Carrier VoIP

MSS15K, MG15K, and MDM in Carrier Voice over IP Networks Fault Management Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP

NN10092-911

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Contents

New in this release

The following sections detail what's new in the *NN10092-911 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Fault Management Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP (NN10092-911)* for release SN09U:

Features

There were no new features added to this document.

Other changes

There have been no other changes to the document in this release.

Fault management overview

This document, *NN10092-911 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Fault Management Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP*, describes the fault management of *Nortel Multiservice Switch 15000 / Media Gateway 15000 (MSS/MG15000)* nodes and Nortel Multiservice Data Manager (MDM) servers within Carrier Voice over IP network solutions.

The Multiservice Data Manager client-set and MDM Admin Server workstations rely on the Multiservice Data Manager server-set/standalone workstation for the Network Model layout and state-based data flows. The following state-based surveillance applications are used to detect, diagnose and view network faults:

- Network Viewer
- Component Information Viewer
- Network Status Bar

The Network Viewer is a network component tool that detects faults on a node. It displays state and topology information for the physical and organizational components that make up the network. The Component Information Viewer is used to diagnose network faults. It provides information on the components and subcomponents of a network element. The Network Status Bar provides a high-level view of the current network status.

See *241-6001-011 Nortel Multiservice Data Manager Fault Management Tools* for information on the fault management tools. See *241-6001-015 Nortel Multiservice Data Manager Network Model Administration* for information on the Network Model.

Fault management data, mostly in the form of alarms, provides the information required for network management including network engineering and troubleshooting. Common causes of alarms include the following occurrences:

- discovery of a fault or failure
- crossing of a threshold by a measured activity

- clearing of a fixed fault or failure condition
- generation of a message alarm in cases where conditions are transient or cannot be repaired

Note 1: Currently, this document is primarily concerned with one type of fault management data, SCC2 alarm logs. In subsequent releases, this document will be expanded to include more information.

Note 2: In SN08, SCC2 logs no longer apply only to fault information. Security audit logs can now also flow northbound in the SCC2 format. For more information on security audit logs, see *NN10180-611 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Security and Administration PT-AAL1/UA-AAL1/UA-IP/PT-IP*.

The system for generating Multiservice Switch / Media Gateway equipment alarms is event-driven. When an event occurs that results in the production of an alarm, Multiservice Switch / Media Gateway alarms are designed to minimize the number of multiple alarms generated in the event of a failure or error condition. Usually, only the component that fails or detects the failure generates an alarm, thus preventing the generation of an entire chain of alarms from components associated with the failed component.

On Sun Netra 240 servers with Server Platform Foundation Software (SPFS), the SPFS resource monitor application (RESMON) detects hardware and software faults for the platform. If the Network Patch Manager is configured, faults associated with NPM operation are detected by the NPM software.

Fault management data flow overview

"SCC2 logs" (page 8) describes how fault data generated by the MSS/MG15000 switches and the Multiservice Data Manager applications flows through the network.

"Server Platform Foundation Software (SPFS) logs" (page 11) describes how SPFS platform logs are distributed.

SCC2 logs

The process for collecting SCC2 logs begins when Multiservice Data Manager software collects alarm and log data from network nodes and Multiservice Data Manager servers. This fault management data, which flows over IP connections from the nodes and servers, is in turn, either forwarded to a higher level management system (HLMS) or directly to the Operations Support Systems (OSS) applications. For PT-AAL1 and

UA-AAL1 solutions, the higher level management system is the CS2000 Core Manager. For UA-IP and PT-IP solutions, the higher level management system is the IEMS.

When a higher level management system is involved, the higher level management application receives node and server alarm logs and converts them into the switch control centre 2 (SCC2) format. The application then transmits the logs to the OSS applications. To the OSS applications, an SCC2 log indicates events that have occurred on the nodes and servers. For more information on interpreting SCC2 log information, see "Interpreting SCC2 logs" (page 13).

Note: The syslog message ID parameter (msgid) for all non-SPFS based MDM servers that deliver fault events to IEMS must be disabled. See “Disabling syslog parameter for non-SPFS based MDM servers delivering fault events to IEMS” in *NN10114-511 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Configuration Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP/PT-AAL2*.

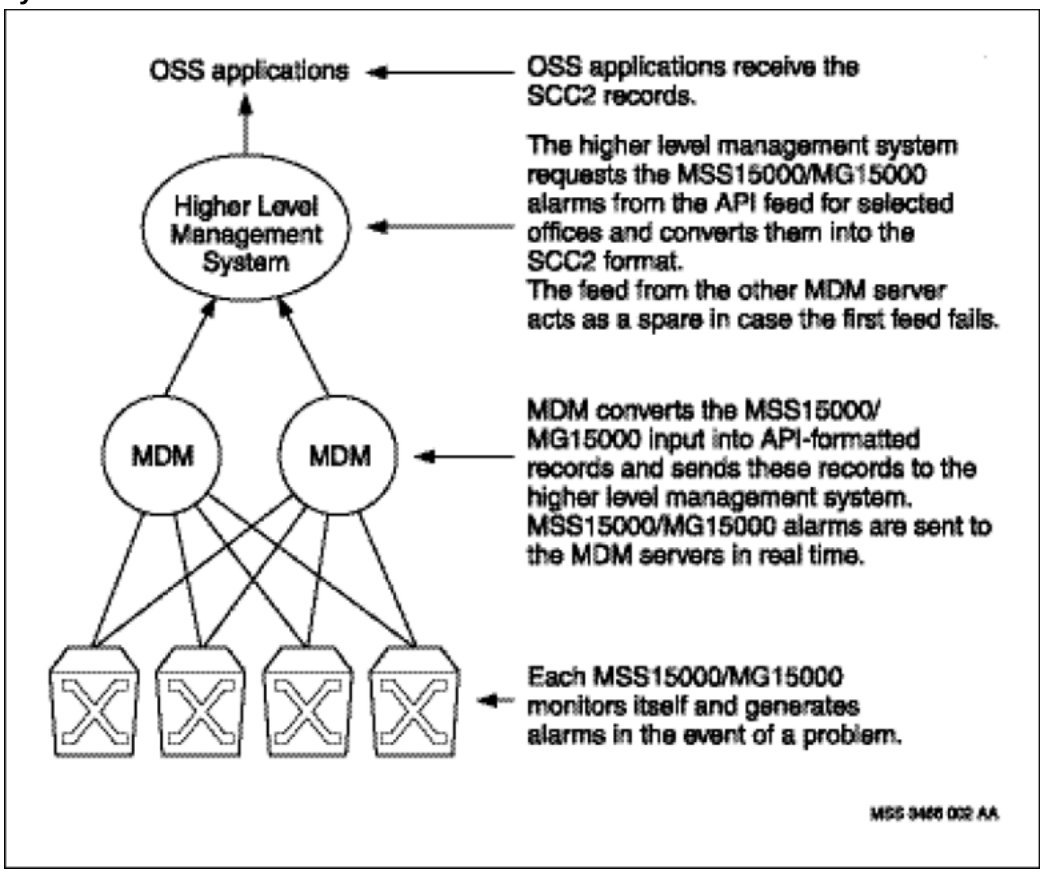
When the fault management data flows directly from the network nodes and Multiservice Data Manager servers to the OSS applications, the records are received in the API format without ever being converted into the SCC2 format.

For an illustration of the two different fault management data flow paths, see the following figures:

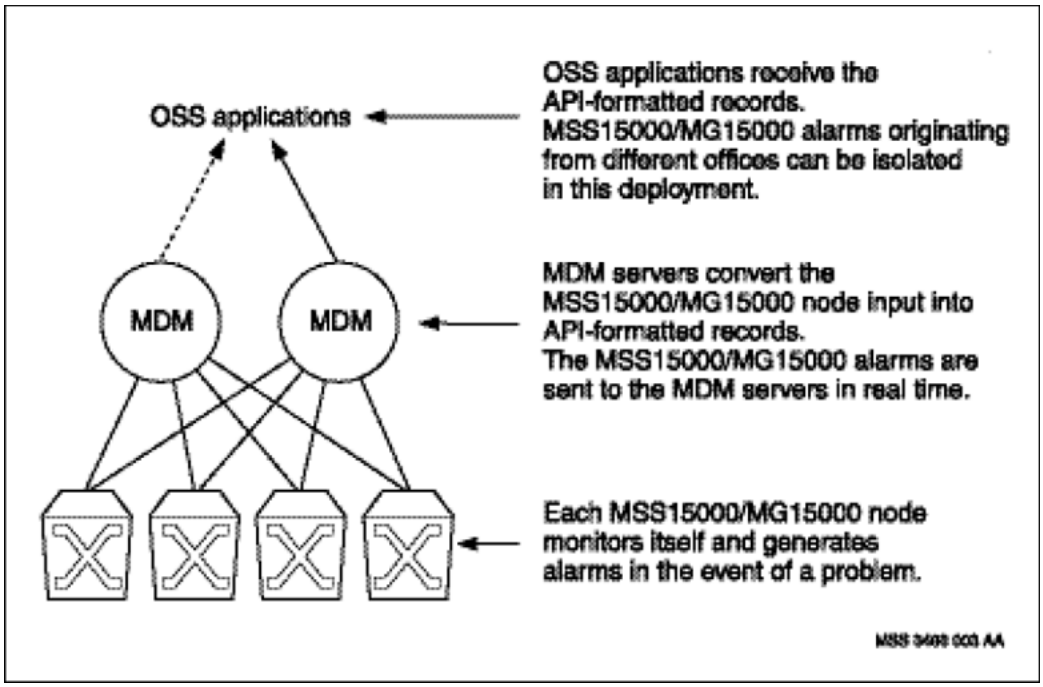
- "Fault data flow to the OSS application by way of a higher level management system" (page 10)
- "Fault data flow to the OSS applications by way of Multiservice Data Manager" (page 11)

Note: The figures "Fault data flow to the OSS application by way of a higher level management system" (page 10) and "Fault data flow to the OSS applications by way of Multiservice Data Manager" (page 11) do not represent the redundant links between the components. For more information about actual connection links and redundancy between links, see *NN10114-511 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Configuration Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP/PT-AAL2*.

Fault data flow to the OSS application by way of a higher level management system



Fault data flow to the OSS applications by way of Multiservice Data Manager



Server Platform Foundation Software (SPFS) logs

The SPFS resource monitor application (RESMON) is integrated with the AlarmD utility which keeps track of alarms on the SPFS platform, lights a light when an alarm is raised or cleared, and writes a customer log that corresponds to the state of an alarm.

RESMON tracks the following types of hardware and software platform events:

- loss of network connectivity
- fan and disk failure
- high temperature
- power supply unit failure
- file system problems
- usage thresholds exceeded

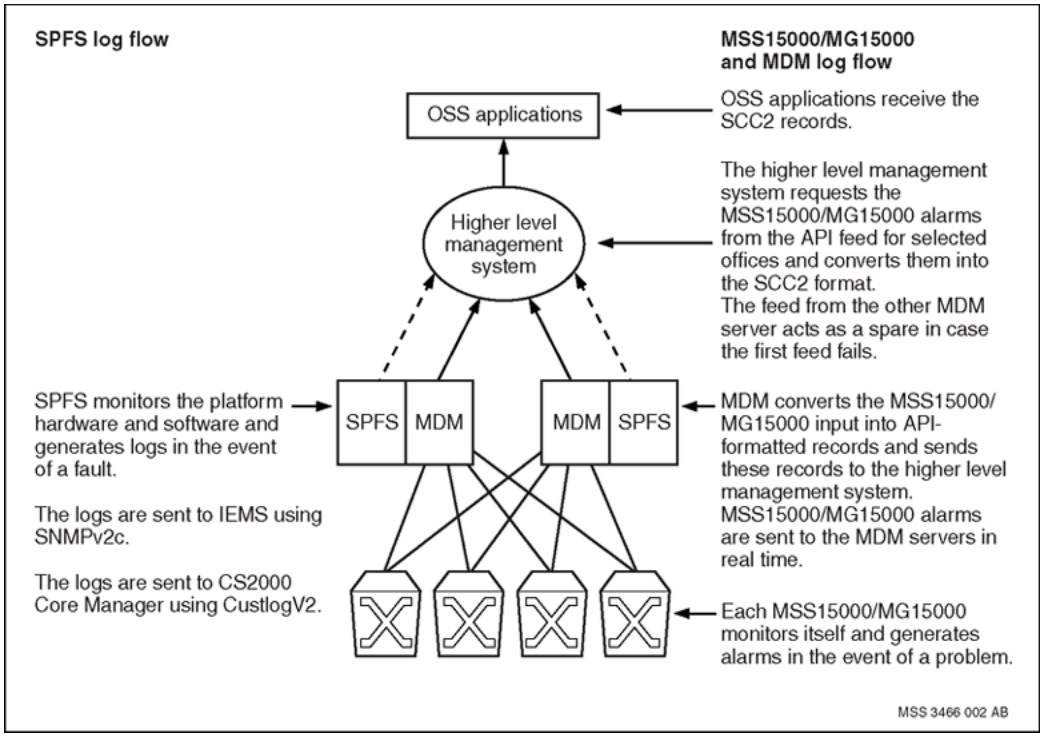
RESMON generates SPFSxxx logs for hardware and software platform faults. The Network Patch Manager (NPM) generates NPMxxx logs for NPM faults. For more information on the logs generated by SPFS and NPM, see *NN10275-909 Carrier Voice over IP Fault Management Logs Reference Volume 2*.

If IEMS is deployed in the network, it uses SNMPv2c to receive traps and other fault information from the SPFS. If IEMS is not configured in the network, AlarmD is configured to send the logs in CustlogV2 format.

For more information on the ports used for SNMPv2c log flow with *IEMS*, see *NN10225-512 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Configuration Attribute Summary PT-AAL1/UA-AAL1/UA-IP/PT-IP/PT-AAL2*.

For more information on sending logs in CustlogV2 format, see *NN10180-611 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Security and Administration PT-AAL1/UA-AAL1/UA-IP/PT-IP*.

Fault data flow for platforms using SPFS



Note: The figure "Fault data flow for platforms using SPFS" (page 12) does not represent the redundant links between the components. For more information about actual connection links and redundancy between links, see *NN10114-511 Nortel Multiservice Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Configuration Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP/PT-AAL2*.

Interpreting SCC2 logs

The various lines and fields within each SCC2 alarm log entry contain alarm data for Nortel Multiservice Switch 15000 / Media Gateway 15000 (MSS/MG15000) nodes and Nortel Multiservice Data Manager (MDM) servers. Operators and engineers can use these fields to isolate the fault using the Multiservice Data Manager Component Information Viewer.

Sample SCC2 log

The table, "Sample SCC2 log" (page 13), gives an example of an SCC2 log. This sample displays the SCC2 log format.

Sample SCC2 log

37	PPEM300 8169 TBL
	time: 2003 01 11 15 37 06
	event: clear
	compId: EM P15KF LP SONET 3
	severity: cleared
	faultCode: 70115201
	alarmType: communications
	commentData: Loss of frame condition has been cleared.

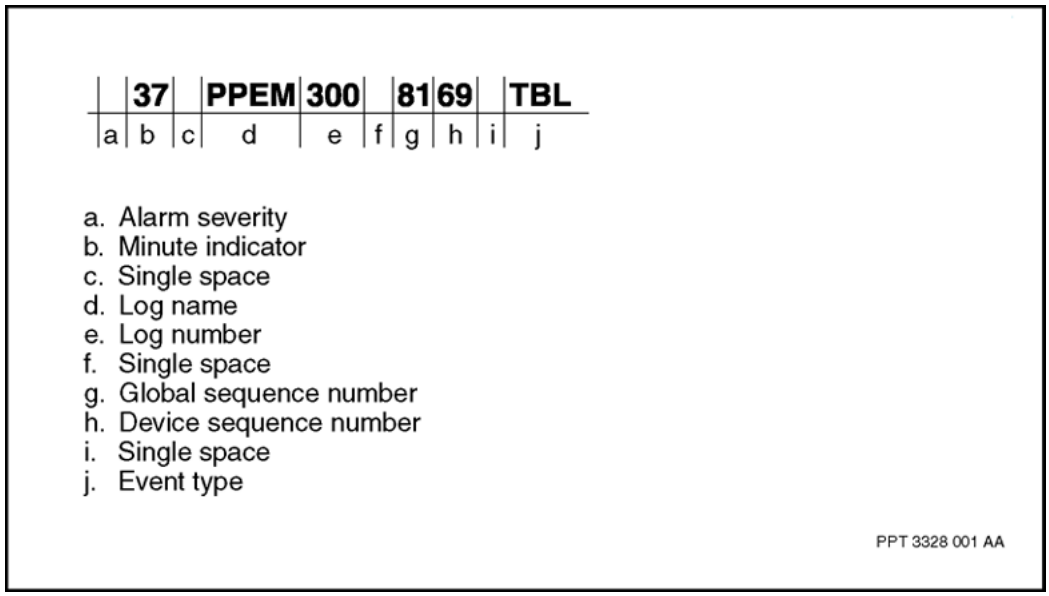
A SCC2 log entry consists of the header line and seven lines of body text. The header line is divided into several fields each of which contains a specific piece of information. These fields are explained in the "Labelled header fields in the sample SCC2 log entry" (page 15) and "Sample SCC2 log entry element description" (page 15). The name of each line in the body text of the SCC2 log appears at the beginning of that line. The information in the body text of the SCC2 log also appears in the corresponding node's

alarm. For more information on the corresponding fields in SCC2 log and Multiservice Switch alarms, see "Corresponding SCC2 log and Alarm NTP information" (page 14).

Corresponding SCC2 log and Alarm NTP information

Line number	Line name	The corresponding field in *NN10600-500 Nortel Multiservice Switch 6400/7400/15000/20000 Alarms Reference*
1	header (name does not appear in the line)	N/A
2	time	date & time
3	event	Status
4	compId	Component
5	severity	Severity
6	faultCode	Alarm NTP Index
7	alarmType	Type
8	commentData	Com

Labelled header fields in the sample SCC2 log entry



Sample SCC2 log entry element description

Line number	Field	Description	Applicable log values and formats
1	a.	Alarm severity MSS/MG15000 node/Multiservice Data Manager alarm log severity	"*C" = critical alarm "**" = major alarm "* " = minor, warning, and indeterminate alarms (one blank) " " = clear alarm (two blanks) Two-character indicator representing one of the values listed above in quotation marks, left justified, padded with blanks
1	b.	Minute indicator Generated by the higher level management system (HLMS) at the time as the HLMS receives the alarm log from Multiservice Data Manager	Ranges from 00 to 59, right justified, padded with zeros Two-character numeric indicator representing the minutes after the hour
1	c.	Single space	" " = space (one blank)

Line number	Field	Description	Applicable log values and formats
1	d.	Log name Name assigned by the higher level management system and is based on the first four digits (Index group) of the eight digit MSS/MG15000 node or Multiservice Data Manager alarm identifier	"CA " for index group 0000 (two blanks) "PPEM" for index groups beginning with 70xx and some fault codes in group 0999 "MDM " for index groups beginning with 30xx and some fault codes in group 0999 (one blank) Four characters, left justified, padded with blanks
1	e.	Log number ***Note:*** The Alarm Type 'debug' is translated as an information log rather than as a fault.	"300" = communications "301" = quality of service "302" = processing "303" = equipment "304" = environmental "305" = security "306" = operator "307" = unknown Three-character numeric indicator representing the Multiservice Switch node or Multiservice Data Manager alarm type
1	f.	Single space	" " = single space (one blank)
1	g.	Global sequence number Number incremented by the higher level management system upon receipt of every alarm log	Two-character numeric indicator ranging from 00 to 99, right justified, padded with zeroes
1	h.	Device sequence number Generated and incremented by the higher level management system upon receipt of every device-specific alarm log from Multiservice Data Manager (originating from MSS/MG15000 node or Multiservice Data Manager server)	Two-characters numeric indicator ranging from 00 to 99, right justified, padded with zeroes
1	i.	Single space	" " = single space (one blank)

Line number	Field	Description	Applicable log values and formats
1	j.	Event type	"TBL " (one blank) Four characters, left justified, padded with blanks
2	N/A	time	
3	N/A	event	One of the following: set, clear, message
4	N/A	compId	The name of the node followed by the component name
5	N/A	severity	
6	N/A	faultCode	
7	N/A	alarmType	
8	N/A	commentData	Comment data is truncated so that the entire log does not exceed 900 bytes

Summary of Multiservice Switch 15000 and Media Gateway 15000 alarm logs

For information about fault management involving Nortel Multiservice Switch 15000 and Nortel Media Gateway 15000 (MSS/MG15000) alarms applicable to Carrier Voice over IP network solutions, see the following sections:

Multiservice Switch 15000 / Media Gateway 15000 Alarm logs

This section lists those MSS/MG15000 SET/CLEAR and message alarms that are applicable to Multiservice Switch 15000 and Media Gateway 15000 nodes in Carrier Voice over IP networks. These SET/CLEAR and message alarms are matched with the corresponding record for the same type of alarm in a SCC2 alarm log. SET/CLEAR alarms are those alarms where the *event* line has a value indicating a *set* or *clear* alarm. For more information of the lines in a SCC2 alarm log, see "Interpreting SCC2 logs" (page 13).

> ***Note:*** The following sections do not include all corresponding CLEAR and SET alarm logs. The SCC2 header for the CLEAR alarm is distinguished from the corresponding SET alarm by the first two characters in the header. For example, the alarm severity field for a SET alarm reads "aa", while the alarm severity field for the CLEAR alarm replaces the "aa" with two blank spaces. For more information on the SCC2 alarm log header line, see "Sample SCC2 log entry element description" (page 15).

Identifying Multiservice Switch 15000 / Media Gateway 15000 alarms in SCC2 logs

This section tells you how to identify SCC2 alarm log headers and the corresponding network node alarm.

For specific information on each of the node's proxy SET/CLEAR and message alarms that are applicable to Carrier Voice over IP networks, see the following sections:

- "MSS15000 / MG15000 SET/CLEAR alarms" (page 21)
- "MSS15000 / MG15000 Message alarms" (page 37)

Alarm NTP index field

The Multiservice Switch 15000 / Media Gateway 15000 alarm NTP index consists of an eight digit number that uniquely identifies each alarm. The alarm NTP index is composed of two parts

- four initial digits that identify the Index Group to which the alarm belongs
- four subsequent digits that identify the SubIndex number for the alarm

All of the records for Multiservice Switch 15000 / Media Gateway 15000 alarms in this document are grouped on the basis of a common index group number. For example, all the records for backplane control system alarms that are applicable to Carrier Voice over IP networks appear below the heading "Index group: 7002". The SubIndex number field uniquely identifies each alarm within an index group by giving the second four digit identifying number. For example, 7002 0002, the index group and subindex numbers, indicates a specific Multiservice Switch 15000 backplane control system alarm.

Component field

The Component name field for each Nortel Multiservice Switch 15000 / Media Gateway 15000 alarm is also used to identify the alarm in the SCC2 alarm log. The component name indicates the managed object against which the alarm log is generated. For example, the component name of the 7002 0002 alarm is `Shelf FabricCard/<n>`. The component name is preceded by the node name of the module which typically starts with EM.

SCC2 header field

The SCC2 header field presents the corresponding header from the SCC2 alarm log that matches the specific alarm already identified in the record. For example, the SCC2 header that matches the 7002 0002 alarm is **bb PPEM303 gghh TBL.

Comment field

The Comment field includes additional descriptive information about either a specific alarm or a group of alarms.

MSS15000 / MG15000 SET/CLEAR alarms

Nortel Multiservice Switch SET/CLEAR alarms that are applicable to Carrier Voice over IP networks are divided into the following index groups:

- "MSS/MG15000 index group 7056: Voice Services Processor (VSP) and Narrowband service trunk over ATM (" (page 45)
- "MSS/MG15000 index group 7060: ATM and frame resource control alarms" (page 46)
- "MSS/MG15000 index group 7082: Routine Exercise alarms" (page 47)

MSS/MG15000 index group: 0000

The alarms in this index group include OSI administrative state changes, general engineering and memory alarms, and internal software error detected alarms.

MSS/MG15000 index group 0000

Alarm NTP Index	Component name	SCC2 header
0000 0000	This alarm can apply to many node components	bb CA eee gghh TBL where: eee = 302, 303, 306
0000 1000	This alarm can apply to many node components	aabb CA eee gghh TBL where: aa = "*C", "**", "* " eee = 300, 306
0000 1001	This alarm can apply to many node components	aabb CA 303 gghh TBL where: aa = "*C", "**", "* "
0000 3000	This alarm can apply to many node components	aabb CA eee gghh TBL where: aa = "*C", "**", "* " eee = 300, 302
0000 3001 0000 3002	These alarms can apply to many node components	aabb CA 302 gghh TBL where: aa = "*C", "**", "* "

MSS/MG15000 index group: 7000

The alarms in this index group apply to failures resulting from provisioning attempts. For example, the failure of a provisioning file to load results in an alarm.

Instance ranges for SET/CLEAR index group: 7000

Card instance range (<n>): 0 to 15

Lp instance range (<m>): 0 to 15

MSS/MG15000 index group 7000: Provisioning alarms

Alarm NTP Index	Component name	SCC2 header
7000 0007	Prov	aabb PPEM306 gghh TBL where: aa = "*C", "**", "* "
7000 0010	This alarm can apply to many node components	* bb PPEM302 gghh TBL
7000 0033	Prov migration	aabb PPEM306 gghh TBL where: aa = "*C", "* "
7000 0036	Prov	aabb PPEM301 gghh TBL where: aa = "**", "* "
7000 0037	Prov	*Cbb PPEM301 gghh TBL
7000 0038	Prov	* bb PPEM301 gghh TBL
7000 0040	Prov	**bb PPEM302 gghh TBL
7000 0041	Provisioning Patch	aabb PPEM306 gghh TBL where: aa = "*C", "* "
7000 0042	Prov CriticalAttributeActivation	* bb PPEM306 gghh TBL for warning/clear or *Cbb PPEM306 gghh TBL for set/clear
7000 0043	Prov ActivationMode	* bb PPEM306 gghh TBL
7000 0044	Shelf Card/<n> Lp/<m>	*Cbb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7000' (page 43)		

MSS/MG15000 index group: 7002

The alarms in this index group apply to failures involving the backplane. For example, a communication failure between an FP and the backplane results in an alarm.

Instance ranges for SET/CLEAR Index group: 7002

FabricCard instance range (<i>): X or Y

Card instance range (<n>): 0 to15

MSS/MG15000 index group 7002: Backplane control system alarms

Alarm NTP Index	Component name	SCC2 header
7002 0002	Shelf FabricCard/<i>	**bb PPEM303 gghh TBL
7002 0003 7002 0004	Shelf FabricCard/<i>	*Cbb PPEM304 gghh TBL
7002 0005	Shelf FabricCard/<i>	**bb PPEM302 gghh TBL
7002 0006	Shelf FabricCard/<i>	**bb PPEM302 gghh TBL
7002 0007	Shelf FabricCard/<i>	**bb PPEM302 gghh TBL
7002 0008	Shelf Card/<n>	* bb PPEM303 gghh TBL
7002 0009	Shelf FabricCard/<i>	* bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7002' (page 45)		

MSS/MG15000 index group: 7003

The alarms in this index group apply to failures of the data collection system. For example, an alarm or log queue size that has exceeded a threshold results in an alarm.

Instance ranges for SET/CLEAR index group: 7003

Agent instance range (<n>): 0 to15
Lp instance range (<n>): 0 to15

MSS/MG15000 index group 7003: Data collection system alarms

Alarm NTP Index	Component name	SCC2 header
7003 0001	Collector/<t> Agent/<n>	**bb PPEM301 gghh TBL
7003 0002	Collector/<t> Spooler	**bb PPEM302 gghh TBL
7003 0003	Collector/<t> Spooler	* bb PPEM301 gghh TBL
7003 0007	Lp/<n> Eng AAList	**bb PPEM301 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7003' (page 46)		

MSS/MG15000 index group: 7006

MSS/MG15000 index group 7006: Radius security alarms

Alarm NTP Index	Component name	SCC2 header
7006 0100	Ac Radius	*Cbb PPEM305 gghh TBL

MSS/MG15000 index group: 7008

Instance ranges for SET/CLEAR index group: 7008

Disk instance range (<n>): 0 or 1

MSS/MG15000 index group 7008: File system alarms

Alarm NTP Index	Component name	SCC2 header
7008 1001	FileSystem	**bb PPEM302 gghh TBL
7008 1002	FileSystem	*Cbb PPEM302 gghh TBL
7008 1004	FileSystem	*Cbb PPEM303 gghh TBL
7008 1005	FileSystem	* bb PPEM303 gghh TBL
7008 1006	FileSystem	**bb PPEM302 gghh TBL
7008 1008 7008 1009 7008 1010 7008 1011	FileSystem Disk/<n>	**bb PPEM303 gghh TBL
7008 1019	FileSystem	* bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7008' (page 47)		

MSS/MG15000 index group: 7011

Instance ranges for SET/CLEAR index group: 7011

Lp instance range (<n>): 0 to 15
Port types (<type>): SONET, EDS1, DS3, BridgedSonet (Bso), Ethernet, SDH
SONET instance range (<n2>): 0 to 3 (4-port); 0 to 15 (16-port FP)
EDS1 instance range (<n2>): 0 or 1
IMA instance range (<n3>): 0 to 13
LK instance range (<n4>): 0 to 31
DS3 instance range (<n2>): 0 to 3 (4-port FP); 0 to 11 (12-port FP)
DS1 instance range (<n3>): 1 to 28
Ethernet instance range (<n2>): 0 to 3
LAPS instance range (<n>): 0 to 15999
Chan instance range (<n4>): 0 to 23
BridgedSonet instance range (<n2>): 0 to 15
Pbg instance range (<n>): 0 to 15999

SDH instance range (<n2>): 0 to n, where n is one less than the number of ports on the card
Sts instance range (<n2>): 0 to 11
Vt1dot5 instance ranges (<x>,<y>): <x> is 1 to 7; <y> is 1 to 4
Vc12 instance ranges (<k>,<l>,<m>): <k> is 1 to 3; <l> is 1 to 7; <m> is 1 to 3
Lag instance range (<y>): 0 to 7
Lag Link instance range (<z>): 0 to 31

MSS/MG15000 index group 7011: Port management system and automatic protection switching alarms

Alarm NTP Index	Component name	SCC2 header
7011 1100	Lp/<n> DS3/<n2> IMA/<n3>	*Cbb PPEM300 gghh TBL
7011 1200 7011 1210 7011 1211 7011 1212 7011 1213 7011 1214 7011 1215 7011 1216	Lp/<n> DS3/<n2> IMA/<n3> LK/<n4>	*Cbb PPEM300 gghh TBL
7011 1500	Lp/<n> Lag/<y>	*Cbb PPEM300 gghh TBL
7011 1501	Lp/<n> Lag/<y> Link/<z>	*Cbb PPEM300 gghh TBL
7011 2000	Lp/<n> <type>/<n2>	*Cbb PPEM303 gghh TBL
7011 5000	Lp/0 EDS1/<n2> Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/0 Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	*Cbb PPEM300 gghh TBL
7011 5001	Lp/0 EDS1>/<n2> Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/0 Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	* bb PPEM300 gghh TBL
7011 5002	Lp/0 EDS1/<n2> Lp/<n> SDH/0 Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	*Cbb PPEM300 gghh TBL
7011 5003	Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	*Cbb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3011' (page 48)		

Alarm NTP Index	Component name	SCC2 header
7011 5004	Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	*Cbb PPEM300 gghh TBL
7011 5005	Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	*Cbb PPEM300 gghh TBL
7011 5006	Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	**bb PPEM300 gghh TBL
7011 5010	Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> SDH/0 Vc4/0 Vc12/<k>,<l>,<m> E1 Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> DS1	* bb PPEM300 gghh TBL
7011 5011	Lp/<n> DS3/<n2> DS1/<n3>	* bb PPEM300 gghh TBL
7011 5050	Lp/0 EDS1/<n2>	aabb PPEM303 gghh TBL where: aa = "*C", "* "
7011 5100 7011 5101 7011 5102 7011 5103 7011 5104	Lp/<n> DS3/<n2>	*Cbb PPEM300 gghh TBL
7011 5105	Lp/<n> DS3/<n2>	* bb PPEM300 gghh TBL
7011 5110	Lp/<n> DS3/<n2>	*Cbb PPEM300 gghh TBL
7011 5111 7011 5120 7011 5121 7011 5122	Lp/<n> DS3/<n2>	* bb PPEM300 gghh TBL
7011 5200 7011 5201 7001 5202	Lp/<n> SONET/<n2> Lp/<n> SDH/<n2>	*Cbb PPEM300 gghh TBL
7011 5203 7011 5204 7011 5210 7011 5211	Lp/<n> SONET/<n2> Lp/<n> SDH/<n2>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3011' (page 48)		

Alarm NTP Index	Component name	SCC2 header
7011 5250 7011 5251	Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Sts/<n2> Laps/<n> Vc4/0 Pbg/<n> Sts/0	*Cbb PPEM300 gghh TBL
7011 5252	Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Sts/<n2> Laps/<n> Vc4/0 Pbg/<n> Sts/0	* bb PPEM300 gghh TBL
7011 5253	Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Sts/<n2> Laps/<n> Vc4/0 Pbg/<n> Sts/0	*Cbb PPEM300 gghh TBL
7011 5254	Lp/<n> SONET/<n2> Sts/0 Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Sts/0 Laps/<n> Vc4/0 Pbg/<n> Sts/0	*Cbb PPEM300 gghh TBL
7011 5255	Lp/<n> SONET/<n2> Path/<n2> Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SONET/<n2> Vc4/<n2> Lp/<n> SDH/<n2> Path/0 Lp/<n> SDH/<n2> Sts/0 Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Path/0 Laps/<n> Sts/0 Laps/<n> Vc4/0 Pbg/<n> Sts/0	*Cbb PPEM300 gghh TBL
7011 5256	Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SDH/<n2> Vc4/0 Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> Laps/<n> Sts/<n2> Laps/<n> SDH/<n2> Vc4/0 Laps/<n> SDH/<n2> Vc4/0 Vc12/<k><l><m> Pbg/<n> Sts/<n2>	*Cbb PPEM300 gghh TBL
7011 5260 7011 5261	Lp/<n> SONET/<n2> Sts/<n2> Lp/<n> SDH/<n2> Vc4/0 Laps/<n> Sts/<n2> Laps/<n> Vc4/0 Pbg/<n> Sts/0	* bb PPEM300 gghh TBL
7011 5270	Laps/<n>	**bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3011' (page 48)		

Alarm NTP Index	Component name	SCC2 header
7011 5271 7011 5272 7011 5273 7011 5274	Laps/<n>	* bb PPEM300 gghh TBL
7011 5275	Laps/<n>	*Cbb PPEM300 gghh TBL
7011 5281	Laps/<n> CrossConnect	*Cbb PPEM300 gghh TBL
7011 5290 7011 5291 7011 5292 7011 5293 7011 5294	Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> Laps/<n> Vc4/0 Vc12/<k>,<l>,<m> Laps/<n> Sts/<n2> Vt1dot5/<x>,<y>	*Cbb PPEM303 gghh TBL * bb PPEM303 gghh TBL
7011 5295 7011 5296	Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> Laps/<n> Vc4/0 Vc12/<k>,<l>,<m> Laps/<n> Sts/<n2> Vt1dot5/<x>,<y>	*Cbb PPEM303 gghh TBL
7011 5297	Lp/<n> SDH/<n2> Vc4/0 Vc12/<k>,<l>,<m> Lp/<n> SONET/<n2> Sts/<n2> Vt1dot5/<x>,<y> Laps/<n> Vc4/0 Vc12/<k>,<l>,<m> Laps/<n> Sts/<n2> Vt1dot5/<x>,<y>	*Cbb PPEMeee gghh TBL where: eee = 303, 306
7011 5400 7011 5401 7011 5402 7011 5403	Lp/<n> Ethernet/<n2>	*Cbb PPEM300 gghh TBL
7011 5480	Lp/<n> Ethernet/<n2> OpticalModule	**bb PPEM300 gghh TBL
7011 5501	Lp/<n> SONET/<n2> Lp/<n> SONET/<n2> Sts/0 Laps/<n> Sts/0 Lp/<n> DS3/<n2> Lp/<n> DS3/<n2> DS1/<n3> Lp/<n> DS3/<n2> DS1/<n3> Chan/<n4> Pbg/<n> Sts/0	*Cbb PPEM300 gghh TBL
7011 5601 7011 5602	Lp/<n> DS3/<n2>	* bb PPEM300 gghh TBL
7011 5603 7011 5604	Lp/<n> DS3/<n2>	**bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3011' (page 48)		

MSS/MG15000 index group: 7012

Instance ranges for SET/CLEAR index group: 7012

Lp instance range (<n>): 0 to 15

Card instance range (<n>): 0 to 15

FabricCard instance range (<i>): X or Y

MSS/MG15000 index group 7012: Processor control system alarms

Alarm NTP Index	Component name	SCC2 header
7012 0050	Shelf	**bb PPEM303 gghh TBL
7012 0051	Shelf	aabb PPEM303 gghh TBL where: aa = "*C", "**"
7012 0052	Shelf Shelf FabricCard/<i>	**bb PPEM303 gghh TBL
7012 0053	Shelf	**bb PPEM303 gghh TBL
7012 0055	Shelf	aabb PPEM303 gghh TBL where: aa = "**", "* "
7012 0056	Shelf	* bb PPEM303 gghh TBL
7012 0057 7012 0058	Shelf	**bb PPEM303 gghh TBL
7012 0059	Shelf	*Cbb PPEM304 gghh TBL
7012 0100	Shelf Card/<n>	aabb PPEM303 gghh TBL where: aa = "*C", "* "
7012 0103 7012 0104	Shelf Card/<n>	**bb PPEM303 gghh TBL
7012 0105	Shelf Card/<n>	* bb PPEM306 gghh TBL
7012 0200	Lp/<n>	*Cbb PPEM302 gghh TBL
7012 0202	Lp/<n>	* bb PPEM306 gghh TBL
7012 0301	Shelf Card/<n> SparedServices	* bb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7012' (page 54)		

MSS/MG15000 index group: 7013

Instance ranges for SET/CLEAR index group: 7013

Lp instance range (<n>): 0 to 15

MSS/MG15000 index group 7013: Message block usage alarms

Alarm NTP Index	Component name	SCC2 header
7013 0000	Lp/<n>	* bb PPEM301 gghh TBL
7013 0001	Lp/<n>	**bb PPEM301 gghh TBL
7013 0002 7013 0003 7013 0004 7013 0005 7013 0011	Lp/<n>	* bb PPEM301 gghh TBL
7013 0021	Lp/<n>	**bb PPEM301 gghh TBL
7013 0022	Lp/<n>	* bb PPEM301 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7013' (page 55)		

MSS/MG15000 index group: 7014

Instance ranges for SET/CLEAR index group: 7014

Lp instance range (<n>): 0 to 15

MSS/MG15000 index group 7014: Memory management alarms

Alarm NTP Index	Component name	SCC2 header
7014 0000	Lp/<n>	* bb PPEM301 gghh TBL
7014 0001	Lp/<n>	**bb PPEM301 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7014' (page 56)		

MSS/MG15000 index group: 7015

Instance ranges for SET/CLEAR index group: 7015

Server instance range (<n>): 1 to 10

MSS/MG15000 index group 7015: Network time-of-day (TOD) synchronization

Alarm NTP Index	Component name	SCC2 header
7015 0000 7015 0002	Time	**bb PPEM304 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7015' (page 56)		

Alarm NTP Index	Component name	SCC2 header
7015 0010 7015 0011	Time Server/<n>	* bb PPEM300 gghh TBL
7015 0012	Time Server/<n>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7015' (page 56)		

MSS/MG15000 index group: 7017

MSS/MG15000 index group 7017: Network clock synchronization alarms

Alarm NTP Index	Component name	SCC2 header
7017 1000	NS	* bb PPEM300 gghh TBL

MSS/MG15000 index group: 7021

Instance ranges for SET/CLEAR index group: 7021

Cache instance range (<n>): 0 to 15
Vr instance range (<i>): any string; usually the digit 0 for the management Vr
Vrf instance range (<y>): name of the vrf
IP address (<ipaddress>): address of the local IpLogicalInterface
Lp instance range (<x>): 0 to15
Protocol Port Id (<ppId>):
VirtualIfEntry identifier (<virtIfId>):

MSS/MG15000 index group 7021: Internet protocol alarms

Alarm NTP Index	Component name	SCC2 header
7021 0006	Vr/<i> Ip Cache/<n>	**bb PPEM302 gghh TBL
7021 0013	Vr/<i> Ip Cpp IsolatedDa/<ipaddress>,<x> Rtr/<i> Cpp IsolatedDa/<ipaddress>,<x> Rtr/<i> Vrf/<y> Cpp IsolatedDa/<ipaddress>,<x>	* bb PPEM305 gghh TBL
7021 0014	Vr/<i> Ip Cpp IsolatedDa/<ipaddress>,<x> Rtr/<i> Cpp IsolatedDa/<ipaddress>,<x> Rtr/<i> Vrf/<y> Cpp IsolatedDa/<ipaddress>,<x>	**bb PPEM305 gghh TBL
7021 1002	Vr/<i> Pp/<ppId> IpPort LogicalIf/<ipaddress> OspfIf Rtr/<i> Interface/<ipaddress> OspfIf	**bb PPEM305 gghh TBL
7021 1003	Vr/<i> Ip Ospf VirtIfEntry/<virtIfId>	**bb PPEM305 gghh TBL
7021 1017	Vr/<i> Ip Ospf	* bb PPEM305 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7021' (page 57)		

MSS/MG15000 index group: 7026

MSS/MG15000 index group 7026: LAN port management system alarms

Alarm NTP Index	Component name	SCC2 header
7026 3000	Lp/0 OamEnet/0	*Cbb PPEMeee gghh TBL where: eee = 300, 303
7026 3005	Lp/0 OamEnet/0	* bb PPEMeee gghh TBL where: eee = 300, 303

MSS/MG15000 index group: 7039

Instance ranges for SET/CLEAR index group: 7039

AtmIf instance range (<n>): 1 to 4095
Vcc instance range (<n2.n3>): where n2 is VPI, n3 is VCI
VPI instance range (<n2>): 0 to 4095
VCI instance range (<n3>): 0 to 65535

MSS/MG15000 index group 7039: ATM core alarms

Alarm NTP Index	Component name	SCC2 header
7039 1000	AtmIf/<n>	* bb PPEM300 gghh TBL
7039 1001 7039 1002 7039 1003 7039 1004	AtmIf/<n> AtmIf/<n> Ca Cbr/0 AtmIf/<n> Ca rtVbr/0 AtmIf/<n> Ca nrtVbr/0 AtmIf/<n> Ca Ubr/0	* bb PPEM301 gghh TBL
7039 2000 7039 2003	AtmIf/<n> Vcc/<n2.n3>	**bb PPEM302 gghh TBL
7013 3000	AtmIf/<n> Vpt/<n2>	* bb PPEM300 gghh TBL
7039 4001	AtmIf/<n>	**bb PPEM300 gghh TBL
7039 5000	AtmIf/<n>	*Cbb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7039' (page 58)		

MSS/MG15000 index group: 7041

Instance ranges for SET/CLEAR index group: 7041

AtmIf instance range (<n>): 1 to 4095

CfgNode instance range (<n>): 0 to 104

MSS/MG15000 index group 7041: ATM networking alarms

Alarm NTP Index	Component name	SCC2 header
7041 0050	AtmIf/<n> Uni Ilmi	**bb PPEMeee gghh TBL where: eee = 300, 303
7041 0052	AtmIf/<n> Uni Ilmi	*Cbb PPEM300 gghh TBL
7041 0150	AtmIf/<n> Uni Sig AtmIf/<n> Pnni Sig	**bb PPEM300 gghh TBL
7041 0200	AtmIf/<n> Uni Sig AtmIf/<n> Pnni Sig AtmIf/<n> Uni Ilmi AtmIf/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0250	AtmIf/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0253	AtmIf/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0301	Artg Pnni	**bb PPEM300 gghh TBL
7041 0302	Artg Pnni CfgNode/<n> Rcc	**bb PPEM300 gghh TBL
7041 0400	AtmIf/<n> Uni AtmIf/<n> Pnni	* bb PPEM300 gghh TBL
7041 0401	AtmIf/<n>	**bb PPEM300 gghh TBL
7041 0500	AtmIf/<n> Uni AtmIf/<n> Pnni	* bb PPEM300 gghh TBL
7041 0600 7041 0601	AtmIf/<n> Uni AtmIf/<n> Pnni	* bb PPEM302 gghh TBL
7041 0700	Artg Pnni CfgNode /n>	**bb PPEM300 gghh TBL
7041 0701	Atmif/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0703	Artg Pnni CfgNode /<n>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7041' (page 60)		

MSS/MG15000 index group: 7042

Instance ranges for SET/CLEAR index group: 7042

Aal1Ces instance range (<n>): 1 to 16383

MSS/MG15000 index group 7042: Circuit Emulation Service (CES) alarms

Alarm NTP Index	Component name	SCC2 header
7042 0001	Aal1Ces/<n>	**bb PPEM301 gghh TBL
7042 0002	Aal1Ces/<n>	**bb PPEM302 gghh TBL
7042 0003	Aal1Ces/<n>	**bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7042' (page 61)		

MSS/MG15000 index group: 7054

Instance ranges for SET/CLEAR index group: 7054

Card instance range (<n>): 1 to 15

MSS/MG15000 index group 7054: Sparing panel subsystem alarms

Alarm NTP Index	Component name	SCC2 header
7054 0100 7054 0101 7054 0102 7054 0103 7054 0104 7054 0105	Shelf Card/<n>	**bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7054' (page 62)		

MSS/MG15000 index group: 7056

The alarms in this index group apply to failures of the Voice Services Processor (VSP) and Narrowband Service Trunk over ATM (Nsta). This alarm group is specific to the Media Gateway 15000 application. For example, severe failure of the VSP card results in an alarm.

Instance ranges for SET/CLEAR index group: 7056

Lp instance range (<x>): 0 to 15
Lp instance range (<y>): 0 to 3
PModule instance range (<y>): 1 to 24
PBlock instance range (<z>): 1 to 2
Nsta instance range (<i>): 0 to 15999
GigE instance range (<m>): 0 or 1
Control instance range (<n>): mg or sg
Conn instance range (<l>): 0 to 128
Brag instance range (<d>): 0 to 159999
Q921 instance range (<r>): 1 to 31
LapV5 instance value (<w>): 15, 16, 31
Tag instance range (<u>): 0 to 16777215

AtmTConn instance range (<h>): 1 to 2700 (max 4094)
dBrag instance range (<t>): 0 to 127
BragS instance range (<k>): 0 to 15
CasDefn instance range (<z>): 0 to 24
Security policy database name (<spd_name>): string

MSS/MG15000 index group 7056: Voice Services Processor (VSP) and Narrowband service trunk over ATM (Nsta) alarms

Alarm NTP Index	Component name	SCC2 header
7056 0002	Lp/<x> Vsp PModule/<y>	** bb PPEM306 gghh TBL
7056 0003	Lp/<x> Vsp PModule/<y> PBlock/<z>	*C bb PPEM303 gghh TBL
7056 0500 7056 0501 7056 0502	Lp/<x> Vsp GigE/<m>	** bb PPEM300 gghh TBL
7056 1000	Nsta/<i> Conn/<l> Nsta/<i> Vgs AtmTConn/<h>	**bb PEM300 gghh TBL
7056 1200	Nsta/<I> Vgs	* bb PPEM300 gghh TBL
7056 1201	Nsta/<i> Vgs IpMConn	** bb PPEM300 gghh TBL
7056 1202	Nsta/<i> Vgs Control/<n> Mediagateway Nsta/<i> Vgs Control/<n> Signalingateway	** bb PPEM300 gghh TBL
7056 1203	Nsta/<i> Vgs Control/<n> Mediagateway Aap Nsta/<i> Vgs Control/<n> Signalingateway Aap Nsta/<i> Vgs Control/<n> SpvcAp Nsta/<i> Vgs IpMConn Aap Nsta/<i> Vgs IpMConn SpvcAp Nsta/<I> Vgs AtmTConn/<h> Aap Nsta/<I> Vgs AtmTConn/<h> SpvcAp	** bb PPEM300 gghh TBL
7056 1204	Nsta/<i> Vgs	* bb PPEM302 gghh TBL
7056 1208	Nsta/<i> Vgs CasDefn/<y> Nsta/<i> Vgs LocalAnnouncements	* bb PPEM302 gghh TBL
7056 1209	Lp/<x> Vsp PModule/<y>	* bb PPEM303 gghh TBL
7056 1210	Nsta/<x> Vgs Brag/<d> Q921/<r> Nsta/<i> Vgs BragS/<k> dBrag/<t> Q921	** bb PPEM300 gghh TBL
7056 1211	Nsta/<x> Vgs Iua Nsta/<x> Vgs Iua	** bb PPEM300 gghh TBL
7056 1213	Nsta/<x> Vgs Brag/<d> V5Link LapV5/<w>	** bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7056' (page 63)		

Alarm NTP Index	Component name	SCC2 header
7056 1217	Nsta/<x> Vgs Tag/<u>	*Cbb PPEM302 gghh TBL
7056 1219	Nsta/<x> Vgs Ctrl/<n> Spd/<spd_name> IkePolicy/1	** bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7056' (page 63)		

MSS/MG15000 index group: 7060

Instance ranges for SET/CLEAR index group: 7060

Lp instance range (<n>): 1 to 15
Aqm instance range (<n2>): 0 to 3

MSS/MG15000 index group 7060: ATM and frame resource control alarms

Alarm NTP Index	Component name	SCC2 header
7060 1000	Lp/<n> Eng Fcrc	**bb PPEM300 gghh TBL
7060 1100	Lp/<n> Eng Arc Aqm/<n2>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 7060' (page 65)		

MSS/MG15000 index group: 7082

MSS/MG15000 index group 7082: Routine Exercise alarms

Alarm NTP Index	Component name	SCC2 header
7082 0001	Rex	* bb PPEM302 gghh TBL
7082 0002	Rex	* bb PPEM306 gghh TBL

MSS15000 / MG15000 Message alarms

Nortel Multiservice Switch 15000 / Media Gateway 15000 (MSS/MG15000) message alarms that are applicable to Carrier Voice over IP networks are divided into the following index groups:

- "MSS/MG15000 index group 0000" (page 38)
- "MSS/MG15000 index group 7000: Provisioning alarms" (page 39)
- "MSS/MG15000 index group 7002: Backplane control system alarms" (page 40)
- "MSS/MG15000 index group 7003: Data collection system alarms" (page 40)
- "MSS/MG15000 index group 7006: Network management interface system alarms and Radius security alarms" (page 41)
- "MSS/MG15000 index group 7008: File system alarms" (page 41)

MSS/MG15000 index group: 0000

The alarms in this index group include OSI administrative state changes, general engineering and memory alarms, and internal software error detected alarms.

MSS/MG15000 index group 0000

Alarm NTP Index	Component name	SCC2 header
0000 9000 0000 9001 0000 9002 0000 9003	This alarm can apply to many node components. Frequently, the component is EM/<nodename>	* bb CA eee gghh TBL where: eee = 300, 302

MSS/MG15000 index group: 7000

The alarms in this index group apply to failures resulting from provisioning attempts. For example, the failure of a provisioning file to load results in an alarm.

MSS/MG15000 index group 7000: Provisioning alarms

Alarm NTP Index	Component name	SCC2 Header
7000 0001	Prov	*Cbb PPEM302 gghh TBL
7000 0002	Prov	* bb PPEM302 gghh TBL
7000 0003	Prov	*Cbb PPEM302 gghh TBL
7000 0004	Prov	*Cbb PPEM302 gghh TBL
7000 0005	Prov	* bb PPEM302 gghh TBL
7000 0006	Prov	*Cbb PPEM302 gghh TBL
7000 0008	Prov	**bb PPEM302 gghh TBL
7000 0009	Prov	**bb PPEM302 gghh TBL
7000 0012	Prov	* bb PPEM306 gghh TBL
7000 0013	Prov	* bb PPEM302 gghh TBL
7000 0015	Prov	* bb PPEM302 gghh TBL
7000 0016	Prov	* bb PPEM30x gghh TBL
7000 0029	Prov	* bb PPEM30x gghh TBL
7000 0030	Prov	* bb PPEM30x gghh TBL
7000 0031	Prov	* bb PPEM302 gghh TBL
7000 0032	Prov	* bb PPEM30x gghh TBL
7000 0035	This alarm can apply to many node components	* bb PPEM307 gghh TBL
7000 0039	Prov	* bb PPEM306 gghh TBL

MSS/MG15000 index group: 7002

The alarms in this index group apply to failures involving the backplane. For example, a communication failure between a card and the backplane results in an alarm.

Instance ranges for message index group: 7002

FabricCard instance range (<i>): X or

Card instance range (<n>): 0 to 15

MSS/MG15000 index group 7002: Backplane control system alarms

Alarm NTP Index	Component name	SCC2 Header
7002 0010	Shelf FabricCard/<i>	* bb PPEM303 gghh TBL
7002 0012	Shelf FabricCard/<i>	* bb PPEM303 gghh TBL
7002 0013	Shelf FabricCard/<i>	* bb PPEM303 gghh TBL
7002 0014	Shelf FabricCard/<i>	* bb PPEM303 gghh TBL
7002 1000	Shelf Card/<n>	*Cbb PPEM303 gghh TBL
Note: Refer to Instance ranges for message index group: 7002		

MSS/MG15000 index group: 7003

The alarms in this index group apply to failures involving the data collection system. For example, an alarm or log queue size that has exceeded a threshold results in an alarm.

Instance ranges for message index group: 7003

Collector instance range (<t>): accounting, alarm, log, debug, scn, trap, stats, rtstats, appl

Agent instance range (<n>): 0 to15

MSS/MG15000 index group 7003: Data collection system alarms

Alarm NTP Index	Component name	SCC2 Header
7003 0004	Collector/<t> Agent/<n>	* bb PPEM301 gghh TBL
7003 0008	Collector/log Spooler	* bb PPEM306 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7003' (page 71)		

MSS/MG15000 index group: 7006

Instance ranges for message index group: 7006

Management Interface type (<type>): Fmip, Ftp, Local, Telnet

Session instance range (<n>): 1 to 35 (Fmip); 1 to 16 (Ftp); 1 to 2 (Local); 1 to 16 (Telnet)

Radius Server instance range (<m>): 0 or 1

MSS/MG15000 index group 7006: Network management interface system alarms and Radius security alarms

Alarm NTP Index	Component name	SCC2 Header
7006 0001	Nmis/<type>	**bb PPEM305 gghh TBL
7006 0002	Nmis/<type> Session/<n>	* bb PPEM305 gghh TBL
7006 0003	Nmis/<type> Session/<n>2	**bb PPEM300 gghh TBL
7006 0005	Nmis Ftp	**bb PPEM302 gghh TBL
7006 0006	Nmis Fmip	**bb PPEM305 gghh TBL
7006 0007	Nmis/<type> Session/<n>	**bb PPEM300 gghh TBL
7006 0008	Nmis Fmip	**bb PPEM300 gghh TBL
7006 0009	Ac	* bb PPEMeee gghh TBL where: eee = 300, 305
7006 0101 7006 0102	Ac Radius Server/<m>	**bb PPEM305 gghh TBL
7006 0103 7006 0104	Ac Radius	**bb PPEM305 gghh TBL
7006 0105	Ac Radius Server/<m>	**bb PPEM305 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7006' (page 72)		

MSS/MG15000 index group: 7008

Instance ranges for message index group: 7008

Disk instance range (<n>): 0 or 1

Card instance range (<x>): 0 or 1

MSS/MG15000 index group 7008: File system alarms

Alarm NTP Index	Component name	SCC2 Header
7008 1003	FileSystem	**bb PPEM302 gghh TBL
7008 1012	FileSystem Disk/<n>	* bb PPEM303 gghh TBL
7008 1013	FileSystem Disk/<n>	**bb PPEM303 gghh TBL
7008 1014	FileSystem Disk/<n>	**bb PPEM307 gghh TBL
7008 1015	FileSystem Disk/<n>	* bb PPEM307 gghh TBL
7008 1016	FileSystem Disk/<n>	* bb PPEM307 gghh TBL
7008 1018	FileSystem Disk/<n>	* bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7008' (page 73)		

Alarm NTP Index	Component name	SCC2 Header
7008 1020	FileSystem	* bb PPEM303 gghh TBL
7008 1021	Shelf Card/<x>	**bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7008' (page 73)		

MSS/MG15000 index group: 7011

Instance ranges for message index group: 7011

Lp instance range (<n>): 0 to 15
Port types (<type>): SONET, DS3
SONET instance range (<n2>): 0 to 3 (4-port FP); 0 to 15 (16-port FP)
DS3 instance range (<n2>): 0 to 3 (4-port FP); 0 to 11 (12-port FP)

MSS/MG15000 index group 7011: Port management system and Automatic Protection Switching alarms

Alarm NTP Index	Component name	SCC2 Header
7011 2002	Lp/<n> <type>/<n2>	**bb PPEM303 gghh TBL
7011 5112	Lp/<n> DS3/<n2>	* bb PPEM300 gghh TBL
7011 8000	Lp/<n> <type>/<n2>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7011' (page 73)		

MSS/MG15000 index group: 7012

Instance ranges for message index group: 7012

Lp instance range (<n>): 0 to 15
Card instance range (<n>): 0 to 15

MSS/MG15000 index group 7012: Processor control system alarms

Alarm NTP Index	Component name	SCC2 Header
7012 0054	Shelf	**bb PPEM303 gghh TBL
7012 0101	Shelf Card/<n>	* bb PPEM303 gghh TBL
7012 0102	Shelf Card/<n>	* bb PPEM301 gghh TBL
7012 0151 7012 0152 7012 0153	Shelf Card/<n>	**bb PPEM302 gghh TBL
7012 0154 7012 0155 7012 0156	Shelf Card/<n>	**bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7012' (page 74)		

Alarm NTP Index	Component name	SCC2 Header
7012 0201	Lp/<n>	* bb PPEM306 gghh TBL
7012 0203	Lp/0	* bb PPEM303 gghh TBL
7012 0204	Lp/<n>	* bb PPEM306 gghh TBL
7012 0300	Shelf Card/<n> SparedServices	aabb PPEMeee gghh TBL where: aa = "*C", "* " eee = any
Note: Refer to 'Instance ranges for message index group: 7012' (page 74)		

MSS/MG15000 index group: 7015

MSS/MG15000 index group 7015: Network time-of-day (TOD) synchronization alarms

Alarm NTP Index	Component name	SCC2 Header
7015 0001	Time	* bb PPEMeee gghh TBL where: eee = 304, 306, 307

MSS/MG15000 index group: 7017

MSS/MG15000 index group 7017: Network clock synchronization alarms

Alarm NTP Index	Component name	SCC2 Header
7017 1001	Ns	* bb PPEM301 gghh TBL

MSS/MG15000 index group: 7021

Instance ranges for message index group: 7021

Vr instance range (<i>): any string; usually the digit 0 for the management Vr

MSS/MG15000 index group 7021: Internet protocol alarms

Alarm NTP Index	Component name	SCC2 Header
7021 0000	Vr/<i> Ip	* bb PPEM302 gghh TBL
7021 1000 7021 1001 7021 1011	Vr/<i> Ip Ospf	* bb PPEM302 gghh TBL
7021 1016	Vr/<i> Ip Ospf	**bb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7021' (page 75)		

Alarm NTP Index	Component name	SCC2 Header
7021 1021	Vr/<i>	**bb PPEM302 gghh TBL
7021 1100	Vr/<i> Ip Ospf	* bb PPEM300 gghh TBL
7021 1101 7021 1103	Vr/<i> Ip Ospf	* bb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7021' (page 75)		

MSS/MG15000 index group: 7026

MSS/MG15000 index group 7026: LAN port management system alarms

Alarm NTP Index	Component name	SCC2 Header
7026 3002	LP/0 OamEthernet/0	* bb PPEM30x gghh TBL
7026 3003	LP/0 OamEthernet/0	* bb PPEM303 gghh TBL
7026 3006	LP/0 OamEthernet/0	* bb PPEM302 gghh TBL

MSS/MG15000 index group: 7039

Instance ranges for message index group: 7039

AtmIf instance range (<n>): 1 to 4095
Vcc instance range (<n2.n3>): where n2 is VPI, n3 is VCI
VPI instance range (<n2>): 0 to 4095
VCI instance range (<n3>): 0 to 65535

MSS/MG15000 index group 7039: ATM core alarms

Alarm NTP Index	Component name	SCC2 Header
7039 2001	AtmIf/<n> Vcc/<n2.n3>	* bb PPEM302 gghh TBL
7039 4000	AtmIf/<n>	* bb PPEM300 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7039' (page 76)		

MSS/MG15000 index group: 7041

Instance ranges for message index group: 7041

AtmIf instance range (<n>): 1 to 4095
CfgNode instance range (<n>): 0 to 104
Top instance range (<n>): 0 to 104
Node instance range (<id>): 44 character hexadecimal digit

Vpt instance range (<n2>): 0 to 4095

MSS/MG15000 index group 7041: ATM networking alarms

Alarm NTP Index	Component name	SCC2 Header
7041 0000	AtmIf/<n> Uni	* bb PPEM306 gghh TBL
7041 0001	AtmIf/<n> Uni	* bb PPEM303 gghh TBL
7041 0051	AtmIf/<n> Uni Ilmi	**bb PPEM300 gghh TBL
7041 0151	Atmif/<n> Uni Atmif/<n> Pnni Atmif/<n> Vpt/<n2> Uni Atmif/<n> Vpt/<n2> Pnni	*Cbb PPEM300 gghh TBL
7041 0251	AtmIf/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0252	AtmIf/<n> Pnni Rcc	**bb PPEM300 gghh TBL
7041 0602	ARtg Pnni Top/<n> Node/<id>	**bb PPEM301 gghh TBL
7041 0603	ARtg	**bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7041' (page 78)		

MSS/MG15000 index group: 7056

The alarms in this index group apply to failures of the Voice Services Processor (VSP) and Narrowband service Trunk over ATM (Nsta). This alarm group is specific to the Media Gateway application. For example, severe failure of the VSP card results in an alarm.

Instance ranges for message index group: 7056

Lp instance range (<x>): 0 to 15
PModule instance range (<y>): 1 to 24
PBlock instance range (<z>): 1 to 2
Nsta instance range (<i>): 0 to 15999
Conn instance range (<l>): 0 to 128
Brag instance range (<d>): 0 to 159999
BragS instance range (<p>): 0 to 15

MSS/MG15000 index group 7056: Voice Services Processor (VSP) and Narrowband service trunk over ATM (Nsta) alarms

Alarm NTP Index	Component name	SCC2 Header
7056 0000	<Any MSS15000 component>	* bb PPEM302 gghh TBL
7056 0006	Lp/<x> Vsp PModule/<y>	* bb PPEM303 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7056' (page 79)		

Alarm NTP Index	Component name	SCC2 Header
7056 1101 7056 1206 7056 1208	Nsta/<i> Conn/<l> Brag/<d> Ccst Nsta/<i> Vgs H248/0 Nsta/<x> Vgs CasDefn/<y> or Nsta/<x> Vgs LocalAnnouncements	* bb PPEM300 gghh TBL * bb PPEM300 gghh TBL
7056 1212	Nsta/<i> Vgs lua	* bb PPEM300 gghh TBL
7056 1214	Lp/<x> Vsp PModule/<y>	** bb PPEM302 gghh TBL
7056 1215	Nsta/<i> Vgs BragS/<p>	** bb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7056' (page 79)		

MSS/MG15000 index group: 7060

Instance ranges for message index group: 7060

Lp instance range (<n>): 0 to 15

MSS/MG15000 index group 7060: ATM and frame resource control alarms

Alarm NTP Index	Component name	SCC2 Header
7060 1200 7060 1300 7060 1400 7060 1500 7060 1600	Lp/<n> Eng Arc Ov Lp/<n> Eng	* bb PPEM301 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7060' (page 80)		

MSS/MG15000 index group: 7061

Instance ranges for message index group: 7061

Vr instance range (<i>): any string, but often specified simply as a digit
Spd instance range (<spd_name>): the name of the security policy database
Pol instance range (<pol_id>): instance number of the Policy component
Security association (<ip_addr,esp,spi>): IP address of the peer with which this Security Association component is established, the security protocol (ESP), the Security Parameter Index (SPI) value

MSS/MG15000 index group 7061: Security policy violation alarms

Alarm NTP Index	Component name	SCC2 Header
7061 0001	Vr/<i> Ip Spd/<spd_name> Pol/<pol_id> Sa/<ip_addr,esp,spi>	**bb PPEM305 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7061' (page 80)		

MSS/MG15000 index group: 7071

Instance ranges for message index group: 7071

LAN application instance range (<n>): 1 to 255

MSS/MG15000 index group 7071: LAN Application alarms

Alarm NTP Index	Component name	SCC2 Header
7071 1000	La/<n>	*Cbb PPEM302 gghh TBL
Note: Refer to 'Instance ranges for message index group: 7071' (page 81)		

MSS/MG15000 index group: 7080

Instance range for message index group: 7080

Software application (<name>): the name of the software application

MSS/MG15000 index group 7080: Software file system alarms

Alarm NTP Index	Component name	SCC2 Header
7080 0100	Sw Av/<name>	**bb PPEM302 gghh TBL
Note: Refer to 'Instance range for message index group: 7080' (page 81)		

MSS/MG15000 index group: 7082

MSS/MG15000 index group 7082: Routine Exercise alarms

Alarm NTP Index	Component name	SCC2 Header
7082 0003	Rex	**bb PPEM303 gghh TBL

MSS/MG15000 index group: 7083

Instance range for message index group: 7083

Card instance range (<x>): 0 to 15

MSS/MG15000 index group 7083: Flash burning alarms

Alarm NTP Index	Component name	SCC2 Header
7083 0100	Shelf Card/<x> Fpga	**bb PPEM302 gghh TBL
7083 0101	Shelf Card/<x> Fpga	**bb PPEM303 gghh TBL
Note: Refer to 'Instance range for message index group: 7083' (page 82)		

Summary of Multiservice Data Manager alarm logs

For information about fault management involving Nortel Multiservice Data Manager (MDM) alarms applicable to Carrier Voice over IP network solutions, see the following sections:

- "Multiservice Data Manager alarm logs" (page 49)
- "Identifying Multiservice Data Manager alarms in SCC2 logs" (page 50)
- "Multiservice Data Manager SET/CLEAR alarms" (page 50)

Multiservice Data Manager alarm logs

This section lists those Nortel Multiservice Data Manager proxy SET/CLEAR alarms that are applicable to Carrier Voice over IP network solutions. These proxy SET/CLEAR alarms include software failure alarms and alarms from the Solaris or Sun Fire platforms, which Multiservice Data Manager software is monitoring. These alarms are initiated by Multiservice Data Manager on behalf of Nortel Multiservice Switch 15000 /Media Gateway 15000 (MSS/MG15000) nodes and injected into the node's alarm log stream. In the following sections, Multiservice Data Manager SET/CLEAR and message alarms are matched with the corresponding record for the same type of alarm in a SCC2 alarm log. Multiservice Data Manager SET/CLEAR alarms are those alarms where the *event* line has a value indicating a *set* or *clear* alarm. For more information on the lines in a SCC2 alarm log, see "Interpreting SCC2 logs" (page 13).

> ***Note:*** The following sections do not include all corresponding Multiservice Data Manager CLEAR and SET alarm logs. The SCC2 header for the CLEAR alarm is distinguished from the corresponding SET alarm by the first two characters in the header. For example, the alarm severity field for a SET alarm reads "aa", while the alarm severity field for the CLEAR alarm replaces the "aa" with two blank spaces. For more information on the SCC2 alarm log header line, see "Interpreting SCC2 logs" (page 13).

Identifying Multiservice Data Manager alarms in SCC2 logs

This section tells you how to identify a SCC2 alarm log header and the corresponding Nortel Multiservice Data Manager alarm.

Multiservice Data Manager alarm NTP index field

Multiservice Data Manager alarm NTP index consists of an eight digit number that uniquely identifies each type of alarm. The alarm identifier is composed of two parts

- four initial digits that identify the Index Group to which the alarm belongs
- four subsequent digits that identify the SubIndex number for the alarm

All of the records for Multiservice Data Manager alarms in this document are grouped on the basis of a common index group number. For example, all the records for a Multiservice Data Manager server monitoring alarms in Index Group 3011 that are applicable to Carrier Voice over IP networks, appear below the heading "Multiservice Data Manager index group: 3011". The SubIndex number field uniquely identifies each alarm within an index group by giving the second four digit identifying number. For example, 3011 0100, the index group and SubIndex numbers, indicates a specific monitoring alarm.

Component field

The Component name field for each Nortel Multiservice Data Manager (MDM) alarm is also used to identify the alarm in the SCC2 alarm log. The component name indicates the managed object against which the alarm log is generated. For example, the component name of the 3011 0100 alarm is `NMS/<x> DISK/<v>`. The component name is preceded by the node name of the module which typically starts with EM.

SCC2 header field

The SCC2 header field presents the corresponding header from the SCC2 alarm log that matches the specific Multiservice Data Manager alarm already identified in the record. For example, the SCC2 header that matches the 3011 0100 alarm is aabb MDM 303 gghh TBL.

Comment field

The Comment field includes additional descriptive information about either a specific alarm or a group of alarms.

Multiservice Data Manager SET/CLEAR alarms

Nortel Multiservice Data Manager (MDM) SET/CLEAR alarms that are applicable to Carrier Voice over IP networks are divided into the following index groups:

- Multiservice Data Manager index group 0999

- "Multiservice Data Manager index group 3010: Multiservice Data Manager server alarms" (page 52)
- "Multiservice Data Manager index group 3011: Multiservice Data Manager platform monitoring alarms" (page 53)
- "Multiservice Data Manager index group 3012: Template configuration audit alarms" (page 54)

Note: All of Multiservice Data Manager SET/CLEAR alarms for Carrier Voice over IP network solutions are applicable to the Packet Trunking - AAL1, Universal Access - AAL1, and Universal Access - IP solutions.

Multiservice Data Manager index group: 0999

Alarm 0999 0001 indicates the loss of access between a Nortel Multiservice Switch 15000 / Media Gateway 15000 node and Multiservice Data Manager server. The server tries to reconnect and when successful, does a state walk of major components on the shelf before issuing alarms for those components that are out-of-service.

Alarm 0999 0012 is a Multiservice Data Manager proxy alarm. This alarm, originating on the server, is sent on behalf of the node, as a result of a state walk or state change notification.

Instance ranges for SET/CLEAR index group: 0999

EM instance range (<nodename>): a string, typically the CLLI identifier for the MSS15000 or MG15000 node

Multiservice Data Manager index group 0999

Alarm NTP index	Component name	SCC2 Header
0999 0001	EM/<nodename>	*Cbb MDM 303 gghh TBL
0999 0012	This alarm can apply to many node components.	**bb PPEMeee gghh TBL where: eee = 300, 301, 302, 303, 304, 305, 306, 307
Note: Refer to 'Instance ranges for SET/CLEAR index group: 0999' (page 86)		

Multiservice Data Manager index group: 3010

The alarms in this index group appear when there are faults with a Nortel Multiservice Data Manager (MDM) server processes, which are needed by Multiservice Data Manager tools and applications. The Multiservice Data Manager Log Display or corresponding UNIX utility (nmslog) may also be used to find the information for the cause of the problem.

Instance ranges for SET/CLEAR index group: 3010

NMS instance range (<x>): a string, typically the hostname of the MDM server platform
APP instance range (<a>): a string, denoting the name of a MDM software application
Autopatch nodes (<nodes parameter>): typically, the name of an HGDS group, a node name or a file name containing a list of node names
EM node name (<nodename>): a string, denoting the name of the MSS15000 node or MG15000 shelf

Multiservice Data Manager index group 3010: Multiservice Data Manager server alarms

Alarm NTP Index	Component name	SCC2 Header
3010 0000	NMS/<x> APP/<a>	**bb MDM 302 gghh TBL
3010 0801	NMS/<x> APP/PPAUTOPATCH	* bb MDM 306 gghh TBL
3010 0802	NMS/<x> APP/PPAUTOPATCH NODES/<nodes parameter>	* bb MDM 302 gghh TBL
3010 0803	NMS/<x> APP/PPAUTOPATCH NODES/<nodes parameter>	**bb MDM 302 gghh TBL
3010 0820	NMS-APP/PPAUTOPATCH EM/<nodename>	**bb MDM 302 gghh TBL
3010 0821	NMS-APP/PPAUTOPATCH EM/<nodename>	**bb MDM 302 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3010' (page 87)		

Multiservice Data Manager index group: 3011

Nortel Multiservice Data Manager (MDM) servers monitoring of platforms such as Solaris and Sun Fire includes monitoring of the CPU, disk space, memory, local ports, and connectivity to adjacent neighbors. The severity of resource problems are determined with pre-set threshold values. Connectivity problems are determined using the ping command.

The alarms 3011 xxFF, where xx can be 01 through 07, are CLEAR alarms only. A single 3011 xxFF alarm clears all outstanding alarms from 3011 xx00 through 3011 xx99.

Instance ranges for SET/CLEAR index group: 3011

NMS instance range (<x>): a string, typically the hostname of the MDM server platform
APP instance range (<a>): a string, denoting the name of a MDM software application
DISK instance range (<v>): a string, denoting disk volume name
CPU instance range (<c>): a string, denoting the CPU id
PORT instance range (<ip>): an iP address or host name
CONNECTION instance range (<ip>): an IP address or host name

SDS instance range (<d>): logical disk name

Multiservice Data Manager index group 3011: Multiservice Data Manager platform monitoring alarms

Alarm NTP Index	Component name	SCC2 Header
3011 0001	NMS/<x> APP/<a>	*Cbb MDM 303 gghh TBL
3011 0100	NMS/<x> DISK/<v>	aabb MDM 303 gghh TBL where: aa = "*C", "**", "* "
3011 01FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0200	NMS/<x> CPU/<c>	aabb MDM 303 gghh TBL where: aa = "*C", "**", "* "
3011 02FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0300	NMS/<x> MEMORY	aabb MDM 303 gghh TBL where: aa = "*C", "**", "* "
3011 03FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0401	NMS/<x> PORT/<ip>	**bb MDM 303 gghh TBL
3011 04FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0501	NMS/<x> CONNECTION/<ip>	*Cbb MDM 303 gghh TBL
3011 05FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0600	NMS/<x> SDS/<d>	*Cbb MDM 303 gghh TBL
3011 06FF	NMS/<x>	bb MDM 303 gghh TBL
3011 0700	NMS/<x>	aabb MDM 303 gghh TBL where: aa = "*C", "**"
3011 07FF	NMS/<x>	bb MDM 303 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3011' (page 48)		

Multiservice Data Manager index group: 3012

The alarms in this index group appear when there are problems with MSS configuration that are detected by the audit tool.

Instance ranges for SET/CLEAR index group: 3012

EM node name (<nodename>): a string, denoting the name of the MSS15000 node or MG15000 shelf

Multiservice Data Manager index group 3012: Template configuration audit alarms

Alarm NTP Index	Component name	SCC2 Header
3012 0001 3012 0002	NMS_APP/CFGAUDIT EM/<nodename>	**bb MDM 302 gghh TBL
Note: Refer to 'Instance ranges for SET/CLEAR index group: 3012' (page 89)		

Multiservice Data Manager Message alarms

Nortel Multiservice Data Manager (MDM) Message alarms that are applicable to Carrier Voice over IP networks are divided into the following index groups:

- "Multiservice Data Manager index group: 0999" (page 54)
- "Multiservice Data Manager index group 3010: Multiservice Data Manager server alarms" (page 52)
- "Multiservice Data Manager index group 600x: MDP application alarms" (page 56)

Note: All of Multiservice Data Manager Message alarms for Carrier Voice over IP network solutions are applicable to the Packet Trunking - AAL1, Universal Access - AAL1, and Universal Access - IP solutions.

Multiservice Data Manager index group: 0999

Alarm 0999 0001 is a Multiservice Data Manager proxy alarm. This alarm is issued when a loss of redundancy of the alarm feed occurs. The MDM has lost its direct network alarm feed, but is still collecting alarms from the redundant MDM.

The message alarm will not be issued for all conditions that could lead to a loss of redundancy, nor is it "cleared" when the problem is resolved. This information is included as the alarm may be seen, but it is not recommended that the alarm be used to trigger activity.

Instance ranges for Message index group: 0999

Device type (<devicetype>): a string representing any IP-enabled device such as "EM" or "PP8600"

Node name (<nodename>): a string representing the name of the device or shelf

Multiservice Data Manager index group 0999

Alarm NTP index	Component name	SCC2 Header
0999 0100	<devicetype>/<nodename>	* bb MDM 303 gghh TBL
Note: Refer to 'Instance ranges for Message index group: 0999' (page 92)		

Multiservice Data Manager index group: 3010

The alarms in this index group appear when there are faults with Nortel Multiservice Data Manager (MDM) server processes, which are needed by Multiservice Data Manager tools and applications. The Multiservice Data Manager Log Display or corresponding UNIX utility (nmslog) may also be used to find the information for the cause of the problem.

Instance ranges for Message index group: 3010

NMS instance range (<x>): a string, typically the hostname of the MDM server platform

GROUP instance range (<g>): a string, denoting the HGDS group name for a set of Multiservice Switch nodes

PP instance range (<nodename>): a string, typically the CLLI identifier for the node

Multiservice Data Manager index group 3010: Multiservice Data Manager server alarms

Alarm NTP Index	Component name	SCC2 Header
3010 0700	NMS/<x> GROUP/<g>	* bb MDM 305 gghh TBL
3010 0701 3010 0702	NMS/<x> PP/<nodename>	* bb MDM 300 gghh TBL
3010 0703	NMS/<x> APPL TODCHANGEOVER	* bb MDM 304 gghh TBL
Note: Refer to 'Instance ranges for Message index group: 3010' (page 93)		

Multiservice Data Manager index group: 600x

Instance ranges for Message index group: 600x

NMS instance range (<x>): a string, typically the hostname of the MDM server platform

MDP instance range (<a>): a string, denoting the name of an MDP software application

Multiservice Data Manager index group 600x: MDP application alarms

Alarm NTP Index	Component name	SCC2 header
6000 0001 to 6004 0000	NMS/<x> MDP/<a>	aabb MDM 307 gghh TBL where: aa = "*C", "**", "* "
Note: Refer to 'Instance ranges for Message index group: 600x' (page 94)		

SPFS fault management procedures

This appendix contains a set of solution-level Server Platform Foundation Software (SPFS) procedures that are relevant to Fault Management. Use the information in the following procedures in the context of Note 1 to Note 3:

Note 1: An N240 server with SPFS and MDM runs in a simplex configuration; it is not part of a high-availability cluster configuration. When dual MDM servers are deployed, they are functioning as two distinct one-server systems.

Note 2: In secured systems, SSH is used to log in to the server instead of telnet.

Note 3: As these procedures are used in different contexts in the Carrier Voice over IP suite of documentation, they may contain references to procedures that are not used by Nortel Multiservice Data Manager.

Disabling local logging of SPFS platform faults

Application

Use this procedure to disable local logging of the Server Platform Foundation Software (SPFS) platform alarm logs. Local logging is enabled by default and when enabled, the SPFS platform alarm logs are sent over both the syslog (custlog) and SNMP (alarmd) interfaces to the Integrated Element Management System (IEMS) causing duplication of alarm logs. To avoid this duplication, disable local logging.

Use this procedure to disable local logging of the Server Platform Foundation Software (SPFS) platform alarm logs. Local logging is enabled by default and when enabled, the SPFS platform alarm logs are sent over both the syslog (custlog) and SNMP (alarmd) interfaces to the CDMA Network Manager (CNM), if available, causing duplication of alarm logs. To avoid this duplication, disable local logging.

Prerequisites

You must have root user privileges.

Action

Perform the following steps to complete this procedure.

Step	Action
	At your workstation
1	Log in to the server by typing `> telnet <IP address>` and pressing the Enter key. where **`IP address`** is the IP address or host name of the SPFS-based server you want to query
2	When prompted, enter your user ID and password.
3	Change to the root user by typing `$ su -` and pressing the Enter key.
4	When prompted, enter the root password.
5	Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
1 - View
2 - Configuration
3 - Other
X - exit
select -
```

6 Enter the number next to the "Configuration" option in the menu.

Example response

```
Configuration
1 - NTP Configuration
2 - Apache Proxy Configuration
3 - DCE Configuration
4 - OAMP Application Configuration
5 - CORBA Configuration
6 - IP Configuration
7 - DNS Configuration
8 - Syslog Configuration
9 - Remote Backup Configuration
10 - Database Configuration
11 - NFS Configuration
12 - Bootp Configuration
13 - Restricted Shell Configuration
14 - Security Services Configuration
15 - Login Session
16 - Location Configuration
17 - Cluster Configuration
18 - Succession Element Configuration
19 - snmp_poller (SNMP Poller Configuration)
20 - backup_config (Backup Configuration)
X - exit
Select -
```

7 Enter the number next to the "Succession Element Configuration" option in the menu.

Example response:

```
Succession Element Configuration
1 - SESM Application Configuration
2 - SAM21EM Application Configuration
3 - NPM Application Configuration
4 - DDMSProxy Application Configuration
5 - OMPUSH Application Configuration
6 - PSE Application Configuration
7 - RESMON Application Configuration
X - exit
```

```
select -
```

Only two options are available for the Core and Billing Manager (CBM). Please see the following CBM example response:

Example response for CBM:

```
Succession Element Configuration
 1 -  RESMON Application Configuration
 2 -  PSE Application Configuration
X - exit
select -
```

8 Enter the number next to the "RESMON Application Configuration" option in the menu.

Example response

```
RESMON Application Configuration
  1 - settrapdest (Set location for IEMS traps)
  2 - queryFaults (Query all faults on the box)
  3 - enableLocalLogs (Enable Local Logging
Of       Faults)
  4 - disableLocalLogs (Disable Local Logging Of
      Faults)
X - exit
select -
```

Although the screen output shows IEMS, option 1 is used to set location for CNM traps. IEMS is not applicable to PMSC.

9 Enter the number next to the "DisableLocalLogs" option in the menu.

Example response

```
===Executing "DisableLocalLogs"
==="DisableLocalLogs" completed successfully
RESMON Application Configuration
  1 - settrapdest (Set location for IEMS traps)
  2 - queryFaults (Query all faults on the box)
  3 - enableLocalLogs (Enable Local Logging Of
      Faults)
  4 - disableLocalLogs (Disable Local Logging Of
      Faults)
X - exit
select -
```

10 Enter the number next to the "DisableLocalLogs" option in the menu.

Example response

```
===Executing "DisableLocalLogs"
==="DisableLocalLogs" completed successfully
RESMON Application Configuration
  1 - queryFaults (Query all faults on the box)
  2 - enableLocalLogs (Enable Local Logging Of
```

```
        Faults)
  3 - disableLocalLogs (Disable Local Logging Of
        Faults)
X - exit
select -
```

The final output response for disabling local logging for the Core and Billing Manager (CBM) is as follows:

```
===Executing "DisableLocalLogs"
==="DisableLocalLogs" completed successfully
RESMON Application Configuration
  1 - settrapdest (Set location for IEMS traps)
  2 - queryFaults (Query all faults on the box)
  3 - enableLocalLogs (Enable Local Logging Of
        Faults)
  4 - disableLocalLogs (Disable Local Logging Of
        Faults)
X - exit
select -
```

Although the screen output shows IEMS, option 1 is used to set location for CNM traps. IEMS is not applicable to PMSC.

11 Exit each menu level of the command line interface to eventually return to the command prompt, by typing

`select - x`

and pressing the Enter key.

You have completed this procedure.

—End—

Querying the state of the SPFS platform

Application

Use this procedure to query the state of the system (all monitors registered with AlarmD or just those that have alarms against them).

Prerequisites

You must have root user privileges.

Action

Perform the following steps to complete this procedure.

Step	Action

At your workstation

1 Telnet to the Sun server by typing

```
> telnet <IP address>
```

and pressing the Enter key.

where

IP address is the IP address of the Sun server you want to query

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

4 When prompted, enter the root password.

5 Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
1 - View
2 - Configuration
3 - Other
X - exit
select -
```

6 Enter the number next to the "Configuration" option in the menu.

Example response

```
Configuration
1 - NTP Configuration
2 - Apache Proxy Configuration
3 - OAMP Application Configuration
4 - CORBA Configuration
5 - IP Configuration
6 - DNS Configuration
7 - Syslog Configuration
8 - Remote Backup Configuration
9 - Database Configuration
10 - NFS Configuration
11 - Bootp Configuration
12 - Restricted Shell Configuration
13 - Security Services Configuration
14 - Disk Drive Upgrade
15 - Login Session
16 - Location Configuration
17 - Cluster Configuration
18 - Succession Element Configuration
19 - snmp_poller (SNMP Poller Configuration)
20 - backup_config (Backup Configuration)
X - exit
Select -
```

7 Enter the number next to the "Succession Element Configuration" option in the menu.

Example response:

```
Succession Element Configuration
1 - SESM Application Configuration
2 - SAM21EM Application Configuration
3 - NPM Application Configuration
4 - PSE Application Configuration
5 - RESMON Application Configuration
6 - OMPUSH Application Configuration
X - exit
select -
```

8 Enter the number next to the "RESMON Application Configuration" option in the menu.

Example response

```
RESMON Application Configuration
  1 - settrapdest (Set location for IEMS traps)
  2 - queryFaults (Query all faults on the box)
  3 - enableLocalLogs (Enable Local Logging Of Faults)
  4 - disableLocalLogs (Disable Local
Logging Of Faults)
X - exit
select -
```

9 Enter the number next to the "queryFaults" option in the menu.

Example response

```
===Executing "queryFaults"
The Log Information is
 *SPFS350 Current filesystem usage = 77%
   Filesystem is filling up
   iemscs2k=wxrpz0xy;NODE=wxrpz0xy;CLASS=SYS
   SYSTYP=FSMon;FSMonName=FSUsage;FSName=/
   Wed Jun 30 14:54:36 2004
==="queryFaults" completed successfully
RESMON Application Configuration
  1 - settrapdest (Set location for IEMS traps)
  2 - queryFaults (Query all faults on the box)
  3 - enableLocalLogs (Enable Local Logging Of Faults)
  4 - disableLocalLogs (Disable Local
Logging Of Faults)
X - exit
select -
```

10 If log information is displayed, refer to the *Carrier Voice over IP Fault Management Logs Reference* document, NN10275-909, for more information.

11 Exit each menu level of the command line interface to eventually exit the command line interface, by typing

```
select - x
```

and pressing the Enter key.

12 You have completed this procedure.

—End—

Configuring the destination for SNMP traps

Application

Use this procedure to configure the destination for SNMP traps on the Integrated Element Management System (IEMS) server and other Server Platform Foundation Software (SPFS) based servers that need to forward their SNMP traps to the Integrated Element Management System (IEMS) application.

Prerequisites

This procedure has the following prerequisites:

- you need the root user ID and password for the server on which you are configuring the destination for SNMP traps
- you need the IP address of the server where the Integrated Element Management System (IEMS) resides

  You can obtain the IEMS IP address to use as the destination for SNMP traps, by logging in to the IEMS server and executing the command "getpip.ksh IEMS".

Action

Perform the following steps to complete this procedure.

Step	Action

At your workstation

1 Log in to the SPFS-based server by typing

```
> telnet <IP address>
```

and pressing the Enter key.

where

`IP address` is the IP address of the SPFS-based server on which you are configuring the destination for SNMP traps

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

4 When prompted, enter the root password.

5 Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
1 - View
2 - Configuration
3 - Other
X - exit
select -
```

6 Enter the number next to the "Configuration" option in the menu.

Example response

```
Configuration
  1 - NTP Configuration
  2 - Apache Proxy Configuration
  3 - OAMP Application Configuration
  4 - CORBA Configuration
  5 - IP Configuration
  6 - DNS Configuration
  7 - Syslog Configuration
  8 - Remote Backup Configuration
  9 - Database Configuration
 10 - NFS Configuration
 11 - Bootp Configuration
 12 - Restricted Shell Configuration
 13 - Security Services Configuration
 14 - Disk Drive Upgrade
 15 - Login Session
 16 - Location Configuration
 17 - Cluster Configuration
 18 - Succession Element Configuration
 19 - snmp_poller (SNMP Poller Configuration)
 20 - backup_config (Backup Configuration)
X - exit
Select -
```

7 Enter the number next to the "Succession Element Configuration" option in the menu.

Example response:

```
Succession Element Configuration
  1 - RADSVR Application Configuration
  2 - S1IS Application Configuration
  3 - CSMCLEANUP Application Configuration
  4 - NPM Application Configuration
  5 - SESM Application Configuration
  6 - SAM21EM Application Configuration
  7 - PSE Application Configuration
  8 - DDMSProxy Application Configuration
```

```
  9 - OMPUSH Application Configuration
 10 - RESMON Application Configuration
X - exit
select -
```

8 Enter the number next to the "RESMON Application Configuration" option in the menu.

Example response

```
RESMON Application Configuration
   1 - settrapdest (Set location for IEMS traps)
   2 - queryFaults (Query all faults on the box)
   3 - enableLocalLogs (Enable Local Logging Of Faults)
   4 - disableLocalLogs (Disable Local
Logging Of Faults)
X - exit
select -
```

9 Enter the number next to the "settrapdest" option in the menu.

Example response

```
===Executing "settrapdest"
Enter the IEMS Server IP Address (default:  45.123.45
6.78):
```

10 When prompted, enter the IP address of the server where the IEMS resides, or press the Enter key to accept the default if one is specified.

You can obtain the IEMS IP address to use as the destination for SNMP traps, by logging in to the IEMS server and executing the command "getpip.ksh IEMS".

Example response

```
IEMS IP: 45.123.456.78
Enter "ok" to commit changes
Enter "quit" to exit
Enter anything else to re-enter settings
```

11 When prompted, confirm the IP address you entered by typing

`ok`

and pressing the Enter key.

Example response

```
==="settrapdest" completed successfully
RESMON Application Configuration
   1 - settrapdest (Set location for IEMS traps)
   2 - queryFaults (Query all faults on the box)
   3 - enableLocalLogs (Enable Local Logging Of Faults)
   4 - disableLocalLogs (Disable Local
Logging Of Faults)
```

```
X - exit
select -
```

12 Exit each menu level of the command line interface to eventually return to the command prompt, by typing

`select - x`

and pressing the Enter key.

You have completed this procedure.

—End—

Routing customer logs to a remote host

Application

Use this procedure to route customer logs to a remote host such as the core manager.

Prerequisites

You must have the IP address of the remote host.

Action

Perform the following steps to complete this procedure.

Step	Action

At your workstation

1 Log in to the server by typing

```
> telnet <IP address>
```

and pressing the Enter key.

where

IP address is the IP address of the SPFS-based server where the CS 2000 Management Tools reside

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

4 When prompted, enter the root password.

5 Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
  1 - View
2 - Configuration
3 - Other
X - exit
select -
```

6 Enter the number next to the "Configuration" option in the menu.

Example response

```
Configuration
  1 - NTP Configuration
  2 - Apache Proxy Configuration
  3 - DCE Configuration
  4 - OAMP Application Configuration
  5 - CORBA Configuration
  6 - IP Configuration
  7 - DNS Configuration
  8 - Syslog Configuration
  9 - Remote Backup Configuration
 10 - Database Configuration
 11 - NFS Configuration
 12 - Bootp Configuration
 13 - Restricted Shell Configuration
 14 - Security Services Configuration
 15 - Disk Drive Upgrade
 16 - Login Session
 17 - Location Configuration
 18 - Cluster Configuration
 19 - Succession Element Configuration
 20- snmp_poller (SNMP Poller Configuration)
 21 - backup_config (Backup Configuration)
  X - exit
Select -
```

7 Enter the number next to the "Syslog Configuration" option in the menu.

Example response

```
Syslog Configuration
  1 - list_syslog (List a system's syslog
      configuration)
  2 - add_syslog (Add a syslog configuration
      entry)
  3 - del_syslog (Remove a syslog configuration
      entry)
  4 - route_syslog_on (Route syslog to remote
      host)
  5 - route_syslog_off (Turn off syslog
      re-direction to a remote host)
  X - exit
select -
```

8 Enter the number next to the "route_syslog_on" option in the menu.

9 When prompted, enter the facility to be routed, for example, "local1.notice".

10 When prompted, enter the IP address of the remote host.

11 Exit each menu level of the command line interface to eventually return to the command prompt, by typing

```
select - x
```

and pressing the Enter key.

You have completed this procedure.

—End—

Viewing customer logs on an SPFS-based server

Application

Use this procedure to view customer logs for the following components:

- Succession Element and Sub-element Manager (SESM)
- Gateway Controller (GWC)
- Server Platform Foundation Software (SPFS)

Use this procedure to view customer logs for the CS 2000 Management Tool server.

Customer logs reside in directory /var/log on the server. For details on customer logs, refer to the Carrier Voice over IP Fault Management Log Reference document, NN10275-909.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

Step	Action
	At your workstation
1	Telnet to the server by typing `> telnet <IP address>` and pressing the Enter key. where **`IP address`** is the IP address of the SPFS-based server
2	When prompted, enter your user ID and password.
3	Access the directory where the customer log files reside by tying `$ cd /var/log` and pressing the Enter key.
4	List the directory content by typing `$ ls` and pressing the Enter key.

The customer log files are appended with numbers, for example "customerlog.0". The files with the lower numbers are the newer files.

5 Use the following table to determine your next step.

If you want to	Do
view the entire content of a log file	substep a only
view specific content of a log file	substep b only

a. View the entire content of a log file by typing

```
$ cat <log_filename> |more
```

and pressing the Enter key.

where

log_filename is the name of the customer log file you want to view.

Example

```
$ cat customerlog.0 |more
```

b. View specific content of the log file by typing

```
# cat <log_filename> |grep <search_string>
```

and pressing the Enter key.

where

search_string is the text you want to search for.

Example

```
$ cat customerlog.0 |grep SPFS350
```

6 To print the contents of this file, contact your site system administrator for assistance with using UNIX print commands and with locating a printer connected to your network.

7 You have completed this procedure.

—End—

Appendix A
Telcordia NMA information

This section summarizes the level of compatibility of the Telcordia NMA application with Carrier Voice over IP network Voice over ATM (VoA) configurations. Also included is specific information related to fault handling on Nortel Multiservice Switch 15000 nodes. For a full description of the integration of Carrier Voice over IP VoA configurations into Telcordia NMA, refer to the Telcordia NMA Operations System Impact Analysis (OSIA) reports. These reports are made available to customers by Telcordia Technologies, Incorporated.

As of the Carrier Voice over IP VoA SN04 release, Telcordia NMA System release 12.0.1 incorporates fault handling on Multiservice Switch 15000 nodes for alarms that are common to both the Carrier Voice over IP Packet Trunking - AAL1(PT-AAL1) and Universal Access - AAL1 (UA-AAL1) solutions. This release does not incorporate alarms specific only to a UA-AAL1 configuration.

As of the Carrier Voice over IP VoA SN06 release, Telcordia NMA System release 13.0 is updated to incorporate fault handling on Multiservice Switch 15000 nodes for both the PT-AAL1 and UA-AAL1 solutions with exceptions for equipment and facility faults specific to the following configurations:

- 1:1 DS3 PNNI interfaces between Multiservice Switch 15000 nodes
- bridged SONET ports linking a Multiservice Switch 15000 node to either a CS2000 or SAM21 shelf controller

The following information should also be noted regarding Telcordia NMA handling of equipment and facility faults specific to a configuration of DS1-IMA (DS1 Inverse Multiplexing over ATM) interfaces linking a Multiservice Switch 15000 node to MG9000:

- Even though the DS1-IMA capability is available in the UA-AAL1 solution for SN05, the Telcordia NMA integration is introduced as part of the UA-AAL1 solution for SN06.
- The DS1-IMA capability on Multiservice Switch 15000 nodes is provided by a 1:1 equipment-protected pair of 4-port DS3 Channelized ATM

(4-portDS3Ch ATM) FPs. The FP provides electrical DS3 facilities and connects via a sparing panel to a DS3:DS1 multiplexor.

- Telcordia NMA provides equipment-level fault handling for the 4-port DS3Ch ATM FPs.
- Telcordia NMA provides facility-level fault handling only for the DS3 facility layer, not for the DS1 or DS0 layers. In other words, the Telcordia NMA system handles faults as a non-channelized DS3 facility. Multiservice Switch 15000 nodes generate faults at the DS1 layer, but if required, those faults would be processed by the NMA user.
- In order to provide the DS3 facility, Telcordia NMA requires the specification of a 'Unit Identifier'. For this particular FP, the unit identifier is a 5-digit number of the following format: 'XYYZZ' where:

Telcordia NMA Unit Identifier structure

X	identifies the shelf within a frame. The range is 1 to 2; 1 means the lower shelf in a frame, 2 means the upper shelf in a frame.
YY	identifies the slot within a shelf. The range is 02 through 15. A Multiservice Switch 15000 shelf has 16 slots (0 to 15) but FPs can not reside in slots 0 or 1.
ZZ	identifies the DS3 port within the slot. The range is 00 through 03.

Note: The unit identifier format is the same for optical FPs (for example, the 16-port OC-3 ATM FP). Unit identifiers are defined as part of the Telcordia TIRKS OSIA in SN04.

Carrier VoIP

MSS15K, MG15K, and MDM in Carrier Voice over IP Networks Fault Management Overview PT-AAL1/UA-AAL1/UA-IP/PT-IP

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