

NOS 2.8.6 LEVEL 859
SOFTWARE
RELEASE BULLETIN

SMD134903

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Chapter 1

SRB Introduction

This document is the NOS 2.8.6 L859 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 Systems, Inc. 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 2.8.6 L859 system described in this document is being released at the following levels:

Operating System	Level 859
Network Host Products	Level 851
Common Product Set	Level 859
CDCNET	Level 857

Audience

The SRB is written primarily for the site analyst. It contains notes and cautions about installation and usage of NOS 2.8.6 L859. Chapter 4 contains information intended for a system/operations administrator. Chapter 5 contains information intended for the end user.

SOLVER

Installation Bulletins

Installation Bulletins are issued to communicate information that is discovered after the release has been forwarded to customers. You can access Installation Bulletins through SOLVER. Refer to the following section for information on reporting a problem and using SOLVER.

Reporting a Problem

SOLVER is an interactive program that allows you to access the Control Data Programming Systems Report (PSR) database. By using SOLVER, you can:

- . List installation bulletins associated with this and other operating systems and levels.
- . Report software problems to Control Data.
- . Check the status of problem reports.
- . Search for duplicate problem reports submitted by other customers.

If a solution to your problem cannot be found by searching the PSR database and checking Installation Bulletins, you should write a PSR describing the problem. The SOLVER report function provides four ways to report a problem:

1. Write a PSR.
2. Place a "me-too" flag on an existing PSR.
3. Write a comment on CYBER software product documentation.
4. Request Software Enhancement of a product to better meet the needs of your site.

The report function is menu driven and provides online help at every point.

You can access SOLVER through the following methods:

Direct Dial	(612)482-4000(14.4 and 28.8K baud) (612)482-6000(9.6K baud or lower)
Internet	telnet solver.cpg.cdc.com telnet 129.179.109.21
X.25 Public Data Network	031346123309302 is the X.25 Public Data Network connection number you can access through your local X.25 packet-switching network.

Enter your assigned SOLVER id at the login prompt. The SOLVER login is case-sensitive. The login name must be in lower case. Next, you will be prompted for your SOLVER password, which is also case sensitive.

If your SOLVER validation is a group login shared by several people, you must identify yourself each time you log into SOLVER. The first time you access SOLVER, you are asked for some information such as your phone number, shipping and E-mail address, terminal type, and editor preference. Your responses are remembered and used for your future SOLVER sessions.

Support Operations Customer Support Hotline

Support Operations 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, use one of the following methods to notify us:

Control Data Systems, Inc.
Support Operations - ARH287
4201 Lexington Avenue North
Arden Hills, MN 55126-6918
USA

Telephone Number	Countries
(800)345-6628	USA and Canada (follow touchtone prompts)
(612)482-3434	Other Countries

Support Operations can also be contacted through EMAIL. The following are the allowed EMAIL addresses to be used for additional help for a particular product or problem.

Email Address	Support Area
nos@css.cdc.com	NOS Operating System Support
nosve@css.cdc.com	NOS/VE Operating System Support
networks@css.cdc.com	Network Support
compilers@css.cdc.com	Compiler Support
support@css.cdc.com	Miscellaneous
solveradm@css.cdc.com	SOLVER Validations
solver@css.cdc.com	Email interface to SOLVER
supportmgr@css.cdc.com	Contact a support manager

Information about Control Data, Control Data's Support Services, and some SOLVER information is available on the World Wide Web. (To access SOLVER information, you will have to enter your SOLVER user name and password.) Here are the addresses for some of these web pages:

http://www.cdc.com	Control Data's Home Page
http://www.cdc.com/support	Control Data's Support Services Home Page
http://www.cdc.com/support/home.html	WebSOLVER Home Page

Chapter 2

Installation

This chapter emphasizes changes in the operating system and its products. These changes 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 2.8.6 L859.

All Local PP Programs Must Be Reassembled

Changes to PP common decks and NOSTEXT at NOS 2.8.6 L859 require that all sites reassemble any local PP programs.

CIP L859 Required for All CYBER 180-Class Mainframes

All CYBER 180-class mainframes require CIP L859 to deadstart NOS 2.8.6 L859. For further information regarding CIP, refer to the CIP L859 SRB.

Changes to Operating System Decks

There are no resequenced decks at NOS 2.8.6 L859.

Deck PFCAT was deleted at NOS 2.8.6 L859.

PSR Summary Report

A summary report of all the NOS PSR modsets in NOS 2.8.6 L859 is available on the permanent file tapes. The report 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 2.8.6 L859 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/VE 1.8.3 L857 are contained on the NOS deadstart tape for dual state customers. The permanent file tapes contain binaries for NOS/VE 1.8.3 L857 compiled to run on NOS 2.8.4 L847, NOS 2.8.5 L851, and NOS 2.8.6 L859.

NOTE

If your system is running NOS/VE 1.8.3 L857 or any of the NOS/VE 1.8.3 L857 BCUs, 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 contains binaries that match the NOS/VE 1.8.3 L857 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 2.8.6 L859 release is built with CDCNET at version D939. This is the version released with NOS/VE 1.8.3 L857. If you have installed additional L857 CDCNET BCUs, that is, your system is running a version of CDCNET greater than D939, you need to modify your upgrade installation to avoid installing D939 over your current version.

To avoid overwriting your current version of CDCNET, you should NOT perform any special instructions in the CDCNET section of the Special Product Installation chapter. (You are referred to chapter 7 to perform special CDCNET instructions during step 3 and step 7 of the Upgrade Installation chapter.) You must, however, 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.

Chapter 3

Analysis

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 made at NOS 2.8.6 L859.

Year 2000 Problems Corrected in NOS 2.8.6 L859

While the underlying system date and time processing mechanism in NOS will work correctly until the year 2034, several individual NOS programs were found to have problems with dates beyond the year 1999.

In NOS 2.8.6 L859, an extensive effort was made to discover and correct as many problems as possible related to dates beyond the year 1999. The following items were found and corrected. The modset ident which corrects the problem(s) is shown following the description of the problem(s) corrected.

- . RECLAIM processed dates greater than 1999 incorrectly in several places. Date comparisons failed, list output was incorrect, and dates were converted incorrectly. (RECLA83)
- . PURGALL would not accept dates beyond 1999. (PURGAL1)
- . CPD defined maximum date incorrectly (991231) and would not properly handle dates after 1999. (NS2786)
- . DDF converted packed dates to display format incorrectly for dates beyond 1999. (NS2786)
- . OQM converted packed dates to display format incorrectly for dates beyond 1999. (NS2786)
- . 1MT, for dates beyond 1999, incorrectly converted between retention days and date of expiration, failed to correctly detect expiration of labels, and failed to put the proper ISO standard century character in label creation and expiration dates.(NS2786)

- . ACPD, for dates beyond 1999, would not accept and convert date parameters, and incorrectly converted display dates to packed format. (NS2786)
- . BLANK failed to put the proper ISO standard century character in label creation and expiration dates beyond 1999. (NS2786)
- . The MSE subsystem incorrectly converted packed dates to display for dates beyond 1999. (NS2786)
- . PROFILE would not accept and convert date parameters beyond 1999. (NS2786)
- . QFSP would not accept and convert date parameters and offsets beyond 1999. (NS2786)
- . RESEX generated incorrect expiration dates if the creation date or the expiration date was beyond 1999. (NS2786)
- . CCL variables DAYS and WEEKDAY returned incorrect values when the date was beyond 1999. (CCL0651)
- . COBOL5, for dates beyond 1999, returned incorrect values for DATE-COMPILED and DAY-OF-WEEK, and when the VALUE OF clause was used in file descriptions for tape label manipulations, failed to put the correct ISO century character on label creation and expiration dates. (CL5B319)

User Applications Should be Checked for Year 2000 Problems

User application programs which accept dates as input, perform calculations based on dates, save dates in databases, and/or display dates on output may need to be modified to continue to operate correctly for dates beyond the year 1999. Sites which intend to continue to use NOS beyond the year 1999, as well as any site which runs application programs which deal with future dates, would be well advised to check their application programs for such problems.

In general, any program which uses a two-digit representation of the year may need additional code to handle comparisons between dates and calculations based on dates. For example, a comparison between the date "July 1, 1999" (represented as "99/07/01") and the date "July 1, 2002" (represented as "02/07/01") may be made incorrectly if the program simply subtracts the 2-digit year in one date from the 2-digit year in the other date.

A simple solution for such problems is to change the program to use an internal representation of the year which allows dates to be compared correctly. This could involve either converting the 2-digit year into a 4-digit year, or adding a bias of 100 to any year beyond 1999. For most applications, such a conversion can be performed by assuming that any 2-digit year with a value of less than 70 actually refers to a year after the year 1999. This assumption may not be valid, however, if your database contains historical data as well as current-year and future-year data. In such a

case, a more complicated algorithm, and/or conversion of your database, may be necessary.

Enhancements

This section highlights new capabilities in NOS 2.8.6 L859.

Tape Alternate Storage Recycling

In previous releases of NOS, recycling of old alternate storage (TAS) tapes was accomplished by redumping the remaining active files to new tapes. The method used to perform this redumping was inefficient in several respects. Since files which were not currently disk resident had to be staged to disk before they were dumped, this meant that each file had to be copied twice. Because of the order in which PFDUMP scanned the permanent file catalogs, repeated mount requests for the same tapes could result. Also, sufficient disk space had to be available on the family being dumped in order to stage the recycled files.

At NOS 2.8.6 L859, PFDUMP has been enhanced so that non-disk-resident files are copied directly from TAS tapes to the new archive file without being staged to disk. Each required tape is requested a single time, and all the files to be copied from that tape are dumped in a single pass through the tape. This will significantly speed up the recycling process, reduce the number of tape mounts required, and reduce the amount of free disk space required on the device in order to be able to perform a recycle.

To assist in determining which TAS tapes are candidates for recycling, PFCAT and the other permanent files utilities have been enhanced to provide a report of the number of active files and sectors on TAS tapes. This report is selected with the LO=S option (see the item on Permanent File Utility Enhancements).

Permanent File Utility Enhancements

The permanent file utilities have been enhanced in the following ways:

- . PFDUMP no longer needs to stage files to disk from TAS tapes in order to dump the file data. Instead, TAS tapes will be assigned internally by PFDUMP and the file data will be copied directly (see the Tape Alternate Storage Recycling item). This capability is not restricted to TAS recycling, but is used whenever the data for a file which resides only on tape must be dumped. However, files that are resident on MSE or optical disk must still be staged to disk in order to be dumped.

- . PFCAT has been modified to be more consistent with the other PF utilities. It is now always possible to run PFCAT for an entire family; performing a separate PFCAT for each master device in the family is no longer required. The 'true device' (TD) parameter is now always supported. It is now possible to specify both an output file and a summary file concurrently. The file list (LO=T option) no longer starts a new page with each new user index, and the user index is now listed with each file instead of on the page header. The file list is sorted by user index, and by file name within each user index. The statistical report (LO=S option) has been changed extensively and includes a TAS VSN usage report (see the item below on the utility list options).
- . A new PF utility, PFLIST, has been created to list the contents of a summary file created by another PF utility. PFLIST produces output in the same format as the utility that created the summary file used as input. PFLIST supports most of the standard PF utility file selection parameters and list options.
- . A new DA parameter is provided to select files according to residence on disk. This parameter is modeled after the TA parameter. An 'all resident' (DA=R) and an 'all non-resident' (DA=N) option are provided, as well as the capability to specify device numbers. This makes it possible to use PFCAT to list all the files that reside on a particular device, something not previously possible. The disk residency selections are listed on screen five of the K display.
- . The DN parameter can now only be used to specify a master device. To select files based on the device on which they reside, the new DA parameter should be used (for PFCAT, PFDUMP, AND PFREL). To select files for PFLOAD based on the device on which they resided, the TD parameter should be used.
- . The LO=T list option has been modified for all utilities to produce a file list sorted by user index and file name. This should make it easier to find a particular file in the listing.
- . The LO=S list option previously supported only by PFCAT is now supported by all utilities. The output format is different from the old PFCAT format. Two reports are provided. The first is a summary of the files processed for each user index. For each user index, total files, total sectors, disk resident files, disk resident sectors, cartridge resident files, cartridge resident sectors, tape resident files, and tape resident sectors are reported. The second report is a summary of the processed files that reside on tape alternate storage. For each alternate storage tape VSN, the tape type, number of files, and number of disk sectors is reported.
- . New parameters are provided to select files for processing by charge and project number. These selections are displayed on a new K display screen six.

- . A new PS parameter is provided that returns program status information to a specified CCL register. This can be used in a CCL procedure to determine if any files were processed, if files were processed with errors, etc.
- . The termination messages issued by the utilities have been modified to be more consistent and to report accurate counts of files processed and files skipped or processed with errors.
- . The error messages issued by the utilities have been simplified and in some cases reworded for clarity. Individual file error messages are no longer issued to the error log. An error log message is issued if error idle is set on a device and message text indicates the reason error idle is being set.

Error Idle No Longer Set at Deadstart

Deadstart device recovery has been changed so it no longer halts deadstart (waiting for an operator GO) nor sets Error Idle when a bad file is detected. A bad file, in this context, is a file whose length on the disk is different from its length in the Track Reservation Table; such a file is usually the result of a system failure or deadstart which occurs while the file is being written.

At NOS 2.8.6 L859, a file with such an error is repaired (truncated), and an error status is set to alert the user to the damage to the file. When the user next attempts to attach the file, the status EOI CHANGED BY RECOVERY will be reported. The user may clear this error status by entering a CHANGE command (with the CE parameter specified), after which the file may be attached and inspected for damage.

Significant Problems

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

Additional Year 2000 Problems

The following additional problems related to dates with years beyond 1999 have been identified. Code will be made available on SOLVER under the indicated PSRs when the problems have been resolved.

- . NAM calculates the number of seconds between two dates incorrectly when one or both of the dates are beyond 1999, and generates an incorrect value for day of the week when the date is beyond 1999. (NA5B945)
- . FORTRAN5 library routine LABEL calculates the expiration date incorrectly when dealing with dates beyond 1999, and fails to account for leap years correctly. (FL5A716).

- . FORTRAN4 library routine LABEL calculates the expiration date incorrectly when dealing with dates beyond 1999, and fails to account for leap years correctly. (FL5A716).

Chapter 4

Operations

This chapter emphasizes change in the operating system which may be of 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 PF Utility DN Parameter

The DN parameter can no longer be used in PFDUMP or PFLOAD to select files that reside or resided on a non-master device. At NOS 2.8.6 L859, the device specified by the DN parameter must be a master device. This will select files cataloged on that device. The TD parameter should be specified on PFDUMP or PFLOAD to specify files residing on a non-master device. Also, the DN and TD parameters can no longer be specified concurrently.

PFDUMP No Longer Supports EO Parameter

The EO parameter is no longer supported by PFDUMP. At previous system levels, if EO was specified for PFDUMP and a read error occurred while dumping a file, a 'supress load' error control word was written to the archive file and no attempt was made to dump the remainder of the file. PFLOAD would not load such files under any circumstances. At level 859, PFDUMP will always continue dumping a file, if possible, after a read error. It will still be possible to supress loading of files with errors by specifying the EO option on PFLOAD.

PFCAT No Longer Reports Permanent File Hole Statistics

PFCAT will no longer generate a report of the number of indirect access catalog holes and sectors when the LO=S option is specified. To display this information, the PACKER utility should be executed with the NC option specified. PACKER issues dayfile messages on termination indicating the number of indirect access catalog holes and sectors on the specified device; the NC (No Changes) parameter specifies that PACKER will simply collect these statistics, but will not actually pack the indirect access file chain.

Chapter 5

End User

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

Enhancements

LI Format Tape Support Added to UPDATE

NOS 2.8.6 L859 adds support for LI format tapes to UPDATE. The primary use of LI format is for cartridge tape (D=AE or CE), but it can also be used for D=GE reel tape. UPDATE can now process LI format PL tapes; however, LI format tape is supported only for UPDATE PLs, and not for COMPILE, SOURCE or READ files.

Because of the buffer memory required to support LI format tapes, users can expect to see an increase of field length for UPDATE of approximately 23000 octal words. The increased buffer sizes should improve performance in some cases even when LI format is not used.

New Command BKSPRU Added to NOS

NOS 2.8.6 L859 adds a new BKSPRU command to NOS. BKSPRU gives the user the capability of backspacing a file by PRU count. This is particularly useful for examining data at the end of a very large file that have no convenient EORs or EOFs to help in positioning the file.

Command format:

BKSPRU(f,n,m)

f = local file name of the file to be positioned.
n = number of PRUs the file is to be backspaced.
m = mode (coded or binary) of the file.

Example:

SKIPEI,MONSTER.	Position file MONSTER to EOI.
BKSPRU,MONSTER,5.	Backspace MONSTER by 5 PRUs.
COPYEI,MONSTER,TAIL.	Copy the last 5 PRUs of MONSTER to file TAIL.

NOS Date Macros Can Now Return Four-Digit Years

To aid sites in upgrading their applications to deal with dates beyond the year 1999, NOS 2.8.6 L859 has enhanced the DATE, EDATE, and JDATE macros to optionally return dates with 4-digit years. These macros have been given a new format parameter, allowing the programmer to specify which date format should be returned.

Macro Formats :

DATE

addr,rform

addr address of reply word.
rform format of date returned to reply word.
 rform = 4, return format "yyyy/mm/dd".
 rform = anything else, or omitted, return
 standard format " yy/mm/dd.".

EDATE

pdate,rform

pdate address of word containing packed date.
rform format of date returned to register X6.
 rform = 4, return format "yyyy/mm/dd".
 rform = anything else, or omitted, return
 standard format " yy/mm/dd.".

JDATE

addr,rform

addr address of reply word.
rform format of date returned to reply word.
 rform = 4, return format 7Ryyyyddd.
 rform = I, return format 6Rcyyddd, where
 c is the ISO century code; if c
 is a space, yy means 19yy; if c is
 display code zero, yy means 20yy.
 rform = anything else, or omitted, return
 standard format 5Ryyddd.

Chapter 6

Configuration Management

Notes and Cautions

This section highlights changes in configuration management for NOS 2.8.6 L859.

Certified Components and Levels

The following components are certified at the indicated levels:

Hardware Component -----	Release Level -----	CIP Level -----
Model 810 Microcode	M14AA16	L859
Model 815 Microcode	M11AA16	L859
Model 825 Microcode	M12AA16	L859
Model 830 Microcode	M13AA16	L859
Model 835 Microcode	M20AA17	L859
Model 840 Microcode	M340x09	L859
Model 845 Microcode	M310x11	L859
Model 850 Microcode	M330x12	L859
Model 855 Microcode	M300x10	L859
Model 860 Microcode	M320x11	L859
Model 990 Microcode	M40Ax22	L859
Model 990 Microcode	M41Ax22	L859
Model 994 Microcode	M44Ax22	L859
Model 96x Microcode	M3A0x10	L859
800 Series Environment Interface (EI)	Level 28	L859
DFT	V10	L859
SCI	V09	L859

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.

The NOS 2.8.6 L859 system is supported in environments containing the following peripheral components:

Hardware Component -----	Release Level -----
7154/855 (BCF-Full Track)	MA401-D08*
FSC Disk Firmware (ADP)	MA454-D04*
7255-01/834/836 (ISD I/II)	MA462-D06*
7165/895 (MA464)	MA464-D10*
5870 (CCC5870)	MA466-D04*
7054/844 (BCS-Half Track)	MA710-D13*
7155/885/844-4X (FMD-HT/FT)	MA721-D12*
7155-401/885-42/885-1X/844-4X (PHD-HT/FT)	MA722-D03*
FSC Tape	MB401-D04*
7021/66X (FIRM66X)	MB434-D14*
7221/639 (CW63X)	MB465-D04*
7990 (CCC7990)	MB466-D03*
698-XX CMTS	MB467-D02*
Cartridge Tape PMC	MB468-D04*
380-170 (NAD)	NOS LVL-06
CM1 Controlware (CMD)	MH422-D07*
CM2 Controlware (CM2)	MH424-D03*
9853 (XMD) Controlware	MH426-D09C*
5830 (DAS) Controlware	MH427-D18*
CYBER Initialization Package (CIP)	CIP L859

*Contained on CIP 859