CDCNET 1.4
SOFTWARE
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CDCNET

The following documentation pertains to CDCNET 1.4 L716 (5709), as used with NOS and NOS/VE systems. It contains general notes and cautions, significant problems known at the time of release, incompatibilities between this release and past releases, notice of future changes, and manual errata.

Headings within the following CDCNET material may be suffixed with (NOS) or (NOS/VE). This notation is used to indicate which type of analyst the item is most relevant to, a NOS analyst or a NOS/VE analyst who is concerned with CDCNET installation and operation. Items with no suffix contain information that are relevant to both types of analysts.

Notes and Cautions

This section contains notes and cautions about CDCNET 1.4. It is provided to reduce problems and difficulties in the operation, maintenance, and use of CDCNET.

Upgrading CDCNET from Pre-NOS 2.5.2 L678 (NOS)

CDCNET upgrades on NOS replace some network files so it is important to know incompatibilities before upgrading. To get this information, read all SRBs between your current level and the level to which you are upgrading. Any SRB you do not have can be ordered from Software Manufacturing and Distribution.

- NOS 2.5.1 L664 SRB (CDCNET 1.0) SMD documentation number SMD131180
- NOS 2.5.1 L670 SRB (CDCNET 1.1) SMD documentation number SMD131244
- NOS 2.5.2 L678 SRB (CDCNET 1.2) SMD documentation number SMD131321
- NOS 2.5.3 L688 SRB (CDCNET 1.2.5) SMD documentation number SMD131530
- NOS 2.6.1 L700 SRB (CDCNET 1.3) SMD documentation number SMD131768

Backing Up to CDCNET 1.3 from 1.4

Certain configuration information (such as the date) is preserved across a CDCNET system reset. When CDCNET first comes up or when the preserved configuration information is somehow corrupted, default values are used. A system operates properly with the defaults. However, there are some visual side effects. For example, the first log messages have a time stamp of 1/1/86 and the last reset time on the system status display shows 1/1/86, until the clock is synchronized with a master clock.

A CDCNET 1.4 level system preserves additional configuration information across a system reset. Unfortunately, a pre-CDCNET 1.4 system interprets information preserved by CDCNET 1.4 as being corrupted.

Level 700 BCU Corrections in This Release

CDCNET 1.4 contains all the corrections in the CDCNET 1.3.1 L700DS (4613) Batch Corrective Update, except for PSRs AC10913, AC10918, and AC1J041. These PSRs will be available in the first BCU release for CDCNET 1.4.

DI Reset Code 40

A DI configures itself from information contained within its configuration file. However, before a DI can access its configuration file, some basic configuration must be known. For example, data buffer size must be known in order to create system data buffers.

A DI resets itself with reset code 40 if it determines that basic configuration from the configuration file differs from what is being used. This reset ensures that the DI is configured and operates as intended by the site. No dump is taken since this reset is a normal part of DI configuration.

One or two resets (code of 40) is normal when changing configuration or software release levels. The second reset occurs if the first reset resulted in changing how PMM should be used for optimal performance.

DEFINE_NP_TERMINAL_GATEWAY Restrictions (NOS)

The DEFINE_NP_TERMINAL_GATEWAY (DEFNTG) command allows a list of 1..15 titles to be specified for the BATCH_TITLE parameter, but only the first title is valid. You should specify only one title for this parameter and each title defined must be unique in the network. The BATCH_TITLE parameter will be changed in a future release to allow specification of only one title. You should ensure that all your configuration files are changed at this release.

Printer VFU Carry Over

The CDC537 printer can be used as either a non-VFU or a VFU device depending on configuration. When reconfiguring a device interface (DI) with a VFU printer device to a non-VFU printer device, you should power the printer off and on. Doing this clears the current VFU load procedure from the printer's memory which prevents any of its old settings from being carried forward to the new non-VFU configuration.

Hexadecimal Zeroes for URI Printers

Prior to CDCNET 1.4, if binary zeroes occurred in a print file to be processed by the URI TIP, the zeroes would cause the printer to skip lines, skip pages, and the data character following the zero would not print because the binary zero is a special escape code used by the URI TIP. In CDCNET 1.4, if a binary zero is detected in a print file after the CODE_SET translation is done, a blank is substituted for the zero.

DEFINE_TCPIP_GW Command Needed for NFS

The DEFINE_TCPIP_GW command is needed to define a gateway used by the CDCNET TCP/IP and Network File System (NFS) separately priced products. The TCP protocol must be specified for the TCP/IP file transfer protocol FTP. The TCP and UDP protocols must be specified for the TCP/IP network file server NFS. For example, the TCP/IP gateway for a CYBER 930-31 having a serial number of 121 is defined as follows:

```
DEFINE_TCPIP_GW GATEWAY_NAME=name TITLE=GW_TCPIP_9303_121 ..
  PROTOCOL=(TCP,UDP)
```

where name is any SCL name (31 characters or less). The title parameter value has a fixed format of GW_TCPIP followed by the mainframe identifier. Since this title can only be defined once, the TCP and UDP protocols must be specified together for both FTP and NFS applications to be active on the CYBER mainframe.

Therefore, if it is necessary to deactivate either FTP or NFS and to stop and cancel the TCP/IP gateway, both FTP and NFS are affected since each one has a passive connection established to the same gateway. There is currently no command to independently stop, cancel, and restart the gateway's TCP and UDP protocol interfaces.

Network Transfer Facility (NOS/VE)

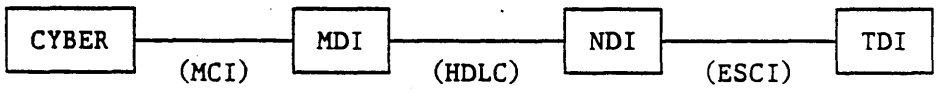
The following items apply for connections to BITNET, EARN or NETNORTH:

1. The DI must contain at least two megabytes of memory. The additional memory is required to store configuration information for the 2300 nodes in these networks.

2. The DI and corresponding NOS/VE system running the Status and Control Facility Server for the NTF remote systems experience a temporary performance degradation (up to 10 minutes) when a line to the BITNET, EARN, or NETNORTH networks is activated. This processing time is required to configure the 2300 nodes in these networks.

Supporting Remote Networks

Since CDCNET 1.2.5 L688, installations like the one in the diagram below may have experienced difficulty in configuring and loading DIs on remote Ethernets.



CDCNET 1.3 L700 gave the site administrator the capability of redefining the cost of the network over which the DI was booted. This allows a considerable improvement in the TUP execution time and the DI load time on a remote network (and in some cases permits the loading of a DI that cannot currently be loaded.)

Changing the cost of a network solution to a very low value (1) is advised if that network solution is the only path between a network solution and a host or other network solution.

It is not recommended that the network cost of a slow network be set lower than the faster networks except in the case described above; otherwise the site may experience unreasonably long response times and poor network performance.

Synchronous RS232 LIM Configurations

Problems such as slow and/or unsuccessful HDLC loading have been traced to a clocking problem that exists on some of the later versions of the RS232 4-port LIM. The problem only occurs when the LIM is used in synchronous mode utilizing an external clock source, such as a modem. Although problems have only been reported relative to HDLC loading, other synchronous configurations could be affected and would be evidenced by excessive retransmissions. Sites experiencing problems while using an RS232 4-port LIM in a synchronous mode should contact CYBER Software Support. Since the nature of the problem is clocking, asynchronous configurations are not affected.

Default IP Gateway

If an IP network number of 0 (zero) is defined using the DEFINE_IP_NET command, the default gateway is defined. A default gateway is used to route IP datagrams destined for IP networks/subnets that do not reside in IP routing tables, to a pre-configured IP gateway/router. If the IP network/subnet does reside in the IP routing tables, the IP router associated with the routing table entry is used.

If a default gateway is configured, ARP proxy requests are not sent on all directly connected IP networks/subnets.

The following command redefines the default gateway as 192.12.251.61.

```
DEFINE_IP_NET IP_NETWORK = 0 IP_ADDRESS = (192,12,251,61) HOP_COUNT = 1
```

Transparent Timeout Interval

The Interactive Passthrough Gateway currently sets the TTI (TRANSPARENT_TIMEOUT_INTERVAL) attribute to 2. For a 9600 Baud passthrough line, this has the net affect of a 20 millisecond intercharacter timer value. For some sites, especially those with non-flow controlled devices connected to passthrough services, this intercharacter timer value may not be long enough to prevent CDCNET from imposing flow control on the device.

Sites with this problem can include a CHANGE_CONNECTION_ATTRIBUTE TTI=xx command in their server TUP. The TTI attribute value specified is set for the server connection and is also mapped onto the client connection. Sites wishing to set a new TTI value only on the client connection can do a BRK CTL-X %CHANGE_CONNECTION_ATTRIBUTE TTI=xx from the client side.

ESCI Subsystem Improvements

Various changes have been made to the ESCI subsystem to resolve problems identified in previous releases of CDCNET. They include:

1. Large numbers of Log 1200 messages issued

   The protocol employed for Ethernet data transfer inherently results in collisions between transmitting systems. These collisions can result in a large number of messages received with CRC and/or alignment errors. Typically, these messages are less than 12 bytes and contain a data pattern consisting of all binary ones. The ESCI subsystem has been changed to more effectively handle reception of these messages. The effects of this change include a reduction in the number of log 1200 messages issued by the ESCI subsystem, as well as reduced load on DIs during periods of frequent collisions.

2. Large numbers of PDUs discarded by INTRANET

   DIs sharing Ethernet trunks with non-CDCNET equipment receive broadcast and multicast messages that are not intended for the DI. These messages are passed up through the software layers to INTRANET, where it is determined that they are not destined for the DI and are discarded. The ESCI subsystem has been changed to, in most cases, immediately discard these messages, thus avoiding the overhead required in passing them up to INTRANET. The effects of this change include a reduction in the number of PDUs discarded by INTRANET, as well as reduced load on DIs sharing Ethernets with non-CDCNET equipment.

3. Improved ability to identify the originator of bad frames

   The normal error handling procedures of the ESCI subsystem identify and discard frames received with errors. The errors most frequently detected are CRC, Alignment, and Incorrect Length. The CRC and Alignment errors are currently reported by log message 1200 after a threshold of two occurrences within one minute has been reached. By eliminating this threshold, reducing the number of log 1200s issued for messages resulting from collisions, and including messages with Incorrect Status error in log 1200s, the information contained in this log message is more useful in identifying the originator of bad frames. Additionally, the log 1201 message has been created to report receipt of frames with Incorrect Length error. Identifying the originator of bad frames can be useful in troubleshooting problems with systems on an Ethernet.

4. ESCI resource errors

   ESCI resource errors occur when frames are received from an Ethernet faster than DI resources can be made available to accept them. To reduce this problem, the ESCI subsystem has been changed to allow more ESCI RAM to be available for received frames. Additionally, changes have been made to more efficiently handle the recycling of receive buffer resources consumed by discarded frames. These changes reduce the number of ESCI Resource errors during periods of frequent collisions, and for DIs sharing Ethernets with non-CDCNET equipment.

PostScript Printer Error Handling

A new device load procedure has been defined for terminal model POSTSCRIPT in CDCNET 1.4 to allow PostScript errors to be reported in the printer listing. This procedure, POSTSCRIPT_ERROR_HANDLER, causes a PostScript error handler procedure to be downloaded to the device each time the line becomes active.

NOTE

This procedure is required for terminal model POSTSCRIPT so you must add it to your site controlled procedure libraries. The procedure is in NOS/VE file $SYSTEM.CDCNET.VERSION_5709.SITE_CONTROLLED.PROCEDURES.DEVICE_LOAD. Use the CREATE_OBJECT_LIBRARY utility to add it to your working device load library $SYSTEM.CDCNET.SITE_CONTROLLED.PROCEDURES.DEVICE_LOAD.

The load procedure is installed to the NOS network administration user name file LP5709. Use the NOS procedures GETCP and REPCP to add it to your working load procedure library.

If a transparent file consisting of PostScript commands is sent to a PostScript printer (on NOS/VE) and PostScript syntax errors are detected in the file, the standard PostScript error handler terminates the file transfer and discards all data up to the END_OF_TEXT (EOT) indicator. Failure of a file to print completely may be due to not having an EOT code at the end of a transparent file. The EOT control code can be added to the end of a transparent file by using the DISPLAY_UNPRINTABLE_CHARACTERS option of the NOS/VE EDIT_FILE utility. If CDCNET banner pages and trailer pages are printed with transparent files, the EOT code is included in the banner page and trailer page.

If a file that is not in PostScript format is routed to a PostScript printer in transparent data mode, erroneous control codes can be sent to the PostScript printer, resulting in the loss of print files. Refer to the section entitled 'Printing Microcomputer Files on PostScript Printers' in the User Impact Bulletin. It contains ideas to avoid this problem.

If a NOS file in 6/12 display code ASCII format (such as a file created by the NOS Full Screen Editor (FSE) ASCII rather than ASCII8 edit option) is to be printed on a PostScript printer, the file must be converted with the FCOPY utility from ASCII (6/12 display code ASCII) to ASCII8 (7-bit in 12 bits ASCII) and the parameter EC=A9 must be specified on the NOS ROUTE command.

NOTE

Failure to do either of these steps can cause erroneous control codes to be sent to the PostScript printer, resulting in the loss of print files.

New Printer Terminal Model (XEROX_SPUR)

The Xerox 4050 printer must have a JDL (Job Descriptor Library) in order to print files. The library is created as a text file using the line editor provided in the Xerox operating system, thereby creating a JSL (Job Source Library). This JSL is then compiled by the PDL processor, creating the above mentioned JDL.

The TABLE and CRITERIA declarations can be used to setup the search criteria for various banner pages. For example:

1. NOS/VE Banner Format

```
TX:       TABLE     CONSTANT=(E='USER JOB NAME = ');
CX:       CRITERIA  CONSTANT=(18, 16, EQ, TX),LINENUM(1,20);

BANNER    TEST=(CX,OR,CY),HCOUNT=1,HRPTNA=(34,16),TYPE=BANNER;
```

2. NOS Banner Format

```
LX:       TABLE     CONSTANT=(E='UJN          = ');
MX:       CRITERIA  CONSTANT=(19, 15, EQ, LX),LINENUM(1,15);

BANNER    TEST=(MX,OR,MY),HCOUNT=1,HRPTNA=(34,6),TYPE=BANNER;
```

3. NOS/VE Trailer Format

```
TY:       TABLE     CONSTANT=(E=' LINES PRINTED = ');
CY:       CRITERIA  CONSTANT=(8, 15, EQ, TY),LINENUM(1,20);
```

4. NOS Trailer Format

```
LY:       TABLE     CONSTANT=(E=' UCLP,. ');
MY:       CRITERIA  CONSTANT=(8, 7, EQ, LY );
```

The above declarations indicate where the USER JOB NAME can be found on the banner page. This includes the exact line and column numbers. Banners can be setup for both the NOS and NOS/VE operating systems.

The VFU statement is used to assign output line numbers to printer carriage control channels. By using this statement and the ASSIGN parameter, channels can be assigned to line numbers. An example of one is as follows:

```
VFU1:     VFU  ASSIGN=(1,1),
               ASSIGN=(2,(1,3,5,7,9,11,13,15,17,19,21,
                          23,25,27,29,31,33,35,37,39,41,
                          43,45,47,49,51,53,55,57,59)),
               ASSIGN=(3,(1,4,7,10,13,16,19,22,25,28,31,
                          34,37,40,43,46,49,52,55,58)),
               ASSIGN=(4,(1,5,9,13,17,21,25,29,33,37,41,
                          45,49,53,57)),
               ASSIGN=(5,(1,6,11,16,21,26,31,36,41,46,51,
                          56)),
               ASSIGN=(6,(1,7,13,19,25,31,37,43,49,55)),
               ASSIGN=(7,(1,8,15,22,29,36,43,50,57)),
               ASSIGN=(8,60)
               ASSIGN=(9,(1,10,19,28,37,46,55)),
               ASSIGN=(10,(1,11,21,31,41,51)),
               ASSIGN=(11,(1,12,23,34,45,56)),
               ASSIGN=(12,58),          TOF=1,BOF=60;
```

This VFU block could be defined for a standard letter form of dimensions 8.5 by 11 inches. VFU blocks for legal and European (A4) forms_sizes can be defined in a similar manner by setting BOF at line 72 for legal and at line 66 for A4.

5. Character Set Construct

The following command can be used to assign the EBCDIC character set:

```
CDCEBC:   CODE
DEFAULT=EBCDIC,ASSIGN=(X'57',X'6A'),ASSIGN=(X'A1',X'5F');
```

In the above case the EBCDIC character set is being used. There are two special ASSIGNs - one, which compensates for the circumflex character, the other for the tilde. Both of these characters are undefined after moving through the SPUR box. The ASSIGN re-establishes them as valid EBCDIC characters.

6. RPAGE Declaration

The RPAGE statement allows for the repositioning of the current (or next) logical page. The following example for 11 inch paper repositions the MW banner page break sequence to appear on a separate page so as not to interfere with the user's data.

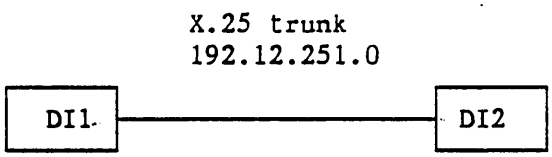
```
CZL: CRITERIA  CONSTANT=( 3,84,EQ,TZ),LINENUM=(4,1);

TZ:  TABLE     CONSTANT=(42)'MW';

RPAGE          TEST=CZL,SIDE=NUFRONT,WHEN=BOTTOM;
```

TCP/IP Over a Point-to-Point X.25 Trunk

If an X.25 trunk is configured between two CDCNET systems (DIs) to carry TCP/IP traffic and is assigned a class A IP network number, no extra configuration commands are required. If a class B or C IP network number is assigned, DEFINE_IP_HOST commands are required. The following diagram indicates when the extra commands are required.



ip address is	ip address is
192.12.251.1	192.12.251.5
DI system id is	DI system id is
080025300414	0800253005BB
DTE address is	DTE address is
111111111111	222222222222

The following commands are required in DI1. They define the DTE addresses for DI1 and DI2.

```
define_ip_host ia=(192,12,251,1) ht=local   si=(111111(16),111111(16))
define_ip_host ia=(192,12,251,2) ht=ip_host si=(222222(16),222222(16))
```

The following commands are required in DI2. They define the DTE addresses for DI1 and DI2.

```
define_ip_host ia=(192,12,251,2) ht=local   si=(222222(16),222222(16))
define_ip_host ia=(192,12,251,1) ht=ip_host si=(111111(16),111111(16))
```

These commands define the mapping between an IP address and an X.121 DTE address. For a point to point X.25 trunk the called DTE addresses can be any set of twelve digits in the range of 0..9.

Async Printer VERTICAL_PRINT_DENSITY

Two parameters have been added to the DEFINE_PRINTER_MODEL_ATTRIBUTES and CHANGE_PRINTER_MODEL_ATTRIBUTES commands to allow specification of a sequence that can be sent to an asynchronous printer to cause it to change VERTICAL_PRINT_DENSITY. These parameters (EIGHT_LPI_SEQUENCE and SIX_LPI_SEQUENCE) are only allowed if the VFU_LOAD_OPTION (VLO) for the printer is NONE.

An error is reported when the DEFINE_BATCH_DEVICE command is executed when VLO is not equal to NONE for a printer terminal model with an EIGHT_LPI_SEQUENCE and SIX_LPI_SEQUENCE defined. The error can also be detected and reported if an attempt is made to change a printer's TERMINAL_MODEL with a CHANGE_BATCH_DEVICE_ATTRIBUTES command such that an EIGHT_LPI_SEQUENCE and SIX_LPI_SEQUENCE would be defined while VLO is not equal to NONE.

Change to NETCU Message Template Numbers

The NETCU message templates numbers have been resequenced. Therefore, if the $SYSTEM.CDCNET.VERSION_INDEPENDENT.COMMAND_LIBRARY file does not match the NETCU product installed in the $SYSTEM.CDCNET.NETCU catalog, template mismatches could occur. If you use the standard CDCNET installation procedures, both files will be upgraded at the same time and no mismatches will occur. The CDCNET build level now appears on all NETCU screens (just to the right of the NETCU version number). You can use this number to determine which version of the $SYSTEM.CDCNET.VERSION_INDEPENDENT.COMMAND_LIBRARY should be installed.

Changes to Default Log and Alarm Messages

As with most past releases, this release also has changed the default log and alarm messages. In addition, there are changes in a number of the log message attribute definitions. The attribute definitions determine into which _data bases a particular log message is placed. The changes to the attribute definitions were made primarily for the following reasons:

1. Reduce size of raw log and data bases
2. Place all hardware related messages in hardware log
3. Reduce number of messages that go to more than one data base where there does not seem to be a need for the messages in at least one of the data bases.

You can determine which messages now go to a different set of data bases by comparing the NPA attribute file (NPAATTR) with its counterpart from the previous release level.

NOTE

Once CDCNET version 5709 (CDCNET 1.4) is installed, the attribute files can be accessed even though version 5709 may not be running in any DIs.

The following list contains the log ID of the default alarms and default logs for version 5709 (CDCNET 1.4). The CDCNET Configuration and Site Administration guide (60461550) contains instructions for obtaining this information for the DI software you are currently running. The fact that there are many new default log messages for this release versus previous ones does not mean that the size of the log files will be larger.

Control Data (CDCNET version 5709) set of default log message numbers:

1..6	9..10	17..22	49..58
60..74	76	94	97
99..101	103	130..134	136
138..146	148..151	153..154	161..167
170..173	177..195	201	203..206
208..209	211..230	241..254	265..270
272..276	281..300	329..368	370..374
376..383	385..389	393..406	409..411
413..414	416..418	420..430	434..437
439	442	444	446..451
457..458	465..482	490	492..495
497..507	510..511	514..547	549..551
557..564	567	572..575	577..580
582..593	601..604	606	608..624
630..633	636..639	641	645..647
649..650	652..667	673..688	729
737	745..749	761..771	809..823
825..826	873..893	913..916	929
931	933..938	1046..1049	1051..1054
1057..1060	1062	1064	1069..1070
1093..1114	1117..1122	1125..1128	1133..1135
1137	1140..1146	1149..1167	1173
1175..1176	1178..1181	1183	1185..1186
1188..1189	1192	1194	1196..1197
1200..1202	1204	1206	1210
1216..1225	1227..1231	1233..1265	1277..1281
1284..1298	1300..1305	1307	1316..1321
1324	1332..1338	1340..1343	1348
1356..1357	1360..1366	1380	1386..1388
1390	1392	1398..1401	1406..1408
1411..1412	1428..1435	1437..1439	1452..1453
1470..1477	1492	1501	1503
1507	1512..1515	1524..1526	1528..1533
1540	1542	1552..1555	1606
1628..1631	1644..1645	1648	1660..1662
1676..1678	1680..1685	1693	1700
1716..1719	1740..1744	1759..1790	1792
1796..1799	1811..1821	1824..1864	1868..1873
1884..1885	1892	1908..1909	1911
1913			

Control Data (CDCNET version 5709) set of default alarm message numbers:

1..2	18..22	61	63..66
71..72	131..132	134	138
141..143	153..154	161..165	168
171..173	177..185	192..195	201
203..206	208	211..217	297
337..338	343..350	352	358
362	371..372	374	377
380..382	393..394	402	404
414	416..418	420	423
434..437	439	442	444
479..480	494	504	550..551
567	601..602	604	621..622
624	645	673..679	809
811..813	819	821	878..879
883..888	913..916	935	937..938
1051..1052	1060	1125	1133..1134
1173	1175..1176	1178..1181	1183
1185..1186	1206	1210	1223..1225
1229	1237	1250	1324
1360..1361	1366	1526..1527	1678
1685	1716..1719	1759..1774	1776
1779..1789	1792	1796..1799	1892

Printing Microcomputer Files on a PostScript Printer

Many applications on microcomputers can be used to generate files in PostScript format. These files can be sent to the host and then routed to a PostScript printer via CDCNET. Following are some suggestions for facilitating this process.

A. Saving a PostScript File on an Apple Macintosh

To save the PostScript file on the Macintosh instead of printing it, you need to depress (and hold down until you see the generating POSTSCRIPTx file message) the command-F keys immediately after you respond OK to the print menu. If you normally use the laser printer spooler, you need to select background printing off. The Macintosh laser driver creates a file named POSTSCRIPTx. Each application puts this file in a different folder, so you must search for it.

B. Saving a PostScript File on an IBM compatible microcomputer using Microsoft WORD

To save the PostScript file on the microcomputer, print your WORD document to a file using the POSTSCRP (portrait) or POSTSCRL (landscape) printer driver.

C. Sending a Microcomputer File to the Host

When sending your microcomputer formatted file to NOS or NOS/VE, be sure to select BINARY or BYTE mode. Other modes, for example, ASCII, do not render a printable document. You can avoid flow control problems by turning off CDCNET parity with the command: %CHANGE_TERMINAL_ATTRIBUTES PARITY=NONE.

D. Loading PostScript Dictionaries

In order for PostScript files created on a microcomputer to print properly on a PostScript printer, any required dictionary must have also been loaded in the printer. These PostScript dictionaries must be transferred from the microcomputer to the host and downloaded to the printer as transparent files. The method of capturing the dictionary on the microcomputer depends on the applications being used and the type of microcomputer.

For example, with MS WORD 4.0 on a microcomputer, the dictionary file is postscrp.ini.

With MS WORD on an Apple Macintosh, the dictionary can be captured as the first part of the print file if you use command-K in a similar manner as command-F.

The following changes should be made before sending the Macintosh dictionary to the printer.

1. Add the following command as the first line of the dictionary. This prevents the dictionary from being reloaded if it is there.

```
userdict md known {stop} if
```

2. Add the following command after the initial comments. It sets the password for succeeding commands.

```
serverdict begin 0 exitserver
```

3. Add an EOT control code (04) to the end of the dictionary.

These dictionaries need only be loaded once after the printer is powered on. They can be sent to the printer as transparent files using the NOS/VE PRINT_FILE command or they can be made a part of the initialization procedure for your printer. The latter method requires that the data be enclosed in PUT_BATCH_SEQUENCE commands.

E. Routing Transparent File to the Printer

It is important that PostScript files have the correct file structure and that they are routed to the printer with appropriate print characteristics. For example, if a non-PostScript file is routed as a transparent file to a PostScript printer, it can cause the printer to go into an error state, possibly causing loss of this and subsequent files.

The following example shows a NOS/VE procedure that you can use to route PostScript files to the printer. This procedure does some file structure checking to help avoid errors and writes an EOT control code at the end of the file to terminate it properly.

```
PROCEDURE print_postscript_file, pripf (.
  postscript_file, pf, or_mac_file_suffix:  "PostScript file to print"
    list of any of
      name
      file
      integer
      string
    anyend = $required
  station, s: name = $optional          "laser printer station name      "
  device: name = $optional              "laser printer device name       "
  copies,c: integer = $job(copies)      "number of copies to be printed "
  status)

" Print postscript files uploaded from an IBM compatible microcomputer "
" or an Apple Macintosh as a binary file to the NOS/VE host.           "

  VAR
    device_name: string
    i: integer
    ignore: status
    message: string
    pf_string: string
    station_name: string
  VAREND
create_variable laser$default_station_name K=STRING S=XREF STATUS=ignore
create_variable laser$default_device_name K=STRING S=XREF STATUS=ignore

  IF $specified(station) THEN
    station_name = $string($value(station))
  ELSE
    IF $variable(laser$default_station_name, defined) THEN
      station_name = laser$default_station_name
    ELSE
      station_name = $string($job(station))
    IFEND
  IFEND

  IF $specified(device) THEN
    device_name = $string($value(device))
  ELSE
    IF $variable(laser$default_device_name, defined) THEN
      device_name = laser$default_device_name
    ELSE
      device_name = $string($job(device))
    IFEND
  IFEND
```

```
    FOR i = 1 TO $size($parameter_value(postscript_file)) DO
      pf_string = $string($value(postscript_file, i))
      IF $value_kind(postscript_file) = 'INTEGER' THEN
        pf_string = 'POSTSCRIPT'//pf_string
      IFEND
      IF NOT $file($fname(pf_string), assigned) THEN
        put_line ' File '//pf_string//' does not exist.'
        EXIT_PROC
      ELSE
        IF ($file($fname(pf_string), fc) <> 'OBJECT' AND ..
            $file($fname(pf_string), fc) <> 'UNKNOWN') OR ..
              $file($fname(pf_string), fs) <> 'DATA' THEN
          message = ' File '//pf_string// ' has incorrect attributes ..
  for a PostScript file.'
          put_line message
          EXIT_PROC
        IFEND
      IFEND

      detach_file $local.zzapple status=ignore

  " In the following command, $system.laser.eot should  "
  " be a file of record_type U consisting of just an    "
  " EOT control code (04).                              "
      copy_file $system.laser.eot $local.zzapple
      IF $file($fname(pf_string),fc) = 'UNKNOWN' then
        chafa $local.zzapple fc=unknown
      IFEND
      copy_file $fname(pf_string) $local.zzapple.$eoi
      IF $file($fname(pf_string),fc) = 'UNKNOWN' then
        chafa $local.zzapple fc=object
      IFEND
      copy_file $system.laser.eot $local.zzapple.$eoi

      print_file f=$local.zzapple d=$name(device_name) ..
        s=$name(station_name) ..
        du=public dm=t fc=' ' ..
        ufn=$name($string($path($fname(pf_string), last))) c=copies

      detach_file $local.zzapple

    FOREND

  PROCEND print_postscript_file
```

F. NOS Access

To print a PostScript formatted file from NOS, you must transfer the binary file to NOS/VE with QTF. The NOS commands are:

```
MFQUEUE,file,ST=VN2,DD=UU,I.
*PRIF ...  S=xxx D=ddd DU=PUBLIC DM=T
```

Incompatibilities

This section identifies incompatibilities between CDCNET 1.4 and previous releases of CDCNET.

Change in Issuing TUP Completed Message

When a terminal user procedure (TUP) is invoked in a CDCNET pre-R1.4 system, the TUP completed message is always issued. At CDCNET 1.4, the TUP completed message is not issued if the TUP creates a connection to a host. This change only affects terminal emulators using login scripts that send input after receiving the TUP completed message. Any scripts that use the TUP completed message should use the host login prompt instead.

Change to NETCU Edit Menu

An additional selection has been added to the NETCU edit menu. The new selection, 'Delete an entity', is now selection number 4 on the menu. The selection, 'Finish editing a partial configuration' is now selection number 5.

Change to NETCU Key Labels

The following changes only affect the EXKEYS set of function key labels. The NORMAL~ key label has been changed to NRMKYS. A new key has been activated for this release and its label is toggled between FULL and NORMAL. The label is toggled depending on the current editing mode. If the editing mode is full, the label is NORMAL. If the editing mode is normal, the label is FULL.

Change to NETCU Trunk Name Generation

When generating the trunk names for the LAN and trunk configuration commands, NETCU no longer appends the ESCI slot number or the LIM and port numbers to the names entered by the user. The generated names now are identical to the user-defined names.

NPA Report Format Has Changed

There have been significant usability improvements to the Network Performance Analyzer (NPA) which include changes in the report formats. These changes may affect site-owned post processing operations that are report format dependent and adjustments may be necessary. The changes in NPA report formats for this release are documented in the CDCNET Network Performance Analyzer Reference manual (60461510).

Changes to DISPLAY_TEST_STATUS Command

The default value for the DISPLAY_OPTION parameter of the DISPLAY_TEST_STATUS command is changed from EXPANDED to SUMMARY.

Changes to Server TELNET Exception Processing

Server TELNET processing of user interrupts %1 through %9, IAC IP, and IAC Break has been changed. Previously, these interrupts and the IAC commands were processed by flushing output only in the CDCNET connection and not in the TELNET connection.

The TELNET connection was not flushed because testing had shown that some user TELNET implementations would hang upon a Server initiated SYNC sequence. PSR AC10856 identified the unflushed output in the TELNET connection as a critical problem.

Server TELNET has been changed to flush the output in the CDCNET and TELNET connections upon receiving the following:

1. User interrupts %1 through %7
2. IAC IP command
3. IAC break, when BREAK_KEY_ACTION = 1..7
4. ATTENTION_CHARACTER, when ATTENTION_CHARACTER_ACTION = 1..7

To ensure correct operation with user TELNET implementations that do not support server initiated SYNC sequences, the %8 and %9 user interrupts, and the BREAK_KEY_ACTION and ATTENTION_CHARACTER_ACTION values 8 and 9, do not cause output in the TELNET connection to be flushed. Also, server TELNET converts %8 and Action value 8 to %1 on the CDCNET connection so that Pause Breaks can be entered from these User TELNET implementations.

Changes to MCI Channel Protocol Version

An MDI running CDCNET 1.4 cannot communicate with a channel connected host running a NOS 2.6.1 L700 or older NAM or a NOS/VE 1.2.3 L688 or older NAM/VE. Add corrective code for PSR NA5B845 (available through SOLVER) to NAM if you need to have an MDI running CDCNET 1.4 communicate with a channel connected host running NOS 2.6.1.

No data transfer can take place via the channel if the MDI and host do not support a common channel protocol version. The following table is presented as an aid to help you determine which level of CDCNET you should be using to ensure channel protocol compatibility. This table does not mean that software levels outside of the committed back level support window will function together properly, it merely shows the channel protocol versions supported at each release level.

	Supported Channel Protocol Version Numbers		
Release Level	CDCNET	NOS	NOS/VE
L716	3, 4, 41-43	3, 4	41-43
L700	0-3, 40, 41	0-2 *	40, 41
L688	0-2, 40	0-2	0, 40
L678	0-2	0-2	0
L670 & earlier	0	0	0

* - with correction set NA5B845 added, NAM (PIP) will support channel protocol versions 0-3

Changes to Batch Device Commands

This section documents changes that impact the DEFINE_BATCH_DEVICE and CHANGE_BATCH_DEVICE_ATTRIBUTES commands.

1. Several DEFINE_BATCH_DEVICE command parameter aliases have been removed. Use one of the remaining aliases listed in the table below.

Parameter Alias Deleted	Parameter Aliases Remaining
EXT_CHARACTERISTICS_1	EXTERNAL_CHARACTERISTICS_1, EC1
EXT_CHARACTERISTICS_2	EXTERNAL_CHARACTERISTICS_2, EC2
EXT_CHARACTERISTICS_3	EXTERNAL_CHARACTERISTICS_3, EC3
EXT_CHARACTERISTICS_4	EXTERNAL_CHARACTERISTICS_4, EC4
UN_DEFINED_FE_ACTION, UDFA	UNDEFINED_FE_ACTION, UNDFA
UN_SUPPORTED_FE_ACTION,USFA	UNSUPPORTED_FE_ACTION, UNSFA

2. The default printer terminal model names on the DEFINE_BATCH_DEVICE (DEFBD) command have been changed. The terminal model name determines the default VFU load procedure name that is used.

The CDCNET 1.4 defaults are as follows:

TIP	Old DEFBD TM Default	Old DEFBD VLP Default	New DEFBD TM Default	New DEFBD VLP Default (if TM defaults)
URI TIP	C585V	CDC_VFU	CDC_585V	VFU_CDC_585V
Async TIP	C536	n/a	CDC_537V	VFU_CDC_537V*
HASP TIP	C18	n/a	CDC_CYBER18	n/a

* Because the Async TIP default terminal model is now CDC_537V, the Async TIP default value for VFU_LOAD_OPTION has also been changed from NONE to USER.

If the TERMINAL_MODEL, VFU_LOAD_OPTION, and VFU_LOAD_PROCEDURE parameters are not explicitly specified on your DEFINE_BATCH_DEVICE commands, verify that the new default values are suitable and that any new, required VFU_LOAD_PROCEDURE has been installed.

3. Several new aliases were introduced at CDCNET 1.3 for some of the CDCNET printer terminal model names in order to make them more consistent with the NOS/VE terminal naming convention. This also applied to the names of the default VFU load procedures that are associated with each printer model.

   The old terminal model names have been deleted. The following chart shows the old and new names:

Old Terminal Model Name	Default VFU Proc	New Terminal Model Name	Default VFU Proc
C585V	CDC_VFU	CDC_585V	VFU_CDC_585V
C533,C536,LW_400	n/a	CDC_533V_536V**	VFU_CDC_533V_536V
C537	n/a	CDC_537V	VFU_CDC_537V
C18	n/a	CDC_CYBER18	n/a

** If no vfu is desired, use ASYNC_PRINTER_WITHOUT_VFU instead of CDC_533V_536V and specify VFU_LOAD_OPTION=NONE.

4. For certain page printers the effective vertical print density of print listings is determined by a procedure that resides in the printer itself, rather than by a control code sent to the printer by CDCNET. This is the case for printer terminal models POSTSCRIPT and XEROX_SPUR, and possibly for site-defined PostScript printer terminal models, that is, terminal model names beginning with POSTSCRIPT_. This effective VERTICAL_PRINT_DENSITY is six lines per inch for the released device load procedure that is used with printer terminal model POSTSCRIPT and for the recommended type of job descriptor library for printer terminal model XEROX_SPUR.

   For this reason the DEFINE_BATCH_DEVICE parameter VERTICAL_PRINT_DENSITY is ignored for the CDCNET-defined terminal models POSTSCRIPT and XEROX_SPUR. Its value is always set to SIX_ONLY and it cannot be changed. For a site-defined PostScript terminal model, the default value of the DEFINE_BATCH_DEVICE parameter VERTICAL_PRINT_DENSITY is SIX_ONLY, but it can be changed.

   If a CHANGE_BATCH_DEVICE_ATTRIBUTES command is used to change a printer's TERMINAL_MODEL name or VERTICAL_PRINT_DENSITY, the change will not be allowed if it would result in a terminal model name of POSTSCRIPT or XEROX_SPUR and in a VERTICAL_PRINT_DENSITY other than SIX_ONLY.

5. A TRAILER_PAGE parameter has been added to the DEFINE_BATCH_DEVICE command. The default value for TRAILER_PAGE is TRUE, indicating the trailer page containing a count of all lines printed should be printed also. However, for compatibility reasons an exception is being made for the default TRAILER_PAGE value under certain circumstances because of the former dependence of trailer page presence on the value of parameter BANNER_PAGE_COUNT. Specifically, if BANNER_PAGE_COUNT is explicitly set to 0 (zero) on a DEFINE_BATCH_DEVICE command, the default value of TRAILER_PAGE is FALSE.

   The TRAILER_PAGE parameter has NOT been added to the CHANGE_BATCH_DEVICE_ATTRIBUTES command, but the CHANGE_BATCH_DEVICE_ATTRIBUTES command processing has been modified so that, as in previous releases, the presence of a trailer page can be controlled by changing the BANNER_PAGE_COUNT to 0 (zero) or a non-zero value. However, an exception will be made so that if TRAILER_PAGE has been explicitly specified on the DEFINE_BATCH_DEVICE command, changing the BANNER_PAGE_COUNT with a CHANGE_BATCH_DEVICE_ATTRIBUTES command will not alter the TRAILER_PAGE value. That is, if TRAILER_PAGE is explicitly specified on a DEFINE_BATCH_DEVICE command, the TRAILER_PAGE and BANNER_PAGE_COUNT values are completely independent.

You should use the TRAILER_PAGE_COUNT explicitly on the DEFINE_BATCH_DEVICE command now in order to avoid future compatibility problems.

6. For certain page printers such as the Apple LaserWriter and the Xerox 4050 printer, the effective FORMS_SIZE of the print form is not equal to the physical dimensions of the paper because space is reserved for margins. For a text file, the number of lines printed per page is determined by a procedure that resides in the printer itself. Therefore, an automatic adjustment of the value of the FORMS_SIZE parameter on the DEFINE_BATCH_DEVICE and CHANGE_BATCH_DEVICE_ATTRIBUTES commands is made for CDCNET-defined terminal models POSTSCRIPT and XEROX_SPUR and for site-defined terminal models beginning with the 11-character prefix, POSTSCRIPT_. This adjustment is described in the CDCNET Configuration and Site Administration guide (60461550) and the CDCNET Batch Device Users guide (60463863).

   Because CDCNET 1.3 required the user to adjust the FORMS_SIZE parameter value, the user had been instructed to specify FORMS_SIZE='10.0' on the DEFINE_BATCH_DEVICE command for terminal model POSTSCRIPT for eleven inch paper. Thus, for compatibility, CDCNET 1.4 will special case the FORMS_SIZE processing for the DEFINE_BATCH_DEVICE command so that if FORMS_SIZE is explicitly set to '10.0', no adjustment is done. This special handling will be removed in a future release of CDCNET. You should avoid explicit use of FORMS_SIZE='10.0' on your DEFINE_BATCH_DEVICE commands to avoid future incompatibilities.

Changes to V Format Effector Processing

V format effector processing has been modified so that if the letter O terminates the channel information, the effective FORMS_SIZE is changed for the remainder of the file. If your print files contain V format effector statements and you do not want the FORMS_SIZE to change, do not terminate them with the letter O. See the documentation pertaining to V format effector processing in the CDCNET Configuration and Site Administration guide (60461550) for more details on the rules governing V format effector statements.

NOTE

If S or T format effectors occur in a print file after a V format effector has been used to change the effective FORMS_SIZE, the FORMS_SIZE immediately reverts to the original value.

Significant Problems

This section identifies significant problems associated with CDCNET. The problems have been reported and are tracked by Programing System Reports (PSRs). The PSR number is provided for each problem described.

NETCU Multiple HDLC Trunks on Single Network

NETCU does not support multiple HDLC trunks to be defined for a single network solution.

The following are examples of how to configure multiple HDLC trunks over a single network solution using the special commands capability. Consult the CDCNET Configuration and Site Administration guide (60461550) for details on how to use the configuration commands mentioned in the following paragraphs.

1. This example only works for DIs that do not have the HDLC trunk as their load path. If your DI has the HDLC trunk as its load path, see the second example.

   a. First, select any one of the trunks to be used in the network solution and configure it in NETCU. If this trunk is to support TCP/IP, then configure all TCP/IP characteristics for the trunk in NETCU as well.

   b. Second, create a special commands file for the DIs at each end of the HDLC trunk.

NOTE

One of these DIs might not be in your configuration.

Include in the file a STOP_NETWORK command specifying the network name for the trunk (the value is the trunk name or the full mode network name, if specified). Then include a CANCEL_HDLC_NET command also specifying the network name for the trunk. These two commands stop and cancel the HDLC network solution that NETCU defined.

Now include the DEFINE_HDLC_TRUNK commands for the additional trunks (NETCU has defined one) that you wish included on the network solution.

To define the network solution, include the new DEFINE_HDLC_NET command specifying all of the trunk names (one defined by NETCU and the others defined in the special commands file).

All TCP/IP configuration commands generated by NETCU will remain functional.

2. The following is an example of how to configure this situation in DIs that have the HDLC trunk as their load path.

   a. First, create a dummy HDLC trunk in NETCU to connect the appropriate DIs. This causes the validation of the configuration to pass. This trunk is not used for anything but passing NETCU validation checks. It is not physically connected to the DI. This can cause configuration errors because NETCU has generated the configuration commands for the dummy trunk, but the errors can safely be ignored.

   b. Second, create a special commands file for the DIs at each end of the HDLC trunk.

NOTE

One of these DIs might not be in your configuration.

Include the DEFINE_HDLC_TRUNK commands for all of the trunks that you wish to include on the network solution. Next, include the DEFINE_HDLC_NET command specifying all of the trunk names that were defined on the previous DEFINE_HDLC_TRUNK commands.

If this network solution is to support the TCP/IP protocol, you must include a DEFINE_IP_NET command defining the HDLC network's IP network number. Also include the appropriate DEFINE_IP_HOST commands for this DI and the CYBER hosts on this network that are supported by this DI.

This problem was reported by PSR NMUA041.

Problems with DISPLAY_SERVICE Command

1. After a service goes down, the DISPLAY_SERVICE command incorrectly reports that the service is up. This condition persists until a CREATE_CONNECTION (CREC) is attempted for that service.

   This problem was reported by PSR AC1G939.

2. The execution of the DISPLAY_SERVICE command can cause excessive congestion in some network configurations. The congestion level is most severe in configurations which consist of many Ethernet and HDLC network solutions and where the site has elected to display many services. In some cases, the congestion is so severe that it causes DI resets.

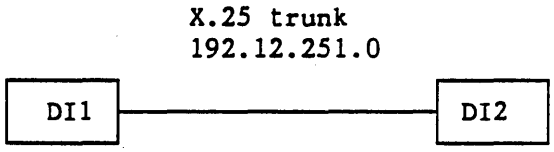
   A workaround for the problem is to configure no more than three displayable services in each TDI.

   An alternative workaround, which allows a site to display the status of all their interactive services, is to use the keyword value INFINITE for the STATUS_INTERVAL parameter on the CHANGE_SERVICES_DISPLAY command. This keyword value instructs the DISS command to NOT use the CDCNET directory services for obtaining the status of the displayable services. It is the use of the directory service which causes the congestion problem. When the INFINITE keyword is used, all services can be safely displayed. There is some reduction in the accuracy of the reported status, however, because the status of the displayable services is only updated based on the success or failure of attempts to CREATE_CONNECTION to the services.

   This problem was reported by PSR AC1G294.

NETCU Configures Class B/C TCP/IP Networks Incorrectly for X.25

If an X.25 trunk is configured between two DIs to support TCP/IP traffic and is assigned a class A IP network number, no extra configuration commands are required. If a class B or C IP network number is assigned, SPECIAL COMMANDS are required for the DIs at each end of the trunk. The following diagram indicates when the SPECIAL COMMANDS are required.



ip address is	ip address is
192.12.251.1	192.12.251.5
DI system id is	DI system id is
080025300414	0800253005BB
DTE address is	DTE address is
111111111111	222222222222

Place the following commands in the SPECIAL COMMANDS file for DI1. They define the DTE addresses for DI1 and DI2.

```
cancel_ip_host ia=(192,12,251,1)
define_ip_host ia=(192,12,251,1) ht=local   si=(111111(16),111111(16))
define_ip_host ia=(192,12,251,2) ht=ip_host si=(222222(16),222222(16))
```

Place the following commands in the SPECIAL COMMANDS file for DI2. They define the DTE addresses for DI1 and DI2.

```
cancel_ip_host ia=(192,12,251,2)
define_ip_host ia=(192,12,251,2) ht=local   si=(222222(16),222222(16))
define_ip_host ia=(192,12,251,1) ht=ip_host si=(111111(16),111111(16))
```

These commands define the mapping between an IP address and an X.121 DTE address. For a point to point X.25 trunk the called DTE addresses can be any set of twelve digits in the range of 0..9.

This problem was reported by PSR NMUA047.

No Multiple Batch Titles with NETCU (NOS)

The Network Configuration Utility (NETCU) allows you to specify multiple titles when configuring batch titles for a NOS host, even though CDCNET allows only one title. Therefore, only one title should be entered in the list.

NETCU also does not validate that all batch titles are unique. At CDCNET 1.4, you must manually ensure that no batch titles are duplicated.

In the case of two channel connections to NOS, NETCU does not generate a proper configuration. For any NOS hosts with two channel connections or dual hosts with two channel connections to the NOS side, interactive titles and batch titles should not be specified for that host. Instead, the DEFINE_NP_TERMINAL_GW command must be entered as a special command for each connection to the NOS host. Consult the CDCNET Configuration and Site Administration guide (60461550) for information about the DEFINE_NP_TERMINAL_GW command.

This problem was reported by PSR NMUA036.

NETCU-No Split Clocking for HDLC Trunks

If an RTI is connected via a hard-wired line (no modems) to an NDI, it is necessary to configure the NDI end of the HDLC trunk with transmit clocking. It is necessary to configure the RTI end with external clocking, since this is what is assumed by the RTI when it loads. NETCU does not permit such split clocking definitions on an HDLC trunk.

You can avoid this problem if you define the trunk as two trunks. Ensure you define them appropriately as intersite or intrasite trunks. On the trunk attributes screen, set the value of NUMBER OF CONNECTIONS IN THIS CONFIGURATION to 1 (one) for both trunks and on the HDLC trunk attributes screen specify the same network identifier for both trunks. You can then specify TRANSMIT clocking for the trunk which will be connected to the NDI and EXTERNAL clocking for the trunk which will be connected to the RTI. Ensure you also specify the correct values for the local and remote addresses on both trunks.

This problem was reported by PSR NMUA052.

Initializing Printers under Abnormal Circumstances

If the status of an output device, which is connected to a CYBER that is running NOS, is DOWN, NOT READY, LOADING PROCEDURE, or LOAD PROCEDURE NOT LOADABLE; the device is not shown in the RBF or PSU displays. If the status is DOWN, NOT READY, or LOADING PROCEDURE, the device does appear and is usable when the status changes. If the status is LOAD PROCEDURE NOT LOADABLE and the device requires a connection procedure, VFU load procedure, or file prefix procedure, (which is true for Control Data printer models and site-defined PostScript printer models), the device is not initialized and it is unusable until the operator installs a correct load procedure and stops and starts the line, via NETOU.

NOTE

The printer connection remains in NVF until the printer is successfully initialized.

This problem was reported by PSR AC1J015.

FTP Client on Foreign Host (NOS)

If a user on a foreign host enters a PUT or APPE command with UN specified on the remote file name and the file does not exist on the CYBER host, the FTP client gets an extra 550 response message causing it to go out of synchronization.

This problem was reported by PSR TCHA042.

TCP/IP Host Products MANTA and INETD (NOS/VE)

- The utility MANAGE_TCP_APPLICATIONS (MANTA) is used by the CDCNET network operator to manage any network services. To use MANTA, add the following command to the network operator's NOS/VE prolog:

```
CRECLE E=$SYSTEM.TCP_IP.MANTA_BOUND_LIBRARY
```

  The only service supported by the parameter USE_SERVICE of the MANTA command is INETD (Internet Daemon).

  The command library problem was reported by PSR TCVA164.

- The ACTIVATE_FTPS and DEACTIVATE_FTPS commands have been replaced by ACTIVATE_INETD and DEACTIVATE_INETD, respectively. The old commands should no longer be used. The ACTIVATE_INETD command starts a system task named INTERNET_DAEMON, rather than FTP_SERVER.

- Since INETD is implemented as a system task, the utility does not have access to the system message templates. This causes some error messages to be misinterpreted. This will be fixed by making INETD a system job in a future release.

- You must spell out all INETD commands contained in the $SYSTEM.TCP_IP.INETD_CONFIGURATION file, that is, they cannot be abbreviated.

  This problem was reported by PSR TCV0034.

V Format Effector Problem

The CDCNET Configuration and Site Administration guide (60461550) documents new rules for V format effector statement processing regarding use of the 0 character to change the effective forms size of a printer device. These new rules apply only to devices driven by the URI TIP. The 0 processing done by the Async and X.25 TIPs still follows the rules documented for CDCNET 1.3, which means that 0 merely terminates the V format effector statement and does not alter the effective forms size.

Caution should also be taken in defining VFUs for printers driven by the Async and X.25 TIPs because certain channel definitions can lead to a situation in which DI memory can be overwritten. Such situations can arise if the AUTO_PAGE_EJECT_CHANNEL (APEC) or BOTTOM_OF_FORM_CHANNEL (BOFC) are specified for print line numbers such that the distance from APEC or BOFC to the last line number of the page at eight lines per inch is greater than the page length at six lines per inch. This applies to VFU images created either by a VFU_LOAD_PROCEDURE or by an embedded V format effector statement.

This problem was reported by PSR AC1H370.

FTP Empty Binary File (NOS)

Attempting to get an empty binary file with only a control record suffixed from a CYBER to any foreign machine, for example, a SUN or a VAX, causes the FTP/NOS server to go down.

This problem was reported by PSR TCHA043.

SNA 3270 Operations

- Use of the NOS/VE command ACCEPT_LINE I=INPUT causes improper positioning of the cursor and starts the next input at the top of the screen. Use $INPUT instead of INPUT to avoid this problem.

  This problem was reported by PSR NV0R594.

- There is a problem which disconnects the 3270 display station if output is streaming to the terminal and the user turns the security key off and on. This problem can be avoided by either waiting for output to complete or terminating output before utilizing the security key.

  This problem was reported by PSR AC1H679.

- If the SNA3270_TIP is stopped while sessions are active, the underlying SNA_Interface should be stopped and started before the SNA3270_TIP is restarted.

  This problem was reported by PSR AC1J077.

PC-NFS Problem with EXCEL Spread Sheet Files

EXCEL spread sheet files residing on a NOS/VE catalog can get truncated when they are opened by EXCEL using PC-NFS. This problem has only been observed if the spread sheet file is selected by moving the cursor. It has not been seen if the file name is typed in.

This problem was reported by PSR NFSA031.

PostScript Printer Special Character Processing (8-Bit Codes)

1. If ASCII characters in the range 128 - 255 occur in a data file sent to a PostScript printer, the upper bit of the characters may be lost due to PostScript parity processing done by the printer or due to setting the CDCNET line or device DATA_PARITY parameter equal to a value other than NONE.

   If you want to support characters in the range 128 - 255 on PostScript printers at your site, that is, process all eight data bits, then you must do two things:

   a. Specify DATA_PARITY=NONE on the DEFINE_LINE or DEFINE_BATCH_DEVICE command and specify CODE_SET=ASCII256 (or a site-defined code set) on the DEFINE_BATCH_DEVICE command for the printer.

   b. Send the following PostScript directives to the printer by routing them to the printer as a transparent file or by adding them to the printer's CDCNET initialization procedure:

```
statusdict begin 25 sccbatch exch pop
67 eq {stop} if
serverdict begin 0 exitserver
statusdict begin 25 BAUDRATE 67 setsccbatch
```

   where BAUDRATE is the desired transmission speed.

2. An additional side effect of special character processing for PostScript printers has to do with line folding.

   For site-defined PostScript printer terminal models (that is, for terminal_model names beginning with POSTSCRIPT_), the FOLD_LINE option may be set to YES or NO. If the FOLD_LINE option is set to YES, the CDCNET software does not fold lines properly because of processing that is done for the special PostScript characters), (, and \. This can cause characters to be lost at the end of long print lines.

NOTE

For the CDCNET-defined printer terminal model POSTSCRIPT, the FOLD_LINE option is set to NO, which means that the CDCNET software does not do any line folding for that terminal model.

This problem was reported by PSR AC1J131.

Future Considerations

Future Features

Within CDCNET 1.4, there are a number of references to OSI and ICA-II support. These features will be available in a future release of CDCNET. They are not supported and are not functional at CDCNET 1.4. No attempt should be made to use them.

Change to DEFINE_TCPIP_GATEWAY Command

With the release of the TCP/IP Gateway with CDCNET 1.4, the MMS (MAX_MESSAGE_SIZE) parameter is no longer used and will be removed in a future release. If you currently use this parameter in your configuration files, you should remove it now. In a future release, when the parameter is removed, you will not be able to configure the TCP/IP gateway if the MMS parameter is included in your configuration files.

Manual Errata

CDCNET Online Manuals

The following is not errata, but it is helpful information for those who are not familiar with the last release.

There are four CDCNET online manuals available, three for NOS/VE users and one for NOS users.

1. CDCNET Diagnostics Messages manual - This manual is available online for both NOS and NOS/VE users.

   To access the online CDCNET messages manual on NOS/VE enter:

   ```
   EXPLAIN, M=CDCNET_MSGS
   ```

   To access the online CDCNET messages manual on NOS enter:

   ```
   EXPLAIN, M=CNETMSG
   ```

NOTE

The online manual reflects CDCNET 1.4 at version 5602. Any additions or changes to the messages after version 5602 were not included. If you need information about a message that is not in the manual, or you suspect that the information in the manual is not up to date, you can use the NPA command EXPLAIN_CDCNET_LOG_MESSAGE (EXPCLM). This command always provides the most accurate and current message information because it reflects the actual code, including any BCUs that have been added.

Refer to the Command Quick Reference manual or NPA manual for more information about using EXPCLM on NOS/VE and NOS systems.

The EXPLAIN application on NOS is not a screen application under control of the SCREEN command. For proper operation of EXPLAIN on NOS, terminal attributes, such as FORM_FEED_SEQUENCE, need to be set correctly.

A copy of the CDCNET 1.3 version of the messages manual is available on NOS/VE as a printable ASCII file. Please note that this file has not been updated to include any of the CDCNET 1.4 messages. To print a copy of this file enter:

```
PRINT_FILE F=$SYSTEM.MANUALS.LINE_PRINTER_MANUALS.CDCNET_MESSAGES
```

An updated, printable ASCII file for both NOS and NOS/VE will be provided in a future release.

The printed version of the CDCNET Diagnostics Messages manual is no longer available from Literature and Distribution Services (LDS); however, if you would like a printed copy of the manual at CDCNET 1.4 send a memo to:

```
Control Data
Technical Publications
ARH219
4201 North Lexington Avenue
Arden Hills, MN 55126-6198
```

2. The Network Configuration Utility (NETCU) manual is available online for NOS/VE users only. You can access the manual with the following command:

```
EXPLAIN, M=NETCU
```

NETCU is also described in the CDCNET Configuration and Site Administration guide (60461550).

3. There is an online manual available for ANALYZE_CDCNET_DUMP (ANACD). The manual is not available on NOS. You can access it either from NOS/VE or from within ANACD with one of the following commands (from NOS/VE or within ANACD):

```
EXPLAIN,M=ANACD          "From NOS/VE"
HELP                     "From within ANACD on NOS/VE only"
```

NAM Programmer's Reference Manual (NOS)

The list of connection failure reason codes contained in the NAM Host Application Programmer's Reference manual (60499500) is incomplete. Refer to documentation PSR NA5B913 for an updated list of connection failure reason codes.

CDCNET TCP/IP Usage Manual (NOS)

The description of the FTP LOGIN_USER command on page 3-35 of the CDCNET TCP/IP Usage manual (60000214) does not make it clear that if the remote host is FTP/NOS, the command is not supported. Also, the description of the USER protocol element on page 3-77 does not make it clear that the FTP/NOS server does not support the secondary user command and there are no plans for it to do so in the future.

CDCNET Diagnostic Messages Manual (NOS)

The following pertains to the CDCNET Diagnostic Messages manual (60461600). The log message 388, NGE_KEY_INTERFACE_ICN_EX_A, was updated to state the following:

Description:

The NP Gateway has received a call request from a CDNA application and has attempted to make a paired connection to the NOS Host on the trunk with the coupler node specified in the log data. The NOS host rejected the connection request due to a transient resource related error or a configuration error in CDCNET and/or NOS Hosts.

The CDNA call request was sent to the NP Gateway by translating to the title specified on an ADDNGO command. The NOS Host rejected the connection for the reason specified in the log data. It is possible that a configuration error has been made, for example, an incorrect application name specified on the ADDNGO command or an error is present in the INCALL statement for the referenced application in the destination NOS Host's local configuration file (LCF).

User Action:

Reference the description of the CON/ACRQ/A supervisory message in the NAM Host Application Programmer's Reference manual (60499500) for a detailed explanation of the reason code listed. Determine the error classification. If this is a temporary error, then no action is required by the Network Administrator. The originating application should retry later.

If this is a critical error, resolve the conflict that exists between the OUTCALL and INCALL statement in the LCFs at the source and destination Hosts and the ADDNGO command that defines access to the application at the destination Host.

CDCNET Batch Device Users Guide

The following changes are to the CDCNET Batch Device Users guide (60463863).

p5-22:	SW2-5	OFF	SW2-5, 2-6, and 2-7 form a binary number which describes the number of lines to be skipped when the Bottom-of-Form is reached. SW-5 is the low-order bit; SW2-7 is the high-order bit. SW2-5, 2-6, 2-7, set (OFF, OFF, OFF), specify skipping zero lines. Skipping over the forms perforations is accomplished via the VFU load feature.
	SW2-6	OFF	
	SW2-7	OFF	
p5-24	SW1-1	OFF	Detect HD Transistor Check on odd-numbered columns
	SW1-2	OFF	Detect HD Transistor Check on even-numbered columns

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