

**NOS 2.7.2 LEVEL 774
SOFTWARE
RELEASE BULLETIN**

SMD133512

Contents

Chapter 1 - SRB Introduction	
Audience	1-1
Central Software Support Hotline	1-2
Chapter 2 - Installation	
Notes and Cautions	2-1
All Local PP Programs Must Be Reassembled	2-1
CIP L774 Required for All CYBER 180-Class Mainframes	2-1
Changes to Operating System Decks	2-1
PSR Summary Report	2-1
Dual State Support	2-2
Installing Your System Without Degrading a CDCNET BCU	2-2
Change Required to TMS	2-2
Change Required to UMass Mailer	2-3
Significant Problems	2-3
Assembly Error in CPUMTR if EJT Entry Size Changed	2-3
Chapter 3 - Analysis	
Enhancements	3-1
5830 Disk Array Subsystem (DAS) Support	3-1
NOS Dual CPU Support for 860-Class and 990-Class Mainframes	3-2
NOS FTP Accounting Enhancements	3-3
Notes and Cautions	3-3
New Device Mnemonics May Require Changes to Site Applications	3-3
Changes to 9853 (XMD) Error Processing	3-3
Incompatibilities	3-4
Change of Default for AUTORESTART IPRDECK Entry	3-4
Change in Fast-Attach Processing for SSJ= Programs	3-4
Significant Problems	3-5
Problems With Error Recovery on 895 and 885-42 (HSIO) disks	3-5
FTPS and FTPI Abort if Channel Connection is Lost	3-5
Chapter 4 - Operations	
Incompatibilities	4-1
Changes to CPU Priority Commands	4-1
DSD Command Logging Change	4-1
Notes and Cautions	4-2
APRDECK Entries Now Processed for Removable Devices	4-2
Chapter 5 - End User	
Enhancements	5-1
New BL Command Parameter for MODIFY Utility	5-1
Network Terminal Name Variable Added to CCL	5-1
Enhancements Added for SHELL Processing	5-1
FSE Single Height Function Key Prompts Now User Selectable	5-2
The BLOCK Command Now Accepts Literal Values	5-2

Chapter 5 - End User (Continued)

ENQUIRE Now Shows Minutes Until Timeout For Suspended Jobs	5-3
ENQUIRE(OP=F) Lists Files In Alphabetical Order	5-3
Incompatibilities	5-3
Changes to CS Parameter on GETF, REPF, APPF	5-3

Chapter 6 - Configuration Management

Notes and Cautions	6-1
Testing Environment	6-1

Chapter 1

SRB Introduction

This document is the NOS 2.7.2 L774 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 2.7.2 L774 system described in this document is being released at the following levels:

Operating System	Level 774
Network Host Products	Level 774
Common Product Set	Level 739
CDCNET	Level 765

You will note that the level 739 Common Product Set is being re-released with this level 774 NOS system. The modsets listed below have been made accessible through placement on the SOLVER database. You should review them carefully for applicability to your site.

CCGA097	CD20472	CD20481	CD2A621	CD2A627
CD20456	CD20473	CD20482	CD2A622	DL30077
CD20461	CD20475	CD20484	CD2A623	FC51609
CD20464	CD20476	CD20485	CD2A624	FC5A528
CD20469	CD20477	CD2A619	CD2A625	FDB0033
CD20471	CD20480	CD2A620	CD2A626	FDB0034

Audience

The SRB is written primarily for the site analyst. It contains notes and cautions about installation and usage of NOS 2.7.2 L774. Chapter 4 contains information intended for a system/operations administrator and chapter 5 contains information for the end user.

Central Software Support Hotline

Central Software Support (CSS) 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, phone 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 2.7.2 L774.

All Local PP Programs Must Be Reassembled

Changes to PP common decks and NOSTEXT at NOS 2.7.2 L774 require that all sites reassemble any local PP programs.

CIP L774 Required for All CYBER 180-Class Mainframes

All CYBER 180-class mainframes require CIP L774 to deadstart NOS 2.7.2 L774. For further information regarding CIP, refer to the CIP L774 SRB.

Changes to Operating System Decks

There are no resequenced decks at NOS 2.7.2 L774.

There is one new deck at NOS 2.7.2 L774:
1DA - 583X (DAS) DRIVER

There are no decks deleted at NOS 2.7.2 L774.

PSR Summary Report

A summary report of all the NOS PSR modsets in NOS 2.7.2 L774 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.

Dual State Support

NOS 2.7.2 L774 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 2.7.2 L774, NOS/VE 1.5.2 L750 and NOS/VE 1.5.3 L765 are contained on the NOS deadstart tape for dual state customers. The permanent file tapes contain binaries for NOS/VE 1.5.2 L765 compiled to run on NOS 2.7.1 L750 and NOS 2.7.2 L774.

NOTE

If your system is running NOS/VE 1.5.2 L765, you DO NOT have to perform any special instructions in chapter 7 of the NOS Installation Handbook unless you wish to alter the dual state source library. Your NOS order already came with the binaries that match the NOS/VE 1.5.2 L765 system on the deadstart tape.

For more information concerning dual state and its build procedure, consult the NOS Version 2 Installation handbook (60459320).

Installing Your System Without Degrading a CDCNET BCU

The NOS 2.7.2 L774 release is built with CDCNET at version A206. This is the version that was released as the L765 NOS CDCNET BCU. If you have installed additional L765 CDCNET BCUs, that is, your system is running a version of CDCNET greater than A206, you will need to modify your upgrade installation so that you do not re-install A206 over your current version.

To avoid overwriting your current version of CDCNET, follow the instructions in step 5 of the Upgrade Installation chapter of the NOS Installation Handbook (60459320) which instruct you to delete PFGDCNS and PFGCHA2 from your RECLAIM database. DO NOT perform any special instructions in the CDCNET section of the Special Product Installation Information chapter since your CDCNET already is at the appropriate level.

Change Required to TMS

For those sites which are running the product TMS (the NOS Tape Management System), the code on SOLVER for PSR TMSA012 should be installed in that product when upgrading to NOS 2.7.2 L774. This change is required due to changes in the format of the demand file in NOS 2.7.2 L774.

Change Required to UMass Mailer

For those sites which are running the UMass Mailer, the following modset should be installed in that product when upgrading to NOS 2.7.2 L774. This change is required due to changes in Fast Attach File processing in NOS 2.7.2 L774.

```
*DECK      IMF
*D,87

IMF1.1     ENFA  MAILDB,GLOBAL .SET GLOBAL FAST ATTACH
*I,93

          ATTACH MAILDB,,,,W,,,IP,FA .TRY FAST ATTACH
          RJ      CES      .CHECK ERROR STATUS
          ZR      X0,IMF1.1 .IF ALREADY FAST ATTACH
          SX3     X0-1
          NZ      X3,ERR    .IF NOT *FILE BUSY*
*/         END OF MODSET.
```

Significant Problems

This section describes significant problems known at the time of release.

Assembly Error in CPUMTR if EJT Entry Size Changed

If NOS 2.7.2 L774 is rebuilt with the size of the EJT entry (symbol EJTE) changed, an assembly error will occur in CPUMTR. To correct this problem, install the code from SOLVER for PSR NS2G616.

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 2.7.2 L774.

5830 Disk Array Subsystem (DAS) Support

NOS 2.7.2 L774 includes the first phase of support for the 5830 Disk Array Subsystem (DAS). Support for this feature will be released in two phases. Phase I, which is included in NOS 2.7.2 L774, supports serial mode access for the Solid State Disk (SSD) and SABRE disk drives. Phase II, which will be included in the NOS 2.7.3 L780 release, adds support for parallel mode access for the SSD, and both parallel and parity mode access for the SABRE.

The following 583x (DAS) device types are supported in the NOS 2.7.2 L774 release:

- 1X 5832 SSD (Solid State Disk)
- 1X 5833 SABRE

The following 583x (DAS) device types are NOT supported in the NOS 2.7.2 L774 release, but will be supported in the next release of NOS (NOS 2.7.3 L780):

- 2X 5832 SSD
- 1XP 5833 SABRE
- 2X 5833 SABRE
- 2XP 5833 SABRE

The following 583x (DAS) device types will NOT be supported under NOS at all:

- 3XP 5833 SABRE
- 4X 5833 SABRE

These devices will not be supported under NOS because they are too large; due to the size of the fields in the NOS Track Reservation Table (TRT), the size of the largest mass storage device that can be supported on NOS is about 2 GB (gigabytes).

A 583x DAS device cannot be used as a CIP device or as a disk deadstart device. Therefore, another type of disk must be configured on the mainframe for use as a CIP device and, if desired, as a disk deadstart device. The 5830 DAS subsystem can coexist in a configuration with the 7x5x/844, 7155/844-4x, 7155/885-1x and 7165/895 disk subsystems, all of which support CIP and deadstart file residency. The 5830 can also coexist in a configuration with the 887 and 9853 disk subsystems, which do not support CIP or deadstart file residency.

583x disks may not be shared between mainframes, but they can coexist in a configuration with other disk subsystems that are shared between mainframes.

The capacity of a 1X SABRE drive is 1039 MB (megabytes). The sustained transfer rate for a single 1X SABRE disk is 6663 Kch/sec (5.33 MB/sec).

The capacity of a 1X SSD drive is 165 MB. The sustained transfer rate for a single 1X SSD disk is 9447 Kch/sec (7.55 MB/sec) on the 10 MB IPI channel, and 9886 Kch/sec (7.90 MB/sec) on the 25 MB IPI channel.

A maximum of 32 drives can be configured per IPI channel; both the 10 MB and the 25 MB IPI channels are supported. Up to 120 single-access or dual-access drives can be configured on a system. This restriction is based on the maximum total CMR size allowed. In a future release of NOS, the maximum size for CMR may be increased; if that were done, a total of 160 dual-access or 320 single-access drives could be configured.

NOS utilizes a 16KB (kilobyte) sector size on the SABRE and SSD. This is a different sector size from that used by NOS/VE; therefore, drives must be reformatted when they are moved back and forth from NOS to NOS/VE. NOS supports the reformatting of 583x drives at deadstart time.

NOS Dual CPU Support for 860-Class and 990-Class Mainframes

NOS 2.7.2 L774 supports the use by NOS of both CPUs on most CYBER 860-class and 990-class mainframes. CYBER 860-class mainframes for which NOS Dual CPU is supported are the CYBER 860, 860A and 870A. CYBER 990-class mainframes for which NOS Dual CPU is supported are the CYBER 990 (except for early mainframes with a CPU model number of 40), 990E, 994 and 995E. The machine must be deadstarted in NOS standalone mode in order for NOS to use both CPUs; if the machine is deadstarted in dual state mode, the second CPU is reserved for use by NOS/VE.

To use this capability for these mainframes, the operator must use the 0 ("CHANGE OS LOAD STATE") option under the "OPERATOR INTERVENTION" menu of CIP to select the "NOS-NOS/BE DUAL CPU" OS load state before proceeding to deadstart NOS. In addition, the CMRDECK must NOT contain a "VE" entry, which is used to designate dual state operation.

NOS FTP Accounting Enhancements

The ABIC message is now issued by FTP after every primary USER command, even when no charge is required. The default charge is now issued when the charge is required and a default exists. SRU accumulation is disabled until the primary USER is established, which prevents the user from being charged for the socket listen time. All of the correct accounting messages should now be generated. FTP now supports secondary USER commands and secondary ACCT commands. FTP now supports the SYST command.

Notes and Cautions

This section highlights changes made at NOS 2.7.2 L774.

New Device Mnemonics May Require Changes to Site Applications

It has been our experience that some CPU and PP programs make either an explicit or an implicit assumption that all mass storage device mnemonics begin with the letter "D". With the advent of the 5830 Disk Array Subsystem, this assumption is no longer valid; 583x disk devices have the mnemonics EA, EB, EC, ED, EE and EF. Several programs within the operating system have been corrected to remove dependence on this assumption. Site analysts should be aware that some site applications may also have code based on this assumption, which would have to be changed if 583x devices were added to their configuration.

Changes to 9853 (XMD) Error Processing

Significant changes have been made in NOS 2.7.2 L774 to error processing in the 9853 (XMD) driver, 1XD. One of the most noticeable of these is in the area of CM Reset processing.

In previous releases, the operator would have to enable the use of the slave reset on the control module, by using the ENABLE,CM RESET entry (either from the IPRDECK or DSD). If ENABLE,CM RESET was entered, 1XD would then always perform a slave reset instead of a logical reset. Under some circumstances, this error recovery algorithm could result in the error CM RESET FAILURE, which generally required a deadstart to correct.

In NOS 2.7.2 L774, 1XD decides on its own, based on the type of error and on the results of earlier error recovery attempts, whether to perform a slave reset on the control module. This enhanced error recovery algorithm will generally prevent the occurrence of CM RESET FAILURE.

Because of this change in error processing, 1XD now ignores the status of the ENABLE,CM RESET entry, although the entry may still be made. In a future release of NOS, the ENABLE,CM RESET entry will no longer be legal.

Incompatibilities

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

Change of Default for AUTORESTART IPRDECK Entry

The default value for the AUTORESTART IPRDECK entry has been changed from DISABLED to ENABLED. If AUTORESTART is ENABLED, the system will automatically restart after a transient power/environmental anomaly, providing that power was not lost altogether. If AUTORESTART is DISABLED, the system operator must manually UNSTEP the system after a transient power/environmental anomaly. This default was changed to make NOS processing, under these conditions, be equivalent to the processing performed by NOS/VE.

Change in Fast-Attach Processing for SSJ= Programs

In previous releases, when an SSJ= program did an ATTACH request, it was possible that it would attach a Fast Attach file when the intent was to attach a normal permanent file. This was a result of the way PFM processed the ATTACH request: for any ATTACH request from an SSJ= program, PFM would, by default, try to attach a Fast Attach file with the specified file name before trying to attach a normal permanent file. This implicit fast attach was always attempted unless the programmer explicitly specified that it was not to take place by specifying the NF special request.

If a programmer who was writing a new SSJ= program was not aware of this behavior, such a program could become a security hole which allowed a normal user to attach Fast Attach files such as the system validation file (VALIDUS). Such an event has happened several times in the past, with such products as FSE, CCL and FTP. In each case, the individual program was fixed, but the underlying PFM behavior was never changed.

At NOS 2.7.2 L774, PFM has been changed to only attempt to attach a Fast Attach file when the calling program specifically requests it, via the FA or MA special requests. The FA (Force Fast Attach) special request already existed in previous releases; it forces PFM to try to attach a fast attach file, and will never attach a normal permanent file. The new MA (Mixed Fast Attach) special request is provided to ease the conversion of existing programs; it works the way PFM used to work by default, allowing a program to attach either a Fast Attach file or a normal permanent file with a single ATTACH request. The FA and MA special requests will be rejected unless the calling program has an SSJ= entry point. An ATTACH without an FA or MA will now never attach a Fast Attach file. The special request NF (Force Non Fast Attach) may still be specified for compatibility; it still works the way it always did, which is now the way ATTACH works by default.

Any site-written SSJ= program which attaches a Fast Attach file, and which does not already specify the FA special request, must be changed to specify either the FA or the MA special request.

Significant Problems

This section describes significant problems known at the time of release.

Problems With Error Recovery on 895 and 885-42 (HSIO) disks

At NOS 2.7.2 L774, a problem with error recovery for 895 and 885-42 (HSIO) disks was introduced. This problem causes most errors which might be recoverable to be declared unrecoverable prematurely. To correct this problem, install the code from SOLVER for PSR NS2G615. All sites which have 895 or 885-42 disks should install this code.

FTPS and FTPI Abort if Channel Connection is Lost

If the channel connection to the MDI is lost, both FTPS and FTPI will abort with the error UNRECOGNIZED CONTROL STATEMENT PARAMETER. Refer to PSR TCH0102 to track resolution of this problem.

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.

Incompatibilities

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

Changes to CPU Priority Commands

In previous releases of NOS, the ENPR DSD command, the ENPR DIS command, the SETPR system command, and the SETPR macro could be used to set the CPU priority of a job to a value other than that defined for the service class of the job. If the value set was 60 or greater, the priority remained in effect until changed again by the same means. If the value was less than 60, however, the service class CPU priority would be restored as soon as the job rolled in or advanced to the next command. This different processing of priorities less than 60 has been removed.

At NOS 2.7.2 L774, any valid priority set set explicitly via command or macro will remain in effect until changed explicitly. The specification of '*' on the ENPR DSD command and ENPR DSD commands will now reset the CPU priority of a job to its service class value instead of setting priority 60. Specification of '*' on the SETPR command or a zero priority on the SETPR macro will also reset the CPU priority to the service class value.

DSD Command Logging Change

In order to allow a site analyst or administrator to track operator entries and correlate these entries with system operation and/or system interrupts, DSD has been changed to log almost all operator command entries to the system dayfile. In some cases, the command will also be logged to the errlog in addition to the system dayfile. In a few cases, where logging of a certain command might interfere with the proper functioning of that command under certain system conditions, no attempt is made to log a command.

Notes and Cautions

This section highlights changes made at NOS 2.7.2 L774.

APRDECK Entries Now Processed for Removable Devices

APRDECK entries will now be processed for removable mass storage devices. In previous releases, APRDECK entries for devices that were defined as removable were ignored, since APRDECK processing was bypassed for removable devices. These entries will now be honored, and flaw entries will be built using the supplied information, if the device is being initialized.

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 2.7.2 L774.

New BL Command Parameter for MODIFY Utility

A new command parameter, BL, has been added to the MODIFY utility. If the BL ("Burstable Listing") parameter is specified, MODIFY will generate its output listing in burstable (easily separable) format. A new page will be started on the output listing for each individual deck.

Network Terminal Name Variable Added to CCL

A new variable, TN, has been added to the list of names that can be returned, tested and substituted in CCL expressions. The symbol TN, when used in a CCL expression, will return the network terminal name associated with the current job. If no terminal name is associated with the job, as in the case of a batch job, a detached job or a non-network job, the terminal name returned will be a null string (value zero).

Enhancements Added for SHELL Processing

A new CPM function 143B has been added to return the current contents of the SHELL control information without changing the SHELL controls. A new macro, GETSHC, has been defined to implement this new function. GETSHC returns the current information to the caller's parameter word in the same format as the existing SHELL macro. Another new macro, SETSHC, has also been defined. However, SETSHC does not implement a new function. It just provides another name for the SHELL macro, one which is a more logical counterpoint to GETSHC. It performs the same function 113B, setting the SHELL controls to new values and at the same time returning the previous values to the caller's parameter word.

Along with these new SHELL processing enhancements, CUESHEL has been modified (using the new GETSHC macro) to reject any attempt to call the CDSHELL or RMSHELL entry points through a direct command. In the past, doing so could result in a loop, wherein the calling command was repeatedly executed.

FSE Single Height Function Key Prompts Now User Selectable

FSE now allows the user to select single height function key prompts, displaying only the legends for the unshifted keys, even if functions and labels are defined for shifted keys. The previous release would display single height function key prompts only when nothing was defined for the shifted keys. The new behavior is selected by means of two new parameters used with the SET PROMPT directive - SHIFT and NOSHIFT. For example, to select 2 rows of prompt blocks, but display only the unshifted function key labels, use the directive:

```
SET PROMPT 2 NOSHIFT
or
SP2N
```

If either the number of rows or the SHIFT/NOSHIFT parameter (but not both) is omitted, the current status of that option is retained. If both are omitted, both options revert to the default values, which are 1 and SHIFT. Shifted function key prompts are never displayed unless at least one shifted function key has a label defined for it.

The BLOCK Command Now Accepts Literal Values

The BLOCK command will now accept \$-delimited literal values for the carriage control parameter. It has not previously been possible to specify certain commonly used carriage control characters, such as space and dash, in BLOCK commands. Now these and other special characters may be used for the carriage control parameter, simply by surrounding the character with a pair of \$ symbols. For example:

```
BLOCK,,, $ $./FIRST LINE/LAST LINE
```

ENQUIRE Now Shows Minutes Until Timeout For Suspended Jobs

The ENQUIRE command will now show the number of minutes that remain until timeout for suspended jobs. For example, the command:

ENQUIRE,JSN.

could produce the following output:

JSN SC CS DS LID STATUS	JSN SC CS DS LID STATUS
AALA.T.ON,BC. .SUSP 20 MIN	AAMM.T.ON.BC. .EXECUTING

Under similar circumstances, the command:

ENQUIRE,UJN,O=STAT.

might produce the following output on file STAT:

JSN SC CS DS LID UJN	STATUS	EXECUTING MESSAGE
AALA.T.ON.BC. .ACLQ	SUSP 20 MIN	FSE,WORDATA,G.
AAMM.T.ON.BC. .ACLQ	EXECUTING	ENQUIRE,UJN,O=STAT.

ENQUIRE(OP=F) Lists Files In Alphabetical Order

ENQUIRE(OP=F) has been enhanced to list local file names in alphabetical order.

Incompatibilities

This section describes any end user incompatibilities with previously released NOS systems.

Changes to CS Parameter on GETF, REPF, APPF

The character set (CS) parameter on the Get_File, Replace_File, and the Append_File commands has been changed. The CS parameter now supports DIS, ASCII, ASCII8, ASCII88, and ASCII8E. The ASCII8 mode has been changed from ASCII 8/12 with Telnet EOLNs, to ASCII 8/12 with zero-byte EOLNs, which is much more useful for most NOS applications. The ASCII8E mode has been added to provide the mode previously available with ASCII8 (ASCII 8/12 with Telnet EOLNs).

5-4
End User

NOS 2.7.2 L774 SRB (06/14/91-07:20:28)
Incompatibilities

Chapter 6

Configuration Management

Notes and Cautions

This section highlights changes in configuration management for NOS 2.7.2 L774.

Testing Environment

The NOS 2.7.2 L774 system was tested in an environment containing the following components:

Hardware Component	Release Level	CIP Level
Model 810 Microcode	M14AA16	L774
Model 815 Microcode	M11AA16	L774
Model 825 Microcode	M12AA16	L774
Model 830 Microcode	M13AA16	L774
Model 835 Microcode	M20AA17	L774
Model 840 Microcode	M340x09	L774
Model 845 Microcode	M310x11	L774
Model 850 Microcode	M330x12	L774
Model 855 Microcode	M300x10	L774
Model 860 Microcode	M320x11	L774
Model 960-11 Microcode	M3A0x07	L774
Model 960-31 Microcode	M3B0x07	L774
Model 990 Microcode	M40Ax22	L774
Model 990 Microcode	M41Ax22	L774
Model 994 Microcode	M44Ax22	L774
800 Series Environment Interface (EI)	Level 26	L774
DFT	V09	L774
SCI	V08	L774

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.

NOS 2.7.2 L774
Software Release Bulletin

Installation Response Form

In order that we may represent the customer base more effectively, we ask that you fill out this form and return it to the address listed below. Thank you.

SITE NAME

SOLVER SITE CODE

SITE ADDRESS

MAINFRAME MODELS

CONTACT

INSTALLATION DATE

This site has installed NOS 2.7.2 L774 and is currently using it in a production environment.

Please return to:

Control Data Corporation - ARH248
4201 Lexington Avenue North
Arden Hills, MN 55126-6198 USA