

# **NOS 2.7.1 LEVEL 716 SOFTWARE RELEASE BULLETIN**

Control Data Corporation recommends that the Software Release Bulletin be read in its entirety prior to any NOS installation.

**SMD131959**

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# Chapter 1

## SRB Introduction

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This document is the NOS 2.7.1 L716 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 L716 system described in this document is being released at the following levels:

Operating System	Level 716
Network Host Products	Level 716
Common Product Set	Level 716
CDCNET	Level 716

## AUDIENCE

The SRB is written primarily for the site analyst. It contains notes and cautions about installation and usage of NOS 2.7.1 L716. Chapter 4 contains information intended for a system/operations administrator and chapter 5 contains information for the end user.

## CYBER SOFTWARE SUPPORT HOTLINE

CYBER 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) 345-9903

From other countries: (612) 851-4131



## Chapter 2

# Installation

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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 L716.

#### CIP V10 L716 Required for All CYBER 180-Class Mainframes

All CYBER 180-class mainframes require CIP V10 L716 to deadstart NOS 2.7.1 L716. For further information regarding CIP, refer to the CIP V10 L716 SRB.

#### All Local PP Programs Must be Reassembled

Changes to PPR entry points at NOS 2.7.1 L716 require that all sites reassemble any local PP programs.

#### Changes to Operating System Decks

There were no resequenced decks at NOS 2.7.1 L716.

The following decks are new at NOS 2.7.1 L716:

- COMPCHD - Convert two hexadecimal digits to display code.
- COMPPCP - Pseudo-control point access routines.
- COMSCVS - CALLVS macro symbol equivalences.
- COMSPCP - Pseudo-control point access macros.
- COMTDSP - ROUTE/TAF DSP tables.
- IHFU - Inject hardware fault utility.
- 1XD - 9853 disk driver.
- 1PP - Periodic function processor.

The following deck was deleted at NOS 2.7.1 L716:

PFMTXTS

## Dual State Support

NOS 2.7.1 L716 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 L716 and NOS/VE 1.4.1 L716 are contained on the NOS deadstart tape for dual state customers. The permanent file tapes contain binaries for NOS/VE 1.4.1 L716 compiled to run on NOS 2.5.3 L688, NOS 2.6.1 L700/688, NOS 2.6.1 L708/688, and NOS 2.6.1 L710/688. For complete information on how to obtain these binaries, refer to the NOS Installation Handbook.

## TCP/IP/FTP/TELNET Now Released in Notrace Mode

The TCPH installation procedure has been changed to build FTP in notrace mode by default. To enable the creation of trace and log files, specify the TRACE keyword on the call to the TCPH installation procedure. Refer to the Manual Errata section in this chapter for additional information.

## PSR Summary Report

A summary report of all the NOS PSR modsets in NOS 2.7.1 L716 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.

## ENHANCEMENTS

This section highlights enhancements to the operating system which affect the installation of NOS and its products.

### New TRACE Parameter for Dual State

A new parameter named TRACE has been added to the DUAL DECKOPL installation procedure. If the TRACE keyword or a value of YES is specified for this parameter, AIP tracing is enabled. By default, AIP tracing is disabled.

### Installation User Names Can be Changed

A site can now change the default values for the installation user name, network operations user name and network administration user name. The Control Data default values are INSTALL, NETOPS and NETADMN, respectively. This change can be made during an upgrade or a component order installation. A Batch Critical Update (BCU) installation retains the current values; that is, these user names cannot be changed as part of a BCU. The process to change these user names is documented in the NOS Installation Handbook.

## Source for Printer Support Utility

With this release, source code is available for the Printer Support Utility (PSU). This affects the release materials in the following ways:

- The PSU source file (PSU1716) now resides on the permanent file tapes.
- The PSU installation procedure has been added to DECKOPL.
- Since all sites can now build PSU, the installation procedure PSULINK has been deleted from DECKOPL. This also eliminates the need for providing Trace binaries (file PFGPSUD) on the permanent file tapes.
- PSU is now released in Trace format rather than Notrace.

The NOS Installation Handbook has been updated to reflect these changes.

## New DECKOPL Parameter MAPTYPE

A new parameter named MAPTYPE has been added to common deck COMLIST in DECKOPL. This enables a site to determine what type of load map is generated when products are reassembled. The parameter value can be permanently changed in file COMMOD or temporarily changed by including the new value on the product installation procedure call (for example, BEGIN,CCL,INSTALL,MAPTYPE=PART.). Values for MAPTYPE are as follows:

Value    Description

---

OFF      No map.

PART     Statistics, block map.

ON       Statistics, block map, entry point cross-reference.

FULL     Statistics, block map, entry point cross-reference, entry point map.

For compatibility with past releases, the default value is FULL. CCP/CROSS installation procedures do not use common deck COMLIST and therefore are not affected by the MAPTYPE parameter.

## USERF Parameter Change

The USERF parameter in DECKOPL common deck COMUSER has been changed. By default, this parameter works the same as before; however, there is an additional capability. If you change the default value from null to UJOBNAM, the installation procedures automatically search for a USER file with a file name of U concatenated with the first six characters of the installation procedure (for example, UFTN5 or UBINEDI). If no file of that name is found, the installation procedure executes as usual and no user code is applied. Since the CCP/CROSS installation procedures do not use common deck COMUSER, they are not affected by this change. Refer to the NOS Installation Handbook for more information on the USERF parameter.

## PERMIT Procedure

A new procedure called PERMIT has been added to DECKOPL. Some of the installation procedures in DECKOPL create files on the installation user name. In general, these files are private; however, some of them may need to be accessed as part of the installation process. The PERMIT procedure permits these files to the appropriate user names. A site may add a PERMIT call to any installation procedure that creates permanent files on the installation user name. A matching IF test must be added to the PERMIT procedure for each PERMIT call. Refer to chapter 6, Customizing the Installation Procedures in the NOS Installation Handbook for more information.

## INCOMPATIBILITIES

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

### Changes to the Screen Formatting Libraries

In the past, common deck COMCGTO contained an external reference to the symbol Z721. This forced the terminal definition for the CDC 721 terminal to be resident in SFLIB and QSFLIB. This made these libraries needlessly large for sites which do not use 721 terminals. This release removes the reference to Z721 from COMCGTO, but leaves the old table entries in as comments to provide an example for sites who wish to define terminals as resident. The TERMLIB installation procedure in DECKOPL has also been changed to have no terminals resident by default (parameter TERMCAP=null). If a site chooses to make a certain type of terminal resident in the screen formatting libraries, COMCGTO must include a reference to the terminal's symbol and TERMLIB must be reassembled using the correct TERMCAP parameter value.

### AP1L Installation Procedure Change

The MAPTYPE parameter name for DECKOPL installation procedure AP1L has been changed to MAPTYP. This was done to avoid a conflict with the new MAPTYPE parameter, previously described in this SRB.

## MANUAL ERRATA

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

### NOS Installation Handbook

The following items describe changes needed in the NOS Installation Handbook, revision L.

#### Page 1-3

If you want to	Then
Upgrade only dual state and not upgrade NOS	<ol style="list-style-type: none"><li>1. Follow the instructions specified in Dual State on Older NOS Systems in the DUAL section of chapter 7.</li><li>2. Go to the NOS/VE SRB and follow the instructions for upgrading a dual state system.</li></ol>

#### Page 3-2

1. Copy the released deadstart tape to a local file named SYSTEM and execute the SYSGEN command that saves file ZZSYSGU on user name SYSTEMX.

```
X.DIS.  
USER,SYSTEMX,password.  
REQUEST,TAPE,VSN=vsn,D=density,LB=KU,F=I,PO=R.  
COPYEI,TAPE,SYSTEM,V.  
UNLOAD,TAPE.  
GTR,SYSTEM,PFGLIB/PFGLIB  
BEGIN,SYSGEN,SYSTEM,LOADUSE.
```

Replace password with the password of the SYSTEMX user name; replace vsn with the VSN of the released deadstart tape; and replace density with the density of that tape.

#### Page 6-24

Procedure Name	Unique Keywords	Required Files
TCPH	DEBUG, TRACE	TCPHpsrin NAM5psrout OPLpsrout

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```
REWIND, PFGDECK.  
DEFINE, DECKOPL, INSTALL, VEDSSL.  
COPYBF, PFGDECK, DECKOPL.  
COPYBF, PFGDECK, INSTALL.  
COPYBF, PFGDECK, COMMOD.  
SAVE, COMMOD.
```

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6. Perform Step 2 of chapter 6 using the L678 DECKOPL materials just loaded. Be sure to modify COMMOD so that psrin is 688 and psrout matches the level of your output PLs. You also must add the following modification to COMMOD (note that BLDUN matches the psrin level).

```
*DECK COMBLUN  
*D 1  
BLDUN = (*N=NS2688),
```

Since older copies of the installation procedures are being used, it is not recommended to reassemble any product other than dual state.

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#### Unique Parameters

Parameter	Description
DEBUG	To add code to aid in debugging and maintenance, specify the keyword DEBUG on the call to the TCPH installation procedure.
TRACE	To create the trace and log files, specify the keyword TRACE on the call to the TCPH installation procedure.

## SIGNIFICANT PROBLEMS

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

### Problem Installing CIP From 698 Tapes

A problem may be encountered when installing CIP from a 698 tape drive. If you specify the location of the CIP tape by using the S (Select Alternate Deadstart Device) option on the CIP U (Utilities) menu, the error message UNABLE TO ACCESS TAPE (CR) TO PROCESS DIFFERENT DEVICE is displayed. To work around this problem, enter a carriage return and then re-enter the location of the tape device. This problem can be tracked via PSR CTIA568 on SOLVER.

## Chapter 3

# Analysis

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

### NOTES AND CAUTIONS

This section highlights changes which should be kept in mind when using NOS 2.7.1 1716.

#### Configuring 9853 Disks with Dual Channel Access

When 9853 disks are configured with dual channel access, the same equipment number must be dialed into the port in use on each control module.

#### Deadstart Failures on 895 Disks

A new revision of the CYBER Channel Coupler (CCC) controlware, MA464 revision D10 part number 10306497, is released in NOS 2.7.1 L716. One of the problems corrected by this new controlware is that some hardware errors were not detected by previous levels of the controlware; these errors are now detected and correctly processed. If your 895 disks have errors that were not previously detected, you may not be able to deadstart with the new firmware. If you experience a deadstart failure using 895 disks and revision 10 of this firmware, have the 895 disks checked by a customer engineer for hardware problems.

### ENHANCEMENTS

This section highlights new capabilities in NOS 2.7.1 L716.

#### 256MB Machine Size Support

NOS can now deadstart on a machine with 256MB or more of memory. It should be noted that the memory in excess of 128MB can only be used by NOS/VE. NOS continues to support a maximum of 2 million words (16MB) for central memory, and 16 million words (128MB) for central memory and extended memory combined.

## Changes to DSDI

The DSDI directive AP now displays the PP operating registers (P, Q, K, and A) from the DFT register save area. The AP directive is now the only PP dumping directive to display operating register data from the DFT save area and/or from the PSR dump record (I4 IOU only).

## New Method for Calling O26

The console text editor, O26, may now be called from DIS by simply entering the character comma (,). The old method of calling O26 (by entering O26. followed by a carriage return) may still be used.

## New TRACE/TRAP Facility

A new debugging facility has been added to the system, to allow the analyst to capture data and/or halt the system when a specified event occurs.

The new DSD command TRACE allows an analyst to identify one or more monitor functions, or MTR to CPUMTR requests, as events that cause CPUMTR to capture certain data and log it to the trace buffer in CMR. This buffer may be examined by using the new DSDI directive TBDUMP.

The new DSD command TRAP directs CPUMTR to check for a specified condition at frequent intervals and to halt the system if this condition occurs.

To use the TRACE/TRAP facility, you must specify the following IPRDECK entries:

```
ENABLE,TRACE.  
ENABLE,SYSTEM DEBUG.
```

Refer to the NOS Version 2 Analysis Handbook for additional information.

## New xxJ File Directives for TAF/TOTAL

TAF now supports the following new options in the xxJ file for the logging of recovery data by the TOTAL data manager.

Directive	Description
AI	After image logging (log record image after updating).
BA	Before and after image logging.
UL	User logging (user supplies routine *TUSRLG*).

Refer to the TAF Reference Manual for additional information.

## New CMRDECK Entry PCP

The PCP entry defines the number of pseudo-control points and has the following format:

```
PCP=np.
```

where np is the number of pseudo-control points defined.

Defining pseudo-control points can improve memory utilization on large memory machines, which in turn reduces overhead from rollout/rollin.

## Flexible Memory Partitions

The new IPRDECK and DSD commands ENABLE/DISABLE, FLEXIBLE PARTITIONS allow a site to select whether the service class limits for total central memory (SERVICE command AM parameter) and total extended memory (SERVICE command EM parameter) are to be absolute limits, or if the scheduler may exceed these limits in the interest of filling up memory. By default, FLEXIBLE PARTITIONS are enabled, allowing the scheduler to use memory space to the greatest extent possible, even if some service classes are sometimes allotted more total memory than the SERVICE command AM and EM parameters specify. This is consistent with previous versions of NOS.

A site may wish to disable flexible partitions if it wants to reserve a portion of central memory for jobs of a high priority service class. This should improve response time for these jobs by allowing the scheduler to roll them in without first having to roll other jobs out.

## INCOMPATIBILITIES

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

### Changes to the IPRDECK and DSD DELAY Command

The MX and MN parameters have been removed from the DELAY command. The CPU switch delay is now defined at the service class level using the SERVICE command SD parameter.

Two new parameters, CI and MP, have been added to the DELAY command. CI specifies the frequency of incrementing the CPU priority of jobs waiting for the CPU (W status) in milliseconds. MP specifies the memory padding factor used when processing central or extended memory increases for a job. MP is expressed in allocation blocks (100 word blocks for central memory and UEBS size blocks for extended memory, where UEBS is a factor determined by the size of available extended memory).

## Changes to the IPRDECK and DSD SERVICE Command

An SD parameter has been added to the SERVICE command to allow specification of the CPU switch delay (previously defined for all jobs by the DELAY command MX and MN parameters) at the service class level. SD is expressed in milliseconds.

The PR parameter has been removed from the SERVICE command; it has been replaced by the new CB parameter, which allows specification of a range of CPU priorities for each service class. CB is expressed as four octal digits in the form lpup where lp is the CPU priority lower bound and up is the CPU priority upper bound. Setting lp and up to the same value defines a constant CPU priority for the service class, which is equivalent to the old PR parameter. If a range of CPU priorities is defined for a service class, the CPU priority for a job in that service class is adjusted up and down within this range, based on the values specified on the SERVICE command SD parameter and the DELAY command CI parameter.

The meaning of the SERVICE command CP parameter has been changed. Previously, CP defined the CPU time slice used in control point scheduling; however, the CPU time slice has been eliminated from the current system. CP now defines a control point slice scheduling priority; an executing job's scheduling priority is decreased to this value when the control point slice defined by the CT parameter expires. The CP and CT parameters are used in scheduling jobs between control points and pseudo-control points.

A CT parameter has been added to the SERVICE command. CT defines a job's control point time slice. When an executing job has exceeded its control point time slice, the scheduling priority is set to the control point slice priority defined by the CP parameter. This makes the job a likely candidate for rollout to a pseudo-control point.

## 1DL Interface Change

The interface for loading PP overlays via 1DL has been changed, for overlays which are too long to fit in 1DL's internal buffer (currently 9 sectors or 5500B bytes). Any PP program which calls 1DL to load an overlay which is longer than this limit must be prepared to pause and/or resynchronize the transfer after each block is passed. See the internal documentation in 1DL for more details.

## Change Required to IPRDECK Entry CPM

A new mainframe CPU type has been added to the table of CPU multipliers in CPUMTR. As a result, sites may have to adjust the indexes specified on the CPM entries in their IPRDECKs. Analysts should refer to the table T1PR in deck CPUMTR and the common deck COMSSRU for additional information.

## **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 L716. 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.

## **SIGNIFICANT PROBLEMS**

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

### **GET May Take FTPS Down**

Attempting to get an empty binary file with only a control record suffixed from CYBER to any foreign machine, for example, a SUN or a VAX, takes FTP/NOS server down. This problem can be tracked via PSR TCHA043 on SOLVER.

### **Deadlocks Between NAM and NPUs**

It is possible that deadlocks may occur in NAM. The deadlocks are more likely to happen at sites using NPUs. The symptoms are that an NPU hangs and eventually other NPUs/MDIs on the same copy of PIP hang up as well. The problem was introduced by code in PSR NA5B196, which was inserted to improve PRU mode performance. However, the code can cause a NAM lock-up by using up all PRU buffers on that copy of PIP and forcing the NPU into regulation because PIP then refuses PRU input from the NPU. Other NPUs/MDIs on that copy of PIP can then suffer the same fate. Code to correct this problem is available on SOLVER under PSR NA5B910.

### **X.25 Lines May Hang Under Heavy Load**

A problem may occur with an X.25 link between a VAX and a 2550 with a large number of A-A connections. Suppose the X.25 TIP has sent seven frames to the VAX with N(S) of 6,7,0,1,2,3,4 and is thus waiting for a frame from the VAX with N(R) of any number except 6. If the VAX erroneously sends out N(R) of 6, then the X.25 TIP cannot send any more frames and the line hangs. The TIP should time out and retransmit the frames or reset the link. Code to correct this problem is available on SOLVER under PSR CC5A530.

### **Queue Files May be Corrupted During Deadstart**

Queue files which reside on buffered disk devices (885-42, 887, 895 and 9853 disks) may be corrupted during deadstart recovery. Whether or not this failure occurs depends on how much I/O buffer space is allocated and how many devices are recovered simultaneously. This problem can be tracked via PSR NS26285 on SOLVER.



## Chapter 4 Operations

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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 L716.

#### New EQPDECK Entries to DOWN and UP Channels at Deadstart

Two new entries, DOWN and UP, may now be entered in the EQPDECK. The DOWN entry provides the ability to down channels at deadstart before the system attempts to use the channel to access devices connected to them. The UP entry provides the ability to reverse the effects of a prior DOWN entry. These entries may be useful for defining in the NOS EOPDECK those equipments which are to be used by NOS/VE in a dual state environment. The format of the DOWN and UP entries is as follows:

DOWN,CH=ch1,ch2,....,chn.

or

UP,CH=ch1,ch2,....,chn.

Parameter	Description
-----------	-------------

chi	Number of the channel to be downed or brought back up; from 0 to 13B and 20B to 33B. A concurrent channel is indicated by a C prefix (Cchi). For example, the following entry would down nonconcurrent channel 23 and concurrent channel 4: DOWN,CH=23,C4.
-----	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

#### NOTE

The DOWN entry will not down the last remaining access to a device unless that device is down. It also will not down either the deadstart channel or the CIP channel. If all channels to a particular equipment are down, the EQ entry requires that ST=DOWN be specified when defining that equipment.

---

## **New Account File Messages**

Two new account file messages, MSLK and MSUL, have been added. MSLK indicates that the console has been locked and MSUL indicates that the console has been unlocked. On a secured system, the new MSUL message is issued on a normal unlock, while the (already existing) message MSSA is issued on a security unlock.

## **H Display Change**

When displaying the DSD H display on the CC545 console, if a large number of very long files are displayed, the screen may flicker. The = key (if the H display is on the right screen) or the / key (if the H display is on the left) may now be used to prevent the position and length fields from being displayed; this reduces the amount of overhead required to generate this display, which should stop the flickering. Pressing the = key or the / key again toggles the display back to the original status.

## **QDSPLAY Change**

QDSPLAY now recognizes and correctly displays ASCII8 (EC=A9) files. All lower case characters are displayed as the corresponding upper case characters; all other non-display code characters are displayed as blanks.

## **INCOMPATIBILITIES**

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

## **IDLE Command Change**

The DSD IDLE command no longer causes BIO to terminate. The IDLE,BIO command may still be used to terminate BIO.

## **MODVAL Change**

The MODVAL K display option to delete a user name has been changed from D,username to DEL,username.

## **New W,P Display**

A new DSD display, W,P, has been created to show the addresses of various tables in central memory. The W,P display includes all of the table addresses formerly shown on the W,R display, as well as several additional table addresses.

## **SIGNIFICANT PROBLEMS**

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

### **New DSD Command ENPR May Cause Program Failures**

The new DSD command ENPR (enter CPU priority) causes the specified job to get the CPU immediately, even if the job is currently waiting for an auto-recall request which is not yet complete. As a result, if a program does I/O with auto-recall and then tries to process the results without checking if the FET is complete, that program may fail if the operator does an ENPR at the wrong time. This problem can be tracked via PSR NS2G289 on SOLVER.



## Chapter 5

### End User

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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 L716.

#### Keyword and T Parameters Added to GTR

A new parameter, T, has been added to the GTR command. The T parameter directs GTR to strip off the record name line from selected TEXT type records. The T parameter follows the NA parameter in the positional parameter format of the GTR command.

GTR has been enhanced to allow non-positional (keyword) parameters. The keyword parameter format is triggered by the presence of a slash (/) separator after the file name parameters. GTR continues to process parameters using the positional format until a slash separator is encountered. All the parameters following the slash separator are processed by keyword. The new GTR command format is as follows:

```
GTR,oldlfn,newlfn/p1,p2,...,pn.directives
```

The keyword parameters pi can be any of the following parameters and are order independent.

Parameter	Description
D	Build a new OPLD at the end of newlfn. When copying a user library, copy all records, including the ULIB and OPLD.
NA	Do not abort on errors.
NR	Do not rewind the new file.
S	Sequential file processing.
T	Remove record name from selected TEXT records.
U	Do not build an OPLD at the end of newlfn. When copying a user library, copy all records, including the ULIB and OPLD.

## RECLAIM COMPACT Directive Can Now Use the EI Option

The EI option can now be used with the RECLAIM COMPACT directive. This makes it possible to add files to an existing dump with COMPACT, just as you can with DUMP.

For compatibility purposes, the default for the EI option for COMPACT is NO. (Note that the reverse is true for the DUMP directive where the default for the EI option is YES.) If the EI option is omitted or specified as EI=NO for a COMPACT directive, COMPACT behaves as it always has and the COMPACT file set is written at the beginning of information on the output dump. If the EI option is specified as EI=YES or just EI, the COMPACT file set is added to the end of the existing output dump.

## New NA Option for RECLAIM Directives

A new directive option, NA, has been added to RECLAIM. The NA (no abort) option prevents RECLAIM from aborting when one or more of a list of specified files cannot be found or if a specified file fails to meet other directive criteria. This differs from the NA parameter used on the RECLAIM command, which suppresses aborts from a variety of causes. The NA option may be used on the COMPACT, COPY, DELETE, DUMP, LIST, LOAD and RESET directives. An example of a batch job using the new NA option follows:

```
RECLJOB.  
USER(...)  
CHARGE(...)  
RECLAIM.  
* NORMAL TERMINATION.  
EXIT.  
* ABNORMAL TERMINATION.  
(EOR)  
DUMP,TN=TAPE01,PF=*,NA.  
FILE1,FILE2,....,FILEn
```

## CATLIST and PURGALL Changes

Two new parameters (FN and EF) have been added to PURGALL to allow a specific set of files to be purged (based on file name) and to exclude a specific set of files from being purged (based on file name). Multiple file names and/or file name templates may be specified for both FN and EF.

The same new parameters have been added to CATLIST, both for general use and to allow the user to preview the effects of some PURGALL runs with a corresponding CATLIST run.

A DF parameter has been added to PURGALL to issue a dayfile message for each file purged.

Refer to the NOS Reference Set, Volume 3, for a detailed description of the parameters for CATLIST and PURGALL.

## **XEDIT Line Number Limitation Removed**

XEDIT has been updated to handle files containing more than 99999 lines properly. For the ALN and RLN commands, XEDIT can handle line numbers up to 10 digits long; for the ALNS command, XEDIT can handle line numbers up to 9 digits long. For all other commands, XEDIT now supports an unlimited number of lines.

## **XEDIT LOOK Mode Implemented**

XEDIT can now be used to look at a file with no fear that it may be accidentally changed, by using the new XEDIT command parameter LK. When the LK parameter is included on the XEDIT command, it is not possible to execute any XEDIT directives which would change the contents of the file. However, other directives which do not modify the file are still usable. For example:

```
XEDIT,EDFILE,LK.
```

## **New TAF ROUTE Request**

To resolve the deficiencies and limitations of the TAF SUBMT request, a new TAF request called ROUTE has been created. The ROUTE request allows a task to route a block of data defined in the task's field length to an input or output queue.

The TAF ROUTE request format for COBOL is as follows:

```
ENTER ROUTE USING lfn length status field1 value1 ... fieldn valuen.
```

The TAF ROUTE request format for FORTRAN is as follows:

```
CALL ROUTE(lfn,length,status,field1,value1,...,fieldn,valuen)
```

For a complete description of the TAF ROUTE request formats as well as the TAF ROUTE return status codes, refer to the TAF Reference Manual.

## **PERMIT Now Allowed for Public Files**

The PERMIT command and macro may now be used on public files. This allows a file owner to set a permission for a specific user which is different from the default permission mode for all other users (as established on the SAVE, DEFINE or CHANGE command).

It should be noted that individual user access data for non-permitted users continues to be collected only for semi-private files.

## Screen Formatting Enhancements

SFLIB routines now correctly translate colon and percent characters for systems operating in 63 character set mode. In addition, three new entry points have been added to SFLIB to simplify and facilitate development of screen management applications. The three new entry points are SFLUSH, SFGETF and SFSETF.

SFLUSH forces any panel data that has been written (by means of a prior SFSWRI request) to be flushed from the output buffer to the terminal screen. Normally, data written by an SFSWRI may not actually be displayed on the screen until the next SFSREA request or until some other event causes the user's job to be rolled out, so it may at times be desirable to force the display by using the SFLUSH request. SFLUSH has no parameters.

SFGETF retrieves the contents of a variable field into a character string, similar to the way SFGETI and SFGETR retrieve the contents of fields as integer and real values.

SFSETF reverses the process, moving a string into a field in the panel and rewriting the panel variable fields.

Both SFGETF and SFSETF provide character set translation independent of the default character set, or that set by SFCSET, and blank fill the destination field if it exceeds the length of the source field. SFGETF and SFSETF make it much simpler to manipulate data fields within panels when the data may vary in length, for example when fields contain a mix of upper and lower case characters.

Format for FORTRAN5 calls:

```
CALL SFLUSH
CALL SFGETF(VARNAME,INSTRING,CSET,STATUS)
CALL SFSETF(VARNAME,OUTSTRING,CSET,STATUS)
```

Format for COBOL5 calls:

```
ENTER SFLUSH.
ENTER SFGETF USING VARNAME, INSTRING, CSET, STATUS.
ENTER SFSETF USING VARNAME, OUTSTRING, CSET, STATUS.
```

VARNAME is a character data item in the calling program which contains the name of the variable as defined in the panel.

INSTRING and OUTSTRING are character data items in the calling program where the string is to be returned (SFGETF) or where the string originates (SFSETF).

CSET is a character data item in the calling program which defines the character set to be used for INSTRING/OUTSTRING.

STATUS is an integer (COBOL Computational-1) data item in the calling program to which the number of characters or six-bit bytes transferred is returned.

## New Flexibility in PDU Panel Definition File Processing

Because PDU's use of the left and right brace for opening and closing delimiters in the declaration section of a panel definition conflicts with use of these codes for national characters in some countries, PDU has been modified to provide a choice of opening and closing delimiters. The additional choices now allowed are left and right brackets and less than and greater than symbols, none of which have any special significance in the declaration portion of the panel definition. The choice of opening delimiter determines the closing delimiter. In addition, the requirement for the opening delimiter to be in the first column of the panel definition file has been relaxed. A meaningful diagnostic is now issued if the delimiter is missing entirely.

## Echoing of FSE Directives Now User Controllable

FSE users can now control the echoing of FSE directives to the listing file. Previously, FSE directives were echoed to the listing file if either the directive file (I=) or the listing file (L=) was not a terminal. This was not always satisfactory, so two methods of providing user control of this feature have been provided.

A new FSE command parameter, E, has been provided. The E parameter sets the ECHO feature on or off. The value for echo can be YES, Y, NO or N. If the ECHO feature is on (YES or Y), all FSE directives are listed on the output file if either the input or the output file is not a terminal. If ECHO is off (NO or N), directives are not listed. The ECHO feature default is on (YES). The FSE command formats are as follows:

```
FSE, FN=filename, OP=access, I=input, L=output, IP=procedure, WF=workfile,  
E=echo.directives
```

or

```
FSE, filename, access, input, output, procedure, workfile, echo.directives
```

A new directive, SET ECHO, has also been provided. The SET ECHO directive sets the ECHO feature on or off. SET ECHO serves the same function as the E parameter on the FSE command. When the ECHO feature is on (YES or Y), all FSE directives are listed to the output file if either the input or the output file is not a terminal. If ECHO is off (NO or N), directives are not listed. The SET ECHO directive format is as follows:

```
SET ECHO value
```

Parameter	Description
-----------	-------------

---

value	Turns the ECHO feature on (YES or Y) or off (NO or N). The default is YES.
-------	----------------------------------------------------------------------------

## New TDUMP Parameters

Two new command parameters, H and CW, have been added to TDUMP to enhance its utility. The H parameter provides a hexadecimal dump option in addition to the previous octal, alphanumeric and combined octal/alphanumeric dump options. The CW parameter displays the CIO control words in a file as well as the data words. When using the CW parameter, EOR and EOF indications are not shown. The new TDUMP command formats are as follows;

```
TDUMP,I=AFILE,H.      Hexadecimal dump
TDUMP,I=AFILE,CW.     Control word dump
```

## Change in FSE Handling of Set/Clear Tab Input Sequences

FSE has been modified to recognize and accept input sequences for setting and clearing tab stops, for those terminals that have that capability. The TDU definitions tab\_clear, tab\_clear\_all and tab\_set have up to now been utilized for output purposes only. Although they were defined as input sequences in the NOS Version 2 Screen Formatting Reference Manual and in the TDUIN portion of the released TDUFILE, FSE used them only as output sequences to set and clear tabs based upon information supplied by the SET TAB directive. These sequences are now also recognized and acted upon by FSE if they are sent upline from the terminal to the host NOS system. Thus, if you are using a terminal which allows setting and clearing of tab stops by a keystroke or sequence of keystrokes, you may now use those keystrokes instead of the SET TAB directive.

## INCOMPATIBILITIES

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

### SETASL, SETJSL and SETTTL Changes

SETASL, SETJSL and SETTTL now set the limit in question to the user's maximum validated limit (rather than issuing an error message and aborting) if a value is entered which exceeds the user's validations. A dayfile message is issued following each command indicating what value was set by the command.

If SETASL,nnn is entered and nnn is less than the current job step SRU limit, both the account block and job set SRU limits are lowered to nnn. Similarly, if SETJSL,nnn is entered and nnn is greater than the current account block SRU limit, both the job step and account block SRU limits are raised to nnn. In this case, if nnn is also greater than the user's validated limit, both limits are set to the user's maximum validated limit.

## FSE Changes in SET CHAR Command and ASCII Mode File Handling

FSE now preserves the ASCII control characters DEL through RS, which were previously changed to blanks when editing a file in ASCII mode. Since these characters do not have graphic representations, a substitute character must be used to represent them on the screen during screen editing. By default, the character used is the circumflex, but the SET CHAR directive has been modified to allow selection of an alternate character of the user's choice. The keywords TAB and CONTROL have been added to the syntax of the SET CHAR directive to allow this selection. The following forms of the SET CHAR directive are now recognized:

Parameter	Description
SET CHAR x or SCx	Causes the soft tab character to be set to x. This form is compatible with the old form of SET CHAR, except that now the letters C and T may not be used as values for x.
SET CHAR TAB x or SCTx	Serves the same function as the first form, causing the soft tab character to be set to x. In this form, there are no restrictions on x.
SET CHAR CONTROL x or SCCx	Causes preserved control characters to be displayed as x on the screen. Unless modified during editing, preserved control characters retain their original identity if an edit file is updated.

The only incompatibility that might be noted is if the SET CHAR directive was being used to set the soft tab to the characters C or T. If this needs to be done, the SET CHAR directive must now be changed to SET CHAR TAB in order to achieve the same results.

FSE handling of other unrecognizable character combinations in ASCII mode editing has also been changed slightly. The 12-bit combinations 7677B and all 74xxB characters (except for 7401B, 7402B, 7404B and 7407B) cannot be processed by FSE. In the past, when a file read in ASCII mode contained any of these combinations (which most often occurs when the file was created in NORMAL mode), they were changed to blanks without comment. These combinations are now changed to commercial at symbols (@) for easier identification. To call attention to this replacement, the following message is issued:

UNKNOWN CHARACTER(S) FOUND - CHANGED TO @

## Changes to Job Input File Processing

No-Auto-Drop file status is now set automatically on the job input file (INPUT or INPUT\*) for all jobs. This implies that this file is no longer returned by a CLEAR, RETURN(\*) or UNLOAD(\*) command. If desired, file INPUT may still be returned by an explicit RETURN or UNLOAD command.

## **Additional Loader Errors Are Now Fatal**

In previous releases of NOS, some errors on commands within a load sequence were treated as nonfatal errors and the load sequence was simply abandoned with an informative message. Now such errors cause the job to abort and the message ILLEGAL LOADER CONTROL STATEMENT is issued. In particular, comment lines (lines with an asterisk in column one) within a load sequence are now treated as fatal errors.

## **The RECLAIM PO Options I, P and S Eliminated**

It is no longer possible to specify tape processing options I, P or S with the RECLAIM PO option. Because inappropriate use of these options could cause a RECLAIM dump tape to be rendered unusable and since there is no need for these options in the RECLAIM context, they have been eliminated to reduce the potential for error. Now if they are entered, they are rejected, aborting the current RECLAIM directive. The same result occurs for any other value not listed under PROCESSING OPTIONS in section 12 of the NOS Reference Set, Volume 3. In addition, values other than D or I which are entered for the TY option now abort the current RECLAIM directive as well.

## **COPYRF Destination File Directory Name Change**

The record name in the OPLD record at the end of the destination file created by the COPYRF command is now the same as the local file name of the destination file. Formerly, the record name of the OPLD on the destination file was always NAME, regardless of the local file name (lfn) or any other condition.

## **REDO Enhancements Change Behavior**

REDO has been enhanced in several ways for this release. REDO no longer ignores commands containing embedded spaces. It now considers commands with leading spaces as well, but only if explicitly directed to do so by inclusion of a leading space or asterisk in the search parameter. It ignores lines beginning with special characters other than \$ or / and no longer fails to place a terminator on a command which contains a terminator character within a literal.

## **Job Card T Parameter Change**

If the value specified for the T (time limit) parameter on a job card, is greater than the user's maximum validated time limit, the job no longer is aborted. Instead, the job's time limit is set to the user's maximum validated time limit.

## Screen Formatting May Require Recompilation

A limitation on the size of MATCH values to a maximum of ten characters has been removed. As a result, some programs that use screen formatting may have to be recompiled or relinked.

In the past, a MATCH value was truncated to the size of the field to which it applied or to ten characters, whichever was smaller. Now the only limitation is the field size.

It is important to note that PANEL now sets the version number in newly compiled panels to 1 (one) rather than 0 (zero), so that SFLIB can recognize and properly process existing panels with the ten character limitation as well as newly compiled panels without the limitations.

### NOTE

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If any program uses a panel with fields which exceed ten characters and have MATCH values, the program must be recompiled or relinked if that panel is recompiled. This is because a version 1 panel cannot be properly processed by older versions of SFLIB if the panel has these characteristics.

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## SIGNIFICANT PROBLEMS

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

### Dayfile Messages for Some Commands Do Not Show Dollar Signs

If a user specifies a dollar sign (\$) prefix on a command processed by a program with an SDM= entry point, the dayfile message for that command does not include the dollar sign. This may affect user programs which search the dayfile if the programs expect the dollar sign to be present on those messages. This problem may be tracked via PSR NS2G321 on SOLVER.



## Chapter 6

# Configuration Management

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### NOTES AND CAUTIONS

This section highlights changes in configuration management for NOS 2.7.1 L716.

#### Testing Environment

The NOS 2.7.1 L716 system was tested in an environment containing the following components:

Hardware Component	Release Level	CIP Level
Model 810 Microcode	M14AA15	V10 L716
Model 815 Microcode	M11AA15	V10 L716
Model 825 Microcode	M12AA15	V10 L716
Model 830 Microcode	M13AA15	V10 L716
Model 835 Microcode	M20AA16	V10 L716
Model 840 Microcode	M340X09	V10 L716
Model 845 Microcode	M310X11	V10 L716
Model 850 Microcode	M330X12	V10 L716
Model 855 Microcode	M300X10	V10 L716
Model 860 Microcode	M320X11	V10 L716
Model 960-11 Microcode	M3A0X05	V10 L716
Model 960-31 Microcode	M3B0X05	V10 L716
Model 990 Microcode	M40AX21	V10 L716
Model 990 Microcode	M41AX21	V10 L716
Model 994 Microcode	M44AX21	V10 L716
800 Series Environment Interface (EI)	Level 21	V10 L716
DFT	V05	V10 L716
SCI	V04	V10 L716

#### 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.

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## **PTF/QTF Transfer Facilities Interconnections**

The following are the recommended systems for proper operation of the PTF/QTF Transfer Facilities through RHF/LCN, NAM/CCP, or NAM/CDCNET:

NOS 2.7.1 L716 to NOS 2.7.1 L716 (RHF/LCN, NAM/CCP and NAM/CDCNET)  
NOS 2.7.1 L716 to NOS 2.6.1 L700/688 (RHF/LCN, NAM/CCP and NAM/CDCNET)  
NOS 2.7.1 L716 to NOS/VE 1.4.1 L716 PTF (RHF/LCN and NAM/CDCNET)  
NOS 2.7.1 L716 to NOS/BE 1.5 L682 (RHF/LCN)  
NOS 2.7.1 L716 to IBM - MVS XA L716  
NOS 2.7.1 L716 to IBM - VM L702  
NOS 2.7.1 L716 to VAX RHF 1.7 L678 (RHF/LCN)  
NOS 2.7.1 L716 to CYBER 120 AOS/VS (NAM/CCP and NAM/CDCNET)