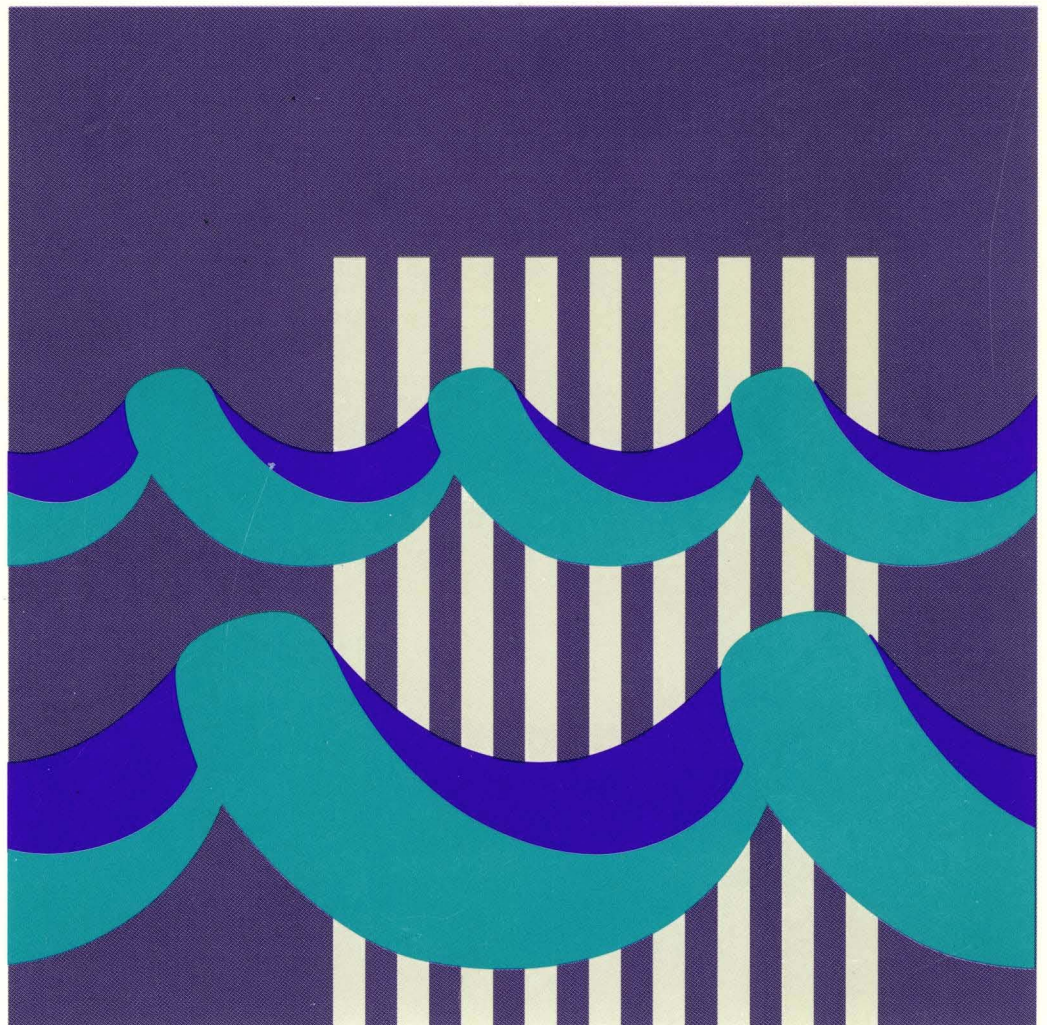


Network Control Program
Emulation Program

LY43-0030-01

**Reference Summary and Data Areas
Volume 1**

NCP Version 7 Release 2
EP Release 12





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Emulation Program

LY43-0030-01

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NCP Version 7 Release 2
EP Release 12

Note!

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Tenth Edition (October 1994)

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Contents

Notices	xv
Programming Interface Information	xv
Trademarks	xv
About This Book	xvii
Who Should Use This Book	xvii
How to Use This Book	xvii
How “MVS”, “VM”, and “VSE” Are Used	xvii
How IBM 3745 Communication Controller Model Numbers Are Used	xvii
How “Ethernet-Type LAN” Is Used	xvii
How “IBM Special Products or User-Written Code” is Used	xviii
How “CSS”, “37CS”, and “3746 Model 900” Are Used	xviii
How “Token-ring” Is Used	xviii
How “Frame-relay” Is Used	xviii
How “NCP V7R2” Is Used	xviii
What is New in This Book	xviii
Supported Releases	xviii
Monitoring and Tuning NCP	xix
Where to Find More Information	xix
A Good Place to Start	xix
Information for NCP Tasks	xx

Data Area Layouts

Section 1. Data Area Layouts	1-1
ACHAIN Anchor Block	1-2
ABEND Control Block	1-3
Adapter Control Block (BSC/SS)	1-5
Adapter Control Block (SDLC)	1-6
ACB Trace Control Block	1-7
Auto Call Unit	1-8
Achain Element Block	1-9
Adapter ID Index (3745)	1-10
Adapter Information Table	1-11
Address Resolution Protocol Packet	1-14
Address Resolution Protocol Table	1-16
Address Trace Block	1-17
ARP Table Entry	1-20
ACB Trace Table Control Block	1-23
Address Vector Control Block	1-27
Address Vector Block Extension	1-31
Adapter Control Block Extension	1-32
BFSESSINFO PIU Control Table	1-43
Block Control Unit (BSC/SS)	1-46
Box Event Record	1-48
Type 01 Level-1 MOSS Down Error	1-49
Type 01 Level-3 MOSS Command Time-Out Error	1-49
Type 01 Level-4 MOSS Inbound Error	1-49
Type 01 Level-4 MOSS Outbound Error	1-49

Type 08 Level-1 ESS-PIO Error Reported by an I/O Controller	1-50
Type 08 Level-1 ESS-AIO Error Reported by an I/O Controller	1-52
Type 08 Level-1 Error Reported by an Ethernet Subsystem	1-53
Type 08 Level-2 ESS Unresolved Error	1-56
Type 08 Level-2 ESS Internal Error	1-58
Type 08 Level-3 ESS Command Time-Out	1-62
Type 08 Level-3 Ethernet Counters	1-63
Type 09 Level-1 Interface Level/Adapter Detected Errors for the CSS	1-64
Type 09 Level-1 CBC/Processor/MOSS-E Failures for the CSS	1-68
Type 09 Level-2 Unresolved Interrupts from the CSS	1-71
Type 09 Level-3 NDPSA Errors (Line, Processor/CBC, Trace) for the CSS	1-72
Type 09 Level-3 LPSA Errors (Line, Trace, and CBC) for the CSS	1-76
Type 09 Level-3 Data Errors for the CSS	1-78
Type 09 Level-3 Timeout Errors (Line, Processor/CBC, Trace) for the CSS	1-79
Type 10 Level-1 CA-PIO Error Reported by an I/O Controller	1-82
Type 10 Level-1 CA-AIO Error Reported by an I/O Controller	1-84
Type 10 Level-1 CA-AIO Error Reported by an I/O Controller	1-86
Type 10 Level-1 Error Reported by a Channel Adapter	1-87
Type 10 Level-3 Channel Adapter and CCU Errors	1-90
Type 11 Level-1 LA-PIO Error Reported by an I/O Controller	1-92
Type 11 Level-1 LA-AIO Error Reported by an I/O Controller	1-94
Type 11 Level-1 Error Reported by a Line Adapter	1-95
Type 11 Level-2 Line Adapter Unresolved Error	1-98
Type 11 Level-2 Line Adapter Internal Error	1-100
Type 11 Level-3 Line Adapter Command Time-Out	1-104
Type 12 Level-1 Program Exceptions Error	1-105
Type 12 Level-2 Program-Controlled Interrupt (PCI)	1-106
Type 13 Level-1 CCU-Related Check Error	1-106
Type 13 Level-3 Channel Adapter and CCU Errors	1-107
Type 13 Level-4 CCU Errors	1-108
Type 13 Level-4 MOSS status hardware interrupt	1-109
Type 14 Level-1 I/O Controller-Related Errors	1-110
Type 14 Level-1 Unresolved Failure for the CSS	1-111
Type 14 Level-1 Invalid IOH/IOHI Issued	1-112
Type 15 Level-1 Token-Ring Multiplexer—PIO Error Reported by an I/O Controller	1-113
Type 15 Level-1 Token-Ring Multiplexer—AIO Errors	1-114
Type 15 Level-1 Error Reported by a Token-Ring Multiplexer	1-115
Type 15 Level-2 Errors	1-116
Type 15 Level-3 Errors	1-118
Background Save Area	1-122
Buffer Prefix	1-123
Buffer for Dynamic Control Blocks	1-124
Block Handler Driver Table	1-125
Block Handler Routine Extension to DVB	1-126
Block Handler Set	1-128
Boundary Inbound Session Started Queue	1-129
Basic Link Unit	1-130
Boundary Out Queue	1-131
Boundary Outbound Session Started Queue	1-132
Destination Boundary Pool (BPOOL) Block	1-133
Boundary Function Processor Address Table	1-134
Boundary Session Block	1-136
Block Handler Set Table	1-145

Branch Trace Table	1-146
Basic Transmission Unit (BSC/SS)	1-148
Switched Backup Extension to DVB	1-150
Boundary Session Block Extension	1-151
Channel Adapter Control Block (Main)	1-157
Channel Adapter Control Block (Extension)	1-168
Channel Adapter Parameter Table	1-173
Channel Adapter Trace Select Table (3745)	1-174
Channel Adapter Vector Table (3745)	1-175
Committed Buffers Block	1-184
Committed Buffers Chains and Delayed Pacing Response List	1-186
Character Control Block (EP)	1-187
Character Control Block General Purpose Extension	1-217
Character Control Block (NCP)	1-219
Configuration Data Block	1-242
Configuration Data Set (3745)	1-243
Channel Adapter ERP Control Block	1-248
Cluster General Poll Extension to DVB	1-251
Channel Control Block	1-253
Channel Vector Table	1-257
Call-In Extension to DVB	1-258
Channel Adapter IOH Trace Table	1-260
Command Table	1-261
Callout Extension to DVB	1-262
Control Program Information Table	1-263
Control Point Notification Queue	1-267
Commit Request Block	1-268
Check Record Pool	1-269
CSS Status Table	1-271
Communication Line Timer and RAS Control Table	1-273
Common Physical Unit Block	1-274
CUBSSCF Values	1-283
Common Physical Unit Block Extension	1-289
Common Physical Unit Block Extension for Embedded Blocks	1-298
Peripheral Physical Unit Block Extension 2 (CX2)	1-300
Device Addressing Extension to a DVB	1-301
Dummy Data Buffer—Channel Adapter	1-302
Dummy Data Buffer—Performance Measurement Facility (Type=PMFFB)	1-303
Dummy Data Buffer—Performance Measurement Facility	1-309
Device Input Area	1-317
Delay PIU Scheduling Queue	1-318
Dispatch Priority Table	1-319
Dispatch Queue Block	1-321
Display/Refresh/Select Table	1-323
Dispatch Table	1-324
Date and Time Generation Control Block	1-325
DLCI-to-LLB Table	1-327
Dynadump Timer Queue	1-329
DLCI-to-Station Table for ODLC Frame Relay	1-330
Device Base Control Block	1-331
Event Control Block	1-339
EBCDIC Character Decode Displacement	1-342
Ethernet Counters Overlay Control Block	1-343

Statistical Counters Control Block	1-344
Ethernet Frame	1-345
Ethernet Frames Supported Table	1-349
Ethernet Frame Header	1-350
ER-to-VR Mapping List	1-352
IP/DLC Interface Control Block	1-354
EP Initialization Table	1-358
Event Queue Block	1-359
Explicit Route Broadcast Queue	1-360
LAN Adapter Control Block	1-361
Fixed ARP Entries Table	1-364
Fullword Direct Addressable Extension	1-365
Flow Control Parameter Table	1-369
Multilink Transmission Group (Fat Link) Control Block	1-370
Function Management Table	1-373
Frame-relay Physical Line Block (ODLC)	1-374
Frame-relay Frame Header	1-376
Frame Relay Physical Line Table	1-378
Frame Relay Support Table	1-379
Frame-Relay Logical Station Block (ODLC)	1-380
Function Vector Table	1-382
Extension to Fullword Addressable Extension	1-383
Group Control Block	1-384
Group Control Block for Channel Links	1-388
Get Error Status Table (ODLC Only)	1-392
Generic Pool Anchor Block	1-393
Generic Pool Block	1-400
Generalized PIU Trace	1-403
Gateway RNAA Workarea	1-408
Gateway Vector of Tasks (FID0)	1-411
Gateway Vector of Tasks (SSCP, LU)	1-412
Hash Entry Control Block	1-413
Host Route Entry	1-414
Host Route Table Control Block	1-415
Token-Ring Hashing Table	1-416
Hashing Table	1-417
Hash Table Control Block	1-418
Extended Halfword Direct Addressables	1-420
Extended Halfword Direct Addressables (HWE) Extension	1-424
Initial Command Execution (ICE) Routine Address Table	1-428
Incident Count Refresh Table	1-432
Interface Disconnect Dispatcher Table	1-433
Identification List Entry	1-435
Identification List Header	1-437
Internet Protocol Datagram Queue Control Block	1-438
Internet Protocol Gateway Routes Table	1-441
Internet Protocol Interface Initialization Table	1-442
Internet Control Message Protocol Message Data Area	1-444
Internet Control Message Protocol Message Header	1-446
IP/Token-Ring Frame Header	1-448
Input/Output Block	1-449
Internet Protocol Option Data Format	1-455
IP Congestion Control Block	1-457

Internet Protocol Datagram Header	1-458
Internet Protocol Router Statistics Control Block	1-459
IP Router Statistics Control Block Extension	1-462
Lookahead Buffer	1-464
Processor-NCP ODLC Adapter Control Block	1-466
Local Address Entry Control Block	1-469
Local Address Table Control Block	1-471
Line Control Block (BSC/SS)	1-472
Channelization Extension	1-482
Lost Control Point Block	1-483
Line Control Selection Table	1-484
Logical Unit Block Extension (LUX) Data Area	1-485
Processor-NCP Dynamic PSA	1-489
LMI Frame Formats	1-497
Line Group Table (EP)	1-501
Line Group Table (NCP)	1-503
Line Interface Table	1-508
Line Control Block (SDLC)	1-511
Channelization Extension	1-520
Link Control Block Extension	1-521
Logical Link Control Block	1-524
Logical Link Block Address Table	1-534
Logical Link Adapter Control Block	1-536
Logical Link Block Extension	1-537
Processor Control Block	1-538
Processor Control Block Extension	1-541
Processor Control Block Extension Table	1-543
Logical Unit (LU) Network Address Control Block	1-544
Dependent Logical Unit (LU) Control Block	1-546
NCST Link Session Control Block	1-547
Line Vector Table (3745)	1-549
Line Vector Table for ODLC	1-552
Link Problem Buffer	1-554
LPDA2 Response Buffer Layout	1-555
Processor-NCP Parameter/Status Area Control Block	1-557
LPDA2 Command (Transmit) Buffer Layout	1-560
Line Quiesce Pending Queue	1-563
Logical Unit (LU) Routing Block	1-564
Link Resource Control	1-565
Logical Resource Vector Table	1-567
LU-LU Session Pacing Criteria	1-568
Line Trace Control Block	1-569
ODLC Line Trace Control Block	1-577
Line Trace Return Address Save Area	1-582
Line Test Control Block	1-583
Logical Line Timer Table	1-586
Line Trace Vector Table	1-587
Logical Unit (LU) Terminal Node Extension	1-588
Logical Unit (LU) Control Block	1-589
Logical Unit (LU) Block NETID Table	1-591
Logical Unit (LU) Vector Table	1-592
Logical Unit (LU) Block Extension	1-593
Link XIO Control Block	1-598

Logical Link Block Common Extension	1-607
LLB LMI Extension	1-609
Level-1 Control Block	1-611
L1B Control Block Extension	1-617
Level-4 Router Control Block	1-619
MOSS Buffer Format	1-620
MOSS Mailbox	1-626
MAC Interface Area	1-642
NMVT Information Block	1-646
MOSS Interface Control Block	1-648
MOSS Interface Table	1-652
SSCP Monitor Mode Link Table	1-654
MMVT Major Vector Table	1-656
Modem Parameter Table	1-657
NMVT Command and Subfunction Router Table	1-660
Mailbox Trace Facility	1-661
NCP-Processor ODLC Adapter Control Block	1-663
NPM Data Block (Token-Ring Physical)	1-668
NPM Data Block (Token-Ring Logical)	1-671
NPM Data Block (Ethernet Line)	1-673
NPM Data Block (Frame-Relay Physical)	1-677
NPM Data Block (Frame-Relay Logical)	1-680
NCP-Processor Dynamic PSA	1-683
NPA Dynamic Reconfiguration History Control Block	1-690
Node Element Descriptor	1-692
NEO Global Control Block	1-694
NEO Router Control Block	1-698
Node Element Qualifier (3745)	1-699
NCP-Activated Explicit Routes Table	1-701
NPA Gateway Accounting Control Block	1-702
NMVT Interface Area	1-704
Network Interconnect Control Block	1-706
NCP-RIP Inactive Interface List Queue	1-708
Network Interconnect Extension	1-709
Programmed Resource Logical Unit (LU) Block	1-713
Programmed Resource Logical Unit (LU) Block Extension	1-715
Network Names Table	1-718
Programmed Resource Physical Unit (PU) Block	1-720
Network Performance Monitor Prefix	1-722
NCP-Processor Parameter/Status Area Control Block	1-724
NPA Counter Queue Block	1-728
NPA Counter Queue Element	1-732
NPA Counter Queue Element Extension	1-736
Network Route Entry	1-739
NCP-NCROUTE Processing Control Block	1-740
NCP-NCROUTE Timer Processing Queue	1-744
Network Route Table Control Block	1-745
NPA Session Accounting Block	1-746
NPM Frame-Relay Physical Station Data Block	1-749
NPA Session Counters Control Block	1-751
NPA Session Processing Control Block	1-755
Nonsequential Queue	1-757
NPM Session Counter Extensions Block	1-758

NPA Takeover Notification Control Block	1-762
NCP-NCPROUTE Timer Processing Control Block	1-764
Network Vector Table	1-765
Network Vector Table Extension	1-768
Owe ANS Exchange	1-769
Output QCB Control Block	1-771
Owners Data Area (3745)	1-772
Online Terminal Test Control Block	1-773
Port Address Table	1-774
Panel Control Block	1-775
NCST LU-SSCP Session Control Block	1-777
Path Information Unit (FID0)	1-778
Path Information Unit (FID1)	1-783
Path Information Unit (FID2)	1-790
Path Information Unit (FID3)	1-797
Path Information Unit (FID4)	1-804
Path Information Unit (FIDF)	1-813
Physical Link Control Block	1-816
Physical Link Block Address Table	1-824
Physical Link Adapter Control Block	1-826
Physical Link Block Extension	1-827
Performance Measurement Facility	1-828
NCST PU Session Control Block	1-829
Physical Unit (PU) Routing Block	1-831
Parameter List	1-832
Parameter/Status Area Control Block (Normal Mode)	1-833
Parameter/Status Area Control Block (Character Mode)	1-848
Parameter/Status Area Control Block (SS Burst Mode)	1-855
Parameter/Status Area Control Block (Ethernet Mode)	1-861
Physical Services Block	1-866
Port Swap Data	1-872
Product Set Identifier	1-873
Port Swap Trace Table (3745)	1-877
Physical Unit (PU) Vector Table	1-878
Queue Anchor Block	1-879
Queue Anchor Block for a Network	1-882
Queue Anchor Block Extension	1-883
Queue Control Block for Input Queues	1-884
Queue Control Block for Work Queues	1-887
Queue Pointer Block	1-889
Route Activation Table	1-891
Release Buffer Queue	1-891
Resource Connection Block	1-892
Route Control Queue	1-894
Routing Data Area Control Block	1-895
Routing Data Area for Fragmentation Control Block	1-898
Resource Definition for an ESCA Line	1-899
Resource Definition for a Token-ring Line	1-900
Resource Definition for an SDLC Line or a Frame-relay Line	1-901
Routing Data Area for Fragment Reassembly	1-905
Routing Data Area for Options Processing	1-906
Resource Definition for a ESCA Station	1-907
Resource Definition for a FHSP Station	1-909

| Resource Definition for a Frame-relay Station	1-911
Resource Definition for a Token-Ring Station	1-914
| Resource Definition for a Frame-relay LMI PU	1-917
Resource Definition for an SDLC Station	1-919
Route Interface Control Block	1-921
Route Management Block	1-924
Route Status Table	1-926
Resource Vector Control Block	1-927
Resource Vector Table	1-928
Receive or Transmit List Control Block	1-931
Station Control Block	1-934
SCBSSCF Values	1-942
Station Control Block Extension	1-948
SNA-IP Interface Counters Control Block	1-954
Search Element Control Block	1-955
Switched Line Group Entry	1-956
Switched Line Group Table	1-957
Search Tree Header Control Block	1-959
NCST PLU-SLU Session Control Block	1-960
Send ID	1-962
Subarea Index Table	1-963
ESCA Link Control Block	1-964
Set Mode Control Block	1-965
Set Mode Control Block (Ethernet)	1-967
SSCP Monitor Mode Control Block	1-968
SNAP Trace Table for ODLC	1-970
SSCP-NCP Session Control Block	1-976
Service Order Table for BSC/SS Lines	1-980
Service Order Table for SDLC	1-981
Session Path Control Block	1-982
Subnetwork Route Entry	1-983
Subnetwork Route Table Control Block	1-985
ESCA Logical Station Control Block	1-986
SNA-IP Session Interface Control Block	1-988
Subareas Serviced Table	1-989
Selection Table Entry	1-990
Subarea Vector Table	1-993
SMMF Switched Table	1-994
Station Control Block Extension	1-995
| Subarea Physical Unit Block Extension 2 (SX2)	1-1001
Token-Ring Logical Station Address Table	1-1002
Test Control Block (Link Test, Level 2)	1-1003
Timer Extension Table	1-1005
Transmission Group Control Block	1-1006
Token-Ring Line Block Extension	1-1009
Time and Date Control Block	1-1011
Trace ACB	1-1013
Channel Adapter Trace Table	1-1018
Dispatcher Trace Table	1-1021
Trace Table (EP, PEP)	1-1024
NCST Internal Trace Table	1-1031
Line Trace Data	1-1032
Trace Table (SDLC, Level-3 Input/Output)	1-1042

Scanner Interface Trace Data	1-1043
Supervisor Call Trace Table	1-1046
Transmission Group Trace Data	1-1049
Trace Control Table	1-1050
Trace Control Block	1-1051
Trace Control Block Extension	1-1053
Token-ring Physical Line Table	1-1055
Transit Routing Table	1-1056
Trace ACB Extension	1-1058
Token-Ring Logical Station Block Extension	1-1060
Time Value Select Table	1-1063
User Adapter Control Block for the BCA	1-1065
User Adapter Control Block	1-1069
User Accounting Notification Queue	1-1071
User Accounting Notification Table	1-1072
Undefined but Operative Block	1-1073
User Interface Control Block	1-1074
User Line Vector Table	1-1075
User Datagram Protocol Message Data Area	1-1076
User Datagram Protocol Message Header	1-1080
Unassigned Subchannel Control Block	1-1081
Usage Tier Status Block	1-1082
Virtual Route Access Table	1-1084
Virtual Route Subarea Index Table	1-1085
Programmed Resource Virtual Line Block	1-1086
Virtual Route Out-of-Sequence Block	1-1088
Virtual Route Control Block	1-1089
Virtual Route Activation Work List	1-1092
Virtual Route Congested Alert Task AAB	1-1094
Virtual Route Status Table	1-1095
Virtual Route Congested Alert Timer Queue	1-1096
Vector Table of SNPs	1-1097
Virtual Route Vector Table	1-1098
Wrap Control Block	1-1099
Wrap Manager Control Block	1-1101
Transport Access Point Table	1-1104
Word Direct Addressable Storage	1-1105
Byte Direct Addressable Storage	1-1109
Halfword Direct Addressable Storage	1-1121
Exchange Identification Data Block (Format 2)	1-1126
Exchange Identification Data Block (Format 3)	1-1131
Physical Link Adapter Control Block Extension	1-1136

Acronyms, Abbreviations, and Bibliography

List of Acronyms and Abbreviations	X-3
Bibliography	X-13
NCP, SSP, and EP Library	X-13
Other Networking Systems Products Libraries	X-13
Networking Systems Library	X-14
VTAM Library	X-14

NPSI Library	X-14
NTune Library	X-14
NetView Library	X-14
NPM Library	X-15
Related Publications	X-15
IBM 3745 Communication Controller Publications	X-15
SNA Publications	X-15

Figures

1-1.	NCP Buffer Diagram	1-266
1-2.	LIT Format for Different Entry Types	1-510
1-3.	MIA Format in an NCP Receive Buffer	1-645
1-4.	PIU Formats in NCP Buffers	1-815

Tables

0-1.	Supported Releases of NCP and EP	xix
0-2.	Sources of Information by Task	xx
1-1.	DDB Offsets for Stages 1 through 5	1-303
1-2.	Values for the 3745	1-313
1-3.	DDB Offsets for Stages 1 through 5	1-313
1-4.	Sense Codes for LPDA2 Response Buffer Layout	1-556

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Programming Interface Information

This publication is intended to help the customer to do diagnosis of the Advanced Communication Function for Network Control Program (NCP) and Emulation Program for IBM Communication Controller (EP). This publication documents information which is Diagnosis, Modification, or Tuning information provided by NCP and EP.

Warning: Do not use this Diagnosis, Modification, or Tuning information as a programming interface.

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About This Book

This section contains the following information:

- Who should use this book
- How to use this book
- IBM 3745-130, 3745-150, 3745-160, and 3745-170 Communication Controllers
- How “IBM special products or user-written code” is used
- How “CSS,” “37CS,” and “3746 Model 900” are used
- What is new in this book
- Where to find more information.

This book provides reference information about Version 7 Release 2 of the Advanced Communications Function for Network Control Program (NCP); Release 12 of the Emulation Program for IBM Communication Controllers (EP), and the Partitioned Emulation Program (PEP) Extension.

Who Should Use This Book

This book is for system programmers and IBM program support representatives who are responsible for diagnosing and debugging problems.

How to Use This Book

This book consists of 2 volumes containing NCP reference information.

Volume 1 contains the data area formats. Volume 2 contains detailed reference information about the flow of data and commands through the functional components of NCP and EP and the flow control mechanisms used by NCP and EP.

How “MVS”, “VM”, and “VSE” Are Used

The term *MVS* means the *MVS/XA**, and *MVS/ESA** systems. The term *VM* means the *VM/ESA** system in the CMS environment. The term *VSE* means the *VSE/SP*, and *VSE/ESA** operating systems.

How IBM 3745 Communication Controller Model Numbers Are Used

In this book, the term *IBM 3745 Communication Controller* refers to all IBM 3745 models. When particular models are discussed, the appropriate model numbers are specified. Model numbers include IBM 3745-130, 3745-150, 3745-160, 3745-170, 3745-17A, 3745-210, 3745-21A, 3745-310, 3745-31A, 3745-410, 3745-41A, 3745-610, and 3745-61A.

How “Ethernet-Type LAN” Is Used

The term *Ethernet-type LAN* means a local area network (LAN) that uses either the Ethernet Version 2 or IEEE 802.3 protocol.

How “IBM Special Products or User-Written Code” is Used

This book sometimes refers to *IBM special products or user-written code*. This phrase means IBM special products such as Network Terminal Option (NTO), Network Routing Facility (NRF), and X.25 Packet Switching Interface (NPSI), or user-written code.

How “CSS”, “37CS”, and “3746 Model 900” Are Used

The terms *connectivity subsystem (CSS)* and *37CS* refer to the 3746 Model 900 connectivity subsystem, an expansion frame that extends the connectivity and enhances the performance of the IBM 3745 Communication Controller.

How “Token-ring” Is Used

NCP can connect to an IBM Token-ring Network using the NCP/Token-ring interconnection (NTRI) or the 3746 Model 900 connectivity subsystem attachment. This book uses the term *token-ring* when referring to either type of connection.

How “Frame-relay” Is Used

To support frame-relay networks, NCP can use a transmission subsystem (TSS) or high performance transmission subsystem (HPTSS) adapter on the 3745, or NCP can use a communication line processor (CLP) adapter on the 3746 Model 900 connectivity subsystem. Unless otherwise stated, this book uses the term *frame-relay* when referring to a 3745 or a 3746 Model 900 connection.

How “NCP V7R2” Is Used

In this book, unless otherwise specified, the term *NCP V7R2* refers to NCP Version 7 Release 2 with or without the optional NCP Feature for 3746 Model 900 connectivity subsystem support. To use this feature, you must have the 3746 Model 900 installed in your controller.

What is New in This Book

This edition contains information on new NCP and EP functions, as well as editorial, organizational, and technical changes. New or changed technical information is identified by a vertical bar (|) in the left margin.

NCP V7R2 and EP R12 offers the following enhancements:

- 3746 Model 900 Frame-relay
- Spare SDLC Lines
- Frame-relay Communications Rate Enhancement

Supported Releases

Table 0-1 on page xix shows the releases of NCP and EP that are currently supported by IBM. If you need information on an unsupported release of NCP or EP, refer to an earlier edition of this book.

Table 0-1. Supported Releases of NCP and EP

Product	Release	Operating Systems
NCP	V4R1	VSE
	V4R2	MVS, VM
	V4R3.1	MVS, VM, VSE
	V5R3	VSE
	V5R4	MVS, VM, VSE
	V6R1	MVS, VM
	V6R2	MVS, VM
	V6R3	MVS
	V7R1	MVS, VM, VSE
	V7R2	MVS
	EP	R3	VSE
R4		MVS, VM
R6.1		MVS, VM, VSE
R7		VSE
R8		MVS, VM, VSE
R9		MVS, VM, VSE
R10		MVS, VM
R11		MVS, VM
R12		MVS, VM, VSE

Monitoring and Tuning NCP

With the following new products, you can monitor and tune NCP while it is running in the communication controller:

- The NTune Monitoring Facility uses online panels and messages to display the current status of various NCP resources and identify network problems. The NTune Monitoring Facility runs under the NetView* program in the host and interacts directly with any NCP activated by VTAM.
- The NTune Tuning Facility enables you to enhance NCP performance by changing various NCP parameters while NCP is running. The NTune Tuning Facility runs in the controller along with NCP and functions in conjunction with the NTune Monitoring Facility.

For more information about these products, refer to *NTune User's Guide* and *NTuneNCP Reference*.

Where to Find More Information

The NCP, SSP, and EP library, available in hardcopy and softcopy form, contains information on a wide variety of tasks related to these products. This section introduces the library, as well as other sources of information that will aid you in performing these tasks.

A Good Place to Start

A good place to start any task regarding NCP, SSP, or EP is *NCP V7R2, SSP V4R2, and EP R12 Library Directory*. This directory introduces the enhancements for the current release and shows where these enhancements are described in the NCP library. It gives you an overview of NCP, SSP, and EP and directs you to information on a variety of tasks related to these programs. When you are using the

book online, you can use *hypertext links*¹ to move directly from task and enhancement descriptions to the appropriate chapters of other books in the library.

Information for NCP Tasks

The books in the NCP, SSP, and EP library are listed here according to task, along with closely related books and tools you may find helpful. See "Bibliography" on page X-13 for brief summaries of each book in the NCP, SSP, and EP library and listings of related publications.

Table 0-2. Sources of Information by Task

Order No.	Title	Hardcopy	Softcopy
Planning			
SC31-7122	<i>Planning for NetView, NCP, and VTAM</i>	■	■
SC31-7123	<i>Planning for Integrated Networks</i>	■	■
SX75-0092	<i>Planning Aids: Pre-Installation Planning Checklist for NetView, NCP, and VTAM</i>	■	
SC31-6259	<i>NCP V7R2, SSP V4R2, and EP R12 Library Directory</i>	■	■
Installation and Resource Definition			
SC31-6221	<i>NCP, SSP, and EP Generation and Loading Guide</i>	■	■
SC31-6258	<i>NCP V7R2 Migration Guide</i>	■	■
SC31-6223	<i>NCP, SSP, and EP Resource Definition Guide</i>	■	■
SC31-6224	<i>NCP, SSP, and EP Resource Definition Reference</i>	■	■
Customization			
LY43-0031	<i>NCP and SSP Customization Guide</i>	■	
LY43-0032	<i>NCP and SSP Customization Reference</i>	■	
Operation			
SC31-6222	<i>NCP, SSP, and EP Messages and Codes</i>	■	■
N/A	<i>Online Message Facility</i>		D
Diagnosis			
LY43-0033	<i>NCP, SSP, and EP Diagnosis Guide</i>	■	
LY43-0037	<i>SSP V4R2 Trace Analysis Program</i>	■	
LY43-0029	<i>NCP and EP Reference</i>	■	
LY43-0030	<i>NCP and EP Reference Summary and Data Areas</i>	■	
LK2T-1999	<i>NCP, SSP, and EP Diagnosis Aid</i>		D
Monitoring and Tuning			
SC31-6247	<i>NTune User's Guide</i>	■	■
LY43-0035	<i>NTuneNCP Reference</i>	■	

D Available on diskette for the IBM OS/2 environment.

Those publications available as softcopy books have cross-document search and hypertext links for speedy, online information retrieval. These softcopy books are grouped together on an electronic bookshelf and are part of the *IBM Networking Systems Softcopy Collection Kit* on compact disc read-only memory (CD-ROM).

¹ A *hypertext link* is a pointer from a location in an online book to another location in the same book or another book. By selecting highlighted information, such as a message number, you can move quickly to related information and, if desired, back again.

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You can view and search softcopy books by using BookManager* READ products or by using the IBM Library Reader* product included on CD-ROM. For more information on CD-ROMs and softcopy books, see *IBM Online Libraries: Softcopy Collection Kit User's Guide* and BookManager READ documentation.

Data Area Layouts

Section 1. Data Area Layouts	1-1
ACHAIN Anchor Block	1-2
ABEND Control Block	1-3
Adapter Control Block (BSC/SS)	1-5
Adapter Control Block (SDLC)	1-6
ACB Trace Control Block	1-7
Auto Call Unit	1-8
Achain Element Block	1-9
Adapter ID Index (3745)	1-10
Adapter Information Table	1-11
Address Resolution Protocol Packet	1-14
Address Resolution Protocol Table	1-16
Address Trace Block	1-17
ARP Table Entry	1-20
ACB Trace Table Control Block	1-23
Address Vector Control Block	1-27
Address Vector Block Extension	1-31
Adapter Control Block Extension	1-32
BFSESSINFO PIU Control Table	1-43
Block Control Unit (BSC/SS)	1-46
Box Event Record	1-48
Type 01 Level-1 MOSS Down Error	1-49
Type 01 Level-3 MOSS Command Time-Out Error	1-49
Type 01 Level-4 MOSS Inbound Error	1-49
Type 01 Level-4 MOSS Outbound Error	1-49
Type 08 Level-1 ESS-PIO Error Reported by an I/O Controller	1-50
Type 08 Level-1 ESS-AIO Error Reported by an I/O Controller	1-52
Type 08 Level-1 Error Reported by an Ethernet Subsystem	1-53
Type 08 Level-2 ESS Unresolved Error	1-56
Type 08 Level-2 ESS Internal Error	1-58
Type 08 Level-3 ESS Command Time-Out	1-62
Type 08 Level-3 Ethernet Counters	1-63
Type 09 Level-1 Interface Level/Adapter Detected Errors for the CSS	1-64
Type 09 Level-1 CBC/Processor/MOSS-E Failures for the CSS	1-68
Type 09 Level-2 Unresolved Interrupts from the CSS	1-71
Type 09 Level-3 NDPSA Errors (Line, Processor/CBC, Trace) for the CSS	1-72
Type 09 Level-3 LPSA Errors (Line, Trace, and CBC) for the CSS	1-76
Type 09 Level-3 Data Errors for the CSS	1-78
Type 09 Level-3 Timeout Errors (Line, Processor/CBC, Trace) for the CSS	1-79
Type 10 Level-1 CA-PIO Error Reported by an I/O Controller	1-82
Type 10 Level-1 CA-AIO Error Reported by an I/O Controller	1-84
Type 10 Level-1 CA-AIO Error Reported by an I/O Controller	1-86
Type 10 Level-1 Error Reported by a Channel Adapter	1-87
Type 10 Level-3 Channel Adapter and CCU Errors	1-90
Type 11 Level-1 LA-PIO Error Reported by an I/O Controller	1-92
Type 11 Level-1 LA-AIO Error Reported by an I/O Controller	1-94
Type 11 Level-1 Error Reported by a Line Adapter	1-95
Type 11 Level-2 Line Adapter Unresolved Error	1-98
Type 11 Level-2 Line Adapter Internal Error	1-100

Type 11 Level-3 Line Adapter Command Time-Out	1-104
Type 12 Level-1 Program Exceptions Error	1-105
Type 12 Level-2 Program-Controlled Interrupt (PCI)	1-106
Type 13 Level-1 CCU-Related Check Error	1-106
Type 13 Level-3 Channel Adapter and CCU Errors	1-107
Type 13 Level-4 CCU Errors	1-108
Type 13 Level-4 MOSS status hardware interrupt	1-109
Type 14 Level-1 I/O Controller-Related Errors	1-110
Type 14 Level-1 Unresolved Failure for the CSS	1-111
Type 14 Level-1 Invalid IOH/IOHI Issued	1-112
Type 15 Level-1 Token-Ring Multiplexer—PIO Error Reported by an I/O Controller	1-113
Type 15 Level-1 Token-Ring Multiplexer—AIO Errors	1-114
Type 15 Level-1 Error Reported by a Token-Ring Multiplexer	1-115
Type 15 Level-2 Errors	1-116
Type 15 Level-3 Errors	1-118
Background Save Area	1-122
Buffer Prefix	1-123
Buffer for Dynamic Control Blocks	1-124
Block Handler Driver Table	1-125
Block Handler Routine Extension to DVB	1-126
Block Handler Set	1-128
Boundary Inbound Session Started Queue	1-129
Basic Link Unit	1-130
Boundary Out Queue	1-131
Boundary Outbound Session Started Queue	1-132
Destination Boundary Pool (BPOOL) Block	1-133
Boundary Function Processor Address Table	1-134
Boundary Session Block	1-136
Block Handler Set Table	1-145
Branch Trace Table	1-146
Basic Transmission Unit (BSC/SS)	1-148
Switched Backup Extension to DVB	1-150
Boundary Session Block Extension	1-151
Channel Adapter Control Block (Main)	1-157
Channel Adapter Control Block (Extension)	1-168
Channel Adapter Parameter Table	1-173
Channel Adapter Trace Select Table (3745)	1-174
Channel Adapter Vector Table (3745)	1-175
Committed Buffers Block	1-184
Committed Buffers Chains and Delayed Pacing Response List	1-186
Character Control Block (EP)	1-187
Character Control Block General Purpose Extension	1-217
Character Control Block (NCP)	1-219
Configuration Data Block	1-242
Configuration Data Set (3745)	1-243
Channel Adapter ERP Control Block	1-248
Cluster General Poll Extension to DVB	1-251
Channel Control Block	1-253
Channel Vector Table	1-257
Call-In Extension to DVB	1-258
Channel Adapter IOH Trace Table	1-260
Command Table	1-261
Callout Extension to DVB	1-262

Control Program Information Table	1-263
Control Point Notification Queue	1-267
Commit Request Block	1-268
Check Record Pool	1-269
CSS Status Table	1-271
Communication Line Timer and RAS Control Table	1-273
Common Physical Unit Block	1-274
CUBSSCF Values	1-283
Common Physical Unit Block Extension	1-289
Common Physical Unit Block Extension for Embedded Blocks	1-298
Peripheral Physical Unit Block Extension 2 (CX2)	1-300
Device Addressing Extension to a DVB	1-301
Dummy Data Buffer—Channel Adapter	1-302
Dummy Data Buffer—Performance Measurement Facility (Type=PMFFB)	1-303
Dummy Data Buffer—Performance Measurement Facility	1-309
Device Input Area	1-317
Delay PIU Scheduling Queue	1-318
Dispatch Priority Table	1-319
Dispatch Queue Block	1-321
Display/Refresh/Select Table	1-323
Dispatch Table	1-324
Date and Time Generation Control Block	1-325
DLCI-to-LLB Table	1-327
Dynadump Timer Queue	1-329
DLCI-to-Station Table for ODLC Frame Relay	1-330
Device Base Control Block	1-331
Event Control Block	1-339
EBCDIC Character Decode Displacement	1-342
Ethernet Counters Overlay Control Block	1-343
Statistical Counters Control Block	1-344
Ethernet Frame	1-345
Ethernet Frames Supported Table	1-349
Ethernet Frame Header	1-350
ER-to-VR Mapping List	1-352
IP/DLC Interface Control Block	1-354
EP Initialization Table	1-358
Event Queue Block	1-359
Explicit Route Broadcast Queue	1-360
LAN Adapter Control Block	1-361
Fixed ARP Entries Table	1-364
Fullword Direct Addressable Extension	1-365
Flow Control Parameter Table	1-369
Multilink Transmission Group (Fat Link) Control Block	1-370
Function Management Table	1-373
Frame-relay Physical Line Block (ODLC)	1-374
Frame-relay Frame Header	1-376
Frame Relay Physical Line Table	1-378
Frame Relay Subport Table	1-379
Frame-Relay Logical Station Block (ODLC)	1-380
Function Vector Table	1-382
Extension to Fullword Addressable Extension	1-383
Group Control Block	1-384
Group Control Block for Channel Links	1-388

Get Error Status Table (ODLC Only)	1-392
Generic Pool Anchor Block	1-393
Generic Pool Block	1-400
Generalized PIU Trace	1-403
Gateway RNAA Workarea	1-408
Gateway Vector of Tasks (FID0)	1-411
Gateway Vector of Tasks (SSCP, LU)	1-412
Hash Entry Control Block	1-413
Host Route Entry	1-414
Host Route Table Control Block	1-415
Token-Ring Hashing Table	1-416
Hashing Table	1-417
Hash Table Control Block	1-418
Extended Halfword Direct Addressables	1-420
Extended Halfword Direct Addressables (HWE) Extension	1-424
Initial Command Execution (ICE) Routine Address Table	1-428
Incident Count Refresh Table	1-432
Interface Disconnect Dispatcher Table	1-433
Identification List Entry	1-435
Identification List Header	1-437
Internet Protocol Datagram Queue Control Block	1-438
Internet Protocol Gateway Routes Table	1-441
Internet Protocol Interface Initialization Table	1-442
Internet Control Message Protocol Message Data Area	1-444
Internet Control Message Protocol Message Header	1-446
IP/Token-Ring Frame Header	1-448
Input/Output Block	1-449
Internet Protocol Option Data Format	1-455
IP Congestion Control Block	1-457
Internet Protocol Datagram Header	1-458
Internet Protocol Router Statistics Control Block	1-459
IP Router Statistics Control Block Extension	1-462
Lookahead Buffer	1-464
Processor-NCP ODLC Adapter Control Block	1-466
Local Address Entry Control Block	1-469
Local Address Table Control Block	1-471
Line Control Block (BSC/SS)	1-472
Channelization Extension	1-482
Lost Control Point Block	1-483
Line Control Selection Table	1-484
Logical Unit Block Extension (LUX) Data Area	1-485
Processor-NCP Dynamic PSA	1-489
LMI Frame Formats	1-497
Line Group Table (EP)	1-501
Line Group Table (NCP)	1-503
Line Interface Table	1-508
Line Control Block (SDLC)	1-511
Channelization Extension	1-520
Link Control Block Extension	1-521
Logical Link Control Block	1-524
Logical Link Block Address Table	1-534
Logical Link Adapter Control Block	1-536
Logical Link Block Extension	1-537

Processor Control Block	1-538
Processor Control Block Extension	1-541
Processor Control Block Extension Table	1-543
Logical Unit (LU) Network Address Control Block	1-544
Dependent Logical Unit (LU) Control Block	1-546
NCST Link Session Control Block	1-547
Line Vector Table (3745)	1-549
Line Vector Table for ODLC	1-552
Link Problem Buffer	1-554
LPDA2 Response Buffer Layout	1-555
Processor-NCP Parameter/Status Area Control Block	1-557
LPDA2 Command (Transmit) Buffer Layout	1-560
Line Quiesce Pending Queue	1-563
Logical Unit (LU) Routing Block	1-564
Link Resource Control	1-565
Logical Resource Vector Table	1-567
LU-LU Session Pacing Criteria	1-568
Line Trace Control Block	1-569
ODLC Line Trace Control Block	1-577
Line Trace Return Address Save Area	1-582
Line Test Control Block	1-583
Logical Line Timer Table	1-586
Line Trace Vector Table	1-587
Logical Unit (LU) Terminal Node Extension	1-588
Logical Unit (LU) Control Block	1-589
Logical Unit (LU) Block NETID Table	1-591
Logical Unit (LU) Vector Table	1-592
Logical Unit (LU) Block Extension	1-593
Link XIO Control Block	1-598
Logical Link Block Common Extension	1-607
LLB LMI Extension	1-609
Level-1 Control Block	1-611
L1B Control Block Extension	1-617
Level-4 Router Control Block	1-619
MOSS Buffer Format	1-620
MOSS Mailbox	1-626
MAC Interface Area	1-642
NMVT Information Block	1-646
MOSS Interface Control Block	1-648
MOSS Interface Table	1-652
SSCP Monitor Mode Link Table	1-654
MMVT Major Vector Table	1-656
Modem Parameter Table	1-657
NMVT Command and Subfunction Router Table	1-660
Mailbox Trace Facility	1-661
NCP-Processor ODLC Adapter Control Block	1-663
NPM Data Block (Token-Ring Physical)	1-668
NPM Data Block (Token-Ring Logical)	1-671
NPM Data Block (Ethernet Line)	1-673
NPM Data Block (Frame-Relay Physical)	1-677
NPM Data Block (Frame-Relay Logical)	1-680
NCP-Processor Dynamic PSA	1-683
NPA Dynamic Reconfiguration History Control Block	1-690

Node Element Descriptor	1-692
NEO Global Control Block	1-694
NEO Router Control Block	1-698
Node Element Qualifier (3745)	1-699
NCP-Activated Explicit Routes Table	1-701
NPA Gateway Accounting Control Block	1-702
NMVT Interface Area	1-704
Network Interconnect Control Block	1-706
NCP-RIP Inactive Interface List Queue	1-708
Network Interconnect Extension	1-709
Programmed Resource Logical Unit (LU) Block	1-713
Programmed Resource Logical Unit (LU) Block Extension	1-715
Network Names Table	1-718
Programmed Resource Physical Unit (PU) Block	1-720
Network Performance Monitor Prefix	1-722
NCP-Processor Parameter/Status Area Control Block	1-724
NPA Counter Queue Block	1-728
NPA Counter Queue Element	1-732
NPA Counter Queue Element Extension	1-736
Network Route Entry	1-739
NCP-NCPROUTE Processing Control Block	1-740
NCP-NCPROUTE Timer Processing Queue	1-744
Network Route Table Control Block	1-745
NPA Session Accounting Block	1-746
NPM Frame-Relay Physical Station Data Block	1-749
NPA Session Counters Control Block	1-751
NPA Session Processing Control Block	1-755
Nonsequential Queue	1-757
NPM Session Counter Extensions Block	1-758
NPA Takeover Notification Control Block	1-762
NCP-NCPROUTE Timer Processing Control Block	1-764
Network Vector Table	1-765
Network Vector Table Extension	1-768
Owe ANS Exchange	1-769
Output QCB Control Block	1-771
Owners Data Area (3745)	1-772
Online Terminal Test Control Block	1-773
Port Address Table	1-774
Panel Control Block	1-775
NCST LU-SSCP Session Control Block	1-777
Path Information Unit (FID0)	1-778
Path Information Unit (FID1)	1-783
Path Information Unit (FID2)	1-790
Path Information Unit (FID3)	1-797
Path Information Unit (FID4)	1-804
Path Information Unit (FIDF)	1-813
Physical Link Control Block	1-816
Physical Link Block Address Table	1-824
Physical Link Adapter Control Block	1-826
Physical Link Block Extension	1-827
Performance Measurement Facility	1-828
NCST PU Session Control Block	1-829
Physical Unit (PU) Routing Block	1-831

Parameter List	1-832
Parameter/Status Area Control Block (Normal Mode)	1-833
Parameter/Status Area Control Block (Character Mode)	1-848
Parameter/Status Area Control Block (SS Burst Mode)	1-855
Parameter/Status Area Control Block (Ethernet Mode)	1-861
Physical Services Block	1-866
Port Swap Data	1-872
Product Set Identifier	1-873
Port Swap Trace Table (3745)	1-877
Physical Unit (PU) Vector Table	1-878
Queue Anchor Block	1-879
Queue Anchor Block for a Network	1-882
Queue Anchor Block Extension	1-883
Queue Control Block for Input Queues	1-884
Queue Control Block for Work Queues	1-887
Queue Pointer Block	1-889
Route Activation Table	1-891
Release Buffer Queue	1-891
Resource Connection Block	1-892
Route Control Queue	1-894
Routing Data Area Control Block	1-895
Routing Data Area for Fragmentation Control Block	1-898
Resource Definition for an ESCA Line	1-899
Resource Definition for a Token-ring Line	1-900
Resource Definition for an SDLC Line or a Frame-relay Line	1-901
Routing Data Area for Fragment Reassembly	1-905
Routing Data Area for Options Processing	1-906
Resource Definition for a ESCA Station	1-907
Resource Definition for a FHSP Station	1-909
Resource Definition for a Frame-relay Station	1-911
Resource Definition for a Token-Ring Station	1-914
Resource Definition for a Frame-relay LMI PU	1-917
Resource Definition for an SDLC Station	1-919
Route Interface Control Block	1-921
Route Management Block	1-924
Route Status Table	1-926
Resource Vector Control Block	1-927
Resource Vector Table	1-928
Receive or Transmit List Control Block	1-931
Station Control Block	1-934
SCBSSCF Values	1-942
Station Control Block Extension	1-948
SNA-IP Interface Counters Control Block	1-954
Search Element Control Block	1-955
Switched Line Group Entry	1-956
Switched Line Group Table	1-957
Search Tree Header Control Block	1-959
NCST PLU-SLU Session Control Block	1-960
Send ID	1-962
Subarea Index Table	1-963
ESCA Link Control Block	1-964
Set Mode Control Block	1-965
Set Mode Control Block (Ethernet)	1-967

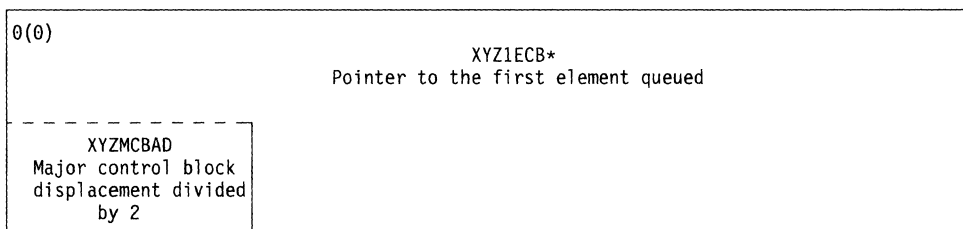
SSCP Monitor Mode Control Block	1-968
SNAP Trace Table for ODL	1-970
SSCP-NCP Session Control Block	1-976
Service Order Table for BSC/SS Lines	1-980
Service Order Table for SDLC	1-981
Session Path Control Block	1-982
Subnetwork Route Entry	1-983
Subnetwork Route Table Control Block	1-985
ESCA Logical Station Control Block	1-986
SNA-IP Session Interface Control Block	1-988
Subareas Serviced Table	1-989
Selection Table Entry	1-990
Subarea Vector Table	1-993
SMMF Switched Table	1-994
Station Control Block Extension	1-995
Subarea Physical Unit Block Extension 2 (SX2)	1-1001
Token-Ring Logical Station Address Table	1-1002
Test Control Block (Link Test, Level 2)	1-1003
Timer Extension Table	1-1005
Transmission Group Control Block	1-1006
Token-Ring Line Block Extension	1-1009
Time and Date Control Block	1-1011
Trace ACB	1-1013
Channel Adapter Trace Table	1-1018
Dispatcher Trace Table	1-1021
Trace Table (EP, PEP)	1-1024
NCST Internal Trace Table	1-1031
Line Trace Data	1-1032
Trace Table (SDLC, Level-3 Input/Output)	1-1042
Scanner Interface Trace Data	1-1043
Supervisor Call Trace Table	1-1046
Transmission Group Trace Data	1-1049
Trace Control Table	1-1050
Trace Control Block	1-1051
Trace Control Block Extension	1-1053
Token-ring Physical Line Table	1-1055
Transit Routing Table	1-1056
Trace ACB Extension	1-1058
Token-Ring Logical Station Block Extension	1-1060
Time Value Select Table	1-1063
User Adapter Control Block for the BCA	1-1065
User Adapter Control Block	1-1069
User Accounting Notification Queue	1-1071
User Accounting Notification Table	1-1072
Undefined but Operative Block	1-1073
User Interface Control Block	1-1074
User Line Vector Table	1-1075
User Datagram Protocol Message Data Area	1-1076
User Datagram Protocol Message Header	1-1080
Unassigned Subchannel Control Block	1-1081
Usage Tier Status Block	1-1082
Virtual Route Access Table	1-1084
Virtual Route Subarea Index Table	1-1085

Programmed Resource Virtual Line Block	1-1086
Virtual Route Out-of-Sequence Block	1-1088
Virtual Route Control Block	1-1089
Virtual Route Activation Work List	1-1092
Virtual Route Congested Alert Task AAB	1-1094
Virtual Route Status Table	1-1095
Virtual Route Congested Alert Timer Queue	1-1096
Vector Table of SNPs	1-1097
Virtual Route Vector Table	1-1098
Wrap Control Block	1-1099
Wrap Manager Control Block	1-1101
Transport Access Point Table	1-1104
Word Direct Addressable Storage	1-1105
Byte Direct Addressable Storage	1-1109
Halfword Direct Addressable Storage	1-1121
Exchange Identification Data Block (Format 2)	1-1126
Exchange Identification Data Block (Format 3)	1-1131
Physical Link Adapter Control Block Extension	1-1136

Section 1. Data Area Layouts

The following conventions are used in this section:

- The displacement of each field from the beginning is given in both decimal and hexadecimal notation (hexadecimal in parentheses).
- If a single field has dual uses with different labels according to the use, the displacement is listed only once and a broken line is inserted between the different labels.
- A pointer or an address contained in a field with a defined length of 4 bytes occupy the last 24 bits of the field. Often the first byte of the field is used for other purposes, such as for a flag. In this case, the 4-byte field is shown as follows:



- Labels shown in parentheses are equated in NCP and EP code to the defined label for a field. Equated labels are most frequently used in the direct addressable areas.
- One field in every queue control block (QCB) is labeled *major control block displacement*. This field contains the offset in halfwords to the beginning of this QCB from the beginning of the major control block that contains the QCB. For example, the DVIMCBD field contains the displacement from the beginning of the device base control block (DVB) to the beginning of the device input QCB.
- Bit patterns or hexadecimal values within a field are defined in a byte expansion table following the formatted data area. The bytes within a field are numbered from zero origin. For example, if the first byte in a 2-byte field has a unique definition, it is referred to as byte 0.
- Bits in the byte expansions that are not identified are reserved.
- Bits within a byte are numbered bit 0 through bit 7.
- Bits within a halfword are numbered byte 0 bit 0 through bit 7 and byte 1 bit 0 through bit 7, or they are numbered bit 0 through bit 15.

ACHAIN Anchor Block

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointed to by: Variable

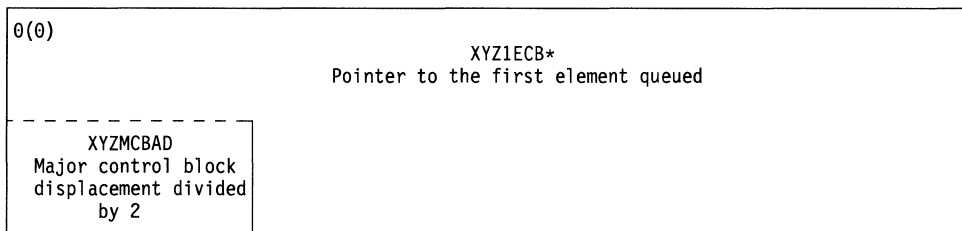
Function: Contains two pointers, one to the first of the chain and, optionally, one to the last of the chain

0(0)	AABCHPF First ACHAIN element pointer
4(4)	AABCHPL Last ACHAIN element pointer (Optional field)

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- If a single field has dual uses with different labels according to the use, the displacement is listed only once and a broken line is inserted between the different labels.
- A pointer or an address contained in a field with a defined length of 4 bytes occupy the last 24 bits of the field. Often the first byte of the field is used for other purposes, such as for a flag. In this case, the 4-byte field is shown as follows:



- Labels shown in parentheses are equated in NCP and EP code to the defined label for a field. Equated labels are most frequently used in the direct addressable areas.
- One field in every queue control block (QCB) is labeled *major control block displacement*. This field contains the offset in halfwords to the beginning of this QCB from the beginning of the major control block that contains the QCB. For example, the DVIMCBD field contains the displacement from the beginning of the device base control block (DVB) to the beginning of the device input QCB.
- Bit patterns or hexadecimal values within a field are defined in a byte expansion table following the formatted data area. The bytes within a field are numbered from zero origin. For example, if the first byte in a 2-byte field has a unique definition, it is referred to as byte 0.
- Bits in the byte expansions that are not identified are reserved.
- Bits within a byte are numbered bit 0 through bit 7.
- Bits within a halfword are numbered byte 0 bit 0 through bit 7 and byte 1 bit 0 through bit 7, or they are numbered bit 0 through bit 15.

ACHAIN Anchor Block

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointed to by: Variable

Function: Contains two pointers, one to the first of the chain and, optionally, one to the last of the chain

0(0)	AABCHPF First ACHAIN element pointer
4(4)	AABCHPL Last ACHAIN element pointer (Optional field)

ABEND Control Block

Program: NCP, PEP

Size in bytes: 128(80) for ABN plus 88(58) for the ABEND control block extension (ABNX);
total=216(D8)

Created by: NCP or PEP generation

Pointed to by: The SYSABNP field in the extended halfword direct addressables control block (HWE)

Function: Contains save areas for level-1 through level-5 registers at ABEND

0(0)	ABNTEMP Temporary save area for ABEND register 2
4(4)	ABNABNXP Pointer to the ABNX, which directly follows the ABN
8(8) - 15(F)	Reserved
16(10) - 47(2F)	ABNL1IAR Eight fullword save areas for level-1 registers (IAR through 7)
48(30) - 79(4F)	ABNL2IAR Eight fullword save areas for level-2 registers (IAR through 7)
80(50) - 111(6F)	ABNL3IAR Eight fullword save areas for level-3 registers (IAR through 7)
112(70) - 127(7F)	ABNL4IAR Four fullword save areas for level-4 registers (IAR through 3)

ABNX

128(80) - 143(8F)		ABNL4R4 Four fullword save areas for level-4 registers (4 through 7)	
144(90) - 175(AF)		ABNBGIAR Eight fullword save areas for level-5 registers (IAR through 7)	
176(B0)		ABNABNP Pointer back to the ABN	
180(B4)	ABNID ABNX extension identifier C'AP'	182(B6)	ABCODE ABEND code
184(B8)		ABADDR Address in routine causing ABEND	
188(BC)		ABPARAM1 First ABEND parameter	
192(C0)		ABPARAM2 Second ABEND parameter	
196(C4) - 203(CB)		ABMAINT Maintenance level of ABENDING module (HJN in hexadecimal in bytes 5 through 8) (PTF level in EBCDIC for module with APAR)	
204(CC) - 211(D3)		ABMODULE Name of module causing ABEND	
212(D4)	ABOFFSET Offset of ABEND in module	214(D6)	Reserved

Adapter Control Block (BSC/SS)

Program: NCP

Size in bytes: 128(80) plus prefix

Created by: NCP generation

Pointed to by: The LCBACBP field in the line control block (LCB), the PSAACBP field in the parameter/status area control block (PSA), or the adapter control block (ACB) vector

Function: Contains line control information and the status of input/output operations for BSC/SS lines

-16(10)	Auto-call unit control block (ACU) prefix
0(0) - 35(23)	Input/output block (IOB)
36(24) - 127(7F)	Character control block (CCB)

Adapter Control Block (SDLC)**Program:** NCP**Size in bytes:** 128(80) plus prefix**Created by:** NCP generation**Pointed to by:** The LKBACBP field in the line control block (LKB) or the PSAACBP field in the parameter/status area control block (PSA)

If the link is a duplex link, CCBRACBP in the transmit leg's adapter control block (ACB) points to the receive leg's ACB, and CCBXACBP in the receive leg's ACB points to the transmit leg's ACB.

Function: Contains line control information and the status of input/output operations for SDLC links

-16(10)	Auto call unit control block (ACU) prefix
0(0) - 35(23)	Link XIO control block (LXB)
36(24) - 127(7F)	Character control block (CCB)

ACB Trace Control Block

Program: NCP

Size in bytes: 12(C)

Created by: NCP generation

Pointed to by: The SYSACTP field in the extended halfword direct addressables control block extension (HWX)

Function: Holds the trace data for the adapter control block (ACB) trace

0(0)	
ACTCMDC Command decoder for the active ACB (CXEXIOCD in CXDCG0B)	
4(4)	
ACTENDR Command ender for the active ACB (RNENDR in CXDCG0D)	
8(8)	10(A)
ACTNDSTT Command ender status (ACTENDR which is traced in RNENDR in CXDCG0D)	ACTL37F External register X'7F' for level-3 interrupts (CXCCTRTC in CXDNCP, CXDPEP, and CXDREM)

Auto Call Unit

Program: NCP

Size in bytes: 16(10)

Created by: NCP generation

Pointed to by: Determined by subtracting 16(10) from the address of the link XIO control block (LXB) (SDLC) or the input/output block (IOB) (BSC/SS)

Function: Contains the auto call retry parameters

0(0) ACURTC Timer retry count	1(1) ACURTL1 First-level retry timer limit	2(2) ACURC2 Second-level retry count	3(3) ACURCL2 Second-level retry count limit
4(4) ACURTL2 Second-level retry timer limit	5(5) ACURCL1 First-level retry count limit	6(6) ACUBAR* ACU interface address	
		ACULPD20* First link problem determination aid 2 (LPDA2) dial command sense byte	7(7) ACULPD2N Last LPDA2 dial command sense byte
8(8) ACUR1 Scanner command and line address		10(A) ACUR2 Scanner address and E bit	
ACUR1HI	9(9) ACUR1LO	ACUR2HI	11(B) ACUR2LO*
12(C) ACUINDX Adapter information (AIT) table index	13(D) ACUV25B1 First V.25 bis dial status byte	14(E) ACUV25B2 Second V.25 bis dial status byte	15(F) ACUV25B3 Third V.25 bis dial status byte

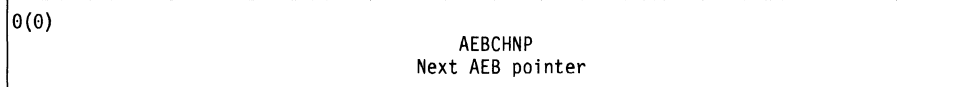
* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) ACUBAR		ACU interface address
	00xx xxxx xxxx xx.. .... .... .... ..1. .... .... .... ....1	ACU interface address Indicates ACUBAR is an offset into the LNVT(ODLC) rather than an address within the LNVT Identifies ACUBAR when it is exchanged with CCBBAR
6(6) ACULPD20		First LPDA2 dial command sense byte
	1... ..	ACU is on a type-3 scanner
11(B) ACUR2LO		
	1... ..	TA bus bit - bus 2

Achain Element Block

Program: NCP
Size in bytes: 4(4)
Created by: NCP generation
Pointed to by: Variable
Function: Contains a pointer for chaining



Adapter ID Index (3745)**Program:** NCP, PEP**Size in bytes:** 48(30); 48(30) 1-byte entries**Created by:** NCP or PEP generation

The shared code module, CXASCBA, calls the generating macro, CXTAIL.

Function: Used to find the adapter information table (AIT) index if the adapter number is known, using ENTRY label CXTAILLA for a line adapter or CXTAILCA for a channel adapter. The following method is used:

The AIT index is equal to the byte value at the location (the line adapter number minus 1 plus CXTAILLA)

or

The AIT index is equal to the byte value at the location (the channel adapter number minus 1 plus CXTAILCA).

Entry

0(0)
AIIFTR
AIT index factor

Adapter Information Table

Program: NCP, EP

Size in bytes: 2560(A00); 80(50) entries of 32(20) bytes each

Created by: NCP or PEP generation

The shared code module, CXASCBA, calls the generating macro, CXTAIT.

Pointed to by: The L1XAITP and L1XADL1P fields in the L1B control block extension (L1X) point to the whole table. The LCBINDX field in the line control block (LCB), the LKBINDX field in the link control block (LKB), the LMBINDX field in the processor control block (LMB), and the ACUINDX field in the autocall unit (ACU) index into the AIT to access an entry.

Function: Contains identification and installation data about each adapter as passed by MOSS in the configuration data set (CDS) and by the CSS in the CSS status table (CST)

AIT Table:

0(0) - 511(1FF)	CXTAIT (CXTB0LA) Line adapter entries in IOC 1 in this order: 1--4, 9--12, 17--20, and 25--28
512(200) - 1023(3FF)	CXTB1LA Line adapter entries in IOC 2 in this order: 5--8, 13--16, 21--24, and 29-32
1024(400) - 1279(4FF)	CXTB0CA Channel adapter entries in IOC 1 in this order: 5--8, and 13--16
1280(500) - 1535(5FF)	CXTB1CA Channel adapter entries in IOC 2 in this order: 1--4, and 9--12
1536(600) - 2495(9BF)	CXTLIME CSS processor entries in this order: 0--29
2496(9C0) - 2559(9FF)	CXTCPLR CSS CBC entries in this order: 1--2

AIT Entry:

0(0) AITADNO Adapter ID number	1(1) AITTYPE* Adapter type	2(2) AITCONF* Adapter configuration	3(3) AITINFO* Adapter information
4(4) AITRELNO Relative line number (RLN) (For an active line adapter, this is the first line number on the adapter. For an inactive line adapter, this is X'0000'.)		6(6) AITATLTC Attached line count	7(7) Reserved
8(8) Reserved			
12(C) Reserved			
16(10) AITSTAT* Adapter status	17(11) AITPIOCT Programmed input/output (PIO) incident count	18(12) AITAIOCT Adapter input/output (AIO) incident count	19(13) AITADPCT Adapter incident count
20(14) AITCAEMK Channel adapter external register 'X'E' mask		22(16) AITTA TA for the adapter	
		AITHITA High byte of the TA	23(17) AITLOTA Low byte of the TA
24(18) AITSELMK Channel adapter select mask	25(19) AITGNF Ground fault incident count	26(1A) AITPROT* Adapter protocol status	
28(1C) Reserved			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
1(1) AITTYPE		Adapter type
	X'00'	No adapter is associated with the board
	X'01'	Channel adapter data streaming (CADS)
	X'02'	Buffer chaining channel adapter (BCCA)
	X'10'	Transmission subsystem adapter (TSS)
	X'20'	High performance transmission subsystem adapter (HPTSS)
	X'30'	Token-ring adapter (TRA)
	X'40'	Airline line control adapter (ALCA)
	X'50'	CSS CBC
	X'52'	CSS SDLC adapter
	X'53'	CSS ESCA
	X'54'	CSS token-ring adapter
	X'60'	Ethernet adapter (ETHR)

Offset/Field Name	Bit Pattern/Hex Value	Contents
2(2) AITCONF		Adapter configuration
	1...	Adapter is not installed
	.1..	Adapter is not operative
	..1.	Adapter is not attached to this CCU
	...1	Adapter is not switched to this CCU
	.... x...	Adapter modem status:
		1 = Integrated modem is in use
		0 = No integrated modem is in use
	.... .1..	CSS CBC is not primary
3(3) AITINFO		Adapter information (channel adapter entry only)
	1...	Two-processor switch (TPS) is not installed
	.1..	Host does not support input/output error alerts
16(10) AITSTAT		Adapter status
		Line Adapter Status
	1...	Interrupt from the line adapter when disconnected
	.1..	IOH instruction to a line adapter failed twice
	...1	Line adapter is down due to a line adapter level-1 interrupt
	.... .1..	Line adapter is down due to exceeding the incident limit
	.... .1.	Line adapter is down due to a MOSS command
		Channel Adapter Status
	1...	Channel adapter is active for NCP
	.1..	Channel adapter is active for EP
	..1.	Channel adapter is active for a programmed resource
	...1	Channel adapter is install in progress
	.... 1...	Channel adapter is CACM mode disconnected
	.... .1.	Channel adapter is down by control program
	.... ...1	Channel adapter is permanently down
26(1A) AITPROT		Adapter protocol status
	Byte 0	
	1...	Adapter slot protocol is down
	.1..	Trace protocol is down
	..1.	Adapter slot and trace protocol are down
	Byte 1	
	1...	SDLC mapper is down
	.1..	ESCA mapper is down
	..1.	CSS TRA mapper is down

Address Resolution Protocol Packet

Program: NCP

Size in bytes: 28(1C)

Created by: Those responsible for performing address resolution protocol (ARP) processing

Function: The ARP request/reply packets are used to resolve protocol addresses into hardware addresses so that frames may be sent to a specific device on the LAN

0(0)		2(2)	
ARPHDWR* Hardware address space		ARPPCOL Protocol address space (X'0800')	
4(4)	5(5)	6(6)	
ARPHLEN Hardware address byte length (X'06')	ARPPLEN Protocol address byte length (X'04')	ARPOPCD* Operation code	
8(8) - 13(D)			
ARPSHA Sender hardware address			
8(8)		10(A)	
ARPSHA12 Sender HA bytes 1-2		ARPSHA34 Sender HA bytes 3-4	
12(C)		14(E) - 17(11)	
ARPSHA Sender hardware address (continued)		ARPSPA Sender protocol address	
ARPSHA56 Sender HA bytes 5-6		14(E)	
		ARPSPA12 Sender PA bytes 1-2	
16(10)		18(12) - 23(17)	
ARPSPA Sender protocol address (continued)		ARPTHA Target hardware address	
ARPSPA34 Sender PA bytes 3-4		18(12)	
		ARPTHA12 Target HA bytes 1-2	
20(14)			
ARPTHA Target hardware address (continued)			
ARPTHA34 Target HA bytes 3-4		22(16)	
		ARPTHA56 Target HA bytes 5-6	
24(18)			
ARPTPA Target protocol address			
ARPTPA12 Target PA bytes 1-2		26(1A)	
		ARPTPA34 Target PA bytes 3-4	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) ARPHDWR		Hardware address space
	X'0001'	Ethernet V2
	X'0006'	IEEE 802.3
6(6) ARPOPCD		Operation code
	X'0001'	ARP request
	X'0002'	ARP reply

Address Resolution Protocol Table

Program: NCP

Size in bytes: 4108(100C) bytes

Created by: NCP initialization

Pointed to by: The ENIARTP field of the IP/DLC interface control block (ENI)

Function: Serves as a hash lookup table for address resolution protocol (ARP) table entries (ATEs) associated with a specific IP supported DLC interface. Each element may point to a chain of one or more ATE control blocks. There is one ARP table (ART) for each DLC interface

0(0)	ARTTYPE ARP table type (X'00')	1(1)	ARTFLAGS* ARP table flags	2(2)	ARTNTRY Number of ARP buckets (X'0400')
4(4)	ARTHASH Address of hash function routine				
8(8)	ARTFREE Pointer to the ATE free list				
12(C) - 4107(100B)	1024 hash buckets**				

* Indicates a byte expansion follows.

** See below for the format of a hash bucket.

Hash Bucket

0(0)	ARTCPTR Pointer to first ATE of a hash chain of one or more IP addresses
------	---

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) ARTFLAGS	1...	ARP table flags Entry mask should be used in hashing

Address Trace Block

Program: NCP
Size in bytes: 60(3C)
Created by: NCP generation
Pointed to by: The SYSATBP field in the extended halfword direct addressables control block (HWE)
Function: Governs the operation of the address trace function executing in level 1

0(0)	ATBPRMS Addresses of trace variables (16 bytes) Parameter 1	
4(4)	Parameter 2	
8(8)	Parameter 3	
12(C)	Parameter 4	
16(10)	ATBFRST Address of the first fullword of the first entry in the trace table (CXTATPF)	
	ATBPRCT Number of variables in each trace entry	
20(14)	ATBPREV Address of the first fullword of the last entry used in the trace table	
	ATBCTL* Address trace control byte	
24(18)	ATBLAST Address of the third to the last fullword in the trace table (CXTATPL)	
	ATBLVLS* Program levels to be traced	
28(1C)	ATBCNTR Number of interrupts processed	30(1E) Reserved

* Indicates a byte expansion follows.

32(20)	Reserved	34(22)	ATBENTSZ Trace entry size
36(24)			
ATBTRAP Address of the trap routine (ACITRAP CSECT)			
ATBECTL* Address trace enhancement control			
40(28)			
ATBDATAL Data address of the offset			
ATBDLOC* Data location control			
44(2C)	ATBRIN Input Rx to R3 instruction placeholder	46(2E)	Reserved
48(30)	ATBOP1M OP1 mask	50(32)	ATBOP2M OP2 mask
52(34)	ATB01CTL* OP1 control	53(35)	ATB02CTL* OP2 control
		54(36)	ATBTACT* True action control
		55(37)	ATBFACT* False action control
56(38)	ATBDATA Halfword of data analyzed	58(3A)	ATBSTPCT Stop-trace-on-count counter

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) ATBCTL		Address trace control byte
	xxxx	Program level to be traced before trace activation: X'0'
		Program level to be traced after trace activation: X'8' Level 2 X'4' Level 3 X'2' Level 4 X'1' Level 5
	.... xxxx	Address trace type variables (from bit 4=variable #4 to bit 7=variable #1): 1 = Register or displacement 0 = Storage
24(18) ATBLVLS		Program levels to be traced
	X'80'	Level 2
	X'40'	Level 3
	X'20'	Level 4
	X'10'	Level 5

Offset/Field Name	Bit Pattern/ Hex Value	Contents
36(24) ATBECTL		Address trace enhancement control
	1...	Address trace enhancement is active
	.1..	UNCOND branch to trap
	.... 1...	OP2 result is true
	.... .1..	Stop trace on count
40(28) ATBDLOC		Data location control
	1...	Storage address
	.1..	Data in the register
	..1.	Address in the register plus the offset
52(34) ATBO1CTL		OP1 control
	1...	OP1 is an AND operation
	.1..	OP1 is an XOR operation
53(35) ATBO2CTL		OP2 control
	1...	OP2 is an AND operation
	.1..	OP2 is an XOR operation
	..1.	OP2 is a COMPARE operation
54(36) ATBTACT 55(37) ATBFACT		True-action and false-action control
	x...	1 = Ignore 0 = Trace
	.1..	Stop trace
	..1.	Stop CCU
	...1	ABEND or IPL (ABEND X'0500')
	.... 1...	Branch to trap routine (ACITRAP CSECT)
	.... .1..	Signal MOSS

ARP Table Entry

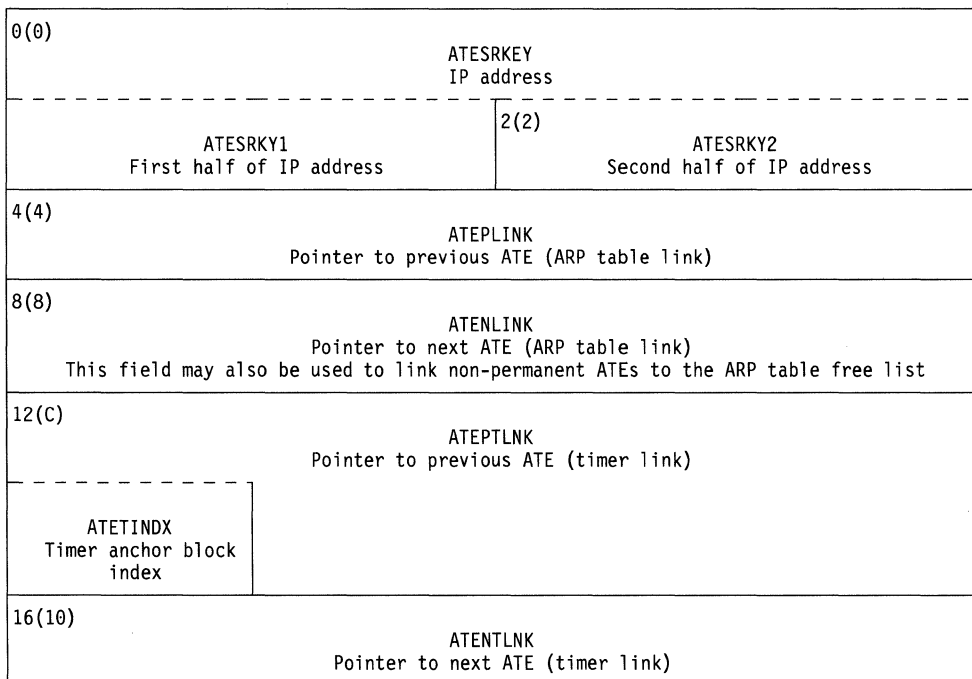
Program: NCP

Size in bytes: 32(20) for Ethernet and permanent token-ring interfaces and 50(32) for temporary token-ring interfaces which may have routing information

Created by: NCP initialization

Pointed to by: The ARP table entry (ATE) elements are chained in two ways: (1) based on the hashed IP address as a means of accessing an element based on a hash function; and (2) based on time of last ARP (REQUEST|REPLY) processing for aging temporary ATEs out of active use and back onto the free list. The first linkage scheme is based on the ARP table (ART) which is pointed to by the IP/DLC interface control block (ENI). The second linkage scheme is based on the ENI directly using twenty-three timer buckets

Function: Contains information related to and representing a specific ARP entry. An ARP entry provides the IP address to hardware address relation which is required to route a datagram onto an ethernet-type or token-ring LAN



20(14) - 25(19)		ATEHA Hardware address	
20(14)	ATEHA12 Hardware address bytes 1-2	22(16)	ATEHA34 Hardware address bytes 3-4
24(18)	ATEHA Hardware address (Continued)	26(1A)	Reserved
	ATEHA56 Hardware address bytes 5-6		
28(1C)		ATEFPTR Packet/frame pointer	
	ATEFLAGS* Control flags		
32(20) - 49(31)		ATERI Routing information (Present only for temporary token-ring ATEs)	
32(20)	ATERIC1* RI control field byte 1	33(21)	ATERIC2* RI control field byte 2
36(24) - 49(31)		ATERI Routing information (Continued)	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
28(1C) ATEFLAGS		Control flags
	x... ..	Entry type 1 = Permanent entry 0 = Non-permanent entry
	.1..	Frame format type established
	..x.	Frame format type 1 = IEEE 802 frame format 0 = Ethernet V2 frame format
	...x	IEEE 802 frame format type 1 = 802.5 frame format 0 = 802.3 frame format
	.... 1..	Entry is in use
	.... .1..	Entry is complete
	.... ..1.	Routing information presence
	.... ...x	Reserved
32(20) ATERIC1		RI control field byte 1
	xx..	Broadcast/path trace 00 = Not all routes explored, path trace not active 01 = Not all routes explored, path trace active 10 = All routes explored, path trace not active 11 = Spanning tree explored, path trace not active
	..x.	Reserved
	...x xxxx	RI length including control field
33(21) ATERIC2		RI control field byte 2
	x... ..	Direction 1 = Interpret RI right to left 0 = Interpret RI left to right
	..xxx	Largest information field (LF) 000 = Up to 516 bytes 001 = Up to 1470 bytes 010 = Up to 2052 bytes 011 = Up to 4472 bytes 100 = Up to 8144 bytes 101 = Up to 11407 bytes 110 = Up to 17800 bytes 111 = Used only in all routes explored frames
	.... xxxx	Reserved

ACB Trace Table Control Block

Program: NCP

Size in bytes: 36(24)

Created by: NCP generation

Pointed to by: Immediately follows the adapter control block extension (AXB) and trace AXB (TRX)

Function: Contains adapter control block (ACB) entries for command end, reset, SDLC level 3, and link activity time-out (LATO) conditions

For all line types but NTRI and frame-relay

0(0) ATTECTL* ACB trace entry control byte	1(1) Reserved
4(4)	ACB trace entry 1
8(8)	ACB trace entry 2
12(C)	ACB trace entry 3
16(10)	ACB trace entry 4
20(14)	ACB trace entry 5
24(18)	ACB trace entry 6
28(1C)	ACB trace entry 7
32(20)	ACB trace entry 8

* Indicates a byte expansion follows.

NTRI and frame-relay lines

0(0) ATTECTL* ACB trace entry control byte	1(1) Reserved
4(4) - 11(B)	ACB trace entry 1
12(C) - 19(13)	ACB trace entry 2
20(14) - 27(1B)	ACB trace entry 3
28(1C) - 35(23)	ACB trace entry 4

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) ATTECTL		ACB trace entry control byte
		Entry Control Bits
	.... .000	Entry 1 next
	.... .001	Entry 2 next
	.... .010	Entry 3 next
	.... .011	Entry 4 next
	.... .100	Entry 5 next
	.... .101	Entry 6 next
	.... .110	Entry 7 next
	.... .111	Entry 8 next

ATT Entry Formats

Command End Entry (See note.)

0(0) IOBCMAND field (BSC/SS)	1(1) RNTIME (byte 1 of TIMH6 field in XDH)	2(2) IOBSTAT field (BSC/SS)
LXBCMAND field (SDLC)		LXBSTAT field (SDLC)

Note: For the Command End Entry only:

- ATTCMDn is the generic name for IOBCMAND and LXBCMAND.
- ATTRNTn is the generic name for RNTIME.
- ATTSTATn is the generic name for IOBSTAT and LXBSTAT.

These generic names are used in subvector key X'86', subfield key X'03' (AXB Control Block Data) in Volume 2 Section 5, "NCP Network Commands."

Reset Entry

0(0) IOBCMAND field (BSC/SS)	1(1) RNTIME (byte 1 of TIMH6 field in XDH)	2(2) IOBIMCTL field (BSC/SS)	3(3) X'D9' Reset entry ID
LXBCMAND field (SDLC)		LXBIMCTL field (SDLC)	

SDLC Level-3 Entry

0(0) CCBCTL field	1(1) CCBRBLUC field	2(2) CCBEND1 field
	CCBCFLD field if duplex transmit	

Link Activity Timeout

0(0) CCBCTL field	1(1) X'D3' LATO entry ID	2(2) CCBEND1 field
----------------------	--------------------------------	-----------------------

ODLC Level-3 Entry

0(0) L/N PSADIAG	1(1) L/N PSACMD if request	2(2) CCBEND1 field
	L/N PSAREAS if response	

NTRI/Frame-relay Reset Entry

0(0) LXBCMAND field	1(1) RNTIME (byte 1 of TIMH6 field in XDH)	2(2) LXBIMCTL field	3(3) X'D9' Reset entry
4(4) CUBSSCF (Peripheral) SCBSSCF (Subarea)		6(6) CUBBSCF (Peripheral) SCBCSCF (Subarea)	7(7) LLBSTIN (Logical) Reserved (Physical)

NTRI/Frame-relay Logical Link Command End Entry

0(0) LXBCMAND field	1(1) RNTIME (byte 1 of TIMH6 field in XDH)	2(2) LLBNIAFL field	3(3) LXBSTATC field
4(4) CUBSSCF (Peripheral) SCBSSCF (Subarea)		6(6) CUBBSCF (Peripheral) SCBCSCF (Subarea)	7(7) LLBSTIN field

NTRI Physical Link Command End Entry

0(0) LXBCMAND field	1(1) RNTIME (byte 1 of TIMH6 field in XDH)	2(2) LXBSTAT field	
4(4) CUBSSCF field		6(6) CUBBSCF field	7(7) Reserved

Address Vector Control Block

Program: NCP

Size in bytes: 120(78)

Created by: NCP generation

Pointed to by: The SYSAVBP field in the fullword direct addressable extension control block (FAX), the XUA AVBP field in the physical link adapter control block extension (XUA), and ECL\$AVB in the link-edit map

Function: Address vectors and general-purpose flags

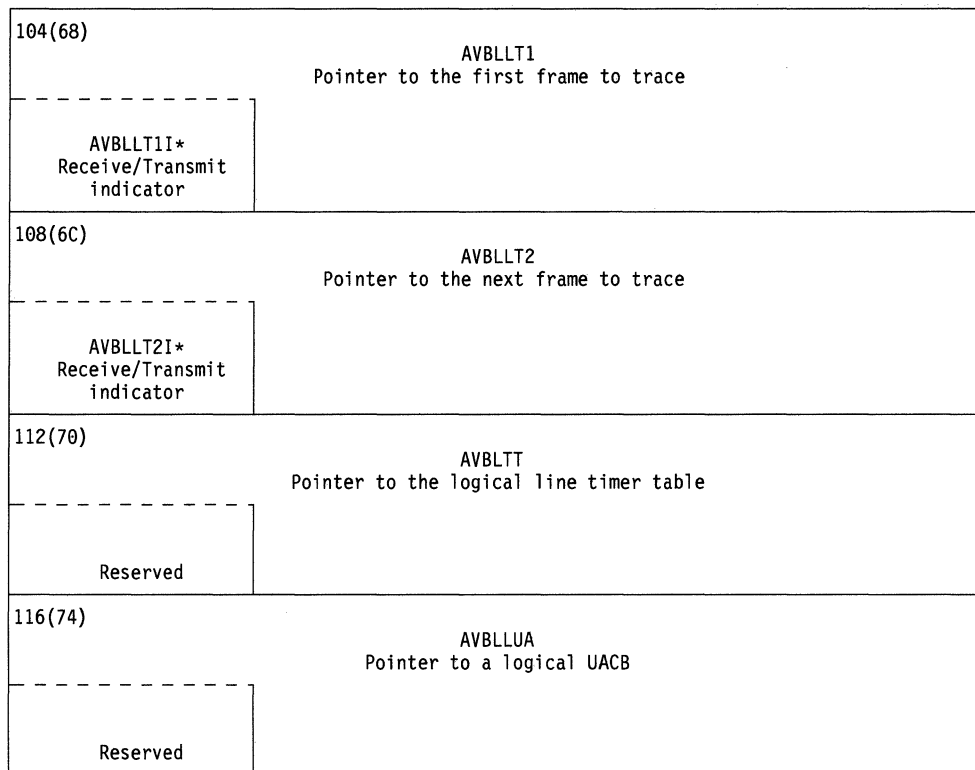
0(0)	AVBBID Block identifier C'AV'	2(2)	AVBTICK* Timer tick scan request	3(3)	AVBNECT Physical link block address table (PLBAT) null entries count
4(4)					
AVBPLBAT Pointer to the PLBAT first entry					
AVBLLSCT Logical link (LL) scan counter					
8(8)					
AVBLLBAT Pointer to the logical link block address table (LLBAT) first entry					
AVBFLAG* AVB flags					
12(C)					
AVBPTNES Pointer to the next PLBAT entry to scan					
Reserved					
16(10)					
AVBLTNES Pointer to the next LLBAT entry to scan					
Reserved					
20(14)					
AVBMIT Pointer to the MOSS interface table (MIT)					
Reserved					

* Indicates a byte expansion follows.

24(18)		
AVBSARBP Pointer to the snap area first entry		
AVBLOCT2 Local T2 timer value		
28(1C)		
AVBSARNP Pointer to the snap area next available entry		
AVBREMT2 Remote T2 timer value		
32(20)		
AVBSARLP Pointer to the snap area last entry		
Reserved		
36(24)	37(25)	38(26)
AVBLOCTO Local T1 timer value	AVBREMT0 Remote T1 timer value	Reserved
40(28)		
AVBLTPT Pointer to the transmit line trace control block (LTCB) (Token-ring interface coupler (TIC) trace) or logical line trace LTCB		
AVBNEPBT PLBAT entries number		
44(2C)		
AVBLTPL Pointer to the receive or logical line trace LTCB		
AVBFLTR* Trace flags		
48(30) - 71(47)		
AVBQCB1 24 bytes Task entry point: ECLNMVX Prefix: AV1		

* Indicates a byte expansion follows.

72(48)	Reserved
76(4C)	AVBRHPT Pointer to the first frame in the receive queue
Reserved	
80(50)	AVBRTPT Pointer to the last frame in the receive queue
Reserved	
84(54)	AVBSHPT Pointer to the head of the timer chain
Reserved	
88(58)	AVBSTPT Pointer to the tail of the timer chain
Reserved	
92(5C)	AVBLVPT Pointer to the last virtual route (VR) held cleared
Reserved	
96(60)	AVBNVPT Pointer to the next VR held to clear
Reserved	
100(64)	AVBAVX Pointer to the address vector block extension (AVX)
Reserved	



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) AVBTICK		Timer tick scan request
	1... ..	Scan physical links requested
	.1.. ..	Scan logical links requested
	..1.	Physical link scan in progress
8(8) AVBFLAG		AVB flags
	1... ..	Snap trace active
44(2C) AVBFLTR		Trace flags
	1... ..	TIC trace active
	.1.. ..	IOH and line traces active
	..1.	Logical line trace active
104(68) AVBLLT1I 108(6C) AVBLLT2I		Transmit/Receive indicator
	X'01'	Received frame
	X'02'	Transmitted frame

Address Vector Block Extension

Program: NCP
Size in bytes: 68(44)
Created by: NCP generation
Pointed to by: The AVBAVX field in the address vector block (AVB)
Function: NTRI and frame-relay general-purpose flags and pointers

0(0) - 17(11)	AVXPRID Product set identifier
	18(12) Reserved
20(14) - 43(2B)	AVXQCB2 TIC trace QCB: Prefix = AV2; task=ECLTT5
44(2C) - 59(3B)	AVXTABL Port address table
60(3C)	AVXTRAL Pointer to the list of available token-ring LLBs
64(40)	AVXFRAL Pointer to the list of available frame-relay LLBs

Adapter Control Block Extension

Program: NCP

Size in bytes: 112(70)

Created by: NCP generation

Pointed to by: The CCBAXBP field in the character control block (CCB)

Function: Contains line control information

0(0)			
AXBCCBP Back pointer to the character control block (CCB)			
AXBEFLGS* Ethernet flags			
4(4)			
AXBSDIAL Pointer to the dial digits for a switched line			
AXBLPCMD Save area for the command field value			
8(8)		10(A)	
AXBOLDLN Original relative line number (RLN)		AXBNEWLN Current RLN	
12(C)			
AXBCPLGT Configurable/primary line group table (LGT) pointer for a switched peripheral SDLC line			
AXBCPRAT Peripheral switched contact fail rate			
16(10)			
AXBSLGT Secondary LGT pointer for a switched peripheral SDLC line			
20(14)	21(15)	22(16)	23(17)
AXBERTRY Peripheral switched configurable/primary first-level retry	AXBSRTRY Peripheral switched secondary first-level retry	AXBLPAF Link problem determination aid 1 (LPDA1) 'A' field	AXBFSTSV SDLC--save final status until final flag
		AXBSTHSV LPDA2 LXBSTAT high byte save field	
24(18)	25(19)	26(1A)	
AXBLPIF LPDA1 'I' field	AXBLPDA* LPDA flags	AXBMULTB Multiple buffer lease amount	
AXBSTLSV LPDA2 LXBSTAT low byte save field			
28(1C)		30(1E)	
AXBR1 Command and line address in the scanner (Physical only)		AXBR2 Scanner address and E bit (character or normal mode) (Physical only)	
AXBR1HI High byte of TD		29(1D)	31(1F)
		AXBR1LO Low byte of TD	AXBR2HI High byte of TA
			AXBR2LO Low byte of TA

* Indicates a byte expansion follows.

32(20)		
AXBPQCQP Pointer to the BSC/SS queue control block (QCB) whose task is triggered upon completion of a queued commit		
AXBRTIME SDLC reply time value	34(22)	AXBXTIME SDLC text time value
36(24)		
AXBLPDXB Pointer to the LPDA2 level-2 and level-3 transmit buffers (Non-ODLC only)		
AXBEXTSV** LPDA2 LXBEXTST save field		
AXBRQST Pointer to LPDA2 request for LPDA NDP builder (ODLC only)		
AXBSVTSK Saved task - this field is used only for channelized force deactivate LPDA2 processing (Non-ODLC only)		
AXBLPCF LPDA 'C' field	38(26)	39(27)
	AXBRLPAF LPDA1 'A' field (Non-ODLC only)	AXBRLPIF LPDA1 'I' field (Non-ODLC only)
40(28)		
AXBLPDRB Pointer to the LPDA2 level-2 and level-3 receive buffers (Non-ODLC only)		
AXBRPLY Pointer to LPDA prototype reply (ODLC only)		
AXBSSNS LPDA2 negative sense data (ODLC only)		
AXBSTATE* Program state byte		
44(2C)		46(2E)
AXBDODLN Dial port of the original RLN		AXBDNWLN Dial port of the current RLN

* Indicates a byte expansion follows.

** See LXBEXTST on page 1-605 for the byte expansion.

Parameter/Status Area (PSA) Trace Function Expansion

48(30) AXB1SSCF Status control field 1	49(31) AXB1CMD Command field 1	50(32) AXB1SES Secondary status field 1	51(33) AXB1LSTA Line communication field 1
AXBUECAU* ODLC unexpected event cause	AXBUEPT* ODLC protocol type of unexpected event	AXBUECMD* ODLC unexpected event command/index	AXBUEQMD* ODLC unexpected event command qualifier/modifier
52(34) AXB2SSCF Status control field 2	53(35) AXB2CMD Command field 2	54(36) AXB2SES Secondary status field 2	55(37) AXB2LSTA Line communication field 2
Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)
56(38) AXB3SSCF Status control field 3	57(39) AXB3CMD Command field 3	58(3A) AXB3SES Secondary status field 3	59(3B) AXB3LSTA Line communication field 3
Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)
60(3C) AXB4SSCF Status control field 4	61(3D) AXB4CMD Command field 4	62(3E) AXB4SES Secondary status field 4	63(3F) AXB4LSTA Line communication field 4
Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)	Reserved (ODLC only)

64(40) AXBTROFF Offset into the PSA trace table	65(41) AXBSMSDF* Set mode control flags	66(42) AXBHLTTR* Trace for the HALT/HALTI issued to the communication scanner processor (CSP)	
		AXBHLT0 Byte 0 of the trace field	67(43) AXBHLT1 Byte 1 of the trace field
68(44) AXBCBL2 Saved CCBL2 for all backup time-outs		70(46) AXBPCMD Command saved when issuing a line dump (X'F5') command	71(47) AXBTYP* Line type
72(48) AXBLBREL Pointer to the head released buffer			
AXBECFL* Ethernet counters flags (Receive leg only)			
76(4C) AXBSOQH Pointer to the head of the service out queue (SOQ)			
AXBECCC* Ethernet counters cause code			
80(50) AXBSOQT1 Pointer to the tail of the high-priority SOQ subqueue			
AXBFLAGS* AXB flags			
84(54) AXBSOQT2 Pointer to the tail of the medium-priority SOQ subqueue			
88(58) AXBSOQT3 Pointer to the tail of the low-priority SOQ subqueue			
92(5C) AXBGPPSP Pointer to the common physical unit block (CUB) responding to the group poll			
AXBRADDR Received SDLC address			

* Indicates a byte expansion follows.

96(60) AXBGPCC Committed buffers count for the group poll	98(62) AXBLGPI Group poll sent indicators for the line	
100(64) AXBCOUNT Repetitious BER count (Transmit leg only)	102(66) AXBBTYPE Saved BER type (Transmit leg only)	103(67) AXBBERID Saved BER ID (Transmit leg only)
104(68) AXBERBAR Saved BAR address (Transmit leg only)	106(6A) AXBBTIME Repetitious BER timer (Transmit leg only)	
AXBERLCS Saved LCS status (Transmit leg only)	105(69) AXBBELCS Saved ELCS status (Transmit leg only)	
108(6C) AXBECTL Ethernet counters saved control field (Receive leg only)	110(6E) AXBECD1 Ethernet counters saved L2 ending status (Receive leg only)	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) AXBEFLGS	.x...	Ethernet flags Ethernet next IOH command indicator mode: 1 = Next IOH is a Get Statistical Counter 0 = Next IOH is an IOH Receive
25(19) AXBLPDA	1... .... .1.. .... ..1. .... ...1 1.. .... .1.. .... ..1. .... ...1	LPDA flags Line is attached to a channelized modem Line is tailed Line is attached to channel A (LPDA1) Test is in progress for this line on the service port (ODLC LPDA2 receive leg only) (AXBTPSV) LPDA2 support on the line LPDA2 dial modem support LPDA support on the line (LPDA1 or LPDA2) Monitor test indicate (TI) lead ODLC LPDA active in level 3

Offset/Field Name	Bit Pattern/ Hex Value	Contents
40(28) AXBSTATE		Program state byte
		TWX Auto-Speed Detect
	X'00'	1200 default speed is pending.
	X'01'	2400 default speed is pending.
	X'02'	Line quiet test is pending.
	X'03'	Queue ACB to level 3.
		LPDA2 Modem Dial
	X'01'	Raise Data Terminal Ready (DTR) is pending.
	X'02'	Dial is pending.
	X'03'	Enable is pending.
	X'04'	Disconnect for Retry is pending.
	X'05'	Disconnect for Abort is pending.
	X'06'	Disable for Retry is pending.
	X'07'	Raise DTR for Retry is pending.
48(30) AXBUECAU		ODLC Unexpected Event Cause field
	X'00'	No unexpected event
	X'01'	Service Request for unexpected/invalid LDP
	X'02'	Request to build unsupported/invalid NDP
	X'03'	Execute Clear for unsupported/invalid NDP
	X'04'	Unexpected XIO SETMODE
	X'05'	Unexpected XIO LINE
	X'06'	Unexpected XIO LINK
	X'07'	Unexpected XIO IMMEDIATE
49(31) AXBUEPT		Protocol Type of most recent unexpected event
	xxxx	Reserved
	.... xxxx	Protocol type (AXBLIMIT)
		0000 = ALL (AXBALL)
		0001 = SDLC (AXBRVX)
		0010 = ESCA (AXBSOCA)
		0011 = TRA (AXBTRA)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) AXBUECMD		ODLC Unexpected Event Command/Index
	LDP command	(if AXBUECAU = X'01')
	NDP builder index	(if AXBUECAU = X'02')
	NDP command	(if AXBUECAU = X'03')
	XIO SETMODE command	(if AXBUECAU = X'04')
	XIO line LXB command (LXBCMAND)	(if AXBUECAU = X'05')
	XIO link communications bits	(if AXBUECAU = X'06')
	XIO immediate command	(if AXBUECAU = X'07')
51(33) AXBUEQMD		ODLC Unexpected Event Command Qualifier/Modifier
	LDP command qualifier X'00'	(if AXBUECAU = X'01') Not applicable (if AXBUECAU = X'02')
	NDP command qualifier	(if AXBUECAU = X'03')
	XIO SETMODE command modifier	(if AXBUECAU = X'04')
	X'00'	Not applicable (if AXBUECAU = X'05')
	X'00'	Not applicable (if AXBUECAU = X'06')
	X'00'	Not applicable (if AXBUECAU = X'07')

Offset/Field Name	Bit Pattern/ Hex Value	Contents
65(41) AXBSMSDF		Set mode control flags
	xxxx x...	Line speed: 00000 = 50 bps 00001 = 75 00010 = 100 00011 = 110 00100 = 134.5 00101 = 200 00110 = 300 00111 = 600 01000 = 1200 01001 = 2400 01010 = 4800 01011 = 9600 01100 = 19200 01101 = 38400 01110 = 55855 01111 = 245760 11111 = Special.
	.... .x..	1 = Modem clocking 0 = Controller clocking
	.... ..x.	Data rate select bit (World Trade modems): 1 = High speed 0 = Low speed.
	.... ...1	Direct attachment—no modem

Offset/Field Name	Bit Pattern/ Hex Value	Contents
65(41) AXBMSDF		Set mode control flags for ODLC
	xxxx x...	Controller clocking speeds for INTERNAL and DIRECT clocking (bps)
		00000 = 50
		00001 = 75
		00010 = 100
		00011 = 110
		00100 = 134.5
		00101 = 200
		00110 = 300
		00111 = 600
		01000 = 1200
		01001 = 2400
		01010 = 4800
		01011 = 9600
		01100 = 19200
		10000 = 38400
		10001 = 55855
		10010 = 64000
		10100 = 256000
		11000 = 512000
		11001 = 1024000
		11010 = 1536000
		11011 = 2048000
	xxxx x...	Controller clocking speeds for EXTERNAL clocking (bps)
		01100 = 50 to 32000 bps
		10000 = 32001 to 64000 bps
		10100 = 64001 to 256000 bps
		11000 = Above 256000 bps
	.... .1.0	Modem clocking (EXTERNAL clocking)
	.... .0.0	INTERNAL clocking
	.... .0.1	Controller clocking (DIRECT clocking)
	.... ..x.	High data rate for modem
		1 = High data rate for modem
		0 = Low data rate for modem
66(42) AXBHLTTR		Trace for a Halt/Halt Immediate issued to a CSP
	X'0000'	No Halt/Halt Immediate was issued.
	X'00F0'	HALT was issued.
	X'FFF1'	HALT Immediate was issued.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
71(47) AXBTYPE		Line type
	1...	X.21 leased line
	.1..	High speed line
	..11	V.25 bis line with SDLC dial connection protocol
	..10	V.25 bis line with SS dial connection protocol
	.... 1...	Group poll in progress
	.... .x..	Line Full Duplex Indicator (AXBLFDX)
		1 = Line is defined as full duplex 0 = Line is defined as half duplex
	.... ..1.	Force Deact in progress in level 3
	.... ...1	Ethernet resource indicator
72(48) AXBECFL		Ethernet counters flags
	1...	IOH Get Counters issued due to DACTLINK
	.1..	IOH Get Counters issued due to Permanent Error
	..1.	Permanent Error occurred on transmit
76(4C) AXBCECC		Ethernet counters cause code
	X'02'	Total frames transmitted counter reached threshold
	X'03'	Total frames received counter reached threshold
	X'04'	Total transmit error counter reached threshold
	X'05'	Total receive error counter reached threshold
	X'06'	Excess collision error counter reached threshold
	X'07'	Late collision error counter reached threshold
	X'08'	Receive congestion error counter reached threshold
	X'09'	CRC error counter reached threshold
	X'0A'	Framing error counter reached threshold
	X'0B'	Receive size error counter reached threshold
	X'0C'	Transmit deferred counter reached threshold
	X'0D'	One collision counter reached threshold
	X'0E'	Multiple collision counter reached threshold
	X'80'	Adapter deactivation in progress
	X'81'	Permanent line error
	X'AA'	Overflow indicator (AXBOVER)
80(50) AXBFLAGS		AXB flags
	1...	Special contact poll pass needs to be executed after regular scan (AXBCPOL)
	.1..	Expanded dial information format is supported (AXBEXDD)
	..1.	Select loop control flag (AXBSLC)
	...1	SIM sent (AXBSIMS)
	.... xxxx	Reserved

BFSESSINFO PIU Control Table

Program: NCP
Size in bytes: 100(64)
Created by: NCP generation; one per network
Pointer to: The SYSBCTP field in the extended halfword direct addressables control block extension (HWX)
Function: Holds BFSESSINFO PIU information

BCT Queue

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

0(0)	BCTIECB Pointer to the first element queued	
	BCTMCBD Major control block displacement divided by 2	
4(4)	BCTLECB Pointer to the last element queued	
	BCTSTATP PRELEASE flags	
8(8)	BCTLINK Pointer to the next queue control block (QCB) on the queue	
	BCTPRKEY QCB ID flag and task protection key	
12(C)	BCTTSKEP Task entry point	
	BCTSTAT Task and queue status	
16(10)	BCTSAVE Address of the save area pushdown list	
	BCTSCHED Task dispatching priority	17(11) BCTPREL PRELEASE buffer count
20(14)	BCTLUNK Pointer to the previous QCB on the queue	
	BCTBHSCH Block handler routine (BHR) scheduling bits	

24(18) Reserved	26(1A) BCTINUSE Number of BCT entries in use	27(1B) BCTBUFN Number of buffers to build one BFSESSINFO
28(1C) BCTFCUBP Pointer to the first common physical unit block (CUB) in the chain of CUBs that do not have BCT entries		
32(20) BCTLCUBP Pointer to the last CUB in the chain of CUBs that do not have BCT entries		
36(24) BCTCCUBP Pointer to the current CUB in the BCT entries chain		
40(28) - 51(33) BCTENT1 First BCT entry for a PU		
52(34) - 63(3F) BCTENT2 Second BCT entry for a PU		
64(40) - 75(4B) BCTENT3 Third BCT entry for a PU		
76(4C) - 87(57) BCTENT4 Fourth BCT entry for a PU		
88(58) - 99(63) BCTENT5 Fifth BCT entry for a PU		

BCT Entry Format

0(0) BCTLLUBP Next logical unit control block (LUB) pointer to be reported
BCTESTAT* Status byte
4(4) BCTLLNBP Next LU network address control block (LNB) pointer to be reported
8(8) BCTLBSBP Next boundary session block (BSB) pointer to be reported

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0)		Status byte
BCTESTAT	1... .. .xxx xxxx	BCT entry in use Reserved

Block Control Unit (BSC/SS)

Program: NCP
Size in bytes: 48(30) control bytes plus the BTU plus the prefix
Located in: Dynamic buffers
Created by: Built dynamically by internal routines
Function: To request work

Buffer Prefix

-4(4) BHBHTG* Buffer tag	-3(3) BHBUFTAG X'C2'	-2(2) BHVVTI Buffer virtual route vector table (VVT) index	
0(0) BCBUFCHN Buffer prefix chain field			
4(4) BCCOPYF Copy field		6(6) BCOFFSET Buffer prefix data offset field	7(7) BCDATCNT Buffer prefix data count field
BCCOPCT Copy count	5(5) BCCOPYS Copy status		

* See "Buffer Prefix" on page 1-123 for byte expansions.

Event Control Block (ECB)

8(8) BCUECHN ECB chain pointer		
BCUESTAT* Event status flags		
12(C) BCUCSTAT* Block status flags	13(D) Reserved	14(E) BCUTMINT (BCUBKLN) Set time interval, as specified by the SETIME macro
		BCUTCNT BCU text count
16(10) BCUQUEUE Address of the waiting task's input queue control block (QCB)		
20(14) - 35(23) Alignment bytes		

* Indicates a byte expansion follows.

Work Area

36(24) Reserved	38(26) BCUTDSP Get-byte/put-byte displacement value	
40(28) BCURVTE Address of the resource vector table (RVT) entry		
44(2C) BCUSSP Subtask sequence pointer for suspended sessions	46(2E) BCUREDS Record descriptor	47(2F) BCUFLAGS* Critical text flags to channel output ----- BCUIWA
48(30) See "Basic Transmission Unit (BTU)" for the format (variable in length)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
8(8) BCUESTAT		Event status flags
	1...	Event is satisfied.
	.1..	Task is to be dispatched.
12(C) BCUCSTAT		Block status flags
	1...	Block enqueued
	.1..	Buffers in the block are counted.
	..1.	Start of Header (SOH) status message
47(2F) BCUFLAGS		Critical test flags to channel output
	1...	Clear data in release blocks.
	.1..	Replace = Session-initiation information reset mode
	..1.	Check mode for replace-session-initiation information
	...1	Second pass
	.... 1...	Third pass

Box Event Record

Program: NCP, EP
Size in bytes: Variable, depending on the BER format
Created by: Macro CXTBER, as needed

Only those BERs generated by NCP are listed in this BER control block. For BERs and IDs not listed, call hardware service personnel or refer to the maintenance information manuals.

Pointed to by: None

Function: Resides in check record pool (CRP) entries when the data is gathered originally and in NCP buffers when the data is sent to MOSS. The first 6 bytes of all BERs are common; then the formats depend on the type of error for which the BER is being built.

Notes:

1. The data shown here begins 2 bytes into the CRP unit.
2. If the data in a BER is invalid, NCP fills in the data field with X'FEFE'.

Common BER Header

0(0) BERLEN BER length	1(1) BERTYP* BER type	2(2) BERID* BER ID	3(3) BERLRC Lost CRP record count
4(4) BERABND ABEND code			

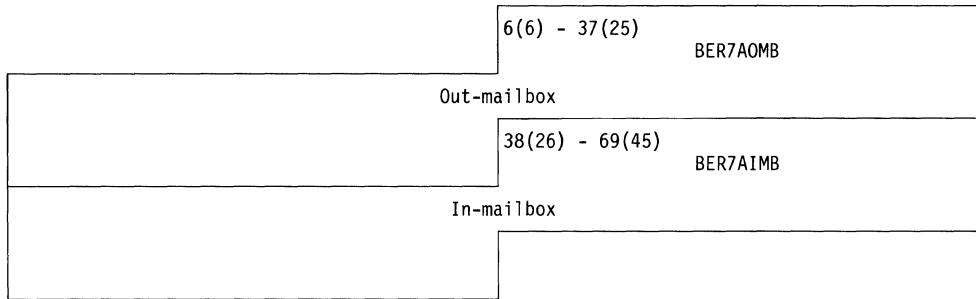
* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) BERTYP		BER type
	X'01'	Errors related to MOSS
	X'08'	Errors related to Ethernet operation
	X'09'	Errors related to ODLC/CSS operation
	X'10'	Errors related to channel adapter operation
	X'11'	Errors related to transmission subsystem (TSS) operation
	X'12'	Program exceptions
	X'13'	Errors related to the CCU
	X'14'	Errors related to the input/output controller (IOC)
	X'15'	Errors related to the token-ring subsystem
2(2) BERID		BER ID
	1... ..	Hardware suspected error
	.xxx	Interrupt level of detection

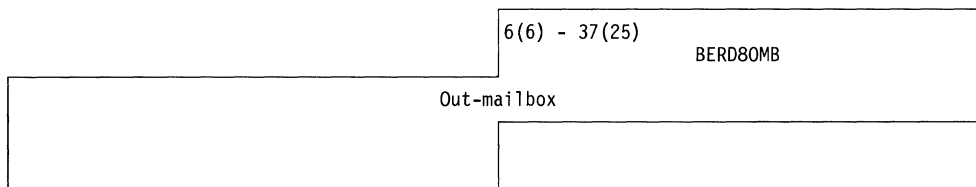
Type 01 Level-1 MOSS Down Error

The applicable BER ID is X'91', MOSS down level 1.



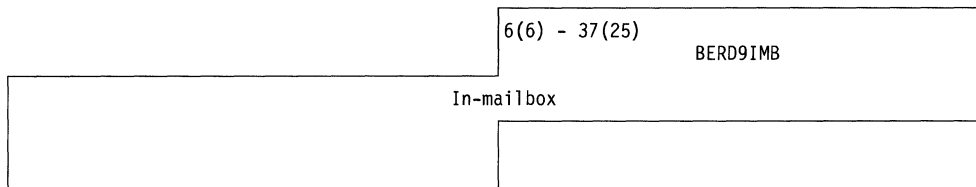
Type 01 Level-3 MOSS Command Time-Out Error

The applicable BER ID is X'B3', NCP-MOSS interface error (level-3 out-mailbox time-out).



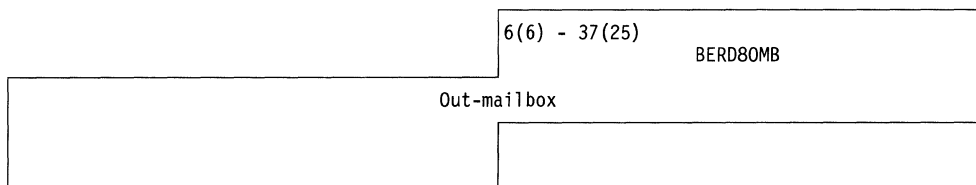
Type 01 Level-4 MOSS Inbound Error

The applicable BER ID is X'C2', NCP-MOSS interface error (level-4 in-mailbox request).



Type 01 Level-4 MOSS Outbound Error

The applicable BER ID is X'C1', NCP-MOSS interface error (level-4 out-mailbox request).



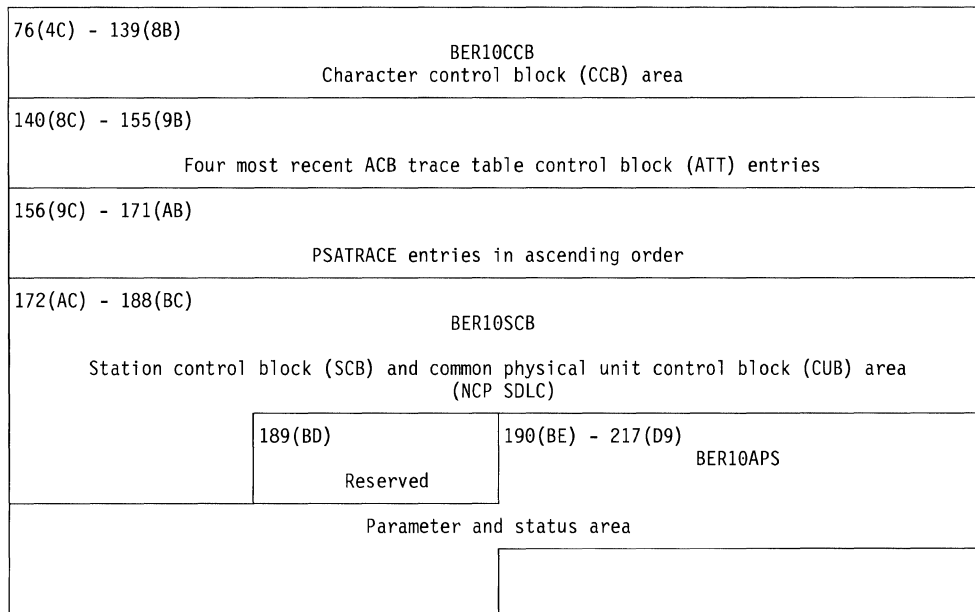
Type 08 Level-1 ESS-PIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'18' IOH/IOHI issued to ESS not installed
- X'1B' Invalid input to ESS
- X'97' ESS PIO error (retry)
- X'98' ESS PIO error (threshold reached)
- X'9C' ESS PIO error—input Get-Line-ID operation code
- X'9E' ESS PIO error—get error status failed.

		6(6) BER207E X'7E' CCU level-1 interrupt request register
8(8) BER20IOC X'76' input/output controller (IOC) error summary register	10(A) BER20II First 2 bytes of instruction	
12(C) BER20LAR X'74' lagging address register		
16(10) BER10LA Line adapter error status register	18(12) BER2076U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER20ETA TA field of an IOH failing in level 1	22(16) Reserved	
24(18) BER20FB* BER flag	25(19) Reserved	26(1A) BER00SWA Switch adapter error register information
28(1C) BER00IAR Interrupted level's instruction address register (IAR)		
BER00IL Interrupted level		
32(20) BER00TA IOH/IOHI image--TA data	34(22) BER00TD IOH/IOHI image--TD data	
36(24) Reserved		
40(28) - 75(4B) BER10LIO Link XI0 control block (LXB) and input/output block (IOB) area (X'FE' for EP)		

* See page 1-121 for the byte expansion.



Type 08 Level-1 ESS-AIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'14' Addressing exception
- X'16' Storage protection
- X'91' ESS AIO error. Adapter retries once
- X'92' ESS AIO error unresolved
- X'93' ESS AIO invalid cycle-steal control word (CCW). Adapter retries once.

		6(6) BER227E X'7E' CCU level-1 interrupt request register
8(8) BER2210C X'76' input/output controller (IOC) error summary register	10(A) BER2275 X'75' AIO cycle-steal control word register	
12(C) Reserved		14(E) BER22ETA TA field of an IOH failing in level 1
16(10) BER12LA Line adapter error status register	18(12) BER2276U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER12SPR Line adapter shared pointer register (X'3F' or X'6F')		
24(18) BER22FB* BER flag	25(19) Reserved	26(1A) BER22SWA Switch adapter error register information
28(1C) BER12LAR X'74' lagging address register		

* See page 1-121 for the byte expansion.

Type 08 Level-1 Error Reported by an Ethernet Subsystem

Applicable BER IDs:

- X'1C' Command reject by ESS
- X'94' ESS DMA/cycle-steal error on set mode.

	6(6) BER10FLG* BER flags	7(7) BER10LVL Interrupted level
8(8) BER10LVT Pointer to the line vector table (LNVT) entry	10(A) - 25(19) BER10PSA	
Parameter area of the parameter/status area control block (PSA)		
	26(1A) BER10SL	
	Status control field	Line status
28(1C) BER10ES1 Line adapter error status register	30(1E) BER10CR Error status for a command reject due to a second command issued during a first command	
	First command	Second command
32(20)	BER10IAR Interrupted level's instruction address register (IAR)	
36(24) Reserved	38(26) BER10TAD	
	TA data byte 0	TD data byte 1
40(28) - 75(4B) BER10LIO X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). Refer to the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		

* See page 1-121 for the byte expansion.

76(4C) - 139(8B)	BER1CCCB	X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. IF EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.
140(8C) - 170(AA)	BER1CAXB	X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.
		171(AB)
		Reserved
172(AC) - 188(BC)	BER1CSCB	X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER85CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.
		189(BD)
		Reserved

Applicable BER IDs:

- X'1E' Invalid output IOH to ESS
- X'95' ESS processor hardcheck
- X'96' ESS disconnected state
- X'99' ESS processor non-hardcheck
- X'9A' Unresolved ESS error
- X'9B' Interrupt from disconnected ESS
- X'9D' ESS microcode error.

		6(6) BER217E X'7E' CCU level-1 interrupt request register
8(8) BER21IOC X'76' input/output controller (IOC) error summary register	10(A) BER21ANO Line adapter number	11(B) - 15(F)
Reserved		
16(10) BER21LAS Line adapter error status register	18(12) BER2176U X'76' for a programmed input/output (PIO) error in level 1	
Reserved		
24(18) BER21FB* BER flag	25(19) BER21FLA Transmission subsystem (TSS) flags	26(1A) BER21SWA Switch adapter error register information
28(1C) BER21LAR X'74' lagging address register		
Reserved		
40(28) - 75(4B) BER11LXB X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
76(4C) - 139(8B) BER11CCB X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
140(8C) - 155(9B) Four most recent ATT entries		
156(9C) - 171(AB) PSATRACE entries in ascending order		

* See page 1-121 for the byte expansion.

Type 08 Level-2 ESS Unresolved Error

The applicable BER ID is X'A1', unresolved level-2 interrupt.

Note: Only the first three fields will be filled in if the PSA address is not within memory or the PSA ID is invalid.

Note: BER ID X'A1' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BER8AALP, BER8ATA0, BER8ATD1, BER84CNT, and the PSALSTAT and PSAELCS fields in BER8APSA.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) BER84B01 Line vector table (LNVT) entry bytes 0 and 1	
44(2C) BER84B23 Line vector table (LNVT) entry bytes 2 and 3	46(2E) - 81(51) BER84LI0	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	82(52) - 145(91) BER84CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	146(92) - 159(9F) BER84AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		

* See page 1-121 for the byte expansion.

160(A0) - 176(B0)		BER84SAT	
<p>X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.</p>			
177(B1) - 192(C0)		BER84SCB	
<p>X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER84CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.</p>			
193(C1)	BER84CSC	194(C2)	BER84CNT
	Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)		BER repetition counter

Type 08 Level-2 ESS Internal Error

Applicable BER IDs:

- X'A2' Internal box error reported by level 2
- X'A4' Transient line error

Note: BER IDs X'A2' and X'A4' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BER8AALP, BER8ATA0, BER8ATD1, BER85CNT, and the PSALSTAT and PSAELCS fields in BER8APSA.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BER85LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BER85CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BER85AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BER85SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		

* See page 1-121 for the byte expansion.

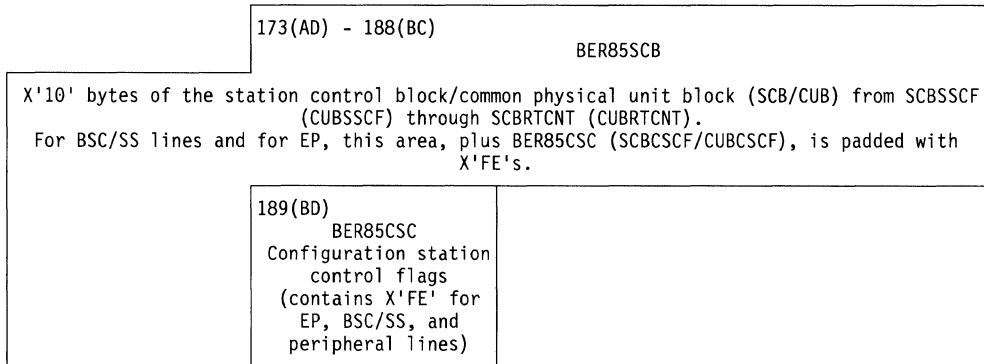
173(AD) - 188(BC)	BER85SCB	
<p>X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER85CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.</p>		
189(BD) BER85CSC Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)	190(BE)	BER85CNT BER repetition counter

Applicable BER IDs:

- X'26' Storage control/direct memory access storage protect/address exception check
- X'A6' Storage control/direct memory access internal error
- X'A7' Switch/storage control/direct memory access interface (main bus) error
- X'A8' Switch/direct memory access reported error
- X'A9' Switch/direct memory access parity check or direct memory time-out
- X'AA' High speed front end scanner/direct memory access interface error.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVF entry)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BER85LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BER85CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BER85AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BER85SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		

* See page 1-121 for the byte expansion.



Type 08 Level-3 ESS Command Time-Out

The applicable BER ID is X'B1', ESS command time-out. (no response to F5 command)

	6(6) BERB7BFB* BER flag	7(7) Reserved
8(8) BERB7LP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BERB7PSA	
Parameter and status area		
	38(26) BERB7TA0 TA data byte 0	39(27) BERB7TD1 TD data byte 1
40(28) BERB7NOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BERB7LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BERB7CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BERB7AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BERB7SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		
	173(AD) - 188(BC) BERB7SCB	
X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BERB7CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.		
	189(BD) BERB7CSC Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)	

* See page 1-121 for the byte expansion.

Type 08 Level-3 Ethernet Counters

The applicable BER ID is X'B7', Ethernet counters data due to overflow condition.

Note: BER ID X'B7' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BERBDA0, BERBDTD1, and BERBDCNT.

	6(6) BERBDA0 TA byte 0	7(7) BERBDTD1 TD byte 1
8(8) BERBDFLG* BER Flags	10(A) BERBDTDR Time domain delay reflectometry	
12(C)	BERBDXTL Total frames transmitted	
16(10)	BERBDRTL Total received frames	
20(14)	BERBDXER Total transmit errors	
24(18)	BERBDRER Total receive errors	
28(1C)	BERBDEXC Excessive collisions	
32(20)	BERBDLTC Late collisions	
36(24)	BERBDRCV Receive congestion errors	
40(28)	BERBDCRC CRC errors	
44(2C)	BERBDFRE Framing errors	
48(30)	BERBDRSZ Receive size errors	
52(34)	BERBDXDF Transmit deferred	
56(38)	BERBDOCL One collision errors	
60(3C)	BERBDMCL Multiple collision errors	
64(40) BERBDCNT BER repetition counter		

* See page 1-121 for the byte expansion.

Type 09 Level-1 Interface Level/Adapter Detected Errors for the CSS

Applicable BER IDs:

- X'10' No XXXX (LNVT, ALNVT, SPECIAL) pointer for associated interface (transmit or receive)
- X'15' CP issued IOH for interface with no start line initial (transmit or receive)
- X'16' Command reject transmit side (transmit only)
- X'17' Command reject receive side (receive only)
- X'18' CP issued IOH to CSS adapter which is not installed (transmit or receive)
- X'19' CP Issued IOH to CSS adapter which is not operational (transmit or receive)

For transmit side errors:

		6(6) BERG1X7E Saved XR'7E' LIBXR7E**	
8(8) BERG1X74 Saved XR'74' (LAR) LIBXR74**			
12(C) BERG1I0 Interrupted level's IAR LIBILIAR**			
BERG1ILV Interrupted level LIBILVL**			
16(10) BERG1X76 Saved XR'76' LIBXR76**		18(12) BERG1ADN Adapter number AITADNO**	19(13) BERG1TYP Adapter type AITTYPE**
20(14) BERG1CON Adapter configuration AITCONF**	21(15) BERG1STA Current adapter status AITSTAT**	22(16) BERG1PRO Adapter protocol status AITPROT**	
24(18) BERG1P76 Secondary IOH's XR'76' value LIBPIO76**		26(1A) BERG1ITA Original IOH's tag address (TA) LIBIOHTA**	
28(1C) BERG1ITD Original IOH's tag data (TD) LIBIOHTD**		30(1E) BERG1GSF GES flag L1XGESFG**	31(1F) BERG1BFL BER flag LIBERFLG**
32(20) BERG1SWA SWAD error register L1XSWADE**		34(22) BERG1PTA Secondary error's TA LIBPIOTA**	

** See field indicated for field definition.

36(24) - 67(43)		
BERG1PSA NCP-processor parameter status area (NPSA) NPSA**		
68(44) - 99(63)		
BERG1DPS First NCP-processor dynamic PSA (NDPSA) NDP**		
100(64)		
BERG1WQH Work queue head pointer NACBWQH**		
104(68)		
BERG1LCQ Processor congestion queue head pointer NACBLCQH**		
108(6C)	110(6E)	111(6F)
BERG1HCC L1 HALT cause code NACB1HCC**	BERG1FLG Flag's byte NACBFLAG**	BERG1ERP ERP Flag's byte NACBERPF**
112(70) - 147(93)		
BERG1LXB LXB--receive leg LXB**		
148(94)	150(96)	
BERG1ST1 Current operational status of line X-CCBSTAT1**	BERG1ND1 Line status at completion of L2 operation X-CCBEND1**	
152(98)	154(9A)	155(9B)
BERG1BAR BAR address of line X-CCBBAR**	BERG1CTL Control flags X-CCBRSPON**	BERG1ECT ACB trace entry control byte X-ATTECTL**
156(9C) - 187(BB)		
BERG1ATT 8 ATT trace entries ATTNRYS**		
188(BC) - 199(C7)		
BERG1GES Last group of GESs and X'FE's in the rest GES** (6 total)		
200(C8)		
BERG1FMT Line format LKEFMT**		

** See field indicated for field definition.

For receive side errors:

		6(6) BERG1X7E Saved XR'7E' LIBXR7E**	
8(8) BERG1X74 Saved XR'74' (LAR) LIBXR74**			
12(C) BERG1IRO Interrupted level's IAR LIBILIAR**			
BERG1ILV Interrupted level LIBILVL**			
16(10) BERG1X76 Saved XR'76' LIBXR76**		18(12) BERG1ADN Adapter number AITADNO**	19(13) BERG1TYP Adapter type AITTYPE**
20(14) BERG1CON Adapter configuration AITCONF**	21(15) BERG1STA Current adapter status AITSTAT**	22(16) BERG1PRO Adapter protocol status AITPROT**	
24(18) BERG1P76 Secondary IOH's XR'76' value LIBPIO76**		26(1A) BERG1ITA Original IOH's TA LIBIOHTA**	
28(1C) BERG1ITD Original IOH's TD LIBIOHTD**		30(1E) BERG1GSF GES flag LIXGESFG**	31(1F) BERG1BFL BER flag LIBERFLG**
32(20) BERG1SWA SWAD error register LIXSWADE**		34(22) BERG1PTA Secondary error's TA LIBPIOTA**	

** See field indicated for field definition.

36(24) - 67(43)		
BERG1PSA LPSA LPSA**		
68(44) - 93(5D)		
BERG1LDP LDPSA LDP**		
		94(5E) - 99(63)
BERG1RST		
Unused X'FE's		
100(64)		
BERG1WQH Work queue head pointer NACBWQH**		
104(68)		
BERG1LCQ Processor congestion queue head pointer NACBLCQH**		
108(6C)	110(6E)	111(6F)
BERG1HCC L1 HALT cause code NACB1HCC**	BERG1FLG Flag's byte NACBFLAG**	BERG1ERP ERP flag's byte NACBERPF**
112(70) - 147(93)		
BERG1LXB LXB--receive leg LXB**		
148(94)	150(96)	
BERG1ST1 Current operational status of line R-CCBSTAT1**	BERG1ND1 Line status at completion of L2 operation R-CCBEND1**	
152(98)	154(9A)	155(9B)
BERG1BAR BAR address of line R-CCBBAR**	BERG1CTL Control flags R-CCBRSPON**	BERG1ECT ACB trace entry control byte R-ATTECTL**
156(9C) - 187(BB)		
BERG1ATT 8 ATT trace entries ATTNTRY**		
188(BC) - 199(C7)		
BERG1GES Last group of GESs and X'FE's in the rest GES** (6 total)		
200(C8)		
BERG1FMT Line format LKEFMT**		

** See field indicated for field definition.

Type 09 Level-1 CBC/Processor/MOSS-E Failures for the CSS

Applicable BER IDs:

- X'11' Set XXXX (LNVT, ALNVT, SPECIAL) IOH issued out-of-sequence
- X'12' Set CDF-E IOH issued out-of-sequence
- X'13' CP issued invalid output IOH
- X'14' CP issued IOH to invalid interface address
- X'1B' CP issued invalid input IOH
- X'1D' DMA read XXXX (LNVT, ALNVT, SPECIAL) error
- X'1E' DMA write CDF-E error
- X'93' DMA hard error
- X'94' IFA HPPB failure
- X'95' Reset to processor or CBC failed twice
- X'96' MOSS-E connection failure
- X'97' Bus error (bus glitch)
- X'98' Bus error (count = limit)
- X'99' CBC detected level 1 error
- X'9B' Failure of Set XXXX (LNVT, ALNVT, SPECIAL) HI/LO IOH to CBC
- X'9C' CBC GLID failure
- X'9C' CBC GLID failure (count = limit)
- X'9D' Update inconsistency detected
- X'9E' CBC PIO time-out to get error status (GES)
- X'9F' Interrupt from CSS and the CP sysgen does not support a CSS

		6(6)	BERGAX7E Saved XR'7E' L1BXR7E**	
8(8)				
BERGAX74 Saved XR'74' (LAR) L1BXR74**				
12(C)				
BERGAIRO Interrupted level's IAR L1BILIAR**				
		BERGAILV Interrupted level L1BILVL**		
16(10)		18(12)	19(13)	
BERGAX76 Saved XR'76' L1BXR76**		BERGAADN*** Adapter number AITADNO**	BERGATYP*** Adapter type AITTYPE**	
20(14)	21(15)	22(16)		
BERGACON*** Adapter configuration AITCONF**	BERGASTA*** Current adapter status AITSTAT**	BERGAPRO*** Adapter protocol status AITPROT**		
24(18)		26(1A)		
BERGAP76 Secondary IOH's XR'76' value L1BPIO76**		BERGAIATA Original IOH's TA L1BIOHTA**		
28(1C)		30(1E)	31(1F)	
BERGAITD Original IOH's TD L1BIOHTD**		BERGAGSF GES flag L1XGESFG**	BERGABFL BER flag L1BERFLG**	
32(20)		34(22)		
BERGASWA SWAD error register L1XSWADE**		BERGAPTA Secondary error's TA L1BPIOTA**		

** See field indicated for field definition.

*** These fields are not valid for BER ID X'96' (X'FE'). They will be filled in with data from the primary CBC's AIT entry for BER IDs X'12', X'1B', X'1E', X'93', X'94', X'99', X'9C', X'9E', and X'9F'. They will be filled in with data from the secondary IOH's (L1BPIOTA) processor's AIT entry for BER IDs X'95' and X'9B' if TA exists (i.e., not equal to X'FEFE'); otherwise not valid (X'FE'). They will be filled in with data from the original IOH's (L1BIOHTA) processor's AIT entry for the rest of the BERs if TA exists (i.e., not equal to X'FEFE'); otherwise not valid (X'FE').

36(24)

BERGADDR
Address sent on Set XXXX IOH
Address of trace section in LNVT(ODLC) when LIBIOHTD indicates that the IOH was a trace
command for BER ID X'1D'.
Address of processor/CBC section in LNVT(ODLC) when LIBIOHTD indicates that the IOH was a
processor command for BER ID X'1D'.
Address of LNVT segment in LNVT(ODLC) when LIBIOHTD indicates that the IOH was a line
command for BER ID X'1D'.
Address of CDF-E for BER IDs X'12' and X'1E'.
Not valid for rest of BER IDs (X'FE').

40(28) - 51(33)

BERGAGES
Last group of GESs and X'FE's in the rest
GES** (6 total)

** See field indicated for field definition.

Type 09 Level-2 Unresolved Interrupts from the CSS

Applicable BER IDs:

- X'A1' Unresolved level 2 interrupt on CSS resource

Note: Only BERH4BAR field will be filled in if the PSA address is not within memory or the PSA ID is invalid.

Note: BER ID X'A1' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BERH4BAR, BERH4TA, BERH4TD, and BERH4CNT.

		6(6) - 37(25)	BERH4PSA***
		NPSA or LPSA NPSA** for level 2 interrupts on the transmit side LPSA** for level 2 interrupts on the receive side	
		38(26)	BERH4BAR BAR address from GLID response CCBBAR**
40(28)	BERH4TA*** Tag address (TA) AXBR2**	42(2A)	BERH4TD*** Tag data (TD) AXBR1**
44(2C)	BERH4CNT*** BER repetition count AXBERBAR**		

** See field indicated for field definition.

*** These fields will be filled with X'FE's if the BAR address is invalid.

Type 09 Level-3 NDPSA Errors (Line, Processor/CBC, Trace) for the CSS

Applicable BER IDs:

- X'30' Error in NPSA parameter area
- X'31' NDPSA error--invalid RI, invalid NDPSA chain pointer, invalid buffer pointer in NDPSA
- X'32' NDPSA error--invalid interface command for a line
- X'33' NDPSA error--invalid interface command for a station
- X'34' NDPSA error--invalid processor.LRID
- X'39' NDPSA buffer errors

For all interfaces:

	6(6)	BERI6TA Tag address (TA) AXBR2**
8(8)	BERI6TD Tag data (TD) AXBRI**	10(A) - 25(19) BERI6NPP
NCP-processor parameter/status area (NPSA) parameter area NPSAPARM**		
	26(1A) - 41(29)	BERI6NPS
NPSA status area NPSASTAT** For BER ID X'31', NPSADIAG can be used to determine the error: X'10' is invalid RI, X'15' is invalid NDPSA chain pointer, and X'16' is invalid buffer pointer in NDPSA.		
	42(2A) - 57(39)	BERI6LPP
Processor-NCP parameter/status area (LPSA) parameter area LPSAPARM** for BER IDs X'30', X'32', X'33', and X'34'. Not valid for rest of BER IDs (X'FE').		
	58(3A) - 83(53)	BERI6LDP
Processor-NCP dynamic parameter/status area (LDPSA) in error LDPSA** for BER IDs X'32', X'33', and X'34' via LACBNDPS. Not valid for rest of BER IDs (X'FE').		
84(54) - 89(59)	BERI6LRS	Unused X'FE's

** See field indicated for field definition.

	90(5A) - 115(73) BERI6NDP
NCP-processor dynamic parameter/status area (NDPSA) in error or with the error NDPSA** in the LDPSA buffer if data is present for BER IDs X'32', X'33', and X'34'. NDPSA** obtained from the sequence number of the NDPSA in error for BER IDs X'31', and X'39'. Not valid for rest of BER IDs (X'FE').	
116(74) - 121(79)	BERI6NRS Unused X'FE's
	122(7A) - 125(7D) BERI6SLI
SLID after NDPSA in error in LDPSA buffer for BER IDs X'32', X'33', and X'34'. Not valid for rest of BER IDs (X'FE').	

** See field indicated for field definition.

For line interfaces:

		126(7E) BERI6FLG*** Flags field NACBFLAG**	127(7F) BERI6ERP*** Error recovery process (ERP) flags NACBERPF**
128(80) BERI6WQH Work queue head pointer NACBWHQ**			
132(84) BERI6CQH Line congestion queue head pointer NACBLCQH**			
136(88) BERI61HC L1 HALT cause code NACB1HCC**		138(8A) - 173(AD) BERI6LXB***	
LXB receive LXB**			
		174(AE) BERI6STT*** Current operational status of line X-CCBSTAT1**	
176(B0) BERI6ND1*** Line status at completion of L2 operation X-CCBEND1**		178(B2) BERI6BAR LNVT(ODLC) offset (BAR Address) X-CCBBAR**	
180(B4) BERI6CTL*** Control flags X-CCBRSPON**	181(B5) BERI6ECT ACB trace entry control byte X-ATTECTL**	182(B6) - 213(D5) BERI6ATT	
ACB trace table control block (8 entries) ATTNTRY5**			
		214(D6) BERI6SSC*** Service-seeking command flags SCBSSCF** if station. X'FE's if line.	
216(D8) BERI6FMT*** Resource definition format SCEFMT** if station. LKEFMT** if line.	217(D9) - 228(E4) BERI6DAT		
Bytes 0 through 11 from the buffer in error when the NDPSA has a pointer to a buffer for BER ID X'39'. Not valid for rest of BER IDs (X'FE').			

** See field indicated for field definition.

*** These fields will be filled with data from the logical control blocks when the error is with a logical resource; otherwise, they will be filled with the data from the physical control blocks.

For processor/CBC and trace interfaces:

		126(7E) BERI6FLG Flags field NACBFLAG**	127(7F) BERI6RTY Resource type NACBRTYP**
128(80) BERI6LFL L-side flags LACBFLAG**	129(81) BERI6STF State field R-LXBSTFLD**		

** See field indicated for field definition.

For trace interface only contains trace point (TP) 1's data;
 otherwise contains X'FE's:

		130(82) BERI6ST1 TP1--SIT trace state field CCTSTATE**	131(83) BERI6SM1 TP1--SIT SNP mask CCTSMPM**
132(84) BERI6RT1 TP1--SIT line type CCTRIT**	133(85) BERI6FL1 TP1--SIT ODLC trace flags CCTOFLAG**	134(86) BERI6BR1 TP1--SIT BAR address CCTBAR**	
136(88) BERI6BT1 TP1--SIT backup timer CCTBKTMR**		138(8A) BERI6LS1 TP1--LTVT line trace status byte LTVTSTAT**	139(8B) BERI6RS2 Unused X'FE'

** See field indicated for field definition.

For trace interface only contains trace point 2's data, if any;
 otherwise contains X'FE's:

140(8C) BERI6ST2 TP2--SIT trace state field CCTSTATE**	141(8D) BERI6SM2 TP2--SIT SNP mask CCTSMPM**	142(8E) BERI6RT2 TP2--SIT line type CCTRIT**	143(8F) BERI6FL2 TP2--SIT ODLC trace flags CCTOFLAG**
144(90) BERI6BR2 TP2--SIT BAR address CCTBAR**		146(92) BERI6BT2 TP2--SIT backup timer CCTBKTMR**	
148(94) BERI6LS2 TP2--LTVT line trace status byte LTVTSTAT**			

** See field indicated for field definition.

For processor/CBC and trace interfaces:

149(95) BERI6TYP Adapter type AITYPE**

** See field indicated for field definition.

Type 09 Level-3 LPSA Errors (Line, Trace, and CBC) for the CSS

Applicable BER IDs:

- X'35' Invalid LPSA status error

		6(6)	BERI3TA Tag address (TA) AXBR2**	
8(8)	BERI3TD Tag data (TD) AXBRI**		10(A) - 25(19)	BERI3LPP
LPSA parameter area of the abnormal request LPSAPARM**				
		26(1A) - 41(29)	BERI3LPS	
LPSA status area of last LPSA before the abnormal request LPSASTAT**				
		42(2A) - 67(43)	BERI3LDP	
First LDPSA LDPSA**				
68(44) - 73(49)		BERI3RST Unused X'FE's		
		74(4A)	BERI3FLG N-side flags NACBFLAG**	75(4B) BERI3RTY Resource type NACBRTYP**
76(4C)	BERI3LFL L-side flags LACBFLAG**		77(4D) BERI3STF State field R-LXBSTFLD**	

** See field indicated for field definition.

For trace interface only contains trace point 1's data;
 otherwise contains X'FE's:

		78(4E) BERI3ST1 TP1--SIT trace state field CCTSTATE**	79(4F) BERI3SM1 TP1--SIT SNP mask CCTSNDPM**
80(50) BERI3RT1 TP1--SIT line type CCTRTT**	81(51) BERI3FL1 TP1--SIT ODLC trace flags CCTOFLAG**	82(52) BERI3BR1 TP1--SIT BAR address CCTBAR**	
84(54) BERI3BT1 TP1--SIT backup timer CCTBKTMR**		86(56) BERI3LS1 TP1--LTVT line trace status byte LTVTSTAT**	87(57) BERI3RS2 Unused X'FE'

** See field indicated for field definition.

For trace interface only contains trace point 2's data, if any;
 otherwise contains X'FE's:

88(58) BERI3ST2 TP2--SIT trace state field CCTSTATE**	89(59) BERI3SM2 TP2--SIT SNP mask CCTSNDPM**	90(5A) BERI3RT2 TP2--SIT line type CCTRTT**	91(5B) BERI3FL2 TP2--SIT ODLC trace flags CCTOFLAG**
92(5C) BERI3BR2 TP2--SIT BAR address CCTBAR**		94(5E) BERI3BT2 TP2--SIT backup timer CCTBKTMR**	
96(60) BERI3LS2 TP2--LTVT line trace status byte LTVTSTAT**			

** See field indicated for field definition.

For all interfaces:

97(61) BERI3TYP Adapter type AITYPE**
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** See field indicated for field definition.

Type 09 Level-3 Data Errors for the CSS

Applicable BER IDs:

- X'37' Invalid resource definition data
- X'38' Configuration mismatch

		6(6)	BERIBTA Tag address (TA) AXBR2**
8(8)	BERIBTD Tag data (TD) AXBRI**	10(A) - 25(19) BERIBLPP	
		LPSA parameter area LPSAPARM**	
		26(1A) - 51(33)	BERIBLDP
		LDPSA indicating the error LDPSA**	
52(34) - 57(39)		BERIBRST Unused X'FE's	
		58(3A) BERIBFLG*** N-side flags NACBFLAG**	59(3B) BERIBRTY*** Resource type NACBRTYP**
60(3C) BERIBLFL*** L-side flags LACBFLAG**	61(3D) BERIBSTF*** State field R-LXBSTFLD**	62(3E) - 65(41) BERIBDAT	
		Four bytes of data Four bytes beginning at place starting at LDPOFSD** if valid data	
		66(42) BERIBFMT Resource definition format LKEFMT** for lines SCEFMT** for stations	67(43) BERIBTYP Adapter type AITTYPE**
68(44) BERIBCNT BER repetition counter			

** See field indicated for field definition.

*** These fields will be filled with data from the logical control blocks when the error is with a logical resource; otherwise, they will be filled with the data from the physical control blocks.

Type 09 Level-3 Timeout Errors (Line, Processor/CBC, Trace) for the CSS

Applicable BER IDs:

- X'B0' Backup timeout on Execute Request--HALT complete received
- X'B1' Backup timeout on Execute Request--no HALT complete received
- X'B2' Timeout on CBC reporting recovery after CBC slot failure

	6(6)	BERIATA Tag address (TA) X-AXBR2**
8(8)	10(A) - 25(19)	BERIATD Tag data (TD) X-AXBR1**
	NCP-processor parameter/status area (NPSA) parameter area NPSAPARM**	
	26(1A) - 41(29)	BERIANPP
	NPSA status area NPSASTAT**	
	42(2A) - 57(39)	BERIANPS
	Processor-NCP parameter/status area (LPSA) parameter area LPSAPARM**	
	58(3A)	BERIAFLG Flags field NACBFLAG**
	59(3B)	BERIAERP Error recovery process (ERP) flags NACBERPF**
60(3C)	BERIAWQH Work queue head pointer NACBWHQ**	
64(40)	BERIACQH Line congestion queue head pointer NACBLCQH**	
68(44)	70(46) - 105(69)	BERIAIHC L1 HALT cause code NACBIHCC**
	LXB receive LXB**	
	106(6A)	BERIASTT Current operational status of line X-CCBSTAT1**

** See field indicated for field definition.

108(6C) BERIAND1 Line status at completion of L2 operation X-CCBEND1**		110(6E) BERIABAR LNVT(ODLC) offset (BAR address) X-CCBBAR**	
112(70) BERIACTL Control flags X-CCBRSPON**	113(71) BERIAECT ACB trace entry control byte X-ATTECTL**	114(72) - 145(91) BERIAATT	
ACB trace table control block (8 entries) ATTNTRY5**			
		146(92) BERIAADN Adapter number AITADNO**	147(93) BERIATYP Adapter type AITTYPE**
148(94) BERIACON Configuration (IOAS..P.) AITCONF**	149(95) BERIASTA Current adapter status AITSTAT**	150(96) BERIAPRO Protocol status AITPROT**	
152(98) BERIAFMT Resource definition format LKEFMT**	153(99) BERIARS1 Unused X'FE'		

** See field indicated for field definition.

For trace interface only contains trace point (TP) 1's data;
otherwise contains X'FE's:

		154(9A) BERIAST1 TP1--SIT trace state field CCTSTATE**	155(9B) BERIASM1 TP1--SIT SNP mask CCTSMPM**
156(9C) BERIART1 TP1--SIT line type CCTRTT**	157(9D) BERIAFL1 TP1--SIT ODLC trace flags CCTOFLAG**	158(9E) BERIABR1 TP1--SIT BAR address CCTBAR**	
160(A0) BERIABT1 TP1--SIT backup timer CCTBKTMR**		162(A2) BERIALS1 TP1--LTVT line trace status byte LTVTSTAT**	163(A3) BERIARS2 Unused X'FE'

** See field indicated for field definition.

For trace interface only contains trace point 2's data, if any;
 otherwise contains X'FE's:

164(A4) BERIAST2 TP2--SIT trace state field CCTSTATE**	165(A5) BERIASM2 TP2--SIT SNP mask CCTSNPM**	166(A6) BERIART2 TP2--SIT line type CCTRTT**	167(A7) BERIAFL2 TP2--SIT ODLIC trace flags CCTOFLAG**
168(A8) BERIABR2 TP2--SIT BAR address CCTBAR**		170(AA) BERIABT2 TP2--SIT backup timer CCTBKTMR**	
172(AC) BERIALS2 TP2--LTVT line trace status byte LTVTSTAT**			

** See field indicated for field definition.

Type 10 Level-1 CA-PIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'18' Attempt to select a channel adapter that is not installed
- X'1C' Sequence of outputs to a channel adapter in error
- X'80' Auto-selection failure, channel adapter bypass
- X'97' Programmed input/output (PIO) error
- X'9B' IOH failure during a channel adapter PIO error recovery procedure (ERP)

		6(6)	BER217E X'7E' CCU level-1 interrupt request register	
8(8)	BER21IOC X'76' input/output controller (IOC) error summary register		10(A)	BER20II First 2 bytes of failing instruction
12(C) BER20LAR X'74' lagging address register				
16(10)	BER00CMP CACM mode remembrance halfword		18(12)	BERXR76U X'76' for a programmed input/output (PIO) error in level 1
20(14)	BER20ETA TA field of an IOH failing in level 1		22(16) Reserved	23(17) BER00ANO Channel adapter number
24(18)	BER21FB* BER flag	25(19) BER00CVT Channel adapter vector table (CAVT) flag byte	26(1A) BER21SWA Switch adapter error register information	
28(1C) BER00IAR Interrupted level's instruction address register (IAR)				
BER00IIL Interrupted level				
32(20)	BER00TA IOH/IOHI image--TA data		34(22)	BER00TD IOH/IOHI image--TD data
36(24)	BER00C08 Channel adapter register X'8'		38(26)	BER00C09 Channel adapter register X'9'
40(28)	BER00C0A Channel adapter register X'0A'		42(2A)	BER00C50 Channel adapter register X'50'
44(2C)	BER00C51 Channel adapter register X'51'		46(2E)	BER00C52 Channel adapter register X'52'

* See page 1-121 for the byte expansion.

48(30) - 95(5F)	
<p>X'30' bytes of fields from the channel adapter control block (CAB), from CABEND up to and including CABCA0F. For EP, the fields CASEL through TERMADR are included from the EP channel control block (CHCB) (X'10' bytes). The remaining space, plus BER00CAC (CABCNTL), is padded with X'FE's for EP.</p>	
96(60)	98(62)
<p>BER20CAC Channel adapter contact control flags (CABCNTL)</p>	<p>BER20C00 Channel adapter register X'0'</p>
100(64)	102(66)
<p>BER20C01 Channel adapter register X'1'</p>	<p>BER2C002 Channel adapter register X'2'</p>
104(68)	106(6A)
<p>BERC0C03 Channel adapter register X'3'</p>	<p>BERC0C04 Channel adapter register X'4'</p>
108(6C)	110(6E)
<p>BERC0C05 Channel adapter register X'5'</p>	<p>BERC0C06 Channel adapter register X'6'</p>
112(70)	114(72)
<p>BERC0C07 Channel adapter register X'7'</p>	<p>BERC0C0B Channel adapter register X'B'</p>
116(74)	118(76)
<p>BERC0C0C Channel adapter register X'C'</p>	<p>BERC0C0D Channel adapter register X'D'</p>
120(78)	122(7A)
<p>BERC0C0E Channel adapter register X'E'</p>	<p>BERC0C0F Channel adapter register X'F'</p>

Type 10 Level-1 CA-AIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'14' Addressing exception
- X'16' Storage protection
- X'91' Adapter input/output (AIO) error
- X'9A' IOH failure during a channel adapter AIO error recovery procedure (ERP)

		6(6) BER217E X'7E' CCU level-1 interrupt request register
8(8) BER21IOC X'76' input/output controller (IOC) error summary register		10(A) BER2275 X'75' AIO cycle-steal control word register
12(C) Reserved		14(E) BER22ETA TA field of an IOH failing in level 1
16(10) Reserved		18(12) BER2276U X'76' for a programmed input/output (PIO) error in level 1
20(14) BER02FPR The channel adapter cycle-steal fixed pointer register (X'3m' or X'6m')		
24(18) BER22FB* BER flag	25(19) Reserved	26(1A) BER21SWA Switch adapter error register information
28(1C) - 41(29) Reserved		
		42(2A) BER01C50 Channel adapter register X'50'
44(2C) BER01C51 Channel adapter register X'51'		46(2E) BER01C52 Channel adapter register X'52'

* See page 1-121 for the byte expansion.

48(30) - 95(5F) <p style="text-align: center;">BER02CAB</p> X'30' bytes of fields from the CAB, from CABEND up to and including CABCA0F. For EP, the fields CASEL through TERMADR are included from the EP CHCB (X'10' bytes). The remaining space, plus BER00CAC (CABCNTL), is padded with X'FE's for EP.	
96(60) <p style="text-align: center;">BER02CAC</p> Channel adapter contact control flags (CABCNTL)	98(62) <p style="text-align: center;">BERC0C00</p> Channel adapter register X'0'
100(64) <p style="text-align: center;">BERC0C01</p> Channel adapter register X'1'	102(66) <p style="text-align: center;">BERC0C02</p> Channel adapter register X'2'
104(68) <p style="text-align: center;">BERC0C03</p> Channel adapter register X'3'	106(6A) <p style="text-align: center;">BERC0C04</p> Channel adapter register X'4'
108(6C) <p style="text-align: center;">BERC0C05</p> Channel adapter register X'5'	110(6E) <p style="text-align: center;">BERC0C06</p> Channel adapter register X'6'
112(70) <p style="text-align: center;">BERC0C07</p> Channel adapter register X'7'	114(72) <p style="text-align: center;">BERC0C0B</p> Channel adapter register X'B'
116(74) <p style="text-align: center;">BERC0C0C</p> Channel adapter register X'C'	118(76) <p style="text-align: center;">BERC0C0D</p> Channel adapter register X'D'
120(78) <p style="text-align: center;">BERC0C0E</p> Channel adapter register X'E'	122(7A) <p style="text-align: center;">BERC0C0F</p> Channel adapter register X'F'

Type 10 Level-1 CA-AIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'81' Power block failure
- X'82' Suspected power block failure; no channel adapter on the input/output controller (IOC) bus can be selected

		6(6) BER207E X'7E' CCU level-1 interrupt request register
8(8) BER20IOC X'76' input/output controller (IOC) error summary register	10(A) Reserved	
12(C) BER20LAR X'74' lagging address register		
16(10) BER2075 X'75' adapter input/output (AIO) cycle-steal control word register	18(12) BER2076U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER20ETA TA field of an IOH failing in level 1	22(16) Reserved	23(17) BER00CAA Channel adapter number
24(18) BER20FB* BER flag	25(19) BER0CVT Channel adapter vector table (CAVT) flag byte	26(1A) BER00SWA Switch adapter error register information
28(1C) Reserved		
32(20) BER00TA IOH/IOHI image--TA data	34(22) BER00TD IOH/IOHI image--TD data	
36(24) Reserved	38(26) BER00CMA CACM mode remembrance halfword	
40(28) Reserved		
44(2C) BER00FPR Channel adapter cycle-steal fixed pointer register (X'3m'or X'6m')		

* See page 1-121 for the byte expansion.

Type 10 Level-1 Error Reported by a Channel Adapter

Applicable BER IDs:

- X'10' Invalid emulator subchannel (ESC) address; EP or user is a channel adapter
- X'1F' Invalid output IOH to a channel adapter
- X'87' Interrupt from a disabled channel adapter
- X'90' Invalid emulator subchannel (ESC) address; EP is not a channel adapter owner
- X'92' Level 1 from a channel adapter in the error recovery procedure (ERP) state
- X'96' Channel adapter bus-in check
- X'98' Channel adapter internal error
- X'99' Channel adapter ground-fault error
- X'9C' IOH failure during a channel adapter ERP
- X'9D' Channel adapter microcode error
- X'9E' Unresolved channel adapter level-1 interrupt (the channel adapter error is not identified in the X'D' register)
- X'9F' ESC interrupt; EP is not a channel adapter owner

		6(6) BER217E X'7E' CCU level-1 interrupt request register	
8(8) BER21IOC X'76' input/output controller (IOC) error summary register	10(A) BER21ANO Channel adapter number	11(B) Reserved	
12(C) BER01LAR X'74' lagging address register			
16(10) Reserved		18(12) BERXR76U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER01TA TA field of an IOH failing in level 1		22(16) Reserved	
24(18) BER21FB* BER flag	25(19) Reserved	26(1A) BER21SWA Switch adapter error register information	
28(1C) - 39(27) Reserved			
40(28) BER01C60 Channel adapter register X'60' (applies to BER ID X'9D' only)		42(2A) BER01C50 Channel adapter register X'50'	
44(2C) BER01C51 Channel adapter register X'51'		46(2E) BER01C52 Channel adapter register X'52'	

* See page 1-121 for the byte expansion.

48(30) Reserved	50(32) - 97(61) BER01CAB
X'30' bytes of fields from the CAB, from CABND up to and including CABCA0F. For EP, the fields CASEL through TERMADR are included from the EP CHCB (X'10' bytes). The remaining space, plus BER00CAC (CABCNTL), is padded with X'FE's for EP.	
	98(62) BER10CAC Channel adapter contact control flags (CABCNTL)
100(64) BERCOC00 Channel adapter register X'0'	102(66) BERCOC01 Channel adapter register X'1'
104(68) BERCOC02 Channel adapter register X'2'	106(6A) BERCOC03 Channel adapter register X'3'
108(6C) BERCOC04 Channel adapter register X'4'	110(6E) BERCOC05 Channel adapter register X'5'
112(70) BERCOC06 Channel adapter register X'6'	114(72) BERCOC07 Channel adapter register X'7'
116(74) BERCOC0B Channel adapter register X'B'	118(76) BERCOC0C Channel adapter register X'C'
120(78) BERCOC0D Channel adapter register X'D'	122(7A) BERCOC0E Channel adapter register X'E'
124(7C) BERCOC0F Channel adapter register X'F'	

Applicable BER IDs:

- X'85' Channel adapter is not accessible
- X'86' Channel adapter is not operative
- X'88' Level-1 interrupt from a CACM mode disconnected channel adapter
- X'89' Level-1 interrupt from a channel adapter that is install in progress
- X'BF' Unresolved channel adapter level-1 interrupt (a channel adapter is not identified in the X'E' register)

		6(6) BER0C7E X'7E' CCU level-1 interrupt request register	
8(8) BER0CIO X'76' input/output controller (IOC) error summary register	10(A) BER0CAN0 Channel adapter number	11(B) BER0CCAF Channel adapter vector table (CAVT) flag byte	
12(C) BER0CLAR X'74' lagging address register			
16(10) BER0CTA TA field of an IOH failing in level 1		18(12) BER0C76U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER0CFB* BER flag	21(15) Reserved	22(16) BER0CSWA Switch adapter error register information	
24(18) BER0CI57 CCU input register X'57'		26(1A) BER0C057 CCU output register X'57'	
28(1C) BER0CC0D Channel adapter register X'0D'		30(1E) BER0CC0E Channel adapter register X'0E'	
32(20) BER0CC0F Channel adapter register X'0F'			

* See page 1-121 for the byte expansion.

Type 10 Level-3 Channel Adapter and CCU Errors

Applicable BER IDs:

- X'34' Level-3 IPL configuration check
- X'35' Emulator subchannel (ESC) address is not within the range (EP on a level-3 interrupt)
- X'B1' Unresolved channel adapter level-3 initial select interrupt
- X'B2' Unresolved channel adapter level-3 data/status
- X'B5' Level 3 cannot disable a channel adapter
- X'B6' On stacked initial status; the command is not NOP or TIO (EP only)
- X'BD' Level-3 interrupt from an error recovery procedure (ERP) inoperative channel adapter
- X'BE' Level-3 interrupt from a disabled channel adapter

	6(6) BERAAR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERAAR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) BERAAR00 X'0' channel adapter initial selection register
12(C) BERAAR01 X'1' channel adapter channel command word (CCW) and subchannel address	14(E) BERAAR02 X'2' data status register
16(10) BERAAR03 X'3' channel adapter ESC subchannel address and status register	18(12) BERAAR04 X'4' channel adapter programmed input/output (PIO) bytes 1 and 2
20(14) BERAAR05 X'5' channel adapter PIO bytes 3 and 4	22(16) BERAAR06 X'6' channel adapter NPA session counters (NSC) status register
24(18) BERAAR07 X'7' channel adapter enabled indications	26(1A) BERAAR0B X'B' channel adapter ESC TIO address and status register
28(1C) BERAAR0C X'C' CA-AIO operations register	30(1E) BERAAR0F X'F' channel adapter level-3 interrupt request register
32(20) - 79(4F) BEREACAB X'30' bytes of fields from the CAB, from CABEND up to and including CABXR6F. For EP, the fields CASEL through TERMADR are included from the EP CHCB (X'10' bytes). The remaining space, plus BER00CAC (CABCNTL), is padded with X'FE's for EP.	
80(50) BEREACAC Channel adapter contact control flags	82(52) BEREATA High byte of the TA used to collect channel adapter registers
	83(53) BEREAFGL Channel adapter ERP control block (CER) flag byte (BER ID X'B5' only)
84(54) BERCAVTF Channel adapter vector table (CAVT) flag	

Applicable BER IDs:

- X'B3' Unresolved channel adapter level-3 interrupt
- X'B7' Level-3 interrupt from a channel adapter that is defined to this CCU
- X'B8' Level-3 interrupt from a channel adapter that is not accessible
- X'BA' Level-3 interrupt from a channel adapter that is operational
- X'BB' Level-3 interrupt from a CACM mode disconnected channel adapter
- X'BC' Level-3 interrupt from a channel adapter that is install in progress

		6(6) BERECR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERECR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) BERECCA CER channel adapter state	
12(C) BERECI57 CCU input register X'57'		14(E) BEREC057 CCU output register X'57'
16(10) BERECTA High byte of the TA used to collect channel adapter registers	17(11) BERECAVT CAVT flag	18(12) BERECROF X'0F' channel adapter level-3 interrupt request register

Applicable BER IDs:

- X'B9' NCP channel media device level error

		6(6) BERECR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERECR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) BERECCA CER channel adapter state	
12(C) Reserved		14(E) Reserved
16(10) BERECTA High byte of the TA used to collect channel adapter registers	17(11) BERECAVT CAVT flag	18(12) BERECROF X'0F' channel adapter level-3 interrupt request register
20(14) BERECEP CABSENSE bits	21(15) Reserved	22(16) BERECI06 CCU input register x'06'

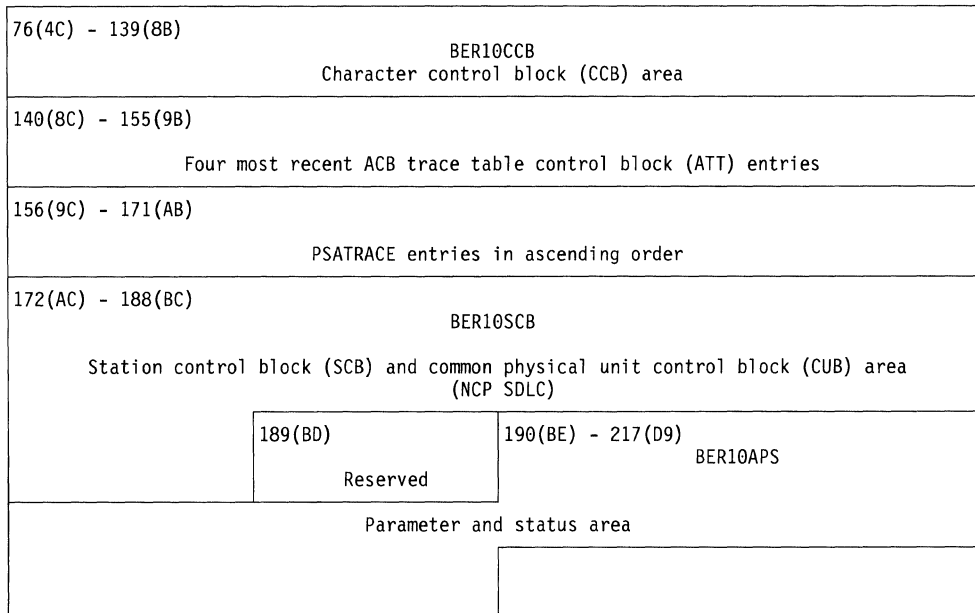
Type 11 Level-1 LA-PIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'18' IOH/IOHI issued to a line adapter that is not installed
- X'1B' Invalid input IOH issued to a line adapter
- X'97' Line adapter programmed input/output (PIO) error—output IOH/IOHI (count ≤ limit)
- X'98' Line adapter PIO error—output IOH/IOHI (count > limit)
- X'9C' Line adapter PIO error—input Get-Line-ID operation code
- X'9E' Line adapter PIO error—get error status failed.

		6(6) BER207E X'7E' CCU level-1 interrupt request register
8(8) BER20IOC X'76' input/output controller (IOC) error summary register	10(A) BER20II First 2 bytes of instruction	
12(C) BER20LAR X'74' lagging address register		
16(10) BER10LA Line adapter error status register	18(12) BER2076U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER20ETA TA field of an IOH failing in level 1		22(16) Reserved
24(18) BER20FB* BER flag	25(19) Reserved	26(1A) BER00SWA Switch adapter error register information
28(1C) BER00IAR Interrupted level's instruction address register (IAR)		
BER00IL Interrupted level		
32(20) BER00TA IOH/IOHI image--TA data		34(22) BER00TD IOH/IOHI image--TD data
36(24) Reserved		
40(28) - 75(4B) BER10LIO Link XIO control block (LXB) and input/output block (IOB) area (X'FE's for EP)		

* See page 1-121 for the byte expansion.



Type 11 Level-1 LA-AIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'14' Addressing exception
- X'16' Storage protection
- X'91' Line adapter input/output (AIO) error. Line adapter retries once
- X'92' Line adapter AIO error unresolved
- X'93' Line adapter AIO invalid channel command word (CCW). Line adapter retries once.

		6(6) BER227E X'7E' CCU level-1 interrupt request register
8(8) BER22IOC X'76' input/output controller (IOC) error summary register	10(A) BER2275 X'75' AIO cycle-steal control word register	
12(C) Reserved	14(E) BER22ETA TA field of an IOH failing in level 1	
16(10) BER12LA Line adapter error status register	18(12) BER2276U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER12SPR Line adapter shared pointer register (X'3F' or X'6F')		
24(18) BER22FB* BER flag	25(19) Reserved	26(1A) BER22SWA Switch adapter error register information
28(1C) BER12LAR X'74' lagging address register		

* See page 1-121 for the byte expansion.

Type 11 Level-1 Error Reported by a Line Adapter

Applicable BER IDs:

- X'1C' Command reject by a line adapter
- X'94' DMA/cycle-steal error on set mode.

	6(6) BER10FLG* BER flags	7(7) BER10LVL Interrupted level
8(8) BER10LVT Pointer to the line vector table (LNV) entry	10(A) - 25(19) BER10PSA	
Parameter area of the parameter/status area control block (PSA)		
	26(1A) BER10SL	
	Status control field	Line status
28(1C) BER10ES1 Line adapter error status register	30(1E) BER10CR Error status for a command reject due to a second command issued during a first command	
	First command	Second command
32(20)	BER10IAR Interrupted level's instruction address register (IAR)	
36(24) Reserved	38(26) BER10TAD	
	TA data byte 0	TD data byte 1
40(28) - 75(4B) BER10LIO X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). Refer to the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		

* See page 1-121 for the byte expansion.

76(4C) - 139(8B)	BER1CCCB	X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.
140(8C) - 170(AA)	BER1CAXB	X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.
	171(AB)	Reserved
172(AC) - 188(BC)	BER1CSCB	X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER85CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.
	189(BD)	Reserved

Applicable BER IDs:

- X'1E' Invalid output IOH to a line adapter
- X'95' Line adapter hardstop
- X'96' Line adapter disconnect state
- X'99' Line adapter error
- X'9A' Unresolved line adapter error
- X'9B' Interrupt received from a disconnected line adapter
- X'9D' Scanner microcode error.

		6(6) BER217E X'7E' CCU level-1 interrupt request register
8(8) BER21IOC X'76' input/output controller (IOC) error summary register	10(A) BER21ANO Line adapter number	11(B) - 15(F)
Reserved		
16(10) BER21LAS Line adapter error status register	18(12) BER2176U X'76' for a programmed input/output (PIO) error in level 1	
Reserved		
24(18) BER21FB* BER flag	25(19) BER21FLA Transmission subsystem (TSS) flags	26(1A) BER21SWA Switch adapter error register information
28(1C) BER21LAR X'74' lagging address register		
Reserved		
40(28) - 75(4B) BER11LXB X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
76(4C) - 139(8B) BER11CCB X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
140(8C) - 155(9B) Four most recent ATT entries		
156(9C) - 171(AB) PSATRACE entries in ascending order		

* See page 1-121 for the byte expansion.

Type 11 Level-2 Line Adapter Unresolved Error

The applicable BER ID is X'A1', unresolved level-2 interrupt.

Note: Only the first three fields will be filled in if the PSA address is not within memory or the PSA ID is invalid.

Note: BER ID X'A1' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BER8AALP, BER8ATA0, BER8ATD1, BER84CNT, and the PSALSTAT and PSAELCS fields in BER8APSA.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) BER84B01 Line vector table (LNVT) entry bytes 0 and 1	
44(2C) BER84B23 Line vector table (LNVT) entry bytes 2 and 3	46(2E) - 81(51) BER84LI0	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	82(52) - 145(91) BER84CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	146(92) - 159(9F) BER84AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		

* See page 1-121 for the byte expansion.

160(A0) - 176(B0)		BER84SAT	
<p>X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.</p>			
177(B1) - 192(C0)		BER84SCB	
<p>X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER84CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.</p>			
193(C1)	BER84CSC	194(C2)	BER84CNT
	Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)		BER repetition counter

Type 11 Level-2 Line Adapter Internal Error

Applicable BER IDs:

- X'A2' Internal box error reported by level 2
- X'A4' Transient line error
- X'AB' Integrated modem error.

Note: BER IDs X'A2' and X'A4' may be suppressed due to a BER flooding condition. If BERs have been suppressed, a dummy BER will be built with only the following fields filled in: BER8AALP, BER8ATA0, BER8ATD1, BER85CNT, and the PSALSTAT and PSAELCS fields in BER8APSA.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BER85LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BER85CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BER85AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BER85SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		

* See page 1-121 for the byte expansion.

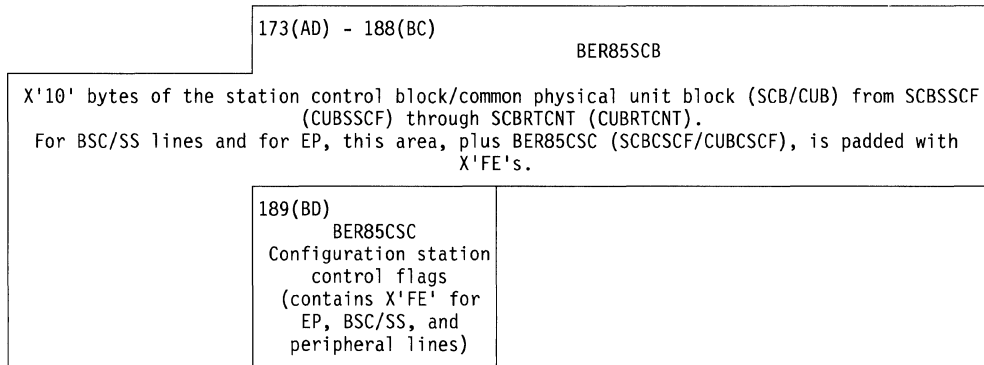
173(AD) - 188(BC)		BER85SCB
<p>X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BER85CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.</p>		
189(BD)	BER85CSC Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)	190(BE) BER85CNT BER repetition counter

Applicable BER IDs:

- X'26' Storage control/direct memory access storage protect/address exception line communication status
- X'A3' Internal multiplexer/line interface coupler error reported by level 2, or internal high-speed front end scanner error reported by level 2
- X'A5' Transient multiplexer/line interface coupler error reported by level 2, or transient high-speed front end scanner error reported by level 2
- X'A6' Storage control/direct memory access internal error
- X'A7' Switch/storage control/direct memory access interface (main bus) error
- X'A8' Switch/direct memory access reported error
- X'A9' Switch/direct memory access parity check or direct memory time-out
- X'AA' High speed front end scanner/direct memory access interface error.

	6(6) BER8ABFB* BER flag	7(7) Reserved
8(8) BER8ALP Get-Line-ID response (pointer to the LNVT entry)	10(A) - 37(25) BER8APSA	
Parameter and status area		
	38(26) BER8ATA0 TA data byte 0	39(27) BER8ATD1 TD data byte 1
40(28) BER8ANOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BER85LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BER85CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BER85AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BER85SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		

* See page 1-121 for the byte expansion.



Type 11 Level-3 Line Adapter Command Time-Out

The applicable BER ID is X'B1', CSP command time-out.

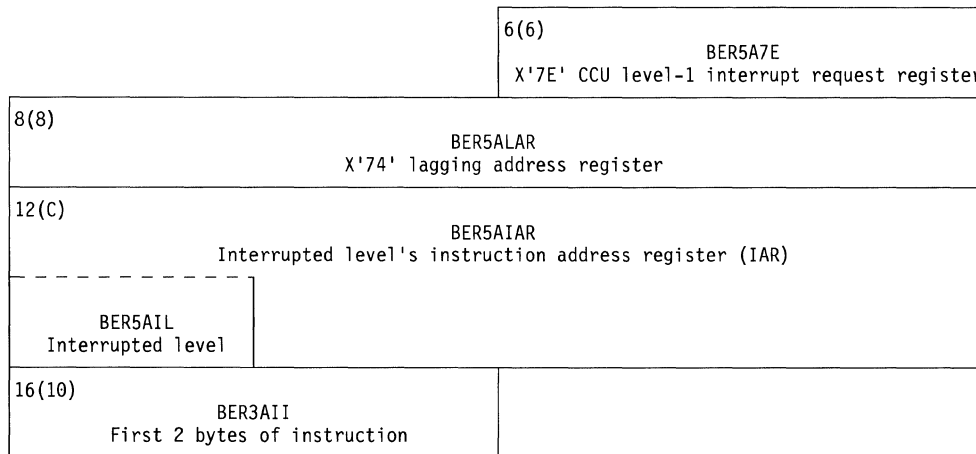
	6(6) BERB7BFB* BER flag	7(7) Reserved
8(8) BERB7LP Get-Line-ID response (pointer to the LNVT slot)	10(A) - 37(25) BERB7PSA	
Parameter and status area		
	38(26) BERB7TA0 TA data byte 0	39(27) BERB7TD1 TD data byte 1
40(28) BERB7NOE Network address (NCP) or channel adapter number and ESC (EP)	42(2A) - 77(4D) BERB7LIO	
X'24' bytes of the LXB (for SDLC lines) or the IOB (for BSC/SS lines). See the link XIO control block (LXB) or input/output block (IOB) for a description of each field. For EP, this area is padded with X'FE's.		
	78(4E) - 141(8D) BERB7CCB	
X'40' bytes of data from the character control block (CCB). If NCP, the fields are from CCBL2 through CCBPOLL. If EP, the fields are from CCBTROPT through CCBXPRT. See the appropriate CCB entry for descriptions of each field.		
	142(8E) - 155(9B) BERB7AXB	
X'E' bytes of data from the ACB trace table control block (ATT): ATTECTL and the last three adapter control block (ACB) trace entries. For EP, this area contains the CCB extension starting at the EP CCB+X'60'.		
156(9C) - 172(AC)	BERB7SAT	
X'11' bytes of data from the parameter/status area (PSA) trace area of the adapter control block extension (AXB) (AXB1SSCF through AXBTROFF). For EP, this area contains the remaining portion of the EP CCB extension padded with X'F' bytes of X'FE's.		
	173(AD) - 188(BC) BERB7SCB	
X'10' bytes of the station control block/common physical unit block (SCB/CUB) from SCBSSCF (CUBSSCF) through SCBRTCNT (CUBRTCNT). For BSC/SS lines and for EP, this area, plus BERB7CSC (SCBCSCF/CUBCSCF), is padded with X'FE's.		
	189(BD) BERB7CSC Configuration station control flags (contains X'FE' for EP, BSC/SS, and peripheral lines)	

* See page 1-121 for the byte expansion.

Type 12 Level-1 Program Exceptions Error

Applicable BER IDs:

- X'11' Level-5 code executes an IN/OUT or IOH/IOHI instruction
- X'12' Invalid operation code
- X'13' Addressing exception on an instruction fetch
- X'14' Addressing exception on an instruction execution
- X'15' Storage protection on an instruction fetch
- X'16' Storage protection on an instruction execution
- X'17' Level-5 branch to location 0 (reported as a level-5 IN/OUT)
- X'18' User branch to location 0 (reported as storage protect on a fetch)
- X'19' Logic error—interrupt reason lost.



Type 12 Level-2 Program-Controlled Interrupt (PCI)

The applicable BER ID is X'21', level-2 PCI.

	6(6) BER96R7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers
8(8)	BER96L3 Level-3 instruction address register (IAR)
12(C)	BER96L4 Level-4 IAR

Type 13 Level-1 CCU-Related Check Error

Applicable BER IDs:

- X'91' Unresolved level-1 interrupt
- X'92' Unresolved interrupted level (when requested)
- X'93' CCU hard check—should not occur
- X'94' IPL—should not occur
- X'95' Invalid level 1 interrupted instruction address register (IN X'79')

	6(6) BER5A7E X'7E' CCU level-1 interrupt request register
8(8)	BER5ALAR X'74' lagging address register
12(C)	BER5AIAR Interrupted level's instruction address register (IAR)
BER5AIL Interrupted level	
16(10) BER4ACCU X'7D' CCU hardware check register	18(12) BER4I57 CCU input register X'57'
20(14) BER4B057 CCU output register X'57'	22(16) BER4BFB BER flag

Type 13 Level-3 Channel Adapter and CCU Errors

Applicable BER IDs:

- X'32' Level-3 interrupt configuration check
- X'B1' Unresolved level-3 interrupt

	6(6) BERAAR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERAAR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) BERAAR00 X'00' channel adapter initial selection register (IOC1)
12(C) BERAAR01 X'01' channel adapter channel command word (CCW) and subchannel address (IOC1)	14(E) BERAAR02 X'02' data status register (IOC1)
16(10) BERAAR03 X'03' channel adapter emulator subchannel (ESC) address and status register (IOC1)	18(12) BERAAR04 X'04' channel adapter programmed input/output (PIO) bytes 1 and 2 (IOC1)
20(14) BERAAR05 X'05' channel adapter PIO bytes 3 and 4 (IOC1)	22(16) BERAAR06 X'06' channel adapter NPA session counters (NSC) status register (IOC1)
24(18) BERAAR07 X'07' channel adapter enabled indications (IOC1)	26(1A) BERAAR0B X'0B' channel adapter ESC TIO address and status register (IOC1)
28(1C) BERAAR0C X'0C' channel adapter adapter input/output (AIO) operations register (IOC1)	30(1E) BERAAR0F X'0F' channel adapter level-3 interrupt request register (IOC1)
32(20) BERFA10D Channel adapter register X'0D' (IOC1)	34(22) BERFA10E Channel adapter register X'0E' (IOC1)
36(24) BERFA200 X'00' channel adapter initial selection register (IOC2)	38(26) BERFA201 X'01' channel adapter channel command word (CCW) subchannel address (IOC2)
40(28) BERFA202 X'02' data status register (IOC2)	42(2A) BERFA203 X'03' channel adapter ESC address and status (IOC2)
44(2C) BERFA204 X'04' channel adapter PIO bytes 1 and 2 (IOC2)	46(2E) BERFA205 X'05' channel adapter PIO bytes 3 and 4 (IOC2)
48(30) BERFA206 X'06' channel adapter NSC status register (IOC2)	50(32) BERFA207 X'07' channel adapter enabled indicator (IOC2)

52(34) BERFA20B X'0B' channel adapter ESC TIO address and status (IOC2)	54(36) BERFA20C X'0C' Channel adapter AIO operation register (IOC2)
56(38) BERFA20D Channel adapter register X'0D' (IOC2)	58(3A) BERFA20E Channel adapter register X'0E' (IOC2)
60(3C) BERFA20F X'0F' channel adapter level-3 interrupt request register (IOC2)	62(3E) BERFATA TA (high byte)
	From IOC1
64(40) BERFAI57 CCU input register X'57'	66(42) BERFA057 CCU output register X'57'
68(44) BERFLAG BER flag	

Type 13 Level-4 CCU Errors

Applicable BER IDs:

- X'C1' Unresolved level-4 interrupt; no level-4 hardware latches on
- X'C2' Unresolved level-4 program controlled interrupt (PCI) hardware interrupt
- X'C3' Continuous or unresolved level-4 PCI hardware interrupt (same as X'C2' except that the level-4 retry count=0)
- X'C4' Unresolved level-4 SVC interrupt
- X'C5' Continuous or unresolved level-4 MOSS request hardware interrupt

	6(6) BERCAR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERCAR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) - 21(15) BERCAL4B
Level-4 router control block	

Type 13 Level-4 MOSS status hardware interrupt

Applicable BER ID:

- X'C6' Continuous or unresolved level-4 MOSS status hardware interrupt

Note: The 7 MTF records are listed in the order of most current to least current.

	6(6) BERCAR77 X'77' adapter level-2 and level-3 interrupt request registers
8(8) BERCAR7F X'7F' CCU level-2, level-3, and level-4 interrupt request registers	10(A) - 21(15) BERCAL4B
Level-4 router control block	
	22(16) - 53(35)
Copy of most recent MTF entry.**	
	54(36) - 85(55)
Copy of second most recent MTF entry.**	
	86(56) - 213(D5)
... (Copy of MTF entries 3-6)** ...	
	214(D6) - 245(F5)
Copy of seventh most recent MTF entry.**	

** If there are less than 7 MTF entries, the BER MTF entries will be filled with zeroes.

Type 14 Level-1 I/O Controller-Related Errors

Applicable BER ID:

- X'92' Unresolved adapter input/output (AIO) level-1 interrupt
- X'93' Unresolved programmed input/output (PIO) level-1 interrupt
- X'96' Read of a switch adapter's error register failed

		6(6) BER6A7E X'7E' CCU level-1 interrupt request register
8(8) BER6A10C X'76' input/output controller (IOC) error summary register		10(A) BER6A75 X'75' AIO cycle-steal control word register
12(C)	BER6ALAR X'74' lagging address register	
16(10) Reserved		18(12) BER6A76U X'76' for a PIO error in level 1
20(14) BER6A157 CCU input register X'57'		22(16) BER6A057 CCU output register X'57'
24(18) BER6AFB* BER flag	25(19) Reserved	26(1A) BER6ASWA Switch adapter error register information

* See page 1-121 for the byte expansion.

Type 14 Level-1 Unresolved Failure for the CSS

Applicable BER IDs:

- X'9A' Unresolved Adapter Detected Level 1 Error
- X'9C' Unresolved GLID Failure

		6(6)	BER6BX7E Saved XR'7E' L1BXR7E**
8(8)	BER6BX74 Saved XR'74' (LAR) L1BXR74**		
12(C)	BER6BIR0 Interrupted level's IAR L1BILIR**		
	BER6BILV Interrupted level L1BILVL**		
16(10)	BER6BX76 Saved XR'76' L1BXR76**	18(12)	BER6BITA Original IOH's TA L1BIOHTA** Not valid for BER ID X'9A' (X'FE').
20(14)	BER6BITD Original IOH's TD L1BIOHTD** Not valid for BER ID X'9A' (X'FE').	22(16)	BER6BP76 Secondary IOH's XR'76' value L1BPI076**
24(18)	BER6BSWA SWAD error register L1XSWADE**	26(1A)	BER6BPTA Secondary error's TA L1BPIOTA**
28(1C)	BER6BBFL BER flag L1BERFLG**		

** See field indicated for field definition.

Type 14 Level-1 Invalid IOH/IOHI Issued

Applicable BER ID:

- X'17' PIO Error - Invalid IOH or IOHI issued by Control Program

	6(6)	BER6BX7E Saved XR'7E' LIBXR7E**
8(8)	BER6BX74 Saved XR'74' (LAR) LIBXR74**	
12(C)	BER6BIRO Interrupted level's IAR LIBILIAR**	
	BER6BILV Interrupted level LIBILVL**	
16(10)	BER6BX76 Saved XR'76' LIBXR76**	18(12) BER6BITA Original IOH's TA LIBIOHTA**
20(14)	BER6BITD Original IOH's TD LIBIOHTD**	22(16) X'FEFE'
24(18)	BER6BSWA SWAD error register L1XSWADE**	26(1A) X'FEFE'
28(1C)	BER6BBFL BER flag LIBERFLG**	

** See field indicated for field definition.

Type 15 Level-1 Token-Ring Multiplexer—PIO Error Reported by an I/O Controller

Applicable BER IDs:

- X'18' Token-ring adapter is not installed
- X'97' Token-ring adapter PIO error (count ≤ limit)
- X'98' Token-ring adapter PIO error (count > limit)
- X'9C' Token-ring adapter PIO error on an input Get-Line-ID operation code
- X'9E' Token-ring adapter PIO error on a get error status command.

		6(6) BER207E X'7E' CCU level-1 interrupt request register
8(8) BER20IOC X'76' input/output controller (IOC) error summary register	10(A) BER20II First two bytes of instruction	
12(C) BER20LAR X'74' lagging address register		
16(10) BRD10TRM Token-ring multiplexer error status register	18(12) BER2076U X'76' for a programmed input/output (PIO) error in level 1	
20(14) BER20ETA TA field of an IOH failing in level 1	22(16) Reserved	
24(18) BER20FB* BER flag	25(19) Reserved	26(1A) BER00SWA Switch adapter error register information
28(1C) BER00IAR Interrupted level's instruction address register (IAR)		
BER00IL		
32(20) BER00TA IOH/IOHI image--TA data	34(22) BER00TD IOH/IOHI image--TD data	

* See page 1-121 for the byte expansion.

Type 15 Level-1 Token-Ring Multiplexer—AIO Errors

Applicable BER IDs:

- X'14' Addressing exception
- X'16' Storage protection
- X'91' Token-ring adapter AIO error (time-out or parity check)
- X'92' Token-ring adapter AIO error unresolved
- X'93' Token-ring adapter AIO invalid CCW.

		6(6) BER227E X'7E' CCU level-1 interrupt request register
8(8) BER22I0C X'76' input/output controller (IOC) error summary register		10(A) BER2275 X'75' AIO cycle-steal control word register
12(C) Reserved		14(E) BER22ETA TA field on an IOH failing in level 1
16(10) BRD10TRM Token-ring multiplexer error status register		18(12) BER2276U X'76' for a programmed input/output (PIO) error in level 1
20(14) BER12SPR Line adapter shared pointer register (X'3F' or X'6F')		
24(18) BER22FB* BER flag	25(19) Reserved	26(1A) BER22SWA Switch adapter error register information

* See page 1-121 for the byte expansion.

Type 15 Level-1 Error Reported by a Token-Ring Multiplexer

Applicable BER IDs:

- X'96' Token-ring adapter disconnect mode
- X'99' Token-ring adapter error
- X'9A' Unresolved token-ring multiplexer error
- X'9B' Disconnect token-ring multiplexer interrupt.

		6(6) BER217E X'7E' CCU level-1 interrupt request register
8(8) BER2110C X'76' input/output controller (IOC) error summary register	10(A) BRD21TRM Token-ring multiplexer number	11(B) - 15(F)
Reserved		
16(10) BRD11TRM Token-ring multiplexer error status register	18(12) BER2176U X'76' for a programmed input/output (PIO) error in level 1	
20(14) Reserved		
24(18) BER21FB* BER flag	25(19) BER21FLA L1BFLGTS	26(1A) BER21SWA Switch adapter error register information

Type 15 Level-2 Errors

Applicable BER IDs:

- X'A3' Invalid level-2 interrupt
- X'A4' Direct memory access or interrupt vector error (due to a token-ring interface coupler)
- X'A5' Direct memory access or interrupt vector error (due to a token-ring multiplexer)
- X'A7' Programmed input/output (PIO)—memory mapped input/output (MMIO) error (due to a token-ring interface coupler)
- X'A8' PIO—MMIO error (due to a token-ring multiplexer).

		6(6) BRD8AFLG* BER flag	7(7) BRD8ATRP Token-ring interface coupler (TIC) number
8(8)	BRD8ATA IOH/IOHI image--TA data		10(A) BRD8ATRM Token-ring multiplexer level-2 status
12(C)	BRDB7RS Ring status		14(E) BRDB7TD IOH/IOHI image--TD data
16(10) BRDB7MS MAC status	17(11) BRDB7PS PLM status	18(12) BRDB7SCB SCB (bytes 1 and 2)	
20(14) BRDB7SCB+2 SCB (bytes 3 - 6)			
24(18) BRDB7SSB SCB (bytes 1 - 4)			
28(1C) BRDB7SSB SCB (bytes 5 - 8)			
32(20) - 47(2F) BRDB7LIT LIT entry (fourth most recent filled by level 2)			
48(30) - 63(3F) BRDB7LIT2 LIT entry (third most recent filled by level 2)			
64(40) - 79(4F) BRDB7LIT3 LIT entry (second most recent filled by level 2)			
80(50) - 95(5F) BRDB7LIT4 LIT entry (most recent filled by level 2)			

* See page 1-121 for the byte expansion.

The applicable BER ID is X'AC', TIC adapter check.

	6(6) BRD8AFLG* BER flag	7(7) BRD8ATRP TIC number
8(8) BRD8ATA IOH/IOHI image--TA data	10(A) BRD8ATRM Token-ring multiplexer level-2 status	
12(C) - 19(13) BRD8AACS Adapter check status		
20(14) BRDACRS Ring status	22(16) BRDACTD IOH/IOHI image--TD data	
24(18) BRDACMS MAC status	25(19) BRDACPS PLM status	26(1A) BRDACSCB SCB (bytes 1 and 2)
28(1C) BRDACSCB+2 SCB (bytes 3 - 6)		
32(20) BRDACSSB SSB (bytes 1 - 4)		
36(24) BRDACSSB SSB (bytes 5 - 8)		
40(28) - 55(37) BRDACLIT LIT entry (fourth most recent filled by level 2)		
56(38) - 71(47) BRDACLIT2 LIT entry (third most recent filled by level 2)		
72(48) - 87(57) BRDACLIT3 LIT entry (second most recent filled by level 2)		
88(58) - 103(67) BRDACLIT4 LIT entry (most recent filled by level 2)		

* See page 1-121 for the byte expansion.

Type 15 Level-3 Errors

Applicable BER IDs:

- X'B3' Level-3 time-out due to a token-ring interface coupler (TIC)
- X'B4' Deadman timer
- X'B5' Level-3 time-out due to a token-ring multiplexer

		6(6) BRDB7FLG* BER flag	7(7) BRDB7TRP TIC number
8(8)	BRDB7TA IOH/IOHI image--TA data	10(A) BRDB7IR Token-ring multiplexer IR/BR register	
12(C)	BRDB7TCR TIC control register	14(E) BRDB7TD IOH/IOHI image--TA data	
16(10)	BRDB7MS MAC status	17(11) BRDB7PS PLM status	18(12) BRDB7RS Ring status
20(14)	BRDB7TRM Level 2 token-ring multiplexer status (BER X'B4' only)	22(16) BRDB7SCB SCB (bytes 1 and 2)	
24(18)	BRDB7SCB+2 SCB (bytes 3 - 6)		
28(1C)	BRDB7SSB SSB (bytes 1 - 4)		
32(20)	BRDB7SSB SSB (bytes 5 - 8)		
36(24) - 51(33)	BRDB7LIT LIT entry (fourth most recent filled by level 2)		
52(34) - 67(43)	BRDB7LIT2 LIT entry (third most recent filled by level 2)		
68(44) - 83(53)	BRDB7LIT3 LIT entry (second most recent filled by level 2)		
84(54) - 99(63)	BRDB7LIT4 LIT entry (most recent filled by level 2)		

* See page 1-121 for the byte expansion.

The applicable BER ID is X'B2' and token-ring interface coupler/token-ring multiplexer check at initialization.

		6(6) BRDB7FLG* BER flag	7(7) BRDB7TRP TIC number
8(8) BRDB7TA IOH/IOHI image--TA data	10(A) BRDB7IR Token-ring multiplexer IR/BR register		
12(C) BRDB7TCR TIC control register	14(E) BRDB7TD IOH/IOHI image--TA data		
16(10) BRDB7MS MAC status	17(11) BRDB7PS PLM status	18(12) BRDB7RS Ring status	
20(14) Unused	22(16) BRDB7SCB SCB (bytes 1 and 2)		
24(18) BRDB7SCB+2 SCB (bytes 3 - 6)			
28(1C) BRDB7SSB SSB (bytes 1 - 4)			
32(20) BRDB7SSB SSB (bytes 5 - 8)			
36(24) - 51(33) BRDB7LIT LIT entry (fourth most recent filled by level 2)			
52(34) - 67(43) BRDB7LIT2 LIT entry (third most recent filled by level 2)			
68(44) - 83(53) BRDB7LIT3 LIT entry (second most recent filled by level 2)			
84(54) - 99(63) BRDB7LIT4 LIT entry (most recent filled by level 2)			

* See page 1-121 for the byte expansion.

The applicable BER ID is X'B7' non-3745 error associated with an NTRI physical link alert.

		6(6) BRDB7FLG* BER flag	7(7) BRDB7TRP TIC number
8(8) BRDB7TA TA data		10(A) BRDB7IR Alert number	11(B) BRDB7IR+1 PLM status
12(C)	BRDB7TCR Alert Q3 field		

* See page 1-121 for the byte expansion.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6)		Box error/event record flags
8(8)		
24(18)		
BER0CFB		
BER10FLG		
BER20FB		
BER21FB		
BER22FB		
BER6AFB		
BER8ABFB		
BER8AFLG		
BERB7BFB		
BRD8AFLG		
BRDB7FLG		
	x... ..	1 = Control program is NCP or PEP 0 = Control program is EP
	.1.. ..	Adapter or token-ring multiplexer is down
	..1.	Control program put an adapter down
	...1	Redrive has been disabled (NCP), or error on invalid ESC (3720) (EP)
	.... x...	Reserved
	.... .1..	Error on get error status
	.... ..1.	Channel adapter is being disabled
	.... ...1	IOH or IOHI on level 1 failed twice
8(8)		Box error/event record flags
BERBDFLG		
	X'4000'	Total receive error counter reached its threshold
	X'8000'	Total transmission error counter reached its threshold

Background Save Area

Program: NCP

Size in bytes: 40(28)

Created by: NCP generation

Called by: Background programs

Pointed to by: The SYSSV5P field in the extended halfword direct addressables control block extension (HWX)

Function: Background register save area

0(0)	BGSBCHN Back chain field
4(4)	BGSFCHN Forward chain field
8(8) - 39(27)	BGSAVERG Register save area (8 words)

Buffer Prefix

- Program:** NCP
- Size in bytes:** 8(8) plus 4-byte prefix
- Located in:** The beginning of each buffer
- Created by:** Any routine that uses the LEASE macro to get a buffer
- Pointed to by:** Variable
- Function:** Chains buffers in a block control unit (BCU) and points to the beginning of the text data within a single buffer

-4(4) BHBHTG* Buffer tag	-3(3) BHBUFTAG Buffer overlay check 'X' 'C2'	-2(2) BHVVTI Buffer virtual route vector table (VVT) index	
0(0) BHBUFCHN Buffer prefix chain field			
4(4) BHCOPYF Copy field		6(6) BHOFFSET Offset to the beginning of the text in this buffer	7(7) BHDATCNT Text data count (for this buffer only)
BHCOPCT Copy count	5(5) BHCOPYS* Copy status		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
-4(4) BHBHTG		Buffer tag
	1...	Buffer is not in a free buffer pool.
	.1..	XID received in 2 byte mode.
	..00	Used in diagnostic test; must be B'00'.
	... 1...	Buffer is initialized to the line or link.
	... .1..	Buffer is chained.
	... ..1.	Buffer is enqueued to the queue control block (QCB).
	... ...1	Buffer is unchained.
5(5) BHCOPYS		Copy status
	.1..	PIU is a copy.
	... 1...	Buffer is a PIU head buffer.
	... .1..	Buffer is allocated to the BPOOL.
	... ..1.	Buffer is allocated to the IPPOOL.

Buffer for Dynamic Control Blocks

Program: NCP

Size in bytes: Buffer size plus 4-byte prefix

Pointed to by: BHCBPTR

Function: This layout shows how dynamic control blocks would look within a buffer

-4(4) BHC BHTG* Buffer tag	-3(3) BHC BTAG Buffer overlay check	-2(2) BHC BUSE Number of in-use control blocks in the buffer	-1(1) Reserved
----------------------------------	---	--	-------------------

* Indicates a byte expansion follows.

Dynamic control block entry

0(0) BHC FLGS* Flag field	1(1) BHC BPTR Pointer back to the beginning of the buffer (offset zero of the buffer)
4 - n BHC CB Control block data (Includes the NPF if the type of control block has an NPF)	

Note: There can be multiple dynamic control block entries in a single buffer. The number is based on the size of a buffer and the size of a control block. All the control blocks in a single buffer will be the same type.

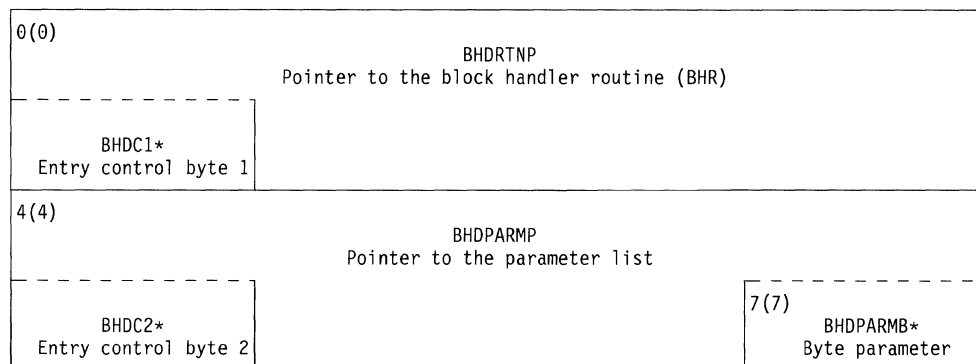
* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
-4(4) BHC BHTG		Buffer tag
	1... .. .xxx xxxx	Buffer is not in a free buffer pool Reserved
-3(3) BHC BTAG		Buffer overlay check
	X'C2' X'C3'	Buffer in not being used for control blocks Buffer being used for control blocks
-0(0) BHC FLGS		Flag field
	1... .. .xxx xxxx	CB is in the reserved pool. Reserved

Block Handler Driver Table

Program: NCP
Size in bytes: 8(8) per entry; total size, variable
Created by: NCP generation
Pointer to: Block handler set control block (BHS)
Function: Defines the block handler routines (BHRs) that are to be executed for a particular block handler



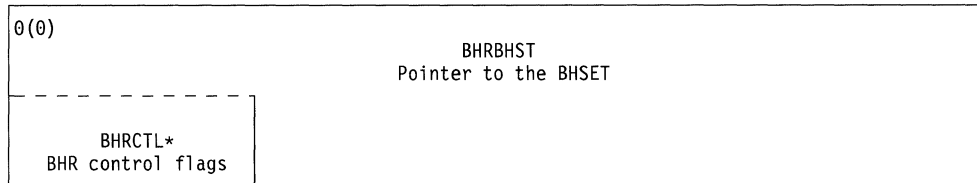
* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) BHDC1		Entry control byte 1
	1...	End of the table (last entry)
	.1..	User block handler routine (BHR)
	...1	Receive control if the command is in error
4(4) BHDC2		Entry control byte 2
	1...	Receive control for Read
	.1..	Receive control for Invite
	..1.	Receive control for Write
	.... 1...	Receive control for Disconnect
	.... .1..	Receive control in terminator subtask for Read I/O
7(7) BHDPARMB		Byte parameter (for date and time)
	1...	Date desired
	.1..	Calendar form of the date desired
	..1.	Julian format of the date desired
	...1	Gregorian format 1 of the date desired
	.... 1...	Gregorian format 2 of the date desired
	.... .1..	Time desired
	.... .1.	Date and time stamp the first block of the message

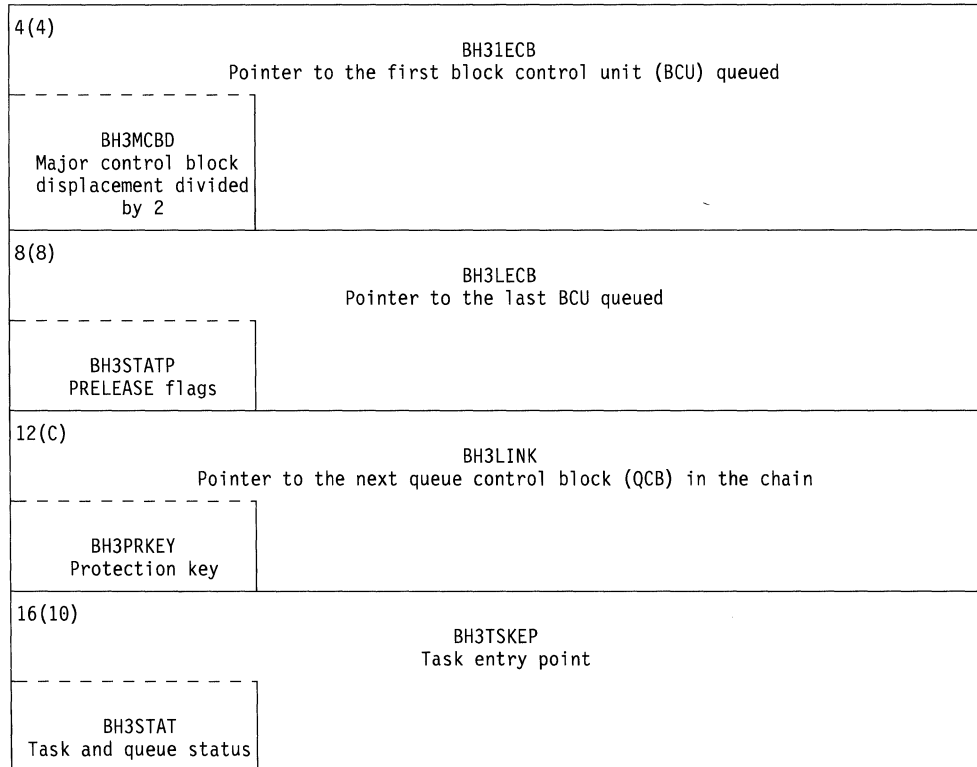
Block Handler Routine Extension to DVB

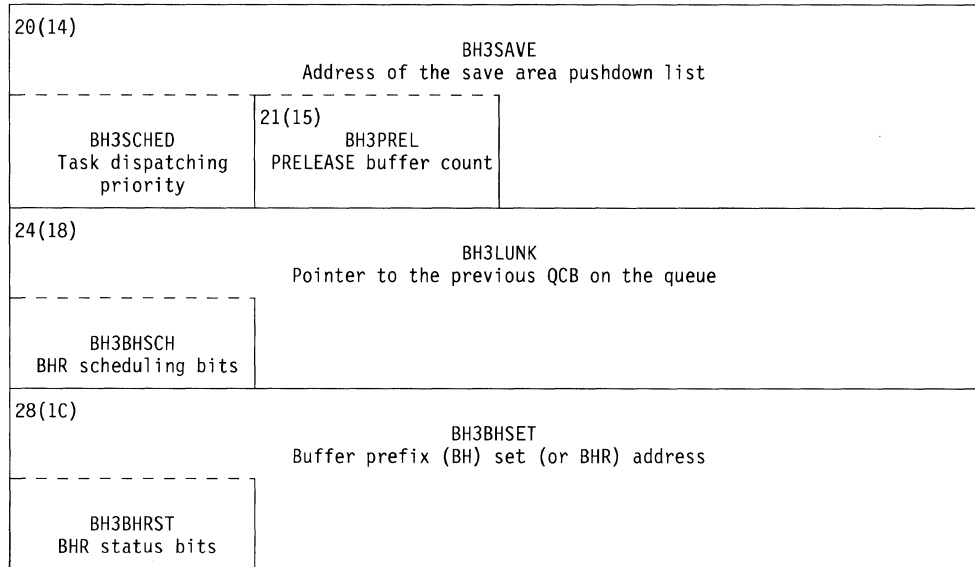
- Program:** NCP
Size in bytes: 32(20)
Located in: Device base control block (DVB)
Created by: NCP generation
Pointed to by: The DVBBHRO field in the DVB
Function: Associates block handler routines with a device
Note: The actual position of this block depends on the other extensions in the DVB.



* Indicates a byte expansion follows.

Point-3 Queue Control Block (BHRBH3Q)
 (See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)





Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) BHRCTL		BHR control flags
	1...	Execute BHR. If a BHR was specified as dynamic, specified initially as inactive, or deactivated by operator control, this bit will be off.
	.1..	Point 1 (specifies point-1 BHR execution)
	..1.	Point 2 (specifies point-2 BHR execution)
	...1	Point 3 (specifies point-3 BHR execution)
	.... 1...	Point 3—a block handler routing QCB exists for a device. This QCB is created by defining PT3EXEC YES or BHEXEC ALL. For dynamic block handlers that have a point 3, there must be a point-3 BHRQCB.

Block Handler Set

Program: NCP

Size in bytes: 12(C)

Created by: NCP generation

Pointed to by: The BSTBHSPT field in the block handler set table (BST)

Function: Points to the block handlers that are to be executed for the BHS

0(0)	BHSP1 Pointer to the point-1 block handler driver table (BHD)
4(4)	BHSP2 Pointer to the point-2 BHD
8(8)	BHSP3 Pointer to the point-3 BHD

Boundary Inbound Session Started Queue

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Pointer to: The QPBISQP field in the queue pointer block (QPB)
Function: Enqueues all inbound PIUs not destined for an active session
Format: Standard input queue control block (QCB)
Task—CXDCBSI
Priority—Productive
Reentrant—No.

Basic Link Unit

Program: NCP

Size in bytes: PIU plus 6 or 7 bytes

Function: This block is the SDLC transmission block.

SDLC Line Control (Modulo 8)

0(0) Flag X'7E'	1(1) Address of the secondary station	2(2) Control (See note.)
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SDLC Line Control (Modulo 128)

0(0) Flag X'7E'	1(1) Address of the secondary station	2(2) Control (See note.)
--------------------	---	--------------------------------

PIU

3(3) or 4(4) PIU (See PIU FID0, FID1, FID2, FID3, FID4, and FIDF for a description.)
--

SDLC Line Control

n Frame check sequence (2 bytes)	n+2 Flag X'7E'
--	-------------------

Note: The control field is 1 byte long for modulo 8 and 2 bytes long for modulo 128 (except unnumbered format which is always 1 byte long regardless of modulo). See Volume 2 Section 6, "SDLC Commands and Responses," for 1-byte and 2-byte descriptions and formats of SDLC commands and responses.

Boundary Out Queue

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Pointer to: The QPBBOQP field in the queue pointer block (QPB)
Function: Interface between subarea and peripheral. All peripheral traffic is enqueued on the BOQ.
Format: Standard input queue control block (QCB)
Task—CXDCVRO
Priority—Immediate
Reentrant—No.

Boundary Outbound Session Started Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointer to: The QPBBOSQP field in the queue pointer block (QPB)

Function: All outbound PIUs not destined for an active session are enqueued on the BOSSQ.

Format: Standard input queue control block (QCB)
Task—CXDCBSO
Priority—Productive
Reentrant—No.

Destination Boundary Pool (BPOOL) Block

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Pointed to by: The SYSBPBP field in the extended halfword direct addressables control block (HWE)
Function: Contains the size of the destination boundary pool, the destination boundary pool thresholds, and the boundary pool status

0(0)	BPBSIZE Number of buffers in the BPOOL	
4(4)	BPBCNT Number of allocated buffers	
8(8)	BPBTHRS1 BPOOL 62.5% threshold	
12(C)	BPBTHRS2 BPOOL 75% threshold	
16(10)	BPBTHRS3 BPOOL 87.5% threshold	
20(14) BPBFLAGS* BPB status	21(15)	Reserved

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
20(14) BPBFLAGS		BPOOL block status
	1...	Reset Window Low Priority (BPBRWIL)
	.1..	Reset Window Medium Priority (BPBRWIM)
	..1.	Reset Window High Priority (BPBRWIH)
	...1	BPOOL full (BPBBPOL)
	.... ..xx	Priority:
		00 = Low Priority (BPBLOW)
		01 = Medium Priority (BPBMED)
		10 = High Priority (BPBHIGH)
		11 = Reserved

Boundary Function Processor Address Table

Program: NCP
Size in bytes: 40(28)
Created by: NCP generation
Pointer to: CXTBPT in the link-edit map
Function: Holds a list of all the routines that are used by the boundary function as inbound, out-bound, or session termination processors. Each entry consists of an index and a pointer to a routine.

0(0)	Pointer to the SSCP-PU boundary function out routine	SPLOUT Index X'01'
4(4)	Pointer to the SSCP-LU boundary function out routine	SLUOUT Index X'02'
8(8)	Pointer to the LU-LU boundary function out routine	LLUOUT Index X'03'
12(C)	Pointer to the SSCP-PU boundary function in routine	SPUIN Index X'04'
16(10)	Pointer to the SSCP-LU boundary function in routine	SLUIN Index X'05'
20(14)	Pointer to the LU-LU boundary function in routine	LLUIN Index X'06'

24(18)	Pointer to the LU-LU session termination notification task
LLUST Index X'07'	
28(1C)	Pointer to the outboard primary LU (OPLU)-SLU inbound processor
PLUIN Index X'08'	
32(20)	Pointer to the OPLU-SLU outbound processor
PLUOUT Index X'09'	
36(24)	Pointer to the session inbound head task processor
HELDIN Index X'0A'	

Boundary Session Block

Program: NCP

Size in bytes: 72(48) for a dependent LU (SSCP-LU)
100(64) for a non-dynamic dependent LU (LU-LU)
104(68) for a dynamic dependent LU (LU-LU)
108(6C) for a non-dynamic independent LU (LU-LU)
112(70) for a dynamic independent LU (LU-LU)

Created by: NCP initialization and dynamically

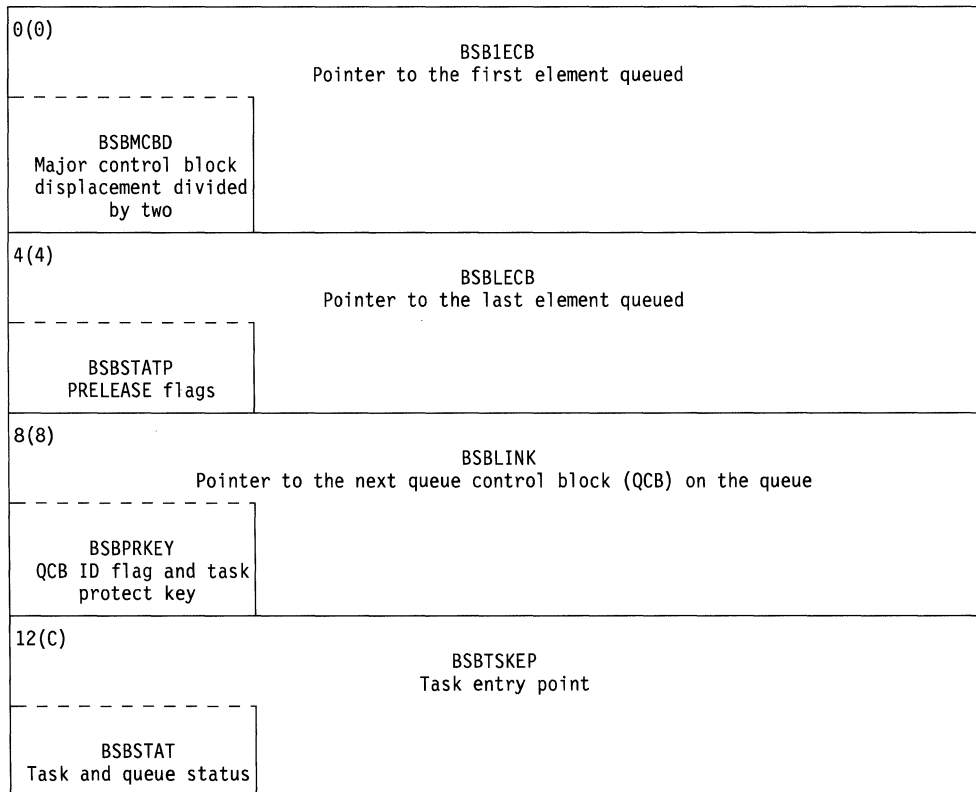
Pointed to by: The LNBBSBF field in the LU network address control block (LNB), the NSCBSBP field in the NPA session counters control block (NSC), the BXIBSBP field in the boundary session block extension (BXI) (dynamic LU-LU BSBs only), and the LNBSLBSB field in the LU network address control block (LNB) (SSCP-LU BSBs only)

Function: Each BSB represents either an SSCP-LU session or an LU-LU session that is established through one of several possible addresses. A BSB for a dependent LU in an SSCP-LU session contains a session path control (SPC) block, but does not contain a resource control block (RCB). A BSB for a dependent LU in an LU-LU session contains an SPC and an RCB, but the RCB does not contain an embedded search element control block (SEB). A BSB for an independent LU in an LU-LU session contains an SPC and an RCB that contains an embedded SEB

CPM Out Queue Control Block (BSBOUTQ)

Common for SSCP-LU sessions or LU-LU sessions

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



16(10)		BSBSAVE Address of the save area pushdown list
BSBSCHED Task dispatching priority	17(11)	BSBPREL PRELEASE buffer count
20(14)		BSBLUNK Pointer to the previous QCB on the queue
BSBBHSCB Block handler routine (BHR) scheduling bits		

Common

24(18)		BSBBSBP Pointer to the next BSB in chain or pool
BSBSTRC* Session trace flags		
28(1C)		BSBLNBP Pointer to the LNB
BSBRSET* Session reset flags		
32(20)		BSBCUBP Pointer to the common physical unit block (CUB)
BSBFLGS* BSB flags		

* Indicates a byte expansion follows.

BSB Format for a Dependent LU in an SSCP-LU Session

36(24) BSBSOSLU** Normal outbound identification	38(26) BSBAOSLU** Expedited outbound identification	
40(28) BSBCPST* Session control primary status	41(29) BSBRALU Field to store data for rebuilding the ACTLU response	
44(2C) BSBCSSET* Session control secondary status	45(2D) BSBSLFG* SSCP-LU flags	46(2E) BSBIDGN** Identification number generation
48(30) BSBINC1 Last incoming sequence number	50(32) BSBINC2 Next-to-last incoming sequence number	
52(34) BSBOUT1 Last outgoing sequence number	54(36) BSBOUT2 Next-to-last outgoing sequence number	
56(38) - 71(47) BSBSPC Imbedded SPC (See the SPC for the format)		

* Indicates a byte expansion follows.

** For LUs on a type 1 PU only.

BSB Format for a Dependent LU in an LU-LU Session

36(24) BSBSMAX Maximum send size of a request/response unit (RU) for a session partner LU	37(25) BSBLMAX Maximum send size of an RU for an LU	38(26) BSBHSTAT* Extended recovery facility (XRF) session status	39(27) BSBAPPS2* Primary status
40(28) BSBAPPST* Application primary status	41(29) BSBCVRC* Control vectors received bits	42(2A) BSBUNBTP* UNBIND type	43(2B) BSBBXIO Offset to the boundary session block extension (BXI) (For non-dynamic BSBs only) ----- BSBDFLG* Dynamic BSB flags (For dynamic BSBs only)
44(2C) BSBAPSST* Application secondary status	45(2D) BSBNPAFG* Network performance monitor (NPM) status flags	46(2E) BSBIDGN** Identification number generation	
48(30) BSBINC1 Last incoming sequence number		50(32) BSBINC2 Next-to-last incoming sequence number	
52(34) BSBOUT1 Last outgoing sequence number		54(36) BSBOUT2 Next-to-last outgoing sequence number	
56(38) - 71(47) BSBSPC Imbedded SPC (See the SPC for the format)			
72(48) - 99(63) BSBRCB Imbedded RCB The RCB does not have an imbedded SEB (See the RCB format for the dependent-LU BSB)			

For dynamic BSBs only

100(64) BSBDBXIP Pointer to BXI (Only present for dynamic BSBs)

* Indicates a byte expansion follows.

** For LUs on a type 1 PU only.

BSB Format for an Independent LU in an LU-LU Session

36(24) BSBSMAX Maximum send size of an RU for a session-partner LU	37(25) BSBLMAX Maximum send size of an RU for an LU	38(26) BSBHSTAT* XRF session status	39(27) BSBAPPS2* Primary status
40(28) BSBAPPST* Application primary status	41(29) BSBCVRC* Control vectors received bits	42(2A) BSBUNBTP* UNBIND type	43(2B) BSBBXIO Offset to the BXI (For non-dynamic BSBs only) ----- BSBDFLG* Dynamic BSB flags (For dynamic BSBs only)
44(2C) BSBAPSST* Application secondary status	45(2D) BSBNPAFG* NPM status flags	46(2E) BSBIDGN** Identification number generation	
48(30) BSBINC1 Last incoming sequence number		50(32) BSBINC2 Next-to-last incoming sequence number	
52(34) BSBOUT1 Last outgoing sequence number		54(36) BSBOUT2 Next-to-last outgoing sequence number	
56(38) - 71(47) BSBSPC Imbedded SPC (See the SPC for the format)			
72(48) - 107(6B) BSBRCB Imbedded RCB The RCB contains an SEB (See the RCB format for the independent-LU BSB)			

For dynamic BSBs only

108(6C) BSBIBXIP Pointer to BXI (Only present for dynamic BSBs)

* Indicates a byte expansion follows.

** For LUs on a type 1 PU only.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) BSBSTRC		Session trace and PIU priority flags
	1...	Last outgoing PIU was expedited
	.1..	Next-to-last outgoing PIU was expedited
	..1.	Last incoming PIU was expedited
	...1	Next-to-last incoming PIU was expedited
	.... .1..	Session trace for a specific resource
	.... ..xx	PIU priority:
		00 = Low priority
		01 = Medium priority
		10 = High priority
28(1C) BSBRSET		Session reset flags
	1...	Session reset is due to virtual route inoperative (VR.INOP)
	.1..	Pending session reset is due to auto network shutdown (ANS)
	..1.	Session reset is due to ANS=STOP
	...1	Session reset is due to a hierarchical or route extension (REX) reset
	.... 1...	Session reset is due to a BFCLEANUP PIU
	.... .1..	Session reset is due to a backup session failure
	.... ..1.	Session reset is due to a virtual route activation failure
	.... ...1	Pending session reset is due to a negative BIND response or an UNBIND from an secondary LU; or an active session reset is due to an UNBIND or a response to an UNBIND
32(20) BSBFLGS		BSB flags
	x...	1 = BSB is allocated 0 = BSB is in a pool
	.1..	Awaiting a pacing response with data; the count has been incremented
	..1.	Pseudo BID is pending; the count has been incremented
	...1	Inbound segmentation; the count has been incremented
	.... x...	Session type:
		1 = SSCP-LU
		0 = LU-LU
	.... .1..	Segments may be received inbound
	.... ..1.	Segments may be received outbound
	.... ...1	Dummy BIND status record is pending
38(26) BSBHSTAT		LU-LU XRF session status
	1...	Switch pending state
	.1..	Dual backup state
	..1.	NOTIFY delayed indicator
	...1	SWITCH FORCED received indicator
	.... 1...	SWITCH CONDITIONAL received indicator
	.... .1..	XRF backup BIND received indicator

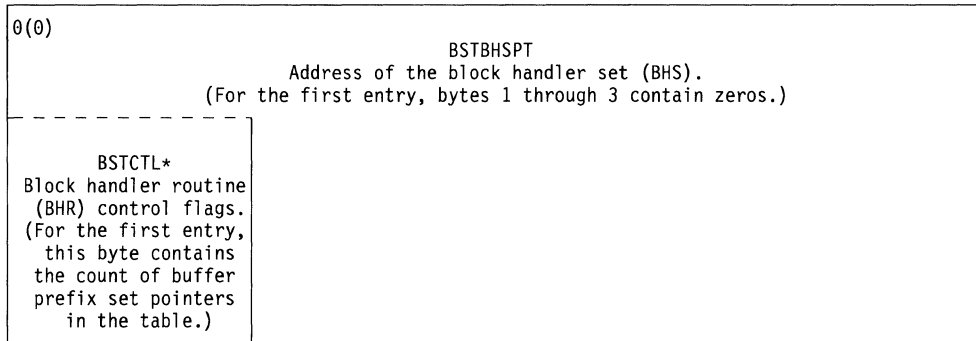
Offset/Field Name	Bit Pattern/ Hex Value	Contents
39(27) BSBAPPS2		LU-LU primary status
	1...	UNBIND response to an LU is required
	.1..	UNBIND response to a session-partner LU is required
	..1.	LU understands extended BINDs
	...1	Session-partner LU understands extended BINDs
	.... 1...	BFTERM is required
	.... .1..	Waiting for BFCINIT
	.... ..1.	BFCINIT has been received; BIND has not been sent
	.... ...1	Processing BIND to a session-partner LU
40(28) BSBCPST		SSCP-LU session control primary status
		Primary Half-Session
	1...	Session established
	.1..	Processing ACTLU
	..1.	Processing DACTLU
		Secondary Half-Session
	...1	Session established
	.... 1...	Processing ACTLU
	.... .1..	Processing DACTLU
	.... ..X.	Reserved
	.... ...1	ACTLU response is pending
40(28) BSBAPPST		LU-LU application primary status
		Primary Half-Session
	1...	Session established
	.1..	Processing BIND to an LU
	..1.	UNBIND to an LU is pending
	...1	UNBIND to an LU is required
	.... 1...	BFSESEND is required
		Secondary Half Session
	.... .1..	UNBIND to the session partner LU is pending
	.... ..1.	UNBIND to the session partner LU is required
	.... ...1	BFSESSST is required
41(29) BSBCVRC		Control vectors received bits
	1...	Route selection control vector X'2B' has been received
	.1..	Include BIND image control vector X'31' in BFSESSST
	..1.	Sense data is saved
	...1	Control vector X'35' is saved
	.... 1..	RU information is included in control vector X'35'
	.... .1..	Control vector X'60' is saved
	.... ..X.	Sense origin name generation:
		1 = A node other than the sense origin
		0 = Sense origin
	.... ...X	Contents of the sense origin name field:
		1 = A local name for an adjacent link station along the path on which the RU was received
		0 = The network name of the sense origin

Offset/Field Name	Bit Pattern/ Hex Value	Contents
42(2A) BSBUNBTP		UNBIND type
	X'01'	Normal end of session
	X'02'	BIND forthcoming
	X'03'	Talk
	X'04'	Restart mismatch
	X'05'	LU not authorized
	X'06'	Invalid session parameters
	X'07'*	VR.INOP
	X'08'*	Route extension inoperative
	X'09'*	Hierarchical reset
	X'0A'*	SSCP gone
	X'0B'*	Virtual route deactivated
	X'0C'	Fail
	X'0E'	LU failure, recoverable
	X'0F'*	UNBIND cleanup
	X'11'	Gateway SSCP is cleaning up the LU session (NOTIFY).
	X'12'	XRF backup hierarchical reset
	X'13'	XRF primary hierarchical reset
	X'FE'	Session fails
* UNBIND types NCP can set.		
43(2B) BSBDFLG		Dynamic BSB flags
	1... ..	Dependent LU-LU BSB (BSBDEPL)
44(2C) BSBCSSET		SSCP-LU session control secondary status
	1... ..	Processing CLEAR
	.... xxxx	Notify RU received counter
44(2C) BSBAPSST		LU-LU application secondary status
	1... ..	Processing CLEAR
	.1..	Inbound segmentation is in progress
	..x.	1 = Session-partner LU is in immediate request mode 0 = Delayed request mode
	...1	Null begin bracket (BB) PIU pending
	.... x...	1 = INB (in bracket state) 0 = BETB (between brackets)
	.... .1..	BB PIU pending
	.... ..1.	PBID pending
	.... ...1	Bracket state management mode
45(2D) BSBSLFG		SSCP-LU flags
	1... ..	Network-qualified name is supported
	.1..	ACTLU on CPM OUT queue
	..xx xxx.	Reserved
	.... ...1	Dynamic BSB - BSB was built dynamically (BSBSDYN)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
45(2D) BSBNPAFG		NPM status flags
	1...	NPM session start is required
	.1...	NPM session start is delayed
	..1.	NPM session end is required
	...1	NPM session end is delayed
	.... 1...	NSC is allocated to the BSB
	.... .1..	Session checked for NPM collection already
	.... ..1.	Session is boundary-to-boundary (BSBB2B)
	.... ...1	Dynamic BSB - BSB was built dynamically (BSBDYNM)

Block Handler Set Table

- Program:** NCP
- Size in bytes:** 4 bytes per entry; the table can contain up to 256 entries.
- Created by:** NCP generation
- Pointed to by:** The SYSBST field in the word direct addressable storage control block (XDA)
- Function:** Points to block handler sets (one entry per BHS)



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0)		BHR control flags
BSTCTL	1...	Execute
	.1..	Point 1
	..1.	Point 2
	...1	Point 3

Branch Trace Table

Program: NCP, EP

Size in bytes: 24-byte header plus a variable number of 8-byte entries

The user specifies the number of entries on the branch keyword of the BUILD macro (a minimum of 100 entries or 800 bytes, and a maximum of 8K entries or 64K bytes).

Created by: NCP or PEP generation

Pointed to by: Address constant for CXTBTRC (NCP/PEP) located in the field at X'18' in the control program information table (CPIT)

Function: Contains a 24-byte header and a table of 8-byte entries. The hardware stores the originating storage address, the destination storage address, and the program levels into the branch trace table under any one of the following circumstances:

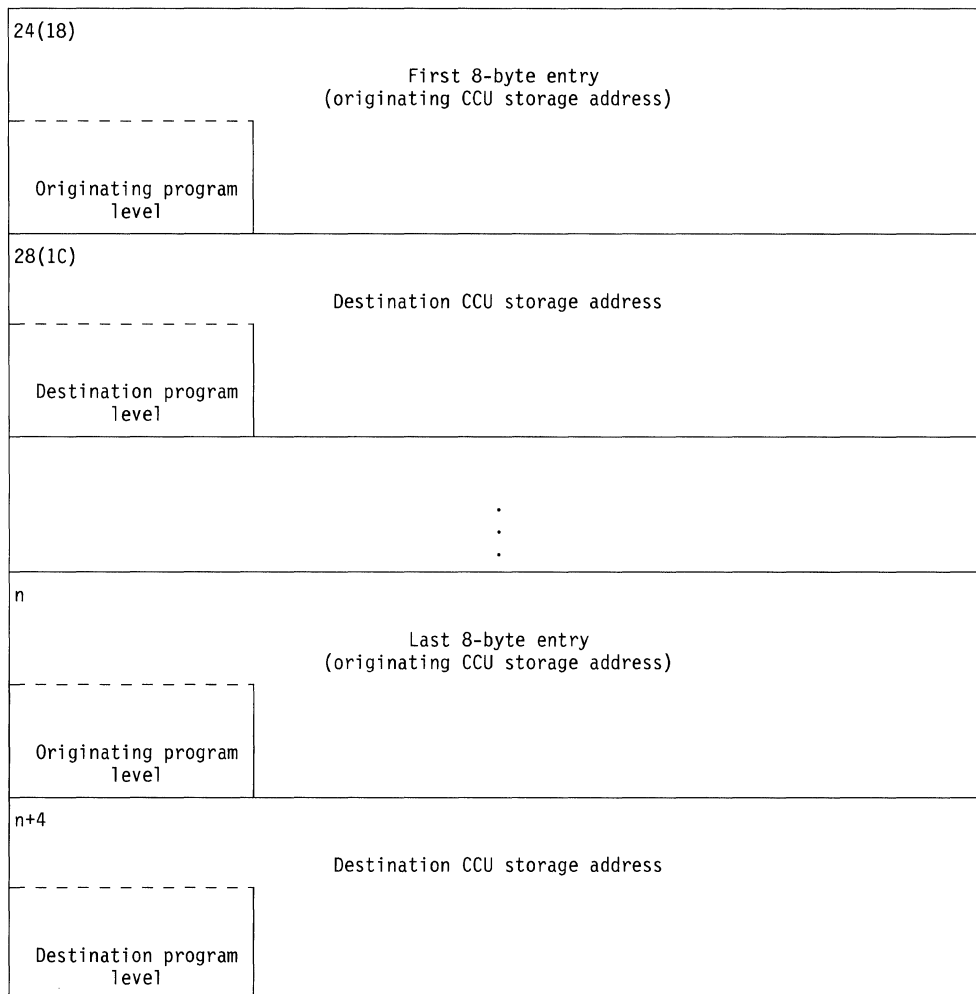
- A conditional or unconditional branch instruction is executed.
- An instruction modifies the instruction address register (register 0 of the active program level).
- A new program level is entered because the control program issued a program controlled interrupt (PCI) or EXIT instruction or because an adapter caused an interrupt.

Branch Trace Table Header

0(0)	2(2)
Length of the branch trace table in bytes (excluding header)	Reserved
4(4)	Lower-limit address of the CCU storage area to be traced
Options*	
8(8)	Upper-limit address of the CCU storage area to be traced
Program levels traced*	
12(C)	Wrap address (BTT address plus X'18') used with the wrap option
16(10)	Address of the current (last) entry used
20(14)	Address of the end entry in the table

* Indicates a byte expansion follows.

BTT



Byte Expansions

Offset/Field Name	Bit Pattern	Contents
4(4)	..1. .... ...1 1... .... .1.. .... ...1	Options Branch trace has been activated. Wrap option Stop branch trace on address compare Stop CCU Always on
8(8)	.1.. .... ..1. .... ...1 1... .... .1..	Program levels traced Level 1 Level 2 Level 3 Level 4 Level 5

Basic Transmission Unit (BSC/SS)**Program:** NCP**Size in bytes:** 14(E) control bytes plus variable-length text**Located in:** Block control unit (BCU)**Created by:** An internal NCP routine**Pointed to by:** None

The starting byte is at displacement 48(30) into the BCU.

Function: Contains information for either a request for input/output or for a control operation, or a response for the same.

48(30) BCUSID (BCHSID) Source name		50(32) BCUDID (BCHDID) Destination name (resource ID)	
52(34) BCUSEQ (BCHSEQ) Request tag or sequence number identifying the BTU		54(36) BCUSRES (BCHSRES) System response (See Volume 2 Section 3 for responses.)	55(37) BCULRES (BCHLRES) Extended response. Contains the status of the input/output operation (See Volume 2 Section 3.)
56(38) BCUCMD* (BCHCMD) Command	57(39) BCUMOD (BCHMOD) Command modifiers (See Volume 2 Section 3 for a list of the BTU commands and their modifiers.)	58(3A) BCUSFLAG* (BCHSFLAG) Function flags	59(3B) BCHBDUF* BTU flags
60(3C) BCUTLEN (BCHTLEN) Text length		62(3E) Text field (variable length)	

* Indicates a byte expansion follows.

Note: Displacements represent the offset into the BCU.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
56(38) BCUCMD (BCHCMD)		Command. (See Volume 2 Section 3, "BTU Commands and Modifiers" for descriptions.)
	X'00'	Null
	X'01'	Read (R)
	X'02'	Write (W)
	X'03'	On-line test (T)
	X'05'	Invite (I)
	X'06'	Contact (C)
	X'07'	Disconnect (D)
	X'08'	Control (Z)
	X'77'	Unsolicited response
	Any other	Invalid
58(3A) BCUSFLAG (BCHSFLAG)		Function flags
	1... ..	Checkpoint select (for control commands) or start of header
	.1.. ..	Header prefix
	..1.	Suppress invite (for control commands) or leading graphics
	...1	First block of a message
	.... 1...	Transparent data
	.... .1..	Positive acknowledgment
	.... ..1.	Negative acknowledgment
	.... ...1	Alternate acknowledgment
59(3B) BCHBDUF		BTU flags
	1... ..	Reset error lock
	.1.. ..	3270 poll for status
	.... .1..	Suppress write response
	.... ..1.	Selective text return

Switched Backup Extension to DVB

Program: NCP
Size in bytes: 4(4)
Located in: Device base control block (DVB)
Created by: NCP generation
Pointed to by: The DVBBUO field in the DVB
Function: Contains control information for devices that can be contacted over a separate line when the current line fails

0(0)	1(1)
BUEFLAGS* Flag byte	BUEPLCBP Primary line control block (LCB) pointer

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) BUEFLAGS		Flag byte
	1...	Service-seeking skip when the device is on a multipoint line
	.... .1..	Error occurred in dialing out.
	.... ..1.	Invite is pending remembrance.
	.... ...1	Backup is in progress.

Boundary Session Block Extension

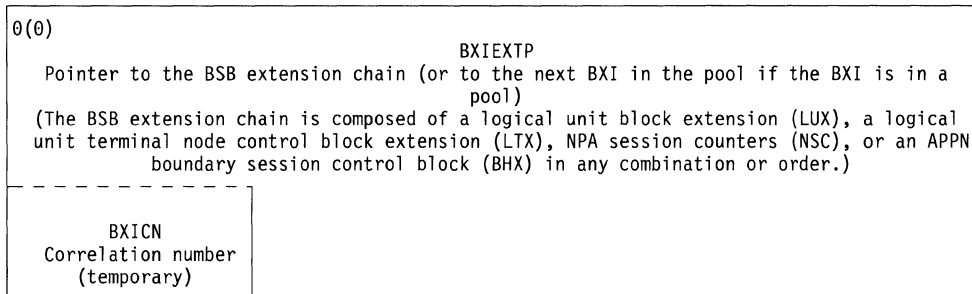
Program: NCP

Size in bytes: 104(68) for non-dynamic BXIs
108(6C) for dynamic BXIs

Created by: NCP initialization and dynamically, one for each LU-LU BSB

Pointed to by: The BSBBXIO offset field in the boundary session block (BSB) for non-dynamic BSBs, the BSBBXIP field in the boundary session block (BSB) for dynamic BSBs only, and the BXIEXTP field in the BXI (if the BXI is in a pool)

Function: Contains additional data for LU-LU sessions and the session inbound held queue



Session Inbound Held Queue for Session Pacing (BXISIHQ)
 (See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

4(4)		BXIIECB Pointer to the first element queued	
	BXIMCBD Major control block displacement divided by 2		
8(8)		BXILECB Pointer to the last element queued	
	BXISTATP PRELEASE flags		
12(C)		BXILINK Pointer to the next queue control block (QCB) on the queue	
	BXIPRKEY QCB ID flag and task protect key		
16(10)		BXITSKEP Task entry point	
	BXISTAT Task and queue status		
20(14)		BXISAVE Address of the save area pushdown list	
	BXISCHED Task dispatching priority	21(15) BXIPREL PRELEASE buffer count	
24(18)		BXILUNK Pointer to the previous QCB on the queue	
	BXIBHSCH Block handler routine (BHR) scheduling bits		

28(1C) - 35(23) BXIPCID Procedure correlator ID (PCID)			
36(24) BXINICPI Network names table (NNT) index for the network ID portion of a fully-qualified control point name		38(26) BXICPCPI NNT index for the control point name portion of a fully-qualified control point name	
40(28) BXINISPI NNT index for the network ID portion of a network-qualified session-partner LU name		42(2A) BXIINQL Length of the inbound held queue	43(2B) BXIOUTQL Length of the outbound held queue
44(2C) - 51(33) BXISPSP Session-partner LU (SPLU) name portion of a network-qualified network SPLU name			
52(34) BXIRRNWS Route extension (REX) stage receive next window size		54(36) BXIRTNWS REX stage transmit next window size	
BXIBIPC1* BIND pacing temporary field 1		BXIBIPC3* BIND pacing temporary field 3	
56(38) BXISENC Sense code from PIU			
BXISRNWS Subarea stage receive next window size		58(3A) BXISTNWS Subarea stage transmit next window size	
BXIBIPC2* BIND pacing temporary field 2		BXIBIPC4* BIND pacing temporary field 4	
60(3C) BXIRXTPI* REX stage transmit pace indicators	61(3D) BXIRXRPI* REX stage receive pace indicators	62(3E) BXISATPI* Subarea stage transmit pace indicators	63(3F) BXISARPI* Subarea stage receive pace indicators
64(40) BXIRTRPC REX stage transmit residual pace count		66(42) BXIRRRPC REX stage receive residual pace count	
BXIEAPLU Element address of the primary LU (temporary field)		BXIEASLU Element address of the secondary LU (temporary field)	

* Indicates a byte expansion follows.

68(44) BXISTRPC Subarea stage transmit residual pace count		70(46) BXISRRPC Subarea stage receive residual pace count	
BXISAPLU Subarea of the primary LU (temporary field)			
72(48) BXIINQS Size in bytes of the session inbound held queue		74(4A) BXIOUTQS Size in bytes of the session outbound held queue	
BXISASLU Subarea of the secondary LU (temporary field)			
76(4C) BXISRWC Subarea stage raised window counter	77(4D) BXIRRWC REX stage raised window counter	78(4E) BXICLRN Clear request sequence number	
80(50) BXICLCNT Clear request counter	81(51) BXIFLGS* BXI flags	82(52) BXINIPLI NNT index for the NETID portion of the PLU CPNAME	
84(54) BXIPLPLI NNT index for the CPNAME portion of the PLU CPNAME		86(56) BXINISLI NNT index for the NETID portion of the SLU CPNAME	
88(58) BXISLSLI NNT index for the CPNAME portion of the SLU CPNAME		90(5A) BXISTH0 TH byte 0 of last sent PIU	91(5B) BXISRH0 RH byte 0 of last sent PIU
92(5C) BXISRH1 RH byte 1 of last sent PIU	93(5D) BXISRH2 RH byte 2 of last sent PIU	94(5E) BXIRTH0 TH byte 0 of last received PIU	95(5F) BXIRRH0 RH byte 0 of last received PIU
96(60) BXIRRH1 RH byte 1 of last received PIU	97(61) BXIRRH2 RH byte 2 of last received PIU	98(62) BXITPLIS Type byte of last IPM sent	99(63) Reserved
100(64) BXICVDAT Pointer to CV2B			
BXISTATB* Status byte			

For dynamic BXIs only

104(68) BXIBSBP Pointer to BSB

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
52(34) BXIBIPC1		BIND pacing temporary field 1
	x... ..	Secondary-to-primary staging indicator: 1 = More than one stage 0 = One-stage pacing
	.x.. .... ..xx xxxx	Reserved BIND secondary send window
54(36) BXIBIPC3		BIND pacing temporary field 3
	x... ..	Primary-to-secondary staging indicator: 1 = One-stage pacing 0 = Two-stage pacing
	.x.. .... ..xx xxxx	Reserved BIND primary send window
56(38) BXIBIPC2		BIND pacing temporary field 2
	1... ..	Adaptive session pacing
	.x.. .... ..xx xxxx	Reserved BIND secondary receive window
58(3A) BXIBIPC4		BIND pacing temporary field 4
	xx..	Reserved
	..xx xxxx	BIND primary receive window
60(3C) BXIRXTPI		REX stage transmit pace indicators
	1... ..	REX stage has adaptive session pacing
	.1..	REX stage is held
	..1.	REX pace response has been received
	...1	Set the request-larger-window-indicator (RLWI) bit on the next pace request set on REX stage
.... xxxx	Reserved	
61(3D) BXIRXRPI		REX stage receive pace indicators
	1... ..	REX stage pace request has been received
	.1..	REX stage is withholding a pace response
	..1.	REX stage withheld the previous pace response
	...1	REX stage received a request for a larger window
	.... 1...	REX stage is in batch mode
	.... .1..	REX stage is awaiting reset acknowledgement
.... ..1.	REX storage received an interactive mode request	

Offset/Field Name	Bit Pattern/ Hex Value	Contents
62(3E) BXISATPI		Subarea stage transmit pace indicators
	1...	Subarea stage has adaptive session pacing
	.1..	Subarea stage is held
	..1.	Subarea stage received pace response
	...1	Set the RLWI bit on the next pace request sent on subarea stage
	.... 1...	VREVENT has been set
	.... .1..	BFEVENT has been set
	.... ..x.	1 = Dependent LU-LU session 0 = Independent LU-LU session
63(3F) BXISARPI		Subarea stage receive pace indicators
	1...	Subarea stage has received pace request
	.1..	Subarea stage is withholding pace response
	..1.	Subarea stage withheld previous pace response
	...1	Subarea stage received a request for a larger window
	.... 1...	Subarea stage is in batch mode
	.... .1..	Subarea stage is awaiting reset acknowledgment
	.... ..1.	Subarea stage received an interactive mode request
81(51) BXIFLGS		BXI flags
	1...	PLU CPNAME saved
	.1..	SLU CPNAME saved
	..1.	BFCINIT CV2B state
	...1	Original BIND contained a CV2B
	.... 1...	APPN cause code
	.... .1..	Bind extended by BF(SLU)
	.... ..1.	Two CV2BS on BFCINIT
	.... ...1	Save CV2B for +RSP(BIND)
100(64) BXISTATB		Status byte
	1...	CV2B saved
	.1..	Dynamic BXI - BXI was built dynamically (BXIDYNM)
	..xx xxxx	Reserved

Channel Adapter Control Block (Main)

Program: NCP

Size in bytes: 114(72) plus prefix

Created by: NCP generation

Pointed to by: The SYSCAB field in the extended halfword direct addressables control block (HWE) points to the first CAB in the timer chain, CABCHAIN to the preceding CAB, CABMAINA of the CAB (ext), or CAVTCABP of the associated channel adapter vector table (CAVT) entry

Function: Contains the parameters and control fields used by the channel adapter input/output supervisor. Each channel adapter has its own CAB

Name	Offset	Name	Offset
CABABRC	111 (6F)	CABHWM	72 (48)
CABATDI	68 (44)	CABICND	4 (4)
CABATDT	70 (46)	CABICND2	54 (36)
CABATD7I	74 (4A)	CABIPIUO	89 (59)
CABATOI	80 (50)	CABLKBP	28 (1C)
CABATOT	82 (52)	CABMMTO	78 (4E)
CABATO7I	76 (4C)	CABRSX	15 (F)
CABCACS	48 (30)	CABSEL	2 (2)
CABCAPP	84 (54)	CABSENSE	108 (6C)
CABCASDI	66 (42)	CABSNPM	88 (58)
CABCASDT	56 (38)	CABSTAT	8 (8)
CABCATYP	64 (40)	CABSTATE	10 (A)
CABCAVTE	60 (3C)	CABTAB0	65 (41)
CABCA0C	40 (28)	CABTGBP	92 (5C)
CABCA0D	42 (2A)	CABTRCF	11 (B)
CABCA0E	44 (2C)	CABTRCFE	84 (54)
CABCA0F	46 (2E)	CABTYPE	12 (C)
CABCA00	18 (12)	CABWSX	13 (D)
CABCA01	20 (14)	CABXR77	16 (10)
CABCA02I	22 (16)	CXCAECB	-16 (-10)
CABCA02O	24 (18)	XXCXCAB	-8 (-8)
CABCA03	26 (1A)		
CABCA06	32 (20)		
CABCA07I	34 (22)		
CABCA07O	36 (24)		
CABCCMD	6 (6)		
CABCDBP	104 (68)		
CABCHAIN	100 (64)		
CABCLRC	28 (1C)		
CABCND	0 (0)		
CABCND2	38 (26)		
CABCNTL	90 (5A)		
CABCRRR	113 (71)		
CABDCKTR	112 (70)		
CABENABL	52 (34)		
CABESNS1	109 (6D)		
CABESNS2	110 (6E)		
CABEXTA	96 (60)		
CABGEN	14 (E)		
CABHATOT	58 (3A)		

-16(10) - -9(9)	CXCAECB** Event control block (ECB) for leasing buffers (For the format, see the ECB)
-8(8) - -1(1)	XXCXCAB Dump identifier characters (XCXCABx, x=Channel adapter address)

** On the first main CAB only.

0(0)	CABCOND* Channel condition flags	2(2)	CABSEL* Channel adapter selection mask
4(4)	CABICND Condition flags on entry (See CABCOND for the flag definitions)	6(6)	CABCCMD* Current channel command
8(8)	CABSTAT* Current status byte	10(A)	CABSTATE* Buffer information
		11(B)	CABTRCF* Channel adapter trace flag
12(C)	CABTYPE Channel type (always X'00' to indicate a CAB)	13(D)	CABWSX Expected write start command
		14(E)	CABGEN** Generated channel adapter type
		15(F)	CABRSX Expected read start command
16(10)	CABXR77 Save area for external register X'77'	18(12)	CABCA00 Save area for channel adapter register X'00' initial selection
20(14)	CABCA01 Save area for channel adapter register X'01' initial selection address command	22(16)	CABCA02I Input save area for channel adapter register X'02'
24(18)	CABCA02O Output save area for channel adapter register X'02'	26(1A)	CABCA03 Save area for channel adapter register X'03' emulator subchannel (ESC) address and status

* Indicates a byte expansion follows.

** See the byte expansion for CABCATYP.

28(1C)		
CABLKBP Pointer to the associated line control block (LKB) for a channel-link		
CABCLRC* CLATO reason code		
32(20)	CABCA06 Save area for channel adapter register X'06' NSC status and control	34(22) CABCA07I Input save area for channel adapter register X'07' channel adapter condition
36(24)	CABCA07O Output save area for channel adapter register X'07' channel adapter condition	38(26) CABCND2* Channel condition flags (continued)
40(28)	CABCA0C Output save area for channel adapter register X'0C' cycle-steal control	42(2A) CABCA0D Save area for channel adapter register X'0D' level-1 interrupt check
44(2C)	CABCA0E Save area for channel adapter register X'0E' level-1 interrupt requests	46(2E) CABCA0F Save area for channel adapter register X'0F' level-3 interrupt requests
48(30) CABCACS Cycle-steal data address save area		
52(34)	CABENABL* Channel adapter enabled mask for channel adapter register X'07'	54(36) CABICND2 Channel condition flags on entry (continued) (See CABCND2 for the byte expansion)
56(38)	CABCASDT Timer decremented channel adapter slowdown interval	58(3A) CABHATOT Timer decremented 1/2 attention timeout (ATO) timer value (idle or second chance)
60(3C) CABCAVTE CABs associated CAVT entry		
64(40)	65(41)	66(42)
CABCATYP* Channel adapter type	CABTAB0* High byte of TA data	CABCASDI Timer channel adapter slowdown interval

* Indicates a byte expansion follows.

68(44) CABATDI Attention delay (tenths of a second)	70(46) CABATDT Timer decremented attention delay interval		
72(48) CABHWM Attention delay path information unit (PIU) counter	74(4A) CABATD7I Attention delay (defined on BUILD or GROUP)		
76(4C) CABAT07I Attention timeout (defined on BUILD or GROUP)	78(4E) CABMMTO Channel monitor mode timer		
80(50) CABATOI Attention timeout (tenths of a second)	82(52) CABATOT Timer decremented attention timeout		
84(54) CABCAPP Pointer to the associated channel adapter parameter table control block (CAP)			
CABTRCFE* Channel adapter trace field extension			
88(58) CABSNDM SSCP-NCP session mask	89(59) CABIPIUO Transmission header (TH) offset into the PIU or link-header offset into the link-header PIU	90(5A) CABCNTL* Channel adapter contact control flags	
92(5C) CABTGBP Pointer to the transmission group control block (TGB)			
96(60) CABEXTA Address of the CAB extension			
100(64) CABCHAIN Address of the next CAB (0-last CAB)			
104(68) CABCDBP Pointer to the configuration data block (CDB)			
108(6C) CABSENSE* Channel sense byte	109(6D) CABESNS1* Extended sense byte 1	110(6E) CABESNS2 Extended sense byte 2	111(6F) CABABRC* Abort reason code
112(70) CABDCKTR* Data check reason code	113(71) CABCRRRC* Command reject reason code		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CABCND		Channel condition flags
	Byte 0	
	1...	Attention status is required
	.1..	Attention delay is active
	..1.	Monitoring suppress out
	...1	Channel monitor mode is active
	.... 1...	Attention has been presented
	.... .1..	Sense command flag
	.... ..1.	Channel adapter slowdown flag
	.... ...1	Load is in progress over this channel adapter
	Byte 1	
	1...	Host can write bit
	.1..	Channel adapter CWALL exit
	..1.	Status transfer is requested
	...1	Abort is requested by level 4
	.... 1...	Abort is recognized
	.... .1..	Abort is pending
	.... ..1.	Channel is in disconnected state
	.... ...1	Channel is inoperative
2(2) CABSEL		Select mask for the channel adapter**
	X'0000'	Channel adapter position 5 (IOC1) or 1 (IOC2)
	X'0200'	Channel adapter position 6 (IOC1) or 2 (IOC2)
	X'0400'	Channel adapter position 7 (IOC1) or 3 (IOC2)
	X'0600'	Channel adapter position 8 (IOC1) or 4 (IOC2)
	X'0800'	Channel adapter position 13 (IOC1) or 9 (IOC2)
	X'0A00'	Channel adapter position 14 (IOC1) or 10 (IOC2)
	X'0C00'	Channel adapter position 15 (IOC1) or 11 (IOC2)
	X'0E00'	Channel adapter position 16 (IOC1) or 12 (IOC2)

** To determine which channel position has been enabled, use the CABTAB0 field to identify the bus on which the channel adapter resides.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) CABCCMD	Byte 0	Initial selection subchannel address
	Byte 1	Current channel command
	X'01'	Write
	X'02'	Read
	X'03'	No-op
	X'04'	Sense
	X'05'	Write IPL
	X'09'	Write Break
	X'31'	Write Start 0
	X'32'	Read Start 0
	X'51'	Write Start 1
	X'52'	Read Start 1
	X'61'	Write XID
	X'62'	Read XID
	X'72'	Read Configuration Data
	X'93'	Restart Reset
	X'A3'	Discontact
	X'C3'	Contact
	X'E4'	Sense ID
	8(8) CABSTAT	Byte 1	Current status byte
1...		Attention
.1..		Status mode
..1.		Control unit end
...1		Busy
.... 1..		Channel end
.... .1..		Device end
.... ..1.		Unit check
.... ...1		Unit exception
10(A) CABSTATE		Buffer information
	1...	Last buffer in the PIU
	.1..	End of the host buffer unit
	..1.	Inbound buffers saved due to CA INOP
	.... 1..	Needs suppressible status
	.... ...1	Sense ID command flag

Offset/Field Name	Bit Pattern/ Hex Value	Contents
11(B) CABTRCF		Channel adapter trace flag
	X'00'	No trace function
	X'0F'	Channel adapter trace is inactive, but the channel adapter data streaming (CADS) trace requires deactivation
	X'FF'	Trace function is activated
28(1C) CABCLRC		CLATO reason code
	X'01'	Panel discontact
	X'02'	Attention or activity time-out
	X'03'	Received WXID in FID4 CONTACTED mode
	X'04'	Force deactivate processing
	X'05'	XID negotiation failed
	X'06'	Channel hardware error
	X'09'	Received channel discontact
	X'0A'	DISCONTACT PIU processing
	X'0B'	Channel adapter slowdown timer expired
	X'0C'	Channel command was received before the XID exchange was completed
	X'0D'	WRITEIPL command received
38(26) CABCND2		Channel condition flags
	Byte 0	
	1...	Channel is in lock state
	.1..	End of run command is requested
	..1.	Unlock channel is requested
	...1	Asynchronous device end (DE) is required
	.... 1...	Blocked virtual route condition is exited
	.... .1..	Stop write channel programs due to blocked virtual route status
	.... ..1.	COMMIT has been satisfied
	.... ...1	COMMIT is outstanding for this channel
	Byte 1	
	1...	Associated group control block (GCB) has station statistics saved
	.1..	Current channel program is an ERP read
	..1.	Intervention required mode because channel adapter is undefined or inactive for NCP
	...1	Channel adapter is active for NCP
	.... 1...	Channel adapter in auto network shutdown (ANS) due to switchback
	.... .1..	Asynchronous status (without device end) has been requested but not presented
	.... ..1.	Retry stacked status
	.... ...1	Stacked status remembrance

Offset/Field Name	Bit Pattern/ Hex Value	Contents
52(34) CABENABL		Enable mask for the channel adapter**
	X'00C0'	Channel adapter position 5 (IOC1) or 1 (IOC2)
	X'0020'	Channel adapter position 6 (IOC1) or 2 (IOC2)
	X'000C'	Channel adapter position 7 (IOC1) or 3 (IOC2)
	X'0002'	Channel adapter position 8 (IOC1) or 4 (IOC2)
	X'9000'	Channel adapter position 13 (IOC1) or 9 (IOC2)
	X'2000'	Channel adapter position 14 (IOC1) or 10 (IOC2)
	X'4800'	Channel adapter position 15 (IOC1) or 11 (IOC2)
	X'0100'	Channel adapter position 16 (IOC1) or 12 (IOC2)
** To determine which channel position has been enabled, use the CABTAB0 field to identify the bus on which the channel adapter resides.		
64(40) CABCATYP		Channel adapter type
	X'06'	Channel adapter type 6
	X'07'	Channel adapter type 7
65(41) CABTAB0		High byte of IOH TA data
	X'08'	Channel adapter is on IOC1
	X'88'	Channel adapter is on IOC2
84(54) CABTRCFE		Channel adapter trace field extension
	1...	Channel adapter trace is still on after initialization
	.1..	Channel adapter trace—recurrent entry (valid for a channel link only)
	..1.	Channel adapter trace was deactivated due to level-5 processing (valid for a channel link only)
	...1	Channel adapter trace was deactivated by a MOSS console
	.... 1...	Activate CADS trace on this channel adapter
	.... ..1.	CADS trace is active on this channel adapter
90(5A) CABCNTL		Channel adapter contact control flags
	Byte 0	
	1...	Host XID is expected
	.1..	Read XID command is expected
	..1.	Read of NCP's XID is pending
	...1	Contact command is expected
	.... 1...	FID4 CONTACTED mode
	.... .1..	FID2 CONTACTED mode
	.... ..1.	Channel is a peripheral resource
	.... ...1	CLATO should be invoked after a READ of NCP's XID is completed
	Byte 1	
	1...	Channel adapter is a channel link
	.1..	Write XID command is expected

Offset/Field Name	Bit Pattern/ Hex Value	Contents
108(6C) CABSENSE		Sense byte to transfer for a sense command
	1...	Command Reject
	.1..	Intervention Required
	..1.	Bus Out Check
	...1	Equipment Check
	.... 1..	Data Check
	.... .1..	Overrun
	.... ..1.	Not Initialized
	.... ...1	Program Abort
109(6D) CABESNS1		Extended sense byte 1
	1...	Dump complete
	.1..	Imprecise data check
	..1.	Resetting event
	...1	Device characteristics change

Offset/Field Name	Bit Pattern/Hex Value	Contents
111(6F) CABABRC		Abort reason code
	X'00'	Reset state
	X'01'	Initialized state—not defined as channel line (CA=coded on LINE)
	X'02'	Initialized state—emulator program (EP) only line (LINE statement and no PU statement coded)
	X'03'	Initialized and not contacted state—channel LINE. (ACTIVATE LINK received, awaiting CONTACT RU, LINE and PU PUTYPE=2 statements coded)
	X'04'	Initialized and not contacted state—channel LINE. (ACTIVATE LINK received, awaiting CONTACT RU, LINE and PU PUTYPE=2 statements coded)
	X'05'–X'0F'	Reserved
	X'10'	FID4 CONTACTED state. Channel XID exchange complete. (Abort bit off, PUTYPE=5)
	X'11'	FID2 CONTACTED state. Channel XID exchange complete. (Abort bit off, PUTYPE=2)
	X'12'	Contact pending state. Awaiting channel XID exchange. (CONTACT RU received, PUTYPE=5)
	X'13'	Contact pending state. Awaiting channel XID exchange. (CONTACT RU received, PUTYPE=2)
	X'14'–X'2F'	Reserved
	X'30'	Channel is in the discontacted state, or channel ANS is in progress and channel command has been received
	X'31'	Write start was received during an XID exchange, and channel ANS is invoked
	X'32'	XID procedure failed; a write XID was received after an XID with invalid parameters was received from the host. Channel ANS is invoked (peripheral channel only)
	X'33'	Read start was received during an XID exchange; channel ANS is invoked
	X'34'	Read XID was received out of sequence during an XID exchange; channel ANS is invoked
	X'35'	Unexpected contact channel command was received; channel ANS is invoked
	X'36'	Contact channel command was received out of sequence during an XID exchange; channel ANS is invoked
	X'37'	Discontact channel command was received; channel ANS is invoked
	X'38'	Program requested interrupt (PRI) was received, and channel ANS is invoked
	X'39'	XID was received on the channel link while in the FID4 CONTACTED state
	X'3A'	CONTACT received for station on channel link while station was in CONTACT/DISCONTACT state
	X'3B'–X'3F'	Reserved
	X'40'	Inbound transfer with channel ANS in progress
	X'41'	Bus out check with channel ANS in progress
	X'42'	Equipment check with channel ANS in progress
	X'43'	Inbound transfer data streaming time-out overrun with channel ANS in progress
	X'44'	Outbound transfer with channel ANS in progress

Offset/Field Name	Bit Pattern/ Hex Value	Contents
111(6F) CABABRC (continued)		
	X'45'	Channel stop or halt I/O (HIO) was received during a read channel command with channel ANS in progress
	X'46'	Outbound transfer data streaming time-out overrun with channel ANS in progress
	X'47'	XID negotiation failed; channel ANS is invoked
	X'48'–X'4F'	Reserved
	X'50'	XID3 was received with a length error
	X'51'	XID3 was received with control vector X'22' appended
	X'52'–X'5F'	Reserved
	X'60'	PIU was received while not FID4 CONTACTED, or an invalid FID4 PIU was received
	X'61'	PIU was received while not FID2 CONTACTED, or an invalid FID2 PIU was received
	X'62'–X'6F'	Reserved
	X'70'	Inbound transfer occurred while channel was inoperative
	X'71'	Outbound transfer occurred while channel was inoperative
	X'72'–X'FF'	Reserved
112(70) CABDCKTR		Data Check reason code
	X'00'	Reset state
	X'01'	Unrecognized XID type
	X'02'	Received XID2 length is incorrect
	X'03'	PIU cannot be routed to subarea path control
	X'04'	PIU cannot be routed to peripheral path control
	X'05'	Transfer count has been exceeded
	X'06'	Link header (LH) validation failed
	X'07'	Set blocking delay LH length is invalid
	X'08'	Invalid LH function code
	X'09'	Reserved
	X'0A'	Input data buffer was empty
	X'0B'	Channel stop occurred
113(71) CABCRRRC		Command reject reason code
	X'00'	Reset state
	X'01'	Invalid channel command
	X'02'	MOSS failed to acknowledge a write IPL command within 5 milliseconds
	X'03'	Incorrect XID channel command sequence—unexpected read XID
	X'04'	RCD command received on T5 or T6 channel adapter
	X'05'–X'FF'	Reserved

Channel Adapter Control Block (Extension)**Program:** NCP**Size in bytes:** 128(80)**Pointed to by:** CABEXTA of the CAB (main)**Function:** Contains parameters and control fields used by the channel adapter input/output supervisor. This block is an extension of the CAB.

Name	Offset	Name	Offset
CABACNT	64 (40)	CABYCNT	106 (6A)
CABBCNT	66 (42)		
CABCCWHI	18 (12)		
CABCCWLO	16 (10)		
CABCPUIUN	32 (20)		
CABCPUI1	28 (1C)		
CABDPEPF	116 (74)		
CABDUMBF	108 (6C)		
CABFCCW	100 (64)		
CABFHAC	96 (60)		
CABHBFCT	55 (37)		
CABHQH	8 (8)		
CABHQT	12 (C)		
CABIBUFA	44 (2C)		
CABIDATA	48 (30)		
CABIPBF	24 (18)		
CABIPIUA	20 (14)		
CABIQBS	68 (44)		
CABIQH	0 (0)		
CABIQT	4 (4)		
CABLID	43 (2B)		
CABMAINA	124 (7C)		
CABMDO	52 (34)		
CABMLCNT	42 (2A)		
CABNXBC	60 (3C)		
CABOBUFA	84 (54)		
CABODATA	88 (58)		
CABOPIUA	80 (50)		
CABOXCNT	94 (5E)		
CABOXSV	72 (48)		
CABO62RB	114 (72)		
CABPAD	112 (70)		
CABPFAD	116 (74)		
CABPIUCT	36 (24)		
CABPIUXF	54 (36)		
CABRCCW	92 (5C)		
CABRDCNT	92 (5C)		
CABRHAC	98 (62)		
CABROTSV	76 (4C)		
CABSCBP	56 (38)		
CABSKPCT	38 (26)		
CABSKPIU	40 (28)		
CABXCNT	104 (68)		
CABXDPCS	103 (67)		
CABXPCS	102 (66)		

CABIQ

Channel Intermediate Queue

0(0)	CABIQH Intermediate queue head pointer (blocks to be transmitted)
4(4)	CABIQT Intermediate queue tail pointer (blocks to be transmitted)

CABHQ

Channel Hold Queue

8(8)	CABHQH Hold queue head pointer (blocks that have transmitted)
12(C)	CABHQT Hold queue tail pointer (blocks that have transmitted)

Inbound Transfer Information
 (Host Write/Write Break)

16(10) CABCCWLO Low threshold to determine the congestion of the intermediate queue	18(12) CABCCWHI High threshold to determine the congestion of the intermediate queue	
20(14) CABIPIUA Address of the first input buffer in the current PIU		
24(18) CABIPBF Address of the previous buffer		
28(1C) CABCPUI1 Address of the first buffer of the completed PIU to pass to path control		
32(20) CABCPUIU Address of the last buffer of the completed PIU to pass to path control		
36(24) CABPIUCT Number of PIUs passed to path control on the last write sequence	38(26) CABSKPCT Number of PIUs to skip for retry	
40(28) CABSKPIU Number of PIUs skipped	42(2A) CABMLCNT SSCP buffer lease count for input data	43(2B) CABLID Local network ID input control
44(2C) CABIBUFA Address of the current buffer received over the channel		
48(30) CABIDATA Address of the current inbound data received over the channel		
52(34) CABMDO Maximum data count at the current input buffer	54(36) CABPIUXF Buffers used in this PIU (Type 6) or current leased buffer count (Type 7)	55(37) CABHFCT Buffers used in this write channel program
56(38) CABSCBP Pointer to the associated station control block (SCB)		
60(3C) CABNXBC Number of bytes transmitted in read channel program		
64(40) CABACNT Inbound VRPRS count	66(42) CABBCNT Outbound end bit count	

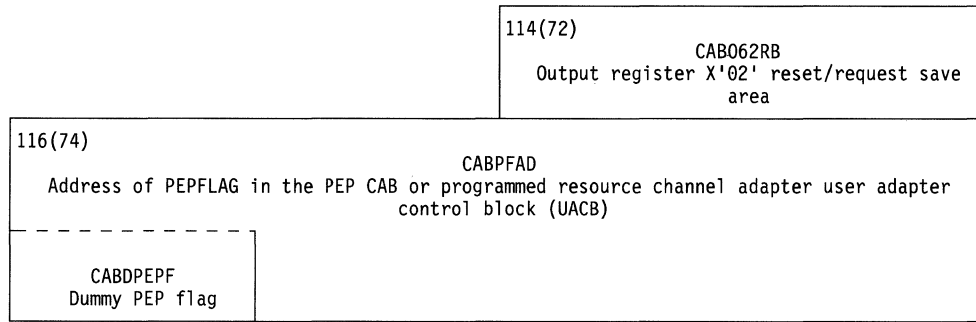
Outbound Transfer Information
 (Host Read)

68(44)		CABIQBS Address of the last output block given to CXCAOUT from path control	
72(48)		CABOXSV Save area for the output transfer routine	
76(4C)		CABROTSV Refresh output transfer save area	
80(50)		CABOPIUA Address of the output (to the channel) PIU	
84(54)		CABOBUFA Address of the output (to the channel) buffer	
88(58)		CABODATA Address of the output (to the channel) data	
92(5C)	CABRDCNT Output buffer residual data count	94(5E)	CABOXCNT Bytes in the next output data service
	CABRCCW Number of host read channel command words (CCWs)		
96(60)	CABFHAC Host read buffer size (UNITSZ)	98(62)	CABRHAC Host read residual byte count
100(64)	CABFCCW Number of host read CCWs (MAXBFRU)	102(66)	CABXPCS Number of PIUs transmitted in read channel program
		103(67)	CABXDPCS Number of data PIUs transmitted in read channel program
104(68)	CABXCNT Inbound VRPRQ count	106(6A)	CABYCNT Inbound end bit count

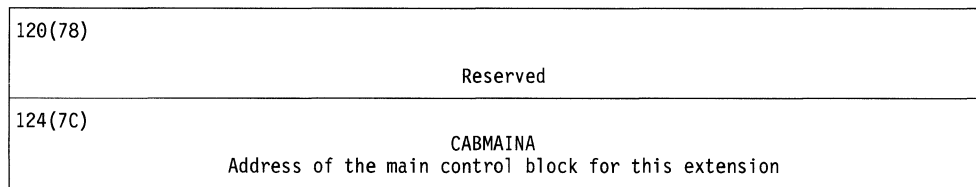
Host Buffer Pad Support

108(6C)		CABDUMBF Address of the dummy data buffer	
112(70)	CABPAD Pad size as control field (BFRPAD)	113(71)	Reserved

PEP Option Interface Area



CAB Extension Chain Field Area



Channel Adapter Parameter Table

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointer to: The CABCAP field in the channel adapter control block (CAB)

Function: Contains the NCP-generated values for this channel adapter

0(0) CAPXFR Maximum PIU buffer count	1(1) CAPINBF Minimum number of buffers to get for a Write command	2(2) CAPTMOUT Attention timeout (ATO) value
4(4) CAPDELAY Attention delay value	6(6) CAPCASDL Channel slowdown time-out value	

Channel Adapter Trace Select Table (3745)

Program: NCP, EP

Size in bytes: 96(60)

Created by: NCP or PEP generation

Pointer to: CXTCAT in the link-edit map

Function: When the channel adapter position indicator matches the panel switches, and the channel adapter is installed, attached, and defined, the channel adapter trace console function can turn the channel adapter trace on or off for the selected channel adapter. The table consists of 17 8-byte entries, one for each of the 16 possible channel adapters and an extra one to indicate the end of the table. NCP generation sets the initialized values and they do not have to change.

0(0)		CATCAVTE Channel adapter associated channel adapter vector table (CAVT) entry pointer	
4(4)	CATPANI* Channel adapter position indicator	6(6)	Reserved

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Hex Value	Contents
4(4) CATPANI		Channel adapter position indicator
	X'0080'	Indicator for channel adapter position 1 (address 8)
	X'0040'	Indicator for channel adapter position 2 (address 9)
	X'0020'	Indicator for channel adapter position 3 (address 10)
	X'0010'	Indicator for channel adapter position 4 (address 11)
	X'8000'	Indicator for channel adapter position 5 (address 0)
	X'4000'	Indicator for channel adapter position 6 (address 1)
	X'2000'	Indicator for channel adapter position 7 (address 2)
	X'1000'	Indicator for channel adapter position 8 (address 3)
	X'0008'	Indicator for channel adapter position 9 (address 12)
	X'0004'	Indicator for channel adapter position 10 (address 13)
	X'0002'	Indicator for channel adapter position 11 (address 14)
	X'0001'	Indicator for channel adapter position 12 (address 15)
	X'0800'	Indicator for channel adapter position 13 (address 4)
	X'0400'	Indicator for channel adapter position 14 (address 5)
	X'0200'	Indicator for channel adapter position 15 (address 6)
	X'0100'	Indicator for channel adapter position 16 (address 7)
	X'FFFF'	Indicator for the last entry

Channel Adapter Vector Table (3745)

Program: NCP, EP

Size in bytes: 196(C4) for PEP
 132(84) for NCP-only generation

Created by: NCP or PEP generation

Pointer to: SYSCAVTP in the extended halfword direct addressables control block (HWE) and label CXTCAVT

Labels CXTVTBS1 and CXTVTBS2 are the addresses of the BUS 1 and BUS 2 pointers.

Function: Contains pointers to channel adapter control blocks (CABs), channel ERP control blocks (CERs), and channel control blocks (CHCBs) for all 16 possible channel adapters, whether generated or not. The CAB pointers contain a channel adapter number that is generated into the high-order byte. The CER pointers contain a flag byte in the high-order byte containing information about the availability of the channel adapter for processing. The CHCBs are used by EP only, and the pointers are included only if generated for EP.

BUS 1's pointers begin at label CXTVTBS1, and BUS 2's pointers begin at CXTVTBS2. The CAB, CER, and CHCB (if one exists) pointers can be addressed by using the labels CAVTCABP, CAVTCERP, and CAVTCHBP once the offset (created by adding the channel adapter select mask times 2) is added to the appropriate bus label. CAVTCURP points to the CAVT entry of the channel adapter currently being serviced in level 3.

CAVT Layout—CAVT current entry pointer

0(0)	CAVTCURP Pointer to the current CAVT entry
4(4) - 63(3F)	CAB, CER, and CHCB pointers for IOC1
64(40) - 123(7B)	CAB, CER, and CHCB pointers for IOC2 (NCP only) (starts at offset 96(60) for PEP)

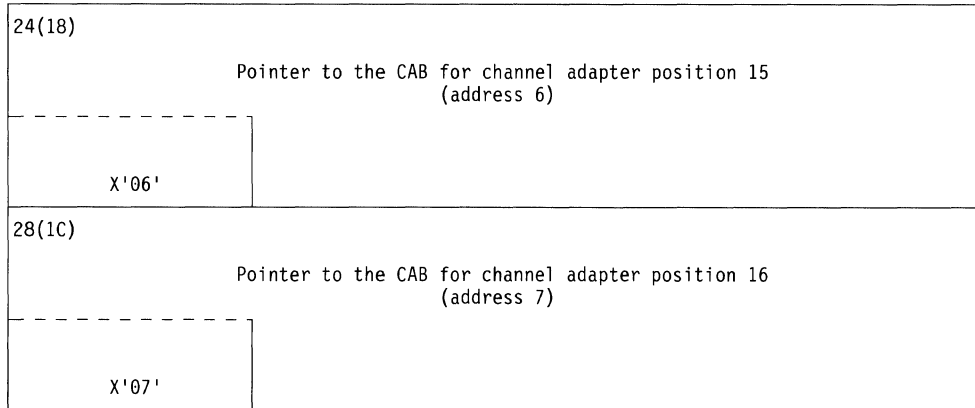
Note: CAVTCURP points to the CAVT entry of the channel adapter currently being serviced in level 3.

BUS 1 Pointers—CXTVTBS1

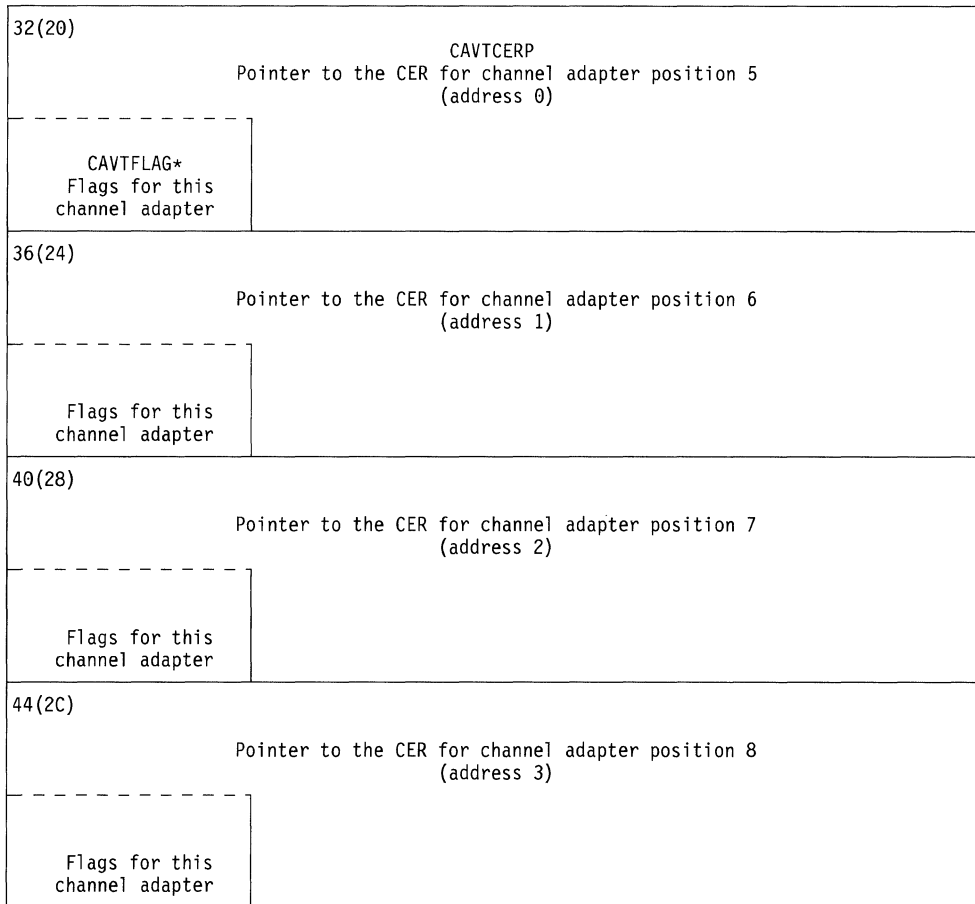
Note: Offsets are based on CXTVTBS1.

CABs

0(0)	CAVTCABP Pointer to the CAB for channel adapter position 5 (address 0)
CAVTCANO Address for this channel adapter X'00'	
4(4)	Pointer to the CAB for channel adapter position 6 (address 1)
X'01'	
8(8)	Pointer to the CAB for channel adapter position 7 (address 2)
X'02'	
12(C)	Pointer to the CAB for channel adapter position 8 (address 3)
X'03'	
16(10)	Pointer to the CAB for channel adapter position 13 (address 4)
X'04'	
20(14)	Pointer to the CAB for channel adapter position 14 (address 5)
X'05'	



CERs



* Indicates a byte expansion follows.

48(30)	Pointer to the CER for channel adapter position 13 (address 4)
Flags for this channel adapter	
52(34)	Pointer to the CER for channel adapter position 14 (address 5)
Flags for this channel adapter	
56(38)	Pointer to the CER for channel adapter position 15 (address 6)
Flags for this channel adapter	
60(3C)	Pointer to the CER for channel adapter position 16 (address 7)
Flags for this channel adapter	

Note: This section ends after the CERs in an NCP-only generation. In PEP or EP, the CHCBs are included.

CHCBs

64(40)	CAVTCHBP** Pointer to the EP CHCB for channel adapter position 5 (address 0)
68(44)	Pointer to the EP CHCB for channel adapter position 6 (address 1)
72(48)	Pointer to the EP CHCB for channel adapter position 7 (address 2)
76(4C)	Pointer to the EP CHCB for channel adapter position 8 (address 3)
80(50)	Pointer to the EP CHCB for channel adapter position 13 (address 4)
84(54)	Pointer to the EP CHCB for channel adapter position 14 (address 5)
88(58)	Pointer to the EP CHCB for channel adapter position 15 (address 6)
92(5C)	Pointer to the EP CHCB for channel adapter position 16 (address 7)

** These pointers are included in PEP only. If EP does not use a particular channel adapter position, there is no CHCB, and this pointer is set to zeros.

BUS 2 Pointers—CXTVTBS2**Note:** Offsets are based on CXTVTBS2.

CABs

0(0)	CAVTCABP Pointer to the CAB for channel adapter position 1 (address 8)
CAVTCAN0 Address for this channel adapter X'08'	
4(4)	Pointer to the CAB for channel adapter position 2 (address 9)
X'09'	
8(8)	Pointer to the CAB for channel adapter position 3 (address 10)
X'0A'	
12(C)	Pointer to the CAB for channel adapter position 4 (address 11)
X'0B'	
16(10)	Pointer to the CAB for channel adapter position 9 (address 12)
X'0C'	
20(14)	Pointer to the CAB for channel adapter position 10 (address 13)
X'0D'	

24(18)	Pointer to the CAB for channel adapter position 11 (address 14)
X'0E'	
28(1C)	Pointer to the CAB for channel adapter position 12 (address 15)
X'0F'	

CERs

32(20)	CAVTCERP Pointer to the CER for channel adapter position 1 (address 8)
CAVTFLAG* Flags for this channel adapter	
36(24)	Pointer to the CER for channel adapter position 2 (address 9)
Flags for this channel adapter	
40(28)	Pointer to the CER for channel adapter position 3 (address 10)
Flags for this channel adapter	
44(2C)	Pointer to the CER for channel adapter position 4 (address 11)
Flags for this channel adapter	

* Indicates a byte expansion follows.

48(30) Flags for this channel adapter	Pointer to the CER for channel adapter position 9 (address 12)
52(34) Flags for this channel adapter	Pointer to the CER for channel adapter position 10 (address 13)
56(38) Flags for this channel adapter	Pointer to the CER for channel adapter position 11 (address 14)
60(3C) Flags for this channel adapter	Pointer to the CER for channel adapter position 12 (address 15)

Note: This section ends after the CERs in an NCP-only generation. In PEP, the CHCBs are included.

CHCBs

64(40)	CAVTCHBP** Pointer to the EP CHCB for channel adapter position 1 (address 8)
68(44)	Pointer to the EP CHCB for channel adapter position 2 (address 9)
72(48)	Pointer to the EP CHCB for channel adapter position 3 (address 10)
76(4C)	Pointer to the EP CHCB for channel adapter position 4 (address 11)
80(50)	Pointer to the EP CHCB for channel adapter position 9 (address 12)
84(54)	Pointer to the EP CHCB for channel adapter position 10 (address 13)
88(58)	Pointer to the EP CHCB for channel adapter position 11 (address 14)
92(5C)	Pointer to the EP CHCB for channel adapter position 12 (address 15)

** These pointers are included in PEP only. If EP does not use a particular channel adapter position, there is no CHCB, and this pointer is set to zeros.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
32(20) CAVTFLAG		CAVT flags byte
	1...	Channel adapter is not installed.
	.1..	Channel adapter is not operational.
	..1.	Channel adapter is not attached to this CCU.
	...1	Channel adapter is not defined.
	.... 1..	Channel adapter is in the error recovery procedure (ERP) state.
	.... .1..	Channel adapter is install in progress.
	.... ..1.	Channel adapter is in CACM mode disconnected.

Committed Buffers Block

Program: NCP

Size in bytes: 36(24)

Created by: NCP generation, NCP initialization, and dynamically

Pointed to by: The CCBCBBP field in the adapter control block (ACB), the CUBCBBP field in the common physical unit block (CUB), the LCBCBBP field in the line control block (LCB), the LKBCBBP field in the link control block (LKB), the SCBCBBP field in the station control block (SCB), the TRBCBBP field in the trace control block (TRB), and the CBBRESP field in the CBB (if the CBB is in a pool)

Function: Maintains buffer commitment status on SDLC stations and BSC/SS lines

0(0)		CBBACBP Pointer to the associated adapter control block (ACB)	
CBBFLGS* Committed buffers flag			
4(4)	CBBCURC Current commitment	6(6)	CBBMAXC Maximum commitment
8(8)	CBBMINC Minimum commitment	10(A)	CBBRBC Receive buffer count
12(C)		CBBRESP Pointer to the associated SCB, CUB, LMB, LKB, or TRB (or to the next CBB if the CBB is in a pool)	
CBBRTYP* Associated resource type			
16(10)		CBBLAABC Pointer to leased and available buffer chain (ODLC only)	
CBBRNR Receive not ready (RNR) control count			

* Indicates a byte expansion follows.

20(14)		CBBPNCBB Pointer to next CBB in CBQ chain	
24(18)		CBBARTN Address of routine to get control when a COMMIT is satisfied	
CBBMFL* COMMIT flags			
28(1C)	CBBPREC Request count	30(1E)	CBBCOMC Committed count
32(20)	CBBTCBQ Time (binary) when put on the CBQ	34(22)	Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CBBFLGS	x... ..	Committed buffers flag Type request: 1 = No poll 0 = Poll requested
12(C) CBBRTYP	X'80' X'60' X'40' X'20' X'10' X'A0'	Resource type BSC or SS line control PU type 1 or 2 PU type 4 ODLC processor ODLC line ODLC SIT slot
24(18) CBBMFL	xx.. .. ..1. .... ...1 1.. .... .1.. .... ..1. .... ...1	COMMIT Flags Type COMMIT requested: (CBBTYP1,CBBTYP2) 00 = CWALL 01 = COND 10 = PSLOW 11 = PCWALL Chained to CRB (CBBCRB) Chained to CBQ decommit chain (CBBQBQ) RTN=Yes (CBBRTN) LEASE=Yes (CBBLEAS) COMMIT satisfied (CBBCSAT) Chained to CBQ pending processing chain (CBBPPQ)

Committed Buffers Chains and Delayed Pacing Response List

Program: NCP

Size in bytes: 28(1C)

Created by: NCP generation

Pointer to: The QPBCBQP field in the queue pointer block (QP)

Function: Maintains a chain of committed buffers block (CBBs) for stations that have had a COMMIT satisfied. Also maintains a chain of CBBs for lines or stations that require a specified routine to get control when a COMMIT is satisfied.

0(0)	CBQDCHP Head pointer to committed buffers decommit chain
4(4)	CBQDCTP Tail pointer to committed buffers decommit chain
8(8)	CBQPPHP Head pointer to committed buffers pending processing chain
12(C)	CBQPPTP Tail pointer to committed buffers pending processing chain
16(10)	CBQDPRH Delayed pacing response list head pointer
20(14)	CBQPRT Delayed pacing response list tail pointer
24(18)	CBQNPCHK Next station in delayed pacing response to be checked for "No Poll" bit off

Character Control Block (EP)

- Program:** EP
- Size in bytes:** Variable, depending upon the extensions added
- Located in:** \$LVL2 (PEP)
- Created by:** PEP generation
- Pointed to by:** Line vector table (LNVT)
- Function:** Contains current information on the physical operation of a line. One CCB is generated for each line specified.

-(m+12)	Buffer*
---------	---------

* Indicates a byte expansion follows.

Set Mode Data for Normal Mode BSC Tributary

-12(C) Disable time-out		-10(A) Line control 1 parameters*	-9(9) Line control 2 parameters*
-8(8) Logical connections device (LCD) and buffer prefix size*	-7(7) Line control 3 parameters*	-6(6) EP buffer size	-5(5) Selection address
-4(4) Group selection address	-3(3) Poll address	-2(2) Reserved	-1(1) Reserved

* Indicates a byte expansion follows.

Set Mode Data for SS Burst Mode

-12(C) Disable time-out		-10(A) Line control 1 parameters*	-9(9) Line control 2 parameters*
-8(8) LCD and buffer prefix size*	-7(7) Line control 3 parameters*	-6(6) EP buffer size	-5(5) NEORCHRS Number of End-of-Reception (EOR) characters
-4(4) EORCHAR1 First EOR character in the EOR list	-3(3) EORCHAR2 Second EOR character in the EOR list	-2(2) EORCHAR3 Third EOR character in the EOR list	-1(1) EORCHAR4 Fourth EOR character in the EOR list

* Indicates a byte expansion follows.

Notes:

1. The fifth through eighth EOR characters (if any) are located in the parameter status area (PSA) in this EP CCB.
2. The parity bit (bit 0) for the EOR characters is always 0.

Set Mode Data for Other Than Normal Mode Tributary or Burst Mode

-12(C) Disable time-out		-10(A) Line control 1 parameters*	-9(9) Line control 2 parameters*
-8(8) LCD and buffer prefix size*	-7(7) Line control 3 parameters*	-6(6) EP buffer size	-5(5) X'00'
-4(4) X'00'	-3(3) X'00'	-2(2) X'00'	-1(1) X'00'

* Indicates a byte expansion follows.

Character Mode (BSC High Priority)

-32(20) - -13(D) Buffer
-12(C) - -1(1) Set mode data (See normal mode for the format)

Character Mode (SS High Priority)

-(n+12)	Buffer*
-12(C) - -1(1)	Set mode data (See normal mode for the format)

* Indicates a byte expansion follows.

Character Mode (Normal)

-12(C) - -1(1)	Set mode data (See normal mode for the format)
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Scanner Interface Trace (SIT)

-1024(400) - -1(1)	Buffer
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Parameter/Status Area

Common Parameter Area

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) PSAOFSET Data area buffer offset	3(3) Reserved
4(4) PSAPBPTR Pointer to the data area			
PSACNT Cycle-steal character count	5(5) PSACHGST Change start	6(6) PSACHG1 Change byte 1	7(7) PSACHG2 Change byte 2
8(8) PSALID Line ID		10(A) PSARLID Receive line ID	
PSACHG3 Change byte 3	9(9) PSACHG4 Change byte 4	PSAVTMR	
12(C) Reserved			

* Indicates a byte expansion follows.

Common Status Area

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) PSASES* Secondary status	19(13) PSALCS* Line communication status
20(14) PSARCNT Residual count	21(15) Reserved	22(16) PSAMDIN* Modem-in	23(17) PSAMDOUT* Modem-out
24(18) Reserved			

* Indicates a byte expansion follows.

V.25 Bis Parameter Area

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) PSAOFSET Data area buffer offset	3(3) Reserved
4(4) PSACNT Cycle-steal character count	5(5) PSAPBPTR Pointer to the data area		
8(8) PSALID Line ID		10(A) PSAVTMR Scanner timeout	
12(C) Reserved			

* Indicates a byte expansion follows.

V.25 Bis Status Area

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) PSASES* Secondary status	19(13) PSALCS* Line communication status
20(14) PSARCNT Residual count	21(15) PSAELCS Extended status byte	22(16) PSAELCS1 Extended status byte 1	23(17) PSAELCS2 Extended status byte 2
24(18) Reserved	25(19) Reserved	26(1A) PSAMDIN* Modem-in	27(1B) PSAMDOT* Modem-out

* Indicates a byte expansion follows.

Character Mode Parameter Area

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) PSAPSCF Secondary control field	3(3) PSAPPDF Parallel data field
4(4) PSAPPCF* Primary control field	5(5) PSAPPDF Serial data field	6(6) PSALQCNT Line quiesce count for Write ICW	7(7) - 15(F)
Reserved			

* Indicates a byte expansion follows.

Character Mode Status Area

16(10) PSASSCF* Secondary control field	17(11) PSAPPDF Parallel data field	18(12) Reserved	19(13) PSALCS* Line communication status
20(14) PSAPPCF** Primary control field	21(15) PSASSDF Serial data field	22(16) PSAMDIN* Modem-in	23(17) PSAMDOUT* Modem-out
24(18) Reserved			

* Indicates a byte expansion follows.

** The high-order 4 bits contain the high-order 4 bits of the CCBLCD field. (See the CCBLCD byte expansion.) The low-order 4 bits contain the low-order 4 bits of the PSAPPCF field. (See the PSAPPCF byte expansion.)

SS Burst Mode Parameter Area

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) PSAPSCF Secondary control field	3(3) PSAPPDF Parallel data field
4(4) PSAPPCF* Primary control field	5(5) PSAPPDF Serial data field	6(6) PSALQCNT Line quiesce count	7(7) PSACCNT* Secondary control field extension and character count
8(8) PSAPPDF1 Parallel data field number 1	9(9) PSAPPDF2 Parallel data field number 2	10(A) PSAPPDF3 Parallel data field number 3	11(B) PSAPPDF4 Parallel data field number 4
12(C) EOREXT5 Fifth EOR character in the EOR list	13(D) EOREXT6 Sixth EOR character in the EOR list	14(E) EOREXT7 Seventh EOR character in the EOR list	15(F) EOREXT8 Eighth EOR character in the EOR list

* Indicates a byte expansion follows.

Note: The first four EOR characters are located in the set mode data area for burst mode in this EP CCB.

SS Burst Mode Status Area

16(10) PSASSCF* Secondary control field	17(11) PSASPDF Parallel data field	18(12) Reserved	19(13) PSALCS* Line communication status
20(14) PSASPCF Primary control field	21(15) PSAPCNT Processed character count	22(16) PSAMDIN* Modem-in	23(17) PSAMDOUT* Modem-out
24(18) PSASPDF1 Parallel data field number 1	25(19) PSASPDF2 Parallel data field number 2	26(1A) PSASPDF3 Parallel data field number 3	27(1B) PSASPDF4 Parallel data field number 4

* Indicates a byte expansion follows.

Trace Parameter Area

0(0) Reserved	1(1) PSAMOD* Command modifier	2(2) PSAOFSET Data area buffer offset	3(3) PSATMR Timer
4(4) PSAPBPTR Pointer to the first buffer in the chain			

PSACNT Cycle-steal character count			
8(8) PSASLID TLNVT slot ID		10(A) PSADCNT* Bytes of data to trace	11(B) PSACSPIA Interface address to trace
12(C) Reserved			

* Indicates a byte expansion follows.

Trace Status Area

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) PSASES* Secondary status	19(13) PSALCS* Line communication status
20(14) PSASBPTR Pointer to the last buffer in the chain			

PSARCNT Residual count			
24(18) Reserved	25(19) PSARTMR Residual timer	26(1A) Reserved	

* Indicates a byte expansion follows.

Wrap Parameter Area (Normal Mode)

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) PSAOFSTT Transmit data area buffer offset	3(3) PSAOFSTR Receive data area buffer offset
4(4) PSAFTBPT First transmit buffer pointer (modem-out)			
PSACNTT Transmit count			
8(8) Reserved		10(A) PSARLID Receive line ID	
12(C) PSAFRBPT First receive buffer pointer (modem-in)			
PSACNTR Receive count			

* Indicates a byte expansion follows.

Wrap Status Area (Normal Mode)

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) Reserved	19(13) PSALCS* Line communication status
20(14) PSALRBPT Last receive buffer used pointer			
PSARCNT Residual count			
24(18) Reserved			

* Indicates a byte expansion follows.

Wrap Parameter Area (Character Mode)

0(0) PSATCC Trace correlation counter	1(1) PSAMOD* Command modifier	2(2) - 9(9)	
Reserved			
		10(A) PSARLID Receive line ID	
12(C) Reserved			

* Indicates a byte expansion follows.

Wrap Status Area (Character Mode)

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) Reserved	19(13) PSALCS* Line communication status
20(14) PSASPCF** Primary control field	21(15) PSASSDF Serial data field	22(16) PSAMDIN* Modem-in	23(17) PSAMDOUT* Modem-out
24(18) Reserved			

* Indicates a byte expansion follows.

** The high-order 4 bits contain the high-order 4 bits of the CCBLCD field. (See the CCBLCD byte expansion.) The low-order 4 bits contain the low-order 4 bits of the PSAPPCF field. (See the PSAPPCF byte expansion.)

Transient Line Error Status Area

16(10) PSASSCF* Secondary control field	17(11) PSACCMD* Current command	18(12) PSASES* Secondary status	19(13) PSALCS* Line communication status
20(14) Reserved	21(15) PSAELCS* Valid when the transient line error bit is on in PSASES	22(16) - 27(1B)	
Reserved			

* Indicates a byte expansion follows.

Common to All Modes

28(1C) CCBSPTR Pointer to the start of a CCB
--

CCB Proper Common Area

32(20) CCBTROPT* Trace option flag	33(21) CCBPEPFL* PEP flags	34(22) Reserved	35(23) CCBOPT3* CCB option byte 3
36(24) CCBL2 Level-2 interrupt address			
40(28) CCBDATA Data buffer 0			
----- CCBL2NCA** Level-2 character address -----			
CCBL2PTR*** SS high-priority data store address -----			
CCBSITB1 SIT buffer 1 address			
CCBSBF1* SIT buffer flag 1			
44(2C) CCBDATA1 Data buffer 1			
----- CCBL3SCA** Level-3 character address -----			
CCBL3PTR*** SS high-priority data service address -----			
CCBTLINK Link register save area		46(2E)	CCBTBADR Current transmit buffer address

- * Indicates a byte expansion follows.
- ** Character mode BSC priority lines only.
- *** Character mode SS priority lines only.

44(2C)			
CCBSITB2 SIT buffer 2 address			
CCBSBF2*** SIT buffer flag 2			
CCBRADR Multi-subchannel line access (MSLA) unassigned CCB1			
48(30)			
CCBSVLNK Data service queue forward chain pointer			
CCBSQC* Sense ID			
52(34)			
CCBSOLNK Status out queue (SOQ) forward chain pointer			
CCBTMFAC Timer repeat count			
56(38)	57(39)	58(3A)	59(3B)
CCBSUBCH Multiplexer subchannel address	CCBCFLG* Configuration flag	CCBSTAT* Final line status	CCBSENSE* Final line sense
60(3C)		62(3E)	
CCBL1STN Level-1 status and sense		CCBL1FLG Level-1 error flags	
CCBL1STA Status byte	61(3D) CCBL1SEN Sense byte	CCBL1CSP* Communication scanner processor (CSP) error flags	63(3F) CCBL1CAF* Channel adapter error flags
64(40)	65(41)	66(42)	67(43)
CCBCMD Current command for the CCB (See Volume 2 Section 7, "EP Information")	CCBLRI* Line request information	CCBCSTAT** Current status	CCBSENS** Current sense
	CCBLECS* Line error check/control byte		

* Indicates a byte expansion follows.

** For the CCBCSTAT byte expansion, see CCBSTAT. For the CCBCSENS byte expansion, see CCBSENSE.

*** For the CCBSBF2 byte expansion, see CCBSBF1.

68(44) CCBCAC* Character address counter	69(45) CCBSVSTC* Service and status flag	70(46) CCBCLOCK Timer control field	71(47) CCBTMADR Time-out routine displacement into a branch table (See Volume 2 Section 7, "EP Information")
CCBNQCNT Data service count	CCBTEST Line active byte for a console test	Reserved	
Reserved			
72(48) Reserved		74(4A) CCBOPT* CCB option byte 1	75(4B) CCBOPT2* CCB option byte 2
76(4C) CCBSTMOD* Mode flag byte	77(4D) CCBLCD* Line control definition	78(4E) CCBLIADR*** Line interface address (low-order 9 bits)	
80(50) CCBTD IOH TD information		82(52) CCBTA IOH TA information	
CCBTDCMD* CSP command	81(51) CCBCSPIA* CSP interface address	CCBSLPAC* Encoded CSPA	83(53) CCBOPIO* Type of input/output instruction
CCBDDFLG* Dynadump flag**	Reserved		
CCBDSCUR** Dump storage current			

- * Indicates a byte expansion follows.
- ** Used only by dynadump.
- *** To compute the relative line number, divide by 2.

84(54) CCBLNVT CCB LNVT address		86(56) CCBTLNVT CCB trace LNVT address	
Reserved		CCBORCGM** Dynadump original command	87(57) CCBCMREM** Dynadump command remember
88(58) CCBDS02 D/S control	89(59) CCBCSPA* CSP address	90(5A) CCBLSTAT* Line initialization state	
CCBSEND** Dump storage end			
92(5C) CCBXPTR Pointer to the CCB general purpose control block extension (CCBX)			
CCBLNTCL* Line test control	93(5D) Reserved		
96(60) CCBCRTRY* Command retry	97(61) CCBCHCB Pointer to the channel control block (CHCB)		
100(64) CCBABRCT Auto-baud detect recognition counter	101(65) CCBABLCT Auto-baud detect loop counter	102(66) CCBABFLG* Auto-baud detect flags	103(67) Reserved

* Indicates a byte expansion follows.

** Used only by dynadump.

SS Extension

104(68) CCBLRC SS longitudinal redundancy check	105(69) CCBSSC* SS control flag	106(6A) CCBSSCX* SS control flag extension	107(6B) CCBHPCNT SS high-priority buffer count
108(6C) Reserved			
112(70) CCBSBUFF Start address of the SS high-priority buffer			
CCBPCNTI* Processed character count image (burst mode)			
116(74) CCBRCVCT* Number of receive characters expected	117(75) CCBEBUFF End address of the SS high-priority buffer		
120(78) CCBLGT Pointer to the line group table			

* Indicates a byte expansion follows.

BSC Extension (Character Mode)

104(68) CCBFLGB1* Flag byte 1 (status)	105(69) CCBFLGB2* Flag byte 2 (terminal type)	106(6A) CCBSYN BSC EBCDIC or ASCII SYN character	107(6B) CCBEOT BSC EBCDIC or ASCII end of transmission character
108(6C) CCBL2A1 CCBL2 save area			
112(70) CCBBCC BSC block check character		114(72) Station select feature (optional)	
CCBBCC1 BSC block check character 1	113(71) CCBBCC2 BSC block check character 2	CCBSADR Poll or select address	115(73) CCBGADR Group selection address
116(74) CCBDLCOM Line address if the dual communications feature is installed (2701 emulation only)		118(76) CCBTMSDR Data Set Ready (DSR) control count	119(77) Reserved
120(78) Reserved			

* Indicates a byte expansion follows.

BSC Extension (Normal Mode)

104(68) CCBFLGB1* Flag byte 1 (status)	105(69) CCBFLGB2* Flag byte 2 (terminal type)	106(6A) CCBCNT Second buffer count	107(6B) CCBTCNT First buffer count
108(6C) CCBTBUF First cycle-steal buffer address or pointer to the auto-call unit (ACU) buffer			
112(70) CCBBBUF Second cycle-steal buffer address			
116(74) CCBDLCOM Dual communications feature		118(76) CCBCAB* Channel adapter flags	119(77) CCBBUFSZ Buffer size or auto-call dial digits
120(78) CCBLGT Pointer to the line group table			

* Indicates a byte expansion follows.

Dynadump Extension 1

104(68)	CCBDYPTR Pointer to the dynamic CDD0
CCBDYTYP* Dynamic pointer type	
108(6C)	CCBDYLN Pointer to the dynamic line trace
112(70)	CCBDYTLN Dynamic TLNVT pointer
	114(72) - 123(7B)
	Reserved

* Indicates a byte expansion follows.

Dynadump Extension 2 (CSP/MOSS Dump)

104(68)	CCBPNTB Pointer to the next byte of the PIU
CCBPCNT PIU residual count	
108(6C)	CCBMPIU1 Pointer 1 to the MOSS PIU buffer
112(70)	CCBMPIU2 Pointer 2 to the MOSS PIU buffer
116(74)	CCBHPIU Pointer to the host PIU buffer
CCBDSICT DSI request count	
120(78)	Reserved

SIT Extension

104(68)	CCBSCNT1 SIT count 1	106(6A)	CCBSCNT2 SIT count 2
108(6C)	CCBPTCCB Pointer to a real CCB		
112(70)	CCBDDCCB DYNADUMP CCB address		
	CCBSITFL* SIT flag		
116(74)	CCBTRCST SIT trace count	118(76)	CCBTRCLN Line trace count
120(78)	Reserved		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents	BSC	SS
-(m+12)		The length of the buffer is determined at EP generation with the BUFSIZE keyword of the GROUP or LINE definition statement. The <i>m</i> specifies the number of bytes to be defined for each of two buffers. The 8 bytes added to the offset are for set mode data. Valid values for <i>m</i> are 4 to 255. Length is $-(2m + 8)$		
-10(A)	0...	Line control 1 parameters Always 0 for EP/PEP	X	X
	..1.	Line is in 270X emulation mode	X	X
	...1	Auto-answer on a switched line	X	
	.... xx..	Intermediate Text Block (ITB) mode set bits	X	
		Receive operation: 00 = Check Block Check Character (BCC); do not generate End of Intermediate Block (EIB) 01 = Treat ITB as data 1x = Check BCC; generate EIB after ITB, End of Text Block (ETB), and End of Text (ETX)		
		Transmit operation: 00 = Compute BCC and send after ITB, ETB, and ETX 01 = Treat ITB as data 1x = Compute BCC and send after ITB, ETB, and ETX Do not skip character after ITB		
	.... ..1.	DSR is permanently active	X	X
	.... ...1	2703 emulation	X	X
-9(9)	1...	Line control 2 parameters Generate answer tone/TWX	X	X
	.1..	Switched line	X	X
	..1.	Ring indicator mode	X	X
	...1	Secures line		X
	.... 1...	Turnaround with request to send (RTS) on (duplex line)	X	X
	.... .1..	Transmit with new sync	X	
	.... ..1.	Ignore bad pad	X	
	.... ...1	Swift support	X	
-8(8)	xxxx	LCD and buffer prefix size Line control definer field. (See CCBLCD bits 0–3 for expansion)	X	X
	.... xxxx	Buffer prefix size (X'0'–X'F', normally X'8')	X	X

Offset/Field Name	Bit Pattern/ Hex Value	Contents	BSC INT	BSC DIR	SS INT	SS DIR
-7(7) SMDBYTE5		Line control 3 parameters				
	xxxx x...	Line speed:				
		00000 = 50 bps	X	X	X	X
		00001 = 75		X	X	X
		00010 = 100		X	X	X
		00011 = 110	X	X	X	X
		00100 = 134.5	X	X	X	X
		00101 = 200	X	X	X	X
		00110 = 300	X	X	X	X
		00111 = 600	X	X	X	X
		01000 = 1200	X	X	X	X
		01001 = 2400	X	X	X	X
		01010 = 4800	X	X	X	X
		01011 = 9600		X	X	X
		01100 = 19200		X	X	X
		01101 = 38400		X		
		01110 = 55855		X		
		01111 = 245760		X		
		11111 = Special	X	X	X	X
	.... .x..	Clocking:	X	X	X	X
		1 = Direct				
		0 = Internal				
	.... ..x.	Modem data rate:	X	X	X	X
		1 = High				
		0 = Low				
	.... ...1	Medium speed local attach	X	X	X	X

Offset/Field Name	Bit Pattern/ Hex Value	Contents
-(n+12)		The length of the buffer is determined at EP generation with the BUFETTE keyword of the GROUP or LINE definition statement. The <i>n</i> specifies the number of 4-byte buffers to be generated. The 8 bytes added to the offset are for set mode data. Length is $-(4n + 8)$
1(1) PSAMOD		Command modifier
		Normal mode
	..1.	Second transparent write
	.... .1..	Data chain
	.... ...1	Line Dump (X'F5') command bit
		Character mode
	1...	Set secondary control field (SCF) and parallel data field (PDF)
	.1..	Set serial data field (SDF)
	..1.	Set primary control field (PCF)
	.... .1..	Character delay
	.... ...1.	Set SCF
	.... ...1	CCU L2 interrupt is required
		Wrap
	.... x...	Wrap type: 1 = Control leads wrap 0 = Data wrap
	.... .x..	Wrap level: 1 = External 0 = Line interface coupler (LIC) (internal)
	.... ...x.	External level type: 1 = Modem 0 = Cable
		Trace
	1...	Not NCP buffer
	.x..	SIT mode—start trace on: 1 = Duplex line 0 = Half-duplex line
		V.25 bis call request
	.... x...	0 = Call request mode is SS 1 = Call request mode is SDLC
	.... ...x.	0 = Phone number supplied 1 = Direct call mode

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) PSAPPCF		Primary control field
		BSC
	X'00'	No-op
	X'04'	Monitor phase DSR check off
	X'05'	Monitor phase DSR check on
	X'07'	Receive in phase
	X'08'	Transmit initial
	X'09'	Transmit normal
	X'0A'	Transmit normal with new sync
	X'0C'	Transmit turn—RTS off
	X'0D'	Transmit turn—RTS on
	X'0E'	Transmit initial and turn (not used)
	X'0E'	Transmit initial and turn—RTS on (not used)
		SS
	X'00'	No-op
	X'07'	Receive
	X'08'	Transmit initial
	X'09'	Transmit normal
	X'0A'	Transmit break
	X'0B'	Transmit turn—RTS off
	X'0D'	Transmit turn—RTS on
	X'0E'	Transmit initial and turn (not used)
	X'0F'	Transmit initial and turn—RTS on (not used)
7(7) PSACCNT		Secondary control field extension and character count
	1... ..	Perform EOR checking.
	.1.. ..	Multiple pad flag
	..1.	Perform receive break detection
	...x	Reserved
	.... xxxx	Character count field
10(A) PSADCNT		Bytes of data to trace
	X'00'	No data to be traced
	X'FF'	All data to be traced
	X'nn'	nn bytes of data to be traced

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) PSASSCF		Secondary control field
		Normal mode
	1...	Halt/abort
	.1..	Service request
	..1.	CSP overrun or underrun
	...1	Modem check
	.... 1...	Data stored
	.... .1..	End of message (EOM)
	.... ...1	Receive (RCV) sequence
		Character and burst mode
	1...	Stop bit check
	.1..	Service request
	..1.	Character overrun or underrun
	...1	Modem check
	.... 1...	Receive line signal detect
	.... .1..	Start bit detected
	.... ..1.	Program flag
	.... ...1	Pad flag
17(11) PSACCMD		Current command
		Normal Mode Commands
	X'20'	EP BSC Transmit Initial
	X'21'	EP BSC Transmit SYN
	X'22'	EP BSC Transmit Data
	X'23'	EP BSC Poll
	X'24'	EP BSC Receive
	X'25'	EP BSC Receive Continue
	X'26'	EP BSC Prepare
	X'27'	EP BSC Monitor for Phase
	X'28'	EP BSC Adprep
	X'29'	EP BSC Search
		Common Commands
	X'01'	Set Mode
	X'02'	Enable
	X'03'	Disable
	X'04'	Monitor Incoming Call
	X'05'	Dial
	X'06'	Change
	X'08'	Raise Data Terminal Ready (DTR)
	X'09'	Flush Data
	X'0B'	Reset—D
	X'0C'	Reset—N
	X'2C'	Start Trace
	X'2D'	Stop Trace
	X'2E'	Wrap
	X'F0'	Halt
	X'F5'	Line Dump

Offset/Field Name	Bit Pattern/ Hex Value	Contents
18(12) PSASES		Secondary status
	.1..	Format exception
	..1.	Transient line error check
	...1	Data check
	.... .1..	In phase
	x... x.xx	Not used

Offset/Field Name	Bit Pattern/ Hex Value	Contents
19(13) PSALCS		Line communications status
		Initial Status
	X'80'	Special status
	X'C0'	Internal box error
	X'E0'	Hardware error
		Special Status (Initial status=100)
	X'80'	Time-out (nothing received)
	X'82'	EOR received (SS only)
	X'86'	Link problem determination aid (LPDA) test control active
	X'88'	Data link escape (DLE) end of transmission (EOT) disconnect sequence
	X'8A'	Lost data
	X'8C'	Poll entry too large
	X'98'	EOT transmitted
	X'9A'	X.21 connection not ready
	X'9C'	Disconnected
	X'9E'	Connected
		Internal box error (Initial status=110)
	X'C0'	Adapter input/output (AIO) error
	X'C2'	Adapter interface error
	X'C4'	CSP interface error
	X'C6'	Front-end scanner (FES) failing to answer
	X'C8'	FES internal error
	X'CA'	LIC driver check/ICC interface error
	X'CC'	LIC interface error
	X'CE'	LIC/ICC interface error
	X'D0'	No interrupt from FES
	X'D2'	Command rejected
	X'D4'	Trace already active
	X'D6'	Scanner error reporting path
	X'D8'	Invalid level-2 interrupt check
		Hardware error status (Initial status=111)
	X'E2'	Clear to send (CTS) dropped during a command
	X'E6'	Receive line signal detector (RLSD) failed to drop on a disable command
	X'EA'	Delayed call
	X'EC'	Incoming call during call-out process
	X'EE'	DSR dropped during a command
	X'F2'	CTS failed to come up
	X'F4'	DSR failed to come up
	X'F5'	Line Dump (X'F5') status
	X'F6'	No cable is installed (on a set mode command)
	X'F8'	DSR/CTS failed to drop (on a disable command)
	X'FA'	Dial
	X'FC'	Auto call check
	X'FC'	Call failure indication (for V.25 bis line)

Offset/Field Name	Bit Pattern/Hex Value	Contents
21(15) PSAELCS		Valid only when the transient line error bit is on in PSASES
	.... ...0	MUX/LIC error
	.... ...1	FESA error
	.... ..0.	Error in the receive path
	.... ..1.	Error in the transmit path
		MUX/LIC Error (Bit 7=0)
	1... ...0	Reserved
	.1... ..0	LIC driver check
	..1. ...0	LIC transmit data check
	...1 ...0	CTS drop time-out
	.... .1.0	FESA transmit data check
		FESA Error (Bit 7=1)
	1... ...1	Reserved
	.1... ...1	Line interrupt register errors
	..1. ...1	LIC receive data check
	...1 ...1	MUX error register
	.... 1..1	FESA error register
	.... .1.1	FESA data check
		V.25 bis extended status
	X'01'	Engaged tone (ET)
	X'02'	Number not stored (NS)
	X'03'	Local DCE busy (CB)
	X'04'	Ring tone (RT)
	X'05'	Abort call (AB)
	X'06'	Answer tone not detected (NT)
	X'07'	Forbidden call (FC)
22(16) PSAMDIN		Modem-in
	1...	DSR
	.1...	CTS
	..1.	Ring indicator
	...1	RLSD
	.... 1...	Test indicator (TI)
	.... .1..	Receive data (RVDT)
23(17) PSAMDOUT		Modem-out
	1...	DTR
	.1...	RTS
	..1.	New Sync
	...1	High data rate for modem
	.... 1...	Modem test

Offset/Field Name	Bit Pattern/ Hex Value	Contents
32(20) CCBTROPT		Trace option flag
	1...	SIT active even interface
	.1..	SIT active odd interface
	..1.	Trace active for level 2
	...1	Trace active for level 2 odd
	.... 1..	Trace active for level 3
	.... .x..	SIT remember—started on: 1 = Duplex line 0 = Half-duplex line
	.... ..1.	Trace data option flag
	.... ...x	Trace data option flag for odd: 1 = Data on line trace 0 = No data on line trace
33(21) CCBPEPFL	x...	PEP flags 1 = EP CCB 0 = NCP adapter control block (ACB)
35(23) CCBOPT3		CCB option byte 3
	1...	Integrated modems are supported
	.1..	Level 3 indicator
	..1.	Break received on a write command
	...1	V.25 bis line
	.... 1..	Incoming call remember
	.... .1..	V.25 bis call request issued
	.... ...1	Intervention required response supported
40(28) CCBSBF1		SIT buffer flag 1
	1...	Buffer is ready to be enqueued
	.1..	Buffer is enqueued
	..1.	CSP is waiting on the buffer
48(30) CCBSQC		Sense ID
	X'00'	Data count for sense data
	X'03'	Data count for sense ID data
57(39) CCBCFLG		Configuration flag
	1...	Stacked status operation is being timed
	.1..	Input/output error alert was sent on this emulator subchannel (ESC).
	..1.	SS high priority
	...x x..	Reserved
	.... .1..	Unhang is active
	.... ..1.	Normal mode (hi-level)
	.... ...1	MSLA USCCB

Offset/Field Name	Bit Pattern/ Hex Value	Contents
58(3A) CCBSTAT		Final line status
	X'00'	Reset status byte
	X'01'	Set UE
	X'02'	Set UC
	X'04'	Set DE
	X'08'	Set CE
	X'0C'	Set CE, DE
	X'0D'	Set CE, DE, UE
	X'0E'	Set CE, DE, UC
	X'10'	Set control unit busy
	X'20'	Set control unit end
	X'40'	Set SM
	X'4C'	Set CE, DE, SM
	X'80'	Set attention
59(3B) CCBSENSE		Final line sense
	X'00'	Reset sense byte
	X'01'	Time-out
	X'02'	Set lost data
	X'04'	Set overrun
	X'08'	Set data check
	X'10'	Set equipment check
	X'20'	Set bus out parity check
	X'40'	Set intervention required
	X'80'	Set command reject
	X'FF'	Unhang is in progress
62(3E) CCBL1CSP		Level 1 EP scanner error flags
	1... ..	EP L1 CSP error on data interface
	.1.. ..	EP L1 CSP error on ACU interface
	..xx xxxx	Reserved
63(3F) CCBL1CAF		Level-1 EP channel adapter error flags
	1... ..	EP L1 adapter input/output (AIO) error
	..1.	EP L1 initial selection error
	...1	EP L1 data/status error
	.... xxxx	Reserved
65(41) CCBLRI		Line request information
	1... ..	Set interface disconnect flag
	.... 1...	Set data end flag
	.... .yxx	y = Buffer (0 or 1) xx = Number of bytes requested from or presented to the channel

Offset/Field Name	Bit Pattern/ Hex Value	Contents
65(41) CCBLECS		Line error check/control byte (defined in CYKTST module)
	1...	Interface disconnect flag
	.1..	Data check indicator
	..1.	Line is in transmit mode
	...1	Line is in receive mode
	.... 1...	Prepare to transmit specified buffer
	.... .1..	Prepare to transmit buffer 3
	.... ..1.	Prepare to transmit buffer 2
	.... ...1	Prepare to transmit buffer 1
68(44) CCBCAC		Character address counter (CAC)
	X'07'	Reset CAC
	.... 1...	Set BSC inhibit store flag
69(45) CCBSVSTC		Service and status flag
	1...	Set data service (buffer 0)
	.1..	Set data service (buffer 1)
	.... 1...	Set data end
74(4A) CCBOPT		CCB option byte 1
	1...	Auto call option is installed
	.1..	Long disable time-out
	..x.	Dualcom interface (BSC): 1 = B 0 = A
	...1	Ring option is installed
	.... 1...	Switched line is installed
	.... .x..	Duplex line is installed: 1 = Duplex 0 = Half-duplex
	.... ..1.	Not unit exception on EOT (IBM SS)
	.... ...1	ACU CCB
75(4B) CCBOPT2		CCB option byte 2
	1...	Channel decode IBM type 1 and type 2 EOB
	.1..	Swift support (FEATURE=STXBSC)
	..1.	Channel decode IBM type 3 ETX
	...1	2702 or 2703
	.... 1...	SS no DCD security monitor
	.... .1..	World trade telegraph
	.... ..1.	Not long line quiet time-out
	.... ...1	Option 1 modem

Offset/Field Name	Bit Pattern/ Hex Value	Contents
76(4C) CCBSTMOD		Mode flag byte (previously set mode byte)
	1...	Disable occurs in CCBCMD when a sense ID is received
	.1..	Reset is issued
	..1.	DTR
	...1	Binary sync clock
	.... 1...	Modem clocking (external)
	.... .x..	Data rate select: 1 = High rate 0 = Low rate
	.... ..1.	Inhibit reset of DTR
	.... ...1	Poll entry is too long
77(4D) CCBLCD		Line control definition
	X'00'	SS 9/6
	X'20'	SS 8/5
	X'30'	Auto call
	X'40'	SS 9/7
	X'50'	SS 10/7
	X'60'	SS 10/8
	X'70'	SS 11/8
	X'C0'	BSC EBCDIC
	X'D0'	BSC ASCII
	X'E0'	BSC ASCII transparent
80(50) CCBTDCMD		CSP command
	X'25'	Normal mode BSC receive continue
	X'40'	BSC character mode Write ICW
	X'41'	SS transfer
80(50) CCBDDFLG		Dynadump flag
	.1..	Dynadump channel stop bit
	.... 1...	CSP/MOSS dump is in progress
	.... .1..	Host PIU Read command is pending
	.... ...1	Level-1 error recovery procedure (ERP)
81(51) CCBCSPIA		CSP interface address
	X'(RLN x2)'	RLN = Relative line number

Offset/Field Name	Bit Pattern/ Hex Value	Contents
82(52) CCBSLPAC		Encoded CSPA
	x...	Bus bit: 1 = Bus 2 0 = Bus 1
	..xx	Slot bits: 01 = Slot 1 10 = Slot 2
	.... .xxx	Group bits: 000 = Group 0 001 = Group 1 010 = Group 2 011 = Group 3 100 = Group 4 101 = Group 5 110 = Group 6 111 = Group 7
		0
83(53) CCBOPIO		Type of input/output instruction
	X'00'	Normal mode Start line
	X'02'	Character mode Start line
89(59) CCBCSPA		CSP address
	X'00'–X'1F'	Line adapter address
90(5A) CCBLSTAT		Line initialization state
	Byte 0	
	1...	Set Mode is in progress
	.1..	Reset command is in progress
	..1.	Set Mode is required
	...1	Reset command is required
	.... 1..	Line Dump (X'F5') command processing is in progress
	.... .1..	Postponed processing
	.... ..1.	Bypass level-2 error handling
	.... ...1	System reset processing is deferred
	Byte 1	
	1...	Line adapter is not installed
	.1..	Scanner is disconnected or not operative
	..1.	Line adapter is not attached
92(5C) CCBLNTCL		Line test control
	1...	Receive initiated by GROUP2
	.1..	Transparent mode
	..1.	Multiple buffer mode
	...x xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
96(60) CCBCRTRY		Command retry
	1... ..	Command retry in progress
	.xxx ..	Reserved
	... 1..	Retry counter active
	... .xxx	Command retry count
102(66) CCBABFLG		Auto-baud detect flag byte
	1... ..	Auto-baud detect line
	.x... ..	1 = ICC1 card installed 0 = ICC2 card installed or ICC2 speed used
	... 1..	Speed found
	... .1..	Data valid
	... ..1.	Stop bit error detected
104(68) CCBFLGB1		BSC flag byte 1 (status)
	1... ..	Channel priority
	.1... ..	EIB mode
	..1.	Not new sync
	...1	Interrupt mode
	... 1..	EIB data check
	... .1..	EIB overrun
	... ..1.	Code B selected
	... ...1	ITB mode
104(68) CCBDYTYP		Dynadump dynamic pointer type
	X'00'	SIT
	X'01'	Line trace
105(69) CCBSSC		SS control flag
	000.	TTY2 type line
	001.	2848 line
	010.	TTY1 type line
	100.	IBM type 1 line
	110.	IBM type 2 line
	...1	Bypass LRC (IBM types 1 or 2) or not upshift (TTY1 or TTY2)
	... 1..	Not immediate end (no line quiet pad check)
	... .1..	Lowercase remember
	... ..1.	Not text in (IBM types 1 or 2) or not figs H (TTY Type 2)
	... ...1	Not text out (IBM types 1 or 2) or not first character (2848 or TTY)
105(69) CCBFLGB2		BSC flag byte 2 (terminal type)
	1... ..	Dualcom is installed
	.1... ..	Station select is installed
	..xx	Dual code mask
	... 1..	Transparent mode (wait for second write)
	... .1..	Second write is accepted
	... ..1.	Multipoint address remember flag
	... ...1	No trailing pad check

Character Control Block General Purpose Extension

Program: EP
Size in bytes: 60(3C)
Created by: PEP generation
Pointed to by: The CCBXPTR field in the character control block (CCB)
Function: Contains current information on the physical operation of a line

0(0)			
CCBADDR Pointer to the beginning of the CCB			
4(4)	5(5)	6(6)	
CCBXUTIL* Utility byte	CCBXSQC* Sense count	CCBXTLNO CCB odd trace line vector table (LNVT) address	
8(8)			
CCBXRSM Resume routine address			
12(C)		14(E)	
CCBXSVM0 Save area		CCBXSVM1 Save area	
CCBXSVM0		13(D)	15(F)
		CCBXSVM1	CCBXSVM2
CCBXSVM3			
16(10)			
CCBLINK1 Panel line test save area			
20(14)			
CCBLINK2 Panel line test save area			
24(18)			
CCBF5RSM F5 level-2 resume routine pointer			
28(1C)			
CCBLCBPT Line control block (LCB) pointer			
32(20)			
CCBXACAD Auto-call address			
36(24)	37(25)	38(26)	39(27)
CCBXVST0 Extended status byte 0	CCBXVST1 Extended status byte 1	CCBXVST2 Extended status byte 2	CCBXTRCT Internal trace entry counter
40(28)			
CCBXHRSM Halt I/O resume address			

44(2C)	CCBXTRW1** Internal trace word 1
48(30)	CCBXTRW2** Internal trace word 2
52(34)	CCBXTRW3** Internal trace word 3
56(38)	CCBXTRW4** Internal trace word 4

- * Indicates a byte expansion follows.
- ** Indicates a fullword expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) CCBXUTIL		Utility byte
	.1..	Wrap is in progress.
	..1.	Console test is in progress.
	.... ...1	Communication scanner processor (CSP) is in wrap mode.
5(5) CCBXSQC		Sense count
	X'00'	Enqueued for sense data
	X'03'	Enqueued for sense ID data
44(2C) 48(30) 52(34) 56(38)		Trace word byte 1
	X'yy'	Channel command (See Volume 2 Section 4, "NCP Channel Commands.")
45(2D) 49(31) 53(35) 57(39)		Trace word byte 2
	X'yy'	I/S control information from IN X'00'
46(2E) 50(32) 54(36) 58(40)		Trace word byte 3
	X'00'	Before command completes
	xxxx	High nibble of low byte of IN X'02' after command completes
	.... xxxx	Low nibble of CCBSTAT after command completes
47(2F) 51(33) 55(37) 59(41)		Trace word byte 4
	X'00'	Before command completes
	X'yy'	CCBSENSE after command completes (see 1-211)

Character Control Block (NCP)

Program: NCP
Size in bytes: 92(5C)
Located in: Adapter control block (ACB)
Created by: NCP generation
Function: Contains line control information

Name	Offset	Name	Offset	Name	Offset
CCBAFLD	88 (58)	CCBLCNT	89 (59)	CCBTIME	46 (2E)
CCBASCNT	102 (66)	CCBLGTP	52 (34)	CCBTOCMD	46 (2E)
CCBAXBP	108 (6C)	CCBLINK	104 (68)	CCBTOREM	47 (2F)
CCBBAR	48 (30)	CCBLKCTR	63 (3F)	CCBTRADR	98 (62)
CCBBCC	50 (32)	CCBLKRFR	62 (3E)	CCBTWORK	44 (2C)
CCBBCC1	50 (32)	CCBLMACB	44 (2C)	CCBTWXFL	101 (65)
CCBBCC2	51 (33)	CCBLMCTR	67 (43)	CCBTXLAT	70 (46)
CCBBSCFL	89 (59)	CCBLMRFR	66 (42)	CCBTYPE	83 (53)
CCBBUFCT	72 (48)	CCBLPND1	86 (56)	CCBTYPEPEC	104 (68)
CCBCASE	51 (33)	CCBLQTC	93 (5D)	CCBUACBP	124 (7C)
CCBCBBP	120 (78)	CCBLQTOC	92 (5C)	CCBVTABD	87 (57)
CCBCCNT	40 (28)	CCBLRC	50 (32)	CCBXACBP	100 (64)
CCBCFLD	90 (5A)	CCBLTCRP	90 (5A)	CCBXTICH	88 (58)
CCBCHAR	80 (50)	CCBL2	36 (24)	CCBXTPCF	52 (34)
CCBCHNP	112 (70)	CCBL2REM	86 (56)	FLUID	90 (5A)
CCBCMFL	112 (70)	CCBL3	76 (4C)		
CCBCMPCD	57 (39)	CCBMTASA	97 (61)		
CCBCNTS	80 (50)	CCBNACBP	72 (48)		
CCBCOMC	118 (76)	CCBNCFL	94 (5E)		
CCBCPCMD	96 (60)	CCBNEGPD	87 (57)		
CCBCPCNT	68 (44)	CCBNEXT	71 (47)		
CCBCPOLL	100 (64)	CCBNTCRP	91 (5B)		
CCBCPRAT	69 (45)	CCBOFSET	95 (5F)		
CCBCRTN	88 (58)	CCBPASCT	79 (4F)		
CCBCRTNP	100 (64)	CCBPOLL	96 (60)		
CCBCTL	82 (52)	CCBPOLLI	120 (78)		
CCBCUT	81 (51)	CCBPOLL2	124 (7C)		
CCBDATA	60 (3C)	CCBPREC	116 (74)		
CCBEND1	58 (3A)	CCBQCBP	124 (7C)		
CCBEND1C	59 (3B)	CCBRACBP	96 (60)		
CCBEND2	60 (3C)	CCBRBLUC	70 (46)		
CCBERCNT	79 (4F)	CCBRSPON	82 (52)		
CCBERTRY	78 (4E)	CCBRXLAT	68 (44)		
CCBESTAT	84 (54)	CCBSEL	100 (64)		
CCBETBCT	92 (5C)	CCBSETYP	108 (6C)		
CCBETBLT	90 (5A)	CCBSSCB	96 (60)		
CCBETBP	112 (70)	CCBSSF	120 (78)		
CCBFLAGS	64 (40)	CCBSSF2	124 (7C)		
CCBFLAG1	94 (5E)	CCBSTART	64 (40)		
CCBFLAG2	89 (59)	CCBSTATE	38 (26)		
CCBFLAG3	65 (41)	CCBSTAT1	56 (38)		
CCBHDBUF	72 (48)	CCBSTAT2	71 (47)		
CCBICCT	86 (56)	CCBTACB	40 (28)		
CCBLACBP	72 (48)	CCBTASPD	103 (67)		
CCBLATO	92 (5C)	CCBTFLAG	61 (3D)		

36(24) CCBL2* Address of the current level-2 character service routine	38(26) CCBSTATE* Pointer to the character service state address table (See note)		
40(28) CCBTACB (CTBACB) Pointer to the next transmit ACB in the timer chain (Transmit leg only)			
CCBCCNT* SS burst mode flags and character count			
44(2C) CCBLMACB Pointer to next processor ACB in ODLC Timer Chain (processor/CBC ACBs) Pointer to parent processor ACB in ODLC Timer Chain (Link ACBs) (ODLC transmit leg only)			
CCBTWORK (CTBWORK) Timer work entry for this ACB	46(2E) CCBTIME* Time-out interface		
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px dashed black;"> CCBTOCMD Time-out command </td> <td style="width: 50%;"> 47(2F) CCBTOREM Time-out remembrance </td> </tr> </table>	CCBTOCMD Time-out command	47(2F) CCBTOREM Time-out remembrance
CCBTOCMD Time-out command	47(2F) CCBTOREM Time-out remembrance		
48(30) CCBBAR* Pointer to the line vector table (LNVT) entry (non-ODLC only) Offset into ODLC LNVT (ODLC only)	50(32) CCBBCB Cyclic redundancy check character (BSC) or frame check sequence (SDLC)		
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px dashed black;"> CCBBC1 First BCC/CRC character </td> <td style="width: 50%;"> 51(33) CCBBC2 CCBBC1 Second BCC/CRC character </td> </tr> </table>	CCBBC1 First BCC/CRC character	51(33) CCBBC2 CCBBC1 Second BCC/CRC character
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	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px dashed black;"> CCBLRC Link resource control (LRC) character (SS) </td> <td style="width: 50%;"> CCBCASE* Shift-case history (SS) </td> </tr> </table>	CCBLRC Link resource control (LRC) character (SS)	CCBCASE* Shift-case history (SS)
CCBLRC Link resource control (LRC) character (SS)	CCBCASE* Shift-case history (SS)		

* Indicates a byte expansion follows.

Note: Initially, CCBSTATE contains the address of the beginning of the state address table. The masks shown in the byte expansion are used to set the low-order byte of CCBSTATE by the character service routines. They change the value of CCBSTATE so that it points to the entry in the state address of the routine to handle the line state indicated.

52(34) CCBLGTP Pointer to the line group table (LGT) for the group			
CCBXTPCF Transmit turn around primary control field (PCF)			
56(38) CCBSTAT1* Current operational status of the line		58(3A) CCBEND1*** Line status at completion of a level-2 operation (The level-2 routine moves the status from CCBSTAT1 to CCBEND1 at the end of an operation)	
57(39) CCBCMPCD Completion codes (first, final)		59(3B) CCBEND1C Completion codes (first, final)	
60(3C) CCBDATA** Address of the data byte being sent or received (character mode)			
CCBEND2 Record descriptor flags moved from CCBSTAT2 at the end of a level-2 operation	61(3D) CCBTFLAG* Timer flags (ODLC transmit leg only)	62(3E) CCBLKRFR Link timer refresh value (ODLC transmit leg only)	63(3F) CCBLKCTR Link timer counter (ODLC transmit leg only)
64(40) CCBSTART Current buffer address			
CCBFLAGS* General flags	65(41) CCBFLAG3* General flags 3 (ODLC only)	66(42) CCBLMRFR Processor Timer Refresh Value (ODLC processor/CBC transmit leg only)	67(43) CCBLMCTR Processor Timer Counter (ODLC processor/CBC transmit leg only)

* Indicates a byte expansion follows.

** Normal mode receive: address of one character beyond the last character received.
 Normal mode transmit: address of the next buffer in the write chain (zero if none).

*** Level 3 translates the status to the ending format of LXBEXTST, LXBSTAT, and LXBSTATC of the link XIO control block (LXB).

<p>68(44) CCBRXLAT Address of the receive translate decode table</p>	<p>70(46) CCBTXLAT High-order byte of the transmit translate-decode table address (the low-order byte of the address if the character is to be translated)</p>	<p>71(47) CCBSTAT2 Record descriptor flags (If any bit in this field is on, it indicates that the corresponding character was scanned)</p>
<p>CCBCPCNT Contact poll cycle count (SDLC)</p>	<p>69(45) CCBCPRAT Contact poll rate (SDLC)</p>	<p>CCBRBLUC* Received SDLC basic link unit (BLU) command field (level 3)</p> <p>CCBNEXT Buffer for the next character to be transmitted</p>
<p>72(48) CCBHDBUF Address of the first buffer in a block</p> <p>CCBBUFCT Buffer maximum for a receive operation</p> <p>CCBNACBP Pointer to NCP-processor ACB (NACB) (ODLC transmit leg or ODLC logical only)</p> <p>CCBLACBP Pointer to processor-NCP ACB (LACB) (ODLC receive leg only)</p>		
<p>76(4C) CCBL3 Address of the next level-3 routine to be executed</p>	<p>78(4E) CCBERTRY Error retry limit (set by RETRIES=m)</p>	<p>79(4F) CCBERCNT Retry counter (BSC/SS)</p> <p>CCBPASCT Pass counter (number of BLUs sent) (SDLC)</p>

* Indicates a byte expansion follows.

80(50) CCBCNTS Character count and buffer count field		82(52) CCBCTL* Control flags and line type	
CCBCHAR Buffer character count	81(51) CCBCUT Buffer maximum for a receive operation	CCBRSPON* Control flags	83(53) CCBTYPE* Line type
84(54) CCBESTAT* Expected ending status of the level-2 operation		86(56) CCBL2REM Save area for CCBL2 (SDLC)	
		CCBLPND1 Save area for CCBEND1 during a link problem determination aid (LPDA) test (SDLC)	
		CCBICCT Initial control character count	87(57) CCBNEGPD BSC negative poll wait time-out
		CCBVTABD Vertical tab delay (number of idles sent after a verticle tab--SS only)	

* Indicates a byte expansion follows.

<p>88(58) CCBCRTN Number of print positions the carriage will return in the time it takes to send one idle character (SS only)</p>	<p>89(59) CCBLCNT Length of print line (SS only)</p>	<p>90(5A) CCBLTCRP Number of data positions since the last carriage return</p>	<p>91(5B) CCBNTCRP Net carriage return value</p>	
<p>CCBAFLD Secondary station address (received)</p>	<p>CCBFLAG2* Mode control flags</p>	<p>CCBETBLT Consecutive end of text block (ETB) limit (BSC 3270 only)</p>		
<p>CCBXTICH Character position of intermediate text block (ITB) mode transparent text (BSC only)</p>	<p>CCBBSCFL* Special flags (BSC only)</p>	<p>CCBCFLD Command field (transmit and receive) (SDLC)</p>		
<p>92(5C) CCBLQTC Line quiet test character count (SS)</p>		<p>93(5D) CCBLQTC Line quiet test interrupt counter (SS)</p>	<p>94(5E) CCBNCFL* Flags to control operations between input/output commands</p>	<p>95(5F) CCBOFSET At the start of a receive operation, set to the offset into the buffer of the first data character (BSC/SS); after the first character, if received, set to 0, indicating that data was stored</p>
<p>CCBLATO Link activity time-out (SDLC secondary)</p>		<p>CCBFLAG1* Flags for control of an SDLC link with an active LXB command</p>		
<p>CCBETBCT Valid ETB counter (BSC 3270 only)</p>				

* Indicates a byte expansion follows.

96(60) CCBPOLL Address of the entry in the service order table for the next station to be polled minus 2 (used when the communication controller is the master station) CCBPOLL is equated to IOBPOLL Pointer to the current service order table (SOT) entry being polled (half-duplex and duplex receive leg, primary stations only) CCBPOLL is equated to LXPOLL			
CCBRACBP Pointer to the receive leg of a duplex link (transmit leg only)			
CCBSSCB Service-seeking control byte	97(61) CCBMTASA Multiple terminal access (MTA) 1050 station address byte	98(62) CCBTRADR Station select address for the communication controller when it is a tributary station	
CCBPCMD Contact poll command executed			
100(64) CCBSEL Address of the station to be selected by the communication controller CCBSEL is equated to IOBSEL Output SOT pointer: pointer to the current station to which I-format data was sent (primary stations only) CCBSEL is equated to LXBSEL			
CCBXACBP Pointer to the transmit leg of a duplex link (receive leg only)			
CCBRTNP Carriage position	101(65) CCBTWXFL* TWX special flags	102(66) CCBASCNT Auto-speed detect recognition count (TWX only)	103(67) CCBTASPD Auto-speed detect line speed (TWX only)
CCBPOLL Value multiplied by four is the contact poll offset into the SOT			
104(68) CCBLINK Next ACB in the level-2 and level-3 chains			
CCBTYPEC* Dial control flags			

* Indicates a byte expansion follows.

108(6C)		CCBAXBP Pointer to the ACB extension (AXB)	
CCBSETYP* Extended type			
112(70)		CCBETBP Pointer to the ethernet adapter control block	
		CCBCHNP Pointer to the next commit request (when in the commit request block)	
CCBCMFL* COMMIT flags			
116(74)	CCBPREC Precommit request count	118(76)	CCBCOMC Committed buffers count
120(78)		CCBCBBP Pointer to the associated CBB	
CCBSSF* SS special flags			
CCBPOLLI* Minimum poll cycle time interval (modulo 8)			
124(7C)		CCBQCBP Pre-SNA QCB pointer	
		CCBUACBP Frame relay UACB pointer	
CCBSSF2* SS dynamic bit			
CCBPOLL2 Minimum poll cycle time interval (modulo 128)			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
36(24) CCBL2	.... ..x	Level-2 routine address Check receive break: 1 = Break signal is valid if detected 0 = Ignore break signal if detected
38(26) CCBSTATE		Pointer to the character service state address table State masks used by BSC character service
	X'00'	Receive not text
	X'02'	Receive phase
	X'04'	Receive BCC
	X'06'	Receive first not text
	X'08'	Receive end pad
	X'0A'	Queue received sub-block
	X'0C'	Receive text
	X'0E'	Receive intermediate BCC
	X'10'	Transmit not text
	X'14'	Transmit BCC
	X'16'	Transmit syn insertion
	X'18'	Transmit end pad
	X'1A'	Transmit initial
	X'1C'	Transmit text
	X'1E'	Transmit intermediate BCC
	X'20'	Receive idle
	X'22'	Receive enable
	X'24'	Receive DLE in text
	X'26'	Receive disconnect
	X'28'	Receive DLE in not text
	X'28'	Transmit DLE in not text
	X'2A'	Receive transparent text
	X'2C'	Receive first transparent text
	X'2E'	Receive DLE in transparent text
	X'30'	Transmit diagnostic
	X'32'	Transmit dial
	X'34'	Transmit DLE in text
	X'36'	Transmit syn insert-transparent
	X'3A'	Transmit transparent text
	X'3C'	Transmit first transparent text
	X'3E'	Transmit DLE in transparent text

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		Miscellaneous masks used by BSC
	X'02'	Transmit INT-BCC to text
	X'03'	RCV Phase to not text
	X'05'	DLE-in-not-text to RCV XTEXT
	X'06'	Transmit first XTEXT to XTEXT
	X'06'	RCV text to post the queue
	X'06'	RCV XTEXT to DLE-in-XTEXT
	X'08'	Transmit INT-BCC to SYN insert
	X'0A'	Transmit text to transmit syn
	X'0C'	Transmit BCC to transmit end pad
	X'0D'	Transmit BCC to transmit end pad
	X'0F'	End Pad Test
	X'25'	DLE-in-not-text to text
	X'26'	Transmit XTEXT to text
	X'28'	Text to DLE-in-text
	X'28'	Set DLE in text or not text
	X'C4'	Text to RCV BCC
	X'D4'	Transmit text to transmit BCC
	X'D7'	Transmit DLE-in-not-text to not text
	X'DF'	Transmit DLE-in-not-text to end pad
	X'F0'	Transmit initial to transmit not text
	X'F7'	Transmit text to transmit BCC
	X'FA'	Transmit DLE-in-XTEXT to XTEXT
	X'FC'	Transmit INTMED BCC to transmit text
	X'FD'	RCV INT-BCC to text
	X'FD'	DLE-in-XTEXT to XTEXT
		State masks used by SS character service
	X'00'	Receive control
	X'02'	Receive lost data
	X'04'	Receive LRC
	X'06'	Receive response
	X'0E'	Line turnaround
	X'10'	Transmit control with repetition
	X'12'	Transmit pad
	X'14'	Transmit LRC
	X'16'	Transmit reply
	X'1A'	Transmit control with address
	X'1E'	Line turnaround
	X'24'	Receive first character MTA
	X'28'	Receive post sense byte
	X'2A'	Post the ACB queue
	X'2C'	Receive line quiet test (1)
	X'2E'	Receive line quiet test (2)
	X'32'	Receive line quiet test (3)
	X'34'	Transmit carriage idles
	X'36'	Transmit 1030 text idles
	X'38'	Transmit reset pad flag
	X'3C'	Transmit sub-block end
	X'3E'	Transmit break

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		Miscellaneous state masks used by SS
	X'02'	RCV CTL to lost data
	X'02'	Line turn to transmit CTL with address
	X'02'	Transmit CTL with address to turnaround
	X'04'	Transmit text to line turnaround
	X'08'	RCV Text to RCV LRC
	X'08'	Transmit Text to transmit LRC
	X'0A'	OLT RCV reply to RCV text
	X'0C'	RCV CTL to RCV text
	X'0E'	RCB text to lost data
	X'10'	Idle to transmit CTL with address
	X'1A'	Turnaround to RCV CTL or reply
	X'20'	RCV CTL to idle
	X'20'	RCV text to line quiet (1)
	X'22'	RCV text to line quiet (2)
	X'24'	Transmit text to reset pad flag
	X'26'	RCV text to post queue
	X'28'	Transmit text to transmit carriage idle
	X'2A'	Shoulder tap time-out
	X'30'	Transmit CTL with count to idle
	X'3C'	Transmit text to idle
		State masks used by SDLC character service
	X'00'	RCV idle
	X'0E'	Shoulder tap time-out
	X'1E'	Shoulder tap time-out
	X'20'	RCV idle
	X'22'	Enable
	X'26'	Disconnect
	X'2E'	Shoulder tap time-out
	X'3E'	Shoulder tap time-out
		Miscellaneous state masks
	X'0F'	Response mask
	X'2A'	Diagnostic write state
	X'C1'	General state reset
	X'DF'	Zero state DLE bit
	X'FE'	Reset state first flag bit

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		State bits and definitions
	X'20'	Data link escape (DLE) mask: 1 = DLE is encountered 0 = No DLE is encountered
	X'10'	Transmit/receive mask: 1 = Transmit 0 = Receive
	X'04'	CLT or text out test mask: 1 = SS state is receive reply 0 = SS state is receive control
	X'02'	Send EOA mask: 1 = Send pad in place of EOA 0 = Send EOA
	X'01'	First flag mask: 1 = First non SYN or DLE 0 = No first non SYN or DLE
40(28) CCBCCNT		SS burst mode flags and character count
	x... ..	End of reception (EOR) detection to be done by: 1 = CSP (EOR characters passed during a set mode command) 0 = NCP (no 4-character bursts)
	.1..	Only multiple pad characters transmitted in a given burst
	..1.	Communication scanner processor (CSP) to perform receive-break detection
	...1	Change command has been issued for an "identifier" terminal on an MTA line
	.... xxxx	Burst character count: Transmit = Number of characters to be transmitted by PSAPPDFX Receive = Number of characters received before getting a level-2 interrupt
46(2E) CCBTIME	The bits in position 0 of both bytes of CCBTIME are used together for time-out control. When these bits have different values in the 2 bytes of CCBTIME, a new timer command is present	Time-out interface

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) CCBBAR		LNVT entry pointer
	00xx xxxx xxxx xx..	Line interface address
	.... .... .... ..1.	Indicates CCBBAR is an offset into the OLNVT rather than an address within the LNVT. (ODLC only)
	.... .... .... ...1	Identifies ACUBAR when it is exchanged with CCBBAR

Offset/Field Name	Bit Pattern/ Hex Value	Contents
51(33) CCBCASE		Shift-case (SS)
	x...	1 = Upper case 0 = Lower case

Offset/Field Name	Bit Pattern/ Hex Value	Contents
56(38) CCBSTAT1		Current operation status of a line
	Byte 0	
	1...	Character overrun or underrun
	.1..	Format error (abnormal line control sequence for a receive operation)
	..1.	Stop bit error (SS only) Abort frame (SDLC). Seven consecutive ones have been received.
	...1	Data check (VRC, LRC, or CRC error). SDLC flags have been received.
	.... 1...	Block overrun occurred (SDLC). End pad failure (BSC point-to-point). Line quiet time-out (SS only).
	.... .1..	Reset command in process
	.... ..1.	Invalid data link escape (DLE) sequence (BSC only). Data communication equipment (DCE) clear indication is detected (X.21 switched lines only).
	.... ...1	Transmit length check (BSC/SS)
	Byte 1	Completion codes indicating how the input/output operation ended. Status masks are the same as those for IOBSTAT plus 1 (BSC/SS lines) or LXBSTATC (SDLC links).

Offset/Field Name	Bit Pattern/ Hex Value	Contents
61(3D) CCBTFLAG		Timer flags (ODLC only)
	x...	ODLC timer type 1 = Backup timer 0 = Heartbeat timer
	.x..	CBC adapter slot protocol down/CBC congestion timer 1 = Timer running--Ignore bit 0 0 = Timer not running--Bit 0 determines timer type

Offset/Field Name	Bit Pattern/ Hex Value	Contents
64(40) CCBFLAGS		General flags
	1...	Tab preceded CR/LF (SS), or no time-out (BSC), or initial time-out interval (SDLC)
	.x...	Control mode indication: 1 = Control mode is a response to text, or NCP polled or selected (BSC), or enable/dial abort when level 2 ends 0 = Control mode is from polling or addressing, or NCP is not polled or selected (BSC), or normal enable/dial
	..1.	Post ACB to the queue after turnaround
	...1	One character of a break signal has been received (SS), or the next event is ITB (BSC), or modem retrain is in progress on an SNA duplex link, or not the first time through "Huntflag" is processing (SDLC)
	.... 1...	Line is in diagnostic mode
	.... .1..	Wrap test is in progress
	.... ..1.	Panel line test is active
	.... ...1	Line is disabled or set mode has been issued
65(41) CCBFLAG3		General flags 3 (ODLC only)
	x...	ACB type 1 = ACB represents ODLC resource other than a line 0 = ACB represents an ODLC line
	.x...	CSS resource type 1 = ACB represents an ODLC processor 0 = ACB represents an ODLC CBC or line
	..1.	Line trace active on this interface (valid for physical CCB)
	...1	NCP SNAP trace active on this interface (valid for physical CCB)

Offset/Field Name	Byte 0	Byte 1	Contents
70(46) CCBRBLUC			Received SDLC BLU command field (level 3)
			1-Byte Control Format
	RRRP SSS0	0000 0000	Information Transfer Command/response
	RRRP MM01	0000 0000	Supervisory command/response
	RRRP 0001	0000 0000	RR—Receive ready command/response
	RRRP 0101	0000 0000	RNR—Receive Not Ready command/response
	RRRP 1001	0000 0000	REJ—Reject command/response
	MMMP MM11	0000 0000	Unnumbered command/response
	0001 0111	0000 0000	SIM—Set Initialization Mode command
	0001 0111	0000 0000	RIM—Request Initialization Mode response (old RQI)
	0001 1011	0000 0000	LPDA command/response
	0001 1111	0000 0000	DM—Disconnect Mode response (old ROL)
	0011 0011	0000 0000	UNP—Unnumbered Poll command/response
	0101 0011	0000 0000	DISC—Disconnect command
	0101 0011	0000 0000	RD—Request Disconnect response (old RQD)
	0111 0011	0000 0000	UA—Unnumbered Acknowledgement response (old NSA)
	1001 0011	0000 0000	SNRM—Set Normal Response Mode command
	1001 0111	0000 0000	FRMR—Frame Reject response (old CMDR)
	1011 1111	0000 0000	XID—Exchange Identification command/response
	1101 1111	0000 0000	SNRME—Set Normal Response Mode Extended command
	1111 0011	0000 0000	TEST command/response
			2-Byte Control Format
	SSSS SSS0	RRRR RRRR	Information Transfer command/response
	0000 MM01	RRRR RRRP	Supervisory command/response
	0000 0001	RRRR RRRP	RR—Receive Ready command/response
	0000 0101	RRRR RRRP	RNR—Receive Not Ready command/response
	0000 1001	RRRR RRRP	REJ—Reject command/response
	MMM1 MM11	0000 0000	Unnumbered command/response (See note.)
	0001 0111	0000 0000	SIM—Set Initialization Mode command
	0001 0111	0000 0000	RIM—Request Initialization Mode response (old RQI)
	0001 1111	0000 0000	DM—Disconnect Mode response (old ROL)
	0011 0011	0000 0000	UNP—Unnumbered Poll command/response
	0101 0011	0000 0000	DISC—Disconnect command
	0101 0011	0000 0000	RD—Request Disconnect response (old RQD)
	0111 0011	0000 0000	UA—Unnumbered Acknowledgement response (old NSA)
	1001 0011	0000 0000	SNRM—Set Normal Response Mode command
	1001 0111	0000 0000	FRMR—Frame Reject response (old CMDR)
	1011 1111	0000 0000	XID—Exchange Identification command/response
	1101 1111	0000 0000	SNRME—Set Normal Response Mode Extended command
	1111 0011	0000 0000	TEST command/response

Notes:

1. **P** Poll (command/request from primary) or Final (response from secondary).
R N(R)—Receive sequence count.
S N(S)—Send sequence count.
M Modifier bits.
2. NCP transmits and receives only 1 byte (byte 0) when the frame is in an unnumbered format.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
82(52) CCBCTL CCBRSPON		Control flags and line type
	Byte 0	Control Flag Definitions for Wrap
	.... .1..	Transmit leg has not received a level-2 interrupt
	.... ..1.	Receive leg has not received a level-2 interrupt
		Control Flag Definitions for Replies
	1...	Send NAK reply/delay after autodial
	.1..	Send ACK reply
	..x.	Alternating ACK bit for BSC (valid only if bit 1 is also on):
		1 = Send ACK1
		0 = Send ACK0
	...1	Last text reply was WACK (BSC), or TTD received when ACK outstanding, or last reply outstanding (SS)
	.... x...	Expected receive alternate ACK bit (BSC):
		1 = ACK1 expected reply
		0 = ACK0 expected reply

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	Byte 0	Control Flag Definitions for Polling Operations
	x... ..	SDLC poll wait: 1 = Wait 0 = No wait Or service-seeking skip bit: 1 = Terminate if at the end of service order table 0 = Continue service seeking Or 1 = Single poll 0 = No single poll
	.1..	SDLC transmit leg is busy
	..1.	BSC/SS service-seeking polling, or SDLC SOT poll pointer is not incremented this pass, or service-seeking
	...x	Orderly link stop bit level 3: 1 = End Run when both transmit and receive legs idle (SDLC) 0 = Continue Run command execution
	.... x...	SDLC receive leg is busy: 1 = Cannot poll now (primary) 0 = Can poll now or 1 = No increment to poll pointer 0 = Increment poll pointer
	.... .xx.	Phase bits for SDLC operations: 00 = No command is active 01 = SDLC I-format is sent or SDLC RR is sent. 10 = SDLC RNR is sent 11 = SDLC NS—command is sent
	.... ...x	SDLC poll loop control: 1 = No active station was found in the list 0 = An active station was found in the list
		Control Flag Definitions for Enable/Dial Operations
	1...	Abort enable/dial
	.1..	Abort when level-2 processing ends
	..x.	Duplex enable second pass through ender (SDLC): 1 = Second pass through enable end 0 = First pass through enable end
	...1	Send ENQ after ID
	.... xx..	Reserved
	.... ..1.	Dial is pending
	.... ...1	Connection is pending
		Control Flag Definitions for Text Operations
	1...	Insert data before text
	.xxx xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	Byte 0	Control Flag Definitions for Multiple Terminal Access
	1... ..	MTA retry in process
	.x... ..	MTA 3767/2741 bit: 1 = Tested for 3767 0 = Tested for 2741
	..1.	MTA 2741 retry in progress
	...x	Reserved
	.... 1...	MTA line enabled
	.... .xx.	Phase bits for BSC/SS: 00 = Idle 01 = Receive text (Read) 10 = Receive text reply (Write) 11 = Receive control (Control) Or special phase bits for ID exchange: 00 = No command is active 01 = Receive ID phase 10 = Receive ID reply 11 = Connect and Command Reject Or SDLC operations: 00 = No command is active 01 = RR send or I-format has been sent 10 = RNR has been sent 11 = NS command has been sent Or level-2 interrupt received by a MOSS Wrap command: 10 = Set to expect level-2 interrupts from transmit leg only 11 = Set to expect level-2 interrupts from transmit and receive legs 0. = Resets bit 5 for the transmit leg .0 = Resets bit 6 for the receive leg 00 = Condition for PCI L3
	.... .x.	1 = Leading graphics are being sent (BSC/SS) 0 = Text is being sent if transmitting
	.... ...1	Subblocking occurred (BSC/SS), or no active SOT entries (SDLC)

Offset/Field Name	Bit Pattern/Hex Value	Contents
83(53) CCBTYPE	Byte 1	Line type
	1...	Line is in normal mode
	.x..	Duplex adapter: 1 = Line has two line adapter addresses 0 = Line has one line adapter address
	..x.	Half-duplex ACB or duplex transmit leg ACB: 1 = Half-duplex leg or duplex transmit leg ACB 0 = Duplex receive leg ACB Or duplex adapter transmit leg ACB: 1 = Transmit leg 0 = Receive leg Or SS (WTTY) strip FIGS/LTRS: 1 = Strip FIGS/LTRS in received text 0 = Leave FIGS/LTRS in received text
	...1	Use data set New Sync feature (BSC/SDLC) or half-duplex line on which break is allowed (SS)
	.... x...	Line type bit (see note on page 1-237): 1 = BSC or CDLC 0 = SS or SDLC (see bit 7)
	.... .1..	<ul style="list-style-type: none"> • Link-attached station can receive an error message (BSC) • Time-out valid reply for a negative poll (SS) • The station is currently a configurable station (SDLC)
	.... ...x.	Point-to-point contention bit (BSC/SDLC): 1 = Point-to-point contention secondary station (BSC) 0 = Point-to-point contention primary station (BSC) Or 1 = SDLC secondary station 0 = SDLC primary station Or 1 = Upshift on space character (WTTY only) 0 = No upshift on space
	.... ...x	DLC link bit (see note): 1 = Line type is SDLC or CDLC (bit 4=0) 0 = Line type is not DLC

Note: Bits 4 and 7 may have the following combinations:

- 0..0 SS
- 0..1 SDLC
- 1..0 BSC
- 1..1 Channel link (CDLC)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
84(54) CCBESTAT		Expected ending status of the level-2 operation
	X'0000'	BSC/SS—expect any status
	X'00FF'	SDLC—expect any status
	X'9934'	Block has been received
	X'D614'	SDLC—accept RR or I-format only
	X'FB1C'	ACK reply
	X'FF00'	Time-out
	X'FF06'	ENQ sent
	X'FF1C'	ACK reply
	X'FF98'	EOT sent
89(59) CCBFLAG2		Mode control flags
	x... ..	Control field operation mode: 1 = 2-byte control 0 = 1-byte control
	.x.. ..	Set Normal Response Mode: 1 = Transmit SNRME (extended) 0 = Transmit SNRM
	..1.	Do not exit level 4 for XIO LINE and IMMED commands (SDLC only)
	...x	Frame Relay HPTSS Performance Enhancement Mode 1 = FR can send multiple frames in one transmit interrupt and receive INN and BNN data at proper offsets 0 = HPTSS or TSS adapter in SDLC mode
	.... 1...	Send reject indicator
	.... .x..	PU priority support: 1 = PU priority is supported 0 = PU priority is not supported
	.... ..1.	ODLC processor/Link ACB (ODLC only) (CCBODL)
	.... ...x	Link priority support: 1 = Use SOQ for scheduling 0 = Use service order table (SOT) for scheduling
89(59) CCBBSCFL		Special flags—BSC only
	1... ..	Conversational write
	.1... ..	ACK response to an ACK flag
90(5A) PLUID		Resource identifier (NTRI)
	X'D7C1'	Physical link
	X'D3C1'	Logical link

Offset/Field Name	Bit Pattern/ Hex Value	Contents
94(5E) CCBNCFL		Flags to control operations between input/output block (IOB) commands (overlays CCBFLAG1)
	xx.. ..x.	Restricted to CCBNCFL
	..xx	May be used by either CCBNCFL or CCBFLAG1
	... xx.x	Restricted to CCBFLAG1
	1...	Command initialization delay is required
	.1..	Special ender procedure when no command is up
	..1.	Send TTD bit
	...1	Send WACK
	.... 1..	Line is enabled
	.... ..1.	Send EOT (S/S only)
94(5E) CCBFLAG1		Flags for control of SDLC link with an active LXB command (overlays CCBNCFL)
	xx.. ..x.	Restricted to CCBNCFL
	..xx	May be used by either CCBNCFL or CCBFLAG1
	... xx.x	Restricted to CCBFLAG1
	...1	Echo defeat is supported
	.... x...	Outstanding poll indicator (SDLC duplex line only): 1 = Reply to poll is outstanding 0 = Final received in response to poll
	.... .1..	Need update to CSP set mode data or, for ODLC, a Resource Definition Update is required (only to be set up in common SDLC/ODLC SETMODE paths. This is not the normal ODLC RDI required indication). (CCBMODE)
	.... ...1	Suppress level-2 processing
101(65) CCBTWXFL		TWX special flags
	1...	TWX auto-speed detect
	.x...	TWX auto-speed detect default line speed: 1 = 1200 bps 0 = 2400 bps

Offset/Field Name	Bit Pattern/ Hex Value	Contents
104(68) CCBTYPEC		Dial control flags
	1...	Switched line
	.1..	Line has an auto-dial unit (switched only), or an X.21 line has dial capability
	..1.	Recognize ring indicator lead or X.21 (1984 version)
	...x	TTY DC telegraph loop: 1 = Line has a DC telegraph loop 0 = Line has a modem
		Or special dial modem (BSC/SDLC): 1 = Non-LPDA2 line has a 4941 modem that accepts LPDA2 dial and disconnect commands for switched connections 0 = Not a modem of the preceding type
	.... x...	Answer tone: 1 = Generate an answer tone after call-in 0 = Answer tone is automatic
		Or X.21 CCLID support: 1 = CCLID is supported 0 = CCLID is not supported
	.... .1..	Not NRZI mode (SDLC) or monitor carrier on receive (SS)
	.... ..1.	Delay is issued after an incoming call
	.... ...1	X.21 switched line
108(6C) CCBSETYP		Extended type
	1...	HDX send priority
	.1..	HPTSS line
	..1.	LPDA1 or LPDA2 test is active
	...x	Reserved**
	.... 1...	Test is in progress on channel A (LPDA1), or disruptive test is in progress
	.... .1..	Forced deactivation is in progress
	.... ..x.	1 = User-written line control for a user adapter control block (UACB) or a group control block (GCB) 0 = IBM-supported line control (must be 0 in a CCB)
	.... ...x	Reserved for GCB compatibility
112(70) CCBCMFL		COMMIT flags
	x...	1 = Conditional type request 0 = CWALL type request
	.1..	Chain to the commit request block (CRB)
	..x.	Poll type definition: 1 = RNR sent 0 = RR sent
	...1	Duplex poll is in progress
	.... 1...	RNR exception state
	.... .1..	COMMIT request has been satisfied
	.... ..1.	COMMIT is in progress
	.... ...1	DECOMMIT ALL keyword is requested

** This bit is defined in the GCB, field name GCBFLAGS. See the byte expansion for GCBFLAGS for more information.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
120(78) CCBSSF		SS special flags
	...x	Immediate end on input: 1 = End Read immediately on receiving the end character 0 = End Read after line quiesce
	xxx.	TWX only Control of TWX receive parity checking
	0...	No parity checking
	1xx.	Parity checking: 00 = Space parity 01 = Odd parity 10 = Even parity 11 = Mark parity
	.... 1...	Suppress TWX prompting sequence
	.... .xxx	Control of TWX transmit parity generation
	.... .0..	No parity generation (controlled by XLTBL)
	.... .1xx	Parity generated: 00 = Space parity 01 = Odd parity 10 = Even parity 11 = Mark parity
120(78) CCBPOLLI		Poll cycle time
	X'FF'	All stations address
124(7C) CCBSSF2		SS dynamic bit
	1...	TWX read ahead is active
	.1..	Monitor mode is active
	..x.	WTTY only, EOB possible: 1 = EOB is possible 0 = EOB is not possible
	...x	WTTY only, EOT possible: 1 = EOT is possible 0 = EOT is not possible
	.... ...1	Allow storing of data (character mode)

Configuration Data Block

Program: NCP

Size in bytes: 192(C0)

Created by: NCP generation

Pointed to by: The CABCDPB field in the channel adapter control block (CAB)

Function: Contains configuration data associated with a channel adapter

0(0) - 31(F)	Node element descriptor (NED) for the input/output device
32(20) - 63(3F)	First specific network element qualifier (NEQ)
64(40) - 95(5F)	Second specific NEQ
96(60) - 127(7F)	NED for the control unit
128(80) - 159(9F)	Token NED
160(A0) - 191(BF)	General NEQ

Configuration Data Set (3745)

Program: NCP, EP

Size in bytes: 448(1C0); 64(40) plus 48 adapter entries of 8(8) bytes each

Created by: NCP or PEP generation

The shared-code module, CXASCBA, calls the generating macro, CXTCDS, to reserve the area. The MOSS cycle steals information into the CDS at initialization time.

Pointed to by: The SYSCDSP field in the extension of the extended halfword direct addressables (HWX)

Function: Contains identification information about the CCU and identification and installation information about each adapter.

CDS Header

0(0) CDSFMT* Format of the CDS	1(1) CDSLVL* Level of the CDS	2(2) CDSPTID0 Plant ID byte 0	3(3) CDSPTID1 Plant ID byte 1
4(4) CDSMSN0 Machine serial number byte 0	5(5) CDSMSN1 Machine serial number byte 1	6(6) CDSMSN2 Machine serial number byte 2	7(7) CDSMSN3 Machine serial number byte 3
8(8) CDSMSN4 Machine serial number byte 4	9(9) CDSMDLN0 Model number	10(A) CDSBLCK0 Block ID byte 0	11(B) CDSBLCK1 Block ID byte 1
12(C) - 23(17) CDSSECL Microcode EC level			
24(18) - 31(1F) CDSMCFID Microcode fix ID Form=PxxxMnnn where P is for patch, xxx relates to EC microcode, M is for MOSS, and nnn is the microcode fix (MCF) number			
32(20) - 39(27) CDSCHSUD Date of the last update of the CDS Form=yy/mm/dd where yy=year, mm=month, and dd=day			
40(28) - 44(2C) CDS CDSUT Time of the last update of the CDS Form=hh : mm (no blanks) where hh=hours and mm=minutes			
45(2D) CDSOPDTA* Operating data		46(2E) CDSMBSZ* Mailbox and MOSS workspace size	47(2F) CDSPIO* Retry threshold programmed input/output (PIO) errors

* Indicates a byte expansion follows.

48(30) CDSAIO* Retry threshold adapter input/output (AIO) errors	49(31) CDSADAP* Retry threshold adapter detected	50(32) CDSUL1* Retry threshold unresolved level 1	51(33) CDSUPCI2* Retry threshold program controlled interrupt (PCI) to level 2
52(34) CDSUL3* Retry threshold unresolved level 3	53(35) CDSUL4* Retry threshold unresolved level 4	54(36) CDSFLG* CDS flags	55(37) CDSWA1* Switch address TA of SWAD IOC1
56(38) CDSWA2* Switch address TA of SWAD IOC2	57(39) CDSMLMA* Multiple load module support	58(3A) CDSIICS* IOC1 CBC status (ODLC only)	59(3B) CDSI2CS* IOC2 CBC status (ODLC only)
60(3C) CDSPIOT ODLC PIO error threshold counter refresh value (ODLC only)	61(3D) CDSECTT ODLC execute CLEAR timeout threshold counter refresh value (ODLC only)	62(3E) Reserved	

* Indicates a byte expansion follows.

Adapter Entry

n CDSADID* Adapter ID	n+1 CDSATYPE* Adapter type	n+2 CDSSTAT* Adapter status	n+3 CDSINFO* Adapter information
n+4 CDSFRLN* First relative line number (RLN)		n+6 CDSLNRG* Line range	n+7 Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CDSFMT		CDS format
	X'01'	Header is 64 bytes; entry is 8 bytes.
1(1) CDSLVL		CDS level
	X'02'	Size of the CDS=448 [64+(48x8)]
	X'03'	ODLC included

Offset/Field Name	Bit Pattern/ Hex Value	Contents
45(2D) CDSOPDTA		Operating data
	x... .. .xxx ..	Reserved Operating mode:
		001 = Operating mode is single 010 = Operating mode is twin-standby 100 = Operating mode is twin-backup 101 = Operating mode is twin-dual
	.... xx.. .... ..xx	Reserved 01 = CDS is for CCU A 10 = CDS is for CCU B
46(2E) CDSMBSZ		Mailbox/MOSS workspace size
	X'00' X'01'–X'xx'	Interpreted as one 4K block Number of 4K blocks of memory
47(2F) CDSPIO		Retry thresholds—PIO errors
	xxxx xxxx	PIO channel adapter threshold for level 1 PIO line adapter threshold for level 1
48(30) CDSAIO		Retry threshold—AIO errors
	xxxx xxxx	AIO threshold for level 1 Reserved
49(31) CDSADAP		Retry threshold—adapter detected errors
	xxxx xxxx	Channel adapter level-1 threshold Line adapter level-1 threshold
50(32) CDSUL1		Retry threshold—unresolved level 1
	xxxx xxxx	Unresolved level-1 threshold Reserved
51(33) CDSUPCI2		Retry thresholds—unresolved level 2 and level-2 PCI
	xxxx xxxx	Unresolved level-2 threshold Level-2 PCI threshold
52(34) CDSUL3		Retry threshold—unresolved level 3
	xxxx xxxx	Unresolved level-3 threshold Reserved
53(35) CDSUL4		Retry threshold—unresolved level 4
	xxxx xxxx	Unresolved level-4 threshold Reserved
54(36) CDSFLG		CDS flags
	x... ..	Force NCP dump support:
		0 = MOSS does not support force NCP dump 1 = MOSS does support force NCP dump

Offset/Field Name	Bit Pattern/ Hex Value	Contents
55(37) CDSSWA1		Switch adapter TA bus 1
	0... ..	0=Bus 1
	.1... ..	Always on
	..00 0000	Always 0
56(38) CDSSWA2		Switch adapter TA bus 2
	1... ..	1=Bus 2
	.1... ..	Always on
	..00 0000	Always 0
57(39) CDSMLMA		Multiple load module support
	X'00'	MOSS does not support multiple load modules
	X'02'	MOSS supports two load modules per CCU
58(3A) CDS1CS		IOC1 CBC Status
	1... ..	CBC not installed
	.1... ..	CBC not operative
	..1.	CBC not attached to this CCU
	...1	CBC not switched to this CCU
	.... .1..	CBC is not primary
59(3B) CDS2CS		IOC2 CBC Status
	1... ..	CBC not installed
	.1... ..	CBC not operative
	..1.	CBC not attached to this CCU
	...1	CBC not switched to this CCU
	.... .1..	CBC is not primary
<i>n</i> CDSADID		Adapter ID
	X'01'–X'20'	IDs for line adapters
	X'01'–X'10'	IDs for channel adapters
<i>n+1</i> CDSATYPE		Adapter type
	X'00'	Adapter is not installed
	X'01'	Channel adapter (CADS)
	X'02'	Channel adapter (BCCA)
	X'10'	Transmission subsystem (TSS)
	X'20'	High-performance transmission subsystem (HPTSS)
	X'30'	Token-ring adapter (TRA)
	X'40'	Airline line control adapter (ALCA)
	X'60'	Ethernet adapter (ETHR)
<i>n+2</i> CDSSTAT		Adapter status
	1... ..	Adapter is not installed
	.1... ..	Adapter is not operative
	..1.	Adapter is not attached to this CCU
	...1	Adapter is not switched to this CCU
	.... x...	1 = Adapter uses modem-integrated couplers only
	.... .x..	0 = Adapter uses line-integrated couplers only
	.... .x..	Reserved.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
<i>n+3</i> CDSINFO		Adapter information
	1... ..	Two-processor switch (TPS) is not installed
	.1.. ..	Host does not support input/output error alerts
<i>n+4</i> CDSFRLN		First RLN
	X'0+10n'	If < X'400', where n=0 to X'3F' (maximum LIC modules=32)
	X'400+2n'	If from X'400' to X'43F' n=0 to X'7' (maximum HPTSSs=8)
	X'440+2n'	If from X'440' to X'44F' n=0 to X'3' (maximum TRAs=4)
<i>n+6</i> CDSLNRG		Line range (maximum number of lines that can be connected)
	X'00'	Range when spare adapter
	X'02'	Range when adapter is TRA or HPTSS
	X'10' or X'20'	Range when adapter is TSS

Channel Adapter ERP Control Block

Program: NCP, EP

Size in bytes: 44(2C)

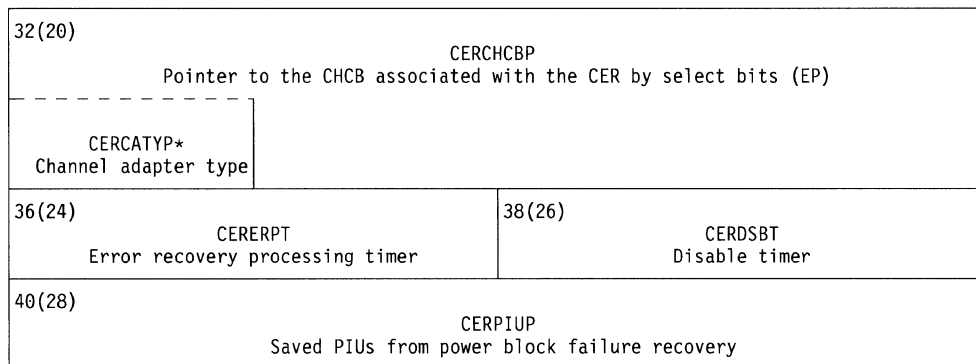
Created by: NCP or PEP generation

Pointed to by: The CAVTCERP field in the channel adapter vector table (CAVT) entry

Function: Serves as a communications area between levels 1, 3, and 4 and also between level-3 interrupts when a channel adapter is to be disabled as a result of level-1 errors. CER contains information on the current state of the disable sequence on the channel adapter and stores external registers for use by the error recovery procedure (ERP) processing in level 3.

0(0) CERSELM* Channel adapter select mask	1(1) CERCCW Current channel command word (CCW)	2(2) CERENAB* Channel adapter enable mask	
4(4) CERCA00 Channel adapter initial select bits		6(6) CERCA01 Channel adapter CCW and subchannel address	
8(8) CERCA02 Channel adapter data status inputs		10(A) CERCA03 Emulator subchannel (ESC) address and status	
12(C) CERCA07 Channel adapter enable and disable indicators		14(E) CERCA0B ESC TIO address and status	
16(10) CERCA0F Level-3 interrupt and channel adapter select		18(12) CERSTATE* Current state of the ERP sequence	
20(14) CERCA0P1 OUT X'2' operations to be performed		22(16) CERCA0P2 OUT X'7' operations to be performed	
24(18) CERSENSE Sense byte	25(19) CERDSCT Disabled attempted count	26(1A) CERTAB0* High byte of the TA	27(1B) CERCFIP* CACM function in progress
28(1C) CERCABP Pointer to the channel adapter control block (CAB) associated with the CER by select bits (NCP)			
----- CERFLGS* CER flag byte			

* Indicates a byte expansion follows.



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CERSELM**		Select mask for the channel adapter
	X'00'	Channel adapter position 1 (IOC2) or 5 (IOC1)
	X'02'	Channel adapter position 2 (IOC2) or 6 (IOC1)
	X'04'	Channel adapter position 3 (IOC2) or 7 (IOC1)
	X'06'	Channel adapter position 4 (IOC2) or 8 (IOC1)
	X'08'	Channel adapter position 9 (IOC2) or 13 (IOC1)
	X'0A'	Channel adapter position 10 (IOC2) or 14 (IOC1)
	X'0C'	Channel adapter position 11 (IOC2) or 15 (IOC1)
	X'0E'	Channel adapter position 12 (IOC2) or 16 (IOC1)
** To determine which channel position has been enabled, use the CERTAB0 field to identify the bus on which the channel adapter resides.		
2(2) CERENAB**		Enable mask for the channel adapter
	X'00C0'	Channel adapter position 1 (IOC2) or 5 (IOC1)
	X'0020'	Channel adapter position 2 (IOC2) or 6 (IOC1)
	X'000C'	Channel adapter position 3 (IOC2) or 7 (IOC1)
	X'0002'	Channel adapter position 4 (IOC2) or 8 (IOC1)
	X'9000'	Channel adapter position 9 (IOC2) or 13 (IOC1)
	X'2000'	Channel adapter position 10 (IOC2) or 14 (IOC1)
	X'4800'	Channel adapter position 11 (IOC2) or 15 (IOC1)
	X'0100'	Channel adapter position 12 (IOC2) or 16 (IOC1)
** To determine which channel position has been enabled, use the CERTAB0 field to identify the bus on which the channel adapter resides.		

Offset/Field Name	Bit Pattern/ Hex Value	Contents
18(12) CERSTATE		Current state of the ERP sequence
	Byte 0	
	1...	Wait for the command to clear
	.1..	Stacked status
	..1.	Sense transferred
	...1	Attempted disable
	.... 1...	Disabled
	.... .1..	Channel adapter is in an ERP inoperative state
	.... ..1.	MOSS CACM time-out is detected
	Byte 1	
	1...	Need transmission groups inhibited
	.1..	Transmission groups are inhibited
	..1.	EP requires control.
	...1	IBM special products or user-written code requires control
	.... 1...	Ending of the ENABLE/DISABLE command is required when a channel adapter goes disabled
	.... .xxx	Reserved
26(1A) CERTAB0		High byte of the TA
	X'08'	Channel adapter is on IOC1
	X'88'	Channel adapter is on IOC2
27(1B) CERCFIP		CACM function in progress
	1...	Disconnect channel adapter is in progress
	.1..	CDS update insert is in progress
	..1.	Channel adapter chain update is in progress
	...1	CDS update delete is in progress
	.... 1...	Connect channel adapter is in progress
	.... .1..	Connect channel adapter recovery is required; IOH failed
	.... ..1.	CACM disconnect in progress
	.... ...x	Reserved
28(1C) CERFLGS		CER flag byte
	1...	Input/output error alert was attempted
	.1..	Input/output error alert can be attempted
	..1.	MOSS input/output error alert is requested
	...1	Reset ESC address active was attempted
	.... 1...	Channel adapter data streaming (CADS) bypassed from the auto-selection chain
	.... .1..	CADS bypassed from the cycle-steal grant chain
	.... ..1.	Power block failure is pending
	.... ...1	Power block failure
32(20) CERCATYP		Channel adapter type
	X'06'	Type 6 channel adapter
	X'07'	Type 7 channel adapter

Cluster General Poll Extension to DVB

Program: NCP
Size in bytes: 24(18)
Located in: Device base control block (DVB)
Created by: NCP generation
Pointed to by: The DVBCLSO field in the DVB
Function: Contains information necessary to reinitiate suspended sessions of general polled devices

0(0)			
CGPRVTE Pointer to the resource vector table (RVT) entry			
CGPFLGS* Flags			
4(4)	5(5)	6(6)	7(7)
CGPSSC Suspended sessions count	CGPSSS Suspended sessions serviced	CGPSSRC Suspended sessions remembrance count	Reserved

* Indicates a byte expansion follows.

Cluster Suspended Sessions queue control block (QCB)
 (See "Queue Control Block for Work Queues" on page 1-887 for all bit definitions.)

8(8)	
CGPIECB Pointer to the first DVB queued	
CGPMCBD Major control block displacement divided by 2	
12(C)	
CGPLECB Pointer to the last DVB queued	
16(10)	
CGPLINK Pointer to the next QCB in the chain	
CGPPRKEY Protection key	
20(14)	
Reserved	
CGPSTAT Task and queue status	

Byte Expansion

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CGPFLGS	x... ..	Flags 1 = Use the table lookup for the next terminal address for the poll 0 = Use the next sequential terminal address for the poll

Channel Control Block

- Program:** EP
- Size in bytes:** 116(74) plus the channel vector table (CHVT)
- Created by:** PEP generation
- Pointed to by:** The CAVTCHBP field of the channel adapter vector table (CAVT) entry for the associated channel adapter
- Function:** Contains the queues, the CHVT, and other data unique to a particular channel adapter

0(0)	CASEL* Channel select bits and PEP flags	2(2)	CAIMSK* Channel adapter interface mask
4(4)	DCCCBADR Dynamic subchannel character control block (CCB) address		
	CHCBTA0* High byte of the TA		
8(8)	NSCCBADR Native subchannel CCB address		
	CHCBOPST* Option and status bits		
12(C)	TERMADR Terminator address		
	ACCOUNT Active command count		
16(10)	PDSOFRST Priority data service out queue (SOQ) first pointer		
20(14)	PDSOLAST Priority data SOQ last pointer		
24(18)	PCDSOFST Priority cycle-steal data SOQ first pointer		
28(1C)	PCDSOLST Priority cycle-steal data SOQ last pointer		
32(20)	DSOFRST Data SOQ first pointer		

* Indicates a byte expansion follows.

36(24)	DSOLAST Data SOQ last pointer
40(28)	CDSOFRST Cycle-steal data SOQ first pointer
44(2C)	CDSOLAST Cycle-steal data SOQ last pointer
48(30)	CDDOFRST Cycle-steal dynadump out queue first pointer
52(34)	CDDOLAST Cycle-steal dynadump out queue last pointer
56(38)	DSIFRST Data service in queue first pointer
60(3C)	DSILAST Data service in queue last pointer
64(40)	CDSIFRST Cycle-steal data service in queue first pointer
68(44)	CDSILAST Cycle-steal data service in queue last pointer
72(48)	SOFRST Status out queue first pointer
76(4C)	SOLAST Status out queue last pointer
80(50)	CPSIFRST Poll data service in queue first pointer
84(54)	CPSILAST Poll data service in queue last pointer
88(58)	SNOFRST Sense out queue first pointer
92(5C)	SNOLAST Sense out queue last pointer

96(60)	SSFRST Stacked status queue first pointer
100(64)	SSLAST Stacked status queue last pointer
104(68)	L1L3CCB Error recovery processing field
108(6C)	CHCBCAVT CAVT entry pointer
112(70)	Reserved
116(74) - n	CHVT Channel vector table

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CASEL		Channel select bits and PEP flags
	Byte 0	
	1... ..	PEP flag—bit on indicates that EP is busy or that a CCB is queued indicating a pending EP operation
	.1.. ..	No PRI flag—bit on indicates that a PRI is not required to give control to the queue scanner*
	...1 ..	Perform output in channel adapter as indicated by bits 0.4–0.6. (Bit is always on)
	... xxx.	Channel adapter selection bits—same as bits 0.4–0.6 of output X'7': 000 = Channel adapter address 0 (IOC1) or 8 (IOC2) 001 = Channel adapter address 1 (IOC1) or 9 (IOC2) 010 = Channel adapter address 2 (IOC1) or A (IOC2) 011 = Channel adapter address 3 (IOC1) or B (IOC2) 100 = Channel adapter address 4 (IOC1) or C (IOC2) 101 = Channel adapter address 5 (IOC1) or D (IOC2) 110 = Channel adapter address 6 (IOC1) or E (IOC2) 111 = Channel adapter address 7 (IOC1) or F (IOC2)
	Byte 1	
	.1.. ..	Set PI same as bit 1.1 of output X'7'. (Bit is always on)
		* The SETPI macro checks byte 0, bit 1 to determine whether the output X'7' instruction should be issued

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) CAIMSK		Channel adapter interface mask (used to check channel adapter interface A bits in input X'7')
	X'00C0'	Channel adapter address 0 (Bus 1) or 8 (Bus 2) mask
	X'0020'	Channel adapter address 1 (Bus 1) or 9 (Bus 2) mask
	X'000C'	Channel adapter address 2 (Bus 1) or A (Bus 2) mask
	X'0002'	Channel adapter address 3 (Bus 1) or B (Bus 2) mask
	X'9000'	Channel adapter address 4 (Bus 1) or C (Bus 2) mask
	X'2000'	Channel adapter address 5 (Bus 1) or D (Bus 2) mask
	X'4800'	Channel adapter address 6 (Bus 1) or E (Bus 2) mask
	X'0100'	Channel adapter address 7 (Bus 1) or F (Bus 2) mask
4(4) CHCBTA0		High byte of the TA
	X'08'	Channel adapter on IOC1
	X'88'	Channel adapter on IOC2
8(8) CHCBOPST		Option and status bits
	x...	Channel adapter type: 1 = Type 6 0 = Type 5
	.1..	Input/output error alert is supported
	.... 1...	Stacked status loop end
	.... .1..	Stacked status loop
	.... ..1.	Ground fault counter expired
	.... ...1	Reset processing is in progress

Channel Vector Table

Program: EP

Size in bytes: Variable, depending on the number of subchannels specified

Located in: Channel control block (CHCB)

Created by: PEP generation

Referenced by: Level-1 and level-3 routines

Function: Allows the level-3 routines to find a line's character control block (CCB) when only the subchannel address is shown and allows level-1 routines to initialize the CCU hardware defined during generation

0(0)	CYACHVT Subchannel addresses	2(2)	CHVTFLGS* CHVT flags	3(3)	Reserved
	1(1)				
	Lowest subchannel address		Highest subchannel address		
4 - n**					
CYACHEND Address of the associated line vector table (LNVT) entry for each of the line adapter interfaces (Each address occupies 4 bytes.) If even, it points to an active LNVT entry. If odd, it points to a USCCB (formerly a dummy CCB)					
n+1					
X'0000 0001' Delimiter					
n+5					
CHVTprt Pointer to the next CHVT or the first CHVT if this is the last					

* Indicates a byte expansion follows.

** $n = \text{the number of line adapter interfaces multiplied by 2, + 1.}$

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) CHVTFLGS		CHVT flags
	1...	Channel adapter is not installed
	.1..	Channel adapter is not operative
	..1.	Channel adapter is not attached to this CCU
	.... ..1.	CACM mode is disconnected
	...x xx.x	Reserved

Call-In Extension to DVB

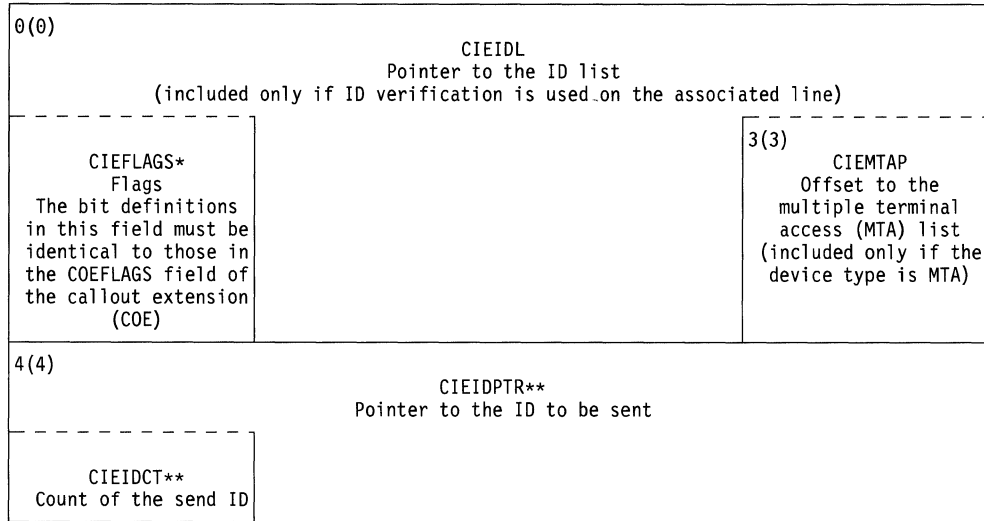
Program: NCP

Size in bytes: Variable

Created by: NCP generation

Pointed to by: The DVBDIAL field in the device base control block (DVB)

Function: Contains optional data required for servicing calls originated by a terminal on a switched line



* Indicates a byte expansion follows.

** These fields are present in the CIE only if sending of the control unit's identification is required for this device.

Note: The actual position of the CIE depends on the other extensions that are present. The CIE follows any polling, addressing, or input extensions to the DVB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CIEFLAGS		Flags
	1...	Send hardware ID is required
	.1..	Receive hardware ID is expected
	..1.	Dial digits are resident
	...1	Call-in device (This bit is always 1 for CIE)
	.... 1..	Send IDSEQ on enable
	.... .1..	A dial request is pending for this device
	.... ..1.	Disconnect when end of call has been received
	.... ...1	Set Mode is required at the telephone connection with this device to set up proper physical line characteristics

Channel Adapter IOH Trace Table

- Program:** NCP
Size in bytes: 4(4) plus 2000 fullword entries
Created by: NCP generation
Pointed to by: The SYSCIOTP field in the fullword direct addressable control block extension (FAX)
Function: Holds the trace data for channel adapter IOHs

0(0)	CIOTNTRY Current entry
4(4) - n	Variable length table (8 bytes per entry). (See the trace entry for the format.)

Trace Entry

0(0)	CIOTTA TA data	2(2)	CIOTTD TD data
4(4)	CIOTIAR Address where the IOH issued		

Command Table

Program: EP

Size in bytes: 48(30)

Located in: Module CYKCAIS/CRKCAIST

Created by: PEP generation

Referenced by: ICP

Function: Contains the character control block (CCB) command codes used for translating the 8-bit host command code into the 5-bit EP CCB command code

0(0) - 47(2F)

CMDTABLE
CCB command codes
(See Volume 2 Section 7.)

Callout Extension to DVB

Program: NCP

Size in bytes: Variable, depending on the length of the dial digits

Created by: NCP generation

Pointed to by: The DVBDIAL field in the device base control block (DVB)

Function: Contains optional data required to call a terminal on a switched line

0(0)			
COESGTP Address of a device's switched group table (SGT)			
COEFLAGS* Flags The bit definitions in this field must be identical to those in the CIEFLAGS field of the call-in extension (CIE)			
4(4)	5(5)	6(6)	7(7)
COELCSTI Index to the line control selection table (LCST) (multiple terminal access only)	COEMAX Maximum field length of the dial digits	COECUR Current number of dial digits	COEDIAL Dial digits (variable length)

* Indicates a byte expansion follows.

Note: The actual position of the COE depends on the other extensions that are present.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) COEFLAGS		Flags
	1... ..	Send hardware ID is required
	.1.. ..	Receive hardware ID is expected
	..1.	Dial digits are resident
	...1	Call-in device (This bit is always 0 for COE)
	.... 1...	Send IDSEQ on enable
	.... .1..	A dial request is pending for this device
	.... ..1.	Disconnect with end of call has been received
	.... ...1	Set mode is required at the telephone connection with this device

Control Program Information Table

Program: NCP, EP

Size in bytes: 68(44) plus prefix

Created by: The call produced by the stage-1 macro, NGEN2, for NCP and PEP
 The CPIT is found in the tables assembly.

Pointed to by: The SYSCPITP field in the fullword direct addressable control block extension (FAX)

Function: Contains all the control program parameters needed by the MOSS microcode

-4(4) Reserved		-2(2) CPIT length (from 0 offset)	
0(0) CPITECL1 Level-1 check record pool (CRP) entry count	1(1) CPITECL2 Level-2 CRP entry count	2(2) CPITECL3 Level-3 CRP entry count	3(3) CPITECL4 Level-4 CRP entry count
4(4) CPITSL1P Pointer to the start of the level-1 CRP subpool			
CPITELL1 Level-1 CRP entry length			
8(8) CPITSL2P Pointer to the start of the level-2 CRP subpool			
CPITELL2 Level-2 CRP entry length			
12(C) CPITSL3P Pointer to the start of the level-3 CRP subpool			
CPITELL3 Level-3 CRP entry length			
16(10) CPITSL4P Pointer to start of the level-4 CRP subpool			
CPITELL4 Level-4 CRP entry length			

20(14)	CPITATCP Pointer to the address trace control block (ATB)
CPITBLEN** Buffer length A	
24(18)	CPITBTP Pointer to the branch trace table (BTT) header (CXTBTRC for NCP or PEP)
CPITBPL** Buffer prefix length B	
28(1C)	CPITMATP Pointer to the MOSS alert text table
CPITBPD0** Offset to the BP data offset C	
32(20)	CPITBTFP Offset of the binary time field in the halfword direct addressable storage control block (XDH)
CPITBDO** Offset to the buffer data D	
36(24)	CPITDFTP Pointer to the EBCDIC time and date field
CPITFTUM FID type used by MOSS (FID1)	
40(28)	CPITELMP Pointer to the EBCDIC load module ID in the physical services block (PSB) (NCP or PEP)
CPITCPT* Control program type	

* Indicates a byte expansion follows.

** See Figure 1-1 on page 1-266.

44(2C)	CPITCATP Pointer to the channel adapter trace select table
CPITBDF0** Offset from the start of the buffer to the data field E	
48(30)	CPITMOQP Address of the MOSS outbound queue head pointer
Reserved	
52(34)	CPITCCLP Address of the control-code level in the PSB (NCP or PEP) or at CYKEPCCL (EP only)
Reserved	
56(38)	CPITLIBP Pointer to the level-1 control block (LIB)
CPITFLGS* Flag byte	
60(3C)	CPITCDSP Pointer to configuration data set (CDS)
64(40)	CPITMITP Pointer to MOSS interface table (MIT) for TRAs; 0 if no TRAs

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
40(28) CPITCPT		Control program type—passed on macro call
	X'01'	EP
	X'02'	NCP
	X'03'	PEP
	X'04'	NCP link-attached

Offset/Field Name	Bit Pattern/ Hex Value	Contents
56(38) CPITFLGS		Flag byte
	x... ..	1 = Tells MOSS to initialize as a type 6 channel adapter 0 = Tells MOSS to initialize as a type 5 channel adapter
	.1..	Tells MOSS that CACM is supported
	..1.	Tells MOSS that hot standby is supported
	...1	Tells MOSS that 3745-310 and -610 CCUs are supported
	.... 1...	Tells MOSS that CSS is supported (CPITCSS)
	.... .1..	Tells MOSS that SCTL3 is supported (CPITSC3)
	.... ..1.	Tells MOSS that ODLC lines have been genned (CPITOGN)
	.... ...1	Tells MOSS that PUC-S EC is supported (CPITPUC)

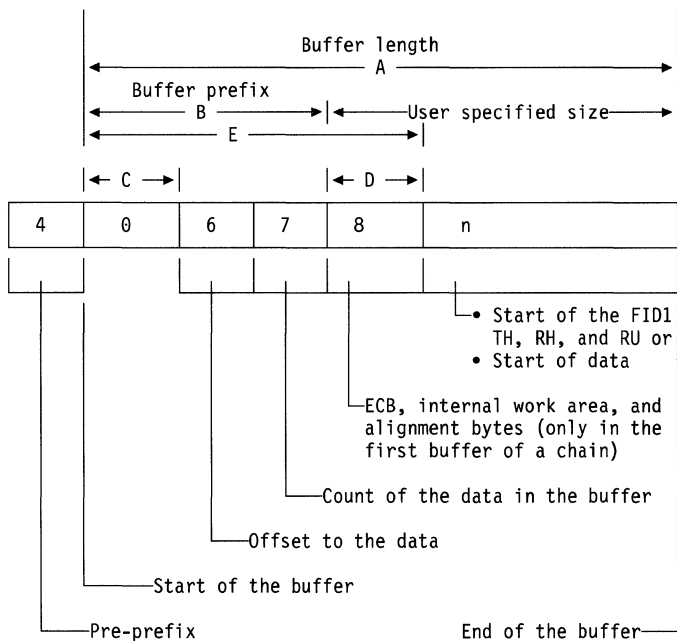


Figure 1-1. NCP Buffer Diagram

Control Point Notification Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointed to by: The QPBCPNP field in the queue pointer block (QPB)

Function: Causes the enqueued PIU to be sent to the SSCP

Note: If an NC.ER.TEST.REPLY PIU is enqueued, then an ER.TESTED PIU is sent.

Format: Standard input queue control block (QCB)
Task—CXDBCPN, CXDBTSD, CXDVRIS, or CXDKICP
Priority—Appendage
Reentrant—No.

Commit Request Block

Program: NCP

Size in bytes: 48(30)

Created by: NCP generation

Pointed to by: The PSBCRBP field in the physical services block (PSB) and the SYSCRBP field in the extended halfword direct addressables control block extension (HWX) plus 52(34)

Function: Processed in level 3 or 4 after a buffer release or a decommit that causes the available buffer total to be above the indicated threshold. Unsatisfied commit requests cause the request that is stored in the adapter control block (ACB) to be chained here if POST=YES.

0(0)	CRBCWHP First commit request pointer (CWALL)
4(4)	CRBCWTP Last commit request pointer (CWALL)
8(8)	CRBSDHP First commit request pointer (Slowdown)
12(C)	CRBSDTP Last commit request pointer (Slowdown)
16(10)	CRBCPSHP CSS pseudo slowdown commit request head pointer
20(14)	CRBCPSTP CSS pseudo slowdown commit request tail pointer
24(18)	CRBCSDHP CSS slowdown commit request head pointer
28(1C)	CRBCSDTP CSS slowdown commit request tail pointer
32(20)	CRBCPCHP CSS pseudo CWALL commit request head pointer
36(24)	CRBCPCTP CSS pseudo CWALL commit request tail pointer
40(28)	CRBCCWHP CSS CWALL commit request head pointer
44(2C)	CRBCCWTP CSS CWALL commit request tail pointer

Check Record Pool

Program: NCP, EP

Size in bytes: 14014(36BE) for all four subpools

The check record pool (CRP) contains a header, a level-1 subpool, a level-2 subpool, a level-3 subpool, and a level-4 subpool. Each subpool contains a subpool control block and has 30 (level 1) or 11 (levels 2, 3, and 4) unit entries. Each entry has a header and a box event record (BER) data area. The length of each BER area depends upon the program level: level 1=220(DC); level 2=198(C6); level 3=232(E8); level 4=244(F4).

Created by: NCP or PEP generation

The shared code module, CXASCBA, calls the generating macro, CXTCRP.

Pointed to by: The SYSCGRP field in the extended halfword direct addressables control block (HWE)

Function: Contains check records that have not yet been processed. Program levels 1, 2, 3, and 4 error-handling routines fill in these check records, and the level-4 module, CXACRPP, transforms them into BERs for transfer to MOSS.

Header

0(0)	CRPPTRL1 Pointer to the level-1 subpool control block
4(4)	CRPPTRL2 Pointer to the level-2 subpool control block
8(8)	CRPPTRL3 Pointer to the level-3 subpool control block
12(C)	CRPPTRL4 Pointer to the level-4 subpool control block

Subpool Control Block

0(0)	CRPNAPTR Pointer to the next available unit for this level to use
	CRPLCRCT Lost check-record count
4(4)	CRPNSPTR Pointer to the next unit in this level needing service
	CRPSIZE CRP unit size

Unit Entry Format

0(0)	CRPFLG* CRP flag	1(1)	Reserved
------	---------------------	------	----------

Start of BER Data (CRPDATA)

2(2) - n

Formatted information.
 See the BER control block for the types of BERs for each program level.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CRPFLG		CRP flag
	1... ..	End of the check record subpool
	.xxx xxx.	Reserved
	.... ...1	Check record unit has been used (filled) and requires service

CSS Status Table

Program: NCP

Size in bytes: 148(94); 20(14) plus 32 adapter entries of 4(4) bytes each

Created by: NCP generation

The CBC DMA's information into the CST.

Pointed to by: The SYSCSTP field in the fullword direct addressable extension (FAX). Since this control block could be above 4 Megabytes, do not code a LA of CXTCST. Use the SYSCSTP field in the FAX.

Function: Contains identification information about the CSS and installation information about each CSS resource.

Header

0(0) CSTSIZE Size in bytes		2(2) Reserved	
4(4) CSTMTY Machine type			
CSTMTY1 Byte 1	5(5) CSTMTY2 Byte 2	6(6) CSTMTY3 Byte 3	7(7) CSTMTY4 Byte 4
8(8) CSTMNO Machine model number			11(B) CSTPLID Plant ID
CSTMNO1 Byte 1	9(9) CSTMNO2 Byte 2	10(A) CSTMNO3 Byte 3	CSTPLID1 Byte 1
12(C) CSTPLID Plant ID (continued)	13(D) Reserved	14(E) CSTMSN Machine serial number	
CSTPLID2 Byte 2		CSTMSN1 Byte 1	15(F) CSTMSN2 Byte 2
16(10) CSTMSN Machine serial number (continued)			19(13) Reserved
CSTMSN3 Byte 3	17(11) CSTMSN4 Byte 4	18(12) CSTMSN5 Byte 5	

Adapter Entry

n CSTADPTA* Adapter TA	n+1 CSTADPTP* Adapter type	n+2 CSTCONF* Adapter configuration	n+3 Unused (CBC use only)
------------------------------	----------------------------------	--	---------------------------------

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
n CSTADPTA		Adapter TA Byte 0
	x... ..	Bus indicator 1 = IOC bus 2 0 = IOC bus 1
	.xxx xxxx	Tag address (TA) Remaining TA bits as specified in Volume 2 Section 9, "IOH/IOHI Registers"
n+1 CSTADPTP		Adapter type
	X'50'	CBC
	X'52'	SDLC
	X'53'	ESCA
	X'54'	TRA
n+2 CSTCONF		Adapter Configuration
	1... ..	Resource is installed
	.1.. ..	Resource is operational

Communication Line Timer and RAS Control Table

Program: NCP

Size in bytes: 11(B)

Created by: NCP generation

Pointed to by: The TIMCTBAD field in the word direct addressable storage control block (XDA)

Function: Indicates end of timer resolution queues. This table must be located at least 25 bytes from the start of a CSECT.

0(0)		CTBACB Pointer to the next adapter control block (ACB)	
		CTBDCCB Dummy character control block (CCB) address	
4(4)		6(6)	
Reserved		CTBWORK Timer work entry for this ACB	
		CTBDWORK Dummy work entry	
8(8)	9(9)		
CTBUXREM Dummy CCBTOREM	Reserved		

Common Physical Unit Block

Program: NCP

Size in bytes: 128(80) plus prefix

Created by: Physical unit specification at NCP generation, NCP initialization, and dynamically

One CUB is generated for each peripheral PU

Pointed to by: The RVTRP field in the resource vector table (RVT), the CXBCUBP field in the common physical unit block extension (CXB), the CBBRESP field in the committed buffers block (CBB), the SCESCBP field in the station control block extension (SCE), the SOTSCB field in the service order table (SOT), the CXICUBP field in the CUB extension for embedded blocks (CXI), and the CX2CUBP field in the peripheral physical unit extension 2 (CX2)

Function: Contains the queue control blocks (QCBs), status information, and scheduling information for a PU. The CUB contains a pointer to the CUB extension (CXB). The CUB extension for embedded blocks (CXI) is pointed to by the CXB

Name	Offset	Name	Offset	Name	Offset
CUBACTPR	4 (4)	CUBLDPSA	72 (48)	CUBPUCBP	72 (48)
CUBADRC	40 (28)	CUBLECB	4 (4)	CUBPUNL	118 (76)
CUBAPIU	52 (34)	CUBLINK	8 (8)	CUBRCMD	65 (41)
CUBBAKPR	12 (C)	CUBLKB	40 (28)	CUBRCNT	80 (50)
CUBBCTI	119 (77)	CUBLMDA	105 (69)	CUBRDURC	80 (50)
CUBBHSCH	20 (14)	CUBLOBH	24 (18)	CUBRECNT	74 (4A)
CUBBID	0 (0)	CUBLOBT	28 (1C)	CUBRENDQ	56 (38)
CUBBSCF	112 (70)	CUBLOSH	32 (20)	CUBRESCC	70 (46)
CUBCASDL	60 (3C)	CUBLOST	36 (24)	CUBREST	60 (3C)
CUBCBBP	96 (60)	CUBLRVTP	124 (7C)	CUBRPCNT	82 (52)
CUBCFGX	100 (64)	CUBLSSI	60 (3C)	CUBRSE	44 (2C)
CUBCLIM	62 (3E)	CUBLUBP	112 (70)	CUBRTCNT	60 (3C)
CUBCOC	63 (3F)	CUBLUNK	20 (14)	CUBSAVE	16 (10)
CUBCONF	2 (2)	CUBMBFR	58 (3A)	CUBSCEP	84 (54)
CUBCPNA	110 (6E)	CUBMCBD	0 (0)	CUBSCHEd	16 (10)
CUBCPNAM	126 (7E)	CUBMSTAT	106 (6A)	CUBSEGSZ	108 (6C)
CUBCPNET	124 (7C)	CUBNLLQP	20 (14)	CUBSESTS	80 (50)
CUBDCF	104 (68)	CUBNR	56 (38)	CUBSHWCS	100 (64)
CUBDLCI	74 (4A)	CUBNRA	32 (20)	CUBSLC	61 (3D)
CUBDLCI1	74 (4A)	CUBNS	57 (39)	CUBSNPM	28 (1C)
CUBDLCI2	75 (4B)	CUBNSBP	32 (20)	CUBSPOLW	51 (33)
CUBDTLBP	80 (50)	CUBOCF	49 (31)	CUBSQBC	72 (48)
CUBEERS	24 (18)	CUBOCL	62 (3E)	CUBSRTLr	64 (40)
CUBERPT	69 (45)	CUBOCLS	71 (47)	CUBSRTR	90 (5A)
CUBERS	58 (3A)	CUBOCLX	62 (3E)	CUBSRTT	88 (58)
CUBFLAG	3 (3)	CUBOFSET	94 (5E)	CUBSSCF	46 (2E)
CUBFLAG3	108 (6C)	CUBPCNT	52 (34)	CUBSSCP	47 (2F)
CUBFLGS	50 (32)	CUBPLXUA	16 (10)	CUBSSIRC	84 (54)
CUBFRCRT	66 (42)	CUBPREL	17 (11)	CUBSSTAT	117 (75)
CUBGADLY	74 (4A)	CUBPREQ	94 (5E)	CUBSTAT	12 (C)
CUBGATMO	72 (48)	CUBPREQ1	94 (5E)	CUBSTATP	4 (4)
CUBGPAF	70 (46)	CUBPREQ2	95 (5F)	CUBSTATS	48 (30)
CUBIDLL	84 (54)	CUBPRIPR	8 (8)	CUBSTMOD	92 (5C)
CUBIMRC	78 (4E)	CUBPRKEY	8 (8)	CUBSTRC	96 (60)
CUBISNPM	93 (5D)	CUBPSTAT	116 (74)	CUBTCNT	50 (32)

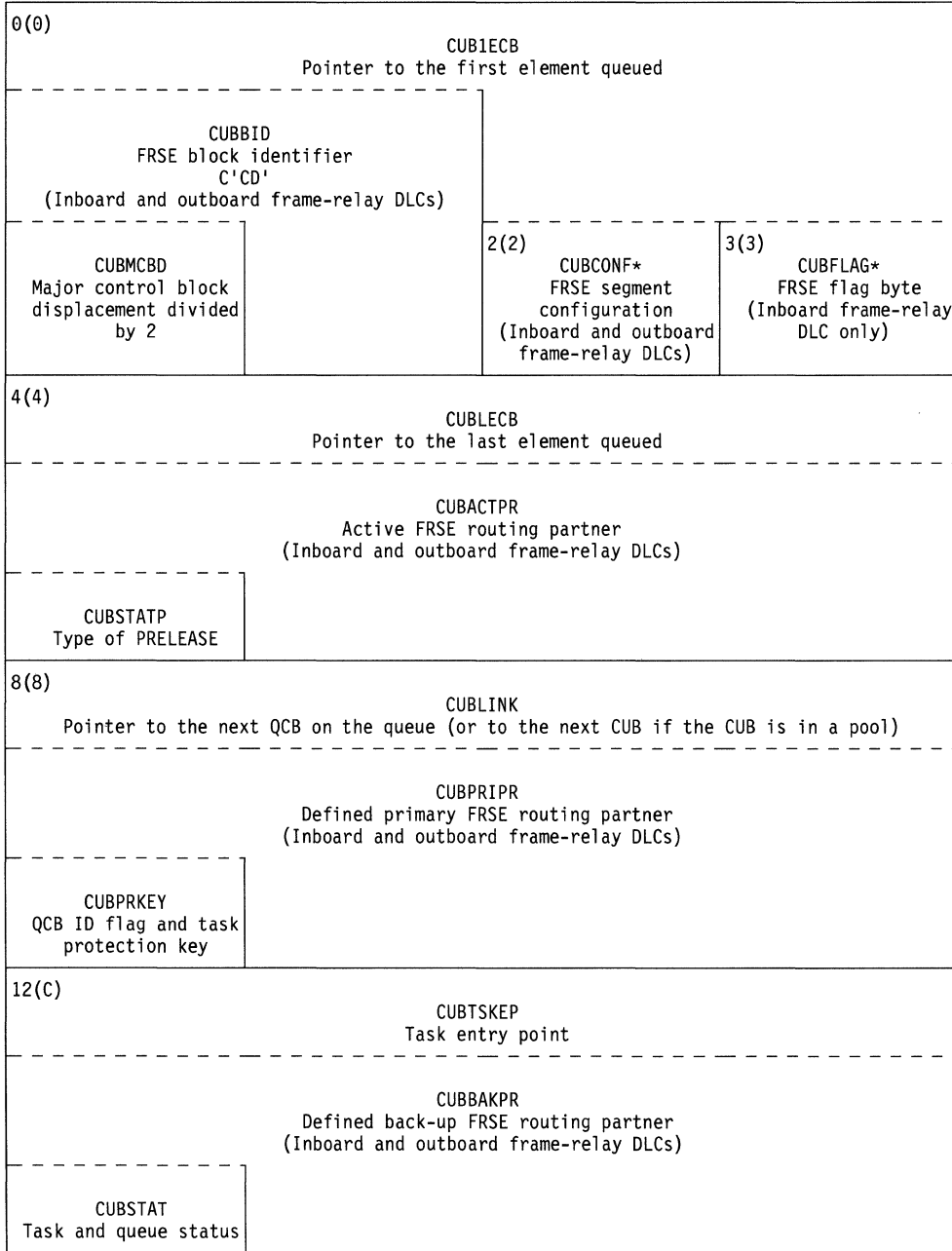
Name	Offset
CUBTERR	68 (44)
CUBTIACT	84 (54)
CUBTINCT	86 (56)
CUBTPCNT	76 (4C)
CUBTRNFR	76 (4C)
CUBTRTCT	72 (48)
CUBTSKEP	12 (C)
CUBTYPE	36 (24)
CUBXIDS	120 (78)
CUBXSA1	107 (6B)
CUBXSA2	120 (78)
CUBXSA3	121 (79)
CUBXSA4	122 (7A)
CUBXSA5	123 (7B)
CUB1ECB	0 (0)
CUB2ERPT	66 (42)

-4(4)

For the prefix format for the CUB, see the network performance monitor prefix control block (NPF).

Link Inbound Queue (CUBLIQ)

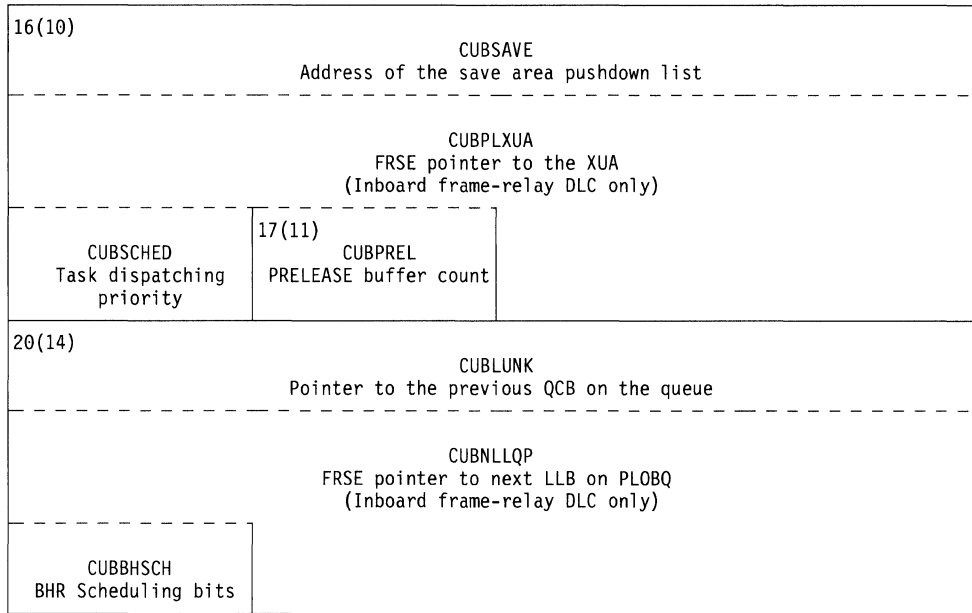
(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



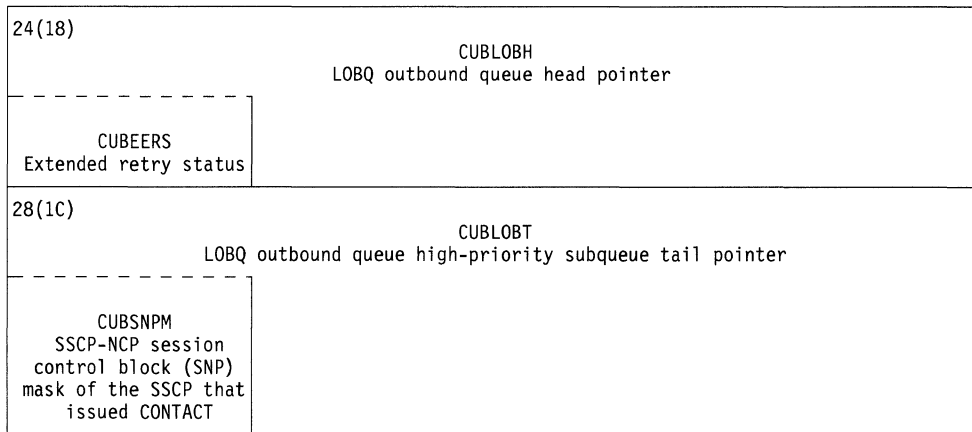
* Indicates a byte expansion follows.

Link Inbound Queue (CUBLIQ)(continue)

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



Link Outbound Queue (LOBQ)



Link Outstanding Queue (LOSQ)

32(20)		CUBLOSH LOSQ outstanding queue head pointer	
CUBNRA Number of PIUs requiring ACK (SDLC only)			
CUBNSBP NPM frame-relay physical station control block (NSB) pointer (Inboard frame-relay DLC only)			
36(24)		CUBLOST LOSQ tail pointer	
CUBTYPE* Station type			
40(28)		CUBLKB Address of the link control block	
CUBADRC SDLC addressing character			
44(2C)		46(2E)	
CUBRSE Element address of the resource		CUBSSCF* Service-seeking control flags	
		Service-seeking commands	47(2F) CUBSSCP* CONTACT poll commands
48(30)	49(31)	50(32)	
CUBSTATS* Station status	CUBOCF* Service-seeking output control flags	CUBTCNT Transmission counter	
		CUBFLGS* Station flags (ODLC)	51(33) CUBSPOLW Station polling weight (ODLC)
52(34)		CUBAPIU Address of the physical services PIU	
CUBPCNT Pass limit			

* Indicates a byte expansion follows.

56(38) CUBRENDQ Pointer to next FRSE station in run ending queue. (Inboard frame-relay DLC only)		
CUBNR NR receive count	57(39) CUBNS NS send count	58(3A) CUBERS Error retry status** CUBMBFR Number of host read commands. (Only used during NCP initialization)
60(3C) CUBCASDL Maximum time allowed until CA slowdown (Only used during NCP initialization)		62(3E) CUBOCL Outstanding count limit
CUBLSSI Last set SCCF issued (ODLC)		
CUBRTCNT First-level error recovery procedure (ERP) retry count		
61(3D) CUBSLC Second-level ERP retry count		63(3F) CUBCOCLX One byte outstanding count limit CUBCOC Current outstanding count
CUBREST FRSE run ending status (Inboard frame-relay DLC only)		
CUBCLIM FRSE station queued buffer limit (Inboard frame-relay DLC only)		
64(40) CUBSRTL Second-level retry limit	65(41) CUBRCMD* Run command modifiers	66(42) CUBZERPT Second-level ERP time-out value
CUBFCRT FRSE subport committed rate in bytes (Inboard frame-relay DLC only)		
68(44) CUBTERR Monitor secondary error count	69(45) CUBERPT Second-level ERP time delay	70(46) CUBRESCC FRSE subport residual committed count to transmit (Inboard frame-relay DLC only)
CUBGPAF Station group address		71(47) CUBOCLS Outstanding count limit save area

* Indicates a byte expansion follows.

** See the LXBSTAT and LXBSTATC fields in the LXB for a definition of the status bits.

72(48) CUBGATMO Genned attention timeout value (Only used during NCP initialization)	74(4A) CUBRECNT Receive I-format error counter		
CUBTRTCT Total retry counter			
CUBSQBC FRSE station queued buffer count (Inboard frame-relay DLC only)	CUBGADLY Genned attention delay value. (Only used during NCP initialization)		
	CUBDLCI Frame-relay DLCI (Inboard frame-relay DLC only)		
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; vertical-align: top;"> CUBDLCI1* First byte of DLCI </td> <td style="width: 50%; vertical-align: top;"> 75(4B) CUBDLCI2* Second byte of DLCI </td> </tr> </table>	CUBDLCI1* First byte of DLCI	75(4B) CUBDLCI2* Second byte of DLCI
CUBDLCI1* First byte of DLCI	75(4B) CUBDLCI2* Second byte of DLCI		
CUBLDPSA Pointer to LDPSA in error (ODLC)			
CUBPUCBP Pointer to the protocol unique control block (Only used during NCP initialization) (ODLC)			
76(4C) CUBTPCNT Total transmission counter	78(4E) CUBIMRC Intensive mode record counter		
CUBTRNFR Maximum amount of data NCP can receive from logical station (Only used during NCP initialization)			
80(50) CUBRCNT I-format received counter	82(52) CUBRPCNT S-format received counter		
CUBSESTS Pointer to ODL station error statistics (ODLC)			
CUBRDURC RDU request code (ODLC)			
CUBDTLBP FRSE DTL entry pointer (Inboard frame-relay DLC only)			

* Indicates a byte expansion follows.

84(54) CUBTIACT Total acknowledged I-format counter		86(56) CUBTINCT Total I-format retransmission counter	
CUBSCEP Pointer to SCE (ODLC)			
CUBIDLL Pointer to IP token-ring dummy LLB (IP token-ring CUB)			
CUBSSIRC Station stop immediate reason code (ODLC)			
88(58) CUBSRTT Total transmission threshold value		90(5A) CUBSRTR Total retries threshold value	
92(5C) CUBSTM0D* Flag byte	93(5D) CUBISNPM Intensive mode SNP mask	94(5E) CUBPREQ** FRSE pending request flags (All bits reserved for frame-relay) (Inboard frame-relay DLC only)	
		CUBPREQ1 FRSE pending request byte 1	95(5F) CUBPREQ2 FRSE pending request byte 2
		CUBOFSET Offset from the buffer prefix (BH) to the TH	
96(60) CUBCBBP Pointer to the committed buffers block			
CUBSTRC* Session trace and link problem determination aid (LPDA) flags			
100(64) CUBCFGX Pointer to the CXB			
CUBSHWCS* Show cause save byte			

* Indicates a byte expansion follows.

** See the LLBPREQ field in the LLB for a definition of the bits.

104(68) CUBDCF* Data link control flags	105(69) CUBLMDA Local modem addresses	106(6A) CUBMSTAT* Miscellaneous status byte	107(6B) CUBXSA1 Byte 0 of XID/XID3 received after a null exchange identification (XID) poll
108(6C) CUBSEGSZ Maximum segment size (in bytes)		110(6E) CUBCPNA Element address of the SSCP that issued a CONTACT to the cluster	
CUBFLAG3* FRSE flags (Inboard frame-relay DLC only)			
112(70) CUBLUBP Pointer to the first logical unit control block (LUB) in the LUB chain			
CUBBSCF* Boundary session control flags			
116(74) CUBPSTAT* PU primary status	117(75) CUBSSTAT* PU secondary status	118(76) CUBPUNL CUB PU name length	119(77) CUBBCTI BFSESSINFO PIU control table (BCT) index for BFSESSINFO processing
120(78) CUBXIDS			
CUBXSA2 Byte 2 of the received XID/XID3 from the PU	121(79) CUBXSA3 Byte 3 of the received XID/XID3 from the PU	122(7A) CUBXSA4 Byte 4 of the received XID/XID3 from the PU	123(7B) CUBXSA5 Byte 5 of the received XID/XID3 from the PU
124(7C) CUBLRVTP Pointer to logical resource vector table			
CUBCPNET Network names table (NNT) entry for the network ID from XID3		126(7E) CUBCPNAM NNT entry for the control point name from XID3	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) CUBCONF		FRSE segment configuration
	1...	Support A
	.1..	Support B
	..1.	Substitute support A
	...1	Substitute support B
3(3) CUBFLAG		FRSE flag byte
	1...	CUB queue on physical link outbound queue (PLOBQ)
36(24) CUBTYPE		Station type
	x...	Reserved
	.1..	Continue polling in auto network shutdown (ANS)
	..1.	Switched SDLC station (CUBTSWT)
	...1	Resource is eligible for network performance analyzer (NPA) data collection
	.... x...	Secondary link bit:
		1 = Link is secondary
		0 = Link is primary
	.... .1..	Terminal node (type 1 PU)
	.... .1.	Cluster controller (type 2 PU)
	.... ...x	1 = Intermediate node (subarea)
		0 = Boundary node (peripheral)
46(2E) CUBSSCF	Byte 0	Service-seeking control flags
	1...	Poll skip flag
	.1..	Halt service seeking
	..1.	Not operational
	.... 1...	LL2 active
	.... ...1	CONTACT poll command active
47(2F) CUBSSCP	Byte 1	CONTACT poll commands
	1...	Disconnect mode (DISC)
	.1..	Set normal response mode (SNRM)
	..11 111.	Poll command mask
	.... 1...	XID with data
	.... .1..	Set initialization mode (SIM)
	.... .1.	XID
	.... .11.	Disconnect modifier (local-to-local link)
	.... ...1	CONTACT poll command field

CUBSSCF Values

Configurable States: (See the preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0000	0000 0001	Reset
1010 0001	0000 1001	XID pending with data
1010 0001	0000 0011	XID without data

Primary States: (See the preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0000	0000 0001	Reset
1010 0001	0100 0001	CONTACT pending
1110 0001	1100 0001	CONTACT and DISCONTACT pending
0000 0000	0000 0001	Active (normal data)
0010 0000	0000 0001	Load/Dump/RPO active
1010 0001	0000 0101	SIM pending
1010 0001	1000 0001	DISC pending (SCBAPIU=0)
1010 0001	1000 0001	DISCONTACT pending (SCBAPIU≠0)
1010 1000	0000 0001	LL2 active
1110 0000	0000 0001	Internal forced station INOP pending
1110 1000	0000 0001	LL2 ending
1110 0001	0000 0001	Free a resource operation pending

Secondary States: (See the preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0001	0100 0001	CONTACT pending or CONTACT pending with SNRM
0000 0000	0000 0001	Active
1010 0001	1000 0001	Request disconnect (SCBAPIU=0)
1010 0001	1000 0111	DISCONTACT pending (SCBAPIU≠0)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) CUBSTATS		Station status
	1...	Poll sent (CUBSPOL)
	.1..	LL2 is active
	..1.	Station quiesce is pending
	...1	Remote power-off (RPO) is in progress
	.... 1...	SIM can be accepted over the link associated with this station
	.... .1..	COMMIT is in progress for this station
	.... ..1.	One or more SDLC error record counters has reached its limit
	.... ...1	Device is available to dynamic reconfiguration
49(31) CUBOCF		Service-seeking output control flags
	1...	Output skip bit
	.1..	Run terminator interlock
	..1.	Receive not ready (RNR) received
	..1.	Allow PIU to flow (ODLC stations only)
	...1	Second-level delay in progress
	.... 1...	Scanner change required
	.... .1..	Duplex SDLC scheduling
	.... ..1.	RNR repoll or half-duplex poll control
	.... ...1	Half-duplex poll in progress

Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) CUBFLGS		Station flags (ODLC)
	1...	End run for secondary
	.1..	Stop station complete is pending
	..1.	A disconnect indication LDPSA was received
	...1	An NDPSA command is queued because buffers were not available
	.... 1..	Resource definition initial pending
	.... .1..	Switched going reset end run
	.... ..1.	FRSE substitute support CONTACT failure—no LMI support
65(41) CUBRCMD		Run command modifiers
	x...	Reserved
	.1..	Override first- and second-level retries
	..1.	Station activation retry
	...1	Immediate retry
	.... 1..	SDLC reject (REJ) has been received since NCP last sent poll/final
	.... .1..	Send reject (REJ) when transmit leg is busy
	.... ..1.	Waiting on a good response to poll
	.... ...x	Reserved
74(4A) CUBDLCI1		First byte of DLCI
	xxxx xx..	Reserved for DLCI address
	.... ..x.	Command/Response indicator
	.... ...x	Extended address bit (0)
75(4B) CUBDLCI2		Second byte of DLCI
	xxxx	Reserved for DLCI address
	.... x...	Reserved for congestion indicator
	.... ..x.	Reserved for congestion indicator
	.... ..x.	Discard eligibility
	.... ...x	Extended address bit (1)
92(5C) CUBSTMOD		Flag byte—set for reset at levels 2, 3, or 5. Level 5 may alter these flags only with an XIO Setmode
	1...	Intensive mode (IM) is active
	.1..	IM stop is in progress for SETCV (IM)
	..1.	IM stop is in progress for slowdown
	...1	IM completed by processor state (CUBSCOM)
	.... 1..	IM deactivation incomplete state (CUBSDEA)
	.... .1..	IM start NDPSA wait (CUBSWAI)
	.... ..1.	IM stop NDPSA not required (CUBSREQ)
	.... ...1	Block link problem determination aid 2 (LPDA2) test to this resource
96(60) CUBSTRC		Session trace and LIMRES flags
	1...	Last outbound PIU was expedited
	.1..	Next-to-last outbound PIU was expedited
	..1.	Last inbound PIU was expedited
	...1	Next-to-last inbound PIU was expedited
	.... 1..	Session trace for all resources
	.... .1..	Session trace for a specific resource
	.... ..1.	Limited resource indicator

Offset/Field Name	Bit Pattern/ Hex Value	Contents
100(64) CUBSHWCS		Show cause save byte
	1...	Dynamic threshold alteration has altered a threshold
	X'01'	Total transmission threshold limit has been exceeded
	X'02'	Total retries threshold limit has been exceeded
	X'03'	Deactivation process
	X'04'	Transmission threshold has been exceeded (I-format)
	X'05'	Receive I-format error threshold has been exceeded
	X'06'	S-format has been received; threshold has been exceeded
	X'07'	Total has been acknowledged; I-format threshold has been exceeded
	X'08'	I-format has been received; threshold has been exceeded
	X'09'	Total I-format retransmission threshold has been exceeded
	X'0A'	Sum of receive I-format error counter and I-format receive counter has resulted in a counter overflow
	X'0B'	Reserved
	X'0C'	Reserved
104(68) CUBDCF		Data link control flags
	x...	Control field operating mode: 1 = 2-byte control field 0 = 1-byte control field
	.x...	SNRM: 1 = Transmit SNRME 0 = Transmit SNRM
	..1.	XID on the LOBQ
	...1	First error in poll cycle
	.... x...	Multipoint line indication: 1 = Multipoint line 0 = Point-to-point line
	.... .1..	Do not transmit while in awaiting CONTACT state
	.... .1.	Station resides on a primary link segment
	.... ...1	Run LPDA when the total transmissions counter reaches its threshold
106(6A) CUBMSTAT		Miscellaneous status byte
	1...	LU-LU session was reported
	.1..	INOP type 04 is required
	..1.	CUBXSA2-5 contains the node ID
	...x	CUB allocated indicator (CUBALLC): 1 = CUB is allocated 0 = CUB is in a pool
	.... 1...	Ready to deallocate CUB
	.... .1..	Cleanup is in progress
	.... .1.	Block DACTPU ALS reset (CUBNTRN)
	.... ...1	Station is on an ODLC line (ODLC)
108(6C) CUBFLAG3		FRSE flags
	..1.	Frame-relay link

Offset/Field Name	Bit Pattern/Hex Value	Contents
112(70) CUBBSCF		Boundary session control flags
	1...	Any XID state
	.1..	Any active normal-response mode state
	..1.	Any DISCONTACT state
	...1	Any CONTACT state
	.... 1...	Any test state
	.... .xx.	Substate indicators: 00 = Configurable 01 = Primary 10 = Secondary
	.... ...1	Final phase for any CONTACT or XID state
		Primary Substate Definitions
	X'00'	Reset state
	X'08'	Link test level 2
	X'13'	CONTACT SNRM state
	X'22'	DISCONTACT primary state
	X'30'	CONTACT-DISCONTACT state (BCA)
	X'32'	CONTACT-DISCONTACT state
	X'42'	Active primary
	X'80'	Null XID, switched line
	X'81'	Pre-negotiation XID3, switched line
	X'82'	Null XID Pre-negotiation non-switched link station
	X'83'	XID3 Pre-negotiation, non-switched final state
	X'90'	Null XID, leased line
	X'91'	Negotiations pending XID3 configurable (Station is still configurable)
	X'92'	Negotiations pending XID3
	X'93'	Control vector X'22', normal exchange
	X'D2'	XID exchange, active station
	X'D3'	Control vector X'22', active XID3 exchange
		Secondary Substate Definitions
	X'15'	CONTACT SNRM state—UA to SNRM sent
	X'24'	DISCONTACT Secondary state
	X'25'	DISCONTACT pending, secondary final state
	X'44'	Active secondary state
	X'54'	CONTACT active secondary state—active XID exchange is complete.
	X'84'	Null XID non-switched link station
	X'85'	XID3 pre-negotiation leased secondary final state
	X'94'	Negotiations pending XID3 secondary
	X'95'	Negotiations pending XID3 secondary final (waiting for RR)
	X'97'	Control vector X'22', normal exchange (Initial XID exchange failed)
	X'B0'	Null XID, CONTACT-DISCONTACT pending
	X'D4'	XID exchange, active secondary station
	X'D5'	Active XID exchange, secondary final
	X'D7'	Control vector X'22', active exchange (NSA/TKO XID exchange failed.)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
116(74) CUBPSTAT		PU primary status
		Primary half-session
	1...	Session established
	.1..	Processing session initiating request
	..1.	Processing terminating request
		Secondary half-session
	...1	Session established
	.... 1...	ACTPU pending
	.... .1..	DACTPU pending
	.... ..1.	FNA request has been received for this FRSE support PU when active
	.... ...1	FRSE forced down due to ANS of physical station (LMI PU)
117(75) CUBSSTAT		PU secondary status
	1...	3270 station
	.1..	Takeover is required
	..1.	BFSESSINFO is in progress
	...1	PU is a dynamic resource
	.... 1...	Network address is required
	.... .1..	Control block contains usable control vector information
	.... ..1.	PU was added by dynamic reconfiguration
	.... ...1	Dynamic reconfiguration is in progress

Common Physical Unit Block Extension

- Program:** NCP
- Size in bytes:** 128(80)
- Created by:** NCP generation, NCP initialization, and dynamically
 One CXB is generated for each CUB.
- Pointed to by:** The CUBCFGX field in the common physical unit block (CUB)
- Function:** Contains the request work queue for a PU.

PU Request Work Queue

(See "Queue Control Block for Work Queues" on page 1-887 for bit definitions.)

0(0)		CXIECB Pointer to the first element queued	
CXMCBD Major control block displacement divided by 2			
4(4)		CXLECB Pointer to the last element queued	
8(8)		CXLINK Pointer to the next queue control block (QCB) on the queue (or to the next CXB if the CXB is in a pool)	
CXPRKEY Protection key			
12(C)	CXSTAT Task and queue status	13(D)	CXBFLAGS* CXB flags
		14(E)	CXBRNRCT Start time of the first receiver not ready (RNR) received
16(10)		18(12)	
CXBLNKTG CDLT counter good		CXBLNKTB CDLT counter bad	

* Indicates a byte expansion follows.

Note: The fields CXBLNKTG and CXBLNKTB must remain at the same relative offsets as their counterparts in the station control block extension (SXB).

20(14) CXBXIDRP Pointer to exchange identification (XID) data received or XID data save in case of resend			
CXBRCT** Reason for CONTACT termination			
24(18) CXBCNTF* CONTACT flags	25(19) CXBGPCNT Generated pass limit	26(1A) CXBTGN Transmission group number	27(1B) CXBDTAIN* Threshold alteration indicator
28(1C) CXBOUTB1 Last outgoing sequence number		30(1E) CXBOUTB2 Next-to-last outgoing sequence number	
32(20) CXBINB1 Last incoming sequence number		34(22) CXBINB2 Next-to-last incoming sequence number	
36(24) CXBCABP Pointer to the associated channel adapter control block (CAB)			
CXBGFLGS* User generation flags			
40(28) CXBGSGSZ Generated maximum segment size (in bytes)		42(2A) CXBILUSF* Independent LU support flags	43(2B) CXBGACL Generated outstanding count limit

* Indicates a byte expansion follows.

** See the byte expansion for RU1LDS in Volume 2 Section 5, "NCP Network Commands."

Note: The fields CXBXIDRP, CXBRCT, CXBTGN, CXBDTAIN, CXBCABP, and CXBGFLGS must remain at the same relative offsets as their counterparts in the SXB.

For ODLC Stations:

44(2C) Reserved	
48(30) CXBDPRP Pointer to link elements in delayed pacing response list	
52(34) CXBDTIME Time station placed in delayed pacing response list	54(36) - 61(3D)
Reserved	

Note: The fields CXBDPRP and CXBDTIME must remain at the same relative offsets as their counterparts in the SXB.

SDLC Secondary Command Reject Pseudo Buffer

(The entire pseudo buffer must be at the same offset in the CXB as in the SXB.)

44(2C) Negative buffer header prefix			
48(30) CXBUFCHN Buffer prefix chain field			
52(34) CXCOPYF Copy field		54(36) CXOFFSET Buffer prefix data offset field	55(37) CXDATCNT Buffer prefix data count field
CXCOPCT Copy count	53(35) CX COPYS** Copy status		
56(38) CXBCMDRC*** Frame reject (FRMR) data bytes 1 and 2		58(3A) CXBFMRME*** FRMR data bytes 3 and 4	
CXBFMR1 FRMR byte 1	57(39) CXBFMR2 FRMR byte 2	CXBFMR3 FRMR byte 3	59(3B) CXBFMR4 FRMR byte 4
60(3C) CXBCMDRX*** FRMR data byte 5 or FRMR reject flags*		61(3D) CXBFMR6 FRMR byte 6 or extra	
CXBFMR5 FRMR byte 5			

* Indicates a byte expansion follows.

*** See the formats for the five FRMR data bytes on page 1-999.

Formats for the Five FRMR Data Bytes

2-Byte Operating Mode

Invalid Command	N(S)	N(R)	Diagnostic Flags
-----------------	------	------	------------------

1-Byte Operating Mode

Invalid Command	N(S), N(R)	Diagnostic flags	0	Diagnostic flags
-----------------	------------	------------------	---	------------------

Note: Only the first 3 bytes are transmitted for 1-byte operations.

		62(3E) CXBSEQN SSCP monitor mode function (SMMF) station PIU sequence number	
64(40) CXBFRAD DLCI address (10 bits, right justified, hex) (Inboard and outboard frame-relay DLCs) (Frame-relay only)		66(42) CXBSTAT* SMMF station status byte	67(43) CXBINPC SMMF station INOP code
CXBFRAD0 DLCI address byte 0 (Frame-relay only)	65(41) CXBFRAD1 DLCI address byte 1 (Frame-relay only)		
68(44) CXBPPBCT Pseudo BID pending count		70(46) CXBIBSCT Incoming segmentation count	
72(48) CXBPBSBF Pointer to the first boundary session block (BSB) in the pre-pending active chain			
CXBCN Correlation number			
76(4C) CXBLOBMT Pointer to the tail of the medium-priority subqueue			
CXBAWCR* Awaiting contact state (AWC) reason indicator			
80(50) CXBLOBLT Pointer to the tail of the low-priority subqueue			
CXBPASCT Pass count for this station			
84(54) CXBSRTLRL Second-level retry limit	85(55) CXBERPT Second-level error recovery procedure (ERP) time delay	86(56) CXBWPDCT Count awaiting a pacing response with data	
88(58) CXBSNEXT Pointer to the next CUB in the service out queue (SOQ) chain			
CXBSOTIN First service order table (SOT) index for this CUB			

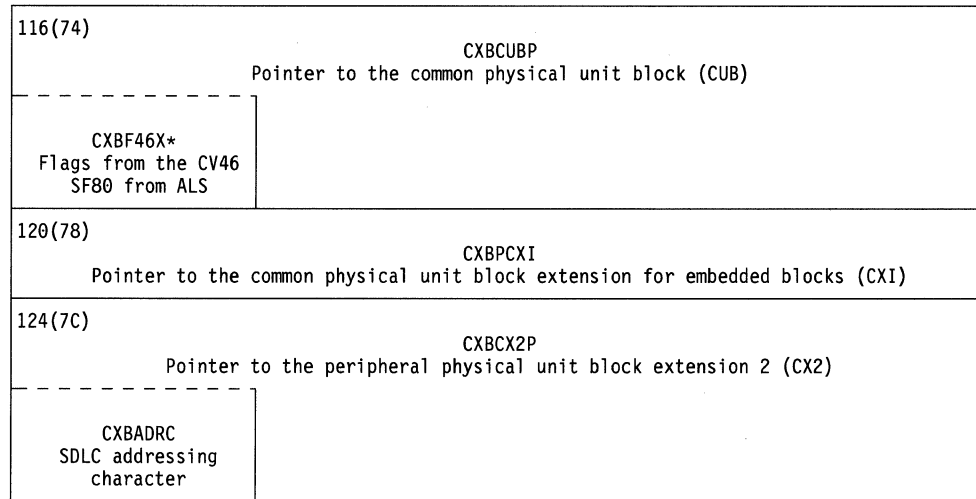
* Indicates a byte expansion follows.

Note: The fields CXBSEQN, CXBFRAD, CXBSTAT, and CXBINPC must remain at the same relative offsets as their counterparts in the SXB.

92(5C) CXBGPMSK Station group poll mask		94(5E) CXBFLG2* CXB flag byte 2	95(5F) CXBMXBFR Maximum buffers per segment
CXBCPL Committed pass limit (Outboard frame-relay DLC only)	93(5D) Reserved (Outboard frame-relay DLC only)		
96(60) CXBQSZWF Ethernet queue size work field			
CXBETYPE* CXB type byte			
100(64) CXBENIP Pointer to Ethernet interface control block (ENI)			
CXBFRPD Temporary pointer used when FRSE primary partner deleted (Inboard and outboard frame-relay DLCs)			
CXBFLGS* CXB flags			
104(68) CXBFLG3* CXB flag byte 3	105(69) CXBAFLGS* APPN flags field	106(6A) CXBALSL Length of name in CXIALSN	107(6B) CXBFLG46* Flags from the CV46 SF80 from host
		CXBFNANL Length of name in CXIFNAN (Inboard and outboard frame-relay DLCs)	
108(6C) CXBACTF ACTCONNIN CV46 flags	109(6D) CXBAXSF* APPN XID state flag	110(6E) CXBAXFG* APPN XID field	111(6F) CXBNTGN TGN of record
112(70) CXBAEBP Next AEB pointer (next CXB in OAX queue)			

* Indicates a byte expansion follows.

Note: The fields CXBCPL and CXBFLG3 must remain at the same relative offset as their counterparts in the SXB.



* Indicates a byte expansion follows.

Note: The field CXBCX2P must remain at the same relative offset as its counterpart in the SXB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
13(D) CXBFLAGS		CXB flags
	x... ..	1 = Do not increment CUB error counter 0 = CUB error counter may be incremented
	.1... ..	Station is in delayed pacing response list (ODLC)
24(18) CXBCNTF		CONTACT flags
	xx... ..	CONTACT usage bits: 00 = Reserved 01 = Initial CONTACT 10 = Takeover CONTACT 11 = Non-Activation CONTACT
	..1... ..	Use null XID polling
	...1... ..	Initial negotiation XID3 from station is pending
	....1... ..	XID3 was sent to the station
	.... .1... ..	XID exchange was not successful
	.... ..1... ..	XID exchange was unsolicited
	.... ...1... ..	Send RECMS with this INOP
27(1B) CXBDTAIN		Threshold alteration indicator
	1... ..	Dynamic threshold alteration has altered a threshold

Offset/Field Name	Bit Pattern/ Hex Value	Contents
36(24) CXBGFLGS		User generation flags
	xxxx	Network addressable function error count for XID exchange
	.... x...	NCP generated modulus: 1 = Modulo 128 0 = Modulo 8
	.... .x..	Generated duplex SDLC scheduling: 1 = Duplex station 0 = Half-duplex station
	.... ..1.	PU initially generated
	.... ...1	PU was generated primary
42(2A) CXBILUSF		Independent LU support flags
	1...	PU-T2.1 station
	.1..	CONTACTED X'0A' and X'0B' support
	..1.	ACTPU was not requested
	...1	Network services are available
	.... 1...	One-way adaptive bind pacing response is required
	.... .1..	NPA session counting control block non-activation contact queued
	.... ..1.	Peripheral station is configurable
	.... ...1	Secondary initiated non-activation exchange indicator (SINAXE)
60(3C) CXBCMDRX		FRMR flags
	.... 1...	N(R)—out of range
	.... .1..	I-field too long status
	.... ..1.	I-field not allowed status
	.... ...1	Invalid C-field status
66(42) CXBSTAT		SMMF station status byte
	1...	SMMF contact pending
	.1..	SMMF contact complete
	..1.	SMMF contact error
	...1	SMMF support for this station
76(4C) CXBAWCR		Awaiting contact state (AWC) reason indicator
	X'00'	AWC due to initial CONTACT
	X'01'	AWC due to SSCP takeover
	X'02'	AWC due to XID received
94(5E) CXBFLG2		CXB flag byte 2
	x...	Group poll flag (valid only for stations supporting group poll): 1 = Group poll should NOT be sent for this station (send specific poll) 0 = Group poll may be sent for this station
	..1.	Disable token-ring physical line when station is reset
	...1	CPname change support
	.... 1...	CP-CP sessions allowed
	.... .1..	TG quiesce
	.... ..1.	Adjacent link station's network node support indicator
	.... ...1	Parallel TGs supported

Offset/Field Name	Bit Pattern/ Hex Value	Contents
96(60) CXBETYPE		CXB type byte
	1...	IP Ethernet resource
	.1..	IP token-ring resource (CXBIPTR)
	..1.	Reserved
	...1	Reserved
	.... 1...	Reserved
100(64) CXBFLGS		CXB flags
	x...	1 = Network performance monitor (NPM) knows about this resource 0 = NPM does not know about this resource
	.x..	NPM must be notified that this resource has been moved
	..1.	Free network address (FNA) must be sent to NPM
	...1	Request network address assignment (RNAA) must be sent to NPM
	.... 1...	Static independent LU address freed
	.... .x..	Non-native network attachment (NNNA) support remembrance: 1 = Initial SSCP owner is NNNA capable 0 = Initial SSCP owner is not NNNA capable
	.... ..1.	Associated physical link block (PLB) has station statistics saved
	.... ...1	RNAA must be queued due to FNA in progress
104(68) CXBFLG3		CXB flag byte 3
	1...	NPM performance collection by transmission priority supported (CXBNTPTP)
	.1..	NPM performance collection by transmission priority active for this station or its associated line (CXBNTPA)
	..1.	INOP type 01 required for discontact processing (ODLC)
	.... x...	Reserved
	.... .x..	Reserved
105(69) CXBAFLGS		APPN flags field
	1...	Adjacent link station's support of CPname change
	.1..	Awaiting contact state indicator
	..1.	APPN connection support indicator
	...1	Host APPN connection support indicator
	.... 1...	ALS treating the connection as LEN
	.... .1..	ALS CP-CP session requested
	.... ..1.	ALS CP-CP session support
	.... ...x	Initial networking support indicator (CXBINNS) (only meaningful for APPN nodes) 1 = This PU was initially activated as a Network Node 0 = This PU was initially activated as an End Node
107(6B) CXBFLG46		Flags from CV46 SF80 from host
	.... ..1..	Intercluster link connection (CXBICL)
	.... ...1.	Release 2 Border Node (R2BN) is supported on this connection (CXBR2BN)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
109(6D) CXBAXSF		APPN XID state flags
	1...	LIMBO indicator
	.1..	We want to change indicator
	..1.	Sent command, waiting for response
	...1	Owe ANS XID exchange
	.... 1...	End run after transmit (ERAT)
	.... .1..	New CPname received on takeover
	.... ..1.	LIMBO due to CONTACT indicator (CXBLMBC)
110(6E) CXBAXFG		APPN XID flags
	1...	Last XID sent had CPname change support
	.1..	Last sent current/old information
	..1.	Send current/old information
	...1	Our second to last XID sent had CPname change support
	.... 1...	CP-CP sessions allowed saved value
	.... .1..	Received XID contains new CPname
	.... ..1.	Received XID contains new TGN
116(74) CXBF46X		Flags from ALS CV46 SF80
	.... .1..	Intercluster link connection (CXBAICL)
	.... ..1.	Release 2 Border Node (R2BN) is supported on this connection (CXBAR2B)

Common Physical Unit Block Extension for Embedded Blocks

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation, NCP initialization, and dynamically.

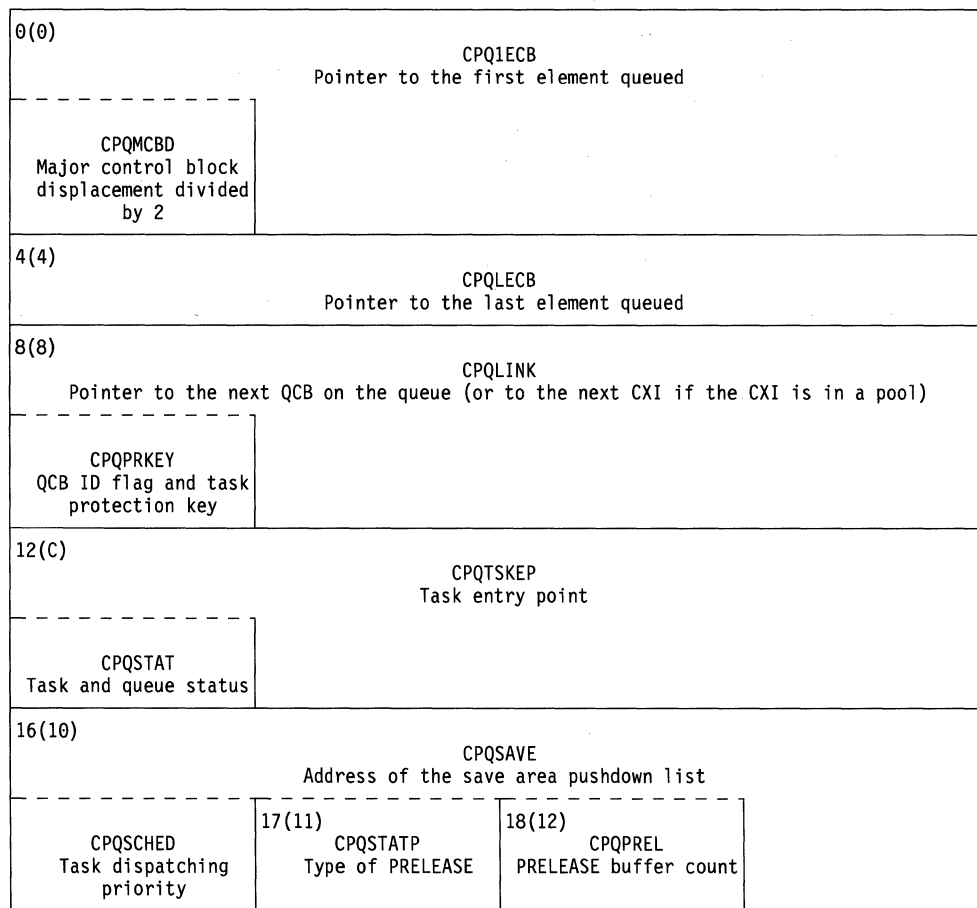
One CXI is generated for each common physical unit block (CUB)

Pointed to by: The CXBPCXI field in the common physical unit block extension (CXB)

Function: Contains the CXIPPO queue control block (QCB) and the physical unit routing block (PRB), the session path control block (SPC), and the resource connection block (RCB)

SSCP-PU CPM Out Processing Queue Control Block (CXIPPO)

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



20(14)		CPQLUNK Pointer to the previous QCB on the queue	
CPQBHSCH Block handler routine (BHR) scheduling bits			
24(18) - 31(1F)		CXICUBPN CUB PU name	
32(20)		CXITOCF Takeover chain-forward pointer	
36(24) - 43(2B)		CXIALSN Adjacent link station name	
		CXIFNAN Deleted FRSE support name (Inboard and outboard frame-relay DLCs)	
44(2C) - 51(33)		CXISSCP SSCP of record	
52(34)		CXICUBP Pointer to the CUB	
CXICPNL SSCP of record length			
56(38)	CXICPNII NNT index for the NETID portion of the connection network virtual node network-qualified CP name (APPN)	58(3A)	CXICPNMI NNT index for the NAME portion of the connection network virtual node network-qualified CP name (APPN)
60(3C) - 75(4B)		Reserved	
76(4C) - 83(53)		CXIPRB Embedded PRB The PRB contains an embedded search tree header control block (SHB)	
84(54) - 99(63)		CXISPC Embedded SPC The SPC contains an embedded search element control block (SEB)	
100(64) - 127(7F)		CXIRCB Embedded RCB (For details, see the RCB format for the CUB)	

Peripheral Physical Unit Block Extension 2 (CX2)

Program: NCP

Size in bytes: 12(C)

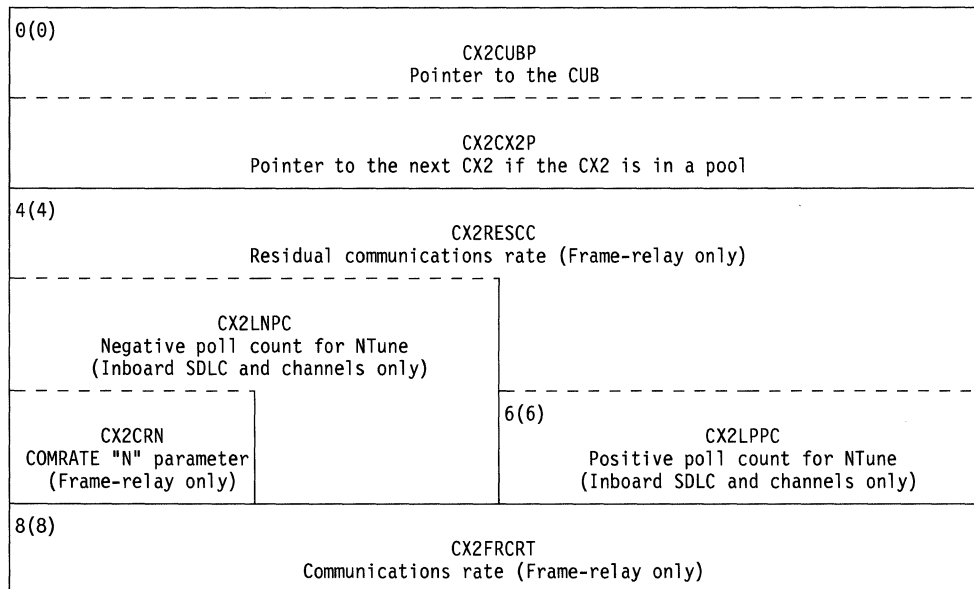
Created by: NCP generation, NCP initialization, and dynamically

One CX2 is generated for each common physical unit block (CUB)

Pointed to by: The CXBCX2P field in the common physical unit block extension (CXB), and the CX2CX2P field in the CX2

Function: Contains various fields for the PU

Note: The CX2 and the SX2 share a common layout and all fields must be at the same offsets



Device Addressing Extension to a DVB

Program: NCP

Size in bytes: Variable, depending on addressing characters

Located in: Device base control block (DVB)

Created by: NCP generation

Pointed to by: None

The DAE immediately follows the polling extension; if no polling extension is present, the DAE immediately follows the DVB.

Function: Contains addressing characters for a device

0(0) DAEOSP** Device output delay	1(1) DAEACUR** Current number of addressing characters	2(2) DAEADDR Addressing characters (variable length). (The DVBA0 field in the DVB points here.)
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** The actual position of these fields depends on the other extensions that are present.

Dummy Data Buffer—Channel Adapter**Program:** NCP**Size in bytes:** 10(A)**Located in:** \$LVL5**Created by:** NCP generation**Pointed to by:** The CABDUMBF field in the channel adapter control block (CAB) extension**Function:** Contains a dummy buffer that the NCP channel IOS program uses to transmit (for each PIU) the number of pad characters required by the host access method. The number of characters transmitted, if any, is specified by the BFRPAD keyword of the HOST macro. The actual pad characters to be transmitted are not specified; whatever happens to be in the storage locations is transmitted.

0(0)		DDBUFCHN Pointer to the next buffer in this chain	
4(4)		6(6)	7(7)
Reserved		DDOFFSET Buffer prefix pad data offset	DDDATCNT Buffer prefix pad data count
8(8)	9(9)		
DD1STDAT Pad--quantity as the first data byte	DDTOTDAT Total number of significant data bytes		

Dummy Data Buffer—Performance Measurement Facility (Type=PMFFB)

Program: NCP

Size in bytes: 274(112)

Located in: \$LVL5

Created by: NCP generation

Pointed to by: The PMFFBFRS field in the PMF points to the NCP free-buffer DDB.

Function: Contains the statistics developed for the NCP free buffers.

Table 1-1 (Page 1 of 2). DDB Offsets for Stages 1 through 5

Field Name	Offset First Stage	Offset Second Stage	Offset Third Stage	Offset Fourth Stage	Offset Fifth Stage
FBBCNTRL	10(A)				
FBBUFCHN	0(0)				
FBFCOPYF	4(4)				
FBCOPYS	5(5)				
FBCOPCT	4(4)				
FBDATCNT	7(7)				
FBFCELT	48(30)	104(68)	140(8C)	176(B0)	212(D4)
FBFCELTC	32(20)	88(58)	124(7C)	160(A0)	196(C4)
FBFCLVAL	36(24)	92(5C)	128(80)	164(A4)	200(C8)
FBFCNTRL	46(2D)	102(66)	138(8A)	174(AE)	210(D2)
FBFFBFHG	220(DC)				
FBFFLRT	52(34)	108(6C)	144(90)	180(B4)	216(D8)
FBFFLRTC	34(22)	90(5A)	126(7E)	162(A2)	198(C6)
FBFFLVAL	40(28)	96(60)	132(84)	168(A8)	204(CC)
FBFHBUCW	70(46)				
FBFHIST	72(48)				
FBFHSCAL	69(45)				
FBFILCNT	44(2C)	100(64)	136(88)	172(AC)	208(D0)
FBFLRAWI	24(18)				
FBFNAVG	28(1C)	84(54)	120(78)	156(9C)	192(C0)
FBFNCNT	20(14)	76(4C)	112(70)	148(94)	184(B8)
FBFNSUM	20(14)	76(4C)	112(70)	148(94)	184(B8)
FBFPCLMT	56(38)				
FBFPSCAL	68(44)				
FBFRSPNS	47(2F)	103(67)	139(8B)	175(AF)	211(D3)
FBFRSTIM	12(C)				
FBFZERO	66(42)				

Table 1-1 (Page 2 of 2). DDB Offsets for Stages 1 through 5

Field Name	Offset First Stage	Offset Second Stage	Offset Third Stage	Offset Fourth Stage	Offset Fifth Stage
FBF001PC	64(40)				
FBF010PC	62(3E)				
FBF100PC	60(3C)				
FBOFFSET	6(6)				
FBTODDAT	9(9)				
FB1STDAT	8(8)				

0(0) FBBUFCHN Pointer to the next buffer in this chain			
4(4) FBCOPYF Copy data field		6(6) FBOFFSET Buffer prefix data offset	7(7) FB DATCNT Buffer prefix data count
FBCOPCT Copy count	5(5) FBCOPYS* Copy status		
8(8) FB1STDAT PAD--quantity as the first data byte	9(9) FBTODDAT Total number of significant data bytes	10(A) FBBCNTRL* Control field DDB statistics	11(B) Reserved
12(C) - 19(13) FBFRSTIM Time stamp set at reset time (form=HH.MM.SS)			

* Indicates a byte expansion follows.

First (16¹) Hexadecimal Counter Stage

20(14)		FBFNSUM Sum of N number of data elements	
FBFNCNT N number of data elements summed in this stage			
24(18)			
FBFLRAWI Last raw input data element			
28(1C)			
FBFNAVG Average of the last 16 data elements (sum shifted four bits)			
32(20)		34(22)	
FBFCELT** Ceiling threshold exceeded counter and alarm		FBFFLRTC** Floor threshold exceeded counter and alarm	
36(24)			
FBFCLVAL Ceiling value			
40(28)			
FBFFLVAL Floor value			
44(2C)		46(2E)	47(2F)
FBFILCNT** Input (domain) exceeded counter and alarm		FBFCNTRL* Local control flags	FBFRSPNS* Local response flags
48(30)			
FBFCELT Ceiling threshold value X'0003FFFF'			
52(34)			
FBFFLRT Floor threshold value X'00000000'			
56(38)			
FBFPCLMT 100% of normal input			

* Indicates a byte expansion follows.

** Not incremented after reaching X'FFFF'.

60(3C) FBF100PC 10% of normal input		62(3E) FBF010PC 1% of normal input
64(40) FBF001PC 0.1% of normal input		66(42) FBFZERO X'0000'
68(44) FBFPSCAL* Percent calculation scaling factor control	69(45) FBFHSCAL* Histogram scaling factor control	70(46) FBFHBUW Histogram entry width
72(48) FBFHIST Pointer to the histogram area for this DDB		

* Indicates a byte expansion follows.

Second (16²) Hexadecimal Counter Stage

76(4C) FBFNSUM Sum of N number of data elements	
FBFNCNT N number of data elements summed in this stage	
80(50) Reserved	
84(54) FBFNAVG Average of the last 16 data elements (sum shifted four bits)	
88(58) FBFCELT** Ceiling threshold exceeded counter and alarm	90(5A) FBFFLRTC** Floor threshold exceeded counter and alarm
92(5C) FBFCLVAL Ceiling value	
96(60) FBFFLVAL Floor value	

** Not incremented after reaching X'FFFF'.

100(64)	FBFILCNT** Input (domain) exceeded counter and alarm	102(66)	FBFCNTRL* Local control flags***	103(67)	FBFRSPNS* Local response flags
104(68)	FBFCELT Ceiling threshold value X'0003FFFF'				
108(6C)	FBFFLRT Floor threshold value X'00000000'				

- * Indicates a byte expansion follows.
- ** Not incremented after reaching X'FFFF'.
- *** Stage 2—X'E0'
 Stage 3—X'E0'
 Stage 4—X'E0'
 Stage 5—X'E5'.

Notes:

1. Each stage begins on a fullword boundary.
2. The third (16³), fourth (16⁴), and fifth (16⁵) hexadecimal counter stages are identical to the second stage.
3. See the DDB index for the third, fourth, and fifth offsets.

220(DC) - 273(111)	FBFFBFHG
The first 26 halfword entries are for data in the normal range. Halfword entry 27 is for data outside the normal range.	

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
5(5) FBCOPYS	.x..	Copy status 1 = Copy 0 = Original
10(A) FBBCNTRL	1...	Control field DDB statistics Request for statistics reset

Offset/Field Name	Bit Pattern/ Hex Value	Contents
46(2E), 102(66), 138(8A), 174(AE), 210(D2) FBFCNTRL		Local control flags
	1...	Statistics recording is active
	.1..	Ceiling threshold checking is active
	..1.	Floor threshold checking is active
	...1	Percent calculation is active; constants are defined. Normally, only the first hexadecimal stage has this bit on
	.... xx..	Defines reset function: 00 = Do not reset on the last hexadecimal stage 01 = Reset statistics on the last hexadecimal stage 10 = Stop the statistics update; set FBFCNTRL bit 0 to 0 (off) and set FBFRSPNS bit 3 to 1 (on) 11 = Reserved
	.... ..xx	Next hexadecimal stage and linkage control: 00 = Reserved 01 = Last hexadecimal stage—don't go any further 10 = Reserved 11 = First hexadecimal stage
47(2F), 103(67), 139(8B), 175(AF), 211(D3) FBFRSPNS		Local response flags
	1...	Input (domain) limit value has been exceeded
	.1..	One or more ceiling thresholds have been exceeded
	..1.	One or more floor thresholds have been exceeded
	...1	FBFCNTRL bit 0 (statistics recording is active) was turned off when processing the last hexadecimal stage
	.... 1...	New ceiling value
	.... .1..	New floor value
	.... ..1.	Chaining on, but not done
	.... ...1	Percent calculation was not done (Scale value was bad—not 0, 1, or 10)
68(44) FBFPSCAL		Percent calculation scaling factor control
	0000 1010	Use ten-tenths resolution (1%)
	0000 0001	Use one-tenth resolution (0.1%)
	0000 0000	Do not perform percent calculation; just do the histogram
69(45) FBFHSCAL		Histogram scaling factor control
	1000 0000	Each entry width=1 (shift left 1)
	0000 0000	Each entry width=2 (no shift)
	0000 0001	Each entry width=4 (shift right 1)
	0000 0011	Each entry width=8 (shift right 2)
	0000 0111	Each entry width=16 (shift right 3)
	0000 1111	Each entry width=32 (shift right 4)
	0001 1111	Each entry width=64 (shift right 5)
	0011 1111	Each entry width=128 (shift right 6)
	0111 1111	Each entry width=256 (shift right 7)

Dummy Data Buffer—Performance Measurement Facility

Program: NCP

Size in bytes: 253(FD)

Located in: \$LVL5

Created by: NCP generation

Pointed to by: The PMFCUC field in the PMF points to the cycle utilization counter (CUC) DDB; the PMFFBFRS field in the PMF points to the NCP free-buffer DDB

Function: Contains the statistics developed for the CUC

0(0)			
PMBUFCHN Pointer to the next buffer in this chain			
4(4)		6(6)	7(7)
PMCOPYF Copy data field		PMOFFSET Buffer prefix data offset	PMDATCNT Buffer prefix data count

	5(5)		
PMCOPT Copy count	PMCOPT* Copy status		
8(8)	9(9)	10(A)	11(B)
PM1STDAT PAD--quantity as the first data byte	PMTOTDAT Total number of significant data bytes	PMBCTRL* Control field DDB statistics	PMFLOOP CUC calculation division counter
12(C) - 19(13)			
PMFRSTIM Time stamp set at reset time (form=HH.MM.SS)			

* Indicates a byte expansion follows.

First (16¹) Hexadecimal Counter Stage

20(14)		PMFNSUM Sum of N number of data elements	
PMFNCNT N number of data elements summed in this stage			
24(18) PMFLRAWI Last raw input data element (for CUC and DDB, one-eighth of the cycles since the last reset)		26(1A) PMFNAVG Average of the last 16 data elements (sum shifted 4 bits)	
28(1C) PMFCELC** Ceiling threshold exceeded counter and alarm		30(1E) PMFFLRTC** Floor threshold exceeded counter and alarm	
32(20) PMFCLVAL Ceiling value X'0000'		34(22) PMFFLVAL Floor value X'FFFF'	
36(24) PMFILCNT** Input (domain) exceeded counter and alarm		38(26) PMFCNTRL* Local control flags X'F3'	39(27) PMFRSPNS* Local response flags
40(28) PMFCELT Ceiling threshold value X'FFFF'		42(2A) PMFFLRT Floor threshold value X'0000'	
44(2C) PMFINLMT Raw CUC value			
48(30) PMFPCLMT*** 100% of normal input		50(32) PMFRESID CUC calculation residual value	

* Indicates a byte expansion follows.

** Not incremented after reaching X'FFFF'.

*** See Table 1-2 on page 1-313.

52(34) PMF100PC*** 10% of normal input		54(36) PMF010PC*** 1% of normal input	
56(38) PMF001PC*** 0.1% of normal input		58(3A) PMFZERO X'0000'	
60(3C) PMFPSCAL* Percent calculation scaling factor control	61(3D) PMFHSCAL* Histogram scaling factor control	62(3E) PMFHUCW Histogram entry width	
64(40) PMFHIST Pointer to the histogram area for this DDB			

* Indicates a byte expansion follows.

*** See Table 1-2 on page 1-313.

Second (16²) Hexadecimal Counter Stage

68(44)		PMFNSUM Sum of N number of data elements	
PMFNCNT N number of data elements summed in this stage			
72(48)	PMFDELTA**** PMFCOVER***** PMFO200*****	74(4A)	PMFNAVG Average of the last 16 data elements (sum shifted 4 bits)
76(4C)	PMFCELT** Ceiling threshold exceeded counter and alarm	78(4E)	PMFFLRTC** Floor threshold exceeded counter and alarm
80(50)	PMFCLVAL Ceiling value X'0000'	82(52)	PMFFLVAL Floor value X'FFFF'

** Not incremented after reaching X'FFFF'.

84(54)	PMFILCNT** Input (domain) exceeded counter and alarm	86(56)	PMFCNTRL* Local control flags***	87(57)	PMFRSPNS* Local response flags
88(58)	PMFCELT Ceiling threshold value X'FFFF'	90(5A)	PMFFLRT Floor threshold value X'0000'		

* Indicates a byte expansion follows.

** Not incremented after reaching X'FFFF'.

*** Stage 2—X'E0'

Stage 3—X'E0'

Stage 4—X'E0'

Stage 5—X'E5'.

**** Stage 2 - Delta for CUC calculations

***** Stage 3 - Number of times CUC counter has overflowed (missed timer interrupts)

***** Stage 4 - Number of times CUC has exceeded 200% (missed or late timer interrupts)

Notes:

1. Each stage begins on a fullword boundary.
2. The third (16³), fourth (16⁴), and fifth (16⁵) hexadecimal counter stages are identical to the second stage.
3. See Table 1-3 on page 1-313 for the third, fourth, and fifth offsets.

164(A4) - 218(DA)

PMFUBFHG

(for CUC)

The first 26 halfword entries are for data in the normal range.
Halfword entry 27 is for data outside the normal range.

Table 1-2. Values for the 3745

Offset/Field Name	3745-210 and -410	3745-1xx	3745-310 and -610
48(30) PMFPCLMT	X'A2C3'	X'5D2F'	X'D967'
52(34) PMF100PC	X'1047'	X'0952'	X'15BD'
54(36) PMF010PC	X'01A1'	X'00EF'	X'022D'
56(38) PMF001PC	X'002A'	X'0018'	X'0038'

Note: The abbreviation 3745-1xx designates all of the following controllers:

- 3745-130
- 3745-150
- 3745-160
- 3745-170.

Table 1-3 (Page 1 of 2). DDB Offsets for Stages 1 through 5

Field Name	Offset First Stage	Offset Second Stage	Offset Third Stage	Offset Fourth Stage	Offset Fifth Stage
PMBUFCHN	0(0)				
PMFCOPYF	4(4)				
PM COPCT	4(4)				
PM COPYS	5(5)				
PM OFFSET	6(6)				
PM DATCNT	7(7)				
PM1STDAT	8(8)				
PMTOTDAT	9(9)				
PMBCNTRL	10(A)				
PMFLOOP	11(B)				
PMFRSTIM	12(C)				

Table 1-3 (Page 2 of 2). DDB Offsets for Stages 1 through 5

Field Name	Offset First Stage	Offset Second Stage	Offset Third Stage	Offset Fourth Stage	Offset Fifth Stage
PMFNCNT	20(14)	68(44)	92(5C)	116(74)	140(8C)
PMFNSUM	20(14)	68(44)	92(5C)	116(74)	140(8C)
PMFLRAWI	24(18)				
PMFDELTA		72(48)			
PMFCOVER			96(60)		
PMFO200				120(78)	
PMFNAVG	26(1A)	74(4A)	98(62)	122(7A)	146(92)
PMFCELTC	28(1C)	76(4C)	100(64)	124(7C)	148(94)
PMFFLRTC	30(1E)	78(4E)	102(66)	126(7E)	150(96)
PMFCLVAL	32(20)	80(50)	104(68)	128(80)	152(98)
PMFFLVAL	34(22)	82(52)	106(6A)	130(82)	154(9A)
PMFILCNT	36(24)	84(54)	108(6C)	132(84)	156(9C)
PMFCNTRL	38(26)	86(56)	110(6E)	134(86)	158(9E)
PMFRSPNS	39(27)	87(57)	111(6F)	135(87)	159(9F)
PMFCELT	40(28)	88(58)	112(70)	136(88)	160(A0)
PMFFLRT	42(2A)	90(5A)	114(72)	138(8A)	162(A2)
PMFINLMT	44(2C)				
PMFPCLMT	48(30)				
PMFRESID	50(32)				
PMF100PC	52(34)				
PMF010PC	54(36)				
PMF001PC	56(38)				
PMFZERO	58(3A)				
PMFPSCAL	60(3C)				
PMFHSCAL	61(3D)				
PMFHBUCW	62(3E)				
PMFHIST	64(40)				
PMFUBFHG	164(A4)				

Byte Expansions

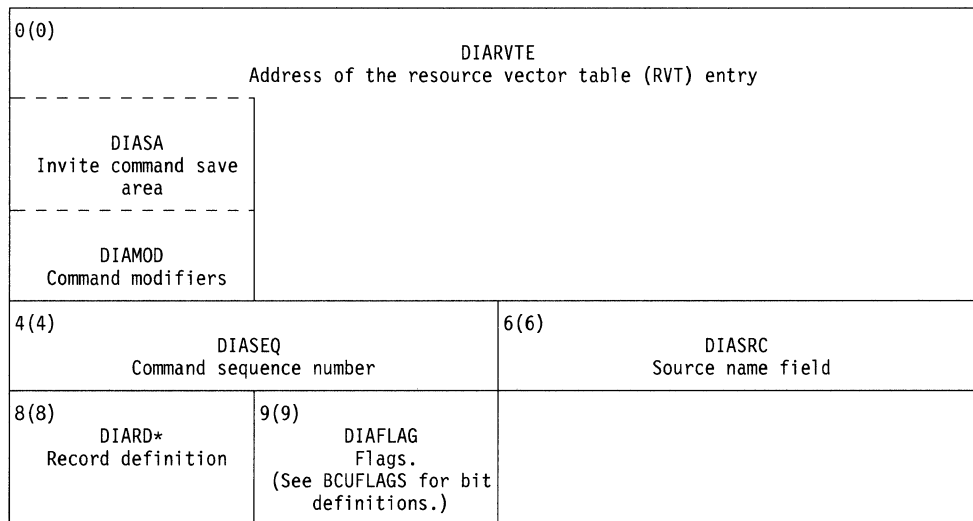
Offset/Field Name	Bit Pattern/ Hex Value	Contents
5(5) PMCOPIES		Copy status
	.x..	1 = Copy 0 = Original

Offset/Field Name	Bit Pattern/ Hex Value	Contents
10(A) PMBCNTRL		Control field DDB statistics
	1... ..	Request for statistics reset
38(26), 86(56), 110(6E), 134(86), 158(9E) PMFCNTRL		Local control flags
	1... ..	Statistics recording is active
	.1.. ..	Ceiling threshold checking is active
	..1. ..	Floor threshold checking is active
	...1 ..	Percent calculation is active; constants are defined. Normally, only the first hexadecimal stage has this bit on
	.... xx..	Defines reset function: 00 = Don't reset on the last hexadecimal stage 01 = Reset statistics on the last hexadecimal stage 10 = Stop the statistics update; set PMFCNTRL bit 0 to 0 (off) and set PMFRSPNS bit 3 to 1 (on) 11 = Reserved
	.... ..xx	Next hexadecimal stage and linkage control: 00 = Reserved 01 = Last hexadecimal stage—do not go any further 10 = Reserved 11 = First hexadecimal stage
39(27), 87(57), 111(6F), 135(87), 159(9F) PMFRSPNS		Local response flags
	1... ..	Input (domain) limit value has been exceeded
	.1.. ..	One or more ceiling thresholds have been exceeded
	..1. ..	One or more floor thresholds have been exceeded
	...1 ..	PMFCNTRL bit 0 (statistics recording is active) was turned off when processing the last hexadecimal stage
	.... 1..	New ceiling value
	.... .1..	New floor value
	.... ..1.	Reserved
	.... ...1	Percent calculation was not done. (Scale value was bad—not 0, 1, or 10)
60(3C) PMFPSCAL		Percent calculation scaling factor control
	0000 1010	Use ten-tenths resolution (1%)
	0000 0001	Use one-tenth resolution (0.1%)
	0000 0000	Do not perform percent calculation; just do the histogram

Offset/Field Name	Bit Pattern/ Hex Value	Contents
61(3D) PMFHSCAL		Histogram scaling factor control
	1000 0000	Each entry width=1 (shift left 1)
	0000 0000	Each entry width=2 (no shift)
	0000 0001	Each entry width=4 (shift right 1)
	0000 0011	Each entry width=8 (shift right 2)
	0000 0111	Each entry width=16 (shift right 3)
	0000 1111	Each entry width=32 (shift right 4)
	0001 1111	Each entry width=64 (shift right 5)
	0011 1111	Each entry width=128 (shift right 6)
	0111 1111	Each entry width=256 (shift right 7)

Device Input Area

Program: NCP
Size in bytes: 10(A)
Located in: Device base control block (DVB) extension
Created by: NCP generation
Pointed to by: The DVBINVO field in the DVB
Function: Contains information about input devices



* Indicates a byte expansion follows.

Note: The actual position of the DIA depends on the other extensions that are present.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
8(8) DIARD		Record definition
	.... .1..	End of Block (EOB)=End of Transmission (EOT)
	.... ..10	Message
	.... ..01	Block
	.... ..11	Transmission

Delay PIU Scheduling Queue

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointed to by: Addressed by label CXQDPSQ

Function: Provides pointers to the DPS queue

0(0)	DPSQHEAD Pointer to head of DPS queue
4(4)	DPSQTAIL Pointer to tail of DPS queue

Dispatch Priority Table

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation

Pointed to by: The SYSDPTP field in the extended halfword direct addressables control block extension (HWX) at +48(30)

Function: Contains the head and tail pointers of the priority queues

Dispatch Queue Block (DQB) for Appendage Priority
 (See the dispatch priority information in "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

0(0)	DPTAUCH Head pointer to the unconditional dispatch queue
DPTASTAT Append status	
4(4)	DPTAUCT Tail pointer to the unconditional dispatch queue
Unconditional queue indicator X'80'	
8(8)	DPTACDH Head pointer to the conditional dispatch queue
12(C)	DPTACDT Tail pointer to the conditional dispatch queue
Conditional queue indicator X'40'	
16(10)	DPTANMH Head pointer to the normal dispatch queue
20(14)	DPTANMT Tail pointer to the normal dispatch queue
Normal queue indicator X'20'	
24(18) - 31(1F)	Reserved

DQB for Immediate Priority

32(20) - 63(3F)

See the appendage priority DQB for the corresponding labels. Immediate labels start with DPTI-. Add 32(20) for offsets.

DQB for Productive Priority

64(40) - 95(5F)

See the appendage priority DQB for the corresponding labels. Productive labels start with DPTP-. Add 64(40) for offsets.

DQB for Nonproductive Priority

96(60) - 127(7F)

See the appendage priority DQB for the corresponding labels. Nonproductive labels start with DPTN-. Add 96(60) for offsets.

Dispatch Queue Block

Program: NCP

Size in bytes: 32(20)

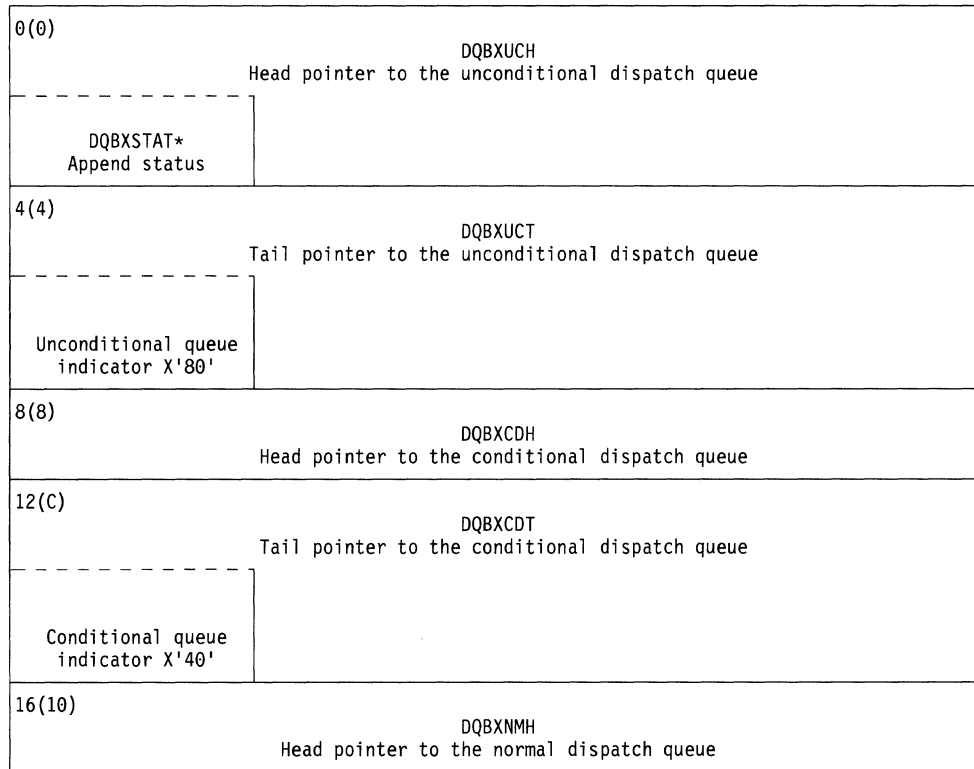
Created by: NCP generation

Pointed to by: Variable. See the dispatch priority table control block (DPT).

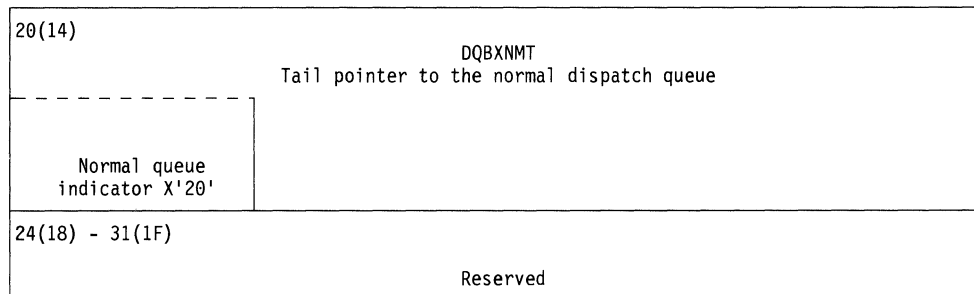
Function: Contains the head and tail pointers of the priority queue

Note: This is the general format for all dispatch priority queues. (The DQBX identifier at the beginning of each label is replaced with a different four-letter identifier for each particular dispatch priority queue.)

DQB for any priority



* Indicates a byte expansion follows.



Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) DQBSTAT		Status dispatch queue
	1...	Unconditional dispatch queue is not empty.
	.1..	Conditional dispatch queue is not empty.
	..1.	Normal dispatch queue is not empty.

Display/Refresh/Select Table

Program: NCP

Size in bytes: 36(24)

Created by: NCP generation

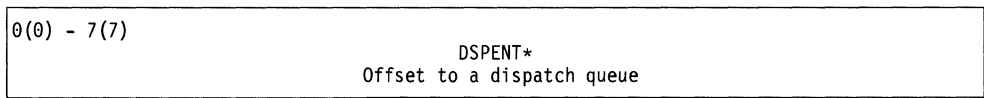
Pointed to by: The SYSDRSP field in the extended halfword direct addressables control block (HWE)

Function: Contains addresses of appendage routines to be given control by CXCCPSUP. The PCBAPNSL field contains the offset into the DRS.

0(0)	Set to 0
4(4)	Reserved
8(8)	DRSPNTST Address of the CXPFLST routine (only if the panel line test is active)
12(C) - 23(17)	Reserved
24(18) - 35(23)	DRSTBL Table of display/refresh/select control values used by individual appendage routines

Dispatch Table

Program: NCP
Size in bytes: 8(8)
Created by: NCP generation
Pointed to by: The SYSDSPP field in the extended halfword direct addressables control block extension (HWX)
Function: Contains offsets into a dispatch queue block (DQB) to the queue from which a task is to be dispatched. The offset into the DSP is determined by ANDing the status mask of a DQB with the complement of the system mask at offset X'4' of the byte direct addressable storage control block (XDB).



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) DSPENT	Byte 0	Offset to a dispatch queue
	0000 0000	Offset to an unconditional queue
	0001 0000	Offset to a normal queue
	0000 1000	Offset to a conditional queue
	1111 1111	Dispatch queue is empty or must not be dispatched.

Date and Time Generation Control Block

- Program:** NCP, EP
- Size in bytes:** 65(41)
- Created by:** NCP or PEP generation
- Pointed to by:** The SYSGENTP field in the extended halfword direct addressables control block extension (HWX)
- Function:** Contains the date and time that the load module was generated, the version of the NCP/EP definition facility, and the version of NCP.

0(0) DTGLNGTH Length of the DTG control block	2(2) - 18(12)
Generation correlator string	
19(13) - 32(20) DTGVERS	
Version of the NCP/EP definition facility (form='ACF SSP Vxxx' where xxx=Version number, blank, blank or xxx=Version number, 'R', release number)	
33(21) - 46(2E)	
Version of NCP (form='ACF NCP Vxxxxx' where xxxxx=Version number, blank, blank, blank, blank or xxxxx=Version number, 'R', release number, blank, blank or xxxxx=Version number, 'R', release number, '.', modification number)	
47(2F) DTGOSTYP* Operating system type	
48(30) - 55(37) DTGDATE Date of generation (form=MM/DD/YY where MM=Month, DD=Day, and YY=Year)	
56(38) DTGBLNK Blank character X'40'	57(39) - 64(40) DTGTIME
Time of generation (form=HH : MM : SS (no blanks) where HH=Hour, MM=Minute, and SS=Second)	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
47(2F) DTGOSTYP		Operating system type
	X'04'	VSE
	X'02'	VM
	X'01'	MVS

DLCI-to-LLB Table

- Program:** NCP
- Size in bytes:** Four bytes per header (one per DTL) and eight bytes per entry
- Created by:** NCP generation
- Pointed to by:** The XUAHTP field in the physical link adapter control block extension (XUA), the LLBHTEBP field in the logical link control block (LLB), and the CUBDTLEP field in the common physical unit block (CUB)
- Function:** Contains an ordered table of pointers to the LLBs attached to a particular physical frame-relay line

Header

-4(4) DTLLHDTID Table identifier C'DT'	-2(2) DTLLHDLICI Highest DLCI in table + 1
--	--

Entry

0(0) DTLLLLBP Pointer to CUB or LLB		
DTLLFLAG* Flag byte		
4(4) DTLLLISTAT* DLCI inbound status byte	5(5) DTLLLOSTAT* DLCI outbound status byte	6(6) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) DTLLFLAG		Flag byte
	1...	Last entry
	.1..	FRSE support set status change to include in next NMVT
	..1.	DLCI inactive status change caused resource failure
	...1	New DLCI reported
	.... 1...	Activation processing delayed
	.... .1..	DLCI status change to include in next NMVT
	.... ..1.	FRSE substitute support contact failure caused by no LMI support being negotiated for its associated physical line
	.... ...1	DLCI deleted from the interface

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) DTLISTAT		DLCI inbound status byte
	.... 1...	DLCI is new
	.... .1..	DLCI not present
	.... ..1.	DLCI is active
	xxxx ...x	Reserved
5(5) DTLOSTAT		DLCI outbound status byte
	.... 1...	DLCI is new
	.... .1..	DLCI not present (only meaningful when user side LMI is supported)
	.... ..1.	DLCI is active
	xxxx ...x	Reserved

Dynadump Timer Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Function: Generates the dynamic dump timer queue and the timer event control block (ECB)

Format: Standard input queue control block (QCB)

Task—CXDKDTQ

Priority—Productive

Reentrant—No.

DLCI-to-Station Table for ODLC Frame Relay

Program: NCP

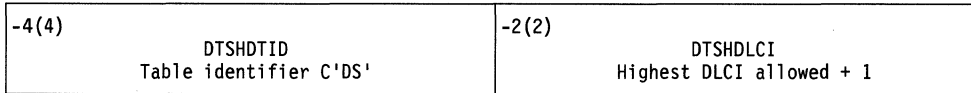
Size in bytes: Four bytes per header (one per DTS) and four bytes per entry.

Created by: NCP generation

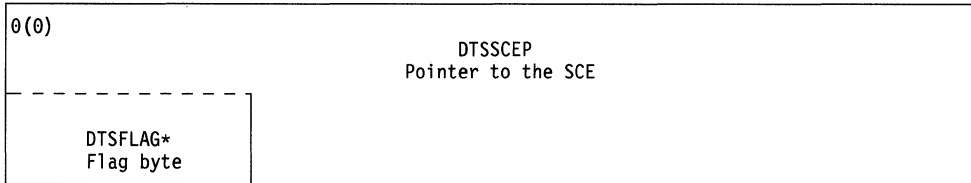
Pointed to by: The LKBDLCIT field in an ODLC frame-relay physical LKB.

Function: Contains an ordered table of pointers to the SCEs associated with a particular physical frame-relay line. One entry is generated for each DLCI allowed per physical line. The DTS entries can be indexed by the DLCI located in CXBFRAD/SXBFRAD.

DTS Header



DTS Entry



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
0(0) DTSFLAG		Flag byte
	1...	This station is in use (DTSUSE) (Not applicable for entry 0)
	.... ...1	Last entry of DTS (DTSLAST)

Device Base Control Block

- Program:** NCP
- Size in bytes:** Variable, depending on the extensions present
- Created by:** NCP generation
 One DVB is generated for each BSC/SS device.
- Pointed to by:** The RVTRP field in the resource vector table (RVT); the LCBDVBP field of the line control block (LCB) during a session
- Function:** Serves as the base for all component, terminal, and device control unit representations. It includes queue control blocks (QCBs), plus all parameters required by a device.

Prefix

-4(4)

For the prefix format for the DVB, see the network performance monitor prefix control block (NPF).

Device Work QCB

(See "Queue Control Block for Work Queues" on page 1-887 for all bit definitions.)

0(0)		DVQ1ECB Pointer to the first element queued	
	DVQMCBD Major control block displacement divided by 2		
4(4)		DVQLECB Pointer to the last element queued	
8(8)		DVQLINK Pointer to the next QCB on the queue	
	DVQPRKEY Protection key		
12(C)	DVQSTAT Task and queue status	13(D)	Reserved

Device Input QCB (DVBDVIQ)

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

16(10)	DVIIECB Pointer to the first element queued	
	DVIMCBD Major control block displacement divided by 2	
20(14)	DVILECB Pointer to the last element queued	
	DVISTATP PRELEASE flags	
24(18)	DVILINK Pointer to the next QCB on the queue	
	DVIPRKEY Protection key	
28(1C)	DVITSKEP Task entry point	
	DVISTAT Task and queue status	
32(20)	DVISAVE Address of the save area pushdown list	
	DVISCHED Task dispatching priority	33(21) DVIPREL PRELEASE buffer count
36(24)	DVILUNK Pointer to the previous QCB on the queue	
	DVIBHSCH Block handler routine (BHR) scheduling bits	
40(28)	DVIBHSET Buffer prefix set (or BHR) address	
	DVIBHRST BHR status bits	

44(2C) DVBRID Device resource ID	46(2E) DVBFEAT1* Device features byte 1	47(2F) DVBFEAT2* Device features byte 2	
48(30) DVBPTR Auxiliary pointer. If the device is a component, this field contains a pointer to the shared terminal DVB. If the device is a terminal, this field contains a pointer to the line LCB. <hr/> DVBTYP* Device type			
52(34) DVBSDRT Transmission counter (bytes 0 and 1) or pointer to the online terminal test control block (OLTT), if in test mode <hr/> DVBLMDA Local modem addresses			
56(38) DVBBHRO Offset to the BHR extension	57(39) DVBBUO Offset to the switched backup control block extension (BUE)	58(3A) DVBDIAL Offset to the call-in or call-out control block extension (CIE or COE) <hr/> DVBGPO Offset to the general poll control block extension (DGP) if this is a general polled device	59(3B) DVBABNM* Abnormal mode indicators. This field is meaningful only when a reset is in progress. Bits 2-7 have the value of the command modifiers when a reset is in progress. Bits 0-1 indicate that a deactivation is in progress.
60(3C) DVBSDRE Temporary error counter	61(3D) DVBINVO Offset to the device input area (DIA)	62(3E) DVBRBBO Offset to the resource connection block (RCB)	63(3F) DVBSSESC* Cause of the DVB session end

* Indicates a byte expansion follows.

64(40) DVBOLDSP Element address of the DVB old session partner		66(42) DVBSRTT Traffic count threshold	
68(44) DVBSRTR Error count threshold	69(45) DVBUNSC Unsolicited response reason	70(46) DVBOU1B1 Last outgoing sequence number	71(47) DVBOU1B2 Next-to-last outgoing sequence number
72(48) DVBOU1B3 Second-from-last outgoing sequence number	73(49) DVBIN1B1 Last incoming sequence number	74(4A) DVBOLDSA Subarea address of the DVB old session partner	
		DVBOLDSH High-order 2 bytes of the subarea	
76(4C) DVBOLDSA Continued		78(4E) DVBSHWCS* Show cause save byte	79(4F) DVBDTAIN* Threshold alteration indicator
DVBOLDL Low-order 2 bytes of the subarea			

* Indicates a byte expansion follows.

Service-Seeking Control Block (SSC)

80(50) DVBSSTAT* Status byte 1	81(51) DVBSSTAT2* Status byte 2	82(52) DVBDMF* Device mode flags	
84(54) DVBPCC Pending contact count	85(55) DVBSSTAT3* Status byte 3	86(56) DVBSPP Session-partner element address	
88(58) DVBSPPSBA Current session-partner subarea address			
DVBSPPSBH High-order 2 bytes of the subarea		90(5A) DVBSPPSBL Low-order 2 bytes of the subarea	
92(5C) DVBSREQNO "sessreq" terminal count	93(5D) DVBSACTNO Active "sessreq" terminal count	94(5E) DVBSACTSV Saved count from DVBSACTNO	95(5F) Reserved

* Indicates a byte expansion follows.

Polling/Addressing Extension

This extension is present only if the device requires polling, addressing, or both.

96(60) DVBSLIM Transmission or block limit	97(61) DVBSCNT Transmission or block counter	98(62) DVBSAO Offset from DVBSSTAT to the first addressing character in the device addressing control block extension (DAE)	99(63) DVBSLCO Cluster general poll extension control block (CGP) offset
--	--	---	--

Polling Extension

The following fields are present only if polling of a device is required. (If this area is included, the DIA must also be included.)

100(64) DVBPCUR Number of polling characters, including ENQ	101(65) - n	DVBPCUR Polling characters (variable length)
---	-------------	---

RCB

The DVB's RCB follows directly after the DVB's extensions. Thus, the RCB starts at offset m which equals 96(60), 100(64), or (n+1) depending upon which extensions are included with the DVB.

m - (m + 28(1C))	Embedded RCB (For details, see the RCB format for the DVB)
------------------	---

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
46(2E) DVBFEAT1		Device features byte 1
	1...	Block limit—BSC patch control
	.1..	Conversational capability
	..1.	Buffered receive
	...1	General poll
	.... 1...	Batched message input
	.... .1..	Carriage return delay (SS only) or virtual printer (BSC only)
	.... ..1.	Text time-out suppression
	.... ...1	Break-terminal originated data; transfer can be interrupted.
47(2F) DVBFEAT2		Device features byte 2
	1...	Critical situation notification
	.1..	1050 Auto EOB feature
	..1.	1050 Receive Interrupt feature
	...1	Resource is eligible for network performance analyzer (NPA) data collection.
	.... 1...	Device is on a fan-out modem.
	.... .1..	Input extension exists (DIA).
	.... ..1.	Addressing extension exists (DAE).
	.... ...1	Polling information exists.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) DVBTYP		Device type
	1... ..	Terminal
	.00.	SS
	.1..	BSC
	1... ..	SDLC
	...x xxxx	Type code
		Components
	X'48'	2980
		SS Terminals
	X'80'	MTA
	X'82'	1050
	X'84'	2740, Model 1
	X'85'	2741
	X'87'	2740, Model 2
	X'88'	115A
	X'89'	83B3
	X'8A'	TWX
	X'8B'	WTTY
		BSC Terminals
	X'4C'	3275, 3277, 3284, 3286
	X'C0'	Logical connection terminals
	X'C1'	1130
	X'C2'	1800
	X'C3'	2701
	X'C4'	2703
	X'C5'	2715
	X'C6'	2770
	X'C7'	2780
	X'C8'	2972
	X'CA'	2020
	X'CB'	2025
	X'CC'	3271, 3275
	X'CD'	3780
	X'CE'	3735
	X'CF'	3741
	X'D0'	3747
	X'FF'	System 3, 3125, 3135
59(3B) DVBABNM		Abnormal mode indicators
	x... ..	Reserved
	.1..	Deactivate line orderly is in progress.
	..1.	Reset at End of Command is in progress.
	...1	Reset conditional is in progress.
	... x...	Reserved
	... .1..	Reset Immediate is in progress.
	... ..1.	Reset Device Queues is in progress.
	... ...1	Critical situation notification device serviced

Offset/Field Name	Bit Pattern/ Hex Value	Contents
63(3F) DVBSESSC		Session end
	X'01'	Normal
	X'07'	Inoperative explicit route
	X'0B'	Deactivate virtual route
	X'0C'	Session end forced deactivate.
78(4E) DVBSHWCS		Show cause save byte
	1... ..	Dynamic threshold alteration has altered a threshold.
	X'01'	Traffic count threshold has been exceeded.
	X'02'	Error count threshold has been exceeded.
	X'03'	Deactivation process
79(4F) DVBDTAIN		Threshold alteration indicator and link segment level indicator
	1... ..	Indicates threshold altered
	.1... ..	Device resides on a primary link segment.
80(50) DVBSTAT		Status byte 1
	1... ..	Service-seeking skip bit
	.1... ..	Contact is pending.
	..1.	Device is active; accept TP commands.
	...1	Disconnect has been received. A Disconnect has been received for the last session, and an initiation command may now be accepted. Any nonsession-initiation TP command should be refused.
	.... 1...	In session
	.... .1..	Device is in an abnormal mode. (Reset or deactivate device is in progress.)
	.... ..1.	Connection exists.
	.... ...1	Invite is pending.
81(51) DVBSTAT2		Status byte 2
	1... ..	Backup mode
	.1... ..	Input/output error lock
	..1.	3270 print is in progress—2740-2 suppress RECMS, 2770 delayed Reverse Interrupt (RVI).
	...1	Inquiry mode—2770
	.... 1...	Suppress response to host.
	.... .1..	A noncompetitive Invite exists. When the line or device was deactivated, an Invite remained for this device.
	.... ..1.	Logical error lock
	.... ...1	Selective test return

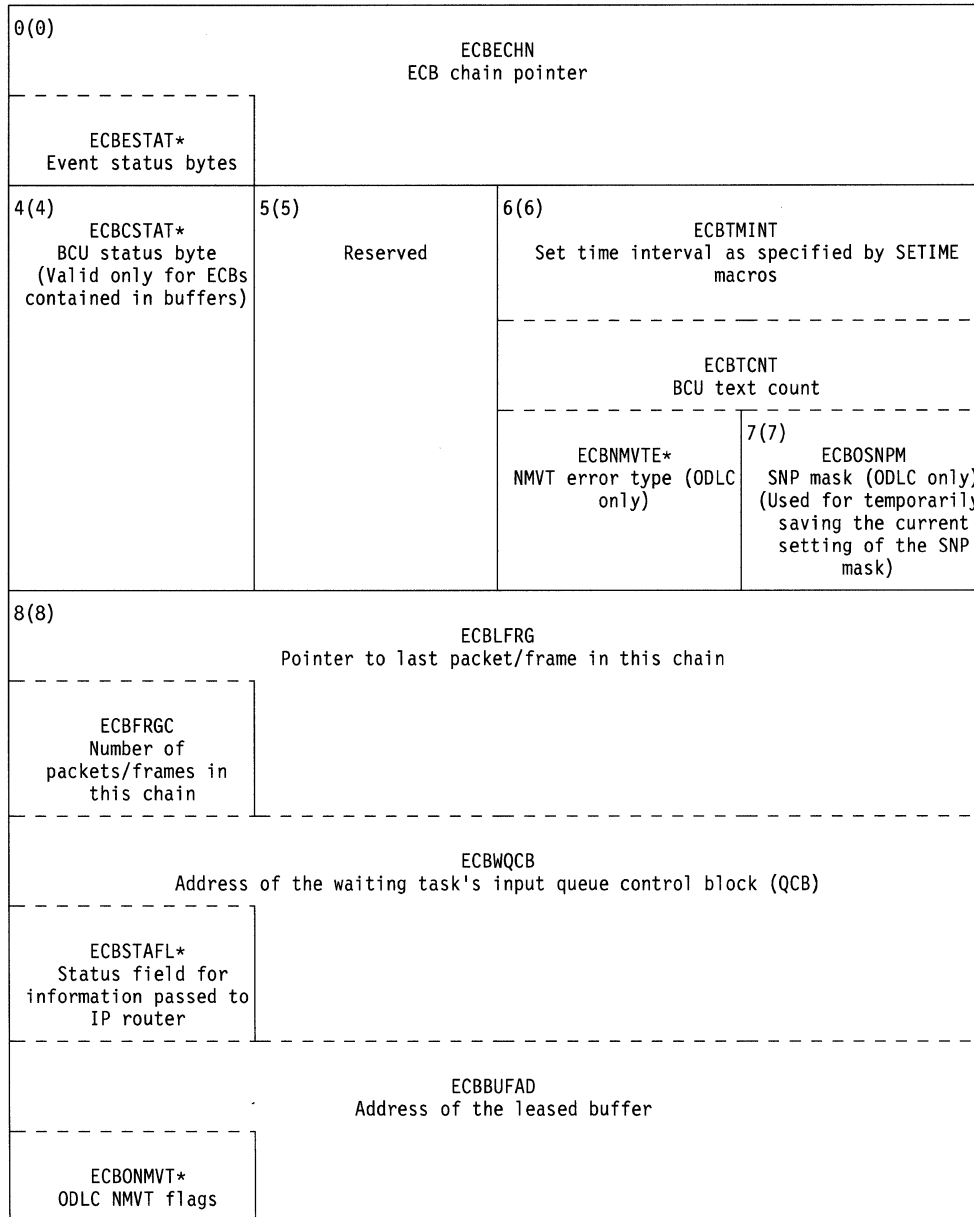
Offset/Field Name	Bit Pattern/ Hex Value	Contents
82(52) DVBDMF		Device mode flags
	Byte 0	
	1...	Activate monitor mode is out of session.
	.1..	Override write text mode error recovery procedures (ERPs).
	..1.	Reject leading graphic (write operations).
	...1	End of Intermediate Block (EIB) deletion (nontransparent only)
	.... 1...	Process reset is conditional as low priority.
	.... .1..	Inhibit time fill/inhibit WACK limit.
	.... ..1.	Embedded line control (nontransparent)/intermediate control character insertion (transparent)
	.... ...1	Critical text
	Byte 1	
	1...	TWX-suppress prompting
	.1..	Override read text mode ERPs.
	..1.	Reject leading graphics (read operations).
	...1	EIB inspection/inhibit text time-out
	.... 1...	Subblocking (input)
	.... .1..	Interrupt is enabled.
	.... ..1.	Activate the monitor mask.
	.... ...1	Auto deactivate monitor mode.
85(55) DVBSTAT3		Status byte 3
	1...	Remember RVI was sent.
	.1..	Pseudo suppress response to host.
	..1.	Send SESSEND to SSCP.
	...1	Suppress error response.
	.... 1...	Send unsolicited response to the primary LU.
	.... .1..	Session is required before polling.
	.... ..1.	Session trace for a specific resource
	.... ...1	Unsolicited response is required due to a route extension (REX) failure.

Event Control Block

Program: NCP
Size in bytes: 12(C)
Located in: Dynamically allocated block control unit/path information unit (BCU/PIU/Ethernet/IP buffer) or as a permanent control block in storage
Created by: NCP generation
Pointed to by: None
Function: To control the BCU status or the event status of an associated block

Notes:

1. ECBWQCB must have the same displacement in the ECB as UxECHN has in the PIU. BCUECHN has in the BCU and XYZLINK has in the QCB.
2. ECBSTAT must be zeroed by ECBINIT whenever any SUPV function is used against that ECB; for example, ENQUE, INSERT, etc.



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) ECBESTAT		Event status byte (NCP processing)
	1... ..	Event is satisfied (ECBESBT)
	.1... ..	Task is ready to be dispatched (ECBTDBT)
	...1 ...	ECB enqueued bit (ECBDQ)
		Event status byte (ODLC processing)
	1... ..	Pacing request (ECBPRQ)
	.1... ..	End of window indicator (ECBEWI)
	.1... ..	Pacing response (ECBPRS)
	...1 ...	Change window reply indicator (ECBCWRI)
	... 1...	Reset window indicator (ECBRWI)
	... .1..	More segments follow (ECBMSF)
	... ..xx	PIU priority (ECBPRI1, ECBPRI2)
		00 = Low priority 01 = Medium priority 10 = High priority 11 = Network priority
4(4) ECBCSTAT		Buffer status byte
	1... ..	Buffer is enqueued
	.1... ..	PIU is segmented by NCP
	... ..1.	Ethernet frame to be retransmitted over dynamic interface
	... ..1	Ethernet broadcast frame to be echoed to IP router
6(6) ECBNMVTE		ODLC NMVT error type
	X'20'	Token-ring error data
	X'21'	Frame-relay error data
	X'22'	Frame-relay link configuration data
	X'50'	Statistical counters
	X'51'	Permanent station error statistics
	X'52'	Permanent line error statistics
	X'53'	CMIP statistics
	X'54'	Station alert statistics (Frame-relay)
	X'55'	Link configuration data statistics (Frame-relay)
8(8) ECBSTAFL		Status field for information passed to IP router
	1... ..	Broadcast frame received from Ethernet (ECBETHB)
8(8) ECBONMVT		ODLC NMVT flags
	x... ..	1 = CMIP alarm 0 = CMIP counter set reports
	..x.	1 = Generic alert subvectors (Could include SVs 53 and 56) (ECBGASV) 0 = Link event subvectors
	.... x...	Statistical counters resource indicator (ECBLSTC)
		1 = Statistical counters associated with link resource 0 = Statistical counters associated with station resource
	.... ..1	An unsolicited LPDA2 test is required (ECBLUTR)

EBCDIC Character Decode Displacement

Program: NCP, EP

Size in bytes: 64(40)

Located in: Module CYKBL, CYKTST/CYLBL, and CYLTST

Created by: NCP or PEP generation

Referenced by: CYATAPH0, CYARAPH0, CYKTST, and CYLTST

Function: Provides the offset into the branch table for proper control character processing

0(0) - 63(3F)

EBCXMTBT
(CYAEBCT)
Displacement data

Ethernet Counters Overlay Control Block

Program: NCP

Size in bytes: 56(38)

Function: Overlay for Ethernet counters data buffer

0(0)	Reserved	2(2)	ECOTDREF Time delay reflectometer
4(4)	ECOTFXMT Total frames transmitted		
8(8)	ECOTFRCV Total frames received		
12(C)	ECOTFXLT Total transmit frames lost		
16(10)	ECOTFRLT Total receive frames lost		
20(14)	ECOEXCOL Excess collisions		
24(18)	ECOLATCL Late collisions		
28(1C)	ECOBUFNA Buffers not available		
32(20)	ECOCRCER CRC errors		
36(24)	ECOFRMER Framing errors		
40(28)	ECORFTLN Received frames longer than 1518 bytes		
44(2C)	ECOXMTDF Number of transmit frames deferred		
48(30)	ECOONECL One collision counter		
52(34)	ECOMULCL Multiple collision counter		

Statistical Counters Control Block

Program: NCP

Size in bytes: 44(2C)

Created by: NCP initialization

Pointed to by: The RIBSCCB field in the route interface control block (RIB)

Function: This control block contains all the counters collected for an IP DLC resource. There is one ECT created for each IP-supported line.

00(0)	ECTBXMIT Total number of bytes transmitted	
04(4)	ECTBREC Total number of bytes received	
08(8)	ECTINFRD Total number of inbound frames discarded (no errors)	
	ECTINFHI High halfword of counter	10(A) ECTINFLO Low halfword of counter
12(C)	ECTOTDIS Total number of outbound frames discarded (no errors)	
16(10)	ECTFDISC Total number of frames discarded because neither IP nor ARP	
20(14)	ECTNBDFR Total number of non-broadcast frames received	
24(18)	ECTBDRRC Total number of broadcast frames received	
28(1C)	ECTNBDIP Total number of non-broadcast frames that IP requests to send	
32(20)	ECTBDFIP Total number of broadcast frames that IP requests to send	
36(24)	ECTNFOBQ Current number of frames on the outbound queue	
40(28)	ECTFRDSC Total number of frames discarded due to errors	
	ECTFRDHI High halfword of counter	42(2A) ECTFRDLO Low halfword of counter

Ethernet Frame

Program: NCP

Size in bytes: Frame size varies depending on:

1. The frame format header
 - Ethernet Version 2 is 14(E) bytes
 - IEEE 802.3 is 22(16) bytes
2. The variable length data
 - Ethernet Version 2 data can range from 46(2E) to 1500(5DC) bytes
 - IEEE 802.3 data can range from 38(16) to 1492(5D4) bytes

The maximum frame size (header plus data) is 1512(5E8) bytes.

Function: The frame is the basic unit of transmission on an ethernet-type LAN

Buffer prefix of first buffer of ethernet frame (Ethernet header only)

-4(4) ENBHTG Buffer tag	-3(3) ENBUFTAG Buffer overlay check X'C2'	-2(2) Reserved	
0(0) ENBUFCHN Buffer prefix chain field			
4(4) ENICOPYF Copy data field		6(6) ENOFFSET Buffer prefix data offset field	7(7) ENDATCNT Buffer prefix data count field
ENCOPCT Copy count	5(5) ENCOPYS Copy status byte		

Event Control Block

8(8) ENECHN Pointer to next packet/frame in this chain		
ENESTAT Event status bytes		
12(C) ENCSTAT BCU status byte Valid only for ECBs contained in buffers	13(D) Reserved	14(E) ENTCNT Packet/frame data count
		ENTMINT Set time interval
16(10) ENLFRG Pointer to last packet/frame in this chain		
ENFRGC Number of packets/frames in this chain		

Ethernet Version 2 frame format

20(14) - 41(29)		Reserved	
		42(2A) - 47(2F)	EFHDADDR*
Address of the destination Ethernet adapter for this frame			
48(30) - 53(35)		EFHSADDR*	
Address of the source Ethernet adapter for this frame			
		54(36)	EFHPTYPE* Protocol type

Note: If EFHPTYPE value is less than or equal to 1500(X'5DC'), then the frame protocol type is IEEE 802.3. Otherwise the frame protocol type is Ethernet Version 2.

* Indicates a byte expansion follows.

IEEE 802.3 frame format

		54(36)		EFHFLEN IEEE 802.3 frame length (DSAP to end of information only)			
56(38)	EFHDSAP* IEEE 802.3 Destination service access point	57(39)	EFHSSAP* IEEE 802.3 source service access point	58(3A)	EFHCTL* IEEE 802.3 control	59(3B) - 61(3D)	EFHPID
IEEE 802.3 protocol ID							
		62(3E)		EFHSPTYP* IEEE 802.3 protocol type			

Note: IEEE 802.3 frame format (offsets 20(14) - 53(35) are the same as the Ethernet Version 2 frame format) offsets.

* Indicates a byte expansion follows.

Buffer Prefix of Second Buffer of Ethernet frame

-4(4)	ENBHTG Buffer tag	-3(3)	ENBUFTAG Buffer overlay check X'C2'	-2(2)	Reserved				
0(0)									
ENBUFCHN Buffer prefix chain field									
4(4)				Reserved		6(6)	ENOFFSET Buffer prefix data offset field	7(7)	ENDATCNT Buffer prefix data count field

Event Control Block

8(8)		ENECHN Pointer to next packet/frame in this chain	
12(C)		14(E)	
Reserved		ENTCNT Packet/frame data count	
16(10)			
ENLFRG Pointer to last packet/frame in this chain			
ENFRGC Number of packets/frames in this chain			

Rest of Buffer

20(14)		22(16) - 45(2D)	
ENTMSMP NCST/Ethernet time stamp			
Reserved			
		46(2E) - m	
		EF2BDATR	
Start of received data			

Note: Data received from the ESS adapter will start at offset X'2E' within the second NCP buffer. The starting offset of transmitted data can vary. This data may be located using the buffer offset value from the buffer prefix.

Buffer prefix of all other buffers of Ethernet frame

-4(4)	-3(3)	-2(2)	
ENBHTG Buffer tag	ENBUFTAG Buffer overlay check X'C2'	Reserved	
0(0)			
ENBUFCHN Buffer prefix chain field			
4(4)		6(6)	7(7)
Reserved		ENOFFSET Buffer prefix data offset field	ENDATCNT Buffer prefix data count field

Rest of buffer

8(8) - m	EF3BDATA Data
----------	------------------

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
42(2A) EFHDADDR		Address of the destination Ethernet adapter for this frame
	Byte 0	
	.... ..x.	1 = Locally administered address 0 = Universally administered address
	.... ..x	1 = Group address 0 = Individual address
48(30) EFHSADDR		Address of the source Ethernet adapter for this frame
	Byte 0	
	.... ..x.	1 = Locally administered address 0 = Universally administered address
	.... ..x	1 = Group address 0 = Individual address
54(36) EFHPTYPE		This field is used to identify the higher level protocol that is embedded within the Ethernet frame. If this field contains a value greater than 1500(5DC), then the frame format is Ethernet Version 2, otherwise the frame format is IEEE 802.3. If the frame format is Ethernet Version 2, then the following values are defined to mean:
	X'800'	IP
	X'806'	ARP
56(38) EFHDSAP		IEEE 802.3 Destination Service Access Point
	X'00'	XID or TEST
	X'AA'	Subnetwork Access Protocol (SNAP) header
57(39) EFHSSAP		IEEE 802.3 Source Service Access Point
	X'00'	XID or TEST
	X'01'	XID or TEST response
	X'AA'	Subnetwork Access Protocol (SNAP) header
58(3A) EFHCTL		This field is used to identify the type of frame embedded within the IEEE 802.3 frame.
	X'03'	Unnumbered I-frame
	X'BF'	XID frame
	X'F3'	Test frame
62(3E) EFHSPTYP		This field is used to identify the higher level protocol that is embedded within the IEEE 802.3 frame.
	X'800'	IP
	X'806'	ARP

Ethernet Frames Supported Table

Program: NCP

Size in bytes: 256(100)

Created by: NCP generation

Function: The Ethernet Frames Supported Table (EFST) is used by the adapter to filter frames being used over the Ethernet.

0(0) Internet Protocol (IP) X'0800'	2(2) Address Resolution Protocol (ARP) X'0806'
4(4) Reverse ARP X'8035'	6(6) SNMP X'814C'
8(8) Signifies End of Table X'0000'	10(A) - 255(FF)
Reserved	

Ethernet Frame Header

Program: NCP

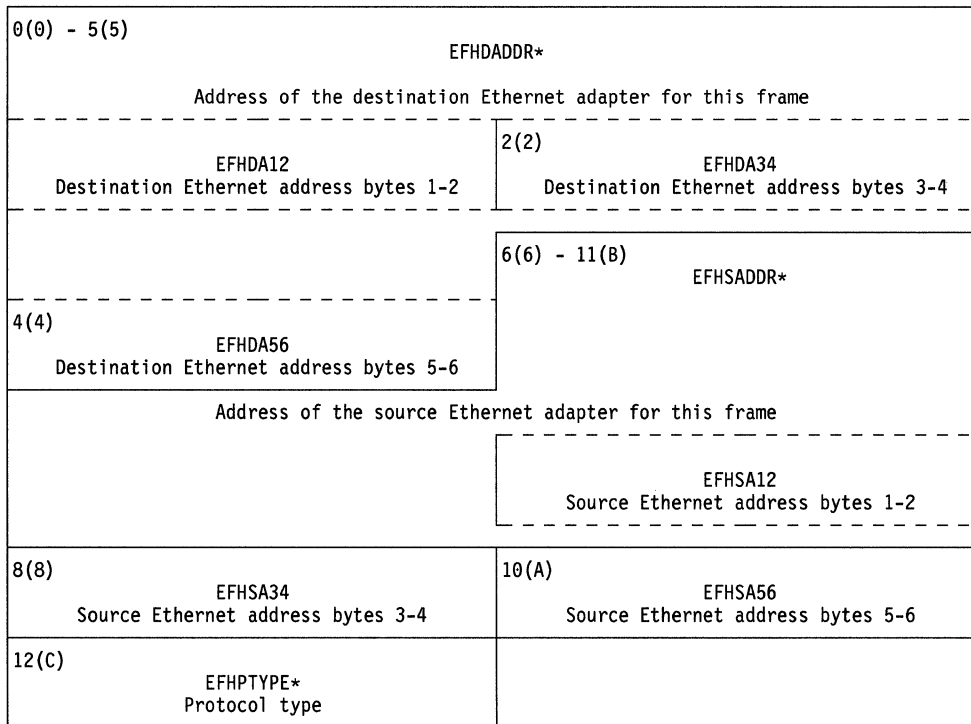
Size in bytes: Variable depending on whether the frame type is Ethernet Version 2 or IEEE 802.3. If the frame type is Ethernet Version 2 then the size is 14(E). If the frame type is IEEE 802.3, then the size is 22(16).

Created by: Devices for transmitting data in an Ethernet-type LAN.

Pointed to by: The first buffer in a buffer chain containing Ethernet data.

Function: To distinguish between the different Ethernet frame formats and to provide such data as source and destination addresses for routing through an Ethernet-type LAN.

Ethernet Version 2 Frame Format



* Indicates a byte expansion follows.

Note: IEEE 802.3 frame format (offsets 0(0) - 11(B) are the same as the Ethernet Version 2 frame format)

IEEE 802.3 Frame Format

12(C) EFHLEN IEEE 802.3 frame length (DSAP to end of information only)	14(E) EFHDSAP* IEEE 802.3 destination service access point	15(F) EFHSSAP* IEEE 802.3 source service access point
16(10) EFHCTL* IEEE 802.3 control	17(11) EFHPID IEEE 802.3 protocol ID	
20(14) EFHSPTYP* IEEE 802.3 protocol type		

* Indicates a byte expansion follows.

Note: If the higher level protocol is IP or ARP then offsets 14(E) - 21(15) are collectively known as the Subnetwork Access Protocol (SNAP) header and are defined as X'AAAA03000000'.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
12(C) EFHPTYPE	X'800' X'806'	This field is used to identify the higher level protocol that is embedded within the Ethernet frame. If this field contains a value greater than 1500(5DC), then the frame format is Ethernet Version 2, otherwise the frame format is IEEE 802.3. If the frame format is Ethernet V2, then the following values are defined to mean: IP ARP
14(E) EFHDSAP	X'AA'	IEEE 802.3 Destination Service Access Point Subnetwork access protocol (SNAP) header
15(F) EFHSSAP	.... .x	IEEE 802.3 Source Service Access Point Request/response 1 = Response 0 = Request
16(10) EFHCTL	X'03' X'BF' X'F3'	This field is used to identify the type of frame embedded within the IEEE 802.3 frame. Unnumbered I-frame XID frame Test frame
20(14) EFHSPTYP	X'800' X'806'	This field is used to identify the higher level protocol that is embedded within the IEEE 802.3 frame. IP ARP

ER-to-VR Mapping List**Program:** NCP**Size in bytes:** Variable;
When ERLIMIT=8: 8 bytes plus 8 bytes per EML row
When ERLIMIT=16: 16 bytes plus 16 bytes per EML row

The number of EML rows associated with a given network is specified by the RMBTRTCT field in the route management block (RMB) for that network. The RMBTRTCT value does not include row zero of the EML.

Created by: NCP generation**Pointed to by:** The RMBEMLP field in the RMB for each network points to the beginning of the EML for that network. The EML is then indexed by using the appropriate entry from the subarea index table (SIT).

The EML for the native network is also pointed to by the NVXEMLP field in the network vector table extension (NVX).

Function: Contains eight 1-byte masks per row when ERLIMIT=8 or eight 2-byte masks per row when ERLIMIT=16. It is the mask of the explicit route that NCP activates during virtual route activation.**ERLIMIT=8**

0(0) - 7(7)			
Zeros			
8(8) Explicit route mask for VR0	9(9) Explicit route mask for VR1	10(A) Explicit route mask for VR2	11(B) Explicit route mask for VR3
12(C) Explicit route mask for VR4	13(D) Explicit route mask for VR5	14(E) Explicit route mask for VR6	15(F) Explicit route mask for VR7

Note: Bytes 8(8) through 15(F) make up one EML row.

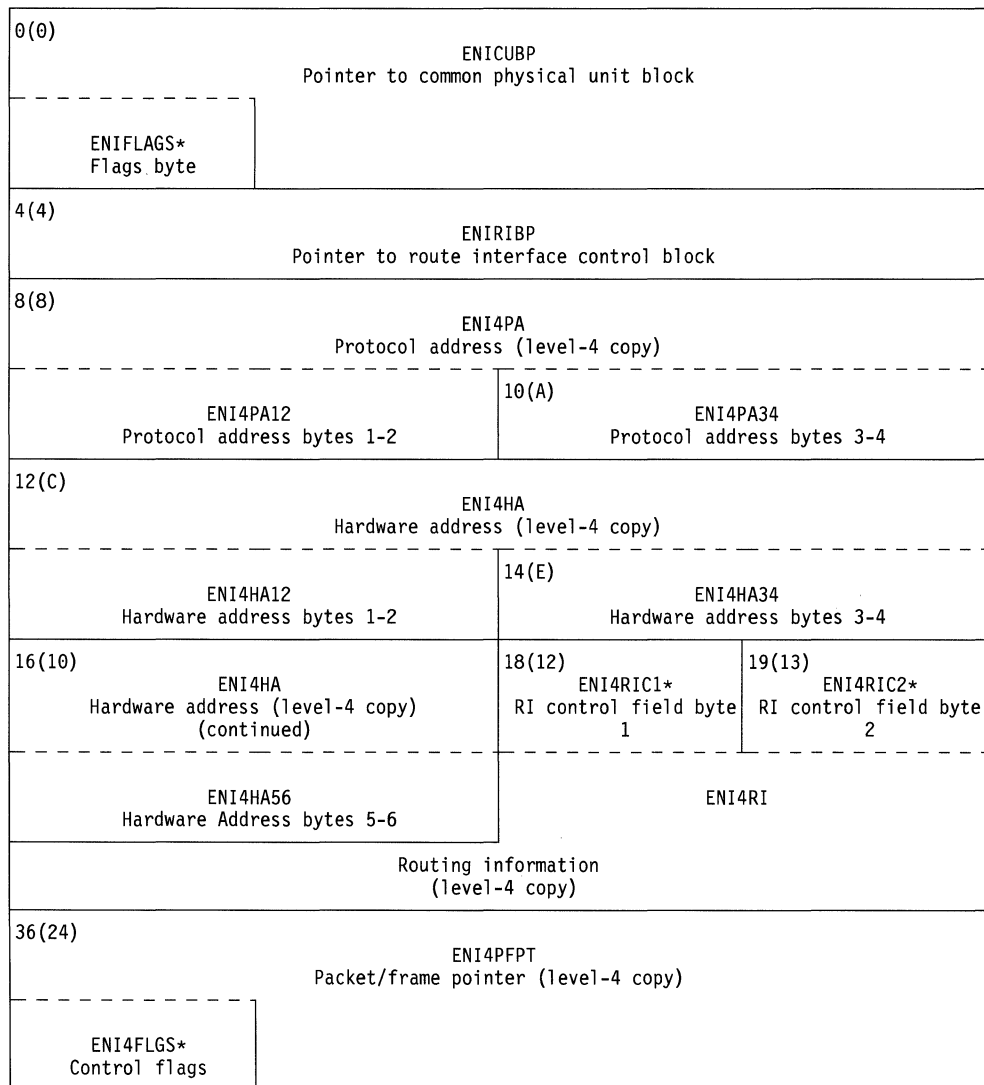
ERLIMIT=16

0(0) - 15(F) Zeros	
16(10) Explicit route mask for VR0	18(12) Explicit route mask for VR1
20(14) Explicit route mask for VR2	22(16) Explicit route mask for VR3
24(18) Explicit route mask for VR4	26(1A) Explicit route mask for VR5
28(1C) Explicit route mask for VR6	30(1E) Explicit route mask for VR7

Note: Bytes 16(10) through 32(20) make up one EML row.

IP/DLC Interface Control Block

- Program:** NCP
- Size in bytes:** 256(100)
- Created by:** NCP initialization
- Pointed to by:** The CXBENIP field in the common physical unit block extension (ENI), and the RIBRSCB field in the route interface control block (RIB) if the resource is a LAN
- Function:** Contains information about an individual IP supported DLC interface.



* Indicates a byte expansion follows.

40(28) ENIARTP Pointer to the ARP table (ART)			
44(2C) ENIAOMT ARP timeout value (X'258')		46(2E) ENIWAOMT Working ARP timeout value	
48(30) ENINARTB Number of ARP reply timer buckets (X'03')	49(31) ENIART1B One-minute ARP reply timer bucket index	50(32) ENINXITB Number of transmit inactivity timer buckets	51(33) ENIXIT1B One-minute transmit inactivity timer bucket index
52(34) ENIPARP Number of permanent ARP table entries (ATE)		54(36) ENINPARP Number of non-permanent ARP table entries (ATE)	
56(38) ENIETBP Pointer to Ethernet adapter control block (ETB)			
60(3C) ENIBPHP ENI buffer pool head pointer			
ENIBPCT ENI buffer pool count			
64(40) ENIBPTP ENI buffer pool tail pointer			
68(44) ENINDBP Pointer to NPM data block			
72(48) - 255(FF) 23 time interval buckets			

There are 23 time interval buckets:

1. The first three time-interval buckets support the three-minute ARP request-reply time limit.
2. The next twenty time-interval buckets support the twenty-minute inactivity time limit imposed on temporary ARP table entries.

Each time-interval bucket represents a one-minute time interval.

The following overlay defines a time interval bucket.

0(0) ENITTPT Tail pointer to ATE control blocks associated with this time interval
4(4) ENITHPT Head pointer to ATE control blocks associated with this time interval

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) ENIFLAGS		ENI flags
	x... ..	Interface state 1 = Active 0 = Inactive
	.x.. ..	Frame format support 1 = Dynamic frame format support (Ethernet V2 and IEEE 802.3 concurrently) 0 = Static frame format support (Either Ethernet V2, IEEE 802.3, or IEEE 802.5)
	..x.	Frame format type (only valid for static frame format support) 1 = IEEE frame format 0 = Ethernet V2 frame format
	...x	IEEE Format Type (only valid for static IEEE frame format support) 1 = IEEE 802.5 frame format 0 = IEEE 802.3 frame format
	.... x...	Hardware address format in ARP packets 1 = Non-Canonical format 0 = Canonical format
	.... .x..	Next transmission frame type 1 = Next frame to transmit is an ethernet broadcast 0 = Next frame to transmit is not an ethernet broadcast
	.... ..xx	Reserved
18(12) ENI4RIC1		RI Control field byte 1
	xx..	Broadcast/path trace 00 = Not all routes explorer, path trace not active 01 = Not all routes explorer, path trace active 10 = All routes explorer, path trace not active 11 = Spanning tree explorer, path trace not active
	..x.	Reserved
	...x xxxx	RI length including control field
19(13) ENI4RIC2		RI Control field byte 2
	x... ..	Direction 1 = Interpret RI right to left 0 = Interpret RI left to right
	.xxx	Largest information field (LF) 000 = Up to 516 bytes 001 = Up to 1470 bytes 010 = Up to 2052 bytes 011 = Up to 4472 bytes 100 = Up to 8144 bytes 101 = Up to 11407 bytes 110 = Up to 17800 bytes 111 = Used only in all routes explorer frames
	.... xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
36(24) ENI4FLGS		Control flags
	x...	Entry type 1 = Permanent entry 0 = Non-permanent entry
	.1..	Frame format type established
	..x.	Frame format type 1 = IEEE 802 frame format 0 = Ethernet V2 frame format
	...x	IEEE frame format type 1 = IEEE 802.5 frame format 0 = IEEE 802.3 frame format
	...1	Entry is in use
	.... 1..	Entry is complete
	.... ..x.	Routing information presence indicator 1 = Routing information present 0 = Routing information not present
	.... ...x	Reserved

EP Initialization Table

Program: EP
Size in bytes: 12(C)
Located in: End of module CYKSTART/CYLSTART
Function: Contains control information used during IPL

0(0) EPIMSTAT* State indicator for MOSS communication	1(1) EPIFUNC Function indicator for line initialization	2(2) EPIABNCD Current abend code
4(4) EPIL2K Installed storage size		
8(8) EPIMSTOR Maximum storage installed		

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) EPIMSTAT		State indicator for MOSS communication
	0000 0000	Inactive state
	1...	Response pending
	.1..	MOSS request configuration data set (CDS) information response
	..1.	MOSS initialization complete
	...1	MOSS control program parameter response
	.... 1...	Request pending
	.... ..1.	Control program parameter saved request
	.... ...1	MOSS CDS information available

Event Queue Block

Program: NCP

Size in bytes: 16(10)

Created by: NCP generation

Pointed to by: The SYSEQBP field in the extended halfword direct addressables control block (HWE)

Function: Contains two chains, one for the slowdown event chain and the other for the CWALL event chain

0(0)	EQBSCHPF First ACHAIN element pointer of the slowdown event chain
4(4)	EQBSCHPL Last ACHAIN element pointer of the slowdown event chain
8(8)	EQBCCHPF First ACHAIN element pointer of the CWALL event chain
12(C)	EQBCCHPL Last ACHAIN element pointer of the CWALL event chain

Explicit Route Broadcast Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointed to by: The QPBERBP field in the queue pointer block (QPB)

Function: Enqueues NC.ER.OP and NC.ER.INOP PIUs to the ERB queue to be broadcast to adjacent PU types 4 and 5

Format: Standard input queue control block (QCB)

Task—CXDBERB

Priority—Appendage

Reentrant—No.

LAN Adapter Control Block

Program: NCP

Size in bytes: 84(54)

Created by: NCP initialization, one per LAN adapter

Pointed to by: The CCBETBP field in character control block (CCB) (NCP), and the ENIETBP field in the Ethernet interface control block (ENI)

Function: Contains information relating to a specific LAN adapter.

0(0)				ETBHA Interface hardware address							
ETBHA12 Interface hardware address bytes 1-2			2(2)			ETBHA34 Interface hardware address bytes 3-4					
ETBHA1* Interface hardware address byte 1		1(1) ETBHA2 Interface hardware address byte 2		ETBHA3 Interface hardware address byte 3		3(3) ETBHA4 Interface hardware address byte 4					
4(4)				6(6)							
ETBHA Interface hardware address (continued)				ETBIHA Interface hardware address (byte inverted form)							
ETBHA56 Interface hardware address byte 5-6				ETBIHA12 Interface hardware address byte 1-2 (byte inverted form)							
ETBHA5 Interface hardware address byte 5		5(5) ETBHA6 Interface hardware address byte 6		ETBIHA1 Interface hardware address byte 1 (byte inverted form)		7(7) ETBIHA2 Interface hardware address byte 2 (byte inverted form)					
8(8)											
ETBIHA Interface hardware address (byte inverted form) (continued)											
ETBIHA34 Interface hardware address byte 3-4 (byte inverted form)				10(A)				ETBIHA56 Interface hardware address byte 5-6 (byte inverted form)			
ETBIHA3 Interface hardware address byte 3 (byte inverted form)		9(9) ETBIHA4 Interface hardware address byte 4 (byte inverted form)		ETBIHA5 Interface hardware address byte 5 (byte inverted form)		11(B) ETBIHA6 Interface hardware address byte 6 (byte inverted form)					

* Indicates a byte expansion follows.

12(C)	ETBTHRFR Counter threshold for all frames sent or received	
16(10)	ETBTHRER Counter threshold for all errors on transmit or receive	
20(14)	ETBBUF Pointer to the Ethernet counters data buffer	
24(18)	Reserved	26(1A) ETBDREF Time domain reflectometry
28(1C)	ETBTFXMT Total frames transmitted	
32(20)	ETBTFRCV Total frames received	
36(24)	ETBTFXLT Total transmit frames lost	
40(28)	ETBTFRLT Total receive frames lost	
44(2C)	ETBEXCOL Excess collisions	
48(30)	ETBLATCL Late collisions	
52(34)	ETBBUFNA Buffers not available	
56(38)	ETBCRCER CRC errors	
60(3C)	ETBFRMER Framing errors	
64(40)	ETBRFTLN Received frames longer than 1518 bytes	
68(44)	ETBXMTDF Number of transmit frames deferred	
72(48)	ETBONECL One collision counter	

76(4C)	ETBMULCL Multiple collision counter
80(50)	Reserved
ETBFLAGS* Miscellaneous flags	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) ETBHA1		Interface Hardware Address byte 1
	x... ..	I/G Bit 1 = Group address 0 = Individual address
	.x... ..	U/L Bit 1 = Locally administered address 0 = Universally administered address
	..xx xxxx	Reserved
80(50) ETBFLAGS		Miscellaneous Flags
	1... ..	Ethernet frames supported table not supported

Fixed ARP Entries Table

Program: NCP

Size in bytes: 12(C) per entry, table varies in size

Created by: NCP generation

Pointed to by: IITARPPT in IIT entry for the appropriate Ethernet interface.

Function: An FAE is destroyed by NCP initialization. One is created at generation for each Ethernet interface that has ETHPERM statements. The number of entries in each FAE corresponds to the number of ETHPERM statements for that interface plus 1 null entry at the end. These entries are moved to the ARP table at initialization.

FAE Entries

0(0)	FAEIPADR IP address	
4(4) - 9(9)	FAEHWADR Hardware address	
	10(A) FAEFLAGS* FAE element flags	11(B) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
10(A) FAEFLAGS		FAE element flags
	x... ..	Last Entry indicator 0 = Not last entry 1 = Last entry (this entry is also null).
	.x... ..	Frame Format Type Established 0 = Not Established (DYNAMIC) 1 = Established
	..x.	Frame Format Type 0 = Ethernet V2 frame format 1 = IEEE 802.3 frame format
	...x xxxx	Reserved.

Fullword Direct Addressable Extension

Program: NCP, EP

Size in bytes: 128(80)

Created by: NCP or PEP generation

Pointed to by: The SYSFAXP field in the word direct addressable storage control block (XDA)

Function: Contains frequently addressed system fullword control fields

Name	Offset
SYSALRL	76 (4C)
SYSATRAP	28 (1C)
SYSAVBP	36 (24)
SYSBFCNT	56 (38)
SYSBFTHR	40 (28)
SYSBPQBC	96 (60)
SYSBUFCT	92 (5C)
SYSCIDQ	52 (34)
SYSCIOTP	0 (0)
SYSCPITP	16 (10)
SYSCSTP	64 (40)
SYSEACB	20 (14)
SYSFACB	112 (70)
SYSFPSA	108 (6C)
SYSFX2P	72 (48)
SYSGSZ	88 (58)
SYSIPCP	60 (3C)
SYSL4BP	8 (8)
SYSMBIN	80 (50)
SYSMBOUT	84 (54)
SYSNACB	116 (74)
SYSNTPP	120 (78)
SYSOLNVT	104 (68)
SYSPMFMP	4 (4)
SYSRDAP	48 (30)
SYSR7SAV	24 (18)
SYSSMMP	32 (20)
SYSSNAPT	68 (44)
SYSTATP	124 (7C)
SYSTRPLP	100 (64)
SYSUTSP	44 (2C)
SYSW11	12 (C)
SYSXBUF	56 (38)

0(0)	SYSCIOTP Pointer to the channel adapter IOH trace table
4(4)	SYSPMFMP Pointer to the performance measurement facility control block (PMF)
8(8)	SYSL4BP Pointer to the level-4 router control block (L4B)
12(C)	SYSW11 Pointer to the maintenance history area
16(10)	SYSCPITP Pointer to the control program information table (CPIT)
20(14)	SYSEACB Pointer to the dummy adapter control block (ACB)
24(18)	SYSR7SAV Save location for register 7
28(1C)	SYSATRAP Address of the CXATRAP module
32(20)	SYSSMMP Pointer to the SSCP monitor mode control block (SMM)
36(24)	SYSVBP Pointer to the NCP/token-ring interconnection (NTRI) AVB control block
40(28)	SYSBFTHR Buffer pre-slowdown mark
44(2C)	SYSUTSP Pointer to the usage tier status block (UTS)

48(30)	<p style="text-align: center;">SYSRDAP Pointer to routing data area control block (RDA)</p>		
52(34)	<p style="text-align: center;">SYSCIDQ Current IP datagram queue control block (IDQ) being used</p>		
56(38)	<p style="text-align: center;">SYSXBUF Transmit free buffer chain</p>		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; vertical-align: top;"> <p style="text-align: center;">SYSBFCNT Buffer count of free transmit buffers</p> </td> <td></td> </tr> </table>	<p style="text-align: center;">SYSBFCNT Buffer count of free transmit buffers</p>	
<p style="text-align: center;">SYSBFCNT Buffer count of free transmit buffers</p>			
60(3C)	<p style="text-align: center;">SYSIPCP Pointer to the IP congestion control block (IPC)</p>		
64(40)	<p style="text-align: center;">SYSCSTP Pointer to CSS status table (CST) (ODLC only)</p>		
68(44)	<p style="text-align: center;">SYSSNAPT Pointer to SNAP trace table (ODLC only)</p>		
72(48)	<p style="text-align: center;">SYSFX2P Pointer to extension to fullword addressables extension (FX2)</p>		
76(4C)	<p style="text-align: center;">SYSALRL Pointer to available (POOLED) list (ODLC only)</p>		
80(50)	<p style="text-align: center;">SYSMBIN Pointer to IN-mailbox</p>		
84(54)	<p style="text-align: center;">SYSMBOUT Pointer to OUT-mailbox</p>		
88(58)	<p style="text-align: center;">SYSGSZ Address of the last byte of installed storage or (MEMSIZE on BUILD statement minus 1) whichever is less</p>		
92(5C)	<p style="text-align: center;">SYSBUFCT Initial free buffer count</p>		
96(60)	<p style="text-align: center;">SYSBPQBC Exit slowdown threshold count</p>		
100(64)	<p style="text-align: center;">SYSTRPLP Token-ring physical line table pointer (TRPL) (ODLC only)</p>		

104(68)	SYSOLNVT Pointer to ODLC line vector table (LNVT) (ODLC only)
108(6C)	SYSFPSA Floating parameter/status area (PSA) for WRAP
112(70)	SYSFACB Pointer to first adapter control block (ACB) in ODLC timer chain (ODLC only)
116(74)	SYSNACB Pointer to next ACB to be processed in ODLC timer chain (ODLC only)
120(78)	SYSNTPP Pointer to the NRP-NCPROUTE timer processing control block (NTP)
124(7C)	SYSSTATP Pointer to ODLC token-ring logical address table (ODLC only)

Flow Control Parameter Table

Program: NCP

Size in bytes: Variable; 7 bytes per FCT row

Created by: NCP generation

Pointed to by: The NVXFCTP field in the network vector table extension (NVX)

Function: Contains the minimum and maximum pacing group (window) sizes that correspond to a particular virtual route with a particular other-end subarea. The FCT initially contains the values specified at system generation, but those values may change.

0(0)	FCTSITI* Subarea index table (SIT) index (the TRT/EML row number corresponding to the other-end subarea of the virtual route)		2(2)	FCTVRID* Virtual route identifier (VRID)	3(3)	FCTMINW Minimum window size for the virtual route
	FCTSITI0	1(1) FCTSITI1				
4(4)	FCTMAXW Maximum window size for the virtual route	5(5) FCTLNID Local network ID	6(6)	FCTFLAG* Flag byte		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
0(0) FCTSITI		SIT index
	X'0000'	This is the last FCT entry.
	X'FFFF'	This FCT entry is not in use. (Any other value is a TRT/EML row number.)
2(2) FCTVRID		Virtual route identifier
	xxxx	Virtual route number (VRN)
	.... xxxx	Transmission priority field (TPF)
6(6) FCTFLAG		Flag byte
	1...	Generated FCT for a dynamic network
	.xxx xxxx	Reserved

Multilink Transmission Group (Fat Link) Control Block

Program: NCP
Size in bytes: 124(7C)
Created by: NCP generation
Pointed to by: The SYSFLBP field in the extended halfword direct addressables control block extension (HWX) and the TGBDLCP field in the transmission group control block (TGB)
Function: Controls traffic on multilink transmission groups

0(0) - 23(17)		
FLBRQCB Multilink transmission group resequence queue control block (QCB) (received PIUs for resequencing)		

FLBSQCB Special PIU (FIDF) (pseudo input)		
24(18) - 39(27)		
FLBXQCB Multilink transmission group QCB (Work queue) (transmit queue)		
40(28)		
FLBTGBP Pointer to the transmission group control block (TGB)		
FLBSOC Station operative count		
44(2C)		
FLBSCBP Pointer to the first station control block (SCB) or to the next FLB in the free pool		
FLBSCC Station committed count		
48(30)	50(32)	51(33)
FLBMTS Maximum transfer size	FLBSTF* State flags for a multilink transmission group (byte 1)	FLBSRC Station ready count
52(34)	54(36)	
FLBNRO Next sequence number for outbound PIUs	FLBNRI* Next expected sequence number from inbound PIUs	

* Indicates a byte expansion follows.

56(38) Reserved	57(39) FLBQPC Queue priority counter	58(3A) FLBUNAC Unacknowledged PIU counter	
60(3C) FLBSRSN Special PIU sequence number		62(3E) FLBSPE Next expected special PIU sequence number	
64(40) FLBAGAC Aging algorithm count	65(41) FLBSTFC* State flags for a multilink transmission group (byte 2)	66(42) FLBMBXL Maximum buffers allowed by NTRI transmit list	67(43) FLBMBOP Maximum number buffers in outstanding PIUs
68(44) FLBSBC Pointer to the list of buffers available for segmentation			
72(48) FLBASMP Pointer to PIU being reassembled			

FLBCORC Correlation counter			
76(4C) - 99(63) FLBTQCB NCP/token-ring interconnection (NTRI) TG segmenting QCB			
100(64) FLBDCHPF Pointer to the head of the list of buffers available for deblocking			
FLBBCNT Number of buffers available for deblocking			
104(68) FLBDCHPL Pointer to tail of list of buffers available for deblocking			
108(6C) FLBNSSP Pointer to MLTG TG next station to be serviced			
112(70) FLBXCNT Number of PIUs on transmit QCB		114(72) FLBRXCNT Number of PIUs on retransmit chain	
116(74) FLBRXHD Pointer to head of multilink TG retransmit chain			
120(78) FLBRXTL Pointer to tail of multilink TG retransmit chain			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) FLBSTF		State flags for a multilink transmission group (byte 1)
	1...	Waiting for buffers to be released for segmenting
	.1..	1= More than one SA link station can be attached to the FLB-TGB 0= Only one SA link station can be attached to the FLB-TGB
	..1.	Sweep mode (FLBSPW)
	...1	Special PIU (FIDF) expected
	.... x...	Round robin search (FLBRRSC)
		1= Round robin order search for ready station 0= Fixed order search for ready station
	.... .1..	MLTG using mixed media support indicator (FLBMMS)
	.... ..X.	Reserved
	.... ...1	Segmenting in progress (FLBSIP)

Note: Also see FLBSTFC.

54(36) FLBNRI		Next expected sequence number from inbound PIUs
	Byte 0 ...1 xxxx	Rollover
	Byte 1 xxxx xxxx	x = Expected number received

65(41) FLBSTFC		State flags for a multilink transmission group (byte 2)
	.1..	Out of sequence
	..1.	Resequencing queue has sequence break

Note: Also see FLBSTF.

Function Management Table

Program: NCP

Size in bytes: Variable; 4(4) bytes per entry

Located in: CXDKFMR (physical services function management router)

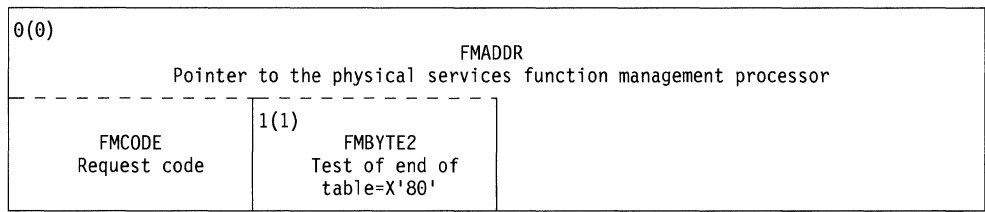
Created by: NCP generation—\$LVL5

Pointed to by: None

See the link-edit map.

Function: DSECT to entries in tables that are used to locate processors for NCP routers. These tables include the following:

- CXTCFL—Locates processors for requests associated with link configuration
- CXTCFN—Locates processors for requests associated with NCP
- CXTCFS—Locates processors for requests associated with the station
- CXTCLL—Locates processors for requests associated with LUs
- CXTMAL—Locates processors for requests associated with link maintenance
- CXTMAA—Locates maintenance-services processors for requests associated with SNA stations
- CXTMAN—Locates maintenance processors for requests associated with NCP
- CXTMAS—Locates maintenance processors for requests associated with stations
- CXTMLL—Locates maintenance processors for requests associated with LUs
- CXTNSL—Locates processors for requests associated with BSC/SS lines
- CXTNSD—Locates processors for requests associated with BSC/SS devices.



Frame-relay Physical Line Block (ODLC)

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The LKEPUCBP field in the LKB extension (LKE)

Function: Contains fields for ODLC frame-relay at a link level and resource definition fields for the physical line and station and logical stations.

0(0) FPBT391 T391 value	1(1) FPBT392 T392 value	2(2) FPBN392 Network/user N392 value	3(3) FPBN393 Network/user N393 value
4(4) FPBN391 User side N391 value	5(5) FPBFLAG* Miscellaneous flags	6(6) FPBPRTA Port address	7(7) Reserved
8(8) FPBMXFR MAXFRAME		10(A) FPBTI TI timer (seconds)	
12(C) Reserved			
16(10) FPBNCRC Notify call response queue			
FPBNCRS Reason code for notify call response (NCR) scheduled but not yet transmitted			
20(14) FPBGATIM Timer for limiting the flow of generic alerts	21(15) FPBNW Number of frames to be received to increment working window by 1	22(16) FPBDW Division for working window when frame loss is detected	23(17) FPBDWC Division for working window when BECN indicated
24(18) FPBAVLL Pointer to available (assigned) list			
28(1C) FPBATTL Pointer to attached list			
32(20) FPBDATBK Size of data block to be transmitted		34(22) Reserved	

* Indicates a byte expansion follows.

Note: The fields FPBNCRS, FPBNCRC and FPBGATIM must remain at the same relative offset as their counterparts in the TLB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
5(5) FPBFLAG		Miscellaneous flags
	xx..	LMI support
		00 = LMI not supported
		01 = CCITT LMI supported (FPBCCIT)
		10 = ANSI LMI supported (FPBANSI)
	..1.	FRELAY=SUBAREA specified for this line (FPBFRSA)
	...1	Echo suppression supported for LMI frames (FPBLEDS)
	.... x...	Echo role (FPBLMOD)
		1 = Primary role for LMI echo suppression
		0 = Secondary role for LMI echo suppression
	.... .xxx	Reserved

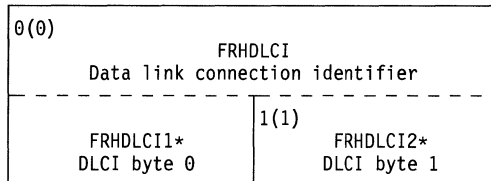
Frame-relay Frame Header

Program: NCP

Size in bytes: 2(2) DLCI header, 6(6) SNAP header

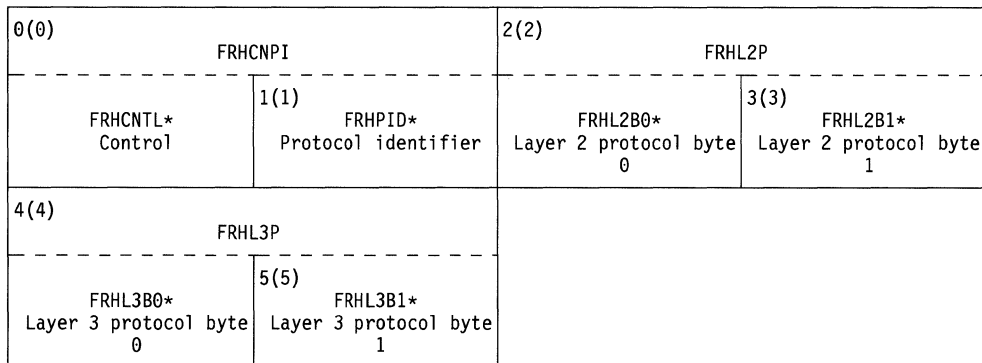
Function: The FRH is a mapping for the NCP header portion of a frame-relay frame. The frame-relay header is made up of the DLCI and the SNAP header. The LLH follows the SNAP header. The SNAP header and LLH only exist for FRTE frames. LMI and FRSE frames only have a DLCI

DLCI Header



* Indicates a byte expansion follows.

SNAP Header



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) FRHDLCI1		DLCI byte 0
	xxxx xx..	Most significant address bits
	.... ..X.	Command response (FRHCRI)
	.... ...X	Extend address bit 0 for 2 byte address (FRHEA0)
0(0) FRHCNTL		Control
	X'03'	Control is UI (Unnumbered information) (FRHCUI)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) FRHDLCI2		DLCI byte 1
	xxxx	Least significant address bits
	.... x...	Forward congestion (FRHFECN)
	.... .x..	Backward congestion (FRHBECN)
	.... ..x.	Discard eligible (FRHDE)
	.... ...x	Extend address bit 1 for 2 byte address (FRHEA1)
1(1) FRHPID		Protocol identifier
	X'08'	Protocol is Q.931 (FRHPQ931)
2(2) FRHL2B0		Layer 2 protocol byte 0
	X'4C'	L2 protocol is 802.2 (FRHL2802)
	X'50'	L2 protocol is user-defined (FRHL2NP0)
3(3) FRHL2B1		Layer 2 protocol byte 1
	X'80'	L2 byte 1 defines no value (FRHL2NUL)
	X'81'	Indicates that no L2 protocol is used (FRHL2NP1)
4(4) FRHL3B0		Layer 3 protocol byte 0
	X'70'	L3 protocol is defined by next byte (FRHL3UD)
5(5) FRHL3B1		Layer 3 protocol byte 1
	X'81'	L3 protocol is SNA subarea (FRHL3SS)
	X'82'	L3 protocol is non-APPN peripheral (FRHL3NP)
	X'83'	L3 protocol is APPN peripheral (FRHL3AP)

Frame Relay Physical Line Table

- Program:** NCP
- Size in bytes:** Variable, depending upon the number of physical resources
- Created by:** NCP generation
- Pointed to by:** The SYSFRPTP field in the 2nd fullword extension (FX2)
- Function:** Contains one entry for each ODLC Frame Relay physical line

FRPT Header

0(0)	FRPTID Table identifier 'C'FP'	2(2)	FRPTCNT Count of entries
------	-----------------------------------	------	-----------------------------

FRPT Entry

0(0)	FRPTLKB Pointer to the physical link control block (LKB)
FRPTPORT PORTADD value for the line	

Frame Relay Support Table

Program: NCP
Size in bytes: 16(10)
Created by: NCP generation
Pointed to by: Entry point \$CXTFRT
Function: Control block for the frame relay support table.

0(0)	FRTSUBA CUB address of subport A
4(4)	FRTSUBB CUB address of subport B
8(8)	FRTSUBC CUB address of substitute support for subport A
12(C)	FRTSUBD CUB address of substitute support for subport B

Frame-Relay Logical Station Block (ODLC)

Program: NCP

Size in bytes: 52(34) for peripheral, 64(40) for subarea

Created by: NCP generation

Pointed to by: The SCEPUCBP field in the station control block extension (SCE)

Function: Contains fields for frame-relay ODLC at a station level and resource definition fields for the logical station

0(0) FSBDSAP Destination SAP	1(1) FSBSSAP Source SAP	2(2) FSBN3 N3 - maximum number of I-frames to receive before sending ACK	3(3) FSBLOCT0 Local timeout value (in tenths of seconds)
4(4) Reserved			
8(8) FSBGRP* Logical group byte	9(9) Reserved		
12(C) FSBXIDP Pointer to the "saved XID"			
FSBFLG1* Flags byte			
16(10) FSBPRSC Genned pointer to physical NACB			
20(14) FSBCORR Correlator value from the notify call indicate LDPSA			
FSBLOCT2 Local T2 value (in tenths of seconds)			
24(18)-51(33) Reserved			

* Indicates a byte expansion follows.

Note: The fields FSBGRP, FSBFLG1, FSBXIDP, FSBPRSC, and FSBCORR must remain at the same relative offsets as their counterparts in the TSB.

FSB Extension for Subarea Resources

52(34)-55(37)	Reserved
56(38)	FSBASMH Load/Dump PIU reassembly chain head pointer
60(3C)	FSBASMT Load/Dump PIU reassembly chain tail pointer

Note: The fields FSBASMH and FSBASMT must remain at the same relative offsets as their counterparts in the TSB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
8(8) FSBGRP		Logical group byte
	X'00'	Inactive (FSBINACT)
	X'01'	Available(pooled) (FSBPOOLD)
	X'02'	Available(assigned) (FSBASGND)
	X'04'	Attached (FSBATCHD)
12(C) FSBFLG1		Flags byte
	x... ..	XID saved indicator (FSBSXID)
		1 = XID saved from notify call indicate LDPSA
		0 = XID not saved
	.x... ..	Committed rate (FSBCOMR)
		1 = COMRATE = FULL
		0 = COMRATE = NONE

Function Vector Table

Program: NCP

Size in bytes: Variable

Created by: NCP generation

Pointed to by: The NLBFVT field in the programmed resource logical unit block (NLB), the NLXFVT field in the NLB extension (NLX), the NPBFVT field in the programmed resource physical unit block (NPB), and the VLBFVT field in the programmed resource virtual line block (VLB)

Function: Contains a list of all tasks that can be associated with each programmed resource

0(0) Index code X'01'	1(1) Pointer to the task that initializes the programmed resource
4(4) Index code X'02'	5(5) Pointer to the notify task
8(8) Index code X'03'	9(9) Pointer to the dump formatter ID block
12(C) Index code X'04'	13(D) Pointer to the network performance monitor (NPM) task
16(10) Index code X'05'	17(11) Pointer to the NPM collection routine
20(14) - n Index codes and pointers to additional user-defined tasks	
n+4 X'00'	n+5 Pointer to the next FVT in the chain (all zeros if this is the last FVT in the chain)

Note: Index codes X'06' through X'09' are reserved for NCP.

Extension to Fullword Addressable Extension

- Program:** NCP, EP
- Size in bytes:** 16(10)
- Created by:** NCP or PEP generation
- Pointed to by:** The SYSFX2P field in the word direct addressable extension (FAX)
- Function:** Contains system fullword control fields

0(0)	SYSGESP Pointer to get error status table (GES) (ODLC only)
4(4)	Reserved
8(8)	SYEFRPT Pointer to the ODLC frame-relay physical line table (FRPT)
12(C)	SYSFRVVP Pointer to the ODLC frame-relay available(pooled) list

Group Control Block**Program:** NCP**Size in bytes:** 109(6D)**Created by:** NCP generation**Pointed to by:** The UACBGCBP field in the user adapter control block (UACB), the PSAACBP field in the parameter/status area control block (PSA)**Function:** Contains information relative to a group of user-written line control lines

0(0)	GCBLIERP Pointer to the programmed resource channel adapter level-1 error recovery procedure (ERP) routine
4(4)	GCBERR Pointer to the timer error routine
	GCBRESET Pointer to the programmed resource channel adapter system reset routine
8(8)	GCBSTAP Pointer to the timer shoulder tap routine
12(C)	GCBLAGST Pointer to the lagging shoulder tap routine
	GCBSCAN Pointer to the programmed resource channel adapter queue scan routine
16(10)	GCBXIOLK Pointer to the XIO SDLC link service routine
	GCBPRFLG*
20(14)	GCBBERP Pointer to the network enhancement option (NEO) channel adapter/LINK box event record (BER) processor routine
24(18)	GCBPRID Pointer to the NEO product identifier subvector
28(1C) - 35(23)	Reserved

* Indicates a byte expansion follows.

36(24) GCBL2 Pointer to the user's level-2 interrupt handler <hr/> GCBIS Pointer to the programmed resource channel adapter initial select inter	38(26) - 51(33)
Reserved	
52(34) GCB1UACB Pointer to the first UACB posted	
56(38) Reserved	58(3A) GCBEND1 Used only by the level-2 router
60(3C) GCBLUACB Pointer to the last UACB posted	
64(40) GCBX1OLN Pointer to the XIO line service routine <hr/> Reserved	
68(44) GCBXIOSM Pointer to the set mode service routine	
72(48) GCBXIOIM Pointer to the XIO immediate service routine	
76(4C) GCBL3 Pointer to the user's level-3 routine <hr/> GCBDS Pointer to the programmed resource channel adapter data/status interrupt	78(4E) - 83(53)
Reserved	
84(54) GCBESTAT Status flags X'0000'	86(56) Reserved

88(58)	GCBRNBLD Pointer to the RECMS/NMVT build routine
92(5C)	GCBGDT Pointer to the group dump table
96(60) - 102(66)	GCBUSID User identification
	103(67) GCBOEMF* User ID flag
104(68)	GCBLINK Pointer to the next adapter control block (ACB) in chain
	GCBTRID Program resource product trace ID
108(6C)	GCBFLAGS* GCB identifier flags

* Indicates a byte expansion follows.

Note: GCBL2, GCBLINK, GCBEND1, GCBFLAGS, GCBL3, and GCBESTAT must be at the same displacements in the GCB as their counterparts in the ACB and GCBB.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
16(10) GCBPRFLG		IBM special products or user-written code priority support:
	1... ..	0 = Priority is not supported. 1 = Priority is supported.
103(67) GCBOEMF		User ID flag
	1... ..	User ID is specified.
	.1.	This GCB is associated with a channel link.
	..1.	Do not exit level 4 for XIO LINE and IMMED commands.
	...1	This GCB is associated with an X.21 RPORT (physical line).
	.... .1..	RECMS are not generated by NCP.
	.... ...1	User formatted dump

Offset/Field Name	Bit Pattern	Contents
108(6C) GCBFLAGS		GCB identifier flags
	1...	User's CBs are compatible with NCP's CBs for port swapping.
	..1.	GCB is on the level-2-to-level-3 communication interrupt control program (CICP) queue.
	...1	User's ACB is compatible with NCP's ACB.
	.... 1...	User's CBs are compatible with NCP's for setting TA, TD, and adapter information table (AIT) index (3745).
	.... .1..	User's CBs are compatible with NCP's CBs for switchback and line adapter disconnect to determine whether lines have SSCP owners or are active (3745).
	.... ..x.	1 = User-written line control (must be 1 in a UACB or GCB) 0 = IBM-supported line control character control block (CCB)
	.... ..10	Identifies the block as a GCB
	.... ..11	Identifies the block as a UACB

Group Control Block for Channel Links

Program: NCP

Size in bytes: 109(6D)

Created by: NCP generation

Pointed to by: The CCBGCBP field in the character control block (CCB)

Function: In the boundary channel attachment (BCA), contains pointers to XIO and timer routines needed to drive the channel code

0(0)	GCBBLERP** Pointer to the programmed resource channel adapter level-1 error recovery procedure (ERP) routine
4(4)	GCCBERR Pointer to the timer error routine
8(8)	GCCBSTAP Pointer to the timer shoulder tap routine
12(C)	GCCBLGST Pointer to the timer lagging shoulder tap routine
16(10)	GCCBXLNK Pointer to the XIO SDLC link service routine
20(14)	GCCBHQH Pointer to the first link-header PIU that was on the channel hold queue when an active station exchange identification data block (XID) exchange occurred
24(18)	GCCBHQT Pointer to the last link-header PIU that was on the channel hold queue when an active station XID occurred
28(1C)	GCCBCABP Pointer to the associated channel adapter control block (CAB)
	GCCBSHWC* Show cause save byte

* See CUBSHWCS/SCBSHWCS for byte expansions.

** This field is required for, but is not used by, a channel link group control block (GCB).

32(20) GCBSSCF Value of CUBSSCF at the last scan interval	34(22) GCBTRTC Save area for the total retry statistical counter
36(24) GCBBL2** Pointer to the user level-2 interrupt handler	38(26) GCBRECT Save area for the link-header PIU received-in-error statistical counter
40(28) GCBTPCT Save area for the total transmission statistical counter	42(2A) GCBRCNT Save area for the link-header PIU received statistical counter
44(2C) GCBRPCT Save area for the second chance poll statistical counter	46(2E) GCBTIAC Save area for the total acknowledged link-header PIU statistical counter
48(30) GCBTINC Save area for the retransmission statistical counter	50(32) GCBTCNT Save area for the link-header PIU transmission statistical counter
52(34) GCB1UAC** Pointer to the first user adapter control block (UACB) posted	
56(38) Reserved	58(3A) GCBEND1** Used only by the level-2 router
60(3C) GCBLUAC** Pointer to the last UACB posted	
64(40) GCBXLNE Pointer to the XIO line service routine	
GCBESC* Enable show cause code	
68(44) GCBXSMD Pointer to the XIO setmode service routine	

* Indicates a byte expansion follows.

** This field is required for, but is not used by, a channel link GCB.

72(48)	GCBBXIMD Pointer to the XIO immediate service routine	
76(4C)	GCBBL3** Pointer to the user's level-3 interrupt handler	78(4E) - 83(53)
Reserved		
84(54)	GCBBESTT** Status flag X'0000'	86(56) - 91(5B)
Reserved		
92(5C)	GCBBGDTP** Pointer to the group dump table	
96(60) - 102(66)	GCBBUSID User identification	
		103(67) GCBBOEMF* User ID flags
104(68)	GCBBLINK** Pointer to the next adapter control block (ACB) in the chain	
	GCBBTRID Program resource product trace ID	
108(6C)	GCBBFLGS* GCB identifier flags	

* Indicates a byte expansion follows.

** This field is required for, but is not used by, a BCA GCB.

Note: GCBBL2, GCBBLINK, GCBBENDI, GCBBFLGS, GCBBL3, and GCBBESTT must be at the same displacements in the GCBB as their counterparts in the ACB and GCB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
64(40) GCBBESC		Enable show cause code (a result of channel link enable processing)
	X'00'	Channel adapter has been enabled.
	X'03'	Channel adapter is undergoing error recovery.
	X'04'	Channel adapter is disabled.
	X'05'	Channel adapter is not attached according to controller configuration data set (3745).
	X'06'	Channel adapter is not installed according to controller configuration data set.
	X'07'	Channel adapter is not operative according to controller configuration data set (3745).
	X'08'	Channel adapter is not defined in NCP definition.
	X'09'	Channel interface failed to enable within 40 seconds.
	X'0A'	Concurrent maintenance (CACM) in progress from channel adapter (3745).
	X'0B'	Channel adapter has been bypassed from auto-selection chain and/or cycle steal grant chain (3745).
	X'0C'	Channel adapter resides on a power block that experienced a failure (3745).
	X'0D'	Channel adapter is inoperative due to failure during error recovery (3745).
103(67) GCBBOEMF		User ID flags
	1... ..	User ID is specified.
	.1.. ..	This GCB is associated with a channel link.
	..1.	Do not exit level 4 for XIO LINE and IMMED commands.
	.... .1..	RECMS are not generated by NCP.
	.... ..1.	RECMS 8X were changed into 7X.
	.... ...0	User formatted dump was not used.
108(6C) GCBBFLGS		GCB identifier flags
	..1.	GCB is on the level-2-to-level-3 CICIP queue.
	...0	BCA GCB is not compatible with NCP's ACB.
	.... ..1.	User-written line control
	.... ...1	Identifies the control block as a GCB

Get Error Status Table (ODLC Only)**Program:** NCP**Size in bytes:** 70(46); 35(23) entries of 2(2) bytes each**Created by:** NCP generation**Pointed to by:** The SYSGESP field in the fullword direct addressable extension (FAX)**Function:** Contains get error status table entries that are filled in by level 1 error processing.**GES Table Entry**

0(0)	
GESHW GES halfword entry	
GESHI GES byte 0	1(1) GESLO GES byte 1

Generic Pool Anchor Block

Program: NCP

Size in bytes: 120(78)

Created by: NCP generation and NCP initialization

Pointed to by: Fields in the QAB, the QAX, and the QAN. See those layouts for a complete list.

The GPA for a major control block is also pointed to by the GPAMGPA field in the GPAs of the associated minor control blocks

Function: Generic DSECT for the following pool/table anchor blocks:

- Independent LU-LU BSBs (Boundary Session Block)
- Dependent SSCP-LU BSBs (Boundary Session Block)
- Dependent LU-LU BSBs (Boundary Session Block)
- Independent BXIs (Boundary Session Block Extension)
- Dependent BXIs (Boundary Session Block Extension)
- CBBs (Committed Buffers Block)
- CUBs (Common Physical Unit Block)
- CXBs (Common Physical Unit Block Extension)
- CXIs (Common Physical Unit Block Extension for Embedded Blocks)
- CX2s (Common Physical Unit Block Extension 2)
- FCT (Flow Control Parameter Table)
- HREs (Host Route Entry Control Block)
- LDAs (Logical Unit Block Extension Data Area)
- LKEs (Link Control Block Extension for ODLC)
- Frame-relay LLBs (Logical Link Control Block)
- Token-ring LLBs (Logical Link Control Block)
- Independent LNBs (Logical Unit Network Address Control Block)
- LNDs/Dependent LNBs (Logical Unit Network Address Control Block)
- LTXs (Logical Unit Terminal Node Extensions)
- LUBs (Logical Unit Control Block)
- LUXs (Logical Unit Block Extension)
- NIBs (Network Interconnect Control Block)
- NIXs (Network Interconnect Extension)
- NLBs (Programmed Resource Logical Unit Block)
- NLXs (Programmed Resource Logical Unit Block Extension)
- NNT (Network Names Table)
- NQEs (NPA Counter Queue Element)
- NQXs (NPA Counter Queue Element Extensions)
- NREs (Network Route Entry Control Block)
- NSBs (NPM Frame-relay Physical Station Data Block)
- NSCs (NPA session Counters Control Block)
- NSXs (NPA session Counters Extension)
- NVT (Network Vector Table)
- ODLC LAN Logical Resources
- ODLC Frame Relay Logical FRTE Resources
- RVT (Resource Vector Table)
- SCEs (Station Control Block Extension for ODLC)
- SREs (Subnetwork Route Entry Control Block)
- SSBs (ESCA Logical Station Control Block)
- TGBs (Transmission Group Control Block)
- TRT (Transit Routing Table)

- VAT (Virtual Route Access Table)
- VTS (Vector Table of SNPs)
- VVT (Virtual Route Vector Table)

Notes:

1. The total number of control blocks/entries in the NCP is the sum of GPAUCBCT plus GPARCBCT plus GPAUSCUR plus GPANPDEF. The total number of control blocks/entries that belong to the pool is the sum of GPAUCBCT plus GPARCBCT plus GPAUSCUR. The total number of sysgen'd control blocks/entries is the sum of GPAFRINT plus GPANPDEF.
2. Only the independent BSB pool, the independent BXI pool, the CUB pool, the FCT, the LNB pool, the LND/LNB pool, and the NLB pool use the reserved counts. The reserved counts in the other pools will always be zero. For the independent BSB pool, the reserved counts reflect the number the BSBs and BXIs created due to the RESSCB keyword on the LU statements and later due to Dynamic Reconfiguration. For the FCT, the reserved counts represent the FCT entries that are not in-use, but are assigned to a particular network. For other pools which use the reserved counts, the reserved counts reflect the number of sysgen'd control blocks with pre-ENA addresses which are not currently in-use.
3. There are 8-byte eye-catchers preceding most of the GPAs. The pools/tables without eye-catchers are: FCT, frame-relay LLBs, token-ring LLBs, ODLN LAN logical resources, RVT, TRT, VTS, and VVT.

0(0)		GPABLK Pointer to the first block/entry in the unreserved pool	
GPAGPFLG* GPA flags byte			
4(4)		GPABLKL Pointer to the last block/entry in the unreserved pool	
GPALNID Local network identifier			
8(8)		GPABLK Pointer to the first block/entry in the reserved pool	
GPAOFSET Offset to GPA chaining field in the control block			
12(C)		GPABLKL Pointer to the last block/entry in the reserved pool	
16(10)		GPAMGPA Pointer to the GPA for the associated major control block (zero if there is no associated major control block)	
20(14)		GPACBBF Number of buffers from the buffer pool currently being used for this type of control block	
24(18)		GPANGPAP Pointer to next GPA in GPA chain (must have the same displacement in the GPA as GPBNGPAP has in the GPB)	
GPANIBUF Number of this control block that can be built in one buffer			
28(1C)	GPACBID* Control block pool/table identifier (must have the same displacement in the GPA as GPBCBID has in the GPB)	30(1E)	GPAMAXD Maximum number of dynamic control blocks that can be created for this pool. (Note: A value of zero indicates no limit)
32(20) - 47(2F) GPAQCB QCB for dynamic control block alert task (See the QCB(work) for the format)			

* Indicates a byte expansion follows.

48(30)	GPAIUBCT Maximum number of free control blocks/entries in the unreserved pool during this interval
52(34)	GPAIRBCT Maximum number of free control blocks/entries in the reserved pool during this interval (See notes)
56(38)	GPAUCBCT Number of free control blocks/entries currently in the unreserved pool
60(3C)	GPARCBCT Number of free control blocks/entries currently in the reserved pool (See notes)
64(40)	GPAUBMIN Minimum number of free control blocks/entries in the unreserved pool during this interval
68(44)	GPARBMIN Minimum number of free control blocks/entries in the reserved pool during this interval (See notes)
72(48)	GPAFRINT Initial number of free control blocks/entries (sum of both reserved and unreserved)
76(4C)	GPAUSINT Initial number of in-use control blocks/entries
80(50)	GPAUSMXI Maximum number of in-use control blocks/entries since NCP was last initialized
84(54)	GPAUSMAX Maximum number of in-use control blocks/entries during this interval
88(58)	GPAUSCUR Number of control blocks/entries currently in-use
92(5C)	GPAUSMIN Minimum number of in-use control blocks/entries during this interval
96(60)	GPADCBMX Maximum number of in-use control blocks/entries from the buffer pool during this interval
100(64)	GPADBCBU Number of in-use control blocks/entries from the buffer pool currently being used for this type of control block
104(68)	GPADCBMN Minimum in-use number of control blocks/entries from the buffer pool during this interval

108(6C)	GPANPDEF Number of permanently assigned (i.e., predefined) control blocks/entries from the sysgen. Note these control blocks/entries are never included in any of the other GPA counts
112(70)	GPAGRLST Pointer to the last sysgen'd control block in the reserved pool
GPACBLN Length of the control block, not including the NPF (only used if the GPA chain pointers are used) Note: If the control block has different lengths for sysgen'd vs dynamic control blocks, this will have the length of the dynamic control block	
116(74)	GPAGULST Pointer to the last sysgen'd control block in the unreserved pool
GPANPLN Length of the NPF prior to the control block (only used if the GPA chain pointers are used)	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) GPAGPFLG		GPA flags byte
	x... ..	GPA table/pool indicator: (GPATBPL) 1 = GPA is for a table for which all the free entries (if any) are contained within the table itself. None of the GPA's chain pointers are used 0 = GPA is for a pool or for a table for which there is a chain of free control blocks or entries
	.1..	Dynamic creation of control blocks supported (GPADYNM)
	..1.	GPA is eligible for NPM monitoring (GPAEMON)
	...x	Do not send a first dynamic control block allocated alert indicator: (GPAN1DY) 1 = Either a first dynamic control block allocated alert has already been sent for this type of control block or a first dynamic control block allocated alert is not needed for this type of control block 0 = A first dynamic control block allocated alert has not yet been sent for this type of control block and should be sent when the first control block of this type is dynamically allocated
	.... x...	Do not send an allocation control blocks failed due to a sysgenmed limit alert indicator: (GPANOCB) 1 = Either an allocation for control blocks failed due to a sysgenmed limit alert has already been sent for this type of control block or an allocation for control blocks failed due to a sysgenmed limit alert is not needed for this type of control block 0 = An allocation for control blocks failed due to a sysgenmed limit alert has not yet been sent for this type of control block and should be sent the first time allocation fails for this control block
	.... .1..	Cleanup dynamic control blocks in unreserved pool required (GPACLDY)
	.... ..1.	Allocation for control block failed due to a sysgenmed limit alert has been requested. Used only for GPAs that can send both types of alerts (i.e., CUB, LNB, LND, NLB, NSC, and NSX) (GPANDAR)
	.... ...1	A first dynamic control block allocated alert has been requested. Used only for GPAs that can send both types of alerts (i.e., CUB, LNB, LND, NLB, NSC, and NSX) (GPADAR)

Offset/Field Name	Bit Pattern/Hex Value	Contents
28(1C) GPACBID		Control block pool/table identifier
	X'0000'	Buffer pool (GPB)
	X'0001'	BSB pool (for independent LUs)
	X'0002'	CUB pool (PU DR pool)
	X'0003'	Flow control parameter table (FCT)
	X'0004'	Token-ring LLB pool
	X'0005'	LNB pool (for independent LUs)
	X'0006'	LND/LNB pool (for dependent LUs)
	X'0007'	LTX pool
	X'0008'	LUB pool(LU DR pool)
	X'0009'	LUX pool
	X'000A'	NLB pool (GWNAUs)
	X'000B'	NIX pool (HSB pool)
	X'000C'	Network names table (NNT)
	X'000D'	NQE pool
	X'000E'	NQX pool
	X'000F'	NSB pool
	X'0010'	NSC pool
	X'0011'	NSX pool
	X'0012'	Network vector table (NVT)
	X'0013'	ODLC LAN logical resources pool
	X'0014'	RVT entry pool
	X'0015'	TGB pool
	X'0016'	Transit routing table (TRT) entry pool
	X'0017'	Virtual route status table (VST)/Virtual route access table (VAT)
	X'0018'	Vector table of SNPs (VTS) (SNP pool)
	X'0019'	Virtual route vector table (VVT) (VRB pool)
	X'001A'	Frame-relay LLB pool
	X'001B'	SCE pool
	X'001C'	SSB pool
	X'001D'	CBB pool
	X'001E'	SSCP-LU BSB pool (for dependent LUs)
	X'001F'	LU-LU BSB pool (for dependent LUs)
	X'0020'	BXI pool (for dependent LUs)
	X'0021'	BXI pool (for independent LUs)
	X'0022'	CXB pool
	X'0023'	CXI pool
	X'0024'	LDA pool
	X'0025'	NLX pool
	X'0026'	NIB pool
	X'0027'	LKE pool
	X'0028'	HRE pool
	X'0029'	SRE pool
	X'002A'	NRE pool
	X'002B'	ODLC frame-relay logical resources (GPAOFLR)
	X'002C'	CX2 pool

Generic Pool Block

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation, one per NCP

Pointed to by: The SYSGPBP field in the extended halfword direct addressables control block extension (HWX)

Function: Contains fields needed for general processing of GPAs.

0(0) - 23(17)		
GPBAQCB Dynamic control block alert queue (see the QCB(input) for the format)		
24(18)		
GPBNGPAP Pointer to next GPA in GPA chain (GPBNGPAP must have the same displacement in the GPB as GPANGPAP has in the GPA)		
28(1C)	30(1E)	31(1F)
GPBCBID* Control block pool/table identifier (GPBCBID must have the same displacement in the GPB as GPACBID has in the GPA)	GPBAFLG* GPB alert flags	Reserved
32(20)		
GPBDCBBF Total number of buffers from the buffer pool currently being used for dynamic control blocks		
36(24)		
GPBQABP Pointer to the QAB		
GPBCBDBC Number of buffers needed to build a maximum size Control Block Pool/Table Data PIU		
40(28) - 47(2F)		
GPBOAAB AAB for the NPM data outstanding chain		
48(30) - 55(37)		
GPBSAAB AAB for the NPM data sent chain		
56(38)		
GPBDYNB Maximum number of buffers that can be used for dynamic control blocks (based on DYNPOOL (1st suboperand))		
		59(3B) GPBDYNBG Percentage of buffer pool for dynamic control blocks (until initialization time only)

60(3C)	GPBDYNBX Exit threshold for maximum dynamic control block buffer usage, in buffers
64(40)	GPBDPAT Alert threshold for DYNPOOL, in buffers (based on DYNPOOL (2nd suboperand))
	67(43) GPBDPATG Percentage of buffer pool for Alert Threshold (until initialization time only)
68(44)	GPBDPATX Exit threshold for DYNPOOL Alert threshold, in buffers
72(48)	GPBDSLW Too Close to Slowdown threshold for DYNPOOL, in buffers
76(4C)	GPBDSLWX Exit threshold for Too Close to Slowdown threshold for DYNPOOL, in buffers
80(50)	GPBDCBMX Maximum number of buffers being used for dynamic control blocks during this interval
84(54)	GPBDCBMN Minimum number of buffers being used for dynamic control blocks during this interval
88(58)	GPBIUBCT Temporary storage for the approximate maximum number of free buffers in the unreserved pool during this interval (i.e. NQELFBH), only updated once per interval (when NPM processing resets NQELFBH)
92(5C)	GPBUCBCT Temporary storage for the number of free buffers currently in the unreserved pool (i.e. NQELFBQ), only updated once per interval (when NPM processing resets NQELFBH and NQELFBL)
96(60)	GPBUBMIN Temporary storage for the approximate minimum number of free buffers in the unreserved pool during this interval (i.e. NQELFBL), only updated once per interval (when NPM processing resets NQELFBL)
100(64)	GPBUSMXI Approximate maximum number of in-use buffers detected during NPM CCU/NCP data collection
104(68) - 127(7F)	GPBDQCB Dynamic control block cleanup pending queue (see the QCB(input) for the format)

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
28(1C) GPBCBID		Control block pool/table identifier
	X'0000'	Buffer Pool (GPB)

Offset/Field Name	Bit Pattern	Contents
30(1E) GPBAFLG		GPB Alert Flags Field
	x...	Send a Buffers for Dynamic Control Blocks Depleted Alert indicator (GPBDYNA) : 1 = A Buffers for Dynamic Control Blocks Depleted Alert needs to be sent 0 = A Buffers for Dynamic Control Blocks Depleted Alert does not need to be sent
	.x...	Have a Buffers for Dynamic Control Blocks Depleted Alert problem indicator (GPBDYNP) : 1 = Have a Buffers for Dynamic Control Blocks Depleted Alert problem 0 = Do not have a Buffers for Dynamic Control Blocks Depleted Alert problem
	...x.	Send an Alert Threshold for Dynamic Control Blocks Reached Alert indicator (GPBDYTA) : 1 = An Alert Threshold for Dynamic Control Blocks Reached Alert needs to be sent 0 = An Alert Threshold for Dynamic Control Blocks Reached Alert does not need to be sent
	...x	Have an Alert Threshold for Dynamic Control Blocks Reached Alert problem indicator (GPBDYTP) : 1 = Have an Alert Threshold for Dynamic Control Blocks Reached Alert problem 0 = Do not have an Alert Threshold for Dynamic Control Blocks Reached Alert problem
	.... x...	Send an Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert indicator (GPBSLWA) : 1 = An Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert needs to be sent 0 = An Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert does not need to be sent
	.... .x..	Have an Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert problem indicator (GPBSLWP) : 1 = Have an Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert problem 0 = Do not have an Allocation for Dynamic Control Blocks Failed: Too Close to Slowdown Alert problem
	.... ..xx	Reserved

Generalized PIU Trace

Program: NCP

Size in bytes: 120(78)

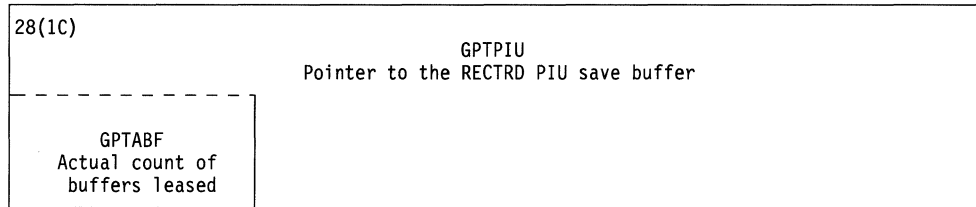
Created by: NCP generation

Pointed to by: The SYSGTP field in the extended halfword direct addressables control block (HWE)

Function: Contains the parameters necessary to control the generalized PIU trace

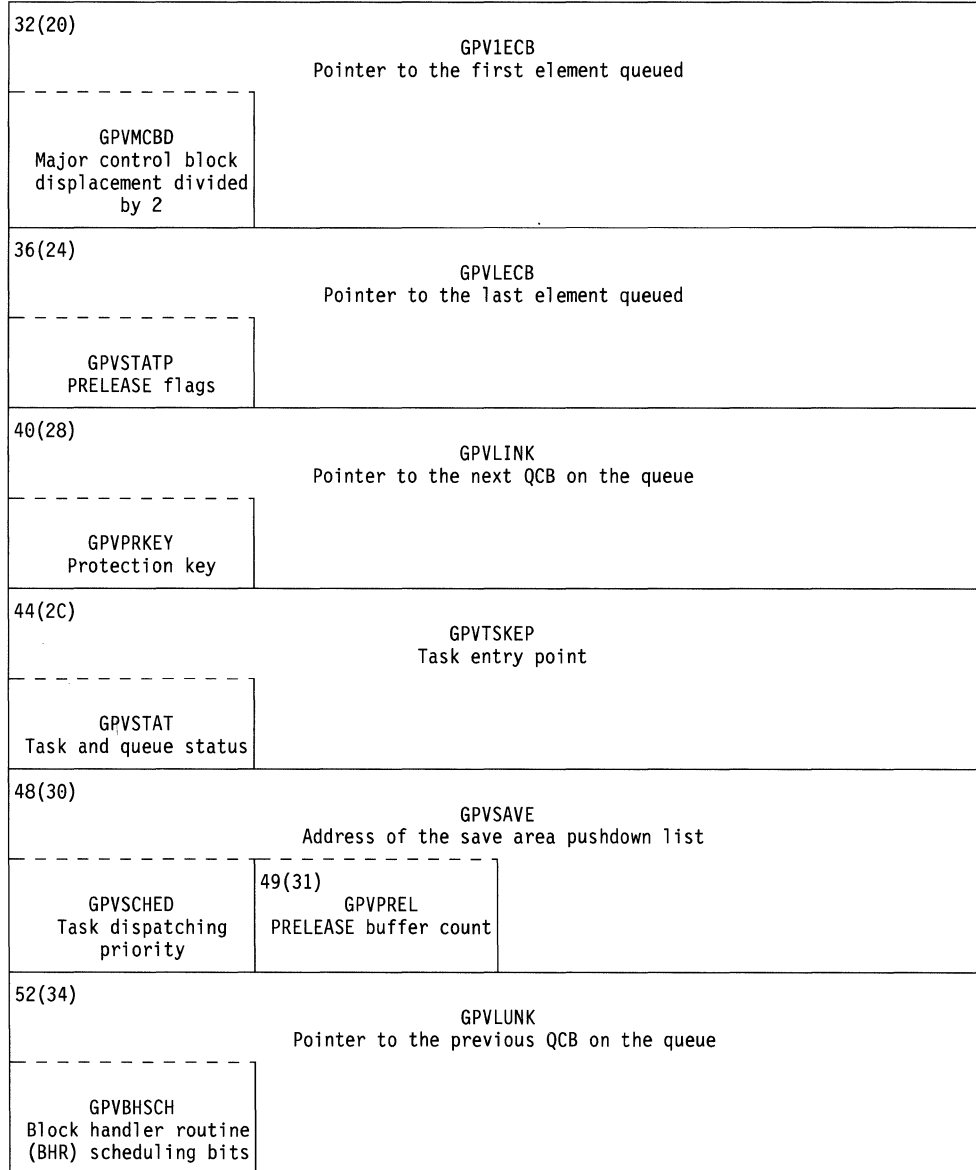
0(0)			GPTHBF Pointer to the GPT head buffer		
GPTFLAG* GPT flag byte					
4(4)			GPTCBF Pointer to the GPT current buffer		
GPTVRC Count of the PIUs on the virtual route queue control block (QCB)					
8(8)			GPTNFB Pointer to the next available byte in the current buffer		
GPTRCBO Resource connection block (RCB) offset					
12(C)	13(D)	14(E)			
GPTRTYP* Status entry source type	GPTDBST* Dummy BIND status	GPTLNK Save area for the link element address			
16(10)		18(12)			
GPTCLUS Save area for the cluster element address		GPTRSE Save area for the resource element address			
20(14)		22(16)			
GPTSNA Element address of the tracing SSCP		GPTCNT Count of the resources being traced			
24(18)					
GPTVRB Pointer to the virtual route control block that is associated with the activating SSCP					
GPTRUFL* GPT trace length round up flag					

* Indicates a byte expansion follows.



GPT Virtual Route Held Input QCB (GPTVRQ)

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



GPT Slowdown Input QCB (GPSQCB)
 (See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

56(38)		GPS1ECB Pointer to the first element queued	
GPSMCBD Major control block displacement divided by 2			
60(3C)		GPSLECB Pointer to the last element queued	
GPSSTATP PRELEASE flags			
64(40)		GPSLINK Pointer to the next QCB on the queue	
GPSRKEY Protection key			
68(44)		GPSTSKEP Task entry point	
GPSSTAT Task and queue status			
72(48)		GPSSAVE Address of the save area pushdown list	
GPSSCHED Task dispatching priority		73(49) GPSPREL PRELEASE buffer count	
76(4C)		GPSLUNK Pointer to the previous QCB on the queue	
GPSBHSCH BHR scheduling bits			

Event Control Block (ECB) for BFREVENT Control (BPTECB)
(See "Event Control Block" on page 1-339 for all bit definitions.)

80(50)		GPTTECHN ECB chain pointer	
GPTTESTAT Event status byte			
84(54)	GPTCSTAT GPT status byte	85(55) Reserved	86(56) GPTTMINT Set time interval as specified by the SETIME macro
		GPTTCNT Block control unit (BCU) text count	
88(58)		GPTWQCB Address of the waiting task's input QCB	

Embedded RCB

92(5C) - 119(77)	GPTRCB Embedded RCB. (For details, see the RCB format for the GPT.)
------------------	---

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) GPTFLAG		GPT flag byte
	1... ..	GPT global is active
	.1... ..	Status trace entry is pending for an ACTTRACE ALL command
	..1... ..	GPT is suspended
	...1... ..	GPT is undergoing auto network shutdown (ANS)
	....1... ..	GPT BFREVENT is active
	.... .1.. ..	GPT VREVENT is active
	.... ..1.	Owning host supports extended network addressing
12(C) GPTRTYP		Status entry source type
	x... ..	1 = Status entry
	.... xxxx	0 = Data entry
		Resource type:
		1111 = NCP physical services
		0001 = PU-Common PU block (CUB) (SNA PU)
		0010 = PU-Device base control block (DVB) (3270 cluster)
		0011 = PU-Programmed resource PU block (NPB) (user defined)
		0101 = LU-LU control block (LUB) (SNA LU)
		0110 = LU-DVB (3270 head)
		0111 = LU-Programmed resource PU block (NLB) (user defined)
		1001 = Line-Line control block (LKB)
		1010 = Line-Line control block (LCB) (3270)
		1011 = Line-Programmed resource virtual line block (VLB) (user defined)
		1100 = Boundary session block (BSB) (LU-LU session)

Offset/Field Name	Bit Pattern	Contents
13(D) GPTDBST		Dummy BIND status
	1... ..	Resource is DR added
	.x... ..	1 = Dummy BIND indicator is on in the header 0 = Dummy BIND indicator is off in the header
24(18) GPTRUFL		GPT trace length round up flag
	1... ..	Trace length was rounded up

Gateway RNAA Workarea

Program: NCP

Size in bytes: 76(4C)

Created by: CXDGRNA

Pointed to by: Located at CXTMV5, the level-5 work area

Function: Holds information about the search for control blocks to represent the prospective session partner while the gateway RNAA PIU is being processed

0(0)	GRWSESSP* Session properties	2(2) - 7(7)	GRWONAD
Network address of the origin network addressable unit			
8(8) - 15(F)	GRWOAID ID of the adjacent network on the origin side of the gateway NCP		
16(10) - 23(17)	GRWDAID ID of the adjacent network on the destination side of the gateway NCP		
24(18) - 31(1F)	GRWOGID ID of the network in which the origin network address unit resides		
32(20)	GRWONLN Length of the origin network address unit name	33(21) - 40(28)	GRWONAM
Name of the origin network addressable unit			
		41(29) - 48(30)	GRWDGID
ID of the network in which the destination network address unit resides			
	49(31) GRWDNLN Length of the destination network address unit name	50(32) - 57(39)	GRWDNAM
Name of the destination network addressable unit			
		58(3A)	GRWSSTAT* Status of the search for the programmed resource LU block (NLB) and the programmed resource LU block extension (NLX)

* Indicates a byte expansion follows.

60(3C)	GRWONXP Pointer to the NLX found on the origin side of the gateway NCP
64(40)	GRWONBP Pointer to the shared NLB found on the origin side of the gateway NCP
68(44)	GRWDXNP Pointer to the NLX found on the destination side of the gateway NCP
72(48)	GRWDXBP Pointer to the shared NLB found on the destination side of the gateway NCP

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) GRWSESSP	Byte 0	Session properties
	1...	The domain of the origin network addressable unit is capable of a parallel session
	.1..	The domain of the destination network addressable unit is capable of a parallel session
	...x.	(This bit is not used for SSCP-SSCP sessions) 1 = The origin LU is the secondary LU 0 = The origin LU is the primary LU
	...x	Reserved
	.... x...	1 = The session is SSCP-SSCP 0 = The session is LU-LU
	.... .x..	Extended network addressing (ENA) capability of the SSCP on the origin side of the transform: 1 = ENA capability 0 = Pre-ENA capability
	.... ..x.	ENA capability on the destination side of the transform: 1 = ENA capability 0 = Pre-ENA capability

Offset/Field Name	Bit Pattern	Contents
58(3A) GRWSSTAT		Status of the search for the NLB and the NLX
	Byte 0	
	1...	Origin side of the gateway NCP is to be searched
	.1..	Shared NLB was found on the origin side of the gateway NCP
	..1.	Free NLB was found on the origin side of the gateway NCP
	...1	Free NLX was found on the origin side of the gateway NCP
	.... 1...	Search of the origin side of the gateway NCP failed
	.... .1..	Shared NLB was found on the destination side of the gateway NCP
	.... ..1.	Free NLB was found on the destination side of the gateway NCP
	.... ...1	Free NLX was found on the destination side of the gateway NCP
	Byte 1	
	1...	Search of the destination side of the gateway NCP failed
	.1..	Half-session control block is reserved for the origin side of the gateway NCP
	..1.	Half-session control block is reserved for the destination side of the gateway NCP
	...1	RNAA was successfully processed

Gateway Vector of Tasks (FID0)

Program: NCP

Size in bytes: 36(24)

Created by: NCP generation

Pointed to by: The NLBFVT field in the programmed resource LU block (NLB) and the NLXFVT field in the programmed resource LU block extension (NLX)

Function: Holds a list of all tasks that are used by the cross-network session managers. Each entry in a GVT consists of an index and a pointer to a task.

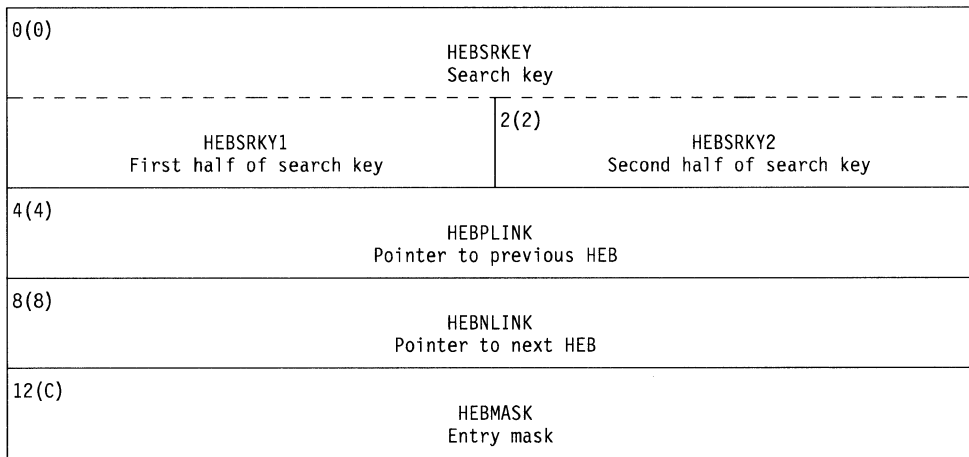
0(0) X'01'	1(1) Pointer to the NLB initial task
4(4) X'02'	5(5) Pointer to the notify task
8(8) X'03'	9(9) Pointer to the user task
12(C) X'04'	13(D) Pointer to the NLX session activation pending task
16(10) X'05'	17(11) Pointer to the NLX active session task
20(14) X'06'	21(15) Pointer to the NLX deactivation pending task
24(18) X'07'	25(19) Pointer to the secondary LU retry task
28(1C) X'08'	29(1D) Pointer to the VTAM activation pending task
32(20) X'00'	33(21) X'000000'

Gateway Vector of Tasks (SSCP, LU)**Program:** NCP**Size in bytes:** 28(1C)**Created by:** NCP generation**Pointed to by:** The NLBFVT field in the programmed resource LU block (NLB) and the NLXFVT field in the programmed resource LU block extension (NLX)**Function:** Holds a list of all tasks that are used by the cross-network session managers. There is a GVT for SSCP sessions and one for LU sessions. Each entry in a GVT consists of an index and a pointer to a task.

0(0) X'01'	1(1) Pointer to the NLB initial task
4(4) X'02'	5(5) Pointer to the notify task
8(8) X'03'	9(9) Pointer to the user task
12(C) X'04'	13(D) Pointer to the NLX session activation pending task
16(10) X'05'	17(11) Pointer to the NLX active session task
20(14) X'06'	21(15) Pointer to the NLX deactivation pending task
24(18) X'00'	25(19) X'000000'

Hash Entry Control Block

- Program:** NCP
- Size in bytes:** 16(10)
- Created by:** NCP initialization
- Pointer to:** HTBCPTR field in the HTB; HEBPLINK, HEBNLINK of adjacent HEBs
- Function:** Represents a node in a hash table search chain. It is embedded in the Network Route Entry (NRE), Subnetwork Route Entry (SRE), Host Route Entry (HRE), and Local Address Entry (LAE), and ARP Table Entry (ATE) control blocks.



Host Route Entry

- Program:** NCP
- Size in bytes:** 28(1C) for each host route entry
- Created by:** NCP initialization and dynamically
- Pointer to:** HRTCPTTR field in HRT, HREPLINK and HRENLINK in HRE when in the hashing table
- Function:** Provides a node in the Host Route Table and points to the route interface control block (RIB) for an IP network address. A hash entry control block (HEB) is embedded at location 0(0) to link to the Host Route Table (HTB field HTBTYPE = X'04').

0(0)	HRESRKEY Host address	
	HRESRKY1 First half of host address	2(2) HRESRKY2 Second half of host address
4(4)	HREPLINK Pointer to previous HRE	
8(8)	HRENLINK Pointer to next HRE	
12(C)	HREMASK Subnetwork mask	
16(10)	HRENXHP Next hop address	
20(14)	HRERIBP Pointer to route interface control block (RIB)	
	HREFLAGS* Host Route Control flags	
24(18)	Reserved	
	HREMETRC Metric	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
20(14) HREFLAGS		Host route control flags.
	x...	1 = Direct routing using Host address. 0 = Indirect routing using Next Hop address.
	.1..	Entry is a permanent routing table entry.
	..1.	Entry is in-use in the host route table.

Host Route Table Control Block

- Program:** NCP
- Size in bytes:** Depends on number of hash buckets. Each hash bucket has a fixed length of 4(4).
- Created by:** NCP generation, one per NCP
- Pointer to:** RDAHRTP field in RDA
- Function:** Serves as a hash lookup table. Each element points to the first host route entry control block (HRE) in a chain of table entries.

0(0)	HRTTYPE HRT table type (X'04')	1(1)	HRTFLAGS* Host route table flags	2(2)	HRTNTRY Number of hash buckets
4(4)	HRHASH Address of hash function routine				
8(8)	HRTFREE Pointer to hash table free HRE list				
12(C) - n	Hash bucket control blocks				

* Indicates a byte expansion follows.

Note: See the following for the format of a hash bucket.

Each entry represents a single hash bucket.

0(0)	HRTCPTR Pointer to first HRE of hash chain
------	---

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
1(1) HRTFLAGS		Host route table flags
	1... .... .xxx xxxx	Entry mask should be used in hashing Reserved

Token-Ring Hashing Table

Program: NCP

Size in bytes: 1024(400); 256(100) entries of 4(4) bytes each

Created by: NCP generation

Pointed to by: The TLBHSHP field in the token-ring line block extension (TLB)

Function: Provides a hashing table for ODLC token-ring physical links.

0(0) - 1023(3FF)

HSHTABLE
256 pointers in the HSH table

Hashing Table

Program: NCP

Size in bytes: 1024(400); 256 4-byte entries

Created by: NCP generation

Pointed to by: The XUAHTP field in the physical link adapter control block extension (XUA), and the LLBHTEBP field in the logical link control block (LLB)

Function: Sampling of the LLBs involved in the hashing process

-4(4) Table identifier C'HT'	-2(2) Number of entries 256
0(0) - 1023(3FF) Hash bucket control blocks	

Note: See below for the format of a hash bucket.

Each entry represents a single hash bucket.

0(0)	PLHLLBP Pointer to the first LLB in this hash bucket
Reserved	

Hash Table Control Block

- Program:** NCP
- Size in bytes:** Varies depending on number of hash buckets. Each hash bucket has a fixed length of 4(4).
- Created by:** NCP initialization
- Pointer to:** Embedded in NRT, SRT, HRT, LAT, and ART
- Function:** Serves as a hash lookup table. Each element points to the first hash entry control block (HEB) in a chain of table entries.

0(0)	HTBTYP* Hash table type	1(1)	HTBFLGS* Hash table flags	2(2)	HTBNTRY Number of hash buckets
4(4)	HTBHASH Address of hash function routine				
8(8)	HTBFREE Pointer to hash table free HEB list				
12(C) - n	Hash buckets				

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern Hex Value	Contents
0(0) HTBTYP	X'00'	Hash table type
	X'01'	ARP table
	X'02'	Network route table (NRT)
	X'03'	Subnetwork route table (SRT)
	X'04'	Local address table (LAT)
	X'FF.'	Host Route table (HRT)
1(1) HTBFLGS		User-defined table
	1... ..	Hash table flags
	.xxx xxxx	Entry mask should be used in hashing Reserved

Each entry represents a single hash bucket.

0(0)	HTBCPTR Pointer to first HEB of hash chain
------	---

Extended Halfword Direct Addressables

Program: NCP, EP

Size in bytes: 128(80)

Created by: NCP or PEP generation

Pointed to by: The SYSW6 field in the word direct addressable storage control block (XDA)

Function: Contains frequently accessed system halfword control fields

Name	Offset
DCTAQCB	112 (70)
DCTSPOOL	116 (74)
SYSABNP	56 (38)
SYSAQCB	112 (70)
SYSATBP	4 (4)
SYSBPBP	84 (54)
SYSCAB	24 (18)
SYSCATP	124 (7C)
SYSCAVTP	104 (68)
SYSCKRP	28 (1C)
SYSCSPDP	8 (8)
SYSDRSP	10 (A)
SYSDTTP	120 (78)
SYSEBCP	14 (E)
SYSEQBP	88 (58)
SYSFQXP	20 (14)
SYSGPTP	108 (6C)
SYSICTP	32 (20)
SYSLCSP	18 (12)
SYSLTBP	92 (5C)
SYSLTSP	52 (34)
SYSMIBP	64 (40)
SYSNIQP	44 (2C)
SYSNQBP	100 (64)
SYSNVTP	96 (60)
SYSPCBP	36 (24)
SYSPDBP	12 (C)
SYSPSBP	68 (44)
SYSPSTA	60 (3C)
SYSSITP	72 (48)
SYSSPOOL	116 (74)
SYSSVTP	76 (4C)
SYSTEMRP	40 (28)
SYSTRTP	80 (50)
SYSTVSP	16 (10)
SYSXBRK	50 (32)

0(0) Reserved	
4(4) SYSATBP Address trace block pointer	
8(8) SYSCSPDP Pointer to an invalid IOH to force a scanner dump	10(A) SYSDRSP Display/refresh/select table (DRS) pointer
12(C) SYSPDBP Panel control block pointer	14(E) SYSEBCP EBCDIC time and date control block (TND) pointer
16(10) SYSTVSP Time value select table pointer	18(12) SYSLCSP Line control selection table pointer
20(14) SYSFQXP FM request transported queue control block (QCB) pointer	
24(18) SYSCAB Pointer to the highest-numbered channel adapter control block (CAB) that was generated in the system	
28(1C) SYSCGRP Pointer to the check record pool (CRP)	
32(20) SYSICTP Pointer to the incident count refresh table (ICT)	
36(24) SYSPCBP Panel queue pointer	

40(28)	SYSTM RP Timer completion queue pointer	
44(2C)	SYSNIQP Non-device input queue pointer	
48(30)	50(32) SYSXBRK Number of break characters (SS)	51(33) Reserved
52(34)	SYSLTSP Pointer to the line test control block (LTS)	
56(38)	SYSABNP Pointer to the abend control block (ABN)	
60(3C)	SYSPSTA Pointer to the port swap trace table (PSTA)	
64(40)	SYSMIBP Pointer to the NMVT control block (MIB)	
68(44)	SYSPSBP Pointer to the physical services control block (PSB)	

72(48)	SYSSITP Pointer to the subarea index table (SIT)
76(4C)	SYSSVTP Pointer to the subarea vector table (SVT)
80(50)	SYSTRTP Pointer to the transit routing table (TRT) for the native network
84(54)	SYSBPPB Pointer to the buffer pool block
88(58)	SYSEQBP Pointer to the event queue block (EQB)
92(5C)	SYSLTBP Pointer to the line trace vector table (LTVT)
96(60)	SYSNVTP Pointer to the network vector table (NVT)
100(64)	SYSNQBP Pointer to the NPA counter queue (NQB) for NPA data collection
104(68)	SYSCAVTP Pointer to the channel adapter vector table (CAVT)
108(6C)	SYSGPTP Pointer to the generalized PIU trace control block (GPT)
112(70)	DCTAQCB (SYSAQCB) System active QCB
116(74)	DCTSPPOOL (SYSSPOOL) Pointer to the first buffer in the system save area pool
120(78)	SYSDTTP Pointer to the dispatch trace table
124(7C)	SYSCATP Pointer to the channel adapter trace table

Extended Halfword Direct Addressables (HWE) Extension**Program:** NCP, EP**Size in bytes:** 128(80)**Created by:** NCP or PEP generation (generated directly following the HWE)**Pointed to by:** The SYSW7 (SYSHWX) field in the word direct addressable storage control block (XDA)**Function:** Contains frequently accessed system control fields

Name	Offset
SYSACTP	104 (68)
SYSBCTP	12 (C)
SYSCDSP	16 (10)
SYSCRBP	52 (34)
SYSCTT	96 (60)
SYSDPTP	48 (30)
SYSDSPP	44 (2C)
SYSFLBP	56 (38)
SYSGENTP	124 (7C)
SYSGPBP	0 (0)
SYSMAXSS	4 (4)
SYSNEOGP	60 (3C)
SYSNNTC	110 (6E)
SYSNNTP	108 (6C)
SYSNSAP	120 (78)
SYSODAP	112 (70)
SYSPMF	20 (14)
SYSIPSIP	92 (5C)
SYSQPBP	8 (8)
SYSSV1P	64 (40)
SYSSV2P	68 (44)
SYSSV3P	72 (48)
SYSSV4A	88 (58)
SYSSV4L	84 (54)
SYSSV4P	76 (4C)
SYSSV5P	80 (50)
SYSUCTT	100 (64)
SYSVATP	32 (20)
SYSVITP	28 (1C)
SYSVSTP	36 (24)
SYSVVTP	40 (28)

0(0)	SYSGPBP Pointer to the generic pool block (GPB)	
4(4)	SYSMAXSS Maximum number of LU sessions	6(6) Reserved
8(8)	SYSQPBP Pointer to the queue pointer block (QPB)	
12(C)	SYSBCTP Pointer to the BFSESSINFO PIU control table (BCT)	
16(10)	SYSCDSP Pointer to the configuration data set (CDS)	
20(14)	SYSPMF Pointer to the performance measurement facility control block (PMF)	
24(18)	Reserved	
28(1C)	SYSVITP Pointer to the virtual route subarea index table (VIT)	
32(20)	SYSVATP Pointer to the virtual route access table (VAT) **	
36(24)	SYSVSTP Pointer to the virtual route status table (VST) **	

** If NCP initialization has not run yet, these fields will contain a X'80' in the leftmost byte and the total of the NUMHSAS keywords from the BUILD and NETWORK statements in the rightmost halfword.

40(28)	<p style="text-align: center;">SYSVTP Pointer to the virtual route vector table (VVT)</p>
44(2C)	<p style="text-align: center;">SYSDSPP Pointer to the dispatch table (DSP)</p>
48(30)	<p style="text-align: center;">SYSDPTP Pointer to the dispatch priority table (DPT)</p>
52(34)	<p style="text-align: center;">SYSCRBP Pointer to the COMMIT request block (CRB)</p>
56(38)	<p style="text-align: center;">SYSFLBP Pointer to the pool of multilink transmission group control blocks (FLBs)</p>
60(3C)	<p style="text-align: center;">SYSNEOGP Pointer to the network enhancement option (NEO) global function table</p>
64(40)	<p style="text-align: center;">SYSSV1P Pointer to the level-1 save area (CXTSV1)</p>
68(44)	<p style="text-align: center;">SYSSV2P Pointer to the level-2 save area (CXTSV2)</p>
72(48)	<p style="text-align: center;">SYSSV3P Pointer to the level-3 save area (CXTSV3)</p>
76(4C)	<p style="text-align: center;">SYSSV4P Pointer to the level-4 save area (CXTSV4)</p>

80(50)	SYSSV5P Pointer to the level-5 save area (CXTSV5)	
84(54)	SYSSV4L Pointer to the level-4 save area (CXTSV4) during lease processing	
88(58)	SYSSV4A Pointer to the supervisor call (SVC) service routine level-4 save area (CXTS4A)	
92(5C)	SYSPSIP Pointer to the product set identifier control block (PSI)	
96(60)	SYSCTT Pointer to the table of CNVT pointers (CTT)	
100(64)	SYSUCTT Pointer to the table of UCNVT pointers (UCTT)	
104(68)	SYSACTP Pointer to the ACB trace control block (ACT)	
108(6C)	SYSNTP Pointer to the network names table (NNT)	
	Reserved	110(6E) SYSNNTC NNT count from stage 2
112(70)	SYSODAP Pointer to the owner's data area	
116(74)	Reserved	
120(78)	SYSNSAP Pointer to the NPA session accounting block (NSA)	
124(7C)	SYSGENTP Pointer to the date and time of generation control block (DTG)	

Initial Command Execution (ICE) Routine Address Table

Program: EP
Size in bytes: 160(A0)
Located at: Label ICEADDR of module CYKSVK/SYLSVC
Created by: PEP generation
Referenced by: Routine CYAIS of module CYKSVK/CYLSVC
Function: Points to ICE routines for command processing

For BSC/SS lines

0(0) - 7(7)	ICE address
8(8)	Address pointer to Write (BSC) (CYACWRIB)
12(C)	Address pointer to Write (SS) (CYACWRIS)
16(10)	Address pointer to Read (BSC) (CYACREAB)
20(14)	Address pointer to Read (SS) (CYACREAS)
24(18) - 31(1F)	Address pointers (two) to No-op (general) (CYACENOP)
32(20) - 39(27)	Address pointers (two) to Sense (general) (ICESEN)
40(28) - 47(2F)	Address pointers (two) to Wrap (general) (ICEWRA)

48(30)	Address pointer to Prepare (BSC) (CYACPREB)
52(34)	Address pointer to Prepare (SS) (CYACPRES)
56(38) - 63(3F)	Address pointers (two) to Invalid Code (CMDERROR)
64(40)	Address pointer to Invalid Code (CMDERROR)
68(44)	Address pointer to Write Break (2848 SS) (CYACBRES)
72(48)	Address pointer to Poll (BSC) (CYACPOLB)
76(4C)	Address pointer to Poll (SS) (CYACWRIS)
80(50)	Address pointer to Invalid Code (CMDERROR)
84(54)	Address pointer to Inhibit (SS) (CYACREAS)
88(58)	Address pointer to Invalid Code (CMDERROR)
92(5C)	Address pointer to Poll SOH (2260 SS) (CYACPOLS)

96(60)	Address pointer to Invalid Code (CMDERROR)
100(64)	Address pointer to Read Clear (2848 SS) (CYACRDCL)
104(68)	Address pointer to Invalid Code (CMDERROR)
108(6C)	Address pointer to Break or Diagnostic Poll (SS) (CYACBKPL)
112(70)	Address pointer to Search (BSC) (CYACSEAB)
116(74)	Address pointer to Search (SS) (CYACSEAS)
120(78)	Address pointer to Disable (BSC) (ICEDISAB)
124(7C)	Address pointer to Disable (SS) (ICEDISAB)
128(80)	Address pointer to Enable (BSC) (ICEENABL)
132(84)	Address pointer to Enable (SS) (ICEENABL)
136(88)	Address pointer to Dial (BSC) (ICEDIAL)

140(8C)	Address pointer to Dial (SS) (ICEDIAL)
144(90)	Address pointer to Adprep (BSC) (CYACADPB)
148(94)	Address pointer to Invalid Code (CMDERROR)
152(98)	Address pointer to Set Mode (BSC) (CYACSETB)
156(9C)	Address pointer to Invalid Code (CMDERROR)

Incident Count Refresh Table**Program:** NCP, EP**Size in bytes:** 20(14)**Created by:** Shared-code module CXASCBA calls generating macro CXTICT**Pointed to by:** The SYSICTP field in the extended halfword direct addressables control block (HWE)**Function:** Contains incident count and threshold values for level-1 type errors.

0(0) ICTPCARF Level-1 programmed input/output (PIO) threshold refresh value for channel adapters	1(1) ICTPLARF Level-1 PIO threshold refresh value for line adapters	2(2) ICTAIORF Level-1 adapter input/output (AIO) threshold refresh value for channel adapters and line adapters	3(3) ICTACARF Level-1 adapter error threshold refresh value for channel adapters
4(4) ICTALARF Level-1 adapter error threshold refresh value for line adapters	5(5) ICTPIOUC Level-1 unresolved PIO interrupt counter	6(6) ICTAIOUC Level-1 unresolved AIO interrupt counter	7(7) ICTADTUC Level-1 unresolved adapter interrupt counter
8(8) ICTURSRF Level-1 unresolved PIO, AIO, adapter error threshold refresh value	9(9) ICTGLDCT Level-1 'GET LINE ID' retry counter	10(A) ICTGLDRF Level-1 'GET LINE ID' threshold refresh counter	11(B) ICTGFRF Ground fault threshold refresh value for channel adapters
12(C) ICTECTT ODLC Execute Clear timeout threshold counter refresh value	13(D) ICTECTTC ODLC Execute Clear timeout threshold counter	14(E) ICTCPIOT ODLC PIO error threshold counter refresh value	15(F) ICTCPIOC ODLC PIO error threshold counter
16(10) ICTOGLDC ODLC Level 1 GLID retry counter	17(11) ICTGLDR ODLC Level 1 GLID refresh value	18(12) Reserved	

Interface Disconnect Dispatcher Table

Program: EP

Size in bytes: 84(54)

Located at: Label IFDADDR of module CYKIFD

Created by: PEP generation

Referenced by: Routine CYAIS

Function: Contains address pointers to IFD and CAEC routines

0(0)	IFDADDR IFD address table

	No action TIO (00) command (CAEC190)
4(4)	Address pointer for a Write (08) command (IFDWRI)
8(8)	Address pointer for a Read (10) command (IFDREA)
12(C)	No action No-op (18) command (CAEC190)
16(10)	Address pointer for a Sense (20) command (CAEC190)
20(14)	No action Wrap (28) command (CAEC190)
24(18)	Address pointer for a Prepare (30) command (IFDPRE)
28(1C)	Error (38)
32(20)	Address pointer for a Write Break (40) command (IFDWRI)

36(24)	Address pointer for a Poll (48) command (IFDWRI)
40(28)	Address pointer for an Inhibit (50) command (IFDREA)
44(2C)	Address pointer for a Poll SOH (58) command (IFDWRI)
48(30)	Address pointer for a Read Clear (60) command (IFDREA)
52(34)	Address pointer for a Break (68) command (IFDWRI)
56(38)	Address pointer for a Search (70) command (IFDREA)
60(3C)	Address pointer for a Disable (78) command (CAEC190)
64(40)	Address pointer for an Enable (80) command (IFDENA)
68(44)	Address pointer for a Dial (88) command (IFDIAL)
72(48)	Address pointer for an Address Prepare (90) command (IFDPRE)
76(4C)	Address pointer for a Set Mode (98) command (IFDSTMD)
80(50)	Address pointer for a Sense ID (A0) command (CAEC190)

Identification List Entry

Program: NCP

Size in bytes: Variable

Created by: NCP generation

Pointed to by: None. The IDE follows the identification list header control block (IDL)

Function: Contains one entry for each valid ID that can be received over a line or lines for which the list is being used

The IDE has the following format if device association is not possible:

0(0) IDELN ID length	1(1) IDEFLAG* Entry flags	2(2) ID characters (variable length)
** IDEPADL Maximum number of pad characters needed for alignment		

* Indicates a byte expansion follows.

** Follows ID characters.

The IDE has the following format if device association is possible:

0(0) IDELN ID length	1(1) IDEFLAG* Entry flags	2(2) Reserved
4(4) IDEDVBP Pointer to the device base control block (DVB)		
8(8) ID characters (variable length)		
** IDEPADL Maximum number of pad characters needed for alignment		

* Indicates a byte expansion follows.

** Follows ID characters.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
1(1) IDEFLAG		Entry flags
	1...	Device association is possible for this entry.
	.1..	End of list
	..1.	Notify host if no match (meaningful only for the first and last entries of a list).

Identification List Header

Program: NCP

Size in bytes: 4(4)

Located in: Beginning of the identification list

Created by: NCP generation

Pointed to by: The CIEIDL field in the call-in extension control block (CIE)

Function: Precedes the first entry in an ID list for switched BSC lines whose terminals identify themselves. The list is required only if validity checking of the incoming ID is required.

0(0) IDLSIZE Maximum number of bytes in the list	2(2) Halfword to force fullword alignment for a list entry
--	--

Internet Protocol Datagram Queue Control Block

Program: NCP, EP

Size in bytes: 72(48)

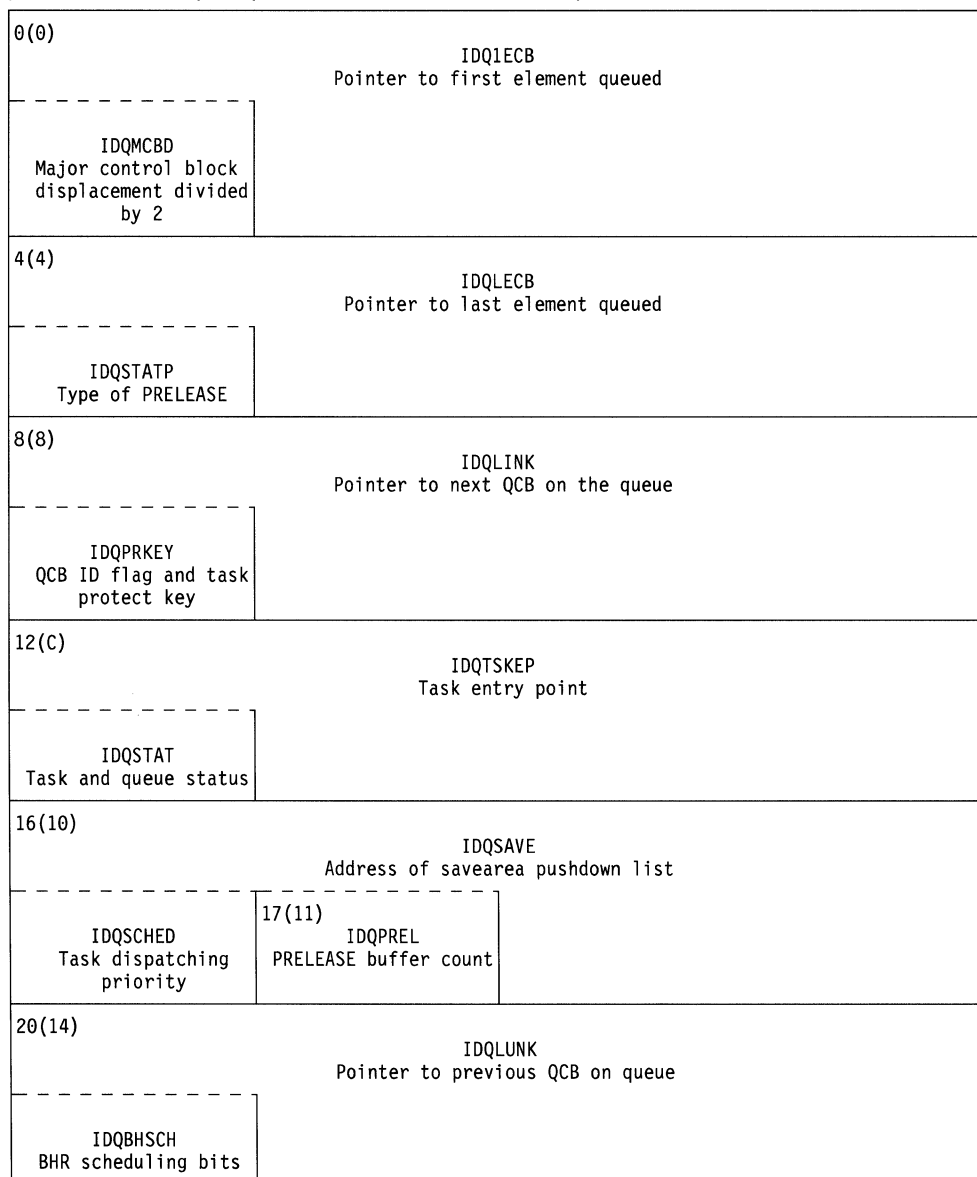
Created by: NCP generation

Pointed to by: The RDAIDQP field in the routing data area control block (RDA)

Function: Datagrams are queued to the IDQ when they are routed by the IP router. When the level 4 router sees that the IDQ contains datagrams, it calls the IP router to process the datagrams.

IP Datagram Queue 1 and 2

(See QCB for input queues for all bit definitions.)



24(18)		IDQPTR Pointer to next Internet protocol datagram queue control block (IDQ)
28(1C)		ID1IECB Pointer to first element queued
ID1MCBD Major control block displacement divided by 2		
32(20)		ID1LECB Pointer to last element queued
ID1STATP Type of PRELEASE		
36(24)		ID1LINK Pointer to next QCB on the queue
ID1PRKEY QCB ID flag and task protect key		
40(28)		ID1TSKEP Task entry point
ID1STAT Task and queue status		
44(2C)		ID1SAVE Address of savearea pushdown list
ID1SCHD Task dispatching priority	45(2D) ID1PREL PRELEASE buffer count	
48(30)		ID1LUNK Pointer to previous QCB on queue
ID1BHSCH BHR scheduling bits		

Remaining fields of the IDQ

52(34)	Pointer to the previous IDQ
56(38)	IDQIPRTH Pointer to first datagram of IP datagram routing chain
60(3C)	IDQIPRTT Pointer to last datagram of IP datagram routing chain
64(40)	IDQTIMES Time stamp of fragment reassembly processing
68(44)	IDQFRCHN Pointer to the fragment chain

Internet Protocol Gateway Routes Table

Program: NCP

Size in bytes: Entries are 24(18), table length varies

Created by: NCP generation, one per NCP

Pointed to by: None. Addressed by label CXTIGR. The IGR resides above 4 M in storage so a load address instruction should not be used to obtain its address.

Function: IGR is used to store the IP gateway routes that are defined by the IPROUTE definition statements. At initialization, this data helps to build the Network Routing Tables. IGR is destroyed by NCP initialization.

IP Gateway Route Table Entry

0(0) IGRSTATS* Entry status flags	1(1) IGRMETRC Metric	2(2) Reserved
4(4) IGRSUBAD Route address		
8(8) IGRNXTHP Next hop IP address		
12(C) IGRRIBP Pointer to RIB (when valid)		
IGRINTRF Interface name (when valid)		
20(14) IGRMASK Subnetwork mask		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IGRSTATS		Entry status flags
	1... ..	Last entry in IGR
	.1.. ..	Route table entry has been built for this address
	..1. ..	Entry is a host route
	...1 ..	Entry is a permanent routing table entry
	... xxxx	Reserved

Internet Protocol Interface Initialization Table

Program: NCP

Size in bytes: 36(24) per entry

Created by: NCP generation

Pointed to by: None. Addressed by label CXTIIT

Function: IIT is used to store information necessary to build and maintain the route and resource interface control blocks used by IP routing. IIT is destroyed by NCP initialization

IP Interface Initialization Table Entry

0(0)		IITRSPTR Pointer to resource (NLX/SCB) for which interface is defined	
IITSTATS* Entry status flags			
4(4) - 11(B)		IITINTRF Interface name	
12(C)	IITMTU Maximum transmission unit that may be sent on this interface	14(E)	IITARP Number of temporary ARP entries for an Ethernet adapter interface/token-ring interface
16(10)		IITARPT Pointer to genned fixed ARP entries for an Ethernet adapter interface/token-ring interface	
IITINTIM Inactivity time for an Ethernet/token-ring interface			
20(14) - 25(19)		IITHDWAD Interface hardware address	
		26(1A) - 29(1D)	IITTHFR
		Counter threshold for all frames sent or received (Ethernet)	
		30(1E) - 33(21)	IITTHRER
		Counter threshold for all errors on transmit or receive (Ethernet)	
		34(22)	Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IITSTATS		Entry status flags
	1...	Last entry indicator in IIT
	.xx.	Type interface indicator 00 = SNA-IP interface 10 = Ethernet interface 01 = Token-ring interface 11 = Reserved
	...x	Frame format support 1 = Dynamic frame format support 0 = Static frame format support (Ethernet V2 or IEEE 802.3 or token-ring)
	.... x...	Ethernet Frame Format (only valid for static Ethernet frame format support) 1 = IEEE 802.3 frame format 0 = Ethernet V2 frame format
	.... .x..	Non-Canonical Hardware Address in the 802.5 ARP Packets 1 = Not Inverted Hardware Address in ARP Packets 0 = Canonical Hardware Address in ARP Packets
	.... ..xx	Reserved

Internet Control Message Protocol Message Data Area

Program: NCP

Size in bytes: Varies depending on data size and message type

Function: Provides data area formats for Internet Control Message Protocol (ICMP) messages that are used for communication between source hosts and gateways in an internet network. The format varies based on the value of the IMHTYPE field in the IMH.

Note: The layout for the IMD is defined in XCXTIMH.

Type = Destination Unreachable/Time Exceeded/Source Quenched ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) Unused		
8(8) - n IP Header + 8 bytes of original datagram		

* Indicates a byte expansion follows in the IMH.

Type = Parameter Problem ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) IMDPTR Byte offset into IP datagram	5(5) Unused	
8(8) - n IP header + 8 bytes of original datagram		

* Indicates a byte expansion follows in the IMH.

Type = Redirect ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) IMDGADD Gateway internet address		
8(8) - n IP header + 8 bytes of original datagram		

* Indicates a byte expansion follows in the IMH.

Type = Echo/Echo Reply ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) IMDIDNT Identifier		6(6) IMDSEQN Sequence number
8(8) - n Data		

* Indicates a byte expansion follows in the IMH.

Type = Timestamp/Timestamp Reply ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) IMDIDNT Identifier		6(6) IMDSEQN Sequence number
8(8) IMDOTIM Originate timestamp		
12(C) IMDRTIM Receive timestamp		
16(10) IMDTTIM Transmit timestamp		

* Indicates a byte expansion follows in the IMH.

Type = Address Mask Request/Reply ICMP

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) IMDIDNT Identifier		6(6) IMDSEQN Sequence number
8(8) IMDAMSK Address mask		

* Indicates a byte expansion follows in the IMH.

Internet Control Message Protocol Message Header

Program: NCP

Size in bytes: Varies depending on data size

Function: Provides header format for internet control message protocol (ICMP) messages that are used for communication between source hosts and gateways in an internet network.

0(0) IMHTYPE* ICMP message type	1(1) IMHCODE* ICMP message code	2(2) IMHCKSM Checksum
4(4) - n IMD ICMP data (varies with type of message)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IMHTYPE		ICMP message type
	X'00'	Echo reply
	X'03'	Destination unreachable
	X'04'	Source quench
	X'05'	Redirect
	X'08'	Echo
	X'0B'	Time exceeded
	X'0C'	Parameter problem
	X'0D'	Timestamp
	X'0E'	Timestamp reply
	X'11'	Address mask request
	X'12'	Address mask reply

Offset/Field Name	Bit Pattern/Hex Value	Contents
1(1) IMHCODE		ICMP message code
	X'00'	IMHTYPE = X'00' (Echo reply) Default
	X'00'	IMHTYPE = X'03' (Destination unreachable) Network unreachable
	X'01'	Host unreachable
	X'03'	Port unreachable
	X'04'	Fragmentation required and DF set
	X'05'	Source route failed
	X'00'	IMHTYPE = X'04' (Source quench) Default
	X'01'	IMHTYPE = X'05' (Redirect) Redirect datagrams for host.
	X'00'	IMHTYPE = X'08' (Echo) Default
	X'00'	IMHTYPE = X'0B' (Time exceeded) Time-to-live exceeded in transit.
	X'00'	IMHTYPE = X'0C' (Parameter problem) Default
	X'00'	IMHTYPE = X'0D' (Timestamp) Default
	X'00'	IMHTYPE = X'0E' (Timestamp reply) Default
	X'00'	IMHTYPE = X'11' (Address mask request) Default
	X'00'	IMHTYPE = X'12' (Address mask reply) Default

IP/Token-Ring Frame Header

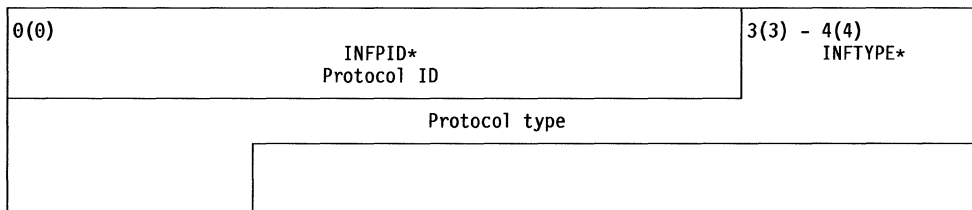
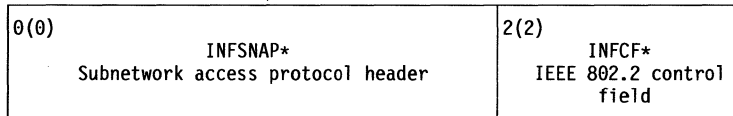
Program: NCP, EP

Size in bytes: 8(8)

Created by: Devices transmitting IP traffic on a token-ring LAN.

Pointer to: The first buffer in a buffer chain containing a token-ring IP frame.

Function: To distinguish between the different IP frame types.



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) INFSNAP	X'AAAA'	IEEE 802.2 Destination Service Access Point Subnetwork access protocol (SNAP) header
2(2) INFCF	X'03'	IEEE 802.2 Control Field Unnumbered information frame
0(0) INFPID	X'000000'	Protocol ID Subnetwork access protocol (SNAP) header
3(3) INFTYPE	X'0800' X'0806'	This field is used to identify the higher level protocol that is embedded within the IEEE 802.5 frame. IP ARP

Input/Output Block

Program: NCP
Size in bytes: 36(24)
Located in: Adapter control block (ACB)
Created by: NCP generation
Pointed to by: The LCBACBP field in the line control block (LCB)
Function: Contains the status of BCS/SS input/output operations.

0(0) IOBIMCTL* Immediate control flags	1(1) IOBCMAND* Input/output command field	2(2) IOBCMODS* IOB command modifiers
4(4) IOBSTAT* Outcome of the command operation		6(6) IOBERST First error status. This field is set equal to IOBSTAT when the first recoverable error occurs
		IOBSTATR Receive leg status (Wrap)
		IOBLTSM Transmit leg status (Wrap)
8(8) IOBEREST First error extended status. This field is set equal to IOBEXTST when the first recoverable error occurs	9(9) IOBRTYCT Retry count for the first level error recovery procedure (ERP) attempts	10(A) IOBKSIZ Received block's size (number of data characters stored)
12(C) IOBDATAP Data pointer to the first buffer in the block		
IOBEXTST* Extended status field (contains error indicators)		

* Indicates a byte expansion follows.

16(10)		IOBINPUT Input control data address (contains the address of the first buffer when buffers are needed to store a reply to text, selection, or inquiry)	
IOBRDESC Record descriptor byte			
20(14)		IOBOUTPUT Output control data address (contains the address of inserted data)	
IOBCTCCT Control count (number of characters to be transmitted from the field addressed by the output control data address)		21(15)	Address of the field to be transmitted
24(18)		IOBLCB Pointer to the LCB	
IOBSTOFS Initial data offset (used to locate the starting point in the first buffer of a block)			
28(1C)		IOBFNLPT Pointer to the last buffer in the chain	
IOBOFSET Final data offset (used to locate the buffer position of the last character in the block that was stored--zero if the buffer is filled)		30(1E)	IOBWRPCT Wrap data count
32(20)	33(21)	34(22)	
Reserved	IOBPFLAG* PEP flag field	Reserved	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IOBIMCTL		Immediate Control flags
	0... ..1.	Force Deactivate Immediate
	1... ..0	Reset Immediate
	1... ..1	Reset Immediate—soft reset
	.1.	Write Request—conditional reset
	..1.	Monitor Mode
	...1	Send Interrupt
	.... 1...	Conditional Send Interrupt
1(1) IOBCMAND		Input/output command field
	X'00'	No input/output occurred.
	X'10'	Write Initial
	X'12'	Write Continue
	X'16'	Write Recover
	X'17'	Write Delay
	X'19'	Write
	X'25'	Read
	X'27'	Read Delay
	X'28'	Read Initial
	X'2A'	Read Continue
	X'40'	Run link problem determination aid (LPDA) test
	X'83'	Disable
	X'85'	PEP switch
	X'87'	Wrap
	X'8D'	Enable
	X'8F'	Dial
	X'94'	Write EOT
	X'9B'	Write Control
	X'AC'	Read Status

Offset/Field Name	Bit Pattern/Hex Value	Contents
2(2) IOBCMODS		IOB command modifiers
	Byte 0	
	1...	Suppress lost data.
	.1..	Override text mode ERPs.
	..1.	Reject received leading graphics.
	...1	Inhibit test time-out (SS). Intermediate Text Block (ITB) mode is not transparent (BSC).
	.... x...	1 = Subblocking mode, or modem leads wrap 0 = Wrap data
	.... .x..	1 = Inhibit WACK limit (BSC), or inhibit time fill (SS), or external wrap 0 = Line interface coupler (LIC) level wrap
	.... ..x.	1 = Enable length check, or ITB mode transparent, or modem 0 = Cable
	.... ...x	1 = Hold buffers, or fixed number of wraps 0 = Continuous wrap
	Byte 1	
	1...	Reset
	.1..	Send priority, or manual dial (Enable commands only), or Start Wrap request from MOSS
	..1.	ETX (Write commands), or single poll (Read commands), or Stop Wrap request from MOSS
	...1	Offset (Write commands), or first buffer assigned (Read commands), or Stop Wrap request from NCP
	.... 1...	Insert (Write commands), or send leading graphics (Read commands), or send identification (Enable), or Wrap Continuous request from MOSS
	.... .1..	Transparent text (Write commands), or send positive ACK (Read commands), or identification mode (Enable)
	.... ..1.	Set negative ACK (Read commands), or SOH (Write commands), or MTA mode (Enable commands)
	.... ...1	Set alternate ACK.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) IOBSTAT		Outcome of the command operation
	Byte 0	Flags
	1...	Extended error status
	.1..	Format exception (bad line control sequence)
	..1.	Sync check (stop bit error, SS only)
	...1	Data check (block check character error)
	.... ...1	Length check
		Read and Write Group Masks
	.... 000.	No errors
	.... 001.	Receive text
	.... 010.	Receive text reply
	.... 011.	Receive control; command reject
	.... 100.	Status was outstanding when command was issued; command was not executed.
	.... 101.	Send text reply
	.... 110.	Send text
	.... 111.	Send control
		Data Set Control Group Masks
	.... 000.	No errors
	.... 001.	Receive ID
	.... 010.	Receive ID reply
	.... 011.	Connect
	.... 100.	Status was outstanding when command issued.
	.... 101.	Error in dialing phase
	.... 110.	Send ID
	.... 111.	Disconnect
	Byte 1	Extended (line) response. See Volume 2 Section 3, "BTU Commands, Modifiers, and Responses."
12(C) IOBEXTST		Extended status field
	1...	Overflow or underrun
	.1..	Line quiet time-out
	..1.	DLE format exception
	...1	Subblock error
	.... .1..	LPDA2 or V.25 bis dial failure

Offset/Field Name	Bit Pattern/ Hex Value	Contents
33(21) IOBPFLAG		PEP flag field
	x... ..	Control block type: 0 = NCP ACB 1 = PEP character control block (CCB).
	.x..	PEP switchable line: 0 = Not switchable 1 = Switchable.
	..x.	Line-active save bit: 0 = Line was inactive at the time of the switch. 1 = Line was active at the time of the switch.
	...x	Reserved
	.... ..x.	Part of the IOBSEL address
	.... ....x	Part of the IOBSEL address

Internet Protocol Option Data Format

Program: NCP

Size in bytes: Varies depending on data size

Function: Provides data format for the option field of an Internet Protocol (IP) datagram header. Options are used to request special route processing for a datagram in an internet network. IOPPNTR is an integer offset into the data area of the IOP and is always > 0.

0(0) IOPTYPE* Option type identifier	1(1) IOPOLLEN Length in bytes of option	2(2) IOPPNTR Pointer offset into data (relative to start of option)	3(3) - n
Data			

* Indicates a byte expansion follows.

For the Timestamp Option, the data area is redefined as below:

4(4) - n	3(3) IOPCNTL* Timestamp control fields
Data	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IOPTYPE		Option type identifier
	X'00'	End of list
	X'01'	No operation
	X'07'	Record route
	X'44'	Timestamp
	X'83'	Loose source code
	X'89'	Strict source code
		Further defined by the following:
	x...	1 = Copy option to fragment 0 = Do not copy option to fragment
	.00.	Control option class
	.01.	Reserved option class
	.10.	Debugging and measurement option class
	.11.	Reserved option class
	...x xxxx	Option number

Offset/Field Name	Bit Pattern/ Hex Value	Contents
3(3) IOPCNTL		Timestamp control fields
	xxxx 0000	Timestamp only
	xxxx 0001	Timestamp and address
	xxxx 0011	Timestamp specified

IP Congestion Control Block

Program: NCP

Size in bytes: 20(14)

Created by: NCP generation

Pointed to by: The SYSIPCP field in the fullword direct addressable extension (FAX), and CXTIPC in link-edit map

Function: Contains the maximum and current values of the IP pool and rate congestion variables, and the congestion status.

0(0)		IPCMAXP Maximum number of buffers in the IPPOOL	
IPCFLAGS* IP congestion status byte			
4(4)		IPCCURP Current number of buffers in the IPPOOL	
8(8)	IPCFRATE IP frame rate	10(A)	IPCBURST Maximum IP burst rate
12(C)	IPCFCNT Current IP frame count	14(E)	Reserved
16(10)	IPCNCST Total number of NCST interfaces	18(12)	IPCENET Total number of Ethernet interfaces

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) IPCFLAGS		IP congestion status byte
	1...	IPPOOL is used for congestion control
	.1..	IPRATE is used for congestion control
	..1.	IPPOOL has been allocated

Internet Protocol Datagram Header

Program: NCP

Size in bytes: Varies based on options and data size.

Function: Provides header format for the Internet Protocol (IP) datagram.

0(0) IPHVLEN* IP version and length	1(1) IPHTYPSR Type of service	2(2) IPHTLEN Total length of datagram (header + data)
4(4) IPHIDENT Identification		6(6) IPHFOFST Fragment offset in 8-byte units ----- IPHFLAGS* Control flags
8(8) IPHTIME Time-to-live	9(9) IPHPROTO Protocol	10(A) IPHHCKSM Header checksum
12(C) IPHSRCIP Source IP address		
16(10) IPHDSTIP Destination IP address		
20(14) - n Options**		

* Indicates a byte expansion follows.

** See IOP for format of the options.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) IPHVLEN	xxxx xxxx	IP version and length IP protocol version. NCP supports version 4. Length of IP datagram in 32 bit words. This does not include the data field.
6(6) IPHFLAGS	0... .... .X.. .... ..X. .... ...x xxxx	IP header control flags Reserved, must be zero 1 = Fragmentation not allowed 0 = Allow fragmentation 1 = More fragments; this is not the last fragment in the datagram. 0 = Last fragment of the datagram High order 5 bits of fragment offset

Internet Protocol Router Statistics Control Block

Program: NCP

Size in bytes: 116(74)

Created by: NCP generation, one per NCP

Pointed to by: The RDAIPSP field in the Routing Data Area Control Block (RDA)

Function: Contains several counters that are used to keep statistics values about the IP router

0(0)	IPSDGR Number of datagrams received
4(4)	IPSDGRBC Number of datagrams received with a bad checksum
8(8)	IPSDGRDL Number of datagrams received with invalid data lengths
12(C)	IPSDGRHL Number of datagrams received with invalid header lengths
16(10)	IPSLAFR Number of local address datagram fragments received
20(14)	IPSLAFD Number of local address datagram fragments discarded
24(18)	IPSLAFTO Number of local address datagram fragments timed out
28(1C)	IPSLADR Number of local address datagrams reassembled
32(20)	IPSDGF Number of datagrams forwarded

36(24)	IPSDGNFU Number of datagrams not forwarded because of unreachable destinations
40(28)	IPSDGSI Number of datagrams sent out on the same interface on which they were received
44(2C)	IPSDGSF Number of datagrams successfully fragmented
48(30)	IPSDGFF Number of datagrams which failed fragmentation
52(34)	IPSFC Number of fragments created
56(38)	IPSDGNC Number of datagrams discarded because of NCP congestion
60(3C)	IPSDGUA Number of datagrams received with unsupported destination addresses
64(40)	IPSDGTE Number of datagrams not forwarded due to time to live being exceeded
68(44)	IPSDGMF Number of datagrams discarded due to MTU fragmentation problems
72(48)	IPSICMPR Number of ICMP messages received including those in error or unsupported
76(4C)	IPSICPE Number of ICMP messages received but determined to have ICMP specific errors
80(50)	IPSDUICM Number of destination unreachable ICMP messages sent

84(54)	IPSTEICM Number of time exceeded ICMP messages sent
88(58)	IPSPPICM Number of parameter problem ICMP messages sent
92(5C)	IPSSQICM Number of source quench ICMP messages sent
96(60)	IPSREICM Number of redirect ICMP messages sent
100(64)	IPSERICM Number of echo reply ICMP messages sent
104(68)	IPSTRICM Number of timestamp reply ICMP messages sent
108(6C)	IPSARICM Number of address mask reply ICMP messages sent
112(70)	IPSIPXP Pointer to internet protocol router statistics control block extension (IPX)

IP Router Statistics Control Block Extension**Program:** NCP**Size in bytes:** 64(40)**Created by:** NCP generation, one per NCP**Pointed to by:** The IPSIPXP field in the internet protocol router statistics control block (IPS).**Function:** Contains several counters that are used to keep statistics values about the IP router specifically related to IP Dynamics.

0(0)	IPXADDRT Number of Add Route Request datagrams received
4(4)	IPXDELRT Number of Delete Route Request datagrams received
8(8)	IPXCHGRT Number of Change Route Request datagrams received
12(C)	IPXURQNP Number of undetermined request datagrams received that could not be processed
16(10)	IPXARQNP Number of Add Route Request datagrams received that could not be processed
20(14)	IPXDRQNP Number of Delete Route Request datagrams received that could not be processed
24(18)	IPXCRQNP Number of Change Route Request datagrams received that could not be processed
28(1C)	IPXSTATA Number of Interface Status datagrams indicating active status sent to NCROUTE

32(20)	IPXSTATI Number of Interface Status datagrams indicating inactive status sent to NCPRROUTE
36(24)	IPXRIPNM Number of RIP broadcast frames received and forwarded to NCPRROUTE
40(28)	IPXSNMPN Number of SNMP frames received and forwarded to NCPRROUTE
44(2C)	IPXLSTHT Number of times NCP entered "reset" state due to the loss of the NCPRROUTE host
48(30)	IPXRSTBC Number of times NCP entered "reset" state due to a UDP datagram received from NCPRROUTE with an invalid checksum
52(34)	IPXUDPRC Number of UDP datagrams received
56(38)	IPXUDPUD Number of UDP datagrams received with an unknown destination port
60(3C)	IPXUDPDS Number of UDP datagrams discarded due to congestion

Lookahead Buffer**Program:** NCP**Size in bytes:** 22(16) for the first command; 14(E) for succeeding commands**Created by:** CXDKLIP**Function:** DSECT of the PIU created and used by the online terminal (OLT) functions

For the First Command in the LAA

0(0) LABUFCHN Pointer to the next buffer in this chain			
4(4) Reserved		6(6) LAOFFSET Offset to the interpretive command	7(7) LAFLAGS Flags for the interpretive command
8(8) LACMD1 First interpretive command	9(9) LAWAIT1 Wait time for level 2 before ending the command as an error	10(A) LASC FM1 Bits in the secondary control field (SCF) to test	11(B) LASCFE1 Expected status of the tested SCF bits
12(C) LAERR1 Address for error processing		14(E) LACNT1 Maximum number of characters to place in the buffer	
		LARCAC1 Adjusted received count for a receive on count command	
		LATPCF1 Primary control field (PCF) character for a transmit turn	15(F) LATPDF1 Parallel data field (PDF) character for a transmit turn
		LACOMP1 Character compared with the received character	
16(10) LARCST1 Buffer pointer for a Receive SDLC command			
LASTAT1 Status of a receive and compare command			
LA1SCF1 SCF used when transmitting LA1PDF1 (Transmit on count command)	17(11) LA1PDF1 PDF character transmitted at the end of the data (Transmit on count command)	18(12) LA2SCF1 SCF used when transmitting LA2PDF2 (Transmit on count command)	19(13) LA2PDF1 Second PDF character transmitted after LA1PDF1 (Transmit on count command)
20(14) LARCCT1 Count for a receive on count command			

For Succeeding Commands in the LAA

0(0) LACMD Succeeding the interpretive command	1(1) LAWAIT Wait time for level 2 before ending a command as an error	2(2) LASC FM Bits in the SCF to test	3(3) LASC FE Expected status of the tested SCF bits
4(4) LAERR Address for error processing		6(6) LACNT Maximum number of characters to place in the buffer	
		LATPCF PCF character for transmit turn	
		LACOMP Character compared with the received character	7(7) LATPDF PDF character for transmit turn
8(8) LASTART Pointer to the receive buffer on receive and compare commands			
LAISCF SCF used when transmitting LA1PDF (Transmit on count command)	9(9) LA1PDF PDF character transmitted at the end of the data (Transmit on count command)	10(A) LA2SCF SCF used when transmitting LA2PDF (Transmit on count command)	11(B) LA2PDF Second PDF character transmitted after LA1PDF
12(C) LACOUNT Count for a transmit on count command			

Processor-NCP ODLC Adapter Control Block

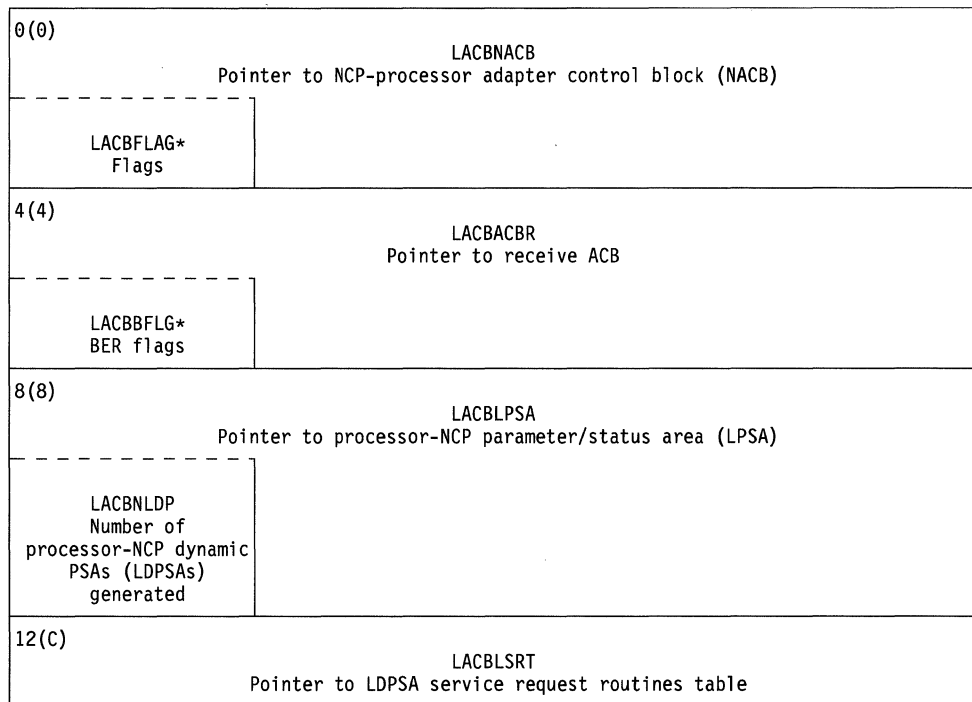
Program: NCP

Size in bytes: 56(38) for physical lines, processor/CBCs, and trace slots; 16(10) for logical lines

Created by: NCP generation

Pointed to by: The CCBLACBP field in receive adapter control block (ACB), and the NACBLACB field in NCP-processor ACB (NACB)

Function: Contains line control information and the transport access point level 1 (XAP1) pointers for the processor to NCP interface.



* Indicates a byte expansion follows.

LACB extension for physical lines, processor/CBC slots, and trace slots

16(10)		LACBHLT Pointer to HALT routine	
LACBHLTF* Halt routine flags			
20(14)		LACBHLTC Pointer to HALT complete routine	
LACBWSCT Withhold service clear (SC) threshold counter (Valid only when LACBWS bit is on)			
24(18)		LACBFDPS Pointer to first DPSA in LDPSA list	
LACBBCTR Number of service request (SR) interrupts where receive list (RL) buffers used is less than the historic buffer usage count			
28(1C)		LACBNDPS Pointer to next DPSA in LDPSA list	
32(20)		LACBLDPS Pointer to last DPSA in LDPSA list	
LACBRTYP* Resource type			
36(24)		LACBFBRC Pointer to first buffer in receive list	
40(28)		LACBLBRC Pointer to last buffer in receive list	
44(2C)		LACBLTCB Pointer to an LTCB (only valid in SIT control blocks)	
48(30)	LACBBCSR Number of buffers used in current SR	50(32)	LACBCBRL Current number of buffers left in receive list
52(34)	LACBBUC Historic buffer usage count	54(36)	LACBBPSR Highest number of buffers used in the last 50 consecutive SRs that used less buffers than the historic buffer usage count

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LACBFLAG		Flags
	1...	NDPSA built (LACBBLT)
	.1..	Withhold service clear (LACBWSC)
	..1.	IOH HALT required (LACBHBQ)
	...1	NOP pending (LACBNOP)
	.... 1..	Line deactivation service clear required (LACBDSC)
	.... .x..	1 = Logical definition (LACBLOG) 0 = Physical definition
	.... ..1.	Physical resource with associated logical resources (LACBPWL)
4(4) LACBBFLG		BER Flags
	1...	Data pointer (LDP1DATP) is valid (LACBDAT)
16(10) LACBHLTF		Halt routine flags
	1...	Send no I/O in HALT routine, just clean up (LACBNIO)
32(20) LACBRTYP		Resource type
	X'00'	Line LACB (LACBLINE)
	X'10'	Processor LACB (LACBLIM)
	X'20'	SIT LACB (LACBLLT)
	X'90'	CBC LACB (LACBCPLR)
	1...	CBC indicator (LACBRTY)

Local Address Entry Control Block

- Program:** NCP
- Size in bytes:** 36(24) for each entry defined in NCP initialization
- Created by:** NCP generation
- Pointed to by:** The HTBCPTR field in the hash table control block (HTB), the LAEPLINK and LAENLINK fields in the local address entry control block (LAE), and the RIBLATE in route interface control block (RIB).
- Function:** Points to the route interface control block (RIB) defined for a local IP network address. Information in the entry comes from the IPLOCAL definition statement. A hash entry control block (HEB) is embedded at location 0(0) to link to the local address table (LAT) (HTB field HTBTYPE = X'03').

0(0)		LAESRKEY Local address+	
LAESRKY1 First half of local address		2(2)	LAESRKY2 Second half of local address
4(4) LAEPLINK Link to previous LAE			
8(8) LAENLINK Link to next LAE			
12(C) LAEMASK Subnetwork mask			
16(10) - 23(17) LAEINTF Interface name			
24(18) LAERIBP Pointer to Route interface control block (RIB)			
LAEMETRC Metric			
28(1C) LAEFLAGS* LAE flags	29(1D) Reserved		
32(20) LAEGATWY Gateway Address (for point to point connections)			

+ If all FF's, this is the last entry.

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
28(1C) LAEFLAGS		LAE flags
	1...	Interface is a point-to-point connection
	.1..	Broadcast frames are supported on this interface

Local Address Table Control Block

Program: NCP

Size in bytes: Depends on number of hash buckets. Each hash bucket has a fixed length of 4(4)

Created by: NCP generation

Pointed to by: The RDALATP field in the routing data area control block (RDA)

Function: Serves as a hash lookup table. Each element points to the first local address entry control block (LAE) in a chain of table entries

0(0)	LATTYPE LAT table type X'03'	1(1)	LATFLAGS* Local address table flags	2(2)	LATNTRY Number of hash buckets
4(4)	LATHASH Address of hash function routine				
8(8)	LATFREE Pointer to hash table free LAE list				
12(C) - n	Hash bucket control blocks***				
(n+1) - p	Local address entry (LAE) control blocks**				

* Indicates a byte expansion follows.

** See LAE for the format of the local address entries.

*** See the following for the format of a hash bucket.

Each entry represents a single hash bucket

0(0)	LATCPTR Pointer to first LAE of hash chain
------	---

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
1(1) LATFLAGS		Local address table flags
	0...	Entry mask should not be used in hashing
	.xxx xxxx	Reserved

Line Control Block (BSC/SS)

Program: NCP

Size in bytes: Variable, depending on line-type extensions

Created by: NCP generation, one for each BSC/SS line

Pointed to by: The RVTRP field in the resource vector table (RVT), and the IOBLCB field in the input/output block (IOB)

Function: Contains fields for the following tasks:

- Scheduling line operation
- Maintaining line-significant status information
- Requesting input/output operations from the communications input/output program (levels 2 and 3).

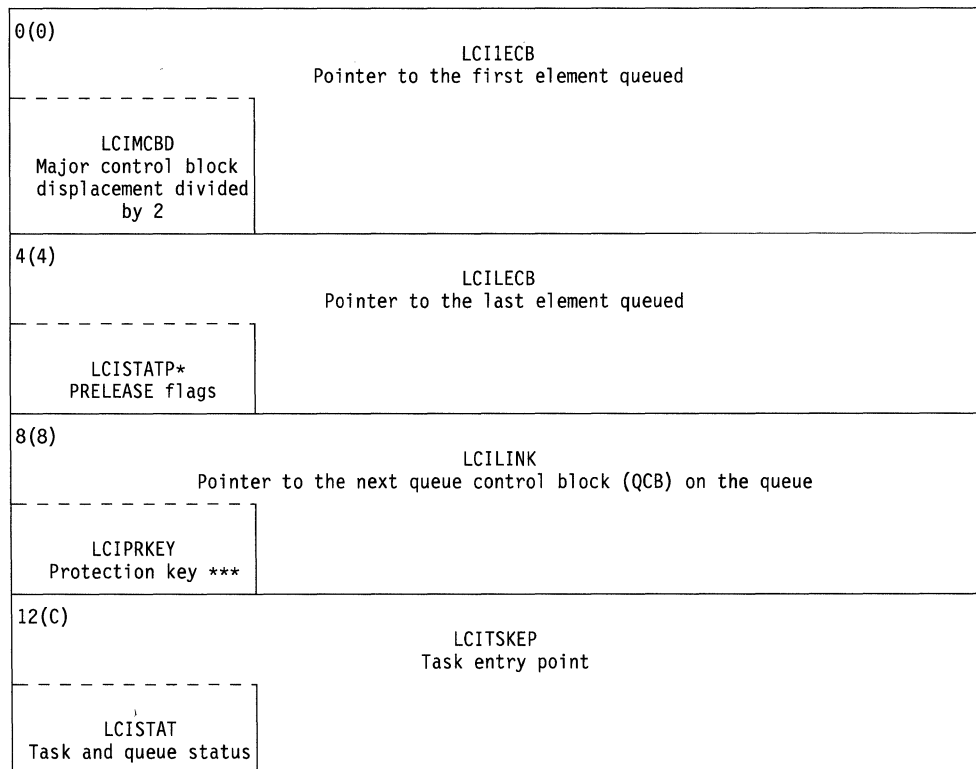
Prefix

-12(C) - -1(1)

For the prefix format for the LCB, see the network performance analyzer prefix control block (NPF).

Line Input/Output Queue Control Block (LCBLIOQ)

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

16(10)		LCISAVE Address of the save area pushdown list
LCISCHE Trigger scheduling priority	17(11) LCIPREL PRELEASE buffer count	
20(14)		LCILUNK Pointer to the previous QCB on the queue
LCIBHSCH Block handler routine (BHR) scheduling bits		
LCIWOFF Number of bytes		
24(18)		LCIBHSET BHR or buffer prefix (BH) set address
LCIBHRST BHR status bits		
28(1C)		LCBACBP Pointer to the adapter control block (ACB) ***
		LCBACBOF Offset to NCP's ACB
32(20)		LCBPEPSC Subchannel of the EP equivalent line
		LCBEPCCB Pointer to EP 372X
LCBINDX Adapter information table (AIT) index		

*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

Line Work QCB (LCBLWQ)

(See “Queue Control Block for Input Queues” on page 1-884 for all bit definitions.)

Note: By format, this is an input QCB. Line work QCB is simply the name given to this particular input QCB.

36(24)		LCWIECB Pointer to the first element queued	
LCWMCBD Major control block displacement divided by 2			
40(28)		LCWLECB Pointer to the last element queued	
44(2C)		LCWLINK Pointer to the next QCB on the queue	
LCWPRKEY Protection key			
48(30)		LCWTSKEP Task entry point	
LCWSTAT Task and queue status			
52(34)		LCWSAVE Address of the save area pushdown list	
LCWSCHED Trigger scheduling priority	53(35) LCWSTATP PRELEASE flags	54(36) LCWPREL PRELEASE buffer count	
56(38)		LCWLUNK Pointer to the previous QCB on the queue	
LCWBHSCH BHR scheduling bits			

Logical Definition Section of the LCB (LCBLDEF) (used by level 5 for line scheduling)

60(3C) LCBLTCTP Line type command table pointer			
LCBLSTAT* First line status byte			
64(40) LCBDVBP Pointer to a device base for the device currently connected over the line			
LCBTYPEC* Line type code			
68(44) LCBMFLAG* LCB flags	69(45) LCBSNPM SSCP-NCP session control block (SNP) mask of the SSCP that issued the activate link	70(46) LCBLCOFF Offset to the channelization extension (LCC) (LPDA1)	71(47) LCBALARM Network Problem Determination Application (NPDA) alarm parameter (LPDA1)
LCBLLGN LLG number	LCBCORN Correlation number (LPDA2)		
72(48) LCBSSP Subtask sequence pointer		74(4A) LCBFEAT1* LCB features	75(4B) LCBLST2* Second line status byte
76(4C) LCBACTNS* Actions to be taken when unusual conditions arise on the line	77(4D) LCBSNPS Saved SNP mask	78(4E) LCBERPL Second-level error-recovery procedure (ERP) loop limit	79(4F) LCBERPC Second-level ERP loop limit
80(50) LCBEDEL Duration of the delay between second level ERP loops	81(51) LCBCOFFL Sub-block cutoff limit	82(52) LCBCOFFC Sub-block cutoff counter	83(53) LCBIOCOM* Input/output communication byte
84(54) LCBCSCNT Count of pending invite and contact commands for the line		86(56) LCBRID Resource ID of the line	
88(58) LCBCBBP Pointer to the committed buffers block			
LCBLST3* Third line status byte			

* Indicates a byte expansion follows.

92(5C) LCBCANDT* Channelization and tailing flag	93(5D) LCBSST* Link subsystem type	94(5E) LCBANSS Subarea undergoing auto network shutdown (ANS)
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Multipoint Extension

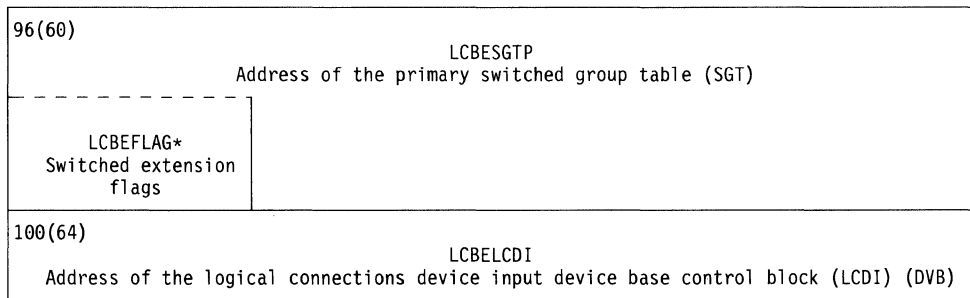
Line Suspended Sessions QCB (LCBLSSQ)

(See "Queue Control Block for Work Queues" on page 1-887 for all bit definitions.)

96(60)		LCS1ECB Pointer to the first element queued	
LCSMCBD Major control block displacement divided by 2			
100(64)		LCSLECB Pointer to the last element queued	
LCSSTAT* Prelease Flags			
104(68)		LCSLINK Pointer to the next QCB on the queue	
LCSPRKEY Protection key			
108(6C)	LCSSTAT Task and queue status	109(6D)	Reserved
112(70)		LCBESOTP Address of the service order table (SOT)	
LCBEPAS Pause between passes through the SOT			
116(74)	LCBENAKL Negative poll response limit	117(75)	LCBESERL Service-seeking scan limit
		118(76)	LCBMS Maximum number of sessions allowed
		119(77)	LCBAS Attempted sessions count
120(78)	LCBCS Suspended connections count	121(79)	LCBWS Connections work count
		122(7A)	LCBENOD Number of devices on this line
		123(7B)	LCBEDIG Number of devices remaining when deactivating line
124(7C)	LCBSOTCT BSC/SS devices in buffer delay not quiesced count for multipoint lines	125(7D)	LCBWFLGS* Line work flags

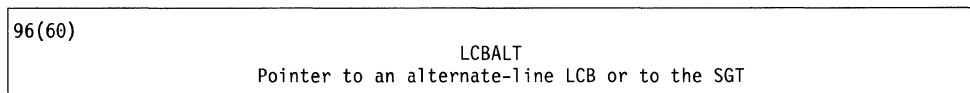
* Indicates a byte expansion follows.

Switched Extension



* Indicates a byte expansion follows.

Nonswitched Point-to-Point Extension



Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) LCISTATP		Prelease Flags
	1...	Preleased triggered
	.1..	Type Prelease = Conditional
	..1.	Type SE = Unconditional
60(3C) LCBLSTAT		First line status byte
	1...	Line is active. A line is active (can accept TP commands) from the completion of an Activate Line operation until the receipt by line management of a Deactivate Line request. A line is inactive (cannot accept TP commands) from the receipt by line management of a Deactivate Line request until the completion of an Activate Line operation.
	.1..	Line is in abnormal mode. A Reset or Deactivate is in progress for some device on this line. See LCBLST2 to determine the actual operation.
	..1.	Active session
	...1	Work scheduler is idle.
	.... 1...	Service seeking is in progress. Switched enable for call-in is active on this line.
	.... .1..	Reset Immediate or Deactivate Line Halt caused an immediate XIO to be issued on this line. See LCBLST2 to determine actual terminal operation.
	.... ..1.	Online Terminal Test (OLTT) is in progress.
	.... ...1	Wrap Test is in progress.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
64(40) LCBTYPEC		Line type code
	.1..	Extension exists.
	..1.	(The meaning of this bit is relevant only if bit 7, the switched line bit, is 1.) 1 = Line changes physical characteristics, through set mode, with each new telephone connection. 0 = Line has the same characteristics for every connection.
	...1	ANS is needed.
	.... 1...	ANS is delayed.
	.... .1..	BSC line
	.... ..1.	Multipoint line
	.... ...1	Switched line
68(44) LCBMFLAG		LCB flags
	1...	Buffer delay wait
	.1..	Critical situation message Write has started.
	..1.	Link problem determination aid (LPDA) is supported online.
	...1	LPDA test is in progress.
	.... 1...	LPDA test ended with errors.
	.... .1..	LPDA2 is supported on line.
	.... ..xx	LPDA retry counter
74(4A) LCBFPEAT1		LCB features
	1...	Multipoint tributary
	.1..	Point-to-point secondary
	..x.	Dial type: 1 = Auto 0 = Manual.
	...1	Speed change capability
	.... 1...	Multipoint backup
	.... .1..	Resource is eligible for NPA data collection.
	.... ..1.	TA/TD compatible (3745)
	.... ...x	Mode switch: 1 = EP 0 = NCP.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
75(4B) LCBLST2		Second line status byte
	1...	Deactivate line halt is in progress.
	.1..	Switch line mode is in progress (EP or NCP).
	..1.	Activate line is in progress.
	...1	Current dial method: 1 = Auto 0 = Manual.
	.... 1...	Monitor mode is in progress.
	.... .x..	Switched line mode bit: 1 = Backup 0 = Normal.
	.... ..x.	Monitor reset bit: 1 = Delay monitor reset. 0 = Reset now.
	.... ...1	Line scheduler interlock*
* Set to prevent any further activity while an LPDA test or a line-speed change is in progress.		
76(4C) LCBACTNS		Actions to be taken when unusual conditions arise on the line
	1...	Shutdown of this line is pending.
	.x..	Deactivate Line Orderly (DLO). Error status (when active): 1 = Error-terminate DLO 0 = No error-process DLO.
	..1.	Service suspended sessions
	...1	Single service seek
	.... 1...	Respond to the current read with an Reverse Interrupt (RVI).
	.... .x..	Negative poll response limit reached: 1 = Break logical connection. 0 = No break.
	.... ..x.	Negative poll response limit reached: 1 = Reschedule Read. 0 = Terminate.
	.... ...1	Monitor line for attention or disconnect.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
83(53) LCBIOCOM		Input/output communication byte
	1... ..	Partial block was sent.
	.1.. ..	Session suspension is required.
	..1. ..	Send ID.
	...1 ..	Transparent text selection
	.... 1..	End of text block (ETB) has been received.
	.... .1..	Conversational mode
	.... ..1.	BHR point-2 execution is required after input/output is completed.
	.... ...1	Last block ended with End of Text (ETX).
88(58) LCBLST3		Third line status byte
	1... ..	Line forced deactivated
	.1.. ..	Line forced deactivation is in progress.
	..1. ..	L5 scanner down
92(5C) LCBCANDT		Channelization and tailing flag
	1... ..	Line is connected to a channelized modem.
	.1.. ..	Line is tailed.
	..1. ..	Line is connected to channel A.
	...1 ..	For LPDA1, RECMS is postponed. For LPDA2, the port A line is acting as a service link.
	.... 1..	An LPDA2 test is in progress for this line on the service link.
	.... .1..	LPDA2 command is required for the secondary circuit.
	.... ..xx	For LPDA1, a count of tests in progress on modem channels B, C, and D. (The count is located in channel A's LCB only.) For LPDA2, channel indicator: 00 = Line is connected to channel A. 01 = Line is connected to channel B. 10 = Line is connected to channel C. 11 = Line is connected to channel D.
93(5D) LCBSST		Link subsystem type
	X'00'	No link subsystem
	X'01'	3863, 3864, 3865, and 3868 modems are supported.
	X'02'	3867 modem is supported.
	X'03'	586X is in normal (nonmigration) mode.
96(60) LCBEFLAG (switched extension)		Switched extension flags
	1... ..	Part of a switched group
	.1.. ..	Call-in line
	..1. ..	Callout line
	...1 ..	Telephone connections exists.
100(64) LCBLSTAT		Prelease flags
	1... ..	Preleased triggered
	.1.. ..	Type Prelease = Conditional
	..1. ..	Type SE = Unconditional

Offset/Field Name	Bit Pattern/ Hex Value	Contents
125(7D) LCBWFLGS		Line work flags
	1...	Clusters attached indicator
	.1..	No work indicator
	..1.	LPDA termination is required.

Channelization Extension

Program: NCP

Size in bytes: 20(14)

Created by: Line control block (LCB), only if channelization is specified

Pointer to: The LCBLCOFF offset field in the LCB

Function: Contains modem channelization and tailing extension information

If channelization exists and channel A

0(0)	LCCPMDR Pointer to the postponed RECMS	
4(4)	Reserved	6(6) LCCCORN Correlation number
8(8)	LCCPCHB Pointer to the LCB for modem channel B	
12(C)	LCCPCHC Pointer to the LCB for modem channel C	
16(10)	LCCPCHD Pointer to the LCB for modem channel D	

If channelization exists and not channel A

0(0)	LCCPMDR Pointer to the postponed RECMS	
4(4)	LCCPCHA Pointer to the LCB for modem channel A	

Lost Control Point Block

Program: NCP
Size in bytes: 28(1C) plus prefix
Created by: NCP generation
Pointer to: CXTLCP in the link-edit map
Function: Used for lost control point generation

-8(8) - -1(1)	
	CXTLCP identifier
0(0) - 27(1B)	
	Lost control point process queue**

** See the input queue control block (QCB) for field definitions. Priority is immediate. Task pointer is CXDALCP.

Line Control Selection Table

- Program:** NCP
- Size in bytes:** 20(14) per entry; number of entries is defined at NCP generation
- Created by:** NCP generation, one for each multiple terminal access (MTA) SS line
- Pointer to:** The SYSLCSP field in the extended halfword direct addressables control block (HWE) or the table of LCST pointers
- Function:** Used to change character control block (CCB) control fields for MTA

0(0) LCSTLGTP Line group table (LGT) address			
4(4) LCSTRTDT Received translate decode table address		6(6) LCSTTTDT Transmit translate decode table address (high-order byte). The low-order byte is the character to be translated.	7(7) LCSTSMDE Set mode serial data (SDF) constant
8(8) LCSTSTBL State table address		10(A) LCSTRTRY Text error retry limit	11(B) LCSTBCUT Buffer cutoff limit (receive)
12(C) LCSTCRTN Carriage return rate factor (SS only)	13(D) LCSTLSIZ Maximum print line size (SS only)	14(E) LCSTC Compare byte (TWX terminals only)	15(F) LCSTM Mask byte (TWX terminals only)
16(10) LCSTSPED Line speed		18(12) Reserved	

Logical Unit Block Extension (LUX) Data Area

Program: NCP
Size in bytes: 128(80)
Created by: NCP generation and dynamically
Pointer to: The LUXLDAP field in the LUX and the LDALUXP field in the LDA (if the LDA is in a pool)
Function: Contains PLU-to-SLU and SLU-to-PLU data information fields

0(0)	LDALUXP
Pointer to the associated LUX control block (or to the next LDA if the LDA is in a pool)	

PLU-to-SLU Status Data Fields (Outbound)

4(4)	LDAOFSQ	6(6)	LDAOFRH
Transmission header (TH) sequence number of the last first-in-chain or only-in-chain request PIU		Request/response header (RH) of the last first-in-chain or only-in-chain request PIU	
8(8)	LDAOFRH (continued)	9(9)	LDAOQNSQ
		TH sequence number of the last normal-flow PIU request	
		11(B)	LDAOQNRH
		RH of the last request PIU	
12(C)	LDAOQNRH (continued)	14(E)	LDAOQNRU
		First 5 RU bytes of the last normal-flow PIU request	
16(10)	LDAOQNRU (continued)		19(13)
			LDAOSNSQ
			TH sequence number of the last normal-flow PIU response
20(14)	LDAOSNSQ (continued)	21(15)	LDAOSNRH
		RH bytes 0 and 1 of the last normal-flow PIU response	
		23(17) - 27(1B)	LDAOSNRU
First 5 RU bytes of the last normal-flow PIU response			

28(1C) LDAOQESQ TH sequence number of the last expedited-flow PIU request	30(1E) LDAOQERH RH of the last expedited-flow PIU request
32(20) LDAOQERH (continued)	33(21) - 37(25) LDAOQERU First 5 RU bytes of the last expedited-flow PIU request
	38(26) LDAOSESQ TH sequence number of the last expedited-flow PIU response
40(28) LDAOSERH RH bytes 0 and 1 of the last expedited-flow PIU response	42(2A) - 46(2E) LDAOSERU First 5 RU bytes of the last expedited-flow PIU response
	47(2F) Reserved

SLU-to-PLU Status Data Fields (Inbound)

48(30) LDAIFSQ TH sequence number of the last first-in-chain or only-in-chain PIU request	50(32) - 52(34) LDAIFRH
RH of the last first-in-chain or only-in-chain PIU request	
53(35) LDAIQNSQ TH sequence number of the last normal-flow PIU request	55(37) - 57(39) LDAIQNRH
RH of the last normal-flow PIU request	
58(3A) - 62(3E) LDAIQNRU	
First 5 RU bytes of the last normal-flow PIU request	
63(3F) - 64(40) LDAISNSQ	
TH sequence number of the last normal-flow PIU response	
65(41) LDAISNRH RH bytes 0 and 1 of the last normal-flow PIU response	67(43) - 71(47) LDAISNRU
First 5 RU bytes of the last normal-flow PIU response	
72(48) LDAIQESQ TH sequence number of the last expedited-flow PIU request	74(4A) - 76(4C) LDAIQERH
RH of the last expedited-flow PIU request	
77(4D) - 81(51) LDAIQERU	
First 5 RU bytes of the last expedited-flow PIU request	
82(52) LDAISESQ TH sequence number of the last expedited-flow PIU response	
84(54) LDAISERH RH bytes 0 and 1 of the last expedited-flow PIU response	86(56) - 90(5A) LDAISERU
First 5 RU bytes of the last expedited-flow PIU response	
91(5B) LDADFIND* Data flow indicators	

* Indicates a byte expansion follows.

92(5C) LDACYP01 Byte 26 of RSP (BIND)	93(5D) LDACYP02 Byte 27 of RSP (BIND)	94(5E) - 101(65) LDASESSK
Cryptography session key		102(66) - 109(6D) LDASEED
Cryptography seed key		110(6E) - 117(75) LDAOXNRU
First 8 RU bytes of the last normal-flow PIU request (outbound)		118(76) - 125(7D) LDAIXNRU
First 8 RU bytes of the last normal-flow PIU request (inbound)		126(7E) Reserved

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
91(5B) LDADFIND		Data flow indicators
	x... ..	Last data direction: 1 = SLU-to-PLU (inbound) 0 = PLU-to-SLU (outbound)
	.x..	Last data flow type: 1 = Expedited 0 = Normal
	..x.	Last PIU type: 1 = Response 0 = Request
	...1	Secondary LU (SLU) expedited response is outstanding
	.... 1...	Primary LU (PLU) expedited response is outstanding
	.... .x..	Cryptography information: 1 = Cryptography is present 0 = Cryptography is not present
	.... ..xx	Reserved

Processor-NCP Dynamic PSA

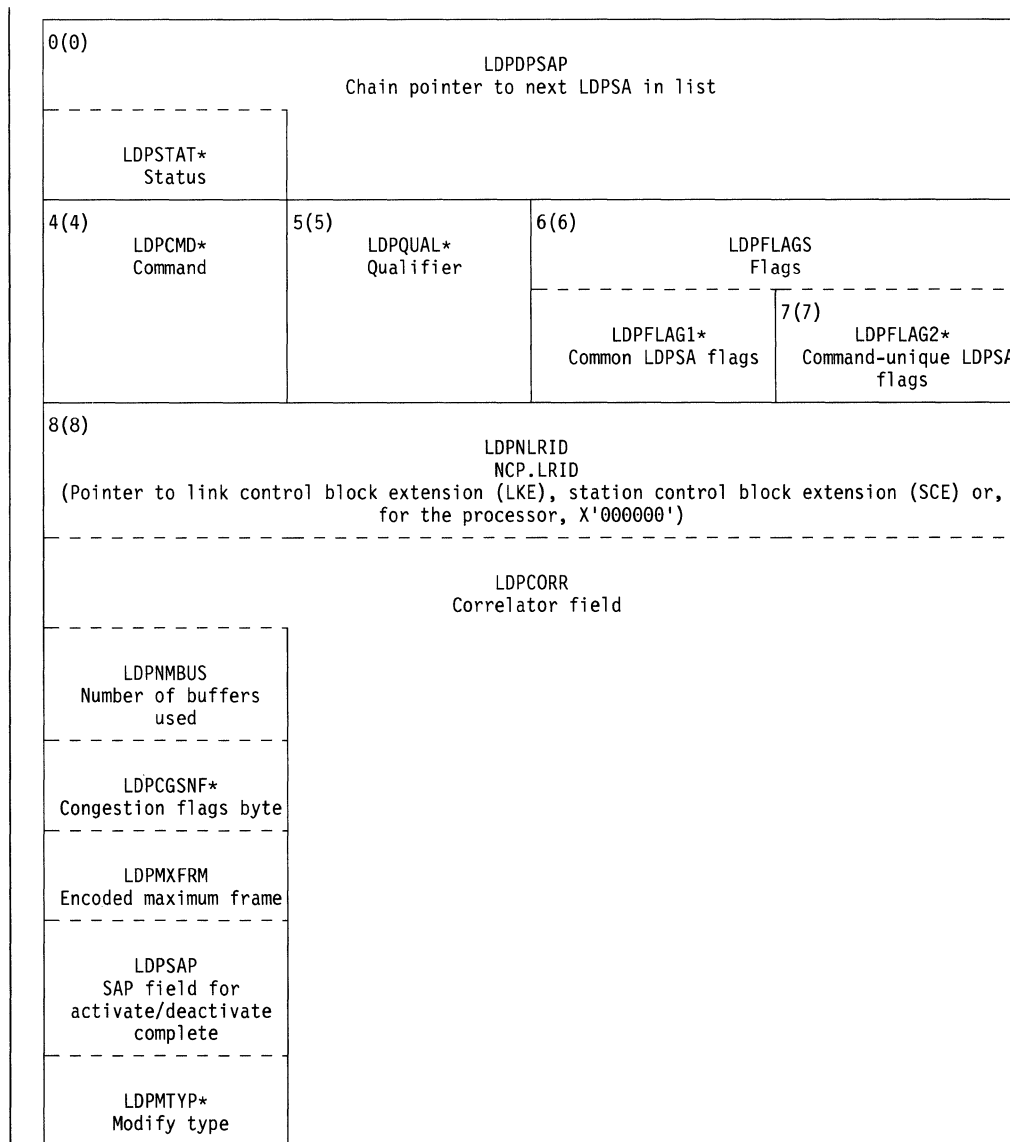
Program: NCP

Size in bytes: 28(1C)

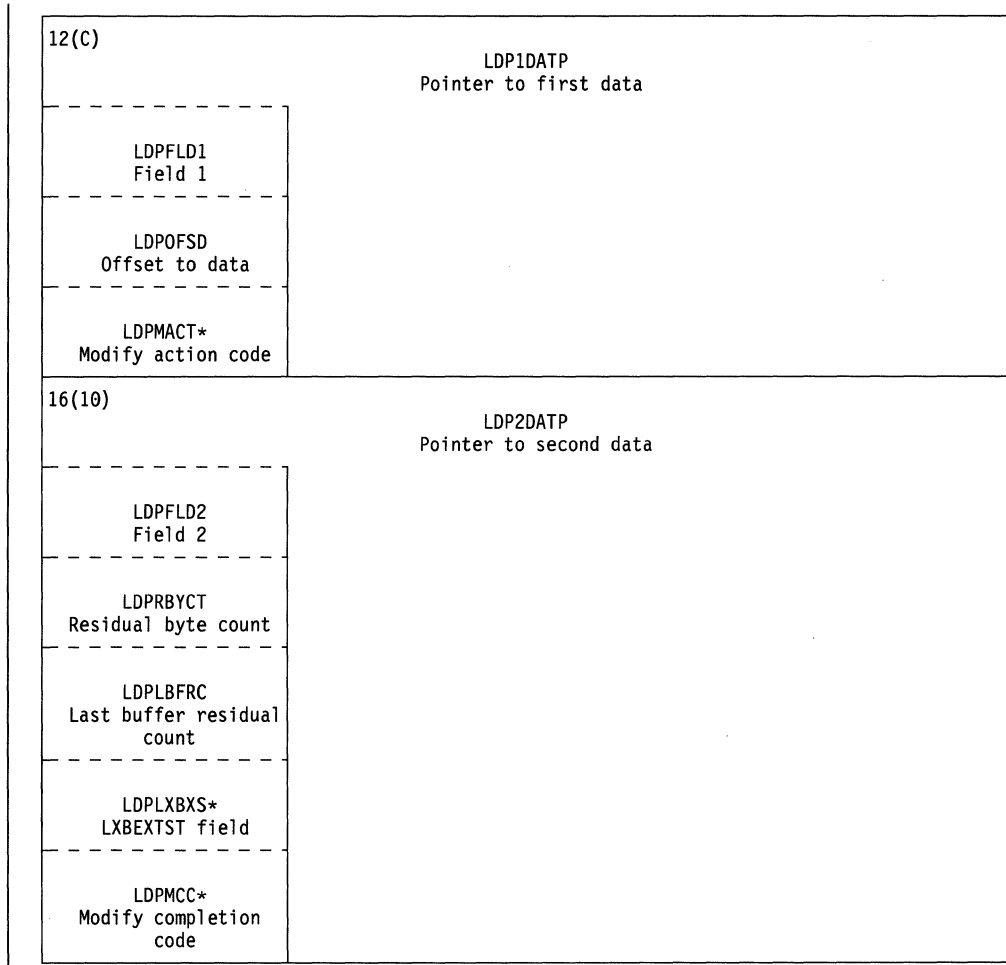
Created by: NCP generation

Pointed to by: The LPSALDPS field in the processor--NCP parameter/status area (LPSA), the LDPDPSAP field in the processor--NCP dynamic PSA (LDP), and the LACBFDPS, LACBNDPS, and LACBLDPS fields in processor--NCP adapter control block (LACB)

Function: Contains commands from the processor and associated information. See Volume 2 Section 20, "Processor--NCP Parameter/Status Area Layouts," for the layouts of specific command/qualifiers



* Indicates a byte expansion follows.



* Indicates a byte expansion follows.

20(14)			
LDPF3456 Fields 3, 4, 5, and 6			
LDPLLRID Processor.LRID			
LDPRETDT Retrieved data pointer			
LDPFLD34 Fields 3 and 4		22(16)	
LDPFLD56 Fields 5 and 6			
LDPLXBST LXBSTAT field		LPDTPIUL Total PIU length	
LDPCLST Completion status		LDPFLD5 Field 5	23(17) LDPFLD6 Field 6
LDPCLCD Completion code		LDPDRADR Received DLC address	LDPOFFER Offset to error
LDPFLD3 Field 3	21(15)		LDPNPAF2* NPA interval flags 2
	LDPFLD4 Field 4	LDPNPAF1* NPA interval flags 1	
LDPSTRS Stop reason			
LDPABTRS* Abort reason			
LDPACKCT ACK count			
LDPCLCB* Completion code			
24(18)			
LDPSEQN Sequence counter			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
0(0) LDPSTAT		Status
	1...	LDP has been processed once (LDPPR1)
	.1..	LDP has been suspended (LDPSUSP)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) LDPCMD		Command
	X'01'	Activate complete
	X'02'	Connect confirm
	X'03'	Connect indicate
	X'04'	Deactivate complete
	X'05'	Disconnect confirm
	X'06'	Disconnect indicate
	X'07'	Halt complete
	X'08'	ID received
	X'09'	Load/Dump
	X'0A'	Notify
	X'0B'	NPA complete
	X'0C'	PIU
	X'0D'	RAS complete
	X'0F'	Resource definition complete
	X'10'	Retrieve complete
	X'11'	Station delete complete
	X'12'	Stop
	X'13'	Trace
	X'14'	NOP
	X'15'	Message
5(5) LDPQUAL		Qualifier
		Activate complete
	X'10'	Enable
	X'20'	Dial
	X'30'	Service access point (SAP)
		Deactivate complete
	X'00'	Link
	X'10'	Service access point (SAP)
		Halt complete
	X'10'	Halt line force deactivate
		Load/Dump
	X'10'	Initialization complete
	X'20'	Initialization indication
	X'30'	Required indication

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		Notify
	X'10'	SA ACK
	X'15'	SA NACK
	X'20'	Flow control
	X'30'	NDPSA error
	X'50'	Statistical counters
	X'51'	Permanent station error statistics
	X'52'	Permanent line error statistics
	X'53'	CMIP status
	X'54'	Station alert statistics (LDPSTALT)
	X'55'	Link configuration data statistics (LDPSTLCD)
	X'70'	Intensive mode data
	X'71'	Intensive mode normal end
	X'72'	Intensive mode last record
	X'90'	Station contacted
	X'92'	Call indicate
	X'A0'	CSS congestion status
	X'A2'	CSS line congestion status (LDPLCGN)
	X'B0'	SIT trace aborted
	X'C0'	Permanent link error
	X'D0'	Permanent station error
		NPA complete
	X'10'	Start
	X'20'	Stop
	X'22'	Stop all
	X'30'	Collect
	X'40'	CMIP
		RAS complete
	X'10'	LL2
	X'20'	LPDA
	X'50'	Start wrap
	X'52'	Stop wrap
	X'54'	Wrap test complete
		Resource definition complete
	X'10'	Initial
	X'20'	Update
	X'30'	Modify (LDPRDMC)
		Stop
	X'10'	Line complete
	X'20'	Station immediate complete
	X'22'	Station soft complete
		Trace
	X'10'	Start complete
	X'20'	Stop complete
	X'30'	Record indicate
6(6) LDPFLAG1		Common LDP flags
	1... ..	Service request for processor
	.1.. ..	Service request for line

Offset/Field Name	Bit Pattern/Hex Value	Contents
7(7) LDPFLAG2		Command-unique flags
	x... ..	For PIU or Notify Flow Control LDP: 1 = Pacing request
		For NPA LDP: 1 = Last collect
		For Notify Permanent Link Error LDP: 1 = Logical resource failure due to failure of associated physical resource
		For Notify Statistics CMIP LDP: 1 = CMIP alarm
	.x... ..	For Notify Permanent Station Error LDP: 1 = Station towers destroyed
		For PIU or Notify Flow Control LDP: 1 = End of window indicator
		For NPA LDP: 1 = Unsolicited collect
	...x	For Notify Statistics LDP: 1 = Generic alert subvectors (could include SVs 53 and 56) 0 = Link event subvectors
		For PIU or Notify Flow Control LDP: 1 = Pacing response
	...x	For PIU or Notify Flow Control LDP (LDPCWRI): 1 = Change window reply indicator
	.... x...	For Notify Statistics LDP (LDPLSTC): 1 = Statistical counters associated with link resource 0 = Statistical counters associated with station resource
		For PIU or Notify Flow Control LDP (LDPRWI): 1 = Reset window indicator

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	.... xxxx	Protocol type (LDPLIMIT) 0000 = All 0001 = SDLC 0010 = ESCA 0011 = TRA 1000 = Frame-relay (LDPFR) Note - Protocol type is defined for the following LDPs when flowing on the processor slot: Message indication, NOP, Notify NDPDA error, Notify CSS Congestion Status, NPA Stop Complete, NPA Collect An unsolicited LPDA2 test is required (LDPLUTR)
8(8) LDPCGSNF		CSS congestion status flags
	x... ..	1 = Ultimate congestion entered 0 = Ultimate congestion exited
	.x.. ..	1 = Critical congestion entered 0 = Critical congestion exited
	..x.	1 = Limited_2 congestion entered 0 = Limited_2 congestion exited
	...x	1 = Limited_1 congestion entered 0 = Limited_1 congestion exited
	.... xxxx	Reserved
	X'F0'	CSS in ultimate congestion (LDPCGUL)
	X'70'	CSS in critical congestion (LDPCGCR)
	X'30'	CSS in limited_2 congestion (LDPCGL2)
	X'10'	CSS in limited_1 congestion (LDPCGL1)
	X'00'	Normal CSS congestion (LDPCGNO)
8(8) LDPMTYP		Modify type
	X'01'	Modify was for a frame-relay DLCI (LDPMTYP1)
12(C) LDPMACT		Modify action code
	X'01'	Modify was to delete the DLCI (LDPMD)
	X'02'	Modify was to add the DLCI (LDPMA)
	X'03'	Modify was to set DLCI inactive (LDPMDIN)
	X'04'	Modify was to set DLCI active (LDPMDA)
16(10) LDPLXBXS		LXBEXTST field
	.... .1..	LPDA2 or V25 bis dial failure (LDPDILF)
16(10) LDPMCC		Modify completion code
	X'00'	Resource definition modify was accepted (LDPMCC0)
	X'01'	Resource definition modify was not accepted because the modify indicated an ACTIVE status for a DLCI not present (LDPMCC1)
	X'03'	Resource definition modify was not accepted because the modify indicated a DELETE status for a DLCI not present (LDPMCC3)
	X'04'	Resource definition modify was not accepted because the maximum DLCIs per CLP has been reached (LDPMCC4)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) LDPABTRS		Abort reason
	X'01'	Suspected NCP error (used with LDPABTRS for SIT) (LDPNCPER)
	X'02'	Suspected CBC error (used with LDPABTRS for SIT) (LDPCLER)
	X'04'	Logical trace aborted because logical station deleted (used with LDPABTRS for SIT) (LDPSTDLT)
20(14) LDPCPLCB		Completion code
	X'00'	RDI accepted (LDPCC00)
	X'01'	RDI data already received for resource (LDPCC01)
	X'02'	Error in resource definition data (LDPCC02)
	X'03'	Configuration mismatch or unsupported protocol specified (LDPCC03)
	X'04'	No stations available (ESCA, Frame Relay) (LDPCC04)
	X'05'	LIC under concurrent maintenance (LDPCC05)
	X'06'	Microcode usage tier mismatch (LDPCC06)
	X'07'	DMA error reading RDI data (LDPCC07)
	X'08'	Internal processor problem (LDPCC08)
	X'09'	Station did not respond to test command frame (LDPCC09)
	X'0A'	Token-ring adapter ring insertion failed (LDPCC0A)
	X'0B'	Token-ring adapter in a beacon state (LDPCC0B)
	X'0C'	No established path for stations IPL ports (LDPCC0C)
	X'0D'	Processor congested (LDPCC0D)
	X'0E'	No ESCC enabled by operator at TSP console for this line (LDPCC0E)
	X'10'	Hardware error in TRM/TIC detected at initialization (LDPCC10)
	X'11'	Device detected with same MAC address (LDPCC11)
	X'12'	Congestion—request for parameters failed (LDPCC12)
	X'13'	Non-specific error—microcode (LDPCC13)
	X'14'	Lobe media error (LDPCC14)
	X'15'	Token-ring failure (LDPCC15)
	X'16'	Parameters server error—also remove command has been received (LDPCC16)
	X'17'	Abnormal signal on token-ring (LDPCC17)
	X'18'	Congestion—timeout occurred (LDPCC18)
	X'19'	Adjacent DLCI not active when the SSCF is X'A801' or X'A105' (LDPCC19)
	X'1A'	Adjacent DLCI not present (LDPCC1A)
	X'1C'	Connection already exists for this DLCI (LDPCC1C)
22(16) LDPNPAF1		NPA interval flags 1
	.... ..1.	Interval 10 (LDPNPA10)
	.... ..1	Interval 9 (LDPNPA9)
23(17) LDPNPAF2		NPA interval flags 2
	1...	Interval 8 (LDPNPA8)
	.1..	Interval 7 (LDPNPA7)
	..1.	Interval 6 (LDPNPA6)
	...1	Interval 5 (LDPNPA5)
	.... 1...	Interval 4 (LDPNPA4)
	.... .1..	Interval 3 (LDPNPA3)
	.... ..1.	Interval 2 (LDPNPA2)
	.... ..1	Interval 1 (LDPNPA1)

LMI Frame Formats

Program: NCP

Size in bytes: Variable, depending upon standard supported and type of status and/or number of DLCs for which status is included. Each LMI frame begins with a common LMI frame header, an information element (IE) header, a report type IE, another IE header, and a link integrity verification IE for a total of 16(10) (ANSI standard) or 15(F) (CCITT standard) bytes.

Function: Generates structures and constants for the LMI frames that NCP builds.

Common LMI frame header

0(0) LFRCTL* Control field	1(1) LFRPD* Protocol discriminator	2(2) LFRCR* Call reference	3(3) LFRMT* Message type
4(4) LFRLS* Locking shift (Only present if the ANSI version of the LMI is being used)			

* Indicates a byte expansion follows.

Information Element (IE) Header

0(0) LFRIEI* Information element identifier	1(1) LFRIEL Length of contents, excludes identifier and length fields
--	---

* Indicates a byte expansion follows.

Report Type Information Element (IE)

	2(2) LFRRTI* Information element identifier	3(3) LFRRTL Length of contents, excludes identifier and length fields X'01'
4(4) LFRRTT* Report type		

* Indicates a byte expansion follows.

Link Integrity Verification (LIV) Information Element

		2(2) LFRLVI* Information element identifier	3(3) LFRLVL Length of contents, excludes identifier and length fields X'02'
4(4) LFRLVSS Send sequence number of originator (Valid values: 1-255)	5(5) LFRLVRS Last received sequence number (Valid values: 0-255)		

* Indicates a byte expansion follows.

Permanent Virtual Connection (PVC) Status Information Element

		2(2) LFRPVI* Information element identifier	3(3) LFRPVL* Length of contents, excludes identifier and length fields
4(4) LFRPVADD PVC DLCI		6(6) LFRPVST* PVC status	7(7) - 9(9) LFRPVBW
LFRPVADH* PVC DLCI (High byte)	5(5) LFRPVADL* PVC DLCI (Low byte)		
Bandwidth data (optional)			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LFRCTL		Control field
	X'03'	Unnumbered information frame (LFRCTLUI)
1(1) LFRPD		Protocol discriminator
	X'08'	Q.931 (LFRPQ931)
2(2) LFRRCR		Call reference
	X'00'	Dummy call reference (LFRCRDUM)
3(3) LFRMT		Message type
	X'75'	Status enquiry message (LFRMTSEM)
	X'7D'	Status message (LFRMTSM)
4(4) LFRLS		Locking shift (ANSI only)
	X'95'	Locking shift used by LMI (LFRLS95)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LFRIEI	X'0F'	Information element identifier Highest comprehension required report type (LFRIEHC)
2(2) LFRRTI	X'01' X'51'	Information element identifier Report type information element (ANSI standard) (LFRRTIRT) Report type information element (CCITT standard) (LFRRTICC)
4(4) LFRRTT	X'00' X'01' X'02'	Report type Full status (status of all PVCs on the bearer channel) (LFRRTTF) Link integrity verification only (LFRRTTL) Single PVC asynchronous status (LFRRTTA)
2(2) LFRLVI	X'03' X'53'	Information element identifier LIV information element (ANSI standard) LIV information element (CCITT standard)
2(2) LFRPVI	X'07' X'57'	Information element identifier PVC status information element (ANSI standard) (LFRPVIPV) PVC status information element (CCITT standard) (LFRPVICC)
3(3) LFRPVL	X'03' X'06'	Length of contents, excludes identifier and length fields Length of contents of PVC status information element without bandwidth data (LFRPVLNB) Length of contents of PVC status information element with bandwidth data (LFRPVLWB)
4(4) LFRPVADH	x... .. ..x... .. ..xx xxxx	PVC DLCI (high byte) First DLCI extension indicator (LFRPVX1) 1 = Last byte of DLCI 0 = Not last byte of DLCI Reserved DLCI most significant bits
5(5) LFRPVADL	x... .. ...x x... .... .xxx	PVC DLCI (low byte) Second DLCI extension indicator (LFRPVX2) 1 = Last byte of DLCI 0 = Not last byte of DLCI DLCI least significant bits Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) LFRPVST		PVC status
	x... ..	PVC status extension indicator (LFRPVX3) 1 = Last byte of PVC status 0 = Not last byte of PVC status
	0xxx	Reserved
	.... x...	DLCI new indicator (Not used for status message(asynchronous)) (LFRPVNW) 1 = PVC is new 0 = PVC is already present
	.... .x..	DLCI deleted indicator (Only defined for status message(asynchronous)) (LFRPVDE) 1 = PVC is deleted 0 = PVC is present
	.... ..1.	DLCI active indicator (LFRPVAC) 1 = PVC is active 0 = PVC is inactive
	.... ...x	Reserved

Line Group Table (EP)

Program: EP

Size in bytes: Varies (10 bytes per GROUP definition statement)

Located in: Immediately follows the character control blocks (CCBs)

Created by: PEP generation

Pointer to: The CCBLGT field in the CCB

Referenced by: CYKNUC, CYLNUC, CYLCSP, and CYKSL

Function: Contains information about a group of lines. The LGT contains an entry for each GROUP definition statement coded by the user (EP only). See the LGT (NCP) for NCP line groups.

0(0) LGTREPLY Reply time-out in tenths of a second	1(1) LGTJET Text time-out in tenths of a second	2(2) LGTCHARS Ending TTY character	3(3) (LCTEOB)**
4(4) LGTLINE* Line information byte	5(5) LGTEOT End of transmission for RPQ and TTY (optional)	6(6) LGTENDCR* TTY end character controls	7(7) LCTQTCNT Number of character delays for an SS line quiesce
8(8) LGTTFAC Enable time factor	9(9) LGTENABT Enable initial timer		

* Indicates a byte expansion follows.

** If bit 3 of byte LCTLINE is off, this byte contains the End of Block (EOB) character. If bit 3 of LGTLINE is on, this byte contains the second ending TTY character.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
4(4) LGTLINE		Line information byte
	...x	Presence of TTY ending characters: 0 = Present 1 = Not present.
	.... x...	Data character detect security: 0 = Security (SS lines) 1 = No security (BSC).
	.... .x..	Line type: 0 = Switched 1 = Nonswitched.
	.... ..x.	XON character control: 0 = Utilize 1 = Inhibit.
	.... ...x	XOFF character control: 0 = Utilize 1 = Inhibit.
6(6) LGTENDCR		TTY end character controls
	1...	FIGS-X-LTRS sequence for End of Transmission (EOT). The value of X is byte 5 (LGTEOT).
	.1..	4-character sequence for EOT. The value of the character is in byte 5 (LGTEOT).
	..1.	FIGS-Y sequence for EOB. The value of Y is in byte 3 (LGTEOB).
	...1	4-character ending sequence for EOB. The value of the character is in byte 3 (LGTEOB).
	.... ..1.	5-character transmit-turnaround-delay flag
	.... ...1	10-character transmit-turnaround-delay flag

Line Group Table (NCP)

Program: NCP
Size in bytes: Variable, depending on line type
Created by: NCP generation
Pointer to: The CCBLGTP field in the character control block (CCB)
Function: Contains line control parameters

0(0) LGTTYPE* Terminal type identification	1(1) LGTSHTAP Shoulder tap time-out state change mask	2(2) LGTENDR1 Receive text status/error recovery procedure (ERP) vector (RR)	
4(4) LGTENDR2 Receive test rely status/ERP vector (RNR)		6(6) LGTENDR3 Receive control reply status/ERP vector (NS)	
8(8) LGTTIMEA** Control time-out command (error time-out) (modulo 8)	9(9) LGTTIMEB** Receive text (long) time-out command	10(A) LGTTIMEC** Transmit time-out command (shoulder-tap)	11(B) LGTTIMED** Response time-out command
12(C) LGTXIPCF Transmit initial LCD/PCF value	13(D) LGTRIPCF Receive initial LCD/PCF value	14(E) LGTINST Initial level-2 state mask	15(F) LGTCMRTY Control mode ERP retry limit
16(10) LGT CMD Pointer to the command decode table		18(12) LGT LATO Remote activity time field	
		LGT INCHR Initial control character	19(13) LGT COUNT Write End of Transmission (EOT) command initial control character count
20(14) LGT WACKL BSC received WACK limit value	21(15) LGT TTD BSC received TTD limit value	22(16) LGT SYN BSC SYN character line code	23(17) LGT RIST Receive initial state set after connect
LGT SELG SS selection address length	LGT POLLG SS poll address length	LGT PADCT SS motor start pad count	
LGT RX21 X.21 retry time	LGT XDLY SDLC initial reply time-out		

* Indicates a byte expansion follows.

** Error time-outs are expressed as X'Cx'. Go to the time value select table control block (TVS) and displace into the TVS by a value of x for timer values. Shoulder tap time-outs are X'8x'.

BSC Line and EBCDIC Characters

24(18) LGDLEEB DLE	25(19) LGTETBE ETB EBCDIC	26(1A) LGDLEOT DLE	27(1B) LGTEOTE EOT EBCDIC
28(1C) LGDLES DLE	29(1D) LGTSTXE STX EBCDIC	30(1E) LGDLEIB DLE	31(1F) LGTITBE ITB EBCDIC
32(20) LGDLE0 DLE	33(21) LGTACK0 ACK0	34(22) LGDLE1 DLE	35(23) LGTACK1 ACK1
36(24) LGDLER DLE	37(25) LGTRVIE RVI EBCDIC	38(26) LGDLEEQ DLE	39(27) LGTENQE ENQ EBCDIC
40(28) LGTNAKE NAK EBCDIC	41(29) LGTSOHE SOH EBCDIC	42(2A) LGDLEEX DLE	43(2B) LGTETXE ETX EBCDIC
44(2C) LGDLEW DLE	45(2D) LGTWACK WACK	46(2E) LGTSOHA SOH ASCII	47(2F) LGTSTXA STX ASCII
48(30) LGTETBA ETB ASCII	49(31) LGTETXA TEX ASCII	50(32) LGTEOTA EOT ASCII	51(33) LGTITBA ITB ASCII
52(34) LGTENQA ENQ ASCII	53(35) LGTNAKA NAK ASCII	54(36) LGDLEA DLE ASCII	

SS Line and EBCDIC Control Characters
 (The label used is dependent on the terminal type.)

24(18) LGTUPPER Upshift	25(19) LGTETB2 Circle B	26(1A) LGTLOWER Down shift	27(1B) LGTEOT2 Circle C or H
		LGTEOT3 Letters	LGTTEOT EOT
28(1C) LGTEOT1 Circle C	29(1D) LGTICRD Circle D	30(1E) LGTVTAB Vertical tab	31(1F) LGHTAB Horizontal tab
LGTWFIG FIGS	LGTWLR Letters	LGTWNULL Null	LGTHT Horizontal tab
LGTCIRC Circle C	LGTTNUL Null	LGTTVT Vertical tab	
	LGTSTX1 Space or carriage return		
32(20) LGTLF Line feed	33(21) LGTCLRF Carriage return	34(22) LGTSPACE Space	35(23) LGTBKSP Backspace
LGTWTAB Tab	LGTWCR Carriage return		LGTSTX2 Carriage return or line feed
LGTTLF Line feed	LGTTCR Carriage return		
	LGTTCR Carriage return or line feed		

36(24) LGTPAD Pad	37(25) LGTIDLE Idle	38(26) LGTSPEC Reserved	39(27) LGTPRE Prefix
LGTPPAD Pad	LGTWEOB1 Idle	LGTWEOB2 EOB sequence	LGTTENQ ENQ
LGTPPAD Pad	LGTSTX3 Idle	LGTTSUB TWX substitution character	LGTWEOB3 ENQ
LGTPPAD Pad			
40(28) LGTDIRN NAK	41(29) LGTRES Restore	42(2A) LGTRSTP Reader stop	43(2B) LGTETB1 Circle B
LGTWEOB4 NAK	LGTWEO1 EOT1	LGTTXOFF XOFF control character	LGTDIRB Circle B
		LGTWEO2 EOT2	LGTTXON XON control character
			LGTWEO3 EOT3
44(2C) LGTDIRY Circle Y	45(2D) LGTBYB Bypass	46(2E) Reserved	47(2F) LGTDPF Punch off
LGTWEO4 EOT4	LGTWXCH1 Ending character	LGTWXCH2 Ending character	LGTWXCH3 Ending character
48(30) LGTPON Punch on	49(31) LGTDELET Delete	50(32) LGTESLSH Slash (EBCDIC)	51(33) LGTESPCE Space (EBCDIC)

SDLC Link

24(18) LGTRNRLT Length of time a Receive Not Ready (RNR) can be received continuously	26(1A) LGTFLAGS* SDLC LGT flags	27(1B) Reserved
--	---------------------------------------	--------------------

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Hex Value	Contents
0(0) LGTTYPE		Terminal type identification
	X'00'	2741
	X'02'	2740 basic
	X'04'	2740 station control
	X'06'	2740 transmit control
	X'08'	2740 station control with checking
	X'0A'	2740 transmit control with checking
	X'0C'	2740 with checking
	X'0E'	2740 Model 2 with checking
	X'14'	2740 Model 2 without checking
	X'1C'	1050
	X'1D'	Multiple terminal access (MTA)
	X'20'	TTYI-B (83B3)
	X'22'	TTYII (TWX)
	X'24'	TTY World Trade
	X'26'	TTYI-A (115A)
	X'4A'	BSC EBCDIC point-to-point station
	X'4C'	BSC EBCDIC control station
	X'4E'	BSC EBCDIC tributary station
	X'6A'	BSC ASCII point-to-point station
	X'6C'	BSC ASCII control station
	X'6E'	BSC ASCII tributary station
	X'8C'	SDLC primary station
	X'8E'	SDLC secondary station
26(1A) LGTFLAGS		SDLC LGT flags
	1... ..	Single line in the GROUP (LGTSING)

Line Interface Table**Program:** NCP**Size in bytes:** 1600(640); 100(64) entries of 16(10) bytes each**Created by:** NCP generation**Pointed to by:** The XUALIT, XUALITEP, and XUALITFP fields in the physical link adapter control block extension (XUA)**Function:** Pass information from medium access control (MAC) level-2 to MAC level-3.

Header

-4(4)	-2(2)
Table identifier C'LI'	Number of entries (100)

Entry

0(0)		
LITXUA1 XUA1B1XL or XUA1RLNF value		
LITFLAG* Flag byte		
4(4)		
LITSSBAC XUASSB or adapter check value		
		6(6) LITSSBC*
8(8)		
LITSSBAC (continued)		
12(C)	14(E)	15(F)
LITPARM RXCSTAT, XUARISTA, XUAAPCT, or XUATRM2S	LITMACS MAC status	LITETYPE* LIT entry type
LITPARM1*	LITPARM2	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LITFLAG		Flags
	1...	Last entry
	.1..	Busy entry
	..1.	Next entry to be filled
	.... 1...	L3 must set Buffer is Allocated to IP starting with second buffer of current frame (LITIPAL)
6(6) LITSSBC		SSB completion bytes
	1...	SSB command completion OK
12(C) LITPARM1		LIT parameters
	.... 1...	Non-FID2 I-frame received
15(F) LITETYPE		LIT entry type (See note.)
	1...	Dummy LIT entry
	X'01'	Ring status change
	X'03'	End Open
	X'04'	End Transmit
	X'06'	End Receive
	X'07'	End Close
	X'0A'	End Read Error Log
	X'0B'	Adapter check
	X'0C'	Second programmed/memory mapped input/output (PIO/MMIO) error
	X'0D'	Second direct memory access (DMA)/interrupt vector error due to token-ring interface coupler (TIC) / (TRP down)
	X'0E'	Unresolved error leg A
	X'0F'	Unresolved error leg B
	X'10'	Transmit list error
	X'13'	Open unsuccessful
	X'16'	IP frame discarded by L2, due to IPRATE or IPPOOL congestion
	X'1B'	Read adapter completion (beacon)
	X'1C'	Second PIO/MMIO error due to token-ring multiplexer (TRM)
	X'1D'	Second DMA/interrupt vector error due to TRM
	X'43'	End Transmit Initialization
	X'63'	End Receive Initialization (SCB clear)
	X'80'	Activation or deactivation of TIC trace (SCB clear)
	X'8C'	First PIO/MMIO error due to a TIC (dummy entry)
	X'8D'	First DMA/Initialization vector error due to a TIC (dummy entry)
	X'8E'	Level-2 interrupt on leg A when frozen or disconnected (dummy entry)
	X'8F'	Level-2 interrupt on leg B when frozen or disconnected (dummy entry)
	X'9C'	First PIO/MMIO error due to a TRM (dummy entry)
	X'9D'	First DMA/Initialization vector error due to a TRM (dummy entry)
	X'CB'	SCB clear dummy LIT entry

Note: See Figure 1-2 on page 1-510.

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
FLAG	ENTRY INFORMATION													MACS	ETYP
						SSB							XUARISTA	M.S.	'01'
						SSB								'03'	'03'
	First buffer					SSB						CSTAT	'04'	'04'	
	First RL			First buffer				Last receive list					CSTAT	M.S.	'06'
						SSB								'17'	'07'
						SSB							CTR	M.S.	'0A'
						Adapter check						XUATRM2S	M.S.	'0B'	
													XUATRM2S	M.S.	'0C'
													XUATRM2S	M.S.	'0D'
						SSB							M.S.	'0E'	
													XUATRM2S	M.S.	'0F'
						SSB								'03'	'13'
						SSB								M.S.	'1B'
													XUATRM2S	M.S.	'1C'
													XUATRM2S	M.S.	'1D'
														'23'	'43'
														'13'	'63'
														M.S.	'80'
														M.S.	'8C'
														M.S.	'8D'
														M.S.	'8E'
														M.S.	'8F'
														M.S.	'9C'
														M.S.	'9D'
														M.S.	'CB'

Figure 1-2. LIT Format for Different Entry Types

Line Control Block (SDLC)

Program: NCP

Size in bytes: 112(70) plus prefix

Created by: NCP generation, one for each link

Pointed to by: The RVTRP field in the resource vector table (RVT), the LXBLKBP field in the link XIO control block (LXB), the SCBLKB field in the station control block (SCB), the CUBLKB field in the common physical unit block (CUB), the LKELKBP field in the link control block extension (LKE), the CBBRESP field in the committed buffers block (CBB), and the CABLKBP field in the channel adapter control block (CAB)

Function: Contains fields for scheduling link operations and for maintaining link status information.

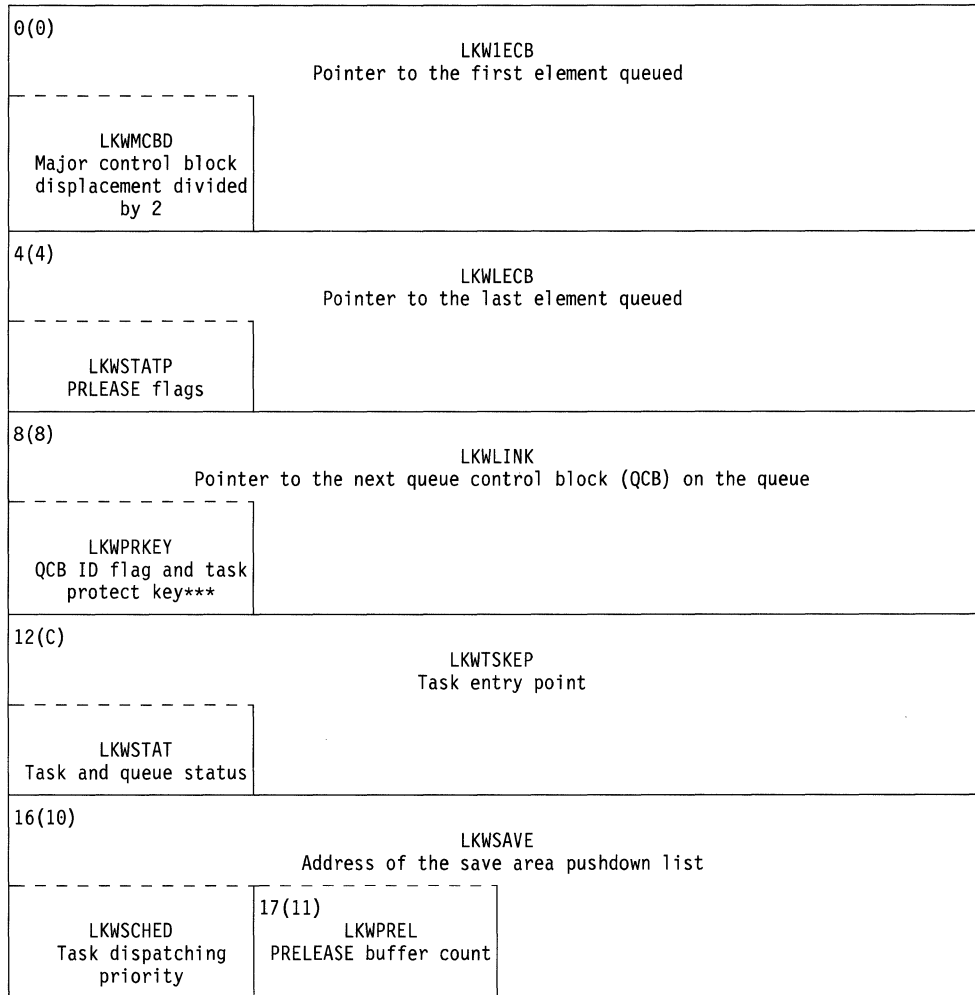
-8(8) - -1(1)

For the prefix format for the LKB, see the network performance analyzer prefix control block (NPF).

Link Queue Control Block (LKWQCB)

Note: This QCB must be at the same offset as the first QCB in the LCB, LMB, and TRB.

(See “Queue Control Block for Input Queues” on page 1-884 for all bit definitions.)



*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

20(14)			
LKWLUNK Pointer to the previous queue control block (QCB) on the queue			
LKWBHSC* Block handler routine (BHR) scheduling bits		21(15) LKWFWOFF Number of bytes / 4 to the queue counter	
24(18) LKBNWADR Element address of the link**		26(1A) LKBSTAT* Status of the link	27(1B) LKBTYPE* Link type
28(1C)			
LKBACBP Address of the receive adapter control block (ACB)***			
LKBMISCE* Miscellaneous flags			
32(20)			
LKBNACBP Pointer to the NACB** (ODLC only)			
LKBSPM* SSCP-NCP session control block (SNP) mask of SSCPs**			
36(24)			
LKBCCBP Pointer to CBB** (ODLC only)			
LKBLPDA* Link problem determination aid (LPDA) flag byte			
40(28)			
LKBLEP Pointer to the LKB extension (LKE)** (ODLC only)			
LKBTYPE2* Extended line type field**			
44(2C) LKBERSCT End RUN for secondary/configurable counter** (ODLC only)	45(2D) LKBSWST* Switched status and EP condition flags	46(2E) LKBERPL Error recovery procedure (ERP) limit	47(2F) LKBCANDT* Channelization and tailing flags

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKB, LMB, and TRB.

*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

48(30)			
LKBTCHN LKB chain pointer Points to an alternate link's LKB			
LKBBUFCT Buffer maximum for a receive operation			
52(34)	53(35)	54(36)	55(37)
LKBALARM Link Problem Determination Aid (LPDA) alarm parameter (LPDA1)	LKBLCOFF Offset to the channelization extension (LKC) (LPDA1)	LKBDRST* Miscellaneous flags	LKBDACRC Deactivate reason code (ODLC only)
LKBCORN Correlation number (LPDA2)			
56(38)			
LKBPUV Address of the PU vector table (PUV) entry			
LKBPUN Number of available entries in the PUV table			

* Indicates a byte expansion follows.

60(3C) LKBINDX Index into the adapter information table (AIT) for the adapter with which this line is associated**	61(3D) LKBSST* Link subsystem type	62(3E) LKBPSELX Index into SDLCST for the primary SDLC link	
64(40) LKBSSELX Index into SDLCST for the secondary SDLC link		66(42) LKBCSELX Index into SDLCST for the configurable SDLC link	
68(44) LKBCABP Pointer to the associated channel adapter control block (CAB)			
LKBCATOS Channel trace owner SNP mask			
72(48) LKBLTAC Line trace activation counter	73(49) LKBLKNL Link name length	74(4A) LKBHOSNP Hierarchical owner SNP mask	75(4B) LKBTYPE3* Extended link type3 field
76(4C) LKBGNDID Generated node id			
80(50) - 87(57) LKBNAME Link name			
88(58) LKBLESTS Pointer to the ODLC line error statistics (ODLC only)			
LKBRDURC Resource definition update (RDU) reason code (ODLC only)			
LKBNDBP Pointer to Ethernet network performance monitor (NPM) data (Only used during NCP initialization)			

* Indicates a byte expansion follows.

** This field must be at the same offset in the LKB, LMB, and TRB.

92(5C)	LKBLDPSA Pointer to processor-NCP dynamic PSA (LDPSA) in error (ODLC only)
LKBERPT Default length of pause between retry sequences for dynamic reconfiguration added PUs	
	LKBPUCCBP Pointer to protocol unique control block (Only used during NCP initialization) (ODLC only)

* Indicates a byte expansion follows.

** This field must be at the same offset in the LKB, LMB, and TRB.

96(60)	LKBRENDQ Pointer to the run end queue (ODLC and frame-relay only)		
LKBSRTL Default maximum number of retry sequences for dynamic reconfiguration added PUs			
	LKBLACBP Pointer to processor-NCP ACB (LACB) (Only used during NCP initialization) (ODLC only)		
100(64)	101(65)	102(66)	103(67)
LKBBTWNF Number of flags between frames (ODLC only)	Reserved	LKBFMT Save field for LKEFMT until NCP initialization (ODLC only)	LKBLPRI Order of service for link in multilink transmission group
104(68)			
LKBDLCIT Pointer to DLCI table			
108(6C)		110(6E)	
LKBLNPC Negative poll count for NTune (Inboard SDLC and channels only)		LKBLPPC Positive poll count for NTune (Inboard SDLC and channels only)	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
26(1A) LKBSTAT		Status of the link
	1...	The link is active; an Activate Link command has been successfully processed
	.1..	Activate Link is in progress
	..1.	Deactivate Line is in progress
	...1	Line quiesce is pending (auto network shutdown)
	.... 1..	Primary/secondary switch is in progress
	.... .1..	Link has been forced into deactivation
	.... ..1.	Online Terminal Test (OLTT) is in progress
	.... ...1	Wrap Test is in progress
27(1B) LKBTYPE		Link type
	1...	Leased
	.1..	Switched
	..1.	One or more clusters are attached to this link
	...1	One or more 3725s are attached to this link
	.... 1..	One or more terminals are attached to this link
	.... .x..	Current link mode: 1 = Secondary 0 = Primary
	.... ..1.	One or more subareas attached to link
	.... ...1	Resource is eligible for NPA data collection
28(1C) LKBMISCE		Miscellaneous flags
	1...	LPDA termination request
	.1..	Level-5 scanner down indicator
	..1.	TA/TD compatible
	...1	Disable/no trigger bit
	.... 1..	Predefined as primary
	.... .1..	Predefined as secondary
	.... ..1.	Port A line is acting as a service link
	.... ...1	Test for this link is in progress on the service link
36(24) LKBLPDA		LPDA flag byte
	1...	LPDA is supported on the link
	.1..	LPDA test is in progress
	..1.	LPDA test ended with errors
	...1	Issue a RUN XIO after the LPDA test
	.... x...	Status of the link at the start of the test: 1 = Busy 0 = Idle
	.... .1..	LPDA2 is supported on the line
	.... ..xx	LPDA retry counter

Offset/Field Name	Bit Pattern/Hex Value	Contents
40(28) LKBTYPE2		Extended line type field
	1... ..	ODLC line** (LKBODLC)
	.1... ..	Subarea dial line (LKBSWIN)
	..1... ..	Logical/physical definition** (LKBLOG)
		1 = Logical link 0 = Physical link
	...1... ..	Physical resource with associated logical resources (LKBPWLR)
	.... 1...	ESCA line (LKBSOCA)
	.... .1..	Frame-relay line (LKBFRLN)
	.... ..1.	Token-ring physical that supports IP data (LKBIPTR)
	.... ...1	Token-ring line (LKBNTLN)
		**These bits must be at the same location in the LKB, LMB, and TRB
45(2D) LKBSWST		Switched status and EP condition flags
	1... ..	Connection exists
	.1... ..	Link is in answer mode
	..1... ..	Dial is in progress
	...1... ..	Switched enable is pending
	.... 1...	Disable decision is pending
	.... .1..	Abandon connection has been received
	.... ..1.	Terminal called in
	.... ...1	This channel is an EP-only channel
47(2F) LKBCANDT		Channelization and tailing flag
	1... ..	Line is connected to a channelized modem
	.1... ..	Line is tailed
	..1... ..	Line is connected to channel A
	...1... ..	RECMS is postponed
	.... 1...	Miscellaneous data recorder (MDR) is queued
	.... .1..	LPDA2 command is required for the secondary circuit
	.... ..xx	For LPDA1, a count of tests on modem channels B, C, and D (The count is located in channel A's LKB only) For LPDA2, channel indicator:
		00 = Line is connected to channel A 01 = Line is connected to channel B 10 = Line is connected to channel C 11 = Line is connected to channel D
54(36) LKBDRST		Miscellaneous flags
	1... ..	FNA is in progress
	.1... ..	Limited resource
	..1... ..	LDPA2 test in progress on an ODLC line (LKBSLTP)
	...1... ..	High speed line (LKBHSPD)
	.... 1...	Ethernet resource
	.... .1..	CMIP supported
	.... ...1	NPM performance collection by transmission priority supported for this line (LKBNPTP)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
61(3D) LKBSST		Link subsystem type
	X'00'	No link subsystem
	X'01'	3863, 3864, 3865, 3868 modems, and 586X modems in migration mode are supported.
	X'02'	3867 link diagnostic units are supported.
	X'03'	586X is in normal (nonmigration) mode.
75(4B) LKBTYPE3		Extended link type3 field
	xxxx xx..	Reserved
	.... ..1.	Spare line (LKBSPAR)
	.... ...1	Redefinable line (LKBREDF)

Channelization Extension

Program: NCP

Size in bytes: 20(14)

Created by: Line control block (LKB), only if channelization is specified

Pointer to: The LKBLCOFF offset field in the LKB

Function: Contains modem channelization and tailing extension information

If channelization exists and channel A

0(0)	LKCPMDR Pointer to the postponed RECMS	
4(4)	Reserved	6(6) LKCCORN Correlation number
8(8)	LKCPCHB Pointer to the LKB for modem channel B	
12(C)	LKCPCHC Pointer to the LKB for modem channel C	
16(10)	LKCPCHD Pointer to the LKB for modem channel D	

If channelization exists and not channel A

0(0)	LKCPMDR Pointer to the postponed RECMS	
4(4)	LKCPCHA Pointer to the LKB for modem channel A	

Link Control Block Extension

Program: NCP

Size in bytes: 48(30)

Created by: NCP initialization

Pointed to by: The LKBLKEP field in the link control block (LKB), the QABLKEP field in the queue anchor block (QAB), and the LKENEXT field in the link control block extension (LKE)

Function: Contains common transport mechanism fields for ODLC I/O at a line level and resource definition fields for the line.

0(0)			
LKENCBP Pointer to next control block on the NCP-processor ACB (NACB) work queue			
LKENEXT Pointer to next LKE in pool			
4(4)			
LKEPCBP Pointer to previous control block on NACB work queue			
LKEXIN Next index in the NCP-processor dynamic PSA (NDP) command queue			
8(8)		10(A)	
LKECBID CBID		Reserved	
LKECBID1 (X'1E')		9(9) LKECBID2 (X'99')	
12(C)			
LKELIMLR Line's processor.LRID			
LKEFLAGS* Flags byte			
16(10)		17(11)	
LKEWQI0 NDP command queue index 0		LKEWQI1 NDP command queue index 1	
18(12)		19(13)	
LKEWQI2 NDP command queue index 2		LKEWQI3 NDP command queue index 3	
20(14)		21(15)	
LKEWQI4 NDP command queue index 4		LKEWQI5 NDP command queue index 5	
22(16)		23(17)	
LKEWQI6 NDP command queue index 6		LKEWQI7 NDP command queue index 7	

* Indicates a byte expansion follows.

24(18)	LKELKBP Pointer to line control block (LKB)	
	LKEFMT* Resource definition format**	
28(1C)	LKEPUCBP Pointer to protocol unique control block	
	LKERDBFC Resource definition data buffer count	
32(20)	LKEEWSC Error while sending chain pointer	
36(24)	LKENMVT Number of NMVTs pending for this line	38(26) Reserved
40(28)	LKELACBP Pointer to processor--NCP ACB (LACB)	
	LKEERSSC Number of stations with saved status indicator (SCEERSS) on (Frame-relay only)	
44(2C)	LKESTAP Pointer to the common PU block (CUB) for a station on the non-port A line (CLA only)	

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKE, LME, SCE, and TRE.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) LKEFLAGS		Flags byte
	1...	NPA start required (LKESTRT)
	.1..	Poll pause value of zero forced for remote loading (LKEPAUS)
	.... ...1	Physical resource with associated logical resources (LKEPWLR)

Offset/Field Name	Bit Pattern/Hex Value	Contents
24(18) LKEFMT		Resource Definition Format
	0... ..	1 = Station definition (LKESTAT) 0 = Link definition
	.x... ..	1 = Logical definition (LKELOG) 0 = Physical definition
	.... xxxλ	Protocol type (LKELIMT) 0000 = All (LKEALL) 0001 = SDLC (LKERVX) 0010 = ESCA (LKESOCA) 0011 = TRA (LKETRA) 1000 = Frame-relay (LKEFR)

Logical Link Control Block

Program: NCP

Size in bytes: 120(78)

Created by: NCP generation

Pointed to by: The LLULLBP field in the logical link adapter control block (LLUACB), the LLBATLLB field in the logical link block address table (LLBAT), the PLHLLBP field in the hashing table (HTAB), the PLBPLOBH and the PLBPLOBT fields in the physical link control block (PLB), and the XUADLLB field in the physical link adapter control block extension (XUA)

Function: Control block for a NTRI or frame-relay logical link

Name	Offset	Name	Offset
LLBACTPR	4 (4)	LLBLXLP	108 (6C)
LLBBAKPR	12 (C)	LLBL5FL	93 (5D)
LLBBID	0 (0)	LLBMISER	8 (8)
LLBBYLOB	68 (44)	LLBMXRTY	101 (65)
LLBB6SH	65 (41)	LLBNHLLB	76 (4C)
LLBCFRJ1	12 (C)	LLBNIAFL	96 (60)
LLBCFRJ2	13 (D)	LLBNLLQP	20 (14)
LLBCLIM	62 (3E)	LLBNMBA	8 (8)
LLBCONF	2 (2)	LLBNSBP	104 (68)
LLBDA	70 (46)	LLBOUSFC	45 (2D)
LLBDA	72 (48)	LLBPCT	80 (50)
LLBDLCI1	74 (4A)	LLBPILOB	64 (40)
LLBDLCI2	75 (4B)	LLBPLLQP	48 (30)
LLBDSAP	48 (30)	LLBPLXUA	16 (10)
LLBFLAG	3 (3)	LLBPREQ	94 (5E)
LLBFLAG2	92 (5C)	LLBPREQ1	94 (5E)
LLBFLAG3	108 (6C)	LLBPREQ2	95 (5F)
LLBFLAG4	112 (70)	LLBPRIPR	8 (8)
LLBHTEBP	80 (50)	LLBPRQ1	46 (2E)
LLBIACT	44 (2C)	LLBPRQ2	47 (2F)
LLBIPCUB	96 (60)	LLBRCVCT	38 (26)
LLBIRCT	104 (68)	LLBRERCT	42 (2A)
LLBISCT	76 (4C)	LLBRETRY	100 (64)
LLBLCFRJ	12 (C)	LLBRIDTA	52 (34)
LLBLFRC	15 (F)	LLBRPAUS	102 (66)
LLBLLBTE	16 (10)	LLBRW	84 (54)
LLBLLCH	48 (30)	LLBSQBC	72 (48)
LLBLLCST	2 (2)	LLBSSAP	49 (31)
LLBLLCS2	2 (2)	LLBTIME	50 (32)
LLBLLCS4	14 (E)	LLBTW	88 (58)
LLBLLOBH	24 (18)	LLBVA	24 (18)
LLBLLOBT	28 (1C)	LLBVP	28 (1C)
LLBLLOSH	84 (54)	LLBVR	20 (14)
LLBLLOST	88 (58)	LLBVS	16 (10)
LLBLLUAP	32 (20)	LLBWW	32 (20)
LLBLLX	104 (68)	LLBXERCT	40 (28)
LLBLMI	20 (14)	LLBXIDPT	96 (60)
LLBLOBLT	116 (74)	LLBXMIC	36 (24)
LLBLOBMT	112 (70)		
LLBLSCFR	4 (4)		
LLBLSCFS	6 (6)		
LLBLSCS1	6 (6)		
LLBLSCS2	7 (7)		
LLBLSTIN	14 (E)		
LLBLXC	108 (6C)		

0(0)	LLBBID* Block identifier C'LL' or C'LD' or C'CD' or C'ID'		2(2)	LLBLLCST* Logical link control (LLC) status	3(3)	LLBFLAG* Flag byte
				LLBLLCS2*		
				LLBCONF**		
4(4)	LLBLSCFR Last SDLC control field received		6(6)		LLBLSCFS Last SDLC control field sent	
			LLBLSCS1		LLBLSCS2	

LLBACTPR Active FRSE routing partner						
8(8)						
LLBNMBA Pointer to the NMVT interface area control block (NIA) or PLB for network management vector transport (NMVT) (for NMVT task)						

LLBPRIPR Defined primary FRSE routing partner						
LLBMISER* Miscellaneous flags						
12(C)	LLBLCFRJ Rejected data link control (DLC) field		14(E)	LLBLSTIN* Copy of LLBLLCST	15(F)	LLBLFRC Frame reject cause
	LLBCFRJ1	LLBCFRJ2		LLBLLCS4*		

LLBBAKPR Defined back-up FRSE routing partner						

* Indicates a byte expansion follows.

** Refer to the CUBCONF field of the CUB control block for a definition of the configuration bits.

16(10)	LLBLLBTE Pointer to the corresponding LLBAT entry (true LLB)
LLBPLXUA Pointer to the XUA (dummy LLB)	
LLBVS Number of next I-frame to transmit	
20(14)	LLBNLLQP Pointer to the next LLB queued on the PLOBQ
LLBVR Number of next expected I-frame	
LLBLMI* Frame-relay LMI support flag	
24(18)	LLBLLQBH Logical link outbound queue header
LLBVA Value of the last received sequence number (N(R))	
28(1C)	LLBLLQBT Logical link outbound queue tail
LLBVP Copy of LLBVS when poll sent	

* Indicates a byte expansion follows.

32(20)			
LLBLLUAP Pointer to the LLUACB (true LLB) Pointer to the transmit physical link adapter control block (PLUA) (dummy LLB)			
LLBWW Working window			
36(24)		38(26)	
LLBXMIC Transmitted frames counter		LLBRCVCT Received frames counter	
40(28)		42(2A)	
LLBXERCT Transmit error counter		LLBRERCT Receive error counter	
44(2C)	45(2D)	46(2E)	
LLBIACT Number of frames acknowledged since working window last incremented	LLBOUSFC Outstanding frame count	LLBPRQ1 LLBPREQ1 save area	LLBPRQ2 LLBPREQ2 save area
48(30)			
LLBPLLQP Pointer to the previous LLB queued on the PLOBQ (IP dummy LLB)			
LLBLLCH LLC header			
		50(32)	
LLBDSAP INNADDR (byte 1)	LLBSSAP X'04'	LLBTIME T1 timer value (CCBTWORK timer format)	

52(34) - 61(3D)		LLBRIDTA Routing information (RI)	
		62(3E)	Routing information (continued)
		LLBCLIM FRSE station queue buffer limit	
64(40) Routing information (continued)			
LLBPILOB FRTE INN number of PIUs on the LLOBQ	65(41) LLBB6SH Byte 6 of frame-relay SNAP header		
68(44) Routing information (continued)		70(46) LLBDA Destination address	
LLBBYLOB Bytes on the LLOBQ (Frame-relay only)			
72(48) LLBDA Destination address (continued)			
LLBSQBC FRSE station queue buffer count	74(4A) LLBDLCI1* First byte of frame-relay DLCI	75(4B) LLBDLCI2* Second byte of frame-relay DLCI	
76(4C) LLBNHLLB Pointer to the next LLB at the corresponding hashing table entry			
LLBISCT I-frame retry count			
80(50) LLBHTEBP Pointer back to the corresponding hashing table entry (NTRI only) Pointer back to the corresponding DTL entry (Frame-relay only)			
LLBPCT Poll retry count			
84(54) LLBLLOSH Logical link outstanding queue header			
LLBRW Receive window			

* Indicates a byte expansion follows.

88(58)		LLBLLST Logical link outstanding queue trailer	
LLBTW Transmit window			
92(5C) LLBFLAG2* LLB flags	93(5D) LLBL5FL* Level 5 flag	94(5E) LLBPREQ Pending request flags	
		LLBPREQ1* Request flag 1	95(5F) LLBPREQ2* Request flag 2
96(60) LLBXIDPT XID3 data pointer			
LLBIPCUB Pointer to the IP token-ring CUB (IP dummy LLB only)			
LLBNIAFL Copy of NIAFLAG			
100(64) LLBRETRY Current retry count inside a retry sequence	101(65) LLBMXRTY Threshold for LLBRETRY	102(66) LLBRPAUS Retry pause for remote ring (CCBTWORK timer format)	
104(68) LLBLX Pointer to the LLB extension (INN only)			
LLBNSBP Pointer to the NSB (Frame-relay dummy LLBs only)			
LLBIRCT I-frame received counter			
108(6C) LLBLXC Pointer to the LLB common extension			
LLBLXLP Pointer to the LLB LMI extension (Frame-relay dummy LLBs only)			
LLBFLAG3* LLB flags			

* Indicates a byte expansion follows.

112(70)	LLBLOBMT Medium priority LOBQ tail
LLBFLAG4* LLB flags	
116(74)	LLBLOBLT Low priority LOBQ tail
120(78)	Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LLBBID		Block identifier
	C'LL'	LLB (ECLMLL)
	C'LD'	Dummy LLB (ECLMLD)
	C'CD'	CUB dummy LLB (ECLMCD)
	C'ID'	IP dummy LLB (ECLMID)
2(2) LLBLLCST		LLC status
	X'00'	Link closed
	X'05'	Link level 2 test in progress
	X'10'	Test local resolve in progress
	X'20'	Test broadcast resolve in progress
	X'30'	Test resolve complete
	X'40'	XID incoming response pending
	X'50'	XID exchange complete
	X'60'	XID outgoing response pending
	X'70'	XID incoming and outgoing response pending
	X'80'	Link opening
	X'90'	Disconnecting
	X'A0'	Frame reject (FRMR) sent
	X'B0'	FRMR received
	X'C0'	Disconnected
	X'D0'	INOP in progress
2(2) LLBLLCS2		Status for link opened or clearing
	X'E'	Link opened
	X'F'	Clearing
	yyyy 1...	Checkpointing*
	yyy .1..	Local busy*
	yyy ..1.	Remote busy*
	yyy ...1	Rejection*

Note: * yyyy = X'E' (link opened) or yyy = X'F' (link closed)

Offset/Field Name	Bit Pattern/Hex Value	Contents
3(3) LLBFLAG		Flag byte
	1... ..	LLB queued on physical link outbound queue (PLOBQ)
	.1.. ..	T1 timer is running
	..1. ..	T1 timer is running
	...1 ..	Routing information present
	... 1..	XID2 or XID3 outstanding
	... .1..	LLB represents subarea link
	... ..1.	T2 long timer
	... ...1	T2 timer running
8(8) LLBMISER		Miscellaneous flags
	x... ..	Reserved
	.1.. ..	Error detected unexpected otherwise
	..1. ..	Waiting on physical link activation completion
	...x ..	Reserved
	... 1..	Release buffer request bit (for LLC level 3)
	... .1..	Resend test resolve
	... ..1.	Resend checkpoint poll
	... ...1	Enable pending
14(E) LLBLSTIN		Copy of LLC status stored when inoperative
	X'00'	Link closed
	X'05'	Link level 2 test in progress
	X'10'	Test local resolve in progress
	X'20'	Test broadcast resolve in progress
	X'30'	Test resolve complete
	X'40'	XID incoming response pending
	X'50'	XID exchange complete
	X'60'	XID outgoing response pending
	X'70'	XID incoming and outgoing response pending
	X'80'	Link opening
	X'90'	Disconnecting
	X'A0'	FRMR sent
	X'B0'	FRMR received
	X'C0'	Disconnected
	X'D0'	INOP in progress
14(E) LLBLLCS4		Status for link opened or clearing
	X'E'	Link opened
	X'F'	Clearing
20(14) LLBLMI		Frame-relay LMI support flags
	1... ..	LMI supported (LLBLSUP)
	.1.. ..	LMI echo detection supported (LLBLEDS)
	..1. ..	LMI echo detection mode is primary (LLBLMOD)
	...x ..	LMI standard (LLBLSTD)
		1 = ANSI
		0 = CCITT

Offset/Field Name	Bit Pattern/ Hex Value	Contents
74(4A) LLBDLCI1		First byte of frame-relay DLCI
	xxxx xx..	Reserved for DLCI address
	.... ..x.	Command/response indication bit
	.... ...x	Extended address bit
75(4B) LLBDLCI2		Second byte of frame-relay DLCI
	xxxx	Reserved for DLCI address
	.... xx..	Reserved for congestion indication
	.... ..x.	Discard eligibility indicator
	.... ...x	Extended address bit
92(5C) LLBFLAG2		LLB flags
	1...	Network performance monitor (NPM) collection active
	.1..	SIM pending or in progress
	..1.	Load/dump/remote power off (RPO) active
	...1	Waiting for buffers for segmenting
	.... 1..	Subarea test resolve time out
	.... .1..	Load or dump previously contacted
	.... ..1.	Reserved
	.... ...1	Connect out pending
93(5D) LLBL5FL		Level 5 flag
	1...	NIA pointer present
94(5E) LLBPREQ1		Request flag 1
	1...	Send test local resolve command
	.1..	Send test broadcast resolve command
	..1.	Send XID null
	...1	Send set asynchronous balanced mode extended (SABME)
	.... 1..	Send DISC
	.... .1..	Send unnumbered acknowledgment (UA)
	.... ..1.	Send disconnect mode (DM)
	.... ...1	Send XID802 response
95(5F) LLBPREQ2		Request flag 2
	1...	Send command frame with poll bit on
	.1..	Send response frame with final bit on
	..1.	Send FRMR
	...1	Send receive ready (RR)
	.... 1..	Send receive not ready (RNR)
	.... .1..	Send reject (REJ)
	.... ..1.	Send set initialization mode (SIM)
	.... ...1	Send test data

Offset/Field Name	Bit Pattern/ Hex Value	Contents
108(6C) LLBFLAG3		LLB flags
	1...	Received forward congestion
	.1..	Received backward congestion
	..1.	Frame-relay line
	...x	Frame-relay committed rate
		1 = Committed rate is none 0 = Committed rate is full
	.... 1..	Logical line trace active
	.... .1..	Available for incoming call (LLBAFIC)
112(70) LLBFLAG4		LLB flags
	1...	Received forward congestion, send backward congestion (LLBRFSB)

Logical Link Block Address Table

- Program:** NCP
- Size in bytes:** Variable, depending on the number of 16-byte entries
- Created by:** NCP generation
- Pointed to by:** The LLBLLBTE field in the logical link control block (LLB), the PLBLLBES field in the physical link control block (PLB), and the AVBLLBAT, AVBLTNEs, and AVBTNSD fields in the address vector control block (AVB)
- Function:** Correspondence table between a logical session and its control blocks

Header

-4(4)	LLBATTID Table identifier C'LT'	-2(2)	LLBATNUM Number of entries
-------	---------------------------------------	-------	-------------------------------

Entry

0(0)		
LLBATLLB Pointer to the LLB		
LLBATRSF* Request scan flag		
4(4)		
LLBATCUB Pointer to the common physical unit block (CUB) (logical peripheral link)		
LLBATSCB Pointer to the station control block (SCB) (logical subarea link)		
LLBATPFL Request scan previous value		
8(8)		
LLBATPLB Pointer to the corresponding PLB		
LLBTSSCP Previous value of the CUBSSCP		
12(C)	13(D)	14(E)
LLBTAPAD Associated physical link port address	LLBTCPAD Associated physical link port address copy	Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LLBATRSF		Request scan flag
	1... ..	Last entry
	.1.. ..	Entry to scan
	..1. ..	Logical link locked
	...1 ..	Frame-relay link
	.... 1..	Disable pending while inoperative
	.... .1..	Virtual route (VR) hold condition exists
	.... ..1.	Run command up against logical link
	.... ...1	Housekeeping logical resources request

Logical Link Adapter Control Block

Program: NCP

Size in bytes: 132(84)

Created by: NCP generation

Pointed to by: The LLBLLUAP field in the logical link control block (LLB), the GCB1UACB and GCBLUACB fields in the group control block (GCB), and the LKBACBP field in the line control block (LKB)

Function: Logical link adapter control block

0(0) - 35(23)	Link XIO control block (LXB) compatibility
36(24) - 127(7F)	Character control block (CCB) compatibility
128(80)	LLULLBP Pointer to the logical link control block (LLB)
LLULRTRY Maximum retry count for local rings	

Logical Link Block Extension

Program: NCP

Size in bytes: 44(2C)

Created by: NCP generation

Pointer to: The LLBLLX field in the logical link control block (LLB)

Function: Extension of the LLB for subarea links

0(0)	LLXBID LLX identifier		2(2)	LLXMPIU Maximum PIU size
4(4)	LLXRASMH Reassemble queue head pointer			
	LLXN3 Maximum received I-frames without sending acknowledgement			
8(8)	LLXRASMT Reassemble queue tail pointer			
	Reserved			
12(C)	LLXLLBP Pointer to the LLB			
	Reserved			
16(10) - 39(27)				
LLXIQCB 24 bytes Task entry point: ECLL5SEG Prefix: LDI				
40(28)	LLXLOCTO Local T1 timer value	41(29)	LLXREMT0 Remote T1 timer value	42(2A)
			LLXLOCT2 Local T2 timer value	43(2B)
				LLXREMT2 Remote T2 timer value

Processor Control Block

Program: NCP

Size in bytes: 64(40)

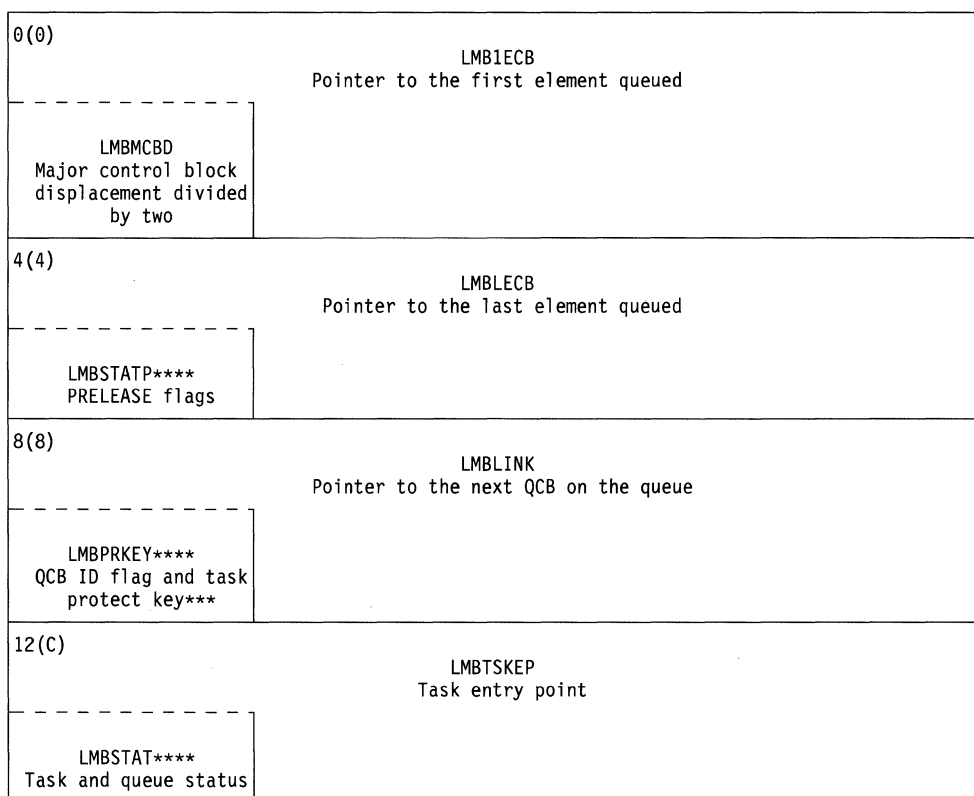
Created by: NCP generation

Pointed to by: The CBBRESP field in the committed buffers block (CBB), the LXBLMBP field in the processor's ACB-X or ACB-R, and the LMELMBP field in all of the LMEs associated with this LMB

Function: Contains processor specific information

Note: The LMB QCB must be at the same offset as the first QCB in the LCB, LKB, and TRB.

Note: LMBPRKEY is the only QCB field currently being used in the LMB.



*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

**** See queue control block for input queues for bit definitions.

16(10)		LMSAVE Address of the save area pushdown list	
LMBSCHE**** Task dispatching priority		17(11) LMBPREL PRELEASE buffer count	
20(14)		LMBLUNK Pointer to previous QCB on the queue	
LMBBHSCH**** BHR scheduling bits			
LMBBHSCH Number of bytes/4 to the queue counter			
24(18)		Reserved	
28(1C)		LMBACBP Pointer to adapter control block (ACB-receive)***	
32(20)		LMBNACBP Pointer to NCP-processor ACB (NACB)**	
LMBCSSCG* CSS congestion status			
36(24)		LMBCBBP Pointer to committed buffers block (CBB)**	
40(28)		LMBLMEP Pointer to first LMB extension (LME) in the LME table**	
LMBTYPE2* Extended line type field**			
44(2C) - 59(3B)		Reserved	
60(3C) LMBINDX Index into AIT for this processor's entry	61(3D)	Reserved	

- * Indicates a byte expansion follows.
- ** These fields must be at the same offset in the LKB, LMB, and TRB.
- *** This field must be at the same offset in the LCB, LKB, LMB, and TRB.
- **** See queue control block for input queues for bit definitions.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
32(20) LMBCSSCG		CSS congestion status
	X'00'	Normal CSS congestion
	X'10'	Limited_1 CSS congestion
	X'30'	Limited_2 CSS congestion
	X'70'	Critical CSS congestion
	X'F0'	Ultimate CSS congestion
40(28) LMBTYPE2		Extended line type field
	1... ..	ODLC line (LMBODLC)**
	.x.. ..	Reserved
	..0.	Physical definition (LMBLOG) - this bit will always be zero**
	...x xxxx	Reserved
** These bits must be at the same location in the LKB, LMB, and TRB		

Processor Control Block Extension

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: LMBLMEP + (protocol type)*(length of LME)

Function: Contains common transport mechanism fields for ODLC I/O at a processor level. There are eight LMEs associated with each LMB, one for each protocol type.

0(0)			
LMENCBP Pointer to next control block on the NCP-processor ACB (NACB) work queue			
4(4)			
LMEPCBP Pointer to previous control block on NACB work queue			
LMENEXIN Next index in NCP-processor dynamic PSA (NDP) command queue			
8(8)		10(A)	
LMECBID CBID		Reserved	
LMECBID1 (X'20')	9(9)	LMECBID2 (X'99')	
12(C)			
LMELIMLR Processor.LRID			
LMEFLAGS* Flags			
16(10)	17(11)	18(12)	19(13)
LMEWQI0 NDP command index 0	LMEWQI1 NDP command index 1	LMEWQI2 NDP command index 2	LMEWQI3 NDP command index 3
20(14)	21(15)	22(16)	23(17)
LMEWQI4 NDP command index 4	LMEWQI5 NDP command index 5	LMEWQI6 NDP command index 6	LMEWQI7 NDP command index 7

* Indicates a byte expansion follows.

24(18)	
LMELMBP Pointer to LMB	
LMEFMT* Resource definition format**	
28(1C)	
LMEPUCBP Pointer to protocol unique control block	

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKE, LME, SCE, and TRE.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) LMEFLAGS		Flags
	1...	NPA FORWARD in progress (LMEFWIP)
	.1..	NPA STOP ALL in progress (LMESTOP)
	..1.	NCP threw away NPA COLLECT LDP with the "Last collect for the active forward" bit on (LMELAST)
	...x xxxx	Reserved
24(18) LMEFMT		Resource definition format
	xxxx	Reserved
	.... xxxx	Protocol type (LMELIMIT)
		0000 = ALL (LMEALL)
		0001 = SDLC (LMERVX)
		0010 = ESCA (LMESOCA)
		0011 = TRA (LMETRA)

Processor Control Block Extension Table

Program: NCP
Size in bytes: 256(100)
Created by: NCP generation
Pointed to by: The LMBLMEP field in the processor control block (LMB)
Function: Table of the LMEs associated with the LMB.

To create a pointer to the LME for a particular protocol:

LME pointer = LMBLMEP + (protocol type)*(length of LME)

0(0) - 31(1F)	LME for the ALL protocol (protocol type 0)
32(20) - 63(3F)	LME for the SDLC protocol (protocol type 1)
64(40) - 95(5F)	LME for the ESCA protocol (protocol type 2)
96(60) - 127(7F)	LME for the TRA protocol (protocol type 3)
128(80) - 159(9F)	Reserved (protocol type 4)
160(A0) - 191(BF)	Reserved (protocol type 5)
192(C0) - 223(DF)	Reserved (protocol type 6)
224(E0) - 255(FF)	Reserved (protocol type 7)

Logical Unit (LU) Network Address Control Block

Program: NCP

Size in bytes: 20(14) for a dependent LU; 28(1C) for an independent LU

Created by: NCP initialization and dynamically

Pointer to: The LUBLNBP field in the LU control block (LUB), the LNBLNBP field in the LU network address control block (LNB), the BSBLNBP field in the boundary session block (BSB), and the GPABLK field in the LNB's GPA (for the first LNB in the pool) or the GPABLK field (for the last LNB in the pool). Note there are two LNB GPAs, one for the pool of dependent LNBs and one for the pool of independent LNBs.

Function: Represents each network address that is defined for its owning LUB. The LU routing block (LRB) is embedded within the LNB. A 2-byte element address field and a 1-byte dynamic reconfiguration (DR) status field in the LNB and LRB share the same storage (overlay).

0(0)	LNBLNBP Pointer to the next LNB in the chain or pool
LNBFLGS* LNB flags	
4(4)	LNBSBF Pointer to the first BSB in the LU-LU session chain
8(8)	LNBLUBP Pointer to the LUB
12(C)	LNBSLBSB Pointer to the SSCP-LU BSB (for dependent LNBs, reserved for independent LNBs)

* Indicates a byte expansion follows.

Imbedded LRB for a Dependent LU

16(10)	LNBELMAD Destination element address (DEF)	18(12)	LNDRST* DR status	19(13)	Offset back to start of LRB
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* Indicates a byte expansion follows.

Imbedded LRB for an Independent LU

16(10)	LNBELMAD Destination element address (DEF)	18(12)	LNDRST* DR status	19(13)	Offset back to start of LNB
20(14) - 27(1B) Imbedded search tree header block (SHB) from the LRB					

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) LNBFLGS		LNB flags
	x... ..	LU address: 1 = Primary 0 = Secondary.
	.1..	BFSESSINFO is in progress.
	..1.	Independent LU
	...1	Network performance monitor (NPM) knows about this resource.
	.... 1...	FNA must be sent to NPM.
	.... .1..	RNAA must be sent to NPM.
18(12) LNBDRST		DR status
	1...	Network address is requested.
	.x..	1 = LNB is allocated. 0 = LNB is in the pool.
	..1.	Control block contains usable control vector information.
	...1	DR added device
	.... 1...	Device is available to DR.
	.... .x..	Initial address status: 1 = Generated initially 0 = Initially in the pool.
	.... ..1.	LU dynamic resource
	.... ...1	Temporary bit: 1 = This LNB is temporarily marked. 0 = This LNB is not temporarily marked.

Dependent Logical Unit (LU) Control Block

Program: NCP

Function: The LND is the term that represents a dependent LU. The LND does not actually exist. It is made of one dependent LU LNB, one SSCP-LU BSB, one dependent LU-LU BSB, and one dependent BXI.

Size of the LNB

Dependent LNB
(See the LNB layout for more information)

Size of the BSB

SSCP-LU BSB
(See the BSB layout for more information)

Size of the BSB

Dependent LU-LU BSB
(See the BSB layout for more information)

Size of the BXI

Dependent BXI
(See the BXI layout for more information)

NCST Link Session Control Block

Program: NCP

Size in bytes: 52(34)

Created by: NCP generation

Pointed to by: The NLXUCB field in the programmed resource logical unit block extension (NLX)

Function: Maps the user control block for the programmed resource virtual line block.

0(0) LNKID Two byte block ID		2(2) LNKSTATE* PLU-SLU session states	3(3) LNKINPUT Index of last PIU received
LNKIDB Unique ID byte (printable) C'LN'	1(1) LNKIDU Printable usability byte		
4(4) LNKBKPTR Back pointer to NCP programmed resource control block			
8(8) LNKLEASE User lease count	9(9) LNKFLGS1* Session flags	10(A) Reserved	
12(C) Reserved			
16(10) LNKLSTPU Address of the last PUV entry that was completely processed for forced deactivate			
20(14) LNKFDQ@ Address of the FDQ			
24(18) LNKSSCP Element of address of line owner		26(1A) LNKSVVTI VVTI for the link owner	
28(1C) LNKVVTI Internal virtual route vector table index		30(1E) LNKSCSEQ Sequence number for SNA session control RU's outbound	
32(20) LNKOSNS* Owning SSCP and NLDM flags	33(21) Reserved		

* Indicates a byte expansion follows.

Alert pacing table

36(24) LNKALIID Alert identifier	37(25) LNKAL1CT Current count of alerts sent	38(26) LNKAL1TM Timestamp at beginning of period
40(28) LNKAL2ID Alert identifier	41(29) LNKAL2CT Current count of alerts sent	42(2A) LNKAL2TM Timestamp at beginning of period

44(2C)	LNKTRAT Pointer to the internal trace table
48(30)	LNKNEXT Next available entry in the trace table

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) LNKSTATE		PLU-SLU session states
	X'01'	Link inactive
	X'02'	Link active
9(9) LNKFLGS1		Session flags
	1... ..	LU capability bit
		1 = Primary
		0 = Secondary
	.1.. ..	Force deactivate is pending
32(20) LNKOSNS		Owning SSCP and NLDM flags
	1... ..	VR activation supported
	.1.. ..	NLDM supported

Line Vector Table (3745)

Program: NCP, EP

Size in bytes: 8968(2308)

The LNVT contains two 4-byte entries for each of the 1103 possible lines, eight 8-byte entries for scanner interface trace (SIT) on NCP lines, eight 8-byte entries for SIT on EP lines, and one 4-byte special LNVT error entry.

Created by: NCP or PEP generation

Function: LNVT entries from offset X'00' to X'2280' represent real lines and allow NCP and a communication scanner processor (CSP) to find a line's parameter/status area (PSA) when only the relative line number is known. (The CSP must also know where its particular LNVT segment starts. This is done with a SET LNVT L0 command issued in initialization.)

The relative line number is specified by the address keyword of the LINE definition statement in the NCP generation. NCP converts this number into an even address or an even-odd pair of addresses, depending upon the type of line being defined. Two LNVT entries exist for each possible line address (2206 LNVT entries). For a duplex line, the first LNVT entry (always even) points to the transmit leg PSA, and the second LNVT entry (always odd) points to the receive leg PSA. For a half-duplex line, the first entry points to the unique PSA used for both transmit and receive operations. The odd entry is unused and points to a dummy PSA.

Each pair of LNVT entries may be found by multiplying the relative line number by 8, converting to hexadecimal notation, and then adding the LNVT origin (LNVTBEG).

LNVT entries from offset X'2280' to X'22BF' (NCP) and X'22C0' to X'2300' (EP) are reserved for the SIT and do not correlate to real lines.

0(0) - 4095(FFF)	LNVTBEG BSC, SS, and SDLC CSP entries (normal lines)
4096(1000) - 8191(1FFF)	Unused (normal lines)
8192(2000) - 8319(207F)	SDLC HPTSS entries
8320(2080) - 8447(20FF)	Unused (HPTSS lines)
8448(2100) - 8583(2187)	ESS entries
8584(2188) - 8703(21FF)	Unused (ESS lines)
8704(2200) - 8775(2247)	Token-ring adapter (TRA) entries
8776(2248) - 8831(227F)	Unused (TRA lines)
8832(2280) - 8895(22BF)	LNVTSITN NCP SIT entries
8896(22C0) - 8959(22FF)	LNVTSITE EP SIT entries
8960(2300)	LNVTEAT LNVT error entry (used for error processing)

n	LNVTPSAP Pointer to the transmit leg PSA
LNVFLGS* Flag byte for the transmit leg	
n+4	LNVTPSAR Pointer to the receive leg PSA
LNVFLGR* Flag byte for the receive leg	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
<i>n</i> LNVTFLGS		Flag bytes
<i>n+4</i> LNVTFLGR		
	1...	Start line initial is required
	.1..	Undefined line or SIT entry
	..1.	In use by SIT or line trace
	...1	Entry is in use by controller load/dump program (CLDP)
	.... 1...	In use by panel line test
	.... .1..	Level-1 scanner down indicator
	.... ..1.	Command reject indicator. (A second command was issued during the first command.)
	.... ...1	In use by EP

Line Vector Table for ODLC

Program: NCP

Size in bytes: 10112(2780)

The line vector table contains two 4-byte entries for each of the 1216 possible ODLC lines, two 4-byte entries for each of the 32 possible processors (includes CBCs), and sixteen 8-byte entries for SIT.

Created by: NCP generation

Pointed to by: The SYSOLNVT field in the fullword direct addressable extension (FAX)

Function: LNVT(ODLC) entries from offset X'0000' to X'25FF' represent real lines and allow NCP and CSS to find a line's parameter/status control block (NPSA or LPSA) when only the line interface address (LIA=RLN*2+interface) is known. (The CSS must also know where its particular LNVT segment starts. This is done with the SET LNVT HI/LO commands issued in initialization.)

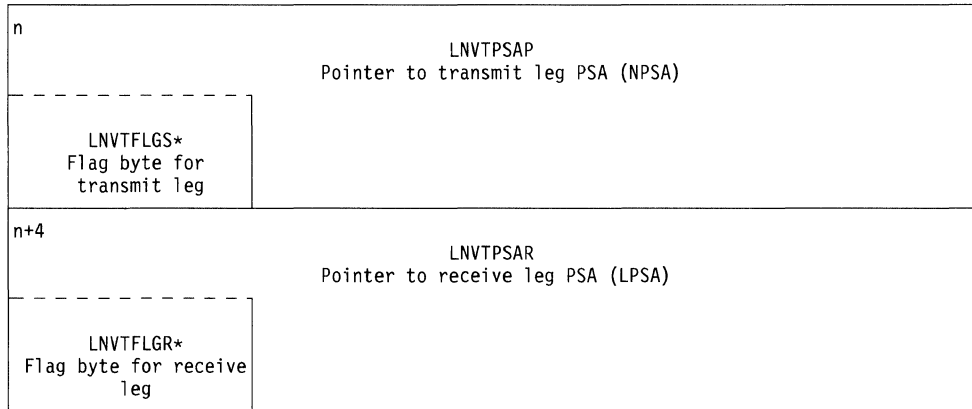
The relative line number is specified by the ADDRESS operand of the LINE definition statement in the NCP generation. The NCP converts this number into an even/odd pair of addresses. Two LNVT(ODLC) entries exist for each possible line address (2432 LNVT(ODLC) entries). For an ODLC line, the first LNVT entry (always even) points to the NPSA and the second LNVT entry (always odd) points to the LPSA.

Each pair of LNVT entries may be found by subtracting 1920 from the relative line number, multiplying the result by 8, converting to hexadecimal notation, and then adding the LNVT(ODLC) origin (OLNVTBEG).

LNVT entries from offset X'2600' to X'26FF' (Processors and CBC(s)) are reserved for special tasks and do not correlate to real lines.

LNVT entries from offset X'2700' to X'277F' are reserved for Scanner Interface Trace (SIT) and do not correlate to real lines. A SIT entry consists of 4 LNVT(ODLC) entries or 2 trace points. A trace point consists of 2 LNVT(ODLC) entries. The first LNVT entry (always even) points to the NPSA and the second LNVT entry (always odd) points to the LPSA. The first trace point is to trace the processor, and the second trace point is to trace the CBC.

0(0) - 9727(25FF)	OLNVTBEG ODLC entries
9728(2600) - 9983(26FF)	OLNVTLIM Processor entries
9984(2700) - 10111(277F)	OLNVTST SIT entries



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
<i>n</i> LNVTFGLGS		Flag byte
	.1..	Undefined line or SIT entry
	..1.	In use by SIT trace
	...1	Entry in use by CLDP (loader/dump program)
	.... .1..	Level 1 scanner down indicator
<i>n+4</i> LNVTFGLGR		Flag byte
	1...	Send no I/O to the processor SIT trace point
	.1..	Send no I/O to the CBC SIT trace point

Link Problem Buffer

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointer to: The LXBDATAP/IOBDATAP fields in the link XIO control block (LXB) and the input/output block (IOB)

Function: Maps the link problem determination aid (LPDA) level-2 and level-3 information into the buffer pointed to by the CCBDATA field

0(0) LPBCNTA Byte count	1(1) LPBAFLD1 Address field	2(2) LPBCFLD1 Control field	
4(4) LPBRTST Test request byte	5(5) LPBIBT1 Information byte 1	6(6) LPBIBT2 Information byte 2	7(7) LPBIBT3 Information byte 3

LPDA2 Response Buffer Layout

Program: NCP

Size in bytes: Variable

Created by: Dynamic processing when buffers are leased for LPDA2 processing

Pointer to: The AXBLPDRB field in the adapter control block extension (AXB)

Function: Contains the LPDA2 response passed from the modem through the communication scanner processor (CSP) for an LPDA2 test

0(0) LPR50LEN Subvector length	1(1) LPR50KEY Subvector key X'50'	2(2) LPR50IFD Information field	
4(4) LPR50SEG Link segment level	5(5) LPR50MOD Modem address	6(6) LPR50CMD LPDA2 command executed	7(7) LPR50SNS Sense code*
8(8) - n LPR50DAT Response data (if any)			

* See Table 1-4 on page 1-556.

Table 1-4. Sense Codes for LPDA2 Response Buffer Layout

Sense Code	Description
X'00'	Normal return code
X'03'	The command was rejected because the modem is in switched network backup mode.
X'04'	The command code is not supported by the modem.
X'05'	The command is valid, but it requires a feature not installed on the modem.
X'06'	The command requires an installed feature, but it is not operational.
X'07'	The command is not authorized for the configuration of the modem.
X'08'	The command code is valid, but the command data is invalid.
X'09'	The local modem received no response from the remote modem.
X'0A'	The local modem received a response with an invalid FCS from the remote modem.
X'0B'	The local modem received a response with a valid FCS from the remote modem, but the format was invalid.
X'0C'	The command is not compatible with the status of the modem.
X'0D'	A modem self-test was run, and the self-test failed.
X'11'	Two explicit numbers were provided to a modem equipped with a two-wire coupler.
X'12'	A two-wire connection was requested from a modem with a four-wire coupler.
X'13'	The local modem received no answer tone after the first (or only) call.
X'14'	The local modem received no answer tone after the second call.
X'15'	The local modem received a continuous answer tone after the first call.
X'16'	The local modem received a continuous answer tone after the second call.
X'17'	The telephone number was not contained in the command frame.
X'19'	A busy tone was detected on the line.
X'1A'	No dial tone was detected on the line during the time period specified in the dial string.
X'1B'	Dial tone was present following the dial operation.
X'1C'	Ring-back detection was present at abort timer expiration, indicating that the phone was ringing but not answered.

Processor-NCP Parameter/Status Area Control Block

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation, one for each ODLC link

Pointed to by: The LNVTPSAR field in ODLC line vector table (LNVT)

Function: Contains a parameter area used to transfer control block information from the processor to the CCU and a status area used to transfer status information from the CCU to the processor.

Parameter area (LPSAPARM)

0(0)	LPSALDPS Pointer to last LDPSA	
LPSACMD* Command		
4(4)	LPSASEQN Sequence counter	6(6) LPSARRC* Abnormal request reason code
8(8)	LPSARDCT Residual data count	10(A)-15(F)
Unused (6 bytes)		

* Indicates a byte expansion follows.

Status area (LPSASTAT)

16(10) LPSAREAS* Reason code	17(11) LPSADIAG* Diagnostic code	18(12) LPSANCP* NCP congestion flags	19(13) Unused
20(14) - 27(1B) Unused (8 bytes)			
28(1C) LPSAACB Pointer to receive ACB or TRA			
LPSAFLAG* Flags			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LPSACMD		Command
	1... ..	ODLC command
	.x.. ..	Reserved
	..xx ..	Operation
		00 = Line operation
		01 = Processor operation
		10 = Trace operation
	.... 0...	Request
	.... .xxx	Request types
		000 = Service Request (SR)
		001 = Halt Complete
		010 = Abnormal Request
6(6) LPSARRC		Abnormal request reason code
	Byte 0	
	x... ..	Error logged by:
		1 = NCP
		0 = CSS
	.1.. ..	NPSA error
	..1.	LPSA error
	...x	Reserved
	.... 1...	LDPSA error
	.... .1..	Other errors
	.... .xx	Reserved
	X'C003'	NPSA parameter--invalid command halt cause code
	X'A004'	LPSA status--invalid reason code
	X'A005'	LPSA status--invalid diagnostic code
	X'A006'	LPSA status--invalid NCP congestion flag
	X'0406'	Processor to CBC buffer count, offset error
	X'0803'	DMA error on write of LDPSA
	X'0804'	DMA error on write of line or station data
16(10) LPSAREAS		Reason codes
	1... ..	ODLC operation
	.0.. ..	Reserved
	..xx ..	Operation
		00 = Line
		01 = Processor
		10 = Trace
	.... 1...	Response
	.... .xxx	Response types
		000 = SC--positive
		001 = SC--negative
		010 = Abnormal response
		011 = SC--line deactivated

Offset/Field Name	Bit Pattern/ Hex Value	Contents
17(11) LPSADIAG		Diagnostic codes
		LPSA errors
	X'04'	Halt pending
	X'20'	Invalid command
	X'21'	Invalid LDPSA pointer
	X'22'	Invalid residual data count
18(12) LPSANCPC		NCP congestion flags
	1... ..	NCP in CWALL state (LPSACS)
	.1..	NCP in pseudo CWALL state (LPSAPCS)
	..1.	NCP in SLOWDOWN state (LPSASDS)
	..1.	NCP in pseudo SLOWDOWN state (LPSAPSD)
	X'00'	NCP in no congestion
28(1C) LPSAFLAG		Command
	x... ..	Unused
	.110 1111	PSA identifier (X'6F') (LPSAID)

LPDA2 Command (Transmit) Buffer Layout

Program: NCP

Size in bytes: Variable

Created by: Dynamic processing when a buffer is leased for LPDA2 processing

Pointed to by: The AXBLPDXB field in the adapter control block extension (AXB)

Function: Contains the LPDA2 command passed to the modem by the communication scanner processor (CSP) to run an LPDA2 test. The CSP reply timer field follows the command layout. It contains the CSP reply timer value that is stored in the parameter/status area (PSA) prior to issuing an IOH. It also contains the ending status (LXBSTAT/IOBSTAT) that occurred prior to running the LPDA2 test. The modem parameter table (MPT) contains predefined command layouts for unsolicited tests. Bytes 0(0)–16(10) of the LPX overlays bytes 4(4)–20(14) of the MPT.

0(0) LPXADDR Address field	1(1) LPXSCMD Link problem determination aid (LPDA) SDLC command X'1B'	2(2) LPXHDR LPDA2 unique header X'05'	3(3) LPXHDR LPDA2 unique header X'10'
4(4) LPXHDR LPDA2 unique header X'42'	5(5) LPXHDR LPDA2 unique header X'08'	6(6) LPXHDR LPDA2 unique header X'21'	7(7) LPXHDR LPDA2 unique header X'84'
8(8) LPXHDR LPDA2 unique header X'10'	9(9) LPXHDR LPDA2 unique header X'42'	10(A) LPXIDN* Identifier field byte 0	11(B) LPXIDN1* Identifier field byte 1
12(C) LPXLMDA* Local modem address	13(D) LPXMDMA* Modem address	14(E) LPXMCMD* Modem command	15(F) - 19(13) LPXDATA
Data associated with the modem command (if any)			
20(14) Additional data (if any)			
24(18) - 35(23) CSP reply timer field and save area (see below)			

* Indicates a byte expansion follows.

CSP Reply Timer Field and Save Area

0(0) LPXCSPTM CSP reply timer value	2(2) LPXESTAT Saved value of the ending status prior to the LPDA2
4(4) LPXLINP Pointer to the non-port A line's LKB or LCB	
LPXEXTST Saved extended status value	
8(8) LPXSTAP Pointer to the common PU block (CUB) or device base control block (DVB) for a station on the non-port A line	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
10(A) LPXIDN		Identifier field byte 0
	1... ..	LPDA2 command
	.x... ..	Transmission speed:
		1 = Data speed
		0 = Service speed
	..0.	Always 0 (indicates command)
	...x	Reason for command:
		1 = Permanent line or station error
		0 = Solicited request or unsolicited statistical event
	.... x...	Local retry indicator (CSP only):
		1 = Retry of the request
		0 = Initial request
	.... .x..	Local modem retry inhibit:
		1 = Inhibit retry by local modem to remote modem
		0 = Allow retry by local modem to remote modem
11(B) LPXIDN1		Identifier field byte 1
	.... ..xx	Local modem port for a non-port A line:
		00 = Port A or N/A
		01 = Port B
		10 = Port C
		11 = Port D
12(C) LPXLMDA		Local modem address
	xxxx	Modem number
	.... xxxx	Segment number

Offset/Field Name	Bit Pattern/ Hex Value	Contents
13(D) LPXMDMA		Modem address
	X'00'	Local modem
	X'FD'	General (broadcast) modem address (for example, switched lines)
	X'FF'	Modem address from a host request when NCP must substitute the true address of the modem
	X'xx'	Normal polling address
14(E) LPXMCMD		Modem command
	X'1A'	Modem and line analysis
	X'1D'	Transmit/Receive test
	X'1E'	Line analysis
	X'21'	LPDA2 dial command
	X'22'	LPDA2 disconnect command
	X'25'	Read configuration
	X'26'	Write configuration
	X'27'	Set transmit speed
	X'2E'	Contact sense
	X'2F'	Contact operate

Note: NPDA/NetView issues all these commands for solicited Network Management Vector Transport (NMVT) requests. NCP only issues the X'1A' command, and that for unsolicited NMVT requests.

Line Quiesce Pending Queue

Program: NCP

Size in bytes: 16(10)

Created by: NCP generation

Pointed to by: CXQLQP in the link-edit map

LQP resides in storage immediately following the physical services block (PSB).

Function: When a pre-SNA line is in the line quiesce pending state (LCBARE on in LCBACTNS) and PIUs are received for that line, they are put on the LQP. When the line quiets, the PIUs on the LQP are removed and processed by physical services.

Format: See "Queue Control Block for Work Queues" on page 1-887, the general format for all work queues.

Logical Unit (LU) Routing Block

Program: NCP

Size in bytes: 12(C) for an independent LU; 4(4) for a dependent LU

Created by: NCP generation

Pointer to: The RVTRP field in the resource vector table (RVT)

Function: The LRB serves as the intermediate routing block for element routing. The LRB is embedded at the end of the LU network address control block (LNB). The LRB element address and dynamic reconfiguration status fields share the same storage (overlay) with the LNB. A search tree header control block (SHB) is embedded in the LRB for independent LUs.

0(0) LRBELMAD Destination element address (DEF)	2(2) LRBDRST* Dynamic reconfiguration (DR) status	3(3) LRBOCCB LNB offset to the LRB
4(4) - 11(B) Embedded SHB (independent LU only)		

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
2(2) LRBDRST		DR status
	1...	Network address requested
	.x..	1 = LRB is allocated. 0 = LRB is in a pool.
	..1.	The control block contains usable control vector information.
	...1	DR added device
	.... 1...	Device is available to DR.
	.... .x..	Initial address status: 1 = Generated initially 0 = Initially in a pool.
	.... ..1.	LU dynamic resource
	.... ...x	Temporary bit: 1 = This LRB is temporarily marked. 0 = This LRB is not temporarily marked.

Link Resource Control

Program: NCP

Size in bytes: 24(18)

Created by: Dynamically when processing NMVT PIUs

Function: A buffer leased to hold temporary information for NMVT processing

0(0) - 7(7)			
Reserved			
8(8) LRCQRYFL* Subfield flag (query link station attributes)	9(9) LRCSETFL* Subfield flag (set link station attributes)	10(A) LRCERRFL* Link resource control error flag	11(B) LRCLPDA Set link problem determination aid (LPDA) value
12(C) LRCSTRT New data transmit threshold (BSC--traffic count threshold) (SDLC--total transmission threshold)			
LRCTTB0 Byte 1	13(D) LRCTTB1 Byte 2	14(E) LRCTTB2 Byte 3	15(F) LRCTTB3 Byte 4
16(10) LRCSTRR New error transmit threshold (BSC--error count threshold) (SDLC--total retries threshold value)			
LRCTRB0 Byte 1	17(11) LRCTRB1 Byte 2	18(12) LRCTRB2 Byte 3	19(13) LRCTRB3 Byte 4
20(14) LRCRPLBP Address of the lease buffer for reply			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
8(8) LRCQRYFL		Subfield flag (query link station attributes)
	1...	Query transmit data and error thresholds
	.1..	Query LPDA status
9(9) LRCSETFL		Subfield flag (set link stations attributes)
	1...	Set transmit data threshold
	.1..	Set transmit error threshold
	..1.	Set LPDA capability

Offset/Field Name	Bit Pattern	Contents
10(A) LRCERRFL		Link resource control error flag
	1... ..	Syntax error
	.1.. ..	Semantic error
	..1. ..	SNA-address-list syntax error

Logical Resource Vector Table

- Program:** NCP
- Size in bytes:** Variable, depending upon the number of logical resources
- Created by:** NCP generation
- Pointed to by:** The SCELRVTP field in the physical station control block extension (SCE)
- Function:** Serves as the table of all logical resources sysgen'ned for an ESCA physical station.

0(0)
LRVTLKB Pointer to logical LKB (X'00000000' indicates end of table)

Line Trace Control Block

Program: NCP

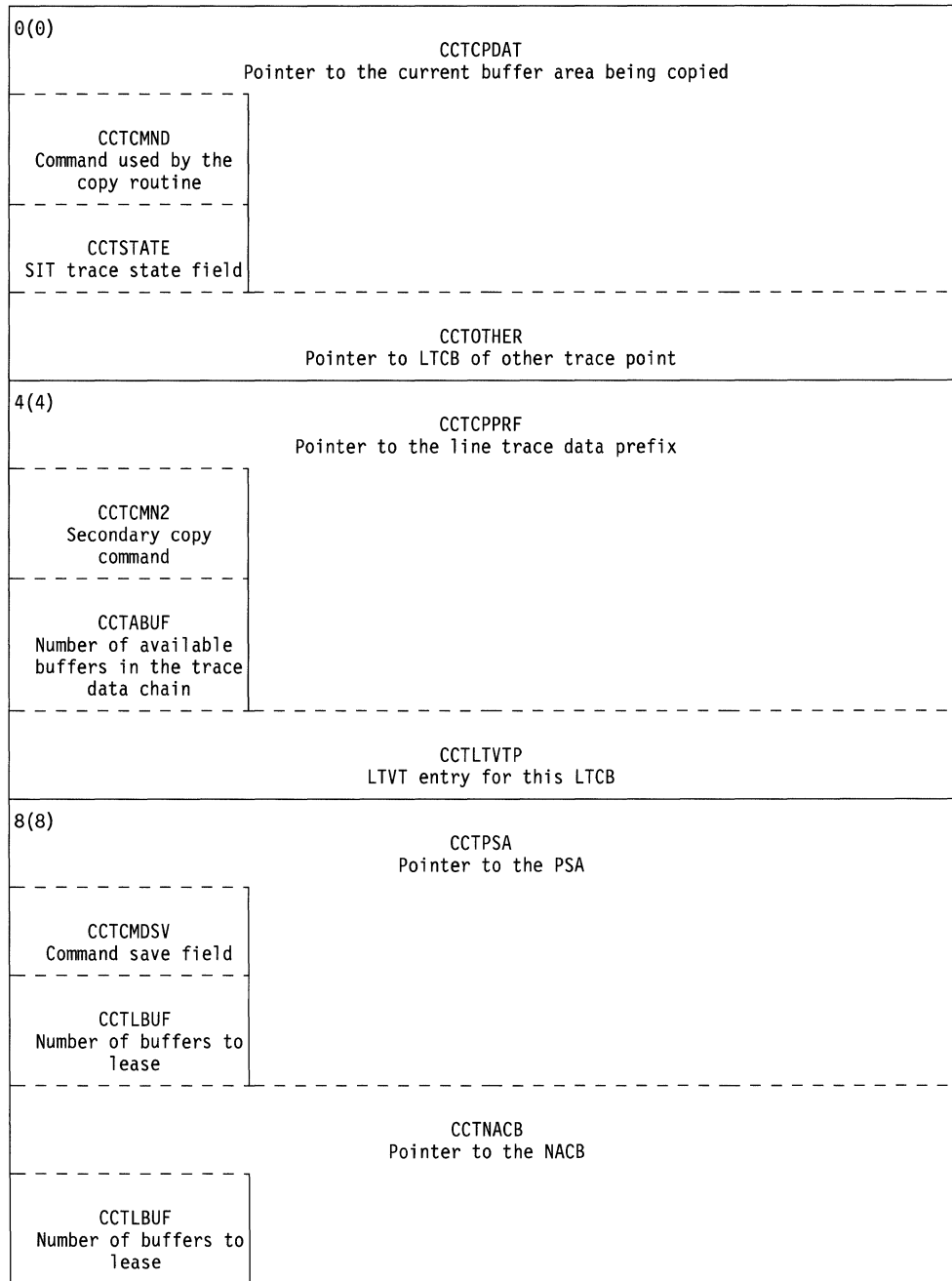
Size in bytes: 116(74)

Created by: NCP generation

Pointed to by: The PSAACBP field in the parameter/status area control block (PSA) when a line trace or scanner interface trace (SIT) is active

It points to the receive leg for duplex lines; the transmit leg LTCB immediately follows the receive leg LTCB.

Function: Contains the pertinent parameters for the line trace and SIT functions. For duplex operation, two LTCBs are required—one for the transmit leg and one for the receive leg.



12(C)		CCTCSTAT Pointer to the copy status area
	CCTSNPM SSCP-NCP session control block (SNP) mask	
		CCTLACB Pointer to the LACB
16(10)		CCTCPARM Pointer to the copy parameter area
	CCTL3FL* Level-3 line trace flags	
20(14)		CCTCPR2 Pointer to the secondary copy parameter
	CCTRTT* Line type	
24(18)		CCTSTA2 Pointer to the secondary status area
	CCTCCNT* Character count to process in a burst	
28(1C)		CCTPSAVE Pointer to the parameter area save field
32(20)		CCTSSAVE Pointer to the status area save field
36(24)	CCTL2 Address of the level-2 line trace routine	38(26) CCTXFRCN Number-of-buffers-to-transfer counter
40(28)		CCTACB Pointer to the adapter control block (ACB) of the traced line

* Indicates a byte expansion follows.

44(2C) CCTWORK Timer work entry for the character control block for trace (CCT)	46(2E) CCTTIME Timer control field for the line trace	
	CCTTMOUT Interval control field	47(2F) CCTTENTH Tenth second timer
48(30) CCTBAR* Offset of trace slot	50(32) CCTOFLAG* ODLC trace flags	
CCTBCB Address of vector to traced line's ACB	CCTFLAG Trace flags for the scanner	
	CCTFLAG1*	51(33) CCTFLAG2*
52(34) CCTL2XFR Level-2 buffer transfer count	54(36) CCTCHAR Free spaces in the level-2 buffer	55(37) CCTBFCNT Filled level-2 buffer count
56(38) CCTL3XFR Level-3 buffer transfer count	58(3A) CCTEND1 Line status for queueing	
CCTFCNT Number of free buffers in the SIT chain		
60(3C) CCTDATA Address of the next diagnostic unit to be stored		
CCTBFSZD Number of bytes in the full trace buffer		
64(40) CCTSTART Pointer to the current level-2 buffer		
68(44) CCTITIME Initial value of the interval timer field for a line trace	70(46) CCTSCF Save area for SCF and (PDF or command)	
CCTITIM1 First byte of CCTITIME	69(45) CCTITIM2 Second byte of CCTITIME	

* Indicates a byte expansion follows.

72(48) CCTHDBUF Pointer to the first buffer in the current chain						
76(4C) CCTL3 Address of the level-3 trace routine	78(4E) CCTCUT Buffer limit per line trace block	79(4F) CCTMAXBF Maximum number of buffers per BTU on the channel				
80(50) CCTZERO Assumed zero by the initial control word (ICW) display	82(52) CCTCTL Control flags (must always equal 0)					
84(54) CCTESTAT Expected ending status	86(56) CCTPRELS Number of level-2 buffers initially leased	87(57) CCTBFASK Number of level-2 buffers to fill before a new buffer request				
88(58) CCTCPRTN Pointer to the next copy routine						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px dashed black; padding: 5px;">CCTCNT1 Maximum number of bytes to copy</td> <td style="width: 75%;"></td> </tr> <tr> <td style="border: 1px dashed black; padding: 5px;">CCTBKTMR SIT backup timer</td> <td></td> </tr> </table>			CCTCNT1 Maximum number of bytes to copy		CCTBKTMR SIT backup timer	
CCTCNT1 Maximum number of bytes to copy						
CCTBKTMR SIT backup timer						
92(5C) CCTPIUBF Pointer to the buffer containing the PIU						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px dashed black; padding: 5px;">CCTCNT2 Current maximum number of bytes to copy</td> <td style="width: 75%;"></td> </tr> </table>			CCTCNT2 Current maximum number of bytes to copy			
CCTCNT2 Current maximum number of bytes to copy						
96(60) CCTLAST Pointer to the last level-2 buffer in the chain						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px dashed black; padding: 5px;">CCTCNTMX Fixed maximum number of bytes to copy</td> <td style="width: 75%;"></td> </tr> </table>			CCTCNTMX Fixed maximum number of bytes to copy			
CCTCNTMX Fixed maximum number of bytes to copy						

100(64) CCTTRNC Line trace entry truncated symbol		103(67) CCTSLPA2 R2 low-order byte value for the SIT	
CCTCOPY Pointer to the current copy buffer in the chain			
CCTR1 R1 IOH value for the SIT			
CCTCMNDS Trace command for the SIT	101(65) CCTSL0T Trace line vector table (LNVT) slot number for the SIT	102(66) CCTR2 R2 IOH value for the SIT	CCTSLPAC Select or PAC value for the SIT
104(68) CCTLINK Pointer to the next ACB on the level-3 chain			
CCTTYPEC X'00'			
108(6C) CCTSETYP X'00'	109(6D) CCTCFRAM Current transmit frame being copied		
112(70) CCTSEC SDLC event correlator			
CCTLTAC Trace activation counter			
CCTXRC Transmit/receive correlator			
CCTXRCH High halfword of the transmit/receive correlator		114(72) CCTXRCL Low halfword of the transmit/receive correlator	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) CCTL3FL		Level-3 line trace flags
	1...	All data was copied.
	.x..	1 = Transmit copy is processing. 0 = Receive copy is processing.
	..x.	1 = Transfer is OK if copy is active. 0 = No transfer if copy is active.
	...1	Lost data
	.... 1...	Invalid command
	.... .x..	1 = Graphics, I-data, or polling characters 0 = No graphics, no I-data, and no polling characters
	.... ..1.	Store "truncated data" message
	.... ...x	1 = Timer has expired and has requested a buffer transfer. 0 = Non-timer buffer transfer has been requested.
20(14) CCTRRT		Line Type
		See byte expansion 63(3F) RU1RTT for the "record trace data (RECTRD) RU," in Volume 2 Section 5, "NCP Network Commands"
24(18) CCTCCNT		Character count to process in a burst
	xxxx	Reserved
	.... xxxx	Character count: Receive = PSAPCNT current value Transmit = PSACCNT value minus the PSACNT current value.
Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) CCTBAR		Offset of trace slot
	.... .... .... ..x.	Offset of trace slot from the start of the LNVT(ODLC) 0 = LNVT address 1 = Offset into LNVT(ODLC)
Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) CCTOFLAG		ODLC trace flags
	.x..	1 = LTCB(ODLC) used for line trace 0 = LTCB(ODLC) used for SIT trace
	..x.	1 = Host deactivation (line TR). 0 = Error deactivation (line TR).
	...x	1 = Trace of physical line 0 = Trace of logical line

Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) CCTFLAG1		Trace flags
	Byte 0	
	x...	1 = SS/BSC Line 0 = SDLC Line
	.1..	INSERT DATA
	..1.	Leading graphics
	...x	1 = High-speed line 0 = Low-speed line
	.... x...	1 = SIT 0 = Line trace
	.... ..x.	1 = Transmit operation 0 = Receive operation
	.... ...1	Copy pending
51(33) CCTFLAG2	Byte 1	Trace flags
	1...	Lost data
	.x..	1 = Error deactivation 0 = Host deactivation
		Or SIT values:
		1 = SIT hardware error 0 = No SIT hardware error.
	..x.	1 = Level 2 need not requeue CCT. 0 = Level 2 must requeue CCT.
	...1	LTCB processed for level 2 deactivation.
	.... 1...	Level 2 needs a buffer, or SIT value: Deactivation in progress.
	.... .1..	Data copy is active, or SIT value: Deactivation request.
	.... ..1.	Pending buffer request, or SIT value: Deactivated.
	.... ...1	Pending deactivation, or SIT value: Issue Stop Trace.

ODLC Line Trace Control Block

Program: NCP

Size in bytes: 116(74)

Created by: NCP generation

Pointed to by: The LTVTCCTP field in the line trace vector table (LTVT) or the NACBLTCB field in the NCP--processor ACB (NACB) If SIT trace is active, then TMALTCBP points to the LTCB(ODLC) or LACBLTCB field in the LACB.

LTVTCCTP points to the first of two stacked LTCB(ODLC)s. These are used for the two trace points in SIT and for receive and transmit legs of a full duplex interface in line trace.

Function: Contains the pertinent parameters for the ODLC line trace and SIT functions.

Note: The CSECT for this control block is that of the LTCB.

0(0)	CCTOTHER Pointer to LTCB of other trace point (SIT)
CCTSTATE* SIT trace state field	
4(4)	CCTLVTP Pointer to the LTVT entry for this LTCB (SIT)
CCTABUF Number of available buffers in the trace data chain	
8(8)	CCTNACB Pointer to the NCP--Processor ACB (NACB)
CCTLBUF Number of buffers to LEASE	
12(C)	CCTLACB Pointer to the processor--NCP ACB (LACB)
CCTSMP SNP mask	
16(10)	Reserved.

* Indicates a byte expansion follows.

20(14)		
Reserved		
CCTRTT* Line type		
24(18)		
Reserved		
28(1C)		
Reserved		
32(20)		
Reserved		
36(24)		
Reserved		
40(28)		
CCTACB Pointer to the receive ACB of the traced line		
44(2C)	46(2E)	47(2F)
Reserved.	CCTTMOUT Interval control field	CCTTENTH Tenth second timer
48(30)	50(32)	51(33)
CCTBAR* Address of the BAR vector to the transmit LNVT(ODLC) trace slot (SIT)	CCTOFLAG* ODLC trace flags	Reserved

* Indicates a byte expansion follows.

52(34) Reserved	54(36) CCTCHAR Free spaces in the L2 buffer	55(37) Reserved
56(38) CCTL3XFR Level-3 buffer transfer count	58(3A) Reserved	
60(3C) CCTDATA Address of the next diagnostic unit to be stored		
CCTBFSZD Number of bytes in the full trace buffer		
64(40) CCTSTART Pointer to the current level-2 buffer		
68(44) CCTITIME Initial value of the interval timer field for line trace	70(46) Reserved	
CCTITIM1 High byte of CCTITIME	69(45) CCTITIM2 Low byte of CCTITIME	
72(48) CCTHDBUF Pointer to the first buffer in the current chain		
76(4C) Reserved	78(4E) CCTCUT Buffer limit per line trace block	79(4F) CCTMAXBF Maximum number of buffers per BTU on the channel

80(50) Reserved		
84(54) Reserved	86(56) CCTPRELS Number of level-2 buffers initially leased	87(57) CCTBFASK Number of level 2-buffers to fill before a new buffer request
88(58) CCTBKTRM SIT backup timer	90(5A) Reserved	
92(5C) CCTPIUBF Pointer to the buffer containing the PIU		
96(60) CCTLAST Pointer to the last level-2 buffer in the chain		
CCTCNTMX Fixed maximum number of bytes to copy		
100(64) CCTTRNC Line trace entry truncated symbol (@TD)	103(67) Reserved	
104(68) Reserved		
108(6C) Reserved		
112(70) Reserved		

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) CCTSTATE		SIT state byte
	X'00'	Trace inactive (CCTINACT)
	X'01'	Trace activation pending (CCTACTP)
	X'02'	Trace active (CCTACTV)
	X'03'	Trace deactivation pending (CCTDACTP)
	X'04'	Trace IOH (Halt) pending (CCTHALTP)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) CCTRRT		Line type
	x... ..	Line type 1 = Full duplex 0 = Half duplex
	.x... ..	Trace point (SIT) 1 = Processor trace point 0 = CBC trace point
	..xx	Reserved
	.... .x..	Line trace 1 = Secondary link 0 = Primary link
	.... 0.01	This is not the last trace record
	.... 0.10	This is the last trace record because a deactivation request was received
	.... 0.11	This is the last trace record because of an NCP problem
	.... 1.10	This is the last trace record because CSS resources were unavailable
	.... 1.11	This is the last trace record because of a CSS hardware error

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) CCTBAR		Address of the BAR vector to the transmit LNV(ODLC) trace slot (SIT)
	.... .... .... ..1.	Indicates CCBAR is an offset into the OLNVT rather than an address within the LNV. (ODLC only) (CCTBRO)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
50(32) CCTOFLAG		ODLC Trace Flags
	.x... ..	1 = LTCB(ODLC) used for SIT trace (CCTWHTR) 0 = LTCB(ODLC) used for line trace
	..x.	1 = Error deactivation (line trace) (CCTSERR) 0 = Host deactivation (line trace)
	...x	1 = trace of logical line (CCTLOG) 0 = trace of physical line

Line Trace Return Address Save Area**Program:** NCP**Size in bytes:** 16(10)**Created by:** NCP generation**Pointer to:** Load address of CXTLTR

The LTR is located at the end of the line trace vector table (LTVT).

Function: Contains one fullword entry for each level-2 line trace subroutine that returns control to its caller through the address passed to it in an input register

0(0)	LTR1 Return address
4(4)	LTR2 Return address
8(8)	LTR3 Return address
12(C)	LTR4 Return address

Line Test Control Block

Program: NCP
Size in bytes: 628(274)
Located in: CXANCB
Created by: NCP generation
Pointer to: The SYSLTSP field in the extended halfword direct addressables control block (HWE)
Function: Contains control information for panel line test operations

0(0)	LTSRDATP Pointer to the receive buffer data area		
4(4)	LTSXDATP Pointer to the transmit buffer data area		
8(8)	9(9)	10(A)	11(B)
LTSC* Control byte 1	LTSC* Control byte 2	LTSC* Control byte 3	LTSC* Control byte 4
12(C)	LTSSVTSK Saved terminator task		
16(10)	LTSSAPTR Saved area pointer for levels 2 and 3		
20(14)	LTSADSW Value of the address and data switches		
24(18)	LTSXPSAP Transmit leg parameter/status area (PSA) pointer		
28(1C)	LTSRPSAP Receive leg PSA pointer		
32(20)	LTSXACBP Transmit leg adapter control block (ACB) pointer		

* Indicates a byte expansion follows.

36(24) LTSRACBP Receive leg ACB pointer			
40(28) LTSXLNVT Address of the line vector table (LNVT) entry for transmit		42(2A) LTSRLNVT Address of the LNVT entry for receive	
44(2C) LTSXL2 Pointer to the transmit level-2 routine			
48(30) LTSRL2 Pointer to the receive level-2 routine			
52(34) LTSDIALC Dial digit control	53(35) - 68(44) LTSDIAL Dial digit data area		
		69(45) LTSDCNT Dial digit counter	70(46) LTSRID Received hardware ID
72(48) LTSFUNC Current active function		74(4A) LTSX21S1 Completion code status	75(4B) LTSX21S2 Cause of the DCE failure
76(4C) LTSX21S3 First byte of a negative call-progress signal	77(4D) LTSX21S4 Second byte of a negative call-progress signal	78(4E) LTSXCNT Byte count in the transmit buffer	79(4F) LTSSMOFF Selected set mode byte number
80(50) LTSPCNT Polling character counter	81(51) - 87(57) LTSPOLL Polling characters		
88(58) LTSACNT Addressing character counter	89(59) - 95(5F) LTSADDR Addressing characters		

96(60) LTSHDWID Hardware ID to send to the device		99(63) LTSIDCNT Hardware ID byte count	
100(64) - 107(6B) LTSXBFR Transmit buffer prefix			
108(6C) - 363(16B) LTSXDATA Transmit buffer for a panel line test			
364(16C) - 371(173) LTSRBFR Receive buffer prefix			
372(174) - 627(273) LTSRDATA Receive buffer for a panel line test			

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
8(8) LTSCCTL		Control byte 1
	1...	Initialized line test
	.1..	A command is active.
	..1.	Switched line
	...1	Multipoint line
	.... 1...	Duplex adapter
	.... .1..	SDLC line
	.... ..1.	X.21 switched line
	.... ...1	Switched call-in line
9(9) LTSCCTL2		Control byte 2
	1...	Single operation
	.1..	Continue operation with errors.
	..1.	Error was detected and displayed.
	...1	End the active function.
	.... 1...	End the panel line test.
	.... .1..	Send ID is required on the next input/output.
	.... ..1.	Send ID is required for this device.
	.... ...1	Receive ID is expected from the device.
10(A) LTSCCTL3		Control byte 3
	1...	Flush command is in progress.
	.1..	Data has been received.
	..1.	Transmit leg interrupt occurred.
	...1	Receive leg interrupt occurred.
	.... 1...	Error occurred on the transmit leg.
	.... .1..	Error occurred on the receive leg.
	.... ..1.	The line has been enabled.
	.... ...1	CCBL2 and CCBL3 linkage is set up.
11(B) LTSCCTL4		Control byte 4
	1...	Level-3 function is active.
	.1..	Exchange identification data block (XID) is required.
	..xx xxxx	Reserved

Logical Line Timer Table

Program: NCP

Size in bytes: 1024(400); 256(100) entries of 4(4) bytes each

Created by: NCP generation

Pointed to by: Offset AVBLTT in the address vector control block (AVB)

Function: Store pointers to logical link adapter control blocks (LLUA) with active timers. Each of the 256 entries will correspond to one timer tick of the system timer

Entry

0(0)

LTLLUA
Pointer to logical link adapter control block (LLUA)

Line Trace Vector Table

Program: NCP
Size in bytes: 20(14) plus four times the number of lines to be traced
Created by: NCP generation
Pointer to: The SYSLTBP field in the extended halfword direct addressables control block (HWE)
Function: Contains information and pointers relating to the line trace control blocks (LTCBs)

0(0) LTVTSTAT* Line trace status byte	1(1) LTVTCCTP Pointer to the LTCB (receive leg LTCB if duplex)
4(4) - n Up to seven additional line trace vector entries	
m End of the LTVT (all zeros)	

* Indicates a byte expansion follows.

Save Area (always present)

0(0)	CXTLTR Line trace level-2 save area for the return address
4(4) - 15(F) Three additional level-2 save areas	

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) LTVTSTAT		Line trace status
	1...	Line trace is active.
	.x..	1 = Duplex line trace 0 = Half-duplex line trace
	..1.	Transmission group trace only
	...1	In use for scanner interface trace (SIT)
	.... 1...	Allocated for trace activation
	.... .1..	Skip timer interrupt

Logical Unit (LU) Terminal Node Extension

Program: NCP

Size in bytes: 20(14)

Created by: NCP generation and dynamically

Pointer to: The BXIEXTP field in the boundary session block extension (BXI), the LTXNEXT field in the LTX (if the LTX is in a pool), the LUXNEXT field in the LU block extension (LUX) (if the LUX is allocated), or the NSCNEXT field in the NPA session counters block (NSC) depending on the position of the LTX within the boundary session block (BSB) extension chain

Function: Contains LU-LU session sequence number management information for LUs that run in terminal nodes (PU type 1). The LTX is one of the logical extensions to the BSB.

0(0)			LTXNEXT Pointer to the next LTX in the pool or the next BSB extension if allocated
4(4)			LTXBSBP Pointer to the BSB if the LTX is allocated
8(8)	9(9)	10(A)	LTXAOLLU LU-LU expedited outbound identification
LTXFLGS* LTX flags	LTXBSBID BSB extension identifier (LTX=X'0D')		
12(C)		14(E)	
LTXSILLU LU-LU normal inbound sequence number		LTXSOLLC LU-LU normal outbound check	
16(10)		18(12)	
LTXSOLLS LU-LU normal outbound save		Reserved	

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
8(8) LTXFLGS	x...	LTX flags 1 = LTX is allocated. 0 = LTX is in a pool.

Logical Unit (LU) Control Block

- Program:** NCP
- Size in bytes:** 32(20) plus prefix
- Created by:** NCP generation LU macro, one for each LU defined during NCP generation and dynamically
- Pointed to by:** The LUBLUBP field if the next LUB is in a pool or is A-chained to a common PU block (CUB), the CUBLUBP field if the LUB is first in the chain, the LNBLUBP field if the LU network address control block (LNB) is allocated to the LUB, and the LUNTLUBP field in the logical unit block NETID table (LUNT)
- Function:** Represents one LU defined for NCP. It provides status and control information for its LU and contains pointers for chaining to other LUBs and connecting to other control blocks

-4(4) For the prefix format for the LUB, see the network performance analyzer prefix control block (NPF)			
0(0) LUBLUBP Pointer to the next LUB in the chain of active LUBs off of a CUB or the next LUB in the pool			
LUBFEAT* LU features			
4(4) - 11(B) LUBNAME LU name			
12(C) LUBLNBP Pointer to the first LNB in the active chain			
LUBNG Generated LU pacing parameter 'n'			
16(10) LUBCUBP Pointer to the CUB			
LUBVNG Generated LU VPACING parameter 'n'			
20(14) LUBADST* LU characteristics and status	21(15) LUBLALU Local address of the LU	22(16) LUBNAML Length of the LU name	23(17) LUBSTRC* LUB session trace class and miscellaneous
24(18) LUBRSCT Reserved session control block count		26(1A) LUBCSCT Current session control block count	
28(1C) LUBNTIDX NNT index for LU NETID name		30(1E) LUBMAXSS Maximum number of sessions for this LU	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LUBFEAT		LU features
	1...	Resource is eligible for network performance analyzer (NPA) data collection
	.1..	Secondary LU address is dynamic or unassigned
	..1.	Element address is needed for NPA data collection
	...x	1 = REX stage uses fixed pacing 0 = REX stage may use adaptive pacing
	.... x...	1 = Subarea stage uses fixed pacing 0 = Subarea stage may use adaptive pacing
20(14) LUBADST		LU characteristics and status
	x...	Type of LU: 1 = Independent LU 0 = Dependent LU
	.1..	Device can be deleted by dynamic reconfiguration
	..x.	LU status: 1 = LUB is in use 0 = LUB is in a pool
	...1	Local address is requested by RNAA
	.... 1...	Temporary allocation for RNAA
	.... .1..	Takeover is required
	.... ..1.	LU can accept extended BINDs
	.... ...1	Authorized LU
23(17) LUBSTRC		LUB session trace class and miscellaneous
	.... .x..	LU NETID set at initialization
	.... ..x.	Session information retrieval (SIR) status ALL: 1 = Enabled 0 = Disabled
	.... ...1	Dummy BIND is required

Logical Unit (LU) Block NETID Table

Program: NCP

Size in bytes: 12(C)

Created by: NCP generation

Pointed to by: None

Function: Defines the storage layout for the logical unit block NETID table. Contains the NETID for each independent LU with NETID coded on the LU statement. This table is only used during initialization. It will be overlaid with buffers when the buffer pool is built

0(0)	LUNTLUBP Pointer to LUB
4(4) - 11(B)	LUNTNED LUB NETID name

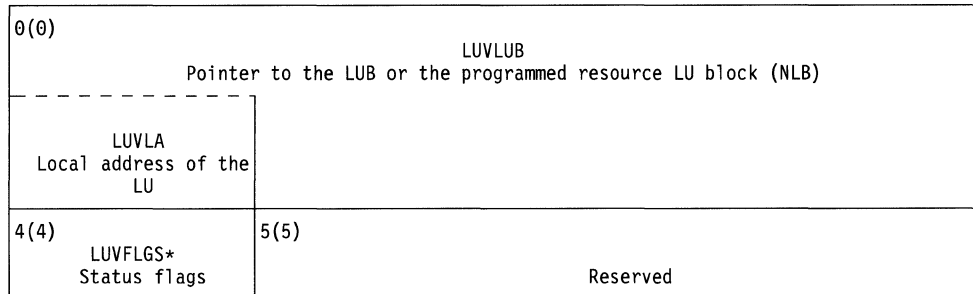
Logical Unit (LU) Vector Table

Program: NCP

Size in bytes: One 8-byte entry for each LU that can be assigned to a PU

Created by: NCP generation

Function: Used to locate the LU control blocks (LUBs) that are assigned to a PU



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
4(4) LUVFLGS		LUV status flags
	1... ..	Last entry in the LUV
	.1.. ..	Entry in use
	..x. ..	Dynamic reconfiguration (DR) indicator: 1 = DR is processing the freeing of an LUB. 0 = DR is processing—not the freeing of an LUB.
	...1 ..	Temporarily marked for add. This entry has been validated for a DR add process.

Logical Unit (LU) Block Extension

Program: NCP

Size in bytes: 116(74)

Created by: NCP generation and dynamically

Pointed to by: The BXIEXTP field in the boundary session block extension (BXI), the LDALUXP field in the LU block extension data area (LDA), and the LUXNEXT field in the LUX (if the LUX is in a pool)

Function: Represents an extended recovery facility (XRF) backup session and is an extension to the boundary session block (BSB) that represents its correlated active session. The LUX contains a queue control block (QCB) and a resource control block (RCB)

0(0)							
LUXNEXT Pointer to the next LUX if the LUX is in a pool, or pointer to the next BSB extension if the LUX is allocated							
<table border="1" style="width: 100%;"> <tr> <td style="width: 25%; text-align: center;">LUXSMAX Maximum size of the send request/response unit (RU) for the session-partner LU</td> <td colspan="3"></td> </tr> </table>				LUXSMAX Maximum size of the send request/response unit (RU) for the session-partner LU			
LUXSMAX Maximum size of the send request/response unit (RU) for the session-partner LU							
4(4)	5(5)	6(6)					
LUXLLBSS* LU-LU backup session state	LUXSLBSS* SSCP-LU backup session state	LUXPSVRT Primary session partner					
8(8)	9(9)	10(A)	11(B)				
LUXUNBTP LUX UNBIND type	LUXBSBID BSB extension identifier (LUX=X'09')	LUXDSTAT* Session data status	LUXCLEN Correlation ID length (maximum=8 bytes)				
12(C) - 19(13)							
LUXCID Correlation ID from the active BIND							
20(14)							
LUXBSBP Pointer to the BSB if the LUX is allocated							
<table border="1" style="width: 100%;"> <tr> <td style="width: 25%; text-align: center;">LUXFLGS* LUX control vector flags</td> <td colspan="3"></td> </tr> </table>				LUXFLGS* LUX control vector flags			
LUXFLGS* LUX control vector flags							
24(18)							
LUXSENC Sense code from the PIU							

* Indicates a byte expansion follows.

28(1C) - 35(23)		
LUXPCID Procedure correlation ID (PCID)		
36(24)	38(26)	
LUXNICPI Network names table (NNT) index for the network ID portion of a fully qualified control point name	LUXCPCPI NNT index for the control point name portion of a fully qualified control point name	
40(28)	42(2A)	43(2B)
LUXNISPI NNT index for the network ID portion of a network qualified session-partner LU name	LUXDCFB* Data compression flag byte	LUXCLVL* Compression-level fields
44(2C) - 51(33)		
LUXSPSP Session-partner LU name portion of a network qualified session-partner LU name		
LUXSPARY SPLU name portion of network-qualified SPLU name declared as an array		
52(34)		
LUXFSA Failed subarea address on VR.INOP		
56(38)		
LUXLDAP Pointer to the LUX data area (LDA)		
60(3C)	62(3E)	
LUXSTNWS Subarea stage transmit next window size	LUXSRNWS Subarea stage receive next window size	

* Indicates a byte expansion follows.

Link QCB for Backup Session (LUXOUTQ)

(See “Queue Control Block for Input Queues” on page 1-884 for all bit definitions.)

64(40)		LUX1ECB Pointer to the first element queued	
LUXMCBD Major control block displacement divided by 2			
68(44)		LUXLECB Pointer to the last element queued	
72(48)		LUXLINK Pointer to the next QCB on the queue	
LUXPRKEY QCB ID flag and task protect key			
76(4C)		LUXTSKEP Task entry point	
LUXSTAT Task and queue status			
80(50)		LUXSAVE Address of the save area pushdown list	
LUXSCHED Task dispatch priority	81(51) LUXSTATP PRELEASE flags	82(52) LUXPREL PRELEASE buffer count	
84(54)		LUXLUNK Pointer to the previous QCB on the queue	
LUXBHSCH Block handler routine (BHR) scheduling bits			
88(58) - 115(73)			
Embedded RCB (For details, see the RCB format for the LUX.)			

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) LUXLLBSS		LU-LU backup session state
	0000 0000	Reset state
	1...	Active pending
	.1..	Backup pending
	..1.	Backup active
	...1	UNBIND backup is required.
	.... 1..	SESEND backup is required.
	.... .1..	Switch conditional from active.
	.... ..1.	Switch conditional from backup.
	.... ...1	Failed subarea (VR.INOP) was saved.
5(5) LUXSLBSS		SSCP-LU backup session state
	1...	Notify for active is required.
	.1..	Notify for backup is required.
	..1.	UNBIND cleanup is required.
	...1	Positive switch response is required.
	.... 1..	Session start backup is required.
	.... .1..	Session start dual backup is required.
	.... ..1.	Negative switch response is required.
	.... ...1	SESEND active is required.
10(A) LUXDSTAT		Session data status—switch type
	0001	X'1' Conditional
	0010	X'2' Forced
	0011	X'3' Conditional has been promoted to Forced due to a primary LU failure.
	.... 1..	LUX is allocated.
	.... .1..	Data compression supported.
	.... ..1.	Data compression information saved from active session bind.
	.... ...1	Data compression information saved from CV66.
20(14) LUXFLGS		LUX control vector flags
	1...	Sense data has been saved.
	.1..	Control vector X'35' has been saved.
	..1.	Control vector X'60' has been saved.
	...1	Control vector X'35' includes a BIND request code.
	.... 1..	Control vector X'35' was deducted by a node other than the sense origin.
	.... .1..	Name is local.
	.... ..1.	Subarea stage has adaptive session pacing.
	.... ...1	Subarea stage requested interactive mode.
42(2A) LUXDCFB		Data compression flag byte
	x...	End-point only flag
		1 = Compression limited to end-points only
		0 = Compression allowed in any mode
	.1..	LZ and SCB compression in series is allowed

Offset/Field Name	Bit Pattern/ Hex Value	Contents
43(2B) LUXCLVL		Compression level fields when compression data saved from SF'82'
	xxxx	Actual compression level for messages in the PLU-SLU direction 0000 = No compression 0001 = SCB compression 0010 = LZ (small table) compression 0011 = LZ (medium table) compression 0100 = LZ (big table) compression
	.... xxxx	Actual compression level for messages in the SLU-PLU direction 0000 = No compression 0001 = SCB compression 0010 = LZ (small table) compression 0011 = LZ (medium table) compression 0100 = LZ (big table) compression

Link XIO Control Block**Program:** NCP**Size in bytes:** 36(24)**Located in:** Adapter control block (ACB)**Created by:** NCP generation (SDLC links)**Pointed to by:** The LKBACBP field in the line control block (LKB)**Function:** Contains the status of SDLC link operations

0(0) LXBIMCTL* Immediate control command flags	1(1) LXBCMAND* Input/output command	2(2) LXBCMODS* Command modifiers field	
4(4) LXBSTAT*		6(6) LXBERST First error status (set upon the first recoverable error) (See LXBSTAT)	
Command ending status field	5(5) LXBSTATC* Completion code byte of status	7(7) LXBHSTAT Hold SDLC status (See LXBSTATC)	
8(8) LXBEREST First error extended status (See LXBEXTST)	9(9) LXBRTYCT Total error recovery procedure (ERP) retry count (Underrun limit--127)	10(A) LXBBKSIZ Received block size (number of data characters stored)	
	LXBX21RT Retry counter for X.21 callouts	LXBRBLUC Received basic link unit (BLU) command field (See CCBRBLUC for bit definitions)	
12(C) LXB DATAP Pointer to the first buffer of data to be transmitted			
LXBEXTST* Extended error status			
16(10) LXB INPUT Input control-data pointer to the command reject (FRMR) data received			
LXBFLAGS* LXB flags		18(12) LXBCPS X.21 negative call-progress signal	
		LXBCPS1	19(13) LXBCPS2

* Indicates a byte expansion follows.

20(14)			
LXBQOFF Level-2 and level-3 block overrun queue head pointer			
LXBCTCCT Pass count			
LXB0FLGS* ODLC line flags and indicators (ODLC only)	21(15) Space for online terminal test (OLTT) IOB/XIO commands		
	LXBCODE Error code indicator (ODLC only)	22(16) LXBSTFLD* Line state (ODLC only)	23(17) LXBRLBCT Number of buffers needed for the receive list (ODLC only)
24(18)			
LXBLKBP Pointer to the link control block			
LXBMBP Pointer to the processor control block (LMB) (ODLC only)			
LXBAEXP* Address expected in the response			
LXBREDF* Stored status flags (ODLC only)			
28(1C)			
LXBFNLPT Final buffer pointer			
LXBSTYPE Station polled CUB/SCB type field	29(1D) LXBPMFL* NPM flags for link level (Ethernet only)	30(1E) LXPOLLT Poll cycle start time	
LXBSFLGS* Saved status flags (ODLC only)	LXBSEXTS Saved LXBEXTST (ODLC only)	LXBSSTAT Saved LXBSTAT (ODLC only)	

* Indicates a byte expansion follows.

32(20)		
LXBQON Level-2 and level-3 block overrun queue tail pointer		
LXBCMD Save area	33(21) LXBRENDX Extended run ending status (ODLC only)	34(22) LXBRENDIS Stored run ending status (ODLC only)

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) LXBIMCTL		Immediate control command flags
	X'02'	Forced Deactivate Immediate has been issued
	X'40'	XIO(IMMED) stop wrap
	X'80'	Reset immediate has been issued
	X'81'	Reset immediate soft reset has been issued
	X'84'	Reset immediate deactivate required has been issued
		Set Mode commands (for idle or busy lines)
	X'04'	Read line type
	X'06'	Set text error retry limit
	X'10'	Set receive buffer cutoff factor
	X'12'	Start line trace
	X'14'	Stop line trace
	X'18'	Set operation link
	X'1A'	Reset operational link
	X'1C'	Set intensive mode (IM) active in SCBSTMOD
	X'1E'	Set IM stopped for slowdown in SCBSTMOD
	X'20'	Set IM stopped for SCV (IM) in SCBSTMOD
	X'22'	Reset 3 IM bits in SCBSTMOD
	X'24'	Set SSCF
	X'26'	Test SCB bits
	X'28'	Set SCB bits
	X'2A'	Reset SCB bits
	X'2C'	Set CCB bits
	X'2E'	Reset CCB bits
	X'30'	Test CCB bits
	X'32'	Query/add/delete in the service order table (SOT)
	X'34'	NPM setmode command
	X'36'	Set line control for a peripheral switched line
	X'38'	Test overlaying logical resource setmode
	X'3A'	Set subarea dial activity timer
	X'3C'	Validate control vector X'38' (short hold mode)
	X'40'	Change channel parameters setmode
	X'42'	Test underlying physical resource setmode
	X'44'	Frame-relay setmode
	X'46'	Set RDU reason code (SCBRDURC) setmode
	X'48'	Start LPDA2 for ODLC
	X'4A'	LPDA2 set link station
	X'4C'	Reset processor takedown in progress
		Set Mode commands (idle lines only)
	X'07'	Set line control procedure
	X'35'	Remove the XID on the LOBQ from the queue
	X'37'	Set line control for a peripheral switched line

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) LXBCMAND		LXB command
	X'00'	No input/output occurred
	X'30'	Run SDLC link
	X'40'	Run link problem determination aid (LPDA) test
	X'83'	Disable
	X'87'	Wrap
	X'8D'	Enable
	X'8F'	Dial
2(2) LXBCMODS		Command modifiers
	Byte 0	
	x...	1 = Suppress ending a new command due to outstanding status 0 = Immediate end to new command when status is outstanding
	.x..	1 = No retry 0 = Retry
	..1.	Ignore disconnect modes and time-outs when initiating a session
	...x	1 = Immediate retry if errors while normal polling 0 = If errors, retry at next normal poll cycle
	.... ..x.	Waiting on good response indicator (LXBWGR)
		1 = Waiting on good response to poll 0 = Not waiting on good response to poll
	.... ...x	1 = Do not release transmitted buffers 0 = Release transmitted buffers after ACK
	Byte 1	
	x...	1 = Perform command reset step first 0 = Normal command execution
	.x..	1 = Perform function to handle XID '07' in response to SNRM 0 = Normal command execution

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) LXBSTAT		Command ending status field
	1... ..	Extended error status. (See LXBEXTST)
	.1... ..	Format exception—invalid SDLC format <ul style="list-style-type: none"> • Frame contained data (UA, SNRM, or SNRME) • Not a complete frame • The following is a list of LXBSTATC values and the reason for the format exception: <ul style="list-style-type: none"> 0E = Rec REJ, line is not duplex 1C = Rec RR or in NS phase 1E = Rec XID in RR or RNR phase A2 = Rec invalid SDLC command A8 = Rec SDLC DISC AC = Rec RD. B2 = Rec SDLC SNRM or SNRME B6 = Rec SDLC RIM. BC = Rec UA in RR or RNR phase BD = Sent SNRM or SNRME; did not rec UA BF = Rec SDLC XID
	..1.	Character sync check has been detected
	...1	FCS error (data check). Run command error/exception phase field
	... 000.	No command is active
	... 001.	SDLC I-format or SDLC RR has been sent
	... 010.	SDLC RNR has been sent
	... 011.	SDLC NS command has been sent
	... 100.	Transmit
	... 101.	Error while sending text I-format
	... 110.	Error while sending normal polling or response S-format
	... 111.	Error while sending NS control sequence
5(5) LXBSTATC		Completion code status byte
	000.	Normal final status: Control information was received in S or I-format.
	...0 000.	Time-out—received RR, RNR, or REJ
	...0 101.	Test frame received or normal LPDA2 status
	...0 110.	Partial acknowledgment—sequence number changes or Negative acknowledgment—sequence number does not change or Process processor congestion queue (ODLC only)
	...0 111.	SDLC REJ has been received
	...1 110.	SDLC RR has been received—positive acknowledgment (NS=NR). For a channel link, this indicates a successful XID exchange or Process CBC congestion queue (ODLC only)
	...1 111.	SDLC RNR has been received
	001.	Normal final status: Data was received in I-format.
	...0 000.	Time-out—received address and control fields
	...0 010.	Buffer cutoff—exceeded buffer limit
	...0 101.	Test frame has been received
	...0 110.	Partial acknowledgment—sequence number changes or Negative acknowledgment—sequence number does not change
	...1 010.	End of block—I-format was received

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	011.	Normal final status: Data was received in NS-format.
	...0 000.	Time-out—flag was received
	...0 001.	SDLC FRMR has been received (no retry)—RECMS record has a reason for FRMR
	...0 010.	Buffer cutoff—exceeded buffer limit
	...0 101.	Test frame has been received
	...1 001.	End of text
	...1 010.	SDLC NSI was received
	100.	Special 0 final status: Special status or control information was received in NS-format.
	...0 000.	Time-out—nothing was received. For a channel link, this means the channel adapter slowdown timer expired
	...0 001.	Frame reject (FRMR)
	...0 010.	Buffer pool is depleted; no more buffers are available
	...0 011.	Modem test is in progress, or Test indicate lead was on when the LPDA2 test was attempted
	...0 100.	DLC initiated DISCONTACT processing
	...0 101.	Lost data
	...0 110.	Reset—end run command
	...0 111.	Invalid address was received from secondary
	...1 010.	Link test level-2 (LL2) end
	...1 011.	Poll stop
	...1 100.	SDLC frame has been sent
	...1 110.	Disabled
	...1 111.	Enabled
	101.	Special 1 SDLC final status: Control information was received in S or NS-format, or a format error occurred in S or I-format.
	...0 000.	Time-out—received flag
	...0 001.	Received invalid SDLC command (no retry). For a channel link, this means a channel command is received before an XID exchange is completed
	...0 010.	Received invalid (incongruous) N(R) in I-format or S-format
	...0 011.	Link activity time-out (secondary only for leased subarea link, primary or secondary for switched subarea link). For a channel link, this means the attention time-out expired
	...0 100.	Received SDLC DISC. For a channel link, this means a received channel DISCONTACT or, for a boundary channel link, XID exchange failure
	...0 101.	Received SDLC UNP (Unnumbered poll) response
	...0 110.	Received SDLC RIM or SIM (no retry)
	...0 111.	Received SDLC SNRME
	...1 000.	Record statistics—total retry count overflow or transmission count overflow
	...1 001.	Received SDLC SNRM
	...1 010.	Received SDLC RD (old RQD)
	...1 011.	Received SDLC DM (old ROL) (no entry)
	...1 100.	Received SDLC SIM
	...1 101.	Received SDLC SARM
	...1 110.	Received SDLC UA (old NSA)
	...1 111.	Received SDLC XID. For a channel link, this means it received a channel XID that had incorrect length or, for a subarea channel link, XID exchange failure

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	111.	Hardware final status
	...0 001.	Modem check—CTS dropped during command. For a channel link, this indicates a MOSS panel DISCONTACT
	...0 010.	<ul style="list-style-type: none"> • Backup timer expired because a line was down • The line was automatically reset because the scanner went down
	...0 011.	Transmit underrun limit has been exhausted
	...0 100.	Adapter check: <ul style="list-style-type: none"> • Time has detected no level-2 interrupts when at least one was expected • Modem self-test failed to get a level-2 interrupt after placing the PCF in turnaround • Enable or dial failed to get a level-2 interrupt after setting the PCF to set mode
	...0 101.	For a channel link, this indicates that the channel has entered the error recovery procedure (ERP) state. Adapter feedback check: <ul style="list-style-type: none"> • Time detects an LCD of X'0F' that results from a hardware-detected error within the adapter • Improper system generation for the adapter in use
	...0 1100	Equipment check. For a channel link, this indicates the 40-second ATO has expired
	...0 111.	Modem check—DSR dropped during command
	...1 000.	Modem error—Set when the SCF modem error bit is on <ul style="list-style-type: none"> • Occurs when DSR drops during a transmit or receive operation • Can be set by timer • Set if CTS drops while transmitting
	...1 001.	Transmit clock or CTS failure: <ul style="list-style-type: none"> • During enable or write control operation, a level-2 interrupt failed to follow line turnaround • During enable on a duplex line, CTS failed to come up • Time-out occurs with PCF of transmit initial (8)
	...1 010.	DSR "turn on" check—DSR fails to come up during an enable or dial operation. For a channel link, this indicates an Enable failure
	...1 011.	No cable is installed
	...1 100.	DSR "turn off" check—DSR fails to drop during a disable operation
	...1 1010	CTS failure with test indicate lead up
	...1 110.	Auto call check: <ul style="list-style-type: none"> • Initial dial PCF 'F' sees ACR, DLO, COS, or PND up • Dial PCF '4' sees ACR or COS up
	1111 1111	Program failure: <ul style="list-style-type: none"> • Line input/output code completed in an impossible status, (that is, ENQ on SDLC line). • A negative data length was computed
	.... ...x	Poll/final bit

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) LXBEXTST		Extended error status
	1...	Overrun is LXBSTAT bit 4=0. <ul style="list-style-type: none"> • Lost character, PDF overlaid • Flag received off boundary Underrun is LXBSTAT bit 4=1. Character in PDF transmitted more than once (Limit 127 retries LXBRTYCT)
	.1..	X.21 time-out proceed to select
	..1.	X.21 time-out ready for data
	...1	X.21 DCE clear occurred
	.... 1..	Block overrun occurred. Level-3 block processing is in progress when another block is available from level 2
	.... .1..	X.21 time-out in clear sequence, or LPDA2 or V.25 bis dial failure
	.... ..1.	Abort receive: <ul style="list-style-type: none"> • Seven consecutive 1 bits received • X.21 negative CPS received
	.... ...1	Monitor count overflow. 64 temporary I-format receive errors have occurred <ul style="list-style-type: none"> • I-format receive data check • I-format receive format checks • I-format receive aborts
16(10) LXBFLAGS		LXB flags
	1...	NDPSA command queued due to buffers unavailable (LXBNCQD)
	.1..	ODLC line unavailable (LXBUNAV)
	..1.	Force deactivate in progress on associated physical link (LXBPFDA)
	...1	Reset—deactivate is required (LXBRDRQ)
	.... 1..	Failure of associated physical resource (LXBFAPR)
	.... .1..	Station delete NDPSA has been sent to ODLC logical line (Token-ring or frame-relay only) (LXBSTND)
	.... ..1.	Generate NCP-initiated generic alert (LXBBLKA)
20(14) LXBOFLGS		ODLC line flags and indicators (ODLC only)
	1...	End run command with stored status (LXBERSS)
	.1..	A deactivation NDPSA was in error (LXBDNDE)
	..1.	LDPSA parsing is suspended due to run ending condition (LXBLPS)
	...1	LXBSTAT/LXBEXTST saved (LXBSTSV)
22(16) LXBSTFLD		Line state (ODLC only)
	1...	RDI pending
	.1..	Activate pending
	..1.	Active
	...1	Deactivate pending
	.... 1..	Halt line forced deactivate pending
	.... .1..	Stop line pending
	.... ..1.	IOH halt pending
	.... ...1	Dial pending

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) LXBAEXP		Address expected in response
	xxxx xxxx	Address
	x...	Echo defeat address bit
24(18) LXBRENDF		Stored status flags
	1...	Associated physical resource failure
	.1..	Physical force deactivation
28(1C) LXBSFLGS		Saved status flags
	1...	Associated physical resource failure (LXBSFPR)
29(1D) LXBNPMFL		NPM flags for link level (Ethernet only)
	1...	NPM is active (LXBNPMA)
	.1..	Suspend receive in progress (LXBSUSP)
	..1.	Suspend congestion in progress (LXBSPCG)
	...1	Get counters in progress (LXBGC)
	.... 1..	Overflow on counters (LXBOVFL)
	.... .1..	Partial counter exist (LXPART)

Logical Link Block Common Extension

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Pointer to: The LLBLXC field in the logical link control block (LLB)
Function: Extension of the LLB

0(0)	LXCBI0 Block identifier 'LC'		2(2)	LXCTSFL Timer save field	
4(4)	LXCND8P Pointer to the logical NPM data block (NDB)				
	LXCFLAG*				
8(8)	LXC8LOPT Pointer to the next LLB in the address vector control block (AVB) timer chain				
	LXC12CT Second level I-frame retries count				
12(C)	LXC8LOTO Slow poll timer		14(E)	LXC2TIM T2 timer value (CCBTWORK timer format)	
16(10)	LXCNRRLM RNR limit		18(12)	LXC8TI TI Timer	
20(14)	LXC8NW Nw	21(15)	LXC8DW Number of bit positions to shift Ww for frame loss	22(16)	LXC8DWC Number of bit positions to shift Ww for congestion (frame-relay)
				23(17)	LXC8N3 N3 value for T2TIMER

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) LXCFLAG		Miscellaneous flags
	1...	Logical link active
	.1..	LLB queued on AVB timer chain
	..1.	Exiting local busy

LLB LMI Extension

Program: NCP

Size in bytes: 84(54)

Created by: NCP generation

Pointed to by: The LLBLXLP field in the logical link control block (LLB)

Function: Control block for frame-relay LMI

Notes: N391 is the LMI full status polling count
 N392 is the LMI error threshold count
 N393 is the LMI monitored events count
 T391 is the LMI link integrity verification polling timer
 T392 is the LMI polling verification timer

0(0) - 23(17) LXLQCBB Frame-relay LMI status message (full) builder QCB Task entry point: CXDFLMIB (Prefix: LX1)			
24(18) - 47(2F) LXLQCBP Frame-relay LMI status message processor QCB Task entry point: CXDFLMIP (Prefix: LX2)			
48(30) LXLGN391 User-specified N391 value	49(31) LXLUSWN1 User-side working N391 value	50(32) LXLGN392 User-specified N392 value	51(33) LXLUSWN2 User-side working N392 value
52(34) LXLNSWN2 Network-side working N392 value	53(35) LXLGN393 User-specified N393 value	54(36) LXLUSWN3 User-side working N393 value	
56(38) LXLNSWN3 Network-side working N393 value		58(3A) LXLDFRC3 Level 3 DLCI 0 frame discarded count	59(3B) LXLDFRC5 Level 5 DLCI 0 frame discarded count
60(3C) Reserved	61(3D) LXLNISF3* Miscellaneous level 3 flags	62(3E) LXLPROF* LMI protocol flags	63(3F) LXL CNMF* LMI CNM flags
64(40) LXL T391 User-specified T391 value		66(42) LXL T392 User-specified T392 value	
68(44) LXLNRSQ Network-side receive sequence number	69(45) LXLNSSQ Network-side send sequence number	70(46) LXLURSQ User-side receive sequence number	71(47) LXLUSSQ User-side send sequence number

* Indicates a byte expansion follows.

72(48)	LXLSEBP Pointer to status enquiry message buffer
LXLSNPM SNP mask of LMI support PU for use with NMVFRDL NMVT	
76(4C)	LXLSFBP Pointer to status message (full) buffers
LXLMISF5* Miscellaneous level 5 flags	
80(50)	LXLPVCCT Count of PVCs reported in last status message (full) sent
	82(52) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
61(3D) LXMLISF		LMI miscellaneous flags
	1... ..	LXLDFRC3 overflowed
	.1... ..	Build status full at next opportunity
62(3E) LXLPROF		LMI protocol flags
	1... ..	Build status message (full) requested
	.1... ..	Frame received during T391 interval
	.1... ..	Network-side LMI supported
	...1 ...	User-side LMI supported
	.... 1..	Status message (full) outstanding
	.... .1..	Status message (full) processing requested
	.... ..xx	Status enquiry message outstanding
		00 = No status enquiry message outstanding
		01 = Status enquiry message (full) outstanding
		10 = Status enquiry message (LIV) outstanding
		11 = Reserved
63(3F) LXL CNMF		LMI CNM flags
	1... ..	Report initial LMI status
	.1... ..	DLCI mismatch between NCP and adjacent device
	..1... ..	Unsupported DLCIs reported by adjacent device
	...1 ...	LMI mismatch between NCP and adjacent device
	.... 1..	LMI threshold exceeded
	.... .1..	First SV52 in NMVT
76(4C) LXMLISF5		Miscellaneous level 5 flags
	1... ..	LXLDFRC5 overflowed

Level-1 Control Block

Program: NCP, EP

Size in bytes: 128(80)

Created by: Shared-code module CXASCB calls generating macro CXTL1B

Pointed to by: The SYSL1BP field in the word direct addressable storage control block (XDA)

Function: Contains all the data collected by level 1 in problem determination and error recovery procedure (ERP) activities resulting from a level-1 interrupt. It is used by level-1 module CXBL1PMA.

Name	Offset	Name	Offset
L1BABND	22 (16)	L1BNL1S	24 (18)
L1BABND2	82 (52)	L1BPIOTA	102 (66)
L1BADNO	112 (70)	L1BP1076	72 (48)
L1BBDPTR	104 (68)	L1BRDV	46 (2E)
L1BCAADR	104 (68)	L1BRDVH	45 (2D)
L1BCAB	68 (44)	L1BRDVPR	70 (46)
L1BCAR0D	96 (60)	L1BRST7E	34 (22)
L1BCAR0E	98 (62)	L1BSBFLG	120 (78)
L1BCAR0F	100 (64)	L1BSBTYP	116 (74)
L1BCAR00	84 (54)	L1BSCSPA	121 (79)
L1BCAR01	86 (56)	L1BSEST	126 (7E)
L1BCAR02	88 (58)	L1BSPR	108 (6C)
L1BCAR03	90 (5A)	L1BSTA	124 (7C)
L1BCAR06	92 (5C)	L1BSV7E	36 (24)
L1BCAR07	94 (5E)	L1BSX76	122 (7A)
L1BCASL1	78 (4E)	L1BXR7D	40 (28)
L1BCASL3	77 (4D)	L1BXR7E	4 (4)
L1BCLAB1	62 (3E)	L1BXR74	0 (0)
L1BCLAB2	64 (40)	L1BXR75	10 (A)
L1BCSCR	50 (32)	L1BXR76	8 (8)
L1BERFLG	44 (2C)	L1BXR79	6 (6)
L1BERID	27 (1B)	L1B1CTA0	38 (26)
L1BERTYP	26 (1A)	L1B1CTD1	39 (27)
L1BFLAGS	74 (4A)		
L1BFLGCA	80 (50)		
L1BFLGLA	75 (4B)		
L1BILIAR	12 (C)		
L1BILVL	7 (7)		
L1BINST	20 (14)		
L1BINSTA	16 (10)		
L1BIOCI	108 (6C)		
L1BIOH	28 (1C)		
L1BIOHTA	30 (1E)		
L1BIOHTD	32 (20)		
L1BLAB3	66 (42)		
L1BLAB4	52 (34)		
L1BLAB5	54 (36)		
L1BLAB6	56 (38)		
L1BLAB7	58 (3A)		
L1BLAB8	60 (3C)		
L1BLAEST	42 (2A)		
L1BLASLC	79 (4F)		
L1BLCAT	76 (4C)		
L1BLNVT	48 (30)		
L1BL1XP	112 (70)		

0(0) LIBXR74 (LIBLAR) External register 74--lagging address register		
4(4) LIBXR7E CCU level-1 interrupt requests	6(6) LIBXR79 Utility register	
		7(7) LIBLVL* Level interrupted by level 1
8(8) LIBXR76 IOC level-1 interrupt requests	10(A) LIBXR75 Adapter input/output channel command word (AIO CCW) register	
12(C) LIBILIAR Interrupted level internal address register (IAR)		
16(10) LIBINSTA Instruction address for program checks		
20(14) LIBINST First 2 bytes of instruction	22(16) LIBABND Abend code for building a check record pool (CRP) entry	
24(18) LIBNL1S Number of level-1 interrupts	26(1A) LIBERTYP Box event record (BER) type	27(1B) LIBERID BER ID
28(1C) LIBIOH IOH/IOHI image for programmed input/output (PIO) errors	30(1E) LIBIOHTA IOH/IOHI TA data or TA returned in get error status (GES) for CSS or primary CBC's TA if bringing down CBC for primary error	
32(20) LIBIOHTD IOH/IOHI TD data	34(22) LIBRST7E Mask to reset the 7E bit	
36(24) LIBSV7E Save area for X'7E'	38(26) LIB1CTA0 TA for a command-on-command error	39(27) LIB1CTD1 TD for a command-on-command error
40(28) LIBXR7D CCU hardware check register	42(2A) LIBLAEST Line adapter error status register	

* Indicates a byte expansion follows.

44(2C) L1BERFLG* BER flags	45(2D) L1BRDVH Redrive hash	46(2E) L1BRDV (L1BFRDV) Frame-2 redrive error register	
48(30) L1BLNVT Pointer to the line vector table (LNVT) for a line with a command reject error. (See L1BCSCR.)		50(32) L1BCSCR Error status for a command reject due to a second command issued during the first command	
		First command	51(33) Second command
52(34) L1BLAB4 Redrive error register for LAB4		54(36) L1BLAB5 Redrive error register for LAB5	
56(38) L1BLAB6 Redrive error register for LAB6		58(3A) L1BLAB7 Redrive error register for LAB7	
60(3C) L1BLAB8 Redrive error register for LAB8		62(3E) L1BCLAB1 Redrive error register for CLAB1	
64(40) L1BCLAB2 Redrive error register for CLAB2		66(42) L1BLAB3 Redrive error register for LAB3	
68(44) L1BCAB Redrive error register for channel adapter control block (CAB)		70(46) L1BRDVPR Redrive response to a poll command	
72(48) L1BPI076 X'76' when a level-1 PIO operation fails		74(4A) L1BFLAGS* Level-1 flags	75(4B) L1BFLGLA* Line adapter flags
76(4C) L1BLCAT Count of the lost channel adapter trace records	77(4D) L1BCASL3 Select mask for the reselect of a channel adapter with level 3	78(4E) L1BCASL1 Select mask for a channel adapter with level 1	79(4F) L1BLASLC Select mask for an line adapter with level 1

* Indicates a byte expansion follows.

80(50)	L1BFLGCA* Channel adapter flags	82(52)	L1BABND2 Abend code for a system abend
84(54)	L1BCAR00 Level-3 interrupt initial selection control register X'0'	86(56)	L1BCAR01 Level-3 interrupt initial selection address and command register X'1'
88(58)	L1BCAR02 Level-3 interrupt data and status control register X'2'	90(5A)	L1BCAR03 Level-3 interrupt emulator subchannel (ESC) address and status byte register X'3'
92(5C)	L1BCAR06 Channel adapter level-3 interrupt NPA session counters (NSC) status and control register X'6'	94(5E)	L1BCAR07 Channel adapter enable mask and NSC bits X'7'
96(60)	L1BCAR0D Channel adapter level-1 interrupt check register X'D'	98(62)	L1BCAR0E Number and address of the channel adapter causing the level-1 interrupt X'E'
100(64)	L1BCAR0F Selected channel adapter level-3 interrupt X'F'	102(66)	L1BPIOTA TA for the failing IOH in level 1
104(68)	L1BBDPTR Pointer to the board slot in the machine configuration table (MCT)		
	L1BCAADR Channel adapter address		

108(6C)		LIBSPR Fixed or shared pointer register	
LIBIOCI* IOC mask indicator for the adapter raising the level-1 interrupt			
112(70)		LIBLXP Pointer to the LIB control block extension (LIX)	
LIBADNO Channel adapter or line adapter number for the adapter causing the level-1 interrupt (from field 1 of the AIT)			
116(74)		Reserved	
LIBSBTYP Saved BER type			
120(78) LIBSBFLG Saved BER flag byte	121(79) LIBSCSPA Saved CSP address	122(7A) LIBSX76 Saved 76 image from a level-1 IOH failure	
124(7C) LIBSTA Saved TA image from a level-1 failure	126(7E) LIBSEST Saved CSP error status		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
7(7) L1BILVL		Level interrupted by level 1
	1... ..	Program level 2 is interrupted
	.1... ..	Program level 3 is interrupted
	..1... ..	Program level 4 is interrupted
	...1... ..	Program level 5 is interrupted
44(2C) L1BERFLG		BER flags
	x... ..	1 = Control program is NCP or PEP 0 = Control program is EP
	.1... ..	Adapter is down
	..1... ..	Control program put the adapter down
	...1... ..	Redrive has been disabled (NCP only), or error on invalid ESC (EP only)
	.... 1...	MOSS CACM time-out is detected (L1BMCTD)
	.... .1..	Error on get error status
	.... .1.	Channel adapter is being disabled
	.... ...1	IOH or IOHI on level 1 failed twice

Offset/Field Name	Bit Pattern/ Hex Value	Contents
74(4A) L1BFLAGS		Level-1 flags
	1... ..	Abend at the end of level-1 processing
	.1.. ..	Build a CRP entry at the end of level-1 processing
	..1. ..	Unresolved interrupted level
	...1 ..	Reselect the channel adapter indicated in L1BCASL3
	.... xxxx	Reserved
75(4B) L1BFLGLA		Line adapter flags
	1... ..	Analyze status for line adapter
	.1.. ..	Get error status failed once for line adapter
	..1. ..	Get error status failed twice for line adapter
	...1 ..	Line adapter is masked down
	.... 1..	PIO error on a line adapter
	.... .1..	Adapter detected error on a line adapter
	.... ..xx	Reserved
80(50) L1BFLGCA		Channel adapter flags
	Byte 0	
	1... ..	Do not retry this channel adapter operation
	.1.. ..	Disable this channel adapter
	..1. ..	This channel adapter is in level-3 service
	...1 ..	EP had control
	.... 1..	EP initial selection
	.... .1..	EP data/status
	.... ..1.	NCP initial selection
	.... ....1	NCP data/status
	Byte 1	
	1... ..	Level-1 channel adapter checks are reset
	.1.. ..	Suppress-out monitor is required
	.... 1..	IBM special products or user-written code had control
108(6C) L1BIOCI		IOC indicator
	X'00'	IOC1
	X'80'	IOC2

L1B Control Block Extension

Program: NCP, EP

Size in bytes: 36(24)

Created by: Shared-Code Module CXASCBA calls generating macro CXTL1X.

Pointer to: The L1BL1XP field in the level-1 control block (L1B).

Function: Contains data collected by level 1 on problem determination and error recovery procedure (ERP) activities resulting from a level-1 interrupt. It is used by the level-1 router module.

0(0)			
L1XAITP Pointer to the adapter information table (AIT)			
4(4)			
L1XADL1P Pointer to the AIT entry corresponding to the adapter number raising the level-1 interrupt			
8(8)			
L1XCAL3P Pointer to the AIT entry corresponding to the channel adapter selected by level 3			
12(C)	13(D)	14(E)	
L1XS1TA0 Switch CCU adapter TA0 for IOC 1	L1XS2TA0 Switch CCU adapter TA0 for IOC 2	L1XSWADE Switch CCU adapter error register	
16(10)		18(12)	
L1XCAR08 Channel adapter register X'08' (auto-select chain check)		L1XCAR09 Channel adapter register X'09' (auto-select chain status)	
20(14)		22(16)	
L1XCAR0A Channel adapter register X'0A' (cycle-steal chain status)		L1XCAR60 Channel adapter register (microcode check)	
24(18)		26(1A)	
L1XCAR50 Channel adapter register X'50' (CADS logic check)		L1XCAR51 Channel adapter register X'51' (CADS logic check)	
28(1C)		30(1E)	31(1F)
L1XCAR52 Channel adapter register X'52' (CADS logic check)		L1XCA0F1 Select mask of a CA with failing input IOH X'F' (IOC BUS 1)	L1X0FCT1 Number of consecutive input IOH X'F' failures (IOC BUS 1)
32(20)	33(21)	34(22)	35(23)
L1XCA0F2 Select mask of CA with failing input IOH X'F' (IOC BUS 2)	L1X0FCT2 Number of consecutive input IOH X'F' failures (IOC BUS 2)	L1XGESFG* Invalid Get Error Status (GES) indicator flag	Reserved

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
34(22) L1XGESFG		GES Indicator Flag
	1...	Invalid GES Error Category (L1XICAT)
	.1..	Invalid GES Error Type (L1XITYP)
	..1.	Invalid GES Count (L1XICNT)
	...1	Invalid GES TA/TD (L1XITAD)

Level-4 Router Control Block

Program: NCP, EP

Size in bytes: 12(C)

Created by: NCP or PEP generation

The shared code module, CXASCBA, calls the generating macro, CXTL4B.

Pointer to: The SYSL4BP field in the fullword direct addressable extension control block (FAX)

Referenced by: Level-4 router (CXAL4RTR) and the PCIL4 user macro

Function: Contains information used by the level-4 router (CXAL4RTR) and the PCIL4 user macro. The priority (specified by level-4 router processing and program control interrupt request processing) is in the same order as the L4B (0–11).

0(0) L4BL45WT Level-4 or level-5 wait mask	1(1) L4BLEASE Lease request	2(2) L4BSLODN Slowdown request	3(3) L4BDISPT Dispatcher request
4(4) L4BIPRTR IP router request	5(5) L4BMDNOF MOSS down or offline request	6(6) L4B37CSP Request CSS portswaps	7(7) L4BCRP Check record pool (CRP) entry service
8(8) L4BMOSSX MOSS transfer request	9(9) L4BFBTO Fallback time-out request	10(A) L4BEPACT EP Activation request	11(B) Reserved

MOSS Buffer Format

Program: NCP, EP

Size in bytes: 80(50) for a mailbox image; 76(4C) for a wrap request; variable for a box event record (BER)

Function: Used to pass information between NCP or EP and MOSS. The buffer contains two parts:

- An FID1 prefix, an event control block (ECB), and a work area
- One of three request areas.

The request areas may contain the following:

- A mailbox image
- Wrap request control and response results
- A BER.

The MBF does not contain a transmission header (TH) or a request/response header (RH). See the MOSS mailbox (MBX) for a summary of the in-mailbox or out-mailbox request field used by each valid mailbox command.

0(0) - 41(29)

FID1 prefix, ECB, and work area.
(See PIU FID1 for the format.)

Mailbox Image Request

		42(2A) Alignment bytes	
44(2C) MBFCMAND* Mailbox command	45(2D) MBFCNTRL* Mailbox control	46(2E) MBFDATLN Data length or 0 if data is in the NCP/EP buffer format	
48(30) MBFDATAD Data address			
52(34) MBFDATA2 Second data address field			
MBFGPA General purpose field A	53(35) MBFGPB General purpose field B	54(36) MBFGPC General purpose field C	55(37) MBFGPD General purpose field D
MBFTHB0 PIU TH byte 0 (outgoing only)	MBFRHB0 PIU RH byte 0 (outgoing only)	MBFRUB0 PIU request/response unit (RU) byte 0 (outgoing only)	MBFRUB1 PIU RU byte 1 (outgoing only)
MBFBFCT Number of buffers requested (request buffer)			

* Indicates a byte expansion follows.

56(38) MBFGPE General purpose field E	57(39) MBFGPF General purpose field F	58(3A) MBFGPG General purpose field G	59(3B) MBFGPH General purpose field H
MBFRUB2 PIU RU byte 2 (outgoing only)		MBFCSPAD Scanner address (Connect scanner command)	
MBFSENSE Sense code (incoming only)			
60(3C) MBFSTAT* Status byte		62(3E) Reserved	
MBFSTAT1 Request accepted or rejected	61(3D) MBFSTAT2 Reject reason		
64(40) MBFSTATA Status address (address of the first buffer leased for MOSS)			
Reserved			
68(44) - 75(4B) Reserved			
76(4C) MBFBCTRL* Buffer control	77(4D) Reserved		

* Indicates a byte expansion follows.

Wrap Request

		42(2A) MBFLIFAD Line interface address	
44(2C) MBFCMND* Wrap command	45(2D) MBFMODIF* Wrap modifier	46(2E) MBFNUMWR Number of wraps	47(2F) Reserved
48(30) MBFTPSND Pointer to the pattern to send			
52(34) MBFTPEXP Pointer to the pattern expected to be received			

* Indicates a byte expansion follows.

Wrap Response Results

56(38) MBFTPBAD Pointer to the first bad pattern			
60(3C) MBFRSLT1* Wrap status byte 1 (results of the wrap test)	61(3D) MBFRSLT2* Wrap status byte 2	62(3E) MBFNUMTR Number of transmissions attempted	63(3F) MBFNUMRC Number of test patterns received
64(40) MBFNUMBD Number of test patterns received that did not match the expected pattern	65(41) MBFXSTAT* Wrap extended status bytes		
	MBFXSCF Secondary control field (SCF) (transmit)	66(42) MBFXLCS Line communication status (LCS) (transmit)	67(43) MBFXSES Secondary ending status (SES) (transmit)
68(44) MBFXSTAT* (continued)		71(47) - 75(4B)	
MBFRSCF SCF (receive)	69(45) MBFRLCS LCS (receive)	70(46) MBFRSES SES (receive)	
Reserved			

* Indicates a byte expansion follows.

BER Request

42(2A) Alignment bytes	
44(2C) MBFBER BER start	45(2D) - 51(33)
BERs are variable in length and contain various types of information. See the BER.	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
44(2C) MBFCMAND		Mailbox command. See MBXCMAND in the MBX for bit definitions and page 1-637 for each command's mailbox fields.
44(2C) MBFCMND		Wrap command
	X'10'	Stop wrap request by NCP or EP
	X'20'	Stop wrap request by MOSS
	X'40'	Start wrap request
	X'80'	Initialize wrap request
45(2D) MBFCNTRL		Mailbox control. See MBXCNTRL in the MBX for bit definitions.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
45(2D) MBFMODIF		Wrap modifier
	.... x...	1 = Wrap leads 0 = Wrap data
	.... .x..	1 = External 0 = LIC level
	.... ..x.	1 = Modem 0 = Cable
	.... ...x	1 = Fixed number of wraps 0 = Continuous wrap
60(3C) MBFSTAT		Status bytes. See MBXSTAT in the MBX for bit definitions and page 1-637 for the valid status for each mailbox command.
60(3C) MBFRSLT1		Wrap status (results of the wrap test)
	x... ..	1 = Not processed 0 = Processed
	X'00'	Test was completed with no errors
	X'40'	Test was stopped by MOSS
	X'41'	Test was stopped due to buffers-not-available
	X'42'	Test was stopped by a level-4 mailbox manager
	X'80'	Line is not NCP/EP generated
	X'81'	Line is active
	X'82'	Invalid sequence
	X'83'	Test is not running
	X'84'	Line is being switched; reissue wrap
	X'85'	Unable to initialize the line to wrap mode
	X'86'	OEM line
	X'87'	Invalid command or parameter
	X'88'	Buffers are not available
	X'89'	No-op DUALCOM line (EP only)
	X'8A'	Panel line test is in progress
	X'8B'	Line trace in progress
	X'8D'	NCP—CSS communication error
61(3D) MBFRSLT2		Wrap status byte 2
	X'02'	Backup timer time-out
	X'04'	Communication scanner processor (CSP) ending status error
	X'08'	Bad pattern found
	X'10'	Successful recovery from error (ODLC)
	X'20'	Unsuccessful recovery from error (ODLC)
	X'30'	Adapter unable to initialize line (ODLC)
	X'31'	NCP error—recovery unsuccessful (ODLC)
	X'40'	Adapter unable to start wrap (ODLC)
	X'41'	CSS error—recovery unsuccessful (ODLC)
	X'50'	Line unavailable for use (ODLC)
	X'60'	Adapter not installed or inoperative (ODLC)
	X'70'	Stop wrap complete rejected (ODLC)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
65(41) 68(44) MBFXSTAT		Wrap extended status bytes
	xxxx	LCD value
	.... x...	1 = NCP 0 = EP
	.... .x..	1 = Normal mode 0 = Character mode
	.... ..x.	1 = ODLC SDLC non-switched X.21 line 0 = Not an ODLC SDLC non-switched X.21 line (bit 6 is only valid bit for ODLC)
76(4C) MBFBCTRL		Mailbox image—buffer control
	1...	EP request
	.1..	NCP request
	..1.	Mailbox manager set wrap test results

MOSS Mailbox

Program: NCP, PEP

Size in bytes: 32(20)

Created by: NCP or PEP generation

Pointed to by: For the in-mailbox, the SYSMBIN field in the fullword direct addressable extension (FAX), and for the out-mailbox, the SYSMBOUT field in the FAX

Function: Depends on whether it is the in-mailbox or the out-mailbox. The in-mailbox contains the *incoming request* from MOSS and the status returned by the mailbox manager. The out-mailbox contains the *outgoing request* to MOSS and the status returned from MOSS. See page 1-637 for a summary of the in- or out-mailbox request fields used by each valid mailbox command.

In-Mailbox (MOSS to NCP/EP)

Mailbox Request (MOSS Writes and NCP/EP Reads)

0(0) MBXCMAND* Mailbox command	1(1) MBXCNTL* Mailbox control	2(2) MBXDATLN Data length or 0 if the data is in the NCP/EP buffer format	
4(4) MBXDATAD Data address (valid when MBXCNTL=B'1xxx xxxx')			
MBXCTL2* Control field 2			
8(8) MBXDATA2 Second data address field (pointer to the buffer used to send the response)			
MBXGPA General purpose field A	9(9) MBXGPB General purpose field B	10(A) MBXGPC General purpose field C	11(B) MBXGPD General purpose field D
MBXORLNA Old line's relative line number		MBXNRLNA New line's relative line number	
MBXBFCT Number of buffers requested			
MBXLANO Line adapter number			
MBXCAPOS* Channel adapter position			

* Indicates a byte expansion follows.

12(C) MBXGPE General purpose field E	13(D) MBXGPF General purpose field F	14(E) MBXGPG General purpose field G	15(F) MBXGPH General purpose field H
MBXSENSE Sense code bytes 1 and 2 (used to send a negative response)		MBXSENS2 Sense code bytes 3 and 4 (used to send a negative response)	

Mailbox Response (NCP/EP Writes and MOSS Reads)

16(10) MBXSTAT* Status bytes	18(12) Reserved	
MBXSTAT1* Request accepted or rejected	17(11) MBXSTAT2* Reject reason	
20(14) MBXSTATA Status address (address of the first buffer leased for MOSS)		
Reserved		
24(18) MBXCC* Completion code	25(19) MBXPGMST* Program status	26(1A) - 31(1F)
MBXPSCC Port swap completion code		
Reserved		

* Indicates a byte expansion follows.

Out-Mailbox (NCP/EP to MOSS)
 Mailbox Request (NCP/EP Writes and MOSS Reads)

0(0) MBXCMAND* Mailbox command	1(1) MBXCNTL* Mailbox control	2(2) MBXDATLN Data length or 0 if data is in the NCP/EP buffer format	
4(4) MBXDATAD Data address (valid when MBXCNTL=B'1xxx xxxx')			
8(8) MBXGPA General purpose field A	9(9) MBXGPB General purpose field B	10(A) MBXGPC General purpose field C	11(B) MBXGPD General purpose field D
MBXTHB0 PIU TH byte 0	MBXRHB0 PIU RH byte 0	MBXRUB0 PIU RU byte 0	MBXRUB1 PIU RU byte 1
12(C) MBXGPE General purpose field E	13(D) MBXGPF General purpose field F	14(E) MBXGPG General purpose field G	15(F) MBXGPH General purpose field H
MBXRUB2 PIU RU byte 2			

* Indicates a byte expansion follows.

Mailbox Response (MOSS Writes and NCP/EP Reads)

16(10) MBXSTAT* Status bytes	18(12) Reserved	
MBXSTAT1 Request accepted or rejected	17(11) MBXSTAT2 Reject reason	
20(14) MBXSTATA Status address		
Reserved		
24(18) - 31(1F) Reserved		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) MBXCMAND		Mailbox commands
	x...	Command indicator: 1 = Mailbox In command 0 = Mailbox Out command.
	.xx.	Command type: 00 = Normal command 01 = Initialization command 10 = Controller load/dump program (CLDP) command 11 = Invalid.
		Out-Mailbox Normal Commands
	X'01'	Fallback Complete
	X'03'	Request Fallback Port Swap
	X'06'	Transfer PIU
	X'07'	Box Event Record (BER)
	X'08'	Buffers Now Available
	X'09'	Wrap Test Results
	X'0C'	Time/Date Valid
	X'0D'	Request Reissue CSS Port Swaps
		Out-Mailbox Initialization Commands
	X'23'	Control Program Parameters
	X'24'	Request Hardware configuration data set (CDS)
	X'25'	Control Program Initialization Complete
	X'26'	Request Hardware CDS or Reissue Port Swap
	X'27'	Request Reissue Port Swap
		Out-Mailbox CLDP Commands
	X'41'	Control Program Loaded
	X'42'	Roll-in Saved Storage for Dump
	X'43'	IPL from Disk
	X'44'	Control Information
	X'45'	First Dump Record Built

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		In-Mailbox Normal Commands
	X'81'	Fallback
	X'82'	Switchback
	X'83'	Fallback Port Swap
	X'84'	Update CDS
	X'85'	Switchback Complete
	X'86'	Transfer PIU
	X'89'	Wrap Test Request
	X'8B'	Disconnect Line Adapter
	X'8C'	Connect Line Adapter
	X'8D'	Connect Scanner
	X'8D'	Request CSS Port Swaps
	X'8E'	Request Buffer
	X'8F'	Free Buffer
	X'90'	MOSS Offline
	X'91'	MOSS Online
	X'92'	Port Swap
	X'93'	Disconnect Channel Adapter
	X'94'	Connect Channel Adapter
	X'95'	Channel Adapter Chain Update
	X'96'	Install Channel Adapter
		In-Mailbox Initialization Commands
	X'A3'	Control Program Parameters Saved
	X'A4'	CDS Information Available
	X'B2'	Reissue Port Swap
		In-Mailbox CLDP Commands
	X'C1'	Scanner IPL Complete
	X'C2'	Roll-In Complete
	X'C3'	IPL from Disk Complete
	X'C4'	Control Information Response
	X'C5'	First Dump Record Complete

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) MBXCNTL		Mailbox control
	1... .. .x... ..	Data address field is valid. Data format: 1 = Data is in NCP or EP buffers. 0 = NCP or EP buffers are not used.
	.... x...	PIU routing (in only): 1 = Broadcast PIU to all owning SSCPs. 0 = PIU has its destination address field (DAF).
	.... .x..	Second data address field (used with bit 6—valid only for Transfer PIU command). 1 = Second address in MBXDATA2 0 = No second address
	.... ..x.	Send the response requested by MOSS (when bit 5=1): 1 = Send a positive response to the host using the buffer pointed to by MBXDATA2. Then send a reply PIU using MBXDATAD. 0 = Send a negative response to the host using the buffer pointed to by MBXDATA2 and the sense code in MBXSENSE.
4(4) MBXCTL2		Mailbox control field 2
	x... ..	CMD X'44' Control Information 1 = Set automatic disk re-IPL 0 = Reset automatic disk re-IPL.
	.x... ..	1 = Set automatic disk dump 0 = Reset automatic disk dump.
	..x.	1 = Re-IPL or dump control bits valid 0 = Ignore re-IPL or dump control bits.
	...1	Save load module on disk
	x... ..	CMD X'82' Switchback 1 = Forced switchback request 0 = Conditional switchback request
	X'01'	CMD X'84' Update CDS Delete ports
	X'02'	Add ports
	X'03'	Delete line adapter (LA)
	X'04'	Add LA
	X'05'	Change CDS header
	X'06'	Insert channel adapter
	X'07'	Delete channel adapter
	X'08'	Change channel adapter

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		CMD X'8B' Disconnect Line Adapter
	x... ..	1 = Forced disconnect LA 0 = Conditional disconnect LA.
		CMD X'8D' Reissue CSS Port Swap
		CMD X'B2' Reissue Port Swap
		CMD X'83' Fallback Port Swap
	1... ..	Last port swap
	.1... ..	Process this port swap
	00... ..	Invalid
		CMD X'94' Connect Channel Adapter
	X'01'	Initialize channel adapter
	X'02'	Cancel channel adapter concurrent maintenance (CACM) mode
		CMD X'95' Channel Adapter Chain Update
	X'01'	Auto-selection chain (ASC) bypass
	X'02'	Cycle steal grant chain (CSGC) bypass
	X'03'	ASC insert
	X'04'	CSGC insert
		CMD X'96' Install Channel Adapter
	X'01'	Set
	X'02'	Reset
		CMD X'C3' IPL from Disk Complete
		IPL from disk status
	00... ..	Successful
	01... ..	Load module is not available.
	10... ..	Loading error
	11... ..	Disk access error
		CMD X'C4' Control Information Response
		Load module status
	00... ..	Load module saved
	01... ..	Saving not required
	10... ..	Saving error
	11... ..	Disk access error
		IPL or dump options status
	..x... ..	1 = Disk access error 0 = New options saved.
		CMD X'C5' First Dump Record Complete
		First dump record status
	00... ..	Successful
	10... ..	Saving error
	11... ..	Disk access error
8(8) MBXCAPOS	X'01'—X'10'	Channel adapter position

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) MBXSTAT		Status bytes
	X'8000'	Accepted
	X'8800'	Accepted: Keep buffer(s).
	X'8400'	Accepted: Free buffer(s).
	X'4080'	Rejected: Buffers are not available.
	X'4040'	Rejected: Function is not supported.
	X'4020'	Rejected: Command is invalid.
	X'4010'	Rejected: MOSS is down/offline.
	X'4008'	Rejected: Parameters are invalid.
	X'4004'	Rejected: Fallback is in progress.
	X'4001'	Rejected: MOSS is unable to queue an SNA request.

Offset/Field Name Bit Pattern	Offset/Field Name Bit Pattern	Contents
16(10) MBXSTAT1	17(11) MBXSTAT2	Request accepted or rejected
1... ....	.... ....	Request is accepted (in/out).
1... 1...	.... ....	Keep the buffers or data (out).
1... .1..	.... ....	Free the buffers or data (out).
.1.. ....	.... ....	Request is rejected (in/out).
.1..	1...	Buffers are not available (in).
.1.. ....	.1..	Function is not supported (in).
.1.. ....	.1..	Command is invalid (in/out).
.1.. ....	...1	MOSS is down or MOSS is offline (in).
.1.. ....	.... 1...	Parameters are invalid (in/out).
.1.. ....	.... .1..	Fallback is in progress.
.1.. ....	.... ...1	MOSS is unable to queue an SNA request (out).
..xx ....	.... ....	Reserved
.... ..xx	.... ....	Reserved
.... ....	.... ..x.	Reserved

Offset/Field Name	Bit Pattern/Hex Value	Contents
24(18) MBXCC		Completion code
		CMD X'83' Fallback Port Swap
		CMD X'92' Port Swap
		CMD X'B2' Reissue Port Swap
	X'00'	Port swap is complete.
	X'01'	New port is already defined.
	X'02'	Old port is undefined.
	X'03'	Old port is not inactive.
	X'04'	Old line is a noncompatible IBM special products or user-written code line.
	X'05'	Old port is an EP line.
	X'06'	Port swap table is full
	X'07'	Adapter types do not match.
	X'08'	New relative line number is not associated with any line adapter, or if associated with an LA, the LA is not attached, not installed, or is spare.
	X'09'	Old relative line number is not associated with any line adapter.
	X'0A'	One line is switched to this CCU; the other line was originally attached to this CCU.
	X'0B'	Illegal line type for port swap
	X'0C'	Port already swapped
	X'80'	Fallback port swap is out of sequence.
	X'81'	Fallback is not in progress; NCP has the full configuration.
	X'82'	Fallback is not in progress; NCP does not have the full configuration.
		CMD X'81' Fallback
	X'00'	Fallback is in progress.
	X'01'	Fallback is already in progress.
		CMD X'82' Switchback
	X'00'	Switchback is complete.
	X'01'	NCP does not have the whole configuration.
	X'02'	Resources to be switched are still owned by SSCPs, transmission groups, or both on the channels to be switched.
		CMD X'84' Update CDS
	X'00'	Update CDS is complete.
	X'01'	Channel adapter or line adapter is not attached to this CCU.
	X'02'	Channel adapter or line adapter is not installed.
	X'03'	Channel adapter or line adapter is currently operative.
	X'10'	Invalid port range
	X'11'	Port or ports currently defined in the CDS
	X'20'	Channel adapter not CACM mode disconnected
	X'21'	Channel adapter is not bypassed from both ASC and CSGC.
	X'22'	Channel adapter is not install in progress.
	X'23'	Channel adapter is currently installed.
	X'24'	Function has already been performed.
	X'25'	Channel adapter cannot be bypassed from both ASC and CSGC.
		CMD X'8B' Disconnect Line Adapter
	X'00'	Request is complete.
	X'02'	Line adapter is not attached to this CCU.
	X'03'	Line adapter is not installed.
	X'04'	Resource to be disconnected is still owned by SSCPs.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		CMD X'8C' Connect Line Adapter
	X'00'	Request is complete.
	X'02'	Line adapter is not attached to this CCU.
	X'03'	Line adapter is not installed.
		CMD X'93' Disconnect Channel Adapter
	X'00'	Disconnect channel adapter is complete.
	X'02'	Channel adapter is not attached to this CCU.
	X'03'	Channel adapter is not installed.
	X'04'	Function has already been performed.
	X'05'	Disable is already in progress (normal).
	X'06'	Disable is already in progress (CA ERP INOP detected).
	X'07'	Disable is initiated.
	X'08'	Channel adapter is in use by NCP,EP, or IBM special products or user-written code.
	X'09'	PBF is detected by level 1.
	X'0A'	ASCF is detected by level 1.
		CMD X'94' Connect Channel Adapter
	X'00'	Connect channel adapter is complete.
	X'02'	Channel adapter is not attached to this CCU.
	X'03'	Channel adapter is not installed.
	X'04'	Channel adapter is not inserted into ASC and CSGC.
	X'05'	Channel adapter not CACM mode disconnected
	X'06'	Invalid channel adapter state: pending level 3 found active
	X'07'	Invalid channel adapter state: channel adapter found interface enabled
	X'08'	Invalid channel adapter state: level-1 or level-3 channel adapter enable failure
	X'09'	Channel adapter is in either ASC or CSGC, but not in both.
	X'0A'	Channel adapter is not operative.
	X'0B'	PBF is detected by level 1.
	X'0C'	IOHF, threshold is reached at level 1.
	X'0D'	ASCF is detected by level 1.
		CMD X'95' Channel Adapter Chain Update
	X'00'	Channel adapter chain update is complete.
	X'02'	Channel adapter is not attached to this CCU.
	X'03'	Channel adapter is not installed.
	X'04'	Function has already been performed.
	X'05'	Channel adapter not CACM mode disconnected
	X'07'	Channel adapter cannot be bypassed from ASC.
	X'09'	Channel adapter cannot be bypassed from CSGC.
	X'0A'	Channel adapter is not operative.
	X'0B'	IOHF, threshold is reached at level 1; perform selective reset.
	X'0D'	PBF is detected by level 1.
		CMD X'96' Install Channel Adapter
	X'00'	Set/Reset is complete.
	X'02'	Channel adapter is not attached to this CCU.
	X'03'	Channel adapter is currently installed.
	X'04'	Function has already been performed.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
25(19) MBXPGMST		Program Status
	1...	Pointer to the owners data area available at MBXSTATA (NCP only)
	.1..	Channel adapter is in use by EP.
	..1.	Channel adapter is in use by NCP.
	...1	Channel adapter is in use by IBM special products or user-written code.
	.... 1...	Another MOSS channel adapter function is in progress for EP.
	.... .1..	Disable is in progress.

Mailbox Command Requests (continued)

Description	Displacement (Hex)	Code (Hex)									
		Mailbox Commands	A3	A4	B2	C1	C2	C3	C4	C5	
General Purpose Field H	F		0	0	0	0	0	0	0	0	
Scanner Address	E-F										
Sense Code Bytes 3,4	E-F										
General Purpose Field G	E		0	0	0	0	0	0	0	0	
General Purpose Field F	D		0	0	0	0	0	0	0	0	
Sense Code Bytes 1,2	C-D										
PIU RU Byte 2	C										
General Purpose Field E	C		0	0	0	0	0	0	0	0	
PIU RU Byte 1	B										
General Purpose Field D	B		0	0	0	0	0	0	0	0	
PIU RU Byte 0	A										
General Purpose Field C	A		0	0	0	0	0	0	0	0	
Second Data Address	9-B								↑ Last Byte in CP		
PIU RH Byte 0	9										
New Line's Rel. Line Num.	A-B				X						
General Purpose Field B	9		0	0		0	0		0	0	
Line Adapter Number	8										
Numbers of Buffers Required	8										
Channel Adapter Position	8										
PIU TH Byte 0	8										
Old Line's Rel. Line Number	8-9				X						
General Purpose Field A	8		0	0		0	0	0	0	0	
Data Address	4-7		0	↑ CDS	0	0	↑ CSP list	0	0	0	
Control Field 2	4				X			↑ Roll-In	X	X	
Data Length	2-3		0	CDS leng	0	0	CDS list	Roll Leng/0	0	0	
Control	1		0	1000 0000	0	0	1000 0000	1000 0000	1000 0000	0	

X = Valid field or status for that command

Moss Writes

Note: Bit 0=0 if control program entry point or size is valid.
 Bit 0=1 if control program entry point or size is not valid.

NCP Reads

Mailbox Command Responses

		Mailbox Response												
		Mailbox Status (Hex)									Status Address	Completion Code	Program Status	
		Rejected					Accepted							
		4001	4004	4008	4010	4020	4040	4080	8000	8400				8800
Description		Unable to Queue SNA Request	Fallback in progress	Invalid Parameters	MOSS Down or Offline	Invalid Command	Function Not Supported	CCU Buffers Not Available	Request Accepted	Free Buffers or Data	Keep Buffers or Data			
Displacement (Hex)		10-11									14-17	18	19	
Code (Hex)	Mailbox Commands													
01	Fallback Complete					X			X			0		
03	Request Fallback Port Swap					X			X			0		
06	Transfer PIU-REQMS	X				X					X	0		
	Transfer PIU-DISPSTOR	X				X					X	0		
	Transfer PIU-IPL	X				X					X	0		
07	Box Event Record (BER)					X				X	X	0		
08	Buffers Now Available					X			X			0		
09	Wrap Test Results					X				X		0		
0C	Time/Date Validation					X			X			0		
0D	Request Reissue CSS Port Swaps					X			X			0		
23	CP Parameters Available					X			X			0		
24	Request Hardware CDS					X			X			0		
25	CP Initialization Complete					X			X			0		
27	Request Reissue Port Swap					X			X			0		
41	Control Program Loaded					X			X			0		
42	Roll-in Saved Storage					X			X			0		
43	IPL From Disk					X			X			0		
44	Control Information					X			X			0		
45	Fast Dump Record Built					X			X			0		

Out-Mailbox (NCP to MOSS)

X = Valid field or status for that command



Mailbox Command Responses (continued)

		Mailbox Response											Status Address	Completion Code	Program Status	
		Mailbox Status (Hex)														
		Rejected						Accepted								
		4001	4004	4008	4010	4020	4040	4080	8000	8040	8800					
Description	Unable to Queue SNA Request	Fallback in progress	Invalid Parameters	MOSS Down or Offline	Invalid Command	Function Not Supported	CCU Buffers Not Available	Request Accepted	Free Buffers or Data	Keep Buffers or Data						
Displacement (Hex)		10-11										14-17	18	19		
Code (Hex)	Mailbox Commands															
81	Fallback				X	X	X	X					0	X		
82	Switchback		X		X	X	X		X				↑ ODA	X		
83	Fallback Port Swap			X	X		X		X				0	X		
84	Update CDS			X	X	X	X		X				0	X		
85	Switchback Complete		X		X	X	X		X				0	X		
86	REQMS Negative Response		X	X	X	X		X	X				0			
	REQMS Pos Resp & RECFMS			X	X	X		X	X				0			
	Unsolicited RECFMS			X	X	X	X	X	X				0			
	DISPSTOR Negative Response			X	X	X		X	X				0			
	DISPSTOR Pos Resp & RECSTOR			X	X	X		X	X				0			
	DISPSTOR Pos Resp No Data			X	X	X		X	X				0			
	IPL Negative Response			X	X	X		X	X				0			
	IPL Pos Resp No Data			X	X	X		X	X				0			
89	Wrap Test			X	X	X		X	X				0			
8B	Disconnect Line Adapter		X	X	X	X			X				↑ ODA	X		
8C	Connect Line Adapter		X	X	X	X			X				0	X		
8D	Connect Scanner			X	X	X		X	X				0			
8D	Request CSS Port Swaps					X			X					X	X	
8E	Request Buffer			X	X	X		X	X				↑ Buffer			
8F	Free Buffer			X	X	X			X							
90	MOSS Offline				X	X			X							
91	MOSS Online					X		X	X				↑ CPIT			
92	Request Port Swap					X			X					X	X	
93	Disconnect Channel Adapter		X	X		X	X		X				↑ ODA	X	0	
94	Connect Channel Adapter		X	X		X	X		X				0	X		
95	Channel Adapter or Chain Update		X	X		X	X		X				0	X	0	
96	Install Channel Adapter		X	X		X	X		X				0	X	0	
A3	CP Parameters Saved					X			X				0			
A4	CDS Information Available					X			X				0			
B2	Request Reissue Port Swap					X			X				0	X		
C1	Scanner IPL Complete					X			X				0			
C2	Roll-In Complete					X			X				0			
C3	IPL From Disk Complete			X		X			X				0			
C4	Control Information Response					X			X				0			
C5	First Dump Record Complete					X			X				0			

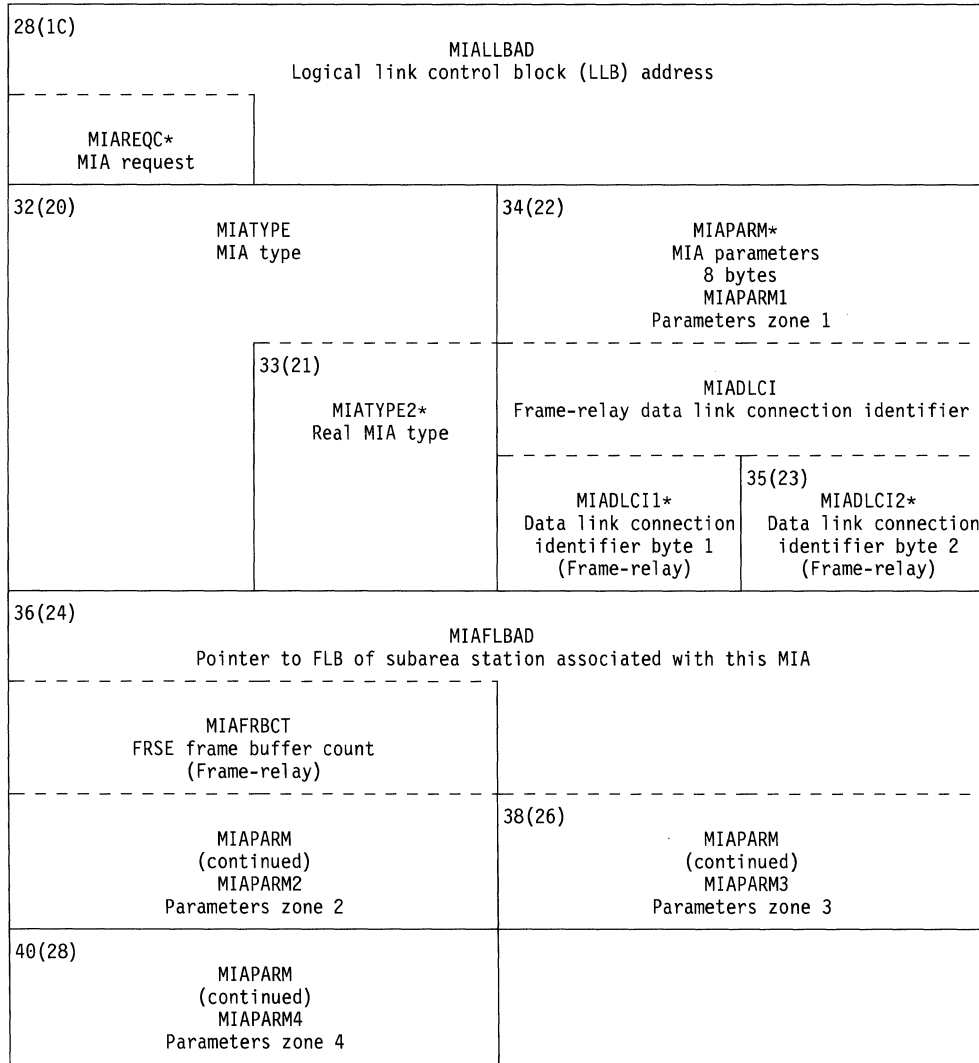
In-Mailbox (MOSS to NCP)

X = Valid field or status for that command



MAC Interface Area

- Program:** NCP
- Size in bytes:** 14(E)
- Located in:** NCP buffer
- Created by:** NCP for inbound or outbound information about the medium access control (MAC) level-3 layer
- Pointed to by:** Variable
- Function:** Interface between the MAC level-3 layer and the other NTRI layers (physical link manager (PLM) and logical link control (LLC))



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
28(1C) MIAREQC		MIA request
	1...	Routing information present (MIARQRI)
	.1..	MAC has to transpose destination address (DA) and source address (SA) (MIARQDS)
	..1.	Transmit end processing required (MIAXEPR)
	...1	Don't release LMI buffers at transmit end (MIAFKBF)
	.... 1..	Urgent Frame Relay LMI Request (MIAUR)
33(21) MIATYPE2		Real MIA type (See note)
	X'F0'	Initialization successful (MIAINITV)
	X'F1'	Initialization unsuccessful (MIAINTKO)
	X'F2'	Adapter check (MIAADPTC)
	X'F3'	Level 2 error leg A (MIAL2ELA)
	X'F4'	Level 2 error leg B (MIAL2ELB)
	X'F5'	Direct memory access or programmed input/output (DMA/PIO) error (MIAPIOER)
	X'F6'	Backup time-out (MIABACTO)
	X'F7'	Beacon MAC frame received (MIABEAC)
	X'F8'	Transmit aborted (MIAXABOR)
	X'01'	Ring status change (MIARISCH)
	X'03'	Open (MIAOPEN)
	X'04'	Transmit end (MIAXEND)
	X'06'	Receive (MIARCV)
	X'07'	Close (MIACLOSE)
	X'0A'	Read error log (MIAREL)
34(22) MIAPARM		MIA parameters
	Byte 0	
	1...	Adapter opened (for MIA type open) (MIAOPNC)
	1...	Adapter closed (for MIA type close) (MIAADPC)
	1...	Read error complete (for MIA type read error log) (MIALOGC)
	.1..	Node address error (for MIA type open) (MIANAER)
	.1..	Hard error (for MIA type ring status change) (MIAHRDE)
	..1.	List size error (for MIA type open) (MIALSER)
	...1	Buffer size error (for MIA type open) (MIABSER)
	.... 1..	External RAM error (for MIA type open) (MIAERER)
	.... 1..	Lobe wire fault (for MIA type ring status change) (MIALBWF)
	.... .1..	Transmit buffer count error (for MIA type open) (MIATBER)
	.... .1..	Autoremoval 1 error (for MIA type ring status change) (MIAAR1E)
	.... ..1.	Open error (for MIA type open) (MIAOPER)
	.... ...1	Remove received (for MIA type ring status change) (MIARMVR)
	Byte 1	
	xxxx ...	Open error phase (for MIA type open) (MIAOPEP)
	.1..	Single station (for MIA type ring status change) (MIASGLS)
	..1.	Ring recovery (for MIA type ring status change) (MIARICO)
	...1	Initialization completion (for MIA type init) (MIAINTC)
	.... xxxx	Open error code (for MIA type open) (MIAOPEC)

Note: See Figure 1-3 on page 1-645.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
34(22) MIADLCI1		Data link connection identifier byte 1 (Frame-relay)
	xxxx xx..	DLCI address
	.... ..x.	1 = Frame is response to primary 0 = Frame is a command to secondary
	.... ...0	Extended address bit (address continues)
35(23) MIADLCI2		Data link connection identifier byte 2 (Frame-relay)
	xxxx	DLCI address
	.... 1...	Forward congestion indicator
	.... .1..	Backward congestion indicator
	.... ..1.	Discard eligibility indicator
	.... ...1	Extended address bit (last byte of address)

1C	1D	1E	1F	20	21	22	23	24	25	26	27	28	29	2A
		PLB address			0 0 0 0 TIC trace									
					0 0 0 1 Ring status change		SSB							
					0 0 0 3 Open		SSB							
		LLB address			0 0 0 4 Transmit end (Token ring)		SSB		SSB		SSB		CSTAT	
		LLB address			0 0 0 4 Transmit end (Frame relay)		DLCI							
		LLB or PLB address			0 0 0 6 Receive OK to LLC (Token ring)		SSB		SSB		SSB		CSTAT	
		LLB address			0 0 0 6 Receive to LLC (Frame relay)		DLCI							
					0 0 0 6 Receive error (PLM)		SSB		CSTAT		RXFERSIZE			
					0 0 0 7 Close		SSB							
					0 0 0 A Read error log		SSB	00	incr counter					
					X X F 0 Initialization successful		Init. interrupt register							
					X X F 1 Initialization unsuccessful		Init. interrupt register							
					X X F 2 Adapter check		AC values		Parameter 0		Parameter 1		Parameter 2	
					X X F 3 Level 2 error - leg A		SSB		SSB		SSB		SSB	
					X X F 4 Level 2 error leg B		TRM level 2 status							
					X X F 5 DMA/PIO error		TRM level 2 status							
					X X F 6 backup T/O									
					X X F 6 Beacon MF received									
Req code		LLB address												

Figure 1-3. MIA Format in an NCP Receive Buffer

NMVT Information Block

Program: NCP
Size in bytes: 108(6C)
Created by: NCP generation
Pointer to: SYSMIBP in the extended halfword direct addressables control block (HWE)
Function: Contains control information and pointers for network management vector transport (NMVT) processing

0(0)			
MIBPIUP Pointer to the NMVT request PIU			
4(4)			
MIBRPIUP Pointer to the NMVT prototype reply PIU			
8(8)			
MIBCNDVP Pointer to the NMVT command subvector			
12(C)	13(D)	14(E)	15(F)
Reserved	MIBRPYFL* Reply flag	MIBSALTE Number of SNA Address List targets	MIBUSNPM Unsolicited SSCP-NCP session control block (SNP) mask
16(10)			
MIBFBUPP Pointer to the function related buffer			
20(14)			
MIBMIGS1 Migration save NMVT first buffer			
24(18)			
MIBMIGS2 Migration save time subvector buffer			
28(1C) - 107(6B)			
10 doublewords of resource ID, resource address, and a pointer to the target entity with which they are associated. (See Resource Entry Format.)			

* Indicates a byte expansion follows.

Resource Entry Format

n	MIBCADDR Control block address
MIBCIBD* Control block ID	
n+4	MIBTARGP Pointer to the associated target entity

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
13(D) MIBRPYFL		Reply flag
	x... ..	1 = Solicited data 0 = Unsolicited data
	.xx.	NMVT position within a group: 10 = First NMVT of a group 11 = Middle NMVT of a group 01 = Last NMVT of a group 00 = Only NMVT.
	...x	1 = An SNA Address List subvector is in the NMVT (does not apply to session information retrieval). 0 = No SNA Address List
<i>n</i> MIBCBID		Control block ID
	X'01'	Common physical unit block (CUB)
	X'03'	Device based control block (DVB)
	X'06'	Programmed resource LU block extension (NLX)
	X'0A'	Line control block (LKB)
	X'0B'	Line control block (LCB)
	X'15'	Station control block (SCB)
	X'18'	Programmed resource

MOSS Interface Control Block**Program:** NCP**Size in bytes:** 88(58)**Created by:** CXASCB or CXASCBA**Pointer to:** The SYSMIFP field in the word direct addressable storage control block (XDA)**Function:** Contains the outbound, hold, and cleanup queue control blocks (QCBs), and status and control information for MOSS

0(0) Reserved	1(1) MIFCTRL1* Mailbox manager control byte 1 (Down or Offline processing control)	2(2) MIFCTRL2* Mailbox manager control byte 2 (Wrap Test state)	3(3) MIFCTRL3* Mailbox manager control byte 3
4(4) MIFLIFAD Line interface address	6(6) MIFTMOUT Time-out count		7(7) MIFTMEXP Time-out expired
8(8) MIFXFERC* Dump transfer control flags	9(9) MIFSNPM SSCP-NCP session control block (SNP) mask for the dump requester	10(A) MIFALERT* Alert user action qualifier	11(B) MIFSTAT* Fallback status
12(C) MIFWRPP Pointer to the level-5 wrap manager control block (WRP)			
16(10) MIFBOUT Fallback time-out count		18(12) MIFFBEXP Fallback timer expired	
20(14) MIFFBUPP Fallback transmit buffer pointer			

* Indicates a byte expansion follows.

24(18) MIFR6SA Register X'06' contents saved in CXAMINTR	
28(1C) MIFTPOUT Transfer PIU out timeout counter	30(1E) MIFTPEXP Transfer PIU out timeout expired

MOSS Outbound QCB (MIFOBQCB)

32(20)		MIMIECB Pointer to the first element in the outbound queue
MIMMCBD Major control block displacement divided by 2		
36(24)		MIMLECB Pointer to the last element in the outbound queue
40(28)		MIMLINK Pointer to the next QCB in the outbound queue
MIMPRKEY Protection key		
44(2C) MIMSTAT Task and queue status	45(2D)	Reserved

Hold QCB (MIFHQCB)

48(30)		MIHIECB Pointer to the first element in the hold queue
MIHMCBD Major control block displacement divided by 2		
52(34)		MIHLECB Pointer to the last element in the hold queue
56(38)		MIHLINK Pointer to the next QCB in the hold queue
MIHPRKEY Protection key		
60(3C) MIHSTAT Task and queue status	61(3D)	Reserved

Cleanup QCB (MIFCUQCB)

64(40)		MIC1ECB Pointer to the first element in the cleanup queue
MICMCBD Major control block displacement divided by 2		
68(44)		MICLECB Pointer to the last element in the cleanup queue
72(48)		MICLINK Pointer to the next QCB in the cleanup queue
MICPRKEY Protection key		
76(4C) MICSTAT Task and queue status	77(4D)	Reserved

Mailbox Trace Facility (MTF)

80(50)		MIFMFTP Pointer to the MTF
84(54)		MIFENTRY Pointer to the next available entry in the MTF

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
1(1) MIFCTRL1		Mailbox manager control byte 1 (Down/Offline processing control)
	1...	MOSS Down/Offline is in progress.
	.1.	Send SSCP alert message.
	..1.	Send Stop Wrap.
	...x xxx.	Reserved
	.... ...1	Set Wrap preprocessing.
2(2) MIFCTRL2		Mailbox manager control byte 2 (Wrap Test state)
	1...	Global Wrap is in progress.
	.11.	Wrap Test is active.
	...1	Reset is in progress.
	.... 1...	Stop Wrap is in progress.
	X'00'	Wrap is in reset
	X'80'	Wrap initialization is in progress.
	X'90'	Wrap reset is in progress.
	X'A0'	Wrap test is running.
	X'C0'	Wrap is initialized.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
3(3) MIFCTRL3		Mailbox manager control byte 3
	1...	Out-mailbox is busy.
	.1..	MOSS is busy with Transfer PIU OUT MBX.
	..xx x...	Reserved
	.... .1..	Switchback-Force Deactivates are in progress.
	.... ..1.	Switchback Complete is ready to receive.
	.... ...1	Switchback Complete is in progress.
8(8) MIFXFERC		Dump transfer control flags
	.1..	Dump request came from EP.
	x.xx xxxx	Reserved
10(A) MIFALERT		Alert user action qualifier
	X'C1'	NCP detected a time-out.
	X'C2'	NCP detected an interface error.
	X'C3'	MOSS detected an inoperative.
11(B) MIFSTAT		Fallback status
	1...	Fallback is in progress.
	.1..	Request for Fallback Port Swaps is in progress.
	..1.	Fallback Port Swaps is in progress.
	...1	Fallback Completion is in progress.
	.... 1...	Fallback adapter has already processed.
	.... .1..	Fallback buffer is on queue.
	.... ..1.	Fallback has timed-out.
	.... ...1	Fallback Abnormal Termination

MOSS Interface Table**Program:** NCP**Size in bytes:** 56(38)**Created by:** NCP generation**Pointed to by:** The AVBMIT field in the address vector control block (AVB)**Function:** Interface between the maintenance and operator subsystem (MOSS) and NCP/token-ring interconnection (NTRI).

0(0)	MITFLAG MIT flag	1(1)	MITLINE NCP line address EBCDIC
4(4)	MITLINE (byte 4)	5(5) MITRPNB Token-ring interface coupler (TIC) number	6(6) MITRMADR Token-ring multiplexer (TRM) address
8(8)	MITINITP Initialization parameter list pointer XUACBIP		
12(C)	MITOPENP Open parameter list pointer PLBOPENL		
16(10)	MITSCBP Pointer to the station control block (SCB) XUASCB		
20(14)	MITSSBP SSB pointer XUASSB		

24(18)	MITRSFP Ring status field pointer XUARISTA
28(1C)	MITIRLP First receive list pointer
32(20)	MITIXLP First transmit list pointer
36(24)	MITERLOG Error log counters pointer
40(28)	MITRPM TIC mode byte pointer XUAMACS
44(2C)	MITRPALI Pointer to activate link inhibited XUAALI
48(30)	MITLITEP Pointer to XUALITEP
52(34)	MITLITFP Pointer to XUALITFP

SSCP Monitor Mode Link Table

Program: NCP

Size in bytes: 12(C) per entry

Created by: NCP generation

Pointer to: CXTMLT in the link-edit map and SMMMLTP in the SSCP monitor mode control block (SMM) points to the first MLT in the table

Function: Each line to be monitored has an MLT entry. After the last valid entry, a null entry (with zeros) is created.

0(0) MLTSTAB0* Monitor mode link status (MLT status byte 0)	1(1) MLTSTAB1 INOP or contacted byte	2(2) MLTSEQN Functional manager data sequence number
4(4) MLTSFRC* Switched failure reason code	5(5) MLTLKBP Pointer to the line control block (LKB/LCB)	
8(8) MLTSTATS* (MLT status continued)	9(9) MLTSWTP Pointer to the SMMF switched table (SWT)	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) MLTSTAB0		MLT status
	1... ..	ACTLINK is pending.
	.1.. ..	ACTLINK is complete.
	..1.	Line is continuously monitored.
	.... 1...	ACTLINK error
	.... .xxx	Reserved
4(4) MLTSFRC		Switched failure reason code
	X'00'	No error hit yet
	X'01'	Receive negative response (SETCV)
	X'02'	Receive bad CONTACTED.
		Note: If the station has not yet been brought back up through CONTACT complete, the CONTACTED code will still be saved in the station's SMMF INOP/contacted field (SXBINPC).
	X'03'	Received station INOP
	X'04'	No control vector X'12' is embedded in the REQCONT.
	X'05'	SWT table missing for the line when processing a REQCONT
	X'06'	IDNUM/NETID (from REQCONT) match is not found in the SWT table for the line.
	X'07'	SWT entry with a matching IDNUM/NETID (from REQCONT) is already being used by another line.

Offset/Field Name	Bit Pattern	Contents
8(8) MLTSTATS		MLT status continued
	1...	ACTCONNIN is pending.
	.1..	Link takeover is in progress.
	..1.	REQCONT is pending.
	...1	SETCV is pending.
	.... 1...	ABCONN is pending.
	.... .1..	DACTLINK is pending.
	.... ..xx	Reserved

MMVT Major Vector Table

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointer to: CXTMMVT in the link-edit map

Function: Contains in each entry a valid network management vector transport (NMVT) major vector key and a pointer to a table of valid commands for the major vector

0(0)	MMVTKEY NMVT major vector key	2(2)	Reserved
4(4)	MMVTMSCT Pointer to the major vector command table		

Modem Parameter Table

Program: NCP

Size in bytes: 80(50)

Created by: NCP generation

Pointer to: CXTMPT in the link-edit map

Function: Represents an internal table of link problem determination aid 2 (LPDA2) commands for unsolicited LK-EVENT or PDSTATS network management vector transport (NMVT) requests. The table contains four entries of 20 bytes each. The entries appear in the MPT in the following index-value order:

1. LPDA2 command for point-to-point or multipoint lines
2. Index for DMPX line with DTE attached.
3. LPDA2 command to the primary circuit of tailed lines
4. LPDA2 command to the secondary circuit of tailed lines.

LPDA2 Command for Point-to-Point or Multipoint Lines

0(0) LPDA2 command chaining flag X'00' (no chaining)	1(1) Reserved	2(2) CSP Timer X'008C' (14 seconds)	
4(4) Address field X'FD'	5(5) LPDA2 SDLC command X'1B'	6(6) LPDA2 unique header X'05'	7(7) LPDA2 unique header X'10'
8(8) LPDA2 unique header X'42'	9(9) LPDA2 unique header X'08'	10(A) LPDA2 unique header X'21'	11(B) LPDA2 unique header X'84'
12(C) LPDA2 unique header X'10'	13(D) LPDA2 unique header X'42'	14(E) Identifier field*	
16(10) Link segment level X'01' (primary circuit)	17(11) Modem address X'FF'. (See note.)	18(12) Modem command X'1A' (modem and line analysis command)	19(13) Reserved

* Indicates a byte expansion follows.

Note: A modem address of X'FF' indicates that NCP substitutes the true address in the command buffer.

LPDA command for DMPX line w/DTE attached

0(0) - 19(13) Reserved

LPDA2 Command to the Primary Circuit of Tailed Lines

0(0) LPDA2 command chaining flag X'01' (chain to four)	1(1) Reserved	2(2) CSP Timer X'008C' (14 seconds)	
4(4) Address field X'FD'	5(5) LPDA2 SDLC command X'1B'	6(6) LPDA2 unique header X'05'	7(7) LPDA2 unique header X'10'
8(8) LPDA2 unique header X'42'	9(9) LPDA2 unique header X'08'	10(A) LPDA2 unique header X'21'	11(B) LPDA2 unique header X'84'
12(C) LPDA2 unique header X'10'	13(D) LPDA2 unique header X'42'	14(E) Identifier field*	
16(10) Link segment level X'01' (primary circuit)	17(11) Modem address X'FD' (general poll address)	18(12) Modem command X'1A' (modem and line analysis command)	19(13) Reserved

* Indicates a byte expansion follows.

LPDA2 Command to the Secondary Circuit of Tailed Lines

0(0) LPDA2 command chaining flag X'00' (no chaining)	1(1) Reserved	2(2) CSP Timer X'008C' (14 seconds)	
4(4) Address field X'FD'	5(5) LPDA2 SDLC command X'1B'	6(6) LPDA2 unique header X'05'	7(7) LPDA2 unique header X'10'
8(8) LPDA2 unique header X'42'	9(9) LPDA2 unique header X'08'	10(A) LPDA2 unique header X'21'	11(B) LPDA2 unique header X'84'
12(C) LPDA2 unique header X'10'	13(D) LPDA2 unique header X'42'	14(E) Identifier field*	
16(10) Link segment level X'02' (secondary circuit)	17(11) Modem address X'FF'. (See note.)	18(12) Modem command X'1A' (modem and line analysis command)	19(13) Reserved

* Indicates a byte expansion follows.

Note: A modem address of X'FF' indicates that NCP substitutes the true address in the command buffer.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
14(E)		Identifier flags
	Byte 0	
	1... ..	LPDA2 command
	.1.. ..	Data speed
	..0. ..	Always 0 (indicates command)
	...x ..	Reason for the command (set by NCP):
		1 = Permanent line or station/terminal error 0 = Solicited request or unsolicited statistical event
	.... .xxx	Reserved
	Byte 1	
	xxxx xxxx	Reserved

NMVT Command and Subfunction Router Table

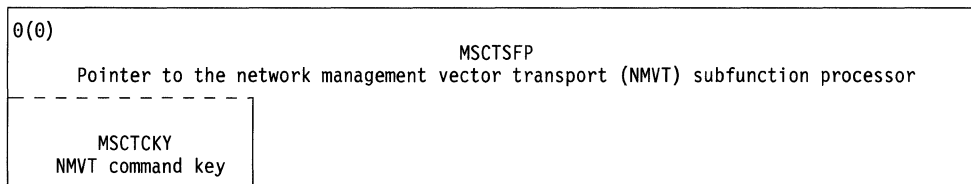
Program: NCP

Size in bytes: 4(4) for each entry

Created by: NCP generation

Pointer to: MMVTMSCT in the NMVT major vector table (MMVT)

Function: Contains in each entry a valid command subvector key for a given PU-NMVT major vector and a pointer to a routing to receive control based on the command



Mailbox Trace Facility

- Program:** NCP, EP
- Size in bytes:** 32 entries of 32(20) bytes each, plus one ending byte for a total of 1025(401) bytes
- Located in:** CXASCB
- Created by:** CXASCB calling macro CXTMIF to generate the MOSS interface control block (MIF).
 The MTF immediately follows the MIF control block.
- Referenced by:** CXAMINTR, CXAMXFER, CXAMINTS, and CXAMDNOF
- Pointer to:** The MIFMTEFP field in the MIF control block
- Function:** Each mailbox trace entry contains a trace identifier followed by one of the following:
- In-mailbox request and status
 - Out-mailbox request (no status)
 - Out-mailbox status (no request)
 - MOSS Down request.

0(0)	MTFLIT* Trace identifier	2(2) - 31(1F)
Copy of In- or Out-mailbox request or status (left-justified)		
32(20)	MTFLIT* Trace identifier	34(22) - 63(3F)
Copy of In- or Out-mailbox request or status (left-justified)		
.		
.		
.		
1024(400)	X'FF'	

* Indicates a byte expansion follows.

Note: Each byte that is not traced for the current entry (no status or no request) contains a X'F0'.

Byte Expansion

Offset/Field Name	Characters	Contents
0(0)		Trace identifier
32(20)		
MTFLIT		
	IS	In-mailbox request and status
	0	Out-mailbox request
	S	Out-mailbox status
	DN	MOSS Down request

NCP-Processor ODLC Adapter Control Block

Program: NCP

Size in bytes: 88(58) for physical lines, processor/CBCs, and trace slots; 52(34) for logical lines

Created by: NCP generation

Pointed to by: The CCBNACBP field in transmit ACB, the LACBNACB field in processor—NCP ODLC adapter control block (LACB), and the LKBNACBP field in the line control block (LKB)

Function: Contains line control information and the transport access point level 1 (XAP1) pointers for the NCP to processor interface

0(0)	NACBLACB Pointer to processor-NCP ACB (LACB)
NACBFLAG* Flags	
4(4)	NACBACBX Pointer to transmit adapter control block (ACB)
NACBTRAC* Trace flags	
8(8)	NACBNPSA Pointer to physical NCP-processor PSA (NPSA)
NACBLTAT Logical traces active count	
12(C)	NACBXLNT Pointer to XIO line routines table
NACBERPF* L1/L3 ODLC error recovery procedure (ERP) flags	
16(10)	NACBXSMT Pointer to XIO setmode routines table

* Indicates a byte expansion follows.

20(14)	NACBXIMT Pointer to XIO immediate routines table
24(18)	NACBXLKT Pointer to XIO link routines table
28(1C)	NACBNBLD Pointer to NCP-processor dynamic PSA (NDP) builder routines table
32(20)	NACBECT Pointer to Execute Clear routines table (Physical line)
	NACBPNAC Pointer to physical NACB (Logical line)
NACBRTYP* Resource type	
36(24)	NACBFDPS Pointer to first NDP in NDP list (Physical line)
	NACBPREV Pointer to previous active logical NACB (Logical line)
NACBUSED Number of NDPs used in current NDP list	
40(28)	NACBNDPS Pointer to next NDP in NDP list (Physical line)
	NACBNEXT Pointer to next active logical NACB (Logical line)
NACBTHLD Threshold for dynamic NDP list	

* Indicates a byte expansion follows.

44(2C)	NACBLDPS Pointer to last NDP in NDP list (Physical line)

	NACBPCUB Pointer to physical station control block (Logical line)
	NACBMDB Maximum number of buffers allowed for dynamic NDPs
48(30)	NACBLTCB Pointer to an LTCB (only valid for SIT control blocks or line control blocks with ODLC line trace active)

NACB extension for physical lines, processor slots, and trace slots

52(34)	NACBLDFL Pointer to last NDP in fixed NDP list
	NACBFNDP Number of fixed NDPs
56(38)	NACBFBDL Pointer to first buffer in dynamic NDP list
	NACBHNUC Historic NDP usage count
60(3C)	NACBLBDL Pointer to last buffer in dynamic NDP list
	NACBCNDB Current number of dynamic NDP buffers
64(40)	NACBWQH Pointer to first element in work queue
	NACBPLCS* Physical line congestion status (Frame-relay physical line only)
68(44)	NACBWQT Pointer to last element in work queue

* Indicates a byte expansion follows.

72(48)		NACBLCQH Pointer to first element in processor congestion queue
		NACBLCQF Forward pointer in processor congestion queue
76(4C)		NACBLCQT Pointer to last element in processor congestion queue
		NACBLCQB Backward pointer in processor congestion queue
80(50)	NACBDSEQ NDP sequence number	82(52) NACB1HCC L1 IOH halt cause code
84(54)	NACBPROT* Adapter protocol status	86(56) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NACBFLAG		Flags
	1...	NACB is busy (NACBUSY)
	.1..	Block NDP (NACBLKN)
	..1.	Release dynamic NDP buffers (NACBRDB)
	...1	Processor congestion stop traffic (NACBLCG)
	.... 1...	Cleanup pending indicator (NACBCLP)
	.... .x..	1 = Logical definition (NACBLOG)
	.... ..1.	0 = Physical definition
	.... ...1	Physical resource with associated logical resources (NACBPWL)
		CBC congestion stop traffic (NACBCCG)
4(4) NACBTRAC		Line trace flags
	1...	Line trace active on this line (NACBTACT)
12(C) NACBERPF		ERP flags
	1...	Interface down (NACBIND)
	.1..	Processor take down in progress (NACBLTD)
	..1.	Processor down (NACBLMD)
	...1	Line on processor down (NACBLLD)
	.... 1...	Protocol on processor down (NACBPLD)
	.... .1..	Send no program reset (NACBNPR)
	.... ..1.	Protocol down in progress (NACBPDP)
32(20) NACBRTYP		Resource type
	X'00'	Line NACB (NACBLINE)
	X'10'	Processor NACB (NACBLIM)
	X'20'	SIT NACB (NACBLLT)
	X'90'	CBC NACB (NACBCPLR)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
64(40) NACBPLCS		Physical line congestion status
	1...	Ultimate congestion entered (NACBUCE)
	.1..	Critical congestion entered (NACBCCE)
	..1.	Limited_2 congestion entered (NACB2CE)
	...1	Limited_1 congestion entered (NACB1CE)
84(54) NACBPROT		Adapter protocol status
	Byte 0	
	1...	Adapter slot protocol is down (NACBADA)
	.1..	Trace protocol is down (NACBTRC)
	..1.	Adapter slot and trace protocol are down (NACBADT)
	Byte 1	
	1...	SDLC mapper is down (NACBDLC)
	.1..	ESCA mapper is down (NACBSOC)
	..1.	TRA mapper is down (NACBTR)

NPM Data Block (Token-Ring Physical)

Program: NCP

Size in bytes: 96(60)

Created by: NCP generation

Pointed to by: The PLXNDBP field in the physical link block extension (PLX)

Function: Network performance monitor (NPM) data

0(0) NDBBID Block identifier C'NB'		2(2) NDBUID Program identifier X'02'		3(3) NDBURSC Program resource type X'01'	
4(4) NDBCFG1* Content flag 1	5(5) Reserved	6(6) NDBOV1* Overflow byte 1	7(7) Reserved		
8(8) NDBXIF Data frames sent					
12(C) NDBRIF Data frames received					
16(10) NDBXBT Total bytes sent					
20(14) NDBRBT Total bytes received					
24(18) NDBXXIF Total I-frames retransmitted					
28(1C) NDBXXBT Total bytes retransmitted					
32(20) Reserved					
36(24) NDBIPBQ I-frames on physical link outbound queue			38(26) Reserved		
40(28) NDBCFG3* Content flag 3	41(29) NDBCFG4* Content flag 4	42(2A) Reserved		43(2B) Reserved	
44(2C) NDBOV3* Overflow byte 3	45(2D) NDBOV4* Overflow byte 4	46(2E) Reserved		47(2F) NDBOV6* Overflow byte 6	
48(30) NDBXFR Total frames sent					

* Indicates a byte expansion follows.

52(34)	NDBRFR Total frames received	
56(38)	NDBALC Number of active logical connections	58(3A) NDBCCT Congestion count (frames not copied)
60(3C)	NDBTXBY Time per byte transmitted	62(3E) NDBTRBY Time per byte received
64(40)	NDBTXFR Time per frame transmitted	66(42) NDBTRFR Time per frame received
68(44)	NDBXPD Total IP data frames transmitted	
72(48)	NDBRPD Total IP data frames received	
76(4C)	NDBXPF Total IP frames transmitted	
80(50)	NDBRPF Total IP frames received	
84(54)	NDBDPF Total IP data frames discarded due to congestion	
88(58)	NDBXPB Total IP bytes transmitted	
92(5C)	NDBRPB Total IP bytes received	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDBCFCG1		Content flag 1
	1... ..	Data frames sent
	.1... ..	Data frames received
	..1.	Total bytes sent
	...1	Total bytes received
	.... 1...	Retransmitted I-frames
	.... .1..	Retransmitted bytes
	.... ..x.	Reserved
	.... ...1	Outbound queue length

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) NDBOV1		Overflow byte 1
	1...	Overflow data frames sent
	.1..	Overflow data frames received
	..1.	Overflow total bytes sent
	...1	Overflow total bytes received
	.... 1...	Overflow retransmitted I-frames
	.... .1..	Overflow retransmitted bytes
40(28) NDBCFG3		Content flag 3
	1...	Total frames sent
	.1..	Total frames received
	..1.	Active logical connections
	...1	Congestion count
	.... 1...	Time per byte sent
	.... .1..	Time per byte received
	.... ..1.	Time per frame sent
	.... ...1	Time per frame received
41(29) NDBCFG4		Content flag 4
	1...	Total IP data frames transmitted
	.1..	Total IP data frames received
	..1.	Total IP frames sent
	...1	Total IP frames received
	.... 1...	Total IP frames discarded due to congestion
	.... .1..	Total IP bytes sent
	.... ..1.	Total IP bytes received
	.... ...x	Reserved
44(2C) NDBOV3		Overflow byte 3
	1...	Overflow total frames sent
	.1..	Overflow total frames received
	..1.	Overflow active logical connections
	...1	Overflow congestion count
45(2D) NDBOV4		Overflow flag 4
	1...	Overflow total IP data frames transmitted
	.1..	Overflow total IP data frames received
	..1.	Overflow total IP frames sent
	...1	Overflow total IP frames received
	.... 1...	Overflow total IP frames discarded due to congestion
	.... .1..	Overflow total IP bytes sent
	.... ..1.	Overflow total IP bytes received
	.... ...x	Reserved
47(2F) NDBOV6		Overflow byte 6
	.... ..1	Double overflow

NPM Data Block (Token-Ring Logical)

Program: NCP

Size in bytes: 60(3C)

Created by: NCP generation

Pointed to by: The LXCNDPB field in the logical link block common extension (LXC)

Function: Network performance monitor (NPM) data

Logical Lines

0(0) NDBBID Block identifier C'NB'		2(2) NDBUID Program identifier X'02'	3(3) NDBURSC Program resource type X'02'
4(4) NDBCFG1* Content flag 1	5(5) Reserved	6(6) NDBOV1* Overflow byte 1	7(7) Reserved
8(8) NDBXIF I-frames sent			
12(C) NDBRIF I-frames received			
16(10) NDBXBT Total bytes sent			
20(14) NDBRBT Total bytes received			
24(18) NDBXXIF Total I-frames retransmitted			
28(1C) NDBXXBT Total bytes retransmitted			
32(20) Reserved			
36(24) NDBILBQ I-frames on logical link outbound queue		38(26) Reserved	
40(28) NDBCFG3* Content flag 3	41(29) Reserved	42(2A) Reserved	43(2B) Reserved
44(2C) NDBOV3* Overflow byte 3	45(2D) Reserved	46(2E) Reserved	47(2F) NDBOV6* Overflow byte 6

* Indicates a byte expansion follows.

48(30)	NDBXFR Total frames sent
52(34)	NDBRFR Total frames received
56(38)	NDBRTO Reply (TI) timeouts

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDBCFG1		Content flag 1
	1... ..	I-frames sent
	.1.. ..	I-frames received
	..1.	Total bytes sent
	...1	Total bytes received
	.... 1..	Retransmitted I-frames
	.... .1..	Retransmitted bytes
	.... ..x.	Reserved
	.... ...1	Outbound queue length
6(6) NDBOV1		Overflow byte 1
	1... ..	Overflow I-frames sent
	.1.. ..	Overflow I-frames received
	..1.	Overflow total bytes sent
	...1	Overflow total bytes received
	.... 1..	Overflow retransmitted I-frames
	.... .1..	Overflow retransmitted bytes
40(28) NDBCFG3		Content flag 3
	1... ..	Total frames sent
	.1.. ..	Total frames received
	..1.	Reply timeouts
	...1	Reserved
44(2C) NDBOV3		Overflow byte 3
	1... ..	Overflow total frames sent
	.1.. ..	Overflow total frames received
	..1.	Overflow reply timeouts
47(2F) NDBOV6		Overflow byte 6
	.... ...1	Double overflow

NPM Data Block (Ethernet Line)

Program: NCP

Size in bytes: 124(7C)

Created by: NCP generation

Pointed to by: The LKBNDBP field in the link control block (LKB) during initialization, and the ENINDBP field in the Ethernet interface control block (ENI) after initialization

Function: Network performance monitor (NPM) data for Ethernet lines

Physical NDB

0(0)	NDBBEID Block identifier C'NB'		2(2)	NDBPID Program identifier X'08'	3(3)	NDBPRSC Program resource type X'11'
4(4)	NDBCFL1* Content flag 1	5(5) Reserved	6(6)	NDBOL1* Overflow byte 1	7(7) Reserved	
8(8)	NDBXDF Transmitted data frames count					
12(C)	NDBRDF Received data frames count					
16(10)	NDBXBC Transmitted byte total					
20(14)	NDBRBC Received byte total					
24(18)	Reserved					
28(1C)	Reserved					
32(20)	Reserved					

* Indicates a byte expansion follows.

36(24) NDBPLQ Frames on physical link outbound queue		38(26) - 61(3D)	
Reserved			
		62(3E) NDBCFL3* Content flag 3	63(3F) NDBCFL4* Content flag 4
64(40) Reserved	65(41) Reserved	66(42) NDBOL3* Overflow flags 3	67(43) NDBOL4* Overflow flags 4
68(44) Reserved	69(45) NDBOL6* Overflow flags 6	70(46) - 73(49) NDBXFC	
Total frames sent			
		74(4A) - 77(4D) NDBRFC	
Total frames received			
		78(4E) - 81(51) NDBCONG	
Congestion count			
		82(52) - 85(55)	
Reserved			
		86(56) - 89(59)	
Reserved			
		90(5A) - 93(5D) NDBXDEF	
Transmission deferred count			
		94(5E) - 97(61) NDBICOL	
One collision count			
		98(62) - 101(65) NDBMCOL	
Multiple collision count			

* Indicates a byte expansion follows.

	102(66) - 105(69)	NDBDIPD
Discarded IP datagrams (due to IP congestion)		
	106(6A)	NDBHOLE Reserved
108(6C)	NDBCONGP	Partial count for congestion
112(70)	NDBXDEFP	Partial count for transmission deferred
116(74)	NDB1COLP	Partial count for one collision
120(78)	NDBMCOLP	Partial count for multiple collisions

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDBCFL1		Content flag 1
	1...	Data frames sent
	.1..	Data frames received
	..1.	Total bytes sent
	...1	Total bytes received
	.... ...1	Frames on the link outbound queue
6(6) NDBOL1		Overflow byte 1
	1...	Overflow data frames sent
	.1..	Overflow data frames received
	..1.	Overflow total bytes sent
	...1	Overflow total bytes received
62(3E) NDBCFL3		Content flag 3
	1...	Total frames sent
	.1..	Total frames received
	...1	Congestion count
61(3F) NDBCFL4		Content flag 4
	1...	Transmission deferred
	.1..	One collision
	..1.	Multiple collisions
	...1	Discarded IP datagrams
66(42) NDBOL3		Overflow byte 3
	1...	Overflow total frames sent count
	.1..	Overflow total frames received count
	..1.	Overflow congestion count

Offset/Field Name	Bit Pattern/ Hex Value	Contents
67(43) NDBOL4		Overflow byte 4
	1...	Overflow transmission deferred count
	.1..	Overflow one collision count
	..1.	Overflow multiple collision count
	...1	Overflow discarded IP datagrams
69(45) NDBOL6		Overflow byte 6
	.... ...1	Double overflow

NPM Data Block (Frame-Relay Physical)

Program: NCP

Size in bytes: 72(48)

Created by: NCP generation

Pointed to by: The PLXNDBP field in the physical link block extension (PLX)

Function: Network performance monitor (NPM) data

Physical NDB

0(0) NDBBID Block identifier C'NB'		2(2) NDBUID Program identifier X'07'		3(3) NDBURSC Program resource type X'0C'	
4(4) NDBCFG1* Content flag 1		5(5) Reserved		6(6) NDBOV1* Overflow byte 1	
7(7) Reserved		8(8) NDBXIF I-frames sent			
12(C) NDBRIF I-frames received					
16(10) NDBXBT Total bytes sent					
20(14) NDBRBT Total bytes received					
24(18) NDBXXIF Total I-frames retransmitted					
28(1C) NDBXXBT Total bytes retransmitted					
32(20) Reserved					
36(24) NDBIPBQ I-frames on physical link outbound queue			38(26) Reserved		
40(28) NDBCFG3* Content flag 3		41(29) NDBCFG4* Content flag 4		42(2A) Reserved	
43(2B) Reserved		44(2C) NDBOV3* Overflow byte 3		45(2D) Reserved	
46(2E) Reserved		47(2F) NDBOV6* Overflow byte 6		48(30) NDBXFR Total frames sent	

* Indicates a byte expansion follows.

52(34)	NDBRFR Total frames received	
56(38)	NDBALC Number of active logical connections	58(3A) Reserved
60(3C)	NDBFECN Number of frames with forward congestion bit on	
64(40)	NDBBECN Number of frames with backward congestion bit on	
68(44)	NDBFRD Number of frames discarded	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDBCFCG1		Content flag 1
	1...	I-frames sent
	.1..	I-frames received
	..1.	Total bytes sent
	...1	Total bytes received
	.... 1..	Retransmitted I-frames
	.... .1..	Retransmitted bytes
	.... ..X.	Reserved
	.... ...1	Outbound queue length
6(6) NDBOV1		Overflow byte 1
	1...	Overflow I-frames sent
	.1..	Overflow I-frames received
	..1.	Overflow total bytes sent
	...1	Overflow total bytes received
	.... 1..	Overflow retransmitted I-frames
	.... .1..	Overflow retransmitted bytes
40(28) NDBCFCG3		Content flag 3
	1...	Total frames sent
	.1..	Total frames received
	..1.	Active logical connections
41(29) NDBCFCG4		Content flag 4
	1...	Frames with forward congestion bit on
	.1..	Frames with backward congestion bit on
	..1.	Frames discarded

Offset/Field Name	Bit Pattern/ Hex Value	Contents
44(2C) NDBOV3		Overflow byte 3
	1...	Overflow total frames sent
	.1..	Overflow total frames received
	..1.	Overflow logical line count
	...1	Overflow forward congestion
	.... 1...	Overflow backward congestion
	.... .1..	Overflow frames discarded
47(2F) NDBOV6		Overflow byte 6
	.... ...1	Double overflow

NPM Data Block (Frame-Relay Logical)

Program: NCP

Size in bytes: 68(44)

Created by: NCP generation

Pointed to by: The LXCNDDBP field in the logical link block common extension (LXC)

Function: Network performance monitor (NPM) data

Logical Lines

0(0)	NDBBID Block identifier C'NB'		2(2)	NDBUID Program identifier X'07'	3(3)	NDBURSC Program resource type X'0D'
4(4)	NDBCFG1* Content flag 1	5(5) Reserved	6(6)	NDBOV1* Overflow byte 1	7(7) Reserved	
8(8)	NDBXIF I-frames sent					
12(C)	NDBRIF I-frames received					
16(10)	NDBXBT Total bytes sent					
20(14)	NDBRBT Total bytes received					
24(18)	NDBXXIF Total I-frames retransmitted					
28(1C)	NDBXXBT Total bytes retransmitted					
32(20)	Reserved					
36(24)	NDBILBQ I-frames on logical link outbound queue			38(26) Reserved		
40(28)	NDBCFG3* Content flag 3	41(29)	NDBCFG4* Content flag 4	42(2A)	Reserved	43(2B) Reserved
44(2C)	NDBOV3* Overflow byte 3	45(2D)	Reserved	46(2E)	Reserved	47(2F) NDBOV6* Overflow byte 6

* Indicates a byte expansion follows.

48(30)	NDBXFR Total frames sent
52(34)	NDBRFR Total frames received
56(38)	NDBRTO Reply (TI) timeouts
60(3C)	NDBFECN Number of frames with forward congestion bit on
64(40)	NDBBECN Number of frames with backward congestion bit on

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDBCFCG1		Content flag 1
	1...	I-frames sent
	.1..	I-frames received
	..1.	Total bytes sent
	...1	Total bytes received
	.... 1...	Retransmitted I-frames
	.... .1..	Retransmitted bytes
	.... ..x.	Reserved
	.... ...1	Outbound queue length
6(6) NDBOV1		Overflow byte 1
	1...	Overflow I-frames sent
	.1..	Overflow I-frames received
	..1.	Overflow total bytes sent
	...1	Overflow total bytes received
	.... 1...	Overflow retransmitted I-frames
	.... .1..	Overflow retransmitted bytes
40(28) NDBCFCG3		Content flag 3
	1...	Total frames sent
	.1..	Total frames received
	..1.	Reply timeouts
41(29) NDBCFCG4		Content flag 4
	1...	Frames with forward congestion bit on
	.1..	Frames with backward congestion bit on
44(2C) NDBOV3		Overflow byte 3
	1...	Overflow total frames sent
	.1..	Overflow total frames received
	..1.	Overflow reply timeouts
	...1	Overflow forward congestion
	.... 1...	Overflow backward congestion

Offset/Field Name	Bit Pattern/ Hex Value	Contents
47(2F) NDBOV6		Overflow byte 6
	.... ...1	Double overflow

NCP-Processor Dynamic PSA

Program: NCP

Size in bytes: 32(20)

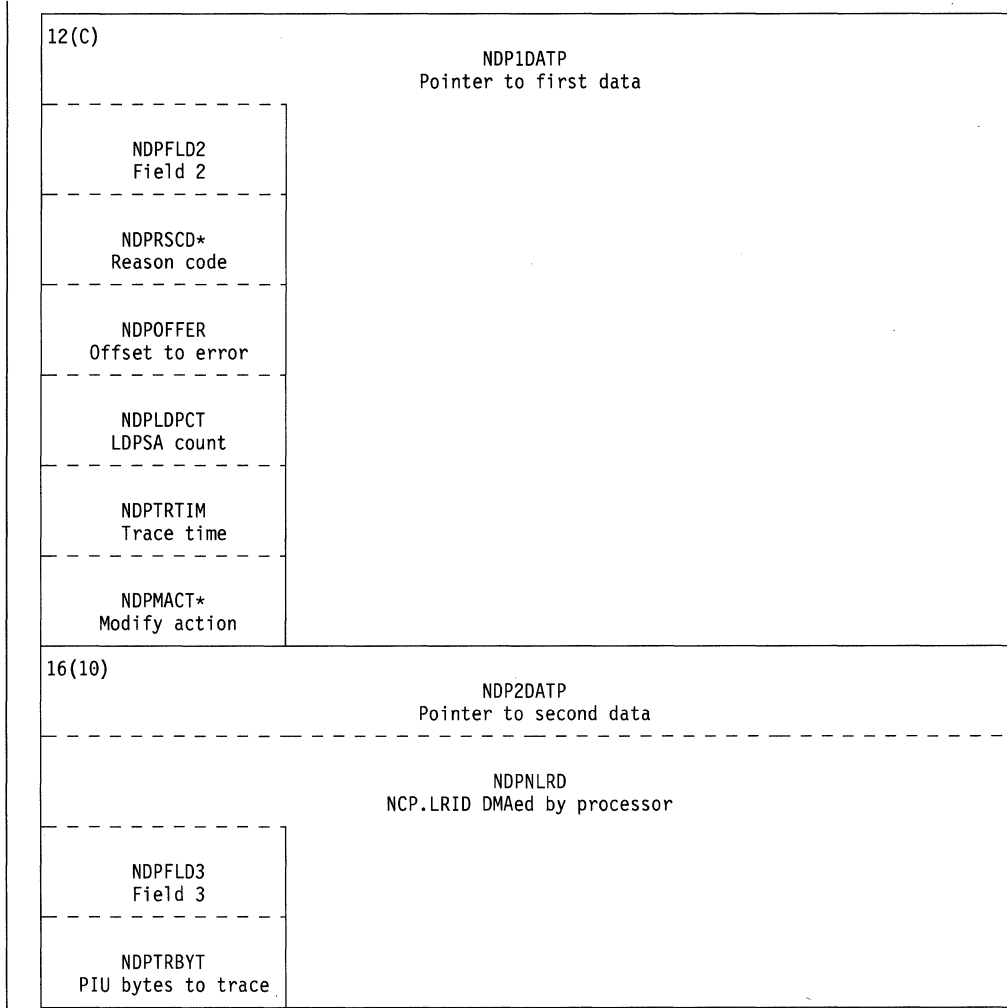
Created by: NCP generation

Pointed to by: The NPSANDPS field in the NCP--processor parameter/status area (NPSA), the NDPDPSAP field in the NCP--processor dynamic PSA (NDP), and the NACBFDPS, NACBNDPS, NACBLDPS, and NACBLDFL fields in the NCP--processor adapter control block (NACB)

Function: Contains commands to the processor and associated information. See Volume 2 Section 19, "NCP--Processor Parameter/Status Area Layouts," for the layouts of specific command/qualifiers.

0(0)		NDPDPSAP Chain pointer to next NDPSA	
NDPFLD0 Field 0			
4(4)	NDPCMD* Command	5(5)	NDPQUAL* Qualifier
		6(6) NDPFLAGS Flags	
		NDPRFLDC Retrieved field code	7(7) NDPFLAG2* Command-unique NDPSA flags
8(8)		NDPLLRID Processor.LRID	
NDPFLD1 Field 1			
NDPBUFSZ NCP buffer size			
NDPTRPTS* Trace points			
NDPSAP Token-ring SAP for activate/deactivate SAP			
NDPMTYP* Modify type	9(9)	NDPPROT Protocol indicator if processor.LRID is 0	

* Indicates a byte expansion follows.



* Indicates a byte expansion follows.

20(14)			
NDP3DATP Pointer to third data			
NDPFLD45 Fields 4 and 5		22(16) NDPFLD67 Fields 6 and 7	
NDPSTST Station state			
NDPNRSD Number of records to send for intensive mode			
NDPMXTRC Maximum trace record size in bytes			
NDPCSPTM Maximum allowable time (in 0.1 seconds) for LPDA2 test to complete			
NDPDLCI DLCI for resource definition modify type X'01'			
NDPFLD4 Field 4	21(15) NDPFLD5 Field 5	NDPFLD6 Field 6	23(17) NDPFLD7 Field 7
NDPDERC Deactivate reason code		NDPNPAF1* NPA interval flags 1	NDPNPAF2* NPA interval flags 2
NDPACKCT ACK count		NDPLIMAD Processor address for SIT trace	NDPRELNM Relative line number within processor
NDPSTRS Stop reason			
NDPBSEQ Sequence number (byte)			
24(18) NDPSEQN Sequence counter		26(1A) NDPRSVD Reserved	
28(1C) NDPNLRID NCP.LRID (Used during NDP list cleanup processing to determine ODLIC resource) (Pointer to LKE, SCE, TRE or LME)			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) NDPCMD		Command
	X'01'	Activate
	X'02'	Connect request
	X'03'	Connect response
	X'04'	Deactivate
	X'05'	Disconnect request
	X'06'	Disconnect response
	X'07'	Halt
	X'08'	ID
	X'09'	Load/Dump
	X'0A'	Notify
	X'0B'	NPA
	X'0C'	PIU
	X'0D'	RAS
	X'0E'	Receive
	X'0F'	Resource definition
	X'10'	Retrieve
	X'11'	Station delete
	X'12'	Stop
	X'13'	Trace
	X'14'	NOP
	X'15'	Message
	X'17'	Link configuration data information (NDPLCDI)

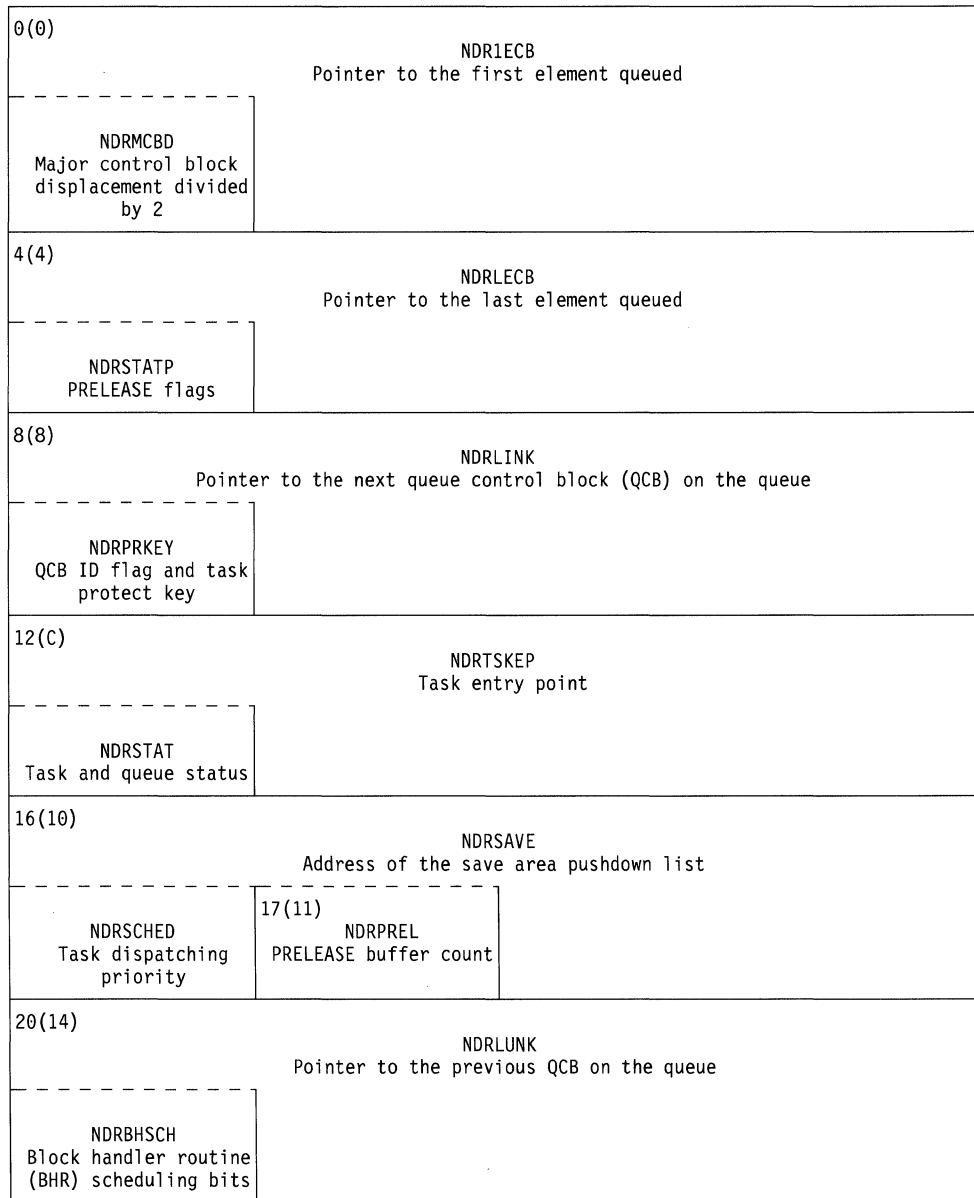
Offset/Field Name	Bit Pattern/ Hex Value	Contents
5(5) NDPQUAL		Qualifier
	.... ...1	ECB is present in associated buffer (NDPECBP)
		Activate Complete
	X'10'	Enable
	X'20'	Dial
	X'30'	Service access point (SAP)
		Deactivate
	X'00'	Link
	X'10'	Service access point (SAP)
		Halt
	X'10'	Line force deactivate
		Load/Dump
	X'10'	Initialization request
	X'20'	Initialization response
		Notify
	X'10'	State change
	X'20'	Flow control
	X'30'	LDPSA error
	X'50'	Takeover (NDPNT0)
	X'92'	Call response
		NPA
	X'10'	Start
	X'20'	Stop
	X'22'	Stop all
	X'30'	Forward
		RAS
	X'10'	LL2
	X'12'	End LL2
	X'20'	LPDA
	X'40'	IM start
	X'42'	IM stop
	X'50'	WRAP start
	X'52'	WRAP stop
		Receive
	X'10'	Initial
		Resource definition
	X'10'	Initial
	X'20'	Update
	X'30'	Modify (NDPMOD)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		Stop
	X'10'	Line
	X'20'	Station immediate
	X'22'	Station soft
		Trace
	X'10'	Start
	X'20'	Stop
6(6) NDPFLAG1		Common NDP flags
	1...	Command to processor (NDPLMCM)
	.1..	Command to line (NDPLNCM)
	..1.	Station state field valid (NDPSSFV)
	.... ...1	Reserved for CLDP
7(7) NDPFLAG2		Command-unique NDP flags
	x...	For Trace NDP: (NDPLOG)
		1 = Trace is for a logical line
		For Station Delete NDP: (NDPSDFD)
		1 = Station delete due to forced deactivation of TR logical line
		For NPA Start NDP: (NDPNPTP)
		1 = NPA Collection by Transmission Priority
		For Wrap NDP: (NDPDWRP)
		1 = Wrap test of dial line
	...x.	For PIU or Notify Flow Control NDP: (NDPPRS)
		1 = Pacing response
	...x	For PIU or Notify Flow Control NDP: (NDPCWRI)
		1 = Change window reply indicator
	.... x...	For PIU or Notify Flow Control NDP: (NDPRWI)
		1 = Reset window indicator
	.... .x..	For PIU or Notify Flow Control NDP: (NDPSTSD)
		1 = Stop to send data (IN)
	.... ..x.	For PIU or Notify Flow Control NDP: (NDPRTSD)
		1 = Resume to send data (IN)
	.... ...x	For PIU or Notify Flow Control NDP: (NDPAUTO)
		1 = Automatic resume (IN)
	.... xxxx	Protocol type (NDPLIMT)
		0000 = All
		0001 = SDLC
		0010 = ESCA
		0011 = TRA
		1000 = Frame-relay (NDPFR)
		Note--Protocol type is defined for the following NDPs when flowing on the processor slot: Message, NOP, Notify LDPSA error, Receive initial, NPA stop, NPA forward.

Offset/Field Name	Bit Pattern/Hex Value	Contents
8(8) NDPTRPTS		Trace points
	.... ..1. .... ..1	Processor trace point (SIT) (NDPLTP) CBC trace point (SIT) (NDPCTP)
8(8) NDPMTYP		Modify type
	X'01'	Modify is for a frame-relay DLCI (NDPMTYP1)
12(C) NDPRSCD		Reason code
	X'01'	No logical resource available (response to NCI) (NDPRSCNA)
	X'02'	Resource in disconnect mode (NDPRDM)
	X'03'	Call in/out collision (NDPCOLSN)
	X'04'	Send RIM (NDPSRIM)
	X'05'	Logical resource available (NDPAVBLE)
X'06'	No logical resource available (NDPNOAVL)	
12(C) NDPMACT		Action code
	X'01'	Delete the DLCI given at offset 20 in the RDM (NDPMDD)
	X'02'	Add the DLCI given at offset 20(14) in the RDM (NDPMAD)
	X'03'	The DLCI given at offset 20(14) in the RDM is inactive (NDPMDIN)
X'04'	The DLCI given at offset 20(14) in the RDM is active (NDPMDA)	
22(16) NDPNPAF1		NPA interval flags 1
	.... ..1. .... ..1	Interval 10 (NDPNPAA) Interval 9 (NDPNPA9)
23(17) NDPNPAF2		NPA interval flags 2
	1... ..	Interval 8 (NDPNPA8)
	.1... ..	Interval 7 (NDPNPA7)
	..1... ..	Interval 6 (NDPNPA6)
	...1... ..	Interval 5 (NDPNPA5)
	.... 1... ..	Interval 4 (NDPNPA4)
	.... .1... ..	Interval 3 (NDPNPA3)
	.... ..1... ..	Interval 2 (NDPNPA2)
....1	Interval 1 (NDPNPA1)	

NPA Dynamic Reconfiguration History Control Block

- Program:** NCP
- Size in bytes:** 32(20)
- Created by:** NCP generation
- Pointed to by:** The NSANDRP field in the network performance analyzer session accounting block (NSA)
- Function:** Used to manage network performance analyzer (NPA) dynamic reconfiguration (DR) history processing



24(18) NDRSSTAT* DR history status	25(19) NDRNADR Number of active DR capable network performance monitors (NPMs)	26(1A) Reserved
28(1C) NDRRVTF Address of the first element in the resource vector table (RVT) chain	30(1E) NDRRVTL Address of the last element in the RVT chain	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) NDRSSTAT		DR history status
	1...	VREVENT is issued
	.1..	DR has occurred
	..1.	End of DR history. PIU must be sent to NPM

Node Element Descriptor

Program: NCP
Size in bytes: 32(20)
Located in: CXTCDB
Created by: NCP generation
Function: Node element descriptor (NED)

0(0) NEDDFGS* Device flags	1(1) NEDTYPE* Device type	2(2) NEDCLASS Hardware class X'06'	3(3) NEDVFGS* Various flags
4(4) NEDTYPN** Type number		6(6) NEDTYPNC 3745 type number	
8(8) NEDTYPN** (Continued)		10(A) NEDMOD Model number	
NEDTYPNC (Continued)			
12(C) NEDMOD (Continued)	13(D) NEDMAN Manufacturer (C'IBM')		
16(10) NEDPLNT Plant of manufacture		18(12) NEDSEQ** Sequence number	
20(14) - 27(1B) NEDSEQ** (Continued)		23(17) - 27(1B) NEDSEQC	
3745 sequence number			
28(1C) NEDSEQ** (Continued)		30(1E) NEDTAG Tag	
NEDSEQC (Continued)			

* Indicates a byte expansion follows.

** The NEDTYPN and NEDSEQ fields are designed to be a certain length, which is longer than required for the 3745 information. A subfield is defined to indicate where information is actually stored. For NEDTYPN, only the low 4 bytes are used (see NEDTYPNC). For NEDSEQ, only the low 7 bytes are used (see NEDSEQC).

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NEDDFGS		Device flags
	X'C0'	Input/output unit NED
	X'D0'	Control unit NED
	X'F0'	Token NED
1(1) NEDTYPE		Device type
	X'01'	Input/output device
	X'02'	Control unit or token NED
3(3) NEDVFGS		Various flags
	xxxx xxx.	Reserved
	.... ...x	1 = NED represents a control unit or is a token NED (NEDLEV) 0 = NED represents an input/output device

NEO Global Control Block

- Program:** NCP
- Size in bytes:** 84(54)
- Created by:** NCP generation
- Pointer to:** The SYSNEOGP field in the extended halfword direct addressables control block extension (HWX)
- Function:** Contains a parameter/status area (PSA) to be used for an interface between NCP and the network enhancement option (NEO) modules for specified functions. There is a PSA for all levels (1, 2, 3, 4, and 5) and a pointer to the NEO router control block (NEOR).

0(0)	NEOG1P1 Level 1, parameter 1	
	NEOG1OP Level-1 operation	
4(4)	Reserved	
8(8)	NEOG1ST* Level-1 status	9(9) - 15(F)
		Reserved
16(10)	NEOG2P1 Level 2, parameter 1	
	NEOG2OP Level-2 operation	
20(14)	Reserved	
24(18)	NEOG2ST Level-2 status	25(19) - 31(1F)
		Reserved

* Indicates a byte expansion follows.

32(20)		NEOG3P1 Level 3, parameter 1
NEOG3OP Level-3 operation		
36(24)		Reserved
40(28)	NEOG3ST Level-3 status	41(29) - 47(2F)
		Reserved
48(30)		NEOG4P1 Level 4, parameter 1
NEOG4OP* Level-4 operation		
52(34)		Reserved
56(38)	NEOG4ST* Level-4 status	57(39) - 63(3F)
		Reserved
64(40)		NEOG5P1 Level 5, parameter 1
NEOG5OP Level-5 operation		
68(44)		Reserved
72(48)	NEOG5ST Level-5 status	73(49) - 79(4F)
		Reserved
80(50)		NEOGRTRP NEO global functions router table pointer

* Indicates a byte expansion follows.

NEOG Global Entry

0(0)		NEOGP1 NEOG parameter 1
NEOGOP* NEOG operation		
4(4)		Reserved
8(8)	NEOGST* NEOG status	9(9) - 15(F)
		Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Hex Value	Contents
0(0) NEOGOP		NEOG operation
0(0) NEOG1OP		NEO operation (level 1)
	X'19'	CACM level-1 error: power block failure.
	X'1A'	CACM level-1 error: auto-selection failure.
	X'1B'	CACM level-1 error: IOH failure.
0(0) NEOGOP		NEOG operation
48(30) NEOG4OP		NEO operation (level 4)
	X'01'	NEO fallback operation (3745)
	X'02'	NEO switchback operation (3745)
	X'03'	Delete port operation
	X'04'	Add port operation
	X'05'	Disconnect line adapter operation (3745)
	X'06'	Connect line adapter operation (3745)
	X'07'	Add channel adapter operation (3745)
	X'08'	Delete channel adapter operation (3745)
	X'09'	Disconnect channel adapter operation (3745)
	X'0A'	Connect channel adapter operation (3745)
	X'0B'	Port swap operation
	X'10'	CACM disconnect channel adapter in use check (3745)
	X'11'	CACM initiate disconnect channel adapter (3745)
	X'12'	CACM disconnect channel adapter complete (3745)
	X'13'	CACM connect channel adapter initialize (3745)
	X'14'	CACM connect channel adapter cancel (3745)
	X'15'	CACM update configuration data set (CDS) insert channel adapter (3745)
	X'16'	CACM update configuration data set (CDS) delete channel adapter (3745)
	X'17'	CACM update CDS change channel adapter (3745)
	X'18'	CACM auto-selection chain insert (3745)

Offset/Field Name	Hex Value	Contents
8(8) NEOGST		NEOG status
8(8) NEOG1ST		NEO status (level 1)
	X'10'	Channel adapter is in use by NEO.
8(8) NEOGST		NEOG status
56(38) NEOG4ST		NEO status (level 4)
	X'00'	Operation is complete.
	X'01'	Operation failed.

NEO Router Control Block

Program: NCP

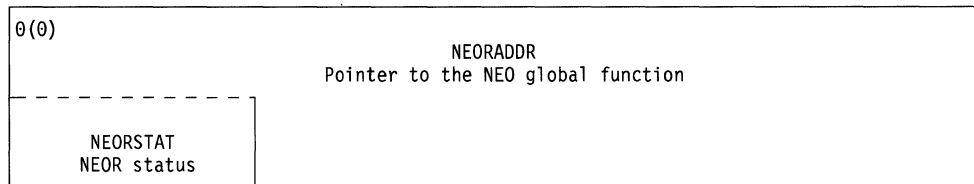
Size in bytes: Variable, 4 bytes per entry

Created by: NCP generation

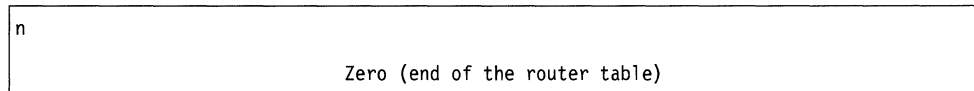
Pointer to: The NEOGRTRP field in the NEO global control block (NEOG)

Function: Contains a pointer to the network enhancement option (NEO) modules that use the NEOG interface between NCP and NEO

Entry



Trailer



Node Element Qualifier (3745)

Program: NCP
Size in bytes: 32(20)
Located in: CXTCDB
Created by: NCP generation
Function: Node element qualifier (NEQ)

Specific NEQ Format

0(0) NEQFLG* NEQ type flags X'40'	1(1) NEQRES1 Reserved	2(2) NEQRES2 Reserved	3(3) NEQRES3 Reserved
4(4) NEQRES4 Reserved	5(5) NEQRES5 Reserved	6(6) NEQRES6 Reserved	7(7) NEQRES7 Reserved
8(8) NEQPITY* PU type	9(9) NEQSPFGS* Support flags	10(A) NEQRESA Reserved	11(B) NEQRESB Reserved
12(C) NEQMXPIU Maximum PIU size		14(E) NEQTMOUT Attention timeout (ATO)	
16(10) NEQDELAY Attention delay		18(12) NEQTU Time units X'00'	19(13) NEQTGN Transmission group number (TGN)
20(14) NEQFCCW Number of Read CCWs per Read channel program		22(16) NEQPFCCW Previous value of NEQFCCW	

NEQVER NCP version and release			
24(18) NEQFHAC Host buffer size		26(1A) NEQPFHAC Host buffer size previously	

NEQVER NCP version and release (continued)			
28(1C) NEQPAD Pad character count (BFRPAD)	29(1D) NEQRES1D Reserved	30(1E) NEQRES1E Reserved	31(1F) NEQRES1F Reserved

NEQRES1C Reserved byte for first specific NEQ			

* Indicates a byte expansion follows.

General NEQ Format

0(0) NEQFLG* NEQ type flags X'80'	1(1) NEQRCSL Record selector	2(2) NEQINTID* Interface ID
4(4) Device-dependent timeout X'00'	5(5) Reserved	
8(8) NEQDEVF Device family		
12(C) - 31(1F) Reserved		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NEQFLG	X'40' X'80'	NEQ type flags Specific NEQ General NEQ
2(2) NEQINTID	Byte 0 1... .. .xxx xxxx	Interface ID RCD command arrived over a TPS. Reserved
8(8) NEQPUTY	X'21' X'40' X'50'	Type of PU NCP represents PU type 2.1 PU type 4 PU type 5
9(9) NEQSPFGS	1... .. .1... ..	NEQ support flags Values in this NEQ are valid ATO supported

NCP-Activated Explicit Routes Table

Program: NCP

Size in bytes: Variable; when ERLIMIT=8, SALIMIT+1 bytes; when ERLIMIT=16, 2*(SALIMIT+1) bytes

Created by: NCP initialization, one per network

Pointer to NET: The RMBNETP field in the route management block (RMB)

Function: Holds 1-byte elements when ERLIMIT=8 and 2-byte elements when ERLIMIT=16 that correspond to the network subarea address. Each 1-byte or 2-byte element is a mask of the explicit routes for which NCP has sent out an NC.ER.ACT request. The first element in the NET is always zero because subarea zero is an invalid network subarea address.

ERLIMIT=8

0(0) Invalid (X'00')	1(1) Mask of explicit routes for which NCP has sent an NC.ER.ACT request	2(2) Mask of explicit routes for which NCP has sent an NC.ER.ACT request	SALIMIT Mask of explicit routes for which NCP has sent an NC.ER.ACT request
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ERLIMIT=16

0(0) Invalid (X'0000')	2(2) Mask of explicit routes for which NCP has sent an NC.ER.ACT request
4(4) Mask of explicit routes for which NCP has sent an NC.ER.ACT request	6(6) Mask of explicit routes for which NCP has sent an NC.ER.ACT request
⋮	⋮
(SALIMIT-1)*2 Mask of explicit routes for which NCP has sent an NC.ER.ACT request	(SALIMIT)*2 Mask of explicit routes for which NCP has sent an NC.ER.ACT request

NPA Gateway Accounting Control Block

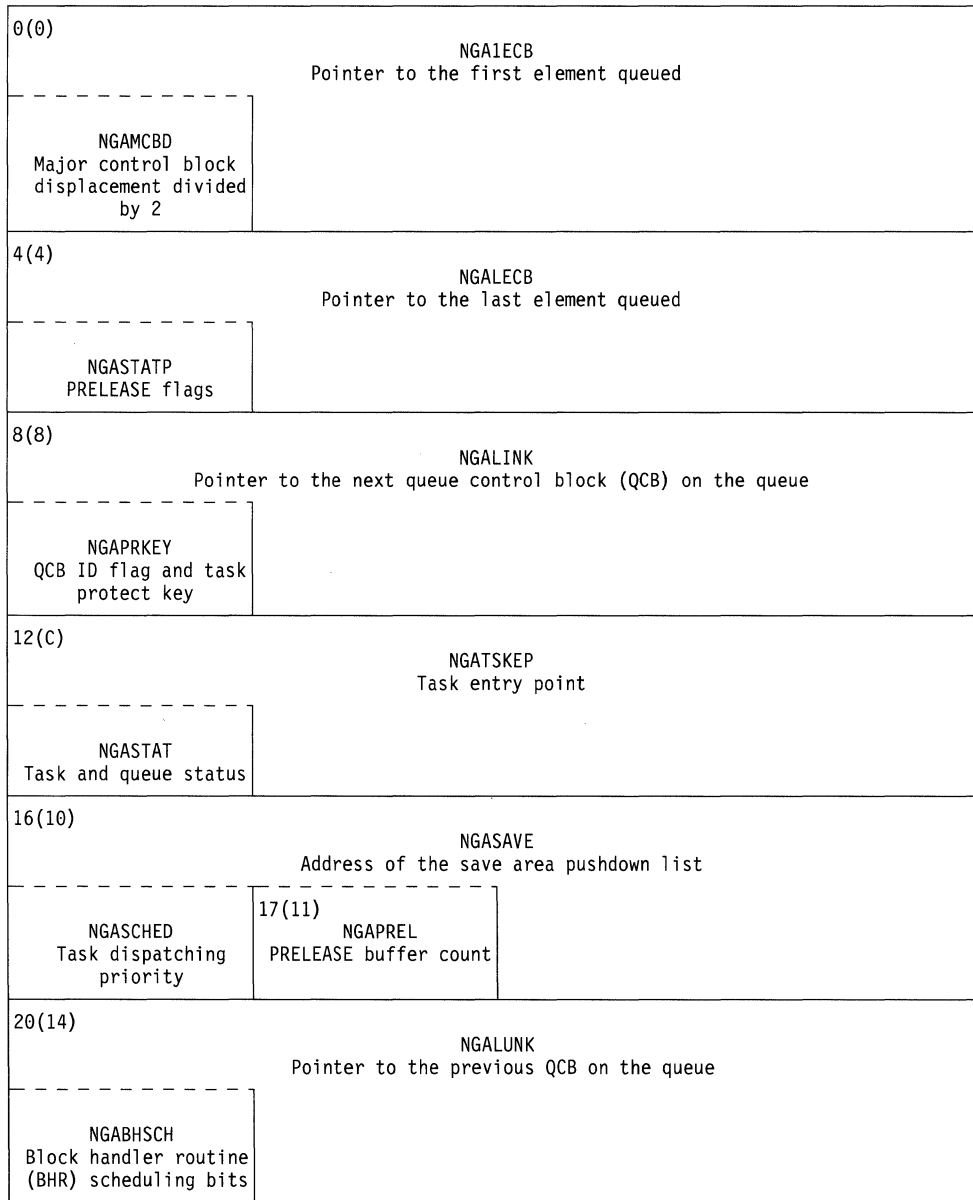
Program: NCP

Size in bytes: 52(34)

Created by: NCP generation

Pointed to by: The NSANGAP field in the network performance analyzer session accounting block (NSA)

Function: Used to manage network performance analyzer (NPA) gateway accounting



24(18) NGASSTAT* Gateway (GW) accounting status	25(19) NGANAGW Number of active GW session accounting capable network performance monitors (NPMs)	26(1A) NGATPCT GW threshold value for PIU counts
28(1C) NGATBCT GW threshold value for byte counts		
32(20) NGANSCF Pointer to the first NPA session counters control block (NSC) in the chain		
36(24) NGANSCL Pointer to the last NSC in the chain		
40(28) NGAPF1 GW session accounting PIU frequency range 1	42(2A) NGAPF2 GW session accounting PIU frequency range 2	
44(2C) NGAPF3 GW session accounting PIU frequency range 3	46(2E) NGAPF4 GW session accounting PIU frequency range 4	
48(30) NGAPF5 GW session accounting PIU frequency range 5	50(32) NGAPF6 GW session accounting PIU frequency range 6	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) NGASSTAT		Gateway accounting status
	1... ..	VREVENT is issued.
	.1.. ..	GW session accounting is enabled.
	..1. ..	GW session accounting is active.
	...1 ..	SETCV PCID may not be overridden.
	.... xxxx	Reserved

NMVT Interface Area

Program: NCP
Size in bytes: 16(10)
Located in: NCP buffer
Created by: NCP when some network management vector transports (NMVTs) are built
Pointed to by: Variable
Function: Interface between the NMVT task and other NTRI layers (physical link manager (PLM), medium access control (MAC), and logical link control (LLC)).

44(2C)		NIABLOCA Physical link control block (PLB) or logical link control block (LLB) address	
NIAFLAG* NIA flags			
48(30)		NIAPLBA PLB address if physical link (PL) is not operational or PDSTAT	
Reserved			
52(34)	NIAXMICT Transmitted frames counter (from LLB)	54(36)	NIARCVCT Received frames counter (from LLB)
56(38)	NIAXERCT Transmit error counter (from LLB)	58(3A)	NIARERCT Receive error counter (from LLB)

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
44(2C) NIAFLAG		NIA flags
	xx..	NMVT type
		00 = Alert
		10 = Link event
		11 = PDSTAT
	..1.	Logical link
	...x xxxx	Error cause
		In the case of alert against the physical link:
		0 0000 = Error cause in MIA
		0 0001 = Beacon
		0 0010 = Level 1 error
		0 0011 = Deadman timer error
		0 0100 = Level 3 hung
		0 0101 = Buffer depletion
		0 0110 = Token-ring multiplexer (TRM) down
		0 0111 = Autodump in progress
		0 1000 = No LLB available for incoming call
		In the case of a logical link (LL) alert:
		0 0000 = Time-out on outgoing call
		0 0001 = Inoperative due to PL failure
		0 0010 = Inoperative due to PL deactivation
		0 0011 = Outgoing call refused or invalid dial digits
		0 0100 = Outgoing call refused or PL not operative
		0 0110 = Outgoing call refused or contention case
		0 0111 = Set control vector gave invalid MAXDATA value
		0 1000 = DLCI deleted
		In the case of an LL link event:
		0 0000 = Invalid SDLC protocol error
		0 0001 = U-frame without information and need it
		0 0010 = Invalid command received
		0 0011 = Invalid N(R) received
		0 0100 = Received frame too short
		0 0101 = Received frame too long
		0 0110 = Received frame reject (FRMR)
		0 0111 = Time out and retry count exhausted
		0 1000 = Permanent affected device
		0 1001 = Error in segment reassembly
		0 1010 = RNR limit exceeded
		0 1011 = Negative Acknowledgment
		In the case of PDSTAT:
		0 0000 = Transmit counter or threshold
		0 0001 = Transmit error counter or threshold
		0 0010 = Receive counter or threshold
		0 0011 = Receive error counter or threshold
		0 0100 = Normal. Deactivation in progress
		0 0101 = Receive congestion counter or threshold
		0 0110 = Close of adapter
		0 0111 = DLCI inactive

Network Interconnect Control Block

- Program:** NCP
- Size in bytes:** 32(20)
- Created by:** NCP generation, NCP initialization, and dynamically
- Pointer to:** The NLBNIB field in the programmed resource LU block (NLB).
The NVT's NVTCHPF points to the NIB in the chain of NIBs that are predefined or in-use non-predefined.
The NIB GPA points to the NIB in the chain of not in-use, not predefined NIBs.
- Function:** Contains information about a cross-network LU and holds information necessary for the gateway address transform. There is one NIB for each gateway NLB.

0(0) - 7(7)	NIBNETID Network ID
8(8) - 15(F)	NIBRNAME Resource name
16(10)	NIBNLBP Pointer to the NLB
NIBIUXCT Number of programmed resource LU block extensions (NLXs) in use	
20(14)	NIBNIBP Pointer to the next NIB
NIBFLGS* NIB flags	
24(18)	NIBHSBPP Pointer to the first network interconnect control block extension (NIX) in a chain of in-use half-session control blocks
28(1C)	NIBHSBFP Pointer to the final NIX in a chain of in-use, half-session control blocks

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
20(14) NIBFLGS		NIB flags
	x... ..	Session type: 1 = SSCP session 0 = LU session.
	.1..	NLB represents the primary LU only.
	..1.	No parallel sessions are allowed.
	...1	The name is predefined.
	.... 1..	The name is assigned.

NCP-RIP Inactive Interface List Queue

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Function: Generates the NCP-RIP Inactive Interface List Queue
Format: Standard input queue control block (QCB)
Task—CXHPILST
Priority—Immediate
Reentrant—No.

Network Interconnect Extension

Program: NCP

Size in bytes: 64(40)

Created by: NCP generation, NCP initialization, and dynamically

Pointer to: The NLXNIX field in the programmed resource LU block extension (NLX)
The NIX GPA points to the first NIX in the half-session control block pool. The NIBHSBPP field points to the first NIX in a chain of in-use, half-session control blocks, and the NIBHSBFP field points to the final NIX.

Function: Contains information needed to support a cross-network session and represents a half session together with its attached NLX. There is one NIX for each gateway NLX.

0(0)	NIXNEXT Pointer to the next NIX in a chain of in-use, half-session control blocks
NIXFLAG* NIX flag byte	
4(4) - 11(B)	NIXNETID Network ID
12(C) - 19(13)	NIXRNAME Resource name
20(14)	NIXNLXP Pointer to the NLX
NIXNRSPM Notify response SSCP-NCP session control block (SNP) mask	
24(18)	NIXONIX Pointer to the other network NIX

28(1C) NIXSCSNP Shared control SNP mask	29(1D) NIXSNSTA* Sequence number status information	30(1E) NIXDINF Deactivation information (notify response sequence number)	
32(20) - 37(25) NIXSSCP SSCP ID			
		38(26) NIXSTAT1* Session status flags	39(27) NIXSTAT2* Session status flags
40(28) NIXARSI ACTCDRM response sequence indicator			
NIXF0FLG* FID0 status	41(29) NIXFORC FID0 response counter		
NIXBSSW* Secondary send window from BIND	NIXBSRW* Secondary receive window from BIND	42(2A) NIXBPSW* Primary send window from BIND	43(2B) NIXBPRW* Primary receive window from BIND
44(2C) NIXARSI (continued)			
48(30) NIXOUTB1 Last outgoing PIU sequence number		50(32) NIXOUTB2 Next-to-last outgoing PIU sequence number	
52(34) NIXINB1 Last incoming PIU sequence number		54(36) NIXINB2 Next-to-last incoming PIU sequence number	
56(38) NIXSPSBA Session-partner subarea address			
NIXSPSBH High-order 2 bytes of the subarea		58(3A) NIXSPSBL Low-order 2 bytes of the subarea	
60(3C) NIXNSCP Pointer to the NPA session counters (NSC) allocated to this session (secondary NIX only)			
NIXSTAT3* NPA status flag (secondary NIX only)	NIXSSTP Pointer to the NPA SESSION START if no NSC is allocated (secondary NIX only)		
	NIXNSXP Pointer to the control vector X'60' saved NPM session counter extensions block (NSX) before the session is established (secondary NIX only)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) NIXFLAG		NIX flag byte
	x... ..	1 = BIND was extended 0 = BIND was not extended.
	.x... ..	1 = Pacing window size changed 0 = Pacing window size did not change.
	..xx xxxx	Reserved
29(1D) NIXSNSTA		Sequence number status information
	1... ..	Last outgoing PIU was expedited.
	.1... ..	Next-to-last outgoing PIU was expedited.
	..1.	Last incoming PIU was expedited.
	...1	Next-to-last incoming PIU was expedited.
38(26) NIXSTAT1		Session status flags
	1... ..	In use
	.x... ..	Session type: 1 = SSCP 0 = LU.
	..x.	Session polarity: 1 = Primary if the session is LU, or session initiator if the session is SSCP 0 = Secondary if the session is LU, or not the session initiator if the session is SSCP.
	...1	Retain control blocks.
	.... 1...	Destination LU real address has been received.
	.... .1..	Virtual route ID list has been received.
	.... ..1.	Name substitution list has been received.
	.... ...1	Destination LU
39(27) NIXSTAT2		Session status flags
	1... ..	Session is established.
	.1... ..	Virtual route is attached.
	..1.	Normal session deactivation is pending; processing DACTCDRM for SSCP. Normal deactivation is in progress for the LU.
	...1	DACTCDRM/UNBIND has been sent.
	.... 1...	Notify is pending.
	.... .1..	FIDO session
	.... ..1.	Predefined NIX
	.... ...1	Extended network addressing is supported by host.

Offset/Field Name	Bit Pattern	Contents
40(28) NIXF0FLG		FID0 status flags
	1... ..	Reset Immediate has been sent.
	.1.. ..	Disconnect has been sent.
	..1.	Set Session Address (SSA) has been sent.
	...1	Set destination mode process.
	.... 1...	Retry just completed.
	.... .x..	1 = Start retry sequence. 0 = Retry failed.
	.... ..x.	1 = Activation retry is needed. 0 = Deactivation retry is needed.
40(28) NIXBSSW		Secondary send window from BIND
	1... ..	Second stage inbound pacing bit
	.x.. ..	Reserved
	..xx xxxx	Secondary send window field
41(29) NIXBSRW		Secondary receive window from BIND
	1... ..	Adaptive session pacing support bit from BIND
	.x.. ..	Reserved
	..xx xxxx	Secondary receive window field
42(2A) NIXBPSW		Primary send window from BIND
	1... ..	First stage outbound pacing bit
	.x.. ..	Reserved
	..xx xxxx	Primary send window field
43(2B) NIXBPRW		Primary receive window from BIND
	xx.. ..	Reserved
	..xx xxxx	Primary receive window field
60(3C) NIXSTAT3		NPA status flags
	1... ..	Network performance monitor (NPM) session start is required.
	.1.. ..	NPM Session Start is delayed.
	..1.	NPM Session End is required.
	...1	NPM Session End is delayed.
	.... 1...	NSC is allocated to the NIX.
	.... .1..	Session checked for NPM collection already.

Programmed Resource Logical Unit (LU) Block

- Program:** NCP
- Size in bytes:** 76(4C) plus prefix
- Created by:** NCP generation, NCP initialization, and dynamically
- Pointer to:** The LUVLUB field in the LU vector table (LUV), the RVTRP field in the resource vector table (RVT), and the NLBNEXT field (if the NLB is in a pool)
- Function:** Contains information about a programmed resource LU

-4(4)

For the prefix format for the NLB, see the network performance analyzer prefix control block (NPF).

0(0) - 23(17)			
Queue control block			
24(18) NLBOFSET Offset to the first NLB extension (not used for SNI NLBs)	25(19) NLBPFVT3 Previous FVT3 index	26(1A) NLBNETAD Element address of the programmed resource LU	
28(1C) NLBNPB Pointer to the programmed resource PU block (NPB)			

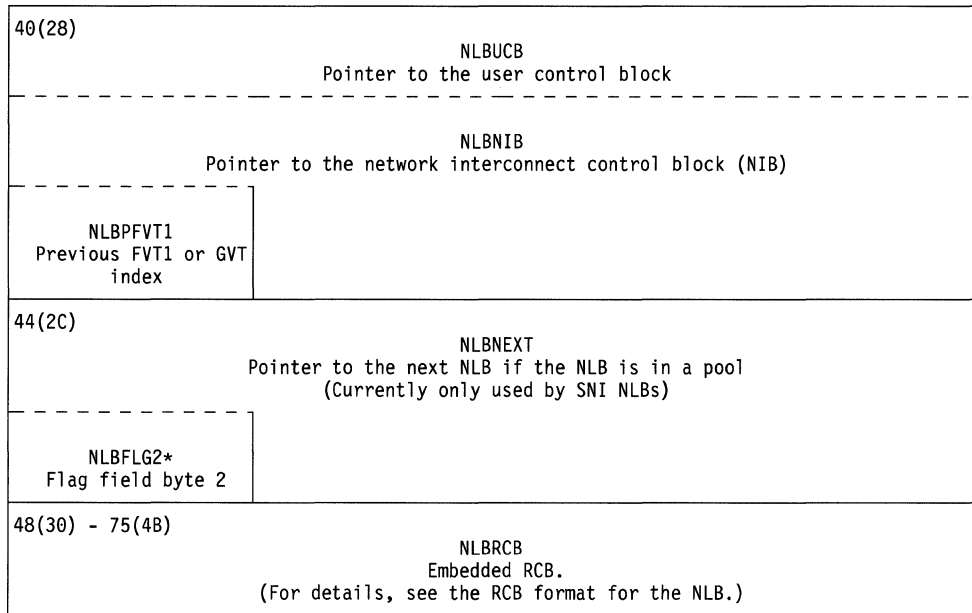
NLBNVTE Pointer to the network vector table (NVT) entry			

NLBTYPE Block identifier field X'04'			
32(20) NLBFLGS* NLB flags	33(21) NLBNOTFY* Notify task information byte	34(22) NLBPFVT2 Previous FVT2 index	35(23) NLBRCBO Offset to the resource connection block (RCB)
36(24) NLBFVT Pointer to the function vector table (FVT) or the gateway vector of tasks (GVT)			

NLBBCFVT Current FVT or GVT index			

* Indicates a byte expansion follows.

Note: The NLB fields must remain in the same relative positions as their counterparts in the LUB, programmed resource LU block extension (NLX), NPB, and programmed resource virtual line block (VLB).



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
32(20) NLBFLGS		NLB flags
	1... ..	NLB is a gateway resource.
	.1... ..	Resource is eligible for network performance analyzer (NPA) data collection.
	..1... ..	NLB represents NPA resource
	...1... ..	NLB is a NCST resource
33(21) NLBNOTFY		Notify task information byte
	1... ..	Resource is undergoing auto network shutdown (ANS).
	.1... ..	Resource entered held state.
	..1... ..	Resource exited held state.
	...1... ..	Deactivate virtual route status has been received.
	.... 1...	Virtual route inoperative (VR.INOP) status has been received.
	.... .1..	Lost session partner
	.... ..1.	Notify has been received.
	.... ...1	Session information retrieval is globally enabled.
44(2C) NLBFLG2		Flags field byte 2
	1... ..	NLB is not in the free pool (Currently for SNI NLBs)
	..xxx xxxx	Reserved

Programmed Resource Logical Unit (LU) Block Extension

Program: NCP

Size in bytes: 76(4C)

Created by: NCP generation, NCP initialization, and dynamically

Pointed to by: The programmed resource LU block (NLB) by offset in the NLBOFSET field, the UICNLXP field in the user interface control block (UIC), the NIXNLXP field in the Network Interconnect Extension (NIX), and the NLXNEXT field (if the NLX is in a pool)

Function: Contains information about a programmed resource LU

0(0) - 23(17)			
Queue control block (QCB)			
24(18) NLXOFSET Offset to the next NLX (not used for SNI NLXs)	25(19) NLXPFVT3 Previous FVT3 index	26(1A) NLXSPART Element address of the session partner	
28(1C) NLXNLB Pointer to the associated NLB			
NLXTYPE Block identifier field X'08'			
32(20) NLXTNUM Number of this extension	33(21) NLXNOTFY* Notify task information byte	34(22) NLXPFVT2 Previous FVT2 index	35(23) NLXRCB0 Offset to the resource connection block (RCB)
36(24) NLXFVT Pointer to the function vector table (FVT) or the gateway vector of tasks (GVT)			
NLXCFVT Current FVT index			
40(28) NLXUCB Pointer to the user adapter control block (UACB)			
NLXNIX Pointer to the network interconnect extension for gateway NLXs			
NLXPFVT1 Previous FVT1 index			
44(2C) NLXNEXT Pointer to the next NLX if the NLX is in a pool (Currently only used for SNI NLXs)			
48(30) - 75(4B) NLXRCB Embedded RCB (For details, see the RCB format for the NLX)			

* Indicates a byte expansion follows.

Note: The NLX fields must remain in the same relative positions as their counterparts in the NLB, programmed resource PU block (NPB), and programmed resource virtual line block (VLB).

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
33(21) NLXNOTFY		Notify task information byte
	1... ..	Resource is undergoing auto network shutdown (ANS).
	.1.. ...	Resource entered held state.
	..1. ...	Resource exited held state.
	...1 ...	Deactivate virtual route status has been received.
	.... 1..	Virtual route inoperative (VR.INOP) status has been received.
	.... .1..	Lost session partner
	.... ..1.	Notify has been received.
	.... ...1	Session information retrieval is globally enabled.

Network Names Table

Program: NCP

Size in bytes: 16(10) header plus 12(C) per entry

Non-dynamic NNT entries will be 12(C) per entry. Non-dynamic NNT entries will be part of the table.

Dynamic NNT entries will be 20(14) per entry. Dynamic entries will not be part of the table but will be chained up via an AAB in the NNT header.

Created by: Initialization routine and dynamically

Pointed to by: The SYSNNTTP field in the extended halfword direct addressable control block extension (HWX). Note QABNNTTP points to the start of the NNT's GPA.

Function: Used to store network names referenced by an index that is stored in other control blocks

Header

0(0)	NNTCHPF 1st NNT entry in dynamic in-use chain (the dynamic chain is order by index number)	
4(4)	NNTCHPL Last NNT entry in dynamic in-use chain	
8(8)	NNTHGEN Highest index of the genned entries	10(A) NNTGUSE Number of genned entries that are currently being used
12(C)	NNTHASHM Mask for use in hashing CPNAMEs	14(E) Reserved

NNT Entry (non-Dynamic)

0(0)	NNTNDATA* Name data	1(1) Reserved	2(2) NNTUSES Number of uses of this name
4(4) - 11(B) NNTNAME Network name (left-justified, blank filled)			

* Indicates a byte expansion follows.

NNT Entry (Dynamic)

0(0) NNTNDATA* Name data	1(1) Reserved	2(2) NNTUSES Number of uses of this name
4(4) - 11(B) NNTNAME Network name (left-justified, blank filled)		
12(C) NNTNXTP Next NNT entry in chain (in-use chain or GPA chain)		
16(10) NNTINDX NNT index of this entry	18(12) Reserved	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NNTNDATA	xx..	Name data Name type: 00 = Network ID 01 = Control point name

Programmed Resource Physical Unit (PU) Block

Program: NCP

Size in bytes: 76(4C)

Created by: NCP generation

Pointer to: The PUV CUB field in the PU vector table (PUV), the NLBNPB field in the programmed resource LU block (NLB), and the RVTRP field in the resource vector table (RVT)

Function: Contains information about a programmed resource PU

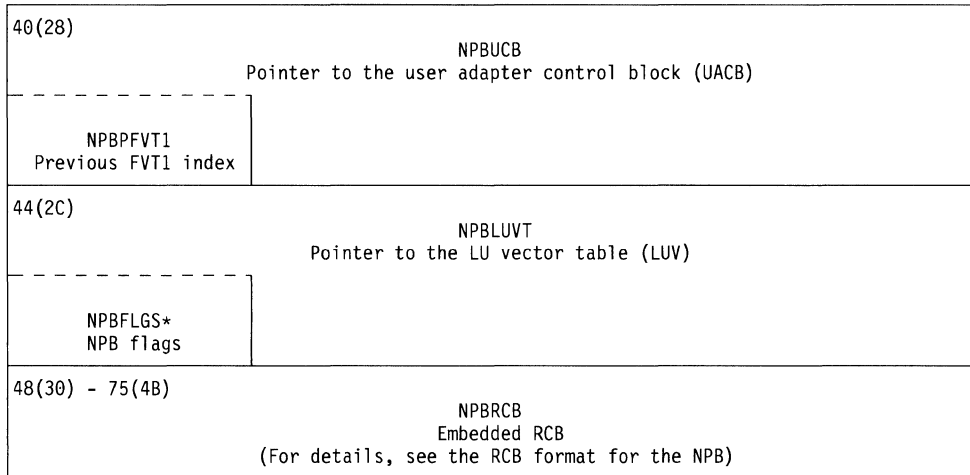
Prefix

-4(-4) - -1(-1)
For the prefix format for the NPB, see the network performance analyzer prefix (NPF) control block.

0(0) - 23(17)			
Queue control block (QCB)			
24(18) NPBNPMIF* NPM information byte	25(19) NPBPFVT3 Previous FVT3 index	26(1A) NPBNETAD Element address of the programmed resource PU	
28(1C) NPBVLB Pointer to the programmed resource virtual line block (VLB)			
NPBTYPE Block identifier field X'02'			
32(20) NPBSNP SSCP-NCP session control block (SNP) mask (identifies the owning SSCP)	33(21) NPBNOTFY* Notify task information byte	34(22) NPBPFVT2 Previous FVT2 index	35(23) NPBRCBO Offset to the resource connection block (RCB)
36(24) NPBFVT Pointer to the function vector table (FVT)			
NPBCFVT Current FVT index			

* Indicates a byte expansion follows.

Note: The NPB fields must remain at the same relative offsets as their counterparts in the programmed resource LU block extension (NLX), NLB, and VLB.



* Indicates a byte expansion follows.

Note: The NPB fields must remain at the same relative offsets as their counterparts in the programmed resource LU block extension (NLX), NLB, and VLB.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
24(18) NPBNPMIF		NPM information byte
	X'01'	Start collection on resource
	X'02'	Forward NPM data
	X'03'	Stop collection on resource
33(21) NPBNOTFY		Notify task information byte
	1... ..	Resource is undergoing auto network shutdown (ANS).
	.1.. ..	Virtual route entered held state.
	..1.	Virtual route exited held state.
	...1	Deactivate virtual route status has been received.
	.... 1...	Virtual route inoperative (VR.INOP) status
	.... .1..	Lost session partner
	.... ..1.	Notify has been received.
44(2C) NPBFLGS		NPB flags
	1... ..	Resource is eligible for NPM data collection
	.xxx xxxx	Reserved

Network Performance Monitor Prefix

Program: NCP

Size in bytes: Variable (up to 12 bytes), depending on the control block

Located in: The beginning of the common PU block (CUB), device base control block (DVB), line control block (LKB), line control block (LCB), LU control block (LUB), programmed resource LU block (NLB), programmed resource PU block (NPB), physical services control block (PSB), station control block (SCB), or programmed resource virtual line block (VLB), if the resource is eligible for network performance analysis (NPA)

Function: Contains status information and the pointer to the counter queue element. (See “NPA Counter Queue Element” on page 1-732.)

For LCB Control Block

-12(C) NPFABRCV Temporary characters received counter	-10(A) NPFABSNT Temporary characters sent counter
---	---

For LCB and LKB Control Blocks

-8(8) NPFACCT Active resource counter	-7(7) NPFABFLG* Line processing flags	-6(6) Reserved
---	---	-----------------------

* Indicates a byte expansion follows.

For CUB, DVB, LCB, LUB, NLB, NPB, PSB, SCB, and VLB Control Blocks

-4(4) NPFQEL Pointer to the NPA counter queue element (NQE)	 NPFFLAGS* Collection type indicators
---	---

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
-7(7) NPFABFLG		Line processing flags
	1...	Block received indicator (BSC)

Offset/Field Name	Bit Pattern	Contents
-4(4) NPFFLAGS		Collection type indicators
	1... ..	Message data is being acquired.
	.1.. ..	Character data is being acquired.
	..1. ..	Poll data is being acquired.
	...1 ..	Error data is being acquired.
	.... 1..	Retransmission data is being acquired.
	.... .1..	Queue length data is being acquired.
	.... ..1.	Resource requires extended NQE
	.... ...1	Poll send indicator
		For CCU collection
	1... ..	CCU utilization data is being acquired.
	.1.. ..	Buffer data is being acquired.
	..1. ..	Channel queue data is being acquired.

NCP-Processor Parameter/Status Area Control Block

- Program:** NCP
- Size in bytes:** 32(20)
- Located in:** \$LVL2E0
- Created by:** NCP generation, one for each ODLC link.
- Pointed to by:** The LNVTPSAP field in ODLC line vector table (LNVT), and the NACBNPSA field in the NCP-Processor adapter control clock (NACB)
- Function:** Contains a parameter area used to transfer control block information from the CCU to the Processor and a status area used to transfer status information from the Processor to the CCU.

Parameter Area (NPSAPARM)

0(0)		NPSANDPS Pointer to first NDPSA	
NPSACMD* Command			
4(4)	NPSASEQN Sequence counter	6(6)	NPSAHCC* IOH halt cause code
8(8)		NPSALDPS Pointer to buffer containing LDPSA in error	
NPSAHCMD Halt command			
12(C)	NPSAGLID* Line ID (Value to be returned with L2 GLID IOH)	14(E)	Unused

* Indicates a byte expansion follows.

Status Area (NPSASTAT)

16(10)	NPSAREAS* Reason code	17(11)	NPSADIAG* Diagnostic code	18(12)	NPSANDPE Sequence number of NDPSA in error (Valid for negative Execute Clear)
20(14) - 27(18)					
Unused (8 Bytes)					
28(1C)					
NPSAACB Pointer to transmit ACB or TRA					
NPSAFLAG* Flags					

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NPSACMD		Command
	1... ..	ODLC command
	.x.. ..	Reserved
	..xx ..	Operation
		00 = Line operation
		01 = Processor operation
		10 = Trace operation
	.... 0...	Request
	.... .xxx	Request type
		000 = Execute Request (ER)
		001 = Halt Line
		010 = Abnormal Request
6(6) NPSAHCC		IOH Halt Cause Code
	Byte 0	
	x... ..	Error logged by:
		1 = NCP
		0 = CSS
	.1.. ..	NPSA error
	..1. ..	LPSA error
	...1 ..	NDPSA error
	.... 1...	LDPSA error
	.... .1..	Other errors

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	X'0406'	Processor to CBC buffer count offset error
	X'0407'	No response to HLF/D/DEACT NDPSA
	X'040A'	CSS server failure
	X'040E'	Internal CSS error, line level
	X'0801'	LDPSA contains invalid NCP.LRID
	X'0802'	RDIC LDPSA contains Processor.LRID = X'0000'
	X'0803'	DMA error on write of LDPSA
	X'0804'	DMA error on write of line or station data
	X'0805'	LDPSA contains an invalid data pointer
	X'0806'	LDPSA contains an invalid command or command qualifier
	X'1003'	NDPSA—DMA read error
	X'1004'	NDPSA—RDI data DMA read error
	X'2001'	LPSA parameter—invalid command
	X'2002'	LPSA parameter—invalid LDPSA pointer
	X'2003'	LPSA parameter—invalid abnormal request reason code
	X'2007'	LPSA status—DMA read error
	X'2008'	LPSA parameter—DMA write error
	X'2009'	LPSA parameter—Invalid residual data count
	X'4004'	NPSA status—invalid reason code
	X'4005'	NPSA status—invalid diagnostic code
	X'4008'	NPSA parameter—DMA read error
	X'4009'	NPSA status—DMA write error
	X'8401'	NCP backup timer expired
	X'8402'	No SLI issued
	X'8403'	Command reject—N side
	X'8404'	IOH issued to adapter not installed or not operative
	X'8405'	Error in buffer pointed to by NDPSA
	X'8408'	SIT termination initiated by NCP
	X'840B'	Command reject—L side
	X'840C'	No set LNVT issued
	X'840D'	Wrap test terminated due to adapter failure
	X'840F'	Buffer prefix, offset count error
	X'8410'	Invalid buffer pointer in buffer prefix
	X'8411'	Invalid ECB chain pointer
	X'8412'	NCP threshold exceeded for withholding service clear
	X'9001'	Receive initial NDPSA rejected
	X'9002'	NDPSA contains invalid Processor.LRID
	X'9005'	NDPSA—deactivate or halt line force deactivate reason code
	X'9006'	NDPSA error on a Processor slot—Processor protocol error
	X'9008'	NDPSA contains invalid data pointer
	X'900A'	NDPSA contains an invalid NDPSA chain pointer
	X'A004'	LPSA status—invalid reason code
	X'A005'	LPSA status—invalid diagnostic code
	X'A006'	LPSA status—invalid NCP congestion flags
	X'C001'	NPSA parameter—invalid command
	X'C002'	NPSA parameter—invalid NDPSA pointer
	X'C003'	Reserved for abnormal request reason code

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) NPSAGLID		Line ID
	00xx xxxx xxxx xx.. .... .... .... ..X.	Offset to ODLN LNVN entry
		1 = ODLN LNVN offset 0 = Regular LNVN address
	.... .... .... ...0	Identifies ACUBAR when it is exchanged with CCBBAR (On only in ACU BAR)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) NPSAREAS		Reason Codes
	1... .... .0.. .... ..xx	ODLN operation Reserved Operation type
		00 = Line operation 01 = Processor operation 10 = Trace operation
	.... 1... .... .xxx	Response Response type
		000 = Execute Clear—Positive 001 = Execute Clear—Negative 010 = Abnormal Response

17(11) NPSADIAG		Diagnostic Codes
		NPSA errors
	X'40'	Invalid command (NPSAINVC)
	X'41'	Invalid pointer (NPSAINVP)
		NDPSA errors
	X'10'	Receive initial NDPSA error (NPSARIER)
	X'11'	DMA error on read of NDPSA (NPSAREND)
	X'14'	Common mapper down (NPSACMPD)
	X'15'	Invalid NDPSA chain pointer (NPSAIPTR)
	X'16'	Invalid buffer pointer in NDPSA (NPSAIBUF)
	X'17'	Line already activated by other CCU (NPSALNAC)
		Others
	X'04'	No ECB in PIU NDPSA (NPSAECBE)
	X'05'	Buffer prefix offset,count error (NPSAPOFC)
	X'06'	Invalid buffer pointer in buffer prefix (NPSAPPTR)
	X'07'	Invalid ECB chain pointer (NPSAIECB)

28(1C) NPSAFLAG		Flags
	x...	1 = IOH operation should be SLI (NPSASLI) 0 = IOH operation should be SL
	.110 1111	PSA identifier (X'6F') (NPSAID)

NPA Counter Queue Block

Program: NCP
Size in bytes: 96(60)
Created by: NCP generation
Pointer to: SYSNQB in the extended halfword direct addressables control block (HWE)
Function: Controls the accumulation and forwarding of network performance analyzer (NPA) statistics

0(0)			NQBTIME NPA time value		
4(4)			NQBNLXP Pointer to the NLX of the primary receiver of network performance data		
NQBSEQN Sequence number of forward in progress					
8(8)	9(9)	10(A)	NQBANANP Number of active network performance capable network performance monitors (NPMs)		
NQBNCOLBC Needed buffers for a 512 byte PIU			Reserved		
12(C)			NQBC1TOP Top of interval queue 1		
NQBPFGLS* Queue element processing flags					
16(10)			NQBC1BOT Bottom of interval queue 1		
NQBNLIMS Number of processors with FORWARD in progress bit on					

* Indicates a byte expansion follows.

20(14) NQBSTIV Interval being forwarded	NQBC2TOP Top of interval queue 2
24(18) NQBSTRI Interval being started	NQBC2BOT Bottom of interval queue 2
28(1C) NQBC3TOP Top of interval queue 3	
32(20) NQBC3BOT Bottom of interval queue 3	
36(24) NQBC4TOP Top of interval queue 4	
40(28) NQBC4BOT Bottom of interval queue 4	
44(2C) NQBC5TOP Top of interval queue 5	
48(30) NQBC5BOT Bottom of interval queue 5	
52(34) NQBC6TOP Top of interval queue 6	
56(38) NQBC6BOT Bottom of interval queue 6	

60(3C)	NQBC7TOP Top of interval queue 7
64(40)	NQBC7BOT Bottom of interval queue 7
68(44)	NQBC8TOP Top of interval queue 8
72(48)	NQBC8BOT Bottom of interval queue 8
76(4C)	NQBC9TOP Top of interval queue 9
80(50)	NQBC9BOT Bottom of interval queue 9
84(54)	NQBCATOP Top of interval queue 10
88(58)	NQBCABOT Bottom of interval queue 10
92(5C)	NQBNICC Non-interval collectibles forward pointer

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) NQBPFLLGS		Queue element processing flags
	.1..	Processing stop all

NPA Counter Queue Element

Program: NCP

Size in bytes: 52(34)

Created by: NCP generation

Pointed to by: The network performance analyzer (NPA) prefix of the resource that is undergoing NPA collection, and the NQEFWD and NQEBWD fields in the NPA counter queue element (NQE)

Function: Accumulates the statistics for the resource that is undergoing NPA collection.

0(0)		NQEFWD Pointer to the next element in the queue (zero if last in the queue)	
NQEUFLGS* NCP user code interface flags			
4(4)		NQEBWD Pointer to the previous element in the queue (zero if first in the queue)	
NQEPFLGS* Queue element processing flags			
8(8)		10(A)	
NQEFLGS* Interval queue flags		NQERSADR Element address of a resource	
12(C)	13(D)	14(E)	
NQERTYPE* Type of resource	NQERLEN Length of the resource record data in this element. Resource record data is from NQESADR to the end of the element.	NQELFLGS Resource record flags	
		NQENFLG1* Flag byte 0	15(F) NQENFLG2* Flag byte 1
		NQECFLG1* CCU/NCP flag byte 0	NQECFLG2* CCU/NCP flag byte 1

* Indicates a byte expansion follows.

NQE Format for Standard Format Resources

16(10)		NQELFCC Value for the CCU free cycle count (CCU/NCP format)	

		NQELUCC Value for the CCU used cycle count/8 (cycle utilization counter format)	

	NQELTPS Value for total PIUs sent	18(12)	NQELTPR Value for total PIUs received
20(14)		NQELTBS Value for total bytes sent	

		NQELFBQ Value for the free buffer queue length (CCU/NCP format)	
24(18)		NQELTBR Value for total bytes received	

	NQELCYS Value for the CCU cycle speed (CCU/NCP format)	26(1A)	NQELCIQ Value for the channel intermediate queue (CCU/NCP format)
28(1C)		NQELROQ Value for the resource outbound	

	NQELCHQ Value for the channel hold queue (CCU/NCP format)	30(1E)	NQELTPC Value for a total poll count

	NQELSL Value in tenths of a second of time in a slowdown (CCU/NCP format)		
32(20)		NQELSLM Value for the buffer count limit for a slowdown entry (CCU/NCP format)	

	NQELPPC Value for a positive poll count	34(22)	NQELERR Value for a total error count
36(24)		NQELMXF Maximum available NCP buffers (CCU/NCP format)	

	NQELRPC Value for a retransmitted PIU count	38(26)	NQELRBC Value for a retransmitted character count
40(28)		NQELFBH Value for the free buffer high-water mark (CCU/NCP format)	
44(2C)		NQELFBL Value for the free buffer low-water mark (CCU/NCP format)	
48(30)		NQENQXP NQE extension pointer	

NQE Format for Extended Format Resources

16(10)	NQEBUFP Pointer to the current buffer in collect PIU	
20(14)	NQENQE C'NQ'	22(16) Reserved
24(18)	NQENPVLV Pointer to the resource control block	
28(1C)	NQENQEP Pointer to this NQE	
32(20)	NQENDBP Pointer to Ethernet NPM Data Block (Ethernet only)	
36(24) - 51(33)	Reserved	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NQEUFLGS		NCP user code interface flags
	x... ..	Forward requested by IBM special products or user-written code
	.x... ..	1 = Forward requested 0 = No forward needed
	..x... ..	1 = User data not in queue element 0 = User data contained in queue element
4(4) NQEPFLGS		Queue element processing flags
	1... ..	Ignore overflow—PIUs sent count
	.1... ..	Ignore overflow—PIUs received count
	..1... ..	Ignore overflow—errors count
	...1... ..	Queue element Collect build processing delayed (NQEDCOL)
	.... 1... ..	Reserved
	.... .1.. ..	Start failed for this resource
8(8) NQEFLGS		Interval queue flags. The flag is on for the queue in which the resource is being collected. All flags are off if on a free queue.
	Byte 0	
	xxxx xx..	Reserved
	.... .1.	Queue 10
	.... ...1	Queue 9
	Byte 1	
	1... ..	Queue 8
	.1... ..	Queue 7
	..1... ..	Queue 6
	...1... ..	Queue 5
	.... 1... ..	Queue 4
	.... .1.. ..	Queue 3
	.... ..1.	Queue 2
	.... ...1	Queue 1

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) NQERTYPE		Type of resource whose data is included
	1...	CCU/NCP resource indicator. Bit 7 is always off if bit 0 is on
	.1..	Link or BSC line. If bit 7=1, the resource is an SDLC link. If bit 7=0, the resource is a BSC line
	..1.	PU or BSC cluster. If bit 7=1, the resource is an SDLC PU. If bit 7=0, the resource is a BSC cluster
	...1	LU or BSC terminal. If bit 7=1, the resource is an SDLC LU. If bit 7=0, the resource is a BSC terminal
	.... x...	NQE format indicator: 1 = Extended format for NQE 0 = Standard format for NQE
	.... .x..	Resource DLC type indicator (not used for NEO) 1 = ODLC 0 = Any other type DLC
	.... ..1.	Programmed resource LU. Bit 7 is always 1 when bit 6=1
	.... ...x	SNA boundary resource 1 = SDLC, frame-relay, or NTRI resource 0 = BSC 3270 resource
14(E) NQENFLG1		INN and BNN resources flag byte 0
	x.xx xxx.	Reserved
	.1..	Double overflow has occurred
	.... ...1	Overflow NQELRBC
14(E) NQECFLG1		CCU/NCP resources flag byte 0
	1...	CCU utilization value is in cycle utilization counter (CUC) format
	.1..	Double overflow has occurred
15(F) NQENFLG2		Flag byte 1
	1...	Overflow NQELRPC
	.1..	Overflow NQELERR
	..1.	Overflow NQELPPC
	...1	Overflow NQELTPC
	.... 1..	Overflow NQELTBR
	.... .1.	Overflow NQELTBS
	.... ..1.	Overflow NQELTPR
	.... ...1	Overflow NQELTPS
15(F) NQECFLG2		CCU/NCP flag byte 1
	.... ..1.	Overflow NQELSL
	.... ...1	Overflow NQELFCC or NQELUCC

NPA Counter Queue Element Extension

Program: NCP
Size in bytes: 60(3C)
Created by: NCP initialization
Pointer to: NQENQXP in the NQE
Function: Contains the transmission priority performance collection data.

0(0)		NQXNEXT Pointer to next NQX in NQX pool	
4(4)		6(6)	
NQXFLAGS Contents Flags		Reserved	
-----		-----	
NQXFLAG1* Contents Flag byte 1	5(5) NQXFLAG2* Contents Flag byte 2		
8(8)		10(A)	
NQXOVFLG Overflow flag		Reserved	
-----		-----	
NQXOVFL1* Overflow flag byte 1	9(9) NQXOVFL2* Overflow flag byte 2		
12(C)			
NQXHPIFS High priority I-frames sent			
-----		-----	
NQXHPFS1		14(E)	NQXHPFS2
16(10)			
NQXHPIFR High priority I-frames received			
-----		-----	
NQXHPFR1		18(12)	NQXHPFR2
20(14)			
NQXHPBYS High priority bytes sent			
-----		-----	
NQXHPBS1		22(16)	NQXHPBS2
24(18)			
NQXHPBYR High priority bytes received			
-----		-----	
NQXHPBR1		26(1A)	NQXHPBR2

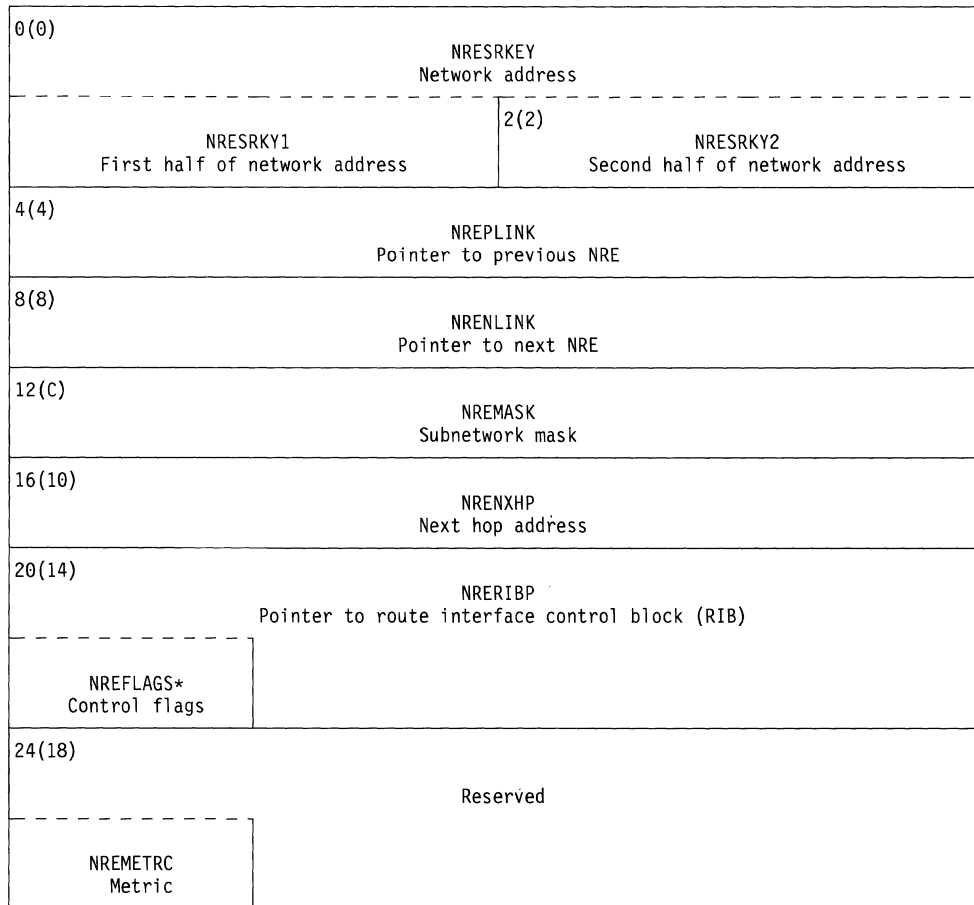
28(1C)		
NQXMPIFS Medium priority I-frames sent		
NQXMPFS1	30(1E)	NQXMPFS2
32(20)		
NQXMPIFR Medium priority I-frames received		
NQXMPFR1	34(22)	NQXMPFR2
36(24)		
NQXMPBYS Medium priority bytes sent		
NQXMPBS1	38(26)	NQXMPBS2
40(28)		
NQXMPBYR Medium priority bytes received		
NQXMPBR1	42(2A)	NQXMPBR2
44(2C)		
NQXLPIFS Low priority I-frames sent		
NQXLPFS1	46(2E)	NQXLPFS2
48(30)		
NQXLPIFR Low priority I-frames received		
NQXLPFR1	50(32)	NQXLPFR2
52(34)		
NQXLPBYS Low priority bytes sent		
NQXLPBS1	54(36)	NQXLPBS2
56(38)		
NQXLPBYR Low priority bytes received		
NQXLPBR1	58(3A)	NQXLPBR2

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
4(4) NQXFLAG1		Contents Flag byte 1
	1... ..	High priority I-frames sent
	.1... ..	High priority I-frames received
	..1... ..	High priority bytes sent
	...1... ..	High priority bytes Received
	.... 1... ..	Medium priority I-frames sent
	.... .1... ..	Medium priority I-frames received
	.... ..1... ..	Medium priority bytes sent
	.... ...1... ..	Medium priority bytes received
5(5) NQXFLAG2		Contents flags byte 2
	1... ..	Low priority I-frames sent
	.1... ..	Low priority I-frames received
	..1... ..	Low priority bytes sent
	...1... ..	Low priority bytes received
	.... 1... ..	Double overflow Indicator
	.... .xxx	Reserved
8(8) NQXOVFL1		Overflow flag byte 1
	1... ..	High priority I-frames sent overflow
	.1... ..	High priority I-frames received overflow
	..1... ..	High priority bytes sent overflow
	...1... ..	High priority bytes received overflow
	.... 1... ..	Medium priority I-frames sent overflow
	.... .1... ..	Medium priority I-frames received overflow
	.... ..1... ..	Medium priority bytes sent overflow
	.... ...1... ..	Medium priority bytes received overflow
9(9) NQXOVFL2		Overflow flag byte 2
	1... ..	Low priority I-frames sent overflow
	.1... ..	Low priority I-frames received overflow
	..1... ..	Low priority bytes sent overflow
	...1... ..	Low priority bytes received overflow
	.... 1... ..	Double overflow Indicator
	.... .xxx	Reserved

Network Route Entry

- Program:** NCP
- Size in bytes:** 28(1C) for each network route entry
- Created by:** NCP initialization and dynamically
- Pointer to:** NRTCPTR field in NRT, NREPLINK and NRENLINK fields in the NRE when in the hashing table
- Function:** Provides a node in the Network Route Table and points to the route interface control block (RIB) for an IP network address. A hash entry control block (HEB) is embedded at location 0(0) to link to the Network Route Table (HTB field HTBTYPE = X'01').



Offset/Field Name	Bit Pattern	Contents
20(14) NREFLAGS		Network route control flags
	x... ..	1 = Direct routing using Network address 0 = Indirect routing using Next Hop address
	.1..	Entry is a permanent routing table entry
	..1.	Entry is in-use in the network route table

NCP-NCPROUTE Processing Control Block

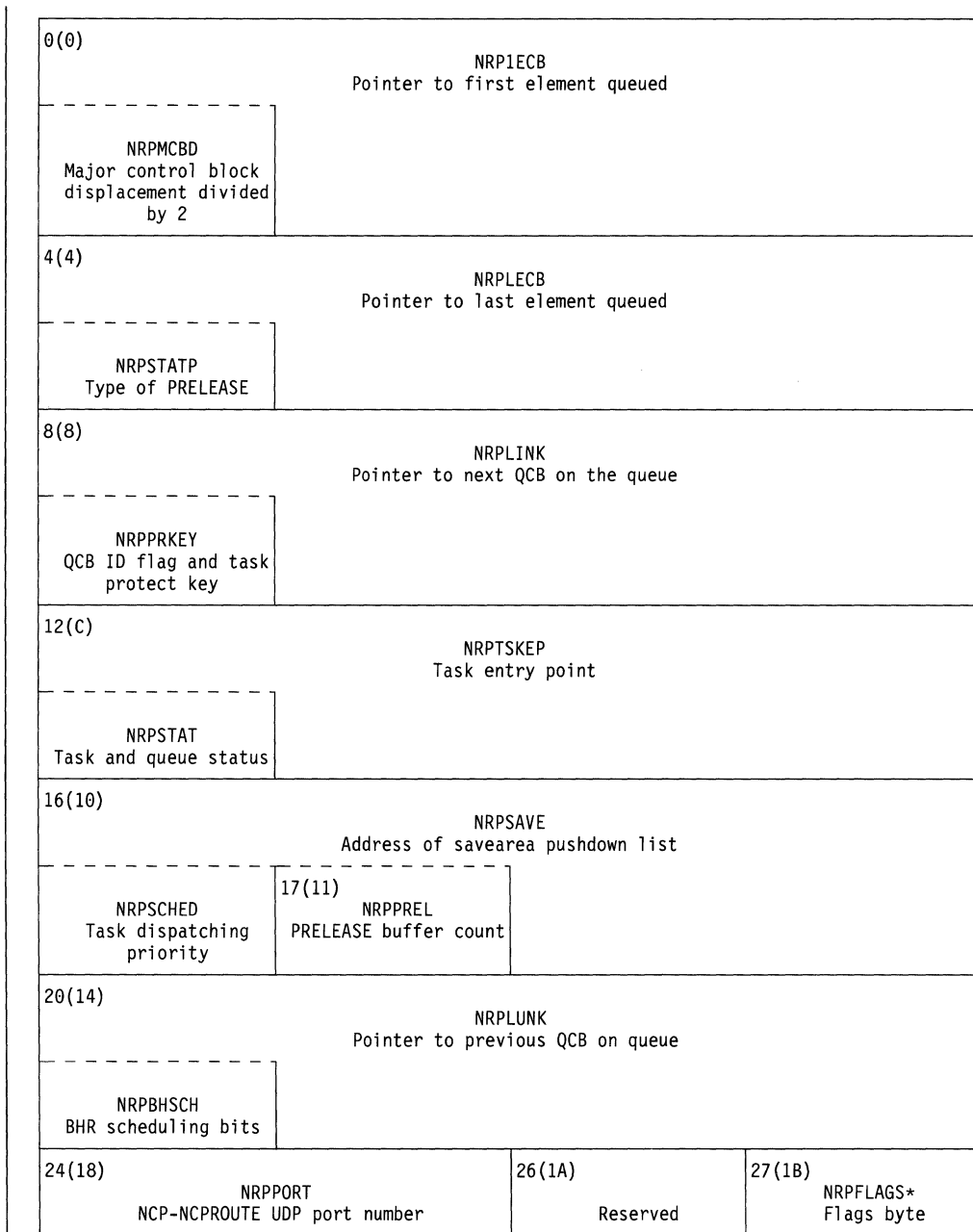
Program: NCP

Size in bytes: 92(5C)

Created by: NCP generation

Pointed to by: The RDANRPP field in the routing data area control block (RDA)

Function: Provides information about NCP-NCPROUTE user datagram protocol (UDP) datagram processing



* Indicates a byte expansion follows.

Dummy header for use in validating UDP datagrams

28(1C)			NRPBFCHN Buffer chain		
32(20)		34(22)		35(23)	
Reserved		NRPOFSET Buffer offset		NRPDATCT Buffer data count	
36(24)					
NRPSRCIP Source IP address					
40(28)					
NRPDSTIP Destination IP address					
44(2C)		45(2D)		46(2E)	
Reserved		NRPPROTO Port number		NRPULEN UDP length	

48(30) - 55(37)					
NRPRTNAM Name of the NCP routing table					
56(38)			58(3A)		
NRPHMAX Hello threshold			NRPHCUR Current hello counter		
60(3C)					
NRPEMAX Hello threshold (in EBCDIC)					
64(40)		65(41)		66(42)	
NRPARCD ACK return code		Reserved		NRPINTNM Total number of interfaces	

Alert QCB

68(44)		NR1IECB Pointer to first element queued	
NR1MCBD Major control block displacement divided by 2			
72(48)		NR1IECB Pointer to last element queued	
NR1STAT Type of PRELEASE			
76(4C)		NR1LINK Pointer to next QCB on the queue	
NR1PRKEY QCB ID flag and task protect key			
80(50)		NR1TSKEP Task entry point	
NR1STAT Task and queue status			
84(54)		NR1SAVE Address of savearea pushdown list	
NR1SCHD Task dispatching priority	85(55) NR1PREL PRELEASE buffer count		
88(58)		NR1LUNK Pointer to previous QCB on queue	
NR1BHSCH BHR scheduling bits			

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
26(1A) NRPFLAGS		Flags byte
	1...	Hello threshold has been defined (NRPHTDF)
	.1..	Hello threshold has been reached (NRPHTRC)
	..1.	NCPROUTE-connection-activation-failed alert needed (NRPBAAN)
	...1	Bad-checksum alert needed (NRPBCAN)
	.... 1...	Hello backoff is active (NRPHTBA)
	.... .1..	NCP-NCPROUTE communications has been established at least once (NRPNRCE)

NCP-NCPROUTE Timer Processing Queue

Program: NCP
Size in bytes: 24(18)
Created by: NCP generation
Function: Generates the NCP-NCPROUTE Timer Processing Queue
Format: Standard input queue control block (QCB)
Task—CXDCNRT
Priority—Productive
Reentrant—No.

Network Route Table Control Block

- Program:** NCP
- Size in bytes:** Depends on number of hash buckets. Each hash bucket has a fixed length of 4(4).
- Created by:** NCP generation, one per NCP
- Pointer to:** The RDANRTP field in the Routing Data Area control block (RDA).
- Function:** Serves as a hash lookup table. Each element points to the first network route entry (NRE) control block in a chain of table entries.

0(0)	NRTTYPE NRT table type (X'01')	1(1)	NRTFLAGS* Network route table flags	2(2)	NRTNTRY Number of hash buckets
4(4)	NRTHASH Address of hash function routine				
8(8)	NRTFREE Pointer to hash table free NRE list				
12(C) - n	Hash bucket control blocks				

* Indicates a byte expansion follows.

Note: See the following for the format of a hash bucket.

Each entry represents a single hash bucket.

0(0)	NRTCPTR Pointer to first NRE of hash chain
------	---

Offset/Field Name	Bit Pattern	Contents
1(1) NRTFLAGS		Network route table flags
	1...	Entry mask should be used in hashing
	.xxx xxxx	Reserved

NPA Session Accounting Block**Program:** NCP**Size in bytes:** 80(50)**Created by:** NCP generation**Pointer to:** The SYSNSAP field in the extended halfword direct addressables control block extension (HWX)**Function:** Used to manage network performance analyzer (NPA) boundary function (BF) accounting

0(0)	NSA1ECB Pointer to the first element queued	
	NSAMCBD Major control block displacement divided by 2	
4(4)	NSALECB Pointer to the last element queued	
	NSASTATP PRELEASE flags	
8(8)	NSALINK Pointer to the next queue control block (QCB) on the queue	
	NSAPRKEY QCB ID flag and task protect key	
12(C)	NSATSKEP Task entry point	
	NSASTAT Task and queue status	
16(10)	NSASAVE Address of the save area pushdown list	
	NSASCHED Task dispatching priority	17(11) NSAPREL PRELEASE buffer count
20(14)	NSALUNK Pointer to the previous QCB on the queue	
	NSABHSCH Block handler routine (BHR) scheduling bits	

24(18)		NSANBPB Pointer to the NPA programmed resource PU block (NPB)	
NSASSTAT* BF accounting status			
28(1C)		NSASEQN Sequence number of the last session accounting PIU sent to the NPA	
32(20)		NSATBCT BF threshold value for byte counts	
36(24)	NSATPCT BF threshold value for PIU counts	38(26)	Reserved
40(28)		NSANSCF Pointer to the first NSC in the chain of NSCs awaiting data to be sent to NPM	
NSANLXM Number of active session accounting capable NPMs			
44(2C)		NSANSCL Pointer to the last NSC in the chain of NSCs awaiting data to be sent to NPM	
NSACOLBC Buffers needed for a 512-byte PIU			
48(30)		NSANTNP Pointer to the NPA takeover notification control block (NTN)	
52(34)		NSANGAP Pointer to the NPA gateway accounting control block (NGA)	
56(38)		NSANDRP Pointer to the NPA DR history control block (NDR)	
60(3C)	NSAPF1 BF session accounting PIU frequency range 1	62(3E)	NSAPF2 BF session accounting PIU frequency range 2
64(40)	NSAPF3 BF session accounting PIU frequency range 3	66(42)	NSAPF4 BF session accounting PIU frequency range 4
68(44)	NSAPF5 BF session accounting PIU frequency range 5	70(46)	NSAPF6 BF session accounting PIU frequency range 6

* Indicates a byte expansion follows.

72(48)	NSANSCA Pointer to the chain of allocated NSCs	
76(4C)	NSADLY Current number of delayed records (for Boundary Function Session Accounting)	78(4E) NSANOA Current number of boundary sessions for which accounting is not being done

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
24(18) NSASSTAT		NSA session accounting status
	1... ..	Session accounting is enabled.
	.1.. ..	Session accounting for secondary LU sessions is supported.
	..1.	Session accounting for primary LU sessions is supported.
	...1	VREVENT is issued.
	.... 1...	PIU frequency range counters are included in network performance analyzer session counters (NSCs)
	.... .1..	The primary NPM for BF session accounting has IBM special products or user-written code capabilities
	.... ..xx	Reserved

NPM Frame-Relay Physical Station Data Block

Program: NCP

Size in bytes: 48(30)

Created by: NCP initialization

Pointed to by: The QABNSBP field in the queue anchor block (QAB), the CUBNSBP field in the common physical unit block (CUB), the LLBNSBP field in the logical link control block (LLB), and the NSBNEXT field in the NPM frame-relay physical station data block (NSB)

Function: NSBs will be used for FRSE and LMI PU performance data collection

0(0)			
NSBNEXT Pointer to the next NSB in the NSB control block pool			
NSBFLAGS* Flags			
4(4)	NSBBID Block identifier C'NS'	6(6)	NSBUIB NPM frame-relay identifier X'07'
		7(7)	NSBURSC* Program resource type
8(8)	NSBCF1* Content flags 1	9(9)	NSBCF2 Content flags 2
		10(A)	NSBCF3* Content flags 3
		11(B)	NSBCF4* Content flags 4
12(C)	NSBOV1* Overflow flags 1	13(D)	NSBOV2 Overflow flags 2
		14(E)	NSBOV3* Overflow flags 3
		15(F)	NSBOV4* Overflow flags 4
16(10)	NSBOV5 Overflow flags 5	17(11)	NSBOV6* Overflow flags 6
		18(12)	NSBOBQL Outbound queue length (FRSE only)
20(14)			
NSBBT Total number of bytes transmitted			
24(18)			
NSBBR Total number of bytes received			
28(1C)			
NSBFT Total number of frames transmitted			
32(20)			
NSBFR Total number of frames received			
36(24)			
NSBFFC Total number of frames with forward congestion bit on (FRSE only)			
40(28)			
NSBFBC Total number of frames with backward congestion bit on (FRSE only)			
44(2C)			
NSBFD Discarded frames count			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) NSBFLAGS		Flags byte
	1... ..	NSB is allocated (NSBALOC)
	.1.	NSB is actively collecting (NSBNPMA)
7(7) NSBURSC		Program resource type
	X'12'	Frame relay SE PU program resource type value (NSBPRTF)
	X'13'	LMI PU program resource type value (NSBPRTL)
8(8) NSBCF1		Content flags 1
	..1.	Total bytes transmitted (NSBCBT)
	...1	Total bytes received (NSBCBR)
	.... ...1	Outbound queue length (FRSE PUs only) (NSBCOQL)
10(A) NSBCF3		Content flags 3
	1... ..	Total frames transmitted (NSBCFT)
	.1.	Total frames received (NSBCFR)
11(B) NSBCF4		Content flags 4
	1... ..	Frames with forward congestion on (FRSE only) (NSBCFFC)
	.1.	Frames with backward congestion on (FRSE only) (NSBCFBC)
	..1.	Total frames discarded (NSBCFD)
12(C) NSBOV1		Overflow flags 1
	..1.	Total bytes transmitted (NSBOBT)
	...1	Total bytes received (NSBOBR)
14(E) NSBOV3		Overflow flags 3
	1... ..	Total frames transmitted (NSBOFT)
	.1.	Total frames received (NSBOFR)
15(F) NSBOV4		Overflow flags 4
	1... ..	Frames with forward congestion on (FRSE only) (NSBOFFC)
	.1.	Frames with backward congestion on (FRSE only) (NSBOFBC)
	..1.	Total frames discarded (NSBOFD)
17(11) NSBOV6		Overflow flags 6
	.... ...1	Double overflow bit (NSBODBO)

NPA Session Counters Control Block

Program: NCP

Size in bytes: If distribution counts are included, 84(54); otherwise, 56(38)

Created by: NCP initialization and dynamically

Pointer to: The BXIEXTP field in the boundary session block extension (BXI), or the LUXNEXT field in the LU block extension (LUX), or the LTXNEXT field in the LU terminal node extension (LTX), depending on the position of the NSC within the boundary session block (BSB) extension chain; NIXNSCP if allocated to a network interconnect extension (NIX); NSANSCA and NSCNSCP if not in the free pool

Function: Keeps counts of PIUs and bytes flowing on an LU-LU session

0(0)		NSCNEXT** Pointer to the next BSB extension	

		NSCSASP*** Subarea address of the session-partner LU	
4(4)		NSCCBP** Pointer to the BSB or NIX	

		NSCBSBP** Pointer to the BSB	

NSCLUEL*** Element address of the LU		6(6)	NSCSPEL*** Element address of the session-partner LU
8(8)	NSCSTAT* NSC session status	9(9)	NSCBSBID Control block ID X'1C'
		10(A)	NSCSEQN Sequence number for the last control vector sent
12(C)			
NSCFWD Pointer to the next element in the NPA session accounting block (NSA) chain of NSCs			

NSCOVRF* Overflow errors			

* Indicates a byte expansion follows.

** Indicates that this field definition is used when the NSC is in the pool or when it is allocated and chained to a control block.

*** Indicates that this field definition is used when the NSC is allocated and not chained to a control block.

16(10)	NSCRTPC Received text PIU count		18(12)	NSCTTPC Transmitted text PIU count	
20(14)	NSCRTBC Received text byte count				
24(18)	NSCTTBC Transmitted text byte count				
28(1C)	NSCRCPC Received control PIU count		30(1E)	NSCTCPC Transmitted control PIU count	
32(20)	NSCRCBC Received control byte count				
36(24)	NSCTCBC Transmitted control byte count				
40(28)	NSCSALU**** Subarea address of the LU				
44(2C)	NSCEXTP Pointer to the NSC extensions				
	NSCEXTS* Extension status				
	NSCPNNT***** Network names table (NNT) index of Net ID for the primary LU			NSCSNNT***** NNT index of Net ID for the secondary LU	
48(30)	NSCPCSB* Status byte	49(31) Reserved	50(32) NSCOVRF1* Received distribution counter overflow errors	51(33) NSCOVRF2* Transmitted distribution counter overflow errors	
52(34)	NSCNSCP Pointer to the next NSC in the chain (in-use or GPA)				

- * Indicates a byte expansion follows.
- **** For SNI sessions only; reserved for boundary function.
- ***** For SNI sessions only, and only if there are no extension blocks.

56(38) NSCTPF1 Received PIU distribution range-1 count	58(3A) NSCTPF2 Received PIU distribution range-2 count
60(3C) NSCTPF3 Received PIU distribution range-3 count	62(3E) NSCTPF4 Received PIU distribution range-4 count
64(40) NSCTPF5 Received PIU distribution range-5 count	66(42) NSCTPF6 Received PIU distribution range-6 count
68(44) NSCTPOR Received PIU out-of-range count	70(46) NSCRPF1 Transmitted PIU distribution range-1 count
72(48) NSCRPF2 Transmitted PIU distribution range-2 count	74(4A) NSCRPF3 Transmitted PIU distribution range-3 count
76(4C) NSCRPF4 Transmitted PIU distribution range-4 count	78(4E) NSCRPF5 Transmitted PIU distribution range-5 count
80(50) NSCRPF6 Transmitted PIU distribution range-6 count	82(52) NSCRPOR Transmitted PIU out-of-range count

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
8(8) NSCSTAT		NSC session status
	1... ..	NSC allocated bit (NSCALLC)
	.1.. ..	Network performance analyzer (NPA) session start is required (NSCSSR).
	..1.	NPA session start is delayed (NSCSSD).
	...1	NPA session end is delayed (NSCSED).
	.... x...	Primary or secondary indicator: 1 = NSC is for a primary session. 0 = NSC is for a secondary session.
	.... .1..	Counter exceeded the threshold (NSCCET).
	.... ..1.	NSC is in an NSA/NGA chain.
	.... ...x	Reserved
12(C) NSCOVRF		Counter overflow errors byte
	1... ..	Received text PIU count overflowed the field.
	.1.. ..	Transmitted text PIU count overflowed the field.
	..1.	Received text byte count overflowed the field.
	...1	Transmitted text byte count overflowed the field.
	.... 1...	Received control PIU count overflowed the field.
	.... .1..	Transmitted control PIU count overflowed the field.
	.... ..1.	Received control byte count overflowed the field.
	.... ...1	Transmitted control byte count overflowed the field.

Offset/Field Name	Bit Pattern	Contents
44(2C) NSCEXTS		NSC extension status
	1...	Control vector X'60' saved
	.1..	Session start/end time/date saved
	..1.	Alias names saved
	...1	Real names saved
	.... xxxx	Reserved
48(30) NSCPCSB		Status byte
	x...	Type of the last PIU received: 1 = Last PIU was control. 0 = Last PIU was text.
	.x..	Type of the last PIU transmitted: 1 = Last PIU was control. 0 = Last PIU was text.
	..xx	Session type: 00 = Peripheral LU-LU session 01 = SNA network interconnect (SNI) LU-LU session 10 = SNI SSCP-SSCP session 11 = SNI FID0 session.
	.... x...	NSC has extensions indicator: 1 = NSC has extensions. 0 = NSC doesn't have extensions.
	.... .xxx	Reserved
50(32) NSCOVRF1		NSC overflow errors byte 1.
	1...	Received PIU distribution range-1 overflow
	.1..	Received PIU distribution range-2 overflow
	..1.	Received PIU distribution range-3 overflow
	...1	Received PIU distribution range-4 overflow
	.... 1...	Received PIU distribution range-5 overflow
	.... .1..	Received PIU distribution range-6 overflow
	.... ..1.	Received PIU out-of-range overflow
	.... ...X	Reserved
51(33) NSCOVRF2		NSC overflow errors byte 2
	1...	Transmit PIU distribution range-1 overflow
	.1..	Transmit PIU distribution range-2 overflow
	..1.	Transmit PIU distribution range-3 overflow
	...1	Transmit PIU distribution range-4 overflow
	.... 1...	Transmit PIU distribution range-5 overflow
	.... .1..	Transmit PIU distribution range-6 overflow
	.... ..1.	Transmit PIU out-of-range overflow
	.... ...X	Reserved

NPA Session Processing Control Block

Program: NCP
Size in bytes: 32(20)
Created by: NCP generation
Pointed to by: The NLXUCB field in the programmed resource LU block extension (NLX)
Function: Contains information for processing the NPA session and function.

0(0)		2(2)	
NSPPSQN PIU sequence number for APPL-LU		NSPPACE Pacing count available	
4(4)		6(6)	7(7)
NSPPACNT Number of PIUs sent since a pacing response was received		NSPCINT Current interval being processed	Reserved
8(8) - 15(F)			
NSPNAME Session-partner LU name			
16(10)	17(11)	18(12)	19(13)
NSPSTAT* Status	NSPTONS* TON PIU status/function flags	NSPPFLGS* Session processing flags	NSPINTSV Internal queue with incomplete queue element
20(14)			
NSPCLPIU Saved collect PIU address			
NSPSTAT2* Status byte 2			
24(18)			
NSPCOLH ODLC collect buffers chain head pointer			
28(1C)			
NSPCOLT ODLC collect buffers chain tail pointer			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) NSPSTAT		Status
	1...	Takeover notification (TON) is required.
	.1..	Network performance monitor (NPM) is accounting data capable.
	..1.	NPM is network performance capable.
	...1	NPM is DR notification capable.
	.... 1...	NPM wants to receive TON.
	.... .1..	NPM session is active.
	.... ..1.	NPM is gateway (GW) session accounting capable.
	.... ...1	VR Event issued.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
17(11) NSPTONS		Takeover notification PIU status/Function flags
	1...	Dynamic reconfiguration (DR) history is forthcoming.
	.1..	Receiver is primary for session accounting data.
	..1.	Receiver is primary for and will receive DR notification.
	...1	Receiver is primary for network performance data.
	.... 1...	Reset the resource resolution table (RRT) to the generated NCP level.
	.... .1..	Receiver is primary for GW session accounting.
	.... ..1.	NPM requested control block pool/table data (NSPTPCD)
	.... ...X	Reserved
18(12) NSPPFLGS		Session processing flags
	1...	NCP has delayed collect build process
	.1..	Collect processing for non-ODLC NCP resources in progress (NSPNCPC)
	..1.	IBM special products or user-written code resources exist for collect processing
	...1	ODLC forward in progress
	.... 1...	Collect processing for ODLC resources in progress
	.... .1..	Control block pool/table data collection in progress (NSPCBD)
	.... ..1.	CCU/NCP performance data sent (NSPCCU)
	.... ...X	Reserved
20(14) NSPSTAT2		Status byte 2
	1...	NPM is IBM special products or user-written code session accounting capable
	.xxx xxxx	Reserved

Nonsequential Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointer to: The QPBNSQP field in the queue pointer block (QPB)

Function: Provides a path by which function management data FID1 PIUs are passed to the connection point manager-in (CXDCPSI) to be sent to all SSCPs (as required) that are in session with NCP

Format: Standard input queue control block (QCB)
Task—CXDNEOPS
Priority—Immediate
Reentrant—No.

NPM Session Counter Extensions Block

- Program:** NCP
- Size in bytes:** 20(14)
- Created by:** NCP initialization and dynamically
- Pointer to:** NSCEXTP if first in the chain; if not first in the chain, NSXNEXT of the previous NSX in the chain
- Function:** There are four types of NSXs: A control vector X'60' saved extension, a session start/end time and date extension, an alias names extension, and a real names extension. These are used to save session accounting information.

Control Vector X'60' Saved Extension to the NPA Session Counters Control Block (NSC)

0(0)		NSXNEXT Pointer to the next NSX in the NSC extension chain or the next NSX in the NSX pool	
NSXSTAT* Extension status			
4(4) - 11(B)		NSXPCID Procedure correlator ID (PCID)	
12(C)	NSXCNT Network names table (NNT) index for the name portion of a fully qualified control point name	14(E)	NSXNNT NNT index for the Net ID portion of a fully qualified control point name
16(10)		Reserved	

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) NSXSTAT		Extension status
	1... ..	NSX allocated
	.xxx ..	Type extension: 000 = control vector X'60' saved.
	.... xxxx	Reserved

Session Start/End Time and Date Extension to the NSC

0(0) NSXNEXT Pointer to the next NSX in the NSC extension chain or the next NSX in the NSX pool			
NSXSTAT* Extension status			
4(4) NSXSSJD** Julian date of the session start (yddd)		6(6) NSXSEJD** Julian date of the session end (yddd)	
8(8) NSXSSHH Hour of the session start	9(9) NSXSSMM Minute of the session start	10(A) NSXSSSS Second of the session start	11(B) NSXSEHH Hour of the session end
12(C) NSXSEMM Minute of the session end	13(D) NSXSESS Second of the session end	14(E) NSXPLID*** LNID of the adjacent network--primary LU (PLU) side	15(F) NSXSLID*** LNID of the adjacent network--secondary LU (SLU) side
16(10) NSXPNT*** NNT index of Net ID for the PLU		18(12) NSXSNNT*** NNT index of Net ID for the SLU	

* Indicates a byte expansion follows.

** Date consists of 3 nibbles used for the Julian day and the upper nibble for the current year difference from the year of the generation.

*** SNA network interconnect (SNI) sessions only.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) NSXSTAT		Extension status
	1...	NSX allocated
	.xxx	Type extension: 001 = Session start/end.
		Time and Date
	.... 1...	Session start time and date saved
	.... .1..	Inaccurate session start time and date
	.... ..1.	Session end time and date saved
	.... ...1	Inaccurate session end time and date

Alias Names Extension to the NSC
 (SNI sessions only)

0(0)	NSXNEXT Pointer to the next NSX in the NSC extension chain or the next NSX in the NSX pool
NSXSTAT* Extension status	
4(4) - 11(B)	NSXAPLU** Alias name of the PLU
12(C) - 19(13)	NSXASLU** Alias name of the SLU

* Indicates a byte expansion follows.

** Left-justified, padded with blanks.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0) NSXSTAT		Extension status
	1... ..	NSX allocated
	.xxx	Type extension: 011 = Alias names.
	.... xxxx	Reserved

Real Names Extension to the NSC
 (SNI sessions only)

0(0)	NSXNEXT Pointer to the next NSX in the NSC extension chain or the next NSX in the NSX pool
NSXSTAT* Extension status	
4(4) - 11(B)	NSXRPLU** Real name of the PLU
12(C) - 19(13)	NSXRSLU** Real name of the SLU

* Indicates a byte expansion follows.

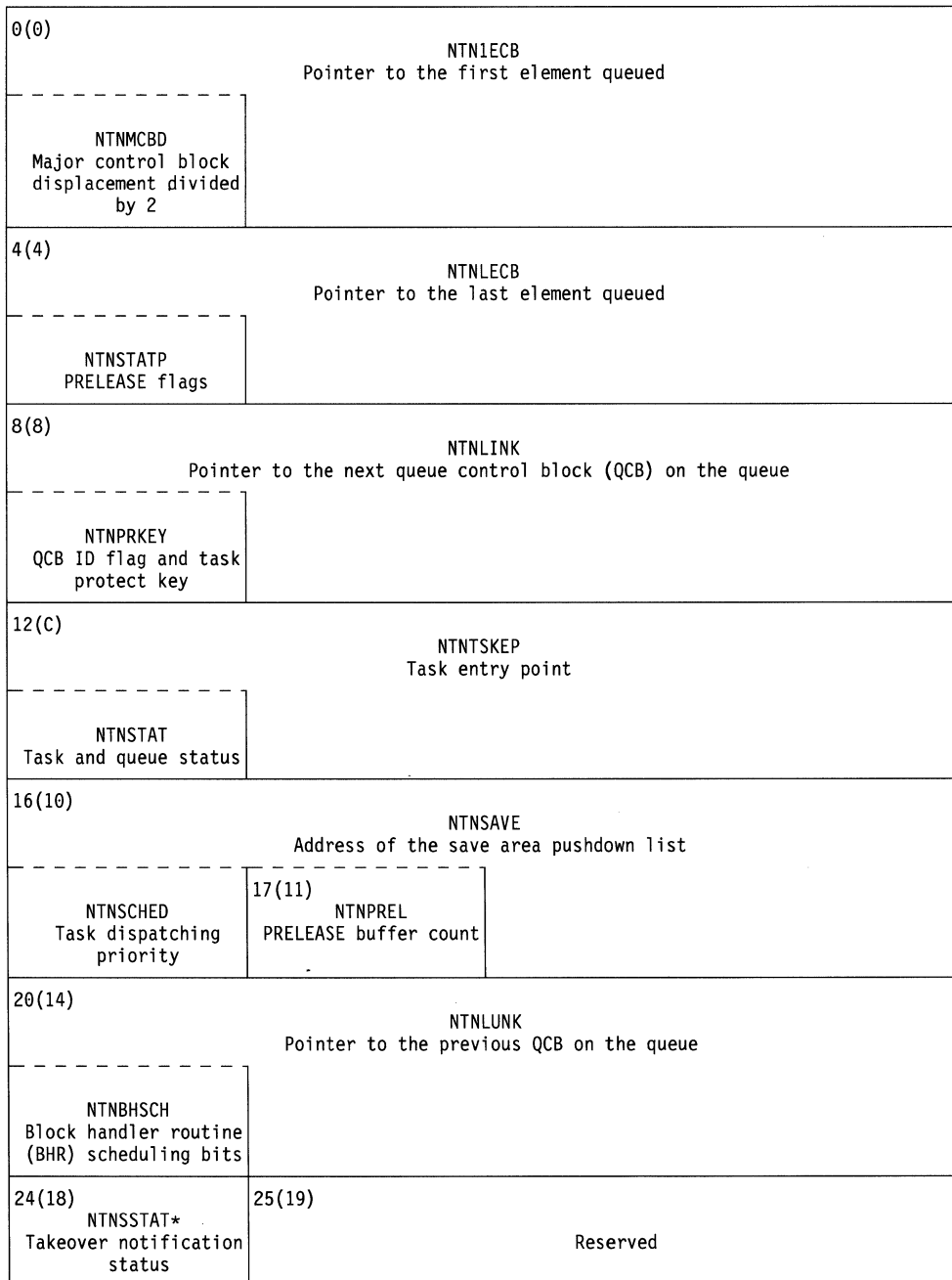
** Left-justified, padded with blanks.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
0(0) NSXSTAT		Extension status
	1... ..	NSX allocated
	.xxx ..	Type extension: 010 = Real names.
	... xxxx	Reserved

NPA Takeover Notification Control Block

Program: NCP
Size in bytes: 28(1C)
Created by: NCP generation
Pointer to: The NSANTNP field in the network performance analyzer session accounting block (NSA)
Function: Used to manage network performance analyzer (NPA) takeover notification



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
24(18) NTNSSTAT		Takeover notification status
	1... ..	VREVENT is issued.
	.1..	Takeover notification is required.
	..xx xxxx	Reserved

NCP-NCPROUTE Timer Processing Control Block**Program:** NCP**Size in bytes:** 4(04)**Created by:** NCP generation, one per NCP**Pointer to:** SYSNTPP in the fullword direct addressable extension (FAX)**Function:** Provides information for User Datagram Protocol (UDP) datagram processing.

0(0) NTPFLAGS* Flags Byte	1(1) Reserved	2(2) NTPTIMR NCP-NCPROUTE timer
---------------------------------	------------------	---------------------------------------

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
24(18) NTPFLAGS		NCP-NCPROUTE timer flags
	1...	Thirty-second timer is valid
	.1..	Three-minute timer is valid
	..1.	Bad Checksum Alert needed

Network Vector Table

Program: NCP

Size in bytes: 16 plus 60(3C) bytes per entry

Created by: NCP generation

There is one NVT table per NCP. There is one NVT entry per network.

Pointer to: The SYSNVTP field in the extended halfword direct addressables control block (HWE)

Function: Contains an entry for each network defined in NCP and for each network in the pool of available networks. Each entry holds network specific information.

NVT Header

0(0)			
NVTNVX Pointer to the network vector table extension (NVX)			
4(4)	5(5)	6(6)	7(7)
NVTNENT Number of entries (See note.)	NVTENTS Entry size	NVTNNIDL Length of native netid	Reserved
8(8)			
NVTNETP Pointer to the reference network			
12(C)	13(D)	14(E)	15(F)
NVCNTAL In-use dynamic counter	NVCNTAD In-use dynamic awaiting notify counter	NVCNTDL Not in-use dynamic awaiting notify counter	Reserved

Note: This does not include the reference network if the reference network has LNID=X'FF'.

NVT Entry

0(0) - 7(7)		
NVTNWID Network ID		
8(8)	NVTADRPS Address of the NCP physical services to this network	11(B) NVTNSBMR Not-subarea split mask (complement of NVTSUBMF)
	10(A) NVTSUBMR Subarea split mask	
12(C)		
NVTSUBA NCP subarea		
16(10)		
NVTSTIP Pointer to the subarea index table (SIT) of this network		
NVTLNID Local network ID		
20(14)		
NVTSTVP Pointer to the resource vector table (RVT) of this network		
NVTFLGS* NVT flags		
24(18)		
NVTSTVP Pointer to the virtual route subarea index table (VIT) of this network		
28(1C)		
NVTCHPF Pointer to the first network interconnect block (NIB) in the chain (the chain includes all the predefined NIBs and all the in-use non-predefined NIBs)		
32(20)		
NVTCHPL Pointer to the last network interconnect block (NIB) in the chain (the chain includes all the predefined NIBs and all the in-use non-predefined NIBs)		
36(24)		
NVTSTVP Pointer to the resource vector control block (RVB) for this network		
40(28)		
NVTQANP Pointer to the queue anchor block for the network (QAN)		

* Indicates a byte expansion follows.

44(2C) NVTMBP Pointer to the route management block (RMB) of this network		
48(30) NVTNTLIM Maximum number of half-session control blocks for this network	50(32) NVTNTUSE Number of used half-session control blocks for this network	
52(34) NVTBALIM* SALIMIT for this network	54(36) NVTERLIM* ERLIMIT for this network	55(37) NVTDCNT Dynamic entry counter
56(38) NVTPWSW Pacing window size	57(39) NVTSLIM Maximum half-session control blocks per NIB	58(3A) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) NVTFLGS		NVT flags
	1... ..	ACTPUs are allowed from the SSCPs in this network.
	.1.. ..	Network ID entry is not in use
	..1. ..	Dynamic entry
	...1 ..	DPU was invoked for this network
	.... 1..	Notify indicator
	.... .1..	Turn off adaptive session pacing in the BINDS
	.... ..1.	Fail session activation if no session pacing
52(34) NVTBALIM		SALIMIT for this network
	X'00FF'	SALIMIT = 255
	X'01FF'	SALIMIT = 511
	X'03FF'	SALIMIT = 1023
	X'07FF'	SALIMIT = 2047
	X'0FFF'	SALIMIT = 4095
	X'1FFF'	SALIMIT = 8191
	X'3FFF'	SALIMIT = 16383
	X'7FFF'	SALIMIT = 32767
	X'FFFF'	SALIMIT = 65535
54(36) NVTERLIM		ERLIMIT for this network
	X'08'	ERLIMIT = 8
	X'10'	ERLIMIT = 16

Network Vector Table Extension

Program: NCP
Size in bytes: 32(20)
Created by: NCP generation
Pointed to by: The NVTNVX field in the network vector table (NVT) header
Function: Provides an extension to the NVT

0(0)	NVXEMLP Pointer to the ER-to-VR mapping list for the native network
4(4)	NVXAVQ Pointer to the activate virtual route (ACTVR) queue control block (QCB)
8(8)	NVXDAVQ Pointer to the deactivate virtual route (DACTVR) QCB
12(C)	NVXRTQ Pointer to the route test QCB
16(10)	NVXUIC Pointer to the user interface control block (UIC)
20(14)	NVXERACT Sequence number of the next activate explicit route (ER.ACT) sent by NCP
24(18)	NVXFCTP Pointer to the flow control parameter table (FCT)
28(1C)	NVXVOSP Pointer to the virtual route out-of-sequence (VOS) queue

Owe ANS Exchange

Program: NCP

Size in bytes: 32(20) plus prefix

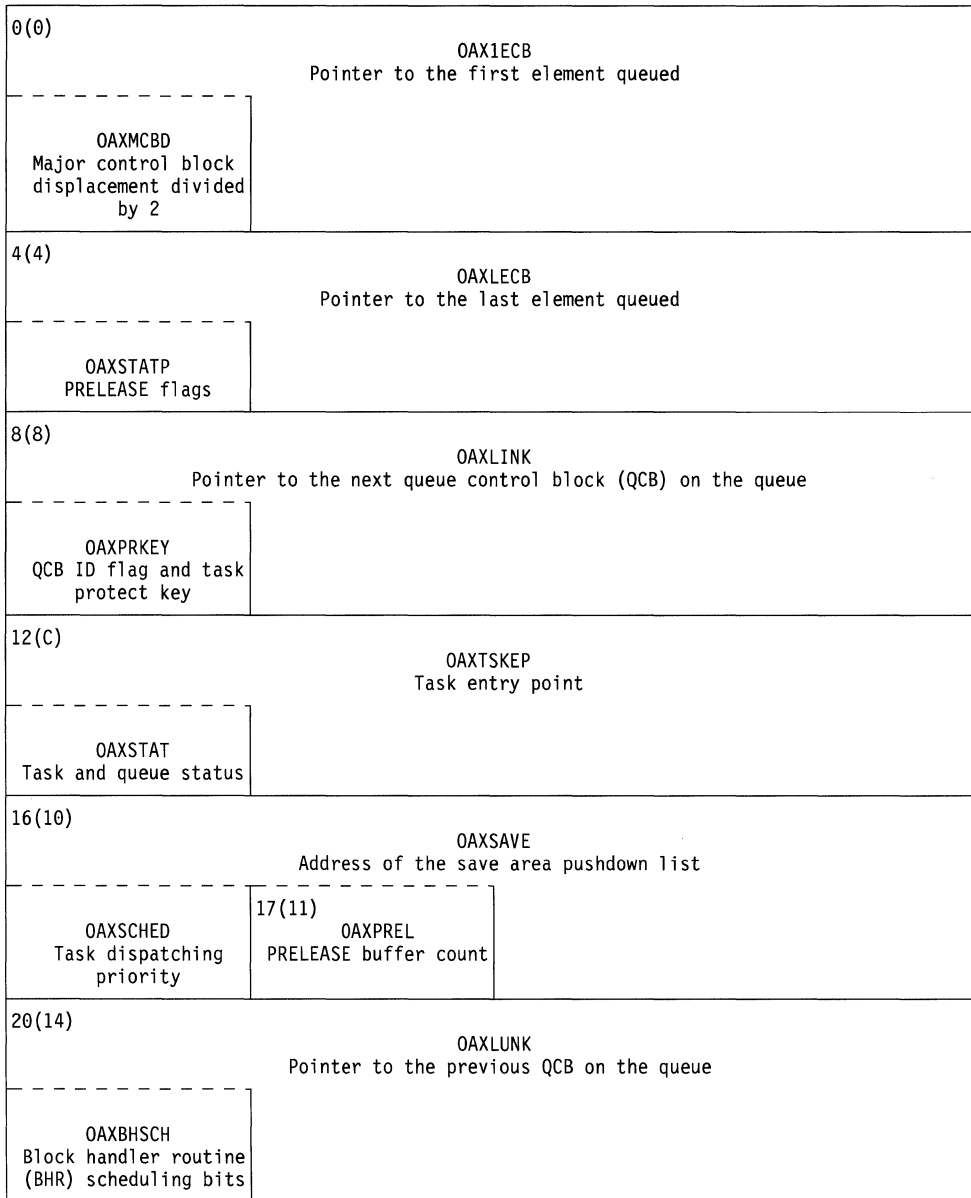
Created by: NCP generation, one per NCP

Pointed to by: Entry CXTOAX is used to address the OAX. CXTOAX provides a pointer to the start of the input QCB within the OAX, which follows the macro name "CXTOAX "

Function: Used to queue and process CXB control blocks that must be processed when an XID3 exchange is owed to an Adjacent Link Station due to ANS processing

Link Queue Control Block (OAXQCB)

Note: This QCB must be at the same offset as the first QCB in the LCB, LMB, and TRB. (See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)



Output QCB Control Block

Program: NCP
Size in bytes: 32(20)
Created by: NCP generation
Function: Maps the NCST output (OCB) control block

0(0) - 23(17)	QCB control block Task entry point: CXSSOUT
24(18)	OCBSIB@ Pointer to SIB control block
28(1C)	OCBCTR Count of bytes on QCB

Owners Data Area (3745)

- Program:** NCP
- Size in bytes:** 196(C4)
- Created by:** NCP generation
- Pointer to:** The SYSODAP field in the extended halfword direct addressables control block extension (HWX)
- Function:** Contains information about the owners of resources or the network name and subarea of a host using a transmission group during a conditional switchback operation or during a conditional disconnect line adapter operation

Header

0(0) <p style="text-align: center;">ODANUM Number of entries</p>	2(2) <p style="text-align: center;">ODALEA Link element address</p>
---	--

Entry

4(4) - 11(B)	<p style="text-align: center;">ODANAME</p> Network name of the host using a channel transmission group or the name of the SSCP found to own a line adapter or a peripheral channel adapter
12(C)	<p style="text-align: center;">ODASUB</p> Subarea address or zeros

Online Terminal Test Control Block

- Program:** NCP
- Size in bytes:** 44(2C)
- Located in:** Dynamically allocated buffer
- Created by:** When a BTU test command is received
- Pointer to:** The DVBSDRT field in the device base control block (DVB) when in online test (OLT) mode
- Function:** Contains status flags and counters from diagnostic input/output operations

0(0) - 7(7)		OLTCTRS Counters	
8(8) - 15(F)		OLTFGLS Flags. (This field can also be used for counters.)	
16(10) OLTSTAT Status field (same as IOBSTAT)		18(12) OLTEXST Extended status field (same as IOBEXTST)	19(13) Reserved
20(14) OLTPHER Phase error-converted	21(15) OLTFSTS First status-converted	22(16) OLTFNLS Final status-converted	
24(18) OLTCCMAD Current relative command address		26(1A) Reserved	
28(1C) OLTEMP Temporary fullword and halfword work area			
32(20) OLTFBAD Address of the first common PU block (CUB) buffer			
36(24) OLTLCBAD Line control block (LCB) address			
OLTXFER Maximum buffers in the read subblock			
40(28) OLTCBAD Current command buffer address			
OLTCBOF Offset into the current buffer			

Port Address Table

- Program:** NCP
- Size in bytes:** Variable, up to eight 2-byte entries
- Created by:** NCP generation
- Pointer to:** The AVBTABL field in the address vector control block (AVB)
- Function:** Allows different physical links to be selected during a dial out when duplicate PORTADDs are used

n PORTADDR* Port address	$n + 1$ BATINDEX Index into the physical link block address table (PLBAT)
----------------------------------	---

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern/ Hex Value	Contents
n PORTADDR		Port address
	1... .... .xxx xxxx	Last entry Port address (in hex)

Note: PORTADD is initialized to '7F'X. BATINDEX is initialized to the number of NTRI physical lines, plus frame relay physical lines defined in the NCP system generation.

Panel Control Block

Program: NCP

Size in bytes: 30(1E)

Created by: NCP generation

Pointer to: The SYSPDBP field in the extended halfword direct addressables control block (HWE)

Function: Provides an area through which information is passed between modules for control panel or console operation

0(0)			
PCBADSW Value of the address and data			
PCBCTL Control byte (used as an interface with a level-3 panel service module)	1(1) PCBADSWA	2(2) PCBADSWC	3(3) PCBADSWE
4(4)		6(6)	7(7)
PCBFNSW Function select value		PCBDICTL* Display A control byte	PCBD2CTL* Display B control byte
8(8)			
PCBD1AD Display A address			
PCBFUNCE Function extension control byte			
12(C)			
PCBD2AD Display B address			
PCBAPNSL Appendage select byte (offset into the DRS control block)			
16(10)			
PCBICPAD Request intercept address			
PCBFLAGS* PCB flags			

* Indicates a byte expansion follows.

20(14)	PCBDRTE MOSS display rate count	21(15) Reserved
24(18)	PCBSTOAD Address of the current storage to be displayed or altered	
	PCBINCR* Storage length to be displayed or altered	
28(1C)	Reserved	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) PCBD1CTL		Display A control byte
	.... .x	1 = Display once and then No-op 0 = Continuous display
	0000 000.	No-op
	0000 001.	22-bit direct (PCBD1AD)
	0000 010.	Halfword storage indirect (PCBD1AD)
	0000 011.	22-bit storage indirect (PCBD1AD)
	0000 100.	External register
	0000 101.	Byte storage indirect (PCBD1AD)
7(7) PCBD2CTL		Display B control byte
	.... .x	1 = Display once and then No-op 0 = Continuous display
	0000 000.	No-op
	0000 001.	22-bit direct (PCBD2AD)
	0000 010.	Halfword storage indirect (PCBD2AD)
	0000 011.	22-bit storage indirect (PCBD2AD)
	0000 100.	External register
	0000 101.	Byte storage indirect (PCBD2AD)
16(10) PCBFLAGS		PCB flags
	1... .x	Panel function 40 is in progress.
	.xxx xxxx	Reserved
24(18) PCBINCR		Storage length to be displayed or altered
	X'01'	Store byte
	X'02'	Store halfword
	X'04'	Store 22-bit word

NCST LU-SSCP Session Control Block

Program: NCP

Size in bytes: 28(1C)

Created by: NCP generation

Pointed to by: The NLXUCB field in the programmed resource logical unit block extension (NLX)

Function: Maps the user control block for the NCP Programmed Resource Logical Unit (NLB) control block.

0(0) PIBID Two byte block ID		2(2) PIBSTATE* SSCP-LU session states	3(3) PIBINPUT Index of last PIU received
PIBIDB Unique ID byte (printable) C'PI'	1(1) PIBIDU Printable usability byte		
4(4) PIBBKPTR Back pointer to NCP programmed resource control block			
8(8) PIBLEASE User lease count	9(9) PIBFLGS1* Session flags	10(A) PIBOFFST Length of this control block	11(B) Reserved
12(C) - 23(17) PIBECB Event control block for timer task			
24(18) PIBSECT Current session count for this PLU		26(1A) PIBSTATX* Extended state byte for PIB	27(1B) Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
2(2) PIBSTATE		SSCP-LU session states
	X'01'	Reset/PU-inactive for LU-SSCP session
	X'02'	LU-SSCP session inactive (PU is active)
	X'03'	LU-SSCP session active
9(9) PIBFLGS1		Session flags
	1... ..	LU capability bit
		1 = Primary 0 = Secondary
	.1.. ..	Force deactivate is pending
30(1E) PIBSTATX		Extended state byte for PIB
	1... ..	Override session continuation

Path Information Unit (FID0)

Program: NCP

Size in bytes: 62(3E) plus variable-length text, plus prefix

Function: Basic unit of transmission in the network. The FID0 PIU is used for requests directed to BSC and SS devices.

Notes:

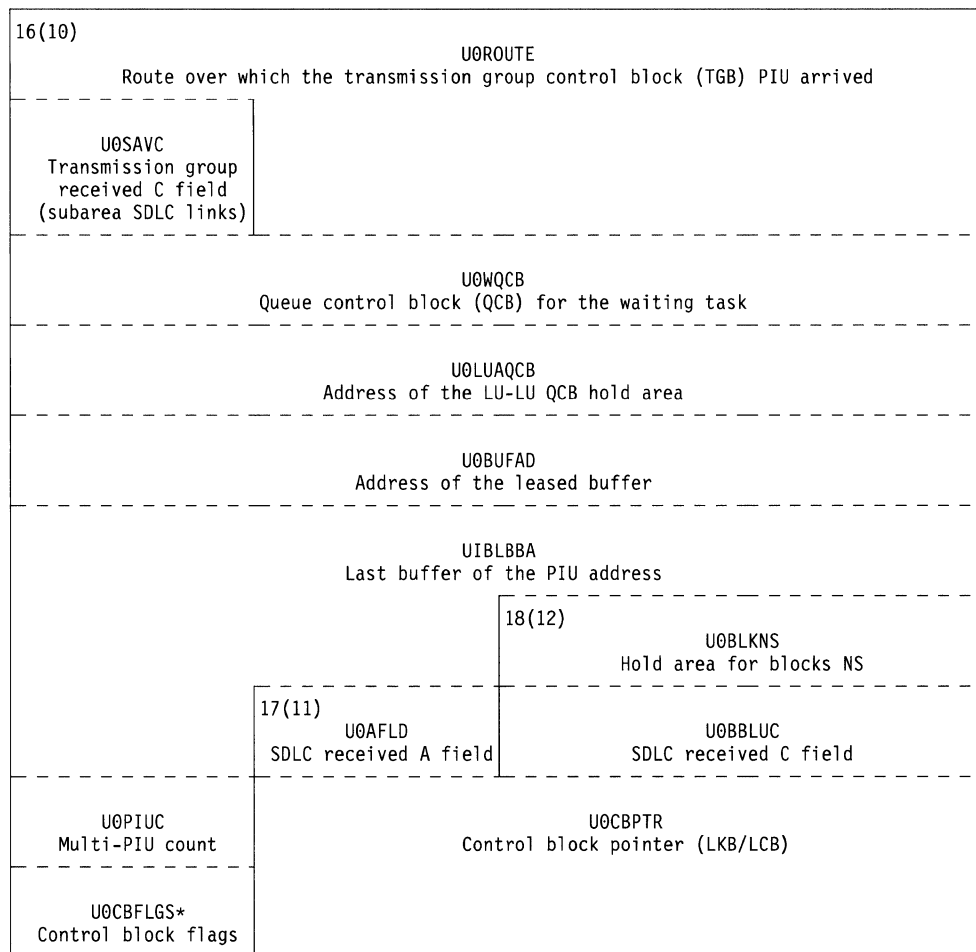
1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

Buffer Prefix (BH)

-4(4) U0BHTG Buffer tag	-3(3) U0BUFTAG Buffer overlay check X'C2'	-2(2) U0VVTI Buffer virtual route vector table (VVT) index	
0(0) U0BUFCHN BH chain field			
4(4) U0COPYF Copy field		6(6) U0OFFSET BH data offset field	7(7) U0DATCNT BH data count field
U0COPCT Copy count	5(5) U0COPYS Copy status		

Event Control Block (ECB)

8(8) U0ECHN ECB chain pointer		
U0ESTAT Event status flags		
12(C) U0CSTAT Block status flags	13(D) Reserved	14(E) U0TMINT Set time interval as specified by the SETIME macro
		U0TCNT PIU0 text count



* Indicates a byte expansion follows.

Internal Work Area

20(14)		U0SAVACB TGB adapter control block (ACB) address over which the PIU was received (subarea SDLC links)	
		UIB0XSCB Station control block (SCB) address over which the PIU was transmitted	
UIHRCCW Number of host read channel command words (CCWs)			
24(18)	U0ERBST* Explicit route broadcast status	26(1A)	Alignment bytes
	UIB0TYPE Equal to the first byte of the destination resource vector block (RVT)		
	U0CPNST Control point notification status (SNP mask)	25(19)	UIB0STAT* UIB status
			UIB0INOP Remember to send an IPL or an RPO to the SSCP
28(1C)	Alignment bytes	30(1E)	TH0VVT VVTI field
32(20)	TH0SNP SSCP-NCP session control block (SNP) mask	33(21)	Alignment bytes
36(24)	TH0TSK Link problem determination aid (LPDA) task pointer save area		
40(28)	Alignment bytes		

* Indicates a byte expansion follows.

Transmission Header (TH)

	42(2A) TH0B0* TH byte 0	43(2B) Reserved
44(2C) TH0DAF Destination element address	46(2E) TH0OAF Origin element address	
48(30) TH0SNF Sequence number	50(32) TH0DCF Count (RH + RU)	

* Indicates a byte expansion follows.

Request Response Header (RH)

52(34) RH0B0* RH byte 0. (See Volume 2 Section 5, "NCP Network Commands.")	53(35) RH0B1* RH byte 1	54(36) RH0B2 RH byte 2	55(37) RH0PAD NetView session sequence number
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* Indicates a byte expansion follows.

Request Response Unit (RU)

56(38) RU0CMD BTU command. (See Volume 2 Section 3, "BTU Commands, Modifiers, and Responses.")	57(39) RU0MOD BTU command modifier. (See Volume 2 Section 3, "BTU Commands, Modifiers, and Responses.")	58(3A) RU0FLG BTU flags. (See the BTU.)
60(3C) RU0SRP BTU system response. (See Volume 2 Section 3, "BTU Commands, Modifiers, and Responses.")	61(3D) RU0LRP BTU extended response. (See Volume 2 Section 3, "BTU Commands, Modifiers, and Responses.")	62(3E) RU0LRP Text field (variable length)

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) U0CBFLGS		Control block flags
	x... ..	Control block type: 0 = Line control block (LCB) pointer 1 = Line control block (LKB) pointer
	.1... ..	Need to send VR out-of-sequence alert to SSCPs
24(18) U0ERBST		Explicit route broadcast status
	X'00'	Not suspended
	X'yy'	Suspended. The value is the displacement into the subarea vector table (SVT).

Offset/Field Name	Bit Pattern/ Hex Value	Contents
25(19) UIB0STAT		UIB status
	X'80'	Recurrent PIU/sensitive data indicator
	X'01'	Invalid destination address field (DAF)
	X'02'	Unrecoverable path error
	X'03'	Unrecoverable station error
	X'04'	Invalid data count field (DCF)
	X'05'	Incomplete header
	X'06'	Format error
42(2A) TH0B0		TH byte 0
	0000	FID0 BSC/SS node
	.... ...X	1 = Expedited flow 0 = Normal flow
52(34) RH0B0		Request/response byte 0
	x...	1 = Response 0 = Request
	.... x...	1 = Formatted 0 = Unformatted
	.... .x..	1 = Sense data is included 0 = No sense data is included
53(35) RH0B1		Request/response byte 1
	1...	Definite response 1 has been requested or sent
	...1	Exception response has been requested or sent
	.... .1..	Larger window is requested for adaptive session pacing
	.... ..1.	Queued response indicator is on

Path Information Unit (FID1)

Program: NCP

Size in bytes: 60(3C) plus variable-length text, plus prefix

Function: Basic unit of transmission in the network. The FID1 PIU is used for transmission between the host, local NCP, and remote NCP.

Notes:

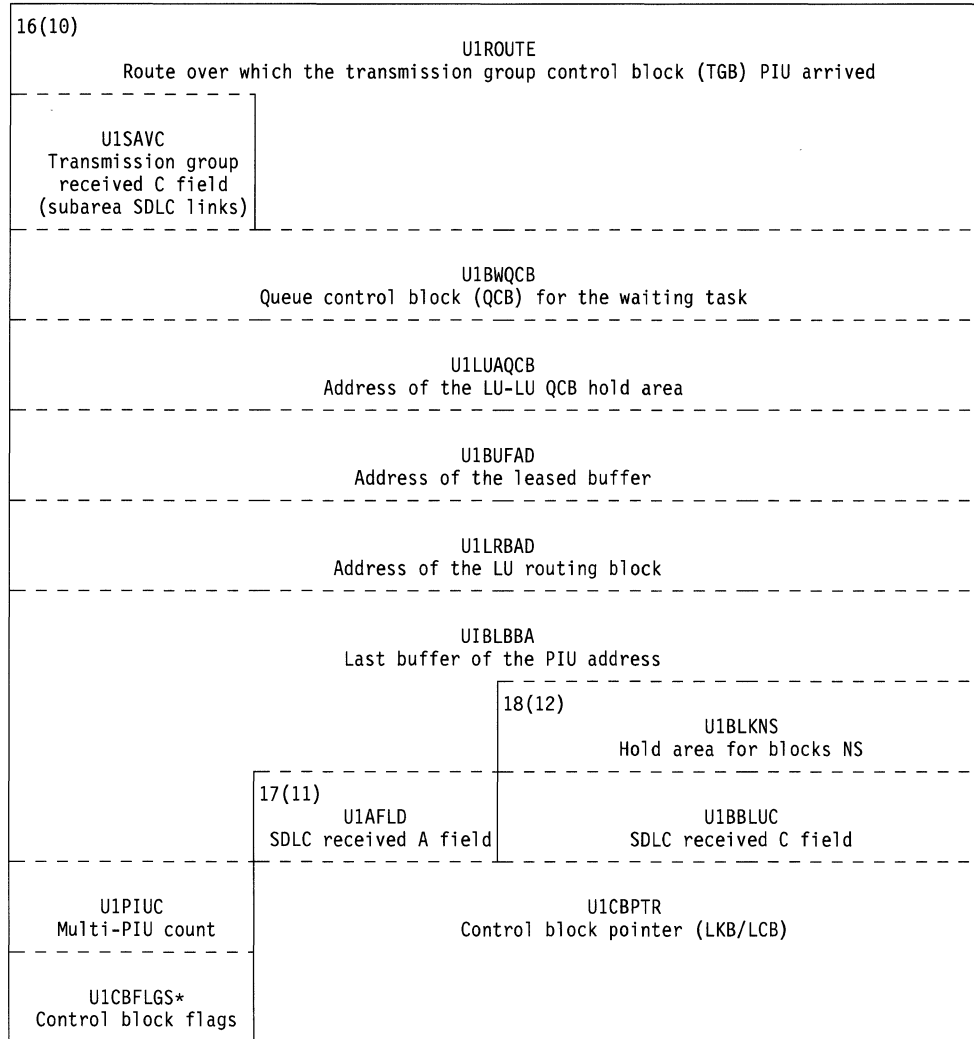
1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

Buffer Prefix (BH)

-4(4) U1BHTG Buffer tag	-3(3) U1BUFTAG Buffer overlay check X'C2'	-2(2) U1VVTI Buffer virtual route vector table (VVT) index	
0(0) U1BUFCHN BH chain field			
4(4) U1COPYF Copy field		6(6) U1OFFSET BH data offset field	7(7) U1DATCNT BH data count field
U1COPCT Copy count	5(5) U1COPYS Copy status		

Event Control Block (ECB)

8(8) U1ECHN ECB chain pointer		
U1ESTAT Event status flags		
12(C) U1CSTAT Block status flags	13(D) Reserved	14(E) U1TMINT Set time interval as specified by the SETIME macro
		U1END1 Queued SDLC status
		U1TCNT PIU1 text count



* Indicates a byte expansion follows.

Internal Work Area

20(14)				
U1SAVACB TGB adapter control block (ACB) address over which the PIU was received (subarea SDLC links)				
U1BIXSCB Station control block (SCB) address over which the PIU was transmitted (all SDLC links)				
U1HBC Head buffer chain pointer (Frame relay and NTRI)				
U1VRVVTI Virtual vector table index (if on the VOS queue)				
U1HRCCW Number of host read channel command words (CCWs)				
U1TMSMP NCST/Ethernet time stamp	22(16) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"> U1RECSQ Next expected sequence number for the virtual route (if on the VOS queue) </td> </tr> <tr> <td style="text-align: center;"> 23(17) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"> U1NBFR Number of buffers in frame, NTRI </td> </tr> </table> </td> </tr> </table>	U1RECSQ Next expected sequence number for the virtual route (if on the VOS queue)	23(17) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"> U1NBFR Number of buffers in frame, NTRI </td> </tr> </table>	U1NBFR Number of buffers in frame, NTRI
U1RECSQ Next expected sequence number for the virtual route (if on the VOS queue)				
23(17) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"> U1NBFR Number of buffers in frame, NTRI </td> </tr> </table>	U1NBFR Number of buffers in frame, NTRI			
U1NBFR Number of buffers in frame, NTRI				

24(18) U1ERBST* Explicit route broadcast status	26(1A) Alignment bytes
U1B1TYPE Equal to the first byte of the destination resource vector table (RVT)	25(19) U1BRISF Route INOP status flags
U1CPNST Control point notification status (SNP mask)	U1SSEQN Send sequence number, NTRI
U1VRLNID LNID (if on the VOS queue)	U1CORC FLB Correlation Counter
U1RXMIT* Retransmit flag, NTRI	U1B1STAT* UIB status
	U1B1INOP Remember to send an IPL or an RPO to the SSCP
	U1TSDST Explicit route tested status
	U1BFLSD Buffer leased count for the NTRI subarea

* Indicates a byte expansion follows.

28(1C) Alignment bytes	30(1E) TH1VVT VVTI field
32(20) TH1RIBP RIB control block pointer	
TH1SNP SSCP/NCP session control block (SNP) mask	33(21) Alignment bytes
36(24) TH1TSK Link problem determination aid (LPDA) task pointer save area	
40(28) Alignment bytes	

Transmission Header (TH)

Note: Correlate fields between FID1 and FID4 by address only.

	42(2A) TH1B0* TH byte 0	43(2B) Reserved
44(2C) TH1DAF Destination element address	46(2E) TH1OAF Origin element address	
48(30) TH1SNF Sequence number	50(32) TH1DCF Count (RH + RU)	

* Indicates a byte expansion follows.

Request Response Header (RH)

52(34) RH1B0* RH byte 0. (See Volume 2 Section 5.)	53(35) RH1B1* RH byte 1	54(36) RH1B2* RH byte 2
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* Indicates a byte expansion follows.

Request Response Unit (RU)

(General format for all commands not listed after the RU)

			55(37) RU1BT0 First byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5.)
			RU1RC0 Request code for non-SSCP-FM requests. (See Volume 2 Section 5.)
56(38) RU1BT1 Second byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5.)	57(39) RU1RC2 Request code for SSCP-FM requests. (See Volume 2 Section 5.)	58(3A) RU1NA* Element address for SSCP-FM requests	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) U1CBFLGS		Control block flags
	x... ..	Control block type: 0 = Line control block (LCB) pointer 1 = Line control block (LKB) pointer
	.1.. ..	Need to send VR out-of-sequence alert to SSCPs
24(18) U1ERBST		Explicit route broadcast status
	X'00'	Not suspended
	X'yy'	Suspended. The value is the displacement into the subarea vector table (SVT)
24(18) U1RXMIT		Re-Transmit Flags
	1... ..	Re-transmitted I-frame
	.1.. ..	I/O pending
	..1.	PIU buffers must be released
	...1	PIU must be copied to fat link retransmit queue
	.... 1...	Decrement FLB unack count
25(19) UIB1STAT		UIB status
	X'80'	Recurrent PIU/sensitive data indicator
	X'01'	Invalid destination address field (DAF)
	X'02'	Unrecoverable path error
	X'03'	Unrecoverable station error
	X'04'	Invalid data count field (DCF)
	X'05'	Incomplete header
	X'06'	Format error
		For PEP Switch
	X'00'	Good switch
	X'01'	Good switch
	X'02'	Line trace active
	X'03'	Line active
	X'04'	Panel line test active
	X'05'	Wrap active
	X'06'	Postponed processing
	X'07'	Transparent mode waiting for host write (EP only)
	X'09'	Already switched
42(2A) TH1B0		TH byte 0
	0001	FID1 intermediate node
	.... 01..	Last segment
	.... 10..	First segment
	.... 11..	Only segment
	.... 00..	Middle segment
	.... ..x.	1 = Primary-to-secondary flow 0 = Secondary-to-primary flow
	.... ...x	1 = Expedited flow 0 = Normal flow

Offset/Field Name	Bit Pattern/ Hex Value	Contents
52(34) RH1B0		Request/response byte 0
	x... ..	1 = Response 0 = Request
	.xx.	00 = Function management data. (See Volume 2 Section 5, "NCP Network Commands.") 01 = Network control. (See Volume 2 Section 5, "NCP Network Commands.") 10 = Data flow control. (See Volume 2 Section 5, "NCP Network Commands.") 11 = Session control. (See Volume 2 Section 5, "NCP Network Commands.")
	.... x...	1 = Formatted 0 = Unformatted
	.... .1..	1 = Sense data is included. (See Volume 2 Section 9, "NCP Exception Responses.") 0 = No sense data is included.
	.... ..11	Only element
	.... ..10	First element
	.... ..01	Last element
	.... ..00	Middle element
53(35) RH1B1		Request/response byte 1
	1... ..	Definite response 1 has been requested or sent
	..1.	Definite response 2 has been requested or sent
	...1	Exception response has been requested or sent
	.... .1..	Larger window is requested for adaptive session pacing
	.... ..1.	Queued response indicator is on
	.... ....1	Pace
54(36) RH1B2		Request/response byte 2
	1... ..	Begin bracket (BB)
	.1..	End bracket (EB)
	..1.	Change direction (half-duplex only)
	...1	Request change of direction
	.... .1..	Logging
58(3A) RU1NA	Byte 0	SSCP-FM LSA reason code
	X'01'	Unexpected physical outage
	X'02'	Controlled node disconnect

Path Information Unit (FID2)

Program: NCP

Size in bytes: 60(3C) plus variable-length text, plus prefix

Function: Basic unit of transmission in the network. The FID2 PIU is used for transmission between NCP and the cluster control unit.

Notes:

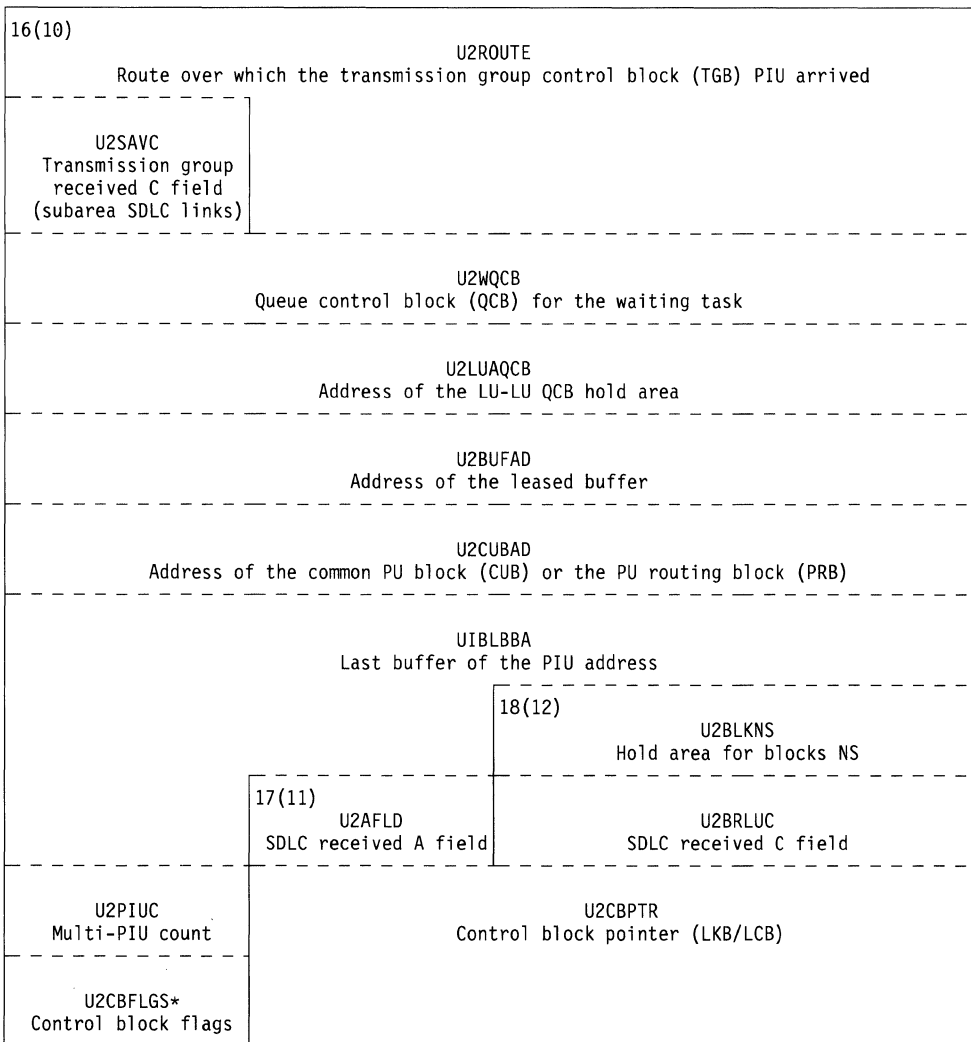
1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

Buffer Prefix (BH)

-4(4) U2BHTG Buffer tag	-3(3) U2BUFTAG Buffer overlay check X'C2'	-2(2) U2VVTI Buffer virtual route vector table (VVT) index	
0(0) U2BUFCHN BH chain field			
4(4) U2COPYF Copy field		6(6) U2OFFSET BH data offset field	7(7) U2DATCNT BH data count field
U2COPCT Copy count	5(5) U2COPYS Copy status		

Event Control Block (ECB)

8(8) U2ECHN ECB chain pointer		
U2ESTAT Event status flags		
12(C) U2CSTAT Block status flags	13(D) Reserved	14(E) U2TMINT Set time interval as specified by the SETIME macro
		U2TCNT PIU2 text count



* Indicates a byte expansion follows.

Internal Work Area

20(14) U2SAVACB Transmission group adapter control block (ACB) address over which the PIU was received (subarea SDLC links)	
UIB2XSCB Station control block (SCB) address over which the PIU was transmitted. (all SDLC links)	
U2XNLX Programmed resource logical unit control block (NLX) address	
U2HBC Head buffer chain pointer (Frame relay and NTRI)	
U2VRVVTI Virtual vector table index (if on the VOS queue)	22(16) U2RECSQ Next expected sequence number for the virtual route (if on the VOS queue)
UIHRCCW Number of host read channel command words (CCWs)	
U2TMSMP NCST/Ethernet time stamp	
U2NBFRH Number of buffers in PIU	
23(17) U2NBFR Number of buffers in frame, NTRI	

24(18)	U2ERBST* Explicit route broadcast status	26(1A)	Alignment bytes
	UIBITYPE Equal to the first byte of the destination resource vector table (RVT)		
	UICPNST CP notification status (SNP mask)	U2SSEQN Send sequence number, NTRI	
	U2VRLNID LNID (if on the VOS queue)	U2CORC FLB correlation counter	
	U2RXMIT* Retransmit flag, NTRI	25(19) UIB2STAT* UIB status	
		U2TSDST Explicit route tested status	
		UIB2INOP Remember to send an IPL or an RPO to the SSCP	
		U2BFLSD Buffer leased count for the NTRI subarea	

* Indicates a byte expansion follows.

28(1C) Alignment bytes	30(1E) TH2VVT VVTI field
32(20) TH2RIBP Route interface control block (RIB) pointer	
TH2SNP SSCP/NCP session control block (SNP) mask	33(21) Alignment bytes
36(24) TH2TSK Link problem determination aid (LPDA) task pointer save area	
40(28) Alignment bytes	42(2A) Channel link header (See the CLH format)
44(2C) Channel link header (continued) (See the CLH format)	

* Indicates a byte expansion follows.

Transmission Header (TH)

		46(2E) TH2B0* TH byte 0	47(2F) Reserved
48(30) TH2DAF Destination element address	49(31) TH2OAF Origin element address	50(32) TH2SNF Sequence number field	

* Indicates a byte expansion follows.

Request Response Header (RH)

52(34) RH2B0* RH byte 0. (See Volume 2 Section 5, "NCP Network Commands.")	53(35) RH2B1* RH byte 1	54(36) RH2B2* RH byte 2
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* Indicates a byte expansion follows.

Request Response Unit (RU)

		55(37) RU2BT0 First byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")
		RU2RC0 Request code for non-SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")
56(38) RU2BT1 Second byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	57(39) RU2RC2 Request code for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	58(3A) RU2NA Element address for SSCP-FM requests

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
16(10) U2CBFLGS		Control block flags
	x... ..	Control block type: 0 = LCB or SCB pointer (SDLC or ODLC) 1 = LCB pointer (BSC or SS)
	.1... ..	Need to send VR out-of-sequence alert to SSCPs
24(18) U2ERBST		ER broadcast status
	X'00'	Not suspended
	X'yy'	Suspended. The value is the displacement into the subarea vector table (SVT)
24(18) U2RXMIT		Re-Transmit Flags
	1... ..	Re-transmitted I-frame
	.1... ..	I/O pending
	..1... ..	PIU buffers must be released
	...1... ..	PIU must be copied to fat link retransmit queue
	.... 1...	Decrement FLB unack count
25(19) UIB2STAT		UIB status
	X'80'	Recurrent PIU/sensitive data indicator
	X'01'	Invalid destination address field (DAF)
	X'02'	Unrecoverable path error
	X'03'	Unrecoverable station error
	X'04'	Invalid data count field (DCF)
	X'05'	Incomplete header
	X'06'	Format error

Offset/Field Name	Bit Pattern/ Hex Value	Contents
46(2E) TH2B0		TH byte 0
	0010	FID2 cluster node
	.... 01..	Last segment
	.... 10..	First segment
	.... 11..	Only segment
	.... 00..	Middle segment
	.... ..1.	BIND was issued by this NCP's outboard primary LU.
	.... ....x	1 = Expedited flow 0 = Normal flow
52(34) RH2B0		Request/response byte 0
	x...	1 = Response 0 = Request
	.xx...	00 = Function management data. (See Volume 2 Section 5, "NCP Network Commands.") 01 = Network control. (See Volume 2 Section 5, "NCP Network Commands.") 10 = Data flow control. (See Volume 2 Section 5, "NCP Network Commands.") 11 = Session control. (See Volume 2 Section 5, "NCP Network Commands.")
	.... x...	1 = Formatted 0 = Unformatted
	.... .x..	1 = Sense data is included 0 = No sense data is included
	.... ..11	Only element
	.... ..10	First element
	.... ..01	Last element
	.... ..00	Middle element
53(35) RH2B1		Request/response byte 1
	1...	Definite response 1 has been requested or sent
	..1.	Definite response 2 has been requested or sent
	...1	Exception response has been requested or sent
	.... .1..	Larger window is requested for adaptive session pacing
	.... ..1.	Queued response indicator is on
	.... ...1	Pace
54(36) RH2B2		Request/response byte 2
	1...	Begin bracket (BB)
	.1...	End bracket (EB)
	..1.	Change direction (half-duplex only)
	...1	Request change direction
	.... x...	Reserved
	.... .1..	Logging

Path Information Unit (FID3)

Program: NCP

Size in bytes: 60(3C) plus variable-length text, plus prefix

Function: Basic unit of transmission in the network. The FID3 PIU is used for transmission between NCP and a terminal node.

Notes:

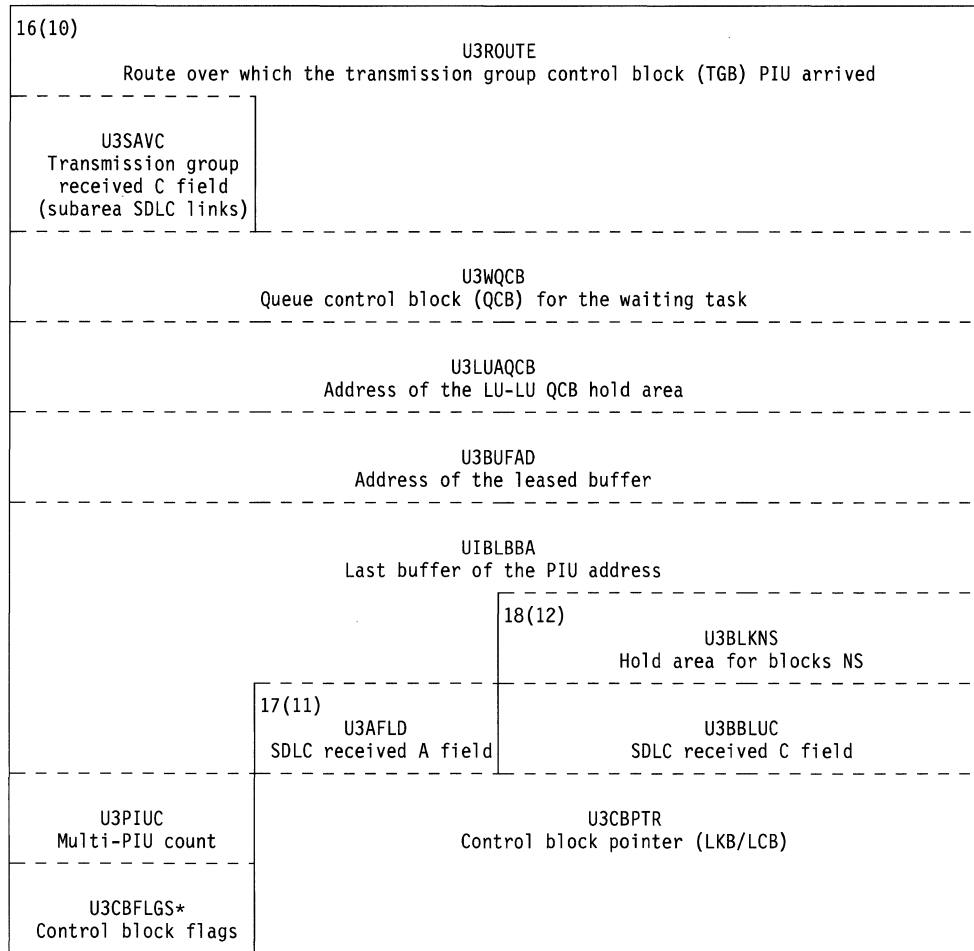
1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

Buffer Prefix (BH)

-4(4) U3BHTG Buffer tag	-3(3) U3BUFTAG Buffer overlay check X'C2'	-2(2) U3VVTI Buffer virtual route vector table (VWT) index	
0(0) U3BUFCHN BH chain field			
4(4) U3COPYF Copy field		6(6) U3OFFSET BH data offset field	7(7) U3DATCNT BH data count field
U3COPCT Copy count	5(5) U3COPYS Copy status		

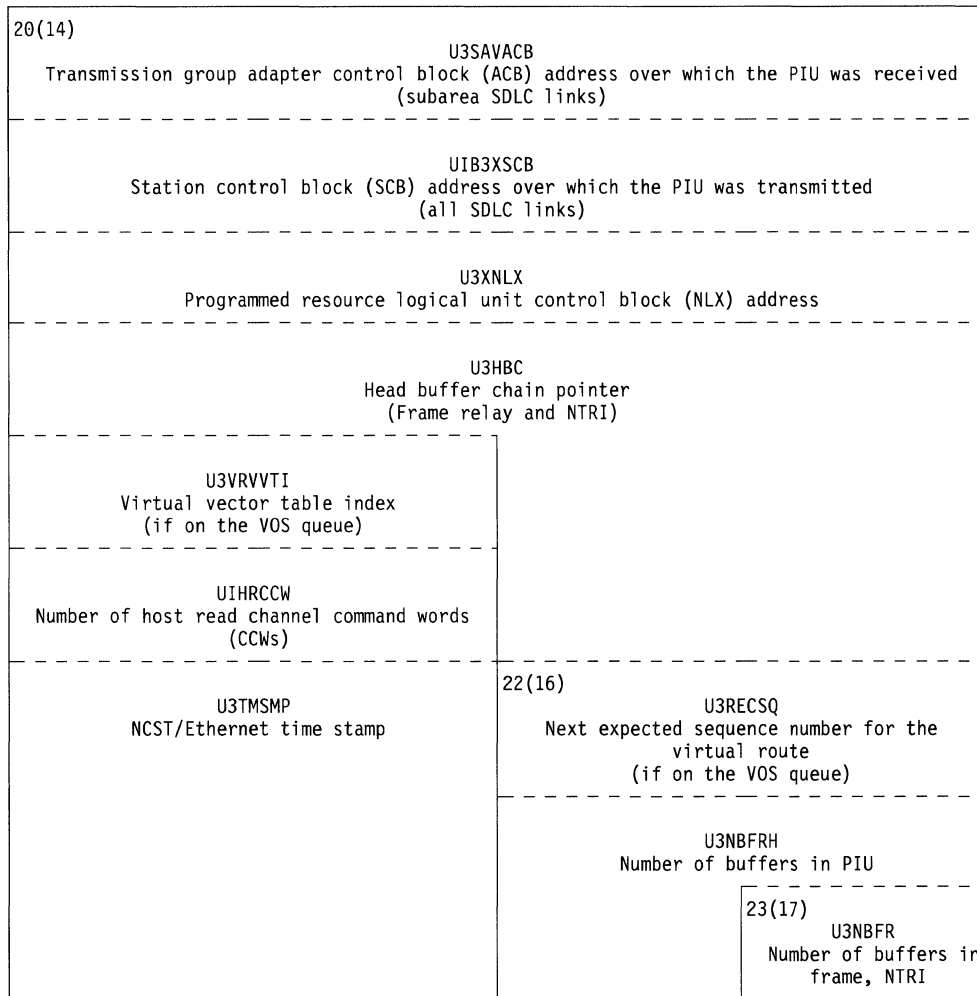
Event Control Block (ECB)

8(8) U3ECHN ECB chain pointer		
U3ESTAT Event status flags		
12(C) U3CSTAT Block status flags	13(D) Reserved	14(E) U3TMINT Set time interval as specified by the SETIME macro
		U3TCNT PIU3 text count



* Indicates a byte expansion follows.

Internal Work Area



24(18)	U3ERBST* Explicit route broadcast status	26(1A)	Alignment bytes
	UIB3TYPE Equal to the first byte of the destination resource vector table (RVT)		
	U3CPNST CP notification status (SNP mask)	U3SSEQN Send sequence number, NTRI	
	U3VRLNID LNID (if on the VOS queue)		
	U3RXMIT* Retransmit flag, NTRI	25(19) UIB3STAT* UIB status	
		UIB3INOP Remember to send an IPL or an RPO to the SSCP	
		U3TSDST Explicit route tested status	
		U3BFLSD Buffer leased count for the NTRI subarea	

* Indicates a byte expansion follows.

28(1C)	Alignment bytes	30(1E)	TH3VVT VVTI field
32(20)	TH3RIBP Route interface control block (RIB) pointer		
	TH3SNP SSCP-NCP session control block (SNP) mask	33(21)	Alignment bytes
36(24)	TH3TSK Link problem determination aid (LPDA) task pointer save area		
40(28)	Alignment bytes		

Transmission Header (TH)

50(32) TH3B0* TH byte 0	51(33) TH3DA0F* Local session ID
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* Indicates a byte expansion follows.

Request Response Header (RH)

52(34) RH3B0* RH byte 0. (See Volume 2 Section 5, "NCP Network Commands.")	53(35) RH3B1* RH byte 1	54(36) RH3B2* RH byte 2
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* Indicates a byte expansion follows.

Request Response Unit (RU)

		55(37) RU3BT0 First byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")
		RU3RC0 Request code for non-SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")
56(38) RU3BT1 Second byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	57(39) RU3RC2 Request code for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	58(3A) RU3NA Element address for SSCP-FM requests

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
16(10) U3CBFLGS		Control block flags
	x... ..	Control block type: 0 = LKB or SCB pointer (SDLC or ODLC) 1 = LCB pointer (BSC or SS)
	.1... ..	Need to send VR out-of-sequence alert to SSCPs
24(18) U3ERBST		Explicit route broadcast status
	X'00'	Not suspended
	X'yy'	Suspended. The value is the displacement into the subarea vector table (SVT)

Offset/Field Name	Bit Pattern/Hex Value	Contents
24(18) U3RXMIT		Re-Transmit Flags
	1... ..	Re-transmitted I-frame
	.1.	I/O pending
	..1.	PIU buffers must be released
	...1	PIU must be copied to fat link retransmit queue
25(19) UIB3STAT		UIB status
	X'80'	Recurrent PIU/sensitive data indicator
	X'01'	Invalid destination address field (DAF)
	X'02'	Unrecoverable path error
	X'03'	Unrecoverable station error
	X'04'	Invalid data count field (DCF)
	X'05'	Incomplete header
	X'06'	Format error
50(32) TH3B0		TH byte 0
	0011	FID3 terminal node
	.... 01..	Last segment
	.... 10..	First segment
	.... 11..	Only segment
	.... 00..	Middle segment
	.... ...x	1 = Expedited flow 0 = Normal flow
51(33) TH3DAOF		Local session ID
	x... ..	1 = To or from an LU 0 = To or from an SSCP
	.x..	1 = To or from an LU 0 = To or from a PU
	..xx xxxx	Local address of the station
52(34) RH3B0		Request/response byte 0
	x... ..	1 = Response 0 = Request
	.xx.	00 = Function management data. (See Volume 2 Section 5, "NCP Network Commands.") 01 = Network control. (See Volume 2 Section 5, "NCP Network Commands.") 10 = Data flow control. (See Volume 2 Section 5, "NCP Network Commands.") 11 = Session control. (See Volume 2 Section 5, "NCP Network Commands.")
	.... x...	1 = Formatted 0 = Unformatted
	.... .x..	1 = Sense data is included 0 = No sense data is included
	.... ..11	Only element
	.... ..10	First element
	.... ..01	Last element
	.... ..00	Middle element

Offset/Field Name	Bit Pattern/ Hex Value	Contents
53(35) RH3B1		Request/response byte 1
	1... ..	Definite response 1 has been requested or sent
	..1.	Definite response 2 has been requested or sent
	...1	Exception response has been requested or sent
	.... .1..	Larger window is requested for adapter session pacing
	.... ..1.	Queued response indicator is on
	.... ...1	Pace
54(36) RH3B2		Request/response byte 2
	1... ..	Begin bracket (BB)
	.1..	End bracket (EB)
	..1.	Change direction (half-duplex only)
	.... x...	Code selection indicator:
		1 = ASCII
		0 = EBCDIC

Path Information Unit (FID4)

Program: NCP

Size in bytes: 60(3C) plus variable-length text, plus prefix

Function: Basic unit of transmission in the network. The FID4 PIU is used for traffic flowing on virtual routes.

Notes:

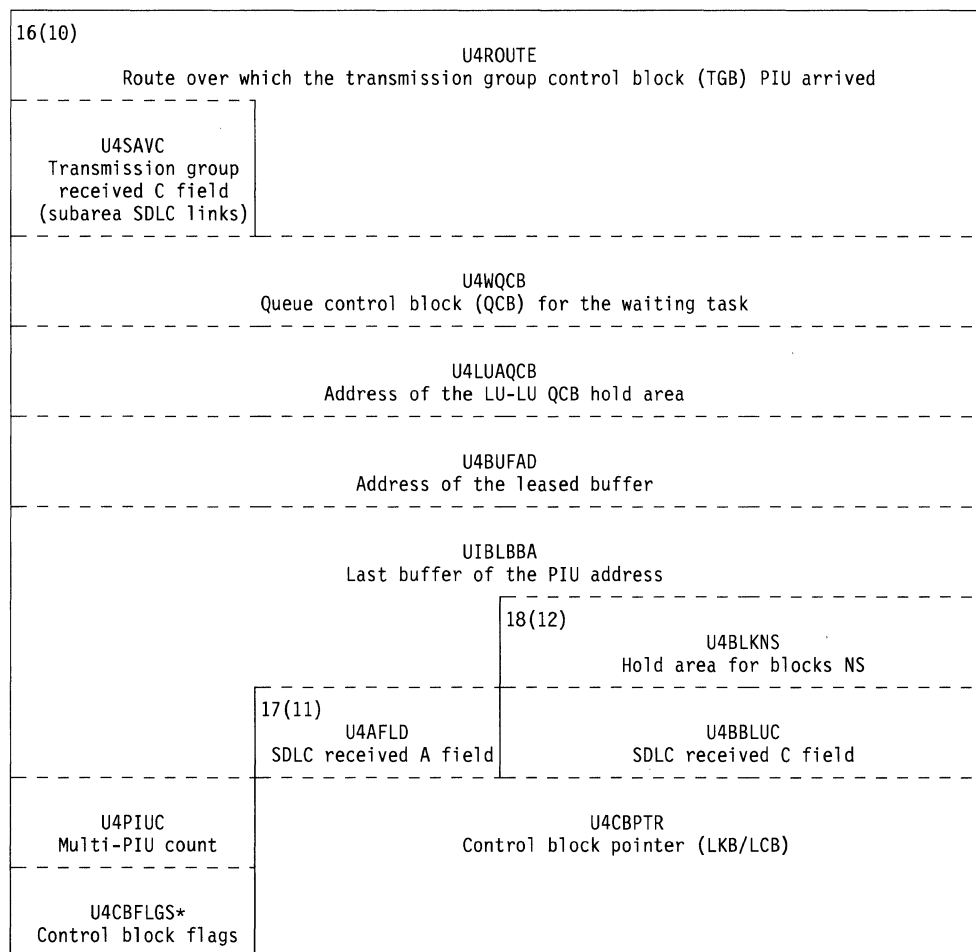
1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

Buffer Prefix (BH)

-4(4) U4BHTG Buffer tag	-3(3) U4BUFTAG Buffer overlay check X'C2'	-2(2) U4VVTI Buffer virtual route vector table (VVT) index	
0(0) U4BUFCHN BH chain field			
4(4) U4COPYF Copy field		6(6) U4OFFSET BH data offset field	7(7) U4DATCNT BH data count field
U4COPCT Copy count (multilink transmission group only)	5(5) U4COPYS* Copy status		

Event Control Block (ECB)

8(8) U4ECHN ECB chain pointer		
U4ESTAT Event status		
12(C) U4CSTAT Block status flags	13(D) Reserved	14(E) U4TMINT Set time interval
		U4TCNT PIU4 text count



* Indicates a byte expansion follows.

Internal Work Area

20(14) U4SAVACB Transmission group adapter control block (ACB) address over which the PIU was received (subarea SDLC links)	
UIB4XSCB Station control block (SCB) address over which the PIU was transmitted (all SDLC links)	
UI4XNLX Programmed resource logical unit control block (NLX)	
U4HBC Head buffer chain pointer (Frame relay and NTRI)	
U4VRVVTI Virtual vector table index (if on the VOS queue)	
UIHRCCW Number of host read channel command words (CCWs)	
U4TMSMP NCST/Ethernet time stamp	22(16) U4RECSQ Next expected sequence number for the virtual route (if on the VOS queue)
	U4NBFRH Number of buffers in PIU
	23(17) U4NBFR Number of buffers in frame, NTRI

24(18)	
U4ERBST* Explicit route broadcast status	
UIB4TYPE Equal to the first byte of the destination resource vector table (RVT)	
U4CPNST Control point notification status (SNP mask)	U4SSEQN Send sequence number, NTRI
U4VRLNID LNID (if on the VOS queue)	U4CORC FLB correlation counter
U4RXMIT* Retransmit flag, NTRI	25(19) UIB4STAT* UIB status
	UIB4INOP Remember to send an IPL or an RPO to the SSCP
	U4TSDST Explicit route tested status
	U4BFLSD Buffer leased count for the NCP/token-ring interconnection (NTRI) subarea

* Indicates a byte expansion follows.

Transmission Header (TH)

		26(1A) TH4B0* TH byte 0	27(1B) TH4B1* TH byte 1
28(1C) TH4B2* TH byte 2	29(1D) TH4B3* TH byte 3	30(1E) TH4TGSNF Transmission group sequence number (last 12 bits of the halfword)	
		TH4VVTI VVT index	
		TH4VRCF* Virtual routing control	
		TH4B4 TH byte 4	
32(20) TH4NSSEQ Send sequence number (last 12 bits of halfword)		34(22) TH4DSAF Destination subarea address	
TH4PACE* Pacing control field			
TH4B6 TH byte 6			
36(24) TH4DSAF Destination subarea address (continued)		38(26) TH4OSAF Origin subarea address	
40(28) TH4OSAF Origin subarea address (continued)		42(2A) TH4B16* TH byte 16	43(2B) Reserved
44(2C) TH4DEF Destination element address		46(2E) TH4OEF Origin element address	
48(30) TH4SNF Sequence number field		50(32) TH4DCF Data count field (RU + RH)	

* Indicates a byte expansion follows.

Request Response Header (RH)

52(34) RH4B0* RH byte 0. (See Volume 2 Section 5, "NCP Network Commands.")	53(35) RH4B1* RH byte 1	54(36) RH4B2* RH byte 2
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* Indicates a byte expansion follows.

Request Response Unit (RU)

55(37) RU4BT0 First byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")		
RU4RC0 Request code for non-SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")		
56(38) RU4BT1 Second byte of the prefix for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	57(39) RU4RC2 Request code for SSCP-FM requests. (See Volume 2 Section 5, "NCP Network Commands.")	58(3A) RU4NA* Element address for SSCP-FM requests (See note.)

* Indicates a byte expansion follows.

Note: The preceding RU4NA format and all of the RU formats in Volume 2 Section 5, "NCP Network Commands," are for an NCP operating in the extended network addressing mode.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
16(10) U4CBFLGS		Control block flags
	x... ..	Control block type:
		0 = LCB or SCB pointer (SDLC or ODLC)
		1 = LCB pointer (BSC or SS)
	.1.. ..	Need to send VR out-of-sequence alert to SSCPs
24(18) U4ERBST		Explicit route broadcast status
	X'00'	Not suspended
	X'yy'	Suspended. The value is the displacement into the subarea vector table (SVT)
24(18) U4RXMIT		Re-Transmit Flags
	1... ..	Re-transmitted I-frame
	.1.. ..	I/O pending
	..1.	PIU buffers must be released
	...1	PIU must be copied to fat link retransmit queue
	.... 1...	Decrement FLB unack count

Offset/Field Name	Bit Pattern/ Hex Value	Contents
25(19) UIB4STAT		UIB status
	X'80'	Recurrent PIU/sensitive data indicator
	X'01'	Invalid destination address field (DAF)
	X'02'	Unrecoverable path error
	X'03'	Unrecoverable station error
	X'04'	Invalid data count field (DCF)
	X'05'	Incomplete header
	X'06'	Format error
26(1A) TH4B0		TH byte 0
	0100	FID4 transit network
	.... 1...	Transmission group sweeping
	.... .x..	Reserved
	.... ..1.	Pacing count is zero (end bit)
	.... ...1	PIU to flow on network priority
27(1B) TH4B1		TH byte 1
	xx..	Transmission group segmenting field:
		00 = Not segmented
		01 = Last segment
		10 = First segment
		11 = Middle segment
	.... xx..	reserved
	.... ..xx	PIU blocking signal:
		00 = Single PIU frame
		10 = First PIU of a multi-PIU frame
		11 = Middle PIU of a multi-PIU frame
		01 = Last PIU of a multi-PIU frame
28(1C) TH4B2		TH byte 2
	xxxx	Initial explicit route number
	.... xxxx	Explicit route number
29(1D) TH4B3		TH byte 3
	xxxx	Virtual route number
	.... ..xx	Transmission priority:
		00 = Low
		01 = Medium
		10 = High
	xxxx ..xx	Virtual route identifier (VRID)
30(1E) TH4VRCF		Virtual routing control field
	x...	1 = Decrement the pacing-group size
		0 = Increment the pacing-group size
	.0..	Transmission group reorder is required
	..xx	Virtual route sequence and type indicator:
		00 = Nonsequenced, nonsupervisory
		01 = Nonsequenced, supervisory
		10 = Singly sequenced

Offset/Field Name	Bit Pattern/Hex Value	Contents
32(20) TH4PACE		Pacing control field
	1... ..	Virtual route pacing request is on
	.1... ..	Virtual route pacing response is on
		CWRI
	...x.	1 = Decrement the pacing-group size by 1 0 = Increment the pacing-group size by 1 if this virtual route end-point has already sent all the PIUs for the current pacing group
		RWI
	...1	Reset the pacing-group size to the specified minimum.
42(2A) TH4B16		TH byte 16
	...x	1 = SNA device 0 = Non-SNA device
	.... xx..	01 = Last segment 10 = First segment 11 = Only segment 00 = Middle segment
	.... ...x	1 = Expedited flow 0 = Normal flow
52(34) RH4B0		RH byte 0
	x... ..	1 = Response 0 = Request
	.xx.	00 = Function management data. (See Volume 2 Section 5, "NCP Network Commands.") 01 = Network control. (See Volume 2 Section 5, "NCP Network Commands.") 10 = Data flow control. (See Volume 2 Section 5, "NCP Network Commands.") 11 = Session control. (See Volume 2 Section 5, "NCP Network Commands.")
	...x	1 = Against flow 0 = With flow
	.... x...	1 = Formatted 0 = Unformatted
	.... .x..	1 = Sense data is included 0 = No sense data is included
	.... ..11	Only element
	.... ..10	First element
	.... ..01	Last element
	.... ..00	Middle element
53(35) RH4B1		RH byte 1
	1... ..	Definite response 1 has been requested or sent
	..1.	Definite response 2 has been requested or sent
	...1	Exception response has been requested or sent
	.... .1..	Larger window is requested for adaptive session pacing
	.... ..1.	Queued response indicator is on
	.... ...1	Pace

Offset/Field Name	Bit Pattern/ Hex Value	Contents
54(36) RH4B2		RH byte 2
	1... ..	Begin bracket (BB)
	.1... ..	End bracket (EB)
	..1.	Change direction (half-duplex only)
	...1	Request change of direction
	.... .1..	Logging
58(3A) RU4NA	Byte 0	SSCP-FM LSA reason code
	X'01'	Unexpected physical outage
	X'02'	Controlled node disconnect

Path Information Unit (FIDF)

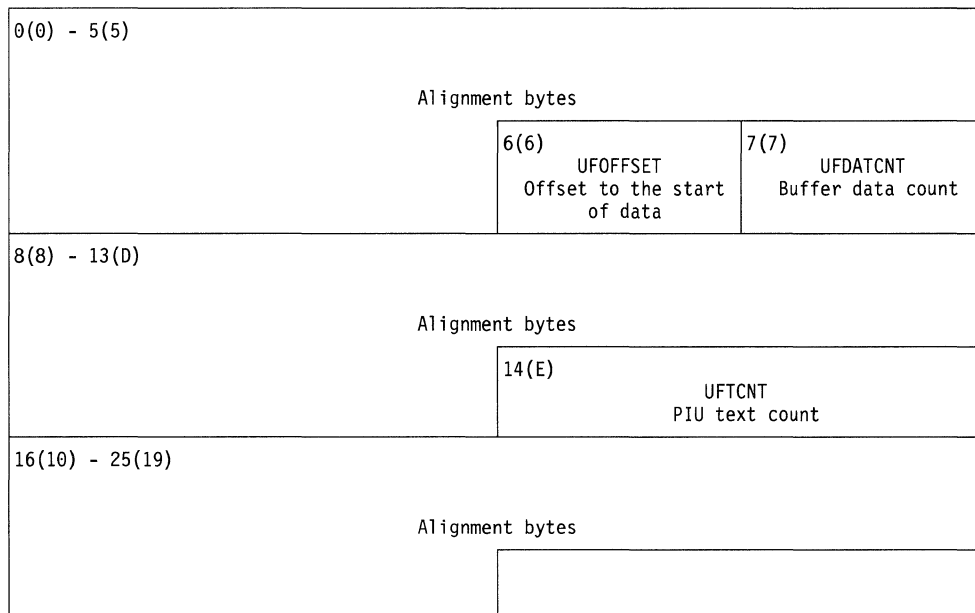
Program: NCP

Size in bytes: 52(34)

Function: A special PIU that is sent by the receiver to notify the sender that all PIUs have been received and forwarded. This process might occur, for example, when a sequence number field overflow invokes the sweep function. The sweep function, in turn, suspends passing PIUs from the FLBXQCB transmit queue to the associated links in a multilink transmission group until all outstanding PIUs are acknowledged at the SDLC level.

Notes:

1. This PIU layout is as it appears in an NCP buffer. The basic PIU begins with the transmission header. See Figure 1-4 on page 1-815 for the relationship of the buffer offset to the PIU offset as seen in traces.
2. When the buffer has been released, the address at which the buffer was released is stored in the fullword at 64(40).

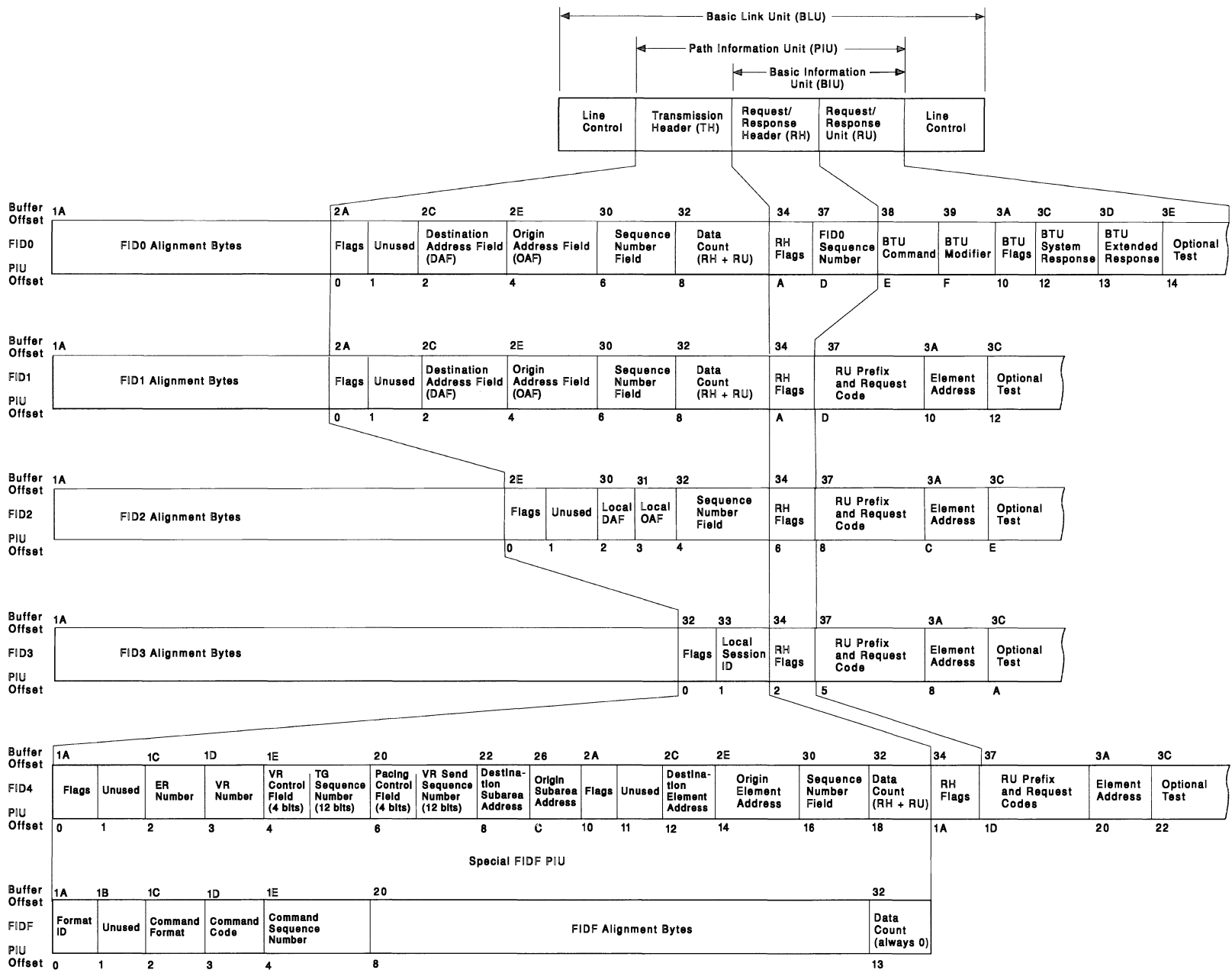


Transmission Header (TH)

		26(1A) THFB0 Format ID (X'F0')	27(1B) Reserved
28(1C) THFB2 Command format X'01'	29(1D) THFB3 Command code X'01'	30(1E) THFTGSNF Command sequence number	
32(20) - 49(31) Alignment bytes			
		50(32) THFDCF Data count field (DCF) (always 0)	

Note: There is no request response header (RH) or request response unit (RU).

Figure 1-4. PIU Formats in NCP Buffers



Physical Link Control Block

Program: NCP

Size in bytes: 152(98)

Created by: NCP generation

Pointed to by: The PLBATPLB field in the physical link block address table (PLBAT), the LLBATPLB field in the logical link block address table (LLBAT), and the XUAPLBP field in the physical link adapter control block extension (XUA)

Function: Control block for a physical link, mainly used by the physical link manager (PLM) layer

0(0) PLBBID Block identifier C'PL'	2(2) PLBFLAG* PLB flag	3(3) PLBPLMST* PLM status
4(4) PLBXBUF Pointer to the extra buffer		
PLBXBUFN Buffer count		
8(8) PLBPLXP Pointer to the physical link block extension (PLX)		
PLBROFF Frame-relay receive buffer offset		
12(C) PLBINAD Line interface address in EBCDIC		
16(10) PLBNMBA Pointer to the NMVT interface area buffer for the network management vector transport (NMVT) task		
PLBSTATC** Interface with NCP terminator		
20(14) PLBRCONC* Receive congestion counter	22(16) PLBRISTA* Current ring status	

* Indicates a byte expansion follows.

** See the byte expansion for LKBSTATC.

24(18)	<p style="text-align: center;">PLBLKBP Pointer to the line control block (LKB)</p>
PLBERRFL* Error flag	
28(1C)	<p style="text-align: center;">PLLLBES Pointer to the next LLBAT entry to be scanned</p>
PLBSNPM SSCP-NCP session control block (SNP) mask	
32(20)	<p style="text-align: center;">PLBPLBTE Pointer to the corresponding PLBAT entry</p>
PLBREQFL* Request flag	
36(24)	<p style="text-align: center;">PLBXPLUP Pointer to the transmit physical link user adapter control block (PLUA)</p>
PLBL1BID BER ID for level 1	
40(28) - 45(2D)	<p style="text-align: center;">PLBFDSA Beaconer's address (6 bytes)</p>
	<p style="text-align: center;">46(2E) - 51(33) PLBFNAUN</p>
	<p style="text-align: center;">Nearest active upstream neighbor (NAUN) found in beacon (6 bytes)</p>
52(34)	<p style="text-align: center;">PLBAITPT Pointer to the corresponding adapter information table (AIT) entry</p>
PLBFDR3* Trace request flags	
56(38)	<p style="text-align: center;">PLB1XBUF Pointer to the first buffer to be used in a transmit frame (Pointer to next head buffer to use)</p>
PLBMISER* Miscellaneous flags	

* Indicates a byte expansion follows.

60(3C) PLBLCXEP Logical link control (LLC) transmit entry point	62(3E) PLBMCXEP Medium access control (MAC) transmit entry point
64(40) PLBPLOBH Physical link outbound queue header <div style="border: 1px dashed black; padding: 2px; width: fit-content;"> PLBTYPE* Node or adapter type </div>	
68(44) PLBPLOBT Physical link outbound queue trailer <div style="border: 1px dashed black; padding: 2px; width: fit-content;"> PLBNTFLG* Physical NTRI flags </div>	
72(48) PLBMXTSL Maximum transmit segment length	74(4A) PLBMRFL Maximum receive frame length

* Indicates a byte expansion follows.

Open Parameter list (next 32 bytes)

76(4C)	PLBPOPT* Open options X'0480'	78(4E)	PLBLOCA Local token-ring interface coupler (TIC) address (bytes 1 and 2)
	PLBSTCNT Saved I-frame transmission counter (Frame-relay only)		PLBTRTCT Saved total retry counter (Frame-relay only)
80(50)	PLBLOCA (bytes 3-6)		
	PLBRECNT Saved I-frame error counter (Frame-relay only)	82(52)	PLBTPCNT Saved total transmission counter (Frame-relay only)
84(54)	PLBGAD Group address X'00000000'		
	PLBRCNT Saved I-frame received counter (Frame-relay only)	86(56)	PLBRPCNT Saved S-frame received counter (Frame-relay only)
88(58)	PLBFAD Functional address X'00000000'		
	PLBTIACT Saved acknowledged I-frame counter (Frame-relay only)	90(5A)	PLBTINCT Saved I-frame retransmission counter (Frame-relay only)
92(5C)	PLBRLS Receive list size X'001A'	94(5E)	PLBTRS Transmit list size X'001A'
	PLBSHWCS Saved show cause byte (Frame-relay only)	93(5D)	Reserved (Frame-relay only)
96(60)	PLBABS Adapter buffer size X'0070'	98(62)	PLBERSA External memory start address X'0000'
100(64)	PLBEREA External memory end address X'0000'	102(66)	PLBTBCMI Minimum transmit buffer count
		103(67)	PLBTBCM Maximum transmit buffer count
104(68)	PLBPIA Product ID address X'0000'		

* Indicates a byte expansion follows.

108(6C)		PLBRADB Read adapter buffer	
PLBADBDC Data count			
PLBADBBT Last beacon type		110(6E)	PLBADBDA Data address
112(70) PLBSPCNT SNA PASSLIM working counter	113(71) PLBIPCNT IP PASSLIM working counter	114(72)	PLBBEAC Beacon timeout value
116(74) - 127(7F) PLBECB1 ECB1 for PLM level 5 task (12 bytes)			
128(80) - 151(97) PLBQCB1 Task entry point: ECLP5DP Prefix: PL2 (24 bytes)			

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) PLBFLAG		PLB flag
	1...	Permanent beacon condition
	.1..	Subarea physical link
	..1.	MAC level 3 must not freeze TIC
	...1	Physical collect active
	.... 1..	First pass of TIC activation
	.... .xx.	Reserved
	.... ...1	NIA pointer passed to ECLNMVT
3(3) PLBPLMST		PLM status
	X'00'	Idle
	X'01'	Initialization in progress
	X'02'	Initialization completed
	X'03'	Open in progress
	X'05'	Active
	X'06'	Close in progress
	X'07'	Closed
	X'08'	Read error log pending
	X'09'	Beaconing in progress
	X'0A'	Deactivation from host in progress
20(14) PLBRCONC		Receive congestion counter
	Byte 0	
	1...	Overflow
22(16) PLBRISTA		Current ring status
	Byte 0	
	1...	Signal loss
	.1..	Hard error
	..1.	Soft error
	...1	Transmit beacon
	.... 1..	Lobe wire fault
	.... .1..	Autoremoval 1 error
	.... ...1	Remove received
	Byte 1	
	1...	Counter overflow
	.1..	Single station
	..1.	Ring recovery
24(18) PLBERRFL		Error flag
	1...	INOP requested due to level 3 hung
	.1..	PDSTAT requested by level 3
	..1.	Token-ring multiplexer (TRM) down
	...1	Disable received
	.... 1..	Counter overflow
	.... .1..	Autodump in progress
	.... ..1.	Temporary error
	.... ...1	Deadman timer error

Offset/Field Name	Bit Pattern/ Hex Value	Contents
32(20) PLBREQFL		Request flag
	1...	INOP logical links requested
	.1..	Deactivate logical links requested
	..1.	Read error log requested
	...1	Scan LLBAT requested
	.... 1..	Discontact requested
	.... .1..	Deactivate force requested
	.... ..1.	Deadman timer process request
	.... ...1	Discontact process requested
52(34) PLBFLDR3		Trace request flags
	1...	Activate TIC trace request
	.1..	Deactivate TIC trace request
	..1.	Deactivate TIC trace due to slowdown
56(38) PLBMISER		Miscellaneous flags
	X'01'	Wrong PLM status or XIO Enable received
	X'02'	Wrong PLM status or CONTACT received
	X'03'	Wrong PLM status or DISCONTACT received
	X'04'	Wrong PLM status or initialization completion received
	X'05'	Wrong PLM status or open completion received
	X'06'	Wrong PLM status or close completion received
	X'07'	Wrong PLM status or read error log completion received
	X'08'	Wrong PLM status or deadman timer elapsed
	X'09'	Wrong MAC status or time-out on transmit leg
	X'0A'	Wrong MAC status or time-out on receive leg
	X'0B'	Unexpected line interface table (LIT) entry
	X'0C'	Unexpected MAC interface area control block (MIA) type
64(40) PLBTYPE		Node or adapter type
		Node type:
	..00 0...	Peripheral node
	..00 1...	Subarea node
	..01 0...	Any node
		Adapter type:
	.... .000	TIC 1
	.... .001	TIC 2
68(44) PLBNTFLG		Physical NTRI flags
	1...	Scheduling concurrent IP and SNA traffic required for this physical

Offset/Field Name	Bit Pattern/ Hex Value	Contents
76(4C) PLBOPOPT		Open options
	Byte 0	
	0...	No wrap interface
	.0..	No Disable hard error
	..0.	No Disable soft error
	...0	No pass adapter MAC frames
	.... 0...	No pass attention MAC frames
	.... .1..	Pad routing field
	.... ..0.	No frame hold
	.... ...0	No contender
	Byte 1	
	1...	Pass beacon MAC frames
	.xxx xxxx	Reserved

Physical Link Block Address Table

Program: NCP

Size in bytes: Variable, depending on the number of 16-byte entries

Created by: NCP generation

Pointed to by: The AVBPLBAT field in the address vector control block (AVB), and the PLBPLBTE field in the physical link control block (PLB)

Function: Table to address physical link blocks

-4(4) Table identifier 'PT'	-2(2) PLBATNOE Number of entries		
0(0) PLBATPLB Pointer to the PLB			
PLBATRSF* Request scan flag			
4(4) PLBATPFL Request scan previous value	5(5) PLBATSEC Scan entry count	6(6) PLBATTPN Token-ring interface coupler (TIC) number	7(7) Reserved
8(8) PLBATCUB Pointer to the common physical unit block (CUB)			
PLBATPA Port address			
12(C) PLBATLAM Line address for the 3745		14(E) Reserved	

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) PLBATRSF		Request scan flag
	1...	Last entry
	.1..	INOP requested
	..1.	Entry to scan
	...1	Housekeeping pending while network management vector transport (NMVT) process
	.... 1...	Physical link locked
	.... .1..	Frame-relay line
	.... ..1.	Not used
	.... ...1	Not used

Physical Link Adapter Control Block

Program: NCP

Size in bytes: 132(84)

Created by: NCP generation

Pointer to: The PLBXPLUP field in the physical link control block (PLB), the CCBRACBP field in the transmit leg's PLUA points to the receive leg's PLUA, the CCBXACBP field in the receive leg's PLUA points to the transmit leg's PLUA, the PLUACB field in the user link vector table (ULVT), the GCB1UACB and the GCBLUACB fields in the group control block (GCB), and the LKBACBP field in the line control block (LKB)

Function: Physical link adapter control block

0(0) - 35(23)	Link XIO control block (LXB) compatibility
36(24) - 127(7F)	Character control block (CCB) compatibility
128(80)	PLUXUAP Pointer to the physical link adapter control block extension (XUA) (for both transmit and receive)
CCB compatibility	

Physical Link Block Extension

Program: NCP

Size in bytes: 20(14)

Created by: NCP generation

Pointed to by: The PLBPLXP field in the physical link control block (PLB)

Function: Extension of the PLB

0(0)	PLXBID Block identifier C'PX'	2(2)	PLXTI TI Timer (CCBTWORK timer format)
4(4)	PLXNDBP Pointer to the physical NPM data block (NDB)		
	PLXNW Nw		
8(8)	PLXTMFA Time of first alert for no resources	10(A)	PLXALRT Alert number for open errors
12(C)	PLXAVAL Pointer to the list of available LLBs		
16(10)	PLXDW Number of bit positions to shift Ww for frame loss	17(11)	PLXDWC Number of bit positions to shift Ww for congestion (Frame-relay only)
		18(12)	PLXDATBK Size of data block to be transmitted (Frame-relay only)

Performance Measurement Facility

Program: NCP

Size in bytes: 12(C)

Located in: \$LVL5

Created by: NCP generation

Pointed to by: The SYSPMF field in the extended halfword direct addressables control block extension (HWX)

Function: Displays percent cycle utilization and percent-available NCP free buffers, points to the cycle utilization counter dummy data buffer (CUC DDB) and the NCP free-buffer statistics DDB, and has global response bytes for the DDBs

0(0) PMFGRSPU* Global response CUC	1(1) PMFPCUC Hexadecimal percent cycle utilization, CUC	2(2) PMFGRSPF* Global response, NCP free buffers	3(3) PMFPFBF Hexadecimal percent-available NCP free buffers
4(4) PMFCUC Pointer to the CUC DDB			
8(8) PMFFBFRS Pointer to the NCP free-buffer statistics DDB			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) PMFGRSPU		Global response
	1... ..	Input (domain) limit value has been exceeded.
	.1.. ..	One or more ceiling thresholds have been exceeded.
	..1. ..	One or more floor thresholds have been exceeded.
	...1 ..	Last hexadecimal counterstage processing turned off.
	... x..	Defined only in DDB
	... .x..	Defined only in DDB
	... ..1.	Chaining was indicated but the chain pointer was 0 or not valid.
	... ...1	Percent calculation was not done; scale value was bad (not 0, 1, or 10).
2(2) PMFGRSPF		Same as PMFGRSPU

NCST PU Session Control Block

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The NLXUCB (User control block) field in the programmed resource (LU) block extension (NLX)

Function: Maps the user control block for the programmed resource physical unit block (NPB).

0(0)		PNKID Two byte block ID		2(2)	PNKSTATE* SSCP-PU session states	3(3)	PNKINPUT Index of last PIU received
PNKIDB Unique ID byte (printable)		1(1)	PNKIDU Printable usability byte				
4(4)							
PNKBKPTR Back pointer to NCP programmed resource control block							
8(8)	PNKLEASE User lease count	9(9)	PNKFLGS1* Session flags	10(A) Reserved			
12(C) Reserved							
16(10)							
PNKNXTLU Address of next LUV entry that needs to be processed for forced deactivate							
20(14)			PNKSEQNO Alert sequence number	22(16)	PNKSTATX* PNK state 'extension'	23(17) Reserved	
24(18) - 31(1F)							
PNKPUNAM Name of the PU							

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) PNKSTATE		SSCP-PU session states
	X'01'	RESET/LINK inactive for PU-SSCP session
	X'02'	PU-SSCP session inactive (link active)
	X'03'	Contacted state for PU-SSCP session
	X'04'	PU-SSCP session active

Offset/Field Name	Bit Pattern/ Hex Value	Contents
9(9) PNKFLGS1		Session flags
	1... ..	LU capability bit 1 = Primary 0 = Secondary
	.1... ..	Force deactivate cleanup is pending
22(16) PNKSTATX		PNK state 'extension'
	1... ..	DISCONTACT/DACTPU PIU being redriven

Physical Unit (PU) Routing Block

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointer to: Embedded in the common PU block extension for embedded blocks (CXI)

See "Common Physical Unit Block Extension for Embedded Blocks" on page 1-298 for the offset.

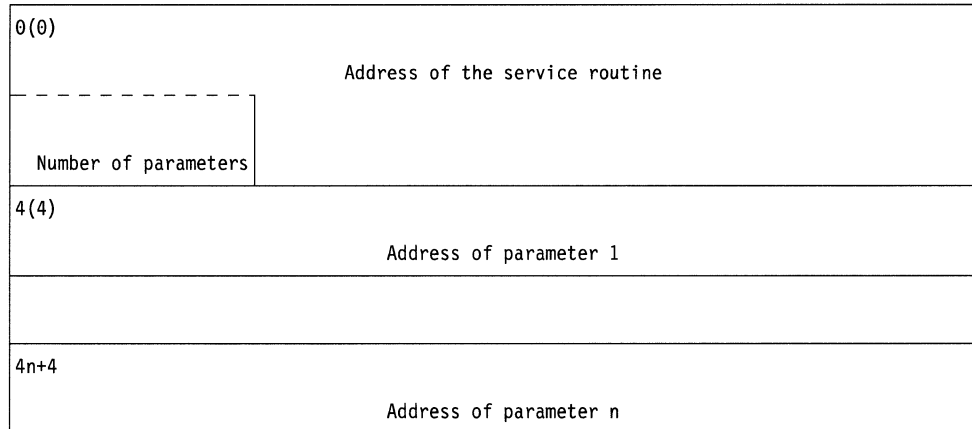
Function: A path-control boundary-function control block that is embedded in the common PU block (CUB's) CXI and is used in the first stage of inbound routing. The PRB contains an embedded search tree header control block (SHB). See "Search Tree Header Control Block" on page 1-959 for details.

0(0) - 7(7)

Imbedded SHB
(8 bytes)

Parameter List

- Program:** NCP
- Size in bytes:** Variable
- Created by:** Dynamically by programs for special supervisor call (SVC) macros
- Pointer to:** Address of the list set in register 1
- Function:** Provides parameters to a called routine



Parameter/Status Area Control Block (Normal Mode)

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The LNVTPSAP field in the line vector table (LNVT), which points to the transmit PSA for duplex lines; LNVTPSAR points to the receive PSA.

Function: Contains a parameter area used to transfer control information from the CCU to the scanner and a status area used to transfer status information from the scanner to the CCU. For duplex operation, two PSAs are required: one for the transmit leg and one for the receive leg. See page 1-846 for a summary of the parameter and status fields used by each valid command.

Name	Offset	Name	Offset
PSAACBF	28 (1C)	PSARCTL1	26 (1A)
PSAACBP	28 (1C)	PSARCTL1	26 (1A)
PSABFSZ	13 (D)	PSARCTL2	27 (1B)
PSABOF1	2 (2)	PSARCTL2	27 (1B)
PSABOF2	3 (3)	PSARCVID	10 (A)
PSABPTR1	4 (4)	PSARC1	25 (19)
PSABPTR2	12 (C)	PSARC1	25 (19)
PSABYT1	6 (6)	PSARSCNT	20 (14)
PSABYT2	7 (7)	PSARTCNT	25 (19)
PSACHCT	4 (4)	PSARTMRR	24 (18)
PSACHNST	5 (5)	PSARTRYT	8 (8)
PSACHST	4 (4)	PSARTYCT	11 (B)
PSACMD	17 (11)	PSASCPS1	26 (1A)
PSACMD2	25 (19)	PSASCPS2	27 (1B)
PSACNT1	4 (4)	PSASES	18 (12)
PSACNT2	12 (C)	PSASES2	26 (1A)
PSACNT2	12 (C)	PSASILCS	24 (18)
PSACNT2	12 (C)	PSASMCT	4 (4)
PSACSPIA	11 (B)	PSASMST	4 (4)
PSADACNT	10 (A)	PSASSCF	16 (10)
PSADCT0	21 (15)	PSASSCF2	24 (18)
PSADCT1	22 (16)	PSATIMD	10 (A)
PSADCT2	23 (17)	PSATRCT	4 (4)
PSAELCS	21 (15)	PSATRTMR	3 (3)
PSAEXTMI	15 (F)	PSAXADR1	8 (8)
PSAHELCS	20 (14)	PSAXADR1	8 (8)
PSAIDATA	12 (C)	PSAXADR1	8 (8)
PSAINLD	22 (16)	PSAXCTL1	10 (A)
PSALBUFP	20 (14)	PSAXCTL1	10 (A)
PSALGRAF	12 (C)	PSAXCTL2	11 (B)
PSALP2RT	8 (8)	PSAXCTL2	11 (B)
PSALSTAT	19 (13)	PSAXC1	9 (9)
PSALSTA2	27 (1B)	PSAXC1	9 (9)
PSAOUTLD	23 (17)	PSAXMITC	9 (9)
PSAPCMOD	1 (1)	PSAXMTID	8 (8)
PSAPRESZ	12 (C)	PSAXOFST	10 (A)
PSAPTCC	0 (0)	PSAXTST	12 (C)
PSARADR1	24 (18)		
PSARADR1	24 (18)		
PSARBOF1	24 (18)		

Parameter Area

0(0) PSAPTCC Transmit correlation count	1(1) PSAPCMOD* Command modifiers	2(2) PSABOF1 Data offset for buffer 1	3(3) PSABOF2 Data offset for buffer 2 <hr/> PSATRTMR Timer for the Trace command
4(4) PSABPTR1 Pointer to buffer 1 or pointer to the Link Problem Determination Aid 2 (LPDA2) response buffer			
PSACNT1 Count for buffer 1			
PSATRCT Count for the Trace command	5(5) PSACHNST Change command start	6(6) PSABYT1 Data byte 1	7(7) PSABYT2 Data byte 2
PSASMST Pointer to the Set Mode Data command			
PSASMCT Count for the Set Mode command			
PSACHST Start of the Change command data			
PSACHCT Count for the Change command			

* Indicates a byte expansion follows.

8(8) PSAXMTID Transmit line ID		10(A) PSARCVID Receive line ID	
PSARTRYT X.21 retry timer		PSATIMD V25 bis call request dial time-out value	
PSALP2RT LPDA2 reply timer		PSAXCTL1** Transmit control 1 (SDLC)	11(B) PSAXCTL2** Transmit control 2 (SDLC)
PSAXADR1** Transmit address 1	9(9) PSAXC1** Transmit control for single address and control fields	PSADACNT Data count for the Trace command	PSACSPIA Interface address of the scanner interface trace (SIT)
	PSAXMITC* Transmit control (BSC)	PSAXOFST Data offset in the transmit buffer (LPDA2)	PSARTYCT X.21 retry count

* Indicates a byte expansion follows.

** For modulo 8 and modulo 128, use the SDLC address and control fields. See page 1-845.

12(C) PSABPTR2 Pointer to buffer 2 or pointer to the LPDA2 command buffer			
PSACNT2 Count for buffer 2	13(D) PSABFSZ NCP buffer size for the Trace command	14(E) Reserved	15(F) PSAEXTMI X.21 extended timer interface
PSAIDATA Pointer to inserted data (BSC transmit)			
PSACNT2 Count of inserted data			
PSALGRAF Pointer to leading graphics (BSC transmit)			
PSACNT2 Count of leading graphics			
PSAPRESZ NCP buffer prefix size for the Trace command			
PSAXTST LPDA command (test frame request)			

Status Area

16(10) PSASSCF* Status control field	17(11) PSACMD* Command	18(12) PSASES* Secondary status	19(13) PSALSTAT* (PSALCS) Line communication status (LCS)
20(14) PSALBUF Pointer to the last buffer used			
PSARSCNT Residual buffer count	21(15) PSAELCS* Extended LCS for all CSP (3745)	22(16) PSAINLD* Input leads from a modem	23(17) PSAOUTLD* Output leads to a modem
PSAHELCS HPTSS extended LCS (3745)	PSADCT0 V25 bis delayed call time byte 0	PSADCT1 V25 bis delayed call time byte 1	PSADCT2 V25 bis delayed call time byte 2
24(18) PSARADR1 Receive address 1	25(19) PSARC1 Receive control for single address and control fields (SDLC)	26(1A) PSARCTL1 Receive control 1 (SDLC)	27(1B) PSARCTL2 Receive control 2 (SDLC)
PSARBOF1 HPTSS Receive buffer 1 offset			
PSARTMRR Residual timer (SIT)	PSACMD2 LPDA command 2	PSASES2 LPDA secondary ending status	PSALSTA2 LPDA line communication status 2
PSASSCF2 LPDA secondary control field 2	PSARTCNT Residual retry count (X.21)	PSASCPS1 First call-progress signal (X.21)	PSASCPS2 Second call-progress signal (X.21)
PSASILCS Initial line communication status			
28(1C) PSAACBP Pointer to the ACB (NCP line without trace) Pointer to the GCB (User line control without trace) Pointer to the LTCB (When trace is running)			
PSAACBF* ACB flag			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) PSAPCMOD		Command modifiers
	x...	Buffer 1 data (to or from NCP) is in one of the following: 1 = Data area 0 = Buffer chain
	.x..	Buffer 2 data (to or from NCP) is in one of the following: 1 = Data area 0 = Buffer chain, or SIT—Duplex
	..0. ..1.	Local NCTE wrap (3745, HPTSS)
	..1. ..1.	Remote NCTE wrap (3745, HPTSS)
	..1.	SDLC/LPDA—2-byte address field, or X.21—Retry requested, or BSC—Second transparent write for online terminal test (OLTT)
	...1	SDLC/LPDA—2-byte control field, or BSC—NCP OLTT
	.... 1...	SDLC—Do not compare address, or BSC—Intermediate text block (ITB) mode, or Wrap: 1 = Control leads wrap 0 = Data wrap
		or V.25 bis call request command modifier: 1 = HDLC mode is the connection protocol 0 = SS mode is the connection protocol
	.... .1..	SDLC—Answer requested, or BSC—Data chain (transmit) or start reply timer (control), or LPDA—Long reply time-out, or Wrap: 1 = External wrap 0 = LIC level wrap

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) PSAPCMOD (continued)	.... ..1.	SDLC (half-duplex)—Turn line around, or SDLC (Duplex)—Drop Request to Send (RTS), or X.21—Direct call, or BSC—Insert data, or Wrap: 1 = Modem clock used 0 = Cable (480Hz clock) or LPDA type of support: 1 = LPDA2 0 = LPDA1
	.... ..1	SDLC (half-duplex)—Receive area assigned, or BSC—ACK expected: 1 = ACK1 0 = ACK0 or LPDA1 tailed modem: 1 = Tailed modem 0 = Non-tailed modem LPDA2 is always 0

Offset/Field Name	Bit Pattern/ Hex Value	Contents
9(9) PSAXMITC		Transmit control (BSC)
	xxx	Initial control sequence (ICS)
	... xxxx .	Final control sequence
	... .... x	Leading graphics flag
		ICS=000 (Control)
	000 0000 0	Turn the line around and monitor
	000 0011 Y	Transmit ENQ; then turn the line around and receive response
	000 0110 Y	Transmit ACK0; then turn the line around and receive
	000 0111 Y	Transmit NAK; then turn the line around and receive
	000 1101 0	Transmit RVI; then turn the line around and receive
	000 1110 Y	Transmit ACK1; then turn the line around and receive
	000 1111 0	Transmit WACK; then turn the line around and receive
		ICS=001 Start of text (STX)
	001 0011 0	Transmit STX-ENQ (TTD); then turn the line around and receive
	001 1001 0	Transmit STX-data-ETX; then turn the line around and receive
	001 1010 0	Transmit STX-data-ETB; then turn the line around and receive
		ICS=010 (DLE-STX)
	010 0011 0	Transmit DLE-STX-data-DLE-ENQ; then turn the line around and receive
	010 0100 0	Transmit DLE-STX-data-DLE-ITB (not line turnaround)
	010 1001 0	Transmit DLE-STX-data-DLE-ETX; then turn the line around and receive
	010 1010 0	Transmit DLE-STX-data-DLE-ETB; then turn the line around and receive
		ICS=011 Start of header (SOH)
	011 1001 0	Transmit SOH-data-ETX; then turn the line around and receive
	011 1010 0	Transmit SOH-data-ETB; then turn the line around and receive
		ICS=100 End of transmission (EOT)
	100 0000 0	Transmit EOT; then turn the line around and monitor
	100 0011 Y	Transmit EOT; then send ENQ, turn the line around, and receive reply
	100 1100 0	Transmit EOT; then turn the line around and request a level-2 interrupt
	100 1110 0	Transmit DLE-EOT; then turn the line around and request a level-2 interrupt

Note: Y in bit 7 indicates that leading graphics are possible.

16(10) PSASSCF		Status control field
	1...	Halt or Abort received
	.1..	Service request
	..1.	Overrun or underrun
	...1	Modem check
	.... 1...	Received data stored
	.... .1..	End of message
	.... ..1.	Transmit data transferred
	.... ...1	Receive sequence

Offset/Field Name	Bit Pattern/Hex Value	Contents
17(11) PSACMD		Normal mode commands
		Note: NCP sets bit 0 to 1 on an Out IOH. A level-2 interrupt from the CSP sets bit 0 to 0. If bit 0=1, the level-2 interrupt from the current command never occurred
		V.25 bis commands
	X'0D'	Call request
	X'0E'	Monitor incoming call
	X'0F'	Disable
		SDLC commands
	X'10'	Transmit control
	X'11'	Transmit data
	X'12'	Receive monitor
	X'13'	Receive
	X'14'	Receive continue
	X'1D'	Transmit continue
		X.21 commands
	X'15'	Call request
	X'16'	Monitor incoming call
	X'17'	DTE clear request
		BSC commands
	X'18'	Control
	X'19'	Transmit
	X'1A'	Transmit continue
	X'1B'	Receive
	X'1C'	Receive continue
		ALC commands
	X'31'	Transmit
	X'32'	Receive
	X'33'	Transmit control
		LPDA command
	X'2B'	LPDA test control
		Commands common to normal, character mode, and burst mode
	X'01'	Set mode
	X'02'	Enable
	X'03'	Disable
	X'04'	Monitor incoming call
	X'05'	Dial (Normal mode only)
	X'06'	Change
	X'08'	Raise data terminal ready
	X'09'	Flush data (Normal mode only)
	X'0B'	Reset-D (Reset and disable)
	X'0C'	Reset-N (Reset and no-op)
	X'2C'	Trace (Start) (Normal mode only)
	X'2D'	Stop trace (Normal mode only)
	X'2E'	Wrap
	X'F0'	Halt
	X'F1'	Halt immediate
	X'F5'	Line dump

Offset/Field Name	Bit Pattern/ Hex Value	Contents
18(12) PSASES		Secondary status
	x...	Reserved
	.1..	Format exception, or SDLC—idle detect
	..1.	Transient line error (3745). (See PSAELCS.)
	...1	Data check
	.... 1..	BSC—Bad pad, or SDLC—Flag off boundary
	.... .1..	In phase (EP only), or test indicate (TI) lead on (NCP only)
	.... ..1.	Data link escape (DLE) error
	.... ...1	Length check, or SDLC—Early flag

Offset/Field Name	Bit Pattern/ Hex Value	Contents
19(13) PSALSTAT (PSALCS)		Line communication status
	xxx	Initial status
	... xxxx .	Final status
	... .... x	Leading graphics
		Initial Status Field—NCP BSC Receive only
	000	Control mode—no text was received.
	001	Text mode—STX is the first character.
	010	Transparent text mode—DLE STX are the first characters.
	011	Header mode—SOH is the first character.
		Initial Status Field—Special
	100	Special status
	101	Special status
		Initial Status Field—Errors
	110	Internal box error
	111	Hardware error
		Final Status Field (Initial Status=0XX)
	... 0000 .	Time-out occurred after reception began and initial status is not "000."
	... 0011 .	ENQ received
	... 0100 .	EOT received
	... 0101 .	DLE followed by and valid second character
	... 0110 .	Wrong ACK received
	... 0111 .	NAK received
	... 1001 .	ETX received
	... 1010 .	ETB received
	... 1101 .	RVI received
	... 1110 .	Positive ACK0/ACK1 received
	... 1111 .	WACK received
		Final Status Field (Initial Status=100)
	... 0000 .	Time-out—nothing has been received.
	... 0001 .	Time-out on Raise Test Control
	... 0010 .	Bad echo on Raise Test Control
	... 0011 .	LPDA test control is active, or X.21 time-out on Proceed-to-Select.
	... 0100 .	DLE EOT disconnect sequence
	... 0101 .	Lost data
	... 1100 .	EOT transmitted
	... 1101 .	X.21 Call-Progress-Signal error
	... 1110 .	Disconnected, or X.21 DCE Clear was received during a call request.
	... 1111 .	Connected
		Final Status Field (Initial Status=101)
	... 0000 0	Modem is already in test mode.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
19(13) PSALSTAT (PSALCS) (continued)		
		Final Status Field (Initial Status=110)
	... 0000 .	Adapter input/output error
	... 0001 .	Adapter interface check
	... 0010 .	Scanner interface error
	... 0011 .	Front end scanner (FES) failed to answer.
	... 0100 .	FES internal error
	... 0101 .	LIC driver check or clock internal error (3720), or MUX failure (3745)
	... 0110 .	LIC internal error (3720), or transient error overflow (3745)
	... 0111 .	LIC/ICC interface error (3720), or LIC/ICF interface error (3745, TSS), or local clock failure (3745, HPTSS).
	... 1000 .	No interrupt from the FES
	... 1001 .	Command is rejected.
	... 1010 .	Trace is already active.
	... 1011 .	Scanner error reporting path check
	... 1100 .	Invalid level-2 interrupt
	... 1101 .	Modem already in test mode
	... 1110 .	Error in the DMA path (3745, HPTSS). (See PSAHELCS.)
	... 1111 .	Line is not accessible (3745, HPTSS).
		Final Status Field (Initial Status=111)
	... 0001 .	Clear to Send (CTS) dropped during a command.
	... 0111 .	Data Set Ready (DSR) dropped during a command, or external clock error (3745).
	... 1000 0	Modem error
	... 1001 .	CTS failed to come up.
	... 1010 .	DSR failed to come up.
	... 1011 .	No cable is installed, or the wrong cable is installed (3745).
	... 1100 .	DSR or CTS or both failed to drop (on Disable and Transmit Data commands).
	... 1110 .	Auto call check, or call failure indication (CFI)
	... 0101 .	Delayed call (DLC)
	... 0110 .	Incoming call (INC)
	... 0100 .	Invalid (INV)
		Leading Graphics Flag
	... .... x	1 = Non-control character was the first character received (NCP BSC receive only). 0 = No leading graphics were received.
		or
		1 = Time-out during an X.21 DTE Clear (X.21 lines only). 0 = No time-out during an X.21 DTE Clear (X.21 lines only).

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) PSAHELCS		HPTSS extended LCS (3745)
	xxxx	Reserved
	.... xxx.	000 Build 1126 Ber
		001 Build 11A6 Ber
		010 Build 11A7 Ber
		011 Build 11A8 Ber
		100 Build 11A9 Ber
		101 Build 11AA Ber
	.... ...x	Reserved
21(15) PSAELCS		Extended LCS for all CSPs (3745)
	.... ...x	1 = FESA error 0 = MUX/LIC error
	.... ...x.	1 = Error in the transmit path 0 = Error in the receive path
	X'FF'	Frame-relay HPTSS adapter that does support FRPE mode
		MUX/LIC error (bit 6=0)
	x...	Reserved
	.1..	LIC driver check
	..1.	LIC transmit data check
	...1	CTS drop time-out
	.... .1..	FESA transmit data check
		FESA error (bit 6=1)
	x...	Reserved
	.1..	Line interrupt register errors
	..1.	LIC receive data check
	...1	MUX error register
	.... 1...	FESA error register
	.... .1..	FESA data check
		V.25 bis extended LCS (LCS=CFI)
	X'00'	HPTSS adapter that does not support FRPE mode
	X'01'	Engaged tone (ET)
	X'03'	Local DCE is busy (CB)
	X'04'	Ring tone (RT)
	X'05'	Abort call (AB)
	X'06'	Answer tone is not detected (NT)
	X'07'	Forbidden call (FC)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
22(16) PSAINLD		Input leads from modem
	1... ..	Line—Data set ready (DSR) Dial—Power indicator (PWI) X.21—Indication
	.1... ..	Line—Clear to send (CTS) Dial—Data line occupied (DLO) X.21—Receive lead (R)
	..1.	Line—Ring indicator (R) Dial—Present next digit (PND)
	...1	Line—Receive line signal detect (RLSD) Dial—Abandon call and retry (ACR)
	.... 1...	Line—Test indicator (TI) Dial—Call originator status (COS)
	.... .1..	Line—Receive data (RD)
23(17) PSAOUTLD		Output leads to modem
	1... ..	Line—Data Terminal Ready (DTR) (0=LIC wrap) Dial—Digit Signal 8 X.21—No LIC wrap
	.1... ..	Line—Request to Send (RTS) Dial—Digit Signal 4 X.21—Control (C).
	..1.	Line—New Sync Dial—Digit Signal 2
	...1	Line—Data Rate Select (DRS) Dial—Digit Signal 1
	.... 1...	Line—Modem Test Dial—Call Request (CRQ)
	.... .1..	Dial—Digit Present (DPR)
28(1C) PSAACBF		ACB flag
	1... ..	SIT or line trace flag (PSAACBP points to the LTCB)
	.110 1111	PSA control block ID X'6F'

Modulo 8 Use of SDLC Address and Control Fields

8(8) PSAXADR1 Transmit address 1	9(9) PSAXC1 Transmit control 1	10(A) Not used	11(B) Not used
24(18) PSARADR1 Receive address 1	25(19) PSARC1 Receive control 1	26(1A) Not used	27(1B) Not used

Modulo 128 Use of SDLC Address and Control Fields

8(8) PSAXADR1 Transmit address 1	9(9) Not used	10(A) PSAXCTL1 Transmit control 1	11(B) PSAXCTL2 Transmit control 2
24(18) Receive address 1	25(19) Not used	26(1A) PSARCTL1 Receive control 1	27(1B) PSARCTL2 Receive control 2

NCP Normal Mode

Code (Hex)	Command	Displacement (Hex)																																		
		0	1	2	3	3	4	4	5	6	7	8	8	8	9	9	A	A	A	A	B	B	B	C	C	C	C	D	E	F						
	Description	TCC	Cmd Modifier	Offset-1	Offset-2	Timer	Count + Adr Buffer 1	Count + Adr Set Mode Data	Count (Change)	Start Change	Data Byte 1	Data Byte 2	X.21 Retry Timer	LPDA2 Retry Timer	Transmit Line ID	Transmit Adr 1	Single AC Xmt Ctrl	Transmit Control	Rev Line ID	Data Count (Trace)	Transmit Ctrl 1	Transmit Data Offset (LPDA2)	Transmit Ctrl 2	Interface Adr (Trace)	X.21 Retry Count	Count + Adr Buffer 2	Count + Adr Insert Data	Count + Adr Lead Graphic	Buffer Prefix Size	LPDA Command	Buffer Size	(Data Byte 9)	(Data Byte 10)			
01	Set Mode	X					X							X				F																		
02	Enable																																			
03	Disable																																			
04	Monitor In Call																																			
05	Dial	X	X	X			D																													
06	Change (See note)	X						X	X	1	2	3					4		5			6			7						8	9	10			
08	Raise DTR																																			
09	Flush Data																																			
0B	Reset—D																																			
0C	Reset—N																																			
10	Transmit Ctrl—SDLC	X	X	R			R								a	b				a		a														
11	Transmit Data—SDLC	X	X	T	R		T								a	b				a		a			R											
12	Rcv Monitor—SDLC	X	X												X																					
13	Receive—SDLC	X	X	R			R								X																					
14	Rcv Continue—SDLC	X	X	R			R																													
15	Call Request—X.21	X	X	D			D					X												X												
16	Monitor In Call—X.21	X																																		
17	DTE Clear Req—X.21	X																																		
18	Control—BSC	X	X				L										X																			
19	Transmit—BSC	X	X	T			T										X									X										
1A	Transmit Continue—BSC	X	X	T			T										X																			
1B	Receive—BSC	X	X	R			R										X									X										
1C	Rcv Continue—BSC	X	X	R			R																													
1D	Transmit Continue—SDLC	X	X	T	R		T								X											R										
2B	LPDA Test Request (LPDA1)	X	X	R		X	R								X	X																X				
2B	LPDA Test Request (LPDA2)	X	X	00			R						X								00				X											
2C	Trace (Start)	X	X		X	X									X					X			X				X			X	X					
2D	Stop Trace																																			
2E	Wrap	X	X	T	R		T											X							R											
F0	Halt																																			
F1	Halt Immediate																																			
F5	Line Dump																																			

X = Valid field for that command
T = Transmit
R = Receive
D = Dial
F = Duplex
L = Leading graphics

a = Modulo 128 uses 1-byte address and 2-byte control fields (except unnumbered frames).
b = Modulo 8 uses 1-byte address and 1-byte control fields.

Note: The numbers 1 through 10 represent the byte of data to be changed. They are shown at the proper displacement, but the descriptions do not always apply.

NCP Normal Mode

Code (Hex)	Command	Displacement (Hex)																			
		10	11	12	13	14	16	17	18	18	18	18	19	19	19	1A	1A	1A	1B	1B	1B
01	Set Mode	X	01	00	X	0	X	X													
02	Enable	X	02	00	X	0	X	X													
03	Disable	X	03	00	X	0	X	X													
04	Monitor In Call	X	04	00	X	0	X	X													
05	Dial	X	05	00	X	0	X	X													
06	Change (See note)	X	06	00	X	0	X	X													
08	Raise DTR	X	08	00	X	0	X	X													
09	Flush Data	X	09	00	X																
0B	Reset—D	X	0B	00	X	0	X	X													
0C	Reset—N	X	0C	00	X	0	X	X													
10	Transmit Ctrl—SDLC	X	10	X	X	R						a	b	b				a	a		
11	Transmit Data—SDLC	X	11	X	X	R						a	b	b				a	a		
12	Rcv Monitor—SDLC	X	12	X	X	0						a	b	b				a	a		
13	Receive—SDLC	X	13	X	X	R						a	b	b				a	a		
14	Rcv Continue—SDLC	X	14	X	X	R						X						X	X		
15	Call Request—X.21	X	15	00	X				X					X		X					X
16	Monitor In Call—X.21	X	16	00	X				X							0					0
17	DTE Clear Req—X.21	X	17	00	X																
18	Control—BSC	X	18	X	X																
19	Transmit—BSC	X	19	X	X	T															
1A	Transmit Continue—BSC	X	1A	X	X	T															
1B	Receive—BSC	X	1B	X	X	R															
1C	Rcv Continue—BSC	X	1C	X	X	R															
1D	Transmit Continue—SDLC	X	1D	X	X	R						a	b	b				a	a		
2B	LPDA Test Request (LPDA1)	X	2B	X	X	R				X					X		X				X
2B	LPDA Test Request (LPDA2)	X	2B	X	X	X						FD			1B						
2C	Trace (Start)	X	2C	00	X	X						X									
2D	Stop Trace	X	2D	00	X																
2E	Wrap	X	2E	00	X	R															
F0	Halt	X	H	X	X																
F1	Halt Immediate																				
F5	Line Dump	X	F5	X	X	X						ab	b					a	a		

X = Valid field for that command
 T = Transmit
 R = Receive
 D = Dial
 F = Duplex
 L = Leading graphics
 H = Halted command code

a = Modulo 128 uses 1-byte address and 2-byte control fields (except unnumbered frames).
 b = Modulo 8 uses 1-byte address and 1-byte control fields.

Note: The numbers 1 through 10 represent the byte of data to be changed. They are shown at the proper displacement, but the descriptions do not always apply.

Parameter/Status Area Control Block (Character Mode)**Program:** NCP**Size in bytes:** 32(20)**Created by:** NCP generation**Pointed to by:** The LNVTPSAP field in the line vector table (LNVT), which points to the transmit PSA for duplex lines; LNVTPSAR points to the receive PSA.**Function:** Contains a parameter area used to transmit SS control information from the CCU to the scanner and a status area used to transfer status information from the scanner to the CCU. See page 1-854 for a summary of the parameter and status field used by each valid command.

Parameter Area

0(0) PSAPTCC Transmit correlation count	1(1) PSAPCMOD* Command modifiers	2(2) PSAPSCF* Secondary control field (SCF)	3(3) PSAPDF Parallel data field (PDF)
4(4) PSAPCPC* Primary control field (PCF)	5(5) PSASDF Serial data field (SDF)	6(6) PSAPLQTC Line quiet count	7(7) - 15(F)
Reserved			

* Indicates a byte expansion follows.

Status Area

16(10) PSASSCF* Status control field	17(11) PSASPDF PDF	18(12) PSASES* Secondary status	19(13) PSALSTAT* (PSALCS) Line communication status (LCS)
	PSACMD* Command		
20(14) PSASLPC Line control definition (LCD) and PCF	21(15) PSASSDF SDF	22(16) PSAINLD* Input leads from a modem	23(17) PSAOUTLD* Output leads to a modem
	PSAELCS Extended LCS for all CSPs	PSADCT1 V25 bis delayed call time byte 1	PSADCT2 V25 bis delayed call time byte 2
24(18) Reserved			
28(1C) PSAACBP Pointer to the ACB (NCP line without trace) Pointer to the GCB (User line control without trace) Pointer to the LTCB (When trace is running)			
PSAACBF* ACB flag			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) PSAPCMOD		Command modifiers
	1...	Set SCF and PDF.
	.1..	Set SDF.
	..1.	Set PCF.
	.... 1...	V.25 bis call request command modifier: 1 = HDLC mode is the connection protocol. 0 = SS mode is the connection protocol.
	.... .1..	Perform a line quiet test.
	.... ..1.	Set SCF.
2(2) PSAPSCF		SCF (same as the status control field—see 16(10) PSASSCF)
4(4) PSAPCPC		PCF (See Volume 2 Section 11, "Character Mode Primary Control Field (PCF) State Diagrams," for PCF state definitions.)
16(10) PSASSCF		Status control field
	1...	Stop bit check/receive break
	.1..	Service request
	..1.	Overrun or underrun
	...1	Modem check
	.... 1...	Receive line signal detect
	.... .1..	Start bit detected
	.... ..1.	Program flag
	.... ...1	Pad flag
17(11) PSACMD		Character mode command
	X'40'	Write ICW. (See the normal mode PSA byte expansion for commands common to the normal mode.)
18(12) PSASES		Secondary status
	1...	A modem retrain operation has successfully recovered.
	..1.	Transient line error occurred. (See PSAELCS.)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
19(13) PSALSTAT (PSALCS)		Line communication status
	xxx	Initial status
	... xxxx .	Final status
	... .... x	Reserved
		Initial Status Field
	000 0000 0	No status reported by CSP. (Ignore this status.)
	110	Internal box error
	111	Hardware error
		Final Status Field (Initial Status=110)
	... 0000 .	Adapter input/output error
	... 0001 .	Adapter interface check
	... 0010 .	Scanner interface error
	... 0011 .	Front end scanner (FES) failed to answer.
	... 0100 .	FES internal error
	... 0101 .	LIC driver check, or clock internal error
	... 0110 .	LIC internal error
	... 0111 .	LIC or clock interface error
	... 1000 .	No interrupt from FES
	... 1001 .	Command was rejected.
	... 1010 .	Trace is already active.
	... 1011 .	Scanner error reporting path check
	... 1100 .	Invalid level-2 interrupt.
	... 1101 .	Modem is already in test mode.
		Final Status Field (Initial Status=111)
	... 0001 .	Clear to Send (CTS) dropped during command.
	... 0111 .	Data Set Ready (DSR) dropped during command.
	... 1000 0	Modem error
	... 1001 .	CTS failed to come up.
	... 1010 .	DSR failed to come up.
	... 1011 .	No cable is installed.
	... 1100 .	DSR or CTS (or both) failed to drop (on Disable command).
	... 1110 .	Auto call check, or call failure indication (CFI)
	...0 1001	Invalid (INV), TSS clear ends in error.
	...0 101.	Delayed call (DLC)
	...0 1011	DLC, TSS clear ends in error.
	...0 110.	Incoming call (INC)
	...0 100.	INV
	...1 1101	CFI, TSS clear ends in error.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
21(15) PSAELCS		Extended LCS for all CSPs (3745)
	.... ..x	1 = FESA error 0 = MUX/LIC error
	.... ..x.	1 = Error in the transmit path 0 = Error in the receive path
		MUX/LIC Error (bit 6=0)
	x...	Reserved
	.1..	LIC driver check
	..1.	LIC transmit data check
	...1	CTS drop time-out
	.... .1..	FESA transmit data check
		FESA Error (bit 6=1)
	x...	Reserved
	.1..	Line interrupt register errors
	..1.	LIC receive data check
	...1	MUX error register
	.... 1...	FESA error register
	.... .1..	FESA data check
		V.25 bis extended LCS (LCS=CFI)
	X'01'	Engaged tone (ET)
	X'02'	Number is not stored (NS).
	X'03'	Local DCE is busy (CB).
	X'04'	Ring tone (RT)
	X'05'	Abort call (AB)
	X'06'	Answer tone is not detected (NT).
	X'07'	Forbidden call (FC)
22(16) PSAINLD		Input leads from modem
	1...	Line—Data Set Ready (DSR) Dial—Power Indicator (PWI) X.21—Indication
	.1..	Line—Clear To Send (CTS) Dial—Data Line Occupied (DLO) X.21—Receive lead (R)
	..1.	Line—Ring Indicator (R) Dial—Present Next Digit (PND)
	...1	Line—Receive Line Signal Detector (RLSD) Dial—Abandon Call and Retry (ACR)
	.... 1...	Line—Test Indicator (TI) Dial—Call Originator Status (COS)
	.... .1..	Line—Receive Data (RD)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
23(17) PSAOUTLD		Output leads to modem
	1...	Line—Data Terminal Ready (DTR) (0=LIC wrap) Dial—Digit Signal 8 X.21—No LIC wrap
	.1..	Line—Request to Send (RTS) Dial—Digit Signal 4 X.21—Control (C)
	..1.	Line—New Sync Dial—Digit Signal 2
	...1	Line—Data Rate Select (DRS) Dial—Digit Signal 1
	.... 1...	Line—Modem Test Dial—Call Request (CRQ)
	.... .1..	Dial—Digit Present (DPR)
28(1C) PSAACBF		ACB flag
	1...	Scanner interface trace (SIT) or line trace flag. (PSAACBP points to the LTCB.)
	.110 1111	PSA control block ID X'6F'

NCP Character Mode

		Parameter Area															Status Area																
		Description	TCC	Cmd Modifier	SCF	PDF	PCF	Count + Adr Set Mode Data	Count (Change)	Start Change	SDF	Line Quiet Count	Data Byte 1	Data Byte 2	Data Byte 3	Transmit Line ID	(Data Byte 4)	Rcv Line ID	(Data Byte 5)	(Data Byte 6)	(Data Byte 7)	(Data Byte 8)	(Data Byte 9)	(Data Byte 10)	SCF	PDF	Command (Hex)	Sec Status	Line Comm Status	LCD/PDF	SDF	Modern-In	Modern-Out
Code (Hex)	Command	0	1	2	3	4	4	4	5	5	6	6	7	8	8	9	A	A	B	C	D	E	F	10	11	11	12	13	14	15	16	17	
01	Set Mode	X					X									X									X	01	00	X	X	X	X	X	X
02	Enable																								X	02	00	X	X	X	X	X	X
03	Disable																								X	03	00	X	X	X	X	X	X
04	Monitor in Call																								X	04	00	X	X	X	X	X	X
06	Change	X						X	X																X	06	00	X	X	X	X	X	X
08	Raise DTR																								X	08	00	X	X	X	X	X	X
0B	Reset-D																								X	0B	00	X	X	X	X	X	X
0C	Reset N																								X	0C	00	X	X	X	X	X	X
2E	Wrap	X															X								X	2E	00	X	X	X	X	X	X
40	Write ICW	X	X	X	X	X				X	X														X		00	X	X	X	X	X	X
F0	Halt																								X	H	00	X	X	X	X	X	X
F1	Halt Immediate																																
F5	Line Dump																								X	X	00	X					

Parameter/Status Area Control Block (SS Burst Mode)

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The LNVTPSAP field in the line vector table (LNVT)

Function: Contains a parameter used to transmit SS control information from the CCU to the scanner and a status area used to transfer status information from the scanner to the CCU. See page 1-860 for a summary of the parameter and status fields used by each valid command.

Parameter Area

0(0) PSAPTCC Transmit correlation count (line trace only)	1(1) PSAPCMOD* Command modifiers	2(2) PSAPSCF* Secondary control field (SCF)	3(3) PSAPDF Parallel data field (PDF) (always equal to the value in PSAPPDF1)
4(4) PSAPCPC* Primary control field (PCF)	5(5) PSASDF Serial data field (SDF) (used to send one character on transmit initial PCF)	6(6) PSALQTC Line quiet count	7(7) PSACCNT* Burst flags and character count
8(8) PSAPPDF1 First PDF	9(9) PSAPPDF2 Second PDF	10(A) PSAPPDF3 Third PDF	11(B) PSAPPDF4 Fourth PDF
12(C) PSAEOR5 Fifth End of Reception (EOR) character in the EOR list	13(D) PSAEOR6 Sixth EOR character in the EOR list	14(E) PSAEOR7 Seventh EOR character in the EOR list	15(F) PSAEOR8 Eighth EOR character in the EOR list

* Indicates a byte expansion follows.

Status Area

16(10) PSASSCF* SCF	17(11) PSASPDF PDF PSACMD* Command	18(12) PSASES* Secondary status	19(13) PSALSTAT* (PSALCS) Line communication status (LCS)
20(14) PSASLPC* Line control definition (LCD) and PCF	21(15) PSAPCNT* Burst processed character count PSAELCS* Extended LCS for all CSP (for 3745) PSADCT0 V.25 bis delayed call time byte 0	22(16) PSAINLD* Input leads from a modem PSADCT1 V.25 bis delayed call time byte 1	23(17) PSAOUTLD* Output leads to a modem PSADCT2 V.25 bis delayed call time byte 2
24(18) PSASPDF1 First PDF	25(19) PSASPDF2 Second PDF	26(1A) PSASPDF3 Third PDF	27(1B) PSASPDF4 Fourth PDF
28(1C) PSAACBP Pointer to the ACB (NCP line without trace) Pointer to the GCB (User line control without trace) Pointer to the LTCB (When trace is running)			
PSAACBF* ACB flag			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) PSAPCMOD		Command modifiers
	1...	Set SCF and PDF.
	.1..	Set SDF.
	..1.	Set PCF.
	.... 1...	V.25 bis call request command modifier: 1 = HDLC mode is the connection protocol. 0 = SS mode is the connection protocol.
	.... .1..	Perform a line quiet test.
	.... ..1.	Set SCF.
2(2) PSAPSCF		SCF (same as the status control field—see 16(10) PSASSCF)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) PSAPCPC		PCF
	X'00'	No-op
	X'07'	Receive
	X'08'	Transmit Initial
	X'09'	Transmit
	X'0A'	Transmit Break
	X'0B'	Transmit Turnaround
	X'0D'	Transmit Turnaround with Request to Send (RTS) on
	X'0E'	Transmit Initial and Turnaround
	X'0F'	Transmit Initial and Turnaround with RTS on
7(7) PSACCNT		Burst flags and character count
	x...	EOR detection to be done by: 1 = CSP (NCP passes EOR characters to the CSP during Set Mode). 0 = NCP (no 4-character bursts).
	.1..	Only multiple pad characters are transmitted in a given burst.
	...x	Receive break detection performed by: 1 = CSP 0 = NCP.
	...x	Reserved
	.... xxxx	Burst character count: Transmit = Number of characters to be transmitted in a burst by PSAPPDFx Receive = Number of characters received before getting a level-2 interrupt.
16(10) PSASSCF		Status control field
	1...	Stop bit check/receive break
	.1..	Service request
	..1.	Overrun or underrun
	...1	Modem check
	.... 1..	Receive line signal detect
	.... .1..	Start bit detected
	.... ..1.	Program flag
	.... ...1	Pad flag
17(11) PSACMD		Command
	X'41'	SS Transfer. (See the normal mode PSA byte expansion for the PSACMD field for commands common to normal and character modes.)
18(12) PSASES		Secondary status
	1...	A modem retrain operation has successfully recovered.
	..1.	Transient Line Error occurred. (See PSAELCS.)
19(13) PSALSTAT (PSALCS)		LCS
	X'82'	EOR character detected. (See the character mode PSA byte expansion for the PSALSTAT field for other LCS definitions.)

Offset/Field Name	Bit Pattern/Hex Value	Contents
20(14) PSASLCPC		LCD and PCF
	xxxx	LCD values: 0 SS 9/6 1 Not used 2 SS 8/5 3 Not used 4 SS 9/7 5 SS 10/7 6 SS 10/8 7 SS 11/8 8–F Not used.
	.... xxxx	PCF values are the same as the PSAPCPC field in parameter area 4(4).
21(15) PSAPCNT		Burst processed character count
	xxxx xxxx	Reserved Character count: Receive = Number of characters received for this interrupt and stored in the PSASPDFx fields Transmit = Number of characters not transmitted for the last transmit operation.
21(15) PSAELCS		Extended LCS for all CSPs (3745)
	.... ...x	1 = FESA error 0 = MUX/LIC error
	.... ....	1 = Error in the transmit path 0 = Error in the receive path
		MUX/LIC Error (bit 6=0)
	x...	Reserved
	.1..	LIC driver check
	..1.	LIC transmit data check
	...1	Clear to Send (CTS) drop time-out
	.... .1..	FESA transmit data check
		FESA Error (bit 6=1)
	x...	Reserved
	.1..	Line interrupt register errors
	..1.	LIC receive data check
	...1	MUX error register
	.... 1...	FESA error register
	.... .1..	FESA data check
		V.25 bis extended LCS (LCS=CFI)
	X'01'	Engaged tone (ET)
	X'02'	Number is not stored (NS).
	X'03'	Local DCE is busy (CB).
	X'04'	Ring tone (RT)
	X'05'	Abort call (AB)
	X'06'	Answer tone is not detected (NT).
	X'07'	Forbidden call (FC)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
22(16) PSAINLD		Input leads from a modem. See the character mode PSA byte expansion for the PSAINLD field for input lead definitions.
23(17) PSAOUTLD		Output leads to a modem. See the character mode PSA byte expansion for the PSAOUTLD field for output lead definitions.
28(1C) PSAACBF		ACB flag
	1... .. .110 1111	Line trace flag. PSAACBP points to the line trace control block (LTCB). PSA control block ID X'6F'

NCP Start Stop Burst Mode

Description	Displacement (Hex)	Code (Hex)															
		01	02	03	04	06	08	0B	0C	2E	41	F0	F1	F5			
TCC	0	X				X				X	X						
Cmd Modifier	1									X	X						
SCF	2										X						
PDF	3										X						
PCF	4										X						
Count + Adr Set Mode Data	4	X															
Count (Change)	4					X											
Start Change	5					X											
SDF	5										**						
Line Quiet Count	6										X						
Data Byte 1	6					1											
Data Byte 2	7					2											
Character Count	7										X						
PDF1	8										X						
(Data Byte 3)	8					3											
Transmit Line ID	8	X															
PDF2	9										X						
(Data Byte 4)	9					4											
Rcv Line ID	A	F								X							
PDF3	A										X						
(Data Byte 5)	A					5											
PDF4	B										X						
(Data Byte 6)	B					6											
EOR 5th Character	C										*						
EOR 6th Character	D										*						
EOR 7th Character	E										*						
EOR 8th Character	F										*						
SCF	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDF	11										1					X	
Command (Hex)	11	01	02	03	04	06	08	0B	0C	2E		H		F5			
Sec Status	12	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
Line Comm Status	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
LCD/PCF	14	X	X	X	X	X	X	00	00	X	X	X					
Processed Char. Count	15	X	X	X	X	X	X	00	00	X	X	X					
Modem-In	16	X	X	X	X	X	X	X	X	X	X	X					
Modem-Out	17	X	X	X	X	X	X	X	X	X	X	X					
PDF1	18										X						
PDF2	19										X						
PDF3	1A										X						
PDF4	1B										X						

F=Duplex
H=Halted command code
X = Valid field for that command

* - The first four end-of-reception (EOR) characters in the EOR list are located in the SMB. EOR characters 5 through 8 (if any) are located in the PSA parameter area.

** - The Start-Stop Transfer command uses the SDF field only in Transmit initial to send a PAD character before sending the data characters from the PDFs.

Parameter/Status Area Control Block (Ethernet Mode)

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The LNVTPSAP field in the line vector table (LNVT), which points to the transmit PSA for duplex lines; LNVTPSAR points to the receive PSA.

Function: Contains a parameter area used to transfer control information from the CCU to the scanner and a status area used to transfer status information from the scanner to the CCU. For duplex operation, two PSAs are required: one for the transmit leg and one for the receive leg.

Parameter Area

0(0) PSAF5XMT Transmit ICB status and control save area		2(2) PSAF5RCV Receive ICB status and control save area	
PSAPTCC Trace correlation counter	1(1) PSAPCMOD* Command modifiers	PSABOF1 Data offset for buffer 1	3(3) PSATRTMR Timer for the trace command
4(4) PSABPTR1 Pointer to buffer 1			
PSACNT1 Count for buffer 1			
PSATRCT Count for the trace command			
PSASMST Pointer to set mode data			
PSASMCT Count for set mode			
8(8) PSAXMTID Transmit line ID		10(A) PSARCVID Receive line ID	
PSAPSLID Trace slot identification		PSADACNT Data count for the trace command	11(B) PSACSPIA Interface address of the SIT trace
12(C) PSAPRESZ NCP buffer prefix size for the trace command	13(D) PSABFSZ NCP buffer size for the trace command	14(E) Reserved	
PSABPTR2 Pointer to buffer 2			

* Indicates a byte expansion follows.

Status Area

16(10) PSASSCF* Status control field	17(11) PSACMD* Command	18(12) PSASES* Secondary status	19(13) PSALSTAT* (PSALCS) Line communication status
20(14) PSALBUF Pointer to last buffer used			

PSARSCNT Residual buffer count			

PSAHELCS* HPTSS extended LCS	21(15) PSAELCS Extended LCS for all CSP (3745)	22(16) PSAPUADR EADP universally administered address	
24(18) PSAPUADR Continued			

PSAF5DCT Number of bytes dumped			

PSAECIND* Ethernet counters overflow indicators	25(19) PSARTMRR Residual timer (SIT)	26(1A) PSAF5DMP Address of CSP dump area	
28(1C) PSAACBP Pointer to the ACB (NCP line without trace) Pointer to the GCB (User line control without trace) Pointer to the LTCB (When trace is running)			

PSAACBF* ACB flag			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) PSAPCMOD		Command modifiers
	x... ..	Buffer 1 data (to or from NCP) is in one of the following: 1 = Data area 0 = Buffer chain
	.x... ..	Buffer 2 data (to or from NCP) is in one of the following: 1 = Data area 0 = Buffer chain

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) PSASSCF		Status control field
	1... ..	Halt received (service request will also be on)
	.1.. ..	Service request
	..x. ..	Reserved
	...1 ..	Ethernet errors
	.... 1..	Received data stored
	.... .1..	End of message
	.... ..1.	Transmit data transferred
	.... ...1	Counters overflowed
17(11) PSACMD		Ethernet mode commands
	X'01'	Set mode
	X'02'	Enable
	X'03'	Disable
	X'2C'	Trace(Start)
	X'2D'	Stop trace
	X'50'	Get counters
	X'51'	Transmit data
	X'53'	Receive
	X'F0'	Halt
	X'F1'	Halt immediate
	X'F4'	Line dump (without recovery)
	X'F5'	Line dump (with recovery)
	X'F8'	Suspend receive
18(12) PSASES		Secondary status (not used)
	xxxx xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
19(13) PSALSTAT (PSALCS)		Line communication status
	xxx	Initial status
	... xxxxx	Final status
		Initial Status Field—Special
	100	Special status
		Initial Status Field—Errors
	110	Internal box error
	111	Hardware error
		Final Status Field (Initial Status=100)
	... 00000	Time-out—nothing has been received
	... 11100	Disconnected
	... 11110	Connected
		Final Status Field (Initial Status=110)
	... 00000	Adapter input/output error
	... 00100	Scanner interface error
	... 00110	Ethernet Adapter (EADP) failed to answer
	... 01000	EADP internal error
	... 01001	Babbling transmitter
	... 01010	Memory error
	... 01011	Transmit overrun
	... 01110	Receive buffer error
	... 10000	No interrupt from the EADP
	... 10010	Command is rejected (See PSAHELCS)
	... 10100	Trace is already active
	... 10110	Transmit buffer error
	... 11000	Invalid EADP level-2 interrupt
	... 11010	Underflow
	... 11100	HELCS is valid (See PSAHELCS)
	... 11110	Overflow
	... 11111	Collision error
		Final Status Field (Initial Status=111)
	... 10010	Connection not established
	... 10100	Loss of Carrier (LCAR)
20(14) PSAHELCS		HPTSS extended LCS (valid only if PSALCS=X'DC' or X'D2')
	xxxx	Reserved
	.... xxx.	000 Build 0826 BER
		001 Build 08A6 BER
		010 Build 08A7 BER
		011 Build 08A8 BER
		100 Build 08A9 BER
		101 Build 08AA BER
	.... ...x	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) PSAECIND		Ethernet counters overflow indicators
	1...	Total frames transmitted counter reached threshold (PSAXMTT)
	.1..	Total transmit frames lost counter reached threshold (PSAXMTE)
	..1.	Total frames received counter reached threshold (PSARCVT)
	...1	Total receive frames lost counter reached threshold (PSARCVE)
28(1C) PSAACBF		ACB flag
	1...	SIT or line trace flag (PSAACBP points to the LTCB)
	.110 1111	PSA control block ID X'6F'

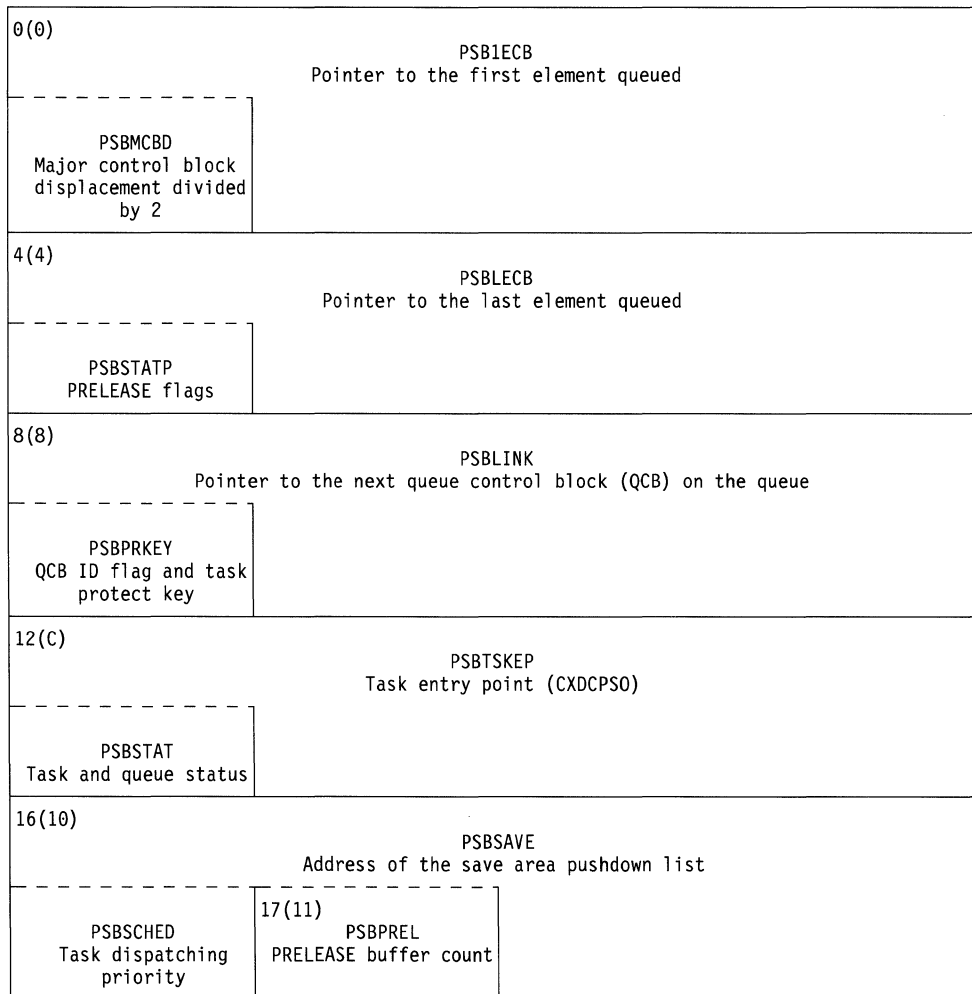
Physical Services Block

- Program:** NCP
- Size in bytes:** 112(70) plus prefix
- Created by:** NCP generation
- Pointed to by:** The RVTRP field in the resource vector table (RVT) and the SYSPSBP field in the extended halfword direct addressables (HWE) control block
- Function:** Contains parameters necessary to the control of the dialogue between the system services control point and the NCP physical services

Prefix

-4(4)
For the prefix format for the PSB, see the network performance analyzer prefix control block (NPF).

Physical Services Process Queue Control Block (Outbound) (See “Queue Control Block for Input Queues” on page 1-884 for all bit definitions.)



20(14)			PSBLUNK Pointer to the previous QCB on the queue		
PSBBHSCH BHR scheduling bits					
PSBFWOFF Offset in fullwords to the counter for this queue					
24(18)		26(1A)		27(1B)	
PSBADRPS Element address of the NCP physical services		PSBSSNPM SSCP/NCP session control block (SNP) mask of the SSCPs in session with NCP		PSBPSTAT* Status and flags	
28(1C) - 35(23)					
PSBLDID NCP load module name					
36(24) - 43(2B)					
PSBLVID Level ID characters					
44(2C) - 51(33)					
PSBPUID NCP PU name					
52(34)					
PSBCSNPP Current SNP pointer to the SSCP on the outbound flow					
PSBCSNPM Current SNP mask of the SSCPs on the inbound flow					
56(38)					
PSBRMBP Pointer to the route management block (RMB)					
PSBPUIDL Length of the PU name (PSBPUID)					
60(3C)					
PSBVTP Pointer to the vector table of SNPs (VTS)					
PSBVTC Count of the entries in the VTS					

* Indicates a byte expansion follows.

64(40)		PSBCRBP Pointer to the commit request block (CRB)	
PSBLDIDL Length of the load module name (PSBLDID)			
68(44)		70(46)	
PSBPSNWA NCP physical services subarea network address		Reserved	
72(48)		74(4A)	
PSBMIS1 Plant ID and the first byte of the MOSS box serial number		PSBMIS2 Second and third bytes of the MOSS box serial number	
76(4C)	77(4D)	78(4E)	
PSBNSNPM SNP mask of native network SSCPs	PSBGSNPM SNP mask of gateway SSCPs	PSBBLKID MOSS block ID	
80(50)			
PSBNCAP* NCP capabilities			
		82(52)	
		PSBCAP2 Define capability extension	

* Indicates a byte expansion follows.

Physical Services Pending System Queue

(See "Queue Control Block for Input Queues" on page 1-884 for all bit definitions.)

84(54)		PSP1ECB Pointer to the first block queued	
PSPMCBD Major control block displacement divided by 2			
88(58)		PSPLECB Pointer to the last block queued	
PSPSTATP PRELEASE flags			
92(5C)		PSPLINK Pointer to the next QCB on the queue	
PSPPRKEY Priority key			
96(60)		PSPTSKEP Task entry point	
PSPSTAT Task and queue status			
100(64)		PSPSAVE Address of the save area pushdown list	
PSPSCHED Task dispatching priority		101(65) PSPPREL PRELEASE buffer count	
104(68)		PSPLUNK Pointer to the previous QCB on the queue	
PSPBHSCH BHR scheduling bits			
PSPFWOFF Offset in fullwords to the counter for this queue			
108(6C) PSBDSNPM SNP mask of SSCPs capable of receiving dynamic network ID notification from this NCP	109(6D) PSBUSNPM SNP mask of SSCPs to receive usage tier generic alert	110(6E) Reserved	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
27(1B) PSBPSTAT		Physical services primary status
	x...	1 = NCP just loaded (IPLed) 0 = NCP not just loaded (IPLed)
	.1..	PIU is RECMS to SSCP
	..1.	Control point manager (CPM) will supply the destination address field (DAF)
	...1	Send usage tier exception generic alert when SDT received
	.... 1...	Virtual route activator is included
	.... .1..	Session information retrieval is enabled for all gateway resources
	.... ..1.	Session information retrieval is enabled for all boundary function resources
	.... ...X	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
80(50) PSBNCAP		NCP capabilities
	Byte 0	
	1...	Lost subarea requirement (LSA) is not required
	.1..	Adjacent link station network address is supported
	..1.	Gateway function is supported
	...1	SSCP is notified of other inoperative subnetwork routes
	.... 1...	Notify the same network of lost route
	.... x..	1 = Send CONTACTED format (X'09')
		0 = Send CONTACTED format (X'04')
	.... ..1.	Extended network addressing (ENA) is supported
	.... ...1	Extended BIND is supported
	Byte 1	
	1...	NCP and MOSS support multiple load modules
	.1..	Extended control vector X'43' support
	..1.	MOVE PU is supported
	...x x...	Reserved
	.... .1..	Non-native network attachment is supported
	.... ..1.	"Non-disruptive takeover of sessions on switched links" is supported
	.... ...1	Dynamic path update is supported
	Byte 2	
	x...	1 = Extended subarea addressing (ESA) is supported
		0 = ESA is not supported
	.1..	APPN enhancements are supported
	..x.	Reserved
	...1	BFSESSST and BFSESEND may be eliminated (PSBNOSE)
	.... xxxx	ESA support level (valid only if ESA is supported)
	.... 0000	ENA 8/15 (SALIMIT=255)
	.... 0001	ENA 9/15 (SALIMIT=511)
	.... 0010	ENA 10/15 (SALIMIT=1023)
	.... 0011	ENA 11/15 (SALIMIT=2047)
	.... 0100	ENA 12/15 (SALIMIT=4095)
	.... 0101	ENA 13/15 (SALIMIT=8191)
	.... 0110	ENA 14/15 (SALIMIT=16383)
	.... 0111	ENA 15/15 (SALIMIT=32767)
	.... 1000	ENA 16/15 (SALIMIT=65535)
	Byte 3	
	1...	Extended request contact is supported
	.1..	Force NCP dump is supported
	..1.	Gateway session accounting is included
	...1	Dynamic network ID notification is supported
	.... 1...	APPN networking functions are supported
	.... .1..	XRF cryptography is supported
	.... ..1.	XRF data compression is supported
	.... ...1	Send Route-INOP only for active VR

Port Swap Data

Program: NCP/PEP

Size in bytes: 20(14)

Created by: NCP or PEP generation

The shared code module, CXASCBA, calls the generating macro, CXTPSB.

Pointed to by: CXTPSD in the link-edit map

Function: Contains information needed by the port swap processing routines

0(0)	PSDORLN Old line's relative line number	2(2)	PSDNRLN New line's relative line number
4(4)	PSDOLNVT Old line's line vector table (LNVT) entry pointer		
	PSD37CS* CSS port swap byte (ODLC only)		
8(8)	PSDNLNVT New line's LNVT entry pointer		
12(C)	PSDOAIT Old line's adapter information table (AIT) entry pointer for 3745		
	PSDOAST Old line's AST identifier entry pointer for non-3745		
16(10)	PSDNAIT New line's AIT entry pointer for 3745		
	PSDNAST New Line's AST identifier entry pointer for non-3745		

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) PSD37CS		CSS port swap byte
	1... ..	Must unswap CSS port swaps before sending request CSS port swaps

Product Set Identifier

Program: NCP

Size in bytes: 76(4C) before 3746 Model 900 connectivity subsystem activation; 98(62) after 3746 Model 900 connectivity subsystem activation

Created by: NCP generation

Pointed to by: The SYSPSIP field in the extended halfword direct addressables control block extension (HWX)

Function: Contains information related to the physical identity of NCP

0(0) PSISVL PSI subvector length	1(1) PSISVK PSI subvector key X'10'	2(2) Reserved	3(3) PSISVL Product identifier length
4(4) PSISVK Product identifier key X'11'	5(5) PSIPRCLH Product class (IBM hardware) X'01'	6(6) PSIHWSFL Hardware subfield length	7(7) PSIHWSFK Hardware subfield key X'00'
8(8) PSIHWSFF Hardware subfield format X'11'	9(9) PSIHWMT Machine type in numeric EBCDIC		
	PSIHWMT1 Byte 1	10(A) PSIHWMT2 Byte 2	11(B) PSIHWMT3 Byte 3
12(C) PSIHWMT (continued)	13(D) PSIHMMN Machine model number in uppercase EBCDIC		
PSIHWMT4 Byte 4	PSIHMMN1 Byte 1	14(E) PSIHMMN2 Byte 2	15(F) PSIHMMN3 Byte 3
16(10) PSIHWPM Plant of manufacture in numeric EBCDIC		18(12) PSIHWSN Hardware serial number in EBCDIC	
PSIHWPM1 Byte 1	17(11) PSIHWPM2 Byte 2	PSIHWSN1 Byte 1	19(13) PSIHWSN2 Byte 2

20(14) PSIHWSN Hardware serial number in EBCDIC (continued)			
PSIHWSN3 Byte 3	21(15) PSIHWSN4 Byte 4	22(16) PSIHWSN5 Byte 5	23(17) PSIHWSN6 Byte 6
24(18) PSIHWSN Hardware serial number in EBCDIC (continued)	25(19) PSISSVL Product identifier length	26(1A) PSISSVK Product identifier key X'11'	27(1B) PSIPRCLS Product class (IBM software) X'04'
PSIHWSN7 Byte 7			
28(1C) PSICISFL Component ID subfield length	29(1D) PSICISFK Component ID subfield key X'02'	30(1E) PSICPID Component ID in uppercase EBCDIC	
		PSICPID1 Byte 1	31(1F) PSICPID2 Byte 2
32(20) PSICPID Component ID in uppercase EBCDIC (continued)			
PSICPID3 Byte 3	33(21) PSICPID4 Byte 4	34(22) PSICPID5 Byte 5	35(23) PSICPID6 Byte 6
36(24) PSICPID Component ID in uppercase EBCDIC (continued)			39(27) PSICPREL Component release in numeric EBCDIC
PSICPID7 Byte 7	37(25) PSICPID8 Byte 8	38(26) PSICPID9 Byte 9	PSICPRL1 Byte 1
40(28) PSICPREL Component release in EBCDIC (continued)		42(2A) PSICLSFL Common level subfield length	43(2B) PSICLSFK Common level subfield key X'04'
PSICPRL2 Byte 2	41(29) PSICPRL3 Byte 3		

44(2C) PSICMVRN Common version in numeric EBCDIC		46(2E) PSICMREL Common release in numeric EBCDIC	
PSICMVN1 Byte 1	45(2D) PSICMVN2 Byte 2	PSICMRL1 Byte 1	47(2F) PSICMRL2 Byte 2
48(30) PSICMMOD Common modification X'F0F0'		50(32) PSIDTSFL Link-edit date and time subfield length	51(33) PSIDTSFK Link-edit date and time subfield key X'09'
PSICMMD1 Byte 1	49(31) PSICMMD2 Byte 2		
52(34) PSIDTLEB Link-edit date and time in packed decimal			
PSIDTLE1 Byte 1	53(35) PSIDTLE2 Byte 2	54(36) PSIDTLE3 Byte 3	55(37) PSIDTLE4 Byte 4
56(38) PSIDTLEB Link-edit date and time in packed decimal (continued)	57(39) PSICNSFL Common name subfield length	58(3A) PSICNSFK Common name subfield key X'06'	59(3B) PSICMNME Common name characters
PSIDTLE5 Byte 5			PSICNM1 Byte 1
60(3C) PSICMNME Common name characters (continued)			
PSICNM2 Byte 2	61(3D) PSICNM3 Byte 3	62(3E) PSICNM4 Byte 4	63(3F) PSICNM5 Byte 5
64(40) PSICMNME Common name characters (continued)		66(42) PSICTSFL Customization ID subfield length	67(43) PSICTSFK Customization ID subfield key X'07'
PSICNM6 Byte 6	65(41) PSICNM7 Byte 7		
68(44) PSICTMID Customization ID			
PSICTID1 Byte 1	69(45) PSICTID2 Byte 2	70(46) PSICTID3 Byte 3	71(47) PSICTID4 Byte 4

72(48) PSICTMID Customization ID (continued)			
PSICTID5 Byte 5	73(49) PSICTID6 Byte 6	74(4A) PSICTID7 Byte 7	75(4B) PSICTID8 Byte 8
76(4C) PSICHSVL 3746 Model 900 connectivity subsystem product identifier length	77(4D) PSICHSVK 3746 Model 900 connectivity subsystem product identifier key X'11'	78(4E) PSICPRCL Product class (IBM hardware) X'01'	79(4F) PSICHWSL Hardware subfield length
80(50) PSICHWSK Hardware subfield key X'00'	81(51) PSICHWSF Hardware subfield format X'11'	82(52) PSICMTY 3746 Model 900 connectivity subsystem machine type	
		PSICMTY1 Byte 1	83(53) PSICMTY2 Byte 2
84(54) PSICMTY 3746 Model 900 connectivity subsystem machine type (continued)		86(56) PSICMNO Model number	
PSICMTY3 Byte 3	85(55) PSICMTY4 Byte 4	PSICMNO1 Byte 1	87(57) PSICMNO2 Byte 2
88(58) PSICMNO Model number (continued)	89(59) PSICPLID Plant ID		91(5B) PSICMSN Machine serial number
PSICMNO3 Byte 3	PSICPLT1 Byte 1	90(5A) PSICPLT2 Byte 2	PSICMSN1 Byte 1
92(5C) PSICMSN Machine serial number (continued)			
PSICMSN2 Byte 2	93(5D) PSICMSN3 Byte 3	94(5E) PSICMSN4 Byte 4	95(5F) PSICMSN5 Byte 5
96(60) PSICMSN Machine serial number (continued)			
PSICMSN6 Byte 6	97(61) PSICMSN7 Byte 7		

Port Swap Trace Table (3745)

Program: NCP

Size in bytes: 516(204)

Created by: NCP generation

Pointer to: The SYSPSTA field in the extended halfword direct addressables (HWE) control block

Function: Contains old and new line numbers for each set of lines swapped during port swapping. The port swap log trace has storage for old and new numbers from the most recent 128 port swaps.

0(0) PSTA0SET Current offset in the table	2(2) PSTALEN Table length
4(4) - 515(203) Port swap entries in the following format	

Entry

0(0) PSTAOLN Old line's relative line number	2(2) PSTANLN New line's relative line number
--	--

Physical Unit (PU) Vector Table

- Program:** NCP
- Size in bytes:** Variable, 8 bytes per station
- Created by:** NCP generation
- Pointer to:** The LKBPUV field in the line control block (LKB) and the VLBPUVT field in the programmed resource virtual line block (VLB)
- Function:** Used on all links to locate the common PU blocks (CUBs) associated with the link

0(0) Pointer to the CUB, the station control block (SCB), or the programmed resource PU block (NPB)		PUVCUB	
-----		-----	
PUVSNP SNP indicator		3(3) PUVTDLCL Temporary SDLC address	
4(4) PUVFLGS* Entry status flags	5(5) Reserved		

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
4(4) PUVFLGS		Entry status flags
	1... ..	Last entry in the PUV
	.x.. ..	In use indicator: 1 = Entry is in use. 0 = Entry is available.
	..x.	Dynamic reconfiguration (DR) processing indicator: 1 = DR processing is freeing the LU control block (LUB). 0 = DR processing is not freeing the LUB.
	...1	DR add marker bit is being verified.

Queue Anchor Block

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation, one per NCP

Pointer to: The GPBQABP field in the Generic Pool block (GPB)

Function: After initialization, contains pointers to NCP's generic pool/table anchor blocks (GPAs) for which there is only one GPA per box. The queue anchor block extension (QAX) contains additional GPA pointers. The queue anchor block for networks (QAN) contains pointers to the GPAs that are on a per network basis. Prior to initialization, some pointer fields contain counts used by initialization for building pools.

Note: See "Generic Pool Anchor Block" on page 1-393 for the layout of a GPA.

0(0)		QABPABP Pointer to the GPA for the PU (CUB) dynamic reconfiguration pool	
QABCUBCT Count of common physical unit blocks (CUBs) to build		2(2)	Reserved
4(4)			
QABLABP Pointer to the GPA for the LU (LUB) dynamic reconfiguration pool (used for DR and switched peripheral			
8(8)			
QABLPAP Pointer to the GPA for the independent logical unit network address control block (LNB) pool			
QABLNBUN Count of independent LNBs to build		10(A)	Reserved
12(C)			
QABDPAP Pointer to the GPA for the dependent LU control block (LND/LNB) pool			
QABLNDUN Count of LNDs to build		14(E)	Reserved
16(10)			
QABNSCP Pointer to the GPA for the NPA session counters control block (NSC) pool			
QABNSCCT Count of NSCs to build		18(12)	QABNSCD Maximum number of dynamic NSCs
20(14)			
QABBAP Pointer to the GPA for the independent boundary session block (BSB) pool			
QABBSBUN Count of the unreserved independent BSBs in the pool at initialization time only		22(16)	QABBSBRS Count of the reserved independent BSBs in the pool at initialization time only
24(18)			
QABTPAP Pointer to the GPA for the logical unit terminal node extension (LTX) pool			

28(1C)	<p style="text-align: center;">QABLUXP Pointer to the GPA for the logical unit block extension (LUX) pool</p>	
32(20)	<p style="text-align: center;">QABNSXP Pointer to the GPA for the NPM session counter extensions block (NSX) pool</p>	
	<p style="text-align: center;">QABNSXCT Count of NSXs to build</p>	<p style="text-align: center;">34(22) QABNSXCT Maximum number of dynamic NSXs</p>
36(24)	<p style="text-align: center;">QABSCEP Pointer to the GPA for the ODLC station control block extension (SCE) pool</p>	
	<p style="text-align: center;">QABSCECT Count of SCEs to build</p>	<p style="text-align: center;">38(26) Reserved</p>
40(28)	<p style="text-align: center;">QABLKEP Pointer to the GPA for the ODLC link control block extension (LKE) pool</p>	
	<p style="text-align: center;">QABLKECT Count of LKEs to build</p>	<p style="text-align: center;">42(2A) Reserved</p>
44(2C)	<p style="text-align: center;">QABSSBP Pointer to the GPA for the SOCA station information control block (SSB) pool</p>	
	<p style="text-align: center;">QABSSBCT Count of SSBs to build</p>	<p style="text-align: center;">46(2E) Reserved</p>
48(30)	<p style="text-align: center;">QABOLANR Pointer to the GPA for the ODLC LAN logical resources pool</p>	
52(34)	<p style="text-align: center;">QABNQXP Pointer to the GPA for the NPA counter queue element extension (NQX) pool</p>	
	<p style="text-align: center;">QABNQXCT Count of NQXs to build</p>	<p style="text-align: center;">54(36) Reserved</p>
56(38)	<p style="text-align: center;">QABNIXP Pointer to the GPA for the network interconnect extension (NIX) pool</p>	
	<p style="text-align: center;">QABNIXCT Count of NIXs to build</p>	<p style="text-align: center;">58(3A) Reserved</p>
60(3C)	<p style="text-align: center;">QABNNTP Pointer to the GPA for the network names table (NNT)</p>	
64(40)	<p style="text-align: center;">QABVATP Pointer to the GPA for the virtual route access table (VAT)</p>	
68(44)	<p style="text-align: center;">QABVVTP Pointer to the GPA for the virtual route vector table (VVT)</p>	

72(48)	<p style="text-align: center;">QABNSBP Pointer to the GPA for the frame-relay physical station NPM data block (NSB) pool</p>	
	<p>QABNSBCT Count of NSBs to Build</p>	<p>74(4A) Reserved</p>
76(4C)	<p style="text-align: center;">QABCBBP Pointer to the GPA for the committed buffers block (CBB) pool</p>	
80(50)	<p style="text-align: center;">QABSBSBP Pointer to the GPA for the dependent SSCP-LU boundary session block (BSB) pool</p>	
84(54)	<p style="text-align: center;">QABLBSBP Pointer to the GPA for the dependent LU-LU boundary session block (BSB) pool</p>	
88(58)	<p style="text-align: center;">QABDBXIP Pointer to the GPA for the dependent boundary session block extension (BXI) pool</p>	
92(5C)	<p style="text-align: center;">QABIBXIP Pointer to the GPA for the independent boundary session block extension (BXI) pool</p>	
96(60)	<p style="text-align: center;">QABCXBP Pointer to the GPA for the common physical unit block extension (CXB) pool</p>	
100(64)	<p style="text-align: center;">QABCXIP Pointer to the GPA for the common physical unit block extension for embedded blocks (CXI) pool</p>	
104(68)	<p style="text-align: center;">QABLDAP Pointer to the GPA for the logical unit block extension data area (LDA) pool</p>	
108(6C)	<p style="text-align: center;">QABNLXP Pointer to the GPA for the programmed resource logical unit block extension (NLX) pool</p>	
112(70)	<p style="text-align: center;">QABRVTP Pointer to the GPA for the resource vector table (RVT)</p>	
116(74)	<p style="text-align: center;">QABLLBT Pointer to the GPA for the token-ring LLB pool</p>	
120(78)	<p style="text-align: center;">QABLLBF Pointer to the GPA for the frame-relay LLB pool</p>	
124(7C)	<p style="text-align: center;">QABQAXP Pointer to the queue anchor block extension (QAX)</p>	

Queue Anchor Block for a Network

- Program:** NCP
- Size in bytes:** 16(10)
- Created by:** NCP generation, one per network
- Pointer to:** The NVTQANP field in an NVT entry.
- Function:** Contains pointers to anchor blocks for pools that are on a network basis. Prior to initialization, some pointer fields contain counts used by initialization for building pools.

Note: See “Generic Pool Anchor Block” on page 1-393 for the layouts of the actual GPAs.

0(0)	QANNIBP Pointer to the network interconnect block (NIB) pool anchor block
4(4)	QANNLBP Pointer to the programmed resource logical unit (NLB) pool anchor block
	QANNLBUN Count of the NLBs to build in the pool at initialization time
8(8)	QANTGBP Pointer to the transmission group control block (TGB) pool anchor block
12(C)	QANTRTP Pointer to the transit routing table (TRT) pool anchor block

Queue Anchor Block Extension

Program: NCP

Size in bytes: 36(24)

Created by: NCP generation, one per NCP

Pointed to by: The QABQAXP field in the queue anchor block (QAB)

Function: After initialization, contains pointers to additional NCP's generic pool/table anchor blocks (GPAs) for which there is only one GPA per box

Note: See “Generic Pool Anchor Block” on page 1-393 for the layout of a GPA.

0(0)	QAXFCTP Pointer to the GPA for the flow control parameter table (FCT)	
4(4)	QAXNVTP Pointer to the GPA for the network vector table (NVT)	
8(8)	QAXNQEP Pointer to the GPA for the NPA counter queue element (NQE) pool	
12(C)	QAXVTSP Pointer to the GPA for the vector table of SNPs (VTS)	
16(10)	QAXHREP Pointer to the GPA for the host route entry (HRE) pool	
	QAXHRECT Count of host route entry control blocks (HREs) to build	18(12) Reserved
20(14)	QAXSREP Pointer to the GPA for the subnetwork route entry (SRE) pool	
	QAXSRECT Count of subnetwork route entry control blocks (SREs) to build	22(16) Reserved
24(18)	QAXNREP Pointer to the GPA for the network route entry (NRE) pool	
	QAXNRECT Count of network route entry control blocks (NREs) to build	26(1A) Reserved
28(1C)	QAXOFRLR Pointer to the GPA for ODLC frame-relay logical resources (FRTEs)	
32(20)	QAXCX2P Pointer to the GPA for the common physical unit block extension 2 (CX2) pool	

Queue Control Block for Input Queues

Program: NCP

Size in bytes: 24(18) when no block handler routines (BHRs) are defined; 28(1C) when BHRs are defined

Created by: NCP generation

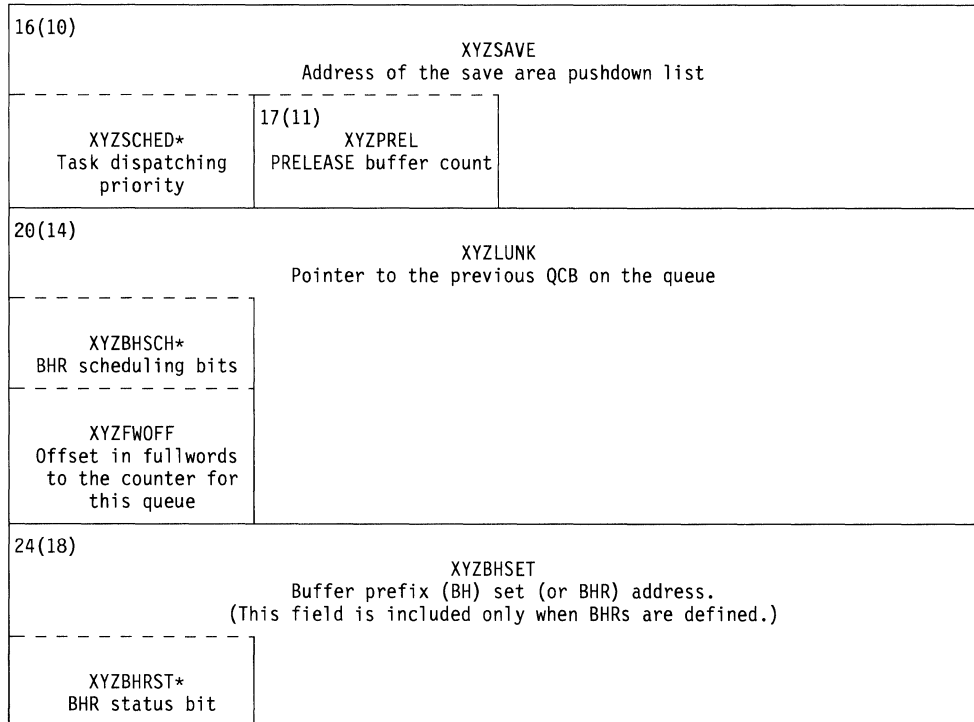
Pointer to: See the following note.

Function: Controls input queues

Note: This is the general format for all input queues. The XYZ identifier at the beginning of each label is replaced with a different three-letter identifier for each particular input queue.

0(0)	XYZIECB Pointer to the first element queued
XYZMCBD Major control block displacement divided by 2	
4(4)	XYZLECB Pointer to the last element queued
XYZSTAMP* PRELEASE flags	
8(8)	XYZLINK Pointer to the next QCB on the queue
XYZPRKEY* QCB ID flag and task protect key	
12(C)	XYZTSKEP Task entry point
XYZSTAT* Task and queue status	

* Indicates a byte expansion follows.



* Indicates a byte expansion follows.

Notes:

1. XYZSTAT must have the same displacement in the QCB as BCUCSTAT has in the BCU and UxCSTAT has in the PIU.
2. XYZPRKEY must have the same displacement in the QCB as BCUESTAT has in the BCU and UxESTAT has in the PIU.
3. XYZLINK must have the same displacement in the QCB as ECBWQCB has in the event control block (ECB), UxECHN has in the PIU, and BCUECHN has in the BCU.

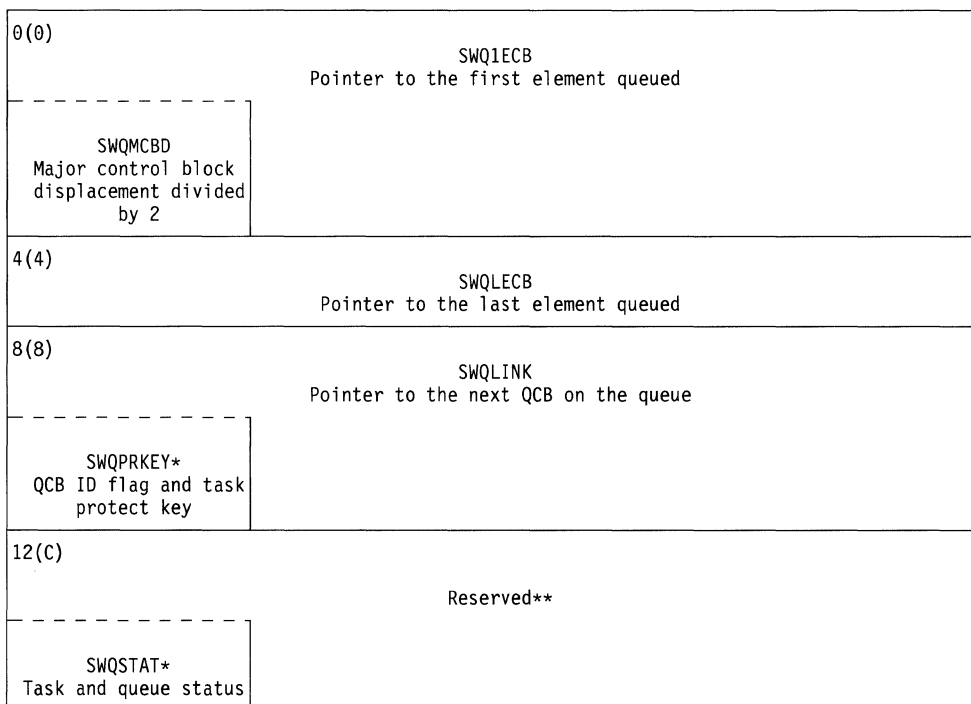
Byte Expansions

Offset/Field Name	Bit Pattern	Contents
4(4) XYZSTATP	Byte 1 1000 0000 0100 0000 0010 0000	PRELEASE flags PRELEASE triggered PRELEASE = Conditional PRELEASE = Unconditional
8(8) XYZPRKEY	1010 1... .... .xxx	QCB ID flag and task protect key Indicates that this is a pseudo-input or input QCB Protection key
12(C) XYZSTAT	1... .... .1. .... ..1. .... ...1 1... .... .1.. .... ..1. .... ...1	Task and queue status Task is in pending state (triggered). Task is in wait state. Delayed task-pending bit. (The task is triggered while active.) Task is not in ready state. Task is reentrant. BHR extension definition: task can execute BHRs. QCB counts bytes through enqueue and dequeue flags Element has been dequeued (and not returned to the queue) during the execution of an active task.
16(10) XYZSCHED	Byte 0 100. 010. 001. 000.	Task dispatching priority Task priority is productive. Task priority is immediate. Task priority is appendage. Task priority is nonproductive.
20(14) XYZBHSC	1... .... .1. .... ..1. .... .... .1..	BHR scheduling bits BHR scheduled for Read command. BHR scheduled for Invite command. BHR scheduled for Write command. BHR scheduled after input/output.
24(18) XYZBHRST	10.. 01.. 11.. .... ..1. .... ...1 1...	BHR status bits Point-2 execution Point-1 execution Point-3 execution First time BHR controller called BHR sequence aborted. BHR protect key

Queue Control Block for Work Queues

Program: NCP
Size in bytes: 16(10)
Created by: NCP generation
Pointer to: Variable
Function: Controls work queues

Note: This is the general format for all work queues. The SWQ identifier at the beginning of each label is replaced with a different three-letter identifier for each particular work queue.



* Indicates a byte expansion follows.

** CXBFLAGS and CXBRNRCT, along with the common fields in the station control block extension (SXB) (SXBFLAGS and SXBRNRCT), overlay these reserved bytes. If these bytes are changed so that they are no longer reserved, but are instead used by the QCB, then the common PU block extension (CXB) and SXB fields mentioned must be moved.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
8(8) SWQPRKEY	1010 0... .... .xxx	QCB ID flag and task protect key Indicates that this is a work QCB Protect key
12(C) SWQSTAT	1... .... .1.. .... ..1. .... ...1 1... .... .1.. .... ..1. .... ...1	Task and queue status Task is in pending state (triggered). Task is in wait state Delayed task-pending bit. (The task is triggered while active.) Task is in ready state. Task is reentrant. Block handler routine (BHR) extension definition: task can execute BHRs. QCB counts bytes through enqueue and deque flag. Element has been dequeued (and not returned to the queue) during the execution of an active task.

Queue Pointer Block

Program: NCP

Size in bytes: 52(34) when no ODLC lines are coded
68(44) when ODLC lines are coded

Created by: NCP generation

Pointed to by: The SYSQPBP field in the extended halfword direct addressables control block extension (HWX)

Function: Holds pointers to queues

0(0)	QPBBISQP Pointer to BISSQ
4(4)	QPBBSQP Pointer to BOSSQ
8(8)	QPBBQQP Pointer to boundary outbound queue (BOQ)
12(C)	QPBRCQP Pointer to routing control queue (RCQ)
16(10)	QPBCPNP Pointer to control point notification (CPN) queue
20(14)	QPBNSQP Pointer to nonsequential queue
24(18)	QPBERBP Pointer to explicit route broadcast queue
28(1C)	QPBAQQP Pointer to alternate boundary outbound queue (AQQ)
32(20)	QPBECTR Pointer to Ethernet counters queue
36(24)	QPBCBQP Pointer to committed buffers queue (CBQ)
40(28)-51(33)	Reserved

ODLC only section:

52(34)	QPBONQP Pointer to ODLN NMVT queue (ODLC only)
56(38)	QPBSSNQ Pointer to ODLN solicited NMVT queue (ODLC only)
60(3C)	QPBDPSQP Pointer to ODLN delay PIU scheduling queue (ODLC only)
64(40)	QPBONPC Pointer to ODLN NPA CMIP inbound data queue (ODLC only)

Route Activation Table

Program: NCP

Size in bytes: Variable; when ERLIMIT=8, SALIMIT+1 bytes; when ERLIMIT=16, 2*(SALIMIT+1) bytes

Created by: NCP initialization, one per network

Pointer to: The RMBRATP field in the route management block (RMB)

Function: Contains 1-byte elements when ERLIMIT=8 or 2-byte elements when ERLIMIT=16 that correspond to the network subarea addresses. Each element is a mask of active explicit routes. An NC.ER.ACT request to NCP or a positive response NC.ER.ACT.REPLY to NCP turns on a particular bit position in one of the masks.

The first element in the RAT is always 0 because subarea 00 is an invalid network subarea address. Each RAT element corresponding to a defined network subarea contains a nonzero mask value when the explicit routes represented by the bit positions within the mask have been activated. If a subarea is undefined, its RAT entry is 0.

ERLIMIT=8

0(0) Invalid (X'00')	1(1) Mask of active explicit routes	2(2) Mask of active explicit routes	SALIMIT Mask of active explicit routes
--------------------------------	---	---	--

ERLIMIT=16

0(0) Invalid (X'0000')	2(2) Mask of active explicit routes
4(4) Mask of active explicit routes	6(6) Mask of active explicit routes
8(8) .	10(A) .
(SALIMIT-1)*2 Mask of active explicit routes	SALIMIT * 2 Mask of active explicit routes

Release Buffer Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointed to by: The QPBRBQP field in the queue pointer block (QPB)

Function: Enqueues buffers which need to be released

Format: Standard input queue control block (QCB)
 Task—CXDZRBQP
 Priority—Productive

Reentrant—No.

Resource Connection Block

Program: NCP

Size in bytes: 28(1C); 36(24) for an independent LU boundary session block (BSB)

Created by: NCP generation. Number is user supplied.

Pointer to: Represents an offset field in the BSB, common PU block (CUB), device base control block (DVB), generalized PIU trace control block (GPT), LU block extension (LUX), programmed resource LU block (NLB), programmed resource LU block extension (NLX), programmed resource PU block (NPB), and SSCP-NCP session control block (SNP). When one of these blocks is associated with the virtual route control block (VRB) its RCB is chained to the VRB. (See VRB fields VRBCHPF and VRBCHPL.)

Function: Contains routing and flow control information. The RCB in an independent-LU BSB has a search element control block (SEB) embedded in it. None of the other RCB formats have the embedded SEB. The SEB search key and virtual route vector table (VVT) index and session partner element address fields share the same storage (overlay).

0(0)			RCBAEBCP Pointer to the next RCB in the chain		
RCBAEBFG* Achain element block (AEB) flags					
4(4)			RCBIECBP Event control block (ECB) chain pointer		
RCBESTAT ESTAT flags					
8(8)			RCBVRAL Pointer to the virtual route activation work list		
RCBCSTAT* CSTAT flags					
12(C)			RCBZQCBP Pointer to the release held task queue control block (QCB)		
16(10)			RCBIMTSK Pointer to the "held" immediate task		
RCBFLAGS* RCB flags					
20(14)	21(15)	22(16)	RCBVRINC Number of times VRPOOL=INC was issued for this session		
RCBBLK* Block type	RCBBLO Block offset				

* Indicates a byte expansion follows.

RCB Format for a Dependent-LU BSB, CUB, and LUX

24(18) RCBVVT VVT index	26(1A) RCBSPART Session partner element address
-------------------------------	---

RCB Format for the DVB, GPT, NLB, NLX, NPB, and SNP

24(18) RCBVVT VVT index	26(1A) Reserved
-------------------------------	--------------------

RCB Format for an Independent-LU BSB

24(18) Imbedded SEB search key (overlay)	
RCBVVT VVT index	26(1A) RCBSPART Session partner element address
28(1C) - 35(23) Remainder of the imbedded SEB	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RCBAEBFG	1... ..	AEB flags RCB is on a chain.
8(8) RCBCSTAT	1... ..	CSTAT flags ECB is on a chain.
16(10) RCBFLAGS	1... .. ..1. .... .x.x xxxx	RCB flags Branch to the immediate routine This RCB is counted in the VRB threshold. Reserved
20(14) RCBBLK	X'01' X'03' X'04' X'05' X'06' X'07' X'08' X'09' X'0C'	Block type CUB DVB SNP NLB NLX NPB GPT LUX BSB

Route Control Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Pointer to: The QPBRCQP field in the queue pointer block (QPB)

Function: Allows communication with the explicit route manager (CXDBERM). NC.ER.OP, NC.ER.INOP, NC.ER.ACT, NC.ER.TEST, NC.ER.ACT.REPLY, NC.ER.TEST.REPLY, LSA PIUs, and transmission group queue control block (QCBs) are enqueued to this queue.

Format: Standard input QCB
Task—CXDBERM
Priority—Appendage
Reentrant—No.

Routing Data Area Control Block

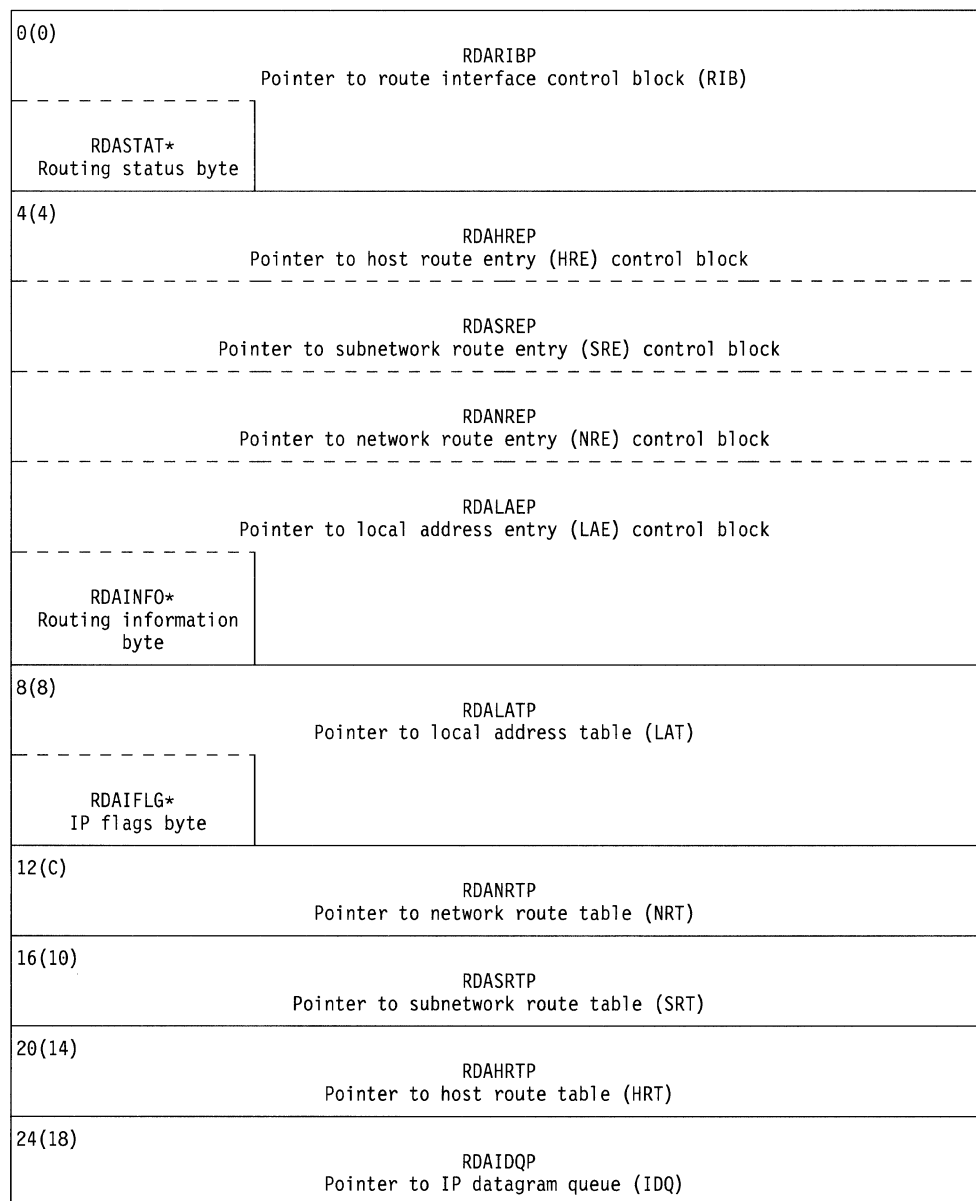
Program: NCP

Size in bytes: 88(58)

Created by: NCP generation, one per NCP

Pointed to by: The SYSRDAP field in the fullword direct addressable extension (FAX) and CXTRDA in link-edit map

Function: Passes routing information between components of the IP router. RDASTAT contains flags that indicate whether a route has been found for a datagram. The pointer fields contain a pointer to the route elements for the route.



* Indicates a byte expansion follows.

28(1C)	RDAIPSP Pointer to IP statistics (IPS) control block	
32(20)	RDAOWNHT IP address of TCP/IP owning host	
36(24)	RDAOWNIN IP address of interface with TCP/IP owning host	
40(28)	RDANRPP Pointer to the NCP-NCROUTE processing control block (NRP)	
44(2C)	RDAIPID IP Datagram ID Field	46(2E) Unused
48(30)	RDARDFP Pointer to routing data area for fragmentation (RDF)	
52(34)	RDARDMP Pointer to routing data area for fragment reassembly (RDM)	
56(38)	RDARDOP Pointer to routing data area for options processing (RDO)	
60(3C)	RDADSF Pointer to first entry in Datagram Snap table	
64(40)	RDADSN Pointer to next available entry in Datagram Snap table	
68(44)	RDADSL Pointer to last entry in Datagram Snap table	
72(48)	RDARSF Pointer to first entry in Routing Snap table	
76(4C)	RDARSN Pointer to next available entry in Routing Snap table	
80(50)	RDARSL Pointer to last entry in Routing Snap table	
84(54)	RDAORIBP Pointer to the RIB for interface with TCP/IP owning host	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDASTAT		Routing status byte
	xx..	Network route lookup 00 = No lookup has been done 01 = Network route has been found 10 = Lookup done, network route not found 11 = Default route has been found
	..xx	Local address lookup 00 = No lookup has been done 01 = Local address has been found 10 = Lookup done, local address not found 11 = Reserved
	.... 1...	Header checksum recalculation is required
4(4) RDAINFO		Routing information byte
	1...	Last frame passed to transmit routine is to broadcast
	..1.	Neither A,B, nor C class destination address inbound
	...1	Inbound frame is broadcast to net or subnet
	.... 1...	Inbound frame is limited broadcast
	.... .1..	Host part of broadcast frame is all 0's
	.... ..1.	Host part of broadcast frame is all 1's
	.... ...1	Broadcast frame is destined for a local network
8(8) RDAIFLG		IP flags byte
	.... ..1.	Datagram Snap trace enabled
	.... ...1	Routing Snap trace enabled

Routing Data Area for Fragmentation Control Block

Program: NCP
Size in bytes: 56(3C)
Created by: NCP generation, one per NCP
Pointer to: RDARDFP in RDA
Function: Contains information used for fragmentation of IP datagrams.

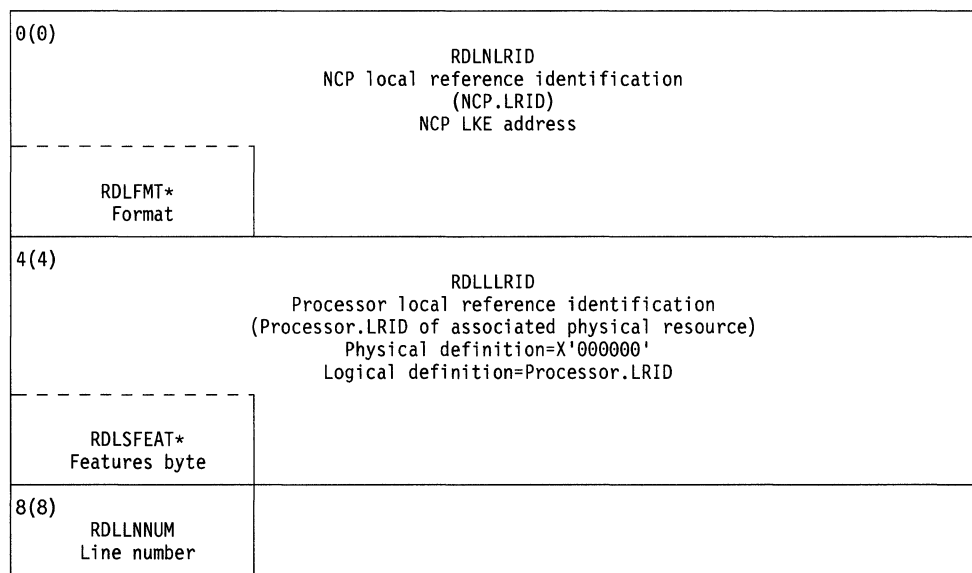
0(0)	RDFRIB Pointer to RIB		
4(4)	RDFBFR Pointer to free buffer chain		
8(8)	RDFDGRM First buffer of original datagram		
12(C)	RDFCHDR Pointer to current IP header		
16(10)	RDFNEXT Save location - next byte after header		
20(14)	RDFHDBUF Save location - buffer from which to create IP header		
24(18)	RDFHDSTR Save location - IPH starting place from which to build header		
28(1C)	RDFBREAK Buffer where first fragment ends		
32(20)	RDFTOT Total incoming datagram size	34(22)	RDFOFF Saved fragment offset from datagram
36(24)	RDFNOFF Next offset for fragment	38(26)	RDFOFLEN Length of data in 8 byte units
40(28)	RDFDLEN1 Data size of first fragment	42(2A)	RDFTLLEN1 Total length of first fragment (MTU calc)
44(2C)	RDF2DSZ Size of data for built fragments	46(2E)	RDFMTU Size of MTU
48(30)	RDFFLAGS Saved IPHFLAGS from datagram	49(31)	RDFHDLN1 Length of original fragment header
		50(32)	RDFHLEN Second and future header length
		51(33)	RDFDTCNT Current break point datcnt
52(34)	RDFNUM Number of fragments building	54(36)	RDFOFSET Current break point offset
		55(37)	Reserved

Resource Definition for an ESCA Line

Program: NCP

Size in bytes: 9(9)

Function: Contains the mapping for the resource definition for an ESCA line. This information will be put into a buffer beginning at offset X'14'



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDLFMT		Format
	0... ..	Link definition
	.x... ..	1 = Logical definition 0 = Physical definition
	.... 0010	ESCA protocol
4(4) RDLSFEAT		Features byte
	1... ..	NPA eligible

Resource Definition for a Token-ring Line

Program: NCP

Size in bytes: 24(18)

Function: Contains the mapping for the resource definition for a token-ring line. This information will be put into a buffer beginning an offset X'14'

0(0)			
RDLNLRID NCP local reference identification (NCP.LRID) NCP LKE address			
RDLFMT* Format			
4(4)			
RDLLLLRID Processor local reference identification (Processor.LRID)			
8(8)	9(9)	10(A)	11(B)
RDLTRFTR* Features byte	RDLRNGSP Ring speed	RDLPRPID PORTADD	Reserved
12(C)		14(E) - 19(13)	
RDLMXTSL Maximum transmit segment length		RDLLMAC	
Local MAC address			
20(14)		22(16)	
RDLBEAC Beacon timeout value		Reserved	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDLFMT		Format
	0... ..	Link definition (RDLSTAT)
	.0.. ..	Physical definition (RDLLLOG)
	... 0011	Token-ring protocol
8(8) RDLTRFTR		Features byte
	1... ..	Early token release is always supported for token-ring (ODLC) (RDLETRL)
	..1.	Resource is eligible for NPA data collections (RDLTNPA)
	...1	Link priority support (RDLTLSPP)
		1 = Use SOQ for scheduling
		0 = Use SOT for scheduling

Resource Definition for an SDLC Line or a Frame-relay Line

Program: NCP

Size in bytes: 47(2F)

Function: Contains the mapping for the resource definition for the line. This information will be put into a buffer beginning at offset X'14'

0(0)			
RDLNLRID NCP local reference identification (NCP.LRID) NCP LKE address			
RDLFMT* Format			
4(4)			
RDLLLLRID Processor local reference identification (processor.LRID) of associated physical resource Physical definition=X'00000000' Logical definition=processor.LRID			
8(8)	9(9)	10(A)	11(B)
RDLFEAT1* Features byte 1	RDLFEAT2* Features byte 2	RDLFEAT3* Features byte 3	RDLFEAT4* Features byte 4
12(C)	13(D)	14(E)	15(F)
RDLFEAT5* Features byte 5	RDLFEAT6* Features byte 6	RDLFEAT7* Features byte 7	RDLFEAT8 Features byte 8
16(10)	17(11)	18(12)	19(13)
RDLAFLD Number of flags before SDLC "A" field	RDLBTWNF Number of flags between SDLC frames	RDLPOLLP Poll pause (PAUSE)	RDLCPRAT CPOLL rate (SERVLIM)

* Indicates a byte expansion follows.

20(14)	RDLMRPSZ Maximum receive frame size (TRANSFER in bytes)	22(16)	RDLLENABL Enable timeout (ENABLTO)
24(18)	RDLDSABL Disable timeout (DSABLTO)	26(1A)	RDLTIMEA Reply timeout (REPLYTO)
28(1C)	RDLTIMEB Text timeout (TEXTTO)	30(1E)	RDLLATO Activity timeout (ACTIVTO)
32(20)	RDLDIAL Dial timeout (DIALTO)	34(22)	RDLXDLY Transmit delay (XMITDLY)
36(24)	RDLRX21 X.21 callout retry timeout (RETRYTO)	38(26) RDLR21 Autocall interface address	
		RDLR2HI TA byte 0	39(27) RDLR1LO TD byte 1
40(28)	RDLRCL1 Dialing attempts per sequence	41(29)	RDLRCL2 Dialing sequences
		42(2A)	RDLRTL1 Dialing pause between attempts
		43(2B)	RDLRTL2 Dialing pause between sequences
44(2C)	RDLRCORN LPDA2 correlation number	45(2D)	Reserved
		46(2E)	RDLMPORT Port number of LPDA2 channelized modem

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDLFMT		Format
	0...	Link definition
	.0..	Physical definition
	.... xxxx	Protocols
		0001 = SDLC 1000 = Frame-relay (RDLFR)
8(8) RDLFEAT1		Features byte 1
	1...	SDLC normal response mode
	.1..	Asynchronous balanced mode
	..1.	LAPB
	...1	LAPD

Offset/Field Name	Bit Pattern/ Hex Value	Contents
9(9) RDLFEAT2		Features byte 2
	1...	Switched line
	.1..	Full duplex--concurrent transmit and receive
	..1.	Transmit turn with request-to-send on
	...1	Transmit in NRZI mode
	.... 1..	Transmit with new sync
	.... .xx.	SDLC role
		00 = Primary
		01 = Secondary
		11 = Configurable
10(A) RDLFEAT3		Features byte 3
	1...	Echo defeat supported
	.1..	Half duplex send priority supported
	..1.	NPA eligible
	...1	Link session priority
	.... 1..	Multipoint capable
11(B) RDLFEAT4		Features byte 4
	1...	Monitor for ring indicator
	.1..	Generate answer tone
	..1.	LDPA2 modem dial
	...1	V.25 ACU
	.... 1..	V.25 bis
	.... .1..	X.21 switched
	.... ..1.	4941 dial
	.... ...1	Subarea/peripheral indicator
		1 = Subarea link
		0 = Peripheral link
12(C) RDLFEAT5		Features byte 5
	1...	X.21
	.1..	X.21 CCITT 1984 supported
	..1.	X.21 short hold mode supported
	...1	X.21 multiple port sharing supported
	.... 1..	Security ID control (CV25) supported
	.... .1..	Called/calling line ID (CCLID) supported
13(D) RDLFEAT6		Features byte 6
	1...	LPDA2 supported
	.1..	Channelized modem
	..1.	Tailed modem
	...1	Wrap in progress

Offset/Field Name	Bit Pattern/ Hex Value	Contents
14(E) RDLFEAT7		Features byte 7
	xxxx x...	Controller clocking speeds for INTERNAL and DIRECT clocking (bps)
		00000 = 50
		00001 = 75
		00010 = 100
		00011 = 110
		00100 = 134.5
		00101 = 200
		00110 = 300
		00111 = 600
		01000 = 1200
		01001 = 2400
		01010 = 4800
		01011 = 9600
		01100 = 19200
		10000 = 38400
		10001 = 55855
		10010 = 64000
		10100 = 256000
		11000 = 512000
		11001 = 1024000
		11010 = 1536000
		11011 = 2048000
	xxxx x...	Controller clocking speeds for EXTERNAL clocking (bps)
		01100 = 50 to 32000 bps
		10000 = 32001 to 64000 bps
		10100 = 64001 to 256000 bps
		11000 = Above 256000 bps
	.... .1.0	Modem clocking (EXTERNAL clocking)
	.... .0.0	INTERNAL clocking
	.... .0.1	Controller clocking (DIRECT clocking)
	.... ..x.	High data rate for modem
		1 = High data rate for modem
		0 = Low data rate for modem

Routing Data Area for Fragment Reassembly

Program: NCP
Size in bytes: 40(28)
Created by: NCP generation, one per NCP
Pointer to: RDARDMP in RDA
Function: Contains information used in Fragment Reassembly processing

0(0)	RDMFGCHN Pointer to fragment chain	
4(4)	RDMQBCN Pointer to save queue chain	
8(8)	RDMGGRM Pointer to single datagram (or fragment)	
12(C)	RDMSRCE IP source address	
	RDMSRCE1 First halfword of source address	14(E) RDMSRCE2 Second halfword of source address
16(10)	RDMDEST IP destination address	
	RDMDEST1 First halfword of destination address	18(12) RDMDEST2 Second halfword of destination address
20(14)	RDMQPLNK Previous link in fragment chain	
24(18)	RDMID IP datagram identifier	26(1A) RDMOFF IP header offset
28(1C)	RDMLSCHN Pointer to previous chain of fragments	
32(20)	RDMLAST Pointer to previous fragment in chain	
36(24)	Reserved	
	RDMFLAGS Flags of IP header	

Routing Data Area for Options Processing

Program: NCP
Size in bytes: 32(20)
Created by: NCP generation, one per NCP
Pointer to: RDARDOP in RDA
Function: Contains routing information used for options processing.

0(0)			
RDOINTP Pointer to receive RIB			
4(4)			
RDOBUF Pointer to datagram buffer			
8(8)			
RDOIPHP Pointer to datagram within buffer			
12(C)			
RDOOPTP Pointer to first option within buffer			
16(10)			
RDOSTART Pointer to first option while processing			
20(14)			
RDOOPTR Pointer to current option			
24(18)			
RDONTRYP Pointer to current entry within option			
28(1C)	29(1D)	30(1E)	31(1F)
RDOOFLGS Option flags for current option	RDOOLEN Total Number of bytes for options	RDOOCNT Bytes for remaining options	RDOOLEFT Bytes remaining within options

Resource Definition for a ESCA Station

Program: NCP

Size in bytes: 32(20)

Function: Contains the mapping for the resource definition for a ESCA station. This information will be put into a buffer beginning at offset X'14'.

Each resource definition will have the following:

0(0)		RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address	
RDSFMT* Format			
4(4)		RDSLLRID Station's link's processor.LIRD	
RDSSTAT* Station type			
8(8)	9(9)	10(A)	11(B)
RDSMNPWS Minimum pacing window	RDSMXPWS Maximum pacing window	RDSSTNUM Station number	RDSSFEAT* ESCA features byte
12(C)		14(E)	
RDSMXBFS Maximum buffer size		RDSUNTSZ Unit size	
16(10)		18(12)	
RDSCASDL Channel adapter (CA) slowdown value		RDSTMOUT Attention timeout value	
20(14)		22(16)	
RDSDELAY Attention delay value		RDSTRNFR Transfer value	
24(18)		26(1A)	
RDSTHXMT Total transmissions threshold		RDSTHRET Total retries threshold	
28(1C)	29(1D)	30(1E)	31(1F)
RDSSRES1 Reserved	RDSSRES2 Reserved	RDSSRES3 Reserved	RDSNEQLN Length of the specific NEQs

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT	1... .. .x... 0010	Format Station definition (RDSSTAT) 1 = Logical definition (RDSLOG) 0 = Physical definition ESCA protocol
4(4) RDSSTAT	X'21' X'50'	Station type T2.1 (RDST21) T5 (RDST5)
11(B) RDSSFEAT	1... ..	ESCA Features Byte NPA eligible (RDSNPAS)

Resource Definition for a FHSP Station

Program: NCP

Size in bytes: 52(34)

Function: Contains the mapping for the resource definition for a frame-relay FHSP station

0(0)			
RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address			
RDSFMT* Format			
4(4)			
RDSLLRID Logical station - station's LMI PU's processor.LRID			
RDSSTATT* Station type			
8(8)		10(A)	
RSDSLCI* DLCI in standard format		Reserved	
12(C)	13(D)	14(E)	15(F)
RDSFHSP1* Features byte 1	RDSFHSP2* Features byte 2	RDSMOFH MAXOUT	RDSCPLFH COMRATE(N)
16(10)	17(11)	18(12)	
RDSPPTA0 Primary partner ODLC adapter number	RDSPPTD1 Primary partner line address	RSDSDBFH Data block	
20(14)		22(16)	
RSDSLCIP Primary partner DLCI		Reserved	
24(18)	25(19)		
RDSCFFH* CDT congestion level flag	Reserved		
28(1C) - 35(23)			
RDSPUNFH Resource PU name			
36(24) - 43(2B)			
RDSPPPFH Primary partner physical line name			
44(2C) - 51(33)			
RDSPPSFH Primary partner resource (PU) name			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT		Format
	1... ..	Station definition (RDSSTAT)
	.0.. ..	Physical definition (RDSLOG)
	.... 1000	Frame-relay protocol (RDSLIMIT=RDSFR)
4(4) RDSSTATT		Station type
	0001 0010	Peripheral FHSP PU.1 (RDSFHSP)
8(8) RSDLCI		DLCI in standard format
	Byte 0	
	xxxx xx..	High order address bits
	.... ..x.	Command/Response indicator (used for echo suppression)
	.... ...0	Address extension bit 0
	Byte 1	
	xxxx	Low order address bits
	.... x...	Forward explicit congestion notification indicator
	.... .x..	Backward explicit congestion notification indicator
	.... ..x.	Discard eligibility indicator
	.... ...1	Address extension bit 1
12(C) RDSFHSP1		Features byte 1
	..1.	NPA eligible (RDSFHNE)
13(D) RDSFHSP2		Features byte 2
	x... ..	Subport (RDSPSP)
		1 = Primary subport
		0 = Substitute (back-up) subport
24(18) RDSCFFH		CDT congestion level flag
	1... ..	Do not forward when NCP in CWALL
	.1.. ..	Do not forward when NCP in pseudo-CWALL
	..1.	Do not forward when NCP in slowdown
	...1	Do not forward when NCP in pseudo-slowdown

Resource Definition for a Frame-relay Station

Program: NCP

Size in bytes: 56(38)

Function: Contains the mapping for the resource definition for a frame-relay FRTE station

0(0)			
RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address			
RDSFMT* Format			
4(4)			
RDSLLRID Logical station - station's physical station processor.LRID			
RDSSTATT* Station type			
8(8)		10(A)	
RSDSLCI* DLCI in standard format		Reserved	
12(C)	13(D)	14(E)	15(F)
RDSMINPF Minimum pacing window	RDSMAXPF Maximum pacing window	RDSFRTE1* Features byte 1	RDSFRTE2* Features byte 2
16(10)	17(11)	18(12)	19(13)
RDSLTOF Local timeout (in tenths of seconds)	RDSLTO2F Local ACK timeout (in tenths of seconds)	RDSFLRLF First level retry limit	RDSLRLF Second level retry limit
20(14)	21(15)	22(16)	23(17)
RDSMXINF Pause between retry sequences	RDSRCOF Received data buffer offset	RDSMOFT MAXOUT	Reserved
24(18)		26(1A)	
RDSRNRLF RNR time limit (in tenths of seconds)		RDSDBTE Data block	
28(1C)		30(1E)	
RDSMRPSF Maximum received PIU size		RDSMSPSF Maximum send PIU size	
32(20)	33(21)	34(22)	
RDSAFF ACK frequency	RDSNWF Window ACK NW	RDSTIF Inactivity timer (in seconds)	

* Indicates a byte expansion follows.

36(24) - 41(29)			
Reserved			
		42(2A) RDSCPLTE COMRATE(N)	43(2B) RDSCFTE* CDT congestion level flag
44(2C) RDSDBC Ww decrement when BECN indicated	45(2D) RDSDBW Ww decrement when frame loss detected	46(2E) RDSSAPF Source SAP	47(2F) RSDSAPF Destination SAP
48(30) - 55(37) RDSPUETE Resource PU name			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT		Format
	1...	Station definition (RDSSTAT)
	.1..	Logical definition (RDSLOG)
	.... 1000	Frame-relay protocol (RDSLIMIT=RDSFR)
4(4) RDSSTATT		Station type
	0010 0000	Peripheral PU2.0/LEN (RDST2)
	0010 0001	Peripheral APPN (RDST21)
	0100 0000	Subarea PU.4 (RDST4)
8(8) RDSLDCI		DLCI in standard format
	Byte 0	
	xxxx xx..	High order address bits
	.... ..x.	Command/Response indicator (used for echo suppression)
	.... ...0	Address extension bit 0
	Byte 1	
	xxxx	Low order address bits
	.... x...	Forward explicit congestion notification indicator
	.... .x..	Backward explicit congestion notification indicator
	.... ..x.	Discard eligibility indicator
	.... ...1	Address extension bit 1
14(E) RDSFRTE1		Features byte 1
	x...	Station definition (RDSSTDE)
		1 = Switched 0 = Not-switched
	.1..	NPA eligible (RDSFRNE)
	.... 1...	Infinite retries (RDSINFR)
	.... .1..	ACK and NACK signals required (RDSRESP)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
15(F) RDSFRTE2		Features byte 2
	..1.	Echo defeat supported (RDSEDS)
	.... x...	IPL: (RDSIPL)
		1 = IPL=YES 0 = IPL=NO
	.... .xx.	SDLC role (RDSROLEF)
		00 = Primary 01 = Secondary 11 = Configurable
	.... ...x	COMRATE support: (RDSCRS)
		1 = COMRATE=FULL 0 = COMRATE=NONE
43(2B) RDSCFTE		CDT congestion level flag
	1...	Do not forward when NCP in CWALL
	.1..	Do not forward when NCP in pseudo-CWALL
	..1.	Do not forward when NCP in slowdown
	...1	Do not forward when NCP in pseudo-slowdown

Resource Definition for a Token-Ring Station

Program: NCP

Size in bytes: 44(2C)

Function: Contains the mapping for the resource definition for a token-ring station. This information will be put into a buffer beginning a offset X'14'.

0(0)			
RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address			
RDSFMT* Format			
4(4)			
RDSLLRID Logical station - station's physical link's processor.LRID			
RDSSTATT* Station type			
8(8)	9(9)	10(A)	11(B)
RDSMINPW Minimum pacing window	RDSMAXPW Maximum pacing window	RDSFEAT1* Features byte 1	RDSFEAT2* Features byte 2
12(C)	13(D)	14(E)	15(F)
RDSLOCT0 Local timeout	RDSREMT0 Remote timeout	RDSLOCT2 Local ACK timeout	RDSREMT2 Remote ACK timeout
16(10)	17(11)	18(12)	19(13)
RDSMXOUT MAXOUT	RDSTRRV1 Reserved	RDS1LV1 First level retry limit	RDS2LVL Second level retry limit
20(14)	21(15)	22(16)	23(17)
RDSRTSEQ Pause between retry sequences	RDSRCVDO Receive data buffer offset	RDSTRRTY Local ring first retry	RDSTRRV2 Reserved
24(18)		26(1A)	
RDSRNRLT Time limit, in tenths of a second, NCP allows station to refuse data before marking station inoperative		RDSTRRV4 Reserved	
28(1C)		30(1E)	
RDSMRPSZ Maximum received PIU size		RDSMSPSZ Maximum send PIU size	
32(20)	33(21)	34(22)	
RDSTRAF ACK frequency	RDSTRWCK Window ACK NW (Number of frames which must be received to increment the working window by 1)	RDSTRITM Inactivity timer	
36(24) - 41(29)			
RDSTRMAC Remote MAC address			
		42(2A)	43(2B)
		RDSSSAP Source SAP	RDSDSAP Destination SAP

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT		Format
	1... ..	Station definition (RDSSTAT)
	.x... ..	Station definition (RDSLOG)
		1 = Logical definition 0 = Physical definition
	..xx ..	Unused
	.... xxxx	Processor types
		0011 = Token-ring adapter
4(4) RDSSTATT		Station type
	X'10'	T1
	X'20'	T2
	X'21'	T2.1
	X'40'	T4
	X'50'	T5
10(A) RDSFEAT1		Features byte 1
	1... ..	Station definition - switched
	.xxx ..	Unused
	.... 1..	Infinite retries for timeout and DM
	.... .1..	ACK and NACK signals required
	.... ..x.	Unused
	.... ...1	Connection oriented service
11(B) RDSFEAT2		Features byte 2
	1... ..	NPA eligible
	.xxx ..	Unused
	.... 1..	IPL = yes

Resource Definition for a Frame-relay LMI PU

Program: NCP

Size in bytes: 40(28)

Function: Contains the mapping for the resource definition for a frame-relay LMI PU

0(0)		RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address	
RDSFMT* Format			
4(4)		RDSLLRID Physical station - station's physical link's processor.LRID	
RDSSTATT* Station type			
8(8)		10(A)	
RSDSLCI* DLCI		Reserved	
12(C)	13(D)	14(E)	15(F)
RDST391 T391	RDST392 T392	RDSLMIF1* Features byte 1	Reserved
16(10)	17(11)	18(12)	19(13)
RDSUN391 User side N391	RDSUN392 User side N392	RDSUN393 User side N393	Reserved
20(14)		22(16)	23(17)
RDSMAXFR Maximum data frame length		RDSNN392 Network side N392	RDSNN393 Network side N393
24(18) - 31(1F)			
RDSPLN Physical line name			
32(20) - 39(27)			
RDSPUNLM Resource (PU) name			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT		Format
	1... ..	Station definition (RDSSTAT)
	.0.. ..	Physical definition (RDSLOG)
	.... 1000	Frame-relay Protocol (RDSLIMIT=RDSFR)
4(4) RDSSTATT		Station type
	0001 0001	Peripheral LMI PU.1 (RDSLMI)
8(8) RDSLDCI		DLCI
	Byte 0	
	xxxx xx..	High order address bits
	.... ..x.	Command/Response indicator (used for echo suppression)
	.... ...0	Address extension bit 0
	Byte 0	
	xxxx	Low order address bits
	.... x...	Forward explicit congestion notification indicator
	.... .x..	Backward explicit congestion notification indicator
	.... ..x.	Discard eligibility indicator
	.... ...1	Address extension bit 1
14(E) RDSLMI1		Features byte 1
	10..	ANSI LMI supported (RDSANSI)
	01..	CCITT LMI supported (RDSCCIT)
	00..	LMI not supported (RDSLMIINS)
	..1.	Eligible for NPA data collection (RDSLMI1NE)
	...1	Echo suppression supported for LMI frames (RDSLMI1EDS)
	.... x...	Role (RDSLMI1MOD)
		1 = Primary role for LMI echo suppression
		0 = Secondary role for LMI echo suppression

Resource Definition for an SDLC Station

Program: NCP

Size in bytes: 40(28)

Function: Contains the mapping for the resource definition for the station. This information will be put into a buffer beginning at offset X'14'.

The complete resource definition will have the following format:

0(0)			
RDSNLRID NCP local reference identification (NCP.LRID) NCP SCE address			
RDSFMT* Format			
4(4)			
RDSLLRID Logical link reference Station's link's processor.LRID			
RDSSTATT* Station type			
8(8)	9(9)	10(A)	11(B)
RDSMINPW Minimum pacing window	RDSMAXPW Maximum pacing window	RDSFEAT1* Features byte 1	RDSFEAT2* Features byte 2
12(C)	13(D)	14(E)	15(F)
RDSFEAT3 Features byte 3	RDSFEAT4 Features byte 4	RDSFEAT5 Features byte 5	RDSPOLWT Station polling weight

* Indicates a byte expansion follows.

16(10)	17(11)	18(12)	19(13)
RDSMXOUT MAXOUT	RDSPSLIM PASSLIM	RDS1LVL First level retry limit	RDS2LVL Second level retry limit
20(14)	21(15)	22(16)	23(17)
RDSRTSEQ Pause between retry sequences	RDSRCVDO Received data buffer offset	RSDLCA1 DLC address byte 1	RSDLCA2 DLC address byte 2
24(18)		26(1A)	
RDSXMTHR Total transmissions threshold		RDSRETHR Total retries threshold	
28(1C)		30(1E)	
RDSMRPSZ Maximum receive PIU size		RDSMSPSZ Maximum send PIU size	
32(20)	33(21)	34(22)	35(23)
RDSLMAD1 Reserved	RDSLMAD2 Reserved	RDSMISTA Reserved	RDSGPAF 3174 group poll address
36(24)		38(26)	
RDSSSACT Switched subarea activity timer		RDSRNRLM Time limit, in tenths of a second, NCP allows station to refuse data before making station inoperative	

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) RDSFMT		Format
	1... ..	Station definition
	.0.. ..	Physical definition
	... 0001	SDLC
4(4) RDSSTATT		Station type
	X'10'	T1
	X'20'	T2
	X'21'	T2.1
	X'40'	T4
	X'50'	T5
10(A) RDSFEAT1		Features byte 1
	1... ..	Full duplex data mode
	.1.. ..	Two byte "C" field
	..1.	Two byte "A" field
	...1	Immediate retries specified
	... 1...	Infinite retries for timeout and DM
	... .1..	ACK and NACK signals required
11(B) RDSFEAT2		Features byte 2
	1... ..	NPA eligible
	.1.. ..	LPDA blocked
	..1.	3174 group poll supported
	...1	Run LPDA when total transmission threshold reached
	... 1...	IPL=yes

Route Interface Control Block

Program: NCP, EP

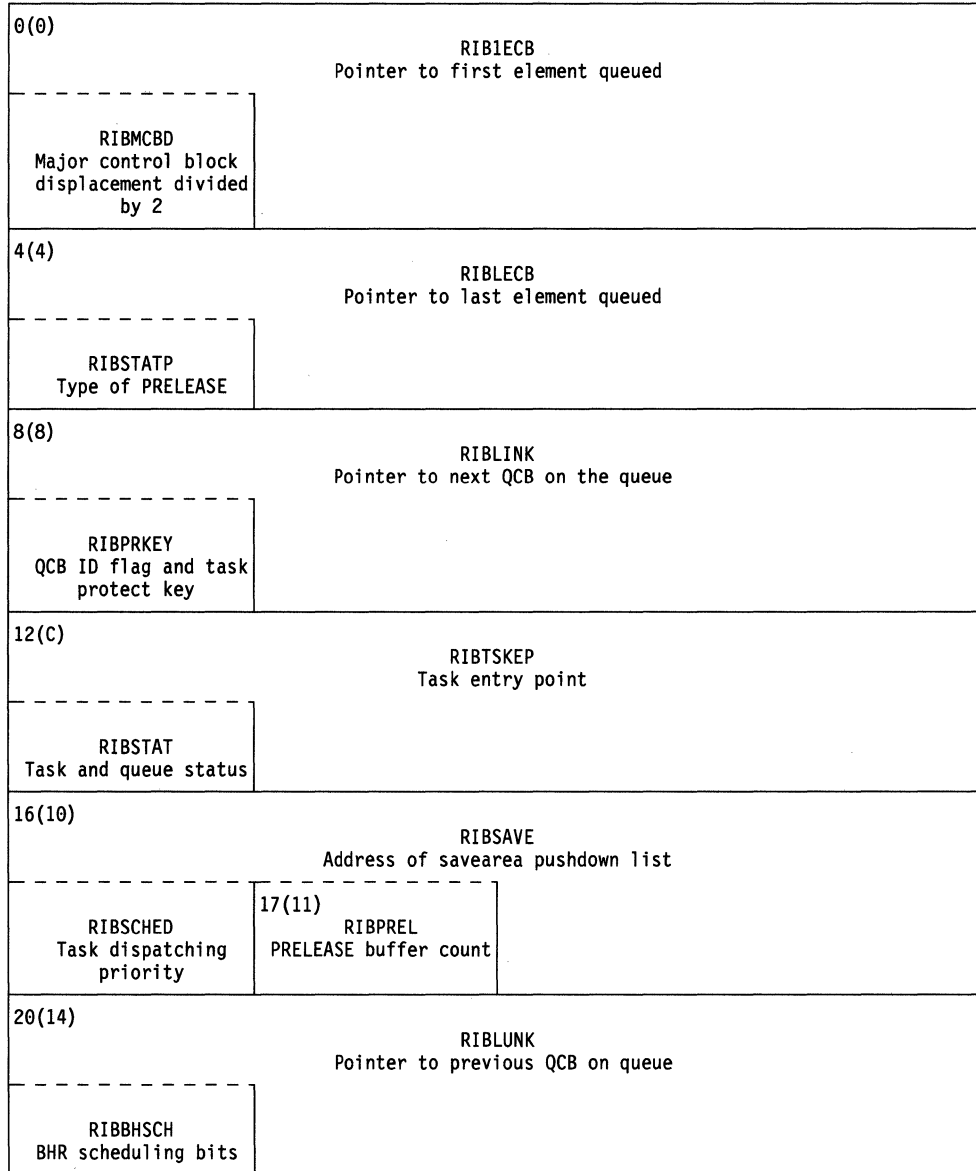
Size in bytes: 68(44)

Created by: NCP Initialization, one per interface

Pointed to by: HRERIBP in host route entry (HRE) if a host route is defined for this network, the NRERIBP field in network route entry (NRE) if subnetworks are not defined for this network, the SRERIBP field in subnetwork route entry (SRE) control block if subnetworks are defined for this network, the LATRIBP field in local address table (LAT) control block if the resource is local to the NCP, the ENIRIBP field in Ethernet interface (ENI) control block, and the SSIRIBP field in SNA IP session interface (SSI) control block

Function: Maps route entries to their associated interface. RIB contains pointers to both the interface control block and the routine which performs interface processing for transmitting the datagram

Route Queue (RTQ) Control Block
 (See QCB for input queues for all bit definitions.)



24(18)	RIBXRTN Address of transmit interface routine	
	RIBFLAGS* RIB flags	
28(1C)	RIBRRTN Address of receive interface routine	
32(20)	RIBRSCB Pointer to resource specific control block (SSI or ENI control block)	
36(24)	RIBLATE Pointer to local address table entry	
40(28)	RIBSCCB Pointer to counters control block (SCT or ECT control block)	
44(2C)	RIBXMTU Maximum transmit unit	46(2E) Reserved
48(30)	RIBBPTR Pointer to the beginning of the RIB	
52(34) - 67(43)	RIBIQCB QCB for the Interface Status Notification Task (See the QCB for layout)	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) RIBFLAGS		RIB flags
	xx..	RIB type 00 = SNA 10 = Ethernet 01 = Token-ring 11 = Reserved
	..x.	Interface state 0 = Inactive 1 = Active
	...1	Do not fragment over this interface
	.... 1...	Interface is to owning TCP/IP host (IPOWNER)
	.... .xxx	Reserved

Route Management Block**Program:** NCP**Size in bytes:** 48(30)**Created by:** NCP generation, one per network**Pointer to:** PSBRMBP for the native network; also NVTRMBP in the network vector table (NVT) for each network**Function:** Contains control information used by explicit route manager routines

0(0)	RMBRSTP Pointer to the routing status table (RST)	
4(4)	RMBRATP Pointer to the route activation table (RAT)	
8(8)	RMBSVTC SVT entry counter	10(A) RMBTRTCT Number of rows in the transmit routing table (TRT) and the ER-to-VR mapping list (EML) for this network not including row zero
12(C)	RMBPROTP Pointer to the prototype PIU	
16(10)	RMBNETP Pointer to the NCP-activated explicit routing table (NET)	
	RMBTSTAT* Task status	
20(14)	RMBEMLP Pointer to the ER-to-VR mapping list (EML)	
	RMBMAXSA Maximum SA for pre-ENA nodes	
24(18)	RMBTRTP Pointer to the TRT	
28(1C)	RMBSVTP Pointer to the part of the subarea vector table (SVT) that is for this network	

* Indicates a byte expansion follows.

32(20) RMBHELD0 VR held deactivation time limit for transmission priority 0		34(22) RMBCGTL0 VR congested alert time limit for transmission priority 0	
36(24) RMBHELD1 VR held deactivation time limit for transmission priority 1		38(26) RMBCGTL1 VR congested alert time limit for transmission priority 1	
40(28) RMBHELD2 VR held deactivation time limit for transmission priority 2		42(2A) RMBCGTL2 VR congested alert time limit for transmission priority 2	
44(2C) RMBXMTQ0 Transmit queue depth alert threshold to transmission priority 0	45(2D) RMBXMTQ1 Transmit queue depth alert threshold to transmission priority 1	46(2E) RMBXMTQ2 Transmit queue depth alert threshold to transmission priority 2	47(2F) Unused

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
16(10) RMBTSTAT	.x..	Task status 1 = Explicit route manager task is suspended. 0 = Initial entry to an explicit route manager task.

Route Status Table

- Program:** NCP
- Size in bytes:** Variable; when ERLIMIT=8, SALIMIT+1 bytes; when ERLIMIT=16, 2*(SALIMIT+1) bytes
- Created by:** NCP initialization, one per network
- Pointer to:** The RMBRSTP field in the route management block (RMB)
- Function:** Contains 1-byte elements when ERLIMIT=8 or 2-byte elements when ERLIMIT=16 that correspond to the network subarea addresses. Each element is a mask of operative explicit routes. These masks represent the state of connectivity in the network as perceived by NCP.

The first element in the RST is always zero because subarea zero is an invalid network subarea address. Each RST element corresponding to a defined network subarea contains a nonzero mask value when the explicit routes represented by the bit positions within the mask are operative.

The RST entry for NCP's own subarea always has all bits in the mask 'on'. This indicates to NCP that all explicit routes to its physical units and boundary are always operative. If a subarea is undefined, its RST entry is zero.

ERLIMIT=8

0(0)	1(1)	2(2)	SALIMIT
Invalid (X'00')	Mask of operative explicit routes	Mask of operative explicit routes	Mask of operative explicit routes

ERLIMIT=16

0(0)	2(2)
Invalid (X'0000')	Mask of operative explicit routes
4(4)	6(6)
Mask of operative explicit routes	Mask of operative explicit routes
8(8)	10(A)
⋮	⋮
(SALIMIT-1)*2	SALIMIT * 2
Mask of operative explicit routes	Mask of operative explicit routes

Resource Vector Control Block

Program: NCP

Size in bytes: 20(14)

Created by: NCP initialization; one per network

Pointer to: The NVTRVBP field in each network vector table (NVT) entry points to the RVB.

Function: Contains the information needed to handle the dynamic allocation of RVT entries.

0(0) - 7(7)	
RVBSHB Imbedded SHB (for in-use dynamic RVT entries)	
8(8) - 15(F)	
RVBAAB Imbedded AAB (for in-use dynamic RVT entries)	
16(10)	18(12)
RVBAELE Number of assigned element addresses (not including the NCP's PU)	Reserved

Resource Vector Table

Program: NCP

Size in bytes: Variable, depending upon the number of 8-byte entries

Dynamic RVT entries will be 28(1C) per entry. Dynamic entries will not be part of the table but will be chained up via an AAB in the RVB.

Created by: NCP generation; one per network

The dynamic entries are created when required by the dynamic control block allocation routine.

Pointed to by: The NVTRVTP field in the network vector table (NVT) points to the highest element network address (-4 entry) in all RVTs. Also, the SYSRVTAD field in the word direct addressable storage control block (XDA) points to the highest BSC/SS/SNI element network address (-2 entry) for the native network (first network).

The in-use dynamic RVT entries are in the RVB's binary search tree and in the RVB's in-use chain. The not in-use dynamic RVT entries are in the unreserved chain of the RVT's GPA (only one for the NCP).

Function: Serves as the master directory to level-5 resource control blocks. Each 8-byte entry contains a 2-byte resource type field, a 2-byte address field that is the next address in the NPA dynamic reconfiguration RVT chain, a 1-byte status field, and a 24-bit address field that is the address of a resource control block for that resource.

Immediately preceding the first entry are two halfwords that contain the highest network address in the table and the highest BSC/SS/SNI ID (if any) in the table.

The dynamic RVT entries are RVT entries that have been created since the NCP load module was created. They are used for resources that are dynamically created. See the RVT for a complete layout of the genned RVT entries. The Dynamic RVT entries contain additional information used to maintain the entry.

Prefix

-4(4) RVTHEA Highest element network address in the table	-2(2) RVTHOEA Highest BSC/SS/SNI element network address (if any)
---	--

RVT Entry (Non-dynamic)

0(0) RVTTYPE1* Resource type	1(1) RVTTYPE2* Resource type indicator	2(2) RVTNPAN Next address in the network performance analyzer dynamic reconfiguration resource vector table (NPA DR RVT) chain
4(4) RVTRP Address of the resource control block (See note for a list of control blocks)		

RVTRACT* Generalized PIU trace control block (GPT) trace status and network performance monitor (NPM) DR knowledge		

* Indicates a byte expansion follows.

Note: The resource control block can be a line control block (LCB/LKB), a device control block, a link control block, a station control block (SCB), a common PU block (CUB), an LU routing control block (LRB), a physical services control block (PSB) (always the first entry in the RVT), a programmed resource LU block (NLB), a programmed resource PU block (NPB), or a programmed resource virtual line block (VLB).

RVT Entry (Dynamic)

0(0) RVTTYPE1* Resource type	1(1) RVTTYPE2* Resource type indicator	2(2) RVTNPAN Next address in the network performance analyzer dynamic reconfiguration resource vector table (NPA DR RVT) chain
4(4) RVTRP Address of the resource control block. (See note for a list of control blocks.)		

RVTRACT* Generalized PIU trace control block (GPT) trace status and network performance monitor (NPM) DR knowledge		
8(8) RVNXTP Pointer to the next RVT entry in the dynamic in-use chain (This is used for scan of the RVT entries) or to the next RVT entry if the RVT entry is in the free pool.		
12(C) - 23(17) RVTSEB Dynamic RVT SEB (This is used for keeping the entry in the binary search tree)		
24(18) RVTELEM Dynamic RVT's element address	26(1A) RVTDFLAG* Dynamic flag byte	27(1B) Reserved

* Indicates a byte expansion follows.

Note: The resource control block for a dynamic RVT entry can be a common PU block (CUB), an LU routing control block (LRB), or a programmed resource LU block (NLB).

Byte Expansions

Offset/Field Name and Bit Pattern		Contents
0(0)	1(1)	
RVTTYPE1	RVTTYPE2	
	0...	RVT entry
	00..	Local resource
	01..	Remote resource
	0.0.	BSC/SS resource
1000 0...	0.0.	BSC/SS line
010.	0.0.	BSC/SS device
001.	0.0.	BSC/SS line group
...1	0.0.	BSC/SS input
.... 1...	0.0.	BSC/SS output
.... .10.	0.0.	BSC/SS switched
.... .11.	0.0.	BSC/SS switched call-out
.... ...1	0.0.	BSC/SS device dependent flag
....	0.1.	SDLC resource
0000 0000	0.1.	NCP physical services resource
1...	0.1.	SDLC link
01..	0.1.	SDLC station format
0100	0.1.	SDLC PU type 4 station
0110	0.1.	SDLC PU type 2 station (cluster) or SDLC PU type 1 station (terminal)
00.. 1...	0.1.	SDLC logical unit
.... .1..	0.1.	SDLC switched
.... ....	.... 010.	Invalid
1111 1111	0...	End of RVT
....	0011	Programmed resource
1...	0.11	Programmed resource virtual line
0110	0.11	Programmed resource virtual physical unit
00.. 1...	0.11	Programmed resource virtual logical unit
0000 1000	0011 1...	Programmed Network addressable unit
....	0... ...1	Binary search routing bit
4(4)		GPT trace status and NPM DR knowledge
RVTRACT		
	1...	GPT is active on this resource
	.1..	GPT is activated; status is pending
	..1.	GPT is deactivated; status is pending
	...1	Missing trace data; status is pending
	.... 1...	Virtual route inoperative (VR.INOP) status is pending
	.... .1..	DR resource started or stopped the trace; status is pending
	.... ...1	Dummy Bind status is pending
	.... ...x	1 = Entry in the NPA DR RVT chain for DR history 0 = Entry in the NPA DR RVT chain for DR updates
		Note: Bit 7 is only meaningful when the entry is in the NPA dynamic reconfiguration RVT chain
26(1A)		Dynamic flag byte
RVTDFLG		
	1...	Deallocation of resource is pending DR history information to be sent to NPM
	.xxx xxxx	Reserved

Receive or Transmit List Control Block

Program: NCP

Size in bytes: Variable, 4(4) bytes for negative prefix and 40(28) bytes for each entry

Created by: NCP generation

Pointed to by: The XUAFRLP, XUA1RLNF, XUANRLRG, XUAFXLP, and XUA1XLNF fields in the physical link adapter control block extension (XUA)

Function: Interface between the token-ring interface coupler (TIC) and the medium access control (MAC) layer to receive or transmit a frame

Header

-4(-4) C'LS'	-2(-2) Number of lists
---------------------	-------------------------------

List

0(0)	Reserved (Halfword alignment)	2(2)	RXTRPSP Reserved for next list (TIC use only)
4(4)	Reserved for next list* (continued)	6(6)	RXCSTAT* Receive/Transmit CSTAT
8(8)	RXFRSIZE Frame size	10(A)	RXCOUNT1* First data count
12(C)	RXDTADR1 First data address		
16(10)	RXCOUNT2* Second data count	18(12)	RXTRPA21 Second data address zone 1 (TIC use only)
	RXCNTL2		
20(14)	RXTRPA22 Second data address zone 2 (TIC use only)	22(16)	RXCOUNT3* Third data count
24(18)	RXDTADR3 Third data address		
28(1C)	RXNLP Next list pointer (NTRI use only)		
32(20)	RXDTADR2 Second data address (NTRI use only)		
	RXDTAD21 Address zone 1	34(22)	RXDTAD22 Address zone 2
	RXXMCT Number of transmit lists this frame		
36(24)	RXPLP Pointer to previous list + 2 (NTRI use only)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
4(4) RXTRPSP		Pointer to next list
	Byte 0	
	Byte 1.... ...1	Logical end of receive list chain
6(6) RXCSTAT		Receive/Transmit CSTAT
	Byte 0	
	1...	Receive or transmit valid
	.1..	Frame complete
	..1.	Start of frame
	...1	End of frame
	.... 1...	Frame interrupt
	.... 1...	Non-format identification 2 (FID2) received
	.... .1..	Transmit error or receive interframe wait
	Byte 1	
	1...	PCFE0 (Bits 0–5 of physical control field. End copied from frame transmitted or received)
	.1..	PCFE1
	..1.	PCFE2
...1	PCFE3	
.... 1...	PCFE4	
.... .1..	PCFE5	
.... ..1.	Receive address match 0	
.... ...1	Receive address match 1	
10(A) RXCOUNT1		First data count
	1...	Last data count flag 1
16(10) RXCOUNT2		Second data count
	1...	Last data count flag 2
22(16) RXCOUNT3		Third data count
	1...	Last data count flag 3

Station Control Block

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation

Pointed to by: The PUVCUB field in the PU vector table (PUV), the RVTRP field in the resource vector table (RVT), the SCESCBP field in the station control block extension (SCE), the SX2SCBP field in the subarea physical unit block extension 2 (SX2), the CBBRESP field in the committed buffers block (CBB), and the LLBATSCB field in the logical link block address table (LLBAT)

Function: Contains the queue control block (QCB), status, and scheduling information for station control. If the station is a cluster, the SCB is incorporated into the common PU block (CUB). (See "Common Physical Unit Block" on page 1-274.)

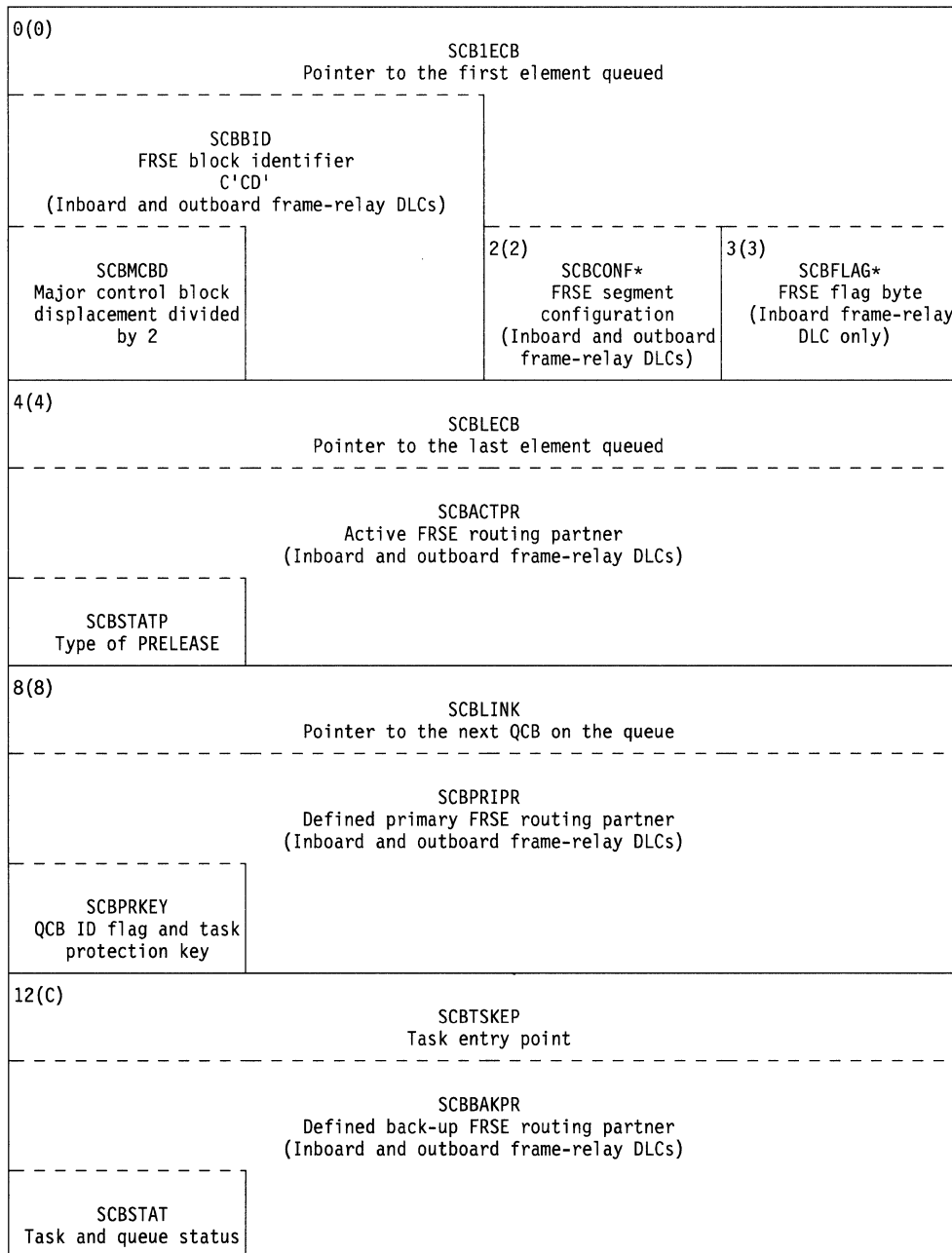
Name	Offset	Name	Offset	Name	Offset
SCBACTPR	4 (4)	SCBLOSH	32 (20)	SCBRTCNT	60 (3C)
SCBADRC	40 (28)	SCBLOST	36 (24)	SCBSAVE	16 (10)
SCBAPIU	52 (34)	SCBLPRI	108 (6C)	SCBSCEP	84 (54)
SCBBAKPR	12 (C)	SCBLSSI	60 (3C)	SCBSCHED	16 (10)
SCBBHSCH	20 (14)	SCBLUNK	20 (14)	SCBSESTS	80 (50)
SCBBID	0 (0)	SCBMBFR	58 (3A)	SCBSHWCS	100 (64)
SCBBSZE	120 (78)	SCBMCBD	0 (0)	SCBSLC	61 (3D)
SCBBZSEG	122 (7A)	SCBMDATA	126 (7E)	SCBSNPM	28 (1C)
SCBCASDL	60 (3C)	SCBMPFM	124 (7C)	SCBSPOLW	51 (33)
SCBCBBP	96 (60)	SCBMPIU	114 (72)	SCBSQBC	72 (48)
SCBCFGX	100 (64)	SCBMSTAT	106 (6A)	SCBSRTL	64 (40)
SCBCLIM	62 (3E)	SCBNLLQP	20 (14)	SCBSRTR	90 (5A)
SCBCOC	63 (3F)	SCBNR	56 (38)	SCBSRTT	88 (58)
SCBCONF	2 (2)	SCBNRA	32 (20)	SCBSSCF	46 (2E)
SCBCSCF	112 (70)	SCBNS	57 (39)	SCBSSCP	47 (2F)
SCBDCF	104 (68)	SCBNSBP	32 (20)	SCBSSIRC	84 (54)
SCBDLCI	74 (4A)	SCBOCF	49 (31)	SCBSTAT	12 (C)
SCBDLCI1	74 (4A)	SCBOCL	62 (3E)	SCBSTATP	4 (4)
SCBDLCI2	75 (4B)	SCBOCLS	71 (47)	SCBSTATS	48 (30)
SCBDTLBP	80 (50)	SCBOCLX	62 (3E)	SCBSTMOD	92 (5C)
SCBEERS	24 (18)	SCBOFSET	94 (5E)	SCBTCNT	50 (32)
SCBERPT	69 (45)	SCBPCNT	52 (34)	SCBTERR	68 (44)
SCBERS	58 (3A)	SCBPLXUA	16 (10)	SCBTGBP	108 (6C)
SCBFLAG	3 (3)	SCBPREL	17 (11)	SCBTIACT	84 (54)
SCBFLGS	50 (32)	SCBPREQ	94 (5E)	SCBTINCT	86 (56)
SCBFLPF	116 (74)	SCBPREQ1	94 (5E)	SCBTPCNT	76 (4C)
SCBFLST	113 (71)	SCBPREQ2	95 (5F)	SCBTRNFR	76 (4C)
SCBGADLY	74 (4A)	SCBPRIPR	8 (8)	SCBTRTCT	72 (48)
SCBGATMO	72 (48)	SCBPRKEY	8 (8)	SCBTSKEP	12 (C)
SCBGPAF	70 (46)	SCBPUCBP	72 (48)	SCBTYPE	36 (24)
SCBIMRC	78 (4E)	SCBRCMD	65 (41)	SCBXSA1	107 (6B)
SCBISNPM	93 (5D)	SCBRCNT	80 (50)	SCB1ECB	0 (0)
SCBLDPSA	72 (48)	SCBRDURC	80 (50)	SCB2ERPT	66 (42)
SCBLECB	4 (4)	SCBRECNT	74 (4A)		
SCBLINK	8 (8)	SCBRENDQ	56 (38)		
SCBLKB	40 (28)	SCBRESCC	70 (46)		
SCBLMDA	105 (69)	SCBREST	60 (3C)		
SCBLNID	116 (74)	SCBRPCNT	82 (52)		
SCBLOBH	24 (18)	SCBRQOC	96 (60)		
SCBLOBT	28 (1C)	SCBRSE	44 (2C)		

-4(4)

For the prefix format for the SCB, see the network performance analyzer prefix control block (NPF).

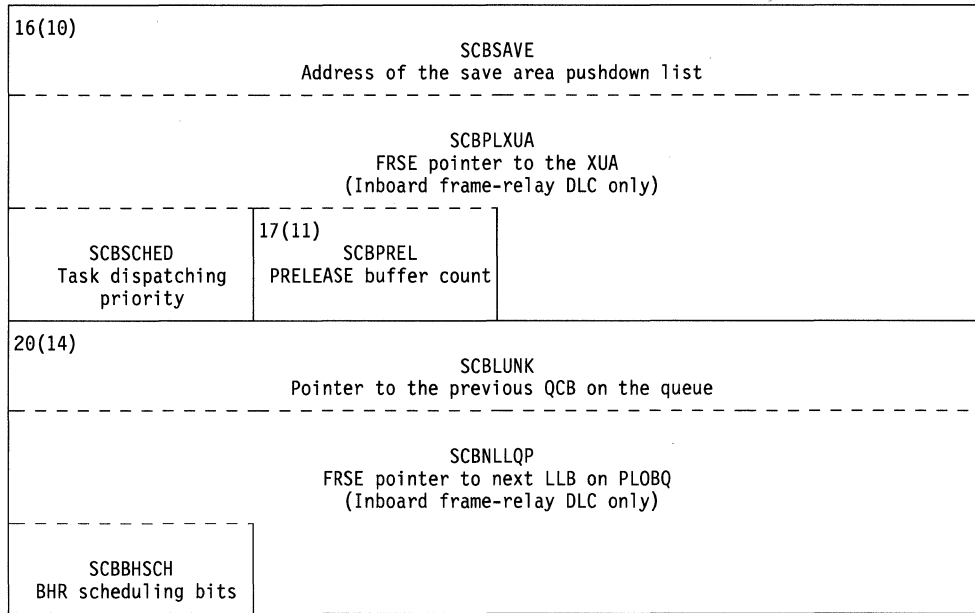
Link Inbound Queue (LIBQ)

(See “Queue Control Block for Work Queues” on page 1-887 for all bit definitions.)

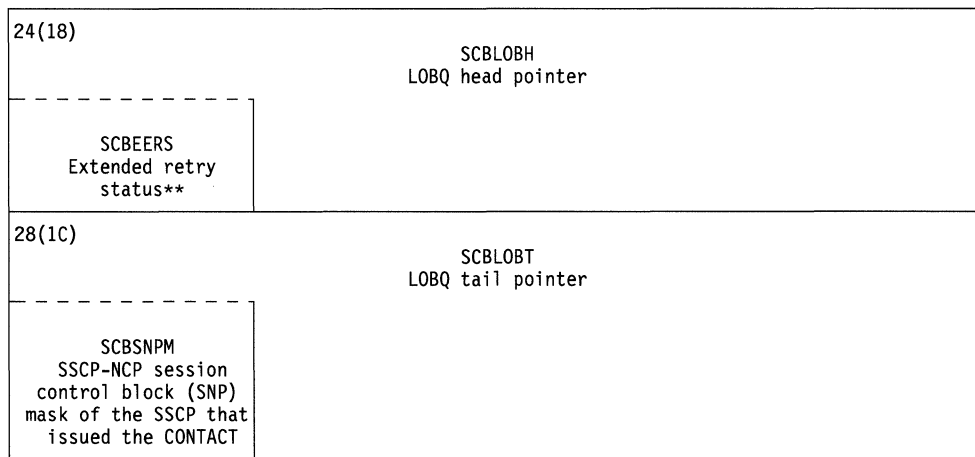


* Indicates a byte expansion follows.

Link Inbound Queue (LIBQ) (continue)



Link Outbound Queue (LOBQ)



** See the LXBEXTST field in the LXB for a definition of the status bits.

Link Outstanding Queue (LOSQ)

32(20)		SCBLOSH LOSQ outstanding queue head pointer	
SCBNRA Number of PIUs requiring ACK (SDLC only)			
SCBNSBP NPM frame-relay physical station control block (NSB) pointer (Inboard frame-relay DLC only)			
36(24)		SCBLOST LOSQ tail pointer	
SCBTYPE* Station type			
40(28)		SCBLKB Address of the link control block	
SCBADRC SDLC addressing character			
44(2C)		46(2E)	
SCBRSE Element address of a resource		SCBSSCF*	
		Service-seeking commands	47(2F) SCBSSCP* CONTACT poll commands
48(30)	49(31)	50(32)	
SCBSTATS* Station status	SCBOCF* Service-seeking output control flags	SCBTCNT Transmission counter (I-format)	
		SCBFLGS* Station flags (ODLC)	51(33) SCBSPOLW Station polling weight (ODLC)
52(34)			
SCBAPIU Address of the physical service PIU			
SCBPCNT Pass limit			

* Indicates a byte expansion follows.

56(38) SCBRENDQ Pointer to next FRSE station in run ending queue (Inboard frame-relay DLC only)		
SCBNR NR receive count	57(39) SCBNS NS send count	58(3A) SCBERS First error encountered*** SCBMBFR ESCA MAXBFRU (Only used during NCP initialization)
60(3C) SCBCASDL Maximum time allowed until CA slowdown (Only used during NCP initialization)		62(3E) SCBOCL Outstanding count limit
SCBLSSI Last set SSCF issued (ODLC)		
SCBRTCNT First level error recovery procedure (ERP) retry count		
61(3D) SCBSLC Second level ERP retry count		63(3F) SCBOCX One byte outstanding count limit
SCBREST FRSE run ending status (Inboard frame-relay DLC only)		
SCBCOCL Current outstanding count		
SCBCLIM FRSE station queued buffer limit (Inboard frame-relay DLC only)		
64(40) SCBSRTL Second level retry limit	65(41) SCBRCMD* Run command modifiers	66(42) SCB2ERPT Hardware second level ERP time-out value
68(44) SCBTERR Monitor station error count (limit 64)	69(45) SCBERPT Second level ERP pause	70(46) SCBRESCC FRSE support residual bytes to send to meet committed rate (Inboard frame-relay DLC only)
SCBGPAF Station group address		71(47) SCBOCLS Outstanding count limit save area

* Indicates a byte expansion follows.

*** See the LXBSTAT and LXBSTATC fields in the LXB for a definition of the status bits.

72(48) SCBGATMO Genned attention timeout value (Only used during NCP initialization)	74(4A) SCBRECNT Receive I-format error counter	

SCBTRTCT Total retry counter		

SCBSQBC FRSE station queue buffer count (Inboard frame-relay DLC only)	SCBGADLY Genned attention delay value (Only used during NCP initialization)	

SCBDLCI Frame-relay DLCI (Inboard frame-relay DLC only)		

SCBDLCI1* First byte of DLCI	75(4B) SCBDLCI2* Second byte of DLCI	

SCBLDPSA Pointer to LDPSA in error (ODLC)		

SCBPUCBP Pointer to protocol unique control block (Only used during NCP initialization) (ODLC)		

76(4C) SCBTPCNT Total transmission counter	78(4E) SCBIMRC Intensive mode record counter	

SCBTRNFR Transfer as coded on PU (ESCA only - only used during NCP initialization)		

80(50) SCBRCNT I-format received counter	82(52) SCBRPCNT S-format received counter	

SCBSESTS Pointer to ODLC station statistics error (ODLC)		

SCBRDURC Resource definition update request code (ODLC)	SCBDTLBP FRSE DTL entry pointer (Inboard frame-relay DLC only)	

* Indicates a byte expansion follows.

84(54) SCBTIACT Total acknowledged I-format counter		86(56) SCBTINCT Total I-format retransmission counter	
SCBSCEP Pointer to station control block (SCE) (ODLC only)			
SCBSSIRC Stop station immediate reason code (ODLC)			
88(58) SCBSRTT Total transmission threshold value		90(5A) SCBSRTR Total retries threshold value	
92(5C) SCBSTMOD* Flag byte	93(5D) SCBISNPM Intensive mode SNP mask	94(5E) SCBPREQ** FRSE pending request flags (Inboard frame-relay DLC only)	
		SCBPREQ1 FRSE pending request flags byte 1	95(5F) SCBPREQ2 FRSE pending request flags byte 2
		SCBOFSET Offset from the buffer prefix (BH) to the TH	
96(60) SCBCBBP Pointer to the committed buffers block (CBB)			
SCBRQOC Requested outstanding count			
100(64) SCBCFGX Pointer to the station control block extension (SXB)			
SCBSHWCS* Show cause save byte			
104(68) SCBDCF* Data link control flags	105(69) SCBLMDA Local modem addresses	106(6A) SCBMSTAT* Miscellaneous status byte	107(6B) SCBXS1 Byte 0 of XID/XID3 received after a null exchange identification (XID) poll

* Indicates a byte expansion follows.

108(6C)			SCBTGBP Transmission group pointer		
SCBLPRI Order of service for link in multilink transmission group					
112(70)	113(71)	114(72)	SCBCSCF*	SCBFLST*	SCBMPIU
Configurable station control flags	Status of the multilink transmission group or X.25 flag	Maximum PIU size			
116(74)					
SCBFLPF Multilink transmission group chain pointer					
SCBLNID Current local network ID					
120(78)			122(7A)		
SCBBSZE Maximum frame size in bytes for multi-PIU frames			SCBBZSEG Saved generated value of SCBBSZE		
124(7C)	125(7D)	126(7E)			
SCBMPFM Maximum number of PIUs that can be in multi-PIU frame	Reserved	SCBMDATA Maximum number of bytes allowed in each segment to be sent on this station (genned MAXDATA)			

* Indicates a byte expansion follows.

** See the LLBPREQ field in the LLB for a definition of the bits.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) SCBCONF		FRSE segment configuration
	1... ..	Subport A
	.1.. ..	Subport B
	..1. ..	Substitute subport A
	...1 ..	Substitute subport B
3(3) SCBFLAG		FRSE flag byte
	1... ..	SCB queue on physical link outbound queue (PLOBQ)
36(24) SCBTYPE		Station type
	x... ..	Reserved
	.1.. ..	Continue polling in auto network shutdown (ANS)
	..1. ..	Switched SDLC station
	...1 ..	Resource is eligible for network performance analyzer (NPA) data collection
	.... x..	Secondary link bit:
		1 = Link is secondary
		0 = Link is primary
	.... .1..	Terminal node (type 1 PU)
	.... .1.	Cluster controller (type 2 PU)
	.... ...x	1 = Intermediate node (subarea)
		0 = Boundary node (peripheral)
46(2E) SCBSSCF		Service-seeking command flags
	Byte 0	
	1... ..	Poll skip flag
	.1.. ..	Halt service seeking
	..1. ..	Not operational
	.... 1..	Link test level 2 (LL2) is active
	.... ...1	CONTACT poll command is active
	Byte 1	
	1... ..	CONTACT poll commands
	.1.. ..	Set normal response mode (SNRM)
	..11 111.	Poll command mask
	.... 1..	XID with data
	.... .1..	Set initialization mode (SIM).
	.... .1.	Exchange identification (XID)
	.... .11.	DISC modifier
	.... ...1	CONTACT poll command field

SCBSSCF Values

Configurable States: (See preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0000	0000 0001	Reset
1010 0001	0000 1001	Exchange identification data block (XID) pending with data
1010 0001	0000 0011	XID without data

Primary States: (See preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0000	0000 0001	Reset
1010 0001	0100 0001	CONTACT pending
1110 0001	1100 0001	CONTACT and DISCONTACT pending
0000 0000	0000 0001	Active (normal data)
0010 0000	0000 0001	Load/Dump/RPO active
1010 0001	0000 0101	SIM pending
1010 0001	1000 0001	DISC pending (SCBAPIU=0)
1010 0001	1000 0001	DISCONTACT pending (SCBAPIU≠0)
1010 1000	0000 0001	LL2 is active.
1110 0000	0000 0001	Internal forced station INOP pending
1110 1000	0000 0001	LL2 ending

Secondary States: (See preceding individual bit definitions.)

Byte 0	Byte 1	Meaning
1010 0001	0100 0001	CONTACT pending or CONTACT pending with SNRM/SNRME
0000 0000	0000 0001	Active
0010 0000	0000 0001	Load/Dump/RPO active
1010 0001	0000 0101	Load/Dump/RPO pending
1010 0001	1000 0001	RD (formerly RQD) pending (SCBAPIU=0)
1010 0001	1000 0111	DISCONTACT pending (SCBAPIU≠0)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) SCBSTATS		Station status
	1...	Poll sent (SCBSPOL)
	.1..	LL2 is active
	..1.	Station quiesce is pending
	...1	Remote power-off (RPO) is in progress
	.... 1...	SIM can be accepted over the link associated with this station
	.... .1..	COMMIT is in progress for this station
	.... ..1.	One or more SDLC error record counters has reached its limit
	.... ...1	Device is available to dynamic reconfiguration

Offset/Field Name	Bit Pattern/Hex Value	Contents
49(31) SCBOCF		Service-seeking output control flags
	1...	Output skip bit
	.1..	Run terminator interlock
	..1.	Receiver not ready (RNR) has been received
	..1.	Allow PIU to flow (ODLC station only)
	...1	Second level ERP pause is in progress
	.... 1..	Scanner change command is required
	.... .1..	Duplex SDLC scheduling
	.... ..1.	RNR repoll
	.... ...1	Half-duplex poll is in progress
50(32) SCBFLGS		ODLC station flags
	1...	End RUN command for secondary/configurable (SCBERFS)
	.1..	Stop station immediate complete LDPSA is pending (SCBSSIP)
	..1.	Disconnect indication LDPSA received (SCBDINR)
	...1	NDPSA command is queued because buffers were not available (SCBNCQD)
	.... 1..	Resource definition initial is pending (SCBRDIP)
	.... .1..	Switched going reset end run command (SCBSRER)
	.... ..1.	FRSE substitute support CONTACT failure/no LMI support (SCBSUBF)
65(41) SCBRCMD		Run command modifiers
	.1..	Override first- and second-level entries
	..1.	Station activation retry
	...1	Immediate retry
	.... 1..	SDLC reject has been received since NCP last sent poll/final
	.... .1..	SDLC reject has been transmitted
	.... ..1.	Waiting for a good response to the poll
74(4A) SCBDLCI1		First byte of DLCI
	xxxx xx..	Reserved for DLCI address
	.... .x.	Command/Response indicator
	.... ...x	Extended address bit (0)
75(4B) SCBDLCI2		Second byte of DLCI
	xxxx	Reserved for DLCI address
	.... x..	Reserved for congestion indicator
	.... .x..	Reserved for congestion indicator
	.... .x.	Discard eligibility
	.... ...x	Extended address bit(1)
92(5C) SCBSTMOD		Flag byte. Set/reset at levels 2, 3, or 5. Level 5 may alter these flags only with an XIO Setmode
	1...	Intensive mode (IM) is active
	.1..	IM stop is in progress for SETCV (IM)
	..1.	IM stop is in progress for slowdown
	...1	IM completed by processor state
	.... 1..	IM deactivation incomplete state
	.... .1..	IM start NDPSA wait
	.... ..1.	IM stop NDPSA not required
	.... ...1	Block link problem determination aid 2 (LPDA2) test to this resource

Offset/Field Name	Bit Pattern/ Hex Value	Contents
100(64) SCBSHWCS		Show cause save byte
	1... ..	Dynamic threshold alteration has altered a threshold
	X'01'	Total transmission threshold limit has been exceeded
	X'02'	Total retries threshold limit has been exceeded
	X'03'	Deactivation process
	X'04'	Transmission threshold has been exceeded (I-format) (SDLC). Data (L) PIUs transferred threshold has been exceeded (channel link)
	X'05'	Received I-format error threshold has been exceeded (SDLC). Data check threshold has been exceeded (channel link)
	X'06'	S-format received threshold has been exceeded (SDLC). Second chance attention polls presented threshold has been exceeded (channel link)
	X'07'	Total acknowledged I-format threshold has been exceeded (SDLC). Acknowledged (L) PIU count threshold has been exceeded (channel link)
	X'08'	I-format received threshold has been exceeded (SDLC). (L) PIUs received correctly threshold has been exceeded (channel link)
	X'09'	Total I-format retransmission threshold has been exceeded (SDLC). (L) PIU retransmission threshold has been exceeded (channel link)
	X'0A'	Sum of received I-format error counter and I-format received counter resulted in a counter overflow
	X'0B'	Reserved
	X'0C'	Reserved
104(68) SCBDCF		Data link control flags
	x... ..	Control field operating mode: 1 = 2-byte control field 0 = 1-byte control field
	.x... ..	Set normal response mode: 1 = Transmit SNRME 0 = Transmit SNRM
	..1.	XID on the LOBQ
	...1	First error in the poll cycle
	.... x...	Multipoint line indication: 1 = Multipoint line 0 = Point-to-point line
	.... .1..	Do not transmit while in awaiting CONTACT state
	.... ..1.	Station resides on a primary link segment
	.... ...1	Run link problem determination aid (LPDA) when the total transmissions counter reaches its threshold
106(6A) SCBMSTAT		Miscellaneous status byte
	xxxx xxx.	Reserved for compatibility with CUBMSTAT
	.... ...1	ODLC station

Offset/Field Name	Bit Pattern/ Hex Value	Contents
112(70) SCBCSCF		Configurable station control flags
	1...	Any load/dump/RPO state
	.1..	Any active normal-response-mode state
	..1.	Any DISCONTACT state
	...1	Any CONTACT state
	.... 1...	Any test state
		Substate indicators
	.... .xx.	00 = Configurable 01 = Primary 10 = Secondary
	.... ...1	Final phase for any CONTACT or load/dump state
		Configurable substate definitions
	X'00'	Reset state
	X'08'	Link test level 2
	X'10'	CONTACT XID '00' state
	X'20'	DISCONTACT configurable state
	X'30'	CONTACT/DISCONTACT XID '00' state
	X'80'	CONTACT/DISCONTACT, load/dump/RPO XID '00' state
	X'A0'	DISCONTACT, load/dump/RPO configurable state
	X'B0'	CONTACT/DISCONTACT, load/dump/RPO XID '00' state
	X'C0'	Load/dump is active.
	X'C1'	Load/dump final is pending.
		Primary substate definitions
	X'13'	CONTACT SNRM state
	X'22'	DISCONTACT primary state
	X'33'	CONTACT/DISCONTACT SNRM state
	X'42'	Active primary
	X'62'	Active DISCONTACT
	X'A2'	DISCONTACT, load/dump/RPO primary state
	X'B3'	CONTACT/DISCONTACT, load/dump/RPO SNRM state
	X'E2'	Active DISCONTACT load/dump/RPO pending primary
		Secondary substate definitions
	X'14'	CONTACT XID '07' state
	X'15'	CONTACT UA state
	X'24'	DISCONTACT secondary state
	X'34'	CONTACT/DISCONTACT XID '07' state
	X'35'	CONTACT/DISCONTACT UA state
	X'44'	Active secondary
	X'64'	Active DISCONTACT pending secondary
	X'84'	Load/dump/RPO pending secondary
	X'A4'	DISCONTACT, load/dump/RPO secondary state
	X'B4'	CONTACT/DISCONTACT, load/dump/RPO UA state
	X'B5'	CONTACT/DISCONTACT, load/dump/RPO UA state
	X'C4'	Load/dump/RPO active secondary
	X'E4'	Active DISCONTACT load/dump/RPO pending secondary

Offset/Field Name	Bit Pattern/ Hex Value	Contents
113(71) SCBFLST		Status of the multilink transmission group or X.25 flag
	1...	Station is ready to send to the multilink transmission group.
	.x..	MLTG configuration (SCBTGCO):
		1 = More than one subarea link station allowed in this MLTG 0 = Only one subarea link station allowed in this MLTG
	..1.	Station in MLTG error recovery mode (SCBGEM)
	...1	Pass multiple frames to DLC:
		1 = TG passes multiple frames to DLC layer at a time 0 = TG passes one frame to DLC layer at a time
	.... 1...	X.25 single link SNA 4
	.... .1..	Token-ring subarea station (NTRI or ODLC)
	.... ..1.	Station has mixed media support:

Station Control Block Extension

Program: NCP

Size in bytes: 72(48)

Created by: NCP initialization and dynamically

Pointed to by: The SCBSCEP field in the station control block (SCB), the CUBSCEP field in the common physical unit block (CUB), and the SSBSCEP field in the ESCA logical station control block (SSB)

Function: Contains common transport mechanism fields for ODLC I/O at a station level and resource definition field for the station

Name	Offset	Name	Offset
SCEALLNP	64 (40)	SCEWQI5	21 (15)
SCECBID	8 (8)	SCEWQI6	22 (16)
SCECBID1	8 (8)	SCEWQI7	23 (17)
SCECBID2	9 (9)		
SCECPL	57 (39)		
SCECWRC	36 (24)		
SCECWS	40 (28)		
SCEDDOPP	68 (44)		
SCEEWSST	10 (A)		
SCEEWSXS	41 (29)		
SCEFFLAG	60 (3C)		
SCEFLAGS	12 (C)		
SCEFMT	24 (18)		
SCEIREA	42 (2A)		
SCELACBP	60 (3C)		
SCELACK	32 (20)		
SCELIMLR	12 (C)		
SCELPEN	28 (1C)		
SCELRVTP	56 (38)		
SCEMAXWS	45 (2D)		
SCEMINWS	44 (2C)		
SCENBLPW	55 (37)		
SCENBPRQ	53 (35)		
SCENBSCR	54 (36)		
SCENCBP	0 (0)		
SCENEXIN	4 (4)		
SCENEXT	0 (0)		
SCENMVT	48 (30)		
SCENSEWS	48 (30)		
SCENWS	0 (0)		
SCEPCBP	4 (4)		
SCEPFLAG	52 (34)		
SCEPUCBP	28 (1C)		
SCERDBFC	43 (2B)		
SCESCBP	24 (18)		
SCESQCNT	56 (38)		
SCESQH	32 (20)		
SCESQT	36 (24)		
SCESSTT	58 (3A)		
SCETCB	68 (44)		
SCEWQI0	16 (10)		
SCEWQI1	17 (11)		
SCEWQI2	18 (12)		
SCEWQI3	19 (13)		
SCEWQI4	20 (14)		

0(0)			
SCENCBP Pointer to next control block on NACB work queue			
SCENEXT Pointer to next SCE in the pool			
SCENWS Next window size			
4(4)			
SCEPCBP Pointer to previous control block on NACB work queue			
SCENEXIN Next index in NDP command queue			
8(8)		10(A)	
SCECBID Control block ID		SCEEWSST Station error while sending status	
SCECBID1 (X'1F')	9(9)	SCECBID2 (X'99')	
12(C)			
SCELIMLR Station's processor.LRID			
SCEFLAGS* Flags byte			
16(10)	17(11)	18(12)	19(13)
SCEWQ10 NDP command queue index 0	SCEWQ11 NDP command queue index 1	SCEWQ12 NDP command queue index 2	SCEWQ13 NDP command queue index 3
20(14)	21(15)	22(16)	23(17)
SCEWQ14 NDP command queue index 4	SCEWQ15 NDP command queue index 5	SCEWQ16 NDP command queue index 6	SCEWQ17 NDP command queue index 7
24(18)			
SCESCBP Pointer to station control block (SCB)			
SCEFMT* Resource definition format**			

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKE, LME, SCE, and TRE.

28(1C)		SCEPUCBP Pointer to protocol unique control block	
SCELPEN* Status flags			
32(20)		SCESQH Pointer to send queue first element	
SCELACK Station processor ACK required count			
36(24)		SCESQT Pointer to send queue last element	
SCEWRC Current window residual count			
40(28)	41(29)	42(2A)	43(2B)
SCECWS Current window size	SCEEWSXS Station error while sending extended status	SCEIREA* IM stop reason code	SCERDBFC RD data buffer count
44(2C)	45(2D)	46(2E)	
SCEMINWS Minimum window size	SCEMAXWS Maximum window size	Reserved	
48(30)		SCENSEWS Next SCE in error while sending chain	
SCENMVT Number of NMVTs pending for this station			
52(34)	53(35)	54(36)	55(37)
SCEPFLAG* Pacing flags	SCENBPRQ Number of buffers associated with the pacing request	SCENBSCR Number of buffers in saved COMMIT request	SCENBLPW Number of buffers in largest received PIU in window

* Indicates a byte expansion follows.

56(38)		SCELRVTP Pointer to logical resource vector table	
SCSQCNT ODLC send queue PIU count	57(39) SCECPL Committed pass limit (Frame-relay only)	58(3A)	SCESTT FHSP saved status (Frame-relay only)
60(3C)		SCELACBP Pointer to LACB	
SCEFFLAG* Frame-relay flag byte			
64(40)		SCEALLNP Pointer to list of active logical line NACBs (ESCA only)	
68(44)		SCETCB Pointer to TCB	
		SCEDDOPP Delayed deactivation chain pointer	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) SCEFLAGS		Flags byte
	1... ..	Station in unacknowledged (NACK) state (SCENACK)
	.1.. ..	EC for PIU NDPSA is outstanding (SCEECPO)
	..1. ..	Station/Line/Processor error while sending (SCEEWS)
	...1 ..	Stop station soft pending (SCESSSP)
	.... 1..	EC for ID NDPSA is outstanding (SCEECID)
	.... .1..	Use all stations (broadcast) SDLC address X'FF' (SCEALLS)
	.... ..1.	Station not active (physical station) (SCESTNA)
	.... ...1	Physical resource with associated logical resources (SCEPWLR)
24(18) SCEFMT		Resource definition format
	x... ..	1 = Station definition (SCESTAT) 0 = Link definition
	.1.. ..	1 = Logical definition (SCELOG) 0 = Physical definition
	.... xxxx	Protocol type (SCELIMIT) 0000 = All 0001 = SDLC 0010 = ESCA 0011 = TRA 0100 = ISDN 0101 = T1.TDM 0110 = X.25 0111 = X.21 1000 = Frame-relay (SCEFR)
28(1C) SCELPEN		Status flags
	1... ..	LPDA2 pending (SCELPDA)
	.1.. ..	NPA start required (SCESTRT)
	..1. ..	End run command for secondary token-ring non-activation XID exchange
	...1 ..	Do not send disconnect response NDPSA for secondary in A181 (SCEDSDR)
	.... 1..	Station delete NDPSA pending (ESCA and FHSP PUs only) (SCESTDP)
	.... .1..	Delayed deactivation, ODLIC processing pending (SCEDDPP)
42(2A) SCEIREA		IM stop reason code
	X'A7'	IM terminated because of request from the SSCP
	X'AB'	IM terminated because NCP is in slowdown
52(34) SCEPFLAG		Pacing flags
	1... ..	RWI previously sent (SCERWI)
	.1.. ..	Pacing response pending (SCEPRSP)
	..x. ..	Reserved
	...1 ..	Withhold pacing response (SCEWPRS)
	.... 1..	Send pacing response to processor (SCESPRS)
	.... .x..	Reserved
	.... ..1.	Send RWI to processor (SCESRWI)
	.... ...1	Notify flow control (PRs) owed (SCENFCO)

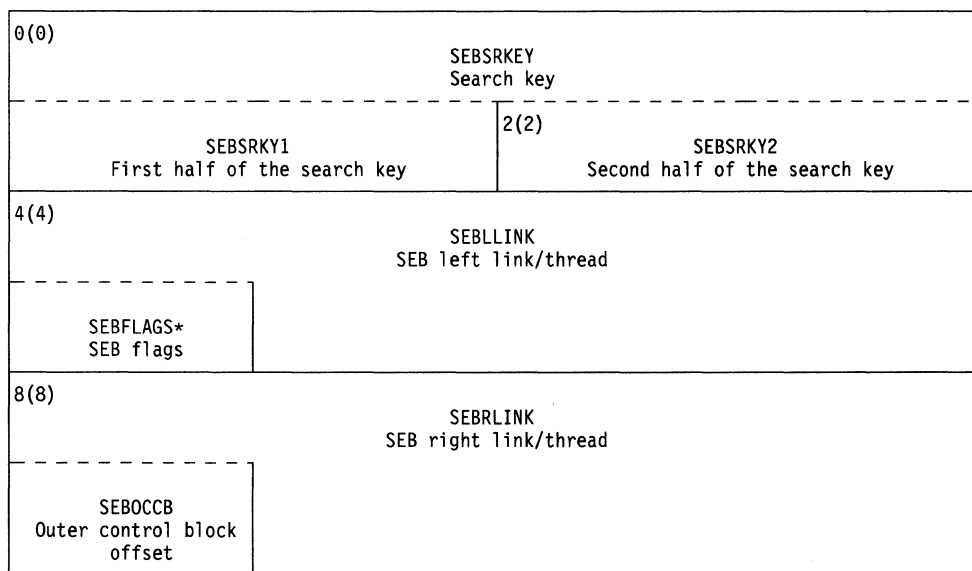
Offset/Field Name	Bit Pattern/ Hex Value	Contents
60(3C) SCEFFLAG		Frame-relay flag byte
	1...	RDM required for this station (SCERDMR)
	.1..	End RUN with status saved in SCESSTT (SCEERSS)
	..1.	FHSP activation processing delayed (SCEWAIT)
	...1	RDM delete pending (SCERDMP)
	.... ..1.	LMI=YES for this LMI PU (SCELMI)
	.... xx.x	Reserved

SNA-IP Interface Counters Control Block**Program:** NCP**Size in bytes:** 20(14)**Created by:** NCP initialization**Pointed to by:** RIBSCCB field in RIB**Function:** Contains several counters that keep statistics about a SNA-IP session interface.

0(0)	SCTNUMT Number of bytes transmitted per SNA-IP interface
4(4)	SCTNUMR Number of bytes received per SNA-IP interface
8(8)	SCTNFDI Number of inbound frames discarded for non-error reasons (per SNA-IP interface)
12(C)	SCTNFDO Number of outbound frames discarded for non-error reasons (per SNA-IP interface)
16(10)	SCTDNIP Number of frames discarded because they were non-IP frames (per SNA-IP interface)

Search Element Control Block

- Program:** NCP
Size in bytes: 12(C)
Created by: NCP generation
Pointer to: The SHBSEBRT field in the search tree header control block (SHB)
Function: Represents a node in the binary search tree. It is embedded in a resource connection block (RCB) or a session path control block (SPC).



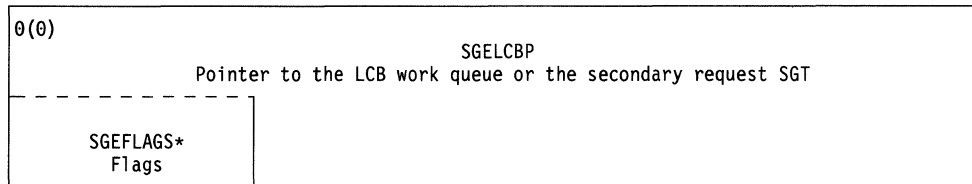
* Indicates a byte expansion follows.

Byte Expansion

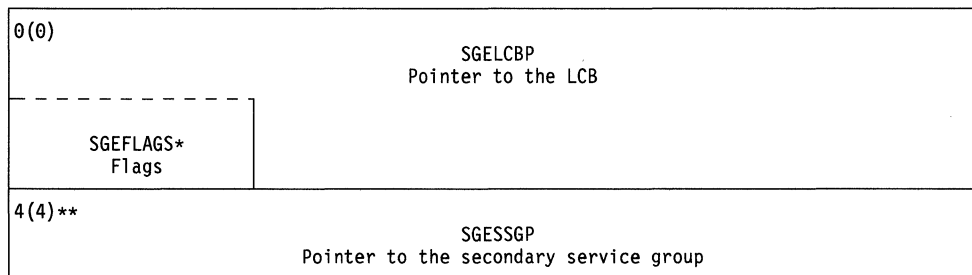
Offset/Field Name	Bit Pattern	Contents
4(4) SEBFLAGS		SEB flags
	xx..	Balance indicator: 00 = Left and right subtrees are equal. 01 = Right subtree is higher by one. 10 = Left subtree is higher by one.
	..1.	Key is provided by NCP.
	...x	1 = The left link/thread field is a thread. 0 = The left link/thread field is a subtree pointer.
	.... x...	1 = The right link/thread field is a thread. 0 = The right link/thread field is a pointer.
	.... .1..	SEB is in a search tree.

Switched Line Group Entry

- Program:** NCP
- Size in bytes:** 4(4) or 8(8)
- Located in:** Switched line group table (SGT), one switched line group entry (SGE) for each line in the group
- Created by:** NCP generation
- Pointed to by:** None. (See "Switched Line Group Table" on page 1-957.)
- Function:** Points to a line control block (LCB) or another SGT for chaining. The following format applies to these entries:
- The first entry if there is no secondary request group (See "Switched Line Group Table" on page 1-957 for a secondary request group)
 - Each entry after the first
 - The last entry if there is no secondary service group



The following format is for the last entry if there is a secondary service group.



* Indicates a byte expansion follows.

** Actual position depends on the number of entries in the table.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) SGEFLAGS		Flags
	1...	Queue is present (always 1)
	..1.	Not a line entry
	...1	Secondary request entry
	.... 1...	Last line entry
	.... .1..	Secondary service group entry is next

Switched Line Group Table

- Program:** NCP
- Size in bytes:** Queue control block (QCB), counter, and the first entry for a secondary request group=28(1C) bytes
- Created by:** NCP generation
- Pointer to:** The COESGTP field in the callout control block extension (COE) and the LCBESGTP field in the line control block (LCB)
- Function:** A group of similar type switched lines that can be used to call a terminal that uses that group

Switched Group QCB (SGTORQ)

(See "Queue Control Block for Work Queues" on page 1-887 for all bit definitions.)

0(0)			
SGTIECB Pointer to the first element queued			
4(4)			
SGTLECB Pointer to the last element queued			
8(8)			
SGTLINK Pointer to the next QCB on the queue			
SGTPRKEY Protection key			
12(C)			
Reserved			
SGTSTAT Task and queue status			
16(10)	17(11)	18(12)	19(13)
SGTWLL Work load limit	SGTWLC Work load current size	SGTQL Queue limit	SGTCIL Call in limit
20(14)	21(15)		
SGTCIC Call in counter	Pad		
24(18)			
SGTIE** Address of the secondary request group SGT or the LCB work queue			
SGTFLAG* Flags			

* Indicates a byte expansion follows.

** The fullword entry at 24(18), consisting of a flag byte and a pointer, is repeated if there is more than one line on a secondary request group in this SGT.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
24(18) SGTFLAG		Flags
	1... ..	Queue is present (always 1).
	..1.	Not a line entry
	...1	Secondary request group
	.... 1..	Last line entry
	.... .1..	Secondary service group entry is next.

Search Tree Header Control Block

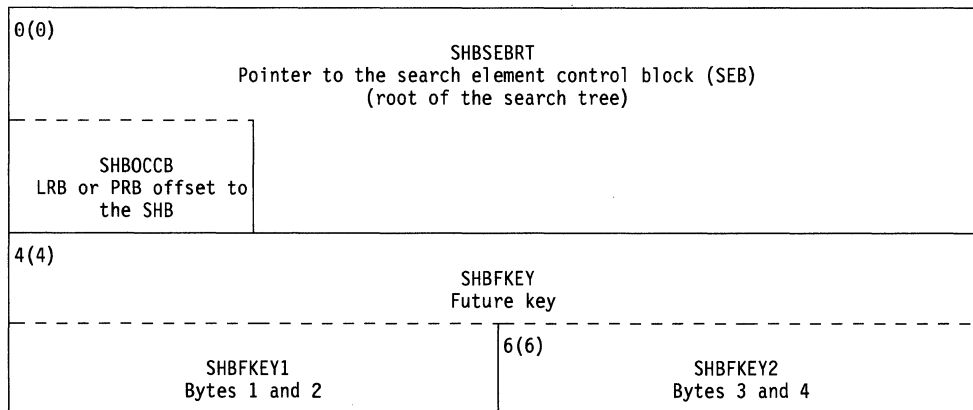
Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointer to: Offset LU routing block (LRB) or PU routing block (PRB)

Function: Serves as the anchor block for inbound and outbound search trees. This block is embedded at the end of the LRB and the PRB.



NCST PLU-SLU Session Control Block**Program:** NCP**Size in bytes:** 60(3C)**Created by:** NCP generation**Pointed to by:** The NLXUCB (User control block) field in the programmed resource (LU) block extension (NLX)**Function:** Maps the user control block for the NCP programmed resource logical unit (LU) block extension.

0(0)	SIBID Two byte block ID		2(2)	SIBSTATE* PLU-SLU session states	3(3)	SIBINPUT Index of last PIU received
	SIBIDB Unique ID byte (printable) C'SI'	1(1)	SIBIDU Printable usability byte			
4(4)	SIBBKPTR Back pointer to NCP programmed resource control block					
8(8)	SIBLEASE User lease count	9(9)	SIBFLGS1* Session flags	10(A)	SIBOFFST Length of this control block	11(B) Reserved
12(C)	Reserved					
16(10)	SIBPIB@ Pointer to PIB for this PLU-SLU session					
20(14)	SIBOCB@ Address of associated output control block for this LU					
24(18)	SIBSSIP Pointer to SNA session interface block (SSI)					
28(1C) - 35(23)	SIBREMLU Remote LU name for auto initiation					
36(24) - 43(2B)	SIBMODNM Remote LU logmode entry name					

* Indicates a byte expansion follows.

44(2C)			
SIBBND BIND PU address			
SIBCHRP Chaining Re-assembly pointer			
48(30)			
SIBVRID VRID list address			
52(34)		54(36)	
SIBSSUBA Low order two bytes of subarea address of session partner		SIBSEQNO PLU-SLU outbound sequence number	
56(38)	57(39)	58(3A)	59(3B)
SIBPCLMO Pacing limit outbound from BIND	SIBPCNTO Current pacing count outbound	SIBPCFLG* Pacing response flags	SIBIPFLG* IP router flags

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
2(2) SIBSTATE		PLU-SLU session states
	X'01'	PLU-SLU session inactive
	X'02'	Bind response pending
	X'03'	PLU-SLU session in progress
	X'04'	UNBIND response pending
	X'05'	VR activation pending
9(9) SIBFLGS1		Session flags
	1... ..	LU capability bit
		1 = Primary
		0 = Secondary
	.1.. ..	Force deactivate is pending
58(3A) SIBPCFLG		Pacing response flags
	1... ..	Pacing response pending
	.1.. ..	Isolated pacing response received
	..1.	Inbound pacing is supported
	...1	First in chain received
	.... 1...	Purging chain state
	.... .1..	This LU will request exception response
59(3B) SIBIPFLG		IP router flags
	1... ..	Initiate remote LU
	.1.. ..	VR event has been issued
	..1.	Re-issue init-self
	...1	Time out pending for this LU

Send ID

Program: NCP

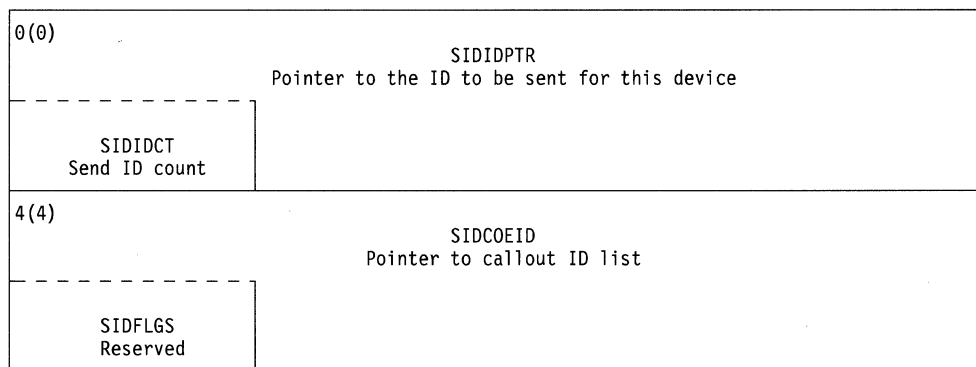
Size in bytes: 4(4) for no callout ID list; 8(8) for callout ID list present

Created by: NCP generation

Pointer to: None

The SID follows the callout control block extension (COE) if the send ID is required.

Function: Contains information required for sending hardware identification. This extension is included only for BSC switched terminals that require the controller to send its ID.



Note: Actual position depends on the other extensions present. This extension is present only if the COE is present, and it always follows that extension.

Subarea Index Table

Program: NCP

Size in bytes: Variable; 2*(SALIMIT+1) bytes

Created by: NCP generation, one per network

Pointer to: CXTSIT in the link-edit map or the SYSSITP field in the extended halfword direct addressables control block (HWE) plus 72(48) for the native network and NVTSTIP in the network vector table (NVT) for each network

Function: Consists of 2-byte elements that correspond to destination subarea addresses (DSAs). Each 2-byte element is the row number of the transit routing table (TRT) that defines the routing to the corresponding DSA. An SIT entry for a particular DSA contains a nonzero value if this NCP currently has at least one explicit route defined to that DSA. If no explicit route is currently defined to a DSA, its SIT entry is zero.

The first element in the SIT is always zero to indicate that subarea X'00' is an invalid DSA. The element in the SIT corresponding to the NCP's subarea address is always zero.

0(0) Invalid (X'0000')	2(2) TRT row number for DSA 1
4(4) TRT row number for DSA 2	6(6) TRT row number for DSA 3
8(8) · · ·	10(A) · · ·
2*(SALIMIT-1) TRT row number for the DSA (SALIMIT-1)	2 * SALIMIT TRT row number for the DSA SALIMIT

ESCA Link Control Block**Program:** NCP**Size in bytes:** 12(0C)**Created by:** NCP generation**Pointed to by:** The LKEPUCBP field in the LKB extension (LKE)**Function:** Contains resource definition information pertaining to a particular Enterprise Systems Connection Adapter (ESCA) logical line

0(0) SLBCASDL Maximum time allowed until CA slowdown occurs (from LINE statement)	2(2) SLBTRNFR Data transfer limit	3(3) SLBLNUM Logical line number
4(4) SLBGATMO Genned attention timeout value (from LINE statement)	6(6) SLBGADLY Genned channel attention delay value (from LINE statement)	
8(8) SLBMBFR Number of host read commands	10(A) Reserved	

Set Mode Control Block

Program: NCP

Size in bytes: 16(10)

Created by: Dynamically created when a buffer is leased for set mode processing

Pointed to by: The PSASMST field in the parameter/status area control block (PSA)

Function: Contains the set mode data area passed to the communications scanner processor (CSP) when the Set Mode command is processed.

0(0) SMBDSBL Disable time-out		2(2) SMBLIN2* Line parameters	3(3) SMBLIN3* Line parameters
4(4) SMBLCD* Line control definition (LCD) and buffer prefix	5(5) SMBLIN5* Line parameters	6(6) SMBBUFF NCP buffer size	7(7) SMBEORCT Total count of the End of Reception (EOR) characters (SS burst mode)
8(8) SMBSEC SDLC secondary station address		10(A) SMBRPLY Reply time-out	
9(9) SMBEOR1 First EOR character in the EOR list (SS burst mode). (See note.)	9(9) SMBEOR2 Second EOR character in the EOR list (SS burst mode). (See note.)	11(B) SMBEOR3 Third EOR character in the EOR list (SS burst mode). (See note.)	11(B) SMBEOR4 Fourth EOR character in the EOR list (SS burst mode). (See note.)
12(C) SMBENBL Enable/connect-out time-out		14(E) SMBTXT Receive text time-out	

* Indicates a byte expansion follows.

Note: The fifth through eighth EOR characters, if any, are located in the PSA.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents	SDLC	X.21	BSC
2(2) SMBLIN2		Line parameters			
	1... ..	Duplex	X	X	
	.1.. ..	230 KB line	X		
	..0.	Always 0 for NCP			
	...1	Transmit two flags	X		
	.... 1...	Monitor Test-Indicate (TI) lead	X		X
	.... .1..	Echo defeat is supported	X		
	.... ..1.	Transmit flags between frames	X		
	.... ...x	1 = Primary station 0 = Secondary station	X		X

Offset/Field Name	Bit Pattern/ Hex Value	Contents	SDLC	X.21	BSC
3(3) SMBLIN3		Line parameters			
	1...	Generate answer tone or X.21 1984 release level	X	X	X
	.1..	Switched line	X	X	X
	..1.	Ring indicator mode or X.21 CCLID support	X	X	X
	...1	Transmit in NRZI mode or secure bit SS	X		X
	.... 1..	Turn with Request to Send (RTS) on (four-wire facility using half-duplex protocol)	X		X
	.... .1..	Transmit with New Sync	X		X
	.... ..1.	Zero insert/delete suppression	X		
	.... ...x	Reserved			
4(4) SMBLCD		LCD and buffer prefix			
	xxxx	Line control definer field			
		X'3' = Auto call	X		X
		X'9' = SDLC	X	X	
		X'C' = BSC (EBCDIC)			X
		X'D' = BSC (ASCII)			X
	.... xxxx	NCP buffer prefix size:			
		X'0' = Minimum			
		X'8' = Normal			
		X'F' = Maximum.			
5(5) SMBLIN5					
	xxxx x...	Line speed—controller clocking:	X	X	X
		00000 = 50 bps			
		00001 = 75 bps			
		00010 = 100			
		00011 = 110			
		00100 = 134.5			
		00101 = 200			
		00110 = 300			
		00111 = 600			
		01000 = 1200			
		01001 = 2400			
		01010 = 4800			
		01011 = 9600			
		01100 = 19200			
		01101 = 38400			
		01110 = 55855			
		01111 = 245760			
		11111 = Special			
	.... .x..	1 = Modem clocking	X	X	X
		0 = Controller clocking			
	.... ..x.	Data rate selection:	X		X
		1 = High data rate for modem			
		0 = Low data rate.			
	.... ...1	Direct attachment			

Set Mode Control Block (Ethernet)

Program: NCP

Size in bytes: Depends on whether a locally administered physical address was generated. If there is a locally administered address, the size is 22(16). If there is not a locally administered address, the size is 16(10).

Created by: Dynamically created when a buffer is leased for set mode processing

Pointed to by: The PSASMST field in the parameter/status area control block (PSA(Ethernet))

Function: Contains the set mode data area passed to the communications scanner processor (CSP) when the Set Mode command is processed for an Ethernet line

0(0)	Reserved	2(2) SMEBLIN2* Line parameters	3(3) SMEBNGA** Number of group addresses
4(4)	Reserved	6(6) SMEBBUFF NCP buffer size	7(7) Reserved
8(8) SMEBTFRM Counter threshold for all frames transmitted or received			
12(C) SMEBTERR Counter threshold for all errors on transmit or receive			
16(10) - 21(15) SMEBLAPA Locally administered physical address			

* Indicates a byte expansion follows.

** See Ethernet adapter hardware specifications for the interface required when this field is non-zero.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) SMEBLIN2		Line parameters
	1...	Split first buffer (frame header in separate buffer on receives)
	.x..	1 = Use universally administered address 0 = Use locally administered address
	..x.	Reserved
	...1	Pass 802.3 frames with no SNAP header indicator
	.... 1...	Do not check IP address on Broadcast ARP frames indicator

SSCP Monitor Mode Control Block

Program: NCP

Size in bytes: 160(100) plus FVTABLE

Created by: NCP generation

Pointed to by: CXTSMM in the link-edit map and the SYSSMMP field in the fullword direct addressable extension (FAX)

Function: Contains the status bytes and queue control blocks (QCBs) for SSCP monitor mode

0(0) - 23(17)		
SMMIQCB** SSCP monitor mode input QCB. (See the input QCB for field definitions.)		
24(18) SMMFSTAT* SMM status byte 1	25(19) SMMFSTA2* SMM status byte 2	26(1A) SMMSEQN Session sequence number
28(1C) SMMNCNT Count of the SSCP monitor mode link (MLT) entries that are not continuous	29(1D) SMMMLTC MLT count (total number of entries)	30(1E) Reserved
32(20) SMMMLTP Pointer to the first MLT entry		
36(24) - 47(2F) SMMQECB SMM event control block (ECB) for the QCB timer. (See the ECB for field definitions.)		
48(30) - 59(3B) SMMNECB SMM ECB for programmed resource LU block (NLB) time. (See the ECB for field definitions.)		
60(3C) - 83(53) SMMWKQ*** SMM input queue. (See the input QCB for field definitions.)		
84(54) - 159(9F) NLB for the SSCP monitor mode request/response unit (RU) processor		
160(100) - n FVTABLE		

* Indicates a byte expansion follows.

** Priority is immediate. Task is CXDJMMI.

*** Priority is productive. Task is CXDJRUP.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) SMMFSTAT		SDLC monitor mode status
	1... ..	SMM is active
	.1.. ..	Deactivate is pending
	..1. ..	SMM QCB timer is in progress
	...1 ..	SMM NLB timer is in progress
	.... 1..	Activate physical is pending
	.... .1..	Activate physical is complete
	.... ..1.	Start data traffic is pending
	.... ...1	Start data traffic is complete
25(19) SMMFSTA2		SMM status byte 2
	1... ..	NCP has an external owner

SNAP Trace Table for ODLC**Program:** NCP**Size in bytes:** Variable (32(20) + (No. of entries * 32(20)))**Created by:** NCP initialization**Pointed to by:** The SYSSNAPT field in the fullword direct addressable extension (FAX)**Function:** Contains the SNAP trace data. An entry is built for each IOH to and each Level 2 interrupt from the processor. If an execute request (ER) or a Service Request (SR) is traced, then the DPSAs associated with the ER or SR are also traced--one entry per DPSA.

SNAP Trace Table Header

0(0)	SNAP1ST Pointer to first entry in table
SNAPFLG1* Flags byte 1	
4(4)	SNAPNEXT Pointer to next available entry in table
SNAPFLG2 Flags byte 2	
8(8)	SNAPLAST Pointer to last entry in table
SNAPFLG3 Flags byte 3	
12(C)-31(1F)	SNAPRSVD Unused

* Indicates a byte expansion follows.

SNAP Trace Entry for IOHs

Beginning at offset 32(20) into the table and every 32(20) thereafter

n SNAPTITL* Title of entry in EBCDIC			
SNAPTIT1*		n+2 SNAPTIT2*	
n+4 SNAPCMD Command/status area			
SNAPCMD1 Reason code (if status)	n+5 SNAPCMD2 Diagnostic code (if status)	n+6 SNAPCMD3 NCP congestion (if status from NCP)	n+7 Unused
PSA command (if parameter)	Unused (if parameter)	Unused (if parameter or status from processor)	
n+8 SNAPGLID Line ID		n+10 SNAPSEQN LPSA or NPSA sequence counter	
n+12 SNAPTA IOH TA		n+14 SNAPTD IOH TD	
n+16 SNAPTIM Time stamp (in 0.1 seconds)		n+18 SNAPHCC IOH halt cause code (IOH halt only)	
n+20 SNAPLDPE Pointer to buffer containing LDP in error (IOH halt only)			
SNAPHCMD Halt command (IOH halt only)			
n+24 Unused			
n+28 SNAPADDR Pointer to LPSA or NPSA			
SNAPPSAT* PSA type			

* Indicates a byte expansion follows.

SNAP Trace Entry for Get Adapter Status IOHs
 Beginning at offset 32(20) into the table and every 32(20) thereafter

n		SNAPTITL* Title of entry in EBCDIC	
SNAPTIT1*		n+2	SNAPTIT2*
n+4	SNAPSYNC CBC sync flags from SYSCSYNC	n+5	Unused
n+8	SNAPGCNT Number of times the GAS entry has been updated	n+10	Unused
n+12	SNAPTA IOH TA	n+14	SNAPTD IOH TD
n+16	SNAPTIM Time stamp of entry creation (in 0.1 seconds)	n+18	SNAPTIM2 Time stamp when this GAS entry was updated (in 0.1 seconds)
(n+20) - (n+31)		Unused	

* Indicates a byte expansion follows.

SNAP Trace Entry for PROGRAM RESET IOHs
 Beginning at offset 32(20) into the table and every 32(20) thereafter

n		SNAPTITL* Title of entry in EBCDIC	
SNAPTIT1*		n+2	SNAPTIT2*
(n+4) - (n+11)		Unused	
n+12	SNAPTA IOH TA	n+14	SNAPTD IOH TD
n+16	SNAPTIM Time stamp (in 0.1 seconds)	(n+18) - (n+31)	
		Unused	

* Indicates a byte expansion follows.

SNAP Trace Entry for L2 Interrupts

Beginning at offset 32(20) into the table and every 32(20) thereafter

n		SNAPTITL* Title of entry in EBCDIC	
SNAPTIT1*		n+2	SNAPTIT2*
n+4			
SNAPCMD Command/status area			
SNAPCMD1 Reason code (if status)	n+5	SNAPCMD2 Diagnostic code (if status)	n+6 Unused
PSA command (if parameter)		Unused (if parameter)	
n+8		n+10	
SNAPGLID Line ID		SNAPSEQN LPSA or NPSA sequence counter	
n+12			
SNAPLDPL Pointer to last LDP (SR only)			
n+16		n+18	
SNAPTIM Time stamp (in 0.1 seconds)		SNAPARRC Abnormal request reason code (SR, halt complete, and abnormal request only)	
n+20		n+22	
SNAPNDPE NDPSA in error (if status) Unused (if parameter)		Unused	
n+24		n+26	
SNAPRDCT Residual data count (SR only)		SNAPEND1 Line status at completion of a L2 operation	
n+28			
SNAPADDR Pointer to LPSA or NPSA			
SNAPPSAT* PSA type			

* Indicates a byte expansion follows.

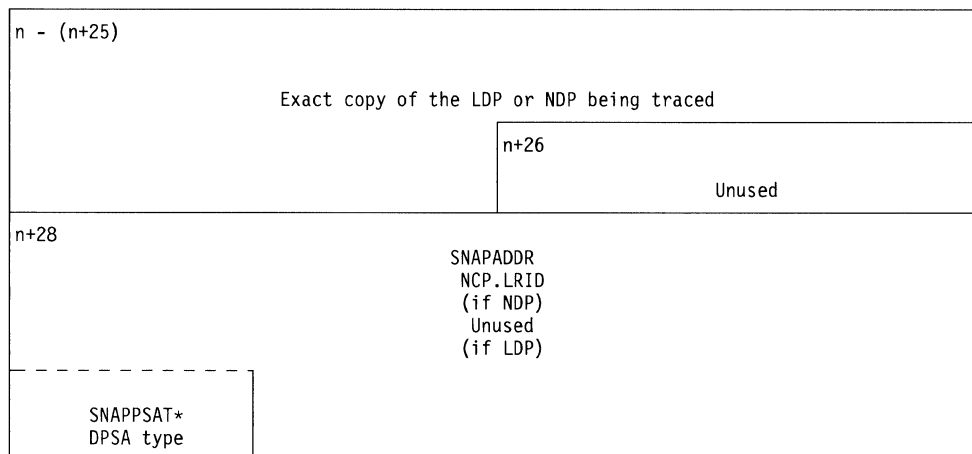
SNAP Trace entry for timeouts and CSS congestion
 Beginning at offset 32(20) into the table and every 32(20) thereafter

n		SNAPTITL* Title of entry in EBCDIC	
SNAPTIT1*		n+2	SNAPTIT2*
n+4 Unused			
n+8 SNAPGLID Line ID		n+10	Unused
n+12 Unused			
n+16 SNAPTIM Time stamp (in 0.1 seconds)		n+18	Unused
n+20 Unused			
SNAPTFLG Timer flags (CCBFLAG**) (Unused for congestion entries)			
n+24 Unused		n+26	SNAPEND1 Line status at completion of a L2 operation
n+28 SNAPADDR Pointer to LPSA or NPSA			
SNAPPSAT* PSA type			

* Indicates a byte expansion follows.

** See field for content.

SNA Trace Entry(DPSA)



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) SNAPFLG1		Flags byte 1
	1... ..	SNAP trace table has wrapped
n SNAPTITL		Title of Entry in EBCDIC
	C'ARQ1'	Abnormal Request IOH Entry
	C'ARQ2'	Abnormal Request L2 Interrupt Entry
	C'ARS1'	Abnormal Response IOH Entry
	C'ARS2'	Abnormal Response L2 Interrupt Entry
	C'PRRS'	Program Reset IOH Entry
	C'GAS '	Get Adapter Status IOH Entry
	C'CCG '	CBC Congestion Entry
	C'EC '	Execute Clear Entry
	C'ER '	Execute Request Entry
	C'HALT'	Halt Entry
	C'HC '	Halt Complete Entry
	C'IOH '	Miscellaneous IOH Entry
	C'LCG '	Processor Congestion Entry
	C'LVL2'	Miscellaneous L2 Interrupt Entry
	C'SC '	Service Clear Entry
	C'SR '	Service Request Entry
	C'TO '	Timeout Entry
n+28 SNAPPSAT		PSA/DPSA Type
	X'D3'	"L" Indicates a LPSA or LDPSA
	X'D5'	"N" Indicates a NPSA or NDPSA

SSCP-NCP Session Control Block**Program:** NCP**Size in bytes:** 88(58) bytes per entry**Created by:** NCP generation, one entry for each allowable concurrent SSCP-NCP session**Pointer to:** The VTSSNPP field in the vector table of SNPs (VTS)**Function:** Contains session-related information to control SSCP-NCP sessions

0(0)			
SNPSUBA Subarea address of the SSCP			
SNPSUBAH High 2 bytes of the subarea		2(2) SNPSUBAL Low 2 bytes of the subarea	
4(4) SNPADRPC Element address of the SSCP		6(6) SNPPSTAT* Physical services primary status	7(7) SNPSTAT* Physical services secondary status
8(8) SNPSNPM SNP mask	9(9) SNPRCBO Offset to the attached resource connection block (RCB)	10(A) SNPANSC* Auto network shutdown (ANS) reason code	11(B) SNPLNID Local network ID
12(C) SNPSEQI Last inbound sequence number		14(E) SNPSEQO Outbound sequence number	
16(10) SNPVTSP Pointer to the VTS			
SNPSTFLG* Session trace flags			
20(14) - 27(1B) SNPTOD Saved ACTPU time of day			
28(1C) - 35(23) SNPNAME SSCP name			

* Indicates a byte expansion follows.

36(24) SNPSONC* Session outage notification (SON) reason code	37(25) SNPNICNL Length of NETID and CPNAME	38(26) - 54(36) SNPNICN	
Network ID and control point name			55(37) SNPMSTAT* Miscellaneous status
56(38) SNPSCAP* SSCP-NCP session capability			
SNPSCAP1* Byte 1	57(39) SNPSCAP2* Byte 2	58(3A) SNPSCAP3* Byte 3	59(3B) SNPSCAP4* Byte 4
60(3C) - 87(57) SNPRCB Embedded RCB. (For details, see the RCB format for the SNP.)			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
6(6) SNPPSTAT		Physical services primary status
	1... ..	Session is established.
	.1... ..	Data flow is enabled.
	..1... ..	Data flow is active.
7(7) SNPSSTAT		Physical services secondary status
	x... ..	Reserved
	.x... ..	1 = Recovery mode 0 = Normal mode
10(A) SNPANSC		ANS reason code
	x... ..	ANS reason code: 1 = Residual. An ACTPU has occurred since ANS completed. 0 = Current.
	X'01'/X'81'	Panel channel discontact
	X'02'/X'82'	Attention or activity time-out
	X'03'/X'83'	Unexpected ACTPU
	X'04'/X'84'	Force Deactivate is processing.
	X'06'	Unrecoverable path error
	X'07'/X'87'	DACTPU
	X'08'/X'88'	Lost subarea (link) or virtual route inoperative (VR.INOP)
	X'09'/X'89'	Channel discontact has been received.
	X'0B'/X'8B'	Channel adapter slowdown timer expired.
	X'0C'/X'8C'	Channel command was received before the XID exchange was complete.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) SNPSTFLG		Session trace flags
	x... ..	Reserved
	.1... ..	Session trace for a specific resource
36(24) SNPSONC		SON reason code [same byte expansion as SNPANSC 10(A)]
55(37) SNPMSTAT		Miscellaneous status
	1... ..	DACTPU ALS reset
	.1... ..	Full notification indicator
	..xx xxxx	Reserved

Offset/Field Name	Bit Pattern/Hex Value	Contents
56(38) SNPSCAP		SSCP-NCP session capability
SNPSCAP1 56(38)	Byte 1	
	1... ..	Lost subarea requirement (LSA) is not required.
	.1.. ..	Adjacent link station network address is supported.
	..1. ..	Gateway function is supported.
	...1 ..	SSCP is notified of other inoperative subnetwork routes.
	.... 1..	Notify the same network of the lost route.
	.... .x..	0 = Send CONTACTED format (X'04'). 1 = Send CONTACTED format (X'09').
	.... ..1.	Extended network addressing (ENA) is supported.
	.... ...1	Extended BIND is supported.
SNPSCAP2 57(39)	Byte 2	
	1... ..	NCP and MOSS support multiple load modules.
	.1.. ..	Extended control vector X'43' support.
	..1. ..	MOVE PU is supported.
	...x x...	Reserved
	.... .1..	Non-native network attachment is supported.
	.... ..1.	"Non-disruptive takeover of sessions on switched links" is supported.
	.... ...1	Dynamic Path Update is supported.
SNPSCAP3 58(3A)	Byte 3	
	x... ..	1 = Extended subarea addressing (ESA) is supported. 0 = ESA is not supported.
	.1.. ..	APPN enhancements are supported.
	..x.	Reserved
	...1 ..	BFSESSST and BFSESEND may be eliminated
	.... xxxx	ESA support level (valid only if ESA is supported)
	.... 0000	ENA 8/15 (SALIMIT=255)
	.... 0001	ENA 9/15 (SALIMIT=511)
	.... 0010	ENA 10/15 (SALIMIT=1023)
	.... 0011	ENA 11/15 (SALIMIT=2047)
	.... 0100	ENA 12/15 (SALIMIT=4095)
	.... 0101	ENA 13/15 (SALIMIT=8191)
	.... 0110	ENA 14/15 (SALIMIT=16383)
	.... 0111	ENA 15/15 (SALIMIT=32767)
	.... 1000	ENA 16/15 (SALIMIT=65535)
SNPSCAP4 59(3B)	Byte 4	
	1... ..	Extended Request Contact is supported.
	.1.. ..	Force NCP Dump is supported.
	..1.	Gateway session accounting is included.
	...1 ..	Dynamic Network ID notification is supported.
	.... 1..	APPN networking functions are supported
	.... .1..	XRF Cryptography is supported.
	.... ..1.	XRF data compression is supported.
	.... ...1	Send Route-INOP only for active VRs

Service Order Table for BSC/SS Lines**Program:** NCP**Size in bytes:** 4 bytes in the header; 4 bytes in each entry; 4 bytes in the trailer**Created by:** NCP generation**Pointer to:** The LCBESOTP field in the line control block (LCB)**Function:** Defines the order in which devices on a BSC/SS line are interrogated to see whether that device requires service. This table is generated for multipoint lines.**Header**

0(0)	SOTEMAX Maximum number of entries	1(1)	SOTUSE Number of entries in use	2(2)	Reserved
------	---	------	---------------------------------------	------	----------

Entry Format

4(4)	SOTRESP Pointer to the DVBSTAT field in the device base control block (DVB) for this device. (More than one entry can point to the same DVB.)
------	---

Trailer

*	Negative offset to the first entry of the SOT	*	Set to 0
---	--	---	----------

* Offset depends on the number of entries in the SOT.

Service Order Table for SDLC

Program: NCP

Size in bytes: 4 bytes in the header; 4 bytes in each entry; 4 bytes in the trailer

Created by: NCP generation

Pointer to: The CCBPOLL field in the adapter control block (ACB)

Function: Defines the order in which stations on an SDLC link are interrogated to see whether that station requires service. For ODL links there is only one entry because link scheduling is performed by the adapter. See the PUV to locate all stations associated with the link.

Header

0(0) Zero	2(2) SOTMAXE Maximum number of entries	3(3) SOTINUSE Number of entries in use
------------------	---	---

Entry Format

4(4)	SOTSCB Pointer to the station control block (SCB) common PU block (representative entry)
SOTOFFS Entry index number*	

Trailer

	Zero (end of table)
0(0) Entry index number*	

* To find the beginning of the SOT when given a pointer to an entry, multiply the entry index number by the SOT entry length and subtract that product from the pointer to the entry.

Session Path Control Block

Program: NCP

Size in bytes: 16(10)

Created by: NCP generation

Pointer to: Embedded in the boundary session block (BSB) or the common PU block's (CUB's) common PU block extension for embedded blocks (CXI).

See the BSB or the CXI for the offset.

Function: A node in the binary search tree that represents inbound PIU routing. The SPC is embedded in a BSB or in the CUB's CXI. The SPC contains an embedded search element control block (SEB). The SEB search key and the SPC search key share the same storage (overlay). See “Search Element Control Block” on page 1-955 for the SEB fields.

0(0)	SPCELMAD Element address	2(2)	SPCOCCB BSB or CXI offset to the SPC	3(3)	SPCIBTI Inbound task index
4(4)					
Imbedded SEB search key (overlay)					
	Reserved	5(5)	SPCINDC* Origin and destination assignment indicator	6(6)	SPCSESX Session index
				7(7)	SPCLADR Local address
8(8) - 15(F)					
Remainder of the imbedded SEB					

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
5(5) SPCINDC		Origin/destination assignment indicator
	.... ...1	Address was assigned by the outboard PU.

Subnetwork Route Entry

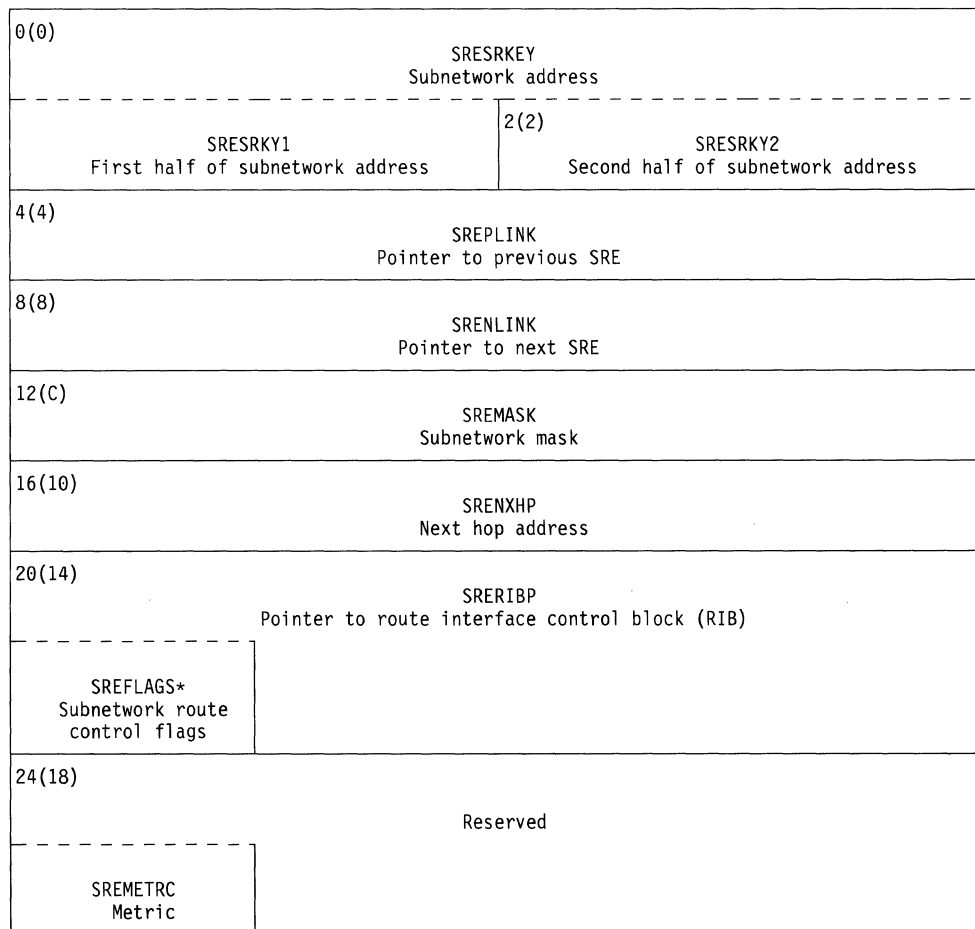
Program: NCP

Size in bytes: 28(1C) for each subnetwork route entry

Created by: NCP initialization and dynamically

Pointer to: SRTCPTTR field in SRT, SREPLINK and SRENLINK fields in SRE when in the hashing table

Function: Provides a node in a subnetwork route table and points to the route interface control block (RIB) for an IP network address. A hash entry control block (HEB) is embedded at location 0(0) to link to the subnetwork route table (HTB field HTBTYPE = X'02').



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
20(14) SREFLAGS		Subnetwork route control flags.
	x...	1 = Direct routing using subnetwork address 0 = Indirect routing using next hop address
	.x..	1 = Entry is a permanent entry in the subnetwork routing table 0 = Entry is not a permanent entry in the subnetwork routing table
	..1.	Entry is in-use in the subnetwork route table entry

Subnetwork Route Table Control Block

- Program:** NCP
- Size in bytes:** Depends on number of hash buckets. Each hash bucket has a fixed length of 4(4).
- Created by:** NCP generation, one per NCP
- Pointer to:** RDASRTP field in RDA
- Function:** Serves as a hash lookup table. Each element points to the first subnetwork route entry control block (SRE) in a chain of table entries.

0(0)	SRTTYPE SRT table type (X'02')	1(1)	SRTFLAGS* Subnetwork route table flags	2(2)	SRTNTRY Number of hash buckets
4(4)	SRTHASH Address of hash function routine				
8(8)	SRTFREE Pointer to hash table free SRE list				
12(C) - n	Hash bucket control blocks				

* Indicates a byte expansion follows.

Note: See the following for the format of a hash bucket.

Each entry represents a single hash bucket.

0(0)	SRTCPTR Pointer to first SRE of hash chain
------	---

Offset/Field Name	Bit Pattern	Contents
1(1) SRTFLAGS	1... .... .xxx xxxx	Subnetwork route table flags Entry mask should be used in hashing Reserved

ESCA Logical Station Control Block**Program:** NCP**Size in bytes:** 40(28)**Created by:** NCP initialization and dynamically**Pointed to by:** The SCEPUCBP field in the station control block extension (SCE)**Function:** Contains resource definition and XID parameters pertaining to a particular ESCON adapter (ESCA) logical station

0(0)		SSBNEXT Pointer to next SSB in the pool (valid only when in pool)	
SSBMBFR Number of host read commands		2(2) SSBUNSZ Host read buffer size	
SSBMBFR1 Number of host read commands byte 1	1(1) SSBMBFR2 Number of host read commands byte 2	SSBUNSZ1 Host read buffer size byte 1	3(3) SSBUNSZ2 Host read buffer size byte 2
4(4) SSBCASDL Maximum time allowed until CA slow down occurs		6(6) SSBTRNFR Data transfer limit	
8(8) SSBGATMO Genned attention timeout value		10(A) SSBATMO Attention timeout value	
		SSBATM01 Attention timeout value byte 1	11(B) SSBATM02 Attention timeout value byte 2
12(C) SSBGADLY Genned channel attention delay value		14(E) SSBADLY Channel attention delay value	
		SSBADLY1 Channel attention delay value byte 1	15(F) SSBADLY2 Channel attention delay value byte 2
16(10) SSBFLAGS* ESCA station block (SSB) flags	17(11) SSBBPAD Host buffer pad size	18(12) SSBPUNSZ Previous host read buffer size	
20(14) SSBGM BFR Genned number of host read commands		22(16) SSBPMBFR Previous number of host read commands	
24(18) SSBCCWLO Low threshold to determine the congestion of the LOBQ		26(1A) SSBCCWHI High threshold to determine the congestion of the LOBQ	

* Indicates a byte expansion follows.

28(1C)		
SSBDPSCP Pointer to next SSB in the delayed PIU scheduling (DPS) chain		
SSBCDPST Current delayed PIU scheduling threshold		
32(20)		
SSBSCEP Pointer to parent station control block extension (SCE)		
SSBMDPST Maximum delayed PIU scheduling threshold		
36(24)	37(25)	38(26)
SSBTGNUM Latest TG number for station	SSBRSRV1 Reserved	SSBRSRV2 Reserved

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
16(10) SSBFLAGS		ESCA Station Block (SSB) Flags
	1...	Channel TG connection in process of being overridden (SSBTGOV)
	.1..	Host NEQ valid (SSBHVAL)
	..1.	SSB on delayed PIU scheduling chain < 0.1 sec (SSBLT1T)
	...1	SSB in delayed PIU scheduling chain (SSBDPSC)

SNA-IP Session Interface Control Block

Program: NCP

Size in bytes: 12(C)

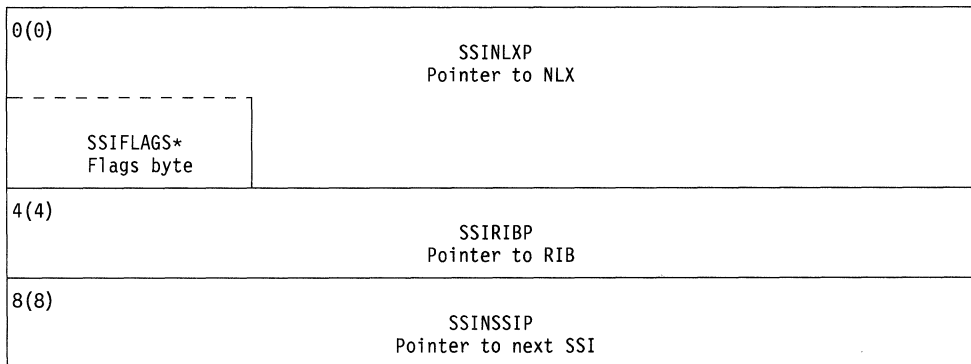
Created by: NCP initialization

Pointed to by: The RIBRSCB field in RIB and the SIBSSIP field in SIB

Function: One for each SNA-IP LU-LU session interface. The SSI control blocks for each route interface are chained together. The SSI contains three pointers that link the Route Interface to the LU-LU session.

The first pointer points to the chain of existing session control blocks. The second pointer points back to the route interface control block which points to the SSI control block. There is only one RIB per Route Interface. The third pointer points to the next SSI control block in the route interface chain.

The SSI also contains a flags byte. A bit in this byte indicates whether the SNA-IP LU-LU session associated with this SSI control block is active.



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) SSIFLAGS	1... ..	SSI Flags Session active indicator

Subareas Serviced Table

Program: NCP

Size in bytes: Variable; when ERLIMIT=8, SALIMIT+1 bytes; when ERLIMIT=16, 2*(SALIMIT+1) bytes

Created by: NCP initialization, one per transmission group control block (TGB)

Pointer to: TGBSSTP in the TGB points to the SST.

Function: The SST is a vector of 1-byte elements when ERLIMIT=8 and of 2-byte elements when ERLIMIT=16, and it corresponds to the network subarea address.

The first element in the SST is always zero since subarea X'00' is an invalid subarea address. Each nonzero entry in the SST corresponds to a subarea that is serviced by the TGB. The TGB is used to route towards the subarea corresponding to the SST entry. Only the explicit routes indicated by the SST entry are serviced by the TGB.

ERLIMIT=8

Invalid (X'00')	1(1) Mask of explicit routes for subarea 1	2(2) Mask of explicit routes for subarea 2	3(3) Mask of explicit routes for subarea 3
4(4) Mask of explicit routes for subarea 4	.....		SALIMIT Mask of explicit routes for subarea SALIMIT

ERLIMIT=16

Invalid (X'0000')	2(2) Mask of explicit routes for subarea 1
4(4) Mask of explicit routes for subarea 2	6(6) Mask of explicit routes for subarea 3
.	.
.	.
.	.
2*(SALIMIT-1) Mask of explicit routes for subarea SALIMIT-1	2*SALIMIT Mask of explicit routes for subarea SALIMIT

Selection Table Entry

Program: NCP

Size in bytes: 16(10) for each entry defined at NCP generation

Created by: NCP generation

Pointer to: CXTSTE in the link-edit map.

LKBPSEL, LKBCSEL, or LKBSSEL in the line control block (LKB) gives indices into the SDLCST.

Function: Used to change the adapter control block (ACB) and station control block (SCB) control fields for primary or secondary switching

First Entry (Dummy)

0(0) STECT Number of table entries	2(2) - 15(F)
Reserved	

Second and Following Entries

0(0) STELGTP Pointer to the line group table (LGT) for groups			
STEOCL Outstanding count limit			
4(4) STESRTL Second level retry limit	5(5) STERCMD Run command modifier	6(6) STETYPE* Line type	7(7) STEERTRY Text error retry limit
8(8) Reserved	9(9) STECPRAT Contact poll rate	10(A) STEADRC SDLC addressing character	11(B) STPCNT Pass limit
12(C) STEERPT Second level error recovery procedure (ERP) time delay	13(D) STEPOLLI Minimum poll cycle time interval (modulo 8)	14(E) STEPOLL2 Minimum poll cycle time interval (modulo 128)	15(F) STEFLAGS* Special flags

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern	Contents
6(6) STETYPE		Line type
	1...	Line is in normal mode.
	.x...	Duplex adapter: 1 = Line has two line adapter addresses. 0 = Line has one adapter address.
	..x.	Half-duplex ACB or duplex transmit leg ACB: 1 = Half-duplex leg or duplex transmit leg ACB 0 = Duplex receive leg ACB. Or Duplex adapter transmit leg ACB: 1 = Transmit leg 0 = Receive leg. Or SS (WTTY) strip FIGS/LTRS: 1 = Strip FIGS/LTRS in received text. Or SS (TWX): 1 = Odd parity verification 0 = Even parity verification.
	...1	Use data set New Sync feature (BSC/SDLC). Half-duplex link on which break is allowed (SS).
	.... x...	Line type bit: 1 = BSC 0 = SS, SDLC. (See bit 7.)
	.... .1..	Remote station can receive an error message (BSC), or time-out valid reply for a negative poll (SS), or the station is currently a configurable station (SDLC).
	.... ...x.	Point-to-point contention bit (BSC/SDLC): 1 = Point-to-point contention secondary station (BSC) 0 = Point-to-point contention primary station Or 1 = SDLC secondary station 0 = SDLC primary station. Or SS (WTTY) shift control: 1 = Upshift on space character 0 = No upshift on space. Or SS (TWX): 1 = Parity checking is required. 0 = No parity checking is required.
	.... ...x	SDLC link bit: 1 = Line type is SDLC (bit 4=0). 0 = Line type is not SDLC.

Offset/Field Name	Bit Pattern	Contents
15(F) STEFLLAGS		Special Flags
	1...	Modulo 8 pause value undefined
	.1..	Modulo 128 pause value undefined

Subarea Vector Table

Program: NCP

Size in bytes: 4(4) for each transmission group

Created by: NCP generation

Pointer to: The start of the SVT table is pointed to by SYSSVTP field in the extended halfword direct addressables control block (HWE).

The RMBSVTP field in the route management block (RMB) points to the part of the table that is for that network.

The SVT table is indexed using the an entry in the transit routine table (TRT) for the network. The index is from the start of the entire SVT, not the network's part.

Function: Contains the address of the transmission group control block (TGB). The first entry in the table is zero. The last entry in the SVT contains a X'FF' delimiter.

0(0)	SVTENT Pointer to the TGB. (See note.)
------	--

Note: If NCP initialization has not run yet, then some of the SVT entries may have a X'80' in the far left byte and a line ID in the far right byte. These entries will be used for pointers to the TGBs that NCP initialization creates (for example, TGBs created due to the TGBXTRA keyword on the BUILD and NETWORK statements).

SMMF Switched Table

Program: NCP

Size in bytes: 16(10) per entry

Created by: NCP generation

Pointed to by: SSCP monitor mode link table (MLT) entries specifying an SWMMT contain a pointer to the named SWT.

Function: There is one SWT entry for each SWMMT statement in a named SWT table. Each entry defines a possible caller for an SMMF controlled station.

0(0)	SWTMO Maxout	1(1)		
		SWTIDNUM Identification number		
		SWTIDNB1	2(2)	3(3)
			SWTIDNB2	SWTIDNB3
4(4)		SWTNETID Network identification		
12(C)	SWTELMAD Element address	14(E)	SWTFLG* Flag byte	15(F) Reserved

* Indicates a byte expansion follows.

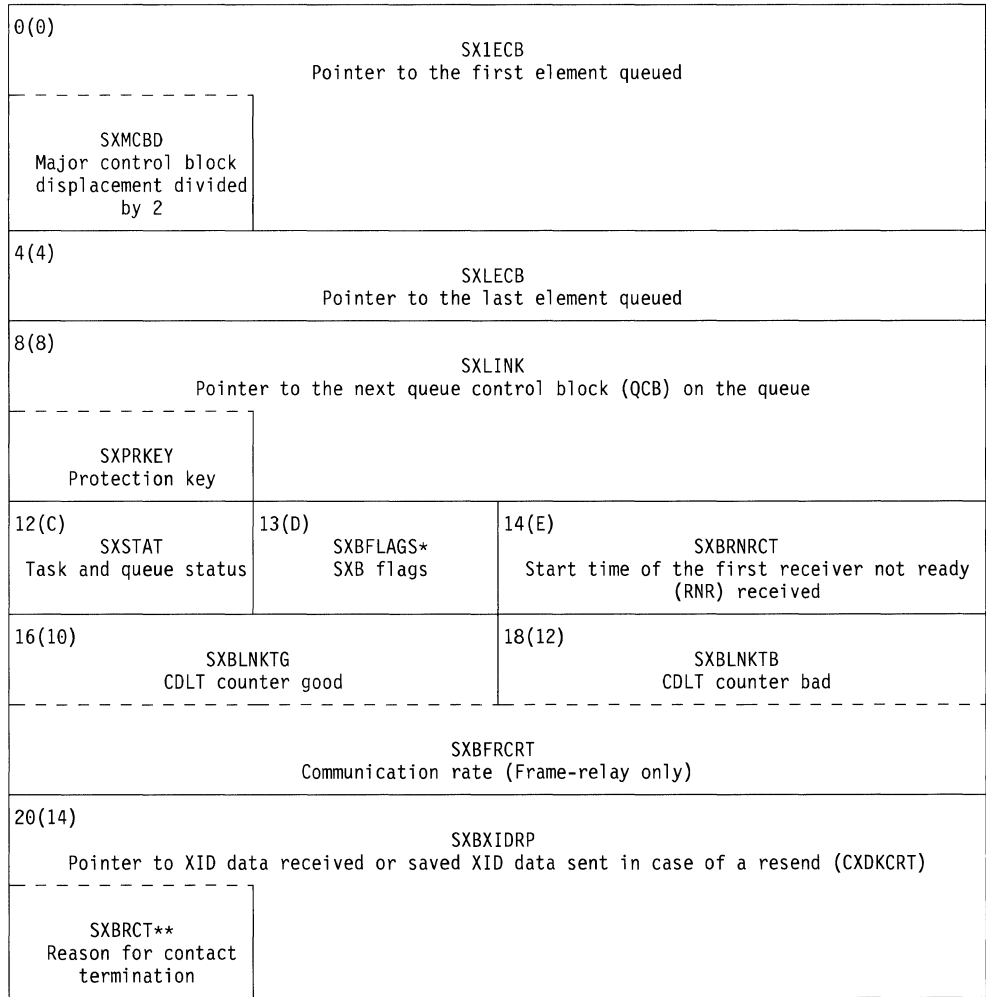
Byte Expansion

Offset/Field Name	Bit Pattern	Contents
14(E) SWTFLG		Flag byte
	x... ..	Last indicator: 0 = Not the last SWT table entry 1 = Last SWT table entry.
	.xxx xxxx	Reserved

Station Control Block Extension

Program: NCP
Size in bytes: 128(80)
Created by: NCP generation
Pointed to by: The SCBCFGX field in the station control block (SCB)
Function: Provides an extension to the SCB for configurable stations.

Station Request Work Queue (SXWSRWQ)
 (See "Queue Control Block for Work Queues" on page 1-887 for all bit definitions.)



** See the byte expansion for RU1LDS in Volume 2 Section 5, "NCP Network Commands."

Note: The fields SXBLNKTG, SXBLNKTB, SXBXIDRP, and SXBRCT must remain at the same relative offsets as their counterparts in the common PU block extension (CXB).

24(18) SXBAPUA NCP subarea	26(1A) SXBTGN Transmission group number	27(1B) SXBDTAIN* Threshold alteration indicator
28(1C) - 35(23) SXBLDMOD Load module name		
36(24) SXBCABP Pointer to the associated channel adapter control block (CAB)		
SXBGFLGS* Generated flags		
40(28) SXBSWINT Subarea dial activity timer initial value	42(2A) SXBSWINW Subarea dial activity timer decremented value	
	SXBSWIN1 Subarea dial activity timer decremented value-byte 1	43(2B) SXBSWIN2 Subarea dial activity timer decremented value-byte 2

* Indicates a byte expansion follows.

Note: The fields SXBTGN, SXBDTAIN, SXBCABP, and SXBGFLGS must remain at the same relative offsets as their counterparts in the CXB.

For ODLC Stations:

44(2C) Reserved	
48(30) SXBDPRP Delayed pacing response (DPR) list link pointer	
52(34) SXBDTIME Time station was placed in DPR list	54(36) - 61(3D) Reserved

Note: The fields SXBDPRP, SXBCIR, SXBBC, SXBDTIME, SXBBE and SXBCPL must remain at the same relative offsets as their counterparts in the CXB.

SDLC Secondary Command Reject Pseudo Buffer

(The entire pseudo buffer must be at the same offset in the SXB as in the CXB.)

44(2C) Negative buffer header prefix			
48(30) SXBUFCHN Buffer prefix chain field			
52(34) SXCOPYF Copy field		54(36) SXOFFSET Buffer prefix data offset field	55(37) SXDATCNT Buffer prefix data count field
SXCOPCT Copy count	53(35) SXCOPIYS** Copy status		
56(38) SXBCMDRC*** Frame reject (FRMR) data bytes 1 and 2		58(3A) SXBFMRM*** FRMR data bytes 3 and 4	
SXBFMR1 FRMR byte 1	57(39) SXBFMR2 FRMR byte 2	SXBFMR3 FRMR byte 3	59(3B) SXBFMR4 FRMR byte 4
60(3C) SXBCMDRX*** FRMR data byte 5 or FRMR reject flags*	61(3D) SXBFMR6 FRMR byte 6 or extra		
SXBFMR5 FRMR byte 5			

* Indicates a byte expansion follows.

*** See the formats for the five FRMR data bytes on page 1-999.

62(3E) SXBSEQN SMMF station PIU sequence number		
64(40) SXBFRAD DLCI address (10 bits, right-justified, hex) (Inboard and outboard frame-relay DLCs) (Frame-relay only)		66(42) SXBSTAT* SMMF station status byte
SXBFRAD0 DLCI address byte 0 (Frame-relay only)	65(41) SXBFRAD1 DLCI address byte 1 (Frame-relay only)	67(43) SXBINPC SMMF station inoperative code

Note: The fields SXBSEQN, SXBFRAD, SXBSTAT, and SXBINPC must remain at the same relative offsets as their counterparts in the CXB.

68(44)			
SXBPTR Pointer to the XID2 (PN) received			
SXBSDST* First status byte			
72(48)	73(49)		
SXBGLNI Generated local network ID	SXBSPID Subarea dial specific ID		
76(4C) - 83(53)			
SXBRND1 Random number 1 used in subarea dial security			
84(54) - 91(5B)			
SXBRND2 Random number 2 used in subarea dial security			
92(5C)	93(5D)	94(5E)	95(5F)
SXBCPL Committed pass limit (Outboard frame-relay DLC only)	Reserved	SXBFLG2* Station flag byte 2	SXBPUNML PU name length
96(60) - 103(67)			
SXBPUNM PU name			
104(68)	105(69)	106(6A)	107(6B)
SXBFLG3* SXB flag byte 3	SXBSTS2* Second status byte	SXBAPUL Adjacent PU name length	SXBALSL Adjacent link station name length
108(6C) - 115(73)			
SXBALSN Adjacent link station name			
116(74) - 123(7B)			
SXBAPUN Adjacent PU name			
124(7C)			
SXBSX2P Pointer to the subarea physical unit block extension 2 (SX2)			
SXBSECAD Generated link address			

* Indicates a byte expansion follows.

Note: The fields SXBFLG3, SXBCPL, and SXBSX2P must remain at the same relative offsets as their counterparts in the CXB.

Formats for the Five FRMR Data Bytes

2-Byte Operating Mode

Invalid Command	N(S)	N(R)	Diagnostic Flags
-----------------	------	------	------------------

1-Byte Operating Mode

Invalid Command	N(S), N(R)	Diagnostic flags	0	Diagnostic flags
-----------------	------------	------------------	---	------------------

Note: Only the first 3 bytes are transmitted for 1-byte operations.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
13(D) SXBFLAGS		SXB flags
	x... ..	1 = Do not increment SCB error counter 0 = SCB error counter may be incremented
	.1... ..	Station is in the delayed pacing response list (SXBDPRL)
27(1B) SXBDTAIN		Threshold alteration indicator
	1... ..	Dynamic threshold alteration has altered a threshold
36(24) SXBGFLGS		Generated flags
	xxxx	Level-5 error retry counter
	.... x...	NCP generated modulus: 1 = Modulo 128 0 = Modulo 8
60(3C) SXBCMDRX		FRMR reject flags
	.... 1...	N(r)—out of range status
	.... .1..	I-field to long status
	.... ..1.	I-field not allowed status
	.... ...1	Invalid C-field status
66(42) SXBSTAT		SMMF station status byte
	1... ..	SMMF contact is pending
	.1... ..	SMMF contact is complete
	..1... ..	SMMF contacted error
	...1	SMMF is supported for this station

Offset/Field Name	Bit Pattern/ Hex Value	Contents
68(44) SXBSDST		First status byte
	1... ..	XID2 (PN) has been received
	.1... ..	CONTACT has been received
	..1.	Start subarea dial activity time-out at connect time
	...1	Start subarea dial activity time-out at owner answer
	.... 1...	SETCV has been received
	.... .1..	NETID negotiation is supported
	.... ..1.	Current "NETID MAY CHANGE" indicator
	.... ...1	Dynamic entry indicator for current LNID
94(5E) SXBFLG2		Station flag byte 2
	1... ..	Group poll flag for station (for compatibility with CXB only) (SXBGPFL)
104(68) SXBFLG3		SXB flag byte 3
	1... ..	NPM performance collection by transmission priority supported (SXBNTPTP)
	.1... ..	NPM performance collection by transmission priority active for this PU or its associated line (SXBNTPA)
	..1.	INOP 01 required for discontact processing (SXBINP1)
	.... xx..	Reserved
105(69) SXBSTS2		Second status byte
	1... ..	First XID2 with control vector X'12' sent indicator(SXBCVSI)
	.x... ..	CP name indicator for SXBAPUN (adjacent PU name) field: 1 = SXBAPUN is a CP name 0 = SXBAPUN is not a CP name
	..1.	Supports receiving multi-PIUs with TG re-order not required (SXBTGR)
	...x xxxx	Reserved

Subarea Physical Unit Block Extension 2 (SX2)

Program: NCP

Size in bytes: 12(C)

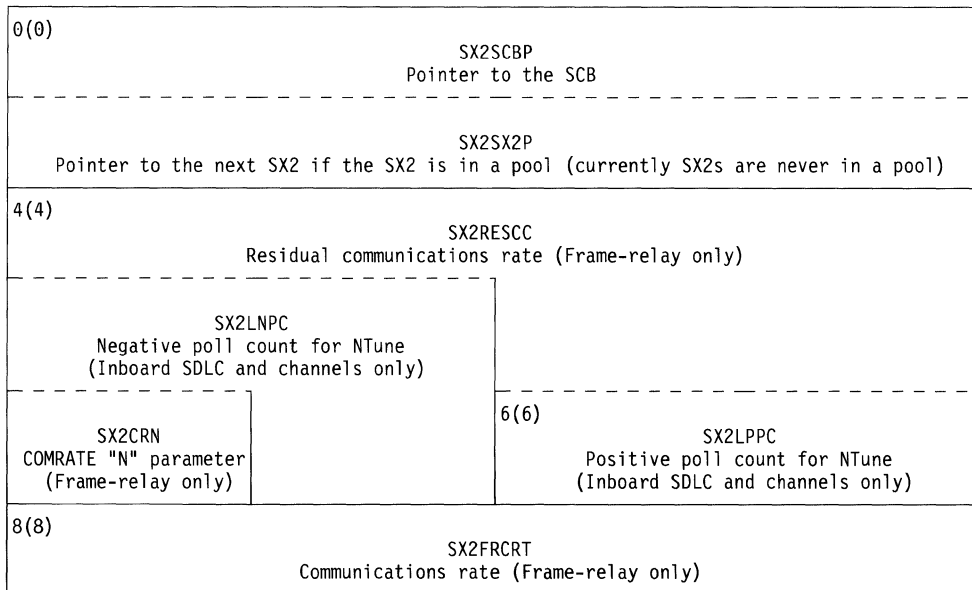
Created by: NCP generation.

One SX2 is generated for each station control block (SCB)

Pointed to by: The SXBSX2P field in the station control block extension (SXB), and the SX2SX2P field in the SX2

Function: Contains various fields for the PU

Note: The SX2 and the CX2 share a common layout and all fields must be at the same offsets



Token-Ring Logical Station Address Table

- Program:** NCP
- Size in bytes:** 4(4) for the header plus 4(4) bytes each for each logical ODLC token-ring station
- Created by:** NCP generation
- Pointed to by:** The SYSTATP field in the fullword direct addressable extension (FAX)
- Function:** Serves as the table of all in-use logical ODLC token-ring stations.

TAT Header

0(0)	TATCNT Count of entries	2(2)	Reserved
------	----------------------------	------	----------

TAT Entry

0(0)	TATCUBP Pointer to the logical CUB or SCB
TATFLAG* Flags byte	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) TATFLAG		Flags byte
	1...	CUB/SCB in use (TATNUSE)
	.1..	CUB/SCB reserved for a physical line (TATRESV)
	..x.	CUB/SCB indicator (TATSCB)
		1 = SCB 0 = CUB
	...x xxxx	TRPL index of physical line (TATTRPLI)

Test Control Block (Link Test, Level 2)

Program: NCP

Size in bytes: Variable, depends on the length of the test data. The TCB is created from an NCP buffer. The U1OFFSET and the U1DATCNT fields in the buffer can be used to determine the exact start and length of the TCB. See "Path Information Unit (FID1)" on page 1-783 for the description of the U1OFFSET and U1DATCNT fields.

Created by: CXDLTI dynamically after receiving a test mode command

Pointer to: The SCBLOBH field in the station control block (SCB). (The TCB is at the head of the link outbound queue.)

Function: Contains test data to be transmitted to the dedicated resource that is specified in the Test Mode command, and maintains counts of the test results

48(30) TCBTRQ Total number of test frames to be transmitted	50(32) TCBTFR Number of test frames received without error	
52(34) Reserved	54(36) TCBZEROB* Flags	55(37) TCBNPS First byte of the prefix X'41'=RU1NS4
56(38) TCBTFTM Test frames transmitted each service cycle (multipoint)	58(3A) TCBPUNA PU element address	
60(3C) TCBPRID Procedure identification	62(3E) TCBTFMR Test frames to be transmitted each service cycle (multipoint)	
64(40) TCBTFT Test frames transmitted counter	66(42) TCBTFR Test frames received counter	
68(44) TCBDATA Test data		
70(46) TCBSTAT* Test termination status (overlays the test data after the test terminates)		
72(48) - n TCBDATA Test data (continued)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
54(36) TCBZEROB	x... ..	Flags 1 = Test is pending. 0 = Test is not pending.
70(46) TCBSTAT	X'0000' X'0001' X'0002' X'0003'	Test termination status Normal end Ended with error Ended due to Link Inoperative Test initialization failure

Timer Extension Table

- Program:** EP
- Size in bytes:** Four times the number of NSCCB addresses plus four times the number of scanner interface trace character control blocks (SIT CCBs) plus 16(10)
- Created by:** EPLT64 stage II macro at PEP generation
- Pointed to by:** The XDHTET field in the halfword direct addressable storage control block (XDH)
- Function:** Provides timer support for wrap and SIT operations. It is located below 64K and appears to be another channel vector table (CHVT) to the timer routine. For each SIT CCB, there is one entry in the TET that points to the associated odd trace line vector table (TLNVT) entry. Addressability to the TET is in halfword direct addressables (XDH), which is set to X'0000FFFF' when wrap is not active.

0(0)	Reserved
4(4)	Wrap line vector table (LNVT) address
8(8)	NSCCB address for the first channel adapter generated
4(n-1)+8	NSCCB address of the last (nth) channel adapter generated
4n+8	TLNVT address (first SIT CCB)
4(m-1)+(4n+8)	TLNVT address (mth SIT CCB)
4(m+n)+8	X'0000 0001'
4(m+n)+12	Pointer to the first CHVT

Transmission Group Control Block

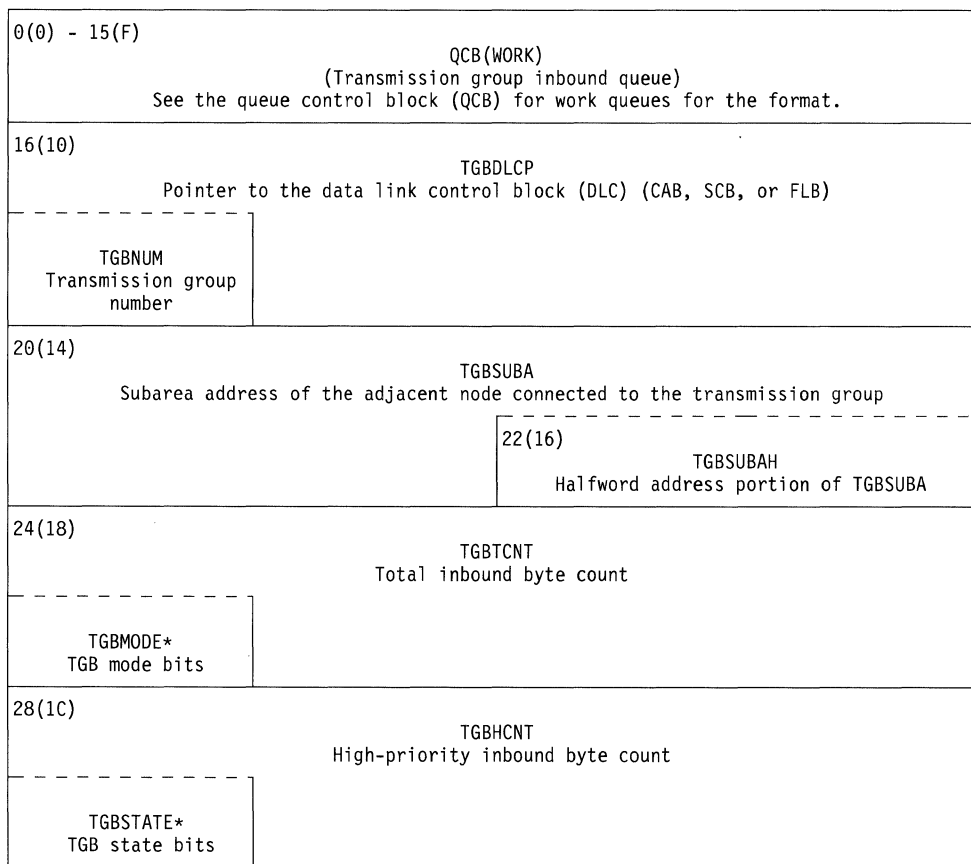
Program: NCP

Size in bytes: 88(58)

Created by: NCP generation; NCP initialization for TGBXTRA

Pointed to by: The CABTGBP field in the channel adapter control block (CAB), the SCBTGBP field in the station control block (SCB), the FLBTGBP field in the multilink transmission group (fat link) control block (FLB), the SVTENT field in the subarea vector table (SVT), and the VRBTGBP field in the virtual route control block (VRB)

Function: Contains information related to the transmission group associated with a particular channel or link. There is one TGB for each transmission group.



* Indicates a byte expansion follows.

32(20)			TGBMCNT Medium-priority inbound byte count		
TGBDLCT* DLC type					
36(24)			TGBLCNT Low-priority inbound byte count		
TGBNOPR* DLC not OP reason code					
40(28)			TGBTTHR Total byte count threshold (20,000)		
44(2C)			TGBHTHR High-priority byte count threshold (5000)		
48(30)			TGBMTHR Medium-priority byte count threshold (5000)		
52(34)			TGBLTHR Low-priority byte count threshold (5000)		
56(38)			TGBTRACP Pointer to the transmission group trace buffer		
TGBTRACT Trace count					
60(3C)			TGBSITP Pointer to the subarea index table (SIT) of the network represented by the local network ID		
TGBLNID Local network ID					
64(40)	65(41)	66(42)	TGBSONC See SNPSONC	TGBERST* Explicit route status field	TGBNOPSA Next NC.ER.OP or NC.ER.INOP subarea to be processed
68(44)			TGBUBOP Pointer to the start of the undefined but operative block (UBO)		
72(48)			TGBSSTP Pointer to the start of the subareas serviced table (SST)		

* Indicates a byte expansion follows.

76(4C)-87(57)					
Reserved					

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) TGBMODE		TGB mode bits
	.... .1..	Transmission group is active
	.... ..x.	1 = Transitional mode 0 = Normal mode
28(1C) TGBSTATE		TGB state bits
	1...	DLC is pending
	.1..	DLC is attached
	..1.	Transmission group is operational
	...1	Fast recovery
	.... 1...	Explicit route pending operational
	.... .1..	Explicit route pending INOP
	.... ..1.	DLC is operational
		Transmission Group State Definitions
	X'00'	INOP
	X'04'	ERM.PEND.INOP
	X'4A'	ERM.PEND.OP
	X'56'	PEND.INOP.PEND.OP
	X'5E'	DLC.OP.PEND.ERM.INOP
	X'62'	OP
	X'C0'	DLC.PEND.OP
	X'C4'	DLC.PEND.INOP
	X'D4'	ERM.PEND.INOP.PEND.OP
32(20) TGBDLCT		DLC type
	X'00'	Channel
	X'04'	SDLC
	X'06'	Multilink transmission group
36(24) TGBNOPR		DLC not operable reason code
	X'01'	Unexpected routing interruption (permanent link error, time-out, or hardware error)
	X'02'	Controlled routing interruption
65(41) TGBERST		Explicit route status
	x...	1 = Explicit route OP was the last path information unit (PIU) sent for this transmission group 0 = Explicit route INOP was the last PIU sent (or nothing has been sent) for this transmission group
	.1..	Dynamic Path Update subvector was successfully processed for this transmission group
	..1.	Extended subarea addressing (ESA) is supported on the adjacent subarea
	...x xxxx	Reserved

Token-Ring Line Block Extension

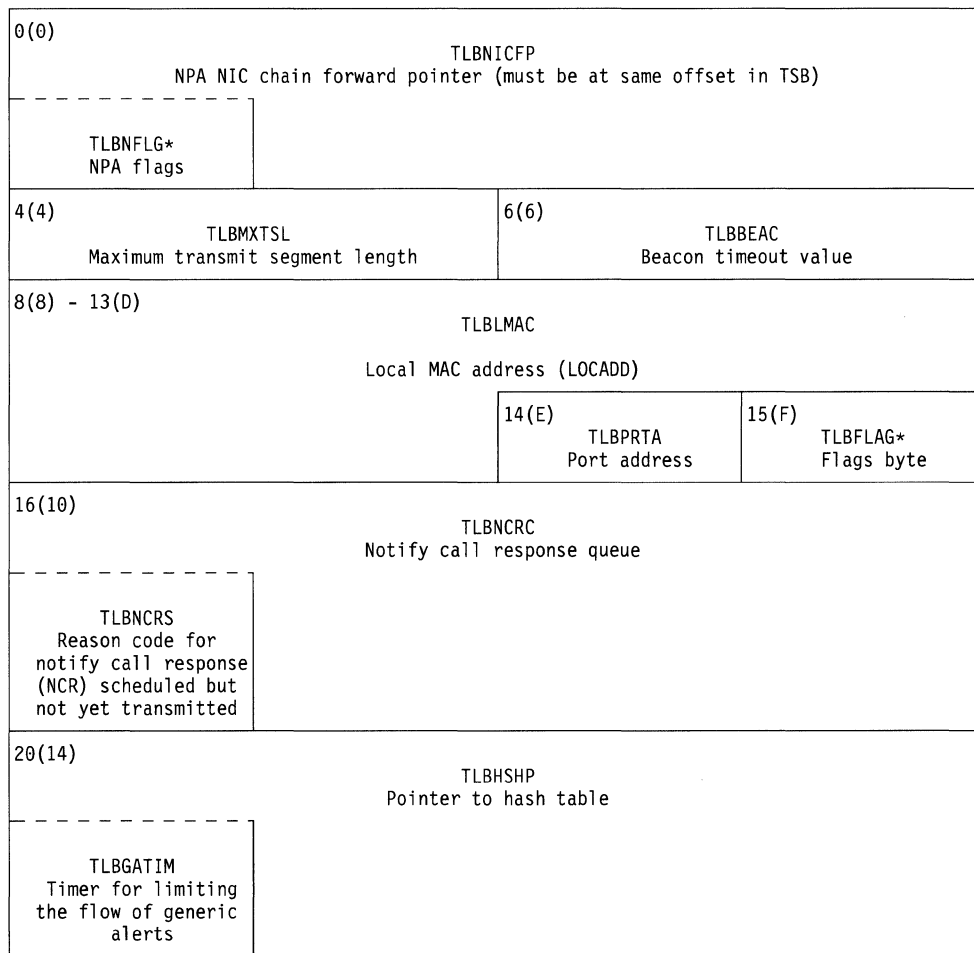
Program: NCP

Size in bytes: 40(28)

Created by: NCP generation

Pointed to by: The LKEPUCBP field in the LKB extension (LKE)

Function: Contains fields for ODLC token-ring at a link level and resource definition fields for the physical line



* Indicates a byte expansion follows.

Note: The fields TLBNCRS, TLBNCRC and TLBGATIM must remain at the same relative offsets as their counterparts in the FPB.

24(18)		TLBAVLL Pointer to available (assigned) list	
TLBNCR Reason code for notify call response (NCR) most recently transmitted			
28(1C)		TLBATTL Pointer to attached list	
TLBTRPL* Index for token-ring physical line table (TRPL)			
32(20)	TLBOMTSL Operational maximum transmit segment length	34(22)	TLBTI TI Timer (tenths of seconds)
36(24)	TLBNW Nw	37(25)	Reserved

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) TLBNFLG		NPA Flags
	1... ..	TLB is in NPA NIC chain (TLBINIC)
	.1... ..	NPA collection is active for this resource (TLBNPAA)
15(F) TLBFLAG		Flags Byte
	x... ..	Token-ring speed (TLBTSPD) 1 = 16 Megabits 0 = 4 Megabits
	.x... ..	Physical sysgenned to accept only subarea resources (TLBPHSA) 1 = Accept only subarea resources 0 = Accept peripheral only or subarea and peripheral resources
	..1... ..	Permanent beaconing condition on token-ring
	...1	Token-ring error data buffer on queue for this physical line
28(1C) TLBTRPL		Index for token-ring physical line table
	xxx.	Reserved
	...x xxxx	Index into TRPL (TLBTRPLI)

Time and Date Control Block

Program: NCP
Size in bytes: 72(48)
Created by: NCP generation
Pointer to: The SYSEBCP field in the extended halfword direct addressables control block (HWE)
Function: Keeps track of the current time and date

0(0) - 5(5)		TNDMDY Date in the form mm/dd/yy where m=month, d=day, and y=year (length of 8 bytes)	
		6(6) - 11(B)	TNDYDOY Julian date in the form yy.ddd where y=year and d=day. (The yy part of this field overlaps the yy part of the previous field.)
12(C) - 19(13) TNDHMS Time in the form hh.mm.ss where h=hour, m=minute, and s=second			
20(14)	TNDUSKIP* Inhibit or allow the update of the TND	21(15)	TNDFLAG* Time and date valid flag for MOSS
		22(16)	Reserved
24(18)	TNDMT1 First month	26(1A)	TNDJANL Number of days in January
28(1C)	TNDMT2 Second month	30(1E)	TNDFEBL Number of days in February
32(20)	TNDMT3 Third month	34(22)	TNDMARL Number of days in March
36(24)	TNDMT4 Fourth month	38(26)	TNDAPRL Number of days in April

* Indicates a byte expansion follows.

40(28)	TNDMT5 Fifth month	42(2A)	TNDMAYL Number of days in May
44(2C)	TNDMT6 Sixth month	46(2E)	TNDJUNL Number of days in June
48(30)	TNDMT7 Seventh month	50(32)	TNDJULL Number of days in July
52(34)	TNDMT8 Eighth month	54(36)	TNDAUGL Number of days in August
56(38)	TNDMT9 Ninth month	58(3A)	TNDSEPL Number of days in September
60(3C)	TNDMT10 Tenth month	62(3E)	TNDOCTL Number of days in October
64(40)	TNDMT11 Eleventh month	66(42)	TNDNOVL Number of days in November
68(44)	TNDMT12 Twelfth month	70(46)	TNDDECL Number of days in December
72(48)	TNDBIN Time in binary format (represented in seconds)		

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) TNDUSKIP		Inhibit or allow update of TND
	X'00' Non-zero	Inhibit update. Allow update.
21(15) TNDFLAG		Time and date valid flag for MOSS
	1...	Indicates the time and date are valid

Trace ACB

Program: NCP

Size in bytes: 128(80)

Created by: NCP generation

Pointed to by: The NACBACBX field in the NCP-processor adapter control block (NACB) and the NPSAACB field in the NCP-processor parameter/status area for the transmit TRA, or the LACBACBR field in the processor-NCP adapter control block (LACB) and the LPSAACB field in the processor-NCP parameter/status area for the receive TRA

Note: The TRA is pointed to by SIT trace control blocks only.

Function: Functions as an ACB for SIT trace

Note: The DSECT used for the TRA is that of the ACB.

0(0)				
Reserved				
4(4)				
Reserved				
8(8)				
Reserved				
12(C)				
Reserved				
16(10)				
Reserved				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: none;"> LXFLAGS* Flags (ODLC) </td> <td style="width: 75%; border: none;"></td> </tr> </table>			LXFLAGS* Flags (ODLC)	
LXFLAGS* Flags (ODLC)				
20(14)	22(16)	23(17)		
Reserved	LXBSTFLD* Line state field (ODLC)	LXBRBCT Number of buffers needed for the receive list (ODLC)		
24(18)				
LXBLKBP Pointer to TRB				
28(1C)				
Reserved				
32(20)				
Reserved				

* Indicates a byte expansion follows.

36(24) CCBL2 Address of current level-2 character service routine	38(26) Reserved	
40(28) Reserved		
44(2C) Reserved		
48(30) CCBBAR Offset to the LNVT entry (backward pointer)	50(32) Reserved	
52(34) Reserved		
56(38) CCBSTAT1 Current operational status of the slot	58(3A) CCBEND1 Line status at completion of a level-2 operation (The level-2 routine moves the status from CCBSTAT1 to CCBEND1 at the end of an operation)	
60(3C) Reserved		
64(40) Reserved	65(41) CCBFLAG3* General flags 3 (ODLC)	66(42) Reserved

* Indicates a byte expansion follows.

68(44)		Reserved	
72(48)		CCBNACBP Pointer to NACB (ODLC transmit leg only) (ODLC)	
		CCBLACBP Pointer to LACB (ODLC receive leg only) (ODLC)	
CCBBUFCT Buffer maximum for a receive operation			
76(4C)	CCBL3 Address of next level-3 routine to be executed	78(4E)	Reserved
80(50)	Reserved	83(53)	CCBTYPE* Line type
84(54)			
Reserved			

* Indicates a byte expansion follows.

88(58) Reserved	89(59) CCBFLAG2* Mode control flags	90(5A) Reserved
92(5C) Reserved		
96(60) CCBRACBP Pointer to the receive leg of a duplex link (transmit leg only)		
100(64) CCBXACBP Pointer to the transmit leg of a duplex link (receive leg only)		
104(68) CCBLINK Next ACB in level 2/3 chain		
108(6C) CCBAXBP Pointer to the TRA extension (TRX)		
CCBSETYP* Extended type		
112(70) Reserved		
116(74) Reserved		
120(78) Reserved		
124(7C) Reserved		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
21(15) LXBFLAGS		ODLC Flags (ODLC)
	.1..	ODLC slot unavailable
22(16) LXBSTFLD		ODLC Line State Field (ODLC)
	.... ..1.	IOH HALT pending

Offset/Field Name	Bit Pattern/ Hex Value	Contents
65(41) CCBFLAG3		General Flags 3 (ODLC)
	x... ..	ACB type 1 = ACB represents ODLC resource other than a line 0 = ACB represents an ODLC line
	.x... ..	CSS resource type 1 = ACB represents an ODLC processor 0 = ACB represents an ODLC CBC or line
	...1 ..	NCP SNAP trace active on this interface
83(53) CCBTYPE		Line type
	.1... ..	Full duplex slot
	..x... ..	Duplex leg ACB: 1 = Transmit leg 0 = Receive leg
	.... 0..1	Line type: SDLC
89(59) CCBFLAG2		Mode control flags
	.... ..1.	ODLC processor/link ACB (ODLC)
108(6C) CCBSETYP		Extended type
	.... .1..	"Forced deactivation" in progress
	.... ..0.	IBM-supported line control

Channel Adapter Trace Table**Program:** NCP**Size in bytes:** 20(14) plus 64(40) bytes per trace entry (number of entries is user specified)**Created by:** NCP generation**Pointer to:** The SYSCATP field in the Extended Halfword Direct addressables control block (HWE)**Function:** Contains traces for NCP channel adapter interrupts

Channel Adapter Trace Table

0(0)	TTRECNR Recurrent entries counter	2(2)	TTSKPCNT Skipped entries counter
4(4)	TTSTAR Address of the beginning of the trace table		
8(8)	TTCUR Current address of the end of the trace table		
12(C)	TTEND Address of the end of the trace table		
16(10)	CTRC Contains the identifier characters "CTRC"		
20(14)	Variable-length table extended by 64(40) bytes per trace entry.		

Trace Entry

0(0) TRCTID* Trace ID eyecatcher	1(1) TRCRID Return ID	2(2) Recurrent counter	3(3) Skipped entry counter
4(4) CABPFAD PEP flag	5(5) CABTRCF Trace flag	6(6) CAB002RB Output 62 request bucket	
8(8) CABCNTL Channel adapter contact control flags		10(A) TIMTENTH Tenths of a second counter	
12(C) CABICND Condition flags on entry		14(E) CABICND2 Condition flags (continued) on entry	
16(10) CABCND Channel condition flags		18(12) CABCND2 Channel condition flags (continued)	
20(14) CABXR77 Contents of external register X'77' (interrupt requests)		22(16) CABCA00 Save area for channel adapter register X'00' (initial selection)	
24(18) CABCA01 Save area for channel adapter register X'01' (initial selection address and command)		26(1A) CABCA02I Input save area for channel adapter register X'02' (data/status control)	
28(1C) CABCA02O Output save area for channel adapter register X'02' (data/status control)		30(1E) CABCA0C Output save area for channel adapter register X'0C' (cycle steal control)	
32(20) CABCA06O Save area for channel adapter register X'06' (NSC status and control)		34(22) CABCA07I Input save area for channel adapter register X'07' (channel adapter condition)	
36(24) CABCA07O Output save area for channel adapter register X'07' (channel adapter condition)		38(26) CABCA0F Save area for channel adapter register X'0F' (level-3 interrupt requests)	

* Indicates a byte expansion follows.

Note: The trace entries are loaded from the CAB. See "Channel Adapter Control Block (Main)" on page 1-157 for field definitions.

40(28) CABCACS Cycle-steal data address save area			
44(2C) CABCPIU1 Address of the first buffer of the last PIU passed to path control			
48(30) Address of the caller			
52(34) CABSENSE Channel sense byte	53(35) CABESNS1 Extended sense byte 1	54(36) CABESNS2 Extended sense byte 2	55(37) CABABRC Abort reason code
56(38) CABDCKTR Data check reason code	57(39) CABCRRC Command reject reason code	58(3A) Reserved.	59(3B) Reserved.
60(3C) CABSTATE Buffer/channel information	61(3D) CABCLRC CLATO Reason code	62(3E) Trace entry number	

Byte Expansion

Offset/Field Name	Character	Contents
0(0) TRCTID		Trace ID eyecatcher
	T	Normal trace entry
	R	Recurrent trace entry
	S	Skipped trace entry

Dispatcher Trace Table

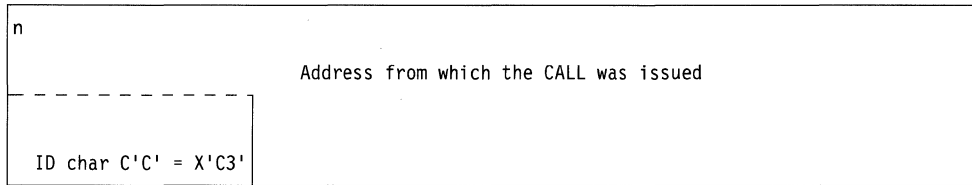
- Program:** NCP
- Size in bytes:** 2028(7EC); 28(1C) byte header and trailer plus 500 fullword entries
- Located in:** Label DSPX000 in the link-edit map
- Created by:** CXDCG02 module (in CXADISP# macro)
- Function:** Traces the dispatched active queue control block (QCB) and its first element queued, any CALLs, subtask sequences, and control router entries

0(0)	C'LOW '
4(4)	X'00000000'
8(8)	C'HIGH'
12(C)	X'00FFFFFF'
16(10)	TABCURR Pointer to the next table entry
20(14)	Identifier characters C'DISP'
24(18) - 2023(7E7)	TABLE 500 fullwords of trace data
2024(7E8)	TABLEND Identifier characters C'TEND'

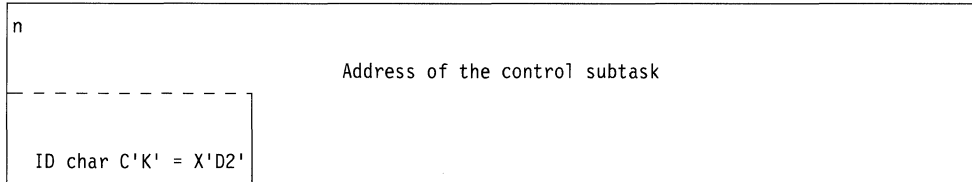
Dispatcher Entry

n	Active QCB address
<div style="border: 1px dashed black; padding: 2px;"> ID char C'D' = X'C4' </div>	
n+4	Address of the first element queued
<div style="border: 1px dashed black; padding: 2px;"> RNTIME Time the QCB was dispatched </div>	
n+8	Task entry pointer

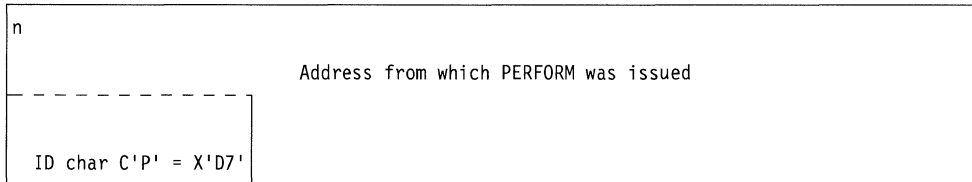
CALL Entry



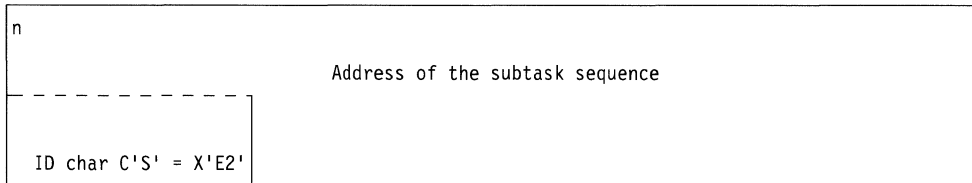
Control Router Entry



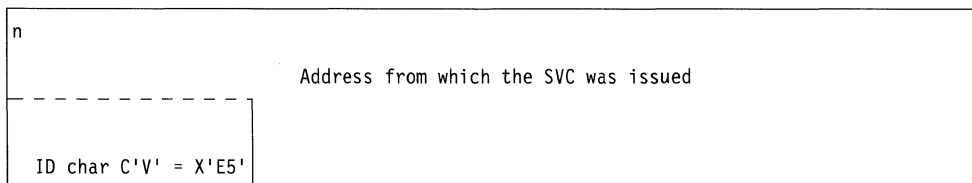
PERFORM Entry



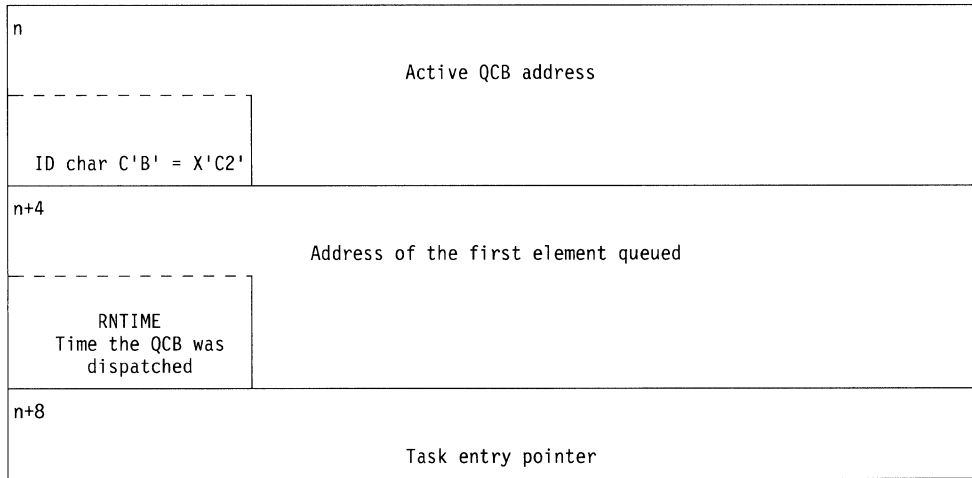
Subtask Sequence Entry



Supervisor Call (SVC) Entry



Bypass Dispatched—Call Was Used (Performance)



Trace Table (EP, PEP)**Program:** EP**Size in bytes:** 8 for each entry**Created by:** PEP generation or trace routine CYLTRC**Function:** Provides line and channel trace for selected subchannel addresses. One entry is made for each level-3 interrupt. Multiple entries are made for level-2 interrupts.

Level-2 Trace Entry (Part 1)

Character Mode

0(0) Entry ID X'11'	1(1) Channel adapter 0 through 5	2(2) Multiplexer subchannel address (CCBSUBCH)	3(3) Trace correlation counter (TCC) (PSATCC)
4(4) Secondary ending status (SES)	5(5) Level-2 interrupt address (CCBL2)		

Level-2 Trace Entry (Part 2)

Character Mode

0(0) Entry ID X'12'	1(1) Status control field (PSASSCF)*	2(2) Parallel data field (PDF) (PSASPDF)	3(3) Line communication status (LCS) (PSALCS)*
4(4) Primary control field (PCF) (PSASPCF)*	5(5) Serial data field (SDF) (PSASSDF)	6(6) Modem-in (PSAMDIN)*	7(7) Modem-out (PSAMDOUT)*

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-2 Trace Entry (Part 3)

Character Mode

0(0) Entry ID X'13'	1(1) Line request information (CCBLRI)*	2(2) Character address counter (CCBCAC)*	3(3) Service and status flag byte (CCBSVSTC)*
4(4) Tenths of a second counter (TIMTENTH)		6(6) Current command for the character control block (CCB) (CCBCMD)*	7(7) Sense**

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

** CCBSSENSE field ORed with CCBSSENS field.

Level-2 Trace Entry (Part 4)
 Character Mode—High-Priority SS

0(0) Entry ID X'14'	1(1) SS control flag byte (CCBSSC)*	2(2) SS control flag extension (CCBSSCX)*	3(3) SS high-priority buffer count (CCBPCNT)
4(4) Reserved	5(5) SS high-priority data store address (CCBL2PTR)		

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-2 Trace Entry (Part 5)
 Character Mode—High-Priority BSC

0(0) Entry ID X'15'	1(1) Flag byte 1 status (CCBFLGB1)*	2(2) Flag byte 2 terminal status (CCBFLGB2)*	3(3) Data service count (CCBNQCNT)
4(4) Reserved	5(5) Level-2 character address (CCBL2NCA)		

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-2 Trace Entry (Part 6)
 Burst Mode

0(0) Entry ID X'16'	1(1) PDF 1 (PSASPDF1)*	2(2) PDF 2 (PSASPDF2)*	3(3) PDF 3 (PSASPDF3)*
4(4) PDF 4 (PSASPDF4)*	5(5) Processed character count (PSAPCNT)*	6(6) Secondary control field (SCF) extension and character count (PSACCNT)*	7(7) X'00'

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-2 Trace Entry (Part 1)
 Normal Mode

0(0) Entry ID X'21'	1(1) Channel adapter 0 through 5	2(2) Multiplexer subchannel address (CCBSUBCH)	3(3) TCC (PSATCC)
4(4) Reserved	5(5) Level-2 interrupt address (CCBL2)		

Level-2 Trace Entry (Part 2)
Normal Mode

0(0) Entry ID X'22'	1(1) Status control field (PSASSCF)*	2(2) Current command (PSACCMD)	3(3) Secondary status (PSASES)*
4(4) LCS (PSALCS)*	5(5) Residual count (PSARCNT)	6(6) Modem-in (PSAMDIN)*	7(7) Modem-out (PSAMDOUT)*
	ELCS (if SES bit 2 is on)	Second buffer count (CCBBCNT)	First buffer count (CCBTCNT)

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-2 Trace Entry (Part 3)
Normal Mode

0(0) Entry ID X'23'	1(1) Reserved	2(2) Tenths of a second counter (TIMTENTH)
4(4) Byte count***	5(5) First cycle-steal buffer address or pointer to the auto call unit (ACU) buffer (CCBTBUF)	

*** The number of data bytes is equal to the value of PSACNT minus PSARCNT. (See "Character Control Block (EP)" on page 1-187.)

For Wrap Command

0(0) Entry ID X'23'	1(1) Last receive buffer used pointer (PSALRBPT)	
4(4) Tenths of a second counter (TIMTENTH)		6(6) Wrap data count

Level-2 Trace Entry (Parts 4–n)
Normal Mode

0(0) Entry ID**** X'24'	1(1) - 7(7)
Seven bytes of data from the buffer pointed to by the pointer in the parameter/status area control block (PSA). (See the EP CCB.)	

**** For Receive and Receive Continue commands when the line data option is "with data."

Level-3 Initial Select Trace Entry (Part 1)

0(0) Entry ID X'31'	1(1) Channel adapter 0 through 5	2(2) Initial selection address and input/output command byte (input X'1')	
4(4) Initial selection control (input X'0' high-order byte)	5(5) Current status (CCBCSTAT)*	6(6) Current command for the CCB (CCBCMD)*	7(7) Current sense (CCBCSENS)*

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-3 Initial Select Trace Entry (Part 2)

0(0) Entry ID X'32'	1(1) CCB address		
4(4) CCB line vector table (LNVT) address (CCBLNVT)		6(6) Tenths of a second counter (TIMTENTH)	

Level-3 Timer Interval Expiration
 Trace Entry

0(0) Entry ID X'41'	1(1) Channel adapter 0 through 5	2(2) Multiplexer subchannel address (CCBSUBCH)	3(3) Time-out routine displacement into the branch table (CCBTMADR) (See Volume 2 Section 7, "EP Information.")
4(4) Current command for the CCB (CCBCMD)*	5(5) Configuration flags (CCBFLG)*	6(6) Tenths of a second counter (TIMTENTH)	

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-3 Status Transfer Trace Entry

0(0) Entry ID X'51'	1(1) Channel adapter 0 through 5	2(2) Emulator subchannel (ESC) address and status bytes (input X'3')	
4(4) Tenths of a second counter (TIMTENTH)		6(6) Current command for the CCB (CCBCMD)*	7(7) Sense**

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

** CCBCSENS field ORed with CCBCSENSE field.

Level-3 Data Transfer Trace Entry (Part 1)

0(0) Entry ID X'61'	1(1) Channel adapter 0 through 5	2(2) ESC address (input X'3' high-order byte)	3(3) Reserved
4(4) Tenths of a second counter (TIMTENTH)		6(6) Data and status control (Input X'2')	

Level-3 Data Transfer Trace Entry (Part 2)

Character Mode

0(0) Entry ID X'62'	1(1) Reserved		
4(4) Data buffer bytes (input X'4')		6(6) Data buffer bytes (input X'5')	

Level-3 Transfer Trace Entry (Part 3)

Character Mode—Not High Priority

0(0) Entry ID X'63'	1(1) Line request information (CCBLRI)*	2(2) Reserved	3(3) Service and status flag byte (CCBSVSTC)*
4(4) Reserved			

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-3 Data Transfer Trace Entry (Part 3)

Character Mode—High-Priority SS

0(0) Entry ID X'64'	1(1) Line request information (CCBLRI)*	2(2) SS high-priority buffer count (CCBPCNT)	3(3) Service and status flag byte (CCBSVSTC)*
4(4) Reserved	5(5) SS high-priority data service address (CCBL3PTR)		

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-3 Data Transfer Trace Entry (Part 3)
 Character Mode—High-Priority BSC

0(0) Entry ID X'65'	1(1) Line request information (CCBLRI)*	2(2) Data service count (CCBNQCNT)	3(3) Service and status flag byte (CCBSVSTC)*
4(4) Reserved	5(5) Level-3 character address (CCBL3SCA)		

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Level-3 Data Transfer Trace Entry (Part 2)
 Normal Mode

0(0) Entry ID X'66'	1(1) Channel adapter pointer register (input '3x' or input '6x')**		
4(4) Cycle steal mode control register (input X'C')		6(6) Second buffer count (CCBBCNT)	7(7) First buffer count (CCBTCNT)

** The x is the channel adapter 0–7 from the CASEL field in the CHCB. 3x is used for channel adapters on Bus 1. 6X is used for channel adapters on Bus 2.

Level-3 Data Transfer Trace Entry (Part 3)
 Normal Mode

0(0) Entry ID X'67'	1(1) Second cycle-steal buffer address (CCBBUF)		
4(4) Buffer size of the auto-call dial digits (CCBBUFSZ)	5(5) First cycle steal buffer address or pointer to the ACU buffer (CCBTBUF)		

Multi-subchannel Line Access (MSLA) Line Swap Trace Entry

0(0) Entry ID X'71'	1(1) X'00'	2(2) "To" subchannel	3(3) "From" subchannel
4(4) "To" channel adapter number		6(6) "From" channel adapter number	

Common Scanner Processor IOH Issued Trace Entry (Part 1)

0(0) Entry ID X'81'	1(1) Channel adapter 0 through 5	2(2) Multiplexer subchannel address (CCBSUBCH)	3(3) PSA byte 0*
4(4) PSA byte 1*	5(5) PSA byte 2*	6(6) PSA byte 3*	7(7) PSA byte 4*

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Common Scanner Processor IOH Issued Trace Entry (Part 2)

0(0) Entry ID X'82'	1(1) PSA byte 5*	2(2) PSA byte 6*	3(3) PSA byte 7*
4(4) PSA byte 8*	5(5) PSA byte 9*	6(6) PSA byte 10*	7(7) PSA byte 11*

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

Common Scanner Processor IOH Issued Trace Entry (Part 3)

0(0) Entry ID X'83'	1(1) IOH instruction address		
4(4) Tenths of a second counter (TIMTENTH)		6(6) Tag data (CCBTD)	

Common Scanner Processor IOH Issued Trace Entry (Part 4–n)

0(0) Entry ID X'84'	1(1) - 7(7)
7 bytes of data from the buffer pointed to by the pointer in the PSA	

Common Scanner Processor IOH Issued Trace Entry (Part 5)

0(0) Entry ID X'85'	1(1) First received buffer pointer (PSAFRBPT)		
4(4) PSA counter	5(5) X'00'	6(6) Wrap data TD	

NCST Internal Trace Table

Program: NCP

Size in bytes: 100 entries - 16 bytes each

Created by: NCP generation

Pointed to by: The LNKTRAT and LNKNEXT fields in NCST link session control block (LNK)

Function: Defines an entry in an NCST trace table

Each Entry:

0(0)	TRAUCBP Pointer to user control block		
4(4)	TRAPIUP Pointer to PIU		
8(8)	TRAIID User control block identifier (FEBID)	10(A) TRASTATE State table index (FEBSTATE)	11(B) TRAINPUT Last input (FEBINPUT)
12(C)	Reserved		

Line Trace Data**Program:** NCP**Size in bytes:** 5(5) for character mode or burst mode; 5(5) or more for normal mode; 3(3) for truncated data message; 18(12) for NCP/token-ring interconnection (NTRI) line trace (dummy); variable for NTRI line trace (normal); variable for NTRI IOH trace; 20(14) for NPSA parameter area and status area trace entries; 20(14) for LPSA parameter area and status area trace entries; 5(5) for ECB pacing flag trace entry; 32(20) for LDPSA trace entry; 38(26) for NDPSA trace entry; variable for ODLC transmit and receive data entries**Created by:** NCP or NTRI line trace routine**Pointed to by:** The line trace control block (LTCB) field points to a buffer or a buffer chain containing the following formats.**Function:** Contains diagnostic information. The NCP line trace stores 5 bytes (character mode) or at least 5 bytes (normal mode) of diagnostic information into a trace entry whenever a level-2 interrupt occurs. Whenever a level-2 interrupt occurs while in NCP burst mode, the NCP line trace stores 5 bytes of diagnostic information for each character of the burst (up to 4 characters), rather than that character's separate trace entry. The diagnostic information (LCD-PCF, timer field, SCF, and TCC) is identical for each burst trace entry. However, the character in the parallel data field (PDF) trace entry field is stored from parameter/status area control block (PSA) fields PSASPDF1 through PSASPDF4, respectively.

The source of the normal mode line trace entry information is indicated by the prefix flag as one of the following:

- PSA parameter area
- PSA status area
- Receive data
- Transmit data.

Line trace stores the PSA parameter and status areas for level-2 interrupts and also associated receive or transmit data. NCP stores the trace entries in dynamically allocated buffers and then transfers them to the host with record trace data (RECTRD) PIUs. See Volume 2 Section 2, "Data Area Relationships," for an illustration of the control block relationships for NCP line trace.

Character Mode or Burst Mode Line Trace Entry

0(0) LCD-PCF (PSASLPCPC)	1(1) Timer field**	2(2) Secondary control field (SCF) (PSASSCF)	3(3) PDF (PSASPDF)
4(4) Transmit correlation counter (TCC) (PSAPTCC)			

** Contains a hexadecimal value indicating, in tenths of a second, the time that elapsed between the activation of the trace and the level-2 interrupt represented by this entry. The field is reset to zero when the trace starts and wraps around to zero after 25.5 seconds.

Normal Mode Line Trace Entry

0(0) Prefix flag*	1(1) Byte count	3(3) Pad byte ----- Time field** (P prefix)
4(4) - n Start of parameter and status data***		
n+1 - n+4 Transmit/receive correlator (Transmit/receive correlation counter)****		

* Indicates a byte expansion follows.

** Contains a hexadecimal value indicating, in tenths of a second, the time that elapsed between the activation of the trace and the level-2 interrupt represented by this entry. The field is reset to 0 when the trace starts and wraps around to 0 after 25.5 seconds.

*** Value of the prefix flag indicates the type of entry starting in 4(4). See the PSA for the format of the parameter or status area by commands.

**** Present only for the status entry of a duplex line.

NPSA Parameter Area Trace Entry

0(0) TRCEKEY Trace entry key (C'A'=X'C1')	1(1) TRCELEN Trace entry length 16(10)	3(3) TRCETIME Trace entry timer interval
4(4) - 19(13) TRCENPRM NPSA parameter area data		
----- TRCEDATA Trace entry data begins at this label		

NPSA Status Area Trace Entry

0(0) TRCEKEY Trace entry key (C'B'=X'C2')	1(1) TRCELEN Trace entry length 16(10)	3(3) TRCETIME Trace entry timer interval
4(4) - 19(13) TRCENSTS NPSA status area data		
----- TRCEDATA Trace entry data begins at this label		

LPSA Parameter Area Trace Entry

0(0) TRCEKEY Trace entry key (C'C'=X'C3')	1(1) TRCELEN Trace entry length 16(10)	3(3) TRCETIME Trace entry timer interval
4(4) - 19(13) TRCELPRM LPSA parameter area data		
----- TRCEDATA Trace entry data begins at this label		

LPSA Status Area Trace Entry

0(0) TRCEKEY Trace entry key (C'D'=X'C4')	1(1) TRCELEN Trace entry length 16(10)	3(3) TRCETIME Trace entry timer interval
4(4) - 19(13) TRCELSTS LPSA status area data		
----- TRCEDATA Trace entry data begins at this label		

ECB Pacing Flag Trace Entry

0(0) TRCEKEY Trace entry key (C'E'=X'C4')	1(1) TRCELEN Trace entry length 1(1)	3(3) TRCETIME Trace entry timer interval
4(4) TRCEDATA Trace entry data begins at this label		
----- TRCEECP ECB pacing flag data		

LDPSA Trace Entry

0(0) TRCEKEY Trace entry key (C'L'=X'D3')	1(1) TRCELEN Trace entry length 28(1C)	3(3) TRCETIME Trace entry timer interval
4(4) TRCELSTS Logical line id data		6(6) - 31(1F) TRCELDP
----- TRCEDATA Trace entry data begins at this label		
LDPSA data		

NDPSA Trace Entry

0(0) TRCEKEY Trace entry key (C'N'=X'D5')	1(1) TRCELEN Trace entry length 34(22)	3(3) TRCETIME Trace entry timer interval
4(4) TRCEIDN Logical line id data		6(6) - 31(1F) TRCENDP
TRCEDATA Trace entry data begins at this label		
NDPSA data		
32(20) TRCENDPR Reserved	34(22) - 37(25) TRCENDPL	
NCP.LRID		

ODLC Receive Data Entry

0(0) TRCEKEY Trace entry key (C'R'=X'D9')	1(1) TRCELEN Trace entry length	3(3) TRCETIME X'00'
4(4) TRCEDATA Trace entry data begins at this label		

ODLC Transmit Data Entry

0(0) TRCEKEY Trace entry key (C'X'=X'E7')	1(1) TRCELEN Trace entry length	3(3) TRCETIME X'00'
4(4) TRCEDATA Trace entry data begins at this label		

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0)		Prefix flag
	X'C1'	A=NPSA parameter area data (ODLC resource)
	X'C2'	B=NPSA status area data (ODLC resource)
	X'C3'	C=LPSA parameter area data (ODLC resource)
	X'C4'	D=LPSA status area data (ODLC resource)
	X'C5'	E=ECB pacing flag data (ODLC resource)
	X'C7'	G=Ethernet get counter data
	X'C9'	I=FRTE transmit data entry
	X'D3'	L=LDPSA data (ODLC resource)
	X'D5'	N=NDPSA data (ODLC resource)
	X'D6'	O=FRTE receive data entry
	X'D7'	P=PSA parameter area
	X'D9'	R=Receive data
	X'E2'	S=PSA status area
	X'E3'	T=FRSE transmit data entry
	X'E5'	V=FRSE receive data entry
	X'E7'	X=Transmit data

Normal Mode Truncated Data Message

(Appears immediately following truncated data in the line trace buffer)

0(0)	1(1)	2(2)
@ character X'7C'	T character X'E3'	D character X'C4'

NTRI Line Trace Entry Formats

Line Trace (Dummy Entry)

0(0)	1(1)	2(2) - 17(11)
X'01'	Length	
Line interface table (LIT) (16 bytes)		

Line Trace (Logical Line Trace Entry)

0(0) X'01' - Receive X'02' - Transmit	1(1) Length		3(3) - 4(4) Time stamp
4(4) Time stamp (continued)	5(5) Access control field*	6(6) Frame control field*	7(7) - 12(C)
Destination address*			
13(D) - 18(12)			
Source address*			
19(13) - q			
Routing information (See breakdown of fields on following pages)			
(q+1) - r Logical link header (See breakdown of fields on following pages)			

* Indicates a byte expansion follows.

Line Trace (Normal Entry for Physical Line)

0(0) X'01'	1(1) Length	2(2) - 17(11)	
LIT (16 bytes)			
		18(12) Access control field*	19(13) Frame control field*
20(14) - 25(19) Destination address*			
26(1A) - 31(1F)			
Source address*			
32(20) - q Routing information (See breakdown of fields on following pages)			
(q+1) - r Logical link header (See breakdown of fields on following pages)			

* Indicates a byte expansion follows.

Routing Information

(See note 1 on page 1-1038.)

Note: The byte offsets below are for the physical line trace entry. Refer to the logical line trace entry to determine its offsets for these fields.

32(20) Routing control field*	34(22) Segment number 1
36(24) Segment number 2	38(26) Segment number 3
--	--
m-2 Segment number (M-1)	m Segment number M

* Indicates a byte expansion follows.

Logical Link Header

(See note 1.)

n Destination service access point (DSAP) address*	n+1 Source service access point (SSAP) address*	n+2 Control field.* (See note 2.)
(n+3) or (n+4) Data Up to twelve data bytes (if any)		

* Indicates a byte expansion follows.

Notes:

1. The routing information field is a variable-length field. This field is padded by the adapter to 18(12) bytes long if the trace is for a receive frame, and is variable if the trace is for a transmit frame. To determine the length of routing information and whether it exists, first look at the source address at offset 26(1A). If the high-order bit of byte 0 is off, there is no valid routing information. If the bit is on, the amount of valid routing information is determined by the length field in the first byte of the routing control field.

For a receive frame, the routing information field contains the valid information, plus residual data, if needed, to pad to 18(12) bytes. Therefore, the logical link header will always begin at offset 50(32) for a receive frame. For a transmit frame, the field, if present, is only as long as the length field indicated, and the logical link header will begin following the routing information. If the routing information is not present for the transmit frame, the logical link header will begin following the source address.

2. The control field in the logical link header is 2 bytes long for I or S frames and 1 byte long for U frames.

Byte Expansions

Note: The byte offsets below are for the physical line trace entry. Refer to the logical line trace entry to determine its offsets for these fields.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
18(12)	xxx. .... ...x x... .... .xxx	Access control field Priority bits (B'000' lowest; B'111' highest) 1 = Busy token 0 = Free token Monitor bit Reservations bits (B'000' lowest; B'111' highest)
19(13)	xx..	Frame control field 00 = MAC frame 01 = LLC frame format 1
20(14)	Byte 0 x... .... .1..	Destination address (bytes 0 through 5) 1 = Group address 0 = Individual address Locally administered address
26(1A)	Byte 0 1... .... .x..	Source address (bytes 0 through 5) Routing information is present. 1 = Locally administered address 0 = Universally administered address
32(20)		Routing control field
		Non-broadcast Frames
	Byte 0 1... .... .xx. .... ...x xxxx	All-segments broadcast Path trace indicators Length of the routing information (RI) field (including the route control field)
	Byte 1 x... .... ...x	Direction; bridge to interpret segment numbers when forwarding a frame: 1 = Right-to-left across the routing information field 0 = Left-to-right across the routing information field. Largest frame size: 000 = Up to 516 bytes 001 = Up to 1470 bytes 010 = Up to 2052 bytes 011 = Up to 4472 bytes 100 = Up to 8144 bytes 101 = Up to 11407 bytes 110 = Up to 17800 bytes 111 = Used in all-segment broadcast Reserved
		All-rings Broadcast Frames
	Byte 0 1... .... .0.. .... ..x. .... ...x xxxx	All-segments broadcast Not used by NTRI Reserved Length of the routing information field (including the route control field)
	Byte 1	Same as for non-broadcast frames

Offset/Field Name	Bit Pattern/ Hex Value	Contents
<i>n</i>	xxxx xx.. .... ..00	DSAP address DSAP address Always 0
<i>n+1</i>	xxxx xx.. .... ..0. .... ...x	SSAP address SSAP address Always 0 1 = Response 0 = Command
<i>n+2</i>		Control field
		Information Frame
	Byte 0 xxxx xxx. .... ...0	Send sequence number—N(S) I-format identifier
	Byte 1 xxxx xxx. .... ...x	Receive sequence number—N(R) Poll (command) or Final (response)
		Supervisory Frame
	Byte 0 0000 xx01	Commands/Responses: 00 = Receive Ready (RR) 01 = Receive Not Ready (RNR) 10 = Reject (REJ).
	0000 ..01	S-format identifier
	Byte 1 xxxx xxx. .... ...x	Receive sequence number—N(C) Poll(command) or Final(response)
		Unnumbered Frame
	Byte 0 0000 0011	UI command
	000P 0111	SIM command
	000F 1111	DM response
	010P 0011	DISC command
	011F 0011	UA response
	011P 1111	SABME command
	100F 0111	FRMR response
	101x 1111	XID command (poll) or Final (response). See note.
	111x 0011	TEST command (poll) or Final (response)

IEEE Standard 802.2 XID Information Field

Note: If byte 0 of the XID format (located in the data area) equals X'81', the XID format is a standards-defined XID information field with the IEEE 802.2 basic format. (See the following expansion.) If byte 0 does not equal X'81', see the XID control blocks for the SDLC extensions.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
	Byte 0 X'81'	Indicates a standards-defined XID information field with the IEEE 802.2 basic format
	Byte 1 xxx. .... ...x xxxx	Reserved for future use of IEEE Class of service supported by the XID sender: 00001 = Connectionless 00011 = Connectionless and connection-oriented. If the SSAP address = X'00', the entire logical link control sub-layer has the indicated service class. Any other SSAP address indicates that the service class applies only to the source SSAP.
	Byte 2 xxxx xxx. .... ...x	XID sender's maximum receive window size Reserved for future use of IEEE

IOH Trace

0(0) X'02'	1(1) Length	2(2) Tag address
4(4) Tag address		6(6) Tag address
8(8) Tag address		
		n Tag address
n+2 Tag address		

Trace Table (SDLC, Level-3 Input/Output)**Program:** NCP**Size in bytes:** 16(10) bytes plus 40 entries at 28(1C) bytes each; the total is 1136(470) bytes.**Located in:** After CSECT CXECENT (CXDCG0D)**Created by:** CXDCG0D module**Function:** Traces input/output level-3 interrupts for SDLC lines

SDLC Input/Output Level-3 Trace Table

0(0)	Current table entry
4(4)	Table end
8(8)	Table beginning
12(C)	Entry length

Trace Entry

0(0)	DLCTCCBP Adapter control block (ACB) address	
4(4)	DLCTSTS1 CCBSTAT1	6(6) DLCTEND1 CCBEND1
8(8)	DLCTESTS CCBESTAT	10(A) DLCTCTL CCBCTL 11(B) DLCTAFLD CCBAFLD
12(C)	DLCTCFLD CCBCFLD	14(E) DLCTRBLC CCBRBLUC (receive) TIMEFLD (transmit)
16(10)	DLCTNRNS Station control block (SCB) N(R)/N(S)	18(12) DLCTNRA SCBNRA 19(13) DLCTNSQ SCBNSQ
	DLCTCMD Command if run not active	
20(14) DLCTCOC SCBCOC	21(15) DLCTLNRP CCBLNRP	22(16) DLCTL2 CCBL2
24(18) DLCCTL3 CCBL3	26(1A) DLCTRTCT SCBRTCNT	

Scanner Interface Trace Data

Program: NCP, EP

Size in bytes: 4 bytes plus variable data size; variable data for NTRI token-ring interface coupler (TIC) internal trace

Created by: Communication scanner processor (CSP) processing the scanner interface trace (SIT) or NCP/token-ring interconnection (NTRI)

Pointer to: Depends on the program

For NCP, the SIT line trace control block (LTCB) fields point to a buffer or a buffer chain containing the following entry formats.

For EP, the trace line vector table (TLNVT) field (X'840') contains a pointer to the SIT character control block (CCB) that contains a pointer to SIT buffer 1 and SIT buffer 2. Each buffer starts with a header.

Function: Contains information indicating actions taken by the CSP as a result of the IOH commands received from NCP or EP. This information includes the IOH issued, the associated parameter/status area (PSA), and any data transmitted or received. The checkpoint trace is initiated only by MOSS microcode.

The TIC trace records the internal communication between NTRI and the TIC.

NCP transfers the trace entries and TIC MAC frame data to the host with a record trace data (RECTRD) PIU.

EP transfers the trace entries to the host by means of the dynadump function.

EP SIT Buffer Header

0(0)	2(2)
Identification X'0000'	Sequence number
4(4)	6(6)
Scanner line interface address	Data count

The following trace entries are common to NCP and EP.

Checkpoint Trace Entry

0(0)	1(1)	3(3)
Identifier=C X'C3'	Data count X'0005' (includes a pad byte)	Pad X'00'
4(4)	6(6)	7(7)
L3 pointer	Interface control block status	Interface control block control

IOH Issued Entry

0(0) Identifier=I X'C9'	1(1) Data count X'0005' (includes a pad byte)	3(3) Pad X'00'
4(4) Tag address (TA)		6(6) Tag data (TD)

Parameter Area Entry

0(0) Identifier=P X'D7'	1(1) Data count (includes a pad byte)	3(3) Pad X'00'
4(4) - n PSA**		

** Only that portion of the PSA that is used by the IOH command is recorded. This area is left-justified with the unused portion (to the right of the last used field) truncated.

Received or Transmitted Data Entry

0(0) Identifier R=X'D9' X'E7'	1(1) Data count	3(3) Pad X'00'
4(4) - n Data burst (maximum four HW per entry)		
n+1 Front end scanner (FES) parameter and status*		

* Indicates a byte expansion follows.

Status Area Entry

0(0) Identifier=S X'E2'	1(1) Data count (includes a pad byte)	3(3) Pad X'00'
4(4) - n PSA**		

** Only that portion of the PSA that is used by the IOH command is recorded. This area is left-justified with the unused portion (to the right of the last used field) truncated.

Overrun Entry

0(0) Identifier (any of the above)	1(1) Data count X'0001' (for the pad byte)	3(3) Pad X'00'
--	--	--------------------------

NTRI TIC Internal Trace Element Format

0(0) X'00'	1(1) Length	2(2) - n
Trace data of the TIC MAC frame (84 bytes or less)		

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
$n+1$		FES parameter
	Byte 0	
	1... ..	Burst is not valid.
	.0.. ..	Not start
	..x. ..	Interrupt request
	...0 ..	Not EP mode (receive), or not MCC remember (transmit)
	.... 0...	No parallel data field (PDF) pointer
	.... .xxx	Byte count of data burst:
		000 = 1 byte
		111 = 8 bytes.
	Byte 1	FES status
	x... xx..	Receive:
		000 = Data (all)
		100 = Stop check (SS)
		001 = Flag OK (SDLC)
		011 = Flag off boundary (SDLC)
		100 = Abort (SDLC)
		101 = CRC check (SDLC)
		110 = IDLE (SDLC)
		111 = Force 0 (BSC)
		011 = Enter normal (A/E)
		100 = VRC error in (A/E)
		110 = Enter transparent (A/E).
	0... ..	Transmit
	.x.. ..	Character service
	..x. ..	Overrun (receive) or underrun (transmit)
	...x ..	Modem change
	.... x...	EOT (transmit)
	.... .x..	Transmit end (transmit)
	.... ..00	Reserved

Note: When not specified, the values apply to both receive and transmit.

Supervisor Call Trace Table

Program: NCP
Size in bytes: 28(1C) bytes plus 300 fullword entries; 1228(4CC) bytes total
Located in: Label CXASVCTR in the link-edit map
Created by: CXDCG01 assembly
Function: Traces up to eight registers for every supervisor call (SVC) macro issued from interrupt level 5

0(0)		SVCRETRN Return address in the level-4 router	
4(4)		Pointer to the next table entry to be used	
8(8)	SVCRGALL* Trace-all-registers option	9(9)	Identifier characters 'SVC'
12(C) - 1211(4BB) 300 fullwords of trace data. (See the trace entry formats following the trace table.)			
1212(4BC) - 1219(4C3) Identifier characters 'SVCTBEND'			
1220(4C4)	Character L (X'D3')	1221(4C5)	Low address of the range to be traced (default=X'000000')
1224(4C8)	Character H (X'C8')	1225(4C9)	High address of the range to be traced (default=X'FFFFFF')

* Indicates a byte expansion follows.

Trace Entry Format

n TENTHTMR Save timer value from halfword direct addressable storage control block (XDH) TIMTENTH (TIMH6)	n+1 Level-5 instruction address register (IAR), register 0
n+4 Character 3 X'F3'	n+5 Level 5, register 3
n+8 Character 5 X'F5'	n+9 Level 5, register 5
n+12 Character 7 X'F7'	n+13 Level 5, register 7

Additional Trace Entry Format When the Trace-All-Registers Option Is Selected

n+16 Character 1 X'F1'	n+17 Level 5, register 1
n+20 Character 2 X'F2'	n+21 Level 5, register 2
n+24 Character 4 X'F4'	n+25 Level 5, register 4
n+28 Character 6 X'F6'	n+29 Level 5, register 6

Byte Expansion

Offset/Field Name	Hex Value	Contents
8(8) SVCRGALL		Trace-all-registers option
	X'00'	Trace all level-5 registers.
	X'40'	Trace only registers 0, 3, 5, and 7.

Transmission Group Trace Data

Program: NCP

Size in bytes: Variable. A dummy trace entry is 2(2) bytes. The size of a normal trace entry, depending on the type of PIU being traced (copied into the trace entry), varies as follows: 34(22) for middle or last segment PIUs, 38(26) for PIUs being sent to or from a non-SNA device, 31(1F) for unformatted function management data (FMD) PIUs, 37(25) for formatted FMD PIUs, and variable for all other PIUs.

Created by: NCP transmission group trace routine

Pointer: TGBTRACP in each transmission group control block (TGB) points to the transmission group trace buffer.

Function: NCP builds the trace entries in dynamically allocated buffers and transfers them to the host in record trace data (RECTRD) PIUs. If not enough buffers can be dynamically allocated to build the current trace entry, a dummy entry is built instead.

Dummy Entry

0(0) Flags*	1(1) X'00'
----------------	---------------

* Indicates a byte expansion follows.

Normal Entry

0(0) Flags*	1(1) Data length	2(2) - n PIU data (maximum of 254 bytes)
----------------	---------------------	--

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
0(0)		Flags
	1... ..	Text data (only value defined)
	.x... ..	0 = Last trace entry for the current PIU 1 = Not the last trace entry for the current PIU

Trace Control Table

Program: EP
Size in bytes: 24(18)
Created by: PEP generation
Referenced by: CYKTRC, CYLTRC, and CYKDSS
Function: Provides control of the trace table

0(0)	CURENTRY Address of the current trace entry	
4(4)	FRSTBLK Address of the first entry in the trace table	
8(8)	LSTBLKEN Address of the first byte after the trace table	
12(C)	CURRBLK Address of the buffer containing the current entry	
16(10)	CURBLKEN Address of the first byte after the end of the current buffer	
20(14) TRCFLAGS* Flag byte	21(15) WRAPCNTR Counter for the trace table wrap	22(16) SEQNO Current sequence number of the buffer being filled with trace entries

* Indicates a byte expansion follows.

Byte Expansion

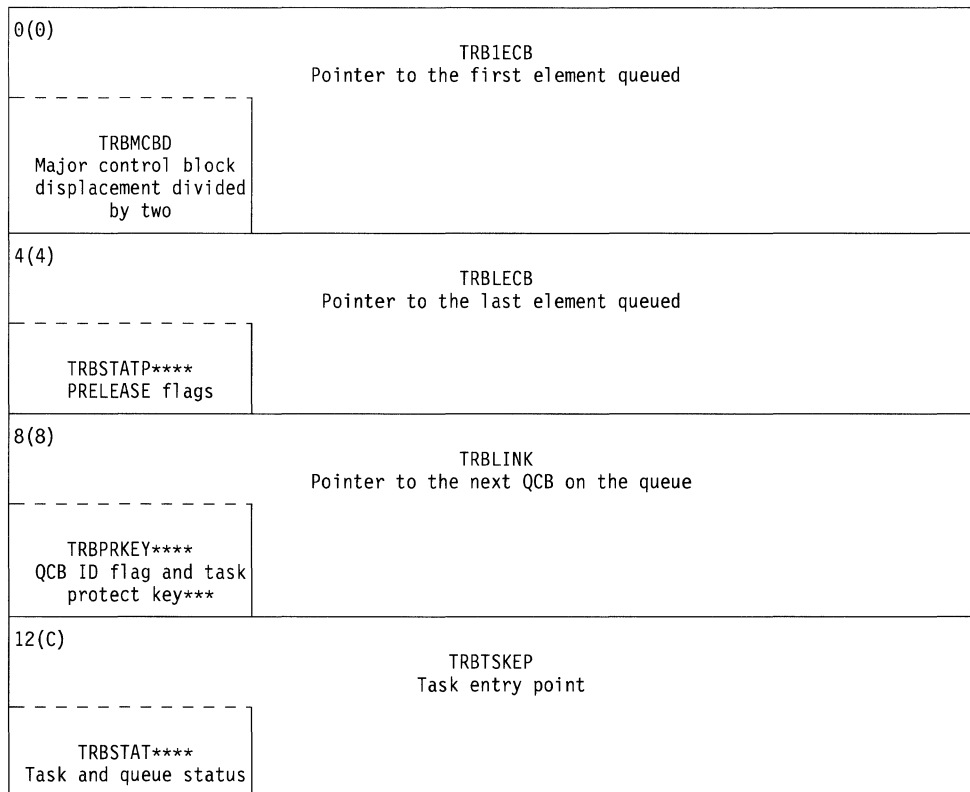
Offset/Field Name	Bit Pattern	Contents
20(14) TRCFLAGS		Flag byte
	1...	Dump is waiting for entry.
	.1..	Dump is active now.
	..1.	Trace is active now.
	.... ..1.	Level-2 trace flag
	.... ...1	Level-3 trace flag

Trace Control Block

- Program:** NCP
- Size in bytes:** 44(2C)
- Located in:** \$LVL5M
- Created by:** NCP generation
- Pointer to:** The LXBLKBP field in the trace's transmit or receive ACB (TRA), the TRETBP field in the trace control block extension (TRE), and the CBBRESP field in the committed buffers block (CBB) for this trace slot
- Function:** Works as a part of the trace standard transport mechanism.

Note: The TRB QCB must be at the same offset as the first QCB in the LCB, LKB, and LMB.

Note: TRBPRKEY is the only QCB field currently being used in the TRB.



*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

**** See Queue Control Block for Input Queues for bit definitions.

16(10)		TRBSAVE Address of the save area pushdown list
TRBSCHED**** Task dispatching priority	17(11)	TRBPREL PRELEASE buffer count
20(14)		TRBLUNK Pointer to the previous QCB on the queue
TRBBHSCH**** BHR scheduling bits		
24(18)	TRBMAXRS Maximum trace record size in bytes	26(1A) Reserved
28(1C)		TRBTRAP Pointer to receive TRA***
TRBMAXBF Maximum trace record size in buffers		
32(20)		TRBNACBP Pointer to NACB**
36(24)		TRBCBBP Pointer to CBB**
40(28)		TRBTREP Pointer to TRB extension**
TRBTYP2* Extended line type field**		

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKB, LMB, and TRB.

*** This field must be at the same offset in the LCB, LKB, LMB, and TRB.

**** See Queue Control Block for Input Queues for bit definitions.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
40(28) TRBTYP2		Extended line type field
	1... ..	ODLC line (TRBODLC)**
	.x.. ..	Reserved
	..0.	Physical definition (TRBLOG)--this bit will always be zero**
	...x xxxx	Reserved
		** These bits must be at the same location in the LKB, LMB, and TRB

Trace Control Block Extension

Program: NCP

Size in bytes: 32(20)

Created by: NCP generation

Pointed to by: The TRBTREP field in the trace control block (TRB)

Function: Contains common transport mechanism fields for ODLC SIT trace I/O.

0(0)			
TRENCBP Pointer to next control block on NACB work queue			
4(4)			
TREPCBP Pointer to previous control block on NACB work queue			
TREXIN Next index in NDP command queue			
8(8)		10(A)	
TRECBI CBID		Unused	
TRECBI1 (X'21')		9(9) TRECBI2 (X'99')	
12(C)			
Reserved			
TREFLAGS Flags (X'00')			
16(10)	17(11)	18(12)	19(13)
TREWQI0 NDP command index 0	TREWQI1 NDP command index 1	TREWQI2 NDP command index 2	TREWQI3 NDP command index 3
20(14)	21(15)	22(16)	23(17)
TREWQI4 NDP command index 4	TREWQI5 NDP command index 5	TREWQI6 NDP command index 6	TREWQI7 NDP command index 7
24(18)			
TRETREP Pointer to trace control block (TRB)			
TREFMT Resource definition format** (X'00' -- See LKEFMT)			
28(1C)			
TREPUCBP Pointer to protocol unique control block			

* Indicates a byte expansion follows.

** These fields must be at the same offset in the LKE, LME, SCE, and TRE.

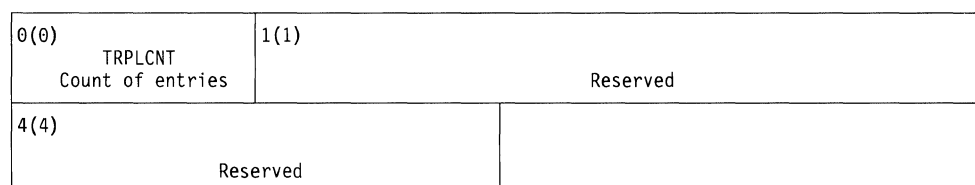
Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) TREFMT		Resource Definition Format
	xxxx	Reserved
	.... xxxx	Protocol type (TRELIMIT)
		0000 = ALL
		0001 = SDLC
		0010 = ESCA
		0011 = TRA

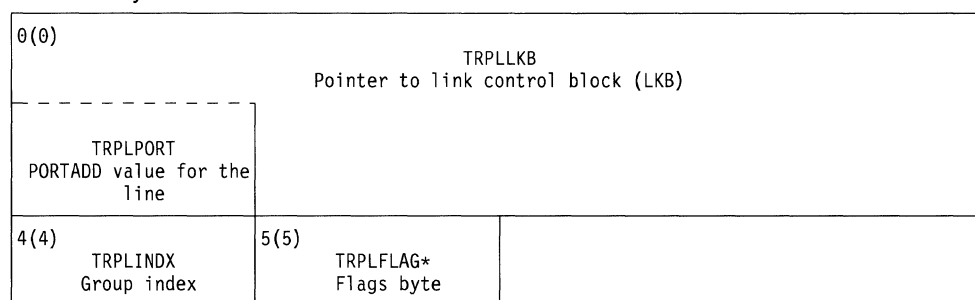
Token-ring Physical Line Table

Program: NCP
Size in bytes: Variable, depending upon the number of physical resources
Created by: NCP generation
Pointed to by: The SYSTRPLP field in fullword direct addressable extension (FAX)
Function: Contains one entry for each token-ring ODLK physical line

TRPL Header



TRPL Entry



* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
5(5) TRPLFLAG		Flags byte
	1... ..	Last entry for a specific PORTADD (TRPLAST)
	.1... ..	Used in this pass of the PORTADD value (TRPLUSD)

Transit Routing Table

Program: NCP

Size in bytes: Variable; 16 bytes plus 16 bytes per TRT row when ERLIMIT=8; 32 bytes plus 32 bytes per TRT row when ERLIMIT=16

The number of TRT rows associated with a given network is specified by the RMBTRTCT field in the route management block (RMB) for that network. The RMBTRTCT value does not include row zero of the TRT.

Created by: NCP generation

Pointer to: The RMBTRTP field in the route management block (RMB) for each network points to the beginning of the TRT for that network. The TRT is then indexed by using the appropriate entry from the subarea index table (SIT).

The TRT for the native network is also pointed to by the SYSTRTP field in the extended halfword direct addressables control block (HWE).

Function: Contains indexes into the subarea vector table (SVT)

ERLIMIT=8

0(0) - 15(F)	
Zeros	
16(10) SVT index for ER0	18(12) SVT index for ER1
20(14) SVT index for ER2	22(16) SVT index for ER3
24(18) SVT index for ER4	26(1A) SVT index for ER5
28(1C) SVT index for ER6	30(1E) SVT index for ER7

Bytes 16 through 32 make up one TRT row.

ERLIMIT=16

0(0) - 31(1F)	
Zeros	
32(20) SVT index for ER0	34(22) SVT index for ER1
36(24) SVT index for ER2	38(26) SVT index for ER3
40(28) SVT index for ER4	42(2A) SVT index for ER5
44(2C) SVT index for ER6	46(2E) SVT index for ER7
48(30) SVT index for ER8	50(32) SVT index for ER9
52(34) SVT index for ER10	54(36) SVT index for ER11
56(38) SVT index for ER12	58(3A) SVT index for ER13
60(3C) SVT index for ER14	62(3E) SVT index for ER15

Bytes 32 through 64 make up one TRT row.

Trace ACB Extension

Program: NCP
Size in bytes: 112(70)
Created by: NCP generation
Pointed to by: The CCBTRXP field in the trace ACB (TRA)
Function: Functions as an AXB for SIT trace.
Note: The DSECT for this control block is that of the AXB.

0(0)			
AXBCCBP Back pointer to the TRA			
4(4) - 27(1B)			
Reserved			
28(1C)		30(1E)	
AXBR1 TD field Command and line address in processor		AXBR2 TA field Processor address and operation	
32(20) - 47(2F)			
Reserved			
48(30)	49(31)	50(32)	51(33)
TRXUECAU* ODLC unexpected event cause field	TRXUEPT* ODLC protocol type of unexpected event	TRXUECMD* ODLC unexpected event command/index	TRXUEQMD* ODLC unexpected event command qualifier/modifier
52(34) - 111(6F)			
Reserved			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) TRXUECAU		ODLC unexpected event cause field
	X'00'	No unexpected event
	X'01'	Service request for unexpected/invalid LDP
	X'02'	Request to build unsupported/invalid NDP
	X'03'	Execute clear for unsupported/invalid NDP
	X'04'	Unexpected XIO SETMODE
	X'05'	Unexpected XIO LINE
	X'06'	Unexpected XIO LINK
	X'07'	Unexpected XIO IMMEDIATE

Offset/Field Name	Bit Pattern/Hex Value	Contents
49(31) TRXUEPT		Protocol type of most recent unexpected event
	xxxx	Reserved
	.... xxxx	Protocol type
		0000 = All
		0001 = SDLC
		0010 = ESCA
		0011 = TRA
50(32) TRXUECMD		ODLC unexpected event command/index
		LDP command (if TRXUECAU = X'01')
		NDP builder index (if TRXUECAU = X'02')
		NDP command (if TRXUECAU = X'03')
		XIO SETMODE command (if TRXUECAU = X'04')
		XIO line LXB command (if TRXUECAU = X'05')
		XIO link communications bits (if TRXUECAU = X'06')
		XIO immediate command (if TRXUECAU = X'07')
51(33) TRXUEQMD		ODLC unexpected event command qualifier/modifier
	X'00'	LDP command qualifier (if TRXUECAU = X'01')
		Not applicable (if TRXUECAU = X'02')
		NDP command qualifier (if TRXUECAU = X'03')
		XIO SETMODE command modifier (if TRXUECAU = X'04')
	X'00'	Not applicable (if TRXUECAU = X'05')
	X'00'	Not applicable (if TRXUECAU = X'06')
	X'00'	Not applicable (if TRXUECAU = X'07')

Token-Ring Logical Station Block Extension

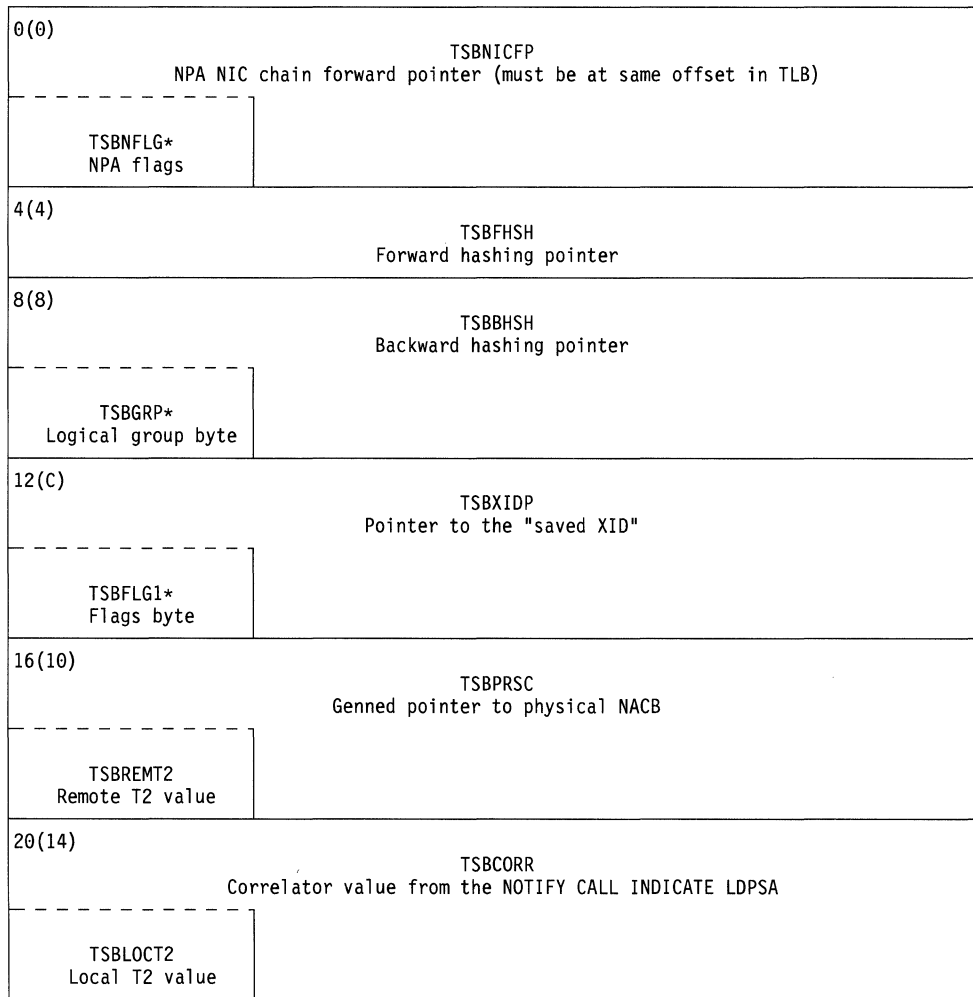
Program: NCP

Size in bytes: 56(38) for peripheral, 64(40) for subarea

Created by: NCP generation

Pointed to by: The SCEPUCBP field in the station control block extension (SCE)

Function: Contains fields for token-ring ODLC at a station level and resource definition fields for the logical station.



* Indicates a byte expansion follows.

Note: The fields TSBGRP, TSBFLG1, TSBXIDP, TSBPRSC and TSBCORR must remain at the same relative offsets as their counterparts in the FSB.

24(18) - 29(1D)			
TSBRMAC			
Remote MAC address			
		30(1E) TSBDSAP Destination SAP	31(1F) TSBSSAP Source SAP
32(20) TSBMXIN MAXIN	33(21) TSBLCRTY Local ring retry limit	34(22) TSBREMTO Remote timeout Value	35(23) TSBLOCTO Local timeout value
36(24) TSBTATI Index into token-ring logical station address table (TAT)		38(26) TSBRI Token-ring routing information	
		TSBRIB0 Token-ring routing information byte 0	39(27) TSBRIB1 Token-ring routing information byte 1
40(28) - 55(37)			
TSBRI Token-ring routing information (continued)			

TSB Extension for Subarea Resources

56(38)	TSBASMH Load/Dump PIU reassembly chain head pointer
60(3C)	TSBASMT Load/Dump PIU reassembly chain tail pointer

Note: The fields TSBASMH and TSBASMT must remain at the same offsets as their counterparts in the FSB.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) TSBNFLG		NPA Flags
	1... ..	TSB is in NPA NIC chain (TSBINIC)
	.1... ..	NPA collection is active for this resource (TSBNPAA)
8(8) TSBGRP		Logical group byte
	X'00'	Inactive
	X'01'	Available(pooled)
	X'02'	Available(assigned)
	X'04'	Attached

Offset/Field Name	Bit Pattern/ Hex Value	Contents
12(C) TSBFLG1		Flags byte
	x... ..	XID saved indicator (TSBSXID) 1 = XID saved from NOTIFY CALL INDICATE 0 = XID not saved
	..x.	Routing information present indicator (TSBRIPR) 1 = Routing information is present in TSBRTI 0 = Routing information is not present in TSBRTI
	...1	Resource is in hash table (TSBHASH)

Time Value Select Table

Program: NCP

Size in bytes: 64(40)

Created by: NCP generation

Pointer to: The SYSTVSP field in the extended halfword direct addressables control block (HWE)

Function: Contains fixed and optional time-out values. This table must be at a 256-byte boundary.

0(0) TVSHI0 Fixed (idle/RAS)	2(2) TVSHI1 Fixed (0 seconds)
4(4) TVSHI2 Fixed (1 second)	6(6) TVSHI3 Fixed (2.2 seconds)
8(8) TVSHI4 Fixed (3 seconds)	10(A) TVSHI5 Fixed (23.5 seconds)
12(C) TVSHI6 Fixed (60 seconds)	14(E) TVSHI7 Fixed (4.2 seconds)
16(10) TVSHI8 Fixed (6.5 seconds)	18(12) TVSHI9 Variable*
20(14) TVSHIA Variable*	22(16) TVSHIB Variable*
24(18) TVSHIC Variable*	26(1A) TVSHID Variable*

* Values determined at NCP generation.

28(1C)	TVSHIE Variable*	30(1E)	TVSHIF Variable*
32(20)	TVSL00 Fixed (idle/RAS)	34(22)	TVSL01 Fixed (0 seconds)
36(24)	TVSL02 Fixed (1 second)	38(26)	TVSL03 Fixed (2.2 seconds)
40(28)	TVSL04 Fixed (3 seconds)	42(2A)	TVSL05 Fixed (23.5 seconds)
44(2C)	TVSL06 Fixed (60 seconds)	46(2E)	TVSL07 Fixed (4.2 seconds)
48(30)	TVSL08 Fixed (6.5 seconds)	50(32)	TVSL09 Variable*
52(34)	TVSLOA Variable*	54(36)	TVSLOB Variable*
56(38)	TVSLOC Variable*	58(3A)	TVSLOD Variable*
60(3C)	TVSLOE Variable*	62(3E)	TVSLOF Variable*

* Values determined at NCP generation.

User Adapter Control Block for the BCA

Program: NCP
Size in bytes: 128(80)
Created by: NCP generation
Pointer to: The LKBACBP field in the line control block (LKB)
Function: Acts as the adapter control block (ACB) for the channel-attached PU. The fields are listed with the character control block (CCB) prefix, not UAB, because the code uses the CCB name when referencing the field. The fields listed as reserved are not referenced by the boundary channel attachment (BCA) code.

0(0) - 35(23)		Link XIO control block (LXB). (See the LXB for field names.)	
36(24)			
Reserved			
40(28)			
CCBTACB Pointer to the next ACB in the timer chain			
44(2C)	CCBTWORK Timer work entry for the ACB	46(2E)	CCBTIME Time-out interface
48(30)			
Reserved			
52(34)			
CCBLGTP Pointer to the line group table (LGT) for the group			
56(38)	Reserved	58(3A)	CCBEND1** Ending status for a command
60(3C) - 82(52)			
Reserved			
			83(53) CCBTYP* Line type

* Indicates a byte expansion follows.

** Indicates a byte expansion follows. These values are moved to LXBSTAT when the Line command ends.

84(54) - 88(58)		Reserved	
	89(59) CCBFLAG2* Mode control flags	90(5A) - 95(5F)	
Reserved			
96(60)		CCBPOLL Pointer to the current service order table (SOT) entry being polled	
100(64)		CCBSEL Output SOT pointer	
104(68)		CCBLINK Next ACB in the level-2 or level-3 chain	
108(6C)		CCBAXBP Pointer to the ACB extension (AXB)	
CCBSETYP* Extended type			
112(70)		CCBCHNP Pointer to the next COMMIT request (when in the commit request block)	
CCBCMFL* COMMIT flags			
116(74) CCBPREC Pre-COMMIT request count		118(76) CCBCOMC Committed buffers count	
120(78)		CCBCBBP Pointer to the associated committed buffers block (CBB)	
124(7C)		CCBQCBP Pointer to the associated group control block (GCB)	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
58(3A) CCBEND1		Ending status for command
	X'001D'	Contact channel command was received after negotiation or non-activation.
	X'008C'	Reset Immediate is complete.
	X'0096'	Poll Stop
	X'009C'	Disable
	X'009E'	Enable
	X'00A6'	Attention timer expired.
	X'00A9'	Discontact is processing.
	X'00E2'	Panel Discount is processed.
	X'00E8'	Channel adapter in error recovery procedure (ERP) state
	X'00EC'	40-second attention timeout (ATO) expired during CLATO.
	X'0480'	Channel adapter slowdown timer expired.
	X'06F4'	Enable failed.
	X'40A3'	Channel command was received before the XID exchange was completed.
	X'40BF'	Invalid length XID was received.
83(53) CCBTYPE		Line type
	1... ..	Line is in normal mode.
	.0.. ..	One line adapter address
	..1.	Half-duplex leg
	.... 0..0	SS line
	.... ..1.	SDLC secondary station
	.... 0..1	SDLC line
89(59) CCBFLAG2		Mode control flags
	0... ..	1-byte control mode
	.0.. ..	Transmit SNRM
		Note: Not used on a channel, but used in level 5 code.
108(6C) CCBSETYP		Extended type
	.... .1..	Force Deactivate is in progress.
	.... ..1.	User written line control
	.... ..11	User adapter control block (UACB) identifier

Offset/Field Name	Bit Pattern/ Hex Value	Contents
112(70) CCBCMFL		COMMIT flags
	x... ..	Request type: 1 = Conditional 0 = CWALL.
	.1.. .... ..x.	Chain to commit request block (CRB) Poll type definition: 1 = Receive Not Ready (RNR) was sent. 0 = RR was sent.
	...1 1... .... .1.. .... ..1. .... ...1	Duplex poll is in progress. RNR exception state COMMIT request is satisfied. COMMIT is in progress. DECOMMIT ALL keyword is requested.

User Adapter Control Block

Program: NCP
Size in bytes: Variable
Created by: NCP generation
Pointer to: User line vector table (ULVT)
Function: User-defined control block which must contain certain required fields in order for user-written line control to function within the NCP interrupt mechanism

0(0) - 39(27)	
User line information	
40(28)	
CCBTACB Pointer to the previous UACB in the timer chain	
44(2C)	46(2E)
CCBTWORK Timer work entry for this UACB	CCBTIME Time-out interface
48(30)	50(32) - 103(67)
CCBBAR Pointer to the line vector table (LNVT) entry (backward pointer)	
User line information	
104(68)	
CCBLINK Pointer to the next UACB in the chain	
108(6C)	
CCBAXBP Pointer to the adapter control block extension (AXB)	
CCBFLAGS* UACB identifier flag	
112(70) - 123(7B)	
User line information (continues at 128(80) if greater than 15(F) bytes)	
124(7C)	
UACBGCBP Pointer to the associated group control block (GCB)	
128(80) - n	
User line information (continued)	

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
108(6C) CCBFLAGS		UACB identifier flags
	.1..	High speed scanner
	.... ..x.	1 = User-written line control (must be 1 in a UACB or GCB) 0 = IBM-supported line control character control block (CCB)
	.... ..10	Identifies block as GCB
	.... ..11	Identifies block as UACB

User Accounting Notification Queue

Program: NCP, EP

Size in bytes: 24(18)

Created by: NCP generation via the CXTUAT CSECT. Follows the user accounting notification table (UAT).

Function: Used when the supervisor level needs to have user accounting notification routines notified

Format: Standard input QCB
Task—CXJQNNOQ
Priority—Productive
Reentrant—No.

User Accounting Notification Table

- Program:** NCP, EP
- Size in bytes:** 4(4) per routine plus 4(4) for the delimiter and 4(4) bytes header
- Created by:** NCP generation
- Pointed to by:** CXTUAT in the link-edit map
- Function:** Contains addresses of the IBM special products or user-written code accounting notification routines

4(-4)	Count of entries (not including fullword of zeros)
0(0)	Pointer to the first routine
4(4)	⋮
4*(n-1)	Pointer to the nth routine
4*n	Fullword of zeros

Undefined but Operative Block

Program: NCP

Size in bytes: Variable; when ERLIMIT=8, SALIMIT+1; when ERLIMIT=16, 2*(SALIMIT+1)

Created by: NCP initialization; one per transmission group control block (TGB)

Pointed to by: TGBUBOP in the TGB

Function: The UBO is a vector of 1-byte elements when ERLIMIT=8 and of 2-byte elements when ERLIMIT=16, and it corresponds to the destination subarea addresses (DSAs).

The first element in the UBO is always zero because subarea X'00' is an invalid DSA. The UBO bit for an explicit route is on if the explicit route is operative to the corresponding DSA, but is not defined over the transmission group that the UBO represents. If the explicit route is not operative to the DSA or is operative and defined over the transmission group that this UBO represents, the corresponding UBO bit will be off.

ERLIMIT=8

0(0) Invalid (X'00')	1(1) Mask of explicit routes for DSA 1	2(2) Mask of explicit routes for DSA 2	3(3) Mask of explicit routes for DSA 3
4(4) Mask of explicit routes for DSA 4	.....		SALIMIT Mask of explicit routes for DSA SALIMIT

ERLIMIT=16

0(0) Invalid (X'0000')	2(2) Mask of explicit routes for DSA 1
4(4) Mask of explicit routes for DSA 2	6(6) Mask of explicit routes for DSA 3
⋮	⋮
2*(SALIMIT-1) Mask of explicit routes for DSA SALIMIT-1	2*SALIMIT Mask of explicit routes for DSA SALIMIT

User Interface Control Block

- Program:** NCP
Size in bytes: 40(28)
Created by: NCP generation
Pointer to: The NCXUIC field in the network vector table extension (NVX)
Function: Provides an interface to a user exit in a cross-network session. Parameters that are passed to the user code and the level-5 registers of the invoking routine are stored here.

0(0)	UICL5R0-UICL5R7 Storage for level-5 registers 0 through 7
32(20)	UICNLXP Pointer to the programmed resource LU block extension (NLX)
36(24)	UICPIUP Pointer to the PIU
UICFLGS* Flags	

* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
36(24) UICFLGS		Flags
	1... ..	User task is executing.

User Line Vector Table

Program: NCP

Size in bytes: Variable, depending on the number of user-line-control lines

Created by: NCP generation

Referenced by: User level-2 routines

Function: Allows the user's level-2 routines to find a line's user adapter control block (UACB) when only the line address is known

n	ULVTUACB Pointer to the transmit leg UACB. (See note 1.)
n+4	ULVTUCBR Pointer to the receive leg UACB. (See note 2.)

Notes:

1. An entry for a non-user-line-control line will be all zeros.
2. For a half-duplex line, the entry will be zeros; for an auto-call line, the pointer will be the same as the transmit UACB.

User Datagram Protocol Message Data Area

Program: NCP

Size in bytes: Varies depending on data size and message type

Function: Provides data area formats for User Datagram Protocol (UDP) messages that are used for communication. The format varies based on the value of the UMDTYPE field in the UMD.

Note: The layout for the UMD is defined in XCXTUMH.

Type = "Hello" Datagram (X'01')

0(0) UMDTYPE* UDP message type	1(1) Reserved
4(4) - 11(B)	UMDNTAB NCP table name
12(C) - 28(1C)	UMDIME Date and time of NCP generation
	29(1D) Reserved

* Indicates a byte expansion follows.

Type = Acknowledgement Datagram (X'02')

0(0) UMDTYPE* UDP message type	1(1) Reserved
4(4) UMDATE* ACK type code	5(5) Reserved

* Indicates a byte expansion follows.

Type = Interface Status Datagram (X'03')

0(0) UMDTYPE* UDP message type	1(1) Reserved
4(4)	UMDIPAD IP address of interface
8(8) UMDSTAT* Interface status	9(9) Reserved

* Indicates a byte expansion follows.

Type = Delete Route Datagram (X'04')

0(0) UMDTYPE* UDP message type	1(1) Reserved	
4(4) UMDDELR IP address of route to be deleted		
8(8) UMDTYPD* Type of route to delete	9(9) Reserved	

* Indicates a byte expansion follows.

Type = Add Route Request Datagram (X'05')

0(0) UMDTYPE* UDP message type	1(1) Reserved	
4(4) UMDADDR IP address of route to be added/changed		
8(8) UMDADDI IP address of interface to be added/changed		
12(C) UMDNXTHP IP address of next hop		
16(10) UMDMTRCA Metric	17(11) UMDTYPA* Type of route to add	18(12) Reserved

* Indicates a byte expansion follows.

Type = Change Route Request Datagram (X'06')

0(0) UMDTYPE* UDP message type	1(1) Reserved	
4(4) UMDADDC IP address of route		
8(8) UMDMTRCC New metric	9(9) UMDTYPC* Type of route to change	10(A) Reserved

* Indicates a byte expansion follows.

Type = Message Transport Datagram (X'07')

0(0) UMDTYPE* UDP message type	1(1) Reserved
4(4) - n Message	

* Indicates a byte expansion follows.

Type = "Inactive Interface" List Datagram (X'08')

0(0) UMDTYPE* UDP message type	1(1) Reserved
4(4) - n IP address of each interface that is INACTIVE	

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Hex Value	Contents
0(0) UMDTYPE		UDP message type
	X'01'	Hello datagram
	X'02'	Acknowledgement datagram
	X'03'	Interface Status datagram
	X'04'	Delete Route Request datagram
	X'05'	Add Route Request datagram
	X'06'	Change Route Request datagram
	X'07'	Message Transport datagram
	X'08'	Inactive Interface List datagram
4(4) UMDATYPE		ACK Type Code
	X'00'	HELLO datagram received by NCPROUTE
	X'01'	NCP Routing Information Table loaded by NCPROUTE with no errors
	X'80'	Routing information table load failed
	X'81'	Wrong table for this NCP - Date/Time stamps do not match
	X'82'	Routing information table format is incorrect
	X'83'	Routing information table not found
5(5) UMDSTAT		Interface status
	X'00'	Inactive
	X'01'	Active
8(8) UMDTYPD		Type of route to delete
	X'00'	Network
	X'01'	Subnetwork
	X'02'	Host

Offset/Field Name	Hex Value	Contents
17(11) UMDTYPA		Type of route to add
	X'00'	Network
	X'01'	Subnetwork
	X'02'	Host
9(9) UMDTYPC		Type of route to change
	X'00'	Network
	X'01'	Subnetwork
	X'02'	Host

User Datagram Protocol Message Header

Program: NCP

Size in bytes: Varies depending on data size (header is 8 bytes long).

Function: Provides header format for user datagram protocol (UDP) messages that are used for communication between source hosts and routers in an internet network.

0(0)	UMHSPRT* UMH source port number	2(2)	UMHDPRT* UMH destination port number
4(4)	UMHLNTH Length	6(6)	UMHCKSM Checksum
8(8) - n UMHDATA UMP data (varies with type of message)			

* Indicates a byte expansion follows.

Offset/Field Name	Hex Value	Contents
0(0) UMHSPRT		UMH source port number
	X'0244'	UDP Port for NCP-RIP messages (580)
	X'0208'	UDP Port for RIP messages (520)
	X'00A1'	UDP Port for SNMP messages (161)
2(2) UMHDPRT		Interface status
		See UMHSPRT for list of values supported

Unassigned Subchannel Control Block

Program: EP

Size in bytes: 92(5C)

Created by: PEP generation

Function: Used to handle sense, TIO, and I/O no-op to subchannels within the high/low range that have no lines, and used for subchannels that are defined in a multi-subchannel line access (MSLA) association and that are not currently using the line

32(20) Reserved		34(22) CCBCHADR Channel control block (CHCB) pointer	
36(24) - 43(2B) Reserved			
44(2C) CCBRADR** Multi-subchannel line address character control block (CCB) address divided by 2			
48(30) - 55(37) Reserved			
56(38) CCBSUBCH Subchannel address	57(39) CCBCFLG* Configuration flags	58(3A) CCBSTAT* Final line status	59(3B) CCBSENSE* Final line sense
60(3C) CCBL1STA Status byte	61(3D) CCBL1SEN Sense byte	62(3E) CCBL1CSP* Communication scanner processor (CSP) error flags	63(3F) CCBL1CAF* Channel adapter error flags
64(40) CCBCMD Current command for the CCB	65(41) CCBLRI* Line request information	66(42) CCBCSTAT* Current status	67(43) CCBCSENS* Current sense
68(44) - 87(57) Reserved			
88(58) CCBDS02 X'74'	89(59) Reserved		

* See "Character Control Block (EP)" on page 1-187 for byte expansions.

** CCBRADR is included for MSLA subchannels only.

Usage Tier Status Block

Program: NCP
Size in bytes: 200(C8)
Created by: NCP definition
Pointed to by: The SYSUTSP field in the fullword direct addressable extension (FAX)
Function: Contains usage tier status information collected from other places to aid in maintenance and debugging of usage tier problems

Header

0(0) UTSMDL Model identifier	1(1) UTSOPMOD* Operating mode	2(2) UTSMLACA Maximum low-speed scanner or high-performance transmission subsystem (LSS/HPTSS) adapters allowed in use on communication control unit (CCU) A	3(3) UTSMTRCA Maximum token-ring adapters allowed in use on CCU A
4(4) UTSMLACB Maximum LSS/HPTSS adapters allowed in use on CCU B	5(5) UTSMTRCB Maximum token-ring adapters allowed in use on CCU B	6(6) UTSOUTL Operating usage tier level	7(7) Reserved

* Indicates a byte expansion follows.

Entry

0(0) UTSADNO Adapter number	1(1) UTSADTYP* Adapter type	2(2) UTSSTAT* Status information	3(3) Reserved
4(4) UTSRLNO First relative line number (RLN) for adapter			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
1(1) UTSOPMOD		Operating mode
	x... .... .xxx	Reserved Operating mode:
		001 = Operating mode is single. 010 = Operating mode is twin-standby. 100 = Operating mode is twin-backup. 101 = Operating mode is twin-dual.
	.... xx.. .... ..xx	Reserved 01 = UTS is for CCU A. 10 = UTS is for CCU B.
1(1) UTSADTYP		Adapter type
	X'00'	Adapter is not installed.
	X'10'	Transmission subsystem (TSS)
	X'20'	HPTSS
	X'30'	Token-ring adapter (TRA)
	X'40'	Airline line control (ALC)
2(2) UTSSTAT		Status information
	1...	In use (always 0 for ALC)
	.xxx	Reserved
	.... xxxx	Line adapter capacity
		X'0' = 2 TRA or HSS lines or 16 LSS lines X'E' = 32 lines.

Virtual Route Access Table

Program: NCP

Size in bytes: 3(3) plus the sum of the NUMHSAS keywords

Created by: NCP initialization

Pointer to: The SYSVATP field in the extended halfword direct addressables control block extension (HWX)

Function: Each entry corresponds to a virtual route status table (VST) row. Each entry keeps a count of the number of nonzero entries (active virtual routes) in a row of the VST. If the count is zero, the VST row is available.

0(0)	1(1)	n+1	n+2
Invalid	Active virtual route count/VST row	Count*	X'FF'

n=NUMHSAS

* The count in one entry is always greater than zero, thereby reserving a row of the VST for internal virtual routes.

Virtual Route Subarea Index Table

- Program:** NCP
- Size in bytes:** Variable; $2*(SALIMIT+1)$
- Created by:** NCP initialization, one per network
- Pointer to:** The SYSVITP field in the extended halfword direct addressables control block extension (HWX) for the native network and NVTVITP in the network vector table (NVT) for each network
- Function:** Each VIT entry corresponds to a subarea and indexes a row of the virtual route status table (VST). The VIT entry is dynamically inserted whenever an Activate Virtual Route command is successfully processed. The VIT entry is zero if the corresponding subarea has not been assigned a VST row.

In the native network VIT, one VIT entry is always set during NCP initialization to index a row of the VST for use by internal virtual routes. This VIT entry is the one corresponding to the NCP subarea that contains the VIT.

0(0)	2(2)
Number of entries	VST index or 0 (first subarea)
4(4)	.
	.
	.
8(8)	2*SALIMIT
VST index or 0	VST index or 0 (last subarea)

Programmed Resource Virtual Line Block

Program: NCP

Size in bytes: 48(30)

Created by: NCP generation

Pointer to: The NPBVLB field in the programmed resource PU block (NPB) and the RVTRP field in the resource vector table (RVT)

Function: Contains information about a programmed resource line

Prefix

-4(-4) - -1(-1)

For the prefix information for the VLB, see the network performance analyzer prefix (NPF) control block

0(0) - 23(17)

Queue control block (QCB)

24(18)
 VLBPMIF*
 NPM information byte

25(19)
 VLBPFVT3
 Previous FVT3 index

26(1A)
 VLBNETAD
 Element address of the programmed resource virtual line

28(1C)

VLBPUVT
 Pointer to the PU vector table (PUV)

VLBPTYPE
 Block identifier field X'01'

32(20)
 VLBSNP
 SSCP-NCP session control block (SNP) mask
 (identifies the owning SSCP)

33(21)
 VLBNOTFY*
 Notify task information byte

34(22)
 VLBPFVT2
 Previous FVT2 index

35(23)
 Reserved

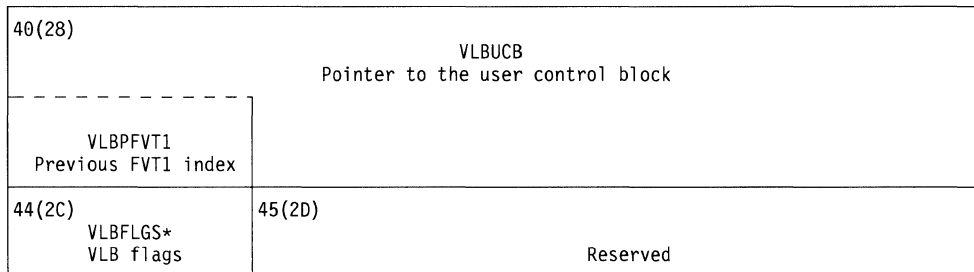
36(24)

VLBFVT
 Pointer to the function vector table (FVT)

VLBCFVT
 Current FVT index

* Indicates a byte expansion follows.

Note: The VLB fields must remain in the same relative position as their counterparts in the programmed resource LU block extension (NLX), programmed resource LU block (NLB), and NPB.



* Indicates a byte expansion follows.

Note: The VLB fields must remain in the same relative position as their counterparts in the programmed resource LU block extension (NLX), programmed resource LU block (NLB), and NPB.

Byte Expansions

Offset/Field Name	Bit Pattern/Hex Value	Contents
24(18) VLBNPMIF		NPM information byte
	X'01'	Start collection on resource
	X'02'	Forward NPM data
	X'03'	Stop collection on resource
33(21) VLBNOTFY		Notify task information byte
	1... ..	Resource is undergoing auto network shutdown (ANS).
	.1.. ..	Resource entered held state.
	..1. ..	Resource exited held state.
	...1 ..	Deactivate virtual route status received
	... 1..	Virtual route inoperative (VR.INOP) status received
	.... .1..	Lost session partner
	.... ..1.	NOTIFY received
44(2C) VLBFLGS		VLB flags
	1... ..	Resource is eligible for NPM data collection
	.xxx xxxx	Reserved

Virtual Route Out-of-Sequence Block

- Program:** NCP
- Size in bytes:** 24(18)
- Created by:** NCP generation
- Pointer to:** CXTVOS in the link-edit map and NVXVOSP
- Function:** Contains header buffers (first buffers) to PIUs and a task-CXDVOSA for sending VR-Out-of-Sequence Alerts to the proper SSCPs. The header buffer is on the VOS queue under the following conditions:
1. The PIU is out-of-sequence.
 2. This PIU is one of the next 10 PIUs on the virtual route since the out-of-sequence PIU was received on the virtual route.
- Format:** Standard input QCB
Task—CXDVOSA
Priority—Non-Productive
Reentrant—No.

Virtual Route Control Block

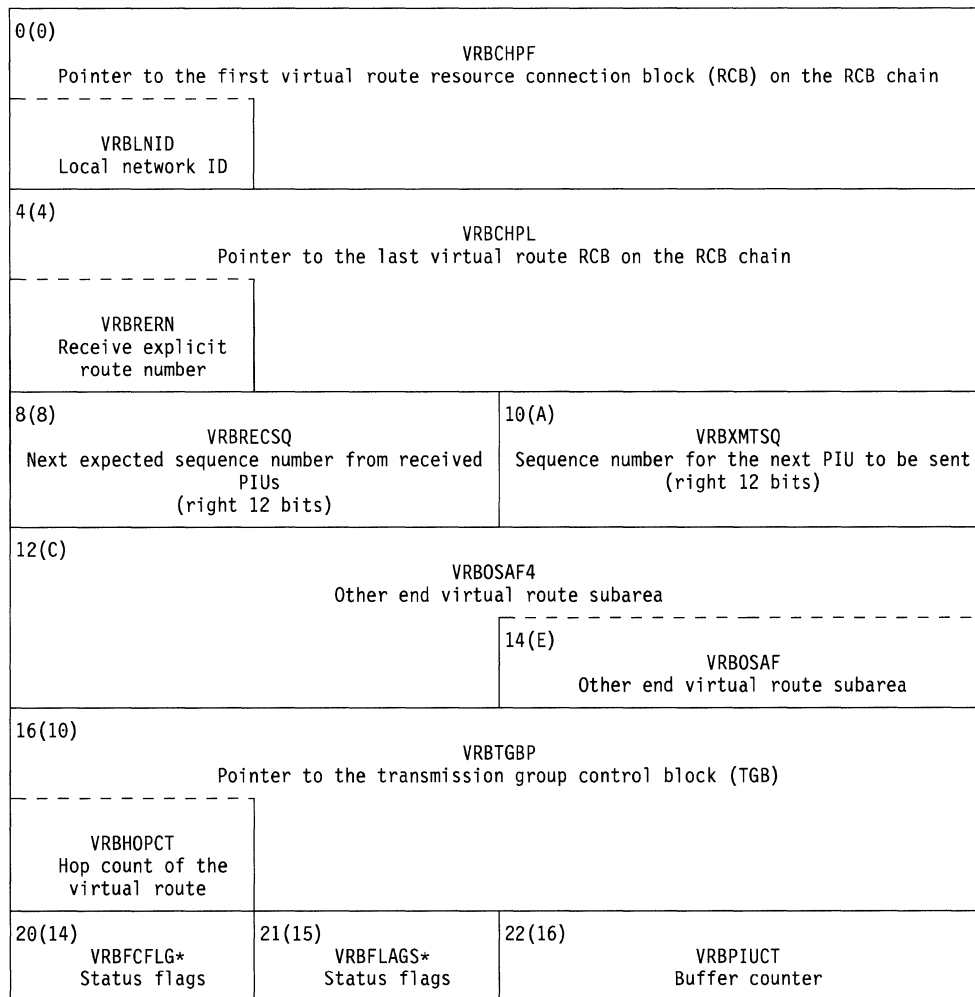
Program: NCP

Size in bytes: 120(78)

Created by: NCP initialization

Pointed to by: The VVTVRBP field in the virtual route vector table (VVT)

Function: Contains virtual routing and flow control information



* Indicates a byte expansion follows.

24(18) VRBERVR		26(1A) VRBXMTC Virtual route transmit queue count	
VRBERNS* Explicit route numbers	25(19) VRBVRID* Virtual route identifier		
28(1C) VRBMWIND Virtual route maximum window	29(1D) VRBWIND Current virtual route window size	30(1E) VRBWCNT Virtual route window count	31(1F) VRBINOPC* Virtual route inoperative code
32(20) - 55(37) VRBXMTC Virtual route transmitter queue control block (QCB) or virtual route inoperative task QCB			
56(38) - 79(4F) VRBWAKQ Virtual route wake-up QCB or session-outage-notification scan QCB			
80(50) VRBVVTI VVT index	82(52) VRBOSC Count of header buffers saved	83(53) VRBLWIND Virtual route minimum window	
84(54) VRBFTHRS Incoming virtual route PIU pool threshold	86(56) VRBFCNT Incoming virtual route PIU pool count		
88(58) - 99(63) VRBBEECB Virtual route buffer event control block (ECB)			
100(64) VRBRERM Reverse explicit route mask	102(66) VRBREQSQ Virtual route sequence number from the most recently received virtual route pacing request		
104(68) VRBCGPTR Pointer to the next VRB on the VR congestion alert task queue			
108(6C) VRBCGTMR Number of 10 second intervals which have passed since VR congestion was first noticed	110(6E) VRBHELDT Number of 10 second intervals which have passed since VR went constantly held		
112(70) VRBCGST1 Time that congestion started in half days (obtained from SYSBINT2(XDH))	114(72) VRBCGST2 Time that congestion started in seconds (obtained from SYSBINTM(XDH))		
116(74) VRBCGFLG* Congested alert flags	117(75) Unused		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) VRBFCFLG		Status flags
	1...	Send virtual route pacing response.
	.1..	Virtual route pacing response has been received.
	..1.	Virtual route pacing request has been received.
	...1	Virtual route is in hold state.
	.... 1..	Notify blocked tasks.
	.... .1..	Set change window reset indicator (CWRI) on next virtual route pacing response.
	.... ..1.	Withholding pacing response
	.... ...1	Reset window (RWI)
21(15) VRBFLAGS		Status flags
	1...	Virtual route is inoperative
	.x..	Save notify bit: 1 = Notify remembrance bit is on 0 = Notify remembrance bit is off
	..1.	Session outage notification (SON) is triggered
	...1	Internal virtual route
	.... 1..	Virtual route deactivation responsibility
	.... ..1.	Virtual route is out of sequence (discarding PIUs)
	.... .x.x	Reserved
24(18) VRBERNS		Explicit route numbers
	xxxx	Initial explicit route number
	.... xxxx	Explicit route number
25(19) VRBVRID		Virtual route identifier
	xxxx	Virtual route number
	.... ..xx	Transmission priority field (TPF)
31(1F) VRBINOPC		Virtual route inoperative codes
	X'07'	Explicit route is INOP.
	X'0B'	DACTVR
116(74) VRBCGFLG		Congested alert flags
	1...	VR is held.
	.1..	NCP is withholding VR pacing response on this VR
	..1.	VR Transmit Queue exceeds sysgen'd VR Transmit Queue depth alert threshold.

Virtual Route Activation Work List

Program: NCP
Size in bytes: 76(4C)
Created by: NCP PU services
Pointer to: RCBVRAL
Function: Contains information for setting up a cross-network session, holds the virtual route ID (VRID) list that is used to activate a virtual route and has BIND Transform information

0(0) - 7(7)			
Reserved			
8(8) - 15(F)			
VRLPLUN Name of the primary LU (PLU)			
16(10) - 23(17)			
VRLSLUN Name of the secondary LU (SLU)			
24(18)		26(1A)	
VRLPLUOF Offset to the PLU name		VRLBND AJ Adjustment for an X'0835' exception response to a BIND	
28(1C)			
VRLBHSP Pointer to BHSET deselect (FID0)			
32(20)	33(21)	34(22)	35(23)
VRLPNL Length of the PLU name	VRLSNL Length of the SLU name	VRLPDCFA PIU data count field (DCF) adjustment	VRLLNID Local network ID
36(24)			
VRLSESAC Pointer to the session activation request			
40(28)			
VRLDSAF Destination subarea field			
44(2C)			
VRLERACT Explicit route activation count			
48(30)	49(31)	50(32)	51(33)
VRLFLGS* Flags	VRLRETC* Virtual route activation return code	VRLCVRID Current VRID	VRLCTVL Count of the VRIDs in the list
52(34) - 75(4B)			
VRLVRIDL VRID list			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
48(30) VRLFLGS		Flags
	.... ..1.	VRID list is present in the VRL.
	.... ...x	Route type: 1 = Normal route—any explicit route number may be used. 0 = Migration route—use explicit route 0.
49(31) VRLRETC		Virtual route activation return code
	X'01'	No VR-to-ER mapping is specified.
	X'03'	No virtual route resource (no available VRB)
	X'04'	No operative explicit route
	X'05'	Explicit route cannot be activated.
	X'06'	Virtual route cannot be activated.
	X'FF'	Virtual route activation is successful.

Virtual Route Congested Alert Task AAB

Program: NCP

Size in bytes: 8(8)

Created by: NCP generation

Pointed to by: CXTVRQ in the link-edit map

Function: Contains the VRBs of Virtual Routes (VRs) which are experiencing congestion. The VRB is on the VRQ under one the following conditions:

1. A congested VR is in a held state.
2. A congested VR endpoint has not sent a virtual route pacing response.
3. The size of the VR transmit queue has exceeded a defined threshold.

Format: Achain anchor block (AAB) type of queue (first and last pointers)

Virtual Route Status Table

Program: NCP

Size in bytes: 4-byte prefix, plus 48 bytes times the sum of the NUMHSAS keywords, plus 48 bytes for internal virtual routes

Created by: NCP initialization

Pointer to: The SYSVSTP field in the extended halfword direct addressables control block extension (HWX)

Function: The VST is indexed by the virtual route number, transmission priority field (TPF) and virtual route subarea index table (VIT) entries. Each VST entry either indexes the virtual route vector table (VVT), and thereby a virtual route control block (VRB), or is equal to zero. The index must be multiplied by 4 to index the VVT.

			-4(4) Length of the VST
0(0) VVT index or 0	2(2) VVT index or 0		46(2E) VVT index or 0
n x 48 VVT index or 0	n x 48 + 2 VVT index or 0		n x 48 + 46 VVT index or 0

Virtual Route Congested Alert Timer Queue

Program: NCP

Size in bytes: 24(18)

Created by: NCP generation

Function: Generates the VR congested alert timer queue and the timer event control block (ECB)

Format: Standard input queue control block (QCB)
Task—CXDCGAT
Priority—Non-productive
Reentrant—No

Vector Table of SNPs

Program: NCP

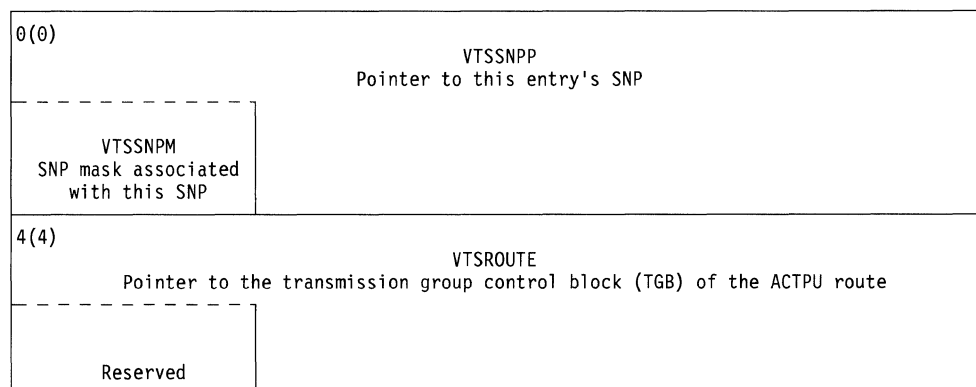
Size in bytes: 8(8) for each entry

The number of entries is located in the physical services control block (PSB) (PSBVTC).

Created by: NCP generation, one entry for each allowable concurrent session

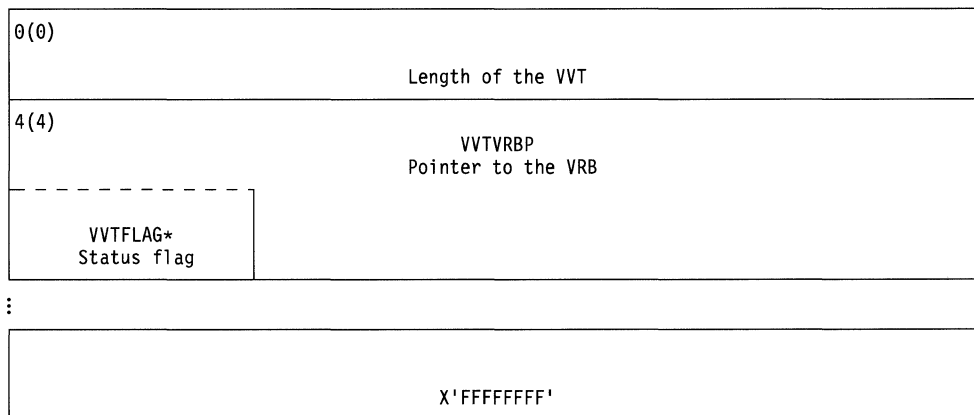
Pointer to: The PSBVTP field in the PSB and the SNPVTSP field in the SSCP-NCP session control block (SNP)

Function: Contains session-related information to control SSCP-NCP sessions



Virtual Route Vector Table

- Program:** NCP
- Size in bytes:** 8 bytes, plus 4 times the VRPOOL keyword value, plus 3
 VRPOOL is in the BUILD macro.
- Created by:** NCP generation
- Pointer to:** CXTVVT in the link-edit map and the SYSVVTP field in the extended halfword direct addressables control block extension (HWX)
- Function:** Contains, in each 4-byte entry, the address of a virtual route control block (VRB) and a flag giving the status of the VRB. The first and last entries are invalid.



* Indicates a byte expansion follows.

Byte Expansion

Offset/Field Name	Bit Pattern	Contents
4(4) VVTFLAG		Status flag
	x... ..	1 = VRB is assigned. 0 = VRB is available.
	.... 1...	Explicit route activation is pending.
	.... .1..	Virtual route activation is pending.
	.... ..1.	Virtual route deactivation is pending.
	.... ...1	VRB is on the DACTVR queue control block (QCB).

Wrap Control Block

Program: EP
Size in bytes: 26(1A)
Located in: CYKMOS module (label CYKWCB)
Created by: CYKMOS assembly
Function: Used to control a wrap test

0(0)			
WCBCCBAD Even character control block (CCB) address of a wrap line			
4(4)			
WCBMBAD Mailbox buffer address			
8(8)			
WCBRVBAD Receive buffer (chain) address			
12(C)			
WCBCTBAD Current transmit buffer in the chain address			
WCBNXTBO Next transmit byte offset			
16(10)			
WBCRBAD Current receive buffer in the chain address			
WCBNXRBO Next receive byte offset			
20(14)	21(15)	22(16)	23(17)
WCBFLG1* Wrap test flag byte 1	WCBFLG2* Wrap test flag byte 2	WCBRSLT1** Stop Wrap test status byte 1	WCBCTL* End of Message (EOM) character and transmit control byte
24(18)			
WCBRCNT Receive residual byte count			

* Indicates a byte expansion follows.

** The byte expansion for MBFRSLT1 on page 1-624 applies to this field as well.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
20(14) WCBFLG1		Wrap test flag byte 1
	xx..	Wrap test state: 00 = Wrap is not initialized. 01 = Wrap is initialized. 10 = Line is being initialized. 11 = Wrap test has started.
	..1.	Auto call unit (ACU) interface remembrance
	...1	Stop Wrap test is pending.
21(15) WBCFLG2		Wrap test flag byte 2
	1...	Transmit test pattern is completed.
	.1..	Received test pattern is completed.
	..1.	Transmit extended status is stored.
	...1	Receive extended status is stored.
	.... 1...	Time-out occurred during the transmission/reception.
	.... .1..	Change command is in progress.
23(17) WCBCTLC		EOM character/transmit control byte
	0000 000x	Turn the line around and monitor.
	0000 011x	Send ENQ, turn the line around, and receive the response. (See note.)
	0000 110x	Send ACK-0, turn the line around, and receive.
	0000 111x	Send NAK, turn the line around, and receive.
	0001 101x	Send RVI, turn the line around, and receive.
	0001 110x	Send ACK-1, turn the line around, and receive.
	0001 111x	Send WACK, turn the line around, and receive.
	0010 011x	Send STX-ENQ (TTD), turn the line around, and receive.
	0011 001x	Send STX-data-ETX, turn the line around, and receive.
	0011 010x	Send STX-data-ETB, turn the line around, and receive.
	0100 011x	Send DLE-STX-data-DLE-ENQ, turn the line around, and receive.
	0100 100x	Send DLE-STX-data-DLE-ITB.
	0101 001x	Send DLE-STX-data-DLE-ETX, turn the line around, and receive.
	0101 010x	Send DLE-STX-data-DLE-ETB, turn the line around, and receive.
	0110 011x	Send SOH-data-ENQ, turn the line around, and receive.
	0111 001x	Send SOH-data-ETX, turn the line around, and receive.
	0111 010x	Send SOH-data-ETB, turn the line around, and receive.
	1000 000x	Send EOT, turn the line around, and monitor.
	1001 100x	Send EOT, turn the line around, and cause a level-2 interrupt.
	1001 100x	Send DLE-EOT, turn the line around, and cause a level-2 interrupt.
	xxxx xxx0	No leading graphics
	xxxx xxx1	Leading graphics

Note: ENQ may be in a data stream of leading graphics. When a Receive or Receive Monitor command is issued with polling or selection, it may be necessary to send EOT and put the line in control mode before sending the polling or selection characters. In this case, bits 0–2 must be 100 instead of 000. This tells the scanner to send an EOT before doing anything else.

Wrap Manager Control Block

Program: NCP

Size in bytes: 52(34)

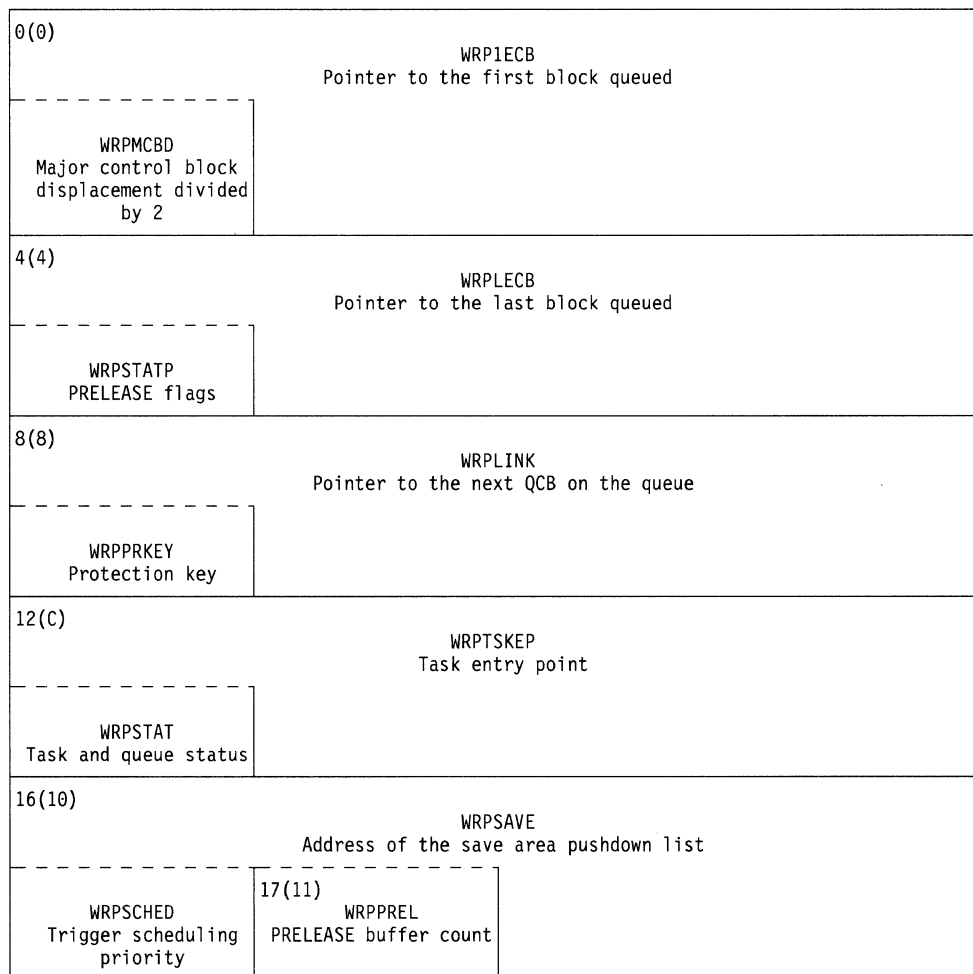
Created by: NCP generation

Pointed to by: The MIFWRPP field in the MOSS interface control block (MIF)

Function: Contains a queue control block (QCB) and other information used by the wrap manager.

Level-5 Wrap Manager Queue (CXQWRP)

(See QCB for input queues for all queue bit definitions.)



* Indicates a byte expansion follows.

20(14)		
WRPLUNK Pointer to the previous QCB on the queue		
<div style="border: 1px solid black; padding: 2px;"> WRPBHSCB Block handler routine (BHR) scheduling bits </div>		
24(18)		
WRPSVTSK Pointer to the save area for the LCB/LKB task		
<div style="border: 1px solid black; padding: 2px;"> WRPFLGS1* Wrap status flags </div>		
28(1C)		
WRPPSAP Pointer to the wrap transmit parameter/status area (PSA-X)		
<div style="border: 1px solid black; padding: 2px;"> Reserved </div>		
32(20)		
WRPBUFS Pointer to the start wrap buffer being processed		
36(24)	37(25)	38(26)
WRPERFLG* Internal error flags	WRPCMAND LXB/IOBCMAND save area	WRPCMODS LXB/IOBCMODS save area
40(28)		
WRPINPUT LXB/IOBINPUT save area		
44(2C)		
WRPDATAP LXB/IOBDATAP save area		
<div style="border: 1px solid black; padding: 2px;"> WRPOSTAT Level 3 ODLC wrap status (ODLC only) </div>		
48(30)		
WRPACBP Pointer to the adapter control block (ACB) or the user adapter control block (UACB)		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) WRPFLGS1		Wrap status flags
	1...	Wrap is initialized (command accepted)
	.1..	Wrap has started
	..1.	Wrap has stopped
36(24) WRPERFLG		Internal error flags
	1...	Invalid command
	.1..	Invalid sequence
44(2C) WRPOSTAT		Level 3 ODLC wrap status (ODLC)
	X'00'	Wrap inactive
	X'02'	Start wrap complete LDPSA pending
	X'03'	Wrap active
	X'04'	Wrap deactivation in progress

Transport Access Point Table

Program: NCP

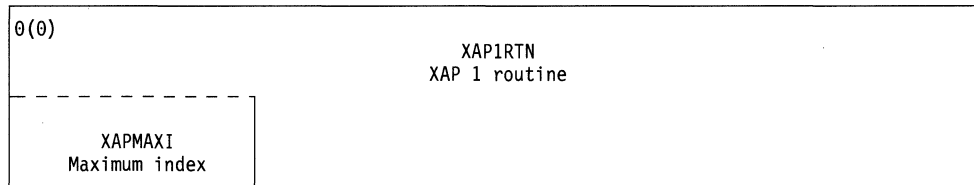
Size in bytes: 4(4) for header plus 4(4) for each entry

Created by: NCP generation

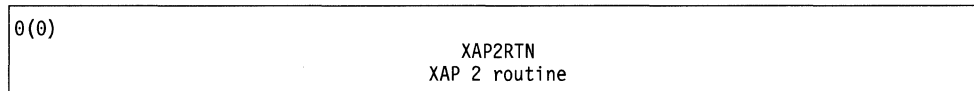
Pointed to by: The LACBLSRT, LACBHLT, and LACBHLTC fields in the processor-NCP adapter control block (LACB), and the NACBXLNT, NACBXSMT, NACBXIMT, NACXLKT, NACBNBLD, and NACBECT fields in the NCP-processor adapter control block (NACB)

Function: Allows access to the XAP1 and XAP2 routines.

XAP Header



XAP Entry



Word Direct Addressable Storage

Program: NCP, EP

Size in bytes: 128(80)

Located in: Relocatable in controller storage

Created by: NCP or PEP generation

Pointed to by: The initialization code stores the XDA pointer at storage location X'38'

Function: Contains frequently accessed system control fields

Name	Offset	Name	Offset
CCPQOFF	0 (0)	SYSW2	72 (48)
CCPQON	4 (4)	SYSW3	76 (4C)
CYKPSCA	100 (64)	SYSW4	80 (50)
CYKTMPTR	108 (6C)	SYSW5	84 (54)
EPSA	12 (C)	SYSW6	88 (58)
EPTRC	16 (10)	SYSW7	92 (5C)
PSCA	100 (64)	SYSW8	96 (60)
QOFF	0 (0)	TET	28 (1C)
QON	4 (4)	TIMCTBAD	52 (34)
RTRSVLAR	40 (28)	TIMH2	32 (20)
RTRW8	40 (28)	TIMH3	36 (24)
SYSALTSV	124 (7C)	TIMH9	52 (34)
SYSBPCBC	20 (14)	TIMWKTAB	32 (20)
SYSBPGCC	8 (8)	TIMWKTNX	36 (24)
SYSBPTBC	24 (18)	TMPTR	108 (6C)
SYSBP1FB	68 (44)	UTILSTSZ	96 (60)
SYSBP2FB	112 (70)	XDAEPSA	12 (C)
SYSBST	116 (74)	XDAEPTRC	16 (10)
SYSBUFPL	84 (54)	XDATET	28 (1C)
SYSCBC	20 (14)		
SYSCBQT	44 (2C)		
SYSEBPL	80 (50)		
SYSEPSV	60 (3C)		
SYSEPSVA	60 (3C)		
SYSFAXP	120 (78)		
SYSGCC	8 (8)		
SYSHWE	88 (58)		
SYSHWX	92 (5C)		
SYSL1B	64 (40)		
SYSL1BP	64 (40)		
SYSMIF	56 (38)		
SYSMIFP	56 (38)		
SYSRVTAD	104 (68)		
SYSR5	48 (30)		
SYSR5SAV	48 (30)		
SYSS1	44 (2C)		
SYSTBC	24 (18)		
SYSTEMQC	72 (48)		
SYSTEMQN	76 (4C)		
SYSW1	68 (44)		
SYSW10	104 (68)		
SYSW12	112 (70)		
SYSW13	116 (74)		
SYSW14	120 (78)		
SYSW15	124 (7C)		

0(0)	QOFF (CCPQOFF) Communication control interrupt program (CICP) queue head
4(4)	QON (CCPQON) CICP queue tail
8(8)	SYSGCC (SYSBPGCC) Global committed buffers count
12(C)	EPSA (XDAEPSA) Error PSA
16(10)	EPTRC (XDAEPTRC) EP trace save area
20(14)	SYSCBC (SYSBPCBC) Current free buffer count
24(18)	SYSTBC* (SYSBPTBC) SLOWDOWN entry threshold Free buffer threshold count + 1 For EP only--buffers replenished threshold
28(1C)	TET (XDATET) Pointer to the timer extension table (EP)
32(20)	TIMH2 (TIMWKTAB) Current line timer control and work table
36(24)	TIMH3 (TIMWKTNX) Pointer to the next low-resolution subtable to be served
40(28)	RTRW8 (RTRSVLAR) Save area for the lagging address register (LAR)

* Indicates a byte expansion follows.

44(2C)	SYSS1 (SYSCBQT) Committed buffer queue threshold
48(30)	SYSR5 (SYSR5SAV) Save location for register 5
52(34)	TIMH9 (TIMCTBAD) Pointer to the start of the high-resolution timer queue
56(38)	SYSMIF (SYSMIFP) Pointer to the MOSS interface control block (MIF)
60(3C)	SYSEPSV (SYSEPSVA) EP save area pointer
64(40)	SYSL1B (SYSL1BP) Pointer to the level-1 control block (L1B)

Supervisor Subcontrol Block (XDASYS)

68(44)	SYSW1 (SYSBP1FB) Pointer to the first free buffer
72(48)	SYSW2 (SYSTEMQC) Pointer to the current time period's time-queue queue control block (QCB)
76(4C)	SYSW3 (SYSTEMQN) Pointer to the next time period's time-queue QCB
80(50)	SYSW4 (SYSEBPL) Remembrance of the last buffer in the buffer pool
84(54)	SYSW5 (SYSBUFPL) Remembrance of the first buffer in the buffer pool
88(58)	SYSW6 (SYSHWE) Pointer to the extended halfword direct addressables control block (HWE)
92(5C)	SYSW7 (SYSHWX) Pointer to the HWE extension (HWX)

96(60)	SYSW8 (UTILSTSZ) Address of the last byte of usable storage (Smaller of (MEMSIZE on BUILD statement minus 1) or (installed storage size minus TSS/MOSS workspace minus 1))
100(64)	PSCA (CYKPSCA) Pointer to the panel selected channel adapter vector table (CAVT)
104(68)	SYSW10 (SYSRVTAD) Pointer to the resource vector table minus 2
108(6C)	TMPTR (CYKTMPTR) Pointer to the channel vector table (CHVT) to be serviced by the timer (EP)
112(70)	SYSW12 (SYSBP2FB) Pointer to the logical end of the system free-buffer pool
116(74)	SYSW13 (SYSBST) Pointer to the buffer prefix (BH) set table
120(78)	SYSW14 (SYSFAXP) Pointer to the fullword addresses extension
124(7C)	SYSW15 (SYSALTSV) Pointer to the level-5 alternate save area

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
24(18) SYSTBC (SYSBPTBC)		SLOWDOWN entry threshold
	X'00000001'	50%
	X'00000002'	25%
	X'00000003'	12%
	X'00000004'	6%
	X'00000005'	3%

After NCP initialization, this field contains the actual calculated number of buffers for the threshold.

Byte Direct Addressable Storage

Program: NCP, EP

Size in bytes: 128(80)

Located in: Relocatable in controller storage

Created by: NCP or PEP generation

Pointed to by: The initialization code stores the XDB pointer at storage location X'30'

Function: Contains frequently accessed system control fields

Name	Offset	Name	Offset	Name	Offset
ABNDINH	43 (2B)	SYSB13	24 (18)	SYSDPSAS	67 (43)
FILLB	0 (0)	SYSB14	25 (19)	SYSVRT	1 (1)
RTRB1	38 (26)	SYSB15	26 (1A)	SYSVRTTE	1 (1)
RTRB11	48 (30)	SYSB17	16 (10)	SYSDSGC	14 (E)
RTRB12	49 (31)	SYSB18	17 (11)	SYSDSPM	4 (4)
RTRB13	50 (32)	SYSB19	18 (12)	SYSFLG0	10 (A)
RTRB17	54 (36)	SYSB2	6 (6)	SYSFLG1	11 (B)
RTRB18	55 (37)	SYSB20	19 (13)	SYSFLG2	18 (12)
RTRB19	56 (38)	SYSB21	20 (14)	SYSFLG3	13 (D)
RTRB2	39 (27)	SYSB3	7 (7)	SYSFLG4	48 (30)
RTRB20	57 (39)	SYSB3C	60 (3C)	SYSFLG5	64 (40)
RTRB21	58 (3A)	SYSB3D	61 (3D)	SYSIBC	8 (8)
RTRB22	59 (3B)	SYSB4	8 (8)	SYSIPLCA	23 (17)
RTRB25	62 (3E)	SYSB4A	74 (4A)	SYSIP1ST	78 (4E)
RTRB26	63 (3F)	SYSB4B	75 (4B)	SYSL13CA	24 (18)
RTRB3	40 (28)	SYSB4C	76 (4C)	SYSMASK	5 (5)
RTRB4	41 (29)	SYSB4D	77 (4D)	SYSMOSS1	60 (3C)
RTRB5	42 (2A)	SYSB4E	78 (4E)	SYSMOSS2	61 (3D)
RTRB6	43 (2B)	SYSB40	64 (40)	SYSNSBMF	20 (14)
RTRCATRC	44 (2C)	SYSB43	67 (43)	SYSODLC	69 (45)
RTRFEESC	54 (36)	SYSB44	68 (44)	SYSOGERP	70 (46)
RTRINLVL	40 (28)	SYSB45	69 (45)	SYSMPFC	84 (54)
RTRIPLST	41 (29)	SYSB46	70 (46)	SYSPRELC	3 (3)
RTRL5KEY	42 (2A)	SYSB47	71 (47)	SYSRAS1E	46 (2E)
RTRSPUR	38 (26)	SYSB48	72 (48)	SYSRAS2E	47 (2F)
RTRSPUR1	39 (27)	SYSB49	73 (49)	SYSSMI	9 (9)
RTRSPUR2	55 (37)	SYSB5	9 (9)	SYSSMMFS	80 (50)
RTRSPUR4	56 (38)	SYSB51	81 (51)	SYSSUBMF	19 (13)
RTR1PUR	50 (32)	SYSB52	82 (52)	SYSTIMER	68 (44)
RTR2PUR	57 (39)	SYSB53	83 (53)	SYSTRNS	76 (4C)
RTR3PUR	49 (31)	SYSB54	84 (54)	SYSTRS	77 (4D)
RTR4PUR	58 (3A)	SYSB6	10 (A)	SYSULANS	71 (47)
SYSALRT	79 (4F)	SYSB7	11 (B)	SYSULAS	72 (48)
SYSAVEK	12 (C)	SYSB8	12 (C)	TIMBA	37 (25)
SYSBFS	6 (6)	SYSB9	13 (D)	TIMB1	28 (1C)
SYSBFSZC	15 (F)	SYSCAERT	51 (33)	TIMB11	21 (15)
SYSBFSZD	7 (7)	SYSCAR	2 (2)	TIMB12	22 (16)
SYSBLKSZ	17 (11)	SYSCARX	27 (1B)	TIMB2	29 (1D)
SYSBS1SL	52 (34)	SYSCAR1	2 (2)	TIMB3	30 (1E)
SYSBS2SL	53 (35)	SYSCAR2	27 (1B)	TIMB4	31 (1F)
SYSBUFSZ	16 (10)	SYSCATPC	25 (19)	TIMB5	32 (20)
SYSB1	5 (5)	SYSCATPS	26 (1A)	TIMB6	33 (21)
SYSB10	14 (E)	SYSCCMB	45 (2D)	TIMB7	34 (22)
SYSB11	15 (F)	SYSCSTIM	74 (4A)	TIMB8	35 (23)
SYSB12	23 (17)	SYSCSYNC	73 (49)	TIMB9	36 (24)

Name	Offset
TIMDIAL	35 (23)
TIMDIDLY	36 (24)
TIMDSABL	33 (21)
TIMENABL	34 (22)
TIMEOTXT	22 (16)
TIMEZERO	21 (15)
TIMLNCNT	31 (1F)
TIMRSRES	32 (20)
TIMSICNT	29 (1D)
TIMSWBID	37 (25)
TIMTICNT	28 (1C)
TIMWKREG	30 (1E)
USAGETR	59 (3B)
XDBCABSN	83 (53)
XDBDMPST	75 (4B)

0(0) FILLB* Flag bits for EP use	1(1) SYSDRT (SYSDRTE) MOSS display rate refresh	2(2) SYSCAR* (SYSCAR1) Conditional assembly removal flags
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* Indicates a byte expansion follows.

Supervisor Control Block (XDBSYS)

			3(3) SYSPRELC System PRELEASE count
4(4) SYSDSPM* System dispatch mask	5(5) SYSB1* (SYSMASK) Control byte for dispatcher flags	6(6) SYSB2 (SYSBFS) Offset to the last byte of the buffer	7(7) SYSB3 (SYSBFSZD) Buffer size minus the buffer prefix size
8(8) SYSB4 (SYSIBC) Buffer size minus (the buffer prefix plus 1) (used as the initial count by communication lines)	9(9) SYSB5* (SYSSMI) (SYSBPSTS) Buffer pool and network status	10(A) SYSB6* (SYSFLG0) General communication byte	11(B) SYSB7* (SYSFLG1) Field used by a dump to determine the storage load
12(C) SYSB8 (SYSAVEK) Number of save areas contained in the buffer	13(D) SYSB9* (SYSFLG3) General communication byte	14(E) SYSB10 (SYSDSGC) Channel adapter data service governor count	15(F) SYSB11 (SYSBFSZC) Buffer size minus (the buffer prefix minus 1)
16(10) SYSB17 (SYSBUFSZ) True buffer size	17(11) SYSB18 (SYSBLKSZ) Maximum number of buffers in the basic control unit (BCU)	18(12) SYSB19* (SYSFLG2) General communication byte	19(13) SYSB20 (SYSSUBMF) DAF/OAF subarea mask (SDLC)
20(14) SYSB21 (SYNSBMF) DAF/OAF not subarea mask (SDLC)	21(15) TIMB11 (TIMEZERO) Zero-second communication error time-out request	22(16) TIMB12 (TIMEOTXT) User-specified shoulder tap or default to the RAS time-out for a text time-out override	23(17) SYSB12* (SYSIPLCA) EP IPL channel adapter
24(18) SYSB13* (SYSLI3CA) Level-1 or level-3 channel adapter error recovery procedure (ERP)	25(19) SYSB14 (SYSCATPC) PRELEASE count for the present active task	26(1A) SYSB15* (SYSCATPS) PRELEASE status for the present active task	27(1B) SYSCAR2* (SYSCARX) Conditional assembly removal flags 2

* Indicates a byte expansion follows.

Timer Subcontrol Block (XDBTIM)

28(1C) TIMB1 (TIMTICNT) Count remembrance field	29(1D) TIMB2 (TIMSICNT) Count remembrance field for the system timer	30(1E) TIMB3 (TIMWKREG) Work register for the communication line timer service routine (CXCLINT)	31(1F) TIMB4 (TIMLNCNT) Number of lines to be served before checking for higher priority work
32(20) TIMB5 (TIMRSRES) Work register for the RAS line timer	33(21) TIMB6 (TIMDSABL) Communication timer time-out to protect against a failure to disconnect	34(22) TIMB7 (TIMENABL) Communication timer time-out to protect against a failure to connect	35(23) TIMB8 (TIMDIAL) Communication timer time-out to protect against a dial failure
36(24) TIMB9 (TIMDIDLY) Communication timer time-out to protect against a delay in dial tone	37(25) TIMBA (TIMSWBID) Communication timer time-out to protect against a switched line hang-up		

Routine Subcontrol Block (XDBRTR)

		38(26) RTRB1 (RTRSPUR) Retry counter for program level-3 unresolved interrupts	39(27) RTRB2 (RTRSPUR1) Retry counter for program level-1 unresolved interrupts
40(28) RTRB3* (RTRINLVL) Program level interrupted by level 1	41(29) RTRB4* (RTRIPLST) IPL status	42(2A) RTRB5 (RTRL5KEY) Level-5 protect key at the time of the protection exception	43(2B) RTRB6 (ABNDINH) Abend inhibit (EP)
44(2C) RTRCATRC* Channel adapter IOH trace byte	45(2D) SYSCCMB* CACM mode/high-level interrupt indicator byte	46(2E) SYSRAS1E* Channel adapters on IOC Bus 1 removed from the auto-selection chain and not disabled	47(2F) SYSRAS2E* Channel adapters on IOC Bus 2 removed from the auto-selection chain and not disabled
48(30) RTRB11* (SYSFLG4) General communication byte	49(31) RTRB12 (RTR3PUR) Reinitialize program level-3 unresolved interrupt counter	50(32) RTRB13 (RTR1PUR) Reinitialize program level-1 unresolved interrupt counter	51(33) SYSCAERT Channel adapter ERP timer counter
52(34) SYBS1SL Select mask of the channel adapter for reselection on IOC Bus 1	53(35) SYBS2SL Select mask of the channel adapter for reselection on IOC Bus 2	54(36) RTRB17* (RTRFEESC) Field engineering hook/escape byte	55(37) RTRB18 (RTRSPUR2) Retry counter for program level-2 unresolved interrupts
56(38) RTRB19 (RTRSPUR4) Retry counter for program level-4 unresolved interrupts	57(39) RTRB20 (RTR2PUR) Reinitialize program level-2 retry counter	58(3A) RTRB21 (RTR4PUR) Reinitialize program level-4 retry counter	59(3B) RTRB22* (USAGETR) Usage tier indicator
60(3C) SYSB3C* (SYSMOSS1) MOSS level-1 request	61(3D) SYSB3D* (SYSMOSS2) MOSS status and level-3 and level-4 requests	62(3E) RTRB25 L2 PCI Counter	63(3F) RTRB26 L2 PCI Refresh threshold
64(40) SYSB40* (SYSFLG5) General communication byte	65(41) Reserved		67(43) SYSB43 (SYSDPSAS) Number of DPSAs into which 1 buffer can be parsed (ODLC only)

* Indicates a byte expansion follows.

68(44) SYSB44 (SYSTIMER) ODLC system timer counter (ODLC only)	69(45) SYSB45* (SYSODLC) ODLC flags byte (ODLC only)	70(46) SYSB46* (SYSOGERP) ODLC global error recovery procedure (ERP) flags byte (ODLC only)	71(47) SYSB47 (SYSULANS) Usage tier counter for LAS not switched to CCU
72(48) SYSB48 (SYSULAS) Usage tier counter for LAS switched to CCU	73(49) SYSB49* (SYSCSYNC) ODLC CBC Synchronization flags (ODLC only)	74(4A) SYSB4A (SYSCSTIM) CBC synchronization timer (value in seconds) (ODLC only)	75(4B) SYSB4B* (XDBMPST) Dynamic dump and NTune status byte
76(4C) SYSB4C (SYSTRNS) Usage tier limit for TRA/ESS not switched to CCU	77(4D) SYSB4D (SYSTRS) Usage tier limit for TRA/ESS switched to CCU	78(4E) SYSB4E (SYSIPIST) Minimum IP first buffer size (SNA)	79(4F) SYSALRT Seconds which pass before VR congested alert task processor gets control
80(50) SYSSMMFS* SMMF status byte	81(51) SYSB51 Reserved	82(52) SYSB52 Reserved	83(53) SYSB53 (XDBCABS) CABSENSE byte
84(54) SYSB54* (SYSPMFC) PMF communication byte	85(55) - 127(7F) Reserved		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) FILLB		Flag bits for EP use
	1... ..	EP has channel adapter active.
	.1... ..	No program requested interrupt (PRI) is required for EP.
2(2) SYSCAR (SYSCAR1)		Conditional assembly removal flags 1
	1... ..	More than one channel adapter on NCP generation
	.1... ..	Link automatic time-out
	..1... ..	Address trace
	...1... ..	SDLC
	.... 1... ..	Programmed resource in system
	.... .1... ..	Channel adapter trace
	.... ..xx	Reserved
4(4) SYSDSPM		System dispatch mask
	1... ..	System is in CWALL state (SYSDCW)
	.1... ..	Pseudo CWALL bit (SYSDPCW)
	..1... ..	Slowdown bit (SYSQIP)
	...1... ..	System is in pseudo slowdown (SYSDSLD)

Offset/Field Name	Bit Pattern/ Hex Value	Contents
5(5) SYSB1 (SYSMASK)		Control byte for dispatcher flags
	1...	Appendage task is in progress.
	.1..	System task is active.
	..1.	Level 3 is disabled.
	...1	Level 3 is active.
	.... 1...	Block handler routines (BHRs) are in execution.
	.... .1..	Dispatcher service is required in level 3.
	.... ..1.	Level 4 is disabled.
9(9) SYSB5 (SYSSMI) (SYSBPSTS)		Buffer pool and network status
	1...	Lease failed when trying to obtain buffers for allocation of a dynamic savearea.
	.1..	Deactivate Invite command has been processed; do not poll during service seeking.
	..x. ...x	Reserved
	...1	SDLC RR/RNR polling control during slowdown
	.... 1...	Quiesce message is required.
	.... .1..	Channel CWAR is invalidated because the buffer pool is depleted, or EP only—buffer is depleted.
	.... ..1.	Level 4 is waiting for a buffer.
10(A) SYSB6 (SYSFLG0)		General communication byte
	1...	Selective system reset
	.1..	Checkpoint option is selected.
	..1.	Extended recovery facility (XRF) is supported.
	...0	System > 64K
	.... 1...	Return data to host on error
	.... .1..	Critical situation notification option is selected.
	.... ..1.	Online test (OLT) option is selected.
	.... ...1	Global scanner down indicator
11(B) SYSB7 (SYSFLG1)		Field used by dump to determine storage load and by MOSS processing
	X'F1'	NCP
	X'F7'	NCP link attached
	X'FA'	EP
	X'FB'	PEP

Note: To determine version and release level, see XDHNCP and XDHEP.

Offset/Field Name	Bit Pattern/Hex Value	Contents
13(D) SYSB9 (SYSFLG3)		General communication byte
	1...	PU type 1 code in system
	.1..	SDLC 3270 Model 11/12 support is included in system.
	..1.	Network performance analysis (NPA) is done for dynamically reconfigured resources.
	...1	Boundary function (BF) session accounting is included.
	.... 1...	SSCP monitor mode function is included.
	.... .1..	NPA data collection is active.
	.... ..1.	MOSS-to-EP communication queue needs service.
	.... ...1	Check record pool (CRP) entries are ready for MOSS.
18(12) SYSB19 (SYSFLG2)		General communication byte
	1...	At least 1 type 2 channel has failed
	.x..	Console support: 1 = NCP 0 = EP
	..1.	PEP line switch in system
	...1	Level-3 trace is active (EP only).
	.... 1...	Dynadump is active (EP only).
	.... .1..	3745
	.... ..1.	3745 has finished initialization.
	.... ...1	NCP/token-ring interconnection (NTRI) is included.
23(17) SYSB12 (SYSIPLCA)		EP IPL channel adapter
	x...	Bus bit: 1 = IOC bus 2 0 = IOC bus 1
	.... xxx.	Select bits
24(18) SYSB13 (SYSL13CA)		Level-1 or level-3 channel adapter ERP
	x...	1 = Process a level-3 interrupt on IOC bus 1 from a channel adapter in the auto-selection chain. 0 = Process a level-3 interrupt on IOC bus 1 from a channel adapter outside the auto-selection chain.
	.x..	1 = Process a level-3 interrupt on IOC bus 2 from a channel adapter in the auto-selection chain. 0 = Process a level-3 interrupt on IOC bus 2 from a channel adapter outside the auto-selection chain.
	..1.	Adapter input/output (AIO) stopped on IOC bus 1 so the channel adapter can be removed from the cycle-steal chain.
	...1	AIO stopped on IOC bus 2 so the channel adapter can be removed from the cycle-steal chain.
	.... x...	Reserved
	.... .x..	Reserved
	.... ..1.	Auto-selection will be re-enabled by level 3 or level 4—IOC bus 1.
	.... ...1	Auto-selection will be re-enabled by level 3 or level 4—IOC bus 2.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
26(1A) SYSB15 (SYSCATPS)		Prelease status for the present active task
	.1..	Active level-5 task is enqueued on the conditional dispatch queue.
	..1.	Active level-5 task is enqueued on the unconditional dispatch queue.
27(1B) SYSCAR2 (SYSCARX)		Conditional assembly removal flags 2
	1...	BHRs are included during NCP generation.
	.1..	Only one channel adapter is active in the system.
	..1.	User-written line control for channel adapters.
40(28) RTRB3 (RTRINLVL)		Program level interrupted by level 1
	1...	Program level 2 is interrupted.
	.1..	Program level 3 is interrupted.
	..1.	Program level 4 is interrupted.
	...1	Program level 5 is interrupted.
41(29) RTRB4 (RTRIPLST)		IPL status
	x...	1 = IPL from disk 0 = IPL from host
	.x..	1 = Host-assisted IPL from disk 0 = IPL from disk without host assistance
	..x.	1 = Loaded over a channel 0 = Loaded over a link.
	...1	Loaded over an SMMF channel link
	.... xxxx	Address of the channel adapter performing the IPL.
	.... x...	Channel adapter IOC bus indicator: 1 = IOC bus 2 0 = IOC bus 1
	.... .xxx	Channel adapter select bits
44(2C) RTRCATRC		Channel adapter IOH trace byte
	x...	Level-3 router trace: 1 = Indicates trace=YES. 0 = Indicates trace=NO
	.1..	Channel adapter IOH trace is currently active.
	..1.	Restrict IOH trace to a single channel adapter.
	...x	Reserved
	.... x...	1 = tracing IOC bus 2 0 = tracing IOC bus 1
	.... .xxx	Select bits of channel adapter being selectively traced
45(2D) SYSCCMB		CACM mode/high-level interrupt indicator byte
	1...	MOSS CACM time-out is detected.
	.1..	CACM operation is in progress.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
46(2E) SYSRAS1E		Channel adapters on IOC bus 1 removed from the auto-selection chain and not disabled (may present interrupts)
	1...	Channel adapter number 5
	.1..	Channel adapter number 6
	..1.	Channel adapter number 7
	...1	Channel adapter number 8
	.... 1..	Channel adapter number 13
	.... .1..	Channel adapter number 14
	.... ..1.	Channel adapter number 15
	.... ...1	Channel adapter number 16
47(2F) SYSRAS2E		Channel adapters on IOC bus 2 removed from auto-selection chain and not disabled (may present interrupts)
	1...	Channel adapter number 1
	.1..	Channel adapter number 2
	..1.	Channel adapter number 3
	...1	Channel adapter number 4
	.... 1..	Channel adapter number 9
	.... .1..	Channel adapter number 10
	.... ..1.	Channel adapter number 11
	.... ...1	Channel adapter number 12
48(30) RTRB11 (SYSFLG4)		General communication byte
	1...	Any CCU-B's bus is attached and/or switched to this CCU.
	.1..	Any CCU-A's bus is attached and/or switched to this CCU.
	..1.	TRA is defined on CCU A.
	...1	TRA is defined on CCU B.
	.... 1..	3745-310 and -610 CCUs are supported.
	.... .x..	SMMF continuous indicator: 1 = SMMF is continuous. 0 = SMMF is not continuous.
	.... ..1.	Model is 3745-130, -150, -160, or -170.
	.... ...1	Model is 3720.
54(36) RTRB17 (RTRFEESC)		Field engineering hook/escape byte
	1...	Allow additional register range (AARR)
	.x..	1 = Dump 0 = No dump
	..x.	1 = No dispatch trace 0 = Dispatch trace is active.
	...1	Dispatch trace control bit (allows calls and subtasks to be traced)
	.... 1..	Supervisor call (SVC) trace is active.
	.... .1..	Buffer service aid
	.... .x.	Conditional branch trace state: 1 = Conditional branch trace is active. 0 = Conditional branch trace is not active.

Offset/Field Name	Bit Pattern/ Hex Value	Contents
59(3B) RTRB22 (USAGETR)		Usage tier level indicator (USAGETR)
	X'01'	Usage tier level 1
	X'1B'	Usage tier level 1--Maximum line number 27
	X'02'	Usage tier level 2
	X'25'	Usage tier level 2.5
	X'03'	Usage tier level 3
	X'04'	Usage tier level 4
	X'05'	Usage tier level 5
60(3C) SYSB3C (SYSMOSS1)		MOSS level-1 request
	1... ..	Request is MOSS down.
	.xxx xxxx	Reserved
61(3D) SYSB3D (SYSMOSS2)		MOSS status and level-3 or level-4 requests
	1... ..	MOSS is down.
	.1.. ..	MOSS is offline.
	..x.	Reserved
	...1	Switchback forced deactivates are in progress
	.... 1...	Request is MOSS offline.
	.... .1..	Request is MOSS down (level 3, time-out).
	.... ..1.	Request is MOSS down (level 4, in-mailbox error).
	.... ...1	Request is MOSS down (level 4, out-mailbox error).
64(40) SYSB40 (SYSFLG5)		General communication byte
	1... ..	Gateway session accounting is included. (SYSGWAI)
	.x..	1 = NCP is running in level 3 upon entry to the control vector builder (SYSCVL3)
	..1.	0 = NCP is running in level 5 upon entry to the control vector builder
	...x	DR resources will have Transmission Priority collection done (in addition to performance collection). (SYSDRTP)
		Ordering of lines in a MLTG (SYSMTGO)
		1 = User specified the order of service for links in MLTG.
		0 = Order of activation determines the preferred order of service for links in the MLTG.
	.... 1...	A non-zero value has been coded for the VR congested alert time limit or VR HELD deactivation time limit. (SYSVRAL)
	.... .1..	Address exception test tool--PARM='TESTING' (SYSAEXP)
	.... ..1.	FOXBUFF test tool--PARM='FOXBUFF' (SYSFOXB)
	.... ...1	Reserved
69(45) SYSB45 (SYSODLC)		ODLC flags byte
	1... ..	ODLC lines sysgenned
	.1..	ODLC timer has expired
	..x.	1 = Link timer chain being processed
		0 = Processor timer chain being processed
	...1	PCI to L3 has failed
	.... 1...	Global ODLC snap trace active

Offset/Field Name	Bit Pattern/ Hex Value	Contents
70(46) SYSB46 (SYSOGERP)		ODLC global ERP flags byte
	1...	Global interface down
	.1..	Global processor down
	..1.	Global CBC down
	...1	Global protocol down
73(49) SYSB49 (SYSCSYNC)		ODLC CBC synchronization flags
	1...	CST has been received
	.1..	Set-CST-HI-LO sent
	..1.	Timeout on get adapter status (GAS) to CBC
	.... ...x	1 = 3746-900 tier B 0 = 3746-900 tier A
75(4B) SYSB4B (XDBDMPST)		Dynamic dump and NTune status byte
	1...	Dynadump in progress (active).
	.1..	Dispatcher trace inactive.
	..1.	Dynadump timer bit
	...x xxx.	Reserved
	.... ...1	NTune Collection Active (XDBNTUN)
80(50) SYSB50 (SYSSMMFS)		SMMF status byte
	.1..	SMMF has been activated for first time since box loaded. (SYSSMMFI)
84(54) SYSB54 (SYSPMFC)		PMF communication byte
	1...	CUC counter is not over 100% (SYSC100)
	.1..	CUC counter has overflowed (SYSCOVF)

Halfword Direct Addressable Storage

Program: NCP, PEP

Size in bytes: 128(80)

Located in: Relocatable in controller storage

Created by: NCP or PEP generation

Pointed to by: The initialization code stores the XDH pointer at storage location X'34'

Function: Contains frequently accessed system control fields

Name	Offset	Name	Offset
CACMREM	78 (4E)	TIMMSIP	60 (3C)
CCPH1	116 (74)	TIMTENTH	58 (3A)
CCPSAVE	116 (74)	XDHATDR	8 (8)
CHSVBKSZ	112 (70)	XDHAVTP	40 (28)
CHSVH1	112 (70)	XDHCIW1	20 (14)
CYEHUNG	38 (26)	XDHCIW2	22 (16)
EPLVL	73 (49)	XDHCSNS1	12 (C)
L2BAR	76 (4C)	XDHCSNS2	14 (E)
NCPLVL	68 (44)	XDHCSNS3	16 (10)
RTRBARSV	118 (76)	XDHCSNS4	18 (12)
RTRCASEL	126 (7E)	XDHEP	73 (49)
RTRH1	118 (76)	XDHL2BAR	76 (4C)
RTRH10	126 (7E)	XDHL3BAR	30 (1E)
RTRH4	4 (4)	XDHNCPH	68 (44)
SYSABND	96 (60)	XDHNCPL	70 (46)
SYSBINTM	98 (62)	XDHNTIP	32 (20)
SYSBINT2	100 (64)		
SYSBPCW	80 (50)		
SYSCACM	78 (4E)		
SYSCUREQ	102 (66)		
SYSHW726	38 (26)		
SYSH11	92 (5C)		
SYSH12	94 (5E)		
SYSH13	96 (60)		
SYSH14	98 (62)		
SYSH15	100 (64)		
SYSH16	102 (66)		
SYSH17	104 (68)		
SYSH18	106 (6A)		
SYSH19	108 (6C)		
SYSH2	86 (56)		
SYSH20	80 (50)		
SYSH21	110 (6E)		
SYSH5	88 (58)		
SYSIN06	86 (56)		
SYSIN57	108 (6C)		
SYSIN7F	110 (6E)		
SYSLINES	88 (58)		
SYSOUT57	106 (6A)		
SYSQMAX	90 (5A)		
SYSQTIM	60 (3C)		
SYSQUMAX	90 (5A)		
SYSSAVEK	94 (5E)		
SYSTASV	92 (5C)		
TIMH6	58 (3A)		

0(0) Reserved	
4(4) RTRH4 Save area for channel adapter level 1	6(6) Reserved
8(8) XDHATDR Channel adapter activate channel adapter trace display register	10(A) Reserved

Channel Sense ID Data

12(C) XDHCSNS1 Channel sense ID data 1	14(E) XDHCSNS2 Channel sense ID data 2
16(10) XDHCSNS3 Channel sense ID data 3	18(12) XDHCSNS4 Channel sense ID data 4
20(14) XDHCIW1 Channel command information word 1	22(16) XDHCIW2 Channel command information word 2

24(18) - 29(1D) Reserved	
	30(1E) XDHL3BAR Level-3 buffer address register (BAR)
32(20) XDHNTIP Pointer to the NTuneNCP information (NTI) control block (NTuneNCP only)	
36(24) Reserved	38(26) SYSHW726 (CYEHUNG) Unhanging indicator (EP)
40(28) XDHAVTP Pointer to address vector table (AVT) (NPSI only)	
Reserved	
44(2C) - 57(39) Reserved	

Timer Subcontrol Block (XDHTIM)

60(3C) SYSQTIM (TIMMSIP) Max frame survival	58(3A) TIMH6 (TIMTENTH) Tenths of a second counter
Reserved	

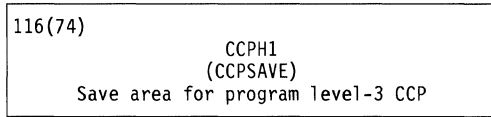
Supervisor Subcontrol Block (XDHSYS)

68(44)		NCPLVL NCP version and release level	
XDHNCPH High halfword of NCP level		70(46)	XDHNCP Low halfword of NCP level
72(48) Reserved	73(49) EPLVL (XDHEP) EP version and release level		
76(4C)	L2BAR (XDHL2BAR) Level-2 BAR	78(4E)	CACMREM (SYSCACM) CACM mode remembrance halfword
80(50)	SYSH20 (SYBPCW) CWall entry threshold	82(52)	Reserved
84(54)	Reserved	86(56)	SYSH2 (SYSIN06) Input register x'06'
88(58)	SYSH5 (SYSLINES) Number of communication lines	90(5A)	SYSQMAX (SYSQMAX) Queue congestion maximum
92(5C)	SYSH11 (SYSTASV) Scanner TA for MOSS	94(5E)	SYSH12 (DCTSAVEK) (SYSSAVEK) System save area buffer pool allocation count
96(60)	SYSH13 (DCTABND) (SYSABND) System ABEND code	98(62)	SYSH14 (SYSBINTM) System binary timer in seconds (Time from the NCP load)
100(64)	SYSH15 (SYSBINT2) System binary timer in half days (Each time SYSBINTM hits a half day this field is incremented, and SYSBINTM is reset to zero)	102(66)	SYSH16 (SYSCUREQ) Time value for the earliest expiring current system timer request
104(68)	SYSH17 Second halfword of SYSCUREQ	106(6A)	SYSH18 (SYSOUT57) Output register X'57'
108(6C)	SYSH19 (SYSIN57) Input register X'57'	110(6E)	SYSH21 (SYSIN7F) Input register X'7F'

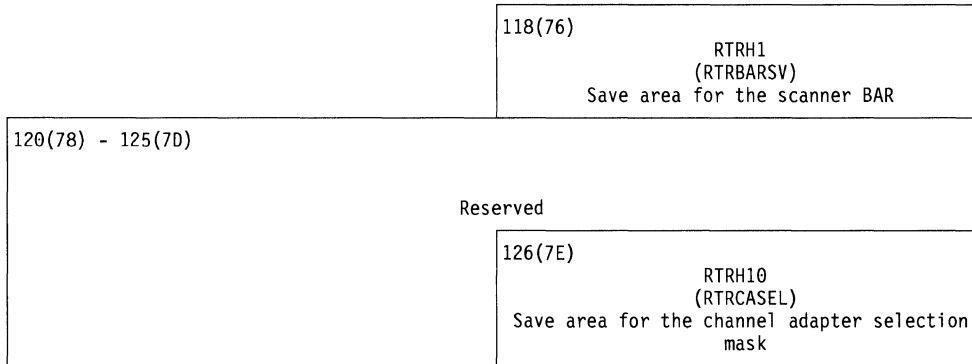
Channel Adapter Interrupt Handler Save Area (XDHCHSV)

112(70)	CHSVH1 (CHSVBKSZ) Maximum byte count to the host per host start input/output	114(72)	Reserved
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Communication Control Program (CCP) Save Area (XDHCCP)



Program Level-1 or Level-3 Router Subcontrol Block (XDHRTR)



Exchange Identification Data Block (Format 2)

Program: NCP

Size in bytes: 31(1F) plus 13(0D) for an SDLC link DLC extension or 11(0B) for a channel data link control (DLC) extension plus the length of all control vectors included in the XID2.

Created by: NCP generation

Pointed to by: The CXTXID entry in the link-edit map

Function: Contains PU identification-related parameters that pass between adjacent subarea nodes

0(0) XID2FTYP* XID format and PU type field	1(1) XID2FLDL XID field length	2(2) XID2BKID Block number (bits 0 through 11)	
4(4) XID2BKID Specific ID (bits 12 through 31)		6(6) XID2CV0 Offset to the start of a control vector	7(7) Reserved
8(8) XID2TFGS* Transmission group active or inactive flags	9(9) XID2FIDT* FID type supported	10(A) Reserved	11(B) XID2MPIU Maximum PIU size supported
12(C) XID2MPIU (continued) Maximum PIU size supported	13(D) XID2TGN Transmission group number	14(E) Reserved	
16(10) XID2SUBA PU subarea address		18(12) XID2EFGS* Error flags	19(13) XID2IPLD* IPL/Dump information byte
20(14) - 27(1B) XID2LMOD Load module name			
28(1C) XID2SLIM* NCP's SALIMIT capabilities	29(1D) Reserved	30(1E) XID2DLCT* DLC type	

* Indicates a byte expansion follows.

The following SDLC link and channel extensions both contain DLC parameters that are included as the DLC portion of the XID format 2. The parameters are defined for SDLC if the DLC type=X'01' at 30(1E), or for channels if the DLC type=X'02'.

SDLC Link DLC Extension

				31(1F) XID2CFGS* Configuration flags
32(20) XID2MDLC* Maximum length of the DLC field to be received		34(22) XID2CMPR SDLC command profile		35(23) XID2FFGS* SDLC function flags
36(24) XID2FLAG* Flag byte	37(25) Reserved	38(26) XID2MODM* Modulus and maxout count		39(27) - 43(2B)
Reserved				
44(2C) - n Control vectors (Possible control vectors are X'12', X'56', X'0E')**				

* Indicates a byte expansion follows.

** See "Control Vectors and Control Lists" in Volume 2, Section 5, "NCP Network Commands."

Channel DLC Extension

				31(1F) XID2IBFS Buffer lease count (INBFRS)
32(20) XID2MBFR Number of SSCP read channel command words (CCWs) (MAXBFRU)		34(22) XID2UNSZ SSCP buffer unit size (UNITSZ)		
36(24) XID2BPAD SSCP pad character count (BFRPAD)	37(25) XID2FLGS* Channel DLC flags	38(26) XID2ADLY CABATD7I Attention delay interval (DELAY)		
40(28) XID2ATMO CABAT07I Attention time-out (ATO) interval (TIMEOUT)		42(2A) - n		
Control vectors (Possible control vectors are X'12', X'0E')**				

* Indicates a byte expansion follows.

** See "Control Vectors and Control Lists" in Volume 2, Section 5, "NCP Network Commands."

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) XID2FTYP		XID format and PU type field
		XID format
	0000	Fixed format
	0001	SDLC variable format
	0010	PU ID with DLC parameter options
		PU type
	.... 0001	PU.T1
	.... 0010	PU.T2
	.... 0100	PU.T4
	.... 0101	PU.T5
8(8) XID2TFGS		Transmission group status
	1...	Transmission group is active
	.1..	Multilink transmission group is supported
		Type segment assembler supported
	..00	ASSEMBLER.NONE (pass through)
	..01	ASSEMBLER.STA; ASSEMBLER.BR.STA
	..10	ASSEMBLER.SESS; ASSEMBLER.BF.SESS
	..11	ASSEMBLER.11 (only BBIU, EBIU supported)
	.... 1...	Multi-PIU frame capability
	.... .1..	Mixed-media on MLTG is supported
	.... ..x.	1 = Interpret XID2MPIU as PIU size 0 = Interpret XID2MPIU as frame size
	.... ...1	Support for receiving multi-PIU frames that are marked TG reorder not required
9(9) XID2FIDT		FID type supported
	1...	FID0
	.1..	FID1
	.... 1...	FID4
18(12) XID2EFGS		Error flags
	.1..	Received XID is unacceptable
	..1.	Incompatible DLC type is currently connected to a resolved transmission group
	...1	Resolved transmission group is undefined
	.... 0...	NCP always sets to 0
	.... .1..	Call security verification failed
19(13) XID2IPLD		IPL or Dump information byte
	X'00'	A CONTACT has been received and no IPL or DUMP information will be included in the XID
	X'07'	Already loaded
	X'08'	Receiver does not support byte 19(13)
	X'09'	Load is required

Offset/Field Name	Bit Pattern/Hex Value	Contents
28(1C) XID2SLIM		NCP's SALIMIT capabilities
	1... ..	Extended subarea addressing (ESA) is supported
	.xxx ..	Reserved
	... xxxx	ESA support level (valid only if ESA supported)
	... 0000	Extended network addressing (ENA) 8/15 (SALIMIT=255)
	... 0001	ENA 9/15 (SALIMIT=511)
	... 0010	ENA 10/15 (SALIMIT=1023)
	... 0011	ENA 11/15 (SALIMIT=2047)
	... 0100	ENA 12/15 (SALIMIT=4095)
	... 0101	ENA 13/15 (SALIMIT=8191)
	... 0110	ENA 14/15 (SALIMIT=16383)
	... 0111	ENA 15/15 (SALIMIT=32767)
	... 1000	ENA 16/15 (SALIMIT=65535)
30(1E) XID2DLCT		DLC type
	X'00'	No DLC parameters follow.
	X'01'	SDLC parameters follow.
	X'02'	Channel parameters follow.
31(1F) XID2CFGS		Configuration flags
	0001	Sender can be primary
	0010	Sender can be secondary
	0100	Sender can be combined
	0011	Sender can be primary or secondary
	0101	Sender can be primary or combined
	0110	Sender can be secondary or combined
	0111	Sender can be primary, secondary, or combined
	... ..00	Sender is two way alternating (TWA)
	... ..01	Sender is two way simultaneous (TWS)
32(20) XID2MDLC		Maximum length of the DLC field to be received
	Byte 0 0xxx xxxx	
	Byte 1 xxxx xxxx	
35(23) XID2FFGS		SDLC function flags
	1... ..	Sending node can negotiate NETID
	..00 ..	Set initialization mode (SIM) and request initialization mode (RIM) are not supported
	..01 ..	Will receive SIM and send RIM
	..10 ..	Will send SIM and receive RIM
	..11 ..	Capability exists to send and receive both SIM and RIM
	... 1..	Echo defeat is supported
	... ..1.	FID4 UI-frame support (XID2UIF)
	... ...1	Pre-negotiation XID2
36(24) XID2FLAG		Flag byte
	1... ..	"NET ID MAY CHANGE" indicator
	.xxx xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
37(25) XID2FLGS		Channel DLC flags
	1... ..	Using status modifier option
	..1.	Override existing channel to transmission group connection
38(26) XID2MODM		Modulus and maxout count
	X'07'	Modulo 8 maximum maxout
	X'08'	Modulo 128 minimum maxout

Exchange Identification Data Block (Format 3)

Program: NCP

Size in bytes: 19(13) plus 10(A) for an SDLC link DLC extension or 18(12) for a channel DLC extension

Created by: NCP generation

Pointed to by: The CXTXID entry in the link-edit map

Function: Contains PU identification-related parameters that pass between adjacent peripheral nodes.

0(0) XID3FTYP* XID3 format and PU type field	1(1) XID3FLDL XID3 field length	2(2) XID3NDID Node identification (bytes 1 and 2)	
4(4) XID3NDID Node identification (continued) (bytes 3 and 4)		6(6) Reserved	
8(8) XID3SCHR		10(A) XID3TGBP* Transmission group BIND pacing support	11(B) - 14(E)
XID3SCH* XID sender node characteristics	9(9) XID3STAT* XID3 status fields	Reserved	
15(F) XID3TGFL* Transmission group flags			
16(10) XID3TGN Transmission group number	17(11) XID3DLCT* DLC type	18(12) XID3DLCL Length of the DLC section**	

* Indicates a byte expansion follows.

** The value includes the length of the DLC section, plus 1 for the length of the XID3DLCL field itself.

The following SDLC link and channel DLC extensions both contain DLC parameters that are included as the DLC portion of the XID format 3. The parameters are defined for SDLC if the DLC type=X'01' at 17(11), or for channels if the DLC type=X'02'.

SDLC Link DLC Extension

		19(13) XID3LSCP* Link station and connection protocol flags
20(14) XID3AFLG* ABM XID flags	21(15) XID3MDLC* Maximum length of the DLC field to be received	23(17) XID3CMPR* SDLC command response profile
24(18) XID3FFGS* SDLC function flags	25(19) Reserved	27(18) XID3MODM* Modulus and maxout count
28(1C) Reserved		

* Indicates a byte expansion follows.

Channel DLC Extension

		19(13) XID3CFGs* Channel XID3 indicators
20(14) XID3CFGs* (continued)	21(15) XID3MLPS Maximum link-header PIU size that the XID sender can handle	23(17) XID3IBFS Buffer prefetch value
24(18) XID3MBFR Number of Read commands to expect in a channel program	26(1A) XID3UNSZ Host buffer size	
28(1C) XID3ADLY Blocking delay value	30(1E) XID3ATMO Attention time-out (ATO) value	
32(20) XID3PMBF Number of Read commands used before an XID or parameter change	34(22) XID3PUNS Host buffer size used before an XID or parameter change	
36(24) XID3TMUT* Time units used in XID3		

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
0(0) XID3FTYP		XID3 format
	0011	Advanced program-to-program networking variable format
	.... 0010	PU Type PU-T2 or PU-T2.1
	.... 0100	PU-T4
8(8) XID3SCH		XID sender node characteristics
	1...	INIT-SELF may not be sent to the XID sender
	.1..	Stand-alone BIND may not be sent to the XID sender
	..1.	XID sender cannot generate BIND PIU segments
	...1	XID sender cannot receive BIND PIU segments
	.... 0000	XID sender supports FID2
9(9) XID3STAT		XID3 status fields
	1...	ACTPU for SSCP-PU session is not requested
		CP-CP Status
	.x..	Networking support indicator
		1 = Sender is a network node
		0 = Sender is an end node
	..x.	Control point services
		1 = CP services requested or provided: when network services are not provided on this TG by the XID sender, CP services are requested; when network services are provided on this TG by the XID sender, CP services are provided
		0 = CP services not requested or provided
	...1	CP-CP sessions are supported
		XID Negotiation State
	.... 00..	Exchange state indicators are not supported
	.... 01..	Negotiation is proceeding
	.... 10..	Pre-negotiation exchange
	.... 11..	Non-activation exchange
	.... ..1.	"Non-activation exchange initiated by the secondary station" is supported
	.... ...1	CPNAME change is supported
10(A) XID3TGBP		Transmission group BIND pacing support
	00..	Adaptive BIND pacing is not supported
	01..	One-way adaptive BIND pacing is supported
	10..	Reserved
	11..	Full support of adaptive BIND pacing
	..1.	Quiesce TG request
	.... ...1	AWP 7223 supported
15(F) XID3TGFL		Transmission group flags
	1...	Multiple transmission groups are supported on this link
	.xxx xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
17(11) XID3DLCT		DLC type
	X'01'	SDLC connection
	X'02'	Channel connection
19(13) XID3LSCP		Link station and connection protocol flags
	x... ..	Reserved
	.1... ..	XID sender can be an ABM combination station
		Link Station Role
	..00	Secondary link station
	..01	Primary link station
	..10	Reserved
	..11	Negotiable link station (primary or secondary)
	.... 1...	Short-hold mode logical connection is already engaged
	.... .1..	Short-hold mode is supported
		Transmit-Receive Capability
	.... ..00	Two-way alternating (TWA)
	.... ..01	Two-way simultaneous (TWS)
19(13) XID3CFGS	Byte 0	Channel XID3 indicators
	1... ..	Change current channel DLC values to values in this XID3
	.1... ..	ATO is supported
	..1... ..	Data streaming is supported
	...1	Channel DLC parameter through XID exchange is supported
20(14) XID3AFLG		ABM XID flags
	x... ..	1= XID sender is sending a non-activation XID command 0= XID sender is sending a response to a non-activation XID command
21(15) XID3MDLC		Maximum length of the DLC field to be received
	Byte 0	
	0xxx xxxx	Bits 1–15 contain the maximum BTU length
	Byte 1	
	xxxx xxxx	
23(17) XID3CMPR		SDLC command response profile
	xxxx	Reserved
	.... 0000	SNA link profile (only value defined)
24(18) XID3FFGS		SDLC function flags
	..1... ..	Set Initialization Mode (SIM) and Request Initialization Mode (RIM) are supported
	xx.x xxxx	Reserved

Offset/Field Name	Bit Pattern/ Hex Value	Contents
27(1B) XID3MODM	x... .... .xxx xxxx	Modulus and maxout count Reserved Maximum number of I-frames that can be received before acknowledgement: X'00'–X'07' = Modulo 8 X'08'–X'7F' = Modulo 128
36(24) XID3TMUT	X'00'	Time units used in XID3 100-millisecond interval used

Physical Link Adapter Control Block Extension

Program: NCP

Size in bytes: 168(A8)

Created by: NCP generation

Pointed to by: The PLUXUAP field in the physical link adapter control block (PLUA), and the LLBPLXUA in the dummy logical link block (LLB)

Function: Used by the medium access control (MAC) layer

0(0)	XUABID Block identifier C'XU'	2(2)	XUAMACS* MAC status	3(3)	XUAFL3* MAC flag level 3
4(4)					
XUALIT Pointer to the first line interface table (LIT)					
XUARCNT1 Retry counter					
8(8)					
XUALITEP LIT empty pointer Pointer to the next LIT entry to be processed by level 3					
XUAFL2* MAC flag level 2					
12(C)					
XUALITFP LIT fill pointer Pointer to the next LIT entry to be filled by level 2					
XUAALI* Activate link inhibited					
16(10)					
XUAHTP Pointer to the hashing table (HTAB) start (NTRI), or pointer to DLCI to LLB (DTL) table (Frame-relay only)					
XUATICNT Initialization timer counter					
20(14)					
XUAFRLP Pointer to the first receive list					
XUA1RLNF Pointer to the first receive list for next frame					

* Indicates a byte expansion follows.

24(18)	XUAFXLP Pointer to the first transmit list
XUA1XLNF Pointer to the first transmit list for next frame	
XUAFL3B* MAC flags level 3	
28(1C)	XUAABVP Pointer to the address vector control block (AVB)
XUARPUCT* Retry count for purge node	
32(20)	XUA1B1RL Pointer to the first buffer of the first receive list
XUANBFXM Number of free transmit lists	
36(24)	XUAXMXEP Pointer to the first transmit list for transmit end
XUANBFHB Number of free header buffers	
40(28)	XUANRLRG Pointer to the next receive list to regenerate
XUARCNT2 Retry counter	
44(2C)	XUAPLBP Pointer to the physical link control block (PLB)
XUACBFN Token-ring interface coupler (TIC) number	
48(30)	XUASCEAD Source address (LOCADD)
	54(36) XUATRM2S Token-ring multiplexer (TRM) level 2 status

* Indicates a byte expansion follows.

56(38) XUAIRBR TIC IR/BR register	58(3A) XUASCB System command block (6 bytes) <hr style="border-top: 1px dashed black;"/> XUASCBCM SCB command
60(3C) XUASCB (Continued)	
<hr style="border-top: 1px dashed black;"/> XUASCBPL Parameters list address (4 bytes)	
64(40) XUASSB System status block (8 bytes)	66(42) XUASSBCB SSB completion bytes
XUASSBTY SSB type	XUASSB1*
68(44) XUASSBCB (Continued)	70(46) XUASSBCB (Continued)
72(48) XUADLLB Pointer to the dummy logical link block (LLB)	
XUANBRLS Receive lists number	
76(4C) XUATRPCR TIC control register	78(4E) Reserved
80(50) XUAIDLL Pointer to the IP dummy logical link block (LLB)	
84(54) Reserved	
88(58) Reserved	

* Indicates a byte expansion follows.

92(5C)		Reserved	
96(60)		Reserved	
100(64)		102(66)	
XUATABYT Tag address (TA) for programmed input/output (PIO) retry		XUATDBYT Tag data (TD) for PIO retry	
-----		-----	
XUATAHI High byte of TA for PIO retry		101(65) XUATALO Low byte of TA for PIO retry	
104(68) - 111(6F)			
XUAACST Adapter check status (8 bytes)			
112(70) - 125(7D)			
XUAAPCT Attached product counters			

126(7E)			
XUATRPTR* Initialization interrupt register			
128(80)			
XUA1RPTR Pointer to the first receive list of the chain			
XUAROPN Open retry count			
132(84)			
XUA1XPTR Pointer to the first transmit list of the chain			
XUANBXLS Number of transmit lists			
-----		-----	
136(88)		138(8A)	
XUASCBCP SCB command pending		XUAADPTR Adapter parameters pointer	
XUASCBCD*		137(89) XUASCBP2*	
140(8C)		142(8E)	
XUARISTA* Ring status received by ECLML2 routine		XUASSBOE SSB copy when open error	

* Indicates a byte expansion follows.

144(90) XUANBTBL Number of buffers to be leased		146(92) XUACBIP Initialization list	
		XUAINOPT* Byte 0	147(93) XUATIC2F* Byte 1
148(94) XUAVT CMD Byte 2 X'01' Command status vector	149(95) XUAVTXMT Byte 3 X'02' Transmit command status vector	150(96) XUAVTRCV Byte 4 X'03' Receive command status vector	151(97) XUAVTRST Byte 5 X'04' Ring status vector
152(98) XUAVTSCB Byte 6 X'20' Station control block (SCB) status vector	153(99) XUAVTACK Byte 7 X'10' Adapter check vector	154(9A) XUARCVBS Byte 8, Byte 9 Receive burst size '0040'	
156(9C) XUAXMTBS Byte 10, Byte 11 Transmit burst size '0040'		158(9E) XUADMAAT Byte 12, Byte 13 DMA abort threshold X'0505'	
160(A0) XUASCBAD Byte 14 - Byte 17 SCB address (4 bytes)			
164(A4) XUASSBAD Byte 18 - Byte 21 SSB address (4 bytes)			

* Indicates a byte expansion follows.

Byte Expansions

Offset/Field Name	Bit Pattern/ Hex Value	Contents
2(2) XUAMACS		MAC status
	X'00'	Idle
	X'03'	Open started
	X'10'	Started
	X'11'	Resetting hard
	X'12'	Initialization list transfer
	X'13'	Receive initialization
	X'17'	Close in progress
	X'21'	TIC resetting soft
	X'22'	Initialized
	X'23'	Transmit initialization
	X'27'	Closed
	1...	Frozen TIC indication
	.1..	Not reinitialized after disconnect (TRM or TIC)
3(3) XUAFL3		MAC level 3 flags
	1...	Buffer depletion
	.1..	Waiting for transmit lists
	...1	Beacon in progress
	.... 1..	Read last beacon type command issued
	.... .1..	TIC frozen to NTRI only
8(8) XUAFL2		MAC flag level 2
	1...	PIO retry counter (XUARPIO)
	.1..	Next receive list busy (XUANRLB)
	..1.	DMA retry counter (XUARDMA)
	...1	Deadman timer interrupt occurred (XUADMT)
	.... 1..	Transmit inhibited (XUAXINH)
	.... .1..	TRM down (XUARTRM)
	.... ..1.	Discard received frame (XUADRF)
12(C) XUAALI		Activate link inhibited
	X'00'	Activation not inhibited
	X'80'	Link activation inhibited
24(18) XUAFL3B		MAC flags level 3
	1...	IOH for TIC are to be traced
	.1..	IOH for TRM are to be traced
	..1.	SCB available
	...1	Activate FIT command sent
	.... 1..	Deactivate FIT command sent
	.... ..1.	Read storage address command request
28(1C)* XUARPUCT		Retry count for purge mode
	X'03'	Maximum purge mode retry number

Offset/Field Name	Bit Pattern/ Hex Value	Contents
66(42) XUASSB1		SSB completion bytes

Note: Byte XUASSB1 has different meaning depending on the low order byte of XUASSBTY.

	Ring status change: XUASSBTY = X'XX01'
Byte 0	
1...	Signal loss
.1..	Hard error
..1.	Soft error
...1	Transmit beacon
.... 1..	Lobe wire fault
.... .1..	Autoremoval 1 error
.... ..1.	Autoremoval 2 error
.... ...1	Remove received
Byte 1	
1...	Counter overflow
.1..	Single station
	Command rejected: XUASSBTY = X'XXFF'
1...	Illegal command
.1..	Address error
..1.	Adapter open
...1	Adapter closed
.... 1..	Same command
	Transmit completion: XUASSBTY = X'XX04'
Byte 0	
1...	Command complete
.1..	Frame complete
..1.	List error
Byte 1	
1...	Frame size
.1..	Transmit threshold
..1.	Odd address
...1	Start of frame
.... 1..	Unauthorized access priority
.... .1..	Unauthorized MAC frame
	Open completion: XUASSBTY = X'XX03'
Byte 0	
1...	Adapter opened
.1..	Node address error
..1.	List size error
...1	Buffer size error
.... 1..	External RAM error
.... .1..	Transmit buffer count error
.... ..1.	Open error
Byte 1	
xxxx	Open phase
.... xxxx	Open error code

Offset/Field Name	Bit Pattern/ Hex Value	Contents
		Receive completion: XUASSBTY = X'XX06'
	1... ..	Frame complete
	.1.. ..	Receive suspended
		Close completion: XUASSBTY = X'XX07'
	1... ..	Adapter closed
		Read error log completion: XUASSBTY = X'XX0A'
	1... ..	Command complete
		Read adapter completion: XUASSBTY = X'XX1B'
	1... ..	Command complete
102(66) XUATDBYT		TD for PIO retry
	Byte 0	
	xxxx ..	TD zone TIC 0
	.... xxxx	TD zone TIC 1
	Byte 1	
	xxxx ..	TD zone TIC 2
	.... xxxx	TD zone TIC 3
126(7E) XUATRPPIR		Initialization interrupt register
	Byte 0	
	1... ..	Interrupt adapter
	.1.. ..	Adapter reset
	..1.	SSB clear
	...1	Execute
	.... 1...	SCB request
	.... .1..	Receive continue
	.... ..1.	Receive valid
	.... ...1	Transmit valid
	Byte 1	
	1... ..	Reset system interrupt
	.1.. ..	Initialization
	..1.	Test
	...1	Error
	.... 1...	Hard error code
136(88) XUASCBCD	Byte 0	SCB command pending
	X'01'	Open
	X'02'	Transmit initialization
	X'03'	Receive initialization
	X'04'	Read error log
	X'05'	Close
	X'06'	Read adapter at offset 04
	X'07'	Read adapter at offset 28
	X'08'	Read adapter at offset 54
	X'09'	Deadman timer
	X'0A'	Read adapter at offset 34

Offset/Field Name	Bit Pattern/ Hex Value	Contents
137(89) XUASCBP2	Byte 1	SCB command pending
	1... ..	Start TIC trace pending
	.1... ..	Stop TIC trace pending
	..1.	Stop backup timer command pending
140(8C) XUARISTA		Ring status received
	Byte 0	
	1... ..	Signal loss
	.1... ..	Hard error
	..1.	Soft error
	...1	Transmit beacon
	.... 1...	Lobe wire fault
	.... .1..	Autoremoval 1 error
	.... ...1	Remove received
	Byte 1	
	1... ..	Counter overflow
	.1... ..	Single station
	..1.	Ring recovery
146(92) XUAINOPT		Initialization options
	1... ..	Reserved
	.11.	Parity enable
	...1	Burst SCB or SSB
	.... 1...	Burst list
	.... .1..	Burst list status
	.... ..1.	Burst receive data
	.... ...1	Burst transmit data
147(93) XUATIC2F		TIC 2 flags
	.1... ..	Token-ring speed 16 Megabyte
	..1.	Early token release
	...1	Non-FID 2 enable

Acronyms, Abbreviations, and Bibliography

List of Acronyms and Abbreviations	X-3
Bibliography	X-13
NCP, SSP, and EP Library	X-13
Other Networking Systems Products Libraries	X-13
Networking Systems Library	X-14
VTAM Library	X-14
NPSI Library	X-14
NTune Library	X-14
NetView Library	X-14
NPM Library	X-15
Related Publications	X-15
IBM 3745 Communication Controller Publications	X-15
SNA Publications	X-15

List of Acronyms and Abbreviations

Acronym	Meaning	BGS	background save area
AAB	achain anchor block	BH	buffer prefix
AARR	allow additional register range	BHD	block handler driver table
AB	abort call	BHR	block handler routine
ABN	abend control block	BHS	block handler set
ABNX	abend control block extension	BISSQ	boundary inbound session started queue
ACB	adapter control block	BLU	basic link unit
ACF	Advanced Communications Function	BOQ	boundary out queue
ACK	acknowledgment	BOSSQ	boundary outbound session started queue
ACR	Abandon Call and Retry	BPB	destination boundary pool (BPOOL) block
ACT	ACB trace control block	BPT	boundary function processor address table
ACU	auto call unit	BSB	boundary session block
AEB	achain element block	BSC	binary synchronous communication
AII	adapter ID index	BST	block handler set table
AIO	adapter input/output	BTT	branch trace table
AIT	adapter information table	BTU	basic transmission unit
ALC	airline line control	BUE	switched backup extension to the DVB
ALCA	airline line control adapter	BXI	boundary session block extension
ALS	adjacent link station	CA	channel adapter
ANS	automatic network shutdown	CAB	channel adapter control block
APPN	advanced peer-to-peer networking	CAC	character address counter
ASC	auto-selection chain	CACM	channel adapter concurrent maintenance
ASCII	American National Standard Code for Information Interchange	CADS	channel adapter data streaming
AST	adapter status table	CAP	channel adapter parameter table
ATB	address trace block	CAT	channel adapter trace select table
ATO	attention timeout	CAVT	channel adapter vector table
ATT	ACB trace table control block	CBB	committed buffers block
AVB	address vector control block	CBC	Controller bus coupler
AXB	adapter control block extension	CBT	conditional branch trace
BAR	buffer address register	CCB	character control block
BB	begin bracket	CCBX	character control block general purpose extension
BCA	Boundary channel attachment	CCLID	called/calling line identifier
BCC	Block Check Character	CCP	communication control program
BCT	BFSESSINFO PIU control table		
BCU	block control unit		
BER	box event record		
BF	boundary function		

CCT	character control block for trace	CSW	channel status word
CCU	communication control unit	CTB	communication line timer and RAS control table
CCW	channel command word	CTS	Clear to Send
CDDO	cycle-steal dynadump data out queue	CTT	table of CNVT pointers
CDRM	Cross-domain Resource Manager	CUB	common physical unit block
CDS	configuration data set	CUC	cycle utilization counter
CE	channel end	CV	control vector
CER	channel adapter error recovery procedure control block	CWI	change window indicator
CFI	call failure indication	CWRI	change window reset indicator
CGP	cluster general poll control block extension to the DVB	CXB	common physical unit block extension
CHCB	channel control block	CXI	common physical unit block extension for embedded blocks
CHVT	channel vector table	DA	destination address
CICP	communication interrupt control program	DAE	device addressing extension
CIE	call-in extension	DAF	destination address field
CIOT	channel adapter IOH trace table	DCD	data carrier detect
CLAB	channel and line attachment board	DCE	data communication equipment
CLDP	controller load/dump program	DCF	data count field
Cmd. Tbl.	command table	DDB	dummy data buffer
CNM	communications network management	DE	device end
COE	callout extension	DEF	destination element address
COS	Call Originator Status or class of service	DFC	data flow control
CP	control point	DGP	general poll extension
CPIT	control program information table	DIA	device input area
CPM	control point manager	DLC	data link control or delayed call
CPN	control point notification queue	DLE	data link escape
CPS	call progress signal	DLO	data line occupied or Deactivate Line Orderly
CRB	commit request block	DM	disconnect mode
CRC	cyclic redundancy check	DMA	direct memory access
CRP	check record pool	DPR	Digit Present
CRQ	Call Request	DPT	dispatch priority table
CSGC	cycle steal grant chain	DQB	dispatch queue block
CSP	communication scanner processor	DR	dynamic reconfiguration
CSPA	communication scanner processor address	DRS	Data Rate Select or display/refresh/select table
CSS	Connectivity subsystem, 3746 Model 900	D/S	data/status
CSTAT	command status	DSA	destination subarea address
		DSAP	destination service access point
		DSI	data service in

DSP	dispatch table	ESA	extended subarea addressing
DSR	data set ready	ESC	emulator subchannel
DTE	data terminal equipment	ESCA	ESCON Channel Adapter
DTG	date and time generation control block	ESCON	Enterprise Systems Connection
DTL	DLCI to LLB table	ET	engaged tone
DTQ	dynadump timer queue	ETB	End of Text Block
DTR	Data Terminal Ready	ETX	End of Text
DVB	device base control block	FAE	fixed ARP entries table
EB	end bracket	FAX	fullword direct addressable extension
EBCDIC	extended binary-coded decimal interchange code	FC	forbidden call
EC	engineering change	FCT	flow control parameter table
ECB	event control block	FDX	full duplex
ECDDT	EBCDIC Character Decode Displacement	FES	front end scanner
ECO	Ethernet counters overlay	FESA	front end scanner adapter
ECT	statistical counters control block	FID	format identification
EF	Ethernet frame	FIGS	figures shift
EFH	Ethenet frame header	FLB	multilink transmission group (fat link) control block
EFST	Ethernet frames supported table	FM	function manager
EIA	external interface adapter	FMD	function management data
EIB	End of Intermediate Block	FMT	function management table
ELCS	extended line communication status	FNA	free network address
ENI	Ethernet interface control block	FRH	frame relay frame header
EML	ER-to-VR mapping list	FRMR	frame reject
ENA	extended network addressing	FVT	function vector table
ENQ	enquiry	GCB	group control block
EOB	End of Block	GCBB	group control block for the boundary channel attachment
EOM	End of Message	GPA	generic pool anchor block
EOR	End of Reception	GPB	generic pool block
EOT	End of Transmission	GPT	generalized PIU trace
EP	Emulation Program	GRW	gateway RNAA workarea
EPINITAB	EP initialization table	GVT	gateway vector of tasks
EQB	event queue block	GW	gateway
ER	explicit route	HDLC	high-level data link control
ERB	explicit route broadcast queue	HDX	half duplex
ERN	explicit route number	HEB	hash entry control block
ER OP	Explicit Route Operative	HPTSS	high-performance transmission subsystem
ERP	error recovery procedure	HRE	host route entry
ERRCN	error cause	HRT	host route table control block

HSB	half session block	IPC	Internet protocol congestion control block
HSH	Token-ring hashing table	IPH	Internet protocol datagram header
HTAB	hashing table	IPS	Internet protocol router statistics control block
HW	halfword	IPT	internal PIU trace
HWE	extended halfword direct addressable control block	IPX	IP router statistics control block extension
HWX	extended halfword direct addressable control block extension	ITB	intermediate text block
IAR	instruction address register	I/O	input/output
ICC	interface control card	LA	line adapter
ICE	initial command execution or initial command execution routing address table	LAA	lookahead buffer
ICP	interface control program	LACB	processor-NCP ODLIC adaptor control block
ICS	initial control sequence	LAE	local address entry control block
ICT	incident count refresh table	LAN	local area network
ICW	initial control word	LAR	lagging address register
IDDT	interface disconnect dispatcher table	LAT	local address table control block
IDE	identification list entry	LATO	link activity time-out
IDL	identification list header	LCB	line control block (BSC/SS)
IDQ	Internet protocol datagram queue control block	LCC	channelization extension
IEEE	Institute of Electrical and Electronics Engineers	LCD	line control definition
IFD	Interface Disconnect	LCDI	logical connections device input
IGR	Internet protocol gateway routes table	LCP	lost control point block
IIT	Internet protocol interface initialization table	LCS	line communication status
IM	intensive mode	LCST	line control selection table
IMD	Internet protocol message protocol message data area	LDA	logical unit block extension data area
IMH	Internet protocol message protocol message header	LDP	processor-NCP dynamic PSA
INC	incoming call	LDPSA	Processor to NCP dynamic parameter status area
INH	IP/token-ring frame header	LFR	LMI frame formats
INOP	inoperative	LGT	line group table
INV	invalid	LH	link header
IOB	input/output block	LIBQ	link inbound queue
IOC	input/output controller	LIC	line interface coupler
IOH	input/output halfword	LIT	line interface coupler
IOHI	input/output halfword immediate	LIQ	link inbound queue
IOP	Internet protocol option data format	LKB	line control block (SDLC)
		LKC	channelization extension
		LKE	line control block extension
		LL	logical link
		LLB	logical link control block

LLBAT	logical link block address table	LUX	logical unit block extension
LLC	logical link control	LXB	link XIO control block
LLUA	logical link adapter control block	LXC	logical link block common extension
LLX	logical link block extension	LXL	LLB LMI extension
LL2	link test level 2	L1B	level-1 control block
LMB	processor control block	L1X	level-1 control block extension
LME	processor control block extension	L4B	level-4 router control block
LMET	processor control block extension table	MAC	medium access control
LNB	logical unit network address control block	MAU	multistation access unit
LND	dependent logical unit control block	MBF	MOSS buffer format
LNID	line identifier	MEX	MOSS mailbox
LNK	NCST link session control block	MCT	machine configuration table
LNVT	line vector table	MDR	miscellaneous data recorder
LOBQ	link outbound queue	MIA	MAC interface area
LOSQ	link outstanding queue	MIB	NMVT information block
LPB	link problem buffer	MIF	MOSS interface control block
LPDA	link problem determination aid	MIT	MOSS interface table
LPR	LPDA2 response buffer layout	MLT	SSCP monitor mode link table
LPX	LPDA2 command (transmit) buffer layout	MMIO	memory mapped input/output
LPSA	processor-NCP parameter/status area control block	MMVT	NMVT major vector table
LQP	line quiesce pending queue	MOSS	maintenance and operator subsystem
LRB	logical unit routing block	MPT	modem parameter table
LRC	link resource control	MSCT	NMVT command and subfunction router table
LRVT	logical resource vector table	MSLA	multi-subchannel line access
LSA	link services architecture	MTA	multiple terminal access
LSP	LU-LU session pacing criteria	MTF	mailbox trace facility
LSS	low-speed scanner	MUX	multiplexer
LT	line trace	NACB	NCP-processor ODLC adapter control block
LTCB	line trace control block	NAK	negative acknowledgment
LTR	line trace return address save area	NAS	NTRI action scheduler
LTRS	letters shift	NAU	network addressable unit
LTS	line test control block	NAUN	nearest active upstream neighbor
LTVT	line trace vector table	NC	network control
LTX	logical unit terminal node extension	NCP	Network Control Program
LU	logical unit	NDB	NPM data block
LUB	logical unit control block	NDP	NCP-processor dynamic PSA
LUNT	logical unit block NETID table	NDPSA	NCP to processor dynamic parameter status area
LUV	logical unit vector table	NDR	NPM DR history control block

NED	node element descriptor	NRQ	NCP-NCPROUTE timer processing queue
NEO	network enhancement option	NRT	network route Table control block
NEOG	network enhancement option global control block	NRZI	non-return to zero inverted recording
NEOR	network enhancement option router control block	NS	network services
NEQ	node element qualifier	NSA	network performance analyzer session accounting block
NET	NCP-activated explicit routes table	NSC	network performance analyzer session counters
NETID	network identifier	NSP	network performance analyzer sequence number and pacing control block
NGA	NPA gateway accounting control block	NSQ	nonsequential queue
NIA	NMVT interface area control block	NSX	network performance monitor session counter extensions block
NIB	network interconnect control block	NT	answer tone not detected
NIQ	NCP-RIP inactive interface list queue	NTN	NPA takeover notification control block
NIX	network interconnect extension	NTO	Network Terminal Option
NLB	programmed resource logical unit block	NTRI	NCP/token-ring interconnection
NLX	programmed resource logical unit block extension	NVT	network vector table
NMVT	network management vector transport	NVX	network vector table extension
NNNA	non-native network attachment	OAF	origin address field
NNT	network names table	OAX	owe ANS exchange
NPA	network performance analyzer	OCB	output QCB control block
NPB	programmed resource physical unit block	ODA	owners data area
NPDA	Network Problem Determination Aid	ODLC	Outboard data link control
NPF	network performance facility	OLT	online test
NPM	network performance monitor	OLTT	Online Terminal Test
NPSA	NCP-processor parameter/status area control block	OLTTCB	online terminal test control block
NPSI	Network Control Program Packet-Switching Interface	OLU	peripheral LU
NQB	network performance analyzer counter queue block	OP	operand
NQE	network performance analyzer counter queue element	PAC	physical address card
NQX	NPA counter queue element extension	PAD	pad character
N(R)	next receive sequence number	PAT	port address table
NRE	Network route entry	PBID	pseudo bid
NRF	Network Routing Facility	PCB	panel control block
NRP	NCP-NCPROUTE processing control block	PCF	primary control field
		PCI	program controlled interrupt
		PCID	procedure correlation identifier
		PDF	parallel data field
		PDSTAT	problem determination statistics

PEP	Partitioned Emulation Program	RCV	receive
PIB	NCST LU-SSCP session control block	RD	request disconnect
PIO	programmed input/output	RD	Receive Data
PIU	path information unit	RDA	routing data area control block
PL	physical link	RDF	routing data area for fragmentation control block
PLB	physical link control block	RDL	resource definition for an SDLC line, or token-ring line, or an ESCA line
PLBAT	physical link block address table	RDM	routing data area for fragment reassembly
PLM	physical link manager	RDO	routing data area for options processing
PLOBQ	physical link outbound queue	RDS	resource definition for an SDLC station, or token-ring station, or ESCA station
PLU	primary LU	RECFSM	record formatted maintenance statistics
PLUA	physical link adapter control block	RECMS	record maintenance statistics
PLX	physical link block extension	RECTRD	record trace data request/response unit
PMF	performance measurement facility	REJ	Reject
PN	peripheral node	REQMS	request maintenance statistics
PN	peripheral node	REX	route extension
PND	present next digit	RH	request/response header
PNK	NCST PU session control block	RI	routing information
PRB	physical unit routing block	RIB	route interface control block
PRI	program requested interrupt	RIM	Request Initialization Mode
PRID	procedure identifier	RLN	relative line number
PRM	parameter list	RLSD	receive line signal detect
PS	presentation services	RLWI	request larger window indicator
PSA	parameter/status area or parameter/status area control block	RMB	route management block
PSB	physical services control block	RNAA	request network address assignment
PSD	port swap data	RNR	Receive Not Ready
PSI	product set identifier	RPO	Remote Power Off
PSTA	port swap trace table (3745)	RQD	request disconnect
PU	physical unit	RR	Receive Ready
PUV	physical unit vector table	RRT	resource resolution table
PWI	Power Indicator	RSP	required space character
QAB	queue anchor block	RST	route status table
QAN	queue anchor block for a network	RT	ring tone
QAX	queue anchor block extension	RTS	Request to Send
QCB	queue control block	RU	request/response unit
QPB	queue pointer block	RVB	resource vector control block
RAS	reliability, availability, serviceability		
RAT	route activation table		
RCB	resource connection block		
RCQ	route control queue		

RVDT	receive data	SOH	Start of Header
RVI	Reverse Interrupt	SON	session outage notification
RVT	resource vector table	SOQ	service out queue
RWI	reset window indicator	SOT	service order table
RXLIS	receive or transmit list control block	SPC	session path control block
SA	source address	SPLU	session partner logical unit
SABME	Set Asynchronous Balanced Mode Extended	SRE	subnetwork route entry
SC	session control	SRT	subnetwork route table control block
SCB	station control block or system command block (TRSS only)	SS	start-stop
SCE	station control block extension	SSA	set session address
SCF	secondary control field	SSAP	source service access point
SCT	SNA-IP interface counters control block	SSB	system status block
SDF	serial data field	SSC	service-seeking control block
SDLC	synchronous data link control	SSCP	system services control point
SEB	search element control block	SSI	SNA-IP session interface control block
SES	secondary ending status	SSP	System Support Programs
SGE	switched line group entry	SST	subareas serviced table
SGT	switched line group table	STE	selection table entry
SHB	search tree header control block	STX	Start of Text
SIB	NCST PLU-SLU session control block	SVC	supervisor call
SID	send identifier	SVT	subarea vector table
SIM	Set Initialization Mode	SWT	SMMF switched table
SIR	session information retrieval	SXB	station control block extension
SIT	scanner interface trace or subarea index table	SYN	synchronous idle
SLB	ESCA link control block	SYSGEN	system generation
SLU	secondary logical unit	TA	tag address
SM	status modifier	TAT	token-ring logical station address table
SMB	set mode control block	TCB	test control block
SMM	SSCP monitor mode control block	TCC	transmit correlation counter
SMMF	SSCP monitor mode function	TET	timer extension table
SNA	Systems Network Architecture	TD	tag data
SNAP	SNAP trace table for ODLC	TG	transmission group
SNI	SNA network interconnect	TGB	transmission group control block
SNP	SSCP-NCP session control block	TGN	transmission group number
SNRM	Set Normal Response Mode	TH	transmission header
SNRM	Set Normal Response Mode (extended)	TI	Test Indicator
		TIC	token-ring interface coupler
		TIO	test input/output
		TKO	takeover

TLB	token-ring line block extension	UTS	usage tier status block
TLNVT	trace line vector table	VAT	virtual route access table or virtual route subarea index table
TND	time and date control block	VC	virtual circuit
TON	takeover notification	VIT	virtual route access table
TPF	transmission priority field	VLB	programmed resource virtual line block
TPS	two-processor switch	VOS	virtual route out-of-sequence or virtual route out-of-sequence block
TRA	token-ring adapter	VR	virtual route
TRB	trace control block	VRB	virtual route control block
TRE	trace control block extension	VRC	vertical redundancy check character or virtual route control
TRLA	token-ring line adapter	VRID	virtual route identifier
TRPL	token-ring physical line table	VRL	virtual route activation work list
TRM	token-ring multiplexer	VRN	virtual route number
TRSS	token-ring subsystem	VRPRS	virtual route pace response
TRT	transit routing table	VRQ	virtual route congested alert task AAB
TRX	trace ACB extension	VST	virtual route status table
TSB	token-ring logical station block extension	VTQ	virtual route congested alert timer queue
TSS	transmission subsystem	VTAM	Virtual Telecommunications Access Method
TTY	teletypewriter	VTS	vector table of SNPs
TVS	time value select table	VVT	virtual route vector table
TWA	two-way alternating	WACK	weak acknowledgment
TWS	two way simultaneous	WCB	wrap control block
TWX	teletypewriter exchange service	WRP	wrap manager control block
UA	unnumbered acknowledgment	WTTY	world trade teletypewriter
UAB	user adapter control block for the BCA	XAP	transport access point table
UACB	user adapter control block	XDA	word direct addressable storage control block
UAQ	user accounting notification queue	XDB	byte direct addressable storage control block
UAT	user accounting notification table	XDH	halfword direct addressable storage control block
UBO	undefined but operative block	XI	X.25 SNA interconnection
UC	unit check	XID	Exchange Identification or exchange identification data block
UCTT	table of UCNVT pointers	XID3	XID type 3
UIB	unit information block	XIO	transfer input/output
UIC	user interface control block	XOFF	transmitter off
ULVT	user line vector table	XON	transmitter on
UMD	user datagram protocol message data area		
UMH	user datagram protocol message header		
UNP	Unnumbered Poll or Unnumbered Poll Response		
USCCB	unassigned subchannel control block		

X/R

transmit/receive

XRF

extended recovery facility

XUA

physical link adapter control block
extension

Bibliography

NCP, SSP, and EP Library

The following paragraphs briefly describe the library for NCP, SSP, and EP. The other books dealing with the networking systems products—VTAM, NPSI, the NetView program, and NPM—are listed without the accompanying descriptions.

NCP V7R2, SSP V4R2, and EP R12 Library Directory (SC31-6259)

This book helps users locate information on a variety of NCP, SSP, and EP tasks. It also provides a high-level understanding of NCP, SSP, and EP and summarizes the changes to these products and to the library for NCP V7R2, SSP V4R2, and EP R12.

NCP V7R2 Migration Guide (SC31-6258)

This book helps users migrate an NCP generation definition from an earlier release to NCP V7R2. It also describes how to add new functions for NCP V7R2.

NCP, SSP, and EP Resource Definition Guide (SC31-6223)

This book helps users understand how to define NCP and EP (in the PEP environment) using SSP. It describes functions and resources and lists the definition statements and keywords that define those functions and resources.

NCP, SSP, and EP Resource Definition Reference (SC31-6224)

This book helps users code definition statements and keywords to define NCP and EP (in the PEP environment) using SSP. It also provides a quick reference of definition statement coding order and keyword syntax.

NCP, SSP, and EP Generation and Loading Guide (SC31-6221)

This book provides detailed explanations of how to generate and load NCP and EP (in the PEP environment) using SSP. It contains information for generating and loading under MVS, VM, and VSE.

NCP and SSP Customization Guide (LY43-0031)

This book helps users who are familiar with the internal logic of NCP and SSP to modify these products. It describes how to change NCP and SSP to support stations that IBM-supplied programs do not support.

NCP and SSP Customization Reference (LY43-0032)

This book supplements the *NCP and SSP Customization Guide*. It describes the resources and macroinstructions provided by IBM for customizing NCP and SSP.

NCP, SSP, and EP Messages and Codes (SC31-6222)

This book is a reference book of abend codes issued by NCP and EP in the PEP environment, and messages issued by the system support programs associated with NCP.

NCP, SSP, and EP Diagnosis Guide (LY43-0033)

This book helps users isolate and define problems in NCP and EP (in the PEP environment) using SSP. The primary purpose of the book is to help the user interact with the IBM Support Center to resolve a problem. In addition, it explains some of the diagnostic aids and service aids available with SSP.

NCP, SSP, and EP Diagnosis Aid (LK2T-1999, diskettes)

The Diagnosis Aid is an OS/2 application used to diagnose NCP, SSP, and EP problems. This tool has all the information contained in the NCP, SSP, and EP Diagnosis Guide.

NCP and EP Reference (LY43-0029)

This book describes various aspects of the internal processing of NCP and EP in the PEP environment. It provides information for customization and diagnosis.

NCP and EP Reference Summary and Data Areas (LY43-0030)

This two-volume book provides quick access to often-used diagnostic and debugging information about NCP and EP in the PEP environment.

Other Networking Systems Products Libraries

The following books provide cross-product information for VTAM, NPSI, NetView, and NPM. For detailed information about these products refer to the library for each.

Networking Systems Library

The following list shows the books in the Networking Systems library.

Planning for NetView, NCP, and VTAM (SC31-7122)

Planning for Integrated Networks (SC31-7123)

Planning Aids: Pre-Installation Planning Checklist for NetView, NCP, and VTAM (SX75-0092)

IBM Networking Systems Softcopy Collection Kit (CD-ROM, SK2T-6012)

IBM Online Libraries: Softcopy Collection Kit User's Guide (GC28-1700)

VTAM Library

The following list shows the books in the VTAM V4R2 library.

VTAM Migration Guide (GC31-6416)

VTAM Release Guide (GC31-6441)

Estimating Storage for VTAM (SK2T-2006)

VTAM Network Implementation Guide (SC31-6419)

VTAM Resource Definition Reference (SC31-6427)

VTAM Resource Definition Samples (SC31-6428, book and diskettes)

VTAM Customization (LY43-0048)

VTAM Operation (SC31-6420)

VTAM Operation Quick Reference (SX75-0201)

Using IBM CommandTree/2 (SC31-7013)

VTAM Messages and Codes (SC31-6418)

VTAM Licensed Program Specifications (GC31-6417)

VTAM Programming (SC31-6421)

VTAM Programming Quick Reference (SX75-0202)

VTAM Programming for LU 6.2 (SC31-6425)

VTAM Diagnosis (LY43-0051)

VTAM Diagnosis Quick Reference (SX75-0203)

VTAM Data Areas for MVS (LY43-0049)

NPSI Library

The following list shows the books in the NPSI Version 3 library.

X.25 NCP Packet Switching Interface General Information (GC30-3469)

X.25 NCP Packet Switching Interface Planning and Installation (SC30-3470)

X.25 NCP Packet Switching Interface Host Programming (SC30-3502)

X.25 NCP Packet Switching Interface Diagnosis, Customization, and Tuning (LY30-5610)

X.25 NCP Packet Switching Interface Data Areas (LY43-0034)

X.25 NCP Packet Switching Interface Master Index (GC31-6206)

NTune Library

The following list shows the publications in the NTune library.

NTune User's Guide (SC31-6247)

NTuneNCP Reference (LY43-0035)

NetView Library

The following list shows the books in the NetView V2R4 library.

NetView General Information (GC31-7098)

Learning about NetView (SK2T-6017, diskettes)

Learning about NetView Graphic Monitor Facility (SK2T-6018, diskettes)

NetView Graphic Monitor Facility Reference Poster (SX75-0100)

NetView Automation Planning (SC31-7083)

NetView Storage Estimates (SK2T-6016, diskette for a PS/2 or a PS/55)

NetView Installation and Administration Guide (SC31-7084 for MVS)

NetView Installation and Administration Facility/2 Guide (or *NIAF/2 Guide*, SC31-7099)

NetView Administration Reference (SC31-7080)

NetView Bridge Implementation (SC31-6131)

NetView Tuning Guide (SC31-7079)

NetView Automation Implementation (LY43-0016)

NetView Customization Guide (SC31-7091)

NetView Customization: Writing Command Lists
(SC31-7092)

NetView Customization: Using PL/I and C (SC31-7093)

NetView Customization: Using Assembler (SC31-7094)

NetView Operation (SC31-7086)

NetView Graphic Monitor Facility User's Guide
(SC31-7089)

NetView Command Quick Reference (SX75-0090)

NetView Messages (SC31-7096)

NetView Resource Alerts Reference (SC31-7097)

NetView Application Programming Guide (SC31-7081)

*NetView Resource Object Data Manager Programming
Guide* (SC31-7095)

NetView Problem Determination and Diagnosis
(LY43-0101)

NPM Library

The following list shows the books in the NPM V2 library.

NetView Performance Monitor at a Glance (GH19-6960)

NetView Performance Monitor Concepts and Planning
(GH19-6961)

NetView Performance Monitor User's Guide
(SH19-6962)

NetView Performance Monitor Messages and Codes
(SH19-6966)

NetView Performance Monitor Graphic Subsystem
(SH19-6967)

*NetView Performance Monitor Installation and
Customization* (SH19-6964)

*NetView Performance Monitor Reports and Record
Formats* (SH19-6965)

NetView Performance Monitor Diagnosis (LY19-6381)

NetView Performance Monitor Desk/2 User's Guide
(SH19-6963)

Related Publications

The following publications, though not directly related to NCP, may be helpful in understanding your network.

IBM 3745 Communication Controller Publications

The following list shows selected publications for the IBM 3745 Communication Controller.

*IBM 3745 Communication Controller Introduction for the
3745-210, 3745-310, 3745-410, 3745-610* (GA33-0092)

*IBM 3745 Communication Controller Introduction for the
3745-130, 3745-150, 3745-170* (GA33-0138)

*IBM 3745 Communication Controller Configuration
Program* (GA33-0093)

IBM 3745 Principles of Operation (SA33-0102)

SNA Publications

The following publications contain information on SNA.

Systems Network Architecture Concepts and Products
(GC30-3072)

Systems Network Architecture Technical Overview
(GC30-3073)

*Systems Network Architecture Format and Protocol Ref-
erence Manual: Management Services* (SC30-3346)

Systems Network Architecture Formats (GA27-3136)

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