

**NOS 2.7.1 LEVEL 750
SOFTWARE
RELEASE BULLETIN**

SMD132911

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Chapter 1

SRB Introduction

This document is the NOS 2.7.1 L750 Software Release Bulletin (SRB). It is to be used in conjunction with the NOS Installation Handbook (IHB) for installing NOS and its products. Control Data recommends that the SRB be read in its entirety prior to software installation. You should also verify that all of your hardware is at the FCA levels indicated in the Configuration Management section of the Software Availability Bulletin (SAB).

The NOS 2.7.1 L750 system described in this document is being released at the following levels:

Operating System	Level 750
Network Host Products	Level 750
Common Product Set	Level 739
CDCNET	Level 750

You will note that the level 739 Common Product Set is being re-released with this level 750 NOS system. Fewer than fifteen modsets have been required in response to major problems since the level 739 Common Product Set release. These modsets have been made accessible through placement on the SOLVER database. You should review them carefully for applicability to your site.

Audience

The SRB is written primarily for the site analyst. It contains notes and cautions about installation and usage of NOS 2.7.1 L750. Chapter 4 contains information intended for a system/operations administrator and chapter 5 contains information for the end user.

CYBER Software Support Hotline

Central Software Support maintains a hotline to assist you in the use of our products. If you need help not provided by the documentation or find that a product does not perform as described, call one of the following numbers. A support analyst will work with you.

From the USA and Canada: (800) 345-6628

From other countries: (612) 482-3434

Chapter 2

Installation

This chapter emphasizes changes in the operating system and its products which may be of particular interest to the person performing the system installation.

Notes and Cautions

This section highlights changes which should be kept in mind when installing NOS 2.7.1 L750.

All Local PP Programs Must Be Reassembled

Changes to PP common decks and NOSTEXT at NOS 2.7.1 L750 require that all sites reassemble any local PP programs.

CIP L750 Required for All CYBER 180-Class Mainframes

All CYBER 180-class mainframes require CIP L750 to deadstart NOS 2.7.1 L750. For further information regarding CIP, refer to the CIP L750 SRB.

Changes to Operating System Decks

There are no resequenced decks at NOS 2.7.1 L750.

There are no new decks at NOS 2.7.1 L750.

There are no decks deleted at NOS 2.7.1 L750.

Dual State Support

NOS 2.7.1 L750 includes support of the Dual State product. A build procedure in DECKOPL, a source library, and permanent files are released with this product. Dual state binaries for NOS 2.7.1 L750 and NOS/VE 1.5.2 L750 are contained on the NOS deadstart tape for dual state customers. The permanent file tapes contain binaries for NOS/VE 1.5.2 L750 compiled to run on NOS 2.7.1 L716, NOS 2.7.1 L727, and NOS 2.7.1 L739. For complete information on how to obtain these binaries, refer to the NOS Installation Handbook.

PSR Summary Report

A summary report of all the NOS PSR modsets in NOS 2.7.1 L750 is available on the permanent file tapes. It is loaded to the installation user name during the SYSGEN procedure call SYSGEN(SOURCE) and has a permanent file name of PSRRPT.

Manual Errata

This section describes manual updates which were discovered after the manuals went to print.

NOS Installation Handbook

The DUAL section of chapter 7 contains 2 errors.

1. Replace the bulleted items in step 4 of the Dual State Upgrade of NOS Only subsection with the following:

- If no BCU has been applied to NOS/VE, enter the following commands:

```
REWIND,PFGDUAL.  
COPYBF,PFGDUAL,VEDSSL.
```

- If a BCU has been applied to NOS/VE, enter the following commands:

```
REWIND,PFGBCU2.  
COPYBF,PFGBCU2,VEDSSL.
```

2. In the subsection Dual State on Older NOS Systems, the following command must be inserted before the COMMON,SYSTEM command:

```
RETURN,SYSTEM.
```

Chapter 3

Analysis

This chapter emphasizes changes in the operating system which may be of particular interest to the site analyst.

Enhancements

This section highlights new capabilities in NOS 2.7.1 L750.

CPU Scheduling Changes

Significant changes have been made to CPU scheduling in NOS 2.7.1 L750. These changes were made to allow more flexibility and predictability in allocating the CPU among competing job classes, and to correct some problems introduced in NOS 2.7.1 L716 and earlier releases.

At NOS 2.7.1 L716, two methods were introduced to allow allocation of the CPU among competing job classes: CPU priority ranges and variable CPU switch delays. While these methods were effective in allowing one service class to be favored over another in CPU scheduling, more recent experience has shown that it was difficult to predict exactly how the CPU would be allocated among competing jobs in a multi-job environment. Depending on the workload, it was possible for one job class to dominate the CPU when the intent was merely to give it slightly more service. In addition, the L716 method of CPU scheduling tended to degrade system I/O performance, since it did not give sufficient preference in assigning the CPU to jobs that were performing I/O. This made it difficult for jobs to stream data to and from both disk and tape.

To resolve these problems, NOS 2.7.1 L750 replaced the two CPU allocation methods of L716 with a single method that is both more flexible and more precise. The SERVICE parameters CB and SD have been deleted, and are replaced by the new SERVICE parameters PR, RS, SE and US. These parameters interact to manage CPU scheduling in the following fashion:

The system maintains a CPU wait queue of all ready to run jobs sorted in descending order by CPU priority. Whenever the job currently executing in a CPU must give up the CPU for some reason, the first job on the queue that can use that CPU is selected for execution. Reasons for giving up the CPU include going into recall status to wait for I/O to complete, preemption by a higher priority job, and expiration of the job's CPU slice. The CPU slice is the method of distributing CPU service among jobs at the same CPU priority and is a time value expressed in milliseconds. When a job has completed its CPU slice, it will be inserted into the CPU wait queue after the jobs at the

same CPU priority which still have time remaining in their CPU slices. Only when all jobs at a CPU priority have completed their CPU slices will jobs with completed CPU slices be selected again for execution. The CPU slice does not have to be a continuous span of time. For example, if a job is giving up the CPU frequently to wait for I/O, the job's CPU slice will typically be interleaved with that of other jobs. Jobs performing I/O will be given preference in obtaining the CPU under some circumstances. If a job gives up the CPU to wait for I/O, that job will be "recalled" when the I/O is complete. A job that has been recalled and which has not yet completed its CPU slice will be inserted into the CPU wait queue before those jobs at the same CPU priority which have not been recalled. A job that has been recalled and which has completed its CPU slice will be inserted into the CPU wait queue after those jobs at the same CPU priority which have not completed their CPU slice, but before those jobs at the same CPU priority which have also completed their CPU slice but which have not been recalled.

The US (unextended CPU slice) SERVICE parameter allows specification of different CPU slice values by service class. Assuming a fairly CPU intensive job mix, a job in a service class with a relatively long CPU slice will receive proportionately more CPU service than a job at the same priority in a service class with a relatively short CPU slice. The SE (CPU slice extension) SERVICE parameter defines an additional maximum amount of time that may be added, if needed, to the CPU slice of jobs performing I/O and also using significant amounts of CPU time. This will improve the I/O transfer rate that the job can achieve, and may also improve overall system throughput. However, this improvement will be at the expense of a more exactly proportional allocation of CPU service to CPU intensive jobs. The RS (recall CPU slice) SERVICE parameter defines the minimum guaranteed amount of time that a recalled job will keep the CPU before it can be preempted by another recalled job at the same CPU priority. This parameter is not involved in determining the amount of CPU time allocated to a job and normally should be set to the same value for all service classes. However, under unusual circumstances in which the I/O behavior of jobs in a service class is consistent and well understood, it may be possible to optimize their performance with a non-standard RS value.

SDSPLAY Input File

The capability to specify an input file on the call to SDSPLAY has been added. If an input file is specified (via the I=lfm parameter), the L-Display will not be activated and SDSPLAY directives will be read from the input file. This new capability allows a site to run an SYOT job which changes the system scheduling parameters without direct operator intervention. Sites may find this useful if, for example, they wish to automatically change system scheduling parameters at a certain time of the day.

DSD Display Changes

The S display has been changed to reflect the changes in the parameters of the SERVICE command. The CPU priority bounds (CB/L and CB/U) and the CPU switch delay (SD) have been deleted. The following fields have been added: the CPU priority (PR), the CPU slice extension (SE), the recall CPU slice (RS), and the unextended CPU slice (US).

On the W,M display, the value of the CPU Priority Incrementing Delay is no longer displayed. This was the value of the CI parameter of the DELAY command; that parameter no longer exists.

The W,Q display has been enhanced to display more detail in the CPU wait queue. If a queue entry is present for CPUMTR program mode, one of the following codes will be displayed to designate the specific CPUMTR function.

FTN	CPUMTR program mode monitor function.
MVE	CPUMTR storage move.
FLV	CPUMTR field length verification.
PSP	CPUMTR buffered I/O (pseudo-PP).
IDL	Idle package.

The W,R display has been enhanced to display more detail concerning the active job in the CPU. If the CPU is assigned to CPUMTR program mode, one of the following codes will be displayed to designate which part of CPUMTR is actually active.

SYS FTN	CPUMTR program mode monitor function.
SYS MVE	CPUMTR storage move.
SYS FLV	CPUMTR field length verification.
SYS PSP	CPUMTR buffered I/O (pseudo-PP).
SYS IDL	Idle package.

NOS Dual CPU Support for the CYBER 960-32

NOS 2.7.1 L750 supports the use by NOS of both CPUs of a CYBER 960-32, when the machine is deadstarted in NOS standalone mode.

If a "VE" entry is included in the CMRDECK at deadstart time, the machine will be deadstarted in dual state mode rather than in NOS standalone mode. In this case, NOS will only be able to use the first CPU on a CYBER 960-32; the second CPU will be reserved for NOS/VE.

VEMEM Procedure Updated to Handle 128MB NOS Memory

The utility procedure VEMEM has been updated to reflect the fact that NOS may use up to 128MB of memory. VEMEM will now also accept 256MB as a total memory size for a machine. Of that total, 128MB may be used by NOS, and 16MB of the NOS memory may be used for normal executing job and operating system memory (the remaining portion of the 128MB can be used only for extended

memory). Within these constraints, VEMEM will lead you through allocation of memory to NOS/VE and NOS, including the various combinations of user extended memory, I/O buffer and other NOS uses, and will produce the necessary CMRDECK and EQPDECK entries needed to support the allocation selected.

Job Sequence Name (JSN) Format is Now Site Controllable

In response to a complaint that NOS will at times generate a Job Sequence Name (JSN) that is offensive to some people, code has been added to CPUMTR to simplify site tailoring of the JSN format. It is now possible to define a range of characters that are acceptable and a list of characters to be excluded for each of the four character positions of the JSN. This allows the approach of excluding vowels from all positions of the JSN, or from all but the last position, for example. It also allows for restricting one or more character positions to digits, or any other subset of alphanumeric characters. To make use of this capability, all that is required is to make the desired changes to one or more of four JSNMASK entries (one for each JSN character position) at the end of routine RJS in CPUMTR. If the letter "A" is to be excluded from JSN's, it is also necessary to change the initial JSN, which can be found at the tag ".JSN" in SET. By default, the JSN format is the same as in previous releases.

DSDI "D" Parameter Enhancement

DSDI now allows the specification of the name of the file onto which the randomized dump will be written, by using the format "D=filename". The old format, specifying simply "D" to create the random dump file with the same file name as specified on the F parameter, is still valid as well. When the "D=filename" format is used, DSDI will not return the file specified by the F parameter. This change allows the user to predefine the random dump file as a permanent file.

Change to STM Control Point Assignment

The internal interactive stimulator, STIMULA, and the external interactive stimulator, PACER, share the same subsystem name, "STM". Since STIMULA must run at the last control point, it has not been possible in previous releases to change the control point assignment of STM through the IPRDECK ENABLE command or through SUBSYST. This was an unnecessary restriction on PACER. In NOS 2.7.1-750, the control point restriction has been removed for the STM subsystem, but code has been added to the STIMULA PP helper program, LTS, to prevent STIMULA from running at any control point other than the last one. This allows PACER to run at a control point other than the last control point.

Incompatibilities

This section describes any system incompatibilities with previously released NOS systems.

DSD Command Changes

The CI parameter (CPU priority incrementing delay) of the DELAY command has been eliminated.

The SERVICE command parameters CB (CPU priority bounds) and SD (CPU switch delay) have been eliminated. Four new parameters have been added to the SERVICE command: PR (CPU priority), RS (recall CPU slice), SE (CPU slice extension), and US (unextended CPU slice). Descriptions for these new parameters are as follows:

- | | |
|------|---|
| PRpr | CPU priority. When more than one job is waiting for the CPU, the jobs with the highest CPU priority will always get the CPU first; jobs with lower CPU priority will only get the CPU when higher-priority jobs no longer wish to use the CPU. pr ranges from 2 to 77B. |
| RSrs | Recall CPU slice in milliseconds. The minimum guaranteed amount of time that a recalled job will keep the CPU before it can be preempted by another recalled job at the same CPU priority. rs ranges from 1 to 7777B, but the value specified must be less than or equal to the value specified for the unextended CPU slice, us. |
| SEse | CPU slice extension in milliseconds. The maximum additional amount of CPU time that a job performing I/O can get after its unextended CPU slice has expired before the CPU slice is considered to have expired, and the CPU is switched to an equal-priority job. This is a maximum ceiling; the slice is actually extended from the amount already used by the value of the recall CPU slice, rs, each time that the job is recalled. se ranges from 0 to 7777B. |
| USus | Unextended CPU slice in milliseconds. The amount of CPU time that a CPU-bound job will get before the CPU is switched to an equal-priority job. us ranges from 1 to 7777B, but the value specified for us must be greater than or equal to the value specified for the recall CPU slice, rs. |

IPRDECK Changes

The CI parameter (CPU priority incrementing delay) of the DELAY entry has been eliminated.

The SERVICE entry parameters CB (CPU priority bounds) and SD (CPU switch delay) have been eliminated. Four new parameters have been added to the SERVICE entry: PR (CPU priority), RS (recall CPU slice), SE (CPU slice extension), and US (unextended CPU slice). Refer to the SRB article on "DSD Command Changes" for descriptions of these new parameters.

SDSPLAY Changes

The SDSPLAY utility has been changed to reflect the changes in service class parameters. The CB (CPU priority bounds) and SD (CPU switch delay) entries have been deleted. The following entries have been added: PR (CPU priority), RS (recall CPU slice), SE (CPU slice extension), and US (unextended CPU slice). Refer to the SRB article on "DSD Command Changes" for descriptions of these new parameters.

CPD/ACPD Version Change

The CPD/ACPD version level has been changed to reflect the new data items added to the CPD data file at NOS 2.7.1 L750. The new CPD data file format is not compatible with older versions of ACPD; similarly, CPD data files generated on older levels of NOS are not compatible with the new version of ACPD.

Subsystem Control Point Assignment Change

In previous releases, it was possible for a subsystem to come up at the wrong control point. This could happen when a subsystem with an assigned control point found its control point occupied by another subsystem or by a job that could not be rolled out. When this happened, the subsystem would simply be scheduled to another control point rather than waiting for its assigned control point.

At NOS 2.7.1 L750, the subsystem will wait for the job at its assigned control point to roll out or terminate. On the "R" display, the newly initiated subsystem will appear to be rolled out (in "PW" state), waiting for an "SS" event.

To prevent a subsystem with an assigned control point from waiting indefinitely for another subsystem to finish, the site should ensure that either ALL subsystems have been assigned unique control points, or NONE of them have been assigned control points.

Notes and Cautions

CMR and Control Point Area Changes

Changes have been made to several areas of CMR and the control point area. Any site-written PP program which accesses any of the affected words should be examined to determine if it needs to be modified. The changes were as follows:

The format of the words CPAL, CSWL, EIBP and WQRL in CMR have been changed.

The format of the words JCIW and CRCW in the control point area have been changed. The relative order of various other words in the control point area also changed.

The word PUCW has been moved from the control point area into NFL, and renamed to PUCN.

The format of the Job Control Block (JCB), and the length of the JCB entry, have been changed; any references to symbols JBCP and JCBE should be checked.

Chapter 4 Operations

This chapter emphasizes changes in the operating system which may be of particular interest to the administrator responsible for performing user validations and accounting activities, and/or the person responsible for operational activities.

Enhancements

This section highlights new capabilities in NOS 2.7.1 L750.

Change in DFTERM Error Handling

In previous releases, DFTERM would display the message "DAYFILE BUSY" if a busy dayfile was encountered and would wait for operator input via the K-display. DFTERM will now continue to retry terminating a busy dayfile until the dayfile becomes non-busy or until the DFTERM is dropped. The message "WAITING FOR BUSY DAYFILE" will be displayed during this procedure.

REDEFINE Will Now Add a DOWN Channel To An Equipment

In previous releases, it was not possible to add a globally DOWN channel to an equipment using the REDEFINE command from DSD. As it is not possible to UP an unconfigured channel, if the channel was not already configured in some equipment entry it was sometimes necessary to either deadstart or make potentially dangerous direct memory changes in order to achieve a desired configuration. This situation has been changed so that it is now possible to use the REDEFINE command to add a globally DOWN channel to an equipment. The channel will be added to the equipment with DOWN status. After the channel has been added to the desired equipment(s), it can then be set to UP status using the UP command from DSD.

Incompatibilities

This section describes any system incompatibilities with previously released NOS systems.

E,T Display Change

On previous releases, a tape unit that was OFF would show on the E,A display as OFF, but on the E,T display as DOWN. On NOS 2.7.1 L750, the E,T display will show OFF status for a unit which is OFF; only a unit which is actually DOWN will show up as DOWN.

Notes and Cautions

This section highlights changes made at NOS 2.7.1 L750.

Change in SRU Limit Calculation

In previous releases, specification of an SRU limit validation index value of 73B, 74B, 75B or 76B would appear to set a large but noninfinite SRU limit; however, the value set as the user's SRU limit was higher than the value at which the SRU accumulator overflows and resets. This effectively gave the user unlimited SRUs. In NOS 2.7.1-750, the SRU calculation formulas are changed to explicitly return "unlimited" if an index value of 73B or greater is entered. Also, the MODVAL K-display is changed to display "UNLIMITED" if such indices are entered, and the SETASL and SETJSL commands are changed to display "UNLIMITED" if a value greater than 219903D (655400B) is entered.

Chapter 5

End User

This chapter emphasizes changes in the operating system which may be of particular interest to the end user.

Enhancements

This section highlights new capabilities in NOS 2.7.1 L750.

Change to SETJOB Command

The SETJOB command now accepts the asterisk (*) as an allowable character in the UJN parameter. This makes SETJOB compatible with ROUTE, which has always accepted an asterisk as a valid character within a UJN.

FSE Can Now Display Single Height Function Key Prompts

Some terminals have function keys which send the same codes when shifted as when unshifted. If the terminal definition does not define any shifted function keys via the 'FSEKEYS' application strings, and the user does not declare any with the SET KEY SHIFTED (SKS) directive, FSE will now display single height function key prompts rather than double height. This allows more editing space on the screen while still displaying the function key prompts. For example, if at least one shifted function key has a defined function, the function key prompt might look something like this:

F1	MRKCHR MARK	F2	ONECPY MOVE	F3	DELB INSB	F4	LAST FIRST	F5	UNMARK UNDO
----	--	----	--	----	--	----	---	----	--

However, if no shifted function key has a defined function, the function key prompt might appear as follows:

F1	MARK	F2	MOVE	F3	INSB	F4	FIRST	F5	UNDO
----	---	----	---	----	---	----	--	----	---

FSE Now Shows Current Search String on Status Display

When an FSE user executes a GET STATUS directive, the Status display that is generated now contains the currently active search string. This is the string that would be used if the user were to issue a LOCATE or REPLACE directive without a search string. For example, after issuing the directive:

L/abc/

the search string value is 'abc'. This would show up on the status display as:

SEARCH STRING: 'abc'

The complete status display (exclusive of function key data) might appear as follows:

PRESS NEXT TO CONTINUE

EDITOR STATUS INFORMATION:

FILES:	NAME	LOCK	CHANGE	CHARSET	NUMBERED	SIZE	POSITION
(CURRENT)	TEXT	NO	YES	ASCII	NO	88	88
	FSEPROC	NO	NO	ASCII	NO	507	1

SET VIEW IN: 1 250 TAB COLUMNS: 7 72

SET VIEW WARN: 160 SET UNDO: YES TAB CHARACTER: \ CNTRL CHRS: ↑

SET VIEW EDIT: 250 SET JUMP: YES SET WORD FILL: 1 65 5 JUSTIFY: NO

SEARCH STRING: 'abc'

QGET Can Now Provide Access to a File Without Dequeuing It

It is now possible to use QGET to access a queued file while retaining the file's status as a QFFT file, including its prior routing status. This is done by means of the DQ parameter. If a QGET command with a DQ=NO parameter is executed, the file will be accessible to the user for listing or for examination, but the file remains a QFFT file; it is not dequeued, and it remains locked and may not be modified. If the user subsequently enters a ROUTE command on the file with no parameters, the file will be requeued with all of the existing routing specifications in effect. The file will also be requeued in this fashion if the user logs out or if the communication line goes down; after recovery the file will be in the queue just as it was before the QGET operation. If the system were to go down before the user could take action to protect the file from loss, the file would be automatically returned to the queue.

QGET may also be executed with DQ=YES. This is equivalent to omitting the DQ parameter, and the file will be dequeued.

Examples:

QGET,ABQX,PR.

*** GET PRINT FILE, REMOVE FROM QUEUE ***

QGET,ABQX,PR,DQ=NO.

*** GET PRINT FILE BUT DO NOT DEQUEUE ***

QGET,ABQX,PR,DQ=YES. *** GET PRINT FILE, REMOVE FROM QUEUE ***
QGET,UJN=GRINCH,DQ=NO. *** GET WAIT QUEUE FILE, DO NOT DEQUEUE ***

More Useful Termination Messages for Most COPY Utilities

The utilities COPY, COPYBF, COPYBR, COPYEI, COPYX, TCOPY, COPYCF, COPYCR, COPYSBF and SCOPY now display a termination message containing the terminating condition and a count of files, records and either words or lines processed. This new termination message is placed in the dayfile in addition to and immediately following the original termination message; for an interactive job, this new message will normally be echoed to the terminal. The new messages are as follows:

For COPY, COPYBF, COPYBR, COPYEI, COPYX and TCOPY:

END. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn WORDS.
The specified termination condition was satisfied.

EOF. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn WORDS.
EOF was encountered before the specified condition,
or the implied or specified condition was EOF.

EOI. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn WORDS.
EOI was encountered before the specified condition,
or the implied or specified condition was EOI.

For COPYCF, COPYCR, COPYSBF and SCOPY:

EOR. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn LINES.
The specified EOR condition was satisfied.

EOF. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn LINES.
EOF was encountered before the specified condition,
or the implied or specified condition was EOF.

EOI. nnnnnnn FILES; nnnnnnn RECORDS; nnnnnnnnn LINES.
EOI was encountered before the specified condition,
or the implied or specified condition was EOI.

Full Screen CCL Now Tailors Screen Size to Procedures

In previous releases, when a user with a terminal capable of multiple row/column formats called a procedure in screen mode, CCL always selected the smallest screen format defined in the Terminal Definition (TDU) for that terminal when prompting for parameters or menu selections.

This behavior has been changed. Full screen CCL will now select a screen format appropriate to the procedure called. The format used is the one with the fewest lines that will display the complete set of parameters/menu selections for that procedure, if that is possible. If the terminal has no format with enough lines to display all selections on a single page, the screen format with the most lines will be selected. In either case, if more than one format has that number of lines, the one with the fewest columns is selected.

NOS TDUs Available for NCD16 and NCD19 Xterminals

Two new Terminal Definitions have been added to TDUFILE and TERMLIB for NOS. They are TDU records TDUNCDX and TDUNCDT, model names NCDX and NCDXT respectively. They support the Network Computing Devices Xterminals, models NCD16 and NCD19. Both TDUs support either model. The only difference is that model name NCDXT is used for FSE support of typeahead.

In order to use one of the TDU's with an NCD16/NCD19 on NOS, you must first install a special ".Xdefaults" file on the UNIX system that runs within the terminal. Each of these TDUs contain within them an explanation of the procedure to follow on UNIX, including the actual ".Xdefaults" file which can be extracted from the TDU and used on UNIX. Following the instructions in the TDU (of which this is a variant), extract the file, removing the quotes from each end of the lines to make the file usable on UNIX. Create a UNIX file with it, then execute the following UNIX command:

```
xrdb whatever_filename_you_used
```

Note: You must allow the c pre-processor to run on this file. Do NOT use the -nocpp option on the xrdb command.

Then invoke xterm, like this:

```
xterm -name cyber -l32 -j
```

The '-name cyber' specifies use of the cyber key mapping. The '-l32' specifies to allow switching to 132 column mode. The '-j' specifies use of jump scrolling instead of smooth scrolling (this is optional).

Note: UNIX is a registered trademark of AT&T, Incorporated.

FSE Now Displays Mark Status On File Header Lines

When editing a file with the NOS Full Screen Editor, a notice will now be displayed on the header line for any file in which one or more lines or characters have been marked. The warning will read "<Mark Active>" if one mark is set, or "<Marks Active>" if two marks are set. When the marks are cancelled, the notice will disappear. Like other optional header line

information (line number range, file size and change status), the mark status display can be turned off with the SET HEADER NO (SHN) directive, and restored with the SET HEADER YES (SHY) directive.

Incompatibilities

This section describes any system incompatibilities with previously released NOS systems.

LIBRARY Command Now Aborts for Bad Library Files

In previous releases, if the LIBRARY command encountered an error, it would (usually) clear the global library set and terminate without aborting. When used within a procedure or a batch job, this could lead to unanticipated results.

On NOS 2.7.1 L750, the LIBRARY command will abort if one or more of the library names specified on the command is neither a local file nor a system library, or if the library name refers to a local file, but the file is not a library file. Diagnostic messages will appear in the dayfile identifying each affected library name, followed by the abort message:

LIBRARY FILE ERROR(S) - SEE DAYFILE.

When the LIBRARY command is issued interactively, only the abort message will appear at the terminal. The user can then issue a DAYFILE command to see which file(s) had an error.

Chapter 6

Configuration Management

Notes and Cautions

This section highlights changes in configuration management for NOS 2.7.1 L750.

Testing Environment

The NOS 2.7.1 L750 system was tested in an environment containing the following components:

Hardware Component	Release Level	CIP Level
Model 810 Microcode	M14AA16	L750
Model 815 Microcode	M11AA16	L750
Model 825 Microcode	M12AA16	L750
Model 830 Microcode	M13AA16	L750
Model 835 Microcode	M20AA17	L750
Model 840 Microcode	M340x09	L750
Model 845 Microcode	M310x11	L750
Model 850 Microcode	M330x12	L750
Model 855 Microcode	M300x10	L750
Model 860 Microcode	M320x11	L750
Model 960-11 Microcode	M3A0x07	L750
Model 960-31 Microcode	M3B0x07	L750
Model 990 Microcode	M40Ax22	L750
Model 990 Microcode	M41Ax22	L750
Model 994 Microcode	M44Ax22	L750
800 Series Environment Interface (EI)	Level 22	L750
DFT	V07	L750
SCI	V06	L750

NOTE

Microcode for model 870 is the same as that for the 860 and microcode for model 995 is the same as that for the 990.

Chapter 7

CDCNET

This chapter contains information about CDCNET at CDCNET 1.5.2 L750 (version 7606N), as used with NOS and NOS/VE systems.

Headings within the following CDCNET material may have numbers in parentheses. These numbers refer to the product number associated with the product described in the article.

Feature Descriptions

ESCI Performance Enhancements

The ESCI Performance Enhancements feature consists of a number of changes in the way the Ethernet Serial Channel Interface board processes packets going to and from Ethernet. These changes improve performance in high packet rate situations, such as single character forwarding (for example, Hotkey). This feature is part of the base CDCNET product.

Device Outcall Gateway Enhancements

The Device Outcall Gateway is a formalization of the outcall capability which is available through Interactive Async Terminal Passthrough. This feature allows terminals (and now host applications) to have connections to asynchronous ports in CDCNET. The enhancements introduced in this release include:

- It is now possible to allow all 8 bits to pass through to a server even if the client is defined as having parity. This allows the ultimate destination to process the original parity supplied by the device.
- Interactive Async Terminal Passthrough and the Outcall Gateway server will now log usage of services. Logging will be done when connections are made and removed.
- With a new DI command, `IDLE_SERVER_DEVICE`, it is possible to have the ports on a specified outcall gateway service taken out of service as they are freed up. This allows a network administrator to take a set of outdial modems, for example, out of service without immediately terminating the current connections.

- By specifying on the outcall gateway service definition that the ports will use Hayes protocol, the clients connection will be required to place the number to be dialed in the SERVICE_DATA parameter. This causes the outcall gateway to condition the modem and dial the number automatically. It also causes the number dialed to be recorded in the new log messages described above. This allows a site to control and track the use of outdial modems.

New NPA Accounting Database NPBSUMM

A new Network Performance Analyzer (NPA) database, NPBSUMM, has been created and REFORMAT_CDCNET_LOG_FILE (REFCLF) has been enhanced to reformat the following connection statistics log messages.

Device Outcall (233,234,237,238)
Passthrough (235,236,239,240)
Server TELNET TIP (1462-1466)
Terminal Support (617-620,1538)
X.25 Asynctip (1340-1344)
X.25 Gateway (1160-1161)
X.25 Terminal Gateway (38-39)

ARCHIVE_NPA_DATA_BASE (ARCNDDB) and RELOAD_NPA_DATA_BASE (RELNDB) have been modified to archive and reload respectively the NPBSUMM database.

The above changes are made to both the NOS and NOS/VE versions of NPA.

TELNET TIP

The TELNET TIP feature is a new terminal interface procedure (TIP) module to support the TCP/IP TELNET protocol. It uses the services of terminal support software and provides support of all the normal terminal attributes. The TIP allows any number of TELNET TIPs, each with its own address. The definition of a TELNET TIP is similar to the definition of an asynchronous line, allowing the use of terminal user procedures (TUPs), among other things. The TELNET TIP can co-exist with the server TELNET gateway in this release. The TELNET TIP is a component of the separately priced TCP/IP product.

TCP/IP Name Resolver for TELNET

The TCP/IP Name Resolver provides a means for TELNET to query a local or foreign database to determine information relating to a logical name dynamically. The queries are sent to a name server application that is accessible via the network but not necessarily a CDCNET product. The name resolver resides in DIs containing the TCP/IP protocol. This feature is a component of the TCP/IP separately priced product.

NOS 2.7.1 L750
Software Release Bulletin

Installation Response Form

Central Software Support maintains a list of the sites using NOS. In order that we may represent the customer base more effectively, we ask that you fill out this form and return it to Central Software Support. Thank you.

SITE NAME

SOLVER SITE CODE

SITE ADDRESS

MAINFRAME MODELS

CONTACT

INSTALLATION DATE

This site has installed NOS 2.7.1 L750 and is currently using it in a production environment.

Please return to:

Central Software Support - ARH213
Control Data Corporation
4201 Lexington Avenue North
Arden Hills, MN 55126 USA