

# NOS/VE Operations

## Usage

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features and parameters.

# Manual History

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Revision	System Version	PSR Level	Date
A	1.0.2	-	October 1983
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This manual is revision J, printed December 1988. It reflects NOS/VE Version 1.4.1 at PSR level 716. This revision reflects the following features and changes:

- CYBER 960, 962, 992, and 994 mainframes
- CC596A console model name change to CC598B
- CC598A console
- Operator intervention during deadstart
- Mass storage sets
- Full input queue and full output queue conditions
- New SCL data types

The following commands are new or have changed:

- ACTIVATE\_SET command
- CHANGE\_INPUT\_ATTRIBUTE command
- CHANGE\_JOB\_ATTRIBUTE\_DEFAULT command
- CHANGE\_OUTPUT\_ATTRIBUTE command
- CHANGE\_TAPE\_VALIDATION command
- CHANGE\_TIME\_ZONE command
- CREATE\_AGED\_FILE\_BACKUP command
- CREATE\_PARTIAL\_BACKUP command
- DISPLAY\_FAMILY command
- DISPLAY\_INPUT\_ATTRIBUTE command
- DISPLAY\_JOB\_ATTRIBUTE\_DEFAULT command

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- DISPLAY\_TAPE\_VALIDATION command
- LOGICAL\_CONFIGURATION\_UTILITY command
- LCU subcommand CHANGE\_ELEMENT\_STATE
- MANAGE\_JOBS command
- MANAGE\_JOBS subcommand SELECT\_JOBS
- MANAGE\_OUTPUT command
- MANAGE\_OUTPUT subcommand SELECT\_OUTPUT

This edition obsoletes all previous editions.



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# About This Manual

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This manual describes the tasks necessary to establish and monitor operations of the CONTROL DATA® Network Operating System/Virtual Environment (NOS/VE) executing in a standalone or dual-state environment. Standalone refers to NOS/VE operations on a dedicated CYBER mainframe. Dual-state refers to NOS/VE operations on a CYBER mainframe in partnership with either the CDC® Network Operating System (NOS) Version 2 or the CDC Network Operating System/Batch Environment (NOS/BE) Version 1.5.

## Audience

This manual is written for the senior operator or analyst responsible for directing system operations. Generally, this manual describes how to use the system console to perform the basic tasks associated with NOS/VE operations. This manual assumes that the reader is familiar with the NOS/VE System Command Language (SCL). For dual-state systems, the manual also assumes that the reader is familiar with NOS or NOS/BE operations.

## Conventions

NOS/VE and its system console support the full ASCII character set. All commands, subcommands, and examples are shown using the full ASCII character set. The following conventions are used in this manual:

<b>Boldface</b>	In a command or procedure format description, command names and required parameters are in boldface type.
<i>Italics</i>	In a command or procedure format description, optional parameters are in italic type.
Numbers	All numbers are decimal unless otherwise noted.
Examples	In examples that show a dialogue between NOS/VE system output and user input, user input is shown in lowercase except where the system requires uppercase input.
KEY1-KEY2	Two keys separated by a hyphen means hold down the first key while pressing the second key.

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# **An Overview of NOS/VE Operations** **1**

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This manual describes the use of the system console in performing day-to-day operator activities required to maintain service to NOS/VE users. There are two types of system consoles: the CDC 721 and the PC console. The cursor control keys and function keys for the different keyboards are described in the Using the Console Keyboard section of chapter 2, Monitoring System Activity. Day-to-day operator activities include the following tasks:

- Monitoring system activity at the system console
- Starting NOS/VE
- Stopping NOS/VE
- Satisfying requests for magnetic tapes
- Maintaining permanent files
- Recovering from operator level errors
- Managing printer output

These tasks are performed by entering commands or making menu selections at the system console. Many frequently used tasks are available through the NOS/VE operator menus. To use the operator menus, enter the `SELECT_OPERATOR_MENU` command described in chapter 8, Operator Commands and Utilities.

This manual does not describe the physical operation of devices other than the system console. For example, the manual describes the commands that must be entered at the console in connection with a user's tape mount request, but does not describe how to mount a tape on specific tape devices. For a description of the physical operations of disk and tape units, printers, communications devices, and other types of equipment, see the operator manuals for specific models of equipment.

## Monitoring System Activity

The operator monitors system activity at the system console. The system job is always executing at the system console. The system job executes under the user name \$SYSTEM and family name \$SYSTEM. The \$SYSTEM user name and the system job possess system-wide access privileges to files and commands that other user names and jobs do not have.

During an installation deadstart, the system creates the \$SYSTEM user name as a member of the \$SYSTEM family. Initially, the only access to the \$SYSTEM user name is through the system console. By assigning a password to the \$SYSTEM user name, you can provide access to the \$SYSTEM user name through an interactive terminal. At the system console, use the ADMINISTER\_VALIDATIONS utility to assign a new password to the \$SYSTEM user name. The ADMINISTER\_VALIDATIONS utility is described in the NOS/VE User Validation manual.

Monitoring system activity involves monitoring system performance information as well as responding to messages. Messages can come from the system or from user jobs.

Your main tool for monitoring system activity is the VEDISPLAY command. The VEDISPLAY command offers several displays containing information about NOS/VE activity. All VEDISPLAY command displays are described in chapter 2, Monitoring System Activity.

There are several other commands that display system information. These command names all begin with the word *display*, as in DISPLAY\_JOB\_STATUS. These commands are described in chapter 8, Operator Commands and Utilities.

## Starting NOS/VE

Starting NOS/VE, also called deadstarting, readies the mainframe, disk units, tape units, input/output units, peripheral devices, and the operating system for operation. There are two types of deadstarts: the installation deadstart and the continuation deadstart. An installation deadstart is done to install a system or to start a system when a continuation deadstart fails repeatedly. Refer to the NOS/VE Software Release Bulletin (SRB) for information on system installation. Refer to the Failure Analysis chapter of the NOS/VE System Performance manual, Volume 2, for information about starting the system when a continuation deadstart fails repeatedly.

A continuation deadstart is done routinely for the following reasons:

- To start the system after a normal termination.
- To start the system after NOS/VE has halted because of an error.
- On dual-state systems, to reestablish NOS/VE after NOS (or NOS/BE) has halted because of an error.

## Stopping NOS/VE

Stopping or terminating NOS/VE at the end of the operations day or before performing maintenance activities are examples of normal termination. The TERMINATE\_SYSTEM command executes the normal termination. When an error does not allow a normal termination, an abnormal termination of NOS/VE is required. An abnormal termination may involve dumping the NOS/VE environment to tape so that the cause for the error can be determined. Terminating NOS/VE is described in chapter 4.

## Satisfying Requests for Magnetic Tapes

When a job opens a tape file, a request to mount the associated tape appears in the tape mount display window on the system console. You can identify a tape by its 6-character external volume serial number (EVSN) which is written on the outside of the tape.

NOS/VE can use labelled tapes or unlabelled tapes. A labelled tape contains a 6-character recorded volume serial number (RVSN) that identifies the tape to the system. Using labelled tapes instead of unlabelled tapes reduces the risk of using the wrong tape.

Initializing, or labelling, a tape refers to the process of recording the RVSN and other labels on the tape. You can label tapes using the LOGICAL\_CONFIGURATION\_UTILITY (LCU) subcommand INITIALIZE\_TAPE\_VOLUME or the LABEL\_TAPE\_VOLUMES command. These commands are described in chapter 8, Operator Commands and Utilities.

Once a tape has been mounted on a tape unit, the tape must be assigned to the tape unit. Assigning a tape to a tape unit makes the tape available to the requesting job. Labelled tapes are assigned automatically; that is, no operator entry at the console is required. Unlabelled tapes must be assigned using the ASSIGN\_DEVICE command. The ASSIGN\_DEVICE command is described in chapter 8, Operator Commands and Utilities.

## Maintaining Permanent Files

Sites routinely copy files from disk storage to tape to prevent the loss of data if a user accidentally deletes files or if a disk unit fails. If a disk unit fails, users who have files stored on the failed disks only lose changes made to the file data since the files were last copied to tape.

The process of copying permanent files to tape is called a backup. There are two types of backups: the full backup and the partial backup. A full backup copies all catalogs and files to tape. Perform a full backup using the CREATE\_FULL\_BACKUP command. A partial backup copies all catalog information and only those files that have been modified since the previous backup. Perform a partial backup using the CREATE\_PARTIAL\_BACKUP command. Usually, partial backups are performed daily while full backups are performed weekly.

If files are lost or damaged for any reason, you can reload them from the backup tapes. This is called restoring files.

Another aspect of maintaining permanent files is the management of disk storage space. When a disk unit approaches its capacity, it may be necessary to backup and delete files that have not been accessed in a long time, or to delete files that have exceeded their expiration dates. Perform these tasks using the CREATE\_AGED\_FILE\_BACKUP, DELETE\_EXPIRED\_FILES, and the DISPLAY\_ALL\_FILES commands. These commands are described in chapter 8, Operator Commands and Utilities.

There is an optional product, Archive/VE, which backs up and deletes file cycle data while leaving catalog entries intact. Refer to the NOS/VE File Archiving manual for more information about this product.

Your site has the option of writing its own permanent file maintenance procedures using the BACKUP\_PERMANENT\_FILES and RESTORE\_PERMANENT\_FILES utilities. These utilities and their subcommands are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

## Recovering from Operator Level Errors

Chapter 7, Operator Level Error Conditions and Recovery Procedures, describes a subset of system and peripheral error conditions that an operator might be expected to handle. For information about how to solve more serious problems, refer to the Failure Analysis chapter of the NOS/VE System Performance and Maintenance manual, Volume 2.

## Managing Printer Output

Managing printer output involves tasks such as displaying the print queue, stopping a printer, and requeueing a print file. To accomplish these and other tasks, use the OPERATE\_STATION utility. Refer to the CDCNET Batch Device User Guide for information on using the OPERATE\_STATION utility.

This manual does not describe the OPERATE\_STATION utility; however, you can perform a limited number of printer management tasks using the NOS/VE operator menus. The NOS/VE operator menus are available through the SELECT\_OPERATORS\_MENU command. You can also display the status of output files in the system using the DISPLAY\_OUTPUT\_STATUS command. Both of these commands are described in chapter 8, Operator Commands and Utilities.

# Monitoring System Activity

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This chapter describes how to use the system console to monitor system activity. The NOS/VE system console offers several windows in which to display information or enter commands. A window is a part of the screen that contains an informative display, menu, or message. The VEDISPLAY command and several other display-generating commands produce a variety of displays which are also described in this chapter.

## The Console Screen

The console screen has three components that always appear: the system message line, the critical display window, and the main operator window. The following windows can also appear on the screen at various times:

- Window A and window B
- Operator action display window
- Operator action menu window
- Tape mount display window
- System core command processor window
- System core debugger window

Figure 2-1 shows an example of the information that can appear on the console screen.

Only line mode commands are allowed at the NOS/VE system console. For example, you cannot use the EDIT\_FILE utility in screen mode; you must use the editor in line mode.

NOS VE Operating System R1 1.4.1 08:51:01 01/13/89	System Message Line
@	Critical Display Window
Operator Action Display	Operator Action Display Window
System Supplied Name = \$0855_0002_AAA_1333 Please broadcast hours for next week.	
Job Log Display	Window A
08:33:14.224.PR.acquired \$0855_0002_AAA_1333 08:35:24.670.CI.ved ij o=els 08:35:35.299.CI.chafa els fc=list 08:35:41.744.CI.prif els 08:35:44.048.PR.acquired \$0855_0002_AAA_1335 08:35:52.103.CI.detf els 08:46:56.192.CI.assd evsn='abc123' en=red3 08:46:58.220.PR.acquired \$0855_0002_AAA_1346 08:48:11.705.CI.disjs \$1337 08:49:36.765.CI.ved aj 08:49:54.431.CI.ved aj o=acr 08:50:24.479.CI.chafa acr fc=list 08:50:34.868.CI.prif acr 08:50:39.973.PR.acquired \$0855_0002_AAA_1348 08:50:56.842.CI.detf acr	
Main Operator Window	Main Operator Window
CLASS=BATCH, JOB_NAME=VALIDATION_JOB / @	

Figure 2-1. Console Screen Example

## System Message Line

Informative messages about system activity appear on the system message line. For example, on dual-state systems, the flashing CYBER 170 attention message appears on the system message line. The CYBER 170 attention message indicates there is an action request from NOS or NOS/BE. The system message line is located at the top of the screen.

Refer to the NOS/VE System Performance and Maintenance manual, Volume 2, for descriptions of critical messages and the role they play in failure analysis.

## Critical Display Window

Messages from the NOS/VE monitor that indicate a disk or peripheral hardware failure appear in the critical display window. This window is always the top window on the screen, just under the system message line. Figure 2-1 shows an example of a critical display window.

The length of the critical display window can vary from 3 to 23 lines. The top line of the window contains the NOS/VE system version, the time, and the date. The next few lines are message lines. The bottom line is the input line identified by the @ symbol. You can enter the following commands on this input line:

- IDLE\_SYSTEM
- STEP\_SYSTEM
- RESUME\_SYSTEM
- UNSTEP\_SYSTEM
- SYSDEBUG
- TDEBUG
- DUMPJOB

The IDLE\_SYSTEM, STEP\_SYSTEM, RESUME\_SYSTEM, and UNSTEP\_SYSTEM commands are described in chapter 8, Operator Commands and Utilities. The SYSDEBUG, TDEBUG, and DUMPJOB commands initiate the system core debugger and are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

## System Core Debugger Window

The system core debugger window appears when you enter the SYSDEBUG, TDEBUG, or DUMPJOB command on the input line of the critical display window. This window always appears immediately below the critical display window. Figure 2-2 shows an example of a system core debugger window.

The length of the system core debugger window can vary from 3 to 23 lines. The top line is the title line. The remaining lines are message lines. The bottom line is the input line identified by the @ symbol. You can enter only system core debugger commands on this input line. System core debugger commands are described in the NOS/VE System Performance and Maintenance manual, Volume 2. Enter the system core debugger command RUN to close this window.

```

NOS VE Operating System      R1      1.4.1      08:51:01      01/13/89
@
System_Core_Debugger

Processing command , $JOBMNT
dm 10001200
LENGTH DE000
SEGMENT = 001
00001200 40000020 00000B2C @ ,
@

```

Figure 2-2. System Core Debugger Window

## Operator Action Display Window

Messages from user jobs appear in the operator action display window. This window appears only when the console has received a message from a job. The operator action display window generally appears immediately below the critical display window. Figure 2-3 shows an example of an operator action display window.

The length of the operator action display window can vary from 1 to 23 lines. The top line is the flashing title line. The next line contains the system-supplied name of the job sending the message. The actual message follows on the third line.

Respond to messages by entering the `REPLY_ACTION` command on the input line of the main operator window. When a message has been answered, the operator action display window disappears.

```

NOS VE Operating System      R1      1.4.1      08:51:01      01/13/89
@
Operator Action Display
System Supplied Name = $0855_0002_AAA_1333
Please broadcast operating hours.

Main Operator Window
/
@

```

Figure 2-3. Operator Action Display Window

## Tape Mount Display Window

The tape mount display window contains requests to mount tapes. This window appears only when a job has opened a tape file. The tape mount display window generally appears immediately below the critical display window. Figure 2-4 shows an example of a tape mount display window.

The length of the tape mount display window can vary from 1 to 10 lines. The top line is the flashing title line showing column labels. The tape mount display is described in chapter 5, Providing Magnetic Tape Service.

Enter the ASSIGN\_DEVICE command on the input line of the main operator window, as needed, to assign a tape to a tape unit. When all tape mount requests have been satisfied, the tape mount display window disappears.

NOS VE Operating System R1 1.4.1 10:46:01 01/13/89							
e							
Mount	Ring	Dens	<--Operator Action-->	Lab	C	System_Job_Name	Time Next_vsn
TAPE01	In	800	ASSIGN_DEVICE needed	No	A	\$9301_0101_AAA_0052	10:28
XA0123	Out	1600	ASSIGN_DEVICE needed	No	A	\$9301_0101_AAA_0016	10:28
RA0354	Out	6250	ASSIGN_DEVICE needed	Yes	E	\$9301_0101_AAA_0019	10:38
RA0456	Out	6250		Yes	A	\$9301_0101_AAA_0019	10:38 RA0457
AB0789	In	6250		Yes	A	\$9301_0101_AAA_0033	10:46
Main Operator Window							
/							
e							

Figure 2-4. Tape Mount Display Window

## Operator Action Menu Window

The operator action menu window prompts you to decide how to handle special requests or problems. For example, an operator action menu window appears when a tape unit is being requested for online maintenance. Operator action menus are described in chapter 5, Providing Magnetic Tape Service, and chapter 7, Operator Level Error Conditions and Recovery Procedures. The operator action menu generally appears immediately below the critical display window. Figure 2-5 shows an example of an operator action menu window.

The top line of the operator action menu window is the flashing title line identifying the requesting job. The bottom line is the input line, identified by the @ symbol. Enter the menu selection on the input line with any additional data as described in the menu. After making your selection, the operator action menu window disappears.

```

NOS VE Operating System      R1      1.4.1      08:51:01      01/13/89
@

NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
Mount tape volume MA0012 for maintenance action on assigned element U50.

You may do one of the following:
  1 - Mount tape volume (MA0012), ring = IN, on element U50
      before making this menu selection.
  2 - Terminate the assignment (include a reason with the menu selection).

Please enter the number corresponding to your selection.
@

Main Operator Window
/
@

```

Figure 2-5. Operator Action Menu Window

## Windows A and B

Windows A and B are optional windows that appear immediately above the main operator window. These windows have the unique ability to periodically update display information on the screen, but only for displays produced by the VEDISPLAY command. Figure 2-6 shows an example of an Active Jobs Display in window A and an example of a Tape Status Display in window B. The VEDISPLAY command displays are described later in this chapter.

You can place other displays in these windows, such as that produced by the DISPLAY\_JOB\_STATUS command. Values for the OUTPUT parameter direct displays to the chosen window: DISPLAY\_A directs a display to window A; DISPLAY\_B directs a display to window B.

Window A can appear on the console by itself, as can window B. When both windows appear on the screen at the same time, window A is always on top.

To replace a display in a window, reenter the VEDISPLAY command and direct the new display to that window. For example, to replace a display currently in window B with the Active Jobs Display, enter the following command:

```
vedisplay display_option=active_jobs output=display_b
```

To close a window and remove the display from the screen, use the VEDISPLAY command to specify the null display. For example, to close window A and remove any display it might contain, enter the following command:

```
vedisplay display_option=null output=display_A
```

Windows A or B can have several lines. These windows automatically reduce to as few as four lines when space is needed by other windows. The first line is the title line which describes what kind of information appears in the window. The title line may contain a display title or column labels.

NOS VE Operating System											R1	1.4.1	08:51:01	01/13/89						
@																				
											CPM	CPJ	PRC	PAS	PIN	S	WS	RT	PC	DP
CPU Idle: 43/20																				NOS: 47
0.	\$AAA_0000	\$SYSTEM	607	925	166185	30183	115944	R	153	1	10	P10								
1.	\$AAF_8369	ABC_1	23	48	1980	2426	19955	R	500	1	5	P5								
2.	\$AAF_4567	RSM	22	19	327	15212	2690	R	121	0	5	P6								
Element	RVSN	EVSN	Ring	Dens	Lab	C	System_Job_Name			Unit	Status									
U50												Not ready								
U51	AZ0023	AZ0023	Out	1600	Yes	A	\$9301_0101_AAA_0019			Ready										
U53			In	800	No	A				Ready										
U54	XT0967	I02363	Out	6250	Yes	A	\$9301_0101_AAA_0119			Ready										
U55	TA5432		In	1600	Yes	E				Ready										
U56	ABC123		Out	1600	Yes	E				Ready										
											Main Operator Window									
/																				
@																				

Figure 2-6. Windows A and B

## Main Operator Window

All output directed to the file \$OUTPUT appears in the main operator window. In addition, SCL and most operator commands are entered in this window on the bottom line next to the @ prompt. The main operator window is always the bottom window on the screen. Figure 2-7 shows the NOS/VE operator main menu appearing in the main operator window.

The main operator window can have a maximum of 23 lines. This window automatically reduces to as few as four lines when space is needed by other windows. The first line is the title line. The last line is the input line, identified by the @ symbol. During deadstart, when the process pauses for the entry of system core commands, this window is retitled System Core Command Processor.

```

NOS VE Operating System      R1      1.4.1      08:51:01      01/13/89

@

      CPM  CPJ  PRC  PAS  PIN  S  WS  RT  PC  DP
CPU Idle:  43/20                                NOS: 47

0.$AAA_0000 $SYSTEM  607  925 166185  30183  115944  R 153  1 10 P10
1.$AAF_8369 ABC_1    23   48  1980    2426  19955  R 500  1  5 P5
2.$AAF_4567 RSM      22   19   327    15212  2690  R 121  0  5 P6

      Main Operator Window

      NOS/VE OPERATOR MAIN MENU

a. View NOS/VE Displays          e. Send Message to Users
b. Use Magnetic Tapes           f. Reset System Logs
c. Manage Printers              g. Shut Down NOS/VE
d. Manage Permanent Files

QUIT Exit Menu, Stay in NOS/VE      ? Help Menu

Enter choice or NOS/VE command and then press RETURN: ?

/
@

```

Figure 2-7. Main Operator Window

## Using the Console Keyboard

The following table describes the cursor control keys and function keys for the two types of consoles: the CC634B and the PC console. The CC634B console is essentially a CDC 721 terminal. A PC console is similar to a personal computer. There are three PC console models: the CC598A, CC598B, and the CYBER 930 console. The CYBER 930 console is, of course, only for the CYBER 930 machine and its keyboard is described in the CYBER 930 Guide to Operations. The CC598A and the CC598B consoles are very similar except that the CC598A console is equipped with a hard disk that contains the CYBER Initialization Package (CIP) software. Refer to the CDC 19003 System Console manual for more information about the CC598A and CC598B consoles. References to function keys in the text are those for the CC634B console.

CC634B Key	PC Key	Description
(arrow left)	(arrow left)	Moves the cursor left. This key is located on the far right keypad.
(arrow right)	(arrow right)	Moves the cursor right. This key is located on the far right keypad.
(arrow up)	(arrow up)	Moves the cursor up. This key is located on the far right keypad.
(arrow down)	(arrow down)	Moves the cursor down. This key is located on the far right keypad.
(backspace)	BACKSPACE	Moves the cursor one character to the left on an input line. Neither the display characters nor the input is deleted when backspacing.
TAB	TAB	Moves the cursor to the last line of the current window. If the cursor is on the last line of a window when you press the TAB key, it moves to the last line of the next window.
NEXT	ENTER <sup>1</sup>	After you enter a command on an input line, the NEXT key sends that input to the process associated with the window. The NEXT key also resumes output to a window to which output had been suspended.
CLEAR EOL	CTRL-END	On an input line, this key deletes characters from the cursor position to the end of the line. If the input is blinking (waiting to be read by a NOS/VE task), this key clears the wait status, allowing you to change the line.
ERASE	DELETE <sup>2</sup>	On an input line, this key deletes the character on an input line immediately to the left of the cursor.
F6	F6	On dual-state systems, this key toggles the console between NOS/VE and NOS or NOS/BE.

1. CYBER 930 keyboard equivalent is RETURN.

2. CYBER 930 keyboard equivalent is DEL.

CC634B Key	PC Key	Description
F7	F7	Toggles the console between NOS/VE, NOS, or NOS/BE and the diagnostic utilities of the Monitor Display Driver (MDD). MDD is documented in the NOS or NOS/BE Online Maintenance Software Reference manual and the CYBER Initialization Package (CIP) Reference manual.
SUPER (F9)	F9	Expands the window containing the cursor by six lines and reduces the length of other windows as necessary. Only one window may be expanded at a time.
SHIFT-SUPER	SHIFT-F9	Expands the window containing the cursor to its maximum size while reducing the length of other windows to their minimum size. Only one window may be expanded at a time.
SUB (F10)	F10	Reduces the window containing the cursor to its minimum size. This key applies only to the critical display window, an operator action display window, or the main operator window.
BACK	CTRL-(arrow left)	Reverses the effect of the SUPER, SHIFT-SUPER, and SUB keys, thus returning the window to its original size. This key applies only to the critical display window, an operator action display window, and the main operator window.
CLEAR P	CTRL-HOME	Refreshes the entire screen. Use this key to clean up a cluttered display.
PRINT	PRINT SCREEN <sup>3</sup>	If the system console has a printer attached to it, this key prints the contents of the screen.
STOP	END	Suspends command execution at the system console. You can press the STOP key at anytime, regardless of the cursor screen position. To resume command execution, enter the RESUME_COMMAND command.
SETUP	PAUSE <sup>4</sup>	Suspends output to the screen. To resume output to the screen, press the F1 key.
F1	ENTER <sup>5</sup>	Resumes output to the screen. To suspend output to the screen, press the SETUP key.

---

3. CYBER 930 keyboard equivalent is SHIFT PRTSC.

4. CYBER 930 keyboard equivalent is CTRL-S.

5. CYBER 930 keyboard equivalent is CTRL-Q.

The Active Jobs Display, Initiated Jobs Display, Initiated Jobs Detailed Display, Device Status Display, and the File Server Display are pageable displays. This means you can page the display up or down in the window to examine all of the information. The following keys perform paging functions. Place the cursor in window A or B before using these keys.

CC634B Key	PC Key	Description
FWD	PAGE DOWN <sup>6</sup>	Moves forward through the information.
BKW	PAGE UP <sup>7</sup>	Moves backward through the information.
UP	-	Moves the display line containing the cursor to the top of the window.
DOWN	+	Moves the display line containing the cursor to the bottom of the window.
BACK	CTRL-(arrow left)	Restores the very first line of the display to the top of the window. The effect is to return to the beginning of the display.

6. CYBER 930 keyboard equivalent is PGDN.

7. CYBER 930 keyboard equivalent is PGUP.

## Displaying System Information with the VEDISPLAY Command

The VEDISPLAY command is the main tool for monitoring system activity. The VEDISPLAY command offers the following displays:

- Active Jobs
- Device Status
- File Server
- General Statistics
- Initiated Jobs
- Initiated Jobs Detailed
- Job Log
- Mass Storage
- PP Assignment
- System Log
- Tape Reservations
- Tape Status

Each of these displays is continuously updated while on the screen when the display appears in window A or window B. The following sections provide an example of each display.

The VEDISPLAY command has the following format:

```
VEDISPLAY or  
VED  
  DISPLAY_OPTION=keyword  
  OUTPUT=file or keyword  
  STATUS=status variable
```

The DISPLAY\_OPTION parameter specifies the type of display. This parameter is required.

The OUTPUT parameter specifies the name of the file in which to write the display information. Specifying DISPLAY\_A places the display in window A on the system console. Specifying DISPLAY\_B places the display in window B. The default is window A.

To remove a display from window B, for example, enter the following VEDISPLAY command:

```
vedisplay display_option=null output=display_b
```

To replace a display with a different one, enter the VEDISPLAY command and specify the window containing the display you want to replace.

The VEDISPLAY command is described in detail in chapter 8, Operator Commands and Utilities.

## Active Jobs Display

The Active Jobs Display gives status information for all active jobs currently in NOS/VE memory. Enter the following command to obtain a display similar to the one shown in figure 2-8:

```
vedisplay display_option=active_jobs
```

	CPM	CPJ	PRC	PAS	PIN	S	WS	RT	PC	DP
CPU Idle: 43/20										NOS: 47
0.\$AAA_0000 \$SYSTEM	607	925	166185	30183	115944	R	153	1	10	P10
1.\$AAF_8369 ABC_1	23	48	1980	2426	19955	R	500	1	5	P5
2.\$AAF_4567 RSM	22	19	327	15212	2690	R	121	0	5	P6

Figure 2-8. Active Jobs Display

The first line of the Active Jobs Display gives the idle statistics; one set for each CPU in the system.

CPU Idle: 43/20 CPU has been idle for 43 percent of the time since the screen was last refreshed. The normal refresh rate is once per second. Making up this 43 percent, 20 percent of the time tasks were waiting for I/O to complete and 23 percent of the time all tasks were waiting for events such as timed or interactive input.

NOS: 47 CPU has been executing NOS or NOS/BE 47 percent of the time. This includes time spent in the system idle loop. This information appears only on dual-state systems.

Each subsequent entry in the display has the following format:

```
ordinal.sjn ujn cpm cpj prc pas pin s ws rt pc dp
```

- ordinal Ordinal number of the job. Ordinal zero is always the system job.
- sjn Last nine characters of the system-supplied job name of the active job.
- ujn User name or the first eight characters of the user-supplied job name specified on the LOGIN or the SUBMIT\_JOB command.
- cpm Number of central processor seconds the job has used in monitor mode.
- cpj Number of central processor seconds the job has used in job mode.
- prc Number of page faults where the page was reclaimed from memory.
- pas Number of new pages assigned to the job.
- pin Number of page faults where the page was read from disk.

s Job status.

**NOTE**

---

If any value, except R, R\*, or H\*, remains in the display for several minutes, it may indicate a system problem. Perform an abnormal termination of NOS/VE, dump the NOS/VE environment to tape, and submit a Programming System Report (PSR). For more information, see Abnormal Termination of NOS/VE in chapter 4, Terminating NOS/VE.

---

Status	Description
*H	Job has halted, but the system is unable to terminate the job. The rest of the operating system is functioning normally. The only way to remove this job is to deadstart NOS/VE.
II	Swapin has been initiated. The job is being written from disk to memory.
R	Job is in memory and ready for execution.
*R	Job was damaged during recovery. The rest of the operating system is functioning normally. The only way to remove this job is to deadstart NOS/VE.
TI	Swapout is delayed until the job releases system resources.

ws Number of pages in the job's working set. An asterisk beside the number means that an active task has been slowed due to excessive paging while the job working set is at its maximum limit.

**NOTE**

---

The asterisk remains for at least 1 minute whether or not paging has returned to normal.

---

rt Number of tasks the job has ready for execution.

pc Percent of central processor time the job used since the last display update. The display is updated approximately every second.

dp Dispatching priority of the job.

## Device Status Display

The Device Status Display gives status information about the storage devices configured for NOS/VE. Enter the following command to obtain a display similar to the one shown in figure 2-9:

```
vedisplay display_option=device_status
```

Name (14 chars)	Product	State	UN(8)	Iou/Channels	VSN	QC	MAC	LUN
D8950	895	ON	0	IOU1/CCH6	VSN001	0	0	2
TAPE0	679	ON	0	IOU0/CH9			0	3
DISK0	887	ON	0	IOU1/CCH0A	DISK0	0	0	4
DISK1	887	ON	1	IOU1/CCH0A	DISK1	0	0	5
TAPE1	679	ON	1	IOU0/CH9			0	6
DISK2	887	ON	0	IOU1/CCH1A			0	7
DISK3	887	ON	1	IOU1/CCH1A			0	8

Figure 2-9. Device Status Display

Each entry in the display has the following format:

```
name product state unit iou/channel(s) vsn qc mac lun
```

name	First 14 characters of the storage device element name as defined in the physical configuration file. Element names that exceed 14 characters are truncated to 14 characters followed by two periods (..).
product	First six nonblank characters of the storage device element identification, excluding leading dollar sign characters (\$).
state	State of the storage device: ON, OFF, or DOWN.
unit	Octal unit number of the storage device.
iou/channel(s)	Name of the input/output unit (IOU) and channels through which NOS/VE has access to the storage device. A concurrent (CIO) channel in an I4 IOU is identified by the name CCHn. All other channels are identified by the name CHn, where n is the channel number.
vsn	Recorded volume serial number (RVSN) identifying the disk volume on a mass disk unit, or the external volume serial number (EVSN) identifying the tape volume on a tape unit.
qc	Number of physical I/O requests currently in the storage device queue.
mac	Maintenance access status for the storage device. This field contains either a number, indicating the number of jobs requesting concurrent maintenance access; or the letter D, indicating that one job has requested dedicated maintenance access.
lun	Logical unit number for the storage device.

## File Server Display

The File Server Display gives information about the activity between mainframes that are connected by STORNET or ESM-II. This information includes mainframe connections, job activity on the server mainframe, and families that are part of the server mainframe. A server mainframe provides file storage for a client mainframe. Refer to the NOS/VE File Server for STORNET and ESM-II manual for more information about the file server. Enter the following command to obtain a display similar to the one shown in figure 2-10:

```
vedisplay display_option=file_server
```

File Server Display				
--element name STORNET302		connection STORNET chan CH2		
---DESTINATION MAINFRAME---		-----TRANSACTIONS-----	-----BUFFER DATA-----	-----PAGE DATA---
\$SYSTEM_0830_1234	S	12345678	12345678	123456
ACTIVE		123.00	123.67	123.67
\$SYSTEM_0830_2345	C	12345678	12345678	123456
ACTIVE		123.67	123.67	123.67
-SYSTEM SUPPLIED NAME-----		-----USER JOB NAME-----	-----TRANSACTIONS-----	-----ACCESS---
mainframe: \$SYSTEM_0830_2345				
\$0830_2345_CCC_5678		ABC	12345	LEVELED
\$0830_2345_DDD_5678		DEF	123456	FILE
---SERVER FAMILY-----		-----ACCESS-----	-----SERVER MAINFRAME-----	-----SERVER STATE---
ALPHA		NONE	\$SYSTEM_0830_1234	ACTIVE
BETA		FILE	\$SYSTEM_0830_1234	ACTIVE

Figure 2-10. File Server Display

Figure 2-10 shows three parts. The File Server Display contains two or three of these parts depending on whether the mainframe is a client, server, or both. The first part displays file server connections and transaction activity. This part always appears in the File Server Display. The columns and fields are as follows:

element name	Name of the STORNET or ESM-II device element.
connection	Type of device connecting the mainframes.
chan	Channel connection to the element.
DESTINATION MAINFRAME	Two-line entry describing the destination mainframe. The first line in this column is the name of the mainframe whose access is controlled through the channel (CH2). The mainframe name is followed by a character indicating whether this mainframe is a server (S) or a client (C). The second line in this column is the file server state. The file server state can be ACTIVATING, ACTIVE, DEACTIVATING, or TERMINATED.

TRANSACTIONS	Two-line entry describing the amount of file transaction activity. The first line in this column is the number of times client jobs have accessed files on the server mainframe since the file server connection was last activated. The second line in this column is the rate (number of times per second) at which client jobs access files on the server mainframe.
BUFFER DATA	Two-line entry describing the amount of data moving through request buffers. The first line in this column is the number of bytes of data that have been transferred between mainframes in request buffers since the file server connection was last activated. The second line in this column is the rate (number of bytes of data per second) at which data transfers between mainframes in request buffers.
PAGE DATA	Two-line entry describing the number of pages of data moving between mainframes. The first line in this column is the number of pages that have been transferred between mainframes since the file server connection was last activated. The second line is the rate (number of pages per second) at which data transfers between mainframes.

The second part of the File Server Display contains information about a client's use of the server mainframe. This part appears only on a server mainframe. The columns and fields are as follows:

mainframe	Name of the client mainframe.
SYSTEM SUPPLIED NAME	System-supplied name of a client job accessing files on the server mainframe.
USER JOB NAME	User-supplied name of a client job accessing files on the server mainframe.
USER TRANSACTIONS	Number of times the client job accessed files on the server mainframe.
ACCESS	Type of family access.

The third part of the File Server Display contains family status for the server mainframe. This segment appears only on a client mainframe. The columns and fields are as follows:

SERVED FAMILY	Names of the families that can be accessed on the server mainframe.
ACCESS	Type of access to the server mainframe. The types of access are NONE, FILE, LOGIN, and LEVELED.
SERVER MAINFRAME	Name of the mainframe on which the family resides.
SERVER STATE	Server mainframe state. The server mainframe state can be ACTIVE, DELETED, DEACTIVATED, INACTIVE, or TERMINATED.



The rest of the General Statistics Display is divided into six sections, each of which describes a particular aspect of NOS/VE operations. A description of the entries in each section follows:

<b>Page Queues</b>	<b>Description</b>
free	Number of pages in the free page queue.
available	Number of pages in the available page queue.
avail-mod	Number of pages in the available-modified page queue.
wired	Number of pages in the wired page queue.
shared	Number of pages in all shared page queues.
IO err	Number of pages in the input/output queue that can't be written to disk.
fixed	Number of pages in all job-fixed page queues.
JWS	Number of pages in all job working sets.
swap-res	Number of pages in the swap-resident queue.
long wait	Number of pages in the long wait queue.
<b>Jobs</b>	<b>Description</b>
interactive	Number of interactive jobs currently in NOS/VE.
non-interactive	Number of noninteractive jobs in NOS/VE.
input queue	Number of jobs currently in the job input queue but not yet initiated. This value does not include jobs sent to a remote application, jobs assigned to a client mainframe connected through a file server, or deferred jobs.
active	Number of active jobs currently in NOS/VE memory.
known jobs	Number of jobs in the input queue. An asterisk after the number indicates that the number of jobs has reached the limit specified by the MAXIMUM_KNOWN_JOBS system attribute. Refer to chapter 7, Operator Level Error Conditions and Recovery Procedures for information about how to respond to a full input queue condition. The MAXIMUM_KNOWN_JOBS system attribute is described in the NOS/VE System Performance and Maintenance manual, Volume 1.
output files	Number of files in the output queue. An asterisk after the number indicates that the number of output files has reached the limit specified by the MAXIMUM_OUTPUT_FILES system attribute. Refer to chapter 7, Operator Level Error Conditions and Recovery Procedures for information about how to respond to a full output queue condition. The MAXIMUM_OUTPUT_FILES system attribute is described in the NOS/VE System Performance and Maintenance manual, Volume 1.

<b>Swapping</b>	<b>Description</b>
jobs in long wait	Number of jobs the system has removed from the active job list but have not yet been written to disk.
long wait, disk down	Number of jobs the system has attempted to write to disk but could not because the disk containing the swap file is down.
swap resident jobs	Number of jobs the system has written to disk but still remain in memory.
swap to disk	Number of jobs the system has written to disk and removed from memory.
number of swapouts	Number of jobs the system has removed from memory.
swap file size	Average number of pages in each swap file.
<b>Page Faults</b>	<b>Description</b>
avail-mod	Number of page faults for the available and available-modified page queue since the last screen refresh.
new	Number of page faults for new pages since the last screen refresh.
disk	Number of page faults for pages on disk since the last screen refresh.
other	Number of page faults for other sources of pages since the last screen refresh.
<b>Tasks</b>	<b>Description</b>
total	Number of tasks currently defined.
ready	Number of tasks ready to execute on NOS/VE.
ready/swap	Number of tasks that are ready to execute but are currently swapped out.
<b>Input/Output</b>	<b>Description</b>
writes	Number of writes to disk since the last screen refresh.
reads	Number of reads from disk since the last screen refresh.

## Initiated Jobs Display

The Initiated Jobs Display gives status information for all initiated jobs (swapped and nonswapped) in NOS/VE. Enter the following command to obtain a display similar to the one shown in figure 2-12. The actual Initiated Jobs Display appears in a two-column format.

```
vedisplay display_option=initiated_jobs
```

SSN	UJN	C	S	PR
CPU Idle: 43/20		NOS:47		
\$0855_0002_AAA_0000	\$SYSTEM	S	M	0
\$0855_0002_AAA_1274	JTC	I		
\$0855_0002_AAA_1344	EM03017_	I		
\$0855_0002_AAA_1281	JED_1	I		
\$0855_0002_AAA_1297	JTC	I		
\$0855_0002_AAA_1284	EM03017_	I		
\$0855_0002_AAA_1304	MOG_3	I		
\$0855_0002_AAA_1293	GGF_2	I		
\$0855_0002_AAA_1300	NDP	I		
\$0855_0002_AAA_1305	GJF_4	I		
\$0855_0002_AAA_1325	RAP_5	I		
\$0855_0002_AAA_1350	DVS_6	I		
\$0855_0002_AAA_1353	BOAZ_7	I		
\$0855_0002_AAA_1323	DLM	I		
\$0855_0002_AAA_1324	MTE_8	I		
\$0855_0002_AAA_1337	RSM	I		
\$0855_0002_AAA_1347	GDR	I		
\$0855_0002_AAA_1339	BAM	I		

Figure 2-12. Initiated Jobs Display

The first line of the Initiated Jobs Display gives the idle statistics; one set for each CPU in the system.

**CPU Idle: 43/20** The CPU has been idle for 43 percent of the time since the screen was last refreshed. The normal refresh rate is once per second. Making up this 43 percent, 20 percent of the time tasks were waiting for I/O to complete and 23 percent of the time all tasks were waiting for events such as timed or interactive input.

**NOS: 47** The CPU has been executing NOS or NOS/BE 47 percent of the time. This includes the system idle loop. This information appears only on dual-state systems.

Each subsequent entry in the display has the following format:

- ssn                    ujn            c    s    pr
- ssn    System-supplied name of the job.
- ujn    First eight characters of the user-supplied job name.
- c      Job class indicator. The abbreviation for the job class name appears in the display. The abbreviations for the default job classes are as follows:
- | Class | Description |
|-------|-------------|
| S     | System      |
| I     | Interactive |
| B     | Batch       |
| M     | Maintenance |
- s      Job status indicator, displayed as one of the following:
- | Status | Description  |
|--------|--|
| M      | Job is in memory.  |
| O      | Job is being swapped out of memory.                          |
| I      | Job is being swapped into memory.                            |
| F      | Job is swapped due to an operator request.                   |
| T      | Job is swapped out because of thrashing.                     |
| P      | Job is swapped out due to low priority.                      |
| blank  | Job is swapped out because it is in a long wait.             |
| U      | Job is swapped out for reasons other than those listed here. |
- pr     Job scheduling priority. The display shows the job scheduling priority number divided by 100. If the priority is greater than 999, 999 is displayed. The full job scheduling priority number appears in the Initiated Jobs Detailed Display.

An entry of the type:

```
UJN    C S PR
SJC_5   *****
```

means the system has forced the job out of memory due to a system or hardware error. The job is dead and cannot be continued.

## Initiated Jobs Detailed Display

The Initiated Jobs Detailed Display gives detailed status information for all initiated jobs (swapped and nonswapped) in NOS/VE. Enter the following command to obtain a display similar to the one shown in the figure 2-13:

```
vedisplay display_option=initiated_jobs_detailed
```

ACT/SWP	CPM	CPJ	S/R	WS	RT	SERVICE	PRIORITY	DP	SES
CPU Idle: 43/20									NOS: 47
0.\$SYSTEM	391	1044	R	244	1	0	0	P10	
1.CLS	7	35	RW	167		290	1000	P5	SE
2.MDP	79	311	RW	121		230	800	P5	SE
3.GGL	2	9	RW	65		72	500	P5	SE
4.JCS	92	97	R	20	2	25992	365	P5	
5.BAN	5	13	RW	62		61	600	P5	SE
6.DW2	11	29	RW	68		300	700	P5	SE
7.DLM	4	11	RW	57		95	1000	P5	SE
8.JCS	0	1	RW	27		27	700	P5	SE
9.DAT	3	45	RW	59		58	700	P5	SE
10.DAL	3	21	RW	95		94	1000	P5	SE

Figure 2-13. Initiated Jobs Detailed Display

The first line of the Initiated Jobs Detailed Display gives the idle statistics; one set for each CPU in the system.

CPU Idle: 43/20      The CPU has been idle for 43 percent of the time since the screen was last refreshed. The normal refresh rate is once per second. Making up this 43 percent, 20 percent of the time tasks were waiting for I/O to complete and 23 percent of the time all tasks were waiting for events such as timed or interactive input.

NOS: 47              The CPU has been executing NOS or NOS/BE 47 percent of the time. This includes the system idle loop. This information appears only on dual-state systems.

Each subsequent entry in the display has the following format:

```
ordinal   ujn   cpm   cpj   s   ws   rt   service  priority  dp  ses
```

ordinal      Ordinal number of the job. Ordinal 0 is always the system job.

ujn            First eight characters the user-supplied job name.

cpm            Number of central processor seconds the job has used in monitor mode.

cpj            Number of central processor seconds the job has used in job mode.

s Job status.

---

**NOTE**

If any value, except R, \*R, or \*H, remains in the display for several minutes, it may indicate a system problem. Perform an abnormal termination of NOS/VE, dump the NOS/VE environment to tape, and submit a Programming System Report (PSR). For more information, see Abnormal Termination of NOS/VE in chapter 4, Terminating NOS/VE.

---

Status	Description
AJ	Swapout is delayed because of low space on the disk containing the swap file.
AW	Same as AJ.
*H	Job has halted but the system is unable to terminate the job. The rest of the operating system is functioning normally. The only way to remove this job is to deadstart NOS/VE.
II	Swapin has been initiated. The job is being written from disk to memory.
JW	Swapout is delayed until the job's I/O tasks complete.
OI	Swapout has been initiated. The job is being written to disk.
R	The job is in memory and ready for execution.
RJ	Job is swapped out due to a job request.
RO	Job is swapped out due to an operator request.
RT	Job is swapped out due to system thrashing.
RP	Job is swapped out due to low priority.
RI	Job is swapped out due to idling system swapout.
RW	Job is swapped out due to a long wait.
RH	Job is swapped out due to a hung task in the job.
RM	Job is swapped out while waiting for an explicit memory request.
RD	Job is swapped out due to idle dispatching priority.
*R	Job was damaged during recovery. The rest of the operating system is functioning normally. The only way to remove this job is to deadstart NOS/VE.
TI	Swapout is delayed until the job releases system resources.

ws For a job in memory, the number of pages in the job's working set. For a swapped job, the swapped job's page count. An asterisk beside the number means that an active task has been slowed due to excessive paging while the job's working set is at its maximum limit.

rt For a job in memory, the number of tasks the job has ready for execution. For a swapped job with ready tasks, the number of seconds the job has been waiting to be swapped in.

service Service given since last swap.

priority For a job in memory, the job priority. For a swapped job, the job's swap queue priority.

dp Job dispatching priority.

ses For a job in memory, this field is blank. For a swapped job, the job swap entry status is displayed as one of the following:

<b>Status</b>	<b>Description</b>
NS	Not swapped.
OI	Operator force-in.
SC	Swap in candidate.
SI	Swapin initiated.
OO	Operator force-out.
SE	System event (long wait).
SF	System force-out; job is forced out of memory due to a system or hardware error. The job cannot be executed again.

## Job Log Display

The Job Log Display gives the contents of the job log associated with the NOS/VE system job. Enter the following command to obtain a display similar to the one shown in figure 2-14:

```
vedisplay display_option=job_log
```

```

Job Log Display
08:33:14.224.PR.acquired $0855_0002_AAA_1333
08:35:24.670.CI.ved ij o=els
08:35:35.299.CI.chafa els fc=list
08:35:41.744.CI.prif els
08:35:44.048.PR.acquired $0855_0002_AAA_1335
08:35:52.103.CI.detf els
08:46:56.192.CI.assd evsn='abc123' en=red3
08:46:58.220.PR.acquired $0855_0002_AAA_1346
08:48:11.705.CI.disjs $1337
08:49:36.765.CI.ved aj
08:49:54.431.CI.ved aj o=acr
08:50:24.479.CI.chafa acr fc=list
08:50:34.868.CI.prif acr
08:50:39.973.PR.acquired $0855_0002_AAA_1348
08:50:56.842.CI.detf acr
    
```

Figure 2-14. Job Log Display

Each entry in the display has the following format:

```
time.origin.text
```

**time** Time of the entry. The format is hours:minutes:seconds.milliseconds.

**origin** Origin of the message. The message origin is one of the following:

Origin	Description
CI	Command interpreted
CS	Command skipped
PR	Program
RC	Recovery
SY	System

**text** Text of the entry. If the text extends beyond 80 characters in length, the text is continued on the next line.

## Mass Storage Display

The Mass Storage Display gives information about the use of the system's mass storage resources. The Mass Storage Display appears automatically when a mass storage class is out of space. Additional messages appear in the display informing you of which storage classes are out of space. In the case of mass storage class Q, the display informs you of how many volumes the system has added to the Q mass storage class. Use the LCU subcommand `CHANGE_MS_CLASS` to add volumes to mass storage classes that are out of space. The `CHANGE_MS_CLASS` subcommand is described in the NOS/VE System Performance and Maintenance manual, Volume 2.

To reclaim mass storage space, delete expired files using the `DELETE_EXPIRED_FILES` command. You can also backup and delete files that have not been accessed since a specified date using the `CREATE_AGED_FILE_BACKUP` command. Both of these commands are described in chapter 8, Operator Commands and Utilities.

Enter the following command to obtain a display similar to the one shown in figure 2-15:

```
vedisplay display_option=mass_storage
```

INDEX	VSN	MAT Space	Status	Alloc	DAT Space	Transfer Count
1.	VSN001	638	normal	true	3470	13
2.	VSN009	2512	normal	true	119448	9
3.	VSN010	1592	normal	true	29044	6
4.	VSN011	3056	normal	true	22312	11
5.	VSN012	2568	normal	true	32812	19
6.	VSN002	696	normal	true	6772	7
7.	VSN003	504	normal	true	5945	7
8.	VSN004	348	normal	true	7483	8
9.	VSN005	464	normal	true	8827	10
10.	VSN006	768	normal	true	5979	26
11.	VSN007	640	normal	true	4807	14
12.	VSN008	1810	normal	true	7507	23

Figure 2-15. Mass Storage Display

Each entry in the display has the following format:

```
index vsn mat space status alloc dat space transfer count
```

**index** Index entry in NOS/VE's active volume table. The active volume table contains information about each volume in the site's active configuration.

**vsn** RVSN of the volume as specified when the volume was initialized.

**mat space** Amount of available disk space represented in the mainframe allocation table (MAT) measured in device allocation units (DAU). The number of bytes in each DAU is device dependent. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2 for information on the number of DAUs for each device type.

Files are assigned mass storage space based on data in the MAT.

<b>status</b>	Device or volume status in terms of available space. Status can have three values:  <table><tr><td><b>normal</b></td><td>Number of available DAUs is above the device's low-on-space threshold, which is about 10 percent of the device's capacity.</td></tr><tr><td><b>space low</b></td><td>Number of available DAUs is below the low-on-space threshold, which is about 10 percent of the device's capacity.</td></tr><tr><td><b>no space</b></td><td>Number of available DAUs has reached the device's out-of-space threshold, which is about 2 percent of the device's capacity. This threshold space is reserved by NOS/VE to assure system recovery.</td></tr></table>	<b>normal</b>	Number of available DAUs is above the device's low-on-space threshold, which is about 10 percent of the device's capacity.	<b>space low</b>	Number of available DAUs is below the low-on-space threshold, which is about 10 percent of the device's capacity.	<b>no space</b>	Number of available DAUs has reached the device's out-of-space threshold, which is about 2 percent of the device's capacity. This threshold space is reserved by NOS/VE to assure system recovery.
<b>normal</b>	Number of available DAUs is above the device's low-on-space threshold, which is about 10 percent of the device's capacity.						
<b>space low</b>	Number of available DAUs is below the low-on-space threshold, which is about 10 percent of the device's capacity.						
<b>no space</b>	Number of available DAUs has reached the device's out-of-space threshold, which is about 2 percent of the device's capacity. This threshold space is reserved by NOS/VE to assure system recovery.						
<b>alloc</b>	Indicates whether space may be allocated from a device. This value is always true even when the value for status is no space.						
<b>dat space</b>	Amount of available disk space represented in the device allocation table (DAT) measured in DAUs. The DAT resides on the device. Allocation units are moved between the DAT and the MAT dynamically based on system need.						
<b>transfer count</b>	Number of outstanding transactions that need to be processed against the device. These transactions are generated when permanent files are created, attached, or deleted.  System tables are updated with transaction information approximately every 30 seconds.						



## System Log Display

The System Log Display gives the most recent entries in the system log. The system log is a record of job activity for all jobs in the system. If you enter the `ACTIVATE_SYSTEM_LOGGING` command, all entries made to user job logs are also recorded in the system log. Otherwise, only job login and logout entries are recorded in the system log. The `ACTIVATE_SYSTEM_LOGGING` command is described in chapter 8, Operator Commands and Utilities. Enter the following command to obtain a display similar to the one shown in figure 2-17:

```
vedisplay display_option=system_log
```

```

System Log Display
09:24:35.559.$0855_0002_AAF_3189.CI.disci infu
09:25:09.650.$0855_0002_AAF_3189.CI.infu
09:26:02.129.$0855_0002_AAF_3189.CI.manna
09:26:12.623.$0855_0002_AAF_3189.CI.disuv
09:27:10.004.$0855_0002_AAA_0000.CI.VED FS
09:28:23.882.$0855_0002_AAF_1209.CI.coms cmm$logical_configuration_mgr l=list
09:29:31.185.$0855_0002_AAA_0000.CI.VED AJ
09:30:02.535.$0855_0002_AAA_1210.CI.edif list
09:31:20.323.$0855_0002_AAA_1212.CI.??%chawc $c

```

Figure 2-17. System Log Display

Each entry in the display has the following format:

```
time.ssn.origin.text
```

**time** Time of the entry. The format is hours:minutes:seconds.milliseconds.

**ssn** System-supplied name of the job.

**origin** Origin of the message. The message origin is one of the following:

Origin	Description
CI	Command interpreted
CS	Command skipped
PR	Program
RC	Recovery
SY	System

**text** Text of the entry. If the text extends beyond 80 characters in length, the text is continued on the next line.

To print the entire system log, use the `DISPLAY_SYSTEM_LOG` command and specify a file name on the `OUTPUT` parameter. Print the file using the `PRINT_FILE` command.

## Tape Reservations Display

The Tape Reservations Display shows jobs that have NOS/VE tape units reserved. This display shows how many tape units have been reserved by a job, either implicitly or by using the RESERVE\_RESOURCE command. Because a job appears in this display, this does not necessarily mean that the tape units have been assigned.

Enter the following command to obtain a display similar to the one shown in figure 2-18:

```
vedisplay display_option=tape_reservations
```

System_Supplied_Name	Mt9\$800	Mt9\$1600	Mt9\$6250	<--- Units_Reserved
\$0855_0002_AAA_0000		1		
\$0855_0002_AAA_0001		1	1	
\$0855_0002_AAA_0003	1			
\$0855_0002_AAA_0004		1	2	

**Figure 2-18. VEDISPLAY Tape Reservations Display**

Each entry in the display has the following format:

system_supplied_name	Mt9\$800	Mt9\$1600	Mt9\$6250
system-supplied name	System-supplied name of a job that has one or more tape units reserved.		
Mt9\$800	Number of tape units reserved by the job at 800-cpi density.		
Mt9\$1600	Number of tape units reserved by the job at 1600-cpi density.		
Mt9\$6250	Number of tape units reserved by the job at 6250-cpi density.		

## Tape Status Display

The Tape Status Display gives the status of the NOS/VE tape units. Tape units that are in the OFF or DOWN state are not displayed. Enter the following command to obtain a display similar to the one shown in figure 2-19:

```
vedisplay display_option=tape_status
```

Element	RVSN	EVSN	Ring	Dens	Lab	C	System_Job_name	Unit_Status
U50								Not ready
U51	AZ0023	AZ0023	Out	1600	Yes	A	\$9301_0101_AAA_0019	Ready
U53			In	800	No	A		Ready
U54	XT0967	I02363	Out	6250	Yes	A	\$9301_0101_AAA_0119	Ready
U55	TA5432		In	1600	Yes	E		Ready
U56	TA5432		Out	1600	Yes	E		Ready

Figure 2-19. Tape Status Display

Each entry in the display has the following format:

```
element rvsn evsn ring dens lab c sjn status
```

- element** Element name of the tape unit.
- rvsn** Recorded volume serial number of the labelled tape mounted on the tape unit.
- evsn** External volume serial number requested by the job.
- ring** Write ring status.
- dens** Density of the tape mounted on the tape unit.
- lab** Label type of the tape mounted on the tape unit. YES means labelled; NO means unlabelled.
- c** Character set of the tape mounted on the tape unit. E means EBCDIC; A means ASCII.
- sjn** System-supplied name of the job that has the tape unit assigned to it.
- status** Tape unit status.

### READY

The tape is available to the job.

### NOT READY

The tape is not available to the job.

### READY/READ ERROR

An error has occurred that prevents the tape from being read. Refer to chapter 7, Operator Level Error Conditions and Recovery Procedures, for information about how to correct this condition.

## Sending a Message to Interactive Users

The method that an operator uses to send a message to all users logged in at interactive terminals is network dependent. The following table is an example of how to send a message to all interactive users for each network.

Network	Entry
CDCNET	<p>This example sends a message to all interactive users connected to terminal device interface TDI1. Enter the following commands at the NOS/VE system console or at a terminal executing the NETWORK_OPERATOR_UTILITY:</p> <pre>network_operator_utility nou/send_command command='write_terminal_message message=.. nou../'Please log out no later than 1730.' system=tdi1</pre> <p>Refer to the CDCNET Network Operations manual for more information about the NETWORK_OPERATOR_UTILITY.</p>
NAM/CCP	<p>This example sends a message to all interactive users connected through NAM/CCP. Enter the following commands at the NOS system console:</p> <pre>K,NAM. K.AP=CS. K.SE,NPUS,MS=Please log out no later than 1730.</pre> <p>Return to the NAM mode K display by entering the following command:</p> <pre>K.*.</pre>
INTERCOM	<p>This example sends a message to all interactive users connected through INTERCOM. Enter the following command at the NOS/BE system console:</p> <pre>M,**,Please log out no later than 1730.</pre>

Refer to the REPLY\_ACTION command in chapter 8, Operator Commands and Utilities, for information about responding to an operator action request.

## Using Operator Menus

Many frequently performed operator tasks, such as displaying system information, are available through the NOS/VE operator menus. To use the operator menus, position the cursor on the input line in the main operator window and enter the SELECT\_OPERATOR\_MENU command. Figure 2-20 shows the main menu. Figure 2-21 lists all of the first level subordinate menus. All operator menus appear in the main operator window. Press SHIFT-SUPER as needed to expand the window.

```

                                NOS/VE OPERATOR MAIN MENU

a. View NOS/VE Displays          e. Send Message to Users
b. Use Magnetic Tapes           f. Reset System Logs
c. Manage Printers              g. Shut Down NOS/VE
d. Manage Permanent Files

QUIT Exit Menu, Stay in NOS/VE    ? Help Menu

Enter choice or NOS/VE command and then press RETURN: ?

```

**Figure 2-20. NOS/VE Operator Main Menu**

```

VIEW NOS/VE DISPLAYS          USE MAGNETIC TAPE          MANAGE PRINTERS
a. CLOSE Display Window      a. Assign a Tape          a. Display Print Queue
b. Active Jobs (AJ)           b. Label Tape(s)         b. Stop Printer
c. General Statistics (GS)    c. Start Printer          c. Start Printer
d. Initiated Jobs (IJ)       d. Remove Print File from Queue
e. Job Log (JL)              e. Cancel Current Print File
f. Mass Storage (MS)         f. Select Next Print File
g. System Log (SL)           g. Reposition Current Print File
h. Tape Reservations (TR)
i. Tape Status (TS)
j. PP Assignment (PA)
k. Device Status (DS)

MANAGE PERMANENT FILES      RESET SYSTEM LOGS        SEND MESSAGE TO USERS
a. Partial Backup            a. Account                a. Broadcast Message to Users
b. Full Backup               b. System                 b. Reply to Message from a Job
c. Archive Backup            c. Statistic
d. Catalog Backup            d. History
e. Restore Catalog           e. Engineering
f. Restore Single File

```

**Figure 2-21. First Level Subordinate Operator Menus**

# Performing a Continuation Deadstart

---

3

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There are two types of deadstart that can be performed on NOS/VE: an installation deadstart and a continuation deadstart.

The purpose of an installation deadstart is to install the NOS/VE operating system, to install software products such as language compilers, to define the hardware peripheral configuration, and to define operating system connections to network products. After the initial installation of NOS/VE, an installation deadstart is used only when upgrading the system to a new system version or, in extreme circumstances, to recover from certain types of system errors.

An installation deadstart is performed by, or under the direction of, a site analyst. The process of performing an installation deadstart is described in the NOS/VE Software Release Bulletin (SRB).

The purpose of a continuation deadstart is to restart NOS/VE after a normal or abnormal termination. On dual-state systems, a continuation deadstart is also necessary to restart NOS/VE if the NOS or NOS/BE partner system is halted by an error.

Specifically, a continuation deadstart performs the following tasks:

- Reinitializes system configuration tables.
- Attempts to recover any files or jobs that were left open or executing when NOS/VE was terminated or halted.
- Executes deadstart prolog and epilog files.
- Starts NOS/VE execution.

To perform a continuation deadstart on any NOS/VE system, a deadstart file must previously have been created by a site analyst. The deadstart file contains mainframe-specific information pertaining to system tuning parameters, the hardware configuration, and similar types of information. The general contents of a deadstart file and the method of creating a deadstart file are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

Deadstarting instructions for a CYBER 930 system are described in the CYBER 930 Guide to Operations manual.

The following section describes how to perform a continuation deadstart on a NOS/VE standalone system. For instructions on how to perform a continuation deadstart on a dual-state system, refer to the section called Dual-State Continuation Deadstart later in this chapter.

## Standalone Continuation Deadstart

To perform a continuation deadstart on a standalone system, perform the following steps:

1. Ready the NOS/VE deadstart file.
2. Execute the CYBER Initialization Package (CIP).
3. Select the deadstart device.

### Ready the NOS/VE Deadstart File

A system deadstart file must be created before the system can be deadstarted. You must use a deadstart tape file when performing an installation deadstart. However, you can perform a continuation deadstart using a deadstart tape file or a copy of the deadstart file that resides on disk. Instructions for copying a deadstart tape file to disk can be found in the NOS/VE System Performance and Maintenance manual, Volume 2.

For sites using a model 844 disk unit as the deadstart device, the deadstart file can reside on a moveable disk. This disk can then be mounted on the model 844 disk unit.

### Execute the CYBER Initialization Package (CIP)

The steps for executing CIP are dependent on the machine model and the type of system console you have. There are three types of consoles: the CC634B, which is essentially a CDC 721 terminal, the CC598A, and the CC598B. Both the CC598A and CC598B are similar to a personal computer; the difference is that the CC598A is equipped with its own hard disk which contains the CIP software. The following sections describe the steps for executing CIP for the various machine models and consoles. Refer to the CYBER Initialization Package (CIP) Reference manual for more information about using CIP.

### Executing CIP on CYBER Models 810, 810A, 815, 825, 830, 830A, 840A, 850A, 860A, 870A, 960, 962, 990, 990A, 990E, 992, 994, and 995E

The following table describes the steps for the three possible consoles: the CC634B, CC598A, and CC598B. If your CC634B console is equipped with a deadstart button, press the deadstart button and skip steps 1 and 2.

#### CC634B Console

#### CC598A or CC598B Console

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Press the reset button on the console to ensure that the console has the proper internal settings for the deadstart. Enter CTRL-G. The following message appears:<br/><br/>OPERATOR ACCESS ENABLED</li> <li>2. Enter CTRL-R. On models 815 and 825, the Maintenance Options Display appears. On all other models, the Deadstart Options Display appears.</li> <li>3. For models 815 and 825, enter S from the Maintenance Options Display. For all other models, enter S from the Deadstart Options Display. The Initial Options Display appears.</li> </ol> | <ol style="list-style-type: none"> <li>1. Enter CTRL-F2. The console main menu appears.</li> <li>2. Enter S from the console main menu. The Initial Options Display appears.</li> </ol> |
|--|---|

### Executing CIP on CYBER Models 835, 840, 845, 850, 855, and 860

All of these models use a CC634B console equipped with a deadstart button. Press the reset button on the console to ensure that the console has the proper internal settings for the deadstart. Press the deadstart button to execute CIP. The Initial Options Display appears.

### Selecting the Deadstart Device

The deadstart device is the disk unit or tape unit on which the NOS/VE deadstart file resides. The system device is the disk unit that contains the NOS/VE deadstart file. When the NOS/VE deadstart file resides on disk, the deadstart device and the system device are the same. You need to know the IOU numbers, channel numbers, equipment numbers, and unit numbers for your system device and deadstart device, especially when deadstarting from a deadstart tape file. Proceed with one of the following sections for deadstarting from a deadstart disk file or a deadstart tape file.

### Deadstarting from a Deadstart Disk File

You have the option of executing the deadstart with or without operator intervention. To execute the deadstart without operator intervention, enter A or a carriage return from the Initial Options Display. The deadstart begins and continues to completion.

You may want to intervene during the deadstart for the following reasons:

- To select a different deadstart device and system device.
- To enter system core commands.
- To modify the physical configuration.
- To modify the logical configuration.
- To install (or activate) deferred product corrections.

To instruct the system to pause for operator intervention during a deadstart, perform the following steps:

1. Enter O from the Initial Options Display. The Operator Intervention Display appears.
2. Enter P from the Operator Intervention Display. The Deadstart Panel Parameters Display appears.
3. Change the OPERATOR PAUSE line of the Deadstart Panel Parameters Display to read P=YES and enter a carriage return to execute the deadstart. The NOS/VE Deadstart and System Device Configuration Selections menu appears. Figure 3-1 shows an example of this menu.

**Deadstart and System Device Configuration Selections**

1. OS Location .....Disk  
 2. Deadstart pause for operator input ...True

Deadstart Device	System Device
3. IOU ..... IOU0	8. IOU ..... IOU0
4. Channel ..... CH1	9. Channel ..... CH1
5. Controller and ..... \$7165_21 Storage Device ..... \$895_2	10. Controller and ..... \$7165_21 Storage Device ..... \$895_2
6. Equipment Number ..... 1(10)	11. Equipment Number ..... 1(10)
7. Unit Number ..... 1(10)	12. Unit Number ..... 1(10)

**NOS/VE Deadstart Command Processor**

Enter a menu number to change a value or  
 Press NEXT to accept parameters and continue the deadstart process.  
 @

Figure 3-1. Standalone Disk Deadstart: Device Configuration Selections Menu

4. Confirm or change values in the Deadstart and System Device Configuration Selections Display. Values for the deadstart device and the system device must be the same. To change a value, enter the number of the display field you want to change. The prompt line at the bottom of the display then describes the options available for that field. Enter your changes on the input line identified by the @ character. Continue entering information until the deadstart device and system device are completely defined. Item 1 should read DISK. Item 2 should read TRUE if you want to enter system core commands, modify the physical configuration, modify the logical configuration, or install deferred product corrections during the deadstart; otherwise item 2 should read FALSE. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2, for information about system core commands, the physical configuration, the logical configuration, and installing products.

When you are satisfied with the values, enter a carriage return. If the device can be accessed, the deadstart continues. If the device cannot be accessed, the menu in figure 3-1 reappears and prompts you to provide correct values.

5. If you specified a pause for operator intervention, the deadstart continues by prompting you to enter system core commands:

Enter system core commands:

After entering system core commands, continue with the deadstart by doing one of the following:

- Enter AUTO to complete the deadstart with no further pauses.
- Enter GO to allow further operator intervention to modify the physical configuration and the logical configuration. The following NOS/VE Reconfiguration menu appears:

NOS/VE RECONFIGURATION MENU - CONTINUATION DEADSTART

You have the following choices for reconfiguration:

- 1 - Intervene before installing the physical configuration.
  - 2 - Intervene before activating existing mass storage set members.
  - 3 - Intervene after activating existing mass storage set members.
- Enter selection, GO, or ? for HELP.

Selection 1 allows you to enter PHYSICAL\_CONFIGURATION\_UTILITY subcommands to modify the physical configuration before it is installed. Selection 2 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to initialize an existing mass storage set member or define a disk volume flaw before the volume is activated. Selection 3 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to reconfigure an activated set member.

After making the appropriate selections and modifications, enter GO to continue.

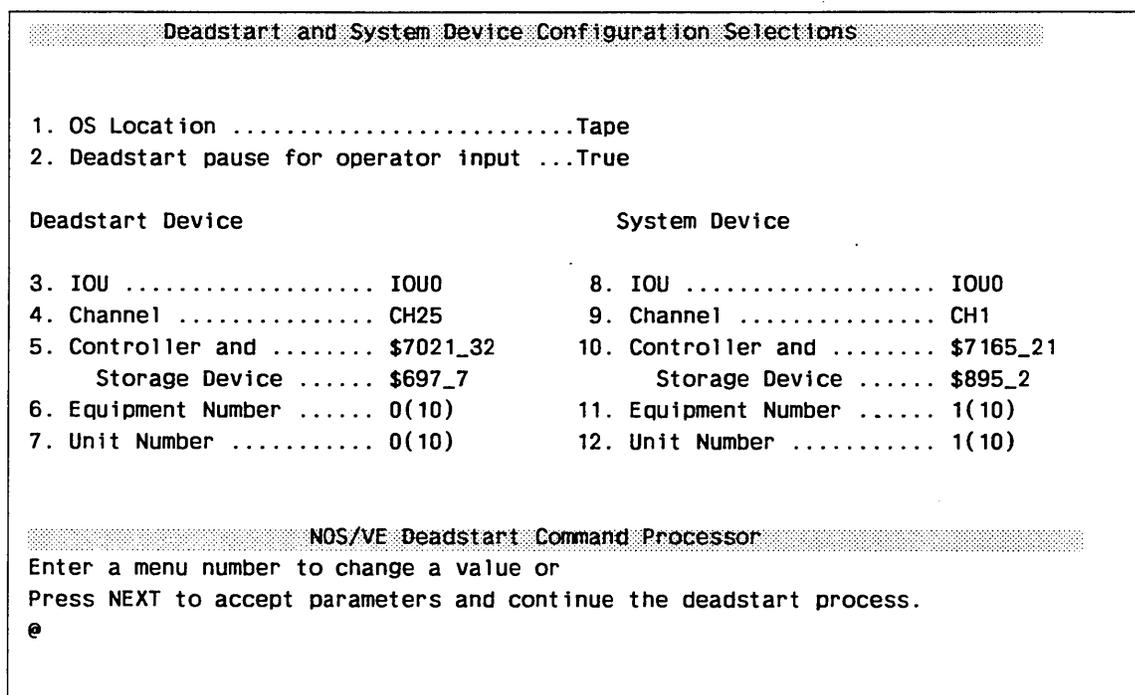
6. One of several menus may now appear depending on whether there are deferred product corrections to install or jobs to be recovered. All of these menus allow you to activate the system for production or for console use only. Activating the system for production means making the system available to users. The following message appears when the deadstart is complete:

---SYSTEM ACTIVATION COMPLETE---

### Deadstarting from a Deadstart Tape File

Deadstarting from a deadstart tape file requires you to intervene during the deadstart process to define a tape unit as the deadstart device. Mount the deadstart tape and proceed with the following steps:

1. From the Initial Options Display, enter O. The Operator Intervention Display appears.
2. Enter S from the Operator Intervention Display. The Select OS Deadstart Device Display appears.
3. Enter T from the Select OS Deadstart Device Display. The Deadstart and System Configuration Selections menu appears. An example of this menu is shown in figure 3-2.



**Figure 3-2. Standalone Tape Deadstart: Device Configuration Selections Menu**

4. Confirm or change values in the Deadstart and System Device Configuration Selections menu. To change a value, enter the number of the display field you want to change. The prompt line at the bottom of the display then describes the options available for that field. Enter your changes on the input line identified by the @ character. Continue entering information until the deadstart device and system device are completely defined. Item 1 should read TAPE. Item 2 should read TRUE if you want to enter system core commands, modify the physical configuration, modify the logical configuration, or install deferred product corrections; otherwise item 2 should read FALSE. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2, for information about system core commands, the physical configuration, the logical configuration, and installing products.

When you are satisfied with the values, press NEXT. If both devices can be accessed, the deadstart begins and continues to completion. If either device cannot be accessed, the display in figure 3-2 reappears and prompts you to provide correct values.

5. If you specified a pause for operator intervention, the deadstart continues by prompting you to enter system core commands:

Enter system core commands:

After entering system core commands, continue with the deadstart by doing one of the following:

- Enter AUTO to complete the deadstart with no further pauses.
- Enter GO to allow further operator intervention to modify the physical configuration and the logical configuration. The following NOS/VE Reconfiguration menu appears:

NOS/VE RECONFIGURATION MENU - CONTINUATION DEADSTART

You have the following choices for reconfiguration:

- 1 - Intervene before installing the physical configuration.
  - 2 - Intervene before activating existing mass storage set members.
  - 3 - Intervene after activating existing mass storage set members.
- Enter selection, GO, or ? for HELP.

Selection 1 allows you to enter PHYSICAL\_CONFIGURATION\_UTILITY subcommands to modify the physical configuration before it is installed. Selection 2 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to initialize an existing mass storage set member or define a disk volume flaw before the volume is activated. Selection 3 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to reconfigure an activated set member.

After making the appropriate selections and modifications, enter GO to continue.

6. One of several menus may now appear depending on whether there are deferred product corrections to install or jobs to be recovered. All of these menus allow you to activate the system for production or for just console use. Activating the system for production means making the system available to users. The following message appears when the deadstart is complete:

---SYSTEM ACTIVATION COMPLETE---

## Dual-State Continuation Deadstart

NOS or NOS/BE must be operating before you can deadstart NOS/VE. Deadstarting NOS and NOS/BE is discussed in the NOS 2 Operations Handbook and the NOS/BE Operator's Guide, respectively. The NOS/VE deadstart process acquires disk units, tape units, controllers, and channels from NOS or NOS/BE and initiates execution of NOS/VE.

To perform a NOS/VE continuation deadstart on a dual-state system, perform the following steps:

1. Reserve equipment and channels for NOS/VE.
2. Ready the NOS/VE deadstart file.
3. Execute the NVE deadstart procedure file.
4. Select the deadstart device.

### Reserve Equipment and Channels for NOS/VE

The process of reserving equipment and channels for NOS/VE is different for NOS and NOS/BE dual-state systems. The following table describes the steps in this process for both types of dual-state systems.

#### NOTE

---

- Each time you perform a level 0 deadstart on NOS, you must ensure that all NOS-defined equipment and channels to be used by NOS/VE are unavailable to NOS.
  - Each time you perform a level 0 or level 1 deadstart on NOS/BE, you must make all NOS/VE tape units and channels (shared by NOS/BE and NOS/VE) unavailable to NOS/BE, and turn off and idle all NOS/VE disk units and channels. A level 3 recovery deadstart does not affect the status of the equipment.
-

**At the NOS Console:**

1. Enter the following DSD command to display the DSD equipment status table:

E,A.

2. Disk and tape units appearing in the DSD Equipment Status Table Display that are to be used by NOS/VE must have a status of DOWN. Make disk or tape units available to NOS/VE by entering the DSD DOWN command with the following format:

DOWN,EQ=est.

where est is the octal EST ordinal of the equipment.

3. Enter the following DSD command to display the channel status table:

W,C.

4. Channels appearing in DSD Channel Status Table Display that are to be used by NOS/VE must have a status of DOWN. Make channels available to NOS/VE by entering the DSD DOWN command with the following format:

DOWN,CH=ch.

where ch is the octal channel number. Enter this command for each channel to be used by NOS/VE.

**At the NOS/BE Console:**

1. Enter the following DSD command to display the DSD equipment status table:

E,A.

2. Tape units, tape unit channels, disk units, and disk unit controllers appearing in the DSD Equipment Status Table Display that are to be used by NOS/VE must have a status of DOWN. Make equipment and channels available to NOS/VE by entering the appropriate DSD commands.

- For tape units, enter the DSD DWN command with the following format:

DWN,UNest.

where est is the octal EST ordinal of the tape unit.

- For tape unit channels, enter the DSD DWN command with the following format:

DWN,CHcc.

where cc is the tape channel number.

- For disk units, enter the DSD IDLE command with the following format:

IDLEest.

where est is the octal EST ordinal of the disk unit.

- For disk unit controllers, enter the DSD CONTROLLER command with the following format:

CONTROLLER,est,cc,OFF.

where est is the octal EST ordinal of the disk unit and cc is the disk channel number.

## Ready the NOS/VE Deadstart File

A NOS/VE deadstart file must be created before the system can be deadstarted. You must use a deadstart tape file when performing an installation deadstart. However, you can perform a continuation deadstart using a deadstart tape file or a copy of the deadstart file that resides on disk. Instructions for copying a deadstart tape file to disk can be found in the NOS/VE System Performance and Maintenance manual, Volume 2.

For sites using a model 844 disk unit as the deadstart device, the deadstart file can reside on a moveable disk. This disk can then be mounted on the model 844 disk unit.

## Execute the NVE Deadstart Procedure File

The NVE deadstart procedure initiates the NOS/VE deadstart process. The NVE deadstart procedure file, which is created by the SETVE command, specifies the procedure file name and details about the deadstart such as whether this is a deadstart from tape or disk, or whether the deadstart should pause for operator intervention. The SETVE command is described in the NOS/VE Software Release Bulletin (SRB).

You may want to intervene during the deadstart for the following reasons:

- To select a different deadstart device and system device.
- To enter system core commands.
- To modify the physical configuration.
- To modify the logical configuration.
- To install (or activate) deferred product corrections.

The method of executing the NVE procedure is different for NOS and NOS/BE dual-state systems.

### At the NOS Console:

Enter the following command at the NOS system console:

```
NVEffff.
```

where ffff is a suffix that completes the name of the NVE procedure file.

### At the NOS/BE Console:

Enter the following commands at the NOS/BE system console:

```
n.CLEAR.  
n.X NVE(ffff,id)
```

where n is a control point number, ffff is a suffix that completes the name of the NVE procedure file, and id is an optional permanent file identifier (ID) for the deadstart procedure file.

## Select the Deadstart Device

After the NVE procedure file executes, the NOS/VE Deadstart and System Device Configuration Selections menu appears giving you the opportunity to specify the deadstart device and the system device. The deadstart device is the disk unit or tape unit on which the NOS/VE deadstart file resides. The system device is the disk unit that contains the NOS/VE deadstart file. When the NOS/VE deadstart file resides on disk, the deadstart device and the system device are the same. You need to know the IOU numbers, channel numbers, equipment numbers, and unit numbers for your system device and deadstart device, especially when deadstarting from a deadstart tape file.

After the NVE deadstart procedure file executes, the NOS/VE Deadstart and System Device Configuration Selections menu appears. Figure 3-3 shows an example of this menu for a deadstart from tape with operator intervention.

Deadstart and System Device Configuration Selections			
1. OS Location .....Tape			
2. Deadstart pause for operator input ...True			
Deadstart Device		System Device	
3. IOU .....	IOU0	8. IOU .....	IOU0
4. Channel .....	CH25	9. Channel .....	CH1
5. Controller and .....	\$7025_32	10. Controller and .....	\$7165_21
Storage Device .....	\$697_7	Storage Device .....	\$895_2
6. Equipment Number .....	0(10)	11. Equipment Number .....	1(10)
7. Unit Number .....	0(10)	12. Unit Number .....	1(10)
NOS/VE Deadstart Command Processor			
Enter a menu number to change a value or			
Press NEXT to accept parameters and continue the deadstart process.			
@			

Figure 3-3. Dual-state Deadstart: Device Configuration Selections Menu

Perform the following steps to complete the deadstart:

1. Confirm or change values in the Deadstart and System Device Configuration Selections menu. When deadstarting from disk, values for the deadstart device and the system device must be the same. To change a value, enter the number of the display field you want to change. The prompt line at the bottom of the display then describes the options available for that field. Enter your changes on the input line identified by the @ character. Continue entering information until the deadstart device and system device are completely defined. Item 1 should read DISK or TAPE depending on whether you are deadstarting from disk or tape. Item 2 should read TRUE if you want to enter system core commands, modify the physical configuration, modify the logical configuration, or install deferred product corrections; otherwise item 2 should read FALSE. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2, for information about system core commands, the physical configuration, the logical configuration, and installing products.

When you are satisfied with the values, press NEXT. If the device cannot be accessed, the menu in figure 3-3 reappears and prompts you to provide correct values. If the device can be accessed, the deadstart continues.

2. If you specified a pause for operator intervention, the deadstart continues by prompting you to enter system core commands:

Enter system core commands:

After entering system core commands, continue with the deadstart by doing one of the following:

- Enter AUTO to complete the deadstart with no further pauses.
- Enter GO to allow further operator intervention to modify the physical configuration and the logical configuration. The following NOS/VE Reconfiguration menu appears:

NOS/VE RECONFIGURATION MENU - CONTINUATION DEADSTART

You have the following choices for reconfiguration:

- 1 - Intervene before installing the physical configuration.
  - 2 - Intervene before activating existing mass storage set members.
  - 3 - Intervene after activating existing mass storage set members.
- Enter selection, GO, or ? for HELP.

Selection 1 allows you to enter PHYSICAL\_CONFIGURATION\_UTILITY subcommands to modify the physical configuration before it is installed. Selection 2 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to initialize an existing mass storage set member or define a disk volume flaw before the volume is activated. Selection 3 allows you to enter LOGICAL\_CONFIGURATION\_UTILITY subcommands to reconfigure an activated set member.

After making the appropriate selections and modifications, enter GO to continue.

- One of several menus may now appear depending on whether there are deferred product corrections to install or jobs to be recovered. All of these menus allow you to activate the system for production or for just console use. The following message appears when the deadstart is complete and the system is available to users:

---SYSTEM ACTIVATATION COMPLETE---

# Terminating NOS/VE

---

4

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Abnormal Termination of NOS/VE on a Standalone System .....	4-3
Abnormal Termination of NOS/VE on a Dual-State System .....	4-4



This chapter describes how to perform either a normal or an abnormal termination of NOS/VE. Terminating NOS/VE on a CYBER 930 system is described in the CYBER 930 Guide to Operations manual.

Use the `TERMINATE_SYSTEM` command to perform a normal termination of NOS/VE. Always attempt a normal termination before attempting an abnormal termination. A normal termination is appropriate under the following conditions:

- At the end of the operations day or before performing maintenance activities, such as permanent file backups.
- For dual-state systems, when a NOS or NOS/BE error occurs that requires you to perform a NOS or NOS/BE deadstart. Attempt a normal termination of NOS/VE before deadstarting NOS or NOS/BE.

An abnormal termination is the sequence of steps that terminate NOS/VE when an error condition prevents a normal termination. An abnormal termination usually includes copying the contents of central memory, peripheral processors, peripheral processor registers, and maintenance registers to tape. Contact CYBER Software Support for information about where to submit this tape and a Programming Systems Report (PSR). The CYBER Software Support hotline number is listed in the preface of this manual.

## Normal Termination of NOS/VE

Perform the following steps to ensure a normal termination of NOS/VE. If you are operating a dual-state system, these steps terminate NOS/VE only; NOS or NOS/BE continues to execute normally.

1. Prevent the initiation of new jobs. Enter the following utility and subcommands:

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=false
MAS/quit
```

2. Send a message to all interactive users requesting that they log out. Refer to Sending a Message to Interactive Users in chapter 2 for information on how to send a message on the different networks.
3. Monitor the user job activity on the Initiated Jobs Display by entering the following command. Make note of jobs that remain after users have been requested to log out.

```
vedisplay display_options=initiated_jobs
```

4. Decide which remaining active jobs should be terminated and which should be candidates for recovery during the next deadstart. Terminate jobs by entering the following command:

```
terminate_job name=$0855_0002_abc_0001 job_state=all
```

### NOTE

---

The JOB\_RECOVERY\_OPTION system attribute controls whether jobs that are active when the system is terminated are recovered during the next deadstart. To recover active jobs, the value for this attribute must be 0. Use the DISPLAY\_SYSTEM\_ATTRIBUTE command to display the value for this attribute. Refer to the NOS/VE System Performance and Maintenance manual, Volume 1 for more information about the JOB\_RECOVERY\_OPTION system attribute and the DISPLAY\_SYSTEM\_ATTRIBUTE command.

---

5. Terminate NOS/VE processing by entering the following command. Avoid terminating NOS/VE if there are any disk volumes that were active and are no longer accessible because of a hardware failure or a change of state. To prevent the loss of data, if possible, wait until these disk units have been returned to the ON state before terminating the system.

```
terminate_system
```

For information about failure analysis, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.

6. The system completes any disk activity and then terminates.

After the next deadstart, you must remove the restrictions on the initiation of new jobs to make the system available to users. This can be done by entering the following commands after the deadstart:

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=true
MAS/change_job_class class_name=unassigned enable_class_initiation=false
MAS/quit
```

You may also include these commands in the JOB\_ACTIVATION\_EPILOG file so that they execute with each deadstart. The JOB\_ACTIVATION\_EPILOG file is described in the NOS/VE System Performance and Maintenance manual, Volume 2.

## Abnormal Termination of NOS/VE

When the system encounters a fatal error, a message describing the nature of the error appears in the critical display window. First attempt a normal termination of NOS/VE. If this fails, perform an abnormal termination of NOS/VE. The process for performing an abnormal termination is different for NOS/VE standalone and dual-state systems.

Dumping the NOS/VE environment to tape is routinely done as part of an abnormal termination. The NOS/VE environment includes the contents of central memory, peripheral processors, peripheral processor registers, and maintenance registers. You can then submit this dump tape for analysis to determine the cause of the error condition.

### Abnormal Termination of NOS/VE on a Standalone System

The dumping of the NOS/VE environment is executed within CIP and is called an express deadstart dump. You need to refer to the CYBER Initialization Package (CIP) Reference manual for information on how to perform an express deadstart dump as part of step 4 in the following process:

1. Determine if the system is in a stepped state. When the system is in a stepped state, this means that NOS/VE has stopped but has not terminated. If the following message appears in the critical display window, the system is in a stepped state and you should proceed to step 2:

```
SYSTEM_STEPPED
```

If this message does not appear, enter the following command on the input line of the critical display window:

```
step_system
```

2. Begin the process of dumping the NOS/VE environment to tape by executing CIP. Refer to chapter 3, Performing a Continuation Deadstart, for instructions on how to execute CIP on your system. Do not dump more than one NOS/VE environment to the same set of tapes. This step is complete when the Initial Options Display appears on the console.
3. Enter U from the Initial Options Display. The Utilities Display appears. Mount a labelled dump tape on a tape unit.

4. Enter E from the Utilities Display. A menu appears prompting you to specify the tape density for the dump tape. The remaining steps for performing an express deadstart dump are described in the General CIP Procedures chapter of the CYBER Initialization Package (CIP) Reference manual.

If a maintenance action or any action that destroys the integrity of central memory is required after the interrupt, but before NOS/VE can be recovered and terminated normally, you can reload central memory from the dump tape after the maintenance action and before deadstarting NOS/VE to allow a complete NOS/VE recovery. Refer to the CYBER Initialization Package (CIP) Reference manual or the CYBER 930 Guide to Operations for information about reloading central memory.

## Abnormal Termination of NOS/VE on a Dual-State System

Perform the following steps to force an abnormal termination of NOS/VE on a dual-state system:

1. When the system is in a stepped state, this means that NOS/VE has stopped but has not terminated. If the following message appears in the critical display window, the system is in a stepped state and you should proceed to step 2:

SYSTEM\_STEPPED

If this message does not appear, enter the following command on the input line of the critical display window:

step\_system

2. Enter the following command at the NOS or NOS/BE console to unlock the console:

UNLOCK.

3. Initiate a shutdown of NOS/VE by entering the following command at the NOS or NOS/BE console:

DROPVE.

This command immediately halts all NOS/VE operations and advances the NVE subsystem to the termination sequence.

4. The NVE subsystem now requests operator intervention. Enter the following commands at the console:

**At the NOS Console:**

K,NVE.

**At the NOS/BE Console:**

After the ASSIGN L-DISPLAY message appears, enter the following command:

L=nn

where nn is the control point number of the NVE subsystem.

5. The display in figure 4-1 appears on the NOS or NOS/BE console, prompting you to make decisions about dumping the NOS/VE environment to tape and terminating the NVE job. The K. characters in the upper and lower left corners of figure 4-1 appear only on the NOS console.

```

K.          TERMINATE VE          NVE

NOS/VE DOWN.

PERFORM THESE STEPS TO CONTINUE PROCESSING.

1. SELECT VALUES FOR THE *DUMP, *VSN, *DENSITY AND
   *TNVEJOB OPTIONS.
   (*DUMP=TRUE. *VSN=DMP00A. *DENSITY=GE. AND
   *TNVEJOB=FALSE. ARE THE DEFAULTS.)

   *DUMP=TRUE.      DUMP CENTRAL MEMORY
   *DUMP=FALSE.    DO NOT DUMP CENTRAL MEMORY
   *DENSITY=PE/GE. DUMP TAPE DENSITY, PE OR GE.
   *VSN=XXXXXX.    DUMP TAPE VSN.
   *TNVEJOB=TRUE.  TERMINATE THE NVE JOB.
   *TNVEJOB=FALSE. DO NOT TERMINATE THE NVE JOB.

2. ENTER

   *RUN.

K.

```

**Figure 4-1. NOS/VE Abnormal Termination Display**

Enter the \*DUMP, \*DENSITY, \*VSN, and \*TNVEJOB commands as required. The default is \*DUMP=TRUE., \*VSN=DMP00A., \*DENSITY=GE., \*TNVEJOB=FALSE. These command defaults instruct the system to copy the NOS/VE environment to tape volume DMP00A, at 6250 cpi, without terminating the NVE job. All of these commands are described in chapter 8, Operator Commands and Utilities.

6. Complete the abnormal termination by entering the following command at the console.

**At the NOS Console:**

**At the NOS/BE Console:**

On the K Display, enter:

On the L Display, enter:

K. \*RUN.

\*RUN.

The \*RUN command is described in chapter 8, Operator Commands and Utilities.

7. Mount the labelled dump tape with a write ring on a tape unit reserved for NOS or NOS/BE that matches the tape density requirements you specified in step 5. The tape is automatically assigned and the NOS/VE environment is written to the tape.

**NOTE**

---

On NOS, the NVE subsystem may move to another control point while waiting for the dump tape to be assigned to a tape unit.

---

If an additional tape is required to complete the dump, perform the following steps at the console:

**At the NOS Console:**

- a. The following message appears in the B Display:  
  
    END OF TAPE. CHKTAPE AT xxxxxx.  
  
    where xxxxxx is a memory address.
- b. Remove the tape and mount another labelled tape on the same tape unit. When the tape unit is made ready, the job continues.

**At the NOS/BE Console:**

---

- a. The following message appears in the B Display prompting you to specify the volume serial number of the additional tape:

```
WHAT REEL FOLLOWS DMP00A  
TYPE nn.VSN,XXXXXX.
```

In this example, DMP00A is the volume serial number of the previous tape and nn is the NVE control point number. Enter the following command to specify the volume serial number of the additional tape:

```
nn.VSN,DMP00B
```

where nn is the NVE control point number. In this example, the VSN of the additional tape is DMP00B.

- b. Mount the additional tape on a tape unit reserved for NOS/BE. When the tape unit is made ready, the job continues.
8. When the dump is complete, the system unloads the tape. If you did not terminate the NVE job (\*TNVEJOB=FALSE), the system automatically deadstarts NOS/VE. If you terminated the NVE job (\*TNVEJOB=TRUE), deadstart NOS/VE by executing the NVE procedure file. Deadstarting NOS/VE on a dual-state system is described in chapter 3, Performing a Continuation Deadstart.

# Providing Magnetic Tape Service

---

5

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This chapter describes the following tasks:

- Mounting tapes
- Assigning tapes
- Labelling tapes
- Reserving tape units that are down or off
- Requesting tapes from the console

Refer to chapter 7, Operator Level Error Conditions and Recovery Procedures, for information about how to handle tape read and write errors.

## Mounting a Requested Tape

When a job opens a tape file, the tape mount display window appears on the system console. Mount the requested tape on a tape unit according to the specifications in the display. The tape mount display window lists all tape mount requests in the system. Figure 5-1 is an example of a tape mount display window.

Mount	Ring	Dens	<--Operator Action-->	Lab	C	System	Job_Name	Time	Next_vsn
TAPE01	In	800	ASSIGN_DEVICE needed	No	A	\$0855_0101_AAA_0052		10:28	
XA0123	Out	1600	ASSIGN_DEVICE needed	No	A	\$0855_0101_ABA_0016		10:28	
RA0354	Out	6250	ASSIGN_DEVICE needed	Yes	E	\$0855_0101_ABD_0019		11:38	
ABC123	Out	6250		Yes	A	\$0855_0101_ACC_0146		11:39	ABC124
AB0789	In	6250		Yes	A	\$0855_0101_ACH_0033		12:16	

Figure 5-1. Tape Mount Display Window

The display column titles are explained as follows:

- Mount** External volume serial number (EVSN) of the tape required by the job. The EVSN is a 6-character name written on the outside of the tape reel or canister. A labelled tape also has a recorded volume serial number (RVSN). The RVSN is a 6-character name recorded on the beginning of the tape.
- Ring** Write ring status. IN means put a write ring in the tape. OUT means do not put a write ring in the tape.
- Dens** Density of the tape required by the job.
- Operator Action** Action you must take to assign the tape to a tape unit. A blank means that the system automatically assigns the tape to the tape unit after you mount the tape. ASSIGN\_DEVICE NEEDED means you must enter the ASSIGN\_DEVICE command to assign the tape.
- Lab** Label type of the tape required by the job. YES means labelled; NO means unlabelled.

C	Character set of the tape required by the job. E means EBCDIC; A means ASCII.
System_Job_Name	System-supplied name of the job requesting the tape.
Time	Time of the tape request in hours and minutes.
Next_vsn	External volume serial number of the next tape when more than one tape is being requested.

Assuming that the requested tape is available, mount the tape with the EVSN shown in the MOUNT column according to the other specifications shown in the display.

## Assigning Tapes

Assigning a tape to a tape unit makes the tape available to the requesting job. The following sections describe how to assign tapes for different types of tape requests.

### Normal Tape Requests

Usually, you mount and assign labelled tapes. Once a labelled tape is mounted and the tape unit is made ready, the system automatically assigns the labelled tape to the tape unit. No further operator action is needed.

NOS/VE permits the use of unlabelled tapes. To assign an unlabelled tape, you must enter the ASSIGN\_DEVICE command. The following is an example of a tape mount request for an unlabelled tape:

```
Mount Ring Dens <--Operator Action--> Lab C System_Job_Name Time Next_vsn
XA0123 Out 1600 ASSIGN_DEVICE needed No A $9301_0101_AAA_0016 10:28
```

The tape mount request prompts you to mount the tape with the EVSN of XA0123. The message, ASSIGN\_DEVICE NEEDED, in the OPERATOR ACTION column indicates that you must assign the tape. Enter the following command on the input line of the main operator window to assign the tape to the tape unit:

```
assign_device element_name=T50 external_vsn='xa0123'
```

The ASSIGN\_DEVICE command is described in chapter 8, Operator Commands and Utilities.

## Requesting Additional Tapes

If a job requests too few tapes to contain all of the data it is writing, an additional tape can be requested and assigned. The following sections describe how to add labelled and unlabelled tapes.

### Additional Labelled Tapes

When an additional labelled tape is needed, an operator action menu window appears prompting you to specify an EVSN or an RVSN for the tape. Also, if a user requests a labelled tape without specifying an EVSN and an RVSN, the same menu appears. Figure 5-2 is an example of an operator action menu for specifying an additional labelled tape.

```

NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
An additional LABELLED tape volume has been requested by this job.

You may do one of the following:
  1 - Mount the volume and specify the EVSN and RVSN with the menu selection
      (i.e. 1 EVSN='XXXXXX' RVSN='XXXXXX'). If the volume you supply
      is unlabelled, do an INITIALIZE_TAPE_VOLUME after the selection.
  2 - Terminate the tape request. (Include a reason with the menu selection)

Please enter the number corresponding to your selection.
@

```

**Figure 5-2. Operator Action Menu for Specifying an Additional Labelled Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Specifies the EVSN and RVSN for the additional tape. Enter 1, then the EVSN, and then the RVSN (if different from the EVSN) as shown in the following example:

```
1 evsn='abc123' rvsn='xa2345'
```

After making this entry, mount the tape and label it if necessary. To label the tape, move the cursor to the input line of the main operator window and enter the LCU subcommand INITIALIZE\_TAPE\_VOLUME. Refer to Labelling Tapes later in this chapter for an example of how to label a tape.

- 2 Terminates the tape mount request and returns an abnormal status to the job. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the tape request was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR-- Operator terminated tape assignment because . . .
```

The default is the following phrase:

```
. . . the specified tape could not be located.
```

### Additional Unlabelled Tapes

When an additional unlabelled tape is needed, an operator action menu window appears prompting you to specify an EVSN for the tape. Also, if a user requests a tape without specifying an EVSN or an RVSN, the same menu appears so you can specify an EVSN. Figure 5-3 is an example of an operator action menu for specifying an additional unlabelled tape.

```

NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
An additional UNLABELLED tape volume has been requested by this job.

You may do one of the following:
  1 - Mount the volume and specify the EVSN with the menu selection
      (i.e. 1 EVSN='XXXXXX').
  2 - Terminate the tape request. (Include a reason with the menu selection)

Please enter the number corresponding to your selection.
@
    
```

**Figure 5-3. Operator Action Menu for Specifying an Additional Unlabelled Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Specifies the EVSN for the additional tape. Enter 1, then the EVSN as shown in the following example:

```
1 evsn='abc123'
```

After making this entry, mount the tape.

- 2 Terminates the tape mount request and returns an abnormal status to the job. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the tape request was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR-- Operator terminated tape assignment because . . .
```

The default is the following phrase:

```
. . . the specified tape could not be located.
```

## Requests for Online Tape Unit Maintenance

A request for online tape unit maintenance specifies an EVSN and the element name of a tape unit. This request appears in the form of an operator action menu window. Figure 5-4 is an example of an operator action menu window for requesting online tape unit maintenance.

```

NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
Mount tape volume MA0012 for maintenance action on assigned element U50.

You may do one of the following:
  1 - Mount tape volume (MA0012), ring = IN, on element U50
      before making this menu selection.
  2 - Terminate the assignment (include a reason with the menu selection).

Please enter the number corresponding to your selection.
@

```

**Figure 5-4. Operator Action Menu Window for Requesting Online Tape Unit Maintenance**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Assigns the specified tape to the specified tape unit. Mount the tape on the tape unit, then enter 1.
- 2 Terminates the tape mount request, unloads the tape, and returns an abnormal status to the job. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the request was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR-- Operator terminated tape assignment because . . .
```

The default is the following phrase:

```
. . . the specified tape could not be located.
```

## Labelling Tapes

A tape has two means of identification. The first is the external volume serial number (EVSN). The EVSN is a 6-character string that is written on the outside of the tape reel or canister. The second is the recorded volume serial number (RVSN) which is one of several labels that are recorded on the tape. The RVSN is also a 6-character string. These characters can be the integers 1 to 9, uppercase letters A to Z, the space, and any of the following characters:

```
! " % & ' ( ) * + , - . / : ; < = > ? _ $ # @
```

The EVSN and RVSN for a tape should match. Tapes and tape labels are described more fully in the NOS/VE System Usage manual.

Labelling or initializing a tape is the process of writing the RVSN on a tape. The following sections describe how to label a single tape or a set of tapes.

### Labelling a Single Tape

Use the LCU subcommand INITIALIZE\_TAPE\_VOLUME to label a single tape. The INITIALIZE\_TAPE\_VOLUME subcommand is described in chapter 8, Operator Commands and Utilities. The following is an example of how to label a single tape. Enter all commands on the input line of the main operator window.

1. Examine the Tape Status Display to identify an available tape unit. An available tape unit shows NOT READY in the UNIT STATUS column.

```
vedisplay display_option=tape_status
```

2. Enter the LOGICAL\_CONFIGURATION\_UTILITY command.

```
logical_configuration_utility
```

3. Enter the INITIALIZE\_TAPE\_VOLUME subcommand. This example labels a single tape with an RVSN of OPTAPE on tape unit R50. The default values are used for all of the other parameters.

```
LCU/initialize_tape_volume element_name=r50 recorded_vsn='optape'
```

4. The following message appears in the operator action display window and prompts you to mount a tape on tape unit R50. Put a write ring in the tape and mount the tape.

```
Please ready R50
```

5. An operator action menu window appears prompting you to confirm the labels to be written on the mounted tape. Figure 5-5 is an example of an operator action menu for labelling a tape.

```
NOS/VE Operator Action Menu for job $0855_0101_AAA_0045
Tape OPTAPE on element R50 = LABELLED

Volume Identifier (Recorded VSN) : OPTAPE
Owner Identifier                   :
Expiration Date                    :

Would you like to continue initializing this volume (1-Yes, 2-No)?
Please enter the number corresponding to your selection.
e
```

**Figure 5-5. Operator Action Menu for Labelling a Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Labels the tape. When labelling is complete, the tape is unloaded.
  - 2 Terminates the labelling process and unloads the tape.
6. When the LCU/ prompt reappears, end the LCU session.

LCU/quit

## Labelling a Set of Tapes

Use the LABEL\_TAPE\_VOLUMES command to label a set of tapes with consecutive RVSNS. This command builds the RVSNS from information you provide, requests the tapes, assigns the tape unit, and labels the tapes. This command is especially useful when labelling tapes you intend to use for full or partial backups.

The following is an example of how to label a set of tapes. Enter all commands on the input line of the main operator window.

1. Examine the Tape Status Display to identify an available tape unit. An available tape unit shows NOT READY in the UNIT STATUS column.

```
vedisplay display_option=tape_status
```

2. Enter the LABEL\_TAPE\_VOLUMES command. This example labels five tapes with RVSNS TAPE01 to TAPE05 on tape unit T50. The LABEL\_TAPE\_VOLUMES command is described in chapter 8, Operator Commands and Utilities.

```
label_tape_volumes element_name=T50 vsn_prefix=tape vsn_count=5
```

3. The following message appears in the operator action display window and prompts you to mount a tape on the tape unit T50. Put a write ring in the tape and mount the tape.

```
Please ready T50
```

4. The operator action menu in figure 5-6 appears prompting you to confirm the labels to be written on the mounted tape.

```

NOS/VE Operator Action Menu for job $0855_0101_ABC_0045
Tape TAPE01 on element T50 = LABELLED

Volume Identifier (Recorded VSN) : TAPE01
Owner Identifier                   :
Expiration Date                    :

Would you like to continue initializing this volume (1-Yes, 2-No)?
Please enter the number corresponding to your selection.
e
    
```

**Figure 5-6. Operator Action Menu for Labelling a Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Labels the tape. When labelling is complete, the tape is unloaded.
- 2 Terminates the labelling process.
5. Mount each tape and confirm the labels as the system prompts you until you have labelled all the tapes in the set.

## Reserving Tape Units That Are Off or Down

Reserving a tape unit informs the system of anticipated tape unit requirements by a job. If a job attempts to reserve a tape unit that is off or down, the system gives you some choices about how to respond to the job. This choice takes the form of an operator action menu window. Figure 5-7 is an example of an operator action menu for handling tape unit reservations:

```

NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
A tape reservation by this job requires tape units that are OFF or DOWN.
Number of tape units required: MT9$6250 = 1
You may do one of the following:
  1 - Continue the reservation (first make additional tape units available).
  2 - Terminate the reservation (include a reason with the menu selection).
  3 - Wait and retry the reservation later (the wait will be 30 minutes
      unless you specify a different time with the menu selection).

Please enter the number corresponding to your selection.
@

```

**Figure 5-7. Operator Action Menu for Reserving Tape Units**

Move the cursor to the bottom of the menu and enter the number for your selection.

- 1 Makes the tape unit reservations as requested. Before you make this selection, you must change the states of the required tape units to ON using the LCU subcommand `CHANGE_ELEMENT_STATE`.

Enter the `LOGICAL_CONFIGURATION_UTILITY` command and the `CHANGE_ELEMENT_STATE` subcommand on the input line of the main operator window. Both of these commands are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

- 2 Terminates the reservation request. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the tape unit reservation was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR--Operator terminated tape reservation because . . .
```

The default is the following phrase:

```
. . . additional tape units cannot be turned ON.
```

- 3 Specifies a period of time to wait before resubmitting the tape unit reservations. For example, to cause the job to wait 15 minutes, enter the following:

```
3 15
```

If you enter just 3, a 30-minute wait is used.

## Requesting a Tape from the Console

The following is an example of how to request a tape from the system console. Enter all commands from the input line of the main operator window.

1. Request the tape. In this example, tape SITE01 is a labelled tape.

```
request_magnetic_tape file=$local.tfile external_vsn='site01' ring=true
```

2. Enter the command that opens the tape file. In this example, you are copying a file to tape.

```
copy_file input=$local.site_sop output=$local.tfile
```

3. The tape mount display window appears on the system console. Place a write ring in the tape and mount the tape on an available tape unit. Because SITE01 is a labelled tape, the system assigns the tape to the tape unit automatically.

```
Mount Ring Dens<--Operator Action-->Lab C System_Job_Name Time Next_vsn
SITE01 In 1600 Yes A $0855_0101_AAA_0009 10:32
```

If SITE01 had been an unlabelled tape, the ASSIGN\_DEVICE NEEDED message would have appeared in the tape mount request. To request and assign an unlabelled tape, perform steps 1, 2, and 3 as described previously, and then perform the following steps:

1. Place the cursor on the input line of the main operator window and press the STOP key to execute a pause break. Then enter the ASSIGN\_DEVICE command. In this example, the tape is mounted on tape unit T50.

```
p/assign_device element_name=t50 external_vsn='site01'
```

2. Cancel the pause break. The assignment is complete.

```
p/resume_command
```

# Maintaining Permanent Files

---

6

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Maintaining permanent files consists of backing up permanent files, restoring permanent files, and managing disk space. This chapter describes the routine permanent file maintenance tasks and the commands that accomplish them. The term *permanent files* describes both file cycles and catalogs.

Anyone at the system console or any user validated for the system administration capability can back up or restore all permanent files on the system. A user validated for the family administration capability can backup or restore any file in a specific family. For more information about granting validation capabilities, see the NOS/VE User Validation manual.

By default, the backup and restore operations described in this chapter require the use of labelled tapes. You can change this default to permit the use of unlabelled tapes using the `CHANGE_BACKUP_LABEL_TYPE` command. The `CHANGE_BACKUP_LABEL_TYPE` command is described in the NOS/VE Commands and Functions manual.

## Backing Up Permanent Files

Most computer sites have a policy of copying permanent files to tape at regular intervals. Copying, or backing up, permanent files to tapes or some other medium at regular intervals serves three purposes:

- To guard against losing large amounts of file data if a disk device fails. If a disk failure occurs, files that were stored on the device can be reloaded from the backup tapes. In this case, users who have created or modified files since the backup only lose whatever work was done since the backup; any work stored prior to the backup is saved.
- To protect users from accidentally damaging or deleting files.
- To free mass storage disk space.

The process of reloading files from a backup tape or other medium is called restoring files. The commands that restore files are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

There are two types of file backup operations that guard against the loss of data: the full backup and the partial backup. In a full backup, all permanent files on the system are written to a backup tape. For a partial backup, only files that have been modified since the last full backup, or since a specified date, are written to tape. Control Data recommends that a full backup be performed on at least a weekly basis. Partial backups should be performed at least daily. The `CREATE_FULL_BACKUP`, `CREATE_PARTIAL_BACKUP`, and `CREATE_CATALOG_BACKUP` commands described in this section are useful for these purposes.

You may want to backup files by mass storage sets. A mass storage set is a set of disk volumes that you define and assign a name using the `CREATE_SET` command. Backing up permanent files by sets enables you to restore the files on another mainframe or to restore a specific set. Mass storage sets and the `CREATE_SET` command are described in the NOS/VE System Performance and Maintenance manual, Volume 2. For information about backing up permanent files by sets, refer to the `BACKUP_SET` subcommand of the `BACKUP_PERMANENT_FILES` utility also in the NOS/VE System Performance and Maintenance manual, Volume 2.

You have the option of modifying existing permanent file maintenance commands or writing your own backup procedures using the `BACKUP_PERMANENT_FILES` utility. This utility and its subcommands are described in the NOS/VE System Performance and Maintenance manual, Volume 2. Refer to the of the same manual for information about how to modify existing permanent file maintenance commands.

Keep the following points in mind when backing up permanent files:

- The backup process skips files that are busy. A busy file is one that is attached to a job with append, modify, or shorten access permission. To avoid having to back up files a second time to acquire those that were busy, be sure all users are off the system before backing up permanent files.
- Use the `LABEL_TAPE_VOLUMES` command to initialize a set of backup tapes. The `LABEL_TAPE_VOLUMES` command is described in chapter 8, Operator Commands and Utilities.

## Performing A Full Backup

A full backup copies all permanent files in the system onto magnetic tape. The `CREATE_FULL_BACKUP` command performs this task and records the date and time of the backup in the file `SYSTEM.DATE_OF_FULL_BACKUP`. The `CREATE_FULL_BACKUP` command is described in chapter 8, Operator Commands and Utilities.

The following is an example of how to perform a full backup using the `CREATE_FULL_BACKUP` command. Enter all commands on the input line of the main operator window.

1. Prevent the initiation of new jobs for all job classes except the `SYSTEM` job class. Enter the following utility and subcommands:

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=false
MAS/change_job_class class_name=system enable_class_initiation=true
MAS/quit
```

2. Send a message to all interactive users requesting that they log out. Backing up permanent files on an inactive system ensures that all files are included in the backup. Refer to chapter 2, Monitoring System Activity, for information on how to send a message on the different networks.
3. Monitor the user job activity on the Initiated Jobs Display. Make note of jobs that remain after users have been requested to log out.

```
vedisplay display_options=initiated_jobs
```

4. Terminate jobs for users who have not logged out after sufficient warning.

```
terminate_job name=$0855_0002_abc_0001 job_state=all
```

5. Label a set of tapes or obtain an existing set of labelled tapes. Refer to chapter 5, Providing Magnetic Tape Service, for information about how label a set of tapes. The `LABEL_TAPE_VOLUMES` command is described in chapter 8, Operator Commands and Utilities.

```
label_tape_volumes vsn_prefix=full vsn_count=10
```

6. Back up all permanent files in the system.

```
create_full_backup vsn_prefix=full vsn_count=10
```

7. Mount each tape with a write ring when the Tape Mount Display prompts you to do so. Because these are labelled tapes, the system automatically assigns each tape to the tape unit.

```
Mount Ring Dens<--Operator Action-->Lab C System Job Name Time Next_vsn
FULL01 In 1600 Yes A $0855_0101_AAA_0053 10:28 FULL_02
```

8. Remove restrictions on the initiation of new jobs for all job classes.

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=true
MAS/change_job_class class_name=unassigned enable_class_initiation=false
MAS/quit
```

## Performing a Partial Backup

A partial backup copies all permanent files that have been modified since the previous full backup or since a specified date onto magnetic tape. The `CREATE_PARTIAL_BACKUP` command performs this task. The `CREATE_PARTIAL_BACKUP` command reads the file `$(SYSTEM.DATE_OF_FULL_BACKUP)` to determine the date and time of the previous full backup. The `CREATE_PARTIAL_BACKUP` command is described in chapter 8, Operator Commands and Utilities.

The following is an example of how to perform a partial backup. Enter all commands on the input line of the main operator window.

1. Prevent the initiation of new jobs for all job classes except the `SYSTEM` job class. Enter the following utility and subcommands:

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=false
MAS/change_job_class class_name=system enable_class_initiation=true
MAS/quit
```

2. Send a message to all interactive users requesting that they log out. Backing up permanent files on an inactive system ensures that all files are included in the backup. Refer to chapter 2, Monitoring System Activity for information on how to send a message on the different networks.
3. Monitor the user job activity on the Initiated Jobs Display. Make note of jobs that remain after users have been requested to log out.

```
vedisplay display_options=initiated_jobs
```

4. Terminate jobs for users who have not logged out after sufficient warning.

```
terminate_job name=$0855_0002_abc_0001 job_state=all
```

5. Label a set of tapes or obtain an existing set of labelled tapes. Refer to chapter 5, Providing Magnetic Tape Service for information about how to label a set of tapes. The `LABEL_TAPE_VOLUMES` command is described in chapter 8, Operator Commands and Utilities.

```
label_tape_volumes vsn_prefix=prt1 vsn_count=5
```

6. Back up all files that have been modified since the previous full backup.

```
create_partial_backup vsn_prefix=prt1 vsn_count=5
```

7. Mount each tape with a write ring when the Tape Mount Display prompts you to do so. Because these are labelled tapes, the system automatically assigns each tape to the tape unit.

```
Mount Ring Dens<--Operator Action-->Lab C System_Job_Name Time Next_vsn
PTL01 In 1600 Yes A $0855_0101_abc_0053 10:28
```

8. Remove restrictions on the initiation of new jobs for all job classes.

```
manage_active_scheduling
MAS/change_job_class class_name=all enable_class_initiation=true
MAS/change_job_class class_name=unassigned enable_class_initiation=false
MAS/quit
```

## Performing a Catalog Backup

A catalog backup copies the catalog information for all families onto magnetic tape; no file data is copied. This catalog structure is a list of catalog, subcatalog, file names and file cycles that shows the permanent file hierarchy. A catalog backup should be performed at least daily and perhaps more often if new file cycles are being created throughout the day. You can perform a catalog backup while user jobs are executing.

Perform the catalog backup using the `CREATE_CATALOG_BACKUP` command. The `CREATE_CATALOG_BACKUP` command is described in chapter 8, Operator Commands and Utilities. For information about establishing a catalog backup policy as a part of site preparation, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.

The following is an example of how to back up catalogs. Enter all commands on the input line of the main operator window.

1. Label a set of tapes or obtain an existing set of labelled tapes. Refer to chapter 5, Providing Magnetic Tape Service, for information on how to label a set of tapes. The `LABEL_TAPE_VOLUMES` command is described in chapter 8, Operator Commands and Utilities.

```
label_tape_volumes vsn_prefix=ctlg vsn_count=5
```

2. Back up all catalogs.

```
create_catalog_backup vsn_prefix=ctlg vsn_count=5
```

3. Mount each tape (CTLG01 to CTLG05) with a write ring when the Tape Mount Display prompts you to do so. Because these are labelled tapes, the system automatically assigns each tape to the tape unit.

```
Mount Ring Dens<---Operator Action-->Lab C System Job_Name Time Next_vsn
CTLG01 In 1600 Yes A $0855_0101_AAA_0053 10:28 CTLG02
```

## Restoring Permanent Files

This section describes how to restore permanent files for a user whose files or catalogs have been deleted. This case does not include files and catalogs that are missing or unavailable due to a disk unit failure. Restoring permanent files in the event of a disk failure is described in the NOS/VE System Performance and Maintenance manual, Volume 2.

Your site has the option of writing its own restore procedures using the RESTORE\_PERMANENT\_FILES utility. This utility and its subcommands are also described in the NOS/VE System Performance and Maintenance manual, Volume 2.

Keep the following points in mind when restoring permanent files:

- Because of the way file and tape data is buffered when permanent files are backed up, a backup listing may not be accurate toward the end of a tape volume. If an attempt to restore a file indicates that the file is not on the tape, try the next EVSN that appears on the backup listing.
- Each file that is backed up to tape consists of a file header followed by file data. The file header contains information about the file such as the version number and the file size. Often, a file begins on one backup tape and ends on the next tape in the set. Therefore, while the first tape in the set must begin with file header information, subsequent tapes may begin with actual file data. When restoring files from such tapes, the following message appears on the console:

```
UNABLE TO READ THE VERSION NUMBER
```

If this message appears when using the first tape in the set, this indicates an error and the tape may be damaged. For subsequent tapes in the set, this message is probably an informative message and does not indicate an error. If file data is encountered at the beginning of a tape, the system skips forward to the first file header on the tape.

## Restoring Files for a User

A user may request that you restore one or more files that were deleted or damaged. The following is an example of how to restore a file for a user:

1. Examine the listing from the most recent backup to identify the EVSN of the tape that the file resides on. In this example, the file to be restored is :NVE.KJB313.REPORTS which resides on the backup tape with an EVSN of BACK04.
2. You will either be restoring a file that doesn't exist in the user's catalog or one or more cycles of an existing file. Enter the following command to determine whether the :NVE.KJB313.REPORTS file exists in the user's master catalog:

```
display_catalog catalog=:nve.kjb313
```

3. If the file appears in the catalog, restore the file as an existing file. Restoring an existing file only restores file cycles that are missing. If the file does not appear in the catalog, restore the file as a nonexisting file.

- To restore missing cycles of an existing file, enter the following statements on the input line of the main operator window:

```

job restore
job/request_magnetic_tape file=$local.user_restore evsn='back04'
job/task r=3
job/restore_permanent_files
job/restore_existing_file file=:nve.kjb313.reports ..
job./backup_file=$local.user_restore
job/quit
job/taskend
job/jobend

```

- To restore all file cycles of a nonexisting file, enter the following statements on the input line of the main operator window:

```

job restore
job/request_magnetic_tape file=$local.user_restore evsn='back04'
job/task r=3
job/restore_permanent_files
job/restore_file file=:nve.kjb313.reports backup_file=$local.user_restore
job/quit
job/taskend
job/jobend

```

4. Mount tape BACK04 without a write ring when requested to do so in the tape mount display window. Because BACK04 is a labelled tape, the system automatically assigns the tape to the tape unit.

Mount	Ring	Dens	Operator	Action	Lab C	System	Job Name	Time	Next_vsn
BACK04	Out	1600		Yes	A	\$0855_0101_AAA_0053		10:28	

5. When tape BACK04 is unloaded, the file has been restored.

## Restoring Catalogs for a User

To restore a catalog of files for a user, begin by restoring files from the most recent set of backup tapes on which the files reside. Restore permanent files from the most recent set of partial backup tapes first, then the next most recent set of partial backup tapes, and so on, through to the most recent set of full backup tapes. If the most recent backup was a catalog backup, begin with the set of catalog backup tapes. If there have been no partial backups since the most recent full backup, you need only restore permanent files from the full backup tapes.

The following is an example of how to restore a catalog of files for a user:

1. Examine the backup listings to identify the EVSNs of the tapes that the catalog resides on. In this example, the subcatalog to be restored is the :NVE.KJB313.LIBRARY catalog which resides on the partial backup tapes BACK04 and BACK05, and on full backup tape FULL03.
2. You will either be restoring a catalog of files that doesn't exist or an existing catalog. Enter the following command to determine whether the :NVE.KJB313.LIBRARY catalog exists in the user's master catalog:

```
display_catalog catalog=.nve.kjb313
```

3. If the subcatalog appears in the master catalog, restore the catalog as an existing catalog. Restoring an existing catalog only restores files and file cycles that are missing. If the subcatalog does not appear in the master catalog, restore the subcatalog as a nonexisting catalog.

- To restore an existing catalog, enter the following statements on the input line of the main operator window:

```
job restore
job/request_magnetic_tape file=$local.user_restore evsn=('back04' 'back05')
job/task r=3
job/restore_permanent_files
job/restore_existing_catalog catalog=:nve.kjb313.library ..
job./backup_file=$local.user_restore
job/quit
job/taskend
job/jobend
```

- To restore a nonexisting catalog, enter the following statements on the input line of the main operator window:

```
job restore
job/request_magnetic_tape file=$local.user_restore evsn=('back04' 'back05')
job/task r=3
job/restore_permanent_files
job/restore_catalog catalog=:nve.kjb313.library ..
job./backup_file=$local.user_restore
job/quit
job/taskend
job/jobend
```

**NOTE**

If, in this example, there had been more than one set of partial backup tapes, you would need to repeat this step and steps 4 and 5 using the subsequent partial backup tape sets. After restoring a catalog from the most recent set of partial backup tapes, restore the catalog as an existing catalog from any subsequent partial backup tape sets.

4. Mount tape BACK04 without a write ring when requested to do so in the tape mount display window. Because BACK04 is a labelled tape, the system automatically assigns it to the tape unit.

```
Mount Ring Dens<--Operator Action-->Lab C System Job Name Time Next vsn
BACK04 Out 1600 Yes A $0855_0101_AAA_0053 10:28 BACK05
```

5. When BACK04 is unloaded, the tape mount display window reappears requesting that you mount BACK05, also without a write ring. Because BACK05 is a labelled tape, the system automatically assigns it to the tape unit.
6. Restore the catalog from the full backup tape. Enter the following job statements on the input line of the main operator window to restore files and file cycles that were excluded from the partial backup tapes:

```
job restore
job/request_magnetic_tape file=$local.user_restore evsn='ful103'
job/task r=3
job/restore_permanent_files
job/restore_excluded_file_cycles catalog=:nve.kjb313.library ..
job../backup_file=$local.user_restore
job/quit
job/taskend
job/jobend
```

7. Mount tape FULL03 without a write ring when requested to do so in the tape mount display window. Because FULL03 is a labelled tape, the system automatically assigns it to the tape unit.

```
Mount Ring Dens<--Operator Action-->Lab C System Job Name Time Next vsn
FULL03 Out 1600 Yes A $0855_0101_AAA_0123 11:06
```

8. When tape FULL03 is unloaded, the catalog has been restored.

## Disk Space Management

To maintain a sufficient amount of available disk space, it may be necessary to back up and delete seldom-used files. This frees disk space and permits users to retrieve these files as needed. Control Data provides the `CREATE_AGED_FILE_BACKUP` command to serve this function. There is also an optional product, Archive/VE, which backs up and deletes file cycle data while leaving catalog entries intact. Refer to the NOS/VE File Archiving manual for more information about this product.

The `CREATE_AGED_FILE_BACKUP` command backs up and deletes all files that have not been accessed since a specified date. This command includes catalog information in the backup and deletes the catalog entries from the system. This means that a file backed up in this way no longer appears in the user's catalog. This command is described in chapter 8, Operator Commands and Utilities. The following related commands are also described in chapter 8.

Command	Description
<code>DISPLAY_ALL_FILES</code>	Submits a batch job that generates a listing of all permanent files on selected disk volumes.
<code>DELETE_EXPIRED_FILES</code>	Deletes all files that have reached or exceeded their expiration date.

Your site has the option of writing its own disk space management procedures using the `BACKUP_PERMANENT_FILES` and `RESTORE_PERMANENT_FILE` utilities. These utilities and their subcommands are described in the NOS/VE System Performance and Maintenance manual, Volume 2.

# Operator Level Error Conditions and Recovery Procedures

---

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# Operator Level Error Conditions and Recovery Procedures

7

This chapter presents a subset of system and peripheral error conditions that an operator might be expected to solve. For information on the analysis of mainframe faults, NOS/VE operating system faults, and mass storage peripheral faults, refer to the Failure Analysis chapter of the NOS/VE System Performance and Maintenance manual, Volume 2.

## Incorrect Assignment of an Unlabelled Tape

If you assign an unlabelled tape for a job requesting a labelled tape, the following operator action menu window appears:

```
NOS/VE Operator Action Menu for job $0830_0604_AAA_0000
LABELLED tape VX6 was requested but an UNLABELLED tape was assigned to
element U0.

You may do one of the following:
  1 - Mount and assign the requested LABELLED tape volume (VX6).
  2 - Terminate the tape assignment (include a reason with the menu selection).
  3 - Allow assignment of the UNLABELLED tape volume.
      (first verify that the correct tape volume was assigned)

Please enter the number corresponding to your selection.
@
```

**Figure 7-1. Operator Action Menu for Correcting an Unlabelled Tape Assignment**

Move the cursor to the bottom of the menu and enter the number for your selection.

- 1 Clears the previous tape mount request, unloads the tape, and redisplay the original tape mount request, prompting you to assign the correct tape.
- 2 Terminates the tape mount request, unloads the tape, and returns an abnormal status to the job. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the tape mount request was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR-- Operator terminated tape assignment because . . .
```

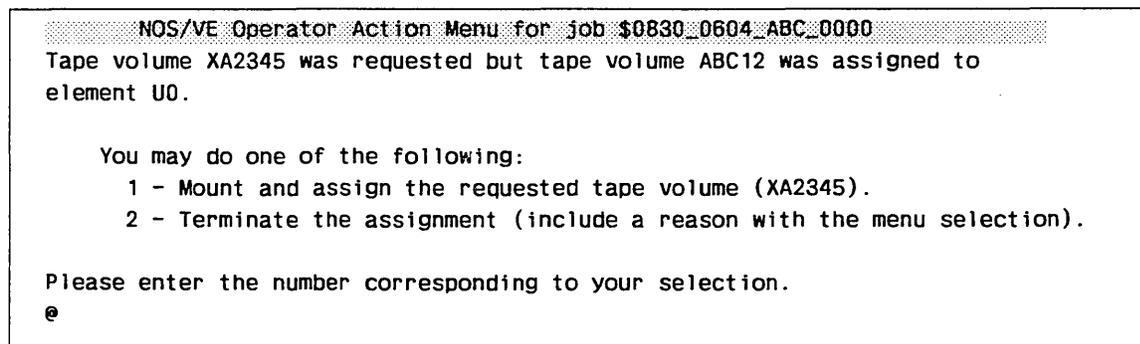
The default is the following phrase:

```
. . . the specified tape could not be located.
```

- 3 Assigns the unlabelled tape and returns an abnormal status to the job. The user will not be able to write on the tape. If the job ignores the abnormal status condition, the tape becomes available to the job.

## Incorrect Assignment of a Labelled Tape

If you assign a labelled tape and its EVSN does not match the RVSN in the tape mount request, the following operator action menu window appears:



**Figure 7-2. Operator Action Menu for Correcting a Labelled Tape Assignment**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Clears the previous assignment, unloads the tape, and redisplay the tape mount request, prompting you to mount the correct tape.
- 2 Terminates the tape mount request, unloads the tape, and returns an abnormal status to the job. Enter 2, followed by a space, followed by a phrase (not enclosed in apostrophes) explaining why the tape mount request was terminated. This phrase is appended to the following status message which is then returned to the job:

```
--ERROR-- Operator terminated tape assignment because . . .
```

The default is the following phrase:

```
. . . the specified tape could not be located.
```

## Fatal Write Error on a Labelled Tape

When a fatal error occurs while a job is writing the VOL1 tape label, the following operator action menu window appears:

```

NOS/VE Operator Action Menu for job $0830_0604_ABC_0015
A fatal write error occurred on labelled tape ABCDEF on element R50
  Error at loadpoint          tape_failure_mode = bad_id_burst
You may choose one of the following:
  1 - Attempt recovery - another mount will be requested after the tape unloads.
      Note: Tape labels may have been destroyed by the fatal write error.  If so,
          do an INITIALIZE_TAPE_VOLUME with RVSN='ABCDEF' after the selection.
  2 - No recovery - a fatal error will be returned to the job.
Please enter the number corresponding to your selection.

```

**Figure 7-3. Operator Action Menu - Fatal Write Error on a Labelled Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Unloads the tape and reissues the request in the tape mount display window.
- 2 Aborts the tape request.

To correct the error and continue writing data, perform the following steps:

1. Enter 1 in the operator action menu window, clean the heads on the tape unit, and ready the tape unit. For a tape unit equipped with a head cleaner, a fatal write error can occur if the head cleaner is not positioned correctly.

### **NOTE**

If the tape labels were destroyed, the tape will not be assigned to the tape unit and the request remains in the tape mount display window. In addition, the Tape Status Display shows no RVSN for the tape. Label the tape as needed.

2. If the error persists, enter 1 in the operator action menu window as before. Remove the tape and mount it on a different tape unit. If this solves the problem, down the problem tape unit using the LCU subcommand `CHANGE_ELEMENT_STATE` and report it for maintenance.
3. If, after mounting the tape on a different tape unit, the error still persists, enter 1 in the operator action menu window as before. Establish a different channel/controller path to the tape unit.
4. If, after establishing a different channel/controller path to the tape unit, the error still persists, enter 1 in response to the operator action menu window as before. Mount and label a different tape.
5. If none of these steps corrects the error, contact a customer engineer.

## Fatal Write Error on an Unlabelled Tape

When a fatal error occurs as a job begins writing on an unlabelled tape, the following operator action menu window appears:

```
NOS/VE Operator Action Menu for job $0830_0604_ABC_0015
A fatal write error occurred on unlabelled tape ABCDEF on element R50
  Error at loadpoint          tape_failure_mode = data_parity_error

You may choose one of the following:
  1 - Attempt recovery - another mount will be requested after the tape unloads.
  2 - No recovery - a fatal error will be returned to the job.

Please enter the number corresponding to your selection.
@
```

**Figure 7-4. Fatal Write Error on an Unlabelled Tape**

Move the cursor to the bottom of the operator action menu window and enter the number for your selection.

- 1 Unloads the tape and reissues the request in the tape mount display window.
- 2 Aborts the tape request.

To correct the error and continue writing data, perform the following steps:

1. Enter 1 in the operator action menu window, clean the heads on the tape unit and make the tape unit ready. For a tape unit equipped with a head cleaner, a fatal write error can occur if the head cleaner is not positioned correctly.
2. If the error persists, enter 1 in the operator action menu window as before. Remove the tape and mount it on a different tape unit. If this solves the problem, down the problem tape unit using the LCU subcommand `CHANGE_ELEMENT_STATE` and report it for maintenance.
3. If, after mounting the tape on a different tape unit, the error still persists, enter 1 in the operator action menu window as before. Establish a different channel/controller path to the tape unit.
4. If, after establishing a different channel/controller path to the tape unit, the error still persists, enter 1 in the operator action menu window as before. Mount and label a different tape.
5. If none of these steps corrects the error, contact a customer engineer.

## Fatal Read Error on a Labelled Tape

If a parity error occurs while the system is attempting to read a tape label, the tape is declared unlabelled. You can confirm that a read error has occurred by examining the Tape Status Display. The UNIT STATUS column of the Tape Status Display will show READY/READ ERROR. Perform the following corrective action:

1. Clean the heads on the tape unit and make the tape unit ready. For a tape unit equipped with a head cleaner, a fatal read error can occur if the head cleaner is not positioned correctly.
2. If the error persists, remove the tape and mount it on a different tape unit. If this solves the problem, down the defective tape unit using the LCU subcommand CHANGE\_ELEMENT\_STATE and report it for maintenance. The CHANGE\_ELEMENT\_STATE subcommand is described in the NOS/VE System Performance and Maintenance manual, Volume 2.
3. If the error still persists, establish a different channel/controller path to the tape unit.
4. If the error still persists, terminate the tape mount request and inform the user that the tape label is defective. In this example, the EVSN is ABC123. Enter the following command:

```
terminate_tape_assignment external_vsn='abc123' ..  
../message='of a defective label.'
```

The following message is returned to the job:

```
--ERROR-- Operator terminated tape assignment because of a defective label.
```

## Write Error While Dumping the NOS/VE Environment on a Dual-State System

When an error occurs while dumping the NOS/VE environment, or if you attempt to dump to an unlabelled tape, the following display appears. The K. characters in the upper and lower left corners of figure 7-5 appear only on the NOS console.

```
K.          TERMINATE VE          NVE

ERROR DUMPING NOS/VE, TRY AGAIN.

PERFORM THESE STEPS TO CONTINUE PROCESSING.

1. SELECT VALUES FOR THE *DUMP, *VSN, *DENSITY AND
   *TNVEJOB OPTIONS.
   (*DUMP=TRUE. *VSN=DMP00A. *DENSITY=GE. AND
   *TNVEJOB=FALSE. ARE THE DEFAULTS.)

   *DUMP=TRUE.      DUMP CENTRAL MEMORY
   *DUMP=FALSE.    DO NOT DUMP CENTRAL MEMORY
   *DENSITY=PE/GE. DUMP TAPE DENSITY, PE OR GE.
   *VSN=XXXXXX.   DUMP TAPE VSN.
   *TNVEJOB=TRUE.  TERMINATE THE NVE JOB.
   *TNVEJOB=FALSE. DO NOT TERMINATE THE NVE JOB.

2. ENTER

   *RUN.

K.
```

Figure 7-5. NOS/VE Abnormal Termination Display

Perform the following steps:

1. To attempt to dump the NOS/VE environment again, remove the tape and mount a different labelled tape. Enter the following commands at the NOS or NOS/BE console to specify the new VSN. All of the commands that appear in the display are described in chapter 8, Operator Commands and Utilities. In this example, the new VSN is DMP00B.

**At the NOS Console:**

**At the NOS/BE Console:**

On the K display, enter:

On the L display, enter:

K. \*VSN=DMP00B.

\*VSN=DMP00B.

Otherwise, cancel the dumping of the NOS/VE environment by entering the following command:

**At the NOS Console:**

**At the NOS/BE Console:**

On the K display, enter:

On the L display, enter:

K. \*DUMP=FALSE.

\*DUMP=FALSE.

2. Complete the abnormal termination by entering the following command:

**At the NOS Console:**

**At the NOS/BE Console:**

On the K display, enter:

On the L display, enter:

K. \*RUN.

\*RUN.

## Interim Remote Host (IRHF) Problem Conditions

If users are unable to transfer files between NOS/VE and NOS or NOS/BE, there could be a problem with the Interim Remote Host Facility (IRHF). To solve this problem, terminate IRHF and then restart it using the following steps:

1. Terminate the NOS/VE tasks associated with IRHF by entering the following command at the NOS/VE console:

```
deactivate_system_tasks task_name=(rhinput,rhoutput)
```

2. Terminate the IRHF job on the NOS or NOS/BE dual-state system.

- NOS dual-state

Enter the following DSD command at the NOS console:

```
DROP,jsn.
```

where jsn is the job sequence name of the IRHF job. You can obtain the job sequence name by examining the DSD R display. The IRHF job has a service class of N (network) and, typically, has a status of TE (timed event).

- NOS/BE dual-state

Enter the following DSD command at the NOS/BE console:

```
n.DROP.
```

where n is the ordinal of the IRHFxxx job (xxx is any number). You can obtain the ordinal by examining the DSD R display.

3. Restart the IRHF job on the NOS or NOS/BE dual-state system.

- NOS dual-state

Enter the following DSD command at the NOS console:

```
MSSIRHF.
```

### NOTE

---

If your site uses the MSS subsystem, your site analyst should rename the MSSIRHF procedure (stored on user index 377777) to xxxIRHF, where xxx is a NOS subsystem that your site does not use.

---

- NOS/BE dual-state

Enter the following DSD command at the NOS/BE console:

```
n.X RUNIRHF.
```

where n is the number of an unoccupied control point.

4. Restart the NOS/VE tasks associated with IRHF by entering the following command at the NOS/VE console:

```
activate_system_tasks task_name=(rhinput,rhoutput)
```

## PASSON Problem Conditions

If users are unable to log in to your dual-state system, there could be a problem with PASSON. To solve this problem, terminate PASSON and then restart it using the following steps:

1. Terminate the NOS/VE task associated with PASSON by entering the following command at the NOS/VE console:

```
deactivate_system_tasks task_name=ifexec
```

2. Terminate the PASSON job on the NOS or NOS/BE dual-state system.

- NOS dual-state

Enter the following DSD command at the NOS console:

```
DROP,jsn.
```

where jsn is the job sequence name of the PASSON job. You can obtain the job sequence name by entering the following commands:

```
K,NAM.
K.*.
K.AP=NVF.
K.ST,AP=VEIAF.
```

The resulting display shows the job sequence name for the VEIAF application. (Use this name to terminate the PASSON job.)

- NOS/BE dual-state

Enter the following DSD command at the NOS/BE console:

```
n.DROP.
```

where n is the ordinal of the PASSON job. You can obtain the ordinal by examining the DSD R display.

3. Restart the PASSON job on the NOS or NOS/BE dual-state system.

- NOS dual-state

Enter the following DSD command at the NOS console:

```
MSSPASS.
```

---

### NOTE

If your site uses the MSS subsystem, your site analyst should rename the MSSPASS procedure (stored on user index 377777) to xxxPASS, where xxx is a NOS subsystem that your site does not use.

---

- NOS/BE dual-state

PASSON is initiated automatically when the first NOS/VE user logs in.

4. Restart the NOS/VE task associated with PASSON by entering the following command at the NOS/VE console:

```
activate_system_tasks task_name=ifexec
```

## Adverse Environmental Conditions

When an adverse environmental condition occurs, such as high temperature or high humidity, NOS/VE suspends all operations and enters an idle state. The following messages appear on the NOS/VE system console:

```
(702) POWER WARNING
```

```
hh:mm:ss VEOS0006 System IDLED due to LONG POWER WARNING
```

```
hh:mm:ss LONG_WARNING detected while stepped
```

Active jobs have been swapped out and are no longer executing, and system tasks have been terminated or idled. The system job monitor task is idle, waiting for the environmental condition to clear. If the condition clears, the system displays the following messages:

```
hh:mm:ss LONG_WARNING cleared while stepped
```

```
hh:mm:ss System ready to RESUME manually; use console command.
```

If the system attribute `AUTOMATIC_UNSTEP_RESUME` is 1, the system automatically resumes operation. If not, you must enter the following command on the input line of the critical display window to resume operation:

```
resume_system
```

The system responds with the following message:

```
hh:mm:ss System resuming via console request
```

The system resumes normal operations by restarting the idled or terminated system tasks. Jobs that have active tasks resume execution.

When NOS/VE has fully resumed operations, the following message appears in the main operator window:

```
----- RESUME_SYSTEM COMPLETE -----
```

## Imminent Power Loss Condition

When a sensor detects that a power loss is imminent, NOS/VE suspends all operations and enters a stepped state. This means that NOS/VE stops but does not terminate. The following messages appear on the NOS/VE system console:

```
(703) POWER WARNING
```

```
hh:mm:ss VEOS0009 System STEPPED due to a SHORT POWER WARNING
```

```
hh:mm:ss SHORT_WARNING detected while stepped
```

All system activity is suspended in its current state. The system job monitor task idles while waiting for the environmental condition to clear. If the condition clears, the following messages appear:

```
hh:mm:ss SHORT_WARNING cleared while stepped
```

```
hh:mm:ss System ready to UNSTEP manually; use console command.
```

If the system attribute `AUTOMATIC_UNSTEP_RESUME` is 1, the system automatically resumes operation. If not, enter the following command on the input line of the critical display window to resume operation:

```
unstep_system
```

The system responds with the following message:

```
hh:mm:ss System unstepped via console request
```

No messages appear in the main operator window. The system resumes normal operations at the point where the imminent loss of power condition was detected.

## Full Input Queue

The `MAXIMUM_KNOWN_JOBS` system attribute imposes a limit on the number of jobs that can be in the input queue at one time. If the number of jobs reaches or exceeds this limit, the following message appears in the critical display window:

```
WARNING - The NOS/VE input queue is full.
```

Perform the following corrective action:

1. Display the current input queue limit by entering the following command.

```
display_system_attribute maximum_known_jobs
```

2. Raise the input queue limit by a small arbitrary amount. If the current limit is 250, you might raise the limit to 260 by entering the following command:

```
set_system_attribute maximum_known_jobs 260
```

If the message disappears from the critical display window and does not return, the condition was probably caused by heavy usage. If the message disappears and then reappears soon after, proceed to the next step.

3. Create and examine a Job Status Display listing to determine the cause for the full input queue by entering the following command:

```
display_job_status name=all display_option=(login_user,job_mode,job_state) ..  
output=$local.job_list
```

The input queue may be full for the following reasons:

- There is a job caught in a loop generating more jobs. Several jobs in the Job Status Display listing that have the same login user name may indicate that this is the problem.
  - There are several batch jobs in the process of terminating that can't dispose of their standard output because the output queue is also full. Several jobs in the Job Status Display listing that show a job mode of `BATCH` and a job state of `TERMINATING` may indicate that this is the problem.
4. Follow site procedures for handling the condition. In the case of a looping job, this may consist of contacting the user, swapping the job out, or terminating the job. In the case of batch jobs that can't dispose of their standard output, this may consist of contacting the users or terminating the jobs. When terminating the jobs, discard unwanted standard output by specifying `OUTPUT_DISPOSITION=DISCARD_STANDARD_OUTPUT` on the `TERMINATE_JOB` command.

## Full Output Queue

The `MAXIMUM_OUTPUT_FILES` system attribute imposes a limit on the number of files that can be in the output queue at one time. If the number of files reaches or exceeds this limit, the following message appears in the critical display window:

```
WARNING - The NOS/VE output queue is full.
```

Perform the following corrective action:

1. Display the current output queue limit by entering the following command.

```
display_system_attribute maximum_output_files
```

2. Raise the output queue limit by a small arbitrary amount. If the current limit is 150, you might raise the limit to 160 by entering the following command:

```
set_system_attribute maximum_output_files 160
```

If the message disappears from the critical display window and does not return, the condition was probably just heavy usage. If the message disappears and then reappears soon after, proceed to the next step.

3. Create and examine an Output Status Display listing for evidence of this condition by entering the following command:

```
display_output_status name=all display_option=(system_job_name,output_state) ..  
output=$local.output_list
```

The output queue may be full for the following reasons:

- A looping job is generating output files. Several output files that originate from the same job name may indicate that this is the problem.
  - Files have completed output processing but remain in the output queue. This is may be the case if several files show an output state of `COMPLETE`. The cause for this condition could be that the `PURGE_DELAY` attribute for many of the output files has been specified.
4. Follow site procedures for handling the condition. This may consist of contacting the user, swapping the job out, terminating the job, or terminating the output. When terminating the job, discard unwanted standard output by specifying `OUTPUT_DISPOSITION=DISCARD_STANDARD_OUTPUT` on the `TERMINATE_JOB` command.



---

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This chapter describes the commands and utilities that an operator needs to maintain NOS/VE operations. These commands control the flow and execution of user jobs. Many of the commands can only be entered from the system console or under the \$SYSTEM user name. Other commands, while not restricted to the \$SYSTEM user name or the system console, have special significance when entered at the system console.

## Command Usage

When entering commands, it is helpful to know about parameter order, system-supplied job names, and status variables.

### Parameter Order

The order in which you enter parameters depends on whether you specify the parameter names.

- When you specify parameter names, you can list the parameters in any order, as shown in the following examples:

```
vedisplay output=display_b display_option=active_jobs
```

```
vedisplay display_option=active_jobs output=display_b
```

Each command description defines a particular order for its parameters. When you enter a parameter name, the system places the parameter in its predefined position.

- When you omit parameter names, you must specify the parameters positionally. That is, you must enter them in the order shown in the format of the command description. In the following example, the second parameter is listed without a name. Because the parameter is defined as second in the parameter list, you must enter it in that position.

```
vedisplay display_option=active_jobs display_b
```

To position to a particular parameter, include the appropriate number of commas. For example, to specify the second and fifth parameters, enter a command with the following format:

```
command, ,value list, , ,value list
```

### NOTE

You must enter the STATUS parameter name; you cannot enter it positionally.

## System-Supplied Job Names

NOS/VE creates a unique 19-character job name for every job in the system. A system-supplied job name can be abbreviated using as few as five characters. All system-supplied job names and abbreviations begin with the ASCII character \$.

The following is an example of a system-supplied job name:

\$0855\_0002\_ABC\_1234

This job name example has the following parts:

0855	The 4-digit model of the machine. In this case, the job is from a CYBER 855 computer.
0002	The 4-digit serial number of the machine. In this case, the machine is identified as serial number 0002.
ABC	The 3-character alphabetic counter beginning with AAA. Each system maintains its own alphabetic counters.
1234	The 4-digit integer counter beginning with 0001. Each system maintains its own integer counters.

You can abbreviate the name of a job originating on your system anytime a job name is required as input. Job names are abbreviated using the alphabetic counter and the integer counter, or just the integer counter. When abbreviating with the alphabetic counter and the integer counter, NOS/VE uses the model and serial numbers from the machine you are using. For example, you can abbreviate the job name \$0855\_0002\_ABC\_1234 as \$ABC\_1234.

When abbreviating with just the integer counter, NOS/VE uses the model number, serial number, and alphabetic counter from the machine you are using. The alphabetic counter is determined by the following conditions:

- If your integer counter entry is less than or equal to the current integer counter value, the current alphabetic counter is used.
- If your integer counter entry is greater than the current integer counter value, the previous alphabetic counter is used.

For example, assume that the most recent job on the system has the system job name \$0855\_0002\_ABC\_1234. If you enter the abbreviation \$1222, the system uses the alphabetic counter ABC, referencing the job \$0855\_0002\_ABC\_1222. If you enter the abbreviation \$9992, the system uses the alphabetic counter ABB, referencing the job \$0855\_0002\_ABB\_9992.

### NOTE

---

When referring to a job submitted from a remote system, you must specify the full system-supplied job name to differentiate between the remote job and the jobs from your host system.

---

## Using the STATUS Parameter

The presence of the STATUS parameter on a command causes the SCL interpreter to proceed to the next command even if an error condition is encountered. The absence of the STATUS parameter causes the SCL interpreter to skip succeeding commands in the current block.

By checking the contents of the specified status variable, succeeding commands can alter the flow of control based upon the occurrence of error conditions.

Refer to the NOS/VE System Usage manual for more information on status variables.

## SCL Data Types

Some of the commands described in this chapter have parameters that take values which must be specified in record format. The specific record formats used are those of the following three SCL data types:

```
date_time
time_increment
time_zone
```

### Date\_Time Format

The date\_time data type is a record with the following format:

```
year-month-day.hour:minute:second.millisecond
```

The date and time components can be specified alone or together, and the individual elements can be specified as integer values. For example, either of the following values could be specified for the LATEST\_PRINT\_TIME parameter of the CHANGE\_OUTPUT\_ATTRIBUTE command:

```
latest_print_time=1988-11-01.10:30:45
```

or

```
latest_print_time=10:30
```

The date\_time data type can also be specified as a string value. Information on how to specify a string value, or on the use of SCL data types in general, can be found in the NOS/VE System Usage manual.

### Time\_Increment Format

The time\_increment data type uses the same format as the date\_time data type with one exception. The time\_increment data type cannot be specified as a string value.

### Time\_Zone Format

The time\_zone data type is used only in the CHANGE\_TIME\_ZONE command and, therefore, is described in the CHANGE\_TIME\_ZONE description.

## Command Reference

The descriptions of the commands in this section are presented in alphabetical order. Descriptions of subcommands are presented in alphabetical order immediately following their respective utility commands. Refer to the back of this manual for an index to commands and subcommands found in this manual and pertinent commands found in other NOS/VE manuals.

## ACTIVATE\_HISTORY\_LOG Command

- Purpose** Activates the collection of job history information for a NOS/VE system and stores that information in the system's job history log.
- Format** **ACTIVATE\_HISTORY\_LOG** or **ACTHL**  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status of this command.
- Remarks**
- The job history log contains job management statistic entries. These entries describe events such as job initiation, job termination, and job queueing. The job management statistics (JM4 to JM18) are described in the NOS/VE System Performance and Maintenance manual, Volume 1.
  - To terminate the job history log, enter the following commands:  

```
deactivate_history_log  
terminate_log type=history
```
- Examples** This example activates the recording of information in the system job history log:  

```
activate_history_log
```

## ACTIVATE\_PRODUCTION\_ENVIRONMENT Command

- Purpose** Activates the system for production at the end of the deadstart process, making the system available to users. For dual-state systems, this command establishes communications between NOS/VE and NOS or NOS/BE.
- Format** **ACTIVATE\_PRODUCTION\_ENVIRONMENT** or **ACTPE**  
*NETWORK\_ACTIVATION=boolean*  
*STATUS=status variable*
- Parameters** *NETWORK\_ACTIVATION* or *NA*  
 Specifies whether to activate the NAM/VE network or to leave it in its current state. The default is TRUE. *NETWORK\_ACTIVATION* can have one of the following values:
- TRUE**  
 Activates NAM/VE.
- FALSE**  
 Leaves NAM/VE in its current state.
- STATUS**  
 Returns the completion status of this command.
- Remarks** The only time you need to enter the **ACTIVATE\_PRODUCTION\_ENVIRONMENT** command is when you want to make the system available for user jobs and the system is currently activated for console use only. This command executes the following prolog and epilog files associated with the deadstart process:
- SYSTEM\_INITIATION\_PROLOG  
 JOB\_ACTIVATION\_PROLOG  
 NETWORK\_ACTIVATION\_PROLOG (optional)  
 NETWORK\_ACTIVATION\_EPILOG (optional)  
 JOB\_ACTIVATION\_EPILOG  
 SYSTEM\_INITIATION\_EPILOG
- The deadstart process and all of these prolog and epilog files are described in the Site Tailoring chapter of the NOS/VE System Performance and Maintenance manual, Volume 2.

## ACTIVATE\_SET Command

- Purpose** Activates a mass storage set that was not active during the previous deadstart.
- Format** **ACTIVATE\_SET** or **ACTS**  
**SET\_NAME = name**  
**VALIDATE\_SET = boolean**  
**DELETE\_UNRECONCILED\_FILES = boolean**  
**STATUS = status variable**
- Parameters** **SET\_NAME** or **SN**  
 Specifies the name of the set to activate. This parameter is required.
- VALIDATE\_SET** or **VS**  
 Specifies whether to validate permanent files that reside on the volumes of the set. The default is TRUE. **VALIDATE\_SET** can have one of the following values:
- TRUE**  
 Validates permanent files.
- FALSE**  
 Does not validate permanent files.
- DELETE\_UNRECONCILED\_FILES** or **DUF**  
 Specifies whether to delete unreconciled files that reside on volumes in the set. Unreconciled files include all files that either have a catalog entry and no data, or data and no catalog entry. The default is FALSE. **DELETE\_UNRECONCILED\_FILES** can have one of the following values:
- TRUE**  
 Deletes unreconciled files on the set.
- FALSE**  
 Leaves unreconciled files on the set.
- STATUS**  
 Returns the completion status for this command.
- Remarks**
- If member disk units of the set are OFF or DOWN, the system prompts you to indicate whether to activate the set without them.
  - Specify **VALIDATE\_SET=TRUE** when the integrity of any of the member volumes is in doubt. This includes the case when, after changing a volume's state to ON, the volume requires recovery without image.
  - Specify **DELETE\_UNRECONCILED\_FILES=TRUE** to reclaim disk space only when all member disk units in the set are in the ON state and their volumes are undamaged.

## ACTIVATE\_SYSTEM\_LOGGING Command

**Purpose**        Activates the recording of user job log messages to the system job log.

**Format**        **ACTIVATE\_SYSTEM\_LOGGING** or  
                  **ACTSL**  
                  *STATUS=status variable*

**Parameters**   *STATUS*  
                  Returns the completion status of this command.

**Remarks**      Because of the large volume of user job messages, this command creates the potential for writing a large amount of data to the system log.

**Examples**      This example activates the recording of user job log messages to the system job log:

```
activate_system_logging
```

## ACTIVATE\_SYSTEM\_TASKS Command

- Purpose**        Activates the specified asynchronous system tasks.
- Format**        **ACTIVATE\_SYSTEM\_TASKS** or  
**ACTST**  
                  **TASK\_NAMES=**list of keyword  
                  **STATUS=***status variable*
- Parameters**   **TASK\_NAMES** or **TN**  
                  Specifies the names of the asynchronous tasks to be activated. Enter the **DISPLAY\_SYSTEM\_TASK\_DATA** command to display the names of the system tasks. This parameter is required.  
  
                  **STATUS**  
                  Returns the completion status of this command.
- Examples**      This example activates the system tasks **RHINPUT** and **RHOUTPUT**:  
  
                  activate\_system\_tasks task\_names=(RHINPUT,RHOUTPUT)

## ASSIGN\_DEVICE Command

**Purpose** Assigns a tape to a tape unit.

**Format** **ASSIGN\_DEVICE** or **ASSD**  
**ELEMENT\_NAME**=name  
**EXTERNAL\_VSN**=string  
**JOB\_NAME**=name  
**STATUS**=status variable

**Parameters** **ELEMENT\_NAME** or **EN**

Specifies the name of the tape unit on which the tape is mounted. This name must be an element name for a tape unit as defined in the physical configuration file. This parameter is required.

**EXTERNAL\_VSN** or **EVSN**

Specifies the external volume serial number (EVSN) of the tape you mounted on the tape unit specified by the **ELEMENT\_NAME** parameter. You must enter an EVSN as a string; that is, enclosed in apostrophes. This parameter is required.

**JOB\_NAME** or **JN**

Specifies the system-supplied name of the job requesting the tape. This job name appears with the tape mount request in the tape mount display window. This parameter is required only when two jobs request a tape with the same volume serial number at the same time.

**STATUS**

Returns the completion status of this command.

**Remarks**

- The **ASSIGN\_DEVICE** command is required in the following situations:
  - When a job requests an unlabelled tape.
  - When a job specifies different values for the **EVSN** and **RVSN** when requesting a tape.
  - When two jobs request the same external volume serial number.
 A job requesting a labelled tape is automatically assigned the tape unit you mount the tape on.
- The tape mount display window appears when a job requires a tape. The tape mount display window disappears when all tape mount requests have been satisfied.

**Examples** This example assigns the tape with an EVSN of XT0034 to tape unit T50:

```
assign_device external_vsn='XT0034' element_name=T50
```

**CHANGE\_CATALOG\_CONTENTS Command**

**Purpose** Removes damage conditions from file cycles in the specified catalogs. This command can also delete catalog entries for files for which no file cycle data exists.

**Format** **CHANGE\_CATALOG\_CONTENTS** or  
**CHANGE\_CATALOG\_CONTENT** or  
**CHACC**  
**CATALOG**=file or keyword  
**DELETE\_DAMAGE\_CONDITIONS**=list of keyword  
**DELETE\_UNRECONCILED\_FILES**=boolean  
**STATUS**=status variable

**Parameters** **CATALOG** or **C**

Specifies the catalog for which the contents are to be changed. The keyword **ALL** specifies all catalogs for all families in the system. This parameter is required.

**DELETE\_DAMAGE\_CONDITION** or **DDC**

Specifies the damage condition to delete from the files in the specified catalogs. **DELETE\_DAMAGE\_CONDITION** has the following values:

**PARENT\_CATALOG\_RESTORED** or **PCR**

Deletes the **PARENT\_CATALOG\_RESTORED** damage condition from file cycles in the specified catalogs. The **PARENT\_CATALOG\_RESTORED** condition indicates that a file cycle is part of a catalog that has been restored.

**RESPF\_MODIFICATION\_MISMATCH** or **RMM**

Deletes the **RESPF\_MODIFICATION\_MISMATCH** damage condition from file cycles in the specified catalogs. The **RESPF\_MODIFICATION\_MISMATCH** condition indicates that a file cycle has been restored but that any changes made to the file cycle since the most recent backup may have been lost.

**DELETE\_UNRECONCILED\_FILES** or **DUF**

Specifies whether to delete catalog entries for all files for which no file cycle data exists in mass storage. **DELETE\_UNRECONCILED\_FILES** has the following values:

**TRUE**

Deletes unreconciled files.

**FALSE**

Does not delete unreconciled files.

**STATUS**

Returns the completion status of this command.

**Remarks** You must enter a value for at least one of the parameters **DELETE\_DAMAGE\_CONDITION** or **DELETE\_UNRECONCILED\_FILES**.

## CHANGE\_CATALOG\_CONTENTS Command

**Examples** This example deletes the RESPF\_MODIFICATION\_MISMATCH damage condition from all catalogs in all families:

```
change_catalog_contents catalog=all ..  
../delete_damage_condition=respf_modification_mismatch
```

**CHANGE\_DATE Command**

- Purpose** Changes the date the system uses as the current date.
- Format** **CHANGE\_DATE** or **CHAD**  
**MONTH=integer** or **keyword**  
**DAY=integer**  
**YEAR=integer**  
*STATUS=status variable*
- Parameters** **MONTH** or **M**  
 Specifies the current month. The value for **MONTH** can be an integer in the range from 1 to 12, corresponding to the months January through December. The name of the month may also be used as a keyword. This parameter is required.
- DAY** or **D**  
 Specifies the day of the month. The value for **DAY** must be an integer in the range from 1 to 31. This parameter is required.
- YEAR** or **Y**  
 Specifies the current year. The value for **YEAR** must be a 4-digit integer in the range from 1900 to 2155. This parameter is required.
- STATUS**  
 Returns the completion status of this command.
- Remarks** This command is valid only for standalone systems. For dual-state systems, changing the date on NOS (or NOS/BE) changes the date for NOS/VE also.
- Examples** This example changes the date on the system to January 13, 1989:  
 change\_date year=1989 month=1 day=13

## CHANGE\_DEFAULT\_DATE\_FORMAT Command

**Purpose** Specifies the default format for the date returned by the system.

**Format** CHANGE\_DEFAULT\_DATE\_FORMAT or  
CHADDF

FORMAT=keyword

STATUS=status variable

**Parameters** FORMAT or F

Specifies the default date format. The initial default date format is MONTH. This parameter is required. FORMAT has the following values:

MONTH

Returns the date as shown:

January 13, 1989

MDY

Returns the date in the order, month, day, year, as shown:

01/13/89

DMY

Returns the date in the order, day, month, year, as shown:

13.01.89

ISOD

Returns the date in the order, year, month, day, as shown:

1989-01-13

ISOD means International Standard Organization Date.

ORDINAL

Returns the date in Julian form as shown:

1989013

STATUS

Returns the completion status of this command.

**CHANGE\_DEFAULT\_TIME\_FORMAT Command**

- Purpose** Specifies the default format for the time returned by the system.
- Format** **CHANGE\_DEFAULT\_TIME\_FORMAT** or **CHADTF**  
**FORMAT=keyword**  
*STATUS=status variable*
- Parameters** **FORMAT** or **F**  
 Specifies the default time format. The initial default time format is AMPM. This parameter is required. **FORMAT** has the following values:
- AMPM**  
 Returns the time in hours and minutes on a 12-hour clock followed by AM or PM as shown:  
 6:38 PM
- HMS**  
 Returns the time in hours, minutes, and seconds on a 24-hour clock as shown:  
 18:38:14
- MILLISECOND** or **MS**  
 Returns the time in hours, minutes, seconds, and milliseconds on a 24-hour clock as shown:  
 18:38:14.656
- ISOT**  
 Returns the time in hours, minutes, seconds, and centiseconds as shown:  
 18:38:14,66  
 ISOT stands for International Standard Organization Time.
- STATUS**  
 Returns the completion status of this command.
- Remarks** The time format in system and job logs is always in millisecond format.

## CHANGE\_DUAL\_STATE\_ENVIRONMENT Command

- Purpose** Specifies the link attribute values to display when a user enters the DISPLAY\_LINK\_ATTRIBUTES command.
- Format** CHANGE\_DUAL\_STATE\_ENVIRONMENT or CHADSE  
*DISPLAY\_CHARGE\_LINK\_ATTRIBUTE = boolean*  
*DISPLAY\_FAMILY\_LINK\_ATTRIBUTE = boolean*  
*DISPLAY\_PROJECT\_LINK\_ATTRIBUTE = boolean*  
*DISPLAY\_USER\_LINK\_ATTRIBUTE = boolean*  
*STATUS = status variable*
- Parameters** *DISPLAY\_CHARGE\_LINK\_ATTRIBUTE* or *DCLA*  
Specifies whether the CHARGE link attribute value will be displayed. The default is TRUE. *DISPLAY\_CHARGE\_LINK\_ATTRIBUTE* has the following values:
- TRUE  
Displays the CHARGE link attribute value.
  - FALSE  
Does not display the CHARGE link attribute value.
- DISPLAY\_FAMILY\_LINK\_ATTRIBUTE* or *DFLA*  
Specifies whether the FAMILY link attribute value will be displayed. The default is TRUE. *DISPLAY\_FAMILY\_LINK\_ATTRIBUTE* has the following values:
- TRUE  
Displays the FAMILY link attribute value.
  - FALSE  
Does not display the FAMILY link attribute value.
- DISPLAY\_PROJECT\_LINK\_ATTRIBUTE* or *DPLA*  
Specifies whether the PROJECT link attribute value will be displayed. The default is TRUE. *DISPLAY\_PROJECT\_LINK\_ATTRIBUTE* has the following values:
- TRUE  
Displays the PROJECT link attribute value.
  - FALSE  
Does not display the PROJECT link attribute value.

*DISPLAY\_USER\_LINK\_ATTRIBUTE* or *DULA*

Specifies whether the USER link attribute value will be displayed. The default is TRUE. *DISPLAY\_USER\_LINK\_ATTRIBUTE* has the following values:

TRUE

Displays the USER link attribute value.

FALSE

Does not display the USER link attribute value.

*STATUS*

Returns the completion status for this command.

**Remarks** For any link attribute that is suppressed using this command, the following message appears in place of the attribute value on the user's display:

value suppressed

**Examples** This example suppresses the displaying of the USER and PROJECT link attributes in a user's display:

```
change_dual_state_environment display_user_link_attribute=false ..  
../display_project_link_attribute=false
```

**CHANGE\_INPUT\_ATTRIBUTE Command**

**Purpose** Changes the attributes for batch jobs in the input queue. This command can only change the attributes of batch jobs that have not yet been initiated.

You can use the SELECT\_JOBS subcommand of the MANAGE\_JOBS utility to create a list variable type as input for the NAME parameter. You must execute the CHANGE\_INPUT\_ATTRIBUTES command within the utility unless you previously created the variable outside of the utility.

**Format** **CHANGE\_INPUT\_ATTRIBUTE** or  
**CHANGE\_INPUT\_ATTRIBUTES** or  
**CHAIA**

**NAME**=list of name  
**COMMENT\_BANNER**=string  
**COPIES**=integer  
**CPU\_TIME\_LIMIT**=integer or keyword  
**DEVICE**=name or keyword  
**EARLIEST\_PRINT\_TIME**=date\_time or keyword  
**EARLIEST\_RUN\_TIME**=date\_time or keyword  
**EXTERNAL\_CHARACTERISTICS**=string or keyword  
**FORMS\_CODE**=string or keyword  
**JOB\_ABORT\_DISPOSITION**=keyword  
**JOB\_CLASS**=name  
**JOB\_DEFERRED\_BY\_OPERATOR**=boolean  
**JOB\_DEFERRED\_BY\_USER**=boolean  
**JOB\_QUALIFIER**=list of name or keyword  
**JOB\_RECOVERY\_DISPOSITION**=keyword  
**LATEST\_PRINT\_TIME**=date\_time or keyword  
**LATEST\_RUN\_TIME**=date\_time or keyword  
**LOGIN\_ACCOUNT**=name or keyword  
**LOGIN\_PROJECT**=name or keyword  
**MAGNETIC\_TAPE\_LIMIT**=integer or keyword  
**MAXIMUM\_WORKING\_SET**=integer or keyword  
**OPERATOR\_FAMILY**=name  
**OPERATOR\_USER**=name  
**OUTPUT\_CLASS**=keyword  
**OUTPUT\_DEFERRED\_BY\_USER**=boolean  
**OUTPUT\_DESTINATION**=name or string  
**OUTPUT\_DESTINATION\_USAGE**=name or keyword  
**OUTPUT\_DISPOSITION**=file or keyword  
**OUTPUT\_PRIORITY**=keyword  
**PURGE\_DELAY**=time\_increment or keyword  
**REMOTE\_HOST\_DIRECTIVE**=string  
**ROUTING\_BANNER**=string  
**SRU\_LIMIT**=integer or keyword  
**STATION**=name or keyword  
**USER\_INFORMATION**=string  
**USER\_JOB\_NAME**=name  
**VERTICAL\_PRINT\_DENSITY**=keyword  
**VFU\_LOAD\_PROCEDURE**=name or keyword  
**STATUS**=status variable

**Parameters** **NAME** or **NAMES** or **N**

Specifies the names of the jobs for which input attributes are to be changed. You can specify system-supplied job names or user-supplied job names. This parameter is required.

**COMMENT\_BANNER** or **CB**

Specifies the 0- to 31-character comment banner string to use with output files produced by the jobs specified by the **NAME** parameter.

**COPIES** or **C**

Specifies how many copies to print of output files produced by jobs specified by the **NAME** parameter. **COPIES** can be an integer from from 1 to 10.

**CPU\_TIME\_LIMIT** or **CTL**

Specifies the maximum number of seconds of CPU time to allow for jobs specified by the **NAME** parameter. **CPU\_TIME\_LIMIT** can be an integer from 1 to 140,737,488,355,327 or one of the following keywords:

**SYSTEM\_DEFAULT**

Specifies the current system default value.

**UNLIMITED**

Specifies that there is no CPU time limit except that imposed by system capabilities.

**UNSPECIFIED**

The system chooses a default value based on the most recent job class specification:

- If you specified **JOB\_CLASS=AUTOMATIC** on the **SUBMIT\_JOB**, **JOB**, or **CHANGE\_INPUT\_ATTRIBUTES** command, the system default is used.
- If you specify a specific job class for the **JOB\_CLASS** parameter on the **SUBMIT\_JOB**, **JOB**, or **CHANGE\_INPUT\_ATTRIBUTES** command, the job class default is used.

**DEVICE** or **D**

Specifies the name of the printer on which to print output files produced by jobs specified by the **NAME** parameter. The keyword **AUTOMATIC** specifies that the system can select any printer at the specified station that matches the external characteristics and forms code specifications for the job's output.

*EARLIEST\_PRINT\_TIME* or *EPT*

Specifies the earliest date and time when the system can print output files produced by jobs specified by the NAME parameter. Values can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day.hour:minute:second.millisecond

The keyword NONE specifies no restrictions on the earliest time when the system can print output files. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

*EARLIEST\_RUN\_TIME* or *ERT*

Specifies the earliest time to initiate jobs specified by the NAME parameter. Values can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day.hour:minute:second.millisecond

The keyword NONE specifies no restrictions on the earliest time when the system can print output files. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

*EXTERNAL\_CHARACTERISTICS* or *EC*

Specifies the external characteristics string to use to match output files, produced by jobs specified by the NAME parameter, with a printer. External characteristics are site-defined. EXTERNAL\_CHARACTERISTICS can be a 0 to 6-character string or the keyword NORMAL.

*FORMS\_CODE* or *FC*

Specifies the forms code string to use to match output files, produced by jobs specified by the NAME parameter, with a printer. Forms codes are site-defined. FORMS\_CODE can be a 0- to 6-character string or the keyword NORMAL.

*JOB\_ABORT\_DISPOSITION* or *JAD*

Specifies the disposition for jobs specified by the NAME parameter that abort because of a system failure. JOB\_ABORT\_DISPOSITION can have one of the following values:

RESTART or R

Resubmits the job to execute from the beginning.

TERMINATE or T

Discards the job.

*JOB\_CLASS* or *JC*

Specifies the job class for jobs specified by the NAME parameter.

*JOB\_DEFERRED\_BY\_OPERATOR* or *JDBO*

Specifies the operator-controlled scheduling state for jobs specified by the *NAME* parameter. *JOB\_DEFERRED\_BY\_OPERATOR* can have one of the following values:

## TRUE

Places jobs in a deferred state, making them ineligible for initiation.

## FALSE

Removes jobs from the deferred state, making them eligible for initiation.

*JOB\_DEFERRED\_BY\_USER* or *JDBU*

Specifies the user-controlled scheduling state for jobs specified by the *NAME* parameter. *JOB\_DEFERRED\_BY\_USER* can have one of the following values:

## TRUE

Places jobs in a deferred state, making them ineligible for initiation.

## FALSE

Removes jobs from the deferred state, making them eligible for initiation.

*JOB\_QUALIFIER* or *JOB\_QUALIFIERS* or *JQ*

Specifies job qualifiers for jobs specified by the *NAME* parameter. Job qualifiers are site-defined. *JOB\_QUALIFIER* can be a list of names or one of the following values:

## NONE

No job qualifiers are assigned to the specified jobs.

## SYSTEM\_DEFAULT

Assigns the system default list of job qualifiers to the specified jobs.

*JOB\_RECOVERY\_DISPOSITION* or *JRD*

Specifies the disposition of jobs specified by the *NAME* parameter if a system interrupt occurs while a job is executing. *JOB\_RECOVERY\_DISPOSITION* can have one of the following values:

## CONTINUE or C

When the system is restarted, recovers the job to the state it was in at the time of the interrupt and then continues execution from that point. If the job recovery fails, the *JOB\_ABORT\_DISPOSITION* attribute determines the job's disposition.

## RESTART or R

Resubmits the job to execute from the beginning.

## TERMINATE or T

Discards the job.

*LATEST\_PRINT\_TIME* or *LPT*

Specifies the latest date and time that the system can print the output files produced by jobs specified by the NAME parameter. *LATEST\_PRINT\_TIME* can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day.hour:minute:second.millisecond

The keyword NONE specifies no restrictions on the latest time when the system can print the output files. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

*LATEST\_RUN\_TIME* or *LRT*

Specifies the latest date and time when the system can initiate jobs specified by the NAME parameter. *LATEST\_RUN\_TIME* can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day.hour:minute:second.millisecond

The keyword NONE specifies no restrictions on the latest time when the system can initiate the jobs. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

*LOGIN\_ACCOUNT* or *LA*

Specifies the account name for the jobs specified by the NAME parameter. The keyword UNSPECIFIED specifies the login user's validation default account.

*LOGIN\_PROJECT* or *LP*

Specifies the project name for the jobs specified by the NAME parameter. The keyword UNSPECIFIED specifies the login user's validation default project.

*MAGNETIC\_TAPE\_LIMIT* or *MTL*

Specifies the maximum number of tapes files that can be opened simultaneously by jobs specified by the NAME parameter. *MAGNETIC\_TAPE\_LIMIT* can be an integer from 0 to 100 or one of the following keywords:

SYSTEM\_DEFAULT

Specifies the current system default value.

UNLIMITED

No maximum tape limit except that imposed by system capabilities.

UNSPECIFIED

Tape limit is not defined and job tape requirements are unknown.

*MAXIMUM\_WORKING\_SET* or *MAXWS*

Specifies the maximum working set size for the jobs specified by the *NAME* parameter. *MAXIMUM\_WORKING\_SET* can be an integer from 20 to 65,000 or one of the following keywords:

*SYSTEM\_DEFAULT*

Specifies the current system default value.

*UNLIMITED*

No maximum working set limit except that imposed by system capabilities.

*UNSPECIFIED*

The system chooses a default value based on the most recent job class specification:

- If you specified *JOB\_CLASS=AUTOMATIC* on the *SUBMIT\_JOB*, *JOB*, or *CHANGE\_INPUT\_ATTRIBUTES* command, the system default is used.
- If you specify a specific job class for the *JOB\_CLASS* parameter on the *SUBMIT\_JOB*, *JOB*, or *CHANGE\_INPUT\_ATTRIBUTES* command, the job class default is used.

*OPERATOR\_FAMILY* or *OF*

Specifies the family name of the operator of the private station or the remote system on which the output files produced by jobs specified by the *NAME* parameter are to be printed.

*OPERATOR\_USER* or *OU*

Specifies the user name for the private station operator or the remote system operator to print the output files produced by jobs specified by the *NAME* parameter.

If the *OUTPUT\_DESTINATION\_USAGE* attribute is *PRIVATE* or *NTF*, the operator user and operator family identify the private station operator or the remote system operator to print the output files. The operator user is also the control user in this case.

*OUTPUT\_CLASS* or *OC*

Specifies the output class of output files produced by jobs specified by the *NAME* parameter. The output class defines the initial priority, the maximum priority, an aging interval, and an aging factor. The keyword *NORMAL* specifies an initial priority of 100, a maximum priority of 3,700, an aging interval of one second, and an aging factor of one priority unit per aging interval.

*OUTPUT\_DEFERRED\_BY\_USER* or *ODBU*

Specifies the user-controlled state of output files produced by jobs specified by the NAME parameter. OUTPUT\_DEFERRED\_BY\_USER can have one of the following values:

**TRUE**

Places the output files in a deferred state, making them ineligible for printing.

**FALSE**

Removes the output files from the deferred state, making them eligible for printing.

*OUTPUT\_DESTINATION* or *ODE*

Specifies the location name of the system where the output files, produced by jobs specified by the NAME parameter, are to be sent for printing. This applies only to output files whose OUTPUT\_DESTINATION\_USAGE output attribute is QTF or NTF. For output files with any other values for OUTPUT\_DESTINATION\_USAGE, this parameter is ignored.

*OUTPUT\_DESTINATION\_USAGE* or *ODU*

Specifies the kind of CDCNET print station where the output files, produced by jobs specified by the NAME parameter, are to be sent; or the queue file transfer application that forwards the output files to a remote system. OUTPUT\_DESTINATION\_USAGE can have one of the following values:

**DUAL\_STATE**

Output files are printed by the NOS or NOS/BE partner system. If this parameter is specified, the only meaningful attributes are FORMS\_CODE, COPIES, ROUTING\_BANNER, and REMOTE\_HOST\_DIRECTIVE.

**NTF**

Output files are forwarded by the Network Transfer Facility to a remote system for printing.

**PRIVATE**

Output files are printed at a private CDCNET batch I/O station when under control of the user name and family name given by the OPERATOR\_USER and OPERATOR\_FAMILY attributes. If you specify this value, the OUTPUT\_DESTINATION and REMOTE\_HOST\_DIRECTIVE attributes are ignored.

**PUBLIC**

Output files are printed at a public CDCNET batch I/O station. If you specify this value, the OPERATOR\_FAMILY, OPERATOR\_USER, OUTPUT\_DESTINATION, and REMOTE\_HOST\_DIRECTIVE attributes are ignored.

**QTF**

Output files are forwarded by the Remote Host Facility to a remote system for printing. The remote system is specified by the OUTPUT\_DESTINATION attribute.

*OUTPUT\_DISPOSITION* or *ODI*

Specifies the disposition of the standard output for jobs specified by the NAME parameter. OUTPUT\_DISPOSITION can be a file name or one the following keywords:

*DISCARD\_ALL\_OUTPUT* or *DAO*

Discards all output files. This value is meaningful only when the job destination is a NOS/VE or Network Transfer Facility (NTF) system.

*DISCARD\_STANDARD\_OUTPUT* or *DSO*

Discards standard output files. This value is meaningful only when the job destination is a NOS/VE or NTF system.

*LOCAL* or *L*

Prints all output files at the destination system rather than being returned to the originating user's default output station.

If the job destination is a NOS/VE system, the destination system's default for the OUTPUT\_DESTINATION\_USAGE parameter is used rather than the job's normal default value.

*PRINTER* or *P*

Returns all output files to the originating user's default output station.

*WAIT\_QUEUE* or *WQ*

Returns all output files to the originating user's \$WAIT\_QUEUE subcatalog. If the job is transferred to a remote system, the job name serves as the file name in \$WAIT\_QUEUE subcatalog.

*OUTPUT\_PRIORITY* or *OP*

Specifies an increment to add to the initial priorities of the output files produced by jobs specified by the NAME parameter. OUTPUT\_PRIORITY can have the following values:

*LOW*

Leaves the current output priority unchanged.

*MEDIUM*

Increases the current output priority by 1,500.

*HIGH*

Increases the current output priority by 3,000.

*PURGE\_DELAY* or *PD*

Specifies how much time output files, produced by jobs specified by the NAME parameter, remain in the output queue after being printed. PURGE\_DELAY can be a time\_increment data type or the keyword NONE. The time\_increment data type is a record consisting of several integer fields in the following format:

years-months-days.hours:minutes:seconds.milliseconds

The keyword NONE specifies that the output file is purged from the output queue immediately after printing. For more information about the time\_increment data type, refer to the NOS/VE System Usage manual.

**REMOTE\_HOST\_DIRECTIVE** or **RHD**

Specifies a 0- to 256-character string that controls the processing of output files or that controls processing of jobs submitted to remote systems. This string is interpreted as follows:

- To control output processing of output files, this string should contain one of the following:
  - A PRINT\_FILE command for output files to be printed on a NOS/VE system.
  - A ROUTE command for output files to be printed on a non-NOS/VE system.
  - The ROUTE command's parameters for output files to be printed on the non-NOS/VE side of a dual-state system.
- If this string is intended to control processing of a job submitted to a remote system, then this string should contain one of the following:
  - A SUBMIT\_JOB command for jobs submitted to remote NOS/VE systems for processing.
  - A ROUTE command for jobs submitted to non-NOS/VE systems for processing.

**ROUTING\_BANNER** or **RB**

Specifies a 0- to 31-character routing banner string to be used with the output files produced by jobs specified by the NAME parameter.

**SRU\_LIMIT** or **SL**

Specifies the maximum number of system resource units (SRUs) to allow for jobs specified by the NAME parameter. SRU\_LIMIT can be an integer from 1 to 140,737,488,355,327 or one of the following keywords:

**SYSTEM\_DEFAULT**

Specifies the current system default value.

**UNLIMITED**

Specifies that there is no SRU limit except that imposed by system capabilities.

**UNSPECIFIED**

The system chooses a default value based on the most recent job class specification:

- If you specified JOB\_CLASS=AUTOMATIC on the SUBMIT\_JOB, JOB, or CHANGE\_INPUT\_ATTRIBUTES command, the system default is used.
- If you specify a specific job class for the JOB\_CLASS parameter on the SUBMIT\_JOB, JOB, or CHANGE\_INPUT\_ATTRIBUTES command, the job class default is used.

*STATION* or *S*

Specifies the name of the I/O station or control facility to which the output files, produced by jobs specified by the NAME parameter, are sent. The keyword AUTOMATIC specifies the system default station name.

*USER\_INFORMATION* or *UI*

Specifies a 0- to 256-character user information string associated with jobs specified by the NAME parameter.

*USER\_JOB\_NAME* or *UJN*

Specifies the user-supplied names for the jobs specified by the NAME parameter.

*VERTICAL\_PRINT\_DENSITY* or *VPD*

Specifies the vertical print density to be used in printing output files produced by jobs specified by the NAME parameter. VERTICAL\_PRINT\_DENSITY can have one of the following values:

*SIX*

Selects a printer capable of printing six lines per inch. If the printer offers several print densities, the printer is set to six lines per inch before printing the file.

*EIGHT*

Selects a printer capable of printing eight lines per inch. If the printer offers several print densities, the printer is set to eight lines per inch before printing the file.

*NONE*

Selects a printer without regard for its vertical print density capability.

*FILE*

Selects a printer and sets the vertical print density according to the VERTICAL\_PRINT\_DENSITY attribute associated with the source file. If the VERTICAL\_PRINT\_DENSITY attribute is 6, six lines per inch is set. If the attribute is in the range from 7 to 12, eight lines per inch is set.

*VFU\_LOAD\_PROCEDURE* or *VLP*

Specifies the name of a procedure file containing the vertical forms unit (VFU) load image to use with the output files produced by jobs specified by the NAME parameter. The keyword NONE specifies that the output files are routed to a printer without a VFU load image or to a printer with its default VFU load image.

*STATUS*

Returns the completion status for this command.

**CHANGE\_JOB\_ATTRIBUTE\_DEFAULTS Command**

**Purpose** Changes the system default values for specified job attributes. This command does not change job class defaults or user validation defaults.

**Format** **CHANGE\_JOB\_ATTRIBUTE\_DEFAULT** or **CHANGE\_JOB\_ATTRIBUTE\_DEFAULTS** or **CHAJAD**

*JOB\_MODE=keyword*  
*CPU\_TIME\_LIMIT=integer or keyword*  
*JOB\_ABORT\_DISPOSITION=keyword*  
*JOB\_CLASS=name*  
*JOB\_DEFERRED\_BY\_OPERATOR=boolean*  
*JOB\_QUALIFIER=list of name or keyword*  
*JOB\_RECOVERY\_DISPOSITION=keyword*  
*LOGIN\_FAMILY=name*  
*MAGNETIC\_TAPE\_LIMIT=integer or keyword*  
*MAXIMUM\_WORKING\_SET=integer or keyword*  
*OUTPUT\_CLASS=name*  
*OUTPUT\_DEFERRED\_BY\_OPERATOR=boolean*  
*OUTPUT\_DESTINATION\_USAGE=keyword*  
*PURGE\_DELAY=time\_increment or keyword*  
*SITE\_INFORMATION=string*  
*SRU\_LIMIT=integer or keyword*  
*STATION=name*  
*VERTICAL\_PRINT\_DENSITY=keyword*  
*STATUS=status variable*

**Parameters** *JOB\_MODE* or *JM*

Specifies the job mode to which job attribute default changes are to be applied. The default is ALL. *JOB\_MODE* has the following values:

**BATCH** or **B**

Changes apply to batch job attribute defaults.

**INTERACTIVE** or **I**

Changes apply to interactive job attribute defaults.

**ALL**

Changes apply to batch and interactive job attribute defaults.

*CPU\_TIME\_LIMIT* or *CTL*

Specifies the system default for the maximum number of seconds of CPU time to allow for a job. This parameter applies only to jobs that were assigned to a job class by the system. The default is UNLIMITED for batch and interactive jobs.

Jobs that the system assigns to a job class, but do not specify a CPU time limit, use the job attribute default or the user's validation limit, whichever is smaller.

Jobs that specify a job class, but do not specify a CPU time limit, use the job class CPU time limit or the user's validation limit, whichever is smaller.

CPU\_TIME\_LIMIT has the following values:

**UNLIMITED**

Specifies that there is no CPU time limit except that imposed by system capabilities.

**REQUIRED**

Specifies that a value for this attribute is required for all jobs. This value is valid only for systems connected through NAM/CDCNET.

**JOB\_ABORT\_DISPOSITION** or **JAD**

Specifies the system default for the disposition of a job that aborts because of a system failure. The initial default at deadstart for batch and interactive jobs is TERMINATE. JOB\_ABORT\_DISPOSITION has the following values:

**RESTART** or **R**

Resubmits the job for execution from the beginning.

**TERMINATE** or **T**

Discards the job.

**JOB\_CLASS** or **JC**

Specifies the default for the JOB\_CLASS attribute of a job. The default for batch jobs is BATCH. The default for interactive jobs is INTERACTIVE.

**JOB\_DEFERRED\_BY\_OPERATOR** or **JDBO**

Specifies the system default operator-controlled scheduling state for all batch jobs entering the input queue. This does not affect batch jobs already in the queue. Use the CHANGE\_INPUT\_ATTRIBUTE command to remove jobs from the deferred state and make them eligible for initiation. JOB\_DEFERRED\_BY\_OPERATOR can have one of the following values:

**TRUE**

Places all batch jobs entering the input queue in a deferred state, making them ineligible for initiation.

**FALSE**

Permits all batch jobs entering the input queue to be eligible for initiation.

**JOB\_QUALIFIER** or **JOB\_QUALIFIERS** or **JQ**

Specifies the system default of up to five job qualifier names for jobs that have not been assigned a job qualifier. The default is NONE for batch and interactive jobs. JOB\_QUALIFIER has the following keyword values:

**NONE**

Specifies that no name is assigned to the job.

**REQUIRED**

Specifies that a value for this attribute is required for all jobs. This value is valid only for systems connected through NAM/CDCNET.

*JOB\_RECOVERY\_DISPOSITION* or *JRD*

Specifies the system default for the disposition of a job by the active job recovery process if a system interrupt occurs while the job is executing. The initial default at deadstart for batch and interactive jobs is CONTINUE. *JOB\_RECOVERY\_DISPOSITION* has the following values:

CONTINUE or C

When the system is restarted, recovers the job to the state the job was in at the time of the interrupt and then continues execution from that point. If the job recovery fails, the *JOB\_ABORT\_DISPOSITION* attribute determines the job's disposition.

RESTART or R

Resubmits the job.

TERMINATE or T

Discards the job.

*LOGIN\_FAMILY* or *LF*

Specifies the system default for the *LOGIN\_FAMILY* attribute of a job. The initial default at deadstart for batch and interactive jobs is the family name of the system job.

*MAGNETIC\_TAPE\_LIMIT* or *MTL*

Specifies the system default for the maximum number of tape files that can be opened simultaneously by a job that does not specify tape requirements. The default is UNSPECIFIED for batch and interactive jobs. The value for *MAGNETIC\_TAPE\_LIMIT* can be an integer from 0 to 100 or one of the following keywords:

UNSPECIFIED

Tape limit is not defined and job tape requirements are unknown.

UNLIMITED

Specifies that there is no maximum tape limit except that imposed by system capabilities.

REQUIRED

Specifies that a value for this attribute is required for all jobs. This value is valid only for systems connected through NAM/CDCNET.

*MAXIMUM\_WORKING\_SET* or *MAXWS*

Specifies the system default for the maximum job working set size. The default is 1,000 for batch and interactive jobs. *MAXIMUM\_WORKING\_SET* can be an integer from 20 to 65,000 or one of the following keywords:

REQUIRED

Specifies that a value for this attribute is required for all jobs. This value is valid only for systems connected through NAM/CDCNET.

UNLIMITED

Specifies that there is no maximum working set limit except that imposed by system capabilities.

*OUTPUT\_CLASS* or *OC*

Specifies the system default for the job output class. *NORMAL* is the only output class that can be specified for batch and interactive jobs.

*OUTPUT\_DEFERRED\_BY\_OPERATOR* or *ODBO*

Specifies the system default operator-controlled state for all files entering the output queue. This has no effect on files already in the output queue. Use the *CHANGE\_OUTPUT\_ATTRIBUTE* command to remove output files from the deferred state and make them eligible for printing. *OUTPUT\_DEFERRED\_BY\_OPERATOR* can have one of the following values:

*TRUE*

Places all files entering the output queue in a deferred state, making them ineligible for printing.

*FALSE*

Permits all files entering the output queue to be eligible for printing.

*OUTPUT\_DESTINATION\_USAGE* or *ODU*

Specifies the system default for the *OUTPUT\_DESTINATION\_USAGE* attribute of a job. The initial default at deadstart for batch and interactive jobs is *DUAL\_STATE* for dual-state operations and *PUBLIC* for *NOS/VE* standalone. *OUTPUT\_DESTINATION\_USAGE* has the following values:

*DUAL\_STATE*

*NOS* (or *NOS/BE*) controls the printing of the output file.

*NTF*

The Network Transfer Facility forwards the output file to a remote system for printing.

*PRIVATE*

Prints the output file at a private CDCNET batch I/O station when under control of the user name and family name given by the *OPERATOR\_USER* and *OPERATOR\_FAMILY* job attributes.

*PUBLIC*

Prints the output file at a public CDCNET batch I/O station.

*QTF*

The remote host facility forwards the output file to a remote system for printing.

*PURGE\_DELAY* or *PD*

Specifies how long output files remain in the output queue after being printed. *PURGE\_DELAY* can be a *time\_increment* data type or the keyword *NONE*. The *time\_increment* data type is a record consisting of several integer fields in the following format:

years-months-days.hours:minutes:seconds.milliseconds

The keyword *NONE* specifies that the output files are purged from the output queue immediately after printing. For more information about the *time\_increment* data type, refer to the NOS/VE System Usage manual.

*SITE\_INFORMATION* or *SI*

Specifies the system default for the *SITE\_INFORMATION* attribute of a job. The initial default at deadstart for batch and interactive jobs is an empty string.

*SRU\_LIMIT* or *SL*

Specifies the system default for the maximum number of system resource units (SRUs) allowed for a job. The initial default is *UNLIMITED* for batch and interactive jobs. The value for *SRU\_LIMIT* can be an integer from 1 to 140,737,488,355,327 or one of the following keywords:

*REQUIRED*

Specifies that a value for this attribute is required for all jobs. This value is valid only for systems connected through NAM/CDCNET.

*UNLIMITED*

Specifies that there is no SRU limit except that imposed by system capabilities.

*STATION* or *S*

Specifies the system default for the *STATION* attribute of a job. *STATION* can be any valid I/O station name. The initial default at deadstart for batch and interactive jobs is the keyword *AUTOMATIC*.

*VERTICAL\_PRINT\_DENSITY* or *VPD*

Specifies the system default for the *VERTICAL\_PRINT\_DENSITY* attribute of a job. The initial default at deadstart for batch and interactive jobs is *FILE*. *VERTICAL\_PRINT\_DENSITY* has the following values:

**SIX**

Selects a printer capable of printing six lines per inch. If the printer offers several print densities, the printer is set to six lines per inch before printing the file.

**EIGHT**

Selects a printer capable of printing eight lines per inch. If the printer offers several print densities, the printer is set to eight lines per inch before printing the file.

**NONE**

Selects a printer without regard for its vertical print density capability.

**FILE**

Selects a printer and sets the vertical print density according to the *VERTICAL\_PRINT\_DENSITY* attribute associated with the source file. If the *VERTICAL\_PRINT\_DENSITY* attribute is 6, six lines per inch is set. If the attribute is in the range from 7 to 12, eight lines per inch is set.

*STATUS*

Returns the completion status of this command.

**Remarks**

- If you specify *REQUIRED* as the default for any job attribute on a system connected through a network other than *NAM/CDCNET*, interactive users cannot log in. This is because the login statements for these other network applications do not have parameters that correspond to these attributes.
- You can display the default job attribute values using the *DISPLAY\_JOB\_ATTRIBUTE\_DEFAULTS* command.
- You may want to add this command to the *SYSTEM\_INITIATION\_PROLOG* file. The *SYSTEM\_INITIATION\_PROLOG* file is described in the *NOS/VE System Performance and Maintenance manual, Volume 2*.

**Examples**

This example sets the default value for the *LOGIN\_FAMILY* job attribute to *NVE*:

```
change_job_attribute_defaults job_mode=all login_family=nve
```

## CHANGE\_OUTPUT\_ATTRIBUTE Command

**Purpose** Changes selected attributes of one or more files in the output queue.

You can use the `SELECT_OUTPUT` subcommand of the `MANAGE_OUTPUT` utility to create a list variable as input for the `NAME` parameter. You must execute the `CHANGE_OUTPUT_ATTRIBUTES` command within the utility unless you previously created the variable outside of the utility.

**Format** `CHANGE_OUTPUT_ATTRIBUTE` or  
`CHANGE_OUTPUT_ATTRIBUTES` or  
`CHAOA`

`NAME`=list of name  
`COMMENT_BANNER`=string  
`COPIES`=integer  
`DEVICE`=name or keyword  
`EARLIEST_PRINT_TIME`=date\_time or keyword  
`EXTERNAL_CHARACTERISTICS`=string or keyword  
`FORMS_CODE`=string or keyword  
`LATEST_PRINT_TIME`=date\_time or keyword  
`OPERATOR_FAMILY`=name  
`OPERATOR_USER`=name  
`OUTPUT_CLASS`=keyword  
`OUTPUT_DEFERRED_BY_OPERATOR`=boolean  
`OUTPUT_DEFERRED_BY_USER`=boolean  
`OUTPUT_DESTINATION`=name or string  
`OUTPUT_DESTINATION_USAGE`=name or keyword  
`OUTPUT_PRIORITY`=keyword  
`PURGE_DELAY`=time\_increment or keyword  
`REMOTE_HOST_DIRECTIVE`=string  
`REPRINT_DISPOSITION`=keyword  
`ROUTING_BANNER`=string  
`STATION`=name or keyword  
`VERTICAL_PRINT_DENSITY`=keyword  
`VFU_LOAD_PROCEDURE`=name or keyword  
`STATUS`=status variable

**Parameters** `NAME` or `NAMES` or `N`

Specifies the names of the output files for which attributes are to be changed. You can specify system-supplied file names or user-supplied file names. This parameter is required.

`COMMENT_BANNER` or `CB`

Specifies the 0- to 31-character comment banner string to use for output files specified by the `NAME` parameter.

`COPIES` or `C`

Specifies how many copies to print of output files specified by the `NAME` parameter. `COPIES` can be an integer from from 1 to 10.

**DEVICE** or **D**

Specifies the name of the printer on which output files specified by the NAME parameter are to be printed. The keyword AUTOMATIC specifies that the system can select any printer at the specified station that matches the external characteristics and forms code specifications for the output files.

**EARLIEST\_PRINT\_TIME** or **EPT**

Specifies the earliest date and time when the system can print the output files specified by the NAME parameter. Values can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day.hour:minute:second.millisecond

The keyword NONE specifies no restrictions on the earliest time when the system can print output files. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

**EXTERNAL\_CHARACTERISTICS** or **EC**

Specifies external characteristics string to use to match output files, specified by the NAME parameter, with a printer. External characteristics are site-defined. EXTERNAL\_CHARACTERISTICS can be a the 0- to 6-character string or the keyword NORMAL.

**FORMS\_CODE** or **FC**

Specifies the forms code string to use to match output files, specified by the NAME parameter, with a printer. Forms codes are site-defined. FORMS\_CODE can be a 0- to 6-character string or the keyword NORMAL.

**LATEST\_PRINT\_TIME** or **LPT**

Specifies the latest date and time when the system can print output files specified by the NAME parameter. If an output file has not printed by this date and time, the system discards the output file. Values can be a date\_time data type or the keyword NONE. The date\_time data type is a record consisting of several integer fields in the following format:

year-month-day-hour.minute:second.millisecond

The keyword NONE specifies no restrictions on the latest time when the system can print the output files. For more information about the date\_time data type, refer to the NOS/VE System Usage manual.

**OPERATOR\_FAMILY** or **OF**

Specifies the family name of the operator of the private station or the remote system on which output files specified by the NAME parameter are to be printed.

**OPERATOR\_USER** or **OU**

Specifies the user name for the private station operator or the remote system operator on which output files specified by the NAME parameter are to be printed.

If the `OUTPUT_DESTINATION_USAGE` attribute is `PRIVATE` or `NTF`, the operator user and operator family identify the private station operator or the remote system operator to print the output files. The operator user is also the control user in this case.

#### *OUTPUT\_CLASS* or *OC*

Specifies the output class for output files specified by the `NAME` parameter. The output class defines the initial priority, the maximum priority, an aging interval, and an aging factor. The keyword `NORMAL` specifies an initial priority of 100, a maximum priority of 3,700, an aging interval of 1 second, and an aging factor of one priority unit per aging interval.

#### *OUTPUT\_DEFERRED\_BY\_OPERATOR* or *ODBO*

Specifies the operator-controlled state for output files specified by the `NAME` parameter. `OUTPUT_DEFERRED_BY_OPERATOR` can have one of the following values:

##### **TRUE**

Places the output files in a deferred state, making them ineligible for printing.

##### **FALSE**

Removes the output files from the deferred state, making them eligible for printing.

#### *OUTPUT\_DEFERRED\_BY\_USER* or *ODBU*

Specifies the user-controlled state for output files specified by the `NAME` parameter. `OUTPUT_DEFERRED_BY_USER` can have one of the following values:

##### **TRUE**

Places the output files in a deferred state, making them ineligible for printing.

##### **FALSE**

Removes the output files from the deferred state, making them eligible for printing.

#### *OUTPUT\_DESTINATION* or *ODE*

Specifies the location name of the system where output files specified by the `NAME` parameter are to be sent for printing. This applies only to output files whose `OUTPUT_DESTINATION_USAGE` output attribute is `QTF` or `NTF`. For output files with any other values for `OUTPUT_DESTINATION_USAGE`, this parameter is ignored.

*OUTPUT\_DESTINATION\_USAGE* or *ODU*

Specifies the kind of CDCNET print station where output files specified by the NAME parameter are to be sent, or the queue file transfer application that forwards the output files to a remote system. OUTPUT\_DESTINATION\_USAGE can have one of the following values:

**DUAL\_STATE**

NOS or NOS/BE prints the output files. If you specify this parameter, the only meaningful attributes are FORMS\_CODE, COPIES, ROUTING\_BANNER, and REMOTE\_HOST\_DIRECTIVE.

**NTF**

The Network Transfer Facility forwards the output files to a remote system for printing.

**PRIVATE**

Output files are printed at a private CDCNET batch I/O station when under control of the user name and family name given by the OPERATOR\_USER and OPERATOR\_FAMILY attributes. If you specify this value, the OUTPUT\_DESTINATION and REMOTE\_HOST\_DIRECTIVE attributes are ignored.

**PUBLIC**

Output files are printed at a public CDCNET batch I/O station. If you specify this value, the OPERATOR\_FAMILY, OPERATOR\_USER, OUTPUT\_DESTINATION, and REMOTE\_HOST\_DIRECTIVE attributes are ignored.

**QTF**

The Remote Host Facility forwards the output files to a remote system for printing. The remote system is specified by the OUTPUT\_DESTINATION attribute.

*OUTPUT\_PRIORITY* or *OP*

Specifies a increment to add to the initial priorities of output files specified by the NAME parameter. OUTPUT\_PRIORITY can have the following values:

**LOW**

Leaves the current output priority unchanged.

**MEDIUM**

Increases the current output priority by 1,500.

**HIGH**

Increases the current output priority by 3,000.

*PURGE\_DELAY* or *PD*

Specifies how much time output files specified by the *NAME* parameter remain in the output queue after being printed. *PURGE\_DELAY* can be a *time\_increment* data type or the keyword *NONE*. The *time\_increment* data type is a record consisting of several integer fields in the following format:

years-months-days.hours:minutes:seconds.milliseconds

The keyword *NONE* specifies that the output files are purged from the output queue immediately after printing. For more information about the *time\_increment* data type, refer to the *NOS/VE System Usage manual*.

*REMOTE\_HOST\_DIRECTIVE* or *RHD*

Specifies a 0- to 256-character string that controls the processing of output files. To control output processing of output files, this string should contain one of the following:

- A *PRINT\_FILE* command for output files to be printed on a *NOS/VE* system.
- A *ROUTE* command for output files to be printed on a non-*NOS/VE* system.
- The *ROUTE* command's parameters for output files to be printed on the non-*NOS/VE* side of a dual-state system.

*REPRINT\_DISPOSITION* or *RD*

Specifies whether to reprint output files specified by the *NAME* parameter that have finished printing but remain in the output queue. The system ignores this parameter for all other output files. *REPRINT\_DISPOSITION* can have one of the following values:

*REPRINT* or *R*

Reprints the output file.

*DISCARD* or *D*

Discards the output file.

*ROUTING\_BANNER* or *RB*

Displays the 0- to 6-character routing banner string to be used with output files specified by the *NAME* parameter.

*STATION* or *S*

Specifies the name of the I/O station or control facility to which output files specified by the *NAME* parameter are sent. The keyword *AUTOMATIC* specifies the system default station name.

*VERTICAL\_PRINT\_DENSITY* or *VPD*

Specifies the vertical print density to use to print output files specified by the *NAME* parameter. *VERTICAL\_PRINT\_DENSITY* can have one of the following values:

*SIX*

Selects a printer capable of printing six lines per inch. If the printer offers several print densities, the printer is set to six lines per inch before printing the file.

*EIGHT*

Selects a printer capable of printing eight lines per inch. If the printer offers several print densities, the printer is set to eight lines per inch before printing the file.

*NONE*

Selects a printer without regard for its vertical print density capability.

*FILE*

Selects a printer and sets the vertical print density according to the *VERTICAL\_PRINT\_DENSITY* attribute associated with the source file. If the *VERTICAL\_PRINT\_DENSITY* attribute is 6, six lines per inch is set. If the attribute is in the range from 7 to 12, eight lines per inch is set.

*VFU\_LOAD\_PROCEDURE* or *VLP*

Specifies the name of the procedure file containing the vertical forms unit (VFU) load image to use with output files specified by the *NAME* parameter. The keyword *NONE* specifies that output files are routed to a printer without a VFU load image or to a printer with its default VFU load image.

*STATUS*

Returns the completion status for this command.

**CHANGE\_PRIORITY Command**

- Purpose** Changes the dispatching priority of a specified job.
- Format** **CHANGE\_PRIORITY** or **CHAP**  
**JOB\_NAME**=name  
*DISPATCHING\_PRIORITY*=name or keyword  
*STATUS*=status variable
- Parameters** **JOB\_NAME** or **JN**  
 Specifies the system-supplied name or user-supplied name of the job whose priority the system is to change. This parameter is required.
- DISPATCHING\_PRIORITY* or *DP*  
 Specifies the central processor (CP) priority to assign to the tasks within the job, relative to all other tasks in the system. The values can be the keywords P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, or DEFAULT. P10 is the highest priority; P1 is the lowest priority. The default is the keyword DEFAULT.
- The keyword DEFAULT resets the priority to the dispatching priority of the DISPATCHING\_CONTROL attribute for the job. The DISPATCHING\_CONTROL attribute is described in the NOS/VE System Performance and Maintenance manual, Volume 1.
- STATUS*  
 Returns the completion status of this command.
- Remarks** You cannot change the dispatching priority of the system job.
- Examples** This example changes the dispatching priority for the job \$0835\_0020\_BAB\_0039 to the priority P8.
- ```
change_priority job_name=$0835_0020_BAB_0039 ..
../dispatching_priority=p8
```

## CHANGE\_TAPE\_VALIDATION Command

**Purpose** Enables or disables magnetic tape validation processing that has been defined by the site. Magnetic tape validation procedures are part of the deadstart file software. These procedures are maintained in the object module RMM\$VALIDATE\_TAPE\_OPERATIONS on the object library \$SYSTEM.SITE\_OS\_MAINTENANCE.SOURCE\_LIBRARY. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2 for more information about how to define tape validation procedures for your site.

**Format** CHANGE\_TAPE\_VALIDATION or  
CHATV  
VALIDATE\_TAPE\_ACCESS = boolean  
STATUS = status variable

**Parameters** VALIDATE\_TAPE\_ACCESS or VTA

Specifies whether magnetic tape usage is to be validated by site-defined validation procedures. VALIDATE\_TAPE\_ACCESS can have one of the following values:

**TRUE**

Enables magnetic tape validation processing defined for your site.

**FALSE**

Disables magnetic tape validation processing defined for your site.

**STATUS**

Returns the completion status for this command.

## CHANGE\_TIME Command

**Purpose** Changes the time the system uses as the current time.

**Format** **CHANGE\_TIME** or **CHAT**  
**HOUR**=integer  
**MINUTE**=integer  
**SECONDS**=integer  
**STATUS**=status variable

**Parameters** **HOUR** or **H**

Specifies the hour of the day on the 24-hour clock. The value for **HOUR** must be an integer from 0 to 23. This parameter is required.

**MINUTE** or **M**

Specifies the number of minutes past the hour. The value for **MINUTE** must be an integer from 0 to 59. This parameter is required.

**SECONDS** or **S**

Specifies the number of seconds past the minute. The value for **SECOND** must be an integer from 0 to 59. The default is 0.

**STATUS**

Returns the completion status of this command.

**Remarks**

- This command is valid only for standalone systems. For dual-state systems, changing the time on NOS (or NOS/BE) changes the time for NOS/VE also.
- Do not use this command for adjusting back and forth between standard time and daylight saving time. Instead, use the **CHANGE\_TIME\_ZONE** command.

**Examples** This example changes the time on the system to 7:35 p.m.

```
change_time hour=19 minute=35
```

**CHANGE\_TIME\_ZONE Command**

**Purpose** Informs the system of the site time zone and adjusts the system clock forward or backward 1 hour depending on the time change. Enter this command on the first day of a time change to either daylight saving time or standard time.

**Format** **CHANGE\_TIME\_ZONE** or **CHATZ**  
**TIME\_ZONE**=time\_zone  
**ADJUST\_DATE\_TIME**=boolean  
**STATUS**=status variable

**Parameters** **TIME\_ZONE** or **TZ**

Specifies the time difference in hours from universal time coordinated (formerly Greenwich mean time) and whether it is currently standard time or daylight saving time. This parameter is required. The time\_zone data type is a record with the following format:

hours\_from\_gmt:minutes\_offset.daylight\_saving\_time

For more information about the time\_zone data type, refer to the NOS/VE System Usage manual.

**ADJUST\_DATE\_TIME** or **ADT**

Specifies whether to adjust the system clock 1 hour to change to or from daylight saving time. This parameter is required. **ADJUST\_DATE\_TIME** has the following values:

**TRUE**

Adjusts the system clock forward 1 hour when changing to daylight saving time or backward 1 hour when changing to standard time.

**FALSE**

Leaves the system clock unchanged. This value must be used for dual-state systems.

**STATUS**

Returns the completion status of this command.

- Remarks**
- The time zone information is saved across deadstarts in the common disk area on the CIP device.
  - You cannot change the system clock for a dual-state system using this command. You must change the time at the NOS or NOS/BE console.
- Examples**
- This example changes the time zone and advances the system clock for the beginning of daylight saving time on a standalone system in Minneapolis, Minnesota, USA:

```
change_time_zone time_zone=-6:0.true adjust_date_time=true
```

- This example changes the time zone and turns back the system clock for the beginning of standard time for a dual-state system in Minneapolis, Minnesota, USA. Enter the following command at the NOS/VE console to change the time zone:

```
change_time_zone time_zone=-6:0.false adjust_date_time=false
```

Now enter the following commands at the NOS or NOS/BE console to turn back the clock to 5:30 p.m.

```
UNLOCK.  
TIME.17.30.00  
LOCK.
```

**CHANGE\_VALIDATION\_LEVEL Command**

- Purpose** Specifies the level of validation to perform during LOGIN command processing. This command defines the required level of validation for all users.
- Format** **CHANGE\_VALIDATION\_LEVEL**  
**VALIDATION\_LEVEL=keyword**  
*STATUS=status variable*
- Parameters** **VALIDATION\_LEVEL** or **VL**  
 Specifies the level of validation to be performed when a job initiates. This parameter is required. The default is **USER**. **VALIDATION\_LEVEL** has the following values:
- ACCOUNT**  
 Validates the account, user name, and password. The project is not validated.
- PROJECT**  
 Validates the project, account, user name, and password.
- USER**  
 Validates the user name and password. The account and project are not validated.
- Remarks**
- The user validation levels that you can specify with this command are described in the NOS/VE User Validation manual.
  - You may want to place this command in the **JOB\_ACTIVATION\_PROLOG** file. The **JOB\_ACTIVATION\_PROLOG** file is described in the NOS/VE System Performance and Maintenance manual, Volume 2.
  - You can enter this command at any time.
- Examples** This example changes the validation level to validate the user name, password, and account:
- ```
change_validation_level validation_level=account
```

**CREATE\_AGED\_FILE\_BACKUP Command**

**Purpose** Submits a batch job that backs up and deletes all permanent files that have not been accessed since a specified cutoff date. This batch job builds the backup tape EVSNs, requests the tapes, copies permanent files to the tapes, and deletes the permanent files from the system. Use this command to free disk space.

**Format** **CREATE\_AGED\_FILE\_BACKUP** or **CREAFB** or **ARCF**

**DATE**=*date\_time*  
**VSN\_PREFIX**=*name*  
**VSN\_COUNT**=*integer*  
**INCREMENT\_SCHEME**=*keyword*  
**FILE\_LABEL\_TYPE**=*keyword*  
**TYPE**=*keyword*  
**STATUS**=*status variable*

**Parameters** **DATE** or **D**

Specifies the file access cutoff date and time. This parameter is required. The *date\_time* data type is a record consisting of several integer fields in the following format:

*year-month-day.hour:minute:second.millisecond*

For more information about the *date\_time* data type, refer to the NOS/VE System Usage manual.

**VSN\_PREFIX** or **VSNP**

Specifies the 1- to 5-character prefix that all of the tape volume serial numbers will have in common. The system completes the volume serial numbers by generating the characters to follow the prefix. These characters can be integers or letters depending on the value of the **INCREMENT\_SCHEME** parameter. This parameter is required.

**VSN\_COUNT** or **VSNC**

Specifies the number of tapes in the backup tape set. The default is 15.

**INCREMENT\_SCHEME** or **IS**

Specifies the format of the procedure-generated characters following the volume serial number prefix. The default is **DECIMAL**. **INCREMENT\_SCHEME** has the following values:

**DECIMAL** or **D**

Generates leading zeros (as needed) and integers to complete the volume serial numbers.

**ALPHABETIC** or **A**

Generates letters to complete the volume serial numbers. The advantage of specifying **ALPHABETIC** is that more labels can be generated for a given prefix.

*FILE\_LABEL\_TYPE* or *FLT*

Specifies whether the backup tapes are labelled or unlabelled. The default is the system default tape label type. *FILE\_LABEL\_TYPE* has the following values:

LABELLED or L

Specifies labelled tapes.

UNLABELLED or U

Specifies unlabelled tapes.

*TYPE* or *T*

Specifies the type of tape unit required. The default is MT9\$1600. *TYPE* has the following values:

MT9\$800

9-track, 800-cpi density.

MT9\$1600

9-track, 1600-cpi density.

MT9\$6250

9-track, 6250-cpi density.

*STATUS*

Returns the completion status of this command.

- |                |  |
|----------------|--|
| <b>Remarks</b> | <ul style="list-style-type: none"> <li>• Only files that have not been accessed since the date given by the <i>DATE</i> parameter are backed up and deleted.</li> <li>• This command does not backup or delete files in the <i>\$SYSTEM</i> catalog.</li> <li>• To display the default tape label type, enter the <i>DISPLAY_BACKUP_LABEL_TYPE</i> command. To change the default label type, enter the <i>CHANGE_BACKUP_LABEL_TYPE</i> command. Both of these commands are described in the NOS/VE Commands and Functions manual.</li> <li>• For information about how to modify this command to satisfy site requirements, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.</li> </ul> |
|----------------|--|

**CREATE\_CATALOG\_BACKUP Command**

- Purpose** Submits a batch job that copies the catalog, subcatalog, and file hierarchy to a set of backup tapes. File data is not backed up. This batch job builds the backup tape EVSNs, requests the tapes, and copies the catalog hierarchy to tape. Catalogs are written to tape in alphabetical order and sorted by family name and user name. You can execute this command while users are active on the system.
- Format** **CREATE\_CATALOG\_BACKUP** or **CRECB** or **BACC**  
*VSN\_PREFIX=name*  
*VSN\_COUNT=integer*  
*INCREMENT\_SCHEME=keyword*  
*FILE\_LABEL\_TYPE=keyword*  
*TYPE=keyword*  
*STATUS=status variable*
- Parameters** **VSN\_PREFIX** or **VSNP**  
 Specifies the 1- to 5-character prefix that all of the tape volume serial numbers will have in common. The system completes the volume serial numbers by generating the characters to follow the prefix. These characters can be integers or letters depending on the value of the **INCREMENT\_SCHEME** parameter. This parameter is required.
- VSN\_COUNT* or *VSNP*  
 Specifies the number of tapes in the backup tape set. The default is 15.
- INCREMENT\_SCHEME* or *IS*  
 Specifies the format of the procedure-generated characters following the volume serial number prefix. The default is **DECIMAL**. **INCREMENT\_SCHEME** has the following values:
- DECIMAL** or **D**  
 Generates leading zeros (as needed) and integers to complete the volume serial numbers.
- ALPHABETIC** or **A**  
 Generates letters to complete the volume serial numbers. The advantage of specifying **ALPHABETIC** is that more labels can be generated for a given prefix.

*FILE\_LABEL\_TYPE* or *FLT*

Specifies whether the backup tapes are labelled or unlabelled. The default is the system default tape label type. *FILE\_LABEL\_TYPE* has the following values:

LABELLED or L

Specifies labelled tapes.

UNLABELLED or U

Specifies unlabelled tapes.

*TYPE* or *T*

Specifies the type of tape unit required. The default is MT9\$1600. *TYPE* has the following values:

MT9\$800

9-track, 800-cpi density.

MT9\$1600

9-track, 1600-cpi density.

MT9\$6250

9-track, 6250-cpi density.

*STATUS*

Returns the completion status of this command.

- Remarks
- If you use the *CREATE\_CATALOG\_BACKUP* command to periodically backup catalog information, you can omit the catalog information from your partial backups.
  - To display the default tape label type, enter the *DISPLAY\_BACKUP\_LABEL\_TYPE* command. To change the default label type, enter the *CHANGE\_BACKUP\_LABEL\_TYPE* command. Both of these commands are described in the NOS/VE Commands and Functions manual.
  - Backup tapes produced by this command can be used with the *RESTORE\_CATALOGED\_FILES* command and the *RESTORE\_UNRECONCILED\_CATALOGS* command. Both of these commands are described in the NOS/VE System Performance and Maintenance manual, Volume 2.
  - For information about how to modify this command to satisfy site requirements, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.

**CREATE\_FULL\_BACKUP Command**

**Purpose** Submits a batch job that backs up all permanent files to a set of backup tapes. This batch job builds the backup tape EVSNs, requests the tapes, and copies the permanent files to the tapes. Files are written to tape in alphabetical order and are sorted by family name and user name. Files in catalog \$SYSTEM.AAM.SHARED\_RECOVERY\_LOG are backed up last.

**Format** **CREATE\_FULL\_BACKUP** or  
**CREFB** or  
**FULB**  
**VSN\_PREFIX**=name  
**VSN\_COUNT**=integer  
*INCREMENT\_SCHEME*=keyword  
*FILE\_LABEL\_TYPE*=keyword  
*TYPE*=file  
*BACKUP\_CATALOGS*=boolean  
*BACKUP\_SYSTEMS\_FAMILY*=boolean  
*STATUS*=status variable

**Parameters** **VSN\_PREFIX** or **VSNP**

Specifies a 1- to 5-character prefix that all of the tape volume serial numbers will have in common. The system completes the volume serial numbers by generating the characters that follow the prefix. These characters can be integers or letters depending on the value of the *INCREMENT\_SCHEME* parameter. This parameter is required.

**VSN\_COUNT** or **VSNC**

Specifies the number of tapes in the backup tape set. This parameter is required.

*INCREMENT\_SCHEME* or *IS*

Specifies the format of the procedure-generated characters following the volume serial number prefix. The default is *DECIMAL*. *INCREMENT\_SCHEME* has the following values:

**DECIMAL** or **D**

Generates leading zeros (as needed) and integers to complete the volume serial numbers.

**ALPHABETIC** or **A**

Generates letters to complete the volume serial numbers. The advantage of specifying *ALPHABETIC* is that more labels can be generated for a given prefix.

*FILE\_LABEL\_TYPE* or *FLT*

Specifies whether the backup tapes are labelled or unlabelled. The default is the value of the *BACKUP\_LABEL\_TYPE* job attribute. Job attributes are described in the NOS/VE System Usage manual. *FILE\_LABEL\_TYPE* has the following values:

LABELLED or L

Specifies labelled tapes.

UNLABELLED or U

Specifies unlabelled tapes.

*TYPE* or *T*

Specifies the type of tape unit required. The default is MT9\$1600. *TYPE* has the following values:

MT9\$800

9-track, 800-cpi density.

MT9\$1600

9-track, 1600-cpi density.

MT9\$6250

9-track, 6250-cpi density.

*BACKUP\_CATALOGS* or *BC*

Specifies whether to include catalog information in the backup. The default is TRUE. *BACKUP\_CATALOGS* has the following values:

TRUE

Backs up catalog information and file cycle data.

FALSE

Backs up file cycles only; catalog information is not included in the backup.

*BACKUP\_SYSTEM\_FAMILY* or *BSF*

Specifies whether to back up the \$SYSTEM family and \$SYSTEM.\$JOB\_INPUT\_QUEUE catalog from all families on the system. The default is TRUE. *BACKUP\_SYSTEM\_FAMILY* has the following values:

TRUE

Includes the \$SYSTEM family and the \$SYSTEM.\$JOB\_INPUT\_QUEUE catalogs in the backup.

FALSE

Excludes the \$SYSTEM family and the \$SYSTEM.\$JOB\_INPUT\_QUEUE catalogs from the backup.

*STATUS*

Returns the completion status of this command.

## CREATE\_FULL\_BACKUP Command

- Remarks**
- This command records the date and time the backup began in the file `$$SYSTEM.DATE_OF_FULL_BACKUP`. This information is used by the `CREATE_PARTIAL_BACKUP` command to determine which files to back up.
  - To display the default tape label type, enter the `DISPLAY_BACKUP_LABEL_TYPE` command. To change the default label type, enter the `CHANGE_BACKUP_LABEL_TYPE` command. Both of these commands are described in the `NOS/VE Commands and Functions` manual.
  - For information about how to modify this command to satisfy site requirements, refer to the `NOS/VE System Performance and Maintenance` manual, Volume 2.

- Examples**
- This example backs up all permanent files to a set of labelled tapes at 1600 cpi with volume serial numbers PFA001 to PFA025:

```
create_full_backup vsn_prefix=pfa vsn_count=25 ..  
../increment_scheme=decimal file_labelled_type=labelled ..  
../type=mt9$1600
```

- This example backs up all permanent files to a set of labelled tapes at 6250 cpi with volume serial numbers FULLAA to FULLAZ:

```
create_full_backup vsn_prefix=full vsn_count=26 ..  
../increment_scheme=alphabetic file_label_type=labelled ..  
../type=mt9$6250
```

## CREATE\_PARTIAL\_BACKUP Command

**Purpose** Submits a batch job to backup all permanent files that have been changed since the last full backup or since a specified cutoff date and time. This batch job builds the backup tape EVSNs, requests the tapes, and copies the permanent files to the tapes. Files are written to tape in alphabetical order and are sorted by family name and user name. Files in catalog \$SYSTEM.AAM.SHARED\_RECOVERY\_LOG are backed up last.

**Format** **CREATE\_PARTIAL\_BACKUP** or **CREPB** or **PARB**  
**VSN\_PREFIX=***name*  
**VSN\_COUNT=***integer*  
**INCREMENT\_SCHEME=***keyword*  
**FILE\_LABEL\_TYPE=***keyword*  
**TYPE=***file*  
**BACKUP\_CATALOGS=***boolean*  
**BACKUP\_SYSTEM\_FAMILY=***boolean*  
**DATE=***date\_time*  
**STATUS=***status variable*

**Parameters** **VSN\_PREFIX** or **VSNP**

Specifies a 1- to 5-character prefix that all of the tape volume serial numbers will have in common. The system completes the volume serial numbers by generating the characters to follow the prefix. These characters can be integers or letters depending on the value of the **INCREMENT\_SCHEME** parameter. This parameter is required.

**VSN\_COUNT** or **VSNC**

Specifies the number of tapes in the backup tape set. The default is 15.

**INCREMENT\_SCHEME** or **IS**

Specifies the format of the system-generated characters following the volume serial number prefix. The default is **DECIMAL**. **INCREMENT\_SCHEME** has the following values:

**DECIMAL** or **D**

Generates leading zeros (as needed) and integers to complete the volume serial numbers.

**ALPHABETIC** or **A**

Generates letters to complete the volume serial numbers. The advantage of specifying **ALPHABETIC** is that more labels can be generated for a given prefix.

*FILE\_LABEL\_TYPE* or *FLT*

Specifies whether the backup tapes are labelled or unlabelled. The default is the system default tape label type. *FILE\_LABEL\_TYPE* has the following values:

LABELLED or L

Specifies labelled tapes.

UNLABELLED or U

Specifies unlabelled tapes.

*TYPE* or *T*

Specifies the type of tape unit required. The default is MT9\$1600. *TYPE* has the following values:

MT9\$800

9-track, 800-cpi density.

MT9\$1600

9-track, 1600-cpi density.

MT9\$6250

9-track, 6250-cpi density.

*BACKUP\_CATALOGS* or *BC*

Specifies whether to include catalog information in the backup. The default is TRUE. *BACKUP\_CATALOGS* has the following values:

TRUE

Backs up catalog information and file cycle data.

FALSE

Backs up file cycles only; catalog information is not included in the backup.

*BACKUP\_SYSTEM\_FAMILY* or *BSF*

Specifies whether to include the \$SYSTEM family and \$SYSTEM.\$JOB\_INPUT\_QUEUE catalogs from all families in the backup. The default is TRUE. *BACKUP\_SYSTEM\_FAMILY* has the following values:

TRUE

Includes the \$SYSTEM family and the \$SYSTEM.\$JOB\_INPUT\_QUEUE catalogs from all families in the backup.

FALSE

Excludes the \$SYSTEM family and the \$SYSTEM.\$JOB\_INPUT\_QUEUE catalogs from all families from in the backup.

*DATE or D*

Specifies the cutoff date and time. Only files that have been modified after this date and time are backed up. The `date_time` data type is a record consisting of several integer fields in the following format:

```
year-month-day.hour:minute:second.millisecond
```

For more information about the `date_time` data type, refer to the NOS/VE System Usage manual.

*STATUS*

Returns the completion status of this command.

- Remarks**
- The date and time specified by the `DATE` parameter overrides the date of the last full backup.
  - When the backup is complete, the HPA monitor job is restarted.
  - To display the default tape label type, enter the `DISPLAY_BACKUP_LABEL_TYPE` command. To change the default label type, enter the `CHANGE_BACKUP_LABEL_TYPE` command. Both of these commands are described in the NOS/VE Commands and Functions manual.
  - For information about how to modify this command to satisfy site requirements, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.

- Examples**
- This example backs up all permanent files that have been changed since the last full backup. Permanent files are backed up to a set of labelled tapes at 1600 cpi with volume serial numbers PFA001 to PFA005:

```
create_partial_backup vsn_prefix=pfa vsn_count=5 ..
../increment_scheme=decimal file_labelled_type=labelled ..
../type=mt9$1600
```

- This example backs up all permanent files that have been changed since 1530 hours (3:30 P.M.) September 23, 1988. Permanent files are backed up to to a set of labelled tapes at 6250 cpi with volume serial numbers PARTAA to PARTAE:

```
create_partial_backup vsn_prefix=part vsn_count=5 ..
../increment_scheme=alphabetic file_label_type=labelled ..
../type=mt9$6250 date=1988-9-23.15:30:0.0
```

## DEACTIVATE\_HISTORY\_LOG Command

**Purpose** Deactivates the collection of job history information for a NOS/VE system.

**Format** **DEACTIVATE\_HISTORY\_LOG** or  
**DEAHL**  
*STATUS=status variable*

**Parameters** *STATUS*  
Returns the completion status of this command.

**Examples** This example stops the recording of job history information in the system job history log:

```
deactivate_history_log
```

**DEACTIVATE\_SYSTEM\_LOGGING Command**

**Purpose** Deactivates the recording of user job messages to the system job log.

**Format** **DEACTIVATE\_SYSTEM\_LOGGING** or  
**DEASL**  
*STATUS=status variable*

**Parameters** *STATUS*  
Returns the completion status of this command.

**Examples** This example stops the recording of user job messages to the system job log.

```
deactivate_system_logging
```

## DEACTIVATE\_SYSTEM\_TASKS Command

**Purpose** Deactivates specified asynchronous system tasks.

**Format** **DEACTIVATE\_SYSTEM\_TASKS** or  
**DEAST**  
**TASK\_NAMES**=list of keyword  
*STATUS*=*status variable*

**Parameters** **TASK\_NAMES** or **TN**

Specifies the names of the asynchronous tasks to be deactivated. Use the **DISPLAY\_SYSTEM\_TASK\_DATA** display to obtain the names of the system tasks. This parameter is required.

*STATUS*

Returns the completion status of this command.

**Examples** This example deactivates the system tasks **RHINPUT** and **RHOUTPUT**:

```
deactivate_system_tasks task_names=(rhinput,rhoutput)
```

**DELETE\_CATALOG Command**

- Purpose** Deletes a catalog. You can delete the catalog and its contents, only the contents, or an empty catalog. An empty catalog is one that contains no subcatalogs or files.
- Format** **DELETE\_CATALOG** or **DELC**  
**CATALOG**=file  
**DELETE\_OPTION**=keyword  
**STATUS**=status variable
- Parameters** **CATALOG** or **C**  
 Specifies the catalog to be deleted. This parameter is required.
- DELETE\_OPTION** or **DO**  
 Specifies how much of the catalog to delete. The default is **ONLY\_IF\_EMPTY**. **DELETE\_OPTION** has the following values:
- CATALOG\_AND\_CONTENTS** or **CAC**  
 Specifies that the catalog and all its subcatalogs and files are to be deleted.
- CONTENTS\_ONLY** or **CO**  
 Specifies that only the catalog's subcatalogs and files are to be deleted.
- ONLY\_IF\_EMPTY** or **OIE**  
 Specifies that the catalog will be deleted only if it is empty.
- STATUS**  
 Returns the completion status of this command.
- Remarks** This command will not delete a master catalog.
- Examples** This example deletes the catalog JKW008.ALPHA\_1 only if the catalog is empty:
- ```
delete_catalog catalog=.jkw008.alpha_1 ..
../delete_option=only_if_empty
```

## **DELETE\_EXPIRED\_FILES Command**

**Purpose** Deletes all files that have reached or exceeded their expiration date. Use this command to free disk space.

**Format** **DELETE\_EXPIRED\_FILES** or  
**DELEF**  
*STATUS=status variable*

**Parameters** *STATUS*  
Returns the completion status of this command.

## \*DENSITY Command

**Purpose** Specifies the tape density when dumping the NOS/VE environment to tape during abnormal termination of NOS/VE. This command is valid only on dual-state systems.

**Format** \*DENSITY = keyword.

**Parameters** keyword

Specifies the character density of the dump tape. This parameter is required and can have one of the following values:

PE

1600 characters per inch

GE

6250 characters per inch

- Remarks**
- Enter the \*DENSITY command in the K display of the NOS system console or the L display of the NOS/BE system console. For more information on using the \*DENSITY command, refer to chapter 4, Terminating NOS/VE.
  - If you do not enter the \*DENSITY command, the default is \*DENSITY=GE.
  - This command must end with a period.

## DISPLAY\_ALL\_FILES Command

**Purpose** Submits a batch job to produce a listing of catalog names, file names, and file cycles that reside on specified disk volumes.

**Format** **DISPLAY\_ALL\_FILES** or **DISAF**  
**RECORDED\_VSN**=list of string or keyword  
*STATUS*=status variable

**Parameters** **RECORDED\_VSN** or **RVSN**  
 Specifies the disk volumes for which to list permanent files. The keyword **ALL** specifies all disk volumes. The default is **ALL**. This parameter is required.

**STATUS**

Returns the completion status of this command.

**Remarks** The job created by this command may slow system performance, especially if all disk volumes are specified.

**Examples** The All Files Display lists file cycles by catalog for specified disk volumes. Figure 8-1 is an example of part of an All Files Display.

| CATALOG                  | PF_NAME               | PF_NAME.CYCLE | SIZE | ACCESS   | DATE/TIME    | MODIFICATION | DATE/TIME    | RECORDED_VSN(S) |
|--------------------------|-----------------------|---------------|------|----------|--------------|--------------|--------------|-----------------|
| -----                    |                       |               |      |          |              |              |              |                 |
| :KDK343                  |                       |               |      |          |              |              |              |                 |
| :KDK343.PROJECT_DATA     |                       |               |      |          |              |              |              |                 |
| SITE_A                   |                       |               |      |          |              |              |              |                 |
|                          | SITE_A.1              |               | 679  | 03/12/88 | 13:12:23.423 | 03/12/88     | 13:23:23.423 | V36A00          |
|                          | SITE_A.2              |               | 704  | 03/12/88 | 14:24:45.143 | 03/12/88     | 14:24:45.143 | V36A00          |
|                          | SITE_A.3              |               | 820  | 03/12/88 | 15:35:11.124 | 03/12/88     | 13:23:18.123 | V36A00          |
| :KDK343.PROJECT_ANALYSIS |                       |               |      |          |              |              |              |                 |
| PERFORMANCE_RESULTS      |                       |               |      |          |              |              |              |                 |
|                          | PERFORMANCE_RESULTS.1 |               | 1206 | 03/25/88 | 09:05:11.541 | 03/22/88     | 15:31:07.487 | V53B30          |
| COST_RESULTS             |                       |               |      |          |              |              |              |                 |
|                          | COST_RESULTS.1        |               | 238  | 03/26/88 | 10:29:04.054 | 03/26/88     | 10:29:04.054 | V53B30          |
| MAINTENANCE_RESULTS      |                       |               |      |          |              |              |              |                 |
|                          | MAINTENANCE_RESULTS.1 |               | 1478 | 03/27/88 | 09:22:34.354 | 03/27/88     | 09:22:34.156 | V53B30          |

**Figure 8-1. All Files Display**

Each file cycle entry has the following format:

name size access modification rvsn

**name** File name and cycle.

**size** Size of the file cycle in bytes.

**access** Date and time the file cycle was last accessed.

**modification** Date and time the file cycle was last modified.

**rvsn** RVSN of the disk volumes on which the file cycle resides.

## DISPLAY\_ALL\_INPUT Command

**Purpose** Displays the current status of all jobs known to the system.

**Format** **DISPLAY\_ALL\_INPUT** or **DISAI**  
*USER*=user name or keyword  
*FAMILY\_NAME*=family name or keyword  
*OUTPUT*=file  
*STATUS*=status variable

**Parameters** *USER* or *U*

Specifies the user name. The status of all jobs submitted by the specified user is displayed. The keyword **ALL** specifies all jobs submitted under a particular family name. (See the *FAMILY\_NAME* parameter.) The default is **ALL**.

*FAMILY\_NAME* or *FN*

Specifies the family name of the user specified by the *USER* parameter. The status of all jobs is displayed for the user or users. The keyword **ALL** specifies jobs for a user in all families in which that user is a member. The default is **ALL**.

The *FAMILY\_NAME* and *USER* parameters combine in the following ways to display the status of jobs for all users:

| Parameter Value                                          | Resulting Display                                                                |
|----------------------------------------------------------|----------------------------------------------------------------------------------|
| <i>USER</i> =user <i>FAMILY_NAME</i> =family             | Displays jobs of a specific user in a specific family.                           |
| <i>USER</i> = <b>ALL</b> <i>FAMILY_NAME</i> =family      | Displays jobs of all users in a specific family.                                 |
| <i>USER</i> =user <i>FAMILY_NAME</i> = <b>ALL</b>        | Displays jobs of a specific user in all families of which that user is a member. |
| <i>USER</i> = <b>ALL</b> <i>FAMILY_NAME</i> = <b>ALL</b> | Displays jobs of all users in all families (all jobs known to the system).       |

*OUTPUT* or *O*

Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is **\$OUTPUT**.

*STATUS*

Returns the completion status of this command.

**Remarks** The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the OUTPUT parameter to specify a file to receive the information from this command. That file can then be routed to a printer with the PRINT\_FILE command.

**Examples** This example displays the current status of all jobs under family name NVE and user name TKWS87 in the main operator window:

```
display_all_input family_name=NVE user_name=tkws87
```

The All Input Display gives status information about a group of jobs specified in the DISPLAY\_ALL\_INPUT command. Figure 8-2 is an example of an All Input Display.

|                        |   |                      |
|------------------------|---|----------------------|
| Job_Class              | : | interactive          |
| Job_State              | : | initiated            |
| Login_Family           | : | \$system             |
| Login_User             | : | \$system             |
| Operator_Action_Posted | : | no                   |
| System_Job_Name        | : | \$0855_0002_aaa_0659 |
| Job_Class              | : | interactive          |
| Job_State              | : | initiated            |
| Login_Family           | : | \$system             |
| Login_User             | : | \$system             |
| Operator_Action_Posted | : | no                   |
| System_Job_Name        | : | \$0855_0002_aaa_0688 |
| Job_Class              | : | interactive          |
| Job_State              | : | initiated            |
| Login_Family           | : | \$system             |
| Login_User             | : | \$system             |
| Operator_Action_Posted | : | yes                  |
| System_Job_Name        | : | \$0855_0002_aaa_0690 |

**Figure 8-2. All Input Display**

The All Input Display has the following format:

```

Job_Class           : class
Job_State           : state
Login_Family        : family name
Login_User          : user name
Operator_Action_Posted : status
System_Job_Name     : job name

```

**class** Job class can be SYSTEM, MAINTENANCE, BATCH, INTERACTIVE or any site-defined job class.

**state** Job state. The job state is one of the following:

**DEFERRED**

Job is not yet eligible to be initiated.

**INITIATED**

Job has been initiated.

**WAITING TO BE INITIATED**

Job has not been initiated but is waiting.

**TERMINATING**

Job is terminating.

**family name** Family name under which the job was scheduled and executed.

**user name** User name under which the job was scheduled and executed.

**status** Status of the posting of an operator action request. This field is YES if an operator action request is pending and NO if an operator action request is not pending.

**job name** System-supplied name of the job.

## DISPLAY\_ALL\_OUTPUT Command

**Purpose** Displays the status of all output files known to the system.

**Format** **DISPLAY\_ALL\_OUTPUT** or **DISAO**  
*USER* = user name or keyword  
*FAMILY\_NAME* = family name or keyword  
*OUTPUT* = file  
*STATUS* = status variable

**Parameters** *USER* or *U*

Specifies the user name for which output file information is to be displayed. Status information for all output files produced by the specified user name is displayed. The keyword *ALL* specifies all user names for the family specified by the *FAMILY\_NAME* parameter. The default is *ALL*.

*FAMILY\_NAME* or *FN*

Specifies the family name of which the user name specified by the *USER* parameter is a member. The keyword *ALL* specifies all family names. The default is *ALL*.

The *USER* and *FAMILY\_NAME* parameters combine in the following ways to display output file status:

| Parameter Values                                         | Resulting Display                                                                          |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <i>USER</i> =user <i>FAMILY_NAME</i> =family             | Displays output files of a specific user in a specific family.                             |
| <i>USER</i> = <i>ALL</i> <i>FAMILY_NAME</i> =family      | Displays output files of all users in a specific family.                                   |
| <i>USER</i> =user <i>FAMILY_NAME</i> = <i>ALL</i>        | Displays output files of a specific user in all families of which that user is a member.   |
| <i>USER</i> = <i>ALL</i> <i>FAMILY_NAME</i> = <i>ALL</i> | Displays output files of all users in all families (all output files known to the system). |

*OUTPUT* or *O*

Specifies the name of the file to which the system writes the display information. The default is *\$OUTPUT*.

*STATUS*

Returns the completion status of this command.

**Remarks** The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the OUTPUT parameter to specify a file to receive the information from this command. That file can then be routed to a line printer with the PRINT\_FILE command

**Examples** This example directs the status of all output files in the system to the file \$SYSTEM.OUTPUT\_STATUS:

```
display_all_output output=$system.output_status
```

The All Output Display gives the status of all output files from a job or group of jobs determined by the parameters specified in the DISPLAY\_ALL\_OUTPUT command. Figure 8-3 is an example of a All Output Display.

|                  |   |                      |
|------------------|---|----------------------|
| System_File_Name | : | \$0855_0002_aaa_1107 |
| System_Job_Name  | : | \$0855_0002_aaa_0000 |
| User_File_Name   | : | printout             |
| System_File_Name | : | \$0855_0002_aaa_1108 |
| System_Job_Name  | : | \$0855_0002_aaa_0000 |
| User_File_Name   | : | listing              |

**Figure 8-3. All Output Display**

Each entry in the display has the following format:

```
System_File_Name      : system file name
System_Job_Name       : job name
User_File_Name        : user file name
```

system file name    System-supplied name of the output file.

job name            System-supplied name of the job producing the output file.

user file name      User-supplied name of the output file.

## DISPLAY\_FAMILY Command

- Purpose** Displays family names and mass storage set membership for selected families.
- Format** **DISPLAY\_FAMILY** or **DISPLAY\_FAMILIES**  
*FAMILY\_NAME*=list of family name or keyword  
*OUTPUT*=file  
*DISPLAY\_OPTION*=keyword  
*STATUS*=status variable
- Parameters** *FAMILY\_NAME* or *FN*  
 Specifies the family name for which to display information. The keyword *ALL* specifies all families. The default is *ALL*.
- OUTPUT* or *O*  
 Specifies the name of the file to which the system writes the display information. The default is *\$OUTPUT*.
- DISPLAY\_OPTION* or *DISPLAY\_OPTIONS* or *DO*  
 Specifies the amount of information to be displayed. The default is *BRIEF*. *DISPLAY\_OPTION* has the following values:
- BRIEF**  
 Displays the names of all families on the system.
- FULL**  
 Displays the names of all families on the system and their mass storage set membership.
- STATUS**  
 Returns the completion status of this command.
- Remarks**
- The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the *OUTPUT* parameter to specify a file to receive the information from this command. That file can then be routed to a printer with the *PRINT\_FILE* command.
  - The *DISPLAY\_FAMILY* command has no abbreviation.
- Examples** This example directs the family administrator's user name, permanent file set, and valid permanent file sets for the family *NVE1* to the file *\$LOCAL.FAMILY*:
- ```
display_family family_name=nve1 display_option=full ..
../output=$local.family
```

The Family Display shows information about the families determined by the parameters specified in the DISPLAY\_FAMILY command. Figure 8-4 is an example of a Family Display.

Family name:	NVEDEV
Set Name:	NVESET
Family Name:	TESTPF
Set Name:	NVESET
Family Name:	TESTING
Set Name:	NVESET
Family Name:	\$\$SYSTEM
Set Name:	NVESET

**Figure 8-4. Family Display**

## DISPLAY\_INPUT\_ATTRIBUTE Command

- Purpose** Displays the attributes for selected jobs in the input queue.
- You can use the `SELECT_JOB` subcommand of the `MANAGE_JOB` utility to create a list variable as input for the `NAME` parameter. You must execute the `DISPLAY_INPUT_ATTRIBUTES` command within the utility unless you previously created the variable outside of the utility.
- Format** `DISPLAY_INPUT_ATTRIBUTE` or `DISPLAY_INPUT_ATTRIBUTES` or `DISIA`
- `NAME = name`  
`DISPLAY_OPTION = list of keyword`  
`OUTPUT = file`  
`STATUS = status variable`
- Parameters** `NAME` or `NAMES` or `N`
- Specifies the names of the jobs for which attributes are to be displayed. Enter either the system-supplied or user-supplied name. This parameter is required.
- DISPLAY\_OPTION* or *DISPLAY\_OPTIONS* or *DO*
- Specifies which attributes values are to be displayed for jobs specified by the `NAME` parameter. The default is `ALL`. `DISPLAY_OPTION` can have one or more of the following values:
- ALL**  
Displays all attribute values for the specified jobs.
- COMMENT\_BANNER** or **CB**  
Displays the comment banner character string to be used with the output files produced by the specified jobs.
- CONTROL\_FAMILY** or **CF**  
Displays the family name of the control user for the specified jobs.
- CONTROL\_USER** or **CU**  
Displays the user name of the control user for the specified jobs.
- COPIES** or **C**  
Displays the number of copies to print of output files produced by the specified jobs.
- CPU\_TIME\_LIMIT** or **CTL**  
Displays the the maximum number of seconds of CPU time allowed for the specified jobs.
- DATA\_MODE** or **DM**  
Displays the data mode for the output files produced by the specified jobs.

**DEVICE or D**

Displays a name of a printer on which output files produced by the specified jobs are to be printed.

**EARLIEST\_PRINT\_TIME or EPT**

Displays the earliest date and time when the system can print the output files produced by the specified jobs.

**EARLIEST\_RUN\_TIME or ERT**

Displays the earliest time that the system can initiate the specified jobs.

**EXTERNAL\_CHARACTERISTICS or EC**

Displays the string that specifies the external characteristics for selecting a printer for output files produced by the specified jobs.

**FORMS\_CODE or FC**

Displays the forms code string for selecting a printer for output file produced by the specified jobs.

**JOB\_ABORT\_DISPOSITION or JAD**

Displays the disposition for jobs specified by the NAME that abort because of a system failure.

**JOB\_CLASS or JC**

Displays the job class for the specified jobs.

**JOB\_DEFERRED\_BY\_OPERATOR or JDBO**

Displays the operator-controlled scheduling state of the specified jobs.

**JOB\_DEFERRED\_BY\_USER or JDBU**

Displays the user-controlled scheduling state of the specified jobs.

**JOB\_DESTINATION or JD**

Displays location name of the remote system to which the job is sent. The location name can be a family name or a logical identifier (LID).

**JOB\_DESTINATION\_USAGE or JDU**

Displays the name of the application that forwards the specified jobs to a remote system.

**JOB\_EXECUTION\_RING**

Displays the execution ring of the specified jobs.

**JOB\_MODE or JM**

Displays the job mode of the specified jobs.

**JOB\_QUALIFIER or JOB\_QUALIFIERS or JQ**

Displays the job qualifiers for the specified jobs.

**JOB\_RECOVERY\_DISPOSITION or JRD**

Displays the disposition of the specified jobs if a system interrupt occurs while the job are executing.

**JOB\_SIZE or JS**

Displays the size of the specified jobs in bytes.

**JOB\_SUBMISSION\_TIME or JST**

Displays the time that the specified jobs entered the input queue and how long those jobs have been in the input queue.

**LATEST\_PRINT\_TIME or LPT**

Displays the latest date and time when the system can print the output files produced by the specified jobs.

**LATEST\_RUN\_TIME or LRT**

Displays the latest date and time when the system can initiate the specified jobs.

**LOGIN\_ACCOUNT or LA**

Displays the account name of the specified jobs.

**LOGIN\_FAMILY or LF**

Displays the family name of the specified jobs.

**LOGIN\_PROJECT or LP**

Displays the project name of the specified jobs.

**LOGIN\_USER or LU**

Displays the user name of the specified jobs.

**MAGNETIC\_TAPE\_LIMIT or MTL**

Displays the maximum number of tape files that the specified jobs can open simultaneously.

**MAXIMUM\_WORKING\_SET or MAXWS**

Displays the maximum working set size of the specified jobs. The maximum working set size is measured in pages.

**OPERATOR\_FAMILY or OF**

Displays the family name of the operator of the private station or the remote system on which output files produced by the specified jobs are to be printed.

**OPERATOR\_USER or OU**

Displays the user name of the operator of the private station or the remote system on which output files produced by the specified jobs are to be printed.

**ORIGINATING\_APPLICATION\_NAME or OAN**

Displays the name of the application that originated the specified jobs.

**OUTPUT\_CLASS or OC**

Displays the default output class for output files produced by the specified jobs.

**OUTPUT\_DESTINATION or ODE**

Displays the location name of the remote system where the output files produced by the specified jobs are sent. This location name can be a family name or a logical identifier.

**OUTPUT\_DESTINATION\_USAGE or ODU**

Displays the kind of CDCNET print station where the output files produced by the specified jobs are sent, or the queue file transfer application that forwards the output files to a remote system.

**OUTPUT\_DISPOSITION or ODI**

Displays the disposition of the standard output files produced by the specified jobs.

**OUTPUT\_PRIORITY or OP**

Displays the output priority increment to be added to the initial priorities of the output files produced by the specified jobs.

**PURGE\_DELAY or PD**

Displays how long the output files produced by the specified jobs remain in the output queue after being printed.

**REMOTE\_HOST\_DIRECTIVE or RHD**

Displays the string used to control the processing of the output files produced by the specified jobs; or the processing of jobs destined for a remote system.

**ROUTING\_BANNER or RB**

Displays the routing banner string to be used with the output files produced by the specified jobs.

**SITE\_INFORMATION or SI**

Displays the site information string associated with the specified jobs.

**SRU\_LIMIT or SL**

Displays the maximum number of system resource units (SRUs) allowed for the specified jobs.

**STATION or S**

Displays the I/O station name or control facility name to which to send output files produced by the specified jobs.

**SYSTEM\_JOB\_NAME or SJN**

Displays the system-supplied name of the specified jobs.

**USER\_INFORMATION or UI**

Displays the user information string associated with the specified jobs.

**USER\_JOB\_NAME or UJN**

Displays the user-supplied name of the specified jobs.

**VERTICAL\_PRINT\_DENSITY or VPD**

Displays the vertical print density, in number of lines per inch, to be used in printing output files produced by the specified jobs.

**VFU\_LOAD\_PROCEDURE or VLP**

Displays the name of the procedure file containing the vertical forms unit load image to use to print output files produced by the specified jobs.

**OUTPUT or O**

Specifies the name of the file to which the system writes the display information. The default is \$OUTPUT.

**STATUS**

Returns the completion status of this command.

**Examples** The Input Attribute Display gives the output attributes for a job. Figure 8-5 is an example of an Input Attributes Display.

Comment_Banner	:	'EXAMPLES'
Control_Family	:	nve
Control_User	:	smith
Copies	:	1
CPU_Time_Limit	:	unlimited
Data_Mode	:	coded
Device	:	automatic
Device_Type	:	printer
Earliest_Print_Time	:	none
Earliest_Run_Time	:	none
External_Characteristics	:	'NORMAL'
Forms_Code	:	'NORMAL'
File_Position	:	0
File_Size	:	6481
Forms_Code	:	'NORMAL'
Job_Abort_Disposition	:	terminate
Job_Class	:	interactive
Job_Deferred_By_Operator	:	no
Job_Deferred_By_User	:	no
Job_Destination	:	'NVE'
Job_Execution_Ring	:	nominal
Job_Mode	:	interactive connected
Job_Qualifier	:	[]
Job_Recovery_Disposition	:	continue
Job_Size	:	0
Job_Submission_Time	:	1988-08-26.13.54:05 (0-0-0.0:15:40.174)
Latest_Print_Time	:	none
Latest_Run_Time	:	none
Login_Account	:	d1257
Login_Family	:	nve
Login_Project	:	p83a2821
Login_User	:	smith
Magnetic_Tape_Limit	:	unlimited
Maximum_Working_Set	:	2000
Operator_Family	:	nve
Operator_User	:	smith
Originating_Application_Name	:	osa\$dual_state_interactive
Output_Class	:	normal
Output_Deferred_By_User	:	no
Output_Destination	:	'NVE'
Output_Destination_Usage	:	dual_state
Output_Disposition	:	printer
Output_Priority	:	low
Purge_Delay	:	none
Remote_Host_Directive	:	' '
Routing_Banner	:	'SMITH'
Site_Information	:	'CYBER 995 Class 102'
SRU_Limit	:	unlimited
Station	:	automatic
System_Job_Name	:	\$0990_0102_aad_1367
User_Information	:	' '
User_Job_Name	:	test01
Vertical_Print_Density	:	six
VFU_Load_Procedure	:	none

**Figure 8-5. Input Attribute Display**

## DISPLAY\_JOB\_ATTRIBUTE\_DEFAULT Command

**Purpose** Displays system default values for selected job attributes.

**Format** **DISPLAY\_JOB\_ATTRIBUTE\_DEFAULT** or  
**DISPLAY\_JOB\_ATTRIBUTE\_DEFAULTS** or  
**DISJAD**

*JOB\_MODE=keyword*  
*DISPLAY\_OPTION=list of keyword*  
*OUTPUT=file*  
*STATUS=status variable*

**Parameters** *JOB\_MODE* or *JM*

Specifies the job mode for which job attribute defaults are to be displayed. The default is ALL. *JOB\_MODE* has the following values:

ALL

Displays batch and interactive job attribute defaults.

BATCH or B

Displays batch job attribute defaults.

INTERACTIVE or I

Displays interactive job attribute defaults.

*DISPLAY\_OPTION* or *DISPLAY\_OPTIONS* or *DO*

Specifies the type of display being requested. The default is ALL. *DISPLAY\_OPTION* has the following values:

ALL

Includes all of the following display options.

*CPU\_TIME\_LIMIT* or CTL

Displays the system default for the maximum number of seconds of CPU time that a job can use.

*JOB\_ABORT\_DISPOSITION* or JAD

Displays the system default for the disposition of a job that aborts because of a system failure.

*JOB\_CLASS* or JC

Displays the default for the *JOB\_CLASS* attribute of a job.

*JOB\_DEFERRED\_BY\_OPERATOR* or JDBO

Displays the system default operator-controlled scheduling state for the job.

*JOB\_QUALIFIER* or *JOB\_QUALIFIERS* or JQ

Displays the system default job qualifier names for jobs that have not been assigned a job qualifier.

*JOB\_RECOVERY\_DISPOSITION* or JRD

Displays the system default for the disposition of a job by the active job recovery process if a system interrupt occurs while the job is executing.

**LOGIN\_FAMILY** or **LF**

Displays the system default for the **LOGIN\_FAMILY** attribute of a job.

**MAGNETIC\_TAPE\_LIMIT** or **MTL**

Displays the system default for the maximum number of tape files that can be opened by a job simultaneously.

**MAXIMUM\_WORKING\_SET** or **MAXWS**

Displays the system default for the maximum working set size of a job. The maximum working set size is measured in pages.

**OUTPUT\_CLASS** or **OC**

Specifies the system default for the output class. **NORMAL** is the only output class for batch and interactive jobs.

**OUTPUT\_DEFERRED\_BY\_OPERATOR** or **ODBO**

Displays the system default operator-controlled state for all files entering the output queue.

**OUTPUT\_DESTINATION\_USAGE** or **ODU**

Displays the system default for the **OUTPUT\_DESTINATION\_USAGE** attribute of a job.

**PURGE\_DELAY** or **PD**

Displays the system default time period that output files remain in the output queue after being printed.

**SITE\_INFORMATION** or **SI**

Displays the system default for the **SITE\_INFORMATION** attribute of a job.

**SRU\_LIMIT** or **SL**

Displays the system default for the maximum number of system resource units (SRU) a job can use.

**STATION** or **S**

Displays the system default for the **STATION** attribute of a job.

**VERTICAL\_PRINT\_DENSITY** or **VPD**

Displays the system default for the **VERTICAL\_PRINT\_DENSITY** attribute of a job.

**OUTPUT** or **O**

Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is **\$OUTPUT**.

**STATUS**

Returns the completion status of this command.

**Remarks**

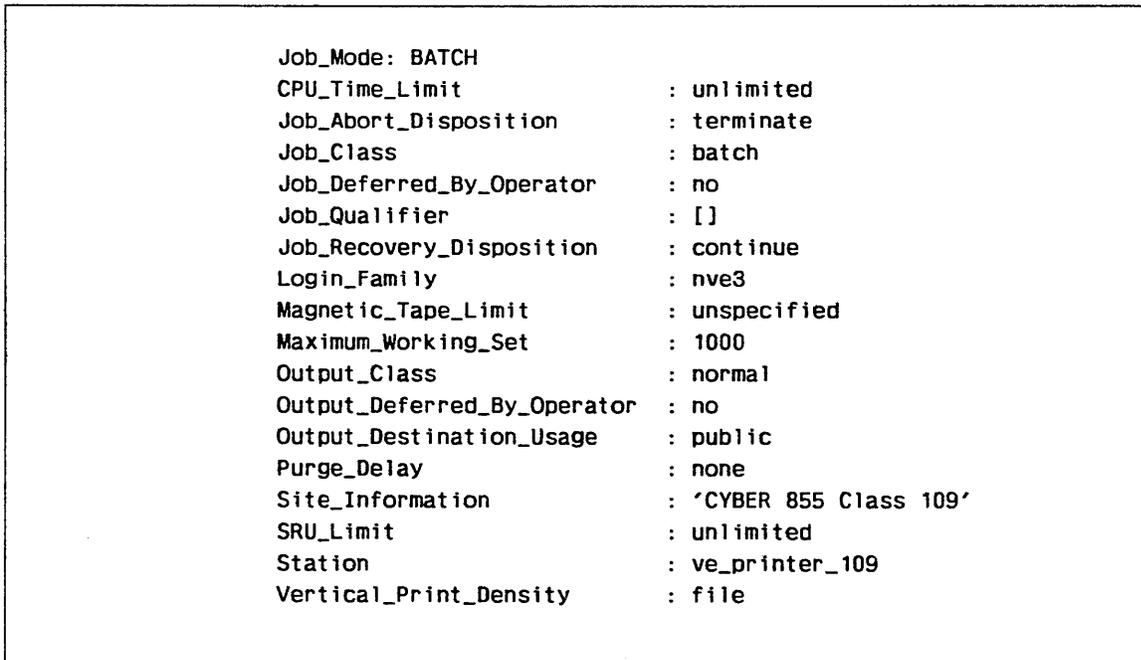
- The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the **OUTPUT** parameter to specify a file to receive the information from this command. That file can then be routed to a printer with the **PRINT\_FILE** command.

- Use the CHANGE\_JOB\_ATTRIBUTE\_DEFAULTS command to change job attribute default values. The CHANGE\_JOB\_ATTRIBUTE\_DEFAULTS command is described earlier in this chapter.

**Examples** This example displays the default values for the job attributes LOGIN\_FAMILY and SITE\_INFORMATION in the main operator window:

```
display_job_attribute_defaults ..
../display_options=(login_family site_information)
```

The Job Attribute Defaults Display gives the default values for certain job attributes. Refer to the CHANGE\_JOB\_ATTRIBUTE\_DEFAULTS command for a description of the various attributes. Figure 8-6 is an example of a Job Attribute Defaults Display.



**Figure 8-6. Job Attribute Defaults Display**

## DISPLAY\_JOB\_STATUS Command

**Purpose** Displays the current status of one or more jobs. This command displays jobs across all mainframes in a cluster configuration. A cluster configuration is two or more mainframes connected through a medium such as STORNET.

You can use the SELECT\_JOBS subcommand of the MANAGE\_JOBS utility to create a list variable type as input for the NAME parameter. You must execute the DISPLAY\_JOB\_STATUS command within the utility unless you previously created the variable outside of the utility.

**Format** **DISPLAY\_JOB\_STATUS** or **DISJS**  
*NAME=list of name or keyword*  
*DISPLAY\_OPTIONS=list of keyword*  
*OUTPUT=file*  
*STATUS=status variable*

**Parameters** *NAME* or *NAMES* or *N*

Specifies the names of the jobs for which job status information is to be displayed. These names can be user-supplied job names or system-supplied job names. The keyword ALL specifies all jobs in the system. The default is the name of the current job.

*DISPLAY\_OPTIONS* or *DO*

Specifies what job status information is to be displayed for jobs specified by the NAME parameter. The default is (CPU\_TIME\_USED, DISPLAY\_MESSAGE, JOB\_STATE, PAGE\_FAULTS, SYSTEM\_JOB\_NAME) or the variable OSD\$DISJS\_DISPLAY\_OPTIONS. DISPLAY\_OPTIONS has the following values:

ALL

Includes all of the following display options.

CONTROL\_FAMILY or CF

Displays the family name of the control user for the specified jobs.

CONTROL\_USER or CU

Displays the user name of control user for the specified jobs.

CPU\_TIME\_USED or CTU

Displays the amount of CPU time that the specified jobs have used.

DISPLAY\_MESSAGE or DM

Displays the most recent command that was executed or display message that was issued for the specified jobs.

JOB\_CLASS or JC

Displays the job class for the specified jobs. The job class can be SYSTEM, MAINTENANCE, BATCH, INTERACTIVE, UNASSIGNED, or any site-defined job class.

JOB\_CLASS\_POSITION or JCP

Displays the position of the specified jobs within their job classes.

**JOB\_DESTINATION\_USAGE or JDU**

Displays the application that forwards the the specified jobs to a remote host for execution.

**JOB\_INITIATION\_TIME or JIT**

Displays the time when the specified jobs were initiated and the elapsed time since those jobs were initiated.

**JOB\_MODE or JM**

Displays the job mode for the specified jobs. The job mode can be batch, interactive connected, interactive line disconnect, interactive system disconnect, or interactive command disconnect.

**JOB\_STATE or JS**

Displays the job state for the specified jobs. The job state can be one of the following:

**DEFERRED**

Job is not yet eligible to be initiated.

**INITIATED**

Job has been initiated.

**WAITING TO BE INITIATED**

Job has not been initiated but is waiting.

**TERMINATING**

Job is terminating.

**LOGIN\_FAMILY or LF**

Displays the family name under which the specified jobs are executing.

**LOGIN\_USER or LU**

Displays the user name under which the specified jobs are executing.

**OPERATOR\_ACTION\_POSTED or OAP**

Displays whether the specified jobs require operator action.

**PAGE\_FAULTS or PF**

Displays the number of page faults that have occurred within the specified jobs.

**SYSTEM\_JOB\_NAME or SJN**

Displays the unique name the system assigned to each the specified job.

**USER\_JOB\_NAME or UJN**

Displays the name the user assigned to the specified jobs.

**OUTPUT or O**

Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is \$OUTPUT.

## STATUS

Returns the completion status of this command.

- Remarks**
- The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the OUTPUT parameter to specify a file to receive the information from this command. That file can then be routed to a line printer with the PRINT\_FILE command.
  - When displaying the status for a job from another mainframe that is connected through a file server, you must specify the complete job name.

**Examples** This example displays the job class and job mode information for all jobs in the system.

```
display_job_status name=all display_option=(job_class job_mode)
```

The Job Status Display gives status information about one or more jobs specified by the DISPLAY\_JOB\_STATUS command. Figure 8-7 is an example of a Job Status Display.

Control_Family	:	nve
Control_User	:	smith
CPU_Time_Used	:	Job Mode- 1203.043 Monitor Mode- 415.038
Display_Message	:	disjs do=all
Job_Class	:	interactive
Job_Class_Position	:	none
Job_Destination_Usage	:	ve
Job_Initiation_Time	:	1988-08-26.13:54.06 (0-0-0.1:14:34.40)
Job_Mode	:	interactive connected
Job_State	:	initiated
Login_Family	:	nve
Login_User	:	smith
Operator_Action_Posted	:	no
Page_Faults	:	Assigned- 186 From Disk- 237 Reclaimed- 305
System_Job_Name	:	\$0855_0260_aal_8536
User_Job_Name	:	smith

**Figure 8-7. Job Status Display**

## DISPLAY\_OUTPUT\_ATTRIBUTE Command

**Purpose** Displays the file attributes for specified output files.

You can use the `SELECT_OUTPUT` subcommand of the `MANAGE_OUTPUT` utility to create a list variable as input for the `NAME` parameter. You must execute the `DISPLAY_OUTPUT_ATTRIBUTES` command within the utility unless you previously created the variable outside of the utility.

**Format** `DISPLAY_OUTPUT_ATTRIBUTE` or  
`DISPLAY_OUTPUT_ATTRIBUTES` or  
`DISOA`

`NAME=list of name`  
`DISPLAY_OPTION=list of keyword`  
`OUTPUT=file`  
`STATUS=status variable`

**Parameters** `NAME` or `NAMES` or `N`

Specifies the name of the output file for which attributes are to be displayed. Enter either the system-supplied or user-supplied name. This parameter is required.

`DISPLAY_OPTION` or `DISPLAY_OPTIONS` or `DO`

Specifies which attributes values are to be displayed for the output files specified by the `NAME` parameter. The default is `ALL`. `DISPLAY_OPTION` has the following values:

`ALL`

Displays values of all attributes for the specified output files.

`COMMENT_BANNER` or `CB`

Displays the comment banner character string to be used with the for the specified output files.

`CONTROL_FAMILY` or `CF`

Displays the family name of the control user of the output file.

`CONTROL_USER` or `CU`

Displays the user name of the control user of the output file.

`COPIES` or `C`

Displays the number of copies of the specified output files to be printed.

`COPIES_PRINTED` or `CP`

Displays the number of copies of the specified output files that have been printed, if any.

`DATA_MODE` or `DM`

Displays the `DATA_MODE` attribute for the specified output files.

`DEVICE` or `D`

Displays a name of a printer on which the specified output files are to be printed.

**DEVICE\_TYPE or DT**

Displays the type of output device on which the specified output files are to be printed.

**EARLIEST\_PRINT\_TIME or EPT**

Displays the earliest date and time when the system can print the specified output files.

**EXTERNAL\_CHARACTERISTICS or EC**

Displays the string that specifies the external characteristics for selecting a printer on which the specified output files are to be printed.

**FILE\_POSITION or FP**

Displays a restarting point for the specified output files if the output is interrupted. The FILE\_POSITION value is always zero or BOI.

**FILE\_SIZE or FS**

Displays the size of the specified output files in bytes.

**FORMS\_CODE or FC**

Displays the string that specifies the forms code for selecting a printer on which the specified output files are to be printed.

**LATEST\_PRINT\_TIME or LPT**

Displays the latest date and time when the system can print the specified output files.

**LOGIN\_ACCOUNT or LA**

Displays the account name of the job that produced the specified output files.

**LOGIN\_FAMILY or LF**

Displays the family name of the job that produced the specified output files.

**LOGIN\_PROJECT or LP**

Displays the project name of the job that produced the specified output files.

**LOGIN\_USER or LU**

Displays the user name of the job that produced the specified output files.

**OPERATOR\_FAMILY or OF**

Displays the family name of the operator of the private station or the remote system on which the specified output files are to be printed.

**OPERATOR\_USER or OU**

Displays the user name of the operator of the private station or the remote system on which the specified output files are to be printed.

**ORIGINATING\_APPLICATION\_NAME or OAN**

Displays the name of the application that originated the job that produced the specified output files.

**OUTPUT\_CLASS or OC**

Displays the the output class of the specified output files.

**OUTPUT\_DEFERRED\_BY\_OPERATOR or ODBO**

Displays the operator-controlled state of the specified output files.

**OUTPUT\_DEFERRED\_BY\_USER or ODBU**

Displays the user-controlled state of the specified output files.

**OUTPUT\_DESTINATION or ODE**

Displays the location name of the remote system where the specified output files are to be sent if the file's OUTPUT\_DESTINATION\_USAGE attribute is QTF or NTF.

**OUTPUT\_DESTINATION\_USAGE or ODU**

Displays the kind of CDCNET print station where the specified output files are to be sent, or the queue file transfer application that forwards the output files to a remote system.

**OUTPUT\_PRIORITY or OP**

Displays the output priority increment to be added to the initial priorities of the specified output files.

**OUTPUT\_SUBMISSION\_TIME or OST**

Displays the time when the specified output files were placed in the queue and how long those files have been in the queue.

**PURGE\_DELAY or PD**

Displays how long the specified output files remain in the output queue after being printed.

**REMOTE\_HOST\_DIRECTIVE or RHD**

Displays the string used to control the processing of the specified output files.

**ROUTING\_BANNER or RB**

Displays the routing banner string to be used with the specified output files.

**SITE\_INFORMATION or SI**

Displays the site information string associated with the job that produced the specified output files.

**STATION or S**

Displays the I/O station name or control facility name to which the specified output files are to be sent.

**SYSTEM\_FILE\_NAME or SFN**

Displays the system-supplied name of the specified output files.

**SYSTEM\_JOB\_NAME** or **SJN**

Displays the system-supplied name of the job that produced the specified output files.

**USER\_FILE\_NAME** or **UFN**

Displays the user-supplied name of the specified output files.

**USER\_INFORMATION** or **UI**

Displays the user information string associated with the job that produced the specified output files.

**USER\_JOB\_NAME** or **UJN**

Displays the user-supplied name of the job that produced the specified output files.

**VERTICAL\_PRINT\_DENSITY** or **VPD**

Displays the vertical print density, in lines per inch, to be used in printing the specified output files.

**VFU\_LOAD\_PROCEDURE** or **VLP**

Displays the name of the procedure file containing the vertical forms unit load image to use in printing the specified output files.

**OUTPUT** or **O**

Specifies the name of the file to which the system writes the display information. The default is \$OUTPUT.

**STATUS**

Returns the completion status for this command.

**Remarks**

Refer to the NOS/VE System Usage manual for a more detailed description of the output file attributes.

**Examples** The Output Attribute Display gives the output attributes for an output file. Figure 8-8 is an example of an Output Attribute Display showing all of the attribute values.

Comment_Banner	:	'EXAMPLES'
Control_Family	:	nve
Control_User	:	sarett
Copies	:	1
Copies_Printed	:	0
Data_Mode	:	coded
Device	:	automatic
Device_Type	:	printer
Earliest_Print_Time	:	none
External_Characteristics	:	'NORMAL'
File_Position	:	0
File_Size	:	6481
Forms_Code	:	'NORMAL'
Latest_Print_Time	:	none
Login_Account	:	d1257
Login_Family	:	nve
Login_Project	:	p83a2821
Login_User	:	sarett
Operator_Family	:	nve
Operator_User	:	sarett
Originating_Application_Name	:	osa\$dual_state_interactive
Output_Class	:	normal
Output_Deferred_By_Operator	:	no
Output_Deferred_By_User	:	yes
Output_Destination	:	'NVE'
Output_Destination_Usage	:	dual_state
Output_Priority	:	low
Output_Submission_Time	:	1987-07-31.16:09:35 (0-0-0.0:37.494)
Purge_Delay	:	none
Remote_Host_Directive	:	' '
Routing_Banner	:	'SARETT'
Site_Information	:	' '
Station	:	automatic
System_File_Name	:	\$0990_0102_aad_1511
System_Job_Name	:	\$0990_0102_aad_1367
User_File_Name	:	examples
User_Information	:	' '
User_Job_Name	:	sarett
Vertical_Print_Density	:	six
VFU_Load_Procedure	:	none

Figure 8-8. Output Attribute Display

## DISPLAY\_OUTPUT\_STATUS Command

**Purpose** Displays the current status of one or more files in the output queue.

You can use the SELECT\_OUTPUT subcommand of the MANAGE\_OUTPUT utility to create a list variable as input for the NAME parameter. You must execute the DISPLAY\_OUTPUT\_STATUS command within the utility unless you previously created the variable outside of the utility.

**Format** DISPLAY\_OUTPUT\_STATUS or  
DISOS

*NAME=list of name or keyword*  
*DISPLAY\_OPTIONS=list of keyword*  
*OUTPUT=file*  
*STATUS=status variable*

**Parameters** NAME or NAMES or N

Specifies the names of one or more output files for which status information is to be displayed. These names can be user-supplied file names or system-supplied file names. The keyword ALL specifies all output files in the system. The default is ALL.

*DISPLAY\_OPTIONS* or DO

Specifies what status information to display for the output files specified by the NAME parameter. The default is the following keyword list: (OUTPUT\_STATE, SYSTEM\_FILE\_NAME, USER\_FILE\_NAME).

DISPLAY\_OPTIONS has the following values:

ALL

Includes all of the following display options.

CONTROL\_FAMILY or CF

Displays the family name of the control user of the job that produced the specified output files.

CONTROL\_USER or CU

Displays the user name of the control user for the job that produced the specified output files.

LOGIN\_FAMILY or LF

Displays the family name of the job that produced the specified output files.

LOGIN\_USER or LU

Displays the user name of the job that produced the specified output files.

OUTPUT\_DESTINATION\_USAGE or ODU

Displays the queue file transfer application that is to print the specified output files or that forwards the output files to a remote system for printing.

**OUTPUT\_STATE or OS**

Displays the state of the specified output files. The output state can be one of the following:

**COMPLETED**

Output file has completed printing.

**DEFERRED**

Output file has been deferred and is ineligible for printing.

**PRINTING**

Output file is being printed.

**TERMINATED**

Output file has been terminated.

**WAITING TO BE PRINTED**

Output file is waiting to be printed.

**SYSTEM\_FILE\_NAME or SFN**

Displays the system-supplied name of the specified output files.

**SYSTEM\_JOB\_NAME or SJN**

Displays the system-supplied name of the job that produced the specified output files.

**USER\_FILE\_NAME or UFN**

Displays the user-supplied name of the specified output files.

**OUTPUT or O**

Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is \$OUTPUT.

**STATUS**

Returns the completion status of this command.

**Remarks**

The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the OUTPUT parameter to specify a file to receive the information from this command. That file can then be routed to a printer with the PRINT\_FILE command.

**Examples** This example displays the system job name of the job that created the output file having the system-supplied name of \$0990\_0101\_ADE\_0394:

```
display_output_status name=$0990_0101_ade_0394 ..  
../display_option=system_job_name
```

The Output Status Display gives the current status of one or more output files. Figure 8-9 is an example of an Output Status Display.

Control_Family	:	nve
Control_User	:	mnr
Login_Family	:	nve
Login_User	:	mnr
Output_Destination_Usage	:	private
Output_State	:	waiting to be printed
System_File_Name	:	\$0855_0002_aaa_1115
System_Job_Name	:	\$0855_0002_aaa_1111
User_File_Name	:	prifile

**Figure 8-9. Output Status Display**

## DISPLAY\_SYSTEM\_CONFIGURATION Command

- Purpose** Displays the channel connections for each element in the system configuration.
- Format** **DISPLAY\_SYSTEM\_CONFIGURATION** or **DISSC**  
*OUTPUT=file*  
*STATUS=status variable*
- Parameters** *OUTPUT* or *O*  
 Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is \$OUTPUT.
- STATUS*  
 Returns the completion status of this command.
- Remarks** The main operator window can display only a limited number of the last lines of output. If you suspect that all the information is not being presented, you should use the *OUTPUT* parameter to specify a file to receive the information from this command. That file can then be routed to a line printer with the *PRINT\_FILE* command.
- Examples** This example displays the connections among elements in the system configuration:

```
display_system_configuration
```

The System Configuration Display gives the channel connections between the elements in the physical configuration. Only channel connections between NOS/VE devices are displayed. Figure 8-10 shows an example of part of a System Configuration Display.

```

STORAGE DEVICE ELEMENT: C55
PRODUCT IDENTIFICATION: $679_6
SERIAL NUMBER: 1113
STATE: OFF
UNIT NUMBER: 5(10)
CONTROLLER CONNECTIONS: COBALT_7021_1 COBALT_7021_2
CONNECTION STATUS:
  IOU0/CH11.COBALT_7021_1          INACTIVE
  COBALT_7021_1.C55              INACTIVE
  IOU0/CH27.COBALT_7021_2        ACTIVE
  COBALT_7021_2.C55             INACTIVE
ACTIVE PATHS:
  NONE
INACTIVE PATHS:
  IOU0.CH11.COBALT_7021_1.C55     IOU0.CH11.CO.U5
  IOU0.CH27.COBALT_7021_2.C55     IOU0.CH27.CO.U5
    
```

Figure 8-10. System Configuration Display

## DISPLAY\_SYSTEM\_LOG Command

- Purpose** Displays the most recent entries in the system job log. The system job log is a record of job activity for all jobs in the system.
- Format** **DISPLAY\_SYSTEM\_LOG** or **DISSL**  
*DISPLAY\_OPTION=integer or keyword*  
*OUTPUT=file or keyword*  
*STATUS=status variable*
- Parameters** *DISPLAY\_OPTION* or *DISPLAY\_OPTIONS* or *DO*  
 Specifies how many lines of the system log file are to be displayed. The default is LAST. *DISPLAY\_OPTIONS* has the following values:
- ALL**  
 Displays all entries in the system log.
- LAST**  
 Displays only the log entries written to the system log since the **DISPLAY\_SYSTEM\_LOG** command was last executed.
- OUTPUT** or *O*  
 Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is \$OUTPUT.
- STATUS**  
 Returns the completion status of this command.
- Remarks**
- If you have entered the **ACTIVATE\_SYSTEM\_LOGGING** command, all entries made to user job logs are also recorded in the system log. Otherwise, only job login and logout entries are recorded in the system log.
  - To produce a print out of this display, specify a file name on the **OUTPUT** parameter, and then print the file using the **PRINT\_FILE** command.
  - The **VEDISPLAY** command can also display the system log. The difference between the **VEDISPLAY** command version and the **DISPLAY\_SYSTEM\_LOG** command version is that the former is continuously updated while on the screen.

**Examples** This example directs all entries in the system log to the file `$SYSTEM.TUESDAY_LOG`:

```
display_system_log display_option=all output=$system.tuesday_log
```

The System Log Display gives the contents of the system log. Figure 8-11 is an example of part of a System Log Display.

```
09:24:35.559.$0855_0002_AAF_3189.CI.disci infu
09:25:09.650.$0855_0002_AAF_3189.CI.infu
09:26:02.129.$0855_0002_AAF_3189.CI.manna
09:26:12.623.$0855_0002_AAF_3189.CI.disuv
09:27:10.004.$0855_0002_AAA_0000.CI.VED FS
09:28:23.882.$0855_0002_AAF_1209.CI.coms cmm$logical_configuration_mgr l=list
09:29:31.185.$0855_0002_AAA_0000.CI.VED AJ
09:30:02.535.$0855_0002_AAA_1210.CI.edif list
09:31:20.323.$0855_0002_AAA_1212.CI.??%chawc $c
```

**Figure 8-11. System Log Display**

Each entry in the display has the following format:

```
time.ssn.origin.text
```

**time** Time of the entry. The format is hours:minutes:seconds.milliseconds.

**ssn** System-supplied name of the job.

**origin** Origin of the message. The message origin is one of the following:

Origin	Description
CI	Command interpreted
CS	Command skipped
PR	Program
RC	Recovery
SY	System

**text** Text of the entry. If the text extends beyond 80 characters in length, the text is continued on the next line.

## DISPLAY\_SYSTEM\_TASK\_DATA Command

**Purpose** Displays information about all system tasks.

**Format** **DISPLAY\_SYSTEM\_TASK\_DATA** or **DISSTD**  
**TASK\_NAMES**=list of name or keyword  
*DISPLAY\_OPTION*=keyword  
*OUTPUT*=file  
*STATUS*=status variable

**Parameters** **TASK\_NAME** or **TASK\_NAMES** or **TN**

Specifies a list of the task names for which information is to be displayed. The keyword **ALL** specifies all system tasks. This parameter is required.

*DISPLAY\_OPTION* or *DO*

Specifies the type of display being requested. The default is **BRIEF**. *DISPLAY\_OPTION* has the following values:

**BRIEF** or **B**

Displays the names of the specified tasks.

**FULL** or **F**

Displays a variety of information about the specified tasks. Refer to figure 8-12.

*OUTPUT* or *O*

Specifies the name of the file to which the system writes the display information. This file can be positioned. The default is **\$OUTPUT**.

*STATUS*

Returns the completion status of this command.

**Examples** This example displays just the task names of all system tasks:

```
display_system_task_data task_names=all display_options=full
```

Figure 8-12 is an example of a System Task Data Display.

TASK NAME	AUTO OPTIONS:			RE-	SPY	ENA-	AC-	COM-	STATUS IF
	TERM	D	I	STRT	ID	BLD	TIVE	PLETE	COMPLETE
STATUS_CONTROL_FACILITY_SERVER	T	T	T	F	0	T	T	F	
STATUS_AND_CONTROL_FACILITY	T	T	T	F	0	T	T	F	
CONSOLE_INTERACTION	T	P	I	F	0	T	T	F	
NETWORK_FILE_ACCESS	F	T	T	T	0	T	T	F	
NETWORK_INITIALIZER	F	T	T	T	0	T	T	F	
OSA\$FILE_TRANSFER_SERVER	T	T	T	T	0	T	T	F	
NAMVE_POLL_CONNECTIONS_TASK	T	P	I	T	0	T	T	F	
NAMVE_CONNECTION_ESTABLISHER	T	P	I	T	0	T	T	F	
NAMVE_TIMER_MONITOR	T	P	I	T	0	T	T	F	
NAMVE_DIRECTORY_ME	T	P	I	T	0	T	T	F	
NAMVE_ROUTING_ME	T	P	I	T	0	T	T	F	
NAMVE_COMPLETED_OUTPUT_TASK	T	P	I	T	0	T	T	F	
NAMVE_SYSTEM_INPUT_TASK	T	P	I	T	0	T	T	F	
DUMP_BROKEN_JOB	T	T	T	T	0	T	T	F	
OPERATOR_DISPLAY_MANAGER	T	P	I	F	0	T	T	F	

**Figure 8-12. System Task Data Display**

Each entry in the display has the following format:

```
autoterm options d/i restrt spy id enabled active complete status
```

**autoterm** Action to be performed when a task fails.

- T Restart the task.
- F Do not restart the task.

**options d** Action to be performed if a DEACTIVATE\_SYSTEM\_TASK command is entered for the task.

- T System job monitor task terminates the task.
- S Signal is sent to terminate the task.
- V Task terminates itself.
- P Task cannot be terminated using the DEACTIVATE\_SYSTEM\_TASK command.

options i      Action to be performed if an IDLE\_SYSTEM or TERMINATE\_SYSTEM command is entered.

          T      System job monitor task terminates the task.  
          S      Signal is sent that terminates the task.  
          V      Task terminates itself.  
          I      Task does not terminate.

restrt        Action to be performed if a task terminates as the result of a system idle condition.

          T      Restarts the task.  
          F      Does not restart the task.

spy id        Identifier in use for the task. If there is no identifier for the task, the entry is zero (0).

enabled       Effect of the ACTIVATE\_SYSTEM\_TASKS command on a task.

          T      The task is enabled.  
          F      The task is not enabled.

active        Task activation status.

          T      Task has been activated by the system job monitor.  
          F      Task has not been activated by the system job monitor.

complete     Task execution status.

          T      Task has completed execution.  
          F      Task has not completed execution.

status        Task completion status. The status is NORMAL if the task completes without terminating prematurely. Otherwise, this field contains the status condition when the task terminated prematurely. A blank field means the task is still executing.

## DISPLAY\_TAPE\_VALIDATION Command

**Purpose** Displays whether site-defined procedures are used to validate magnetic tape usage. The CHANGE\_TAPE\_VALIDATION command, described earlier in this chapter, enables and disables these validation procedures.

**Format** **DISPLAY\_TAPE\_VALIDATION** or **DISTV**  
*OUTPUT=file*  
*STATUS=status variable*

**Parameters** *OUTPUT* or *O*  
 Specifies the name of the file to which the display is written. The default is \$OUTPUT.

*STATUS*  
 Returns the completion status for this command.

**Remarks** Magnetic tape validation procedures are part of the deadstart file software. These procedures are maintained in the object module RMM\$VALIDATE\_TAPE\_OPERATIONS on the object library \$SYSTEM.SITE\_OS\_MAINTENANCE.SOURCE\_LIBRARY. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2 for more information about how to define tape validation procedures for your site.

**Examples** The following is an example of a Tape Validation Display:

```
Validate_tape_access      : on
```

ON indicates that tape validation is enabled; OFF indicates that tape validation is disabled.

**DISPLAY\_UNRECONCILED\_FILES Command**

- Purpose** Displays missing and unavailable catalogs and files. Missing means those files and catalogs that reside on a storage device that was down or off during the previous deadstart. Unavailable means those files and catalogs that reside on a storage device that has gone down since the previous deadstart.
- Format** **DISPLAY\_UNRECONCILED\_FILES** or **DISUF**  
*CATALOG=file or keyword*  
*SET\_NAME=name*  
*DISPLAY\_OPTIONS=keyword*  
*OUTPUT=file*  
*MISSING\_COUNT=integer variable*  
*UNAVAILABLE\_COUNT=integer variable*  
*STATUS=status variable*
- Parameters** *CATALOG* or *C*  
 Specifies the catalog for which unreconciled files are to be displayed. The keyword **ALL** specifies all catalogs for all families in the system. You must specify a value for **CATALOG** or **SET\_NAME**, but not both.
- SET\_NAME* or *SN*  
 Specifies the name of the mass storage set for which unreconciled files are to be displayed. You must specify a value for **CATALOG** or **SET\_NAME**, but not both.
- DISPLAY\_OPTIONS* or *DO*  
 Specifies the type of unreconciled files to display. The default is **ALL**. **DISPLAY\_OPTIONS** has the following values:
- ALL* or *A*  
 Displays missing and unavailable catalogs and files.
- MISSING* or *M*  
 Displays missing catalogs and files.
- UNAVAILABLE* or *U*  
 Displays unavailable catalogs and files.
- OUTPUT* or *O*  
 Specifies the name of the file to which the system writes the display information. The default is **\$OUTPUT**.
- MISSING\_COUNT* or *MC*  
 Specifies an integer variable that returns the number of missing catalogs and files.
- UNAVAILABLE\_COUNT* or *UC*  
 Specifies an integer variable that returns the number of unavailable catalogs and files.

*STATUS*

Returns the completion status of this command.

**Examples** This example totals the number of unavailable catalogs and files in the system and stores that number in the integer variable NUMBER\_OF\_UNAVAILABLE:

```
var number_of_unavailable: integer
var/varend
display_unreconciled_files catalog=all ..
../unavailable_count=number_of_unavailable
```

Figure 8-13 is an example of an Unreconciled Files Display. The display lists the files and catalogs that are missing along with a count of those files and catalogs.

```
PF 2005-- .ajl.catalog_1.file_a
PF 285-- .ajl.catalog_1.file_b
PF 232-- .ajl.catalog_1

*****Summary*****

Number of missing catalogs: 1
Number of missing files: 2
```

**Figure 8-13. Unreconciled Files Display**

## \*DUMP Command

- Purpose** Specifies whether to dump the NOS/VE environment to tape during abnormal termination of NOS/VE on a dual-state system. Enter the \*DUMP command in the K display at the NOS system console or the L display on the NOS/BE system console.
- Format** \*DUMP = boolean.
- Parameters** boolean  
TRUE instructs the system to dump the NOS/VE environment. FALSE instructs the system not to dump the NOS/VE environment. This parameter is required.
- Remarks**
- For more information on using the \*DUMP command, refer to chapter 4, Terminating NOS/VE.
  - If you do not enter the \*DUMP command, the default is \*DUMP=TRUE.
  - This command must end in a period.

## **IDLE\_SYSTEM Command**

- Purpose**      Temporarily suspends the system by swapping out all jobs and reducing the system job to one monitor task. Use this command when resolving error conditions such as high temperature or humidity.
- Format**      **IDLE\_SYSTEM**
- Remarks**    • This command must be entered from the critical display window. Use the RESUME\_SYSTEM command to resume operations.
- There is no abbreviated form of this command.

**LABEL\_TAPE\_VOLUMES Command**

**Purpose** Labels one or more tapes. This command builds the labels from information you provide, requests the tapes, assigns the tape unit, and labels the tapes. Refer to the section called Labelling a Set of Tapes, in chapter 5, Providing Magnetic Tape Service, for step-by-step instructions on using the LABEL\_TAPE\_VOLUMES command.

**Format** LABEL\_TAPE\_VOLUMES or LABTV  
 ELEMENT\_NAME=name  
 VSN\_PREFIX=name  
 VSN\_COUNT=integer  
 INCREMENT\_SCHEME=keyword  
 TYPE=keyword  
 STATUS=status variable

**Parameters** ELEMENT\_NAME or EN

Specifies the name of the tape unit on which the tapes are to be mounted. This parameter is required.

**VSN\_PREFIX or VSNP**

Specifies a 1 to 5-character prefix that all of the tape volume serial numbers will have in common. The system completes the volume serial numbers by generating the characters to follow the prefix. These characters can be integers or letters depending on the value of the INCREMENT\_SCHEME parameter. This parameter is required.

**VSN\_COUNT or VSNC**

Specifies the number of tapes in the set. This parameter is required.

**INCREMENT\_SCHEME or IS**

Specifies the format of the system-generated characters following the volume serial number prefix. The default is DECIMAL. INCREMENT\_SCHEME has the following values:

**DECIMAL**

Generates leading zeros (as needed) and integers to complete the volume serial numbers.

**ALPHABETIC**

Generates letters to complete the 6-character volume serial numbers. The advantage to specifying ALPHABETIC is that more labels can be generated for a given prefix.

*TYPE* or *T*

Specifies the type of tape unit required. The default is MT9\$1600. *TYPE* has the following values:

MT9\$800

9-track, 800-cpi density.

MT9\$1600

9-track, 1600-cpi density.

MT9\$6250

9-track, 6250-cpi density.

**Remarks**

- The LCU subcommand INITIALIZE\_TAPE\_VOLUME initializes a single tape. The INITIALIZE\_TAPE\_VOLUME subcommand is described later in this chapter.

- For information about how to modify this command to satisfy site requirements, refer to the NOS/VE System Performance and Maintenance manual, Volume 2.

**Examples**

- This example generates RVSNs PFA001 to PFA025:

```
label_tape_volumes vsn_prefix=pfa vsn_count=25 ..  
../increment_scheme=decimal
```

- This example generates RVSNs FULLAA to FULLAZ, FULLBA to FULLBZ, FULLCA to FULLCZ, and so on, through FULLFA to FULLFF:

```
label_tape_volumes vsn_prefix=full vsn_count=136 ..  
../increment_scheme=alphabetic
```

**LOGICAL\_CONFIGURATION\_UTILITY Command**

- Purpose** Initiates the Logical Configuration Utility.
- Format** LOGICAL\_CONFIGURATION\_UTILITY or  
LCU  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status for the entire utility.
- Remarks** The following subset of LCU subcommands are described immediately after this command. Refer to the NOS/VE System Performance and Maintenance manual, Volume 2 for descriptions of all LCU subcommands.
- CHANGE\_ELEMENT\_STATE  
INITIALIZE\_TAPE\_VOLUME  
QUIT

## CHANGE\_ELEMENT\_STATE Subcommand

- Purpose** Changes the state (ON, OFF, or DOWN) of peripheral elements or channels connected to a mainframe. Refer to Remarks below for restrictions on the use of this subcommand.
- Format** **CHANGE\_ELEMENT\_STATE** or **CHAES**  
**ELEMENT**=name  
**STATE**=keyword  
*IOU*=name  
*STATUS*=status variable
- Parameters** **ELEMENT** or **E**  
 Specifies the name of the element whose state is to be changed. This parameter is required.
- STATE** or **S**  
 Defines the desired state of the defined element. This parameter is required. You can specify one of the following keywords:
- ON**  
 Indicates that the element is operational.
- OFF**  
 Indicates that the element is not available for normal operations or maintenance.
- DOWN**  
 Indicates that the device is only available for maintenance purposes.
- IOU**  
 Specifies the name of the IOU to which a channel element is connected. Values you can specify for this parameter are IOU0 and IOU1. The default is IOU0.
- STATUS**  
 Returns the completion status for this subcommand.
- Remarks**
- Use of this subcommand requires system job privileges.
  - A central processor is denoted by CPn. The n value can be either 0 or 1.
  - Restrictions on the use of this subcommand:
    - You cannot change the state of a disk unit whose volume is a member of class Q (system-critical) or class J (\$SYSTEM catalogs) to OFF or DOWN after deadstart has completed.
    - You cannot change a mass storage channel or controller to OFF or DOWN if it provides the only access to a class Q or class J disk volume. However, a state change to DOWN or OFF is permitted if a redundant channel or controller exists, is in the ON state, and provides access to the critical storage device.

- No state change of a tape channel, controller, or unit is permitted if access will be denied to a job that has a tape unit assigned to it or if it is currently the object of maintenance access.
- NOS/VE does not automatically set mass storage elements to DOWN following deadstart. However, it disables access to a disk unit if it is faulty or cannot be accessed. The state of the faulty element should be manually changed to DOWN before repair is attempted. To reinstate the volume, change the state back to ON.
- You cannot use this subcommand to change the state of a NAD communications element while RHFAM/VE is active.
- The following state changes are allowed for CPUs (denoted by central processor element CPn):
  - ON to DOWN
  - DOWN to ON
 Note that a CPU cannot be placed in an OFF state.
- You cannot set the only CPU that is in the ON state to a DOWN state.
- You cannot change the state of a dual-state CPU in a multiple-CPU system if the MANDATORY\_DUALSTATE system attribute is set to TRUE 1 (TRUE).
- You cannot change the state of a CPU that is set to DOWN because of hardware problems. This situation requires a NOS/VE deadstart.
- A state change requested by this subcommand becomes effective immediately, regardless of whether you enter it during deadstart or during normal system operations.
- State changes made by this subcommand are preserved across continuation deadstarts.
- Any resources acquired by NOS/VE from NOS or NOS/BE are returned to those systems either when you issue the LCU subcommand CHANGE\_ELEMENT\_STATE or when NOS/VE terminates.

If the element is a PP:

- When the state of a channel is changed to OFF (from ON or DOWN), NOS/VE reverts ownership of any PPs configured to the channel back to the NOS or NOS/BE system. However, this action does not apply to PPs that belong to the second IOU (IOU1) in a multiple-IOU mainframe. NOS and NOS/BE can only reference PPs and channels belonging to IOU0.

If the element is a mass storage element:

- Once acquired from NOS or NOS/BE, a NOS/VE mass storage channel, controller, or storage device remains assigned to NOS/VE until NOS/VE terminates.

If the element is not a mass storage element:

- In a dual-state environment, changing the state of nonmass storage elements may cause ownership of the element to revert from NOS/VE to NOS (or NOS/BE). To use such an element in the NOS or NOS/BE system, you must configure it on both NOS/VE and NOS or NOS/BE. See the NOS/VE System Performance and Maintenance manual, Volume 2 for more information on toggling element ownership.

If the element is a tape channel:

- If this is the only channel to a tape subsystem, the entire subsystem is returned to the NOS (or NOS/BE) system. This includes the PP(s), the controller (if applicable), and the associated tape unit.
- If another channel to the tape subsystem is defined in the NOS/VE active configuration and that channel is in the ON state, only the PP(s) and the channel affected by the state change are returned to the NOS (or NOS/BE) system.

If the element is a tape controller:

- All channels and units that are only connected to the controller and that are in the ON or DOWN state are returned to the NOS (or NOS/BE) system, provided that none of the storage devices are reserved or assigned to a NOS/VE job.

If the element is a tape unit:

- The element is logically disabled so that the associated NOS/VE driver or drivers process no further requests for the element. The element is also no longer a candidate for reservation or assignment to a NOS/VE job. The tape unit is returned to the NOS (or NOS/BE) system; however, NOS must use its own channel and controller to access the tape unit.

When you change the state of a channel or a controller from ON to OFF, other elements may be returned to the NOS or NOS/BE system even though their state remains ON in the NOS/VE configuration. Therefore, to reverse the effect of changing the state of a channel or controller to OFF, you need only return that element to the ON state. NOS/VE automatically acquires from NOS (or NOS/BE) the necessary subsystem elements; these subsystem elements are still in the ON state in the NOS/VE configuration.

For example, an operator changes the state of a controller from ON to OFF, causing its associated channel, PP, and tape units to be returned to the NOS (or NOS/BE) system. Later, when the operator returns the controller to the ON state, the previously mentioned resources are reacquired. In this example, if the operator wants to reacquire all but one of the tape units, the operator must change the state of the unwanted element to OFF before returning the state of the controller to ON.

- The effects of changing the state of an element from OFF to ON are the reverse of changing the state of an element from ON to OFF. However, the following exception applies: when a disk unit is turned ON by the CHANGE\_ELEMENT\_STATE subcommand, the volume mounted on the unit is not immediately available to the system for file access and allocation. However, set members are implicitly activated when the operator terminates the LCU session that caused the state change. Thus, you can turn ON an existing set member's unit, initialize the volume, and add the volume to the set. However, you must do this in one LCU session. NOS/VE does not allow an existing set member to be initialized after deadstart unless this is the first time that its disk unit has been turned ON since the last deadstart.
- When the state of a channel is changed to DOWN or OFF, NOS/VE automatically reconfigures to use a redundant channel to any of the elements connected to the original channel. When the channel is set to ON again, the original configuration is reinstated.
- When the state of a \$FA7B5\_A (9836 or 9853) disk controller is changed to DOWN or OFF, NOS/VE automatically reconfigures to use a redundant controller to any of the units connected to the original controller. When the controller is set to ON again, the original configuration is reinstated.

**Examples**

- This example removes control of a 639 tape subsystem (channel CH6, tape unit equipment number 52) from NOS/VE and returns it to NOS. Enter the following command at the NOS/VE system console:

```
logical_configuration_utility
change_element_state element=ch6 state=off
quit
```

The channel and the 639-1 tape unit are returned to NOS. Enter the following commands at the NOS system console to make the tape unit available:

```
UP,CH6.
ON,EQ=52.
IDLE,MAG.
MAG.
```

For 639 and 698 tape subsystems, MAGNET should be idled and restarted in order to force the loading of the NOS conversion tables. (This is not required for the 679 tape subsystem.)

- This example moves control of a 679 tape subsystem (channel CH33, EST ordinal 42) to NOS/VE from NOS/BE. Enter the following commands at the NOS/BE console:

```
OFF,42.  
DOWN,CH33.
```

Enter the following commands at the NOS/VE system console:

```
logical_configuration_utility  
change_element_state element=ch33 state=on  
quit
```

NOS/VE may now use the tape unit.

**INITIALIZE\_TAPE\_VOLUME Subcommand**

**Purpose** Initializes the labels on an ANSI standard labelled tape volume. Refer to the section called Labelling a Single Tape, in chapter 5, Providing Magnetic Tape Service, for step by step instructions on using the INITIALIZE\_TAPE\_VOLUME subcommand.

**Format** INITIALIZE\_TAPE\_VOLUME or INITV  
 ELEMENT\_NAME = name  
 RECORDED\_VSN = string  
 TYPE = keyword  
 OWNER\_IDENTIFIER = string  
 VOLUME\_ACCESSIBILITY\_CODE = string  
 FILE\_ACCESSIBILITY\_CODE = string  
 CHARACTER\_SET = keyword  
 LABEL\_STANDARD\_VERSION = string  
 STATUS = status variable

**Parameters** ELEMENT\_NAME or EN

Specifies the element name of the NOS/VE tape unit on which the tape volume is to be mounted. This parameter is required.

**RECORDED\_VSN or RVSN**

Specifies the 6-character string to be recorded on the VOL1 label of the tape volume. This parameter is required.

**TYPE or T**

Specifies the type of tape unit required. The default is MT\$1600. TYPE has the following values:

MT9\$800

9-track magnetic tape, 800-cpi density.

MT9\$1600

9-track magnetic tape, 1600-cpi density.

MT9\$6250

9-track magnetic tape, 6250-cpi density.

**OWNER\_IDENTIFIER or OI**

Specifies a 1- to 14-character string that identifies the owner of the tape. This value is recorded in the owner identifier field of the VOL1 label. The default is a space. This string can consist of the uppercase letters A to Z, the space character, and the following special characters:

! " % & ' ( ) \* + , - . / : ; < = > ? \_ \$ # @

*VOLUME\_ACCESSIBILITY\_CODE* or *VAC*

Specifies a 1-character string for the volume accessibility code that must be assigned to users who have access to the tape volume. This value is written into the accessibility code field of the VOL1 label. The default is a space.

*FILE\_ACCESSIBILITY\_CODE* or *FAC*

Specifies the file accessibility code that must be assigned to users who are to have access to the tape. This parameter accepts a 1-character string. This value is written into the accessibility code field of the HDR1 label. The default is a space. This allows anyone to read the tape.

*CHARACTER\_SET* or *CS*

Specifies the character set used in recording the labels on a tape. All labels and files that specify character conversion are recorded in this character set. The default is ASCII. *CHARACTER\_SET* has the following values:

ASCII or A

American National Standard Code for Information Interchange. A 7-bit code representing a prescribed set of 128 characters. The 7-bit ASCII code character is stored right-justified in an 8-bit byte.

EBCDIC or E

Extended Binary Coded Decimal Interchange Code. An 8-bit code representing a prescribed set of 256 characters.

*LABEL\_STANDARD\_VERSION* or *LSV*

Specifies the ANSI standard version number to record on the tape volume label. The ANSI version is recorded in the label standard version field of the VOL1 label. The default is 4. The system interprets blanks as an unidentified ANSI version. *LABEL\_STANDARD\_VERSION* has following values:

Value	ANSI Version
1	ANSI X3.27, 1969
3	ANSI X3.27, 1978
4	ANSI X3.27, 1983.

For systems that don't accept the value 4, you can specify any of the other values and still write data according to ANSI X3.27, 1983.

*STATUS*

Returns the completion status of this command.

**Remarks**

- You must enter the LOGICAL\_CONFIGURATION\_UTILITY command before entering the INITIALIZE\_TAPE\_VOLUME subcommand. To end the LCU session after labelling the tape, enter the QUIT subcommand.

- A labelled tape contains the following labels as a minimum (\* represents a tapemark):

VOL1 HDR1 HDR2 \*\* EOF1 EOF2 \*\*

- The HDR1 and EOF1 labels have the following default label attribute values:

Label Attribute	Value
FILE_IDENTIFIER	17 spaces
FILE_SET_IDENTIFIER	The RVSN from the VOL1 label.
FILE_SECTION_NUMBER	0001
FILE_SEQUENCE_NUMBER	0001
GENERATION_NUMBER	0001
GENERATION_VERSION_NUMBER	00
CREATE_DATE	Today's date
EXPIRATION_DATE	00000 (indicates that the file is expired).
FILE_ACCESSIBILITY_CODE	FILE_ACCESSIBILITY_CODE parameter value.

- The HDR2 and the EOF2 labels have the following default label attribute values:

Label Attribute	Value
RECORD_FORMAT	1 space
BLOCK_LENGTH	00000
RECORD_LENGTH	00000
RESERVED_TO_IMPLEMENTORS	35 spaces
BUFFER_OFFSET	2 spaces

**Examples** This example labels a tape with an RVSN of TAPE01 on tape unit U50 with a 6250-cpi tape density:

```
logical_configuration_utility
LCU/initialize_tape_volume element_name=u50 ..
LCU../recorded_vsn='tape01' owner_id='smith' ..
LCU../file_accessibility_code='X' type=mt9$6250
```

Confirm the labels in the operator action menu when it appears. When the LCU/ prompt returns, enter QUIT.

**QUIT Subcommand**

**Purpose** Terminates the Logical Configuration Utility.

**Format** **QUIT** or  
**QUI**

## MANAGE\_JOB Command

- Purpose** Initiates a MANAGE\_JOB utility session.
- Format** MANAGE\_JOB or  
MANAGE\_JOBS or  
MANJ  
*STATUS=status variable*
- Parameters** STATUS  
Returns the completion status for this utility.
- Remarks** The MANAGE\_JOB subcommands are described immediately following this command:
- SELECT\_JOBS  
QUIT

**SELECT\_JOBS Subcommand**

**Purpose** Selects a set of system-supplied job names according to a set of selection criteria and stores those names in a list variable. When you specify more than one selection criteria parameter, the resulting list of job names is the intersection of the criteria you specify.

This subcommand cannot select jobs executing on another mainframe in the same cluster.

**Format** **SELECT\_JOB** or  
**SELECT\_JOBS** or  
**SELJ**

*CONTROL\_FAMILY*=list of name  
*CONTROL\_USER*=list of name  
*JOB\_CATEGORY\_NAME*=list of name  
*JOB\_CLASS*=list of name  
*JOB\_DEFERRED\_BY\_OPERATOR*=boolean  
*JOB\_DEFERRED\_BY\_USER*=boolean  
*JOB\_QUALIFIER*=list of name or keyword  
*JOB\_STATE*=list of keyword  
*LOGIN\_ACCOUNT*=name or keyword  
*LOGIN\_FAMILY*=list of name  
*LOGIN\_PROJECT*=list of name  
*LOGIN\_USER*=list of name  
*NAME*=list of name  
*SITE\_INFORMATION*=list of string  
*USER\_INFORMATION*=list of string  
*MAXIMUM\_SELECTION*=integer or keyword  
*JOB\_SELECTION\_LIST*=list variable  
*STATUS*=status variable

**Parameters** *CONTROL\_FAMILY* or *CF*

Specifies the names of the control families by which jobs are to be selected.

*CONTROL\_USER* or *CU*

Specifies the names of the control users by which jobs are to be selected.

*JOB\_CATEGORY\_NAME* or *JCN*

Specifies the names of job categories by which jobs are to be selected.

*JOB\_CLASS* or *JC*

Specifies the job classes by which jobs are to be selected.

*JOB\_DEFERRED\_BY\_OPERATOR* or *JDBO*

Specifies the operator-controlled scheduling state by which jobs are to be selected. *JOB\_DEFERRED\_BY\_OPERATOR* can have one of the following values:

TRUE

Selects jobs that the operator has placed in a deferred state.

FALSE

Selects jobs that the operator has made eligible for initiation.

*JOB\_DEFERRED\_BY\_USER* or *JDBU*

Specifies the user-controlled scheduling state by which jobs are to be selected. *JOB\_DEFERRED\_BY\_USER* can have one of the following values:

TRUE

Selects jobs that the user has placed in a deferred state.

FALSE

Selects jobs that the user has made eligible for initiation.

*JOB\_QUALIFIER* or *JQ*

Specifies the job qualifiers by which jobs are to be selected.

*JOB\_STATE* or *JS*

Specifies the job state by which jobs are to be selected. *JOB\_STATE* can have one or more of the following values:

ALL

Selects jobs in all states.

DEFERRED

Selects jobs that are not eligible for initiation.

QUEUED

Selects jobs that are waiting to be initiated.

INITIATED

Selects jobs that have been initiated.

TERMINATED

Selects jobs that are in the process of terminating.

*LOGIN\_ACCOUNT* or *LA*

Specifies the names of login accounts by which jobs are to be selected.

*LOGIN\_FAMILY* or *LF*

Specifies the names of login families by which jobs are to be selected.

*LOGIN\_PROJECT* or *LP*

Specifies the login projects by which jobs are to be selected.

*LOGIN\_USER* or *LU*

Specifies the names of login users by which jobs are to be selected.

*NAME* or *N*

Specifies the user-supplied or system-supplied names of jobs to be selected.

*SITE\_INFORMATION* or *SI*

Specifies the site information string by which jobs are to be selected.

*USER\_INFORMATION* or *UI*

Specifies the user information string by which jobs are to be selected.

*MAXIMUM\_SELECTION* or *MAXS*

Specifies the maximum number of jobs that can be selected. The default is the number of all jobs satisfying the selection criteria.

*JOB\_SELECTION\_LIST* or *JSL*

Specifies the name of the list variable that is to contain the set of system-supplied job names resulting from the selection criteria. The default is JMV\$SELECTED\_JOBS.

*STATUS*

Returns the completion status for this subcommand.

**Remarks**

- A list variable created by this subcommand is useful as a value for the *NAME* parameter on commands such as the following:
  - *CHANGE\_INPUT\_ATTRIBUTE*
  - *DISPLAY\_INPUT\_ATTRIBUTE*
  - *DISPLAY\_JOB\_STATUS*
  - *TERMINATE\_JOB*
- If you enter no selection criteria parameters (parameters other than *JOB\_SELECTION\_LIST* and *STATUS*), this subcommand selects all jobs in the system.
- This subcommand never includes the system job in the list of selected jobs names.

## QUIT Subcommand

- Purpose** Terminates a MANAGE\_JOBS utility session.
- Format** **QUIT** or  
**QUI**  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status for this subcommand.

## MANAGE\_OUTPUT Command

- Purpose** Initiates a MANAGE\_OUTPUT utility session.
- Format** **MANAGE\_OUTPUT** or  
**MANO**  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status for this utility.
- Remarks** The MANAGE\_OUTPUT subcommands are described immediately following this command:
- SELECT\_OUTPUT  
QUIT

**SELECT\_OUTPUT Subcommand**

**Purpose** Selects a set of system-supplied file names according to a selection criteria and stores those names in a list variable. When you specify more than one selection criteria parameter, the resulting list of output file names is the intersection of the criteria you specify.

**Format** **SELECT\_OUTPUT** or **SELO**

*COMMENT\_BANNER* = string  
*CONTROL\_FAMILY* = list of name  
*CONTROL\_USER* = list of name  
*DATA\_MODE* = list of keyword  
*DEVICE* = list of name or keyword  
*EXTERNAL\_CHARACTERISTICS* = list of string or keyword  
*FORMS\_CODE* = list of string or keyword  
*LOGIN\_ACCOUNT* = name or keyword  
*LOGIN\_FAMILY* = list of name  
*LOGIN\_PROJECT* = list of name  
*LOGIN\_USER* = list of name  
*NAME* = list of name  
*OPERATOR\_FAMILY* = list of name  
*OPERATOR\_USER* = list of name  
*OUTPUT\_CLASS* = list of name  
*OUTPUT\_DEFERRED\_BY\_OPERATOR* = boolean  
*OUTPUT\_DEFERRED\_BY\_USER* = boolean  
*OUTPUT\_DESTINATION* = list of name or string  
*OUTPUT\_DESTINATION\_USAGE* = list of name or keyword  
*OUTPUT\_PRIORITY* = list of name  
*OUTPUT\_STATE* = list of keyword  
*REMOTE\_HOST\_DIRECTIVE* = list of string  
*ROUTING\_BANNER* = list of string  
*SITE\_INFORMATION* = list of string  
*STATION* = list of name or keyword  
*SYSTEM\_JOB\_NAME* = list of name  
*USER\_INFORMATION* = list of string  
*VERTICAL\_PRINT\_DENSITY* = list of keyword  
*VFU\_LOAD\_PROCEDURE* = list of name or keyword  
*MAXIMUM\_SELECTION* = list of integer or keyword  
*OUTPUT\_SELECTION\_LIST* = list variable  
*STATUS* = status variable

**Parameters** *COMMENT\_BANNER* or *CB*

Specifies the comment banner string by which output files are to be selected.

*CONTROL\_FAMILY* or *CF*

Specifies the names of the control families by which output files are to be selected.

*CONTROL\_USER* or *CU*

Specifies the names of the control users by which output files are to be selected.

*DATA\_MODE* or *DM*

Specifies the data mode by which output files are to be selected.

*DEVICE* or *D*

Specifies the names of the printers by which output files are to be selected.

*EXTERNAL\_CHARACTERISTICS* or *EC*

Specifies external characteristics strings by which output files are to be selected.

*FORMS\_CODE* or *FC*

Specifies the forms codes by which output files are to be selected.

*LOGIN\_ACCOUNT* or *LA*

Specifies the names of the login accounts by which output files are to be selected.

*LOGIN\_FAMILY* or *LF*

Specifies the names of the login families by which output files are to be selected.

*LOGIN\_PROJECT* or *LP*

Specifies the login projects by which output files are to be selected.

*LOGIN\_USER* or *LU*

Specifies the names of the login users by which output files are to be selected.

*NAME* or *N*

Specifies the user-supplied or system-supplied names of the files to be selected.

*OPERATOR\_FAMILY* or *OF*

Specifies the family names of the private station operators or the remote system operators by which output files are to be selected.

*OPERATOR\_USER* or *OU*

Specifies the user names of the private station operators or remote system operators by which output files are to be selected.

*OUTPUT\_CLASS* or *OC*

Specifies the output classes by which output files are to be selected. The only defined output class is NORMAL.

*OUTPUT\_DEFERRED\_BY\_OPERATOR* or *ODBO*

Specifies the operator-controlled scheduling states by which output files are to be selected. *OUTPUT\_DEFERRED\_BY\_OPERATOR* can have one of the following values:

TRUE

Selects output files that the operator has placed in a deferred state.

FALSE

Selects output files that the operator has made eligible for printing.

*OUTPUT\_DEFERRED\_BY\_USER* or *ODBU*

Specifies the user-controlled scheduling states by which output files are to be selected. *OUTPUT\_DEFERRED\_BY\_USER* can have one of the following values:

TRUE

Selects output files that the user has placed in a deferred state.

FALSE

Selects output files that the user has made eligible for printing.

*OUTPUT\_DESTINATION* or *ODE*

Specifies the system location names by which output files are to be selected. The location names can be family names or logical identifiers that identify the systems on which the files are to be printed.

*OUTPUT\_DESTINATION\_USAGE* or *ODU*

Specifies the routing applications or network by which output files are to be selected. The output destination usage can be the kind of CDCNET print station where the file is to be printed, or the queue file transfer application to be used to forward the output file to a remote system. *OUTPUT\_DESTINATION\_USAGE* can have one or more of the following values:

DUAL\_STATE

Selects output files that are to be printed under control of the partner system.

NTF

Selects output files that are to be forwarded to a remote NTF system for processing by that system.

PRIVATE

Selects output files that are to be printed at a private CDCNET batch I/O station when the designated station operator is controlling the station.

PUBLIC

Selects output files that are to be printed at a public CDCNET batch I/O station.

**QTF**

Selects output files that are to be forwarded to the remote system identified by the OUTPUT\_DESTINATION attribute.

**OUTPUT\_STATE or OS**

Specifies the output states by which output files are to be selected. OUTPUT\_STATE can have one or more of the following values:

**ALL**

Selects output files in all states.

**DEFERRED**

Selects output files that are not eligible for printing.

**QUEUED**

Selects output files that are waiting to be printed.

**INITIATED**

Selects output files that are being printed.

**TERMINATED**

Selects output files that are in the process of terminating.

**COMPLETED**

Selects output files that have finished printing.

**REMOTE\_HOST\_DIRECTIVE or RHD**

Specifies the remote host directive strings by which output files are to be selected.

**ROUTING\_BANNER or RB**

Specifies the routing banner strings by which output files are to be selected.

**SITE\_INFORMATION or SI**

Specifies the site information strings by which output files are to be selected.

**STATION**

Specifies the names of the printer stations by which output files are to be selected.

**SYSTEM\_JOB\_NAME or SJN**

Specifies the system-supplied job names by which output files are to be selected.

**USER\_INFORMATION or UI**

Specifies the user information strings by which output files are to be selected.

*VERTICAL\_PRINT\_DENSITY* or *VPD*

Specifies the vertical print density by which output files are to be selected. *VERTICAL\_PRINT\_DENSITY* can have one or more of the following values:

*SIX*

Selects output files that are to be printed at six lines per inch.

*EIGHT*

Selects output files that are to be printed at eight lines per inch.

*NONE*

Selects output files for which vertical print density is not used to select a printer.

*VFU\_LOAD\_PROCEDURE* or *VLP*

Specifies the VFU load procedures by which output files are to be selected.

*MAXIMUM\_SELECTION* or *MAXS*

Specifies the maximum number of output files that can be selected. The default is the number of output files satisfying the selection criteria.

*OUTPUT\_SELECTION\_LIST* or *OSL*

Specifies the name of the list variable to contain system-supplied names of the output files that satisfy the selection criteria. The default is *JMV\$SELECTED\_OUTPUT*.

*STATUS*

Returns the completion status for this subcommand.

- Remarks
- A list variable created by this subcommand is useful as a value for the *NAME* parameter on commands such as the following:
    - *CHANGE\_OUTPUT\_ATTRIBUTE*
    - *DISPLAY\_OUTPUT\_ATTRIBUTE*
    - *DISPLAY\_OUTPUT\_STATUS*
    - *TERMINATE\_OUTPUT*
  - If you enter no selection criteria parameters (parameters other than *OUTPUT\_SELECTION\_LIST* and *STATUS*), this subcommand selects all output files in the system.

## QUIT Subcommand

- Purpose** Terminates a MANAGE\_OUTPUT utility session.
- Format** **QUIT** or  
**QUI**  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status for this subcommand.

## REASSIGN\_DEVICE Command

- Purpose** Terminates a tape assignment to a tape unit, unloads the tape, and redisplay the tape mount request.
- Format** **REASSIGN\_DEVICE** or **READ**  
**ELEMENT\_NAME**=name  
*STATUS*=status variable
- Parameters** **ELEMENT\_NAME** or **EN**  
Specifies the name of the tape unit whose tape assignment is to be terminated. This name must be an element name for a tape unit as defined in the physical configuration file. This parameter is required.  
*STATUS*  
Returns the completion status of this command.
- Remarks** Use this command when you have assigned a tape unit to a job, but the tape unit cannot be made ready or is inoperable.
- Examples** This example terminates a tape assignment to tape element T50:  
`reassign_device element_name=t50`

## REPLY\_ACTION Command

- Purpose** Sends a message to a job in response to an operator action request. An operator action request appears in an operator action display window.
- Format** **REPLY\_ACTION** or **REPA**  
*ACTION\_ID*=name  
*MESSAGE*=string  
*STATUS*=status variable
- Parameters** **ACTION\_ID** or **AI**  
 Specifies the system-supplied job name that sent the operator action request. This job name appears in the operator action display window with the text of the action request. This parameter is required.
- MESSAGE* or *M*  
 Specifies the text of the message you want to send as a response to the operator action request. The message must be enclosed in apostrophes. The message is sent to the originating job when it is requested. The default is a blank string.
- STATUS*  
 Returns the completion status of this command.
- Remarks**
  - Operator action requests automatically appear in the operator action display window. When you have responded to a request, the operator action display window disappears.
  - If the task that issued the operator action request is terminated by the user before you can respond, you can clear the message by entering this command with a blank message string. The operator action request disappears when the requesting job terminates.
- Examples** This example sends a message to an interactive job advising the user to contact the operator:
- ```

reply_action action_id=$0860_0001_ABF_7694 ..
../message='Call console for message.'
  
```

## RESUME\_COMMAND Command

- Purpose** Resumes job activity that was interrupted by the STOP key.
- Format** RESUME\_COMMAND or  
RESC  
*STATUS=status variable*
- Parameters** STATUS  
Returns the completion status of this command.
- Remarks**
- The task suspended because the STOP key was pressed. Any changes to your job's environment caused by SCL commands that were entered after the STOP key was pressed and before this command remain in effect.
  - This command is valid only while activity is suspended because of the STOP key.
  - Refer to the TERMINATE\_COMMAND command later in this chapter. ▯

## RESUME\_SYSTEM Command

- Purpose** Resumes system activity after entering the IDLE\_SYSTEM command or after correcting an error condition.
- Format** RESUME\_SYSTEM
- Remarks**
- Enter this command on the input line of the critical display window.
  - There is no abbreviated form of this command.
- Examples** This example resumes system activity after you enter the IDLE\_SYSTEM command:
- ```
resume_system
```

## \*RUN. Command

**Purpose** Executes the abnormal termination of NOS/VE on a dual-state system. Enter the \*RUN command in the K display at the NOS system console or the L display at the NOS/BE system console.

**Format** \*RUN.

- Remarks**
- For more information on how to use this command, refer to chapter 4, Terminating NOS/VE.
  - This command must end with a period.

## SELECT\_OPERATORS\_MENU Command

- Purpose** Initiates the operator menu interface for NOS/VE.
- Format** **SELECT\_OPERATORS\_MENU** or **SELOM**  
*STATUS=status variable*
- Parameters** *STATUS*  
Returns the completion status of this command.
- Remarks** The NOS/VE operator main menu offers several operator task selections. This menu appears in the main operator window as shown in figure 8-16.

```

                                NOS/VE OPERATOR MAIN MENU

a. View NOS/VE Displays           e. Send Message to Users
b. Use Magnetic Tapes            f. Reset System Logs
c. Manage Printers               g. Shut Down NOS/VE
d. Manage Permanent Files

QUIT  Exit Menu, Stay in NOS/VE   ? Help Menu

Enter choice or NOS/VE command and then press RETURN: ?
```

Figure 8-14. NOS/VE Operator Main Menu

## SET\_JOB\_CLASS\_LIMIT Command

**Purpose** Changes the maximum number of jobs that can be initiated in a particular job class.

---

### NOTE

To prevent the initiation of new jobs when terminating the system or backing up permanent files, use the `MANAGE_ACTIVE_SCHEDULING` utility instead of the `SET_JOB_CLASS_LIMITS` command. The `MANAGE_ACTIVE_SCHEDULING` utility is described in the NOS/VE System Performance and Maintenance manual, Volume 1.

---

**Format** `SET_JOB_CLASS_LIMIT` or  
`SET_JOB_CLASS_LIMITS` or  
`SETJCL`

*JOB\_CLASS* = name or keyword  
*NUMBER* = integer  
*STATUS* = status variable

**Parameters** `JOB_CLASS` or `JC`

Specifies the job class to which the new maximum limit applies. You can enter the name of any site-defined job class or a keyword. The default is `ALL`. `JOB_CLASS` has the following values:

#### SYSTEM

Limits the number of system jobs in the system at any one time.

#### BATCH

Limits the number of jobs in the batch job class in the system at any one time.

#### INTERACTIVE

Limits the number of jobs in the interactive job class in the system at any one time.

#### MAINTENANCE

Limits the number of maintenance jobs in the system at any one time.

#### ALL

Limits the number of initiated jobs for each defined job class except `SYSTEM` and `MAINTENANCE`.

#### *NUMBER* or *N*

Specifies the maximum number of jobs of the specified class. When specifying `ALL` for `JOB_CLASS`, `NUMBER` is the maximum number of initiated jobs for each class defined in the system. The maximum value for `NUMBER` is 65,535. The default is zero.

#### *STATUS*

Returns the completion status of this command.

- Remarks**
- At the current version level of NOS/VE, this command changes the scheduler tables directly and does not update the active scheduling profile. Consequently, these changes are not reflected in the `MANAGE_ACTIVE_SCHEDULING` utility displays and are not recovered at the next deadstart. You can correct this and other discrepancies between the scheduler tables and the `MANAGE_ACTIVE_SCHEDULING` utility displays by entering the following commands:

```
manage_active_scheduling
MAS/activate_profile $system.scheduling.osf$system_profile.2
MAS/quit
```

- New jobs are not initiated if these limits are exceeded. Batch mode jobs are held in the input queue until they can be executed. Interactive users are informed that the system is busy. Jobs that are already initiated are not affected by this command.

**Examples** This example limits to 40 the number of interactive jobs that can be executing at one time:

```
set_job_class_limits job_class=interactive number=40
```

## STEP\_SYSTEM Command

**Purpose** Stops the system immediately but does not terminate it. Use this command when resolving error conditions such as an imminent power loss.

**Format** STEP\_SYSTEM

- Remarks**
- This command must be entered from the critical display window. Any jobs currently in memory, including the system job, are stopped but not swapped out, and the system job monitor task is idled.
  - Enter the UNSTEP\_SYSTEM command to restart the system.
  - There is no abbreviated form of this command.

## SWAP\_IN\_JOB Command

- Purpose** Swaps a job with a ready task into memory, placing the job ahead of other jobs waiting for resources.
- Format** **SWAP\_IN\_JOB** or **SWAIJ**  
**JOB\_NAME**=name  
*STATUS*=status variable
- Parameters** **JOB\_NAME** or **JN**  
Specifies the name of the job to be swapped into memory. This name can be a user-supplied name or a system-supplied name. This parameter is required.  
  
*STATUS*  
Returns the completion status of this command.
- Remarks** Before a job can be swapped in, there must be enough available memory for the particular job class, and the limit for the number of active jobs must be high enough to allow the job to execute.
- Examples** This example swaps job \$0815\_0003\_AGF\_4576 into memory:  
  
swap\_in\_job job\_name=\$0815\_0003\_AGF\_4576

## SWAP\_OUT\_JOB Command

- Purpose** Swaps a job out of memory.
- Format** **SWAP\_OUT\_JOB** or **SWAOJ**  
**JOB\_NAME=name**  
*STATUS=status variable*
- Parameters** **JOB\_NAME** or **JN**  
Specifies the name of the job to be swapped out of memory. This name can be a user-supplied name or a system-supplied name. This parameter is required.
- STATUS**  
Returns the completion status of this command.
- Remarks** A job that is swapped out by this command cannot continue executing until the operator swaps the job in using the **SWAP\_IN\_JOB** command. The **TERMINATE\_JOB** and **TDEBUG** commands have no effect on a job that is swapped out using this command.
- Examples** This example swaps job \$0815\_0003\_AGF\_4576 out of memory:  
  
swap\_out\_job job\_name=\$0815\_0003\_AGF\_4576

## TERMINATE\_COMMAND Command

- Purpose** Terminates processing of a command that was interrupted by the STOP key.
- Format** TERMINATE\_COMMAND or  
TERC  
*STATUS=status variable*
- Parameters** STATUS  
Returns the completion status of this command.
- Remarks**
- Any changes to your job's environment caused by SCL commands that were entered before the STOP key was pressed remain in effect.
  - This command is valid only while activity is suspended by the STOP key.
  - Refer to the RESUME\_COMMAND command described earlier in this chapter.
- Examples** This example terminates a command that was previously suspended.
- ```
p/terminate_command  
Command terminated.
```

## TERMINATE\_JOB Command

- Purpose** Terminates one or more batch or interactive jobs. This command can terminate jobs across all mainframes in a cluster configuration. A cluster configuration is two or more mainframes connected through a file server such as STORNET.
- You can use the SELECT\_JOBS subcommand of the MANAGE\_JOBS utility to create a list variable that can be used as input for the NAME parameter. You must execute the TERMINATE\_JOB command within the utility unless you previously created the variable outside of the utility.
- Format** **TERMINATE\_JOB** or  
**TERMINATE\_JOBS** or  
**TERMINATE\_INPUT** or  
**TERJ** or  
**TERI**  
*NAME=list of name*  
*JOB\_STATE=keyword*  
*OUTPUT\_DISPOSITION=keyword*  
*STATUS=status variable*
- Parameters** **NAME** or **NAMES** or **N**  
Specifies the names of the jobs to be terminated. This name can be a user-supplied name or a system-supplied name. This parameter is required.
- JOB\_STATE** or **JS**  
Specifies which job states in which jobs specified by the NAME parameter are to be terminated. The default is ALL. JOB\_STATE has the following values:
- ALL** or **A**  
Terminates specified jobs in all states.
  - DEFERRED** or **D**  
Terminates the specified jobs not yet eligible for initiation.
  - QUEUED** or **Q**  
Terminates the specified jobs that are eligible for initiation and are waiting to be initiated.
  - INITIATED** or **I**  
Terminates the specified jobs that are executing.
  - TERMINATED** or **T**  
Terminates the specified jobs that are in the process of terminating.

*OUTPUT\_DISPOSITION* or *ODI*

Specifies the disposition of the standard output files produced by the jobs specified by the NAME parameter. The default is the value of the OUTPUT\_DISPOSITION job attribute of the job being terminated. OUTPUT\_DISPOSITION has the following values:

## DISCARD\_STANDARD\_OUTPUT or DSO

Discards the standard output files produced by the specified jobs.

## PRINTER or P

Prints the standard output files produced by the specified jobs.

## WAIT\_QUEUE or WQ

Copies the standard output files produced by the specified jobs to the user's subcatalog \$WAIT\_QUEUE. The system creates this catalog if it does not exist.

*STATUS*

Returns the completion status of this command.

## Remarks

- A job must be swapped in before it can be terminated.
- If a job is waiting to be initiated when it is terminated by this command, the job is eliminated as a candidate for initiation and deleted from the input queue. No output occurs for the job. If a job is executing, NOS/VE causes an abnormal termination. This termination includes releasing all files and resources used by the job and, for batch jobs, routing its output file as specified by the job.
- Occasionally, you will have to enter the TERMINATE\_JOB command more than once to terminate a job. If the job continues to execute after entering the TERMINATE\_JOB command five times, the job may remain in the system until NOS/VE is shut down. If the job is still consuming resources, swap the job out of memory using the SWAP\_OUT\_JOB command. Such a job cannot be recovered during the next deadstart.
- When terminating a job from another mainframe in the cluster configuration, you must specify the complete job name.

## Examples

This example terminates job \$0815\_0003\_AGF\_4576 for all job states and discards the job's standard output file:

```
terminate_job name=$0815_0003_agf_4576 ..
../output_disposition=discard_standard_output
```

**TERMINATE\_LOG Command**

**Purpose** Clears the specified global log of all entries after copying those entries to a permanent file.

**Format** **TERMINATE\_LOG** or  
**TERL**  
**TYPE=keyword**  
*FILE=file*  
*STATUS=status variable*

**Parameters** **TYPE** or **T**  
Specifies the global log to be terminated. This parameter is required. **TYPE** has the following values:

**SYSTEM**

System log.

**ACCOUNT**

Account log.

**STATISTIC**

Statistic log.

**ENGINEERING**

Engineering log.

**HISTORY**

History log.

**FILE** or **F**

Specifies the file to which the specified global log is copied. The default is a file name having the following format:

**\$SYSTEM.logname\_date.\$NEXT**

where logname is the log name as specified in the **TYPE** parameter and date is the current Julian date (in ordinal format). For example, the first time you terminate the account log on January 13, 1989, the file name would be **\$SYSTEM.ACCOUNT\_1988198.1**. Subsequent terminations of the account log on the same day adds cycles to the same file.

**STATUS**

Returns the completion status of this command.

- Remarks**
- After you have terminated the system log, two entries are made. One entry is made at the end of the permanent file showing the date that the system log was terminated. The other entry is made at the beginning of the now empty system log showing the date the system log was cleared.
  - After you have terminated any global log except the system log, two statistic entries are made. An end-of-log statistic (LG1) is recorded at the end of the permanent file. A start-of-log statistic (LG0) is recorded at the beginning of the now empty global log.

## TERMINATE\_LOG Command

**Examples** This example copies the contents of the account log into file \$SYSTEM.ACCOUNT\_DATA and then clears the account log:

```
terminate_log type=account file=$system.account_data
```

## TERMINATE\_OUTPUT Command

- Purpose** Terminates one or more files in the output queue.
- You can use the `SELECT_OUTPUT` subcommand of the `MANAGE_OUTPUT` utility to create a list variable that can be used as input for the `NAME` parameter. You must execute the `TERMINATE_OUTPUT` command within the utility unless you previously created the variable outside of the utility.
- Format** `TERMINATE_OUTPUT` or `TERMINATE_OUTPUTS` or `TERO`  
`NAME=list of name`  
`OUTPUT_STATE=keyword`  
`STATUS=status variable`
- Parameters** `NAME` or `NAMES` or `N`  
 Specifies the names of the output files to terminate. File names may be user-supplied names or the system-supplied names. This parameter is required.
- `OUTPUT_STATE` or `OS`  
 Specifies which output states for which output files specified by the `NAME` parameter are to be terminated. The default is `ALL`. `OUTPUT_STATE` has the following values:
- `ALL`  
 Terminates the specified output files in all states.
- `DEFERRED` or `D`  
 Terminates the specified files that are not eligible to be printed.
- `QUEUED` or `Q`  
 Terminates the specified files that are waiting to be printed.
- `INITIATED` or `I`  
 Terminates the specified files currently printing. Files currently printing continue to completion before being removed from the output queue.
- `COMPLETED` or `C`  
 Terminates files that have completed printing.
- `STATUS`  
 Returns the completion status of this command.
- Remarks**
- Output operations can be terminated only if the output file is in an output queue of the NOS/VE system where the requesting job is being executed.
  - Refer to the `DISPLAY_OUTPUT_STATUS` command, described earlier in this chapter, for information about displaying the status of output files.

- An output file in the process of printing remains in the output queue until the output application finishes processing the file.

**Examples**

- This example terminates output files with system file names \$0855\_0002\_abc\_1107 and \$0855\_0002\_abc\_1108:

```
terminate_output names=($1107 $1108)
```

- This example terminates all output files under the login user AJK38 that are waiting to be printed. Use the MANAGE\_JOBS utility to create the variable that specifies these output files:

```
manage_output  
MO/var discard:list of name  
var/varend  
MO/select_output output_selection_list=discard ..  
MO../login_family=ajk38 output_state=queued  
MO/terminate_output name=discard  
MO/quit
```

## TERMINATE\_SYSTEM Command

**Purpose** Executes a normal termination of NOS/VE.

---

### NOTE

Before entering this command, notify all active users that they are being disconnected but that they will be able to reconnect to their jobs. Refer to chapter 4, Terminating NOS/VE, for more information on normal termination.

Avoid terminating NOS/VE if there are any disk units that have changed states to OFF or DOWN since the previous deadstart. If possible, wait until these disk units have been returned to the ON state before terminating the system to prevent the loss of data.

---

**Format** **TERMINATE\_SYSTEM**  
*STATUS=status variable*

**Parameters** *STATUS*  
 Returns the completion status of this command.

**Remarks**

- There is no abbreviated form for this command.
- The JOB\_RECOVERY\_OPTION system attribute controls whether jobs that are active when the system is terminated are recovered during the next deadstart. To recover active jobs, the value for this attribute must be 0. Use the DISPLAY\_SYSTEM\_ATTRIBUTE command to display the value for this attribute. Refer to the NOS/VE System Performance and Maintenance manual, Volume 1 for more information about the JOB\_RECOVERY\_OPTION system attribute and the DISPLAY\_SYSTEM\_ATTRIBUTE command.

## TERMINATE\_TAPE\_ASSIGNMENT Command

- Purpose** Terminates a request to mount a tape and removes the entry from the tape mount display window.
- Format** **TERMINATE\_TAPE\_ASSIGNMENT** or **TERTA**  
*EXTERNAL\_VSN=string*  
*MESSAGE=string*  
*JOB\_NAME=name*  
*STATUS=status variable*
- Parameters** **EXTERNAL\_VSN** or **EVSN**  
 Specifies the external volume serial number of the tape being requested. This parameter is required.
- MESSAGE* or *M*  
 Specifies the phrase explaining why a tape mount request or tape assignment was terminated. The phrase can be up to 80 characters and must be enclosed in apostrophes. The phrase is appended to the following status message, which is then returned to the job:
- ```
--ERROR-- Operator terminated tape assignment because . . .
```
- The default is the following phrase:
- ```
. . . the specified tape could not be located
```
- JOB\_NAME* or *JN*  
 Specifies the system-supplied name of the job requesting the tape. This parameter is required only when more than one job is requesting the same EVSN.
- STATUS*  
 Returns the completion status of this command.
- Examples** This example terminates a request to mount tape XT3311 and returns a message to the job explaining why the request was terminated:
- ```
terminate_tape_assignment external_vsn='XT3311' ..  

    ../message='of tape unit maintenance.'
```

## \*TNVEJOB Command

- Purpose** Specifies whether to terminate the NVE job. Use this command only during abnormal termination of NOS/VE on a dual-state system.
- Format** \*TNVEJOB=boolean.
- Parameters** boolean
- TRUE terminates the NVE job without returning memory. FALSE leaves the NVE job intact. This parameter is required.
- Remarks**
- Enter the \*TNVEJOB command on the K display of the NOS system console (on the L display of the NOS/BE system console). This command is valid only during abnormal termination of NOS/VE. For more information on using the \*TNVEJOB command, refer to chapter 4, NOS/VE Termination.
  - The only time you would use this command is when a NOS/VE continuation deadstart fails and you want to prevent the system from retrying the continuation deadstart.
  - This command must end with a period.
  - If you do not enter the \*TNVEJOB command, the default is \*TNVEJOB=FALSE.

## UNSTEP\_SYSTEM Command

**Purpose** Restarts the system from a stepped state. Enter this command when resolving error conditions such as an imminent power loss.

**Format** UNSTEP\_SYSTEM

- Remarks**
- You can enter this command only from the critical display window.
  - There is no abbreviated form of this command.

## VEDISPLAY Command

- Purpose** Displays one of several informative displays about NOS/VE activity. Refer to chapter 2, Monitoring System Activity, for examples of all the VEDISPLAY command displays.
- Format** **VEDISPLAY** or **VED**  
**DISPLAY\_OPTION** = keyword  
*OUTPUT* = file or keyword  
*STATUS* = status variable
- Parameters** **DISPLAY\_OPTION** or **DO**  
 Specifies the type of information to be displayed. This parameter is required. DISPLAY\_OPTION has the following values:
- ACTIVE\_JOBS** or **AJ**  
 Displays the status of all active jobs currently in NOS/VE memory.
- DEVICE\_STATUS** or **DS**  
 Displays status information about the storage devices actively configured for NOS/VE.
- FILE\_SERVER** or **FS**  
 Displays file server status information for client and server mainframes connected through STORNET.
- GENERAL\_STATISTICS** or **GS**  
 Displays statistical data about system activity including page queues, page faults, jobs, tasks, input/output, and swapping.
- INITIATED\_JOBS** or **IJ**  
 Displays status information for all initiated jobs (swapped and nonswapped) in NOS/VE.
- INITIATED\_JOBS\_DETAILED** or **IJD**  
 Displays detailed status information for all initiated jobs.
- JOB\_LOG** or **JL**  
 Displays the job log associated with the NOS/VE system job.
- MASS\_STORAGE** or **MS**  
 Displays statistical data about the use of the system's mass storage resources.
- NULL**  
 Closes a window containing a VEDISPLAY command display. The window is specified by the OUTPUT parameter.
- PP\_ASSIGNMENT** or **PA**  
 Displays information about the peripheral processors (PPs) actively configured for NOS/VE.

**SYSTEM\_LOG** or **SL**

Displays the contents of the system log file.

**TAPE\_RESERVATIONS** or **TR**

Displays the jobs having NOS/VE tape units reserved.

**TAPE\_STATUS** or **TS**

Displays the status of the NOS/VE tape units.

**OUTPUT** or **O**

Specifies the name of the file to which the system writes the display information. The default is **DISPLAY\_A**.

**STATUS**

Returns the completion status of this command.

- Remarks**
- The VEDISPLAY command displays are updated continuously when they appear in window A or window B.
  - The Active Jobs Display, Initiated Jobs Display, Initiated Jobs Detailed Display, Device Status Display, and the File Server Display are pageable displays. This means you can use the UP, DOWN, FWD, and BKW keys to move the display forward and backward within the window. These keys are described in chapter 2, Monitoring System Activity.
  - If a VEDISPLAY command display is in window A or B, and you enter the VEDISPLAY command directing the output of the same display to a file, the display on the screen disappears and the window closes.

- Examples**
- This example presents the Active Jobs Display in window B:
 

```
vedisplay display_option=active_jobs output=display_b
```
  - This example presents the Job Log Display in window A:
 

```
vedisplay display_option=job_log
```
  - This example clears any display in window B and closes the window:
 

```
vedisplay display_option=null output=display_b
```
  - This example clears any display in window A and closes the window:
 

```
vedisplay display_option=null
```

## \*VSN Command

- Purpose** Specifies the VSN of the dump tape when dumping the NOS/VE environment. This command is used only during abnormal termination of NOS/VE on a dual-state system.
- Format** \*VSN = name.
- Parameters** name  
The EVSN of the dump tape.
- Remarks**
- The \*VSN command is entered on the K display of the NOS system console (on the L display of the NOS/BE system console), and is valid only during abnormal termination of NOS/VE. For more information on using the \*VSN command, refer to chapter 4, Terminating NOS/VE.
  - If you do not enter the \*VSN command, the default is \*VSN=DMP00A.
  - This command must end with a period.







## A

### **Active Job**

Job that is in memory and that has an ACTIVE\_JOB\_LIST ordinal assigned to it. Compare with Initiated Job.

## C

### **Catalog Backup**

Copy of all catalog, subcatalog, file, and file cycle entries. A catalog backup contains no file cycle data.

### **Cluster**

Two or more mainframes connected to a file sharing device such as STORNET.

### **CYBER Initialization Package (CIP)**

Program that distributes and installs several hardware and software interface programs. These interface programs create the environment into which NOS/VE is installed and deadstarted.

### **Client Mainframe**

Mainframe that can store files on and retrieve files from a server mainframe.

### **Continuation Deadstart**

Process of readying the NOS/VE operating system and hardware for operation. The continuation deadstart recovers files and jobs. Compare with Installation Deadstart.

### **Control Family**

Family name of the control user.

### **Control User**

User name under which a user submits a job.

## D

### **Deadstart File**

File containing the instructions that configure and deadstart NOS/VE.

### **Deadstart Device**

Disk or tape unit on which the NOS/VE deadstart file resides.

### **Deadstart Procedure File**

NOS or NOS/BE procedure file that deadstarts NOS/VE.

### **Dual-State**

System that is shared by NOS/VE and either NOS or NOS/BE.

## F

### Family

Logical grouping of NOS/VE users that determines the location of their permanent files. A family can be subdivided into accounts and projects.

### File Server

Program that manages the transfer of files between mainframes connected through STORNET or ESM-II.

### Full backup

Copy of all permanent files in the system.

## I

### Initiated Job

Job that has started execution but has not finished. Compare with Active Job.

### Interim Remote Host Facility (IRHF)

Facility that routes NOS/VE batch input jobs from NOS or NOS/BE to NOS/VE. IRHF also routes NOS/VE print files to NOS or NOS/BE for printing.

### Installation Deadstart

Process that installs the NOS/VE operating system and software products, defines the hardware configuration, and defines the operating system connections to network products. Compare with Continuation Deadstart.

## J

### Job Class

Name defining a set of attributes that controls the execution of the jobs belonging to that job class. NOS/VE uses the following job classes: SYSTEM, MAINTENANCE, BATCH, INTERACTIVE, and site-defined job classes.

### Job Log

Chronological listing of all operations associated with an interactive job.

## L

### Login User

User name under which a job is scheduled and executed. For batch jobs, the user name appearing in the USER parameter of the LOGIN command is the login user.

## M

### Missing Files

Catalogs and files that reside on a storage device that was down or off during the previous deadstart.

**N****NOS/VE Environment**

Contents of central memory, peripheral processors, peripheral processor registers, and maintenance registers.

**P****Partial Backup**

Copy of all permanent files that have been modified since the previous full backup or a specified date.

**PASSON**

NOS or NOS/BE job that acts as the communications link between a NOS/VE interactive task and a terminal connected to the NOS or NOS/BE network.

**S****Server Mainframe**

Mainframe that is maintaining files for a client mainframe connected through STORNET.

**Swapping**

Movement of jobs from central memory to disk or from disk to central memory. Swapping is done to maintain good system performance.

**System Administrator**

Any user at the system console or a user validated for the system administration capability.

**System Log**

File containing a chronological record of job activity for all jobs in the system.

**System Device**

Disk unit on which the NOS/VE deadstart file resides.

**U****Unavailable Files**

Catalogs and files that reside on a disk device that has gone down since the previous deadstart.

**Unreconciled Files**

Missing and unavailable catalogs and files.



# Related Manuals

B

---

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Accessing Online Manuals ..... B-1



## Related Manuals

**B**

Table B-1 lists the titles of all manuals referenced in this manual. The table also includes the titles of any other system, product, or hardware manuals that are directly related to this manual.

If your site has installed the online manuals, you can find an abstract of each NOS/VE manual in the online System Information manual. To access this manual, enter:

```
/explain
```

## Ordering Printed Manuals

To order a printed Control Data manual, send an order form to:

Control Data  
Literature and Distribution Services  
308 North Dale Street  
St. Paul, Minnesota 55103-2495

To obtain an order form or to get more information about ordering Control Data manuals, write to the above address or call (612) 292-2101. If you are a Control Data employee, call (612) 292-2100.

## Accessing Online Manuals

To access an online NOS/VE manual, log in to NOS/VE and enter the online title on the EXPLAIN command (table B-1 supplies the online titles). For example, to see the Site Analyst Examples manual, enter:

```
/explain manual=site_analyst_examples
```

**Table B-1. Related Manuals**

<b>Manual Title</b>	<b>Publication Number</b>	<b>Online Title</b>
CYBER 930 Computer System Guide to Operations Usage	60469560	
CYBER Initialization Package (CIP) Reference Manual	60457180	
NOS/VE System Performance and Maintenance Volume 1: Performance Usage	60463915	
NOS/VE System Performance and Maintenance Volume 2: Maintenance Usage	60463925	
NOS/VE User Validation Usage	60464513	
NOS/VE File Archiving Usage	60463944	
NOS/VE Commands and Functions Quick Reference	60464018	SCL
NOS/VE System Usage	60464014	EXAMPLES
CDCNET Batch Device User Guide	60463863	CDCNET_ BATCH
CDCNET Network Operations	60461520	
CDC 19003 System Console (CC598-A/B) Operations and Maintenance Guide	60463610	





## ASCII Character Set

This appendix lists the ASCII character set (refer to table C-1).

NOS/VE supports the American National Standards Institute (ANSI) standard ASCII character set (ANSI X3.4-1977). NOS/VE represents each 7-bit ASCII code in an 8-bit byte. These 7 bits are right justified in each byte. For ASCII characters, the eighth or leftmost bit is always zero. However, in NOS/VE the leftmost bit can also be used to define an additional 128 characters.

If you want to define additional non-ASCII characters, be certain that the leftmost bit is available in your current working environment. The full screen applications (such as the EDIT\_FILE utility, the EDIT\_CATALOG utility, and the programming language environments) already use this bit for special purposes. Therefore, these applications accept only the standard ASCII characters. In applications in which the leftmost bit is not used, however, you are free to use it to define the interpretation of each character as you wish.

Table C-1. ASCII Character Set

Decimal Code	Hexadecimal Code	Octal Code	Graphic or Mnemonic	Name or Meaning
000	00	000	NUL	Null
001	01	001	SOH	Start of heading
002	02	002	STX	Start of text
003	03	003	ETX	End of text
004	04	004	EOT	End of transmission
005	05	005	ENQ	Enquiry
006	06	006	ACK	Acknowledge
007	07	007	BEL	Bell
008	08	010	BS	Backspace
009	09	011	HT	Horizontal tabulation
010	0A	012	LF	Line feed
011	0B	013	VT	Vertical tabulation
012	0C	014	FF	Form feed
013	0D	015	CR	Carriage return
014	0E	016	SO	Shift out
015	0F	017	SI	Shift in
016	10	020	DLE	Data link escape
017	11	021	DC1	Device control 1
018	12	022	DC2	Device control 2
019	13	023	DC3	Device control 3
020	14	024	DC4	Device control 4
021	15	025	NAK	Negative acknowledge
022	16	026	SYN	Synchronous idle
023	17	027	ETB	End of transmission block
024	18	030	CAN	Cancel
025	19	031	EM	End of medium
026	1A	032	SUB	Substitute
027	1B	033	ESC	Escape
028	1C	034	FS	File separator
029	1D	035	GS	Group separator
030	1E	036	RS	Record separator
031	1F	037	US	Unit separator
032	20	040	SP	Space
033	21	041	!	Exclamation point
034	22	042	"	Quotation marks
035	23	043	#	Number sign
036	24	044	\$	Dollar sign
037	25	045	%	Percent sign
038	26	046	&	Ampersand
039	27	047	'	Apostrophe

*(Continued)*

Table C-1. ASCII Character Set (Continued)

Decimal Code	Hexadecimal Code	Octal Code	Graphic or Mnemonic	Name or Meaning
040	28	050	(	Opening parenthesis
041	29	051	)	Closing parenthesis
042	2A	052	*	Asterisk
043	2B	053	+	Plus
044	2C	054	,	Comma
045	2D	055	-	Hyphen
046	2E	056	.	Period
047	2F	057	/	Slant
048	30	060	0	Zero
049	31	061	1	One
050	32	062	2	Two
051	33	063	3	Three
052	34	064	4	Four
053	35	065	5	Five
054	36	066	6	Six
055	37	067	7	Seven
056	38	070	8	Eight
057	39	071	9	Nine
058	3A	072	:	Colon
059	3B	073	;	Semicolon
060	3C	074	<	Less than
061	3D	075	=	Equals
062	3E	076	>	Greater than
063	3F	077	?	Question mark
064	40	100	@	Commercial at
065	41	101	A	Uppercase A
066	42	102	B	Uppercase B
067	43	103	C	Uppercase C
068	44	104	D	Uppercase D
069	45	105	E	Uppercase E
070	46	106	F	Uppercase F
071	47	107	G	Uppercase G
072	48	110	H	Uppercase H
073	49	111	I	Uppercase I
074	4A	112	J	Uppercase J
075	4B	113	K	Uppercase K
076	4C	114	L	Uppercase L
077	4D	115	M	Uppercase M
078	4E	116	N	Uppercase N
079	4F	117	O	Uppercase O

(Continued)

Table C-1. ASCII Character Set (Continued)

Decimal Code	Hexadecimal Code	Octal Code	Graphic or Mnemonic	Name or Meaning
080	50	120	P	Uppercase P
081	51	121	Q	Uppercase Q
082	52	122	R	Uppercase R
083	53	123	S	Uppercase S
084	54	124	T	Uppercase T
085	55	125	U	Uppercase U
086	56	126	V	Uppercase V
087	57	127	W	Uppercase W
088	58	130	X	Uppercase X
089	59	131	Y	Uppercase Y
090	5A	132	Z	Uppercase Z
091	5B	133	[	Opening bracket
092	5C	134	\	Reverse slant
093	5D	135	]	Closing bracket
094	5E	136	^	Circumflex
095	5F	137	_	Underline
096	60	140	`	Grave accent
097	61	141	a	Lowercase a
098	62	142	b	Lowercase b
099	63	143	c	Lowercase c
100	64	144	d	Lowercase d
101	65	145	e	Lowercase e
102	66	146	f	Lowercase f
103	67	147	g	Lowercase g
104	68	150	h	Lowercase h
105	69	151	i	Lowercase i
106	6A	152	j	Lowercase j
107	6B	153	k	Lowercase k
108	6C	154	l	Lowercase l
109	6D	155	m	Lowercase m
110	6E	156	n	Lowercase n
111	6F	157	o	Lowercase o
112	70	160	p	Lowercase p
113	71	161	q	Lowercase q
114	72	162	r	Lowercase r
115	73	163	s	Lowercase s
116	74	164	t	Lowercase t
117	75	165	u	Lowercase u
118	76	166	v	Lowercase v
119	77	167	w	Lowercase w

(Continued)

Table C-1. ASCII Character Set (Continued)

Decimal Code	Hexadecimal Code	Octal Code	Graphic or Mnemonic	Name or Meaning
120	78	170	x	Lowercase x
121	79	171	y	Lowercase y
122	7A	172	z	Lowercase z
123	7B	173	{	Opening brace
124	7C	174		Vertical line
125	7D	175	}	Closing brace
126	7E	176	~	Tilde
127	7F	177	DEL	Delete



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# Command and Subcommand Index

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This index lists the commands and subcommands described in this manual and the page on which each is described. Each subcommand entry is followed by the word sub and the abbreviation of the command that starts the utility session.

Some of the commands in this index refer you to another manual instead of a page number. The descriptions for these commands can be found in the manuals represented by the following abbreviations:

- CNO CDCNET Network Operations
- LCN NOS/VE LCN Configuration and Network Management
- NM NOS/VE Network Management
- SPM1 NOS/VE System Performance and Maintenance  
Volume 1: Performance
- SPM2 NOS/VE System Performance and Maintenance  
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