

NETWORK AND MISSION SERVICES PROJECT

**Network Control Center (NCC)
Communications and Control Segment (CCS)**

**Computer Operators User's Guide
NCCDS98**

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Network Control Center (NCC) Communications and Control Segment (CCS)

Computer Operators User's Guide

NCCDS98

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Preface

The document has been updated to reflect the Release NCCDS 98 changes made to the Communications and Control Segment (CCS). This document replaces the previous document, *Network Control Center (NCC), Communications and Control Segment (CCS), Computer Operators User's Guide, Revision 1, update 1, 532-OUG-NCCCCS/R95.1*.

Abstract

The *Network Control Center (NCC) Communications and Control Segment (CCS) Release NCCDS 98 Computer Operators User's Guide*, 451-USG-CCS-NCCDS98, provides the procedures to be used by NCC personnel to operate and maintain the functions of the CCS computers.

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Section 1. System Startup

1.1 Introduction

This procedure describes how to boot the VAX and what happens during the boot.

1.2 Procedure

Power up is necessary only if the computer has been turned off; this will not normally happen.

1.2.1 Powering Up VAX 8550

To power up the VAX 8550, the user should

1. Power up the console by turning the switch to ON(1).
2. Power up the central processing unit (CPU) and peripherals by turning the CPU circuit breaker on.
3. Spin up SYSTEM disk and user disks. (Refer to RA71 User's Guide.)

1.2.2 Restarting the Operating System

Restarting the operating system means loading the operating system into memory and performing the necessary housekeeping functions for the system to run properly. When the system fails, it restarts itself automatically most of the time; however, sometimes operator assistance is required to restart the system.

This usually occurs after the operator has halted the operating system by using the SHUTDOWN procedure. There are two ways to restart the system, depending on when the CPU was powered up. If the system has just been powered up, after the system console finishes booting the operator types the following:

```
>>>PO ON
```

```
>>>@SYSINIT
```

If the system does not boot automatically and for all other boots, the operator enters the following:

```
>>>BOOT
```

When the operating system is bootstrapped, the Digital Equipment Corporation (DEC)-supplied command procedure SYSS\$SYSTEM:STARTUP.COM is executed automatically. This procedure contains commands for site-independent operations such as

1. Assigning debugger systemwide logical names
2. Assigning systemwide logical names for libraries and help files
3. Starting ERRFMT

4. Starting the Job Controller
5. Starting the Operator Communications Manager (OPCOM)
6. Installing images that require privilege and those that should be shared
7. Configuring input/output (I/O) database automatically to include all standard devices and their required drivers
8. Enabling RMS file sharing
9. Installing the deferred swapfile, if present
10. Invoking the system manager's installation-specific startup file

The `SYSS$MANAGER:SYSTARTUP.COM` so invoked contains site-specific initialization commands to perform such functions as

1. Assigning systemwide logical names
2. Invoking site-specific command procedures
3. Defining site-specific announcement and welcome messages
4. Installing images (i.e., compilers, assemblers, and the database)
5. Mounting user disks
6. Setting terminal characteristics (setting up modem ports is optional)
7. Initializing and starting print queues
8. Initializing and starting batch queues
9. Loading site-specific drivers and other peripherals
10. Purging OPERATOR logs
11. Starts Object Broker
12. NFS mounts the CCS remote log device LG:
13. Analyzing SYSDUMP.DMP if it exists (optional)
14. Announcing "System on the Air"

The following message will appear on the user terminal after system startup has completed:

```
Batch,SYSTEM    hh:mm:ss.cc  
VAX/VMS is on the air, you may log on.
```

Section 2. CCS System Procedures

2.1 Introduction

This section describes the execution of CCS specific system procedures.

2.2 System Procedures

The CCS system and application software is initiated from the captive account STARTCCS. When the operator uses the STARTCCS account to log onto the VAX system, a command procedure executes automatically. This command procedure performs all the necessary functions to start the CCS system.

The startup command procedure requires input from the user/operator during both the startup and termination phases of the CCS session. The inputs are required at startup to complete the CCS configuration.

Inputs are also solicited when the user requests that the CCS session be terminated. These inputs verify authorization to terminate the CCS session and allow optional selection of application print files to be queued for output.

The CCS system can be started in one of the following three modes: cold start, warm start, or backup for manual switchover. The following sections describe the three modes of startup.

The CCS application software can be executed at one of three CM-controlled levels: TEST, APRV, or NASA. On the development CCS, the computer operator is prompted to choose either TEST or APRV. If the user selects TEST, the level 1 executables are accessed. If the user selects APRV, a second prompt asks the operator to select software level 2 or 3.

The operational CCS prompts the computer operator to choose either APRV or NASA. If the user selects APRV, a second prompt asks the operator to select the software level 2 or 3. If the user selects NASA, the software executes the currently selected default release and level. To select a current default release prior to a cold start, refer to the RELEASE option in the Operator Menu section.

2.2.1 CCS Cold Start

The cold-start procedure is the normal way to bring up the CCS system for both the prime CCS and the backup CCS when automatic switchover is being used.

The following script describes the STARTCCS input prompts, user/operator responses, and various system response and information messages.

The startup procedure supports all levels; therefore, the user/operator should enter the level specified on the test runsheet. As shown here, the current delivered release to NASA is selected.

Enter the Level: TEST/APRV/NASA : NASA

The system monitors system mailbox usage and issues a warning message to the computer operators consoles if more than 70 percent of a single mailbox queue is in use. This message is not an error or warning because this condition may occur during periods of high throughput. If the operator wants mailbox monitoring, he or she enters Y after the following prompt; if the operator does not want monitoring, he or she enters a carriage return.

Are mailboxes to be monitored? [D:N]

The system can be started using either the initial data files or the data files that were being used prior to this startup. To use the initial set of files, the operator must answer Y to the cold-start prompt; to use the existing files, the operator must answer N. The areas affected by this prompt are the hardware configuration to be used, active events, and alerts. A cold start uses the initial values for these areas.

Is this a cold start? Y

```
CREATED GLOBAL SECTION PORT_TABLE USING FILE PORT_TABLE.GBL
CREATED GLOBAL SECTION CUTABLE USING FILE CUTABLE.GBL
CREATED GLOBAL SECTION SCONFABLE USING FILE SCONFABLE.GBL
CREATED GLOBAL SECTION CONFABLE USING FILE CONFABLE.GBL
CREATED GLOBAL SECTION XEQPTB USING FILE XEQPTB.GBL
CREATED GLOBAL SECTION XGRPITB USING FILE XGRPITB.GBL
CREATED GLOBAL SECTION XITGRPTB USING FILE XITGRPTB.GBL
CREATED GLOBAL SECTION XITSCRN USING FILE XITSCRN.GBL
CREATED GLOBAL SECTION XNFEPOR USING FILE XNFEPOR.GBL
CREATED GLOBAL SECTION XSPSAPP USING FILE XSPSAPP.GBL
CREATED GLOBAL SECTION XSSCIT USING FILE XSSCIT.GBL
CREATED GLOBAL SECTION XSYPARM USING FILE XSYPARM.GBL
CREATED GLOBAL SECTION XLOGFNT USING FILE XLOGFNT.GBL
FORTRAN STOP
TIME TAG FILE OK
TDRS-ID FILE OK
USERID/PASSWORD FILE OK
SPACECRAFT FILE OK
DQM SETUP PARAMETER FILE OK
DQM USERS FILE OK
ACTIVE SCHEDULE FILE OK
SCHEDULE STATUS SPOOL FILE OK
NES SCHEDULE ACCEPT/REJECT FILE OK
CONS_STATUS.DAT FILE CREATED OK
POCC_STATUS.DAT FILE CREATED OK
TERM_STATUS.DAT FILE CREATED OK
TERM_DIRECT.DAT FILE CREATED OK
```

PRINT_DTIME.DAT FILE CREATED OK
FTXTMSG_ACK.DAT FILE CREATED OK
MESSAGE_IDN.DAT FILE CREATED OK
ALERT_DIREC.DAT FILE CREATED OK
ALERT_QUEUE.DAT FILE CREATED OK
TNC_ROUTINE.DAT FILE CREATED OK
FORTRAN STOP

%%%%%%%%% OPCOM 16-FEB-1989 18:42:39.01 %%%%%%%%%%

Operator status for operator _CCSONE\$RTA1:

CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER,
OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

The various file messages verify that each CCS global section and file was created or backed up. Errors encountered during these operations are reported here.

The CCS subprocesses are being started at this point. Errors related to the subprocesses may appear on the STARTCCS device.

CCSX R NASA 98.1

This message describes, for verification, the level and release just selected. CCSX indicates the processor name: either CCS1 or CCS2. "R" indicates the processor role: either P for prime or B for backup.

Executing tape logger

Occasionally during CCS operation, the operator will be prompted to archive log data from disk to tape. Each operator prompt on the operator terminal has an associated request number that will be used in the operator response. The initial tape logger prompt is:

Please obtain a tape and reply the media control tape name...

The appropriate operator response is to obtain a tape from media control and reply at the operator terminal:

reply/to = ##### tapename

where ##### is the request number and tapename is a valid log tape name. A valid tape name consists of six characters in which the first three characters are a valid tape type, such as CCS or STS, and the second three characters are a number between 001 and 999. A table of valid tape types is located in the Log Constants File.

If the operator responds with a tape name not of six characters, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name size entered. Please enter a valid
6 character tape name for the NEW request.

If the operator responds with a tape name of invalid tape type, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name type entered. Please enter a valid tape name for the NEW request.

If the operator responds with a tape name of invalid tape number, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape number entered. Number must be in range of 001 —> 999. Please enter a valid tape name for the NEW request.

This series of prompts, alerts, and reprompts continues until the operator responds with a valid tape name. The operator is then prompted to mount the tape as follows:

Please mount tape *** on a tape device and reply with the tape device name.**

NOTE

To start this tape logging session again, respond with “RETRY”.
To abort this tape logging session permanently, respond with “ABORT”.

EXAMPLES: “MUAO:” or “RETRY” or “ABORT”

where ***** is the previously stated tape name.

The correct operator response is to mount the tape on an available tape drive and reply with the drive name:

reply/to = ##### device_name

where ##### is the request number and device_name is a valid tape drive name. A table of valid tape drive names is located in the Log Constants File.

If the operator responds with RETRY, the software will start the tape logging process over by reprompting for a tape name.

If the operator responds with ABORT, the software will abort this tape logging process, and all data targeted to be logged to tape will be lost, saved only by a standalone logging session.

If the operator responds with a valid tape drive name, but the tape drive is inoperable or subsequently fails, prior to mount completion, the following operator action is required, at the operator’s DCL terminal:

\$REPLY/ENABLE

\$REPLY/ABORT=#####

where ##### is the request number from the following operator prompt:

REQUEST #####, from user STARTCCS on CCSONE

Please mount device _\$1\$MUAO: (HSCONE)

NOTE

The tape log (TLOG) software will retry the mount request two times and the operator, using the same procedure, must also abort the two additional mount requests that result.

The operator is then reprompted to enter an alternate tape drive name.

If the operator responds with an invalid tape drive name, the following alert is provided, followed by a renewed prompt for the tape drive name:

OPERATOR ERROR —> Invalid tape device drive or log session command entered. Please reply again to the NEW request.

The operator has three tries to respond with a valid tape drive name before the software will automatically abort the tape logging session. If a valid tape drive name is given, the operator will see a VMS tape mounted notification and a VMS tape dismounted notification. After the tape dismounted notification is given, the tape logging session is complete and the tape can be physically dismounted and returned to media control.

To terminate CCS, the user enters Control Y. The following message is issued:

DO YOU REALLY WANT TO TERMINATE?

NOTE

In the case of recoverable software or hardware errors, the entire tape logging process will repeat a maximum of two more times.

To terminate CCS, the user enters Y. The following message is issued:

DO YOU REALLY WANT TO TERMINATE?

The following message is issued to inform the operator that standalone logger is now being executed.

EXECUTING STANDALONE TAPE LOGGER

This program prompts the operator for the tape to be mounted.

Executing standalone logger

The operator is prompted for a tape name as follows:

-->**ENTER CCS LOG TAPE NAME:**

The operator replies with a tape name targeted for logged data. All tape name replies must conform with the valid tape name characteristics as described in the preceding "Executing tape logger" section. If the replied tape name does not conform, the operator is notified and then reprompted for a tape name as follows:

*** *ENTER * *INVALID TAPE NAME**

-->**ENTER CCS LOG TAPE NAME:**

Once a valid tape name has been replied, the operator is then prompted for a tape drive name as follows:

-->**ENTER CCS LOG TAPE NAME:**

The operator replies with a tape drive name on which the tape will be mounted. All tape drive names must conform with the valid tape drive name characteristics as described in the preceding "Executing tape logger" section. If the replied tape drive name does not conform, the operator is notified and then reprompted for a tape drive name as follows:

*** *ENTER * *INVALID TAPE NAME**

-->**ENTER CCS LOG TAPE NAME:**

Once a valid tape drive name has been replied, the operator should mount the tape on the replied tape drive. The standalone logger will then log data to the tape mounted on this tape drive.

This entire process is repeated until all necessary data has been logged to tape. At any time, the operator may enter Control Y to abort the standalone logger execution.

\$ LOGOUT

After the CCS processes have been terminated, the application dump files are printed. Following this step, the STARTCCS session is automatically logged off.

2.2.2 CCS Warm Start

The warm-start procedure brings up the same CCS system as the prime CCS. This startup procedure retains current events, current configuration, and current alerts.

The following script describes the STARTCCS input prompts, user/operator responses, and various system response and information messages:

The startup procedure supports all levels; therefore, the user/operator should enter the level specified on the test runsheet. As shown here, the current delivered release to NASA is selected.

Enter the Level: TEST/APRV/NASA : NASA

The system monitors system mailbox usage and issues a warning message to the computer operators consoles if more than 70 percent of a single mailbox queue is in use. This message is not an error or warning because this condition may occur during periods of high throughput. To initiate mailbox monitoring, the operator enters Y to the following prompt; if not, the operator just enters a carriage return.

Are mailboxes to be monitored? [D:N]

The system can be started either using the initial data files or the data files that were being used prior to this startup. To use the initial set of files the operator must answer Y to the coldstart prompt; to use the existing files, the operator must answer N. The areas affected by this prompt are the hardware configuration to be used, active events, and alerts. A cold start uses the initial values for these areas.

Is this a Cold Start? N

The system allows the operator to warm start the system from either the same VAX or the other VAX in the cluster. If warm starting the same processor, the operator enters YES to the following prompt; if not, he or she enters N.

Is this startup a warmstart on the same processor? Y

CREATED GLOBAL SECTION PORT_TABLE USING FILE PORT_TABLE.GBL
CREATED GLOBAL SECTION CUTABLE USING FILE CUTABLE.GBL
CREATED GLOBAL SECTION SCONFABLE USING FILE SCONFABLE.GBL
CREATED GLOBAL SECTION XEQPTB USING FILE XEQPTB.GBL
CREATED GLOBAL SECTION XGRPITTB USING FILE XGRPITTB.GBL
CREATED GLOBAL SECTION XITGRPTB USING FILE XITGRPTB.GBL
CREATED GLOBAL SECTION XITSCRN USING FILE XITSCRN.GBL
CREATED GLOBAL SECTION XNFEPOROT USING FILE XNFEPOROT.GBL
CREATED GLOBAL SECTION XSPSAPP USING FILE XSPSAPP.GBL
CREATED GLOBAL SECTION XSSCIT USING FILE XSSCIT.GBL
CREATED GLOBAL SECTION XSYPARM USING FILE XSYPARM.GBL
CREATED GLOBAL SECTION XLOGFNT USING FILE XLOGFNT.GBL
FORTRAN STOP
TIME TAGE FILE OK
TDRS-ID FILE OK
USERID/PASSWORD FILE OK
SPACECRAFT FILE OK
DQM SETUP PARAMETERS FILE OK
DQM USERS FILE OK
ACTIVE SCHEDULE FILE OK
SCHEDULE STATUS SPOOL FILE OK
NES SCHEDULE ACCEPT/REJECT FILE OK
CONS_STATUS.DAT FILE CREATED OK
POCC_STATUS.DAT FILE CREATED OK
TERM_STATUS.DAT FILE CREATED OK
TERM_DIRECT.DAT FILE CREATED OK
PRINT_DTIME.DAT FILE CREATED OK
FTXTMSG_ACK.DAT FILE CREATED OK
MESSAGE_IDN.DAT FILE CREATED OK
ALERT_DIREC.DAT FILE CREATED OK
ALERT_QUEUE.DAT FILE CREATED OK
FORTRAN STOP
%%%%%%%%% OPCOM 16-FEB-1989 18:42:39.01 %%%%%%%%%%
Operator status for operator _CCSONE\$RTA1:

CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER,
OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

The various file messages verify that each CCS global section and file was created or backed up. Errors encountered during these operations will be reported here.

The CCS subprocesses are being started at this point. Errors related to the subprocesses may appear on the STARTCCS device.

This message is an information message if a warm start or switchover has been selected.

This system is ready for completion of switchover/warm start(Control Y will abort the backup CCS).

The operator should respond to this prompt after a switchover or warm start is to be initiated. To start switchover/warm start, the user enters Y; otherwise the user does not respond.

Is system ready for completion of switchover/warmstart? [D:N]

CCSX R NASA 98.1

This message describes, for verification, the level and release just selected. CCSX indicates the processor name, CCS1 or CCS2. R indicates whether the processor role is prime or backup.

The operator must input the same password that was previously input to complete the CCS termination. If the user enters an incorrect password the STARTCCS device is placed back in the secure mode.

Executing tape logger

Occasionally during CCS operation, the operator will be prompted to archive log data from disk to tape. Each operator prompt on the operator terminal has an associated request number that will be used in the operator response. The initial tape logger prompt is:

Please obtain a tape and reply the media control tape name...

The appropriate operator response is to obtain a tape from media control and reply at the operator terminal:

reply/to = ##### tapename

where ##### is the request number and tapename is a valid log tape name. A valid tape name consists of six characters in which the first three characters are a valid tape type, such as CCS or STS, and the second three characters are a number between 001 and 999. A table of valid tape types is located in the Log Constants File.

If the operator responds with a tape name not of six characters, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name size entered. Please enter a valid 6 character tape name for the NEW request.

If the operator responds with a tape name of invalid tape type, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name type entered. Please enter a valid tape name for the NEW request.

If the operator responds with a tape name of invalid tape number, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape number entered. Number must be in range of 001 —> 999. Please enter a valid tape name for the NEW request.

This series of prompts, alerts, and reprompts continues until the operator responds with a valid tape name. The operator is then prompted to mount the tape as follows:

Please mount tape *** on a tape device and reply with the tape device name.**

NOTE

To start this tape logging session again, respond with "RETRY".
To abort this tape logging session permanently, respond with "ABORT".

EXAMPLES: "MUAO:" or "RETRY" or "ABORT

where ***** is the previously stated tape name.

The correct operator response is to mount the tape on an available tape drive and reply with the drive name:

reply/to = ##### device_name

where ##### is the request number and device_name is a valid tape drive name. A table of valid tape drive names is located in the Log Constants File.

If the operator responds with RETRY, the software will start the tape logging process over by reprompting for a tape name.

If the operator responds with ABORT, the software will abort this tape logging process, and all data targeted to be logged to tape will be lost, saved only by a standalone logging session.

If the operator responds with a valid tape drive name, but the tape drive is inoperable or subsequently fails, prior to mount completion, the following operator action is required, at the operator's DCL terminal:

\$REPLY/ENABLE

\$REPLY/ABORT=#####

where ##### is the request number from the following operator prompt:

REQUEST #####, from user STARTCCS on CCSONE Please mount device \$1\$MUAO: (HSCONE)

NOTE

The TLOG software will retry the mount request two times and the operator, using the same procedure, must also abort the two additional mount requests that result.

The operator is then reprompted to enter an alternate tape drive name.

If the operator responds with an invalid tape drive name, the following alert is provided, followed by a renewed prompt for the tape drive name:

OPERATOR ERROR --> Invalid tape device drive or log session command entered. Please reply again to the NEW request.

The operator has three tries to respond with a valid tape drive name before the software will automatically abort the tape logging session. If a valid tape drive name is given, the operator will see a VMS tape mounted notification and a VMS tape dismounted notification. After the tape dismounted notification is given, the tape logging session is complete and the tape can be physically dismounted and returned to media control.

To terminate CCS the user enters Y. The following message will be issued:

DO YOU REALLY WANT TO TERMINATE?

The following message is issued to inform the operator that standalone logger is now being executed. This program may prompt the operator for the tape to be mounted.

Executing standalone logger

The operator is prompted for a tape name as follows:

--> **ENTER CCS LOG TAPE NAME:**

The operator replies with a tape name targeted for logged data. All tape name replies must conform with the valid tape name characteristics as described in the preceding "Executing tape logger" section. If the replied tape name does not conform, the operator is notified and then reprompted for a tape name as follows:

**** ENTER ** INVALID TAPE NAME**

—> **ENTER CCS LOG TAPE NAME:**

Once a valid tape name has been replied, the operator is then prompted for a tape drive name as follows:

--> **ENTER CCS LOG TAPE NAME:**

The operator replies with a tape drive name on which the tape will be mounted. All tape drive names must conform with the valid tape drive name characteristics as described in the preceding "Executing tape logger" section. If the replied tape drive name does not conform, the operator is notified and then reprompted for a tape drive name as follows:

**** ENTER ** INVALID DEVICE NAME**

--> **ENTER CCS LOG TAPE NAME:**

Once a valid tape drive name has been replied, the operator should mount the tape on the replied tape drive. The standalone logger will then log data to the tape mounted on this tape drive.

This entire process is repeated until all necessary data has been logged to tape. At any time, the operator may enter Control Y to abort the standalone logger execution.

\$LOGOUT

After the CCS processes have been terminated, the application dump files are printed. Following this step, the STARTCCS session is automatically logged off.

2.2.3 CCS Manual Switchover

The manual switchover procedure brings up the CCS system as a backup for manual switchover. When switchover is initiated, the system will retain the current configuration, current events, and alarms.

The startup procedure supports all levels; therefore, the user/operator should enter the level specified on the test runsheet. As shown here, the current delivered release to NASA is selected.

Enter the Level: TEST/APRV/NASA : NASA

The system monitor system mailbox usage and issues a warning to the message computer operators' consoles if more than 70 percent of a single mailbox queue is in use. This message is not an error or warning because this condition may occur during periods of high throughput. If the user wants mailbox monitoring, he or she enters "Y" to the following prompt; if the user does not want mailbox monitoring, he or she enters a carriage return.

Are mailboxes to be monitored? [D:N]

The system can be started using either the initial data files or the data files that were being used prior to this startup. To use the initial set of files, the operator must answer Y to the cold-start prompt; to use the existing files, the operator must answer N. The areas affected by this prompt are the hardware configuration to be used, active events, and alerts. A cold start uses the initial values for these areas.

Is this a Cold Start? N

The system allows the operator to warm start the system from either the same VAX or the other VAX in the cluster. If warm starting the same processor, the user enters YES to the following prompt; if not the user enters N.

Is this startup a warmstart on the same processor? N

CREATED GLOBAL SECTION PORT_TABLE USING FILE PORT_TABLE.GBL

CREATED GLOBAL SECTION CUTABLE USING FILE CUTABLE.GBL

CREATED GLOBAL SECTION SCONFABLE USING FILE SCONFABLE.GBL

CREATED GLOBAL SECTION XEQPTB USING FILE XEQPTS.GBL

CREATED GLOBAL SECTION XGRPITB USING FILE XGPPITB.GBL

CREATED GLOBAL SECTION XITGRPTB USING FILE XITGRPTB.GBL
 CREATED GLOBAL SECTION XITSCRN USING FILE XITSCRN.GBL
 CREATED GLOBAL SECTION XNFEPORF USING FILE XNFEPORF.GBL
 CREATED GLOBAL SECTION XSPSAPP USING FILE XSPSAPP.GBL
 CREATED GLOBAL SECTION XSSCIT USING FILE XSSCIT.GBL
 CREATED GLOBAL SECTION XSYPARM USING FILE XSYPARM.GBL
 CREATED GLOBAL SECTION XLOGFNT USING FILE XLOGFNT.GBL
 FORTRAN STOP
 TIME TAGE FILE OK
 TDRS-ID FILE OK
 USERID/PASSWORD FILE OK
 SPACECRAFT FILE OK
 DQM SETUP PARAMETERS FILE OK
 DQM USERS FILE OK
 ACTIVE SCHEDULE FILE OK

 SCHEDULE STATUS SPOOL FILE OK
 NES SCHEDULE ACCEPT/REJECT FILE OK
 CONS_STATUS.DAT FILE CREATED OK
 POCC_STATUS.DAT FILE CREATED OK
 TERM_STATUS.DAT FILE CREATED OK
 TERM_DIRECT.DAT FILE CREATED OK
 PRINT_DTIME.DAT FILE CREATED OK
 FTXTMSG_ACK.DAT FILE CREATED OK
 MESSAGE_IDN.DAT FILE CREATED OK

 ALERT_DIREC.DAT FILE CREATED OK
 ALERT_QUEUE.DAT FILE CREATED OK
 TNC_ROUTINE.DAT FILE CREATED OK
 FORTRAN STOP
 %%%%%%%%% OPCOM 16-FEB-1989 18:42:39.01 %%%%%%%%%
 Operator status for operator _CCSONE\$RTA1:
 CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER,
 OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9,
 OPER10, OPER11, OPER12

The various file messages verify that each CCS global section and file was created or backed up. Errors encountered during these operations will be reported here.

The CCS subprocesses are being started at this point. Errors related to the subprocesses may appear on the STARTCCS device.

The following message is issued when the operator has selected a warm start of a different processor. This mode is used to bring the CCS up in the backup mode for manual switchover.

This startup is preparation for manual switchover to CCSX, where X is the CCS being started.

This message is an information message if a warm start or switchover has been selected.

This system is ready for completion of switchover/warmstart(Control Y will abort the backup CCS)..

The operator responds to this prompt after a switchover or warm start is to be initiated. To start switchover/warm start, the user enters Y; otherwise the user does not respond.

Is system ready for completion of switchover/warm start? [D:N]

NOT E

The operator must stop the other CCS prior to answering this question on the current CCS.

Executing tape logger

Occasionally during CCS operation, the operator will be prompted to archive log data from disk to tape. Each operator prompt on the operator terminal has an associated request number that will be used in the operator response. The initial tape logger prompt is:

Please obtain a tape and reply the media control tape name...

The appropriate operator response is to obtain a tape from media control and reply at the operator terminal:

reply/to = ##### tapename

where ##### is the request number and tapename is a valid log tape name. A valid tape name consists of six characters in which the first three characters are a valid tape type, such as CCS or STS, and the second three characters are a number between 001 and 999. A table of valid tape types is located in the Log Constants File.

If the operator responds with a tape name not of six characters, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name size entered. Please enter a valid six character tape name for the NEW request.

If the operator responds with a tape name of invalid tape type, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape name type entered. Please enter a valid tape name for the NEW request.

If the operator responds with a tape name of invalid tape number, the following alert is provided, followed by a renewed prompt for the tape name:

OPERATOR ERROR —> Invalid tape number entered. Number must be in range of 001 - 999. Please enter a valid tape name for the NEW request.

This series of prompts, alerts, and reprompts continues until the operator responds with a valid tape name. The operator is then prompted to mount the tape as follows:

Please mount tape *** on a tape device and reply with the tape device name.**

NOTE

To start this tape logging session again, respond with "RETRY".
To abort this tape logging session permanently, respond with "ABORT".

EXAMPLES: "MUAO:" or "RETRY" or "ABORT"

where ***** is the previously stated tape name.

The correct operator response is to mount the tape on an available tape drive and reply with the drive name:

reply/to = ##### device_name

where ##### is the request number and device_name is a valid tape drive name. A table of valid tape drive names is located in the Log Constants File.

If the operator responds with RETRY, the software will start the tape logging process over by reprompting for a tape name.

If the operator responds with ABORT, the software will abort this tape logging process, and all data targeted to be logged to tape will be lost, saved only by a standalone logging session.

If the operator responds with a valid tape drive name, but the tape drive is inoperable or subsequently fails, prior to mount completion, the following operator action is required, at the operator's DCL terminal:

\$REPLY/ENABLE
\$REPLY/ABORT=#####

where ##### is the request number from the following operator prompt:

REQUEST #####, from user STARTCCS on CCSONE

Please mount device _\$1\$MUAO: (HSCONE)

NOTE

The TLOG software will retry the mount request two times and the operator, using the same procedure, must also abort the two additional mount requests that result.

The operator is then reprompted to enter an alternate tape drive name.

If the operator responds with an invalid tape drive name, the following alert is provided, followed by a renewed prompt for the tape drive name:

OPERATOR ERROR —> Invalid tape device drive or log session command entered. Please reply again to the NEW request.

The operator has three tries to respond with a valid tape drive name before the software will automatically abort the tape logging session. If a valid tape drive name is given, the operator will see a VMS tape mounted notification and a VMS tape dismounted notification. After the tape dismounted notification is given, the tape logging session is complete and the tape can be physically dismounted and returned to media control.

If this is a switchover, then stop the prime CCS.

**STARTING
CCS
FOR NASA**

This message describes, for verification, the level and release just selected.

After the CCS processes have been terminated, the application dump files are printed. The user/operator may select any of these files. Following this step, the STARTCCS session is automatically logged off.

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Section 3. CCS Menu Interface

3.1 Introduction

This section describes the procedures for execution of the Field/Maintenance and Operator class command procedures on the VAX 8550. The initial step involves logging into an account that will consist of a unique username and password for each user in one of the two classes. This information will be provided to the user after the account has been requested and created.

Upon logon, the user will be provided with a screen similar to that shown in Figure 3-1. The screen is divided into five displays that are used for the functions listed in Table 3-1.

Table 3-1. Window Functions

1. USERNAME display	-	the Username used to logon onto CCS will be displayed here.
2. TITLE display	-	The title will be displayed here.
3. MENU NAME display	-	An appropriate acronym for the current menu will be displayed here.
4. MESSAGE display	-	If reply is enabled, any messages broadcast to the terminal will be displayed here.
5. MENU display	-	The options for the current menu will be displayed here. The menu will consist of different choices depending on the class of user account used.

An example of the MAIN MENU for a FIELD account user is shown in Figure 3-2. An example of an OPERATOR account and associated MAIN MENU is shown in Figure 3-3. Figure 3-4 shows the submenu OPRU MENU (**OPeRator** CCS Utilities) for an OPERATOR type account.

Options displayed in the menu can be selected by using the UP/LEFT or DOWN/RIGHT ARROW keys and pressing ENTER/RETURN. If a menu contains more entries than can be displayed vertically in the MENU display, the hidden menu options will be scrolled up and down as needed.

If the selected option is a submenu, then this menu will be displayed and available for user input. If the selection is a command procedure or other executable file, the screen will be cleared and execution of the command procedure will proceed as documented in later sections.

There are a few special keys for user inputs in the MENU system:

- <PF1> <DOWN ARROW> – causes highlight bar to go to last MENU item
- <PF1> <UP ARROW> – causes highlight bar to go to first MENU item

- <PF3> – Toggles the MENU window on and off for viewing of broadcast messages.
- <PF4> – Refreshes the screen. During periods of high volumes of broadcast message traffic, the terminal I/O buffer can become overloaded. This causes the display to show garbled messages. The PF4 key refreshes the display.

In order to ensure that the MENU windows are displayed correctly, check the terminal setup and verify that the tab setting is “8 column tabs.”

If the terminal has a local printer, check the printer setup to ensure that the terminal is set for “Normal Print Mode.” Auto print mode produces incorrect printouts and incomplete displays.

In order to logoff the terminal, the user must select the EXIT to DCL option and the type <LOGOFF>. (FIELD account only)

USERNAME	TITLE	MENU NAME
<p>%%%%%%%%%% OPCOM 1 JAN 1994 00:00:00.01 %%%%%%%%%%</p> <p>Message from user SYSTEM on</p> <p>SYSTEM TIME RESET WITH UTC TIME</p> <p>%%%%%%%%%% OPCOM 1 JAN 1994 00:05:00.01 %%%%%%%%%%</p> <p>Message from user STARTCCS on CCS004</p> <p>AAA BBB CCC OPEN</p>		<p>1 OPTION 1</p> <p>2 OPTION 2</p> <p>• •</p> <p>• •</p> <p>• •</p> <p>• •</p> <p>• •</p> <p>N. OPTION N</p>

Figure 3-1. General Menu Interface

FIELD1	CCS OPERATOR INTERFACE	MENU NAME
	<pre> %%%%%%%%%%%%% OPCOM 1 JAN 1999 00:02:00.01 %%%%%%%%%%%%%% Request 12, from user STARTCCS on CCS004 Please obtain a tape and reply the media control tape name. %%%%%%%%%%%%% OPCOM 1 JAN 1999 00:05:00.01 %%%%%%%%%%%%%% Message from user STARTCCS on CCS004 AAA BBB CCC OPEN </pre>	<ol style="list-style-type: none"> 1. CLEAR_PRINT QUEUE 2. SHUTDOWN 3. CCSUTC 4. SHADOW 5. EXIT TO DCL

Figure 3-2. Field Account Screen With Main Menu Displayed

OPERATOR1	CCS OPERATOR INTERFACE	MENU NAME
	<pre> %%%%%%%%%%%%% OPCOM 1 JAN 1999 00:02:00.01 %%%%%%%%%%%%%% Request 12, from user STARTCCS on CCS004 Please obtain a tape and reply the media control tape name. %%%%%%%%%%%%% OPCOM 1 JAN 1999 00:05:00.01 %%%%%%%%%%%%%% Message from user STARTCCS on CCS004 AAA BBB CCC OPEN </pre>	<pre> 1. CCS UTILITIES 2. CCS LOG UTIL 3. BACKUP 4. SHADOW 5. SHUTDOWN 6. ARP FLUSH 7. REPLY 8. EXIT TO DCL 9. LOGOUT </pre>

Figure 3-3. Operator Account Screen With Main Menu Displayed

OPERATOR1	CCS OPERATOR INTERFACE	OPRU MENU
	<p>%%%%%%%%%%%% OPCOM 1 JAN 1999 00:02:00.01 %%%%%%%%%%</p> <p>Request 12, from user STARTCCS on CCS004</p> <p>Please obtain a tape and reply the media control tape name.</p> <p>%%%%%%%%%%%% OPCOM 1 JAN 1999 00:05:00.01 %%%%%%%%%%</p> <p>Message from user STARTCCS on CCS004</p> <p>AAA BBB CCC OPEN</p>	<ol style="list-style-type: none"> 1. CLEAR_PRINT QUEUE — 2. ENTITY_UP 3. ENTITY_DOWN 4. INIT_TIME_TAG 5. REVIEW_EVENT 6. RELEASE 7. CONFIG 8. MAIL 9. PREVIOUS MENU

Figure 3-4. Operator Screen With Submenu OPRU Menu Displayed

Section 4. Operator Menu

4.1 Introduction

This section describes each of the available options for the OPERATOR class account.

4.2 MAIN MENU Options

4.2.1 CCS Utilities

If this option is selected, the Operator CCS Utilities subMENU will be displayed in the MENU Display (see Section 3). Each option available on this subMENU is described in the following sections.

4.2.1.1 CLEAR_PRINT_QUEUE

To delete all or any entry from the CCS print queue, the operator should take the following steps:

1. Log on to an OPERATOR class account.
2. Select CCS Utilities, option 1, from the OPERATOR account MAIN MENU and press ENTER/RETURN.
3. Then select the CLEAR_PRINT_QUEUE option from the OPRU MENU and press ENTER/RETURN.
4. Respond to level prompt:

ENTER THE SYSTEM LEVEL: TEST/APRV/NASA

where TEST is development
APRV is CM-controlled test,
NASA is operational

5. Respond to delete option type:

DO YOU WANT TO DELETE THE ENTIRE PRINT QUEUE [Y/N]?

For option type = Y, the entire queue and DSSB_PRT*.DAT files are deleted.

For option type = N, the user may choose specific entries for deletion by successive execution of the following steps:

- a. Respond 'Y' to prompt:

DELETE AN ENTRY FROM THE PRINT QUEUE [Y/N]

Contents of the queue are listed.

- b. Respond to selection prompt:

ENTER QUEUE ENTRY TO DELETE OR <RETURN> TO EXIT

Type selected choice from list and <RETURN>

User may exit the procedure at step **a** by responding N or at step **b** by entering <RETURN>.

NOTE

When the ENTIRE PRINT QUEUE is deleted, all DSSB_PRT*.DAT files are deleted from the disk. If there are no files present on disk, the message

%DELETE-W-SEARCHFAIL, error searching for NASA\$DISK:[98.1]DSSB_PRT*.DAT-RMS-E-ENF, file not found will be displayed. This is acceptable and requires no action.

Never stop CLEAR_PRINT_QUEUE from executing. This will leave the printers disabled.

4.2.1.2 ENTITY_UP

Obsolete

4.2.1.3 ENTITY_DOWN

Obsolete

4.2.1.4 INIT_TIME_TAG

This procedure will initialize the CCS timetag file. For NCC98 forcing a full static data transfer is now accomplished via an HP workstation display. To clear the CCS static data timetags, the operator should take the following steps:

1. Log on to an OPERATOR class account.
2. Select CCS Utilities, option 1, from the OPERATOR account MAIN MENU and press ENTER/RETURN.
3. Then select the INIT_TIME_TAG option from the OPRU MENU and press ENTER/RETURN.

The operator is required to enter the system level:

1. TEST == Level 1 CM-controlled development software.
2. APRV == Level 2 CM-controlled system test software. The operator must further specify the software level:
 - a. 2 == Level 2 CM-controlled system test software
 - b. 3 == Level 3 CM-controlled acceptance test software
3. NASA == Level 3 CM-controlled operational software on NASA\$DISK.

This procedure initializes the CCS timetag file to blank

Under normal operations in a controlled environment, this procedure should not be needed.

4.2.1.5 REVIEW_EVENT

To produce a printout of the current CCS copy of the active event file, the operator should take the following steps:

1. Logon to an OPERATOR class account.
2. Select CCS Utilities, option 1, from the OPERATOR account MAIN MENU and press ENTER/RETURN.
3. Then select the REVIEW_EVENT option from the OPRU MENU and press ENTER/RETURN.
4. Respond to the level prompt:

ENTER SYSTEM LEVEL: TEST/APRV/NASA

- a. Enter TEST for level 1 CM-controlled development.
 - b. Enter APRV for level 2 CM-controlled software. The operator must further specify the software level:
 - 2 == level 2 CM-controlled system test software
 - 3 == level 3 CM-controlled acceptance test software
 - c. Enter NASA for level 3 CM-controlled operational software.
5. Respond to the printout type request

LIST EVENTS OR DUMP EVENT FILE? L/D (D:L)

- a. Enter an L (or press return for default) to obtain a list of the event file. This list contains one line for each event file record.
- b. Enter a D to obtain a dump of the event file. This dump is a hexadecimal/ASCII dump of the event file contents.

4.2.1.6 RELEASE

To change the current CCS default release, the operator should take the following steps:

1. Log on to an OPERATOR class account.
2. Select CCS Utilities, option 1, from the OPERATOR account MAIN MENU and press ENTER/RETURN.
3. Then select the RELEASE option from the OPRU MENU and press ENTER/RETURN.
4. The process will then show the current default release and level, as well as available previous releases.
5. The operator will be requested to select the release to be used.
6. The CCS system can now be started.

4.2.1.7 CONFIG

Obsolete

4.2.1.8 MAIL

To display the status of the CCS mailboxes, the operator should take the following steps:

1. Log on to an OPERATOR class account.
2. Select CCS Utilities, option 1, from the OPERATOR account MAIN MENU and press ENTER/RETURN.
3. Then select the MAIL option from the OPRU MENU and press ENTER/RETURN.

The following is an example of the CCS mailbox status display:

ALQ1	0	0	0	0	APFL	0	0	0
APST	0	0	0	0	CASP	0	0	0
CCPR	0	0	0	0	CPWS	0	0	0
DRQF	0	0	0	0	DSSD	0	0	0
DSSB	0	0	0	0	DSSR	0	0	0
DSST	0	0	0	0	DSTR	0	0	0
EMDS	0	0	0	0	EMGM	0	0	0
EMRP	0	0	0	0	ERRP	0	14	14
FELC	0	2	2	0	FIFE	0	0	0
FTXT	0	0	0	0	HSAK	0	0	0
HSMI	0	0	0	0	HSMO	0	0	0
ISLC	0	2	2	0	LOGF	0	0	0
LOGN	0	0	0	0	LOGB	0	16	16
LOGS	0	0	0	0	NMDP	0	0	0
WMER	0	0	0	0	NMIN	0	0	0
NMRP	0	0	0	0	NMTP	0	0	0
SDSP	0	0	0	0	SPLR	0	0	0
SSUP	0	2	2	0	SSCK	0	2	2
SYSM	0	18	18	0	TLOG	0	2	2
UTAS	0	0	0	0	UTCL	0	0	0
UTES	0	0	0	0	UTPW	0	0	0
UTSD	0	0	0	0	UTTS	0	0	0

NUMBER OF EXISTING MAILBOXES = 44 OF 44 LISTED IN NASA\$DISK:

[98_1.DAT]MAILBOX

This is an example of the CCS mailbox status display.

4.2.1.9 Previous Menu

This option allows the operator to return to the previous menu. If this option is selected, access to the OPRU MENU is completed and the previous menu (MAIN MENU) is displayed.

4.2.2 CCS LOG UTIL

CCS LOG UTILITIES can be executed by logging on to an OPERATOR class account and selecting the CCS LOG UTIL option. The command procedure that is executed prompts the user/operator for input to identify the CCS system software level. The user/operator is then solicited for the CCS node on which to perform the functions. At this point, the user/operator is presented with a menu featuring three selections, along with a fourth selection to exit the utility and terminate the LOGCCS session. At any point during a function, the user/operator can regain this menu via the Control Y key sequence.

Once logged on and following the selection of the CCS LOG UTIL option, the user/operator must enter the desired CCS system level at which the functions will be performed:

Enter the SYSTEM Level: TEST/APRV(/NASA):

Only TEST, APRV, and NASA (in the operational suite) are acceptable. There is no default.

Now the user interface requests the CCS node name as follows:

Enter CCS node name of log files to be processed (CCS1/)CCS2(/CCS3):

Only CCS1 (in the operational suite), CCS2, and CCS3 (in the development suite) are acceptable. There is no default.

Once the user/operator has responded with acceptable level and node directives, the main LOG UTIL menu is presented as follows:

1. SHOW DIRECTORY OF CCS LOG FILES?
2. SHOW NSM DIRECTORY OF CCS LOG FILES?
3. CLOSE CURRENT LOG FILE?
4. TERMINATE DELOG SESSION?

ENTER SELECTION: 1/2/3/4 [D:1]:

Only the numerals 1-4 or a null carriage return are acceptable. The default is selection 1.

The following four sections illuminate the four possible selections from the main delog menu.

4.2.2.1 Show Directory of Log Files?

If the user/operator desires to view the current logger disk directory of logged data files, response to the selection prompt must be 1:

ENTER SELECTION: 1/2/3/4 [C:1] : 1

The user/operator is then provided with a logger disk directory listing:

Directory LOGGER\$DISK:[STARTCCS.CCS3]

1999329124602620.CCS	2000	1999329124910630.CCS	2000
1999329125319080.CCS	2000	1999329131722880.CCS	2000
1999329134604440.CCS	2000	1999329142313960.CCS	2000

1999329144449010.CCS	2000	1999329145355740.CCS	2000
1999329151706680.CCS	2000	1999329154633510.CCS	2000
1999329155710010.CCS	2000	1999329162406080.CCS	2000
1999329163748340.CCS	2000	1999329184053860.CCS	2000
1999329190615910.CCS	2000	1999329194255640.CCS	2000
1999329194615490.CCS	2000	1999329202100400.CCS	2000
1999329205625440.CCS	2000	1999329213407340.CCS	2000

Total of 20 files, 40000 blocks.

Control is now returned to the main menu.

4.2.2.2 Show NSM Directory of CCS Log Files?

If the user/operator wants to view the exported CCS log files, response to the selection prompt must be 2:

ENTER SELECTION: 1/2/3/4 [D:1] : 2

The user/operator is then provided with a listing of CCS log files exported to the NFS mounted log device.

4.2.2.3 Close Current Log File?

Because the CCS logger process locks the current log file access, if a delog is requested from data included in the current log file, it is necessary to close the current log file by responding to the selection prompt with a 3:

ENTER SELECTION: 1/2/3/4 [D:1] : 3

The software then provides a safety prompt to ensure the desire to close the current log file as follows:

Current LOGFILE opened on CCS# will be closed
Close it? Y/N :

If N is specified, no files are closed and control returns to the main delog menu.

If Y is specified, and the specified CCS is up and operating, the following alerts are posted:

FORTRAN STOP
Close requested!

The file has been closed and copied to the remote CCS log device and control returns to the main delog menu.

NOTE

This option closes the disk log file currently opened by the logger process executing on the host CCS. If no logger process is executing, this option aborts since there exists no locked disk file. This abort is distinguished by a system alert stating a failure to connect to mailboxes.

4.2.2.4 Terminate Session?

If the user/operator desires to terminate the current session, response to the selection prompt must be 4:

ENTER SELECTION: 1/2/3/4 [D:1] :

This reply will return the user/operator to the MENU interface.

4.2.3 BACKUP

4.2.3.1 Introduction

This section describes the procedure for performing backups on the VAX 8550. The backup procedure consists of logging into an OPERATOR class account and selecting the BACKUP option from the MAIN MENU, then following the steps presented by the command procedure.

4.2.3.2 Backup Schedule

The backup command procedure implements the backup schedule recommended in the VAX/VMS System Management and Operations Guide manual.

1. Daily incremental backups, performed Monday through Saturday, cover the files created or modified each day. Twelve tapes are dedicated to daily backups (marked Monday, ... Saturday) and are reused each week. Each day should have two tapes.
2. Weekly incremental backups, performed on Sundays, cover all files created or modified during the previous week. Eight tapes are dedicated to weekly backups (marked Weekly#1, ... Weekly#8) and are reused each month. Two tapes are reserved for each week. If the system requests additional tapes, the operator should provide the additional tapes and label them accordingly.
3. Image backups, performed on the first Sunday of each month, save the entire contents of the disk, regardless of creation or modification date. Sixteen tapes are dedicated to image backups (marked IMAGE#1, ... IMAGE#16). Image 1 through Image 8 are used one month, and Image 9 through Image 16 are used the next month. Image tapes are reused every other month.
4. In addition, a static save will be initiated automatically following the completion of each daily, weekly, and image backup.

4.2.3.3 Command Procedure Prompts

The backup command procedure interacts with the user either by telling the user to perform a function or by requesting information before proceeding. Prompts requesting information are of the form

text [default]

“Text” tells what information is being requested, and “default” is an answer that can be selected by pressing the <RETURN> key. The defaults always reflect the backup schedule implemented. The default answer should be taken as the normal case and be overridden only by special instructions.

When necessary, the user can override the defaults presented simply by typing a new answer before pressing the <RETURN> key.

4.2.3.4 Procedure (CCS Operations)

The following sections describe the steps in the system backup procedure.

4.2.3.4.1 Login

Log into an OPERATOR class account and select the BACKUP option.

4.2.3.4.2 BACKUP Type

The first prompt, BACKUP Type: DAILY, WEEKLY, IMAGE, or STATIC [<backup_type>]:, asks the type of backup to perform: daily incremental, weekly incremental, image disk backup, or standalone static save or restore operations. The default, <backup_type>, is determined by the command procedure based on the current date. It will be either DAILY, WEEKLY, or IMAGE. The STATIC type is never a default. This operation is included with the other backup types. Special conditions may require a standalone static save operation or the loading of a static save tape through the static restore operation.

4.2.3.4.2.1 Daily Backup

Daily incremental backups create a **BACKUP** save set for each disk being backed up. The save sets are named \$1\$ddcu.DAY; ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (In other words, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.)

4.2.3.4.2.1.1 Disks To Be Backed Up

The command procedure backs up the system and user disks automatically. DUS0 and DUS1 are backed up.

The disks are backed up in the same order.

4.2.3.4.2.1.2 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

Enter tape drive of choice (MUA0, MUA1, MUA2 or MUA3) or carriage return and allow the system to choose the drive.

The next prompt is

Mount tape marked <day_of_week> on drive _MUcu:, <RETURN> when done.

where <day_of_week> is MONDAY, TUESDAY, etc., and _MUcu: is the tape drive that the command procedure has allocated or the user has selected.

If no tape drive is available, the message “MU: device not currently available” is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free. If the tape drive selected has problems, the backup session may be terminated, the procedure to down a tape drive (Section 6.5) should be executed, and the backup session can be restarted.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

```
Date      = dd-mmm-yyyy
Density   = density
Format    = BACKUP
Label     = yymmdd
Node      = _none::
Contents: DAILY INCREMENTAL BACKUP OF ddcu:, _ddcu:, ...
```

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form; _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined), and _ddcu:, _ddcu:, ... is the list of disks being backed up.

4.2.3.4.2.1.3 BACKUP Command

At this point, the command procedure will execute the BACKUP command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -
  /JOURNAL=SYS$MANAGER:BACKUP.BJL -
  _ddcu:[*...]/SINCE=BACKUP -
  _$1$MUcu:$1$ddcu.DAY
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.4.2.1.4 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume “n”
%BACKUP-I-READYWRITE, mount volume “n” on _MUcu: for writing
Enter “yes” when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.4.2.1.5 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.4.2.2 Weekly Backup

Weekly incremental backups create a BACKUP save set for each disk being backed up. The save sets are named \$1\$ddcu.WEK, where ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (That is, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.) Weekly incremental backups are performed online.

4.2.3.4.2.2.1 Date From Which To Back Up

The prompt

“Weekly BACKUP /SINCE=Date [<dd-mmm-yyyy 00:00:00.00.00.00.>]”,

asks for the date from which to back up. The date can be entered in any of the standard VMS date/time formats. The default date, <dd-mmm-yyyy 00:00:00.00.00.00.>, is determined by the command procedure and is the date of Sunday of the previous week.

4.2.3.4.2.2.2 Disks To Be Backed Up

The command procedure automatically backs up the system (DUS0) and user disk (DUS1). The disks are backed up in the same order.

4.2.3.4.2.2.3 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

The user may enter the tape drive of choice (MUA0, MUA1, MUA2 or MUA3), or enter a carriage return and allow the system to choose a drive. The command procedure asks the operator to mount a tape physically on the allocated tape drive with the prompt

“Mount tape marked WEEKLY#n on drive _MUcu:, <RETURN> when done”

where “n” is a number from 1 through 4 and “_MUcu:” is the tape drive that the command procedure has allocated or the user has selected.

NOTE

If no tape drive is available, the message MU: device not currently available is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free.

If selected tape drive has problems, the user may terminate the backup session, execute the procedure to down a tape drive (Section 5.3.13), and restart the backup session.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = _node::

Contents: WEEKLY INCREMENTAL BACKUP OF _ddcu:, _ddcu, ...

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined); and _ddcu:, _ddcu, ... is the list of disks being backed up.

4.2.3.4.2.2.4 BACKUP Command

At this point, the command procedure will execute the BACKUP command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYS$MANAGER:BACKUP.BJL -  
  _ddcu:[*...]/SINCE="date" -  
  _$1$MUcu:$1$ddcu.WEK
```

where _ddcu: is the disk being backed up, date is the backup date selected, and _MUcu: is the tape drive being used.

4.2.3.4.2.2.5 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume"n" on _MUcu: for writing  
Enter"yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.4.2.2.6 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.4.2.3 Image Backup

Image backups create a BACKUP save set for each disk being backed up. The save sets are named \$1\$ddcu.IMG; ddcu is the device name of the disk. A new tape set is started for the save set of each disk being backed up. (The command procedure will ask for a new tape before starting each disk, and BACKUP may ask for additional tapes if the save set does not fit on one tape.)

4.2.3.4.2.3.1 Disks To Be Backed Up

The command procedure backs up the system (DUS0) and user (DUS1) disk automatically. The disks are backed up in the same order.

4.2.3.4.2.3.2 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

The user enters the tape drive of choice (MUA0, MUA1, MUA2, or MUA3) or enters a carriage return and allows the system to choose a drive. The command procedure asks the operator to physically mount a tape on the allocated tape drive with the prompt

“Mount a scratch tape on drive _MUcu:, <RETURN> when done”

where _MUcu: is the tape drive that the command procedure has allocated or the user has selected.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = _node::

Contents: IMAGE BACKUP OF _ddcu:

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined); and _ddcu: is the disk being backed up.

This step and the BACKUP command are repeated for each disk being backed up.

4.2.3.4.2.3.3 BACKUP Command

At this point, the command procedure will execute the BACKUP command to back up the disk. Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYSS$MANAGER:BACKUP.BJL -  
  /LIST=SYSS$MANAGER:BACKUP.LIS -  
  _ddcu: -  
  _$1$MUcu:$1$ddcu.IMG
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.4.2.3.4 Additional Tapes

If the image save set does not fit on one tape, the BACKUP utility will ask for additional tapes. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume "n" on _MUcu: for writing  
Enter "yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.4.2.3.5 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.4.2.4 Automatic Static Save

The static save creates a backup of critical operational data that is used in the event of failover to the development Communications and Control Segment (CCS) (CCS3). This data consists of operational baseline data files, the operational user authorization file (OPS accounts) and the login command procedures and default directories for operational CCS users. These data items are applied as part of the failover procedure.

The static save procedure is invoked automatically following the daily, weekly, or image backup. In addition, users can perform standalone static saves following updates of any of the static save data items using the standalone static save procedure.

4.2.3.4.2.4.1 Standalone Static Save Invocation

The standalone static save differs from the automatic static save only in the manner in which the user invokes the save. The operator responds to the prompts as follows to invoke the standalone static save:

```
Backup Type: DAILY, WEEKLY, IMAGE, OR STATIC [DEFAULT]: STATIC  
Perform Static SAVE OR RESTORE?: SAVE
```

4.2.3.4.2.4.2 Static Save Tape

The operator selects the next available FOVSDT tape from the red static save tape library in media control and prepares a label as instructed by the static save procedure:

Label the FOVSDT tape with following information:

Date = DD-MON-YEAR
Density = 6250
Format = BACKUP - Multiple Savesets
Label = FOVSDT

4.2.3.4.2.4.3 Static Save Release Verification

Because the CCS can be a multiple release environment, it is important for the operator to verify that the currently selected release (via @RELEASE) is the release on which the static operations should be based. The verification is completed by determining whether the release identified in the following prompt is the release wanted for the static operation:

```
>>>>CURRENT RELEASE IS: 98.1, CORRECT?[D:Y]:
```

If this information is correct, the response is <RETURN>. If another release is desired, then the response is <N>. In this case, the backup process is logged off and the static operation is not performed.

The operator may select a different release following the @RELEASE procedures in Section 4.2.1.6 of this guide and perform a standalone static save or restore as described in Section 4.2.3.4.2.4.1 of this guide.

4.2.3.4.2.4.4 Mount Static Save Tape

The operator mounts the selected FOVSDT tape on the drive indicated by \$1\$MUA#, where # represents the tape device, in the following message:

```
%%%%%%%%OPCOM DD-MON-YEAR HH:M:SS:HH %%%%%%%%%  
Request #, from user BACKUP on CCSNNN  
Please mount volume FOVSDT in device - $1$MUA#:(HSCNNN)
```

NOTE

If the following message occurs during the save, static save must be performed again.

```
%BACKUP -E- OPENIN , error opening SYS$COMMON:[SYSEXE]  
SYSUAF.DAT as input  
- SYSTEM -W- ACCONFLICT , file access conflict  
%BACKUP -W- NOFILES , no files selected from  
SYS$COMMON:[SYSEXE] SYSUAF.DAT:*
```

4.2.3.4.2.5 Static Restore

The static restore operation is used in special cases, such as failover, where it may be necessary to restore the baseline data files only. Following a recovery of the operational CCSs, the static restore is used to apply static saves made during operational support on CCS3.

4.2.3.4.2.5.1 Static Restore Invocation

The static restore is selected by responding to the backup prompts as follows:

```
Backup Type: DAILY,WEEKLY,IMAGE, OR STATIC [DEFAULT]:STATIC
Perform Static SAVE or RESTORE?:RESTORE
```

The operator uses the static save release verification procedures described in Section 4.2.3.4.2.4.3 of this guide to verify that the currently selected release is the desired baseline to be restored. Then he or she uses the mount static save tape procedure described in Section 4.2.3.4.2.4.4 of this guide to mount the current FOVSDT tape.

4.2.3.5 Procedure (CCS3 Acceptance Test Configuration)

The following sections describe the steps in the system backup procedure.

4.2.3.5.1 Login

Log into an OPERATOR class account and select the BACKUP option.

4.2.3.5.2 BACKUP Type

The first prompt, BACKUP Type: DAILY, WEEKLY, IMAGE, or STATIC [<backup_type>]:, asks the type of backup to perform: daily incremental, weekly incremental, image disk backup, or standalone static save or restore operations. The default, <backup_type>, is determined by the command procedure based on the current date. It will be either DAILY, WEEKLY, or IMAGE. The STATIC type is never a default. Special conditions may require a standalone static save operation or the loading of a static save tape through the static restore operation.

4.2.3.5.2.1 Daily Backup

Daily incremental backups create a BACKUP save set for each disk being backed up. The save sets are named \$1\$ddcu.DAY; ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (In other words, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.)

4.2.3.5.2.1.1 Disks To Be Backed Up

The command procedure backs up the system and user disks automatically. DUA10, DUA11, DUA12, and DUA13 are backed up.

The disks are backed up in the same order.

4.2.3.5.2.1.2 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

Enter tape drive of choice (MUA0 or MUA1) or carriage return and allow the system to choose the drive.

The next prompt is

Mount tape marked <day_of_week> on drive _MUcu:, <RETURN> when done.

where <day_of_week> is MONDAY, TUESDAY, etc., and _MUcu: is the tape drive that the command procedure has allocated or the user has selected.

If no tape drive is available, the message MU: device not currently available is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free. If the tape drive selected has problems, the backup session may be terminated, the procedure to down a tape drive (Section 6.5) should be executed, and the backup session can be restarted.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = none::

Contents: DAILY INCREMENTAL BACKUP OF _ddcu:, _ddcu:, ...

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form; _node:: is the DECnet node name (this line appears only if the logical name SYSSNODE is defined), and _ddcu:, _ddcu:, ... is the list of disks being backed up.

4.2.3.5.2.1.3 BACKUP Command

At this point, the command procedure will execute the BACKUP command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYSSMANAGER:BACKUP.BJL -  
  _ddcu:[*...]/SINCE=BACKUP -  
  _$1$MUcu:$1$ddcu.DAY
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.5.2.1.4 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume "n" on _MUcu: for writing  
Enter "yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.5.2.1.5 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.5.2.2 Weekly Backup

Weekly incremental backups create a BACKUP save set for each disk being backed up. The save sets are named ddcu.WEK, where ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (That is, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.) Weekly incremental backups are performed online.

4.2.3.5.2.2.1 Date From Which To Back Up

The prompt

```
"Weekly BACKUP /SINCE=Date [<dd-mmm-yyyy 00:00:00.00.],"
```

asks for the date from which to back up. The date can be entered in any of the standard VMS date/time formats. The default date, <dd-mmm-yyyy 00:00:00.00>, is determined by the command procedure and is the date of Sunday of the previous week.

4.2.3.5.2.2.2 Disks To Be Backed Up

The command procedure automatically backs up the system (DUA10) and user disks (DUA11 and DUA12), and the logger disk (DUA13). The disks are backed up in the same order.

4.2.3.5.2.2.3 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

```
TAPE DRIVE [MU:]
```

The user may enter the tape drive of choice (MUA0 or MUA1), or enter a carriage return and allow the system to choose a drive. The command procedure asks the operator to mount a tape physically on the allocated tape drive with the prompt

Mount tape marked WEEKLY#n on drive _MUcu:, <RETURN> when done

where “n” is a number from 1 through 4 and “_MUcu:” is the tape drive that the command procedure has allocated or the user has selected.

NOTE

If no tape drive is available, the message MU: device not currently available is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free.

If selected tape drive has problems, the user may terminate the backup session, execute the procedure to down a tape drive (Section 6.5), and restart the backup session.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy
Density = density
Format = BACKUP
Label = yymmdd
Node = _node::
Contents: WEEKLY INCREMENTAL BACKUP OF _ddcu:, _ddcu, ...

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined); and _ddcu:, _ddcu:, ... is the list of disks being backed up.

4.2.3.5.2.2.4 BACKUP Command

At this point, the command procedure will execute the BACKUP command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYS$MANAGER:BACKUP.BJL -  
  _ddcu:[*...]/SINCE="date" -  
  _$1$MUcu:$1$ddcu.WEK
```

where _ddcu: is the disk being backed up, date is the backup date selected, and _MUcu: is the tape drive being used.

4.2.3.5.2.2.5 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

%BACKUP-I-RESUME, resuming operation on volume “n”
%BACKUP-I-READYWRITE, mount volume “n” on _MUcu: for writing
Enter “yes” when ready:

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.5.2.2.6 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.5.2.3 Image Backup

Image backups create a BACKUP save set for each disk being backed up. The save sets are named \$1\$ddcu.IMG; ddcu is the device name of the disk. A new tape set is started for the save set of each disk being backed up. (The command procedure will ask for a new tape before starting each disk, and BACKUP may ask for additional tapes if the save set does not fit on one tape.)

4.2.3.5.2.3.1 Disks To Be Backed Up

The command procedure backs up the system (DUA10) and the user disks (DUA11 and DUA12), and the logger disk (DUA13) automatically. The disks are backed up in the same order.

4.2.3.5.2.3.2 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

The user enters the tape drive of choice (MUA0 or MUA1) or enters a carriage return and allows the system to choose a drive. The command procedure asks the operator to physically mount a tape on the allocated tape drive with the prompt

Mount a scratch tape on drive _MUcu:, <RETURN> when done

where MUcu: is the tape drive that the command procedure has allocated or the user has selected.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd
Node = _node::
Contents: IMAGE BACKUP OF _ddcu:

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined); and _ddcu: is the disk being backed up.

This step and the BACKUP command are repeated for each disk being backed up.

4.2.3.5.2.3.3 BACKUP Command

At this point, the command procedure will execute the BACKUP command to back up the disk. Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYS$MANAGER:BACKUP.BJL -  
  /LIST=SYS$MANAGER:BACKUP.LIS -  
  _ddcu: -  
  _$1$MUcu:$1$ddcu.IMG
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.5.2.3.4 Additional Tapes

If the image save set does not fit on one tape, the BACKUP utility will ask for additional tapes. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume "n" on _MUcu: for writing  
Enter "yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.5.2.3.5 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.5.2.4 Static Save

The static save creates a backup of critical data. These data consist of baseline data files, the user authorization file, and the login command procedures and default directories for CCS users.

Users can perform standalone static saves following updates of any of the static save data items using the standalone static save procedure.

4.2.3.5.2.4.1 Standalone Static Save Invocation

The standalone static save differs from the automatic static save only in the manner in which the user invokes the save.

The operator responds to the prompts as follows to invoke the standalone static save:

```
Backup Type: DAILY, WEEKLY, IMAGE, OR STATIC [DEFAULT]: STATIC
Perform Static SAVE OR RESTORE?: SAVE
```

4.2.3.5.2.4.2 Static Save Tape

The operator selects the next available FOVSDT tape from the red static save tape library in media control and prepares a label as instructed by the static save procedure

Label the FOVSDT tape with following information:

```
Date      = DD-MON-YEAR
Density   = 6250
Format    = BACKUP - Multiple Savesets
Label     = FOVSDT
```

4.2.3.5.2.4.3 Static Save Release Verification

Because the CCS can be a multiple release environment, it is important for the operator to verify that the currently selected release (via @RELEASE) is the release on which the static operations should be based. The verification is completed by determining whether the release identified in the following prompt is the release wanted for the static operation

```
>>>>CURRENT RELEASE IS: 98.1, CORRECT?[D:Y]:
```

If this information is correct, the response is <RETURN>. If another release is desired, then the response is <N>. In this case, the backup process is logged off and the static operation is not performed.

The operator may select a different release following the @RELEASE procedures in Section 4.2.1.6 of this guide and perform a standalone static save or restore as described in Section 4.2.3.5.2.4.1 of this guide.

4.2.3.5.2.4.4 Mount Static Save Tape

The operator mounts the selected FOVSDT tape on the drive indicated by \$1\$MUA#, where # represents the tape device, in the following message:

```
%%%%%%%%OPCOM DD-MON-YEAR HH:M:SS:HH %%%%%%%%%
Request #, from user BACKUP on CCSNNN
Please mount volume FOVSDT in device - $1$MUA#:(HSCNNN)
```

4.2.3.5.2.5 Static Restore

The static restore operation is used in special cases where it may be necessary to restore the baseline data files only.

4.2.3.5.2.5.1 Static Restore Invocation

The static restore is selected by responding to the backup prompts as follows:

```
Backup Type: DAILY,WEEKLY,IMAGE, OR STATIC [DEFAULT]:STATIC
Perform Static SAVE or RESTORE?:RESTORE
```

The operator uses the static save release verification procedures described in Section 4.2.3.5.2.4.3 of this guide to verify that the currently selected release is the desired baseline to be restored. Then he or she uses the mount static save tape procedure described in Section 4.2.3.5.2.4.4 of this guide to mount the current FOVSDT tape.

4.2.3.6 Procedure (CCS4 Development/System Test Configuration)

The following sections describe the steps in the system backup procedure.

4.2.3.6.1 Login

Log into an OPERATOR class account and select the BACKUP option.

4.2.3.6.2 BACKUP Type

The first prompt, BACKUP Type: DAILY, WEEKLY, or IMAGE [<backup_type>]:, asks the type of backup to perform: daily incremental, weekly incremental, image disk backup. The default, <backup_type>, is determined by the command procedure based on the current date. It will be either DAILY, WEEKLY, or IMAGE.

4.2.3.6.2.1 Daily Backup

Daily incremental backups create a BACKUP save set for each disk being backed up. The save sets are named CCS004\$ddcu.DAY; ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (In other words, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.)

4.2.3.6.2.1.1 Disks To Be Backed Up

The command procedure backs up the system and user disks automatically. DUA0, DUA1, DUA2, and DUA3 are backed up.

The disks are backed up in the same order.

4.2.3.6.2.1.2 Mount Tape on Drive

The command procedure next prompts for tape drive:

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

```
TAPE DRIVE [MU:]
```

Enter tape drive of choice (MUA0 or MUB0) or carriage return and allow the system to choose the drive.

The next prompt is

Mount tape marked <day_of_week> on drive _MUcu:, <RETURN> when done.

where <day_of_week> is MONDAY, TUESDAY, etc., and _MUcu: is the tape drive that the command procedure has allocated or the user has selected.

If no tape drive is available, the message MU: device not currently available is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free. If the tape drive selected has problems, the backup session may be terminated, the procedure to down a tape drive should be executed, and the backup session can be restarted.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = none::

Contents: DAILY INCREMENTAL BACKUP OF _ddcu:, _ddcu:, ...

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form; _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined), and _ddcu:, _ddcu:, ... is the list of disks being backed up.

4.2.3.6.2.1.3 BACKUP Command

At this point, the command procedure will execute the BACKUP

command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
/JOURNAL=SYS$MANAGER:BACKUP.BJL -  
_ddcu:[*...]/SINCE=BACKUP -  
_CCS004$MUcu:CCS004$ddcu.DAY
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.6.2.1.4 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"
```

%BACKUP-I-READYWRITE, mount volume “n” on _MUcu: for writing
Enter “yes” when ready:

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.6.2.1.5 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.6.2.2 Weekly Backup

Weekly incremental backups create a BACKUP save set for each disk being backed up. The save sets are named CCS004\$ddcu.WEK where ddcu is the device name of the disk. The save sets for all disks being backed up are written on one tape set. (That is, the command procedure will not ask for additional tapes after the first one; however, BACKUP may ask for additional tapes if all of the save sets do not fit on one tape.) Weekly incremental backups are performed online.

4.2.3.6.2.2.1 Date From Which To Back Up

The prompt

“Weekly BACKUP /SINCE=Date [<dd-mmm-yyyy 00:00:00.00.>]”,

asks for the date from which to back up. The date can be entered in any of the standard VMS date/time formats. The default date, <dd-mmm-yyyy 00:00:00.00>, is determined by the command procedure and is the date of Sunday of the previous week.

4.2.3.6.2.2.2 Disks To Be Backed Up

The command procedure automatically backs up the system (DUA0) and the user disks (DUA1 and DUA2), and the CM disk (DUA3). The disks are backed up in the same order.

4.2.3.6.2.2.3 Mount Tape on Drive

The command procedure next prompts for tape drive

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

The user may enter the tape drive of choice (MUA0 or MUB0), or enter a carriage return and allow the system to choose a drive. The command procedure asks the operator to mount a tape physically on the allocated tape drive with the prompt

“Mount tape marked WEEKLY#n on drive _MUcu:, <RETURN> when done”

where “n” is a number from 1 through 4 and “_MUcu:” is the tape drive that the command procedure has allocated or the user has selected.

NOTE

If no tape drive is available, the message MU: device not currently available is printed and the backup process logs off. The backup command procedure should be reexecuted when a tape drive is free.

If selected tape drive has problems, the user may terminate the backup session, execute the procedure to down a tape drive (Section 6.5), and restart the backup session.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = _node::

Contents: WEEKLY INCREMENTAL BACKUP OF _ddcu:, _ddcu, ...

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYS\$NODE is defined); and _ddcu:, _ddcu:, ... is the list of disks being backed up.

4.2.3.6.2.2.4 BACKUP Command

At this point, the command procedure will execute the BACKUP command(s) to back up the disk(s). Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYS$MANAGER:BACKUP.BJL -  
  _ddcu:[*...]/SINCE="date" -  
  _CCS004$MUcu:CCS004$ddcu.WEK
```

where _ddcu: is the disk being backed up, date is the backup date selected, and _MUcu: is the tape drive being used.

4.2.3.6.2.2.5 Additional Tapes

From this point, the backup procedure will run without further prompting, except in the case of requests for additional tapes from the BACKUP utility. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume "n" on _MUcu: for writing  
Enter "yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.6.2.2.6 Logging Out

When the backup command procedure is finished, it will return control to the MENU interface.

4.2.3.6.2.3 Image Backup

Image backups create a BACKUP save set for each disk being backed up. The save sets are named CCS004\$ddcu.IMG; ddcu is the device name of the disk. A new tape set is started for the save set of each disk being backed up. (The command procedure will ask for a new tape before starting each disk, and BACKUP may ask for additional tapes if the save set does not fit on one tape.)

4.2.3.6.2.3.1 Disks To Be Backed Up

The command procedure backs up the system (DUA0) and the user disks (DUA1 and DUA2), and the CM disk (DUA03) automatically. The disks are backed up in the same order.

4.2.3.6.2.3.2 Mount Tape on Drive

The command procedure next prompts for tape drive:

NOTE

The colon is not a valid part of the tape device name as a response to this prompt.

TAPE DRIVE [MU:]:

The user enters the tape drive of choice (MUA0 or MUB0) or enters a carriage return and allows the system to choose a drive. The command procedure asks the operator to physically mount a tape on the allocated tape drive with the prompt

Mount a scratch tape on drive _MUcu:, <RETURN> when done

where _MUcu: is the tape drive that the command procedure has allocated or the user has selected.

After the tape has been physically mounted, the command procedure will initialize and logically mount the tape. It will then print the following information for tape identification:

Label the BACKUP tape with the following information:

Date = dd-mmm-yyyy

Density = density

Format = BACKUP

Label = yymmdd

Node = _node::

Contents: IMAGE BACKUP OF _ddcu:

where dd-mmm-yyyy is the current date; yymmdd is the year, month, and day of the current date in numeric form, _node:: is the DECnet node name (this line appears only if the logical name SYSS\$NODE is defined); and _ddcu: is the disk being backed up.

This step and the BACKUP command are repeated for each disk being backed up.

4.2.3.6.2.3.3 BACKUP Command

At this point, the command procedure will execute the BACKUP command to back up the disk. Each BACKUP command is of the form

```
$ BACKUP/FAST RECORD -  
  /JOURNAL=SYSS$MANAGER:BACKUP.BJL -  
  /LIST=SYSS$MANAGER:BACKUP.LIS -  
  _ddcu: -  
  _CCSdd4$MUcu:CCSdd4$ddcu.IMG
```

where _ddcu: is the disk being backed up and _MUcu: is the tape drive being used.

4.2.3.6.2.3.4 Additional Tapes

If the image save set does not fit on one tape, the BACKUP utility will ask for additional tapes. Requests for additional tapes are of the form

```
%BACKUP-I-RESUME, resuming operation on volume "n"  
%BACKUP-I-READYWRITE, mount volume "n" on _MUcu: for writing  
Enter "yes" when ready:
```

and should be satisfied by physically mounting a scratch tape and entering yes.

4.2.3.6.2.3.5 Logging Out

When the backup command procedure is finished, it will log out automatically.

4.2.3.7 Standalone Backup

The standalone backup procedure is used to back up disk when the normal VMS operating system is not up and running. This is normally done when the system disk itself is being backed up.

The standalone backup is booted from five floppy disks. The user performs the following steps:

1. Shut down the system properly using shutdown procedure.
2. Halt the system by P and then <<<H
3. Insert the first diskette of the standalone backup system in the TOB floppy drive.
4. Start the boot by typing @CSB00. [Note: If the system was powered off, the system should be powered on (P ON), and the boot procedure CSAB00 should be used.]
5. Follow the directions given by the standalone backup program to load all five diskettes.
6. Mount a tape each on MUAO and MUA1 with write ring.

7. When the standalone BACKUP has been booted, back up the system disk with the following command:

```
$BACKUP/IMAGE DUA0: MUA0:DUA0.IMG,MUB0:/ REWIND/DENSITY=6250
```

The above command backs up DUA0 to magtape MUA0 and MUB0.

8. Continue giving tapes and label each volume until the backup is complete.

4.2.3.8 Journal File

All of the BACKUP commands that the command procedure issues include the /JOURNAL qualifier. A new journal file is started before each set of image backups. This file can be used to locate the last backup of a file so that it can be restored.

4.2.3.9 Log File

The backup command procedure maintains a log of the backups that are performed. Log file entries are of the form

```
<backup_type> BACKUP ON <dd-mmm-yyyy hh:mm> OF  
<disk_list> [SINCE <backup_date>]
```

where <backup_type> is the type of backup performed, <dd-mmm-yyyy hh:mm> is the date and time of the backup, <disk_list> is the list of disks that were backed up, and <backup_date> is the weekly backup date. "SINCE <backup_date>" appears only for weekly incremental backups.

4.2.4 Shadow

This option allows the user/operator the ability to add a disk to a shadow set. If it is necessary to remove a disk from a shadow set, the user must perform the steps in Section 4.2.4.2 after selecting the EXIT TO DCL option.

4.2.4.1 Remove/Delete Disk From Shadow Set

On the operational CCS system (CCS ONE and CCS TWO), the disks \$1SDUA0 and \$1SDUA1 form the shadow set \$1SDUS0, \$1SDUA2 and \$1SDUA3 form the shadow set \$1SDUS1, and the disks \$1SDUA4 and \$1SDUA5 form the shadow set \$1SDUS2. A member disk can be dismounted for maintenance by issuing the dismount command with the device name of the member. Once maintenance is completed, the procedure SHADOW may be used to add the disk to the shadow set.

4.2.4.2 Remove Disk From Shadow Set

To remove a disk from a shadow set, the operator takes the following steps:

1. Sign onto a FIELD class account and select the EXIT to DCL option.
2. At the DCL prompt, enter the following:

```
DISMOUNT/CLUSTER      Disk Name  
where disk name       = $1SDUA0, or
```

\$1SDUA1, or
\$1SDUA2, or
\$1SDUA3, or
\$1SDUA4, or
\$1SDUA5

4.2.4.3 Add Disk to Shadow Set

It is recommended that this procedure be run from the system console with page printer write enabled to ensure hardcopy of operator's keyins. To add a disk to a shadow set, the operator takes the following steps:

1. Sign onto an OPERATOR or FIELD class account.
2. Select the SHADOW option from the MAIN MENU.
3. A list of device disk units will appear with volume labels.
4. Answer prompts as directed:
 - a. SHADOW SET VIRTUAL UNIT: [DUS0, DUS1, or DUS2]

Enter: DUS0 for shadow set virtual unit 0
or
DUS1 for shadow set virtual unit 1
or
DUS2 for shadow set virtual unit 2

NOTE

An error on entry will cause the following printout:

ERROR - YOU SHOULD INPUT DUS0, DUS1, OR DUS2 FOR
SHADOW SET VIRTUAL UNIT

and a return to Step 3.

[An improper entry could also produce a system error message(s)
and terminate procedure.]

- b. VOLUME LABELS OF THE VIRTUAL UNITS: [VAXVMSRL5, NASADISK23,
or USERDISK5]

Enter: VAXVMSRL5
or
NASADISK23
or
USERDISK5

or

Choose from list of device disk units listed in Step 3.

NOTE

List in Step C is most current

- c. DISK(s) TO BE ADDED TO THIS SHADOW SET:
[\$1\$DUAn, n = 0, 1, 2, 3, 4, 5]

Enter: 0, 1, 2, 3, 4, or 5

NOTE

DUA0 and DUA1 form shadow set DUS0;
DUA2 and DUA3 form shadow set DUS1.
DUA4 and DUA5 form shadow set DUS2.

5. Confirm the mount directive by answering the confirmation prompt after the summary information is printed.

ALLOW FULL SHADOW COPY ON THE ABOVE MEMBER? [N]

Enter: <RETURN> to exercise default (no) (procedure terminates)

Y (yes) to exercise mount command

NOTE

Successful mount causes printout
%SYSTEM-I-MOUNTVER, xxxxxxx:SHADOW
COPY HAS BEEN STARTED

where xxxxxxx identifies operator request.

4.2.5 Shutdown

4.2.5.1 Introduction

This is the procedure to shut down the VAX. SHUTDOWN performs an orderly shutdown of the system. It is used for performing system backups, rebooting the system when it is needed, invoking the maintenance system, and so forth.

The system shutdown can be canceled at any time by typing a Control C. Canceling system shutdown after it has passed the 4-minute-to-go mark is inadvisable because logins will be disabled. If this happens, the user can RESELECT SHUTDOWN again, let it complete, and reboot if necessary.

4.2.5.2 Procedure

The command procedure invoked upon selection of the SHUTDOWN option executes a SHOW USERS command to provide the operator with the number of users logged on. Then it invokes SYSSYSTEM:SHUTDOWN.COM, the DEC-supplied shutdown procedure.

SHUTDOWN.COM asks the following questions:

1. How many minutes until final shutdown [0]?

The operator enters the number of minutes before users are logged out. Typing <RETURN> will select 0 minutes, causing shutdown to start immediately after the remaining questions have been answered. After all the questions are answered, the system sends a message to the users. Subsequent messages are sent when half the remaining time has passed (e.g., messages appear at 60 minutes to go, 30, 15, and so forth). A message is always sent out at 4 minutes to go when logins are disabled, DECnet is stopped, and the print and batch queues are stopped.

2. Reason for shutdown [Standalone]:

A reason provided in the messages sent to the users. This can be any text. If the operator types <RETURN>, no reason is given.

3. Do you want to spin down the disk volumes [No]?

This determines whether the disk is left spinning when it is dismounted. Answer should be yes or no; the first letter is sufficient. Typing <RETURN> selects the default answer of no.

4. Do you want to invoke the site-specific shutdown procedure [Yes]?

5. Should an automatic system reboot be performed [No]?

The operator indicates whether VMS should be rebooted immediately after shutdown. Answer should be yes or no; one letter is sufficient. Typing <RETURN> selects the default answer of no.

6. When will the system be rebooted [Later]?

The operator should provide an expected uptime in the messages sent to the users. This can be any text to follow the word "up." (See the format of message 7.) If the operator types <RETURN>, no expected up time is given.

7. Shutdown options (enter as a comma-separated list):

[REMOVE_NODE]	Remaining nodes in the cluster should adjust.
[CLUSTER_SHUTDOWN]	Entire cluster is shutting down.
[REBOOT_CHECK]	Check existence of basic system files.

Shutdown options [NONE]:

The procedure prompts the operator to specify one or more shutdown options. If the system is a VAXcluster member, all three options are listed; otherwise, only the REBOOTCHECK option is listed. Users may enter REBOOTCHECK to verify that a subset of the files necessary to reboot the system after shutdown is present.

4.2.5.3 Messages

The messages sent to the logged on terminals are in the form of the following:

SHUTDOWN message on CCSDEV from user SHUTDOWN at CCSDEV\$OPAO: hh:mm:ss.cc
CCS DEV will shut down in <n> minute[s][; up 'expected up-time']. ['Reason']

Expected up-time and reason are the answers supplied to questions two and six above, and square brackets ([]) indicate portions of the message that may not appear, depending on the answers.

The following messages will appear on the operator console regarding the state of the system:

```
10 terminals have been notified on CCSDEV
%SHUTDOWN-I-OPERATOR, this terminal is now an operator's console
%SHUTDOWN-I-DISLOGINS, interactive logins will now be disabled
%%%%%%%%%% OPCOM dd-mmm-yyy hh:mm:ss.c %%%%%%%%%%%
Operator status for operator CCSDEV$OPAO:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER,
SECURITY, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9,
OPER10, OPER11, OPER12

%SET-I-INSTET, login interactive limit=0, current interactive value=10
%SHUTDOWN-I-SHUTNET, the DECnet network will not be shut down
%%%%%%%%%% OPCOM dd-mmm-yyy hh:mm:ss.cc %%%%%%%%%%%
Message from user DECnet on CCSDEV
DECnet shutting down

%SHUTDOWN-I-STOPQUEMAN, the queue manager will now be stopped

%SHUTDOWN-I-SITESHUT, the site-specific shutdown procedure will not be in
%SPM-E-CONORU, collections not running
%SHUTDOWN-I-STOPUSER, all user processes will not be stopped
%SHUTDOWN-I-REMOVE, all installed images will now be removed
%SHUTDOWN-I-DISMOUNT, all volumes will now be dismantled
%SHUTDOWN-I-DISMOUNTDEV, dismantling device_$1$DJA3:
%SHUTDOWN-I-DISMOUNTDEV, dismantling device_$1$DUS1:

%%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%%
Message from user SHUTDOWN on CCSDEV
CCSDEV$OPAO:, CCSDEV shutdown was requested by the operator
%%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%%
Logfile was closed by operator CCSDEV$OPAO:
Logfile was SYSSYSROOT:[SYSMGR]OPERATOR.LOG

%%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%%
Operator CCSDEV$OPAO: has been disabled, username SHUTDOWN

SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM
```

When the final message appears, the operator types the following to bring the system down:

CNTRL/P

>>>H

>>>

If it is desirable to power down the system, the operator enters the following:

>>>PO OFF

NOTE

Shutdown of one node causes the other node to pause for about 15 seconds.

4.2.6 ARP Flush

This option allows the user/operator to flush the MULTINET ARP table. This function is required when switching between hosts with like IP addresses but different ETHERNET addresses.

4.2.7 Reply

This option allows the user/operator to REPLY/ENABLE or REPLY/DISABLE. This function determines whether or not REPLY is currently enabled. If REPLY is enabled the function disables the REPLY. If REPLY is disabled when the function is executed, REPLY is then set to enable.

4.2.8 Exit to DCL

The user can enter DCL mode from an OPERATOR or FIELD class account by selecting the EXIT TO DCL option from the MAIN MENU.

4.2.9 Logout

This option allows the user/operator to log off the OPERATOR class account.

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Section 5. Field/Maintenance Menu

5.1 Introduction

This section describes each of the available options for the FIELD/MAINTENANCE class account.

5.2 MAIN MENU Options

5.2.1 Clear_Print_Queue

To delete all or any entry from the CCS print queue the operator should take the following steps:

1. Logon to a FIELD class account.
2. Select CLEAR_PRINT_QUEUE from the FIELD account MAIN MENU and press ENTER/RETURN.

5.2.2 Shutdown

5.2.2.1 Introduction

This is the procedure to shut down the VAX. SHUTDOWN performs an orderly shutdown of the system. It is used for performing system backups, rebooting the system when it is needed, invoking the maintenance system, and so forth.

The system shutdown can be canceled at any time by typing a Control C. Canceling system shutdown after it has passed the 4-minute-to-go mark is inadvisable because logins will be disabled. If this happens, the user can RESELECT SHUTDOWN again, let it complete, and reboot if necessary.

5.2.2.2 Procedure

The command procedure invoked upon selection of the SHUTDOWN option executes a SHOW USERS command to provide the operator with the number of users logged on. Then it invokes SYS\$SYSTEM:SHUTDOWN.COM, the DEC-supplied shutdown procedure. SHUTDOWN.COM asks the following questions:

1. How many minutes until final shutdown [0]?

The operator enters the number of minutes before users are logged out. Typing <RETURN> will select 0 minutes, causing shutdown to start immediately after the remaining questions have been answered. After all the questions are answered, the system sends a message to the users. Subsequent messages are sent when half the remaining time has passed (e.g., messages appear at 60 minutes to go, 30, 15, and so forth). A message is always sent out at 4 minutes to go when logins are disabled, DECnet is stopped, and the print and batch queues are stopped.

2. Reason for shutdown [Standalone]:

A reason provided in the messages sent to the users. This can be any text. If the operator types <RETURN>, no reason is given.

3. Do you want to spin down the disk volumes [No]?

This determines whether the disk is left spinning when it is dismounted. Answer should be yes or no; the first letter is sufficient. Typing <RETURN> selects the default answer of no.

4. Do you want to invoke the site-specific shutdown procedure [Yes]?

5. Should an automatic system reboot be performed [No]?

The operator indicates whether VMS should be rebooted immediately after shutdown. Answer should be yes or no; one letter is sufficient. Typing <RETURN> selects the default answer of no.

6. When will the system be rebooted [Later]?

The operator should provide an expected uptime in the messages sent to the users. This can be any text to follow the word "up." (See the format of message 7.) If the operator types <RETURN>, no expected up time is given.

7. Shutdown options (enter as a comma-separated list):

- [REMOVE_NODE] Remaining nodes in the cluster should adjust.
- [CLUSTER_SHUTDOWN] Entire cluster is shutting down.
- [REBOOT_CHECK] Check existence of basic system files.

Shutdown options [NONE]:

The procedure prompts the operator to specify one or more shutdown options. If the system is a VAXcluster member, all three options are listed; otherwise, only the REBOOTCHECK option is listed. Users may enter REBOOTCHECK to verify that a subset of the files necessary to reboot the system after shutdown is present.

5.2.2.3 Messages

The messages sent to the logged on terminals are in the form of the following:

SHUTDOWN message on CCSDEV from user SHUTDOWN at CCSDEV\$OPAO: hh:mm:ss.cc CCS DEV will shut down in <n> minute[s][; up 'expected up-time']. ['Reason']

Expected up-time and reason are the answers supplied to questions two and six above, and square brackets ([]) indicate portions of the message that may not appear, depending on the answers.

The following messages will appear on the operator console regarding the state of the system:

```

10 terminals have been notified on CCSDEV
%SHUTDOWN-I-OPERATOR, this terminal is now an operator's console
%SHUTDOWN-I-DISLOGINS, interactive logins will now be disabled
%%%%%%%%% OPCOM dd-mmm-yyy hh:mm:ss.c %%%%%%%%%%
Operator status for operator_CCSDEV$OPAO:

```

CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER,
SECURITY, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9,
OPER10, OPER11, OPER12

%SET-I-INSTET, login interactive limit=0, current interactive value=10
%SHUTDOWN-I-SHUTNET, the DECnet network will not be shut down
%%%%%%%%% OPCOM dd-mmm-yyy hh:mm:ss.cc %%%%%%%%%%
Message from user DECnet on CCSDEV
DECnet shutting down

%SHUTDOWN-I-STOPQUEMAN, the queue manager will now be stopped

%SHUTDOWN-I-SITESHUT, the site-specific shutdown procedure will not be in
%SPM-E-CONORU, collections not running

%SHUTDOWN-I-STOPUSER, all user processes will not be stopped
%SHUTDOWN-I-REMOVE, all installed images will now be removed
%SHUTDOWN-I-DISMOUNT, all volumes will now be dismounted
%SHUTDOWN-I-DISMOUNTDEV, dismounting device_\$1\$DJA3:
%SHUTDOWN-I-DISMOUNTDEV, dismounting device_\$1\$DUS1:

%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%
Message from user SHUTDOWN on CCSDEV
CCSDEV\$OPAO:, CCSDEV shutdown was requested by the operator
%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%
Logfile was closed by operator CCSDEV\$OPAO:
Logfile was SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG

%%%%%%%%% OPCOM dd-mmm-yyyy hh:mm:ss.cc %%%%%%%%%%
Operator CCSDEV\$OPAO: has been disabled, username SHUTDOWN

SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM

When the final message appears, the operator types the following to bring the system down:

Control P

>>>H

>>>

If it is desirable to power down the system, the operator enters the following:

>>>PO OFF

NOTE

Shutdown of one node causes the other node to pause for about 15 seconds.

5.2.3 CCSUTC

This option allows the user/operator to execute the CCSUTC program. If it is necessary to stop the CCSUTC program or set the system time on the VAX, the user must perform the steps in Sections 5.2.3.1 and 5.2.3.2 after selecting the EXIT TO DCL option.

The CCSUTC program, which synchronizes the VAX system time to the UTC time, runs as a detached process on each node (CPU) of the CCS systems. When time is corrected/reset, it corrects the time for a single node. It does not set time clusterwide. (UTC does not provide the year; the SET TIME function must be used to make any correction to the year.)

The UTC software process may be stopped or started and, if stopped, the DCL Command SET TIME may be used to change time. The following sections describe the associated procedures.

5.2.3.1 Stop the UTC Software Process

To stop the UTC software process, the operator should take the following steps:

1. Sign on to a FIELD class account and select the exit to DCL option.
2. At the DCL prompt, enter the following:

```
STOP CCSUTC
```

5.2.3.2 Set Time

While the UTC software process is stopped, if the user desires the system time to be changed, perform the following:

1. Sign on to a FIELD class account and select the exit to DCL option.
2. At the DCL prompt, enter the following:

```
SET TIME = DD-MMM-YYYY:HH:MM:SS
```

where

DD is the day of the month

MMM is the first three characters of the month

YYYY is the year

HH is the hours

MM is the minutes

SS is the seconds

NOTE

The above function sets the time by node.

5.2.3.3 Start UTC Software Process

To start the UTC software process, the operator performs the following steps:

1. Sign on to a FIELD class account.
2. Select the CCSUTC option by highlighting it and pressing ENTER/RETURN.

The system prints a message to indicate that the process has started and identifies the process ID.

5.2.4 Shadow

This option allows the user/operator the ability to add a disk to a shadow set. If it is necessary to remove a disk from a shadow set, the user must perform the steps in Section 4.2.5.1 after selecting the EXIT TO DCL option.

5.2.4.1 Remove/Delete Disk From Shadow Set

On the operational CCS system (CCS ONE and CCS TWO), the disks \$1SDUA0 and \$1SDUA1 form the shadow set \$1SDUS0, \$1SDUA2 and \$1SDUA3 form the shadow set \$1SDUS1, and the disks \$1SDUA4 and \$1SDUA5 form the shadow set \$1SDUS2. A member disk can be dismounted for maintenance by issuing the dismount command with the device name of the member. Once maintenance is completed, the procedure SHADOW may be used to add the disk to the shadow set.

5.2.4.2 Remove Disk From Shadow Set

To remove a disk from a shadow set, the operator takes the following steps:

1. Sign onto an FIELD class account and select the EXIT to DCL option.
2. At the DCL prompt, enter the following:

```
DISMOUNT/CLUSTER      Disk Name
where disk name       =  $1SDUA0, or
                       $1SDUA1, or
                       $1SDUA2, or
                       $1SDUA3, or
                       $1SDUA4, or
                       $1SDUA5
```

5.2.4.3 Add Disk to Shadow Set

It is recommended that this procedure be run from the system console with page printer write enabled to ensure hardcopy of operator's key-ins. To add a disk to a shadow set, the operator takes the following steps:

1. Sign onto an OPERATOR or FIELD class account.
2. Select the SHADOW option from the MAIN MENU.
3. A list of device disk units will appear with volume labels.
4. Answer prompts as directed:
 - a. SHADOW SET VIRTUAL UNIT: [DUS0, DUS1, or DUS2]

```
Enter: DUS0 for shadow set virtual unit 0
or
DUS1 for shadow set virtual unit 1
or
DUS2 for shadow set virtual unit 2
```

NOTE

An error on entry will cause the following printout:

ERROR - YOU SHOULD INPUT DUS0, DUS1, OR DUS2 FOR SHADOW SET
VIRTUAL UNIT

and a return to Step 3.

[An improper entry could also produce a system error message(s) and terminate
procedure.]

- b. VOLUME LABELS OF THE VIRTUAL UNITS: [VAXVMSRL5, NASADISK23,
or USERDISK5]

Enter: VAXVMSRL5

or

NASADISK23

or

USERDISK5

or

Choose from list of device disk units listed in Step 3.

NOTE

List in Step C is most current

- c. DISK(s) TO BE ADDED TO THIS SHADOW SET: [\$1\$DUAn, n = 0, 1, 2, 3, 4, 5]

Enter: 0, 1, 2, 3, 4, or 5

NOTE

DUA0 and DUA1 form shadow set DUS0;

DUA2 and DUA3 form shadow set DUS1.

DUA4 and DUA5 form shadow set DUS2.

5. Confirm the mount directive by answering the confirmation prompt after the summary
information is printed.

ALLOW FULL SHADOW COPY ON THE ABOVE MEMBER? [N]

Enter: <RETURN> to exercise default (no) (procedure terminates)

Y (yes) to exercise mount command

NOTE

Successful mount causes printout
%SYSTEM-I-MOUNTVER, xxxxxxx:SHADOW
COPY HAS BEEN STARTED

where xxxxxxx identifies operator request.

5.2.5 Exit to DCL

The user can enter DCL mode from an OPERATOR or FIELD class account by selecting the EXIT TO DCL option from the MAIN MENU.

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Section 6. Miscellaneous

6.1 Introduction

This section describes various functions that did not lend themselves for inclusion into the menu interface. All of these functions require access to DCL mode.

6.2 System Restore

This section describes the procedures to restore an entire disk from backup tapes and to restore individual files and directories.

NOTE

The system manager should assist in system restore operation.

6.2.1 Restoring a Volume From Incremental Backups

If a combination of full and incremental backups have been performed on a public volume, the operator must use the following procedures to recover the volume from its backups, should the volume be lost.

First, the operator restores the volume from the last full backup, using an image restore operation as shown in the following example. (The /RECORD qualifier is required for correction operation of this procedure.)

```
$ MOUNT/FOREIGN DUAO:
%MOUNT-I-MOUNTED, SCRATCH mounted on _DUAO:
$ MOUNT/FOREIGN MUAO:
%MOUNT-I-MOUNTED, DUAO.IMG mounted on _DUAO:
$ MOUNT/FOREIGN MUA1:
%MOUNT-I-MOUNTED, DUA002.IMG mounted on _DUAO:
$ BACKUP/IMAGE/RECORD MUAO:DUAO.IMG, MUA1: DUAO:
%BACKUP-I-RESUME, resuming operation on volume 2
%BACKUP-I-RESUME, resuming operation on volume 3
%BACKUP-I-RESUME, resuming operation on volume 4
%BACKUP-I-RESUME, resuming operation on volume 5
$
$ DISMOUNT MUAO:
$ DISMOUNT MUA1:
$ DISMOUNT/NOUNLOAD DUAO:
```

The user mounts the disk as a file-structured volume and applies the incremental backups in reverse chronological order. The operator should begin with the last daily backup, then apply the preceding daily backups and finally the weekly backups, as follows:

```

$ MOUNT DUAO: VAXVMS
%MOUNT-I-MOUNTED, VAXVMS mounted on _DUAO:
$ MOUNT/FOREIGN MUAO: INCD17
%MOUNT-I-MOUNTED, INCD17 mounted on _MUAO:
$ BACKUP/INCREMENTAL MUAO:INCD16JUN DUAO:/OWNER=ORIGINAL$
DISMOUNT MUAO

$ MOUNT BACKUP/IMAGE/RECORD MUAO:DUAO.IMG, MUA1: DUAO:
%MOUNT-I-MOUNTED, INCD16 mounted on _MUAO:
$ BACKUP/INCREMENTAL MUAO:INCD16JUN DUAO:/OWNER=ORIGINAL$
DISMOUNT MUAO:

$ MOUNT/FOREIGN MUAO: INCD15
%MOUNT-I-MOUNTED, INCD15 mounted on _MUAO:
$ BACKUP/INCREMENTAL MUAO:INCD15JUN DUAO:/OWNER=ORIGINAL
$ DISMOUNT MUAO:

$ MOUNT/FOREIGN MUAO: INCW14
%MOUNT-I-MOUNTED, INCW14 mounted on _MUAO:
$ BACKUP/INCREMENTAL MUAO:INCW14JUN DUAO:/OWNER=ORIGINAL
$ DISMOUNT MUAO:

$ MOUNT/FOREIGN MUAO: INCW7J
%MOUNT-I-MOUNTED, INCW7J mounted on _MUAO:
$ BACKUP/INCREMENTAL MUAO:INCW7JUN DUAO:/OWNER=ORIGINAL
$ DISMOUNT MUAO:

```

In this example, applying the latest incremental backup using the /INCREMENTAL qualifier restores the volume's directories to their state at the time the backup was taken. In addition, all files in the incremental save set are restored. Files that are present on the volume from the full restore operation but are not present in the directories of the incremental backup are deleted. These files were deleted by the users during the time period between the full backup and the last incremental backup.

In applying the earlier incremental backups, BACKUP restores the remaining files that have directory entries on the volume. These are files that were last modified some time before the last incremental backup and were still present at the last incremental backup.

NOTE

BACKUP restores the volume correctly regardless of the order in which the incremental backups are applied; using reverse chronological order is most efficient.

The /RECORD and /INCREMENTAL qualifiers must be used where shown in the above example to obtain the correct operation.

If the operator chooses to exclude certain files selectively in incremental backups (for example, listing files or batch logs), these files are not restored but have directory entries in the resulting

volume. To clean up these “null” directory entries, the operator a repair pass with the VAX/VMS Verify Utility.

If directory files were renamed during the time period covered by the incremental backups, these directories appear on the reconstructed volume under both their old and new names. The files written since the directory was renamed appear under the new name; the files written before the directory was renamed appear under the old name. The operator must merge the old and new directories manually.

6.2.2 Restoring Files and Directories

To restore individual files in large save sets, the operator uses the BACKUP/LIST/JOURNAL command to find the volume and uses BACKUP to select and restore the desired files. If the volume is not the first volume in a multi-volume save set, the system sends a warning message:

%BACKUP-W-NOT1STVOL, tape 'name' is not the start of a save set

6.3 Stopping a CCS Process

The capability, if needed, to terminate any CCS-related process exists from DCL MODE. Operators should exercise extreme caution when using this ability because the CCS system could be inadvertently terminated or disabled. The operator should first display the status of the CCS processes to obtain the process identification (PID) of the process to be stopped (the number in the first column). Once this has been done, the user enters the following command:

STOP/ID-XXXXXXXX

where XXXXXXXX is the PID of the process to be stopped.

6.4 Display CCS Network Connections

This procedure describes the steps needed to display the CCS network connections for all CCS LANs.

1. Sign on to an OPERATOR class account and select the EXIT to DCL option.
2. At the DCL prompt, the user enters the following:

MULTINET SHOW/CONNECTIONS

Use of the /CONTINUOUS qualifier causes the display to be continuously updated. (MULTINET SHOW/CONNECTIONS/CONTINUOUS).

This is an example of the MULTINET SHOW/CONNECTIONS display.

Multinet Active Connections:

Proto	Rcv-0	Snd-0	Local Address (Port)	Foreign Address (Port)	State
TCP	0	0	CB01 (2000)	IB14 (1024)	ESTABLISHED
TCP	0	0	CA01 (2000)	IA14 (1024)	ESTABLISHED
TCP	0	0	CB01 (2000)	IB13 (1026)	ESTABLISHED
TCP	0	0	CA01 (2000)	IA13 (1026)	ESTABLISHED

TCP	0	0	CB01 (1039)	SB03 (2000)	ESTABLISHED
TCP	0	0	CA01 (1038)	SA03 (2000)	ESTABLISHED
TCP	0	0	CC01 (1037)	NC01 (2000)	ESTABLISHED
TCP	0	0	CC01 (1036)	NC02 (2000)	ESTABLISHED
TCP	0	0	CD01 (1035)	ND02 (2000)	ESTABLISHED
TCP	0	0	CD01 (1033)	ND01 (2000)	ESTABLISHED
TCP	0	0	CB01 (2000)	* (*)	LISTEN
TCP	0	0	CA01 (2000)	* (*)	LISTEN

6.5 Disable/Enable/Verify Tape Drive

The following command should be issued on both hierarchical storage controllers (HSCs) to disable a tape drive:

SET Tn NOHOST_ACCESS

where n is the tape unit number.

The following command should be issued on both HSCs to enable the tape drive:

SET Tn HOST_ACCESS

where n is the tape unit number.

The following command should be issued on the HSCs to verify which tape drive can be access by the CPU:

SHOW TAPE

NOTE

Before issuing these comamnds, the user should perform Control Y to get to the HSC prompt.

6.6 Display Status of CCS Subprocesses

To display the status of the STARTCCS subprocesses the operator should take the following steps:

1. Sign on to an OPERATOR or FIELD type account and select the EXIT TO DCL option.
2. Enter the following command from the DCL prompt:

SHO SYS/SUB

The following example shows the CCS subprocess status display. If the STARTCCS session has not begun to execute the CCS subprocesses, then no output is displayed.

```

VAX/VMS V4.7 on node CCSOME 16-FEB-1989 18:42:43.35 Uptime 11 15:41:23
Pid      Process Name      State  Fri    I/O      CPU      Page fits Ph.M
20600FE2 PRIMDET             HIB    19     85       0:00:00:00.28    225
20600FE3 SYSMON             LEF    21    183       0:00:00:00.76    433
20600FE4 ERRP_LV3           LEF    19    145       0:00:00:00.60    394
VAX/VMS V4.7 on node CCSOME 16-FEB-1989 18:42:48.56 Uptime 11 15:41:28
Pid      Process Name      State  Fri    I/O      CPU      Page fits Ph.M
20600FE2 PRIMDET             HIB    19     85       0:00:00:00.28    225
20600FE3 SYSMON             LEF    21    330       0:00:00:00.81    436
20600FE4 ERRP_LV3           LEF    19    245       0:00:00:00.92    499
20600FE5 TLOG_LV3          LEF    19     95       0:00:00:00.39    385
20600FE6 LOGR_LV3          PFW    19    ?87       0:00:00:00.35    290
VAX/VMS V4.7 on node CCSOME 16-FEB-1989 18:42:53.72 Uptime 11 15:41:34
Pid      Process Name      State  Fri    I/O      CPU      Page fits Ph.M
20600FE2 PRIMDET             HIB    19     85       0:00:00:00.28    225
20600FE3 SYSMON             LEF    21    491       0:00:00:00.86    437
20600FE4 ERRP_LV3           LEF    19    256       0:00:00:00.97    507
20600FE5 TLOG_LV3          LEF    19     95       0:00:00:00.39    385
20600FE6 LOGR_LV3          LEF    19    110       0:00:00:00.46    434
20600FE7 FELC_LV3          LEF    21    ?89       0:00:00:00.39    340
20600FE8 ISLC_LV3          LEF    21    ?89       0:00:00:00.41    401

```

The menu can be returned from the DCL mode by entering the command MENU.

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Appendix A. CCS Messages to Computer Operator's Console

Message	Description	Action
[In the following messages, AAAA is entity; BBBB is entity, connection, or port ID; C is role (P, B); and DDDD is site (if applicable).]		
AAAA BBBB C DDDD OPEN	Connection to identified entity is open with designated role.	None.
AAAA BBBB C DDDD CLOSED	Connection to identified entity is closed.	Reconfigure if desired.
AAAA AAAA C UP	Entity is up with associated role, if applicable.	None.
AAAA AAAA C DOWN	Entity is down.	System Supervisor should reconfigure if desired.
AAAA BBBB C OPEN FAILED	Open attempt on connection BBBB associated with entity AAAA for role C failed to open.	System Supervisor should reattempt/check patching.
AAAA BBBB C CLOSE FAILED	Close attempt on connection BBBB associated with entity AAAA for role C failed to close.	System Supervisor should reattempt close.
AAAA BBBB C UP FAILED	Up attempt on entity AAAA failed during synchronization.	System Supervisor should reattempt up.
AAA BBBB C DOWN	Entity AAAA is now down.	None.
APPLICATION SWITCHOVER HAS FAILED	Applications startup after CCS warm start or CCS switchover has failed to reinitialize data for applications.	Cold start recommended.
CCS/SPS SYNC XXXXXXXX TIMED OUT	Synchronization message identified by XXXXXXXX failed between CCS and SPS. SPS will not come up.	Retry or assess based on message that failed.
CCS/SPS SYNC XXXXXXXX SUCCESSFUL	Synchronization message identified by XXXXXXXX succeeded between CCS and SPS.	None.
DURING SWITCHOVER UNABLE TO RESTORE xxxx xxxx xxxx	During warm start or CCS switchover, pertinent data could not be saved.	Cold start.

ERROR IN READING GMT	The routine that controls the reading of Greenwich Mean Time (GMT) device received an error status in any of the Q10s it issues to the GMT device.	If this error persists, reset the Datum 9700 UTC device according to the instructions provided in Section 4.2.1 of the Operating Manual for Datum 9700.
FAILED READING OPERATOR MCTN RESPONSE	SYSS\$QIOW error reading log tape name entered from operator's console during TLOG.	None.
FAILED READING OPERATOR RESPONSE TO MOUNT TAPE REQUEST	SYSS\$QIOW error reading log tape device entered from operator's console during TLOG.	None.
GMT IS NOT UPDATING PROPERLY	Two consecutive reads from the UTC (GMT) device did not show that the second time read is not in the future from the first read.	If this error persists, check to see that the front display on the 9700 is in translate mode and that it is connected to NASA timing.
INITIAL LOG STATIC FILE ACCESS – STATUS	Error opening/reading LOG_CONSTANTS_FILE of FILE_NAMES_TABLE.	None.
LOG ARCHIVE FAILED	Error processing TLOG request.	None.
MESSAGE TYPE A (PREVIOUS MESSAGE)	Multiblock message from a particular site incomplete upon receipt of next message.	None.
INCOMPLETE MESSAGE TYPE B (MISSING BLOCK)	For a particular site, received block sequence omitting a block.	None.
INITIAL LOG STATIC FILE ACCESS – STATUS	Error opening/reading LOG_CONSTANTS_FILE or FILE_NAMES_TABLE.	None.
LOG ARCHIVE FAILED	Error processing TLOG request.	None.
LOG FILE CORRUPTION: NNNNNNNNN RECORD#?XXXXX NCHAR = YYYYY I = ZZZZZ	Tape logging process detected a corruption in log file "nnnnnnnnnnnn.DAT" on disk. The corrupted record was not written to tape.	Contact CSC software maintenance personnel
LOG FILE DELETE - YYDDDDHHMMSSCCC - RETURN CCCC WHERE CCCC = RETURN CODE	Error opening/closing log file during LOGR delete operation.	None.
LOG FILE OPEN - YYDDDDHHMMSSCCC - RETURN CCCC	Error opening log file during LOGR operation.	None.

WHERE CCCC = RETURN CODE		
LOG FILE WRITE - YYDDDDHHMMSSCCC - RETURN CCCC WHERE CCCC = RETURN CODE	Error writing log file during LOGR operation.	None.
LOGR FAILED SENDING TLOG A LOG FILE ARCHIVE REQUEST	CSYDM error sending TLOG a tape log request.	None.
LOG TAPE ON DRIVE XXXX IS WRITE LOCKED - SUPPLY WRITE RING WHERE XXXX = DRIVE IDENTIFIER	Mounted log tape has no write ring.	Supply write ring to log tape and repeat responses to previous prompts.
MANUAL COMM TEST BLOCK TO AAAA FAILED	Operator attempt to send manual CTM failed to establish communication with site AAAA.	Assess cause of communication failure.
MANUAL COMM TEST BLOCK TO AAAA SUCCEEDED	Operator attempt to send manual CTM succeeded in establishing communication with site AAAA.	None.
NONSEQUENTIAL RECEPTION OF BLOCKS	For a particular site, received an initial block of block number > 1.	None.
OPERATOR MEDIA CONTROL TAPE NAME REQUEST FAILED	Error sending operator request for log tape name.	None.
OPERATOR REQUEST TAPE MOUNT FAILED	Error sending operator request for log tape device.	None.
OPERATOR TAPE MOUNT FAILED	Operator entered ERROR in response to tape device.	None.
SELECTED TAPE DRIVE XXXX IS NOT AVAILABLE WHERE XXXX = DRIVE IDENTIFIER	Operator selected tape device for TLOG that is not available.	Reply to prompt with a different tape device.
SITE AAA IS NOW BBB	The status of site AAA is now BBB (up or down).	None.
SYSTEM TIME RESET WITH UTC TIME	The VAX system time is corrected with the UTC time.	If the timetag on this message does not agree with the correct UTC time, contact Computer Sciences Corporation (CSC).
TAPE DISMOUNT FAILED	SYSDISMOU error during TLOG tape discount	Manually dismount log tape.

TAPE FAILED MOUNT	SYSS\$MOUNT error during TLOG tape mount.	None.
TAPE OPEN FAILED	SYSS\$ASSIGN error assigning input/output (I/O) channel to tape device during TLOG operation.	None.
TAPE WRITE FAILED	SYSS\$QIOW error writing log tape during TLOG operation.	None.
ALERT: YYDDDDHHMMSSNNN.DAT DELETED PRIOR TO LOG TO TAPE	Log file was deleted that was never archived to log tape.	None.
TLOG HAS AUTOMATICALLY ABORTED AFTER THREE TRIES	Tape logger software has aborted after several attempts.	Data can only be archived to tape via standalone logger.
OPERATOR HAS CHOSEN TO ABORT TLOG	Operator has replied to tape drive prompt with ABORT.	Data can only be archived to tape via standalone logger.
XXXX MESSAGE HAS BEEN PURGED	Message from site XXXX has been purged: will not be transmitted.	None.
LOG COPY FAILED - YYYYYY YYYYYYYYYYYY - RETURN ZZZZ	CCS Failed to copy log file named YYY... to the remotely mounted log device used for NCD delogging	Check that the log device is NFS mounted. Check that remote directories have correct ownership and sufficient free space.
OBB SERVER ERROR - KKK - TTT	Where KKK is error source and TTT is error text	If error persists, restart Object Broker servers
WARNING APPLICATIONS NONFUNCTIONAL UNTIL DATA TRANSFER FROM SPS	CCS is unable to complete startup until an initial set of static data can be transferred from the SPS.	No action necessary if startup is successful. If startup fails, then check CCS-SPS physical connections. Warm start SPS and start CCS again.

Glossary

ASCII	American Standard Code for Information Interchange
CCS	Communications and Control Segment
CM	configuration management
CPU	central processing unit
CSC	Computer Sciences Corporation
DCL	digital command language
DEC	Digital Equipment Corporation
GMT	Greenwich Mean Time
HSC	hierarchical storage controller
ID	identifier
ISN	intersegment network
JSC	Johnson Space Center
LAN	local area network
NASA	National Aeronautics and Space Administration
Nascom	NASA Communications
NCC	Network Control Center
NCCDS	Network Control Center Data System
OPCOM	Operator Communications Manager
PID	process identification
SIC	spacecraft identification code
SPSR	Service Planning Segment Replacement
SUPIDEN	support identification code
TDRS	Tracking and Data Relay Satellite
TLOG	tape log
UTC	Coordinated Universal Time
VMS	Virtual Memory System

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