

297-1771-120

DMS-100 Family

Spectrum Peripheral Module Tools

Reference Manual

SPM15 Standard 03.01 February 2001

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Reference Manual

Publication number: 297-1771-120

Product release: SPM15

Document release: Standard 03.01

Date: February 2001

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Publication history

February 2001

SP15 Standard 03.01

New commands added for SR 50335544.

New commands added for the SP15 development cycle.

Corrections made to the loadname verification procedure.

October 2000

SP14 Standard 02.02

References to STA removed for SR 10366712.

July 2000

SP14 Standard 02.01

This release aligns this book with the SP14 release strategy.

May 2000

SP13 Standard 01.01

First release of the document.

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About this document

When to use this document

This document describes the use of remlogin commands to complete tasks related to the Spectrum Peripheral Module.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory*, 297-8991-001.

References in this document

The following documents are referred to in this document:

- *DMS-Spectrum Peripheral Module Commands Reference Manual*, 297-1771-819
- *DMS-100 Family Post-Release Software Manager (PRSM) Reference Guide*, 297-8991-540
- *DMS-100 Family NA100 Card Replacement Procedures*, 297-80y1-547

What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION - Information needed to perform a task

ATTENTION

If the unused DS-3 ports are not deprovisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

DANGER - Possibility of personal injury

 **DANGER**
Risk of electrocution
Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING - Possibility of equipment damage

 **WARNING**
Damage to the backplane connector pins
Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION - Possibility of service interruption or degradation

**CAUTION****Possible loss of service**

Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

How commands, parameters, and responses are represented

Commands, parameters, and responses available from the command interpreter (CI) level of the MAP terminal in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

```
>BSY
```

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

```
>BSY CTRL
```

Variables

Variables are shown in lowercase letters:

```
>BSY CTRL ctrl_no
```

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.
```

```
FP 3 Busy CTRL 0: Command passed.
```

Commands, parameters, and responses in the SPM debug shell

Commands, parameters, and responses available from the SPM debug shell (dshell) of the SPM in this document conform to the following conventions.

Input prompt(dsh:7>)

An input prompt (dsh:7>) indicates that the information that follows is a command:

```
dSH:7> swnode
```

Commands and fixed parameters

Commands and fixed parameters that are entered at a dshell prompt are shown in lowercase letters:

```
dSH:7> swnode -hst
```

Variables

Variables are shown in lowercase letters and are surrounded by less than and greater than symbols:

```
dSH:7> remlogin -s <logical_slot_num>
```

The letters or numbers that the variable represents must be entered. Optional variables are surrounded by left and right brackets:

```
dSH:7> cd [<directory>]
```

Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
dSH:7> swnode -hst
```

```
current proceses will be suspended
```

Part I

Introduction

This section of the book describes introductory information about the Spectrum Peripheral Module (SPM) that is specific to remlogin and MAP terminal tools.

This section of the book consists of the following chapters.

- Chapter 1, “Command cross reference”
- Chapter 2, “Introduction to remlogin”

1 Command cross reference

Table 1-1 provides a cross reference for the DMS-100 Spectrum Peripheral Module (SPM) commands to common DMS-100 Extended Peripheral Module (XPM) commands. The SPM commands are available at either the command interpreter (CI) level of the MAP terminal or the remlogin level of the SPM. The XPM commands are available at the CI level of the MAP terminal or at the PMDEBUG level.

Table 1-1 XPM to SPM command cross reference

XPM command	SPM command
LOGUTIL	LOGUTIL and /aer directory commands
PERFORM	SPERFORM
OMSHOW	/resman directory commands
PMDEBUG	/aer directory commands
XPMTRACK	/termtrace directory commands

In addition to the commands in Table 1-1, the following SPM commands are available from the MAP terminal.

Table 1-2

SPM command	Command description
SPMACT (CI level)	This command provides information about the common equipment module (CEM) processor occupancy, origination and termination counts, and real time performance measures of the CEM processor.
SPUSAGE (CI level)	This tool collects information about events that affect call processing such as messages, logs, and operational measurements. While the tool is active, it generates a SPRF671 log report every minute to summarize the information.
SPMECMON (CI level)	This command reports the performance of the integrated echo canceller. The command requests the echo return loss (ERL) and echo return loss enhancement (ERLE) data for a channel of an echo canceller on an SPM.
SPMLFINFO (CI level)	This command shows post release software management (PRSM), market, and release information about an SPM load file.
SELECT (PRSM level)	This command generates reports for loadfile destinations, peripheral destinations, and post release software units (PRSU).
DISADMIN (PRSM level)	This command displays administrative information about a PRSU.
DBAUDIT (PRSM level)	This command compares the PRSM PRSU database with a database on a destination node. Log report PRSM303 identifies any discrepancies.

2 Introduction to remlogin

This chapter describes remlogin, how to access remlogin, and a brief description of the commands available in the /dshell directory.

About remlogin

Remlogin provides access to the Spectrum Peripheral Module (SPM) through remote login. The interface is like a UNIX console session. The debug shell (dSH) provides access to the commands and directories on the SPM.

The following list describes restrictions related to remlogin access.

- only one user can access one SPM common equipment module (CEM) at a time
- the SPM denies access if the C-side links are down
- the SPM denies access if it is isolated and in a system busy-not available (SYSBSY-NA) state
- many directories and commands are password protected

Accessing remlogin

Users access remlogin from the CI level of the DMS-100 switch MAP terminal. Figure 2-1 illustrates the command syntax and system response. For more information about the remlogin command, refer to the commands reference section of this document.

Figure 2-1 Remlogin syntax

```
CI:
> remlogin spm 0 0
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:7>
```

The /dshell directory

The commands reference section of this document provides a complete listing of the commands available in the /dshell directory. The commands available in the /dshell directory are equivalent to the UNIX built-in commands. Some common commands are listed in the following sections.

help

The help command provides a description of a directory or command. Figure 2-2 illustrates the syntax of the help command and describes the commands in the /aer directory.

Figure 2-2 Help syntax

```
dSH:7> help /aer
aer/: Application Event Record
disable*: display of the specific event records is disabled
display*: display select event records
enable*: display of the specific event records is enabled
listbuf*: list all the AER buffer names
listevent*: list all class names registered in the buffer
```

remlogin

From the CI level of the MAP, remlogin provides remote login access to a CEM in the SPM. From an active remlogin session, remlogin provides access to a resource module (RM) within the same SPM. Figure 2-3 illustrates the command syntax for accessing the OC-3 module in logical slot 9 of the SPM. Refer to section “Logical slots” for more information about physical slots and logical slots in the SPM.

Figure 2-3 Remlogin to an OC-3 module

```
dSH:7> remlogin -s9
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:9>
```

The dshell prompt changes to indicate the logical slot number of the current remlogin session.

remlogout

Remlogout exits the current remlogin session. If the current remlogin session is on another RM in the SPM, this command exits that session and returns the user to the previous remlogin session. For example, the first remlogin session always accesses one of the CEMs in the SPM. A second remlogin command

provides access to one of the digital signal processor (DSP) modules in the SPM. A remlogout command at this point logs the user out of the session on the DSP and returns the user to the session on the CEM. Figure 2-4 illustrates a remlogin session to the CEM, a second session to access a DSP, and then the remlogout syntax to exit the session on the DSP.

Figure 2-4 Remlogout syntax

```
CI:
> remlogin spm 0 0
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:7> remlogin -s25
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:25>
dSH:25> remlogout
dSH:7>
dSH:7>
```

swnode

Swnode allows the user access between the CI level of the MAP and a remlogin session on an SPM. Figure 2-5 illustrates the command syntax for a session between the CI level of the MAP and a remlogin session.

Figure 2-5 Swnode syntax

```
dSH:7>
dSH:7> swnode
>
>
CI:
>
> swnode
current process will be suspended
dSH:7>
```

su

Su allows the user to become another user or the super user. Figure 2-6 illustrates the syntax to gain super user privileges.

Figure 2-6 Su syntax

```
dSH:7> su root VtHfscnAuCH
Your username and permissions have changed to 'root'.
dSH:7>
```

Logical slots

Remlogin sessions are accessed and identified by the logical slot number of the SPM. Figure 2-7 shows the physical to logical slot numbering scheme used in a provisioned SPM. The SPM is provisioned as follows.

- CEM 0 in physical slot 7, shelf 0, logical slot 7
- CEM 1 in physical slot 8, shelf 0, logical slot 8
- OC3 0 in physical slot 9, shelf 0, logical slot 9
- OC3 1 in physical slot 10, shelf 0, logical slot 10
- DSP 0 in physical slot 9, shelf 1, logical slot 23
- DSP 1 in physical slot 10, shelf 1, logical slot 24
- DSP 2 in physical slot 11, shelf 1, logical slot 25
- VSP 0 in physical slot 14, shelf 0, logical slot 14
- VSP 1 in physical slot 13, shelf 0, logical slot 13

Figure 2-7 SPM logical slot numbers

Log. slot	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Shelf 1									D S P 0	D S P 1	D S P 2				S I M
Phys. slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Log. slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Shelf 0							C E M 0	C E M 1	O C 3 0	O C 3 1			V S P 1	V S P 0	S I M
Phys. slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	

Part II

Tasks

This section of the book describes tasks specific to the Spectrum Peripheral Module.

This section of the book consists of the following chapters.

- Chapter 3, “Loadname verification”
- Chapter 4, “/aer log buffers”
- Chapter 5, “SPERFORM”
- Chapter 6, “PERFMON”
- Chapter 7, “Q.931 termtrace”
- Chapter 8, “OC-3 line timing”

3 Loadname verification

This chapter describes how to access loadfile information about the Spectrum Peripheral Module (SPM). The first section provides a description of the loadfile information provisioned in tables MNCKTPAK and PMLOADS. The second section shows how to use the QUERYPM FILES command for SPMs at SP11 and higher. The third section shows how to use the remlogin interface for SPMs at SP14 or higher to verify that the software on the RM matches the datafill in tables MNCKTPAK and PMLOADS. The fourth section describes how to use DISKUT to translate the information from the table and command output into the SPM loadname convention.

The SPM loadname convention has three values. The first value is the software load version. The second value is the maintenance release and the third value is the emergency maintenance release. For example, SP14.1.2 indicates that the software load version is SP14, the maintenance release is 1, and the emergency maintenance release version is 2.

Figure 3-1 shows how the sections in this chapter relate to each other and what SPM loadname access functionality is available in SPM software loads.

Figure 3-3 Table PMLOADS

LOADNAME	ACTFILE	ACTVOL	BKPFIL	BKPVOL	UPDACT

DSP0013					
DSP0014_010056		S00DIMAGE			
DSP0014_010056		S00DIMAGE			N

QUERYPM FILES

For SPMs at SP11 and higher, the MAP terminal provides access to the loadname information about each resource module (RM) in an SPM. Figure 3-4 shows how to access the querypm command and syntax for the command. As the figure shows, the querypm command is available at the peripheral module (PM) level of the MAP terminal. The output in the figure shows that DSP 1 has DSP0014_010056 software in random access memory (RAM), knows the software filename, and has a backup copy of software in flash.

Figure 3-4 Querypm files syntax

```

CI:
>MAPCI NODISP;MTC;PM;POST SPM 0;QUERYPM FILES
MAPCI:
MTC:
PM:
POST:
SPM:
SPM 0 InSv
CEM 0 InSv InAct   Default Loadname: CEM0014
                   Default Filename: CEM0014_010094
                   Running Load:      CEM0014_010094
                   Load in Flash:     CEM0014_010094
CEM 1 InSv Act     Default Loadname: CEM0014
                   Default Filename: CEM0014_010094
                   Running Load:      CEM0014_010094
                   Load in Flash:     CEM0014_010094
...
...
DSP 1 InSv Act     Default Loadname: DSP0014
                   Default Filename: DSP0014_010056
                   Running Load:      [ DSP0014_010056 ]
                   Load in Flash:     [ DSP0014_010056 ]
....

```

Software verification through remlogin

For SPMs at SP14 and higher, remlogin provides access to loadname information. A mismatch between the software load on an RM and datafill in tables MNCKTPAK and PMLOADS is unlikely. However, the following section provides a method to determine the software in RAM and flash on an RM. Because the RM provides this information, error is unlikely.

Note: The procedure is unnecessary since the QUERYPM FILES command produces the default filename.

The following figure shows how to access the software load information from a DSP RM in slot 8 of an SPM. The figure shows that the software loaded in flash is DSP0014_010056. As with the datafill in table PMLOADS, this information requires processing at the DISKUT level of the MAP terminal.

Figure 3-5 Remlogin software verification

```
dSH:7>
dSH:7> remlogin -s8
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:14>
dSH:14> /loadinfo/qload f
Load is valid.
Base address is: 0x1060400.
Entry address is: 0x1061000.
Last address is: 0x114B2A4.
Load size is: 0xEAEA8.
Load name is: DSP0014
Load file name: [ DSP0014_010056 ]
Load nodes are: Default load notes.
                (checking integrity ...)
Load passed integrity check.

dSH:14>
```

DISKUT

The DISKUT level of the MAP terminal accesses the disks and tapes of the DMS-100 switch. To determine the SPM software load, the user requires the ACTVOL name from table PMLOADS and the ACTFILE name. The ACTFILE name is available from table PMLOADS, the QUERYPM FILES command, or the qload output of a remlogin session. For example, the ACTVOL name is S00DIMAGE and the load file name is DSP0013_010056. Figure 3-6 shows how to access the DISKUT level of the MAP terminal and how to list the files on the S00DIMAGE disk.

Figure 3-6 DISKUT level of the MAP terminal

```

CI:
>DISKUT
Disk utility is now active.
DISKUT:
>
>LF S00DIMAGE

File information for volume S00DIMAGE:
{NOTE: 1 BLOCK = 512 BYTES }
-----
FILE NAME          O R I O O V FILE  MAX   NUM OF   FILE   LAST
                   R E T P L L CODE  REC   RECORDS  SIZE  MODIFY
                   G C O E D D     LEN   IN      IN     DATE
                   C N           FILE  BLOCKS
-----
MMP13BI_CM        I F Y           0 1020  186098  372196 003003
...
...
DSP0014_010056 0 V           0  256   8517   4607 003003
...
...
>

```

The SPM loads are now listed in the user's directory. Now the SPMLFINFO command can access the SPM load version, maintenance release, and emergency release version of the SPM software load. Figure 3-7 shows the syntax and output of the SPMLFINFO command. The output shows the software on the DSP is SP14.1.2. The SPM loadname convention shows the version is SPD14, the maintenance release is 01, and the emergency release is 02.

Figure 3-7 Spmlfinfo syntax

```
DISKUT:
>SPMLFINFO DSP0014_010056
Filename: DSP0014_010056
Loadname: DSP0014
Equipment type: DSP
Market: All
Vendor: NortelNetworks
Version: SPD14
Release type: maintenance
General Release: DSP14
Maintenance Release: 01
Emergency Release: 02
Required Emergency Release:
Target Customer:
Target Office:
Issue Date: 2000/02/01 23:00:00 WED.
Description: Maintenance Release 01 (MR1)
Loadbuild Agency: Ottawa
Library Update: l_spd100dbu
Required CSP:
Required Shared:
Required PCL:
Required CEM:
Other requirements:
Comments: SPD14 dsp build

>
```

4 /aer log buffers

The Spectrum Peripheral Module (SPM) transports trap logs in the common equipment module (CEM) to the DMS-100 switch core. Other logs are available from log buffers on each CEM, optical carrier level-3 (OC-3), and other resource modules (RM). The SPM provides access to these buffers in the /aer directory through the remlogin interface. The SPM records the time on these logs to five thousandths of a second. This is one advantage over the logs in the DMS-100 switch core. This chapter describes how to access the logs.

Access remlogin

Refer to Chapter 2, “Introduction to remlogin” or “remlogin” in the commands section of this document for more information about the remlogin command.

Access the /aer directory

From within the SPM dshell, change directories to the /aer directory. Figure 4-1 shows how to access the /aer directory and a list of the commands in the /aer directory.

Figure 4-1 Access the /aer directory

```
dSH:7>
dSH:7> cd /aer
dSH:7>
dSH:7> ls
disable*          display*          enable*          listbuf*
listevent*
dSH:7>
```

/aer directory commands

Chapter 11, “/aer level commands” in this document describes each /aer directory command in detail. The following subsections provide a brief description and example of the listbuf, listevent, and display commands.

listbuf

The listbuf command lists all the log buffers in the CEM, OC-3, or RM. For more information about the buffers in the OC-3 and other RMs, refer to section “Useful buffers in other RMs.” Figure 4-2 shows the help for the listbuf command and the list of buffers on a CEM. The buffers that appear with a grey background are detailed in section “Useful buffers.”

Figure 4-2 Listbuf syntax and example

```

dSH:7> pwd
/aer/
dSH:7> listbuf -h
listbuf*: list all the AER buffer names
Usage: LISTBUF [-h]
dSH:7> listbuf
  ABBITBUF ATMERR  ATMINF  AUDITBUF C7UPTMR  CALLPBUF
  CARMBUF  CEMDSYNC CLKDBG  CLKSCHG  CLKSYNC  CLKTRBL
  CLKTRC   CONNINFO CONNSWER CPPBUFF  DDMBUF  DLLAER
  ECMON    ERRORBUF  FEATCNTL FTSBUFF  HALBUF1  HALBUFF2
  HALBUF3  IDMBUF   ILMBUFF  INMMTC   INMTRC   ITMBUF
  LEDBUF   MTCEDB   MTPSBUFF MTSBUF   OTEMAER  OTUNEXP
  PRIAUDIT RMANBUFF  RMANSPAR RMMMGR   RMTUSER  SELFTEST
  SNLAER   SPERFORM SPMECAN  SPMLDR   SPMLM    SPMLOGTX
  SPMTC    STAMBUFF  SWACT    TKMTCBUF TRAPINFO TSAUDBUF
  TSEBUF
dSH:7>

```

listevent

The listevent command lists the log types that a buffer can contain. Figure 4-3 shows the help for the listevent command and the types of logs the errorbuf and spmmtc buffers contain.

Figure 4-3 Listevent syntax and example

```

dSH:7> listevent -h
listevent*: list all class names registered in the buffer
Usage:      LISTEVENT [-h] <buffer_name>
Parms:      <buffer_name>STRING

dSH:7> listevent errorbuf
          SWER

dSH:7> listevent spmmtc
          NODE  SPM

dSH:7>

```

display

The display command displays the contents of a buffer. The following figure shows the help for the display command and the first two software error (SWER) logs in the errorbuf of a CEM.

Figure 4-4 Display syntax and example

```

dSH:7> pwd
/aer/
dSH:7> display -h
display*: display select event reports
Usage:   DISPLAY [-h] <buffer_name> [<class_name>
        [<start_num> [<stop_num>]]

Parms:   <buffer_name>STRING
        <class_name>STRING
        <start_num>{0 TO 1000}
        <stop_num>{0 TO 1000}

dSH:7>
dSH:7> display errorbuf swer 1 2
SWER      Software Error          JAN-01  00:00:09.520
FILENAME: tseDebug.cpp           LINENUM: 840   TASKID: 255
ERRSTR:
        Failed to add printBchMap command

TRACEBACK: 00c0aee4 00c021e0 001c3c90 001c34f8 00fde97c
NUMBER OF SWERRS:      1          SIZE OF TIMESTAMP LIST:  1

SWER      Software Error          MAR-23  15:35:01.605
FILENAME: svRmmTask_Actor.cpp    LINENUM: 330   TASKID: 164
ERRSTR: stopWaiting - Rmm not responding - timed out
TRACEBACK: 00c51a1c 00a337f4 009f98ac 009f97f0 009fa034
NUMBER OF SWERRS:      1          SIZE OF TIMESTAMP LIST:  1

```

Useful buffers

The following subsections provide a brief description of the information in some CEM buffers.

errorbuf

Errorbuf contains software error (SWER) logs. Figure 4-5 provides the format and an example of a SWER log. SWER logs are most useful if the timestamp is related to an event.

Figure 4-5 SWER format and example

```

SWER      Software Error          MMM-DD HH:MM:SS.sss
FILENAME: sourcefile             LINENUM: nnnn  TASKID: xxx
ERRSTR: errorstring
TRACEBACK: hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh
NUMBER OF SWERRS:      xxx      SIZE OF TIMESTAMP LIST: xxx

SWER      Software Error          MAR-22 22:28:28.380
FILENAME: UnitPmMgr_Actor.cpp    LINENUM: 1999  TASKID: 164
ERRSTR: MINmAnegoPermAckSid send failure
TRACEBACK: 00c51alc 0098a708 0099904c 0094d104 01057490
NUMBER OF SWERRS:      2        SIZE OF TIMESTAMP LIST: 2
    
```

The following table explains each of the fields in the log report.

Table 4-1 (Sheet 1 of 2)

Field	Value	Description
MMM-DD	alphanumeric	This field shows the date as three characters for the month and two numbers for the day.
HH:MM:SS.sss	numeric	This field shows the time as two numbers for the hour, minute, and seconds. Three numbers represent the thousandths of a second.
sourcefile	string	This field shows the name of the C++ source file that reports the software error.
nnnn	numeric	This field shows the line number of the source file that reports the software error. Valid values are 1 to 9999.
xxx	numeric	This is a value between 1 and 999. These values are valid for the number of software errors, task identifier, and the size of the timestamp list.

Table 4-1 (Sheet 2 of 2)

Field	Value	Description
errorstring	string	This field shows a message about why the software error generated the error.
hhhhhhh	hexadecimal	This field shows a hexadecimal dump of the instruction that caused the software error.

trapinfo

Trapinfo contains only TRAP logs. TRAP logs represent software exceptions. Figure 4-6 shows the format of a TRAP log for a data access exception.

Figure 4-6 TRAP format 1

```

TRAP      EXCEPTION INFO      MMM-DD  HH:MM:SS.sss
Data Access Exception
TaskId:  0xhhhhhhhh  At Instruction Address: 0xhhhhhhhh
Fault Address: hhhhhhhh

Traceback: hhhhhhhh hhhhhhhh hhhhhhhh

General Registers:
R0 -R3 : hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh
...
...
R28-R31: hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh

CR:      hhhhhhhh
XER:     hhhhhhhh
LR:      hhhhhhhh
CTR:     hhhhhhhh

Configuration Registers:
HIDO:    hhhhhhhh

Memory Management Registers:
DCMP:    hhhhhhhh
...
...
RPA:     hhhhhhhh

Exception Handling Registers:
DAR:     hhhhhhhh
DSISR:   hhhhhhhh
SRRO:    hhhhhhhh
SRR1:    hhhhhhhh

Miscellaneous Registers:
IABR:    hhhhhhhh

Task Switching History
-----
Tid      Task Name  Run Time (ms)
xxx      taskname   Y.YY
xxx      taskname   Y.YY

Interrupt Stack Dump:

hhhhhhhh: hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh
hhhhhhhh: hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh
hhhhhhhh: hhhhhhhh hhhhhhhh hhhhhhhh hhhhhhhh

```

Figure 4-7 shows the format of a TRAP log for a trap extension record.

Figure 4-7 TRAP format 2

```

TRAP      EXCEPTION INFO      MMM-DD  HH:MM:SS.sss
Trap Extension Record - FORMAT:      xxx, SIZE:      xxx
Task Switching History
-----
Tid      Task Name  Run Time (ms)
xxx      taskname   Y.YY
xxx      taskname   Y.YY
...
...
xxx      taskname   Y.YY
xxx      taskname   Y.YY

```

The following table explains each of the fields in the log report.

Table 4-2

Field	Value	Description
MMM-DD	alphanumeric	This field shows the date as three characters for the month and two numbers for the day.
HH:MM:SS.sss	numeric	This field shows the time as two numbers for the hour, minute, and seconds. Three numbers represent the thousandths of a second.
hhhhhhhh	hexadecimal	This field shows a hexadecimal dump of the instruction that caused the software error.
xxx	numeric	This is a value between 1 and 999. These values are valid for task identifier, format, and size.
taskname	string	This field shows the name of the software task in the task switching history.
y.yy	numeric	This field shows the milliseconds that a task spent in the processor.

inmtrc

The internode messaging trace (inmtrc) buffer contains Internode Messaging (INM) logs. These logs report the status of the messaging that takes place between CEMs over the internode messaging links.

The variety of INM log reports makes a detailed description of each log report beyond the scope of this document. The following list shows common log numbers and explains their purpose.

- INM901 and INM902 logs verify that the INM links are available
- INM935 logs report a change of state for the CEM
- INM950 logs verify that the CEM can perform an audit on the mate CEM
- INM960 logs verify that the mate CEM has a sane software load

Figure 4-8 is an example of a INM901. Other INM logs have a similar format.

Figure 4-8 INM901 log report example

```
INM901 TPS/TASK MSG          APR-07 09:56:47.635
../../../../C++/TargetRTS/MInmDMSIOIf_Actor.cpp: 7798: sendTpsCaAudit -
received MInmAuditReplySid
```

inmmtc

The internode message maintenance (inmmtc) buffer contains NODE500 log reports. These logs indicate a change of state in a CEM. Figure 4-9 shows the format of the NODE500 log and an example.

Figure 4-9 Inmmtc log format and example

```
NODE500 LOCAL STATE CHANGE   MMM-DD HH:MM:SS.sss
From State: stat(stat_msg) To State: stat(stat_msg)

NODE500 LOCAL STATE CHANGE   MAR-27 07:56:07.020
From State: SYSB(trouble) To State: INSV(trouble)
```

The following table explains each of the fields in the log report.

Table 4-3 (Sheet 1 of 2)

Field	Value	Description
MMM-DD	alphanumeric	This field shows the date as three characters for the month and two numbers for the day.
HH:MM:SS.sss	numeric	This field shows the time as two numbers for the hour, minute, and seconds. Three numbers represent the thousandths of a second.

Table 4-3 (Sheet 2 of 2)

Field	Value	Description
stat	string	This field shows a four character value for the state. Valid values are INSV, SYSB, and NIL.
stat_msg	string	This field is a single or comma separated multiple string secondary state qualifier. Valid values are available, trouble, and mtclnProgress.

rmanbuff

The resource manager buffer (rmanbuff) contains DBG, ERR, and INFO log reports. These log reports contain information about state changes and sparing actions on RMs. Figure 4-10 shows the format and examples of the common ERR100 and INFO600 log reports in rmanbuff. The two example logs are part of a manual RM protection switch.

Figure 4-10 Rmanbuff log report formats and examples

```

ERR100  RMAN ERROR          MMM-DD  HH:MM:SS.sss
RsnTxt          ID =  hhh RC = nnnn

INFO600  RMAN INFORMATION    MMM-DD  HH:MM:SS.sss
RsnTxt          ID =  hhh RC = nnnn

ERR100  RMAN ERROR          APR-14  11:30:12.860
RmanSparing - Ack Message sent to sparing! signal, destRm, ID = 0x0 RC=16

INFO600  RMAN INFORMATION    APR-14  11:30:12.860
RMODA - timer started for configRequest , ID = 0x10 RC=2000

```

The following table explains each of the fields in the ERR100 and INFO600 log reports.

Table 4-4

Field	Value	Description
MMM-DD	alphanumeric	This field shows the date as three characters for the month and two numbers for the day.
HH:MM:SS.sss	numeric	This field shows the time as two numbers for the hour, minute, and seconds. Three numbers represent the thousandths of a second.
RsnTxt	string	This field shows a text message that indicates the action taken by the SPM. These messages typically include key phrases like "state change" or "sparing action."
hhh	hexidecimal	If this field is a non zero value, then it represents the logical slot number in hexidecimal.
nnnn	numeric	This field is the return code of the process. This value is used by Nortel Networks software designers.

spmmtc

The spectrum peripheral module maintenance (spmmtc) buffer contains SPM and NODE log reports. These logs report activity related to CEM card events and diagnostics. Figure 4-11 shows the format and two examples of the SPM910 log report.

Figure 4-11 SPM910 log report format and examples

```

SPM910  EXPERT INFO      MMM-DD  HH:MM:SS.sss
SPM RMM Debug Event:
event_type
event_msg
           n      n      n      n

SPM910  EXPERT INFO      MAR-27  09:12:57.665
SPM RMM Debug Event:
BoardRMMDiag Diag req
INSV Diagnostic being requested
           0      0      0      0

SPM910  EXPERT INFO      MAR-27  09:12:57:665
SPM RMM Debug Event:
BoardRMMDiag Diag req
Diagnostic being requested from diag ctrllr
           0      0      0      0

```

The following table explains each of the fields in the log report.

Table 4-5

Field	Value	Description
MMM-DD	alphanumeric	This field shows the date as three characters for the month and two numbers for the day.
HH:MM:SS.sss	numeric	This field shows the time as two numbers for the hour, minute, and seconds. Three numbers represent the thousandths of a second.
event_type	string	This field shows the type of event.
event_msg	string	This field describes the maintenance action.

swact

The switch activity (swact) buffer contains SWCT log reports. The following list shows common SWCT log reports and explains the purpose of each log report.

- SWCT301 logs report that the CEM is unable to swact to the mate CEM
- SWCT501 logs report a swact toward the CEM

- SWCT601 logs report events related to swacts. Failed swacts are also reported at the LOGUTIL level of the MAP terminal in SPM331 log reports.
- SWCT603 logs report if the CEM can swact
- SWCT605 logs report a swact away from the CEM

Useful buffers in other RMs

The following sections describe buffers on the OC-3 and DSP RMs.

OC-3

The OC-3 RM has fewer log buffers than the CEM. Figure 4-12 shows the list of available log buffers.

Figure 4-12 /aer log buffers on an OC-3 RM

```
dSH:9> listbuf  
  
CARMBUF  DLLAER  ERRORBUF  HALBUF1  ITMBUF  MTSBUF  
  
OTEMAER  OTUNEXP  RMMTCBUF  RMTUSER  SNLAER  SPMLDR  
  
SPMMTC   TRAPINFO
```

The carrier maintenance (carmbuf) log report buffer on an OC-3 RM lists all the carriers on the RM. Figure 4-13 shows the first few lines of the carmbuf log buffer. The first TRAS666 log reports describe the setup of the RM and the OC3B log reports list each STS1, VT1.5, or DS3 provisioned in table MNHSCARR.

Figure 4-13 OC-3 RM carmbuf log reports

```

dSH:9> display carmbuf
TRAS666 CarmTraceMgrLog          JAN-01  00:00:26.740
RM Init
TRAS666 CarmTraceMgrLog          APR-21  07:56:41.240
Send Reset ACK back to CEM
TRAS666 CarmTraceMgrLog          APR-21  07:56:41.250
Reset
OC3B LABEL                          APR-21  07:56:53.270
  STS1 1 Tx & Expected Path Signal Label VtStructured
OC3B LABEL                          APR-21  07:56:53.270
  VT1.5 1 Path Signal Label AsyncDsl
OC3B LABEL                          APR-21  07:56:53.280
  VT1.5 8 Path Signal Label AsyncDsl
OC3B LABEL                          APR-21  07:56:53.290
  VT1.5 15 Path Signal Label AsyncDsl
...
...
TRAS666 CarmTraceMgrLog          APR-21  07:56:53.940
sent configcomplete msg

```

DSP/VSP

DSP and VSP RMs have fewer log buffers than the CEM. Figure 4-14 shows the log buffers available on a DSP RM.

Figure 4-14 /aer log buffers on a DSP RM

```

dSH:16> listbuf

DLLAER  ERRORBUF HALBUF1  ITMBUF  MTSBUF  OTEMAER
OTUNEXP RMMTCBUF RMTUSER  SNLAER  SPMLDR  SPMMTC
TRAPINFO

```

5 SPERFORM

The SPERFORM level of the MAP terminal reports call processing performance measurements of the Spectrum Peripheral Module (SPM).

This MAP terminal level is the SPM equivalent of the PERFORM level on an XMS-based Peripheral Module (XPM). This chapter describes the SPACT and SPUSAGE subdirectories and the PFQUERY command. These subdirectories and commands are equivalent to the XPM tools for PMACT, USAGE, and PFQUERY.

For more information about the SPERFORM level or the commands at the SPERFORM level, refer to the *DMS-Spectrum Peripheral Module Commands Reference Manual*, 297-1771-819.

Note: Users must exit all SPERFORM tools before a warm or cold restart.

To access the SPERFORM level, enter the following command.

```
>MAPCI;MTC;PM;POST SPM spm_no;SPERFORM
```

where

spm_no

is a number between 0 and 63 that identifies the SPM

The following figure is an illustration of the MAP terminal at the SPERFORM level.

5-2 SPERFORM

Figure 5-1 SPERFORM level

```
CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
LOWSpr  Istb    3MPCOS  35PSLk  1 RCU  2  RS      .      70 CC  1Crit  .
M
SPERFORM
0 Quit          PM          SysB  ManB  OffL  CBSy  ISTb  InSv
2 SPMAct       SPM          2      0      2      1      30   27
3 SPUSAGE
4          SPM    0  InSv  Loc:  Site  HOST  Floor  1 Row D  FrPos 10
5
6
7          LOAD NAME : CEM0014
8          STATUS:          REASON:          LOGS:          TIME:
9 PFQuery
10
11
12
13
14
15
16
17
18
USER1
Time 08:51 >
```

SPMACT

The SPMACT subdirectory shows the processor occupancy and resource availability. To access the SPMACT subdirectory from the SPERFORM level, enter the following command.

```
>SPMACT
```

When in the SPMACT level of the MAP terminal, the SPM updates the MAP terminal display with the following information.

- percentage of processor time spent on system, application, and background processes
- call originations, call terminations, and averages of each
- availability, usage, and high water (peak use) counts for the following resources
 - multi-frequency (MF)
 - dual tone multi-frequency (DTMF)
 - tone synthesizer (TONESYN)
 - continuity (COT)
 - echo cancellation (ECAN)

If the STRTLOG command is used, the SPM generates an SPRF670 log report every minute the tool is active with the information in the list above.

The following sections describe the commands available at the SPMACT level of the MAP terminal.

Quit

The QUIT command exits the SPMACT level of the MAP terminal.

Note: Active sessions continue to process unless stopped with the STOP or STOPLOG command.

Strt

The STRT command starts the SPM activity monitoring process. The MAP terminal displays the call processing information.

The STRT command takes a numeric argument between 1 and 1440 to determine the duration in minutes to run the process. No argument results in a default value of 15 minutes. Figure 5-2 shows an example of the STRT command.

Figure 5-2 Strt example at the SPMACT level

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
NoSync 04SBPT NO AMA **PSLk 6 IDT 1 PCC  Diag      C      .      .
M
SPMACT
0 Quit      PM      6      2      2      0      13      14
2 Strt      SPM      0      1      1      0      2      0
3 Strtlog
4 Stoplog  SPM  0  ISTb  Loc:  Site  HOST  Floor  1  Row  D  FrPos  36
5 Stop      LOAD NAME : CEM0014
6          STATUS: RUNNING  REASON: COMMAND  LOGS: OFF TIME: 00:12
7          SYSTEM  APPLICATION  BACKGROUND
8          CEM      0      0      98
9          CEMAVG   0      0      98
10
11          ORIG      ORIGAVG      TERM      TERMAVG
12          0      0      0      0
13          DTMF      MF      ECAN      COT      TONE
14          AVAIL      0      0      0      0      0
15          INUSE      0      0      0      0      0
16          HIGH      0      0      0      0      0
17
18
USER3
Time 10:40 >

```

Strtlog

The STRTLOG command starts a background process to monitor SPM activity. The STRTLOG command monitors the same information as the STRT command but produces an SPRF670 log upon termination instead of output on the MAP terminal. Like the STRT command, the STRTLOG command accepts a numeric argument between 1 and 1440 to determine the duration in minutes to run the process. Figure 5-3 shows an example of the MAP terminal during a STRTLOG session.

Figure 5-3 STRTLOG example at the SPMACT level

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
CM Flt  Clock  1IOCOS  1SBCd  1 SPM   21 RS    .      8GC      1Crit   .
M      M      M      M      *C*    *C*    .      *C*    *C*
SPMACT
0 Quit      PM      SysB    ManB    OffL    CBSy    ISTb    InSv
2 Strt      SPM     3      0      5      0      4      2
3 Strtlog
4 Stoplog   SPM    33  ISTb  Loc:  Site  HOST  Floor  1  Row  B  FrPos  8
5 Stop      LOAD NAME : SPMLOAD
6          STATUS: STOPPED REASON: NOT_STARTED LOGS: ON TIME: 00
7          SYSTEM    APPLICATION    BACKGROUND
8          CEM
9          CEMAVG
10
11         ORIG      ORIGAVG      TERM      TERMAVG
12
13         DTMF     MF      ECAN      COT      TONE
14         AVAIL
15         INUSE
16         HIGH
17
18
USER24
Time 13:51 >

```

Stoplog

The STOPLOG command stops a STRTLOG process.

Stop

The STOP command stops a STRT process.

SPUSAGE

The SPUSAGE level of the MAP terminal displays information about call processing events in the SPM. To access the SPUSAGE subdirectory from the SPERFORM level, enter the following command.

```
>SPUSAGE
```

The SPM updates the MAP terminal display with the following information. The SPM also generates an SPRF671 log every minute the tool is active with the same information.

- abandoned message counts (ABDN)
- exited message counts (EXIT)
- confusion message counts (CONF)
- released call message counts (REL_CAL)

- transmission fail counts (TX_FAIL)
- dual tone multi-frequency deny counts (DTMF_DNY)
- multi-frequency deny counts (MF_DNY)
- network parity (NET_PAR)
- network integrity lost (NET_INTG)
- network integrity found (NET_FND)
- network integrity not found (NET_NFND)

The following sections describe the commands available at the SPUSAGE level of the MAP terminal.

Strt

The STRT command starts the SPM activity monitoring process. The MAP terminal displays the call processing information.

The STRT command takes a numeric argument between 1 and 1440 to determine the duration in minutes to run the process. No value results in a default value of 15 minutes. Figure 5-4 shows an example of the STRT command.

Figure 5-4 STRT example at the SPUSAGE level

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
CM Flt 02SBCH 3MPCOS  2CSLk  1 RCU   .        .        57 CC   1Crit  .
M
SPUSAGE
0 Quit      PM          2      0      1      1      36      21
2 Strt      SPM         0      0      0      0      1      0
3 Strtlog
4 Stoplog   SPM      0  ISTb  Loc: Site HOST Floor 1 Row D FrPos 10
5 Stop
6
7          LOAD NAME : CEM0014
8          STATUS: RUNNING REASON: COMMAND LOGS: OFF TIME: 00:14
9          ABDN  EXIT  CONF  REL_CAL  TX_FAIL  DTMF_DNY
10         0      0      0      0      0      0
11         MF_DNY  NET_PAR  NET_INTG  NET_FND  NET_NFND
12         0      0      0      0      0
13
14
15
16
17
18
USER5
Time 10:29 >

```

Strtlog

The STRTLOG command starts a background process to monitor SPM call processing activity. The STRTLOG command monitors the same information as the STRT command but produces an SPRF671 log upon termination instead of output on the MAP terminal. Like the STRT command, the STRTLOG command accepts a numeric argument between 1 and 1440 to determine the duration in minutes to run the process. As with the display in the SPMACT level, the LOGS field indicates that the STRTLOG command is active.

Stoplog

The STOPLOG command stops a STRTLOG process.

Stop

The STOP command stops a STRT process.

PFQUERY

PFQUERY is a SPERFORM level command that displays the following information about active SPERFORM sessions.

- node number of the session
- SPM number
- the name of the user that has an active session

Figure 5-5 shows the output of the PFQUERY command.

5-8 SPERFORM

Figure 5-5 PFQUERY example at the SPERFORM level

```
CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
CM Flt  ManB    2MPCOS  2CSLk   1 RCU   .        .        58 CC   1Crit   .
M       M       M
SPERFORM
0 Quit          PM          2          0          1          1          35          24
2 SPMAct       SPM          0          0          0          0          1          0
3 SPUSAGE
4          SPM      0  ISTb  Loc: Site HOST Floor  1 Row D  FrPos 10
5
6
7          LOAD NAME : CEM0014
8          STATUS:          REASON:          LOGS:          TIME:
9 PFQuery     PFQuery
10           Peripherals in use are:
11           NODE: 121      PM: SPM          0      USER: USER5
12
13
14
15
16
17
18
USER5
Time 14:11 >
```

6 PERFMON

The performance monitoring (PERFMON) level of the MAP terminal provides access to synchronous optical network (SONET) GR-253 compliant performance monitoring.

For more information about the PERFMON level or the commands at the PERFMON level, refer to the *DMS-Spectrum Peripheral Module Commands Reference Manual*, 297-1771-819.

To access the PERFMON level, enter one of the following commands.

```
>MAPCI;MTC;TRKS;CARRIER;POST SPM spm_no;PERFMON carr_no
```

or

```
>MAPCI;MTC;TRKS;CARRIER;POST SPM spm_no ckt_no;PERFMON 0
```

where

spm_no

is a number between 0 and 63 that identifies the SPM

carr_no

is a number between 0 and 4 that identifies the carrier

ckt_no

is a number between 1 and 180 that identifies the circuit number in table MNHSCARR

The following figure is an illustration of the MAP terminal at the PERFORM level for an OC-3 section (OC3s).

6-2 PERFMON

Figure 6-1 OC-3 section at the PERFMON level

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext
CM Flt  Istb    3MPCOS  .      1 IDT  .      .      49 CC  .
M
PERFMON CLASS ML OS ALRM SYSB MANB UNEQ OFFL CBSY PBSY
0 Quit   TRUNKS 10 6 82 72 0 0 0 0 0
2        REMOTE 3 0 5 2 0 0 0 0 0
3        TIMING 0 0 0 0 0 0 0 0 0
4        HSCARR 0 0 0 0 169 0 0 0 0
5
6 SilM1  PERFMON 0 : SPM 0 OC3RM 0 OC3S 0
7 Interval: 6:10 Status:
8 Parm Count M D Parm Count M D Parm Count
9 MeterPP SEFS-N 0 I CV-N 0 I ES-N 0
10 SES-N 0 I LBC-N 96 I OPT-N 99
11 OPR-N 98 I
12 PERFMON:
13
14 PPQuery
15
16
17
18
USER1
Time 09:06 >

```

PERFMON symbols

The following table identifies and describes each symbol related to the PERFMON MAP level.

Table 6-1

Symbol	Description
M	This symbol represents the current 15 minute threshold.
D	This symbol represents the 24 hour performance. These values reset to 0 at midnight.
*	This symbol indicates that the performance parameter exceeded the threshold count.
I	This symbol is the invalid data flag (IDF). This flag indicates that not enough time has passed for data collection. In the above figure, the IDF flag for all parameters under the D symbol indicates that the carrier is less than one day old.

The following table identifies which performance parameters are measured for different carrier types.

Table 6-2 Performance parameters

	OC3s	STS3I	STS3cp	STS1p	DS3p	VT15p	DS1
CV-N	x	x	x	x	x	x	x
ES-N	x	x	x	x	x	x	x
SES-N	x	x	x	x	x	x	x
SEFS-N	x						
UAS-N		x	x	x	x	x	x
PSC-N		x					
CSS-N							x
AISS-N							x
LBC-N	x						
OPT-N	x						
OPR-N	x						
CV-F			x	x			
ES-F			x	x			
SES-F			x	x			
UAS-F			x	x			

Note: STS3cP is used for Succession Network components.

The following list identifies the performance parameters in table 6-2.

- CV-N coding violations - near end
- ES-N errored seconds - near end
- SES-N severely errored seconds - near end
- SEFS-N severely errored frame seconds - near end
- UAS-N unavailable seconds - near end
- PSC-N protection switch count - near end
- CSS-N controlled slip seconds - near end
- AISS-N alarm indication signal (AIS) seconds - near end

- LBC-N laser bias current - near end
- OPR-N optical power received - near end
- OPT-N optical power transmitted - near end
- CV-F coding violations - far end
- ES-F errored seconds - far end
- SES-F severely errored seconds - far end
- UAS-F unavailable seconds - far end

PPQuery

The PPQuery command is available at the PERFMON MAP level. This command queries the performance parameters for a carrier. To get the clearest output, enter the following command.

```
>MAPCI NODISP;MTC;TRKS;CARRIER;POST SPM spm_no  
ckt_no;PERFMON 0;PPQUERY
```

where

spm_no

is a number between 0 and 63 that identifies the SPM

ckt_no

is a number between 1 and 180 that identifies the circuit number in table MNHSCARR

Figure 6-2 shows the output for an OC-3 carrier on SPM 2. The last line of output indicates that the invalid data flag is set for this carrier. Therefore, values for the previous 15 minutes, the current day, and the previous day are not meaningful.

Figure 6-2 PPQuery output for OC-3 section

```

CI:
>MAPCI NODISP;MTC;TRKS;CARRIER;POST SPM 2 1;PERFMON 0;PPQUERY
MAPCI:
MTC:
TRKS:
CARRIER:
POST:
PERFMON:

```

Parm	Alm	15Min Count	Prv15 Count	15Min Thres	Day Count	PrvDay Count	Day Thres
CV-N	.	18	0	1772	18	0	4430
ES-N	.	1	0	346	1	0	864
SES-N	.	0	0	2	0	0	4
SEFS-N	.	0	0	7	0	0	17

Parm	Alm	Count	Set Thres	Clear Thres
LBC-N	.	104	150	125
OPT-N	.	99	85	95
OPR-N	.	113	85	95

```

Interval: 15Min= 8:26 Day= 0:53:24
IDF-N: Prev15 CurrDay PrevDay
>

```

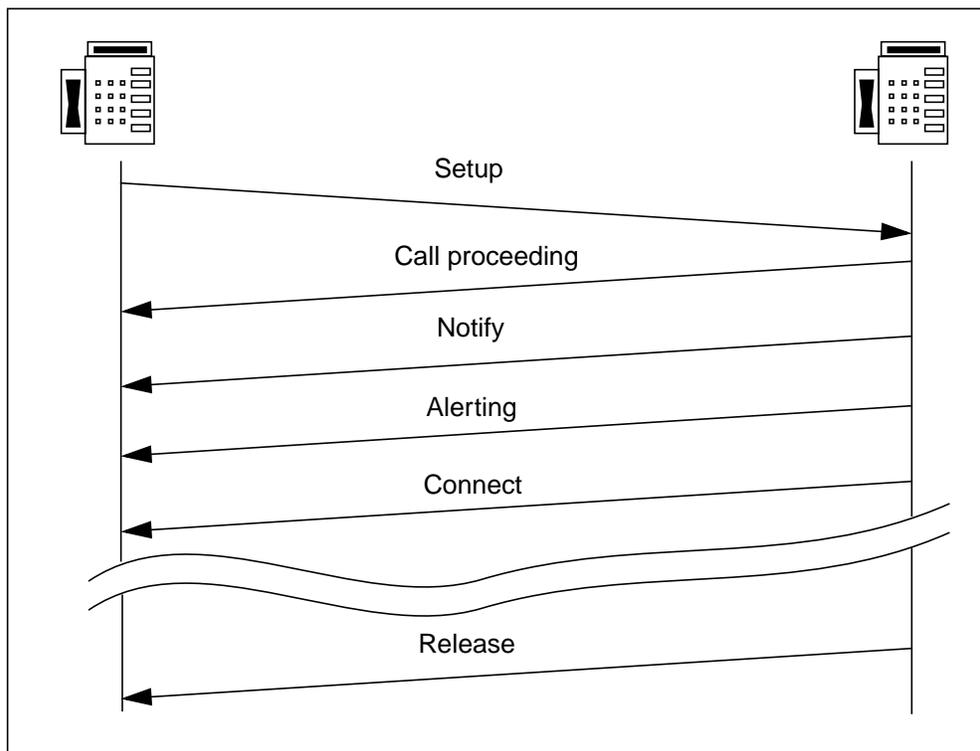
7 Q.931 termtrace

**CAUTION**

This chapter includes service affecting procedures.

Q.931 is a telecommunications specification that identifies the procedures for establishing, maintaining, and clearing network connections at the Integrated Services Digital Network (ISDN) user-network interface. These procedures are identified by messages transmitted over the D-channel of basic rate interface (BRI) and primary rate interface (PRI) connections.

Figure 7-1 shows the messages the Spectrum Peripheral Module (SPM) monitors with the termtrace tool.

Figure 7-1 Monitored Q.931 messages

The following sections describe how to monitor Q.931 messages from the SPM debug shell.

Access the dshell and DLC

Refer to Chapter 2, “Introduction to remlogin” for more information about accessing the dshell. The message trace requires access to the dshell on an active data link controller (DLC). The following figure is an example of how to access the dshell from the CI level of the MAP terminal and then remlogin to an active DLC in logical slot 5.

Figure 7-2 Accessing the dshell

```

CI:
>remlogin spm 0 0
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:7> remlogin -s5
You are now logged into the SPM debug shell.
Type 'help' to see the available shell commands.
dSH:5>
  
```

Access the /termtrace directory

The /termtrace directory is password protected. Use the su command to become the super user. Refer to Chapter 2, “Introduction to remlogin” or command “su” in the command section of this manual for more information about the su command.

Once super user privilege is accessible, cd into the /termtrace directory. Figure 7-3 shows how to cd into the /termtrace directory and help for the commands in the /termtrace directory.

Figure 7-3 /termtrace directory

```
dSH:5> cd /termtrace
dSH:5> help
Terminal Trace System
-----
This tool set is used to record and display trace and
debug information. The information is stored in the form
of events; each event has a particular event type.
Commands in this tool set include:
  start      - Enable the event tracing system.
  stop       - Disable the event tracing system.
  clear      - Clear all recorded events.
  wrap       - Enable or disable circular buffering.
  ctsstatus- Display the system status.
  timestamp- Select the verbosity of timestamp display.
  suppress   - Prevent specific events from being recorded
               in the event buffer.
  hide       - Prevent specific recorded events from being
               displayed.
  restore    - Enable and make visible specific events.
  first      - Display the oldest recorded event.
  last       - Display the most recent recorded event.
  next       - Display the next recorded event.
  previous   - Display the previous recorded event.
  current    - Re-display the last shown event.
  dump       - Print all the recorded events.
  record     - Insert a text message into the event buffer.
  alloc      - Allocate memory for the event buffer.
  dealloc    - Deallocate memory for the event buffer.
Subsystem recording control commands include:
  subsystem- Allow or suppress events from a particular
               subsystem.
  setprint   - Set text events to be recorded to the console.
  setrecord- Set text events to be recorded to the CTS
               buffer.
  context    - Set an event tracing priority for a
               particular context.
  all        - Set the tracing state for all contexts and
               subsystems.
  callp     - Set the tracing state for all contexts and
               call-processing-related subsystems.
  status     - Show CTS, subsystem, and context trace status.
  help      - Display this help information.
You may also type: 'help event <event-name>'
                  or: 'help level <level-number>'
for a detailed explanation of an event type or event level.
dSH:5>
```

Perform the trace

Procedure 7-1 Q.931 trace



CAUTION

Use of the trace command can degrade service.

At the MAP terminal

- 1 Change directories into the /termtrace directory with the cd command.
- 2 Use the alloc command to allocate 500 kilobytes of memory for a text buffer.
- 3 Use the subsystem command to set the message trace events to debug.
- 4 Use the clear command to empty the event buffer.
- 5 Use the start command to begin the event trace.

Figure 7-4 shows an example of the commands and command parameters to begin a Q.931 trace.

Figure 7-4 Trace setup commands example

```
dSH:5> cd /termtrace
dSH:5> alloc 500
Succeeded. (Text events routing to buffer.)
dSH:5> subsystem msgtrace debug
Subsystem 'msgtrace': tracing is on in debug mode.
dSH:5> clear
dSH:5> start
Warning: event tracing has been enabled. This may cause
        minor system performance degradation. To reduce
        the level of degradation, use the 'suppress'
        command to suppress specific events, or the
        'context' command to disable event recording for
        specific terminals.
dSH:5>
```

- 6 Perform tasks that generate Q.931 messages.
- 7 Use the stop command to disable event tracing.
- 8



CAUTION

Do not use the dump command unless the stop command has disabled event tracing. Use of the dump command while tracing events can result in severe performance degradation.

Use the dump command to display the recorded events.

Figure 7-5 shows an example of the commands to stop event tracing and a display of traced information.

Figure 7-5 Trace completion and dump

```
dSH:5> stop
Event tracing has been disabled.
dSH:5> dump
16:04:43.590 msg: mlen: 0004 03-->03
16:04:43.590 dat:
16:04:43.610 Link Number = 14
16:04:43.610 msg: mlen: 0004 01-->02
16:04:43.610 dat:
16:04:43.610 02 01 01 03
16:04:44.410 Link Number = 14
16:04:44.410 msg: mlen: 0043 01-->02
16:04:44.410 dat:
16:04:44.410 00 01 02 02 08 02 00 02 05 04 a2 .....
16:04:44.410 e1 81 83 81 6c 08 80 31 32 33 31 ...1..1234
16:04:44.410 80 34 31 30 31 32 33 31 32 33 34 .410123123
16:04:44.410 msg: mlen: 0004 03-->02
16:04:44.410 dat:
16:04:44.410 TNS IE not present !
16:04:44.490 getEncodeExtensionBitTo0 returned FALSE
16:04:44.490 msg: mlen: 0014 03-->02
16:04:44.490 dat:
16:04:44.490 02 01 02 04 08 02 80 02 02 18 03 .....
End of buffer reached.
dSH:5>
```

- 9** Do you want to trace more events?
- | If | Do |
|-----|----------------|
| Yes | Go to step 10. |
| No | Go to step 11. |
- 10** Do you want to clear the event buffer?
- | If | Do |
|-----|---|
| Yes | Use the clear command to clear the allocated event buffer and go to step 5. |
| No | Go to step 5. |
- 11** Use the dealloc command to return the memory space to the DLC.
- 12** This procedure is complete.

8 OC-3 line timing

The DMS-100 switch can receive its timing reference signal from the high phase resolution and sampling frequency of the Spectrum Peripheral Module (SPM). The input timing signal synchronizes the message switch (MS) clocks and distributes the timing signals to all peripherals on the switch.

This chapter describes the limitations and restrictions of using the OC-3 line timing feature and how to implement the feature.

Limitations and restrictions

The following list describes the limitations and restrictions of the OC-3 line timing feature.

- requires CSP13 based or newer software

Note: CSP13 based software requires a software patch for this feature. The patch identifier is STS30. Refer to the *DMS-100 Family Post-Release Software Manager (PRSM) Reference Guide*, 297-8991-540 for information about validating and applying software patches. CSP14 based software does not require a patch.

- requires two SPMs with OC-3 carriers
- requires the NT9X53AD MS clock card
- does not use revertive reference switching
- the OC-3 carriers must be provisioned in table MNHSCARR before the conversion procedure

Further restrictions and information are detailed in notes during the procedure to convert an office to use the OC-3 line timing feature.

Preliminary setup

This section describes steps that must be complete before the conversion procedure.

Set SPMs to internal timing

To set the clock source SPMs to internal timing mode, edit table MNNODE. Figure 8-1 shows how to edit field CLKREF to INTERNAL for SPM 2.

Figure 8-1 Table MNNODE

```

CI:
>TABLE MNNODE
TABLE:MNNODE
>POS SPM 2
      SPM 2      SPM_2      DMSCP 2 SYNC LOOP 15 (COT 60)
                                (DTMF 60) (ECAN 60) (TONESYN 60)
                                (MF 60) $ (SYSB CR RPT) (MANB MJ RPT)
                                (ISTB MN RPT) (SYSBNA CR RPT)
                                (MANBNA MJ RPT) (COTLOW MN RPT)
                                (DTMFLOW MN RPT) (ECANLOW MN RPT)
                                (TONESLOW MN RPT) (MFLOW MN RPT)
                                (CMRLOW MN RPT) $ (ABTRK SPMEX)
                                (PRAB SPMEX) $

>CHA
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
ALIAS: SPM_2
>
CLASS: DMSCP
>
FLOOR: 2
>
CLKMODE: SYNC
>
CLKREF: LOOP
>INTERNAL
LEDTIMER: 15
>
RSRUTLIM: COT 60
>
RSRUTLIM: DTMF 60
>
...
ALRMCTRL: SYSB CR RPT
>
ALRMCTRL: MANB MJ RPT
>
ALRMCTRL: ISTB MN RPT
>
ALRMCTRL: SYSBNA CR RPT
>
...
TUPLE TO BE CHANGED:
      SPM 2      SPM_2      DMSCP 2 SYNC INTERNAL 15 (COT 60)
                                (DTMF 60) (ECAN 60) (TONESYN 60)
                                (MF 60) $ (SYSB CR RPT) (MANB MJ RPT)
                                (ISTB MN RPT) (SYSBNA CR RPT)
                                (MANBNA MJ RPT) (COTLOW MN RPT)
                                (DTMFLOW MN RPT) (ECANLOW MN RPT)
                                (TONESLOW MN RPT) (MFLOW MN RPT)
                                (CMRLOW MN RPT) $ (ABTRK SPMEX)
                                (PRAB SPMEX) $

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
TUPLE CHANGED

```

Change MS cards to NT9X53AD

Refer to section “SuperNode message switch card replacement procedures” in the *DMS-100 Family NA100 Card Replacement Procedures*, 297-80y1-547 for the procedure to replace a MS card.

Conversion procedure

The following in service procedure describes how to convert an office to use the OC-3 line timing feature.

Procedure 8-1 Convert to OC-3 line timing

At the MAP terminal

- 1 If the software load is CSP13 based, verify that the STS30 software patch is installed. Refer to the *DMS-100 Family Post-Release Software Manager (PRSM) Reference Guide*, 297-8991-540 for information about software patches.
- 2 Drop synchronization of the MS clock.

Note: This step is required only if converting from master-external or slave configurations.

Figure 8-2 Drop synchronization

```
CI:
>MAPCI;MTC;MS;CLOCKS;DPSYNC
This action will degrade SPM OC-3 SYNC performance.
Do you wish to continue?
>Y
Request to Drop Synchronization on Clock 1: Submitted
Request to Drop Synchronization on Clock 1: Passed
```

- 3 Determine what changes to make to Table SYNCLK.

If this is a conversion from	Do
slave	Go to step 4.
master-external	Go to step 6.
master-internal	Go to step 8.

- 4 To convert from slave to OC-3 line timing, change the office configuration in Table SYNCLK.

spm_no

In the following figure, spm_no is the number of an SPM that will provide a clock source. For example, use 0 as LK0_PNUM and 1 as LK1_PNUM to set SPM 0 as the primary clock source and SPM 1 as the backup clock source.

Figure 8-3 Slave conversion

```

CI:
>TABLE SYNCLK;FORMAT PACK;LIST
TABLE:SYNCLK
<line length>: 76 columns can be output per line.
<pack length>: Pack mode is ON.
<indent column>: Indented lines will begin in column 1.
<first column>: The first column of output is column 1.
TOP
CLKKEY CLKDATA OFFCDATA
-----
0 STRAT3 SLAVE DTC 0 0 0 DTC 1 0 0
>CHA
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
CLKTYPE:STRAT3
>
OFFCONF:SLAVE
>
LK0_PTYPE:DTC
>SPM
LK0_PNUM:
>spm_no
LK0_RMTYPE:
>OC3
LK1_PTYPE:DTC
>SPM
LK1_PNUM:
>spm_no
LK1_RMTYPE:
>OC3
TUPLE TO BE CHANGED:
0 STRAT3 SLAVE SPM spm_no OC3 SPM spm_no OC3
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
TUPLE CHANGED

```

- 5 Go to step 10.
- 6 To convert from master-external to OC-3 line timing, change the office configuration in table SYNCLK.

spm_no

In the following figure, spm_no is the number of an SPM that will provide a clock source. For example, use 0 as LK0_PNUM and 1 as LK1_PNUM to set SPM 0 as the primary clock source and SPM 1 as the backup clock source.

Figure 8-4 Master-external conversion

```

CI:
>TABLE SYNCLK;FORMAT PACK;LIST
TABLE:SYNCLK
<line length>: 76 columns can be output per line.
<pack mode>: Paek mode is ON.
<indent column>: Indented lines will begin in column 1.
<first column>: The first column of output is column 1.
TOP
CLKKEY CLKDATA OFFCDATA
-----
0 STRAT3 MASTEXT F1000 ANALOG T50 OFF
>CHA
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
CLKTYPE:STRAT3
>
OFFCONF:MASTEXT
>SLAVE
LK0_PTYP:
>SPM
LK0_PNUM:
>spm_no
LK0_RMTYP:
>OC3
LK1_PTYP:
>SPM
LK1_PNUM:
>spm_no
LK1_RMTYP:
>OC3
Perform a BUSY (BSYMS) and RTS (RTSMS) without OOBAND
option on each MS to be setup the new clock configuration.
TUPLE TO BE CHANGED:
0 STRAT3 SLAVE SPM spm_no OC3 SPM spm_no OC3
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
TUPLE CHANGED

```

- 7 Go to step 9.
- 8 To convert from master-internal to OC-3 line timing, change the office configuration in table SYNCLK.

spm_no

In the following figure, spm_no is the number of an SPM that will provide a clock source. For example, use 0 as LK0_PNUM and 1 as LK1_PNUM to set SPM 0 as the primary clock source and SPM 1 as the backup clock source.

Figure 8-5 Master-internal conversion

```

CI:
>TABLE SYNCLK;FORMAT PACK;LIST
TABLE:SYNCLK
<line length>: 76 columns can be output per line.
<pack mode>: Pack mode is ON.
<indent column>: Indented lines will begin in column 1.
<first column>: The first column of output is column 1.
TOP
CLKKRY CLKDATA OFFCDATA
-----
0 STRAT3 MASTINT
>CHA
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
CLKTYPE:STRAT3
>
OFFCONF:MASTINT
>SLAVE
LK0_PTYP:
>SPM
LK0_PNUM:
>spm_no
LK0_RMTYP:
>OC3
LK1_PTYP:
>SPM
LK1_PNUM:
>spm_no
LK1_RMTYP:
>OC3
Perform a BUSY (BSYMS) and RTS (RTSMS) without OOBAND
option on each MS to setup the new clock configuration.
TUPLE TO BE CHANGED:
0 STRAT3 SLAVE SPM spm_no OC3 SPM spm_no OC3
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
TUPLE CHANGED

```

- 9 Perform a manual busy (BSY) and return to service (RTS) without the OOBAND option for both MSs on the switch. Perform this step on the slave MS first. Figure 8-6 shows how to determine the slave MS. Figure 8-7 shows how to perform the step.

Figure 8-6 Slave MS

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       Istb  4 CkEr  64PSLk  1 SPM 2   RS      .       49GC    1Crit   .
                *C*      *C*      *C*      *C*
MS      Message Switch  Clock  Shelf  0      Inter-MS Link 0 1
0 Quit      MS 0      .      Master  F      - -
2           MS 1      .      Slave   F      - -
3
4
5
6 Tst_
7 Bsy_
8 RTS_
9
10 LoadMS_
11
12 SwMast
13 Shelf
14 QueryMS
15
16
17 InterMS_
18 Clock
  USER
Time 20:37 >

```

Figure 8-7 MS BSY and RTS

```

CI:
>MAPCI;MTC;MS;BSY 1
Request to MAN BUSY MS: 1 submitted.
Request to MAN BUSY MS: 1 passed.
>RTS 1
Request to RTS MS: 1 submitted.
Request to RTS MS: 1 passed.
>SWMAST
>BSY 0
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
>RTS 0
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.

```

10 Initiate synchronization on the MS clock.

Figure 8-8 MS clock synchronization

```
CI:  
>MAPCI;MTC;MS;CLOCK;SYNC  
Request to Synchronize Clock 1: Submitted.  
Request to Synchronize Clock 1: Passed.  
Clock synchronization started...
```

11 This procedure is complete.

Part III

Commands and directories

The following chapters describe the directories and associated commands available from the SPM debug shell. Refer to section “About this document” in this book for information about text conventions used for commands and directories.

The list of commands and directories is current with the latest SPM software release available from Nortel Networks.

9 /dshell level commands

This chapter provides an overview of the /dshell level. This chapter also provides detailed information on commands in the /dshell level.

The following table alphabetically lists the commands available at the /dshell level.

Table 9-1

Command
cd
echo
help
listusers
ls
pwd
remlogin
remlogout
su
swnode
which
who

Description

The /dshell directory provides the shell commands that are available in all directories. These commands are similar to UNIX built-in commands.

How to access the /dshell level

Access the /dshell level from the SPM debug environment:

```
dSH:7> cd /dshell
```

Note: For information about how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /dshell level.

Figure 9-1 Example of a MAP display of the /dshell level



```
dSH:7>cd /dshell
dSH:7>ls
cd*          echo*       help*       listusers*
ls*          pwd*        remlogin*   remlogout*
su*          swnode*    which*      who*
```

dSH:7>
dSH:7>

cd

Type

The cd command is a menu listed command.

Target

The command target for the cd command is ALL.

Description

The cd command changes the working directory.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The cd command was first recorded in the SP14 release.

Limitations and restrictions

The cd command has no limits or restrictions.

Syntax

The cd command syntax is as follows:

```
dSH:7> cd [-h] [<directory>]
```

The following table describes the parameters and variables of the cd command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[<directory>]	string	This parameter is the name of the directory to enter. Note: If no directory is supplied, the root directory (/) becomes the working directory.

cd (end)

Example

The following table provides an example of the cd command.

Command example

Command:	dSH:7> cd /aer
Description of task:	Change directories to the Application Event Reporting directory.
MAP response:	The dshell does not provide any immediate indication of the command completion.
Explanation:	The current working directory becomes the /aer directory.

Responses

The following table explains possible responses to the cd command.

MAP responses with associated meanings and actions

Command:	dSH:7> cd osquery
MAP response:	Parameter 'osquery' not recognized. Use 'cd -h' to confirm syntax.
Meaning:	Osquery is not a directory.
Actions:	Use a directory as an argument to the cd command.

echo

Type

The echo command is a menu listed command.

Target

The command target for the echo command is ALL.

Description

The echo command prints parsed command parameters to the MAP terminal screen.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The echo command was first recorded in the SP14 release.

Limitations and restrictions

The echo command is not useful outside the Nortel Networks software development environment.

Syntax

The echo command syntax is as follows:

```
dSH:7> echo [-h] [<command>] [--<switch>] [<parameter>*]
```

The following table describes the parameters and variables of the echo command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[<command>]	String	This parameter is the name of the command to print to the MAP terminal display.

echo (end)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
[-<switch>]	String	This parameter is the name of the command switch to print to the MAP terminal display. For example, -h is a switch to the cd command.
[<parameter>*]	String	This parameter is a list of arguments for the command to print to the MAP terminal display.

Example

The following table provides an example of the echo command.

Command example

Command:	dSH:7> echo swnode
Description of task:	Print the command swnode to the MAP terminal display.
MAP response:	swnode
Explanation:	There is no explanation for this example.

Responses

The echo command does not provide meaningful responses.

help

Type

The help command is a menu listed command.

Target

The command target for the echo command is ALL.

Description

The help command provides an description of a directory and the commands available in that directory if a directory name is the argument to the help command. The help command provides a description of a command if a command name is the argument to the help command.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The help command was first recorded in the SP14 release.

Limitations and restrictions

The help command has no limits or restrictions.

Syntax

The help command syntax is as follows:

```
dSH:7> help [-h] [<command>, <directory>]
```

The following table describes the parameters and variables of the help command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
<none>		If the help command does not have any parameters, the help command displays the built-in shell commands.
[-h]		This parameter displays the command syntax and parameters.

help (continued)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
[<command>]	String	This parameter displays a description of the command.
[<directory>]	String	This parameter displays a description of the directory and the commands in that directory.

Example

The following table provides an example of the help command.

Command example

Command:	dSH:7>help /aer
Description of task:	Display a description of the /aer directory and the commands in the /aer directory.
MAP response:	<pre>aer/: Application Event Record disable*: display of the specific event records is disabled display*: display select event reports enable*: display of the specific event records is enabled listbuf*: list all the AER buffer names listevent*: list all class names registered in the buffer</pre>
Explanation:	The /aer directory contains commands related to the Application Event Record.

Responses

The following table explains possible responses to the help command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7>help /memory /aer
MAP response:	<pre>memory/: Memory subdirectory addr*: Display important addresses. show*: Show memory usage and/or statistics</pre>
Meaning:	The help command displayed a description of the /memory directory but ignored the /aer argument.
Actions:	The help command only accepts one argument at a time. Enter help /memory and then help /aer.

help (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Command:	dSH:7>help me
MAP response:	Parameter 'me' not recognized. Use 'help -h' to confirm syntax.
Meaning:	Me is not a command or directory.
Actions:	Use only commands or directories as an argument to the help command.

listusers

Type

The listusers command is a menu unlisted command.

Target

The command target for the listusers command is ALL.

Description

The listusers command prints a list of the users defined on the node.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The listusers command is new for the SP15 release.

Limitations and restrictions

The listusers command and other user related commands frequently return errors.

Syntax

The listusers command syntax is as follows:

```
dSH:7> listusers [-h]
```

The following table describes the parameters and variables of the listusers command.

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

listusers (end)**Example**

The following table provides an example of the listusers command.

Command example

Command:	dSH:7> listusers
Description of task:	Print a list of users for this node.
MAP response:	<pre> Number of craft users defined = 1 Craft User Name Enabled Last Modified ntadmin yes NOV-27 13:32 </pre>
Explanation:	Username ntadmin is available on this node.

Responses

The following table explains possible responses to the listusers command.

MAP responses with associated meanings and actions

Command:	dSH:7> listusers
MAP response:	<pre> Command Failed: Password file was not properly initialized. It could not be reinitialized. Please inform your system administrator. (rc = 12) </pre>
Meaning:	This is an error.
Actions:	No action is required. For the SP15 and lower loads, username accounts are not enforced.

ls

Type

The ls command is a menu listed command.

Target

The command target for the ls command is ALL.

Description

The ls command lists the contents of a directory.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The ls command was first recorded in the SP14 release

Limitations and restrictions

The ls command has no limits or restrictions.

Syntax

The ls command syntax is as follows:

```
dSH:7> ls [-h] [<directory>]
```

The following table describes the parameters and variables of the ls command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[<directory>]	string	This parameter lists the contents of the specified directory. If this parameter is not provided, the ls command lists the contents of the current working directory.

Example

The following table provides an example of the ls command.

Command example

Command:	dSH:7> ls /footprint
Description of task:	List the contents of the footprint directory.
MAP response:	display* listbuf* listevent* unlock*
Explanation:	The display, listbuf, listevent, and unlock commands are in the footprint directory.

Responses

The following table explains possible responses to the ls command.

MAP responses with associated meanings and actions

Command:	dSH:7> ls loadinfo
MAP response:	Parameter 'loadinfo' not recognized. Use 'ls -h' to confirm syntax.
Meaning:	Loadinfo is not accessible from the current working directory.
Actions:	Use the pwd command to determine the current working directory or precede the directory command with the absolute path such as /loadinfo.

pwd

Type

The pwd command is a menu listed command.

Target

The command target for the ls command is ALL.

Description

The pwd command prints the current working directory to the display.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The pwd command was first recorded in the SP14 release.

Limitations and restrictions

The pwd command has no limits or restrictions.

Syntax

The pwd command syntax is as follows:

```
dSH:7> pwd [-h]
```

The following table describes the parameters and variables of the pwd command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the pwd command.

Command example (Sheet 1 of 2)

Command:	dSH:7> pwd
Description of task:	Print the current working directory to the display.

pwd (end)

Command example (Sheet 2 of 2)

MAP response: /aer/

Explanation: The current working directory is the /aer directory.

Responses

The pwd command does not have meaningful error responses.

remlogin

Type

The remlogin command is a menu listed command.

Target

The command target for the remlogin command is ALL.

Description

The remlogin command connects the user to another resource module (RM) in the SPM.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The remlogin command was first recorded in the SP14release.

Limitations and restrictions

The remlogin command has no limits or restrictions.

Syntax

The remlogin command syntax is as follows:

```
dSH:7> remlogin [-h] [-s<slot_id>] [-u<user_name>]
```

The following table describes the parameters and variables of the remlogin command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[-s<slot_id>]	numeric	This parameter is the logical slot number of the RM on which to begin a remlogin session. Refer to heading "Logical slots" in Chapter 2, "Introduction to remlogin" for more information about logical slot numbers.
[-u<user_name>]	string	This parameter is the user name to use during the remlogin session.

remlogin (end)

Example

The following table provides an example of the remlogin command.

Command example

Command:	dSH:7> remlogin -s15
Description of task:	Begin a remlogin session on the RM in slot 1 of shelf 1.
MAP response:	You are now logged into the SPM debug shell. Type 'help' to see the available shell commands. dSH:15>
Explanation:	The command was successful and a remlogin session on the RM in slot 15 is active. The command prompt displays the logical slot number.

Responses

The following table explains possible responses to the remlogin command.

MAP responses with associated meanings and actions

Command:	dSH:7> remlogin -s16
MAP response:	dSH:7> dSH:7>
Meaning:	The command was not successful.
Actions:	Check that the RM in slot 16 is in-service. The SPM can reject the command to execute other tasks with a higher priority.

remlogout

Type

The remlogout command is a menu listed command.

Target

The command target for the remlogout command is ALL.

Description

The remlogout command exits the current remlogin session.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The remlogout command was first recorded in the SP14 release.

Limitations and restrictions

The remlogout command has no limits or restrictions.

Syntax

The remlogout command syntax is as follows:

```
dSH:7> remlogout [-h]
```

The following table describes the parameters and variables of the remlogout command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the remlogout command.

Command example (Sheet 1 of 2)

Command:	dSH:15> remlogout
Description of task:	Exit the remlogin session on the RM in logical slot 15.

remlogout (end)

Command example (Sheet 2 of 2)

MAP response: dSH: 7>

Explanation: The SPM returned the user to the remlogin session on the common equipment module (CEM) in logical slot 7.

Responses

The remlogout command does not have meaningful error responses.

su

Type

The su command is a menu listed command.

Target

The command target for the su command is ALL.

Description

The su command enables a user to become a super-user or another user.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The su command was first documented in the SP14 release.

Limitations and restrictions

The su command has no limits or restrictions.

Syntax

The su command syntax is as follows:

```
dSH:7> su [-h] <username> <pwd>
```

The following table describes the parameters and variables of the su command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<username>	string	This parameter is the name of the user to become. To become a super-user, the value is root.
<pwd>	string	This parameter is the password for the user identified by the username parameter.

Example

The following table provides an example of the su command.

Command example

Command:	dSH:7> su root bnKgDJTdurL
Description of task:	Become a super-user.
MAP response:	Your user name and permissions have changed to 'root'.
Explanation:	This user has privileged access to service-affecting commands developed by software development groups of Nortel Networks for testing purposes.

Responses

The following table explains possible responses to the <command_name> command.

MAP responses with associated meanings and actions

Command:	dSH:7> su root sesame
MAP response:	Permission denied - Invalid password.
Meaning:	Sesame is not the password for the super-user.
Actions:	Contact your next level of support.

swnode

Type

The swnode command is a menu listed command.

Target

The command target for the swnode command is ALL.

Description

The swnode command switches the user login context between a remlogin session and a MAP terminal level login.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The swnode command was first documented in the SP14 release.

Limitations and restrictions

The swnode command has no limits or restrictions.

Syntax

The swnode command syntax is as follows:

```
dSH:7> swnode [-h] [-{hst, rmt} [N] ]
```

The following table describes the parameters and variables of the swnode command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

swnode (end)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
[-{hst, rmt}]		This parameter determines if the swnode command switches the session to the remote session on the SPM or the host session on the DMS-100 switch MAP terminal. If no option is specified, the swnode command switches between the current MAP terminal level and the current remlogin session.
[N]		This parameter extends the -hst or -rmt parameter by switching the login context by N times toward the context indicated by the -hst or -rmt parameter.

Example

The following table provides an example of the swnode command.

Command example

Command:	dSH:7> swnode
Description of task:	Switch the user context to the MAP terminal session.
MAP response:	>
Explanation:	The user context switched to the CI level of the MAP terminal.

Responses

The swnode command does not have meaningful error responses.

which

Type

The which command is a menu listed command.

Target

The command target for the which command is ALL.

Description

The which command searches the path for a command. The path is set to /dshell and the current working directory.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The which command was first recorded in the SP14 release.

Limitations and restrictions

The which command has no limits or restrictions.

Syntax

The which command syntax is as follows:

```
dSH:7> which [-h] [<command>]
```

The following table describes the parameters and variables of the which command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[<command>]	string	This parameter is the name of the command to find.

which (end)

Example

The following table provides an example of the which command.

Command example

Command:	dSH:7> which remlogout
Description of task:	Find the location of the remlogout command.
MAP response:	/dshell/remlogout*
Explanation:	The remlogout command is in the /dshell directory.

Responses

The following table explains possible responses to the which command.

MAP responses with associated meanings and actions

Command:	dSH:7> which printoms
MAP response:	Parameter 'printoms' not recognized. Use 'which -h' to confirm syntax.
Meaning:	The printoms command is not in the /dshell or current working directory.
Actions:	List the contents of directories with the ls command or cd into the /resman directory.

who

Type

The who command is a menu listed command.

Target

The command target for the who command is ALL.

Description

The who command displays information about users.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The who command was first recorded in the SP14 release.

Limitations and restrictions

The who command has no limits or restrictions.

Syntax

The which command syntax is as follows:

```
dSH:7> who [-h] [{ami, -u}]
```

The following table describes the parameters and variables of the who command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[ami]		This parameter displays information about the login status of the user that executes the command.
[-u]		This parameter displays more detailed status data.

Example

The following table provides an example of the who command.

Command example

Command:	dSH:7> who ami
Description of task:	Provide information about the current login status.
MAP response:	Host Session 00: Active. Name 0 rcidad03fb7204 * 1 dshell103dbfc04
Explanation:	The current login status is active.

Responses

The who command does not have meaningful error responses.

10 / level commands

This chapter provides an overview of the / directory. This chapter also provides detailed information of the commands in the / level.

The following table alphabetically lists the commands available at the / level.

Table 10-1

Command
date
oslookup
osquery
restartorder

Description

The / directory is the system root directory.

How to access the / level

Access the / level from the SPM debug environment:

```
dSH:7> cd
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the / level.

Figure 10-1 Example of a MAP display of the / level

```
dSH:7> cd /
aer/          date*        dmdump/     dshell/
footprint/   ilmtest/    inmci/      loadinfo/
memory/      oslookup*   osquery*    patches/
resman/      restartorder*  rmmmgr/    spmdbg/
swact/
dSH:7>
```

date

Type

The date command is a menu listed command.

Target

The command target for the date command is ALL.

Description

The date command displays or sets the system date and time.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The date command was first recorded in the SP14 release.

Limitations and restrictions

The date command has no limits or restrictions.

Syntax

The date command syntax is as follows:

```
dSH:7> date [-h] [mmddhhmm[yy]]
```

The following table describes the parameters and variables of the date command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and arguments.
[mmddhhmm[yy]]	numeric	This parameter is a numeric representation of the date with two values each for month, day, hour, minute, and year.

date (end)

Example

The following table provides an example of the date command.

Command example

Command:	dSH:7> date
Description of task:	Show the system date and time.
MAP response:	Current Date and Time = 13:47:19.325 APRIL 6, 2000
Explanation:	No explanation needed.

Responses

The following table explains possible responses to the date command.

MAP responses with associated meanings and actions

Command:	dSH:7> date 05
MAP response:	Parameter '05' not recognized. Use 'date -h' to confirm syntax.
Meaning:	To change the system date, the user must present all arguments of the date.
Actions:	Use the date command and supply the day, hour, minute, and optionally, the year to change the system date and time.

oslookup**Type**

The oslookup command is a menu listed command.

Target

The command target for the oslookup command is ALL.

Description

The oslookup command displays data for the kernel entity specified on the command line.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The oslookup command was first recorded in the SP14 release.

Limitations and restrictions

The oslookup command has no limits or restrictions.

Syntax

The oslookup command syntax is as follows:

```
dSH:7> oslookup {-h, -t, -q, -s, -m, -e, -p} [<entity name>]
```

The following table describes the parameters and variables of the oslookup command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
-h		This parameter displays the command syntax and arguments.
-t		This parameter displays the tasks in the kernel and identifies the tasks by task number, name, identifier, priority, and function.
-q		This parameter displays the queues in the kernel and identifies the queues by queue number, name, identifier, and size.

oslookup (continued)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
-s		This parameter displays the semaphores in the kernel and identifies the semaphores by semaphore number, name, and identifier.
-m		This parameter displays the mutexes in the kernel and identifies the mutexes by mutex number, name, identifier, and lock status.
-e		This parameter displays the events in the kernel and identifies the events by event number, name, and identifier.
-p		This parameter displays the partitions in the kernel and identifies the partitions by partition number, name, identifier, address, size, and unit size.
[<entity name>]	string	This optional parameter indicates the kernel entity name for the OS server to locate and display.

Example

The following table provides an example of the oslookup command.

Command example

Command:	dSH:7> oslookup -s TASKMONSEMA		
Description of task:	Display kernel entity information about the task monitor semaphore.		
MAP response:	Name	Id	
	TASKMONSEMA	42	
Explanation:	The task monitor semaphore has a kernel entity identification number of 42.		

Responses

The following table explains possible responses to the oslookup command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> slookup -t RxFM			
MAP response:	Name	Id	Priority	Function
	RxFM	254	MAINTENANCE HIGH	0000000

oslookup (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The RxFM kernel entity task has an identification number of 254, receives a maintenance high priority during a system reboot, and has a null function value.
Actions:	This response requires no action.

osquery

Type

The osquery command is a menu listed command.

Target

The command target for the osquery command is ALL.

Description

The osquery command displays data for the kernel entity specified on the command line.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The osquery command was first recorded in the SP14 release.

Limitations and restrictions

The osquery command has no limits or restrictions.

Syntax

The osquery command syntax is as follows:

```
dSH:7> osquery {-h, -t, -q, -s, -m, -e, -p} {name, id}
```

The following table describes the parameters and variables of the osquery command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
-h		This parameter displays the command syntax and arguments.
-t		This parameter displays information about the task in the kernel that was identified task name or number.
-q		This parameter displays information about the queue in the kernel that was identified by queue name or number.

osquery (continued)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
-s		This parameter displays information about the semaphore in the kernel that was identified and by semaphore name or number.
-m		This parameter displays information about the mutex in the kernel that was identified by mutex name or number.
-e		This parameter displays information about the event in the kernel that was identified by event name or number.
-p		This parameter displays information about the partition in the kernel that was identified by partition name or number.
{name}	string	This parameter indicates the kernel entity name for the OS server to locate and display.
{id}	numeric	This parameter indicates the kernel entity identifier for the OS server to locate and display.

Example

The following table provides an example of the osquery command.

Command example

Command:	<code>dSH:7> osquery -s TASKMONSEMA</code>
Description of task:	Display kernel entity information about the task monitor semaphore.
MAP response:	Semaphore name: `TASKMONSEMA` id: 41 semaphore count: 0
Explanation:	The task monitor semaphore has a kernel entity identification number of 41.

Responses

The following table explains possible responses to the osquery command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	<code>dSH:7> osquery -s RMAN_ROOT_TASK</code>
MAP response:	Could not find object named `RMAN_ROOT_TASK`.

osquery (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	RMAN_ROOT_TASK is a task and the command requested semaphore information.
Actions:	Use the -t switch to get task information.

restartorder

Type

The restartorder command is a menu listed command.

Target

The command target for the restartorder command is ALL.

Description

The restartorder command displays data for the kernel entity specified on the command line.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The restartorder command was first recorded in the SP14 release.

Limitations and restrictions

The restartorder command always reports that the most recent restart was nonsurvivable and that the overall result was failed.

Syntax

The restartorder command syntax is as follows:

```
dSH:7> restartorder
```

The following table describes the parameters and variables of the restartorder command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
-h		This parameter displays the command syntax and executes the command.

restartorder (end)

Example

The following table provides a partial example of the restartorder command.

Command example

Command:	dSH:7> restartorder
Description of task:	Display the order that tasks start, return codes, and the most recent restart type.
MAP response:	<pre>The number of foundation tuples is : 10 The number of other tuples is: 143 Subsystem Name Restart Proc @ Return Code Blocked ----- 0: OsServices 1c4194 Okay No 1: CemHalInit 275b54 Okay No 2: BMS 5aead8 Okay No 152: AITASK 1010870 Okay No The most recent restart type was Nonsurvivable, and the overall result was Failed.</pre>
Explanation:	The displayed tasks started okay.

Responses

The restartorder has no meaningful error responses.

11 /aer level commands

This chapter provides an overview of the /aer level. This chapter also provides detailed information on new or changed commands in the /aer level.

The following table alphabetically lists the commands available at the /aer level.

Table 11-1

Command
disable
display
enable
listbuf
listevent

Description

The /aer level provides access to Application Event Record of the resource module (RM).

How to access the /aer level

Access the /aer level from the dshell environment:

```
dSH:7> cd /aer
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /aer level.

Figure 11-1 Example of a MAP display of the /aer level

```
dSH:7> cd /aer
dSH:7> ls
disable*          display*          enable*          listbuf*
listevent*
dSH:7>
```

disable

Type

The disable command is a menu listed command.

Target

The command target for the disable command is ALL.

Description

The disable command prevents the display of the indicated log reports.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The disable command was first recorded in the SP14 release.

Limitations and restrictions

The disable command has no limits or restrictions.

Syntax

The disable command syntax is as follows:

```
dSH:7> disable [-h] <buffer_name> <class_name>
```

The following table describes the parameters and variables of the disable command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

disable (end)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
<buffer_name>	string	This parameter is the name of the buffer that contains the log reports that the user wants to disable. Use the listbuf command to list the buffer names.
<class_name>	string	This parameter is the name of the log type that the user wants to disable. Use the listevent command to list the log types in a log buffer.

Example

The following table provides an example of the disable command.

Command example

Command:	dSH:7> disable spmldr info
Description of task:	Do not display INFO log reports in the spmldr log buffer.
MAP response:	Done
Explanation:	A display command on the spmldr log buffer will not display INFO log reports.

Responses

The following table explains possible responses to the disable command.

MAP responses with associated meanings and actions

Command:	dSH:7> disable spmmtc info
MAP response:	The class is not found
Meaning:	The spmmtc log buffer does not contain INFO log reports.
Actions:	Use the listevent command to determine the log report types in the spmmtc log buffer.

display**Type**

The display command is a menu listed command.

Target

The command target for the display command is ALL.

Description

The display command prints log reports to the MAP terminal display.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The display command was first recorded in the SP14 release.

Limitations and restrictions

Values for <start_num> and <stop_num> are between 1 and 1000 even though the command help reports 0 to 1000.

Syntax

The display command syntax is as follows:

```
dSH:7> display [-h] <buffer_name> [<class_name>
                    [<start_num> {<stop_num>}]]
```

The following table describes the parameters and variables of the display command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<buffer_name>	string	This parameter is the name of the log buffer that contains the log reports that the user wants to display. Use the listbuf command to get a list of log buffers.

display (end)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
<class_name>	string	This optional parameter is the name of the log type that the user wants to display. Use the listevent command to list the log types.
<start_num>	numeric	This optional parameter is a number between 1 and 1000 that determines which log in the buffer to display first.
<stop_num>	numeric	This optional parameter is a number between 1 and 1000 that determines the last log in the buffer to display.

Example

The following table provides an example of the display command.

Command example

Command:	dSH:7> display spmmtc node 1 3
Description of task:	Display the first three NODE log reports in the spmmtc log buffer.
MAP response:	NODE300 TBL Mismatch JAN-18 01:07:40.850
Explanation:	The first three NODE log reports are displayed.

Responses

The following table explains possible responses to the display command.

MAP responses with associated meanings and actions

Command:	dSH:7> display spmmtc info 1 10
MAP response:	No records
Meaning:	The spmmtc log buffer does not contain INFO log reports.
Actions:	Use the listevent command to determine the log report types in the spmmtc log buffer.

enable

Type

The enable command is a menu listed command.

Target

The command target for the enable command is ALL.

Description

The enable command allows the display of the disabled log reports.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The enable command was first recorded in the SP14 release.

Limitations and restrictions

The enable command has no limits or restrictions.

Syntax

The enable command syntax is as follows:

```
dSH:7> enable [-h] <buffer_name> [<class_name>]
```

The following table describes the parameters and variables of the enable command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

enable (end)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
<buffer_name>	string	This parameter is the name of the buffer that contains the log reports that the user wants to enable. Use the listbuf command to list the buffer names.
<class_name>	string	This parameter is the name of the log type that the user wants to enable. Use the listevent command to list the log types in a log buffer.

Example

The following table provides an example of the enable command.

Command example

Command:	dSH:7> enable spmldr info
Description of task:	Display INFO log reports in the spmldr log buffer when the display command is used.
MAP response:	Done
Explanation:	A display command on the spmldr log buffer will display INFO log reports.

Responses

The following table explains possible responses to the enable command.

MAP responses with associated meanings and actions

Command:	dSH:7> enable swact spm
MAP response:	The class is not found
Meaning:	The swact log buffer does not contain SPM log reports.
Actions:	Use the listevent command to determine the log report types in the swact log buffer.

listbuf

Type

The listbuf command is a menu listed command.

Target

The command target for the listbuf command is ALL.

Description

The listbuf command displays all the log buffer names.

Note: Different resource modules contain different log buffers.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The listbuf command was first recorded in the SP14 release.

Limitations and restrictions

The listbuf command has no limits or restrictions.

Syntax

The listbuf command syntax is as follows:

```
dSH:7> listbuf [-h]
```

The following table describes the parameters and variables of the listbuf command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

listbuf (end)

Example

The following table provides an example of the listbuf command.

Command example

Command:	dSH:7> listbuf
Description of task:	Display all the log buffer names.
MAP response:	ATMERR ATMINF AUDITBUF C7UPTMR CALLPBUF CARMBUF CEMDSYNC CLKSCHG CLKSYNC CLKTRBL CONNINFO CONNSWER CPPBUFF DDMBUF DLLAER ECMON ERRORBUF FEATCNTL FTSBUFF HALBUF1 HALBUF2 HALBUF3 IDMBUF ILMBUFF INMMTC INMTRC ITMBUF LEDBUF MTCEDB MTPSBUF MTSBUF OTEMAER OTUNEXP PRIAUDIT RMANBUFF RMMMGR RMTUSER SELFTEST SNLAER SPERFORM SPMECAN SPMLM SPMLOGTX SPMTC STAMBUFF SWACT TKMTCBUF TRAPINFO TSAUBUF TSEBUF
Explanation:	The listbuf command listed all the log buffers available on the CEM.

Responses

The listbuf command does not have meaningful error responses.

listevent

Type

The listevent command is a menu listed command.

Target

The command target for the listevent command is ALL.

Description

The listevent command shows the type of log reports available in the indicated log buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The listevent command was first recorded in the SP14 release.

Limitations and restrictions

The listevent command has no limits or restrictions.

Syntax

The listevent command syntax is as follows:

```
dSH:7> listevent [-h] <buffer_name>
```

The following table describes the parameters and variables of the listevent command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<buffer_name>	string	This parameter is the name of the buffer that contains the log reports.. Use the listbuf command to list the buffer names.

listevent (end)

Example

The following table provides an example of the listevent command.

Command example

Command:	dSH:7> listevent spmmtc
Description of task:	Display the types of log reports in the spmmtc log buffer.
MAP response:	NODE SPM
Explanation:	The spmmtc log buffer contains NODE and SPM log reports.

Responses

The following table explains possible responses to the listevent command.

MAP responses with associated meanings and actions

Command:	dSH:7> listevent spmbuf
MAP response:	The Buffer is not found, use LISTBUF to get the buffer name.
Meaning:	Spmbuf is not a log buffer.
Actions:	Use the listbuf command to determine the log buffer names.

12 /carm level commands

This chapter provides an overview of the /carm level. This chapter also provides detailed information on new or changed commands in the /carm level.

The following table alphabetically lists the commands available at the /carm level.

Table 12-1

Command
cals
qrycarmstate
qryclamiactstate

Description

The /carm directory provides access to carrier maintenance commands.

How to access the /carm level

Access the /carm level from the dshell environment:

```
dSH:7> cd /carm
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /carm level.

Figure 12-1 Example of a MAP display of the /carm level

```
dSH:7> cd /carm
dSH:7> ls
cals*          caspare/      grycarm1state*
gryclamiactstate*
dSH:7>
```

cals

Type

The cals command is a menu listed command.

Target

The command target for the cals command is ALL.

Description

The cals command lists the status of all the carriers on the SPM.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The cals command was first recorded in the SP15 release.

Limitations and restrictions

The following limits and restrictions apply to the cals command:

- cals does not accept a range of carrier numbers as an argument

Syntax

The cals command syntax is as follows:

```
dSH:7> cals [-h] 0-181
```

The following table describes the parameters and variables of the cals command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
0-181	integer	This parameter identifies the carrier to display information about. If no value is entered, the cals command displays information for all valid carriers. Note: 0 and 181 are not valid values.

cals (end)

Example

The following table provides an example of the cals command.

Command example

Command:	dSH:7> cals 2
Description of task:	List the carrier information for carrier 2.
MAP response:	<pre>Carrier Status Report Ckt# Prt# Type SqN P/W Fid A PS-Q Sec State -----+-----+-----+-----+-----+-----+-----+-----+----- 2 1 STS3L 1 Wrk NA 0 OOS-MA ACT PPS There are 19 carriers registered. 2 Section, 2 Line, 15 Path</pre>
Explanation:	Carrier 2 is an STS3L. The parent circuit is 1, the sequence number is 1. It is the working STS3L. The failure id is not available (no failures) and there are 0 alarms. The primary state and qualifier are out of service (OOS) and memory administration (MA). The secondary state is active (ACT) and indicates path protection switching (PPS).

Responses

The following table explains possible responses to the cals command.

MAP responses with associated meanings and actions

Command:	dSH:7> cals 10-20
MAP response:	<pre>Carrier Status Report Ckt# Prt# Type SqN P/W Fid A PS-Q Sec State -----+-----+-----+-----+-----+-----+-----+-----+----- 10 3 VT1.5P 3 Wrk NA 0 OOS-MA PPS There are 19 carriers registered. 2 Section, 2 Line, 15 Path</pre>
Meaning:	The cals command only accepts the first valid carrier number.
Actions:	Do not use an argument to the command to list all the valid carriers.

qrycarmstate

Type

The qrycarmstate command is a menu listed command.

Target

The command target for the qrycarmstate command is ALL.

Description

The qrycarmstate command queries the carrier maintenance software state on the local common equipment module (CEM). The response indicates the status of the carrier local maintenance messaging interface (CLAMI) and the carrier agent director (CAD).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The qrycarmstate was first recorded in the SP15 release.

Limitations and restrictions

The qrycarmstate command has no limits or restrictions.

Syntax

The qrycarmstate command syntax is as follows:

```
dSH:7> qrycarmstate [-h]
```

The following table describes the parameters and variables of the qrycarmstate command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax, parameters, and executes the command.

qrycarmstate (end)

Example

The following table provides an example of the qrycarmstate command.

Command example

Command:	dSH:7> qrycarmstate
Description of task:	Query the carrier maintenance state on the local CEM.
MAP response:	CLAMI is in the INSERVICE state. CAD is in the NORMAL state.
Explanation:	

Responses

The following table explains possible responses to the qrycarmstate command.

MAP responses with associated meanings and actions

Command:	dSH:7> qrycarmstate
MAP response:	CLAMI is in the OUTOFSERVICE state. CAD is in the NORMAL state.
Meaning:	Carrier local maintenance messaging interface software is not running.
Actions:	Contact your next level of support with this information.

qryclamiactstate

Type

The qryclamiactstate command is a menu listed command.

Target

The command target for the qryclamiactstate command is ALL.

Description

The qryclamiactstate queries the carrier local maintenance messaging interface (CLAMI) to determine if the CLAMI is the active or inactive CLAMI.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The qryclamiactstate command was first recorded in the SP15 release.

Limitations and restrictions

The qryclamiactstate command has no limits or restrictions.

Syntax

The qryclamiactstate command syntax is as follows:

```
dSH:7> qryclamiactstate [-h]
```

The following table describes the parameters and variables of the qryclamiactstate command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command description and executes the command.

qryclamiactstate (end)

Example

The following table provides an example of the qryclamiactstate command.

Command example

Command:	dSH:7> qryclamiactstate
Description of task:	Query the activity state of the CLAMI.
MAP response:	The CLAMI thinks that it is ACTIVE.
Explanation:	CLAMI software indentifies this common equipment module (CEM) as the active CEM.

Responses

The following table explains possible responses to the qryclamiactstate command.

MAP responses with associated meanings and actions

Command:	dSH:7> qryclamiactstate
MAP response:	The CLAMI thinks that it is INACTIVE.
Meaning:	CLAMI software identifies this CEM as the inactive CEM.
Actions:	No action is required.

13 /carm/casp spare level commands

This chapter provides an overview of the /carm/casp spare level. This chapter also provides detailed information on new or changed commands in the /carm/casp spare level.

The following table alphabetically lists the commands available at the /carm/casp spare level.

Table 13-1

Command
showsigfault

Description

The /carm/casp spare/ directory provides access to carrier sparing commands.

How to access the /carm/casp spare level

Access the /carm/casp spare level from the dshell environment:

```
dSH:7> cd /carm/casp spare
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /carm/casp spare level.

Figure 13-1 Example of a MAP display of the /carm/caspere level

```
dSH:7> cd /carm/caspere
dSH:7> ls
showsigfault*
dSH:7>
```

showsigfault

Type

The showsigfault command is a menu listed command.

Target

The command target for the showsigfault command is ALL.

Description

The showsigfault command shows the signal failure (SF) and signal degrade (SD) occurrences on an STS3L.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The showsigfault command was first recorded in the SP15 release.

Limitations and restrictions

The showsigfault command has no limits or restrictions.

Syntax

The showsigfault command syntax is as follows:

```
dSH:7> showsigfault [-h]
```

The following table describes the parameters and variables of the showsigfault command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command description.

Example

The following table provides an example of the showsigfault command.

Command example (Sheet 1 of 2)

Command:	dSH:7> showsigfault
Description of task:	Show the SF and SD faults on the STS3L carriers.

showsigfault (end)

Command example (Sheet 2 of 2)

MAP response:	WORK STS3L: No signal fault PROT STS3L: No signal fault
Explanation:	The STS3L carriers have no signal faults.

Responses

The following table explains possible responses to the showsigfault command.

MAP responses with associated meanings and actions

Command:	dSH:7> showsigfault
MAP response:	WORK STS3L: No signal fault PROT STS3L: SF
Meaning:	The local common equipment module (CEM) detects signal failure on the protection STS3L.
Actions:	SF can be an indication of a OC3 hardware fault, a misrouted OC3 fiber, or a disconnected OC3 fiber. To test an OC3 resource module refer to the <i>Trouble and Locating Procedures</i> . If it is not a hardware fault or related to the OC3 fiber, contact your next level of support.

14 /ddmdump level commands

This chapter provides an overview of the /ddmdump level. This chapter also provides detailed information on new or changed commands in the /ddmdump level.

The following table alphabetically lists the commands available at the /ddmdump level.

Table 14-1

Command
list

Description

The /ddmdump directory provides access to commands related to the Data Download Manager (DDM). The DDM controls the download of table control information from the core to Peripheral Modules (PM).

How to access the /ddmdump level

Access the /ddmdump level from the Spectrum Peripheral Module (SPM) debug environment:

```
dSH:7> cd /ddmdump
```

Note: For information about how to access the SPM debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /ddmdump level.

Figure 14-1 Example of a MAP display of the /ddmdump level

```
dSH:7> cd /ddmdump
dSH:7> ls
list*
dSH:7>
```

Type

The list command is a menu unlisted command.

Target

The command target for the list command is ALL.

Description

The list command prints information related to the Data Download Manager (DDM). This information is for Nortel Networks software development personnel.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The list command is new for the SP15 release.

Limitations and restrictions

The list command has no limits or restrictions.

Syntax

The list command syntax is as follows:

```
dSH:7> list
```

The list command does not accept parameters.

Example

The following table provides an example of the list command.

Command example (Sheet 1 of 2)

Command:	dSH:7> list
Description of task:	Print information about table control information downloaded to the Spectrum Peripheral Module (SPM) by the DDM.

list (end)

Command example (Sheet 2 of 2)

MAP response:	<pre> Table id Sequence Number Single Sequence Number Table ===== ===== 22 0 0 Y Table Targets, Note that the nil target is: #00CEACC0 Add Tuple: #00C6D510 Mod Tuple: #00CEACC0 Del Tuple: #00C6D614 Reset Table #00C6D4A0 Table Present: #00C6D69C Audit Receive: #00C6D694 OM Report: #00CEACC0 Query Data: #00CEACC0 Delta Update: #00CEACC0 Audit Checksum: #00CEACC0 *** Pool Data *** Pool Name: 0012 numBufs: 64 bufferSize: 2048 poolHeadLength: 40 freeBuffers: 64 ** End of Pool Data ** </pre>
Explanation:	This information is for Nortel Networks software development personnel.

Responses

The list command has no other response.

15 /footprint level commands

This chapter provides an overview of the /footprint level. This chapter also provides detailed information on new or changed commands in the /footprint level.

The following table alphabetically lists the commands available at the /footprint level.

Table 15-1

Command
display
listbuf
listevent
unlock

Description

The log buffers in the /footprint directory collect data when severe problems occur.

How to access the /footprint level

Access the /footprint level from the dshell environment:

```
dSH:7> cd /footprint
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlgout
```

MAP display

The following figure shows an example of the MAP display of the /footprint level.

Figure 15-1 Example of a MAP display of the /footprint level

```
dSH:7> cd /footprint
dSH:7> ls
display*          listbuf*          listevent*        unlock*
```

display**Type**

The display command is a menu listed command.

Target

The command target for the display command is ALL.

Description

The display command prints log reports to the MAP terminal display.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The display command was first recorded in the SP14 release.

Limitations and restrictions

Values for <start_num> and <stop_num> are between 1 and 1000 even though the command help reports 0 to 1000.

Syntax

The display command syntax is as follows:

```
dSH:7> display [-h] <buffer_name> [<class_name>
                    [<start_num> {<stop_num>}]]
```

The following table describes the parameters and variables of the display command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<buffer_name>	string	This parameter is the name of the log buffer that contains the log reports that the user wants to display. Use the listbuf command to get a list of log buffers.

display (continued)

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
<class_name>	string	This optional parameter is the name of the log type that the user wants to display. Use the listevent command to list the log types.
<start_num>	numeric	This optional parameter is a number between 1 and 1000 that determines which log in the buffer to display first.
<stop_num>	numeric	This optional parameter is a number between 1 and 1000 that determines the last log in the buffer to display.

Example

The following table provides an example of the display command.

Command example

Command:	dSH:7> display active swct 1 10
Description of task:	Display the first ten SWCT log reports in the active log buffer.
MAP response:	<pre> SWCT305 System Swact Info APR-12 09:00:22.025 Event: Hardware autonomous activity drop Source file name: /clearcase/VOBS/SPM/SW/CemMtc/Swact/src/SwactActHdl.cc Source line number: 1898 Func# Name C Imp DegL MateDegL ----- 1 DSync N 7 Crtcl NoDeg 3 CLA N 7 NoDeg NoDeg </pre>
Explanation:	The first ten SWCT log reports are printed. If there are fewer than ten SWCT log reports, the SPM shows as many as it has.

display (end)

Responses

The following table explains possible responses to the display command.

MAP responses with associated meanings and actions

Command:	dSH:7> display hold1 spm
MAP response:	No records
Meaning:	The hold1 log buffer does not contain SPM log reports.
Actions:	No action is required.

listbuf

Type

The listbuf command is a menu listed command.

Target

The command target for the listbuf command is ALL.

Description

The listbuf command displays all the log buffer names.

Note: Different resource modules contain different log buffers.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The listbuf command was first recorded in the SP14 release.

Limitations and restrictions

The listbuf command has no limits or restrictions.

Syntax

The listbuf command syntax is as follows:

```
dSH:7> listbuf [-h]
```

The following table describes the parameters and variables of the listbuf command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

listbuf (end)**Example**

The following table provides an example of the listbuf command.

Command example

Command:	dSH:7> listbuf
Description of task:	Display all the log buffer names in the /footprint directory.
MAP response:	<pre> Buffer Descriptor First Entry Last Entry ===== ACTIVE ADDR=07fe9310 SIZE=4000 WORDS APR-12 09:00 ???-00 00:00 HOLD1 ADDR=07feb27c SIZE=4000 WORDS ???-00 00:00 ???-00 00:00 HOLD2 ADDR=07fed1e8 SIZE=4000 WORDS ???-00 00:00 ???-00 00:00 </pre>
Explanation:	The listbuf command listed all the log buffers.

Responses

The listbuf command does not have meaningful error responses.

listevent

Type

The listevent command is a menu listed command.

Target

The command target for the listevent command is ALL.

Description

The listevent command shows the type of log reports available in the indicated /footprint log buffers.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The listevent command was first recorded in the SP14 release.

Limitations and restrictions

The listevent command has no limits or restrictions.

Syntax

The listevent command syntax is as follows:

```
dSH:7> listevent [-h]
```

The following table describes the parameters and variables of the listevent command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

listevent (end)**Example**

The following table provides an example of the listevent command.

Command example

Command:	dSH:7> listevent
Description of task:	Display the types of log reports in the /footprint log buffers.
MAP response:	<pre> CLK DLLF FTU HFLT HLK HSTH INTH ITM MODH MSPH NODE OEMF OS PTCH SLK SLKH SLM SNLF SPM SWCT TRAP </pre>
Explanation:	The log buffers in the /footprint directory contain the log types listed above.

Responses

The following table explains possible responses to the listevent command.

MAP responses with associated meanings and actions

Command:	dSH:7> listevent active
MAP response:	<pre> Input is wrong, check the command usage LISTEVENT: list all the footprint event class names Usage: LISTEVENT [-h] </pre>
Meaning:	The listevent command in the /footprint directory lists all the log types available in all the log buffers in the /footprint directory.
Actions:	Use the listevent command without any any parameters.

unlock

Type

The unlock command is a menu listed command.

Target

The command target for the unlock command is ALL.

Description

The unlock command unlocks the locked buffer and allows the display command to show the contents of the locked buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The unlock command was first recorded in the SP14 release.

Limitations and restrictions

The unlock command has not limitations or restrictions.

Syntax

The unlock command syntax is as follows:

```
dSH:7> unlock [-h]
```

The following table describes the parameters and variables of the unlock command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

unlock (end)

Example

The following table provides an example of the unlock command.

Command example

Command:	dSH:7> unlock
Description of task:	Unlock the locked log buffer in the /footprint directory.
MAP response:	Done
Explanation:	The locked buffer is unlocked and available for display.

Responses

The following table explains possible responses to the unlock command.

MAP responses with associated meanings and actions

Command:	dSH:7> unlock active
MAP response:	Input is wrong, check the command usage UNLOCK: unlock the locked buffer Usage: UNLOCK [-h]
Meaning:	The unlock command only unlocks the locked buffer.
Actions:	Use the unlock command without any parameters to unlock the locked log buffer.

16 /ilmtest level commands

This chapter provides an overview of the /ilmtest level. This chapter also provides detailed information on new or changed commands in the /ilmtest level.

The following table alphabetically lists the commands available at the /ilmtest level.

Table 16-1 (Sheet 1 of 2)

Command
activity
changetimeout
clearall
dispall
dispalladdr
disptimeout
dlkc
dlks
dmc
dms
dvc
dvs
linkaddr
lkc
lks

Table 16-1 (Sheet 2 of 2)

Command
mc
mchaddr
ms
quit
readme
setdebugflag
setincflag
structsizes
testlog
vc
vchaddr
vs

Description

The /ilmtest directory contains commands related to Integrated Link Maintenance (ILM). These commands are largely useful to Nortel Networks software development groups, but the following list provides useful groups of commands.

- **activity**

This command indicates if the local Common Equipment Module (CEM) is the active or inactive CEM.

- **lks, dlks, lkc, dlkc**

In this order, these commands provide information about link status and configuration information. These links are the DS-512 links between the CEM and the Enhanced Network (ENET).

- **ms, dms, mc, dmc**

In this order, these commands provide information about message channel status and configuration information. The **dms** command provides information about five message channels. The first four are the message channels on the DS-512 links between the CEM and ENET. The fifth message channel is the message channel between the CEM and the mate CEM.

- **vs, dvs, vc, dvc**

In this order, these commands provide information about virtual channel status and configuration information. These commands also provide information about the messaging between the CEM and mate CEM like the message channel commands.

- **linkaddr, mchaddr, vchaddr, dispalladdr**

The first three commands retrieve link, message channel, and virtual channel address information into the local buffer. The **dispalladdr** command displays the address information from the local buffer.

How to access the /ilmttest level

Access the /ilmttest level from the dshell environment:

```
dSH:7> cd /ilmttest
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /ilmttest level.

Figure 16-1 Example of a MAP display of the /ilmtest level

```
dSH:8> cd /ilmtest
dSH:8> ls
activity*          changetimeout*    clearall*         dispall*
dispalladdr*      disptimeout*     dlkc*             dlks*
dmc*              dms*             dvc*              dvs*
linkaddr*         lkc*             lks*              mc*
mchaddr*          ms*              quit*             readme*
setdebugflag*    setincflag*      structsizes*     testlog*
vc*               vchaddr*         vs*
```

dSH:8>

activity

Type

The activity command is a menu unlisted command.

Target

The command target for the activity command is ALL.

Description

The activity command indicates if the current node is the active Common Equipment Module (CEM).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The activity command is new for the SP15 release.

Limitations and restrictions

The activity command is available only for the CEM.

Syntax

The activity command syntax is as follows:

```
dSH:7> activity [-h]
```

The following table describes the parameters and variables of the activity command.

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

activity (end)

Example

The following table provides an example of the activity command.

Command example

Command:	dSH:7> activity
Description of task:	Indicate if this is the active CEM.
MAP response:	This IS the active CEM
Explanation:	The command prompt indicates the the current node is in slot 7. The CEM in slot 7 is the active CEM.

Responses

The following table explains possible responses to the activity command.

MAP responses with associated meanings and actions

Command:	dSH:7> activity
MAP response:	This IS NOT the active CEM
Meaning:	The CEM in slot 7 is not the active CEM.
Actions:	To check that the CEM in slot 8 is active, enter the following command remlogin -s8 to access the other CEM. Then enter /ilmttest/activity to determine if the CEM in slot 8 is the active CEM.

changetimeout

Type

The changetimeout command is a menu unlisted command.

Target

The command target for the changetimeout command is ALL.

Description

The changetimeout command changes the allowable interval for a reply from ObjectTime (OT) objects about Integrated Link Maintenance (ILM).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The changetimeout command is new for the SP15 release.

Limitations and restrictions

The changetimeout command has no limits or restrictions.

Syntax

The changetimeout command syntax is as follows:

```
dSH:7> changetimeout <# seconds>
```

The following table describes the parameters and variables of the changetimeout command.

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<# seconds>	integer	This parameter indicates an interval in seconds. This parameter controls how long the commands in the /ilmtest directory wait for a response from ObjecTime software objects. The limit is 60 seconds.

changetimeout (end)

Example

The following table provides an example of the changetimeout command.

Command example

Command:	dSH:7> changetimeout 10
Description of task:	Change the timeout interval to 10 seconds.
MAP response:	
Explanation:	The command does not indicate the change in interval. Use the disptimeout command to verify the interval change.

Responses

The following table explains possible responses to the changetimeout command.

MAP responses with associated meanings and actions

Command:	dSH:7> changetimeout ten
MAP response:	Invalid entry. Syntax: changetimeout <# seconds>
Meaning:	The changetimeout takes an integer argument.
Actions:	Use an integer value to change the timeout interval.

clearall

Type

The clearall (clear all) command is a menu unlisted command.

Target

The command target for the clearall command is ALL.

Description

The clearall command deletes information in the local buffer without displaying the information.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The clearall command is new for the SP15 release.

Limitations and restrictions

The clearall command has no limits or restrictions.

Syntax

The clearall command syntax is as follows:

```
dSH:7> clearall
```

The clearall command does not accept any parameters.

Example

The following table provides an example of the clearall command.

Command example

Command:	dSH:7> clearall
Description of task:	Delete retrieved information about Integrated Link Maintenance (ILM) without displaying it.
MAP response:	
Explanation:	The clearall command does not provide any status indication.

Responses

The clearall command has no other response.

dispalladdr

Type

The dispalladdr (display all addresses) command is a menu unlisted command.

Target

The command target for the dispalladdr command is ALL.

Description

The dispalladdr command displays memory address information stored in a local buffer. Memory address information is retrieved and stored in the local buffer with the **linkaddr**, **mchaddr**, or **vhaddr** commands.

The dispalladdr command does not function.

dispall

Type

The dispall (display all) command is a menu unlisted command.

Target

The command target for the dispall command is ALL.

Description

The dispall command displays all configuration, status, and memory address information from the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dispall command is new for the SP15 release.

Limitations and restrictions

The dispall command has no limits or restrictions.

Syntax

The dispall command syntax is as follows:

```
dSH:7> dispall
```

The dispall command does not accept any parameters.

Example

The following table provides an example of the dispall command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dispall
Description of task:	Display information about configuration, status, and memory address from the local buffer.

dispall (end)

Command example (Sheet 2 of 2)

MAP response:	No MCH status info to display. No MCH config info to display. No VCH status info to display. No VCH config info to display. No link status info to display. No link config info to display. No address info to display.
----------------------	---

Explanation:	There is no information in the local buffer.
---------------------	--

Responses

The dispall command has no other response.

disptimeout

Type

The disptimeout (display timeout) command is a menu unlisted command.

Target

The command target for the disptimeout command is ALL.

Description

The disptimeout command prints the timeout interval. The timeout interval is set with the **changetimeout** command.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The disptimeout command is new for the SP15 release.

Limitations and restrictions

The disptimeout command has no limits or restrictions.

Syntax

The disptimeout command syntax is as follows:

```
dSH:7> disptimeout
```

The disptimeout command does not accept parameters.

Example

The following table provides an example of the disptimeout command.

Command example

Command:	dSH:7> disptimeout
Description of task:	Print the current timeout interval.
MAP response:	Current timeout set at 4 seconds.
Explanation:	The interval for requests is set at 4 seconds.

Responses

The disptimeout command has no other response.

dlkc

Type

The dlkc (display link configuration) command is a menu unlisted command.

Target

The command target for the dlkc command is ALL.

Description

The dlkc displays link configuration information from the local buffer. Use the **lkc** command to retrieve link information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dlkc command is new for the SP15 release.

Limitations and restrictions

The dlkc command has no limits or restrictions.

Syntax

The dlkc command syntax is as follows:

```
dSH:7> dlkc
```

The dlkc command does not accept parameters.

Example

The following table provides an example of the dlkc command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dlkc
Description of task:	Display the link configuration information in the local buffer.

dlkc (end)**Command example (Sheet 2 of 2)**

MAP response:	<pre>LINK CONFIGURATION DATA: linkid: 0 1 myPortId: 0 2 matePortId: 1 1 myAcid: 15 1 vchids: 16 0 num of links: 8 num of link users: 1 iAmResetSrc: F hw config data: 02 3ele b802 3ele a000 f749 4407 eea9 4000 0000 02</pre>
Explanation:	<p>The link key is 0. The link index is 1. The port key is 0. The port index is 2. The mate port key is 1. The mate port index is 1. The link access id key is 15. The link access id index is 1. The virtual channel id key is 16. The virtual channel index is 0. There are 8 links available to Integrated Link Maintenance (ILM). There is 1 link user. For each link user, there is an entry for a virtual channel id. This Common Equipment Module (CEM) is not the reset source. The hardware configuration data is a hexadecimal dump that is unique to each CEM.</p>

Responses

The following table explains possible responses to the dlkc command.

MAP responses with associated meanings and actions

Command:	dSH:7> dlkc
MAP response:	No link config info to display.
Meaning:	There is no link configuration information in the local buffer.
Actions:	Use the lkc command to retrieve link configuration information into the local buffer.

dlks

Type

The dlks (display link status) command is a menu unlisted command.

Target

The command target for the dlks command is ALL.

Description

The dlks command displays link status information from the local buffer. This command also deletes that information from the local buffer. Use the **lks** command to retrieve link status information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dlks command is new for the SP15 release.

Limitations and restrictions

The dlks command output is formatted incorrectly.

Syntax

The dlks command syntax is as follows:

```
dSH:7> dlks
```

The dlks command does not accept parameters.

Example

The following table provides an example of the dlks command.

Command example

Command:	dSH:7> dlks
Description of task:	Display the link status information in the local buffer.
MAP response:	See the following figure for an example of the dlks output.
Explanation:	Explanation follows in the figure.

dlks (continued)

LINK STATUS DATA:

		status							mateStatus							cenRR		
		H	N				mtc	acc				rec	mtc	acc	-----			
ctrlr	P	T	rec	prob	act	RR	ess	AV	vry	prob	act	RR	ess	my	mate	eqp		
linkid	AV	vry	prob	act	RR	ess	AV	vry	prob	act	RR	ess	my	mate	eqp			
state	T	R	-----															
0	0	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
1	0	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
0	1	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
1	1	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
0	2	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
1	2	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
0	3	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																
1	3	AV	SYS	NO	PROB	F	T	T	AV	SYS	NO	PROB	F	T	T	T	T	
IDLE	F	0																

Each entry begins with two digits. The following list describes each field and possible values.

- linkid

The two digits represent the link identifier. The link identifier is composed of the link key and link index.

- The following fields are available for the current Common Equipment Module (CEM) and the mate CEM.

- AV

Two characters indicate the availability. Possible values are available (AV), unreliable available (UR), not available (NA).

- rec
vry

Three characters indicate the recovery status. Possible values are offline (OFF), system (SYS), and controller (CTL). SYS does not indicate System Busy (SYSB).

- prob

dlks (continued)

A character string indicates the problem status. Possible values are no problem (NO PROB), non critical (NON CRI), and critical (CRITICL).

— mtc
act

Maintenance activity is indicated as active (T) or inactive (F).

— RR

Required resource is indicated as true (T) or false (F).

— acc
ess

The accessibility of the link is indicated as true (T) or false (F).

- cenRR

Central required resource is indicated for this CEM and the mate CEM. Possible values are true (T) and false (F).

- eqp

The equipped status of the link is indicated as true (T) or false (F).

- state

This field indicates the state of the controller. Possible values are idle (IDLE), wait (WAIT), master (MASTR), slave (SLAVE), self (SELF), and unequipped (UNEQP).

- H
P
T

This field indicates if a High Priority Task (HPT) is running. Possible values are true (T) or false (F).

- N
T
R

This field indicates the Number of Tasks Running (NTR).

Responses

The following table explains possible responses to the dlks command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> dlks
MAP response:	No link status info to display.

dlks (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	There is no link status information in the local buffer.
Actions:	Use the lks command to retrieve link status information into the local buffer.

dmc

Type

The dmc (display message channel configuration) command is a menu unlisted command.

Target

The command target for the dmc command is ALL.

Description

The dmc command displays information about message channels from the local buffer. This command also deletes message channel information from the local buffer after it displays the information. Use the **mc** command to retrieve message channel configuration information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dmc command is new for the SP15 release.

Limitations and restrictions

The dmc command has no limits or restrictions.

Syntax

The dmc command syntax is as follows:

```
dSH:7> dmc
```

The dmc command does not accept parameters.

Example

The following table provides an example of the dmc command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dmc
Description of task:	Display the message channel configuration in the local buffer.

Command example (Sheet 2 of 2)

MAP response:	<pre> MCH CONFIGURATION DATA: mchid: 15 0 myAcid: 15 0 64 num of mchs: 5 myHwID: owner: 26 clientinfo: 0154 53 distance from MS: mine 1 mate 2 imc: F iAmResetSrc: F userNickname: NIL hw config data: 00 0000 0000 0000 0000 0000 0000 0000 0000 0000 00 </pre>
Explanation:	See the following list for an explanation of the fields.

The following list describe each of the fields in the display.

- **mchid**
The message channel identifier is composed of a key and index. In the example above, the key is 15 and the index is 0.
- **myAcid**
The access identifier is composed of a key, index, and channel. In the example above, the key is 15, the index is 0, and the channel is 64.
- **num of mchs**
The number of message channels is indicated by an integer value. In the example above, there are 5 message channels.
- **myHwID**
The hardware identifier is refined by subfields owner and clientinfo.
 - **owner**
The hardware identifier owner is indicated by an integer value. In the example above, the hardware identifier owner is 26.
 - **clientinfo**
The hardware identifier client information is composed of hexadecimal byte values. In the example above, the client information bytes are 01, 54, and 53.
- **distance from MS**

dmc (end)

This field is refined by subfields mine and mate.

— mine

This integer value indicates the distance from the Message Switch (MS). The value is 1 or 255. A value of 255 indicates that this message channel is used for Intermodule Communication (IMC).

— mate

This integer value indicates the distance from the Message Switch (MS). The value is 2 or 255. A value of 255 indicates that this message channel is used for Intermodule Communication (IMC).

- imc

The IMC flag is set to true (T) or false (F) to indicate if the message channel is used for IMC.

- iAmResetSrc

This field indicates if this end of the message channel initiates a reset. The possible values are true (T) or false (F).

- userNickname

This field always has a nil (NIL) value.

- hw config data

This field shows 20 hexadecimal bytes that indicate the hardware configuration data.

Responses

The following table explains possible responses to the dmc command.

MAP responses with associated meanings and actions

Command:	dSH:7> dmc
MAP response:	No MCH config info to display.
Meaning:	There is no message channel configuration information in the local buffer.
Actions:	Use the mc command to retrieve message channel configuration information into the local buffer.

dms

Type

The dms (display message channel status) command is a menu unlisted command.

Target

The command target for the dms command is ALL.

Description

The dms command displays message channel status information from the local buffer. After displaying the information, the message channel status information is cleared from the local buffer. Use the **ms** command to retrieve message channel status information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dms command is new for the SP15 release.

Limitations and restrictions

The dms command has no limits or restrictions.

Syntax

The dms command syntax is as follows:

```
dSH:7> dms
```

The dms command does not accept arguments.

Example

The following table provides an example of the dms command.

Command example

Command:	dSH:7> dms
Description of task:	Display message channel status information from the local buffer.
MAP response:	The following figure shows the MAP response.
Explanation:	The explanation follows the figure.

dms (continued)

```

MCH STATUS DATA:

```

mch	avail	recov	prob	my		mate		mch	vch	cenRR		ctrlr	state	H P T	
				RR	RR	avail	cond			avail	my				mate
34	0	AV	SYS	NO	PROB	T	T	AV	OPEN	AV	T	T	T	IDLE	F
35	0	AV	SYS	NO	PROB	T	T	AV	OPEN	AV	T	T	T	IDLE	F
35	2	AV	SYS	NO	PROB	T	T	AV	OPEN	AV	T	T	T	IDLE	F
34	2	AV	SYS	NO	PROB	T	T	AV	OPEN	AV	T	T	T	IDLE	F
33	0	AV	SYS	NO	PROB	T	T	AV	OPEN	AV	T	T	T	IDLE	F

The following list explains each field in the figure above.

- **mch**
The message channel is composed of the key and index. The key and index are integer values. In the above example, the first entry has a key of 34 and an index of 0.
- **avail**
The availability of the message channel is indicated by two characters. The possible values are available (AV), available unreliable (UR), and not available (NA). In the above example, the first entry has an availability of AV.
- **recov**
The recovery indicates the source of message channel recovery. Possible values are offline (OFF), system (SYS), and controller (CTL). SYS does not mean System Busy (SYSB).
- **prob**
The problem field indicates the status of the message channel. Possible values are no problem (NO PROB), non critical (NON CRIT), and critical (CRITICAL).
- **my
RR**
Field my required resource (RR) indicates if the message channel is required. Possible values are true (T) or false (F).
- **mate**

dms (continued)

This field is composed of subfields mate RR and mate avail.

— mate
RR

This field indicates if the message channel to the mate Common Equipment Module (CEM) is a required resource (RR). Possible values are true (T) or false (F).

— mate
avail

This field indicates the availability of the message channel to the mate CEM. Possible values are available (AV), available unreliable (UR), and not available (NA).

- mch
cond

The message channel condition is indicated by a character string. Possible values are open (OPEN) or closed (CLOSE).

- vch
avail

The virtual channel availability is indicated by two characters. Possible values are available (AV), available unreliable (UR), and not available (NA).

- cenRR

Central required resource has subfields my and mate. Each subfield indicates true (T) or false (F).

- equip

This field indicates if Integrated Link Maintenance (ILM) detects hardware in the slot. Possible values are occupied (T) or unoccupied (F).

- ctrlr
state

The controller state field indicates the state of the ILM controller. Possible values are idle (IDLE), wait (WAIT), master (MASTR), slave (SLAVE), self (SELF), and unequipped (UNEQP).

- H
P
T

dms (end)

This field indicates if a high priority task is running on the message channel. Possible values are true (T) or false (F).

- N
T
R

This field indicates the number of tasks running on the message channel. The value is an integer.

Note: This field is not shown in the above example due to space constraints.

Responses

The following table explains possible responses to the dms command.

MAP responses with associated meanings and actions

Command:	dSH:7> dms
MAP response:	No MCH status info to display.
Meaning:	There is no message channel status information in the local buffer.
Actions:	Use the ms command to retrieve message channel status information into the local buffer.

dvc**Type**

The dvc (display virtual channel configuration) command is a menu unlisted command.

Target

The command target for the dvc command is ALL.

Description

The dvc command displays information about virtual channel configurations from the local buffer. After the command displays the information, it deletes the virtual channel configuration information from the local buffer. Use the **vc** command to retrieve virtual channel configuration information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dvc command is new for the SP15 release.

Limitations and restrictions

The dvc command has no limits or restrictions.

Syntax

The dvc command syntax is as follows:

```
dSH:7> dvc
```

The dvc command does not accept arguments.

Example

The following table provides an example of the dvc command.

Command example

Command:	dSH:7> dvc
Description of task:	Display virtual channel configuration information from the local buffer.
MAP response:	See the following figure for a MAP response to the dvc command.
Explanation:	An explanation follows the figure.

dvc (continued)

```

VCH CONFIGURATION DATA:
vchid: 34 0  myAcid: 7 176 118
myEpt: 2  num of elements: 3
  elemId  elem  elem  ----- acid1 -----  ----- acid2 -----
  key index avail  type  key index channel  key index channel
-----
         AV  NON    7 176  118    5  2  118
40      AV  CONN   5  2  118    5 84  64
10     0  AV  LINK   5 84  64    23 0  64

```

The following list explains the fields in the figure above.

- vchid
This field indicates the virtual channel identifier. It is composed of the key and index. In the example above, the key is 34 and index is 0.
- myAcid
This field indicates the access identifier. It is composed of a key, index, and channel. In the example above, the key is 7, the index is 176, and the channel is 118.
- myEpt
This field indicates the endpoint for the virtual channel. It is an integer value. In the example above, the value is 2.
- num of elements
This field indicates the number of elements represented by the virtual channel. It is an integer value. In the example above, the value is 3.
- elemId
The element identifier has subfields key and index. Key and index are integer values.
- elem avail
Element availability is indicated with two characters. Possible values are available (AV), available unreliable (UR), and not available (NA).
- elem type
Element type indicates the type the virtual channel represents. Possible values are nil (NIL), link (LINK), bus (BUS), connection (CONN), and non ILM link (NON). Elements of type NON do not have an element

dvc (end)

identifier key or index. Elements of type CONN have an element identifier key but not an index.

- acid1 and acid2

Access identifiers 1 and 2 have subfields key, index, and channel. Each subfield is an integer value.

Responses

The following table explains possible responses to the dvc command.

MAP responses with associated meanings and actions

Command:	dSH:7> dvc
MAP response:	No VCH config info to display.
Meaning:	There is no virtual channel configuration information in the local buffer.
Actions:	Use the vc command to retrieve virtual channel configuration information into the local buffer.

dvs

Type

The dvs (display virtual channel status) command is a menu unlisted command.

Target

The command target for the dvs command is ALL.

Description

The dvs command displays virtual channel status information from the local buffer. After the command displays the information, the virtual channel status information is deleted from the local buffer. Use the **vs** command to retrieve virtual channel status information into the local buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dvs command is new for the SP15 release.

Limitations and restrictions

The dvs command has no limits or restrictions.

Syntax

The dvs command syntax is as follows:

```
dSH:7> dvs
```

The dvs command does not accept arguments.

Example

The following table provides an example of the dvs command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dvs
Description of task:	Display virtual channel status information from the local buffer.

Command example (Sheet 2 of 2)

MAP response:	VCH STATUS DATA:
	VCH avail equipped numTasks

	34 0 AV T 0
	35 0 AV T 0
	35 2 AV T 0
	34 2 AV T 0
	33 0 AV T 0
Explanation:	<ul style="list-style-type: none"> • VCH indicates the key and index of the virtual channels. The key and index for the first entry are 34 and 0. • The availability is indicated by two characters. Possible values are available (AV), available unreliable (UR), and not available (NA). All the virtual channels in the example above are AV. • equipped indicates if Integrated Link Maintenance (ILM) detects a Common Equipment Module (CEM) in the slot. Possible values are true (T) or false (F). • numTasks is an integer value that indicates the number of tasks using the virtual channel

Responses

The following table explains possible responses to the dvs command.

MAP responses with associated meanings and actions

Command:	dSH:7> dvs
MAP response:	No VCH status info to display.
Meaning:	There is no virtual channel status information in the local buffer.
Actions:	Use the vs command to retrieve virtual channel status information into the local buffer.

linkaddr

Type

The linkaddr (link address) command is a menu unlisted command.

Target

The command target for the linkaddr command is ALL.

Description

The linkaddr command retrieve link address information into the local buffer. Use the **dispalladdr** command to display this information.

The linkaddr command does not function.

Type

The lkc (link configuration) command is a menu unlisted command.

Target

The command target for the lkc command is ALL.

Description

The lkc command retrieves link configuration information into the local buffer. Use the lkc command multiple times to retrieve information about multiple links before using the **dlkc** command to view the link configuration information. Use the **lks** and **dlks** commands to determine the link key and index arguments to the lkc command.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The lkc command is new for the SP15 release.

Limitations and restrictions

The following limitations and restrictions apply to the lkc command:

- The command checks for an argument count less than two. If more than two arguments are passed, it ignores all but the first two arguments.
- the command attempts to retrieve information for any two integer values even if the two values do not point to a link key and index

Note: See “Responses” in this section for more information about these limitations and restrictions.

Syntax

The lkc command syntax is as follows:

```
dSH:7> lkc <key> <index>
```

lkc (continued)

The following table describes the parameters and variables of the lkc command.

Parameters and variables	Value	Description
<key>	integer	This parameter indicates the link key.
<index>	integer	This parameter indicates the link index.
Note: See the lks and dlks commands for information about link key and index.		

Example

The following table provides an example of the lkc command.

Command example

Command:	dSH:7> lkc 0 0
Description of task:	Retrieve link configuration information about the link with a key of 0 and an index of 0.
MAP response:	This command does not generate a MAP response.
Explanation:	If a link with a key of 0 and an index of 0 is a valid link, the link configuration information is retrieved into the local buffer. If a link with a key of 0 and an index of 0 does not exist, the command performs no action.

Responses

The following table explains possible responses to the lkc command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> lkc 0 0 1 2 1 0 0 2
MAP response:	This command does not generate a MAP response.
Meaning:	This command uses only the first two parameters as the key and index arguments. All other parameters are ignored.
Actions:	Use only two arguments to the command.
Command:	dSH:7> lkc 1034 56663
MAP response:	This command does not generate a MAP response.

ikc (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	These values are not valid possible values for link key and index.
Actions:	Use the iks and dlks to determine the link key and index values.

lks

Type

The lks (link status) command is a menu unlisted command.

Target

The command target for the lks command is ALL.

Description

The lks command retrieves link status information into the local buffer. Use the **dlks** to display the link status information.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The lks command is new for the SP15 release.

Limitations and restrictions

The lks command has no limits or restrictions.

Syntax

The lks command syntax is as follows:

```
dSH:7> lks
```

The lks command does not accept arguments.

Example

The following table provides an example of the lks command.

Command example

Command:	dSH:7> lks
Description of task:	Retrieve the link status information into the local buffer.
MAP response:	Retrieving Link status information, use dlks to display.
Explanation:	The link status information is retrieved into the local buffer.

Responses

The lks command has no other response.

mchaddr

Type

The mchaddr (message channel address) command is a menu unlisted command.

Target

The command target for the mchaddr command is ALL.

Description

The mchaddr retrieves message channel address information into the localbuffer. Use the **dispalladdr** command to display this information.

The mchaddr command does not function.

mc

Type

The mc (message channel configuration) command is a menu unlisted command.

Target

The command target for the mc command is ALL.

Description

The mc command retrieve message channel configuration information into the local buffer. Use the mc command multiple times to retrieve information about multiple message channels before using the **dmc** command to view the message channel configuration information. Use the **ms** and **dms** commands to determine the message channel key and index arguments to the mc command.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The mc command is new for the SP15 release.

Limitations and restrictions

The following limits and restrictions apply to the mc command:

- The command checks for an argument count less than two. If more than two arguments are passed, it ignores all but the first two arguments.
- the command attempts to retrieve information for any two integer values even if the two values do not point to a message channel key and index

Syntax

The mc command syntax is as follows:

```
dSH:7> mc <key> <index>
```

mc (continued)

The following table describes the parameters and variables of the mc command.

Parameters and variables	Value	Description
<key>	integer	This parameter is the message channel key.
<index>	integer	This parameter is the message channel index.
Note: Use the ms and dms commands to determine the message channel key and index.		

Example

The following table provides an example of the mc command.

Command example

Command:	dSH:7> mc 15 0
Description of task:	Retrieve information about the message channel with a key of 15 and an index of 0.
MAP response:	This command does not generate a MAP response.
Explanation:	If a message channel with a key of 15 and an index of 0 is a valid message channel, the message channel configuration information is retrieved into the local buffer. If a message channel with a key of 15 and an index of 0 does not exist, the command performs no action.

Responses

The following table explains possible responses to the mc command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> mc 15 0 16 2 16 0 15 2
MAP response:	This command does not generate a MAP response.
Meaning:	This uses only the first two parameters as the key and index arguments. All other parameters are ignored.
Actions:	Use only two arguments to the command.
Command:	dSH:7> mc 1034 56663
MAP response:	This command does not generate a MAP response.

mc (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	These values are not valid possible values for message channel key and index.
Actions:	Use the ms and dms commands to determine the message channel key and index values.

Type

The ms (message channel status) command is a menu unlisted command.

Target

The command target for the ms command is ALL.

Description

The ms command retrieves message channel status information into the local buffer. Use the **dms** command to display the message channel status information.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The ms command is new for the SP15 release.

Limitations and restrictions

The ms command has no limits or restrictions.

Syntax

The ms command syntax is as follows:

```
dSH:7> ms
```

The ms command does not accept arguments.

Example

The following table provides an example of the ms command.

Command example

Command:	dSH:7> ms
Description of task:	Retrieve message channel status information into the local buffer.
MAP response:	Retrieving MCH status information use dms to display.
Explanation:	The message channel status information is retrieved into the local buffer. Use the dms command to display the information.

ms (end)

Responses

The ms command has no other response.

quit

Type

The quit command is a menu unlisted command.

Target

The command target for the quit command is ALL.

Description

The quit command exits the /ilmtest directory. It also displays a warning if the **setdebugflag** command or the **setincflag** is set. It is a dshell equivalent of the QUIT command available at the ILMDEBUG level of the CI.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The quit command is new for the SP15 release.

Limitations and restrictions

The quit command does not change directory out of the /ilmtest directory.

Syntax

The quit command syntax is as follows:

```
dSH:7> quit
```

The quit command does not accept any arguments.

Example

The following table provides an example of the quit command.

Command example

Command:	dSH:7> quit
Description of task:	Exit the ILMTEST environment.
MAP response:	* Warning * - ILMDEBUGON flag remains set * Warning * - ILMINCARNATEFLAG flag remains set
Explanation:	The command warns that the debug flag was set with the setdebugflag command and that the actor incarnate/deconstructor flag was set with the setincflag command.

quit (end)

Responses

The following table explains possible responses to the quit command.

MAP responses with associated meanings and actions

Command:	dSH:7> quit
MAP response:	No MAP response.
Meaning:	No flags were set and no action was taken. The previous working directory is still the current working directory. For example, if this command is entered from the /ilmtest directory, the user is still in the /ilmtest directory.
Actions:	No action is required.

readme

Type

The readme command is a menu unlisted command.

Target

The command target for the readme command is ALL.

Description

The readme command prints information about Integrated Link Maintenance (ILM).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The readme command is new for the SP15 release.

Limitations and restrictions

The readme command has no limits or restrictions.

Syntax

The readme command syntax is as follows:

```
dSH:7> readme
```

The readme command does not accept arguments.

Example

The following table provides an example of the readme command.

Command example (Sheet 1 of 2)

Command:	dSH:7> readme
Description of task:	Print information about ILM.

readme (end)

Command example (Sheet 2 of 2)

MAP response:	<pre>ILM debug AER ERRORBUF logs are turned off upon quit. Use the setdebugflag command to activate recording of these logs. Use the setincflag command to record actor incarnation/destruction. The timeout value set in command changetimeout includes time to send the request to Objectime and receive the reply (replies for status).</pre>
Explanation:	<p>ILM debug logs are not turned off after using the quit command. The logs are enabled with the setdebugflag command, but the quit command only warns that the debug flag is still set.</p>

Responses

The readme command has no other response.

setdebugflag

Type

The setdebugflag (set debug flag) command is a menu unlisted command.

Target

The command target for the setdebugflag command is ALL.

Description

The setdebugflag command controls the logging of ILM600 logs in the ILMBUFF. These logs are for information only and are available in the /aer directory. See the /aer directory in this book for more information on how to display logs from the local buffers.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The setdebugflag command is new for the SP15 release.

Limitations and restrictions

The setdebugflag command has no limits or restrictions.

Syntax

The setdebugflag command syntax is as follows:

```
dSH:7> setdebugflag <0 or 1>
```

The following table describes the parameters and variables of the setdebugflag command.

Parameters and variables	Value	Description
<0>	0	This integer value disables the debug flag.
<1>	1	This integer value enables the debug flag.

setdebugflag (end)

Example

The following table provides an example of the setdebugflag command.

Command example

Command:	dSH:7> setdebugflag 1
Description of task:	Enable the debug flag and transmit logs to the ILMBUFF in the /aer directory.
MAP response:	This command does not generate a MAP response.
Explanation:	The debug flag is set and log are transmitted to the ILMBUFF in the /aer directory.

Responses

The following table explains possible responses to the setdebugflag command.

MAP responses with associated meanings and actions

Command:	dSH:7> setdebugflag on
MAP response:	Invalid entry.
Meaning:	On is not a valid argument to the setdebugflag command.
Actions:	Use 0 or 1 to toggle the debug flag.

setincflag

Type

The setincflag (set actor incarnation flag) command is a menu unlisted command.

Target

The command target for the setincflag command is ALL.

Description

The setincflag command enables or disables the actor incarnation flag. This flag assists debugging when enabled by sending additional information to the ILMBUFF in the /aer directory. Refer to the /aer directory in this document for more information about displaying local log buffers.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The setincflag command is new for the SP15 release.

Limitations and restrictions

The setincflag command has no limits or restrictions.

Syntax

The setincflag command syntax is as follows:

```
dSH:7> setincflag <0 or 1>
```

The following table describes the parameters and variables of the setincflag command.

Parameters and variables	Value	Description
<0>	0	This integer value disables the actor incarnation flag.
<1>	1	This integer value enables the actor incarnation flag.

setincflag (end)

Example

The following table provides an example of the setincflag command.

Command example

Command:	dSH:7> setincflag 1
Description of task:	Enable the actor incarnation flag.
MAP response:	This command does not generate a MAP response.
Explanation:	The actor incarnation flag is set and assists in debugging by sending more information to the ILMBUFF in the /aer directory.

Responses

The following table explains possible responses to the setincflag command.

MAP responses with associated meanings and actions

Command:	dSH:7> setincflag on
MAP response:	Invalid entry. Syntax: setincflag <'0' or '1'>
Meaning:	On is not a valid argument to the setincflag command.
Actions:	Use 0 to disable the flag and 1 to enable the flag.

structsizes

Type

The structsizes (structure sizes) command is a menu unlisted command.

Target

The command target for the structsizes command is ALL.

Description

The structsizes command displays the size of Integrated Link Maintenance (ILM) test data structures. The values are the decimal number of bytes.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The structsizes command is new for SP15.

Limitations and restrictions

The structsizes command has no limits or restrictions.

Syntax

The structsizes command syntax is as follows:

```
dSH:7> structsizes
```

The structsizes command does not accept arguments.

Example

The following table provides an example of the structsizes command.

Command example (Sheet 1 of 2)

Command:	dSH:7> structsizes
Description of task:	Display the size of data structures associated with ILM.

structsizes (end)

Command example (Sheet 2 of 2)

```
MAP response:      sizeof IlmTestMchStatusData   = 056.
                   sizeof IlmTestMchConfigData   = 048.
                   sizeof IlmTestVchStatusData   = 012.
                   sizeof IlmTestLinkStatusData  = 072.
                   sizeof IlmTestLinkConfigData  = 060.
                   sizeof IlmTpsAddress          = 014.
                   ILM_TEST_BMS_BUFFER_BYTE_SIZE = 118.
                   MTS_MESSAGING_SYSTEM_HEADER_BYTE_SIZE = 026.
                   sizeof IlmTestRequestData     = 008.
                   sizeof IlmTestVchConfigData   = 084.
```

Explanation: Each data structure is named and the size of that data structure is indicated. The decimal value indicates the number of bytes each structure uses.

Responses

The structsizes command has no other response.

testlog**Type**

The testlog command is a menu unlisted command.

Target

The command target for the testlog command is ALL.

Description

This command tests the Integrated Link Manager (ILM) log system.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The testlog command is new for the SP15 release.

Limitations and restrictions

The testlog command only generates one type of error log.

Syntax

The testlog command syntax is as follows:

```
dSH:7> testlog <iData> <error type [0 = AER]>
```

The following table describes the parameters and variables of the testlog command.

Parameters and variables	Value	Description
<iData>	integer	This parameters indicates the log report number to generate. The only valid value is 600.
<error type>	integer	This parameter indicates which log system to send the error log. The only valid value is 0. This parameter indicates that error logs are sent to /aer log buffers. See the /aer section in this document for information on how to display logs from the ILMBUFF log buffer.

testlog (end)

Example

The following table provides an example of the testlog command.

Command example

Command:	dSH:7> testlog 600 0
Description of task:	Generate an ILM600 log report and transmit it to the ILMBUFF log buffer in the /aer directory.
MAP response:	This command does not generate a MAP response.
Explanation:	These are the only valid parameters to the testlog command. Use the /aer/display ILMBUFF command to display the logs in the ILMBUFF of the /aer log buffers.

Responses

The following table explains possible responses to the testlog command.

MAP responses with associated meanings and actions

Command:	dSH:7> testlog 500 0
MAP response:	No such class number.
Meaning:	Parameter 500 is not a valid log class number.
Actions:	Use the testlog command with 600 as the iData (class number) parameter.
Command:	dSH:7> testlog 600 1
MAP response:	No such error type.
Meaning:	Parameter 1 is not a valid error type.
Actions:	Use the testlog command with 0 as the error type to transmit the log to the /aer log buffers.

vchaddr

Type

The vchaddr (virtual channel address) command is a menu unlisted command.

Target

The command target for the vchaddr command is ALL.

Description

The vchaddr command retrieves virtual channel address information into the local buffer. Use the **dispalladdr** command to display this information.

The vchaddr command does not function.

vc

Type

The vc (virtual channel configuration) command is a menu unlisted command.

Target

The command target for the vc command is ALL.

Description

The vc command retrieves information about virtual channel configuration into the local buffer. Use the **dvc** command to show the virtual channel configuration information from the local buffer. Use the **vs** and **dvs** commands to determine the virtual channel identifier parameters to the vc command.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The vc command is new for the SP15 release.

Limitations and restrictions

The vc command has no limits or restrictions.

Syntax

The vc command syntax is as follows:

```
dSH:7> vc <key> <index>
```

The following table describes the parameters and variables of the vc command.

Parameters and variables	Value	Description
<key>	integer	This parameter indicates the virtual channel identifier key.
<index>	integer	This parameter indicates the virtual channel identifier index.

Note: Use the **vs** and **dvs** commands to determine the virtual channel identifier key and index.

Example

The following table provides an example of the `vc` command.

Command example

Command:	dSH:7> vc 34 0
Description of task:	Retrieve virtual channel configuration information for the virtual channel with a key of 34 and an index of 0.
MAP response:	This command does not generate a MAP response.
Explanation:	If 34 and 0 are valid identifiers for a virtual channel, then the <code>vc</code> command retrieves the configuration information into the local buffer. The <code>dvc</code> command displays this information. If 34 and 0 are not valid identifiers for a virtual channel, the command performs no action.

Responses

The `vc` command has no other response.

vs

Type

The vs (virtual channel status) command is a menu unlisted command.

Target

The command target for the vs command is ALL.

Description

The vs command retrieves virtual channel status information into the local buffer. Use the **dvs** command to display this information.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The vs command is new for the SP15 release.

Limitations and restrictions

The vs command has no limits or restrictions.

Syntax

The vs command syntax is as follows:

```
dSH:7> vs
```

The vs command does not accept arguments.

Example

The following table provides an example of the vs command.

Command example

Command:	dSH:7> vs
Description of task:	Retrieve virtual channel status information into the local buffer.
MAP response:	Retrieving VCH status information, use dvs to display.
Explanation:	The command stores the the virtual channel status information in the local buffer.

VS (end)

Responses

The vs command has no other response.

17 /inmci level commands

This chapter provides an overview of the /inmci level. This chapter also provides detailed information on new or changed commands in the /inmci level.

The following table alphabetically lists the commands available at the /inmci level.

Table 17-1

Command
dump
dumpflags

Description

The /inmci directory provides access to Integrated Node Maintenance (INM) information.

How to access the /inmci level

Access the /inmci level from the dshell environment:

```
dSH:7> cd /inmci
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /inmci level.

Figure 17-1 Example of a MAP display of the /inmci level

```
dSH:7> cd /inmci
dSH:7> ls
dump*                dumpflags*
dSH:7>
```

dumpflags

Type

The dumpflags command is a menu unlisted command.

Target

The command target for the dumpflags command is ALL.

Description

The dumpflags command prints information about the Integrated Node Maintenance (INM) system. The display shows boolean flags and timer values. This command is used by Nortel Networks software development personnel.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dumpflags command is new for SP15.

Limitations and restrictions

The dumpflags command has no limits or restrictions.

Syntax

The dumpflags command syntax is as follows:

```
dSH:7> dumpflags
```

The dumpflags command does not accept parameters.

Example

The following table provides an example of the dumpflags command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dumpflags
Description of task:	Display boolean flags and timer values.

dumpflags (end)

Command example (Sheet 2 of 2)

MAP response:	Node num: 0	Unit num: 0	ftsPc: 15
	Flag		0/1 Command
	====		=== =====
	InmFtsFlag	1	setFlag fts
	InmDdmFlag	1	setFlag ddm
	InmDdmDataSyncFlag[DDM_CONFIG]	1	setFlag ddm_config
	InmLabRestartFlag	1	setFlag restart
	CriticalFltFlag	0	setFlag criticalFlt
	NonCriticalFltFlag	0	setFlag nonCriticalFlt
	sysBRecoveryEnabled	1	setFlag sysbRecovery
	InmHandleCfltFlag	1	setFlag criticalFaults
	InmHandleHmiAbortFlag	1	setFlag hmiAbort
	InmHandleForceAbortFlag	1	setFlag forceAbort
	InmSendAbtkResponsesFlag	1	setFlag abtkResponses
	InmSendInactAnegoNackFlag	1	setFlag swactAnegoN
	InmSwactColdFlag	0	setFlag swactCold
	Timer	Value	Command
	=====	=====	=====
	RmmInitTimerInc	1000	setTimer rmmInit
	ilmTimerValue	120	setTimer ilm
	idmTimerValue	30	setTimer idm
	ddmTimerValue	60000	setTimer ddm
	ddmOosTimerValue	500	setTimer ddmOos
	sFtaTimerValue	3000	setTimer sFta
	inmFtsPcSchgTimerValue	6000	setTimer ftsPcSchg
	inmInternalAbortAckTimerValue	500	setTimer inter
	inmSysBRetryTimerValue	1500	setTimer sysbRetry
	inmLaQryResendTimerValue	8000	setTimer laQryRese
	inmQueryActWaitTimere	6000	setTimer queryActWait
	inmRmmMgrSysBWaitTimerValue	20	setTimer rmmmgrSy
	inmLaHandoffTimerValue	1000	setTimer laHandoff
	inmLaHandoffLoopTimerValue	2000	setTimer laHandof
	restartInformTimerValue	400	setTimer restartIn
	rstCtrlTimerValue	6000	setTimer restartCt
	inmSwactCompTimerValue	100	setTimer swactComp
	inmSchgCompTimerValue	200	setTimer schgComp
	inmTestCompTimerValue	200	setTimer testComp
	inmSwactInactiveLowerMipValue	100	setTimer swactMip
	Deactivated Rmms		killRmm
Explanation:	This information is for Nortel Networks software design personnel.		

Responses

The dumpflags command has no other response.

dump**Type**

The dump command is a menu unlisted command.

Target

The command target for the dump command is ALL.

Description

The dump command displays information from the Integrated Node Maintenance (INM) local access database.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The dump command is new for the SP15 release.

Limitations and restrictions

The dump command has no limits or restrictions.

Syntax

The dump command syntax is as follows:

```
dSH:7> dump [-h] {data/id/traits/activity}
```

The following table describes the parameters and variables of the dump command.

(Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This optional parameter prints the command syntax and parameters.
{data/id/traits/activity}	See subfields.	One of the following parameters is required.
	data	This parameter prints status data from the local access database.
	id	This parameter prints scoreboard data from the local access database.

dump (continued)

(Sheet 2 of 2)

Parameters and variables	Value	Description
	traits	This parameter prints trait data from the local access database.
	activity	This parameter prints maintenance activity from the local database.

Example

The following table provides an example of the dump command.

Command example

Command:	dSH:7> dump data
Description of task:	Display status data from the local access database.
MAP response:	<pre> INM Local DBase :***** : External state : INSV ACTIVE TRBL AVAIL No_MIP AFS : :***** : Auxiliary traits: No_SMA No_FullLOAD No_HalfLOAD : :***** : Internal state : INSV : :***** : DDM Base Data : DDM_AVAILABLE DDM Config Data : DDM_AVAILABLE DDM ServiceData : DDM_AVAILABLE FTS PC state : FTS_INSV : ? = INVALID : *****:***** </pre>
Explanation:	See the following list for an explanation of the MAP response.

dump (continued)

The following list describes each of the fields in the MAP response. This explanation is specific to the dump response with data as the parameter.

- External state

This field has the following subfields.

- State

The example shows this Common Equipment Module (CEM) as in service (INSV). Possible values are manual busy (MANB), system busy (SYSB), and offline (OFFL).

- Activity

The example shows this CEM as the active (ACTIVE) unit. The other response is inactive (INACTIVE).

- Trouble

The example shows this CEM as having trouble (TRBL). The other response is no trouble (No_TRBL).

- Availability

The example shows this CEM as being available (AVAIL). The other response is unavailable (UNAVAIL).

- Maintenance In Progress (MIP)

The example shows this CEM without MIP (No_MIP). The other response is MIP (MIP).

- Available For Service (AFS)

The example shows this CEM is AFS. The other response is Not_AFS.

- Auxiliary traits

This field has the following subfields.

- System Maintenance Activity (SMA)

The example show this CEM has no SMA (No_SMA).

- Fully loaded

The example shows this CEM is not fully loaded (No_FullLOAD).

- Half loaded

The example shows this CEM is not half loaded (No_HalfLOAD).

Note: The values above are the only values possible for a Spectrum Peripheral Module (SPM).

- Internal state

dump (continued)

The example shows this CEM is in service (INSV). Possible values are manual busy (MANB), system busy (SYSB), and offline (OFFL).

- DDM Base Data
DDM Config Data
DDM ServiceData

These fields indicate the status of the Data Download Manager (DDM). Possible values are DDM_AVAILABLE, DDM_UNAVAILABLE, DDM_DATA_SYNCING, and DDM_INITIALIZING.

- FTS PC state

This field indicates the Frame Transport System (FTS) Point Code (PC) state. Possible values are FTS_INSV, FTS communicating (FTS_COMM), FTS not communicating (FTS_NOCOMM), and FTS_OFFL.

- ? = INVALID

This field is available for future use by Nortel Networks software development personnel.

Responses

The following table explains possible responses to the dump command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> dump id		
MAP response:			
	INM Local DBase	: *****	
	Node Id	: 33	33 indicates the node is an SPM
		: 0 UNIT 0	SPM node and CEM number
		: *****	
	Version	: 2	INM protocol version
	Architecture	: inmWarmSparedArchitecture	
	Point Code	: 0xf	
	SREX Test Type	: 0x1e	
	Ca Info	: 0x7f0001	This field is a counter for the Core agent and is not related to carriers.
	Mate FTA - FMT	: 0x4	
	Mate FTA - SEG	: 0x24d	
	Mate FTA - SUBNET	: 0x1000	
		: *****	

dump (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The fields not identified in the MAP response above are for use by Nortel Networks software development personnel.
Actions:	No action is required.

18 /loadinfo level commands

This chapter provides an overview of the /loadinfo level. This chapter also provides detailed information on new or changed commands in the /loadinfo level.

The following table alphabetically lists the commands available at the /loadinfo level.

Table 18-1

Command
qcard
qload

Description

The /loadinfo directory provides information about software loads on a resource module (RM).

How to access the /loadinfo level

Access the /loadinfo level from the dshell environment:

```
dSH:7> cd /loadinfo
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /loadinfo level.

Figure 18-1 Example of a MAP display of the /loadinfo level

```
dSH:7> cd /loadinfo
dSH:7> ls
qcard*          qlload*
dSH:7>
```

qcard

Type

The qcard command is a menu unlisted command.

Target

The command target for the qcard command is ALL.

Description

The qcard command displays information from the Module Information Module (MIM) on the card. The MIM is Non Volatile Random Access Memory (NVRAM) that assists debugging cards returned to Nortel Networks.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The qcard command is new for the SP15 release.

Limitations and restrictions

The qcard command has no limits or restrictions.

Syntax

The qcard command syntax is as follows:

```
dSH:7> qcard
```

The qcard command does not accept any command arguments.

Example

The following table provides an example of the qcard command.

Command example (Sheet 1 of 2)

Command:	dSH:7> qcard
Description of task:	Display information about the card from the MIM.

qcard (continued)

Command example (Sheet 2 of 2)

```
MAP response:      Read MIM's manufacture data
                    Reading manufacture data ...
                    Mfg data read requested (request id:17FE)
                    formatRelease      : 01
                    pecCode             : NTLX82AA
                    productionRelease   : 04
                    dateOfManufacture   : Apr25/2000
                    serialNumber        : NNTM64K00VXK
                    cleiHuman           : ENPCNN0AAA
                    cleiMachine         : 245506
                    itmClockSpeed       : 32
                    blk0DramDepth       :
                    blk1DramDepth       :
                    blk2DramDepth       :
                    blk3DramDepth       :
                    dramTiming          :
                    flashSpeed          :
                    flashDepth          :
                    cpuClockSpeed       :
                    macAddr              : 006038872877
```

Explanation: The important fields for this card are pecCode, and macAddr. pecCode indicates that the Product Engineering Code (PEC) for this card is NTLX82AA. This cards is a Common Equipment Module (CEM). The macAddr indicates that the Media Access Control (MAC) address for the card is 006038872877. This value is in hexadecimal.

Responses

The following table explains possible responses to the qcard command.

MAP responses with associated meanings and actions

Command:	dSH:9> qcard
MAP response:	<pre> Reading manufacture data ... Mfg data read requested (request id:0463) formatRelease : 02 pecCode : NTLX71AA productionRelease : 03 dateOfManufacture : May03/1999 serialNumber : NNTM17233PJK cleiHuman : ENI2NREAAA cleiMachine : 241330 itmClockSpeed : 25 blk0DramDepth : blk1DramDepth : blk2DramDepth : blk3DramDepth : dramTiming : flashSpeed : flashDepth : cpuClockSpeed : macAddr : </pre>
Meaning:	The dshell prompt indicates that this is the card in slot 9 (dSH:9>). This card has a PEC of NTLX71AA and is an OC3 Resource Module (RM).
Actions:	No action is required.

qload

Type

The qload command is a menu listed command.

Target

The command target for the qload command is ALL.

Description

The qload command queries load file information from the RM.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The qload command was first recorded in the SP14 release.

Limitations and restrictions

The software integrity check is not operational and may incorrectly report that software fails an integrity check.

Syntax

The qload command syntax is as follows:

```
dSH:7> qload <load>
```

The following table describes the parameters and variables of the qload command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
<load>	string	This required parameter determines if the qload command displays information about the initial boot load, software in random access memory (RAM), or the software stored in flash memory. Valid values are ibl, sw, and flash. Valid values are optionally abbreviated to i, s, or f.

qload (end)**Example**

The following table provides an example of the qload command.

Command example

Command:	dSH:7> qload s
Description of task:	Query the load file that is running in RAM.
MAP response:	<pre> *** WARNING: SOFTWARE (sw) integrity check not fully operatioal *** Load is valid. Base address is: 0xC40000. Entry address is: 0xC4000. Last address is: 0xFC9530. Load size is: 0xF05534. Load name is: CEM0013 Load file name: CEM0013_010092 Load nodes are: Default load notes. (checking integrity...) Load passed integrity check. </pre>
Explanation:	This CEM has SP14 software in RAM, the load file on the disk is named CEM0013_010092, and there are no load notes. For more information about load files and load file verification, see Chapter 3, "Loadname verification".

Responses

The following table explains possible responses to the qload command.

MAP responses with associated meanings and actions

Command:	dSH:7> qload -h
MAP response:	<pre> qload*: qload: query load info qload: ERROR - invalid parameter: -h </pre>
Meaning:	The qload command does not provide help.
Actions:	Use the qload command with no parameters to display the command syntax.

19 /memory level commands

This chapter provides an overview of the /memory level. This chapter also provides detailed information on new or changed commands in the /memory level.

The following table alphabetically lists the commands available at the /memory level.

Table 19-1

Command
addr
show

Description

The /memory directory contains commands related to memory addresses, usage, and displaying values in memory.

How to access the /memory level

Access the /memory level from the dshell environment:

```
dSH:7> cd /memory
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /memory level.

Figure 19-1 Example of a MAP display of the /memory level

```
dSH:7> cd /memory
dSH:7> ls
addr*          show*
dSH:7>
```

addr

Type

The addr command is a menu listed command.

Target

The command target for the addr command is ALL.

Description

The addr command displays the addresses and size of memory allocations.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The addr command was first recorded in the SP14 release.

Limitations and restrictions

The addr command has no limits or restrictions.

Syntax

The addr command syntax is as follows:

```
dSH:7> addr
```

The addr command does not accept any parameters.

Example

The following table provides an example of the addr command.

Command example (Sheet 1 of 2)

Command:	dSH:7> addr
Description of task:	Display important addresses in memory.

addr (end)

Command example (Sheet 2 of 2)

MAP response:	End of Ram: 0x08000000			
	Load end: 0x0108954C			
		Start address	Size	Start page
		=====	====	=====
		=====	=====	=====
	Bsp code	0x000C4000	0x0001BFFF	0x00C4
	Code space	0x000E0000	0x00C5F0A8	0x00E0
	Read only	0x00D3F0D8	0x0028A44F	0x0D3F
	Heap space	0x02600000	0x059D9000	0x2600
	Surv Store	0x07FD9000	0x00010000	0x7FD9
	Perm Store	0x07FE9000	0x0000F000	0x7FE9
	Page table	0x07FF8000	0x00008000	0x7FF8
				0x00DF
				0x0D3E
				0x0FC8
				0x7FD8
				0x7FE8
				0x7FF7
				0x7FFF
Explanation:	The hexadecimal value for End of Ram indicates that the CEM has 128 MegaBytes (MB) of random access memory (RAM). All values are hexadecimal.			

Responses

The addr command does not have meaningful error responses.

show**Type**

The show command is a menu listed command.

Target

The command target for the show command is ALL.

Description

The show command displays memory usage and memory statistics.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The show command was first recorded in the SP14 release.

Limitations and restrictions

The show command has no limits or restrictions.

Syntax

The show command syntax is as follows:

```
dSH:7> show [-h] {[stat] [system] [private] [task <taskid>]}
```

The following table describes the parameters and variables of the show command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[stat]		This parameter displays information about memory statistics.
[system]		This parameter displays information about system heap usage.
[private]		This parameter displays information about private heap usage.

show (continued)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
[task]		This parameter displays information about the memory usage of the task identified by <taskid>.
<taskid>	numeric	This parameter is the number of a task. The output of the system parameter shows the task identifiers.

Example

The following table provides an example of the show command.

Command example

Command:	dSH:7> show stat
Description of task:	Display memory usage statistics.
MAP response:	<pre>Memory Statistics (decimal values in parentheses): loadsize = 0x00ee9508 (15635720) staticDataSize = 0x001eb6fc (2012924) tempHeapSize = 0x059d9000 (94212096) tempHeapUsed = 0x00f1f9d0 (15858128) tempHeapUnreserved = 0x04415630 (71390768) permSize = 0x0000f000 (61440) permUsed = 0x000009e54 (40532) OS workspaceSize = 0x00500000 (5242880) staticSurvSize = 0x00000014 (20) survHeapSize = 0x00010000 (65536) survHeapUsed = 0x000005dc (1500) survHeapUnreserved = 0x00006000 (24576) RTL Heap Size = 0x00020000 (131072) total memory used = 0x0251ea04 (38922756)</pre>
Explanation:	The value in parenthesis is in bytes.

Responses

The following table explains possible responses to the show command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> show task 12
MAP response:	

show (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The memory management system does not have a task with a taskid of 12.
Actions:	Use the system parameter to display a list of system tasks.

20 /patches level commands

This chapter provides an overview of the /patches level. This chapter also provides detailed information on new or changed commands in the /patches level.

The following table alphabetically lists the commands available at the /patches level.

Note: The commands in /patches are query-only command equivalents to the Post Release Software Manager (PRSM) tool. For information about PRSM, see the *Post-Release Software Manager Reference Manual*, 297-1771-540.

Table 20-1

Command
abscal
memstat
patchlist
ppldump
version

Description

The /patches directory contains information about software patches.

How to access the /patches level

Access the /patches level from the dshell environment:

```
dSH:7> cd /patches
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /patches level.

Figure 20-1 Example of a MAP display of the /patches level

```
dSH:7> cd /patches
dSH:7> ls
abscal*          memstat*        patchlist*      ppldump*
version*
dSH:7>
```

abscalc

Type

The abscalc command is a menu unlisted command.

Target

The command target for the abscalc command is ALL.

Description

The abscalc command computes an absolute address from a milestone address and offset. If the milestone address was patched, the abscalc command returns the absolute address of the patched function. If the milestone address was not patched, the abscalc command returns the result of adding the milestone address and the offset.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The abscalc command is new for the SP15 release.

Limitations and restrictions

The abscalc command has no limitations or restrictions.

Syntax

The abscalc command syntax is as follows:

```
dSH:7> abscalc <Argument>
Argument:
  -h : Display this message
  <orig addr> : Original address (in hex) of function.
  <offset>    : Offset (in hex) from the beginning of the
               function.
  <patch id>  : Either 'none' or a Patch Id in the Patch List.
               The Patch Id is used to confirm that the
               function in RAM is in the NEW code section of
               specified Patch Id
```

abscal (continued)

The following table describes the parameters and variables of the abscal command.

Parameters and variables	Value	Description
-h		This parameter displays the command syntax and parameters.
<orig addr>	hexidecimal	This parameter identifies the milestone address of a function. Values are acceptable with a 0x prefix or without. For example, 0x0000fe0f.
<offset>	hexidecimal	This parameter identifies the byte offset from the original address. Values are acceptable with a 0x prefix or without.
<patch id>	string	This parameter identifies the patch. None is an acceptable value.

Example

The following table provides an example of the abscal command.

Command example

Command:	dSH:7> abscal 0x00F5C1EC 0x10 XYZ00S15
Description of task:	Calculate the absolute address of the milestone function at address 0x00F5C1EC with an offset of 0x10.
MAP response:	Procedure at milestone address 0x00F5C1EC has NOT been patched.
Explanation:	The procedure at address 0x00F5C1EC is the original procedure in the milestone software release. This function has not been patched.

Responses

The following table explains possible responses to the abscal command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> abscal 0x00F5C1EC 0x10 XYZ00S15
MAP response:	Patch Id XYZ00S15 is not the last patchid to alter milestone address 0x00F5C1EC. Try Patch Id XYZ01S15.

abscalc (end)**MAP responses with associated meanings and actions (Sheet 2 of 2)**

Meaning:	The milestone address was patched, but patch XYZ00S15 was not the software patch that altered the procedure address.
Actions:	Use the abscalc command with the same address and offset, but use a patchid of XYZ01S15.
Command:	dSH:7> abscalc 0x00F5C1EC 0x10 none
MAP response:	The milestone version of the procedure that lived at milestone 0x00F5C1EC HAS BEEN patched by patch id XYZ01S15.
Meaning:	See the MAP response.
Actions:	No action is required.
Command:	dSH:7> abscalc 0x00F5C1EC 0x10 none
MAP response:	Use : 0x00F5C1FC
Meaning:	Since the abscalc command returned the sum of 0x00F5C1EC and 0x10, the procedure at address 0x00F5C1EC was not patched.
Actions:	No action is required.
Command:	dSH:7> abscalc 0x00F5C1EC 0x10 XYZ01S15
MAP response:	Use : 0x6D48C220
Meaning:	Since the abscalc command returned a value that is not the sum of 0x00F5C1EC and 0x10, the address returned is the address of the new function.
Actions:	No action is required.

memstat

Type

The memstat command is a menu unlisted command.

Target

The command target for the memstat command is ALL.

Description

The memstat command prints memory resource statistics related to patching.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The memstat command is new for the SP15 release.

Limitations and restrictions

The memstat command has no limits or restrictions.

Syntax

The memstat command syntax is as follows:

```
dSH:7> memstat
```

The memstat command does not accept parameters.

Example

The following table provides an example of the memstat command.

Command example (Sheet 1 of 2)

Command:	dSH:7> memstat
Description of task:	Print memory resource statistics related to patching.

memstat (end)

Command example (Sheet 2 of 2)

MAP response:	Patching Memory Available: 516076 bytes Lilypad Memory Available : 258028 bytes Patching Memory Ready For Reclaim: 0 bytes Lilypad Memory Ready For Reclaim : 0 bytes Memory Reclaimed On Next Patch Action: Yes
Explanation:	This information is used by Nortel Networks software development personnel.

Responses

The memstat command has no other response.

patchlist

Type

The patchlist command is a menu unlisted command.

Target

The command target for the patchlist command is ALL.

Description

The patchlist command displays a list of patches and the status for each patch.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The patchlist command was first recorded in the SP14 release.

Limitations and restrictions

The patchlist command has no limits or restrictions.

Syntax

The patchlist command syntax is as follows:

```
dSH:7> patchlist
```

The patchlist command does not accept any parameters.

Example

The following table provides an example of the patchlist command.

Command example

Command:	dSH:7> patchlist
Description of task:	Display the list of patches applied to the software.
MAP response:	Patch List Empty
Explanation:	There are no patches in the software.

patchlist (end)

Responses

The following table explains possible responses to the patchlist command.

MAP responses with associated meanings and actions

Command:	dSH:7> patchlist
MAP response:	Patch List ----- Patch ID Status ----- ----- XYZ01S15 Applied XYZ02S15 Applied XYZ03S15 Applied XYZ04S15 Removed XYZ05S15 Applied XYZ06S15 Applied
Meaning:	Five patches are applied and one patch was removed.
Actions:	No action is required.

ppldump

Type

The ppldump command is a menu unlisted command.

Target

The command target for the ppldump command is ALL.

Description

The ppldump command prints the Patched Procedure List (PPL) information. The output for the command provides the address of the original software function in the General release, the new function address, and the new procedure size. All values are in hexadecimal. Refer to the SPMLFINFO command for information about loadfile information and how to determine the General release of a software load.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The ppldump command is new for the SP15 release.

Limitations and restrictions

The ppldump command has no limits or restrictions.

Syntax

The ppldump command syntax is as follows:

```
dSH:7> ppldump
```

The ppldump command does not accept any parameters.

Example

The following table provides an example of the ppldump command.

Command example

Command:	dSH:7> ppldump
Description of task:	Print a list of patched procedures.
MAP response:	C++ PPL Dump
Explanation:	This response indicates an empty PPL.

ppldump (end)**Responses**

The following table explains possible responses to the ppldump command.

MAP responses with associated meanings and actions

Command:	dSH7:> ppldump
MAP response:	<pre> C++ PPL Dump PPL List ----- [0] 0x30C2CAE4 : 0x6D48C210 0x0050 [Curr] [1] 0x30C2CB34 : 0x6D48C428 0x0070 [Curr] [2] 0x30C25C38 : 0x6D48CD88 0x00AB [Curr] [3] 0x30C136B4 : 0x6D48CE70 0x0054 [Curr] [4] 0x30C1370C : 0x6D48C0A0 0x0018 [Curr] [5] 0x30C232C4 : 0x6D48CF00 0x00C2 [Curr] [6] 0x30C23E70 : 0x6D48D248 0x0093 [Curr] [7] 0x30C135D4 : 0x6D48D158 0x0020 [Curr] [8] 0x30C1670C : 0x6D48D508 0x00EB [Curr] [9] 0x30C25CB8 : 0x6D48CE38 0x0018 [Curr] </pre>
Meaning:	The PPL dump indicates the number of patched procedures, the address of the original procedure, the address of the new procedure, and the procedure size.
Actions:	No action is required.

version

Type

The version command is a menu unlisted command.

Target

The command target for the version command is ALL.

Description

The version command prints information about the C++ patcher.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The version command is new for the SP15 release.

Limitations and restrictions

The version command has no limits or restrictions.

Syntax

The version command syntax is as follows:

```
dSH:7> version
```

The version command does not accept any parameters.

Example

The following table provides an example of the version command.

Command example

Command:	dSH:7> version
Description of task:	Print information about the C++ patcher.
MAP response:	C++ Patcher Version: Patch_01_00
Explanation:	The 1.0 version of the patcher tool installed the current software patches.

Responses

The version command has no other response.

21 /resman level commands

The following table alphabetically lists the commands available at the /resman level.

Table 21-1

Command
configdata
pools
printoms
rmload

Description

The /resman directory provides information about resource management on the resource module (RM).

How to access the /resman level

Access the /resman level from the dshell environment:

```
dSH:7> cd /resman
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /resman level.

Figure 21-1 Example of a MAP display of the /resman level

```
dSH:7> cd /resman
dSH:7> ls
configdata*      pools*          printoms*       rmload*
```

configdata

Type

The configdata command is a menu listed command.

Target

The command target for the configdata command is ALL.

Description

The configdata command shows the resource allocation from table MNCKTPAK and the resource usage on a RM.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The configdata command was first recorded in the SP14 release.

Limitations and restrictions

The configdata command has no limits or restrictions.

Syntax

The configdata command syntax is as follows:

```
dSH:7> configdata [-h] [ALL [VERBOSE]] [SPM]
                [RM <rm_num> [VERBOSE]]
```

The following table describes the parameters and variables of the configdata command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
ALL		This optional parameter displays the resource allocation for all RMs in the Spectrum Peripheral Module (SPM).
VERBOSE		This optional parameter provides additional information about the resource configuration.

configdata (continued)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
SPM		This optional parameter shows the total for each resource type on the SPM.
RM		This optional parameter shows only the resource configuration for the RM identified by <rm_num>.
<rm_num>	numeric	This parameter is used with the RM option. Valid values are 1 to 6 and 9 to 28. These values are equivalent to the logical slot number of the RM.

Example

The following table provides an example of the configdata command.

Command example

Command:	dSH:7> configdata rm 15
Description of task:	Show the resource configuration for the RM in logical slot 15.
MAP response:	<pre>Service Configuration data for rmId 15 Desired configuration COT DTMF TONESYN ABBIT MF 12 12 12 12 12 Actual configuration COT DTMF TONESYN ABBIT MF 12 12 12 12 12</pre>
Explanation:	The RM in logical slot 15 provides the resources provisioned in table MNCKTPAK and the Actual configuration indicates that the resources are in use.

Responses

The following table explains possible responses to the configdata command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> configdata rm 7
MAP response:	<pre>Invalid parameter! Predefined command parameter: rmid (RM) ranges from 1 - 6 and 9 - 28</pre>

configdata (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The configdata command does not show resources for a common equipment module (CEM) in slots 7 or 8.
Actions:	Use a valid slot number with the RM parameter.

pools

Type

The pools command is a menu listed command.

Target

The command target for the pools command is ALL.

Description

The pools command displays information about the available resources.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The pools command was first recorded in the SP14 release.

Limitations and restrictions

The command help does not indicate that the ALL parameter is a default parameter.

Syntax

The pools command syntax is as follows:

```
dSH:7> pools [-h] [ALL] [<ResType>]
```

The following table describes the parameters and variables of the pools command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
ALL		This optional parameter displays the resource allocation for all RMs in the SPM.
<ResType>	string	This parameter limits the pools command to display information about that resource type only. Valid values are COT, DTMF, TONESYN, ABBIT, and MF.

Example

The following table provides an example of the pools command.

Command example

Command:	dSH:7> pools																																				
Description of task:	Show the resource allocation and use on the SPM.																																				
MAP response:	<p>Note: This figure does not show the Alarm and LatchState columns because of space constraints.</p> <table border="1"> <thead> <tr> <th>Pool</th> <th>NumInuse</th> <th>NumFree</th> <th>TotalCount</th> <th>Thresh%</th> <th>ThreshCount</th> </tr> </thead> <tbody> <tr> <td>COT</td> <td>0</td> <td>36</td> <td>36</td> <td>60%</td> <td>21</td> </tr> <tr> <td>DTMF</td> <td>0</td> <td>36</td> <td>36</td> <td>60%</td> <td>21</td> </tr> <tr> <td>TONESYN</td> <td>0</td> <td>36</td> <td>36</td> <td>60%</td> <td>21</td> </tr> <tr> <td>ABBIT</td> <td>0</td> <td>36</td> <td>36</td> <td>100%</td> <td>0</td> </tr> <tr> <td>MF</td> <td>0</td> <td>36</td> <td>36</td> <td>60%</td> <td>21</td> </tr> </tbody> </table>	Pool	NumInuse	NumFree	TotalCount	Thresh%	ThreshCount	COT	0	36	36	60%	21	DTMF	0	36	36	60%	21	TONESYN	0	36	36	60%	21	ABBIT	0	36	36	100%	0	MF	0	36	36	60%	21
Pool	NumInuse	NumFree	TotalCount	Thresh%	ThreshCount																																
COT	0	36	36	60%	21																																
DTMF	0	36	36	60%	21																																
TONESYN	0	36	36	60%	21																																
ABBIT	0	36	36	100%	0																																
MF	0	36	36	60%	21																																
Explanation:	<p>The Pool column identifies the type of resource. The NumInuse column shows the number of resources currently in use. The NumFree column shows the number of available resources. The TotalCount column shows the total of each resource type allocated on the SPM. The Thresh% column shows the threshold percentage level from table MNNODE. The ThreshCount column indicates the number of resources that correlate to Thresh%. The Alarm column indicates if the threshold alarm is ON or OFF. The LatchState column indicates if the resource is Latching or NotLatching.</p>																																				

Responses

The following table explains possible responses to the pools command.

MAP responses with associated meanings and actions

Command:	dSH:7> pools ecan
MAP response:	No resources of specified type are registered in the Pools.
Meaning:	The SPM does not have any voice signal processor (VSP) cards.
Actions:	Use the correct command syntax.

printoms

Type

The printoms command is a menu listed command.

Target

The command target for the printoms command is ALL.

Description

The printoms command displays operational measurement information related to echo cancellation (ECAN) or digital signal processing (DSP).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The printoms command was first recorded in the SP14 release.

Limitations and restrictions

The following limits and restrictions apply to the printoms command:

- the command returns null values (0) for ECAN if the SPM has no VSP RMs rather than reporting that there are no VSPs
- when given an illegal parameter, the printoms command mangles the illegal parameter

Syntax

The printoms command syntax is as follows:

```
dSH:7> printoms [-h] [all] [ecan] [dsp]
```

The following table describes the parameters and variables of the printoms command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
all		This optional parameter displays the operational measurements for ECAN and DSPs.

printoms (continued)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
ecan		This optional parameter displays information for ECAN only.
dsp		This optional parameter displays information for DSPs only.

Example

The following table provides an example of the printoms command.

Command example

Command:	dSH:7> printoms dsp
Description of task:	Display the operational measurements related to the DSPs in the SPM.
MAP response:	<pre> OM Group DSPRMAN's Active Registers ----- LOW LOST DENY UTIL HI FAIL COT 0 0 0 0 0 0 DTMF 0 0 0 0 0 N/A MF 0 0 0 0 0 N/A TONESYN 0 0 0 0 0 N/A OM Group DSPRMAN's Holding Registers ----- LOW LOST DENY UTIL HI FAIL COT 0 0 0 0 0 0 DTMF 0 0 0 0 0 N/A MF 0 0 0 0 0 N/A TONESYN 0 0 0 0 0 N/A *Current Date and Time - 12:31:12.345 APRIL 13, 2000 H **Number of dsp scans: 4 </pre>
Explanation:	This SPM does not use any of the provisioned resources.

Responses

The following table explains possible responses to the printoms command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> printoms dtmf
MAP response:	Invalid option 'oa4n84nxuS4' entered

printoms (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The printoms command does not show any measurements for DTMF.
Actions:	Use the correct command parameters to display operational measurements for ECAN or DSPs.

rmload

Type

The rmload command is a menu listed command.

Target

The command target for the rmload command is ALL.

Description

The rmload command provides information about resource load distribution.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The rmload command was first documented in the SP14 release.

Limitations and restrictions

The following limits and restrictions apply to the rmload command:

- rmload only displays information about ECAN
- rmload does not return an error message if the SPM has no VSPs

Syntax

The rmload command syntax is as follows:

```
dSH:7> rmload [-h] [ALL] [<ResType>]
```

The following table describes the parameters and variables of the rmload command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
ALL		This optional parameter displays information about the distribution of ECAN resources on VSP RMs.
<ResType>	string	This optional parameter identifies the resource type. The only valid value is ECAN.

rmload (end)

Example

The following table provides an example of the rmload command.

Command example

Command:	dSH:7> rmload			
Description of task:	Display the ECAN resource distribution on the SPM.			
MAP response:	Physical RMid	In Use	Free	Total

	ECAN	15	0	10
Explanation:	The VSP card in logical slot 15 of the SPM provides 10 ECAN resources and none are in use.			

Responses

The following table explains possible responses to the rmload command.

MAP responses with associated meanings and actions

Command:	dSH:7> rmload
MAP response:	
Meaning:	The SPM may not have any VSP RMs.
Actions:	Check table MNCKTPAK to verify that the SPM does not have VSP RMs.
Command:	dSH:7> rmload dtmf
MAP response:	RmLoad [<none>] [-h] [<ALL>{ALL}] RmLoad [<ResType>{ECAN}]
Meaning:	The rmload does not provide resource information about DTMF.
Actions:	Use the correct command syntax for information about ECAN or use the pools command for information about DTMF.

22 /rmmmgr level commands

This chapter provides an overview of the /rmmmgr level. This chapter also provides detailed information on new or changed commands in the /rmmmgr level.

The following table alphabetically lists the commands available at the /rmmmgr level.

Table 22-1

Command
queryrmms

Description

The /rmmmgr directory is for debugging the Spectrum Peripheral Module (SPM) Resource Maintenance Manager (RMM) Manager (SPMRMMMGR). RMMs are designed to maintain the state of functional blocks in an SPM unit. RMMs are responsible for reporting and clearing faults against these functional blocks. The SPMRMMMGR also requests a SWACT if a critical fault occurs while a unit is in service (INSV). The SWACT occurs if the SWACT controller determines that the state of the SPM will improve by switching to the opposite unit.

How to access the /rmmmgr level

Access the /rmmmgr level from the dshell environment:

```
dSH:7> cd /rmmmgr
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /rmmmgr level.

Figure 22-1 Example of a MAP display of the /rmmmgr level

```
dSH:7> cd /rmmmgr
dSH:7> ls
queryrmmms*
dSH:7>
```

queryrmms

Type

The queryrmms (query resource maintenance managers) command is a menu unlisted command.

Target

The command target for the queryrmms command is ALL.

Description

The queryrmms command displays information about the resources managed by the Resource Maintenance Manager (RMM) Manager (RMMMGR). This information is useful to Nortel Networks software design personnel.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

This command was first introduced for the SP15 release.

Limitations and restrictions

The queryrmms command has no limits or restrictions.

Syntax

The queryrmms command syntax is as follows:

```
dSH:7> queryrmms
```

The queryrmms command does not accept parameters.

Example

The following table provides an example of the queryrmms command.

Command example

Command:	dSH:7> queryrmms
Description of task:	Display information about resources managed by RMM.
MAP response:	See the following figure for a MAP response.
Explanation:	The list following the MAP response describes the fields in the MAP response.

queryrmms (continued)

This field indicates the sequence number for an RMM. When the Common Equipment Module (CEM) is requested to enter the manual busy (MANB) state, the RMMs are set to unavailable in descending order. As the CEM comes into service, the RMMs enter the ready state in ascending order.

- SAP

This field indicates the service access point.

- MIP

This boolean field indicates if the RMM has maintenance in progress. N indicates no maintenance activity. Y indicates maintenance activity.

- State

This field indicates the status of the RMM. Possible values are READY, DELOAD, UNAVAIL, and STANDBY. All RMMs should report READY if the CEM state is in service (INSV).

- Flt

The trouble indicator field has the following subfields.

- CFLT

This boolean field indicates if the RMM has a critical fault.

- SFLT

This boolean field indicates if the RMM has a sanity fault.

- nCFLT

This boolean field indicates if the RMM has a non critical fault.

- DEG

This field indicates the degradation of the RMM. Possible values are None, Minor, Major, and Crit.

- REG

This boolean field indicates if the RMM is registered with the Spectrum Peripheral Module (SPM) RMM Manager (SPMRMMMGR). All RMMs should indicate Y.

queryrmms (continued)

This field has the following subfields.

— MTCSYS

This integer field indicates the maintenance system running under the RMM.

— FUNC

This integer field indicates a unique application running in the maintenance system.

- Act

This field consists of two subfields and indicates the activation data.

— ACT

This boolean field indicates if the RMM is activated.

— CRIT

This boolean field indicates if successful operation of the RMM is critical to the node. Some RMMs are not critical and N is acceptable.

- Timers

This field has the following subfields. The values indicate the time in milliseconds (ms) an RMM has to complete a request.

— TEST

This field indicates the time an RMM has to complete a test request.

— INIT

This field indicates the time an RMM has to complete initialization.

— READY

This field indicates the time an RMM has to complete a request to enter the READY state.

— BUSY

This field indicates the time an RMM has to complete a request to enter the STANDBY state.

— SHUTDOWN

This field indicates the time an RMM has to complete a request to enter the UNAVAIL state.

- MIP STRING

This field is used by Nortel Networks software design personnel.

querymms (end)

Responses

The querymms command has no other response.

23 /spmdbg level commands

This chapter provides an overview of the /spmdbg level. This chapter also provides detailed information on new or changed commands in the /spmdbg level.

The following table alphabetically lists the commands available at the /spmdbg level.

Table 23-1

Command
dis
dm

Description

The /spmdbg directory contains commands that debug software.

How to access the /spmdbg level

Access the /spmdbg level from the dshell environment:

```
dSH:7> cd /spmdbg
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /spmdbg level.

Figure 23-1 Example of a MAP display of the /spmdbg level

```
dSH:7> cd /spmdbg
dSH:7> ls
dis*                dm*
dSH:7>
```

dis**Type**

The dis command is a menu listed command.

Target

The command target for the dis command is ALL.

Description

The dis command disassembles machine code for the PowerPC processor.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The dis command was first recorded in the SP14 release.

Limitations and restrictions

The dis command will hang a remlogin session if the <address> parameter is an inaccessible address.

Syntax

The dis command syntax is as follows:

```
dSH:7> dis [-h] <address>
```

The following table describes the parameters and variables of the dis command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<address>	hexadecimal or decimal	This parameter is a memory address. The dis command converts a decimal address to hexadecimal unless the address has a 0x prefix.

dis (continued)**Example**

The following table provides an example of the dis command.

Command example

Command:	dSH:7> dis 0x247		
Description of task:	Start at memory address 0x247 and disassemble twenty instructions.		
MAP response:	00000247	A6606310	lhzu r19,25360(0)
	0000024B	327C6001	addic r19,r28,24577
	0000024F	247C0004	.constw 0x247c0004
	00000253	AC7C6802	lhau r3,26626(r28)
	00000257	A6906100	lhzu r20,24832(r16)
	0000025B	94480CC2	stwu r2,3266(r8)
	0000025F	137C6802	.constw 0x137c6802
	00000263	A6546304	lhzu r18,25348(r20)
	00000267	307C240B	addic r3,r28,9227
	0000026B	783821FF	.constw 0x783821ff
	0000026F	F0480CBC	.constw 0xf0480cbc
	00000273	FF382100	.constw 0xff382100
	00000277	10480CC2	.constw 0x10480cc2
	0000027B	A7806100	lhzu r28,24832(0)
	0000027F	107C7043	.constw 0x107c7043
	00000283	A6806100	lhzu r20,24832(0)
	00000287	947C6803	stwu r3,26627(r28)
	0000028B	A6806100	lhzu r20,24832(0)
	0000028F	047C7A03	.constw 0x047c7a03
	00000293	A6806100	lhzu r20,24832(0)
Explanation:	The first column is the memory address. The second column shows the contents of the memory location. The third column shows the assembly language instruction. The fourth column indicates the processor registers or a 32 bit long word in hexidecimal notation.		

Responses

The following table explains possible responses to the dis command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> dis 23		
MAP response:	00000017	00000000	.constw 0x00000000
	0000001B	00000000	.constw 0x00000000
	...		
	...		
	00000063	00000000	.constw 0x00000000

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	The dis command converted the decimal value 23 to hexadecimal value 0x17 without warning.
Actions:	Prefix the address with 0x to indicate a hexadecimal address.
Command:	dSH:7> dis 0b0010
MAP response:	Parameter '0b0010' not recognized. Use 'dis -h' to confirm syntax.
Meaning:	The dis command does not accept binary number arguments.
Actions:	Convert the binary value to hexadecimal.

dm

Type

The dm command is a menu listed command.

Target

The command target for the dm command is ALL.

Description

The dm command displays the contents of memory.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The dm command was first recorded in the SP14 release.

Limitations and restrictions

The dm command will hang a remlogin session if the <address> parameter is an inaccessible address.

Syntax

The dm command syntax is as follows:

```
dSH:7> dm [-h] [-b] [-w] [-l] <address> [<numbytes>]
```

There is no change to the <command_name> command syntax.

The following table describes the parameters and variables of the dm command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[-b]		This parameter displays memory in segments of one byte (8 bits) each.
[-w]		This parameter displays memory in segments of one word (16 bits) each.

Command parameter and variable descriptions (Sheet 2 of 2)

Parameters and variables	Value	Description
[-l]		This parameter displays memory in segments of one long word (32 bits) each.
<address>	hexidecimal or decimal	This parameter indicates a memory address. The dm command converts a decimal address to hexidecimal unless the address has a 0x prefix.
<numbytes>	decimal	This optional parameter indicates the number of bytes, words, or long words to display. The default value is 16.

Example

The following table provides an example of the dm command.

Command example

Command:	dSH:7> dm -l 0x247
Description of task:	Start at memory address 0x247 and display 16 long words.
MAP response:	<pre>0x00000247: A6606310 327C6001 247C0004 AC7C6802 0x00000257: A6906100 94480CC2 137C6802 A6546304 0x00000267: 307C240B 783821FF F0480CBC FF382100 0x00000277: 10480CC2 A7806100 107C7043 A6806100</pre>
Explanation:	Memory has the above values at the above memory addresses.

Responses

The following table explains possible responses to the <command_name> command.

MAP responses with associated meanings and actions

Command:	dSH:7> dm 0x7fff
MAP response:	Another parameter was expected. Use 'dm -h' to confirm syntax.
Meaning:	The dm commands needs to know if the output should be in bytes, words, or long words.
Actions:	Use the -b, -w, or -l parameter with the dm command.

24 /swact level commands

This chapter provides an overview of the /swact level. This chapter also provides detailed information on new or changed commands in the /swact level.

The following table alphabetically lists the commands available at the /swact level.

Table 24-1

Command
imcqry
statqry

Description

The /swact directory provides access to commands related to Common Equipment Module (CEM) status. CEM status indicates the availability for the Spectrum Peripheral Module (SPM) to perform a Switch of Activity (SWACT).

How to access the /swact level

Access the /swact level from the dshell environment:

```
dSH:7> cd /swact
```

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /swact level.

Figure 24-1 Example of a MAP display of the /swact level

```
dSH:7> cd /swact
dSH:7> ls
imcqry*          statqry*
dSH:7>
```

imcqry

Type

The imcqry (Inter Machine Communication (IMC) query) command is a menu unlisted command.

Target

The command target for the imcqry command is ALL.

Description

The imcqry command displays IMC state and statistic information transmitted to and from the Switch of Activity (SWACT) controller. The information applies only to the local Common Equipment Module (CEM).

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The imcqry command is new for the SP15 release.

Limitations and restrictions

The imcqry command has no limits or restrictions.

Syntax

The imcqry command syntax is as follows:

```
dSH:7> imcqry
```

The imcqry command does not accept parameters.

Example

The following table provides an example of the imcqry command.

Command example (Sheet 1 of 2)

Command:	dSH:7> imcqry
Description of task:	Display IMC state and statistic information.

imcqry (continued)

Command example (Sheet 2 of 2)

MAP response:	*** IMC Statistics *** IMC state: Good Number of transmissions: 4792 Number of retries: 69 Number of messages received: 4733 Number of corrupted messages: 0
Explanation:	The IMC communication is functional. The statistics indicate that 4733 of 4792 messages were received. A state of Good for IMC state indicates that the SWACT controller database on the local CEM and the mate CEM are synchronized. If this command is issued on the mate CEM, a different value for Number of transmissions is possible. The difference is attributable to the difference in processor restart time.

Responses

The following table explains possible responses to the imcqry command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> imcqry
MAP response:	*** IMC Statistics *** IMC state: Down Number of transmissions: 271 Number of retries: 267 Number of messages received: 0 Number of corrupted messages: 0

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning: This example is from a unit with the mate unit in service trouble (ISTB). IMC communication is not functional. No messages were received.

Actions: Use the MAP terminal to perform the following steps.

- post the Spectrum Peripheral Module (SPM)

```
MAPCI;MTC;PM;POST SPM <spm_no>
```

- select the unit that is not in service (INSV)

```
SELECT CEM <unit_no>
```

- busy the unit

Note: This command may be service affecting.

```
BSY
```

- return the unit to service

```
RTS
```

For more information about these commands, refer to the *SPM Commands Reference Manual*, 297-1771-819.

statqry

Type

The statqry (state query) command is a menu unlisted command.

Target

The command target for the statqry command is ALL.

Description

The statqry command displays information about the state of the Switch of Activity (SWACT) handler.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP15

The statqry command is new for the SP15 release.

Limitations and restrictions

The statqry command has no limits or restrictions.

Syntax

The statqry command syntax is as follows:

```
dSH:7> statqry
```

The statqry command does not accept parameters.

Example

The following table provides an example of the statqry command.

Command example (Sheet 1 of 2)

Command:	dSH:7> statqry
Description of task:	Display information about the SWACT handler state.

statqry (continued)**Command example (Sheet 2 of 2)**

MAP response:	<pre> *** SWACT Internal States *** Activity: Active AFS: Available MAFS: Available JAM: Not Jammed MJAM: Not Jammed ISOL: Not Isolated MISOL: Not Isolated MPRES: Present CarMtc: Ready to swact </pre>
----------------------	--

Explanation:	The following list explains the fields in the MAP response.
---------------------	---

- **Activity**
This field indicates if the SWACT handler process is running. Possible values are 'Active' and 'Inactive'. This value is available from the CEM level of the MAP terminal.
- **AFS**
MAFS
These fields indicate if the Common Equipment Module (CEM) or mate CEM is Available For Service (AFS). Possible values are 'Available' and 'NotAvailable'.
- **JAM**
MJAM
These fields indicate if the CEM or mate CEM is jammed. A jam is equivalent to an activity lock. If the mate is jammed, a warm SWACT is not available and prevented. Possible values are 'Jammed', 'Not Jammed' and 'Jam Not Implemented'.
- **ISOL**
MISOL
These fields indicate if the CEM or mate CEM is Core side (C-side) isolated. An isolated unit is not accessible from the MAP terminal. Possible values are 'Isolated' and 'Not Isolated'.
- **MPRES**

statqry (end)

This field indicates if IMC detects the presence of the mate CEM. IMC determines that the mate is present if the mate has power. Possible values are 'Present', 'Not Present', and 'Pres Not Implemented'.

- CarMtc

This field indicates if carrier maintenance is prepared to SWACT. Possible values are 'Ready to swact' and 'Not ready to swact'.

Responses

The following table explains possible responses to the statqry command.

MAP responses with associated meanings and actions

Command:	dSH:7> statqry
MAP response:	*** SWACT Internal States *** Activity: Active AFS: Available MAFS: NotAvailable JAM: Not Jammed MJAM: Jam Not Implemented ISOL: Not Isolated MISOL: Not Isolated MPRES: Not Present CarMtc: Not ready to swact
Meaning:	This example shows a CEM operating in simplex mode. The mate CEM is not installed in the slot.
Actions:	This configuration represents a lab configuration. If the CEM is installed, contact your next level of support.

25 /termtrace level commands

This chapter provides an overview of the /termtrace level. This chapter also provides detailed information on new or changed commands in the /termtrace level.

The following table alphabetically lists the commands available at the /termtrace level.

Note: This chapter only describes commands for procedures in this book.

Table 25-1 (Sheet 1 of 2)

Command
all
alloc
callp
clear
context
ctsstatus
current
dealloc
dump
ecmon
first
help
hide
last

Table 25-1 (Sheet 2 of 2)

Command
next
previous
record
resman
restore
setprint
setrecord
start
status
stop
subsystem
suppress
timestamp
wrap

Description

The /termtrace directory is a password protected. The commands in the /termtrace directory are service affecting and their primary use is for Nortel Networks software development.

How to access the /termtrace level

Access the /termtrace level from the dshell environment:

```
dSH:7> cd /termtrace
```

Note: For information on how to access the Spectrum Peripheral Module (SPM) debug shell from the CI environment, refer to the remlogin command in this document.

How to return to the CI

Return to the CI environment:

```
dSH:7> remlogout
```

MAP display

The following figure shows an example of the MAP display of the /termtrace level.

Figure 25-1 Example of a MAP display of the /termtrace level

```
dSH:7> cd /termtrace
dSH:7> ls
all*          alloc*        callp*        clear*
context*      ctsstatus*   current*      dealloc*
dump*         ecmon*       first*        help*
hide*         last*        next*         previous*
record*       resman*      restore*      setprint*
setrecord*    start*       status*       stop*
subsystem*    suppress*    timestamp*    wrap*
dSH:7>
```

alloc

Type

The alloc command is a password protected command.

Target

The command target for the alloc command is ALL.

Description

The alloc command allocates memory for an event buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The alloc command was first recorded for the SP14 release.

Limitations and restrictions

The alloc command has no limits or restrictions.

Syntax

The alloc command syntax is as follows:

```
dSH:7> alloc [-h] <memory blocks>
```

The following table describes the parameters and variables of the alloc command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<memory blocks>	numeric	This parameter is the number of memory blocks to alloc for the event buffer. Each memory block is 1024 bytes.

alloc (end)**Example**

The following table provides an example of the alloc command.

Command example

Command:	dSH:7> alloc 500
Description of task:	Allocate five megabytes of memory for an event buffer.
MAP response:	Succeeded. (Text events routing to buffer.)
Explanation:	The command created the event buffer successfully.

Responses

The following table explains possible responses to the alloc command.

MAP responses with associated meanings and actions

Command:	dSH:7> alloc 500000000
MAP response:	Error: Maximum size is 1000 blocks.
Meaning:	Only ten megabytes is available for an event buffer.
Actions:	Use the alloc command with 1000 as the memory blocks parameter.
Command:	dSH:7> alloc 1
MAP response:	Error: Must allocate at least 10 blocks for adequate performance.
Meaning:	The event buffer must be at least ten kilobytes.
Actions:	Use the alloc command with 10 as the memory blocks parameter.

clear

Type

The clear command is a password protected command.

Target

The command target for the clear command is ALL.

Description

The clear command erases all messages from the event buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The clear command was first recorded in the SP14 release.

Limitations and restrictions

The clear command has no limits or restrictions.

Syntax

The clear command syntax is as follows:

```
dSH:7> clear [-h]
```

The following table describes the parameters and variables of the clear command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the clear command.

Command example (Sheet 1 of 2)

Command:	dSH:7> clear
Description of task:	Erase messages from the event buffer.

clear (end)

Command example (Sheet 2 of 2)

MAP response:

Explanation: The event buffer contains no messages.

Responses

The clear commands does not have meaningful error responses.

context

Type

The context command is a password protected command.

Target

The command target for the context command is ALL.

Description

The context command sets a priority for a type of event trace.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The context command was first recorded in the SP14 release.

Limitations and restrictions

The context command has no limits or restrictions.

Syntax

The context command syntax is as follows:

```
dSH:7> context [-h] { {  
    term <termno> |  
    intid <intcontext> |  
    default }  
    <level> }  
| { all <level> <contexttype> }
```

Note: The context command syntax is complex and best understood as one of term, intid, or default must be specified along with a variable for level. Or, the context command can accept the all parameter with level and contexttype variables.

context (continued)

The following table describes the parameters and variables of the context command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
[term]		This parameter is the external terminal identifier identified by <termno>.
<termno>	numeric	This parameter is a value between 1 and 2016.
[intid]		This parameter is the internal context identifier identified by <intcontext>.
<intcontext>	numeric	This parameter is a value between 1 and 2016.
[default]		This parameter sets the context to the default value.
<level>	string	This variable controls the verbosity of the context command. Valid values are message, debug, normal, on, lite, off, and query. Note: Query is not available with the all parameter.
[all]		This parameter sets the context to monitor all trunks.
<contexttype>	string	This variable controls the scope of trunks to monitor. Valid values are c7, pts, prib, prid, and ptp.

Example

The following table provides an example of the context command.

Command example

Command:	dSH:7> context term 24 debug
Description of task:	Set the context for message tracing to trunk number 24 and meter the verbosity to debugging level.
MAP response:	Tracing has been set on in debug mode.
Explanation:	The start command will monitor call progress for all calls on trunk 24.

context (end)

Responses

The context command does not have meaningful error responses.

dealloc

Type

The dealloc command is a password protected command.

Target

The command target for the dealloc command is ALL.

Description

The dealloc command releases event buffer memory space.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The dealloc command was first recorded for the SP14 release.

Limitations and restrictions

The dealloc command has no limits or restrictions.

Syntax

The dealloc command syntax is as follows:

```
dSH:7> dealloc [-h]
```

The following table describes the parameters and variables of the dealloc command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

dealloc (end)

Example

The following table provides an example of the dealloc command.

Command example

Command:	dSH:7> dealloc
Description of task:	Return the memory space of the event buffer to the common equipment module (CEM).
MAP response:	Succeeded.
Explanation:	The event buffer no longer exists.

Responses

The dealloc command does not have meaningful error responses.

dump**Type**

The dump command is a password protected command.

Target

The command target for the dump command is ALL.

Description

The dump command prints the messages in the event buffer to the display.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The dump command was first recorded for the SP14 release.

Limitations and restrictions

The dump command has no limits or restrictions.

Syntax

The dump command syntax is as follows:

```
dSH:7> dump [-h]
```

The following table describes the parameters and variables of the dump command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the dump command.

Command example (Sheet 1 of 2)

Command:	dSH:7> dump
Description of task:	Print the event buffer to the display.

dump (continued)**Command example (Sheet 2 of 2)**

```

MAP response:      16:32:20.400 --+>> LAYER1 Channel: 42 drive request =
                        L1OPEN and state = full_closed
                        16:32:21.400 --+>> LAYER1 Channel: 42 drive request =
                        L1OPEN and state = full_closed
                        16:32:21.840 rmMeGetOms: time to get OMS
                        16:32:21.840 l3sts.DCHIDMSW = 0
                        16:32:21.840 l3sts.DCHIDLSW = 0
                        16:32:21.840 rmMeGetOms: call Q931DchOms for Dch# = 0
                        16:32:21.840 The value of l3SuId returned from Database
                        is 999
                        16:32:21.840 SprimTptsTsetoL3-->Q931DchOms:NOT CONFIGURED
                        DChannel # =0
                        16:32:21.840 rmMeGetOms: Back from Q931DchOms ORC = 0
                        16:32:21.840 **GOTBACK** l3sts->sabmTx = 1
                        16:32:21.840 **GOTBACK** l3sts->sabmRx = 1
                        16:32:21.840 **GOTBACK** l3sts->rejTx = 0
                        16:32:21.840 **GOTBACK** l3sts->rejRx = 0
                        16:32:21.840 ** Q931DchOms returned FALSE: skip this Dch
                        16:32:21.840 rmMeGetOms: time to get OMS
                        16:32:21.840 l3sts.DCHIDMSW = 0
                        16:32:21.840 l3sts.DCHIDLSW = 0
                        16:32:21.840 rmMeGetOms: call Q931DchOms for Dch# = 1
                        16:32:21.840 The value of l3SuId returned from Database
                        is 999
                        16:32:21.840 SprimTptsTsetoL3-->Q931DchOms:NOT CONFIGURED
                        DChannel # =1
                        16:32:21.840 rmMeGetOms: Back from Q931DchOms ORC = 0
                        16:32:21.840 **GOTBACK** l3sts->sabmTx = 1
                        16:32:21.840 **GOTBACK** l3sts->sabmRx = 1
                        16:32:21.840 **GOTBACK** l3sts->rejTx = 0
                        16:32:21.840 **GOTBACK** l3sts->rejRx = 0

```

Explanation: The messages in the event buffer appear of the display.

Responses

The following table explains possible responses to the dump command.

MAP responses with associated meanings and actions (Sheet 1 of 2)

Command:	dSH:7> dump
MAP response:	Attempting to print captured data while tracing is active can result in a severe performance degradation. Use the 'force' keyword at the end of this command if you're sure you want to do this.

dump (end)

MAP responses with associated meanings and actions (Sheet 2 of 2)

Meaning:	Displaying the event buffer while recording can disrupt service.
Actions:	Use the stop command and then use the display command to view the event buffer.

start

Type

The start command is a password protected command.

Target

The command target for the start command is ALL.

Description

The start command enables event tracing.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The start command was first recorded for the SP14 release.

Limitations and restrictions

The start command has no limits or restrictions.

Syntax

The start command syntax is as follows:

```
dSH:7> start [-h]
```

The following table describes the parameters and variables of the start command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the start command.

Command example (Sheet 1 of 2)

Command:	dSH:7> start
Description of task:	Begin the event trace.

start (end)

Command example (Sheet 2 of 2)

MAP response:	Succeeded. (Text events routing to buffer.) Warning: Event tracing has been enabled. This may cause minor system performance degradation. To reduce the level of degradation, use the 'suppress' command to suppress specific events, or the 'context' command to disable event recording for specific terminals.
----------------------	--

Explanation:	Call processing event messages will log messages in the event buffer.
---------------------	---

Responses

The start command does not provide meaningful error responses.

stop

Type

The stop command is a password protected command.

Target

The command target for the stop command is ALL.

Description

The stop command disables event tracing.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The stop command was first recorded for the SP14 release.

Limitations and restrictions

The stop command has no limits or restrictions.

Syntax

The stop command syntax is as follows:

```
dSH:7> stop [-h]
```

The following table describes the parameters and variables of the stop command.

Command parameter and variable descriptions

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.

Example

The following table provides an example of the stop command.

Command example (Sheet 1 of 2)

Command:	dSH:7> stop
Description of task:	Stop recording call processing event messages in the event buffer.

stop (end)

Command example (Sheet 2 of 2)

MAP response:	Event tracing has been disabled.
Explanation:	Event messages are not sent to the event buffer.

Responses

The stop command does not provide meaningful error responses.

subsystem

Type

The subsystem command is a password protected command.

Target

The command target for the subsystem command is ALL.

Description

The subsystem command enables control of recording text events from software subsystems. It acts as a filter for the text event buffer.

Release history

This section identifies if the command is new or changed, and the applicable software release.

SP14

The subsystem command was first recorded in the SP14 release.

Limitations and restrictions

The subsystem command has no limits or restrictions.

Syntax

The subsystem command syntax is as follows:

```
dSH:5> subsystem [-h] [subsystem-name | all]
                [debug | normal | on | lite | off | query]
```

The following table describes the parameters and variables of the subsystem command.

Command parameter and variable descriptions (Sheet 1 of 2)

Parameters and variables	Value	Description
[-h]		This parameter displays the command syntax and parameters.
<subsystem-name>	string	This parameter identifies the software subsystem. Valid values are different for each resource module (RM). The command help displays valid subsystem-names.
[all]		This parameter causes the subsystem command to affect all software subsystems.

subsystem (continued)**Command parameter and variable descriptions (Sheet 2 of 2)**

Parameters and variables	Value	Description
[debug]		This parameter sets the verbosity to debug.
[normal]		This parameter sets the verbosity to normal.
[on]		This parameter sets the subsystem tracing to on.
[lite]		This parameter sets the verbosity to light.
[off]		This parameter sets the subsystem tracing to off.
[query]		This parameter causes the subsystem command to return the settings for the software subsystems.

Example

The following table provides an example of the subsystem command.

Command example

Command:	dSH:5> subsystem msgtrace debug
Description of task:	Set the msgtrace software subsystem for debugging.
MAP response:	Subsystem 'msgtrace': tracing is on in debug mode.
Explanation:	When the call trace begins, messages will be the most verbose.

subsystem (end)

Responses

The following table explains possible responses to the subsystem command.

MAP responses with associated meanings and actions

Command:	dSH:5> subsystem debug
MAP response:	<pre>This command allows the user to control the recording of text events from particular software subsystems. Usage: subsystem [<subsystem-name> all] [debug normal on lite off query] Valid subsystems: mtps msgtrace 12 13 misc layer1</pre>
Meaning:	Debug is not an option alone so the subsystem command prints the command help.
Actions:	Use the proper syntax for the subsystem command.

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Publication number: 297-1771-120
Product release: SPM15
Document release: Standard 03.01
Date: February 2001
Printed in the United States of America