CIP V10 L727

SOFTWARE RELEASE BULLETIN

June 7, 1989

Note: For CYBER 960/962/992/994 with a CC598 console, read the CC598 Software Release Bulletin before installing CIP V10 L727.

Important

Two copies of the CIP V10 L727 Software Release Bulletin (SRB) and the Field Change Announcement (FCA) are included in the CIP field kit. One copy is for the customer and the other is for the Control Data Customer Engineer (CE). The Maintenance Software Reference manuals and microfiche also need to be provided to the CE. Please ensure your CE receives this information. It is important that the CE be aware of all CIP features and cautions.

Control Data Corporation recommends that this Software Release Bulletin be read in its entirety prior to any CIP V10 L727 installation.

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Chapter 1
Introduction

The CYBER Initialization Package (CIP) consists of hardware/software interface modules. The modules are released on tape and must be installed to disk for system operation. The CIP V10 L727 release supports CYBER models 810, 815, 825, 830, 835, 840, 845, 850, 855, 860, 870, 960, 962, 990, 992, 994, and 995. The CIP V10 L727 module levels are listed in the table below:

NOTE: Please consult your Field Change Announcement (FCA) sheet to verify that the hardware is at the appropriate level prior to the installation of CIP V10 L727.

The CIP V10 L727 described in this document is being released at the following levels:

Module	Level	
CTI	716	(Level 727 CYBER 960/962/990/992/994/995)
MSL	716	(Level 727 CYBER 960/962/990/992/994/995)
EDD/RCM	716	(Level 727 CYBER 960/962/990/992/994/995)
DFTx/DBDx/ECRx	06	
EI	21	
MDD	13	
SCI	05	
SCD	05	

The file structure of the CIP V10 L727 tape for CYBER 810/815/825/830/835 840/845/850/855/860/960/990/994 is as follows:

File 1 CIP V10 L727 deadstart file.

File 2 CTITEXT.

File 3 Empty file.

File 4 NOS peripheral microcode.

File 5 NOS/BE peripheral microcode.

File 6 Procedure to install peripheral microcode onto the NOS/BE operating system.

File 7 Seldom used and obsolete diagnostics that can be loaded at the option of the site maintenance personnel. Instructions for copying file 7 to a tape for installation are contained in chapter 5.

The file structure of the CIP V10 L727 tape for CYBER 962/992 is as follows:

File 1 CIP V10 L727 file.

Chapter 2
Installation

Enhancements

CTI

The features to Computer Test and Initialization (CTI) are as follows:

- Support for a secondary I4C (model 44) IOU on CYBER models 960/962/992/994.
- Support for CYBER models 960/962 dual CPUs.
- Support to hand off NIO PPs in 8K mode for stand alone on CYBER models 960, 962, 990, 992, 994, and 995.

EDD/RCM

The Express Deadstart Dump (EDD) and Restore Central Memory (RCM) utilities have been enhanced to include support for I4C (model 44) as a secondary IOU.

DFT

The Dedicated Fault Tolerance (DFT) module has the following modifications:

- Support for CYBER models 960/962 with dual CPUs.
- Support for a secondary I4C (model 44) IOU on CYBER models 960/962/992/994.

SCI

The System Console Interface (SCI) module has a parameter name changed in the display memory and enter memory commands. The AD parameter has been changed to MA for the commands DB, DC, DH, EB, and EC. For example, DB MA=3FF WC=10 should now be used in place of DB AD=3FF WC=10.

Mainframe Microcode

960/962

CIP 960/962 V10 L727 mainframe microcode was modified for this release as follows:

- Modification to support OP code 07 for purge SFSA push stack.

- MDD mode of SCI is designed to allow an analyst to observe the condition of a mainframe before NOS/VE begins its initialization routines. For SCI to begin the deadstart of NOS/VE, the user should press the F7 key on a CC634B OR CC598A/CC598B console. If a console other than a CC634B or CC598A/CC598B is used, the operator should enter an RS (RECORD SEPARATOR = 1E hexadecimal) and a lower case w. This is true regardless of the origin port of the deadstart or the port that MDD is to drive.

- On an I2 IOU, when MDD is initiated at deadstart for standalone NOS/VE, the F7 key may not correctly initiate the NOS/VE deadstart. When this problem occurs, the operator sees only the MDD banner on the MDD console (or a garbled MDD banner). The operator should enter an F7 followed by a lower case w to continue deadstart.

- When using dual state, if you deadstart NOS/BE on a dual CPU CYBER 995, a false (218) FATAL CPU1 ERROR is received in the CERFILE which is also displayed on the NOS/VE console when that system is deadstarted. This error message does not prevent NOS/VE from using the CPU, thus the message can be ignored. To avoid having the error message appear at all, obtain PSR NB0E611 from SOLVER and install it in your NOS/BE system.

- When switching from using dual state to standalone NOS, CIP V10 L727 must be reinstalled with an initial installation to ensure the proper level of SCI is installed.

- When installing the NOS/VE boot programs for NOS/VE 1.4.1 L716 or NOS/VE 1.4.2 L727, the NOS/VE deadstart tape must be used.

- At NOS/VE 1.4.1 or later, NOS/VE supports the capability of disabling CPU elements in a dual CPU environment, while the system is executing on line. CIP currently does not provide a user interface to clear the CPU down status via CTI. The action required to clear this status is to clear the MRT on the CIP disk. See previous note in this section for a description on how to clear the MRT.

- The Maintenance Display Driver (MDD) has a parameter name changed in the display memory and enter memory commands. The AD parameter has been changed to MA for the commands DB, DC, DH, EB, and EC. For example, DB MA=3FF WC=10 should now be used in place of DB AD=3FF WC=10.

- On CYBER 960/962/992/994 after installing/replacing the NOS/VE boot programs a deadstart is required before initiating an operating system load. This is necessary to correct a problem caused by the loss of the system configuration status during the CIP Install NOS/VE Programs Utility.

- CIP does not support tapes configured on channels 0 or 1.

CIP Installation

- Do not install CIP when the CIP disk is in use. Installation of CIP should be accomplished only when CIP has sole access to the disk to avoid conflicts with operating system access and possible file corruption.

  In dual state, the CIP device must be defined to the host operating system (NOS or NOS/BE). The CIP disk may either be defined in the NOS/VE configuration as state=OFF or must be omitted entirely from the NOS/VE configuration. NOS/VE does not use a device with state=OFF unless it is a CIP disk, and then only for DFT access.

  For NOS/VE standalone, the CIP device must be state=ON. It is also recommended that the CIP disk also be the system disk.

  You may alternate between dual state and standalone, using the same PHYSICAL_CONFIG and configuration prolog files by changing the state of the CIP disk to state=OFF when running dual state.

- Perform the following steps to install CIP V10 L727 to the CIP disk:

  1. If you plan to run dual state with NOS 2.6.1 L700/688 or NOS 2.7.1 L716 and intend to use NOS/VE 1.2.3 L688 or a prior level, you must create a modified CIP tape based on the CIP currently in use by replacing SCI with the version from the CIP V10 L727 tape. You must use this tape when installing the NOS/VE boot components.

     If this situation does not apply to you, skip to step 2.

     Perform the following steps to create the modified CIP tape:

     a. Obtain the following:

        - The CIP tape which matches the level of NOS/VE you are currently running.
        - The CIP V10 L727 tape.
        - A scratch tape for the modified CIP tape that you will create.

     b. To replace SCI, have the site analyst perform the following steps at the system console or from an interactive terminal:

```
REQUEST,CIP,VSN=CIP,D=PE,F=SI,LB=KU.
   assign the CIP V10 L727 tape
GTR,CIP,SCI.OVL/SCI
UNLOAD,CIP.
REQUEST,OLD,VSN=OLD,D=PE,F=SI,LB=KU.
   assign the CIP tape matching the NOS/VE level to be used:
```

for NOS/VE Level	use CIP Level
1.2.3 L688	V8 L688
1.2.2 L678	V7 L678

Acquiring the peripheral microcode from the CIP V10 L727 tape for installation onto the operating system is an operation separate from CIP V10 L727 installation. NOS peripheral microcode is contained on file 4 of the CIP tape, and NOS/BE peripheral microcode is on file 5. File 6 is a procedure to aid in the installation of peripheral microcode onto the NOS/BE operating system. The steps in the NOS and NOS/BE sections describe how to install peripheral microcode onto an operating system deadstart tape.

Enhancements

The peripheral microcode MH426 for 9853 has added two functional changes plus other various features. These changes are transparent to the user and improve performance. Field tests show a 12-13% performance improvement from these enhancements. To install MH426 the utility LEEP is used. The documentation for LEEP is contained in the CYBER Systems Peripheral Diagnostic Reference Manual, publication number 60000144 revision F.

The utility LEEP, which loads the EEPROM in the CM3 may not terminate correctly. LEEP normally terminates with the following message: MICROCODE XX SUCCESSFULLY LOADED, where XX is the level number. If LEEP halts with a DISK SUBSYSTEM ERROR, DRIVE STATUS=8004H, and a LOW LEVEL ERROR = 0063H, the EEPROM has been properly loaded. This can ber verified by rerunning LEEP. Enter an R on the keyboard, followed by a space bar. The initial warning message is display. Note the currently loaded portion of the message, which should reflect level 09, which was just loaded.

The features are described as follows:

- Dual process: This features provides two processes under the kernel for each drive on the string. If there are two more commands in the command buffer (IPI-3 buffer) for the same drive, the first command is parsed and executed and the second command is parsed and readied for execution during the seek for the first command. However, other drive commands could be parsed and put into execution prior to the second or subsequent commands for that drive. In other words, a second command for each drive could be parsed and readied for execution during the execution of commands for that drive to be complete before beginning the next command on that drive.

- Split buffer: This feature allows for another drive's data to be loaded into the buffer and transferred to the host prior to completion of the command for the drive currently transferring data. The following conditions must be met for this feature to work:

  - the last burst for the current transfer is in the buffer
  - the next drives RPS interrupt occurs
  - the next drive has the same sector size as the current drive.

NOS/BE Installation

To incorporate the latest peripheral microcode from the CIP V10 L727 tape onto NOS/BE, follow the steps below:

1. Deadstart NOS/BE.

2. Mount the CIP V10 L727 tape.

3. Enter the following commands at the system console:

   ```
   n.DIS.
   REQUEST,CIP,VSN=CIP,NT,PE,NORING.
   SKIPF,CIP,5,17.
   BEGIN,,NOSBE,CIP.
   ```

   When this procedure terminates, all peripheral microcode used by NOS/BE is CATALOGed with ID=CWARE. The deadstart tape must now be rebuilt using the appropriate NOS/BE build job (DST1 or DST3) as described in the NOS/BE Installation Handbook.

4. If CIP V10 L727 has not been installed to disk yet, use the process documented in the CIP V10 L727 Installation section, mentioned previously.

5. Deadstart NOS/BE with the new tape.

Chapter 3

Enhancements

The enhancements to the Maintenance Software Library (MSL) are as follows:

- Modifications to SMT3, LMT3, BPT3, EXCH, TRAP, FCT1, FCT5, CMEM, and EME for CYBER 960/962 for the redesigned LMA module (JS arrays).
- Modifications to MCT3, CMSE and the command buffers on CYBER 960/962 for dual CPUs.
- Support for I4C as a secondary IOU on CYBER 960/962/992/994.
- Modification to MDT3 to correct MDT3 margin failures on CYBER 960/962.
- Modification to command buffers FII40 and FII44 to add CX,I (master clear IOU) and CE,I (clear IOU fault register) CMSE commands for CYBER 96x/99x.

Notes and Cautions

- Microfiche program listings of CTI, microcode, SCI, SCD, MDD, DFT, and EI are available at the discretion of the District Technical Operational Support (TOS) managers or the Country Central Office.
- Deleting DEMOT's OUTPUT files (*DP,fn command), or any other file created without a 77 table (such as the flaw map from FMU), results in the error message PRFX TABLE MISMATCH appearing in the keyboard area error/message line. Although the file was deleted and the error message can be cleared with no need to retry the command, the disk space used by such a file is not released by CMSE. If a SRT FULL situation is encountered, CIP V10 L727 requires reinstallation using the update installation option.
- The memory tests generally do not execute properly if CMSE is using central memory for communication.
- To run the I4 (CIO) PP based diagnostics, central memory has to be enabled at the initial CMSE display by entering 8.3 (parameter change). The diagnostics do not run without CM enabled. Refer to Service Bulletin 6945. The diagnostics that are affected are:

  - CCA4 - 170 DMA (CIO) channels
  - ISI4 - Intelligent Subsystem Interface (ISI) channels
  - IPI4 - Intelligent Peripheral Interface (IPI) channels
  - HYDR - DMA enhanced ISI channel adapter to 887 disk test
  - UESM - ESM/STORNET monitor
  - UHYD - ISI channel off line monitor of 887 disk in line test
  - DEMOT diagnostics (CIO)

  Note: The 170 DMA IOU diagnostic CCA4 leaves the CIO IOU in a state that the DEMOT diagnostics can't use. A deadstart followed by a U-I-M sequence corrects the problem.

Chapter 4

Configuration Management

Mainframe Microcode Levels

Mainframe System Type	Release Level	Mainframe System Type	Release Level
CYBER 180-810 810A	M14AA15	CYBER 170-815	M11AA15
CYBER 180-830 830A	M13AA15	CYBER 170-825	M12AA15
CYBER 180-840 840A	M340x09	CYBER 170-835	M20AA16
CYBER 180-850 850A	M330x12	CYBER 170/180-845	M310x11
CYBER 180-860 860A	M320x11	CYBER 170/180-855	M300x10
CYBER 960/962-11	M3A0x06*	CYBER 180-990/995	M40Ax22*
CYBER 960/962-31	M3B0x06*	CYBER 180-990/995	M41Ax22*
CYBER 992	M43Ax22*		
CYBER 994	M44Ax22*		

* Changed with the CIP V10 L727 release when compared to CIP V10 L716.

Peripheral Microcode Levels

These are the versions of peripheral microcode furnished on the CIP V10 L727 tape and the current versions with which CIP was tested.

Name	Version	Description
MA401	08	844FT disk peripheral microcode
MA454	04	FSC disk peripheral microcode
MA462	06	ISD disk adapter peripheral microcode
MA464	10	895 disk peripheral microcode
MA466	03	5870 NIP peripheral microcode
MA710	13	844HT disk peripheral microcode
MA721	12	885/FMD disk peripheral microcode
MA722	03	885/FMD DEMA disk peripheral microcode
MB301	012	IPI tape peripheral microcode
MB401	04	FSC tape peripheral microcode
MB434	14	66X tape peripheral microcode
MB465/CW63X	04	639 ISMT tape control module peripheral microcode
MB466	03	7990 mass storage subsystem peripheral microcode
MB467	02	698 CMTS tape peripheral microcode
MD422	07	834 disk diagnostics
MD424	03	836 disk diagnostics
MH422	07	834 disk COS
MH424	03	836 disk COS
*MH426	09	9853 disk COS

* = Modified for this release.

Field Change Announcement (FCA) Index Levels

FCA plug and play index levels are documented on the FCA sheet distributed with CIP V10 L727.

Chapter 5
Seldom Used or Obsolete Diagnostic Instructions

Notes and Cautions

This section contains information on file 7 for CIP V10 L727 tapes with MSL. The following programs, which are seldom used or obsolete diagnostics, can be installed at the option of the local site maintenance personnel for all systems except a CYBER 962 or CYBER 992.

FFU01-FFU99A
FLM00-FLM99C
FSM00-FSM99A
F4401-F4499A
F7X00-F7X99A
F8801-F8899A
PDP01-PDP99B
BCX-9X6
MY8-9VJ
MY9-9VT
LDC-9V5
MTC-9UP
S2C-8JU
SCX
CID-7AZ
MYP-9VX

PAGE2	CYBER 960/990/994/995 only
STAT2	CYBER 960/990/994/995 only
TASE2	CYBER 960/990/994/995 only
TIVE2	CYBER 960/990/994/995 only
PAGE065	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
STAT065	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
TASE065	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
TIVE065	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
GENM	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
CACHE-CACHEB	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
TRPEM-TRPEB	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only
VAUTO-VAUTOB	CYBER 845/855/840/840A/850/850A/860/860A/870/870A only