



Carrier VoIP

## MSS15K, MG15K, and MDM Configuration Attribute Summary PT-AAL1/UA-AAL1/UA-IP/PT- AAL2

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# Contents

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<b>New in this release</b>	<b>7</b>
MG15000 Period Routine Exercise	7
MDM Templates to configure MG15000 nodes for PT-IP	7
Media Gateway 2 port voice services processor 4e	8
Media Gateway 15000 CLI DS0 visibility and tools	9
DS0 Visibility	9
Signaling trace	10
Media trace	10
Other changes	10
<b>Shelf-wide and CP configuration</b>	<b>13</b>
Interpreting audit results	14
Access control configuration	16
ATM routing configuration	17
ATM Routing for PT-AAL2	24
Data collection system configuration	25
Data Collection for PT-AAL2	27
LP feature configuration (PT-AAL1/UA-AAL1)	29
LP feature configuration (PT-AAL1/UA-AAL1) with Internode ESA	30
LP feature configuration (PT-AAL2)	31
LP feature configuration (UA-IP)	32
LP feature configuration (PT-IP)	35
Media Gateway 15000 periodic routine exercise components and attributes	36
Shelf/Module data configuration	38
Shelf/Module data configuration (PT-AAL2)	40
Network clock synchronization configuration	42
Out-of-band OAM connectivity configuration	44
In-band OAM management connectivity configuration	47
Configuration of Virtual Router for bearer and control traffic (UA-IP)	49
Configuration of Virtual Router for bearer and control traffic (PT-IP)	51
Configuration of Virtual Router for control traffic with Internode ESA (UA-AAL1)	52
Configuration of Virtual Router for control traffic (PT-AAL2)	53
Time-of-day configuration	54

<b>Summary of FP configuration</b>	<b>57</b>
FP configuration for Multiservice Switch 15000 (PT-AAL1/UA-AAL1)	57
4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)	58
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)	59
4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)	62
4-port DS3ChATM function processor configuration (UA-AAL1)	64
12-port DS3ATM function processor configuration (UA-AAL1)	65
FP configuration for Multiservice Switch 15000 (PT-AAL2)	66
4-port OC-3 function processor configuration (PT-AAL2)	67
4-port OC-12 function processor configuration (PT-AAL2)	68
2-port VSP3-o function processor configuration (PT-AAL2)	69
FP configuration for Multiservice Switch 15000 (UA-IP)	71
4-port OC-3 function processor configuration (UA-IP)	71
16-port OC-3 function processor configuration (UA-IP)	73
4-port OC-12 function processor configuration (UA-IP)	74
1-port OC-48 function processor configuration (UA-IP)	75
4-port GE function processor configuration (UA-IP)	77
4-port DS3ChATM function processor configuration (UA-IP)	78
12-port DS3ATM function processor configuration (UA-IP)	79
FP configuration for Multiservice Switch 15000 Media Gateway 15000 (UA-IP)	80
2-port GE VSP3 function processor configuration (UA-IP)	81
2-port OC-3 VSP3-o/2 port VSP4e function processor configuration (UA-IP)	82
4-port OC-3 (TDM) function processor configuration (UA-IP)	83
FP configuration for Multiservice Switch 15000 Media Gateway 15000 (PT-IP)	84
4-port GE function processor configuration (PT-IP)	84
2-port OC-3 VSP3-o/2-port OC-3 VSP4e function processor configuration (PT-IP)	86
<b>Summary of link configuration</b>	<b>89</b>
Link configuration (PT-AAL1/UA-AAL1)	90
ATM PNNI link configuration (PT-AAL1/UA-AAL1)	90
CS2000 link configuration (PT-AAL1/UA-AAL1)	99
Bridged CS2000 link configuration (UA-AAL1)	106
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)	110
MG4000 ATM interface configuration (PT-AAL1/UA-AAL1)	116
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)	125
MG9000 DS3 ATM interface configuration (UA-AAL1)	133
MG9000 DS1-IMA ATM interface configuration (UA-AAL1)	140
SAM 21 SC link configuration (UA-AAL1)	150
UAS/MS2020 ATM UNI link configuration (UA-AAL1)	155
Bridged SAM 21 SC link configuration (UA-AAL1)	161
Link configuration (PT-AAL2)	166
4pOC12 ATM UNI interface between MG15000 and MGX (PT-AAL2)	166

4pOC12 ATM AAL2 PNNI Interface (PT-AAL2)	172
4pOC3 AS Interface (PT-AAL2)	176
Media Gateway 15000-specific interface configuration (PT-AAL2)	178
TDM OC-3 interface configuration (PT-AAL2)	178
MGC-H.248 (VSP3-o) interface (PT-AAL2)	179
STS + 28ISUP Trunks (2pOC3ChSmIrvsp3-o) (PT-AAL2)	188
Link configuration (UA-IP)	189
Multiservice Switch inter-shelf IP interface configuration (UA-IP)	189
CS-LAN GE link configuration (UA-IP)	196
CS-LAN OC-12 link configuration (UA-IP)	200
MG9000 OC-3 link configuration (UA-IP)	204
MG9000 STS-1/ DS3 link configuration (UA-IP)	210
MG9000 DS1-IMA link configuration (UA-IP)	213
Hairpin ATM (HAI) interface configuration (UA-IP)	219
Hairpin IP (HII) interface configuration (UA-IP)	223
Media Gateway 15000-specific interface configuration (UA-IP/PT-IP)	228
TDM OC-3 interface configuration (UA-IP/PT-IP)	228
Core network GE interface configuration (PT-IP)	229
TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration (PT-IP)	233
MGC - H.248 (2pGeMmSrVSP3) interface configuration (UA-IP)	233
MGC - H.248 (VSP) interface configuration (UA-IP)	243
MGC - H.248 (VSP) interface configuration (PT-IP)	255
MGC - H.248 (VSP3-o/2pVSP4e) TrFO interface configuration (PT-IP)	263
MGC - H.248 (VSP3-o) TrFO interface configuration (PT-IP)	265
MGC - H.248 (2pVSP4e) TrFO interface configuration (PT-IP)	267
TDM trunk configuration (UA-IP/PT-IP)	269
TDM trunk preparation - LAP STS (UA-IP)	270
TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (UA-IP)	270
TDM ISUP trunk configuration (VSP3) (UA-IP)	271
TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (PT-IP)	272
TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)	274
TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (PT-IP)	275
TDM PRI trunk configuration (VSP3-o/2pVSP4e) (UA-IP)	276
TDM PRI trunk configuration (VSP3-o/2pVSP4e) (PT-IP)	277
TDM PRI trunk profile (VSP3) configuration (UA-IP)	279
TDM PRI trunk (VSP3) configuration (UA-IP)	280
TDM PTS trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)	281
TDM PTS trunk profile configuration (VSP3-o/2pVSP4e) (PT-IP)	281
TDM CAS trunk profile configuration (VSP3-o/2pVSP4e) (UA-IP)	282
TDM PTS trunk configuration (VSP3-o/2pVSP4e) (UA-IP)	284
TDM PTS trunk configuration (VSP3-o/2pVSP4e) (PT-IP)	285
<b>Summary of Multiservice Data Manager server configuration</b>	<b>287</b>
Boot prompt configuration	288

Remote login configuration 289  
IP address to host name mapping configuration 289  
Default gateway configuration 291  
MDM software license configuration 291  
Shared memory segment size configuration 292  
Host group directory server configuration 292  
MDM server launch (SVMList) configuration 293  
General Management Data Router server configuration 300  
Security Audit Log Collector (SALC) server configuration 301  
    SALC configuration file 303  
Network Time Synchronization system configuration 304  
Workstation surveillance configuration 308  
MDP user configuration 310  
MDP server configuration 310  
MDP configuration 312  
MDP configuration for File Prober 313  
Clean up of the cron file configuration 313  
Firewall configuration 314  
Policy and role configuration for Operator Client user administration in a VoA  
    network on the MDM Admin Server 323  
Auto-patching of MSS/MG15000 nodes from the MDM 330

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**DSo Visibility Tool configuration 335**

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## New in this release

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This document includes the following new features for SN09U.

- ["MDM Templates to configure MG15000 nodes for PT-IP" \(page 7\)](#)
- ["Media Gateway 2 port voice services processor 4e" \(page 8\)](#)
- ["Media Gateway 15000 CLI DS0 visibility and tools" \(page 9\)](#)

### MG15000 Period Routine Exercise

The MG15000 Periodic Routine Exercise (REX) is a subsystem that provides periodic, automated, routine equipment-testing of protected equipment on MG15000 nodes. REX is supported on Carrier VoIP Media Gateway 15000 platforms that use Voice Service Processor 3-o (VSP3-o), 2pVSP4e and 4pGe FPs. REX automatically tests supported, protected card-pairs on the MG15000 shelf to guarantee that both units of a pair are healthy and to ensure that the spare unit is ready and able to provide full service in the case where a service-providing unit experiences a failure. The automated tests can be scheduled to run automatically or started manually.

During REX testing, a SWACT can be performed on each protected pair (with 1:1 sparing) of CP3s and VSP3 FPs only. This option allows REX to run a routine exercise on spared equipment. This option must be configured by the administrator prior to scheduling REX.

The Carrier VoIP solutions that support the MG15000 REX Phase II application are as follows:

- Packet Trunking-IP with 4pGigE FPs (PT-IP GE)
- Universal Access-IP with 4pGigE FPs (UA-IP GE)

This feature introduces some new and changed components. For more information, refer to ["Media Gateway 15000 periodic routine exercise components and attributes" \(page 36\)](#).

### MDM Templates to configure MG15000 nodes for PT-IP

Nodal Provisioning (NP) templates are available for card, service, and interface configuration for Media Gateway 15000 nodes in a PT-IP solution.

The PT-IP NP templates are also used to configure MG15000 as a local host device. How you want your MG to function, whether as a local host device or a remote subnet router depends on the value entered for the customizationSpec attribute in these templates. You can enter layer2 for the custSpec value and use the templates to configure a local host topology or enter noLHD for the custSpec value and provision a remote subnet router. For more information about provisioning MG as a host, refer to *NN10600-780 Nortel Media Gateway 7480/15000 Technology Fundamentals*.

Configured for PT-IP, this node provides for the management of trunk connections to other offices, as well as, network-based services on those trunk connections. See the following:

- ["Shelf-wide and CP configuration" \(page 13\)](#)
- ["Summary of FP configuration" \(page 57\)](#)
- ["Summary of link configuration" \(page 89\)](#)

## Media Gateway 2 port voice services processor 4e

The 2 port voice services processor 4e with optical TDM interface (2pOC3ChSmIrvsp4e) functional processor (FP) offers double the capacity of the voice services processor 3 with optical TDM interface (VSP3-o), adds more packet FPGA capabilities, and is configurable for both wireline and wireless applications. The two on-board active optical TDM ports double the number of TDM connections (4032 TDM packet connections, up from 2016 provided by the VSP3-o), and therefore throughput, to deliver a higher DS0 density per shelf at a lowered cost per DS0. A variant of the VSP3-o, the 2pVsp4e is part of Nortel's Converged Media Solutions for Voice over IP (VoIP).

The following sections have been modified to incorporate this feature:

- ["Media Gateway 2 port voice services processor 4e" \(page 8\)](#)
- ["LP feature configuration \(UA-IP\)" \(page 32\)](#)
- ["LP feature configuration \(PT-IP\)" \(page 35\)](#)
- ["FP configuration for Multiservice Switch 15000 \(UA-IP\)" \(page 71\)](#)
- ["2-port OC-3 VSP3-o/2 port VSP4e function processor configuration \(UA-IP\)" \(page 82\)](#)
- ["FP configuration for Multiservice Switch 15000 Media Gateway 15000 \(UA-IP\)" \(page 80\)](#)
- ["Media Gateway 15000-specific interface configuration \(UA-IP/PT-IP\)" \(page 228\)](#)
- ["TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration \(PT-IP\)" \(page 233\)](#)

- "MGC - H.248 (VSP) interface configuration (UA-IP)" (page 243)
- MGC - H.248 (VSP) interface configuration (PT-IP)
- "TDM trunk configuration (UA-IP/PT-IP)" (page 269)
- "TDM trunk preparation - LAP STS (UA-IP)" (page 270)
- "TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (UA-IP)" (page 270)
- "TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (PT-IP)" (page 273)
- "TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)" (page 274)
- "TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (PT-IP)" (page 275)
- "TDM PRI trunk configuration (VSP3-o/2pVSP4e) (UA-IP)" (page 276)
- "TDM PRI trunk configuration (VSP3-o/2pVSP4e) (PT-IP)" (page 277)
- "TDM PTS trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)" (page 281)
- "TDM PTS trunk profile configuration (VSP3-o/2pVSP4e) (PT-IP)" (page 282)
- "TDM CAS trunk profile configuration (VSP3-o/2pVSP4e) (UA-IP)" (page 282)
- "TDM PTS trunk (VSP3-o/2pVSP4e) configuration (UA-IP)" (page 284)

## Media Gateway 15000 CLI DS0 visibility and tools

Media Gateway 15000 Component Administration System command line interface (CLI) visibility and tools provides the ability to capture signaling or bearer path data specific to an individual DS0. Tools introduced by this feature are:

- DS0 visibility
- Signaling trace
- Media trace

### DS0 Visibility

DS0 visibility provides the capability to remotely capture and display dynamic aspects of a DS0 endpoint that are a result of processing MGC commands and state changes induced by traffic stream. Access to DS0 data is provided through commands available to any PVG user via the safe

Debug Shell when logged into a VSP FP. Supported VSP FPs are; VSP2, VSP3, VSP3-o, and 2pVSP4e FP cards. Three commands are available, one for each of the following types of access group:

- Basic Rate access group for switched-voice legacy TDM component (Brag),
- Basic Rate access group for switched-voice Optical TDM component (DBrag), and
- TDM access group (Tag)

### Signaling trace

The signaling trace tool captures all H.248 messages which specifically reference the TDM endpoint for the DS0 and, if the TDM endpoint is in a context, all messages associated with that context and any ephemeral endpoints also present in the context.

Signal trace capabilities on a DS0 include:

- applicable to VSP2, VSP3, VSP3-o, and 2pVSP4e FP cards on the MG 15000
- up to 10 simultaneous DS0 captures per card
- a provisionable timer (range 1 to 30 minutes) to limit the duration of the signal trace. The default is 5 minutes (provisioned in seconds).

### Media trace

The media trace tool activates the DS0 IO capture or IO dump feature for the specified DS0.

Media trace capabilities on a DS0 include:

- applicable to VSP3, VSP3-o, and 2pVSP4e FP cards on the MG 15000
- one DS0 capture per card
- a provisionable timer (range 1 to 30 minutes) to limit the duration of the signal trace. The default is 5 minutes (provisioned in seconds).

### Other changes

See the following sections for information about changes that are not feature related:

- ["MGC - H.248 \(VSP\) interface configuration \(UA-IP\)" \(page 243\)](#)

This section has been updated to reflect interface configuration according to each Nodal Provisioning template required.

- ["MGC - H.248 \(VSP3-o/2pVSP4e\) TrFO interface configuration \(PT-IP\)" \(page 263\)](#)

This section was updated to include TrFO interface configuration instructions specific to the SN09U release.



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## Shelf-wide and CP configuration

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Within the Carrier VoIP portfolio's solutions for PT-AAL1, UA-AAL1, PT-AAL2, UA-IP, and PT-IP, most of the configuration for the Nortel Multiservice Switch 15000 nodes occurs during initial and incremental installation and commissioning. This document summarizes the component and attribute values set during initial configuration so that you can better understand how the node was configured and so that you can troubleshoot any problems.

**Note 1:** To ensure performance levels and prevent equipment outages, Nortel recommends that you DO NOT change the initial installation configuration, or configure additional components and services on Multiservice Switch 15000 nodes.

**Note 2:** Nortel recommends that all configuration changes contained in the Global Bulletin System (GBS) and the Method of Procedure (MOP) for the current release be reflected on the Multiservice Switch 15000s before performing the upgrade.

The focus of this document is on those components and attribute values specific to the portfolio. The document may not describe the complete hierarchy of a component if the subcomponents and attributes under that component are not relevant to the solution. It does not include or describe default values unless the defaults are relevant. It also does not include detailed descriptive information about the components. See *NN10600-060 Nortel Multiservice Switch 7400/15000/20000 Component Reference* for complete component descriptions and hierarchies.

Before configuring the function processors (FPs) and links to other components in Nortel Multiservice Switch nodes the shelf-wide and control processor (CP) software must be configured. This section describes the specifics of that configuration.



**CAUTION**

**Risk of performance degradation and outages**

To ensure performance levels and prevent outages, Nortel recommends you DO NOT change the initial installation configuration, or configure additional components and services.

- "Access control configuration" (page 16)
- "ATM routing configuration" (page 17)
- "ATM Routing for PT-AAL2" (page 24)
- "Data collection system configuration" (page 25)
- "Data Collection for PT-AAL2" (page 27)
- "LP feature configuration (PT-AAL1/UA-AAL1)" (page 29)
- "LP feature configuration (PT-AAL2)" (page 31)
- "LP feature configuration (UA-IP)" (page 32)
- "LP feature configuration (PT-IP)" (page 35)
- "Media Gateway 15000 periodic routine exercise components and attributes" (page 36)
- "Shelf/Module data configuration" (page 38)
- "Shelf/Module data configuration (PT-AAL2)" (page 40)
- "Network clock synchronization configuration" (page 42)
- "Out-of-band OAM connectivity configuration" (page 44)
- "In-band OAM management connectivity configuration" (page 47)
- "Configuration of Virtual Router for bearer and control traffic (UA-IP)" (page 49)
- "Configuration of Virtual Router for bearer and control traffic (PT-IP)" (page 51)
- "Configuration of Virtual Router for control traffic (PT-AAL2)" (page 53)
- "Time-of-day configuration" (page 54)

## Interpreting audit results

An NP template audit or Node level configuration audit can be run at any time to verify the integrity of the values in the template. Figure 1 shows an audit report screen that contains the results of an audit. The audit report screen consists of a Component Selection pane and a Component Data pane.

The Component Selection pane displays a hierarchy of the various component instances, with one of four small icons immediately to the left of each instance name. The icon indicates whether or not differences exist between what is configured and what is in the template. The Component Data pane displays details of each component and attribute including the attribute source (Attr Source). The Attr Source entries, in the Component Data pane of the report screen, can have one of the following values:

- Preset: value was defined in the template
- Default: value was retrieved from the model
- Calculated: value was calculated by a formula defined in the template
- User: value was entered by user

Some attributes are set manually, outside of the NP templates. In the cases where attributes are set manually, there is no value for Attr Source. If the Configured Value is <customer-defined>, the Attr Source is User.

Refer to 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* for more information.

Service Audit Report (Entire View: CG0100E.full.001 on DESIGN\_6)

File Edit View Selected Help

Component Selection

- DS/RTSTA
  - Ov
  - Arc
    - Ov
    - Frc
      - Ov
      - Ov
  - T Ds/alarm
    - Ov
  - T AAList
    - Ov
  - T Ds/stats
    - Ov
  - T Ds/scn
    - Ov
- S Lp/12
  - S Eng
    - S Ds/AC/COU
      - Ov
    - S Ds/ALARM
      - Ov
    - S Ds/DEBUG
      - Ov
    - S Ds/BCN
      - Ov
    - S Ds/TRAP
      - Ov

Component Data

Component	Comp So...	Attribute	On-switch	Template	Atr Source
Lp/10 Eng ...	Template	connectio...	513	6	Preset
Lp/10 Eng ...	Template	ipRoutesP...	96000	4096	Preset
Lp/10 Eng ...	Template	agentQue...	Not availa...	100	Preset
Lp/10 Eng ...	Template	maxListSize	Not availa...	100	Preset
Lp/10 Eng ...	Template	agentQue...	Not availa...	200	Preset
Lp/10 Eng ...	Template	agentQue...	Not availa...	0	Preset
Lp/11 Eng ...	Template	connectio...	513	6	Calculated
Lp/11 Eng ...	Template	ipRoutesP...	96000	4096	Preset
Lp/11 Eng ...	Template	agentQue...	Not availa...	100	Preset
Lp/11 Eng ...	Template	maxListSize	Not availa...	100	Preset
Lp/11 Eng ...	Template	agentQue...	Not availa...	0	Preset
Lp/11 Eng ...	Template	agentQue...	Not availa...	200	Preset
Lp/6	Template	logicalPro...	Not availa...	Sw LptWS...	User
Lp/6	Template	oneForNS...	Not availa...	delayedS...	Default
Lp/6	Template	customer...	Not availa...	0	Default
Lp/6	Template	mainCard	Not availa...	Shelf Card/6	Preset
Lp/6 Eng ...	Template	agentQue...	Not availa...	200	Preset
Lp/6 Eng ...	Template	agentQue...	Not availa...	0	Preset
Lp/6 Eng ...	Template	agentQue...	Not availa...	0	Preset
Lp/6 Eng ...	Template	agentQue...	Not availa...	50	Preset
Lp/6 Eng A...	Template	maxListSize	Not availa...	autoConf...	Default
Lp/6 Eng ...	Template	agentQue...	Not availa...	500	Preset
Lp/6 Eng ...	Template	agentQue...	Not availa...	1500	Preset
Lp/6 Sonot...	Template	commentT...	Not availa...		Default
Lp/6 Sonot...	Template	vendor	Not availa...		Default

Annotations:

- Component contains no differences (points to Lp/10 Eng ...)
- Component contains attributes that are different than those in the template (points to Lp/11 Eng ...)
- Component exists on switch but is not in the template (points to Lp/12)
- Component exists in the template but is not on switch (points to Lp/6)

## Access control configuration

Nortel Multiservice Switch 15000 access control restricts node access through user IDs, passwords, and authorized remote IP access. Access control is set through the configuration of the *Access Control* component and subcomponents.

Due to security and variance in customer security requirements, NP SH-CP(s) templates in UA-IP, PT-IP, and PT-AAL2 solutions no longer provision attributes in the Access Control and its subcomponents.

MSS node *Access Control* *UserId* and *IPAddress* subcomponents are added using the MDM NP tool. Attribute values are assigned according to their specific security requirements. For information on how to administer access control, refer to NN10180-611 *Nortel Networks 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*.

## ATM routing configuration

Review the following information to understand how ATM routing was configured on the Nortel Multiservice Switch 15000 nodes. To show the ATM routing component, at least one function processor (FP) must be configured with ATM.

For ATM routing in the PT-AAL2 solution, see "[ATM Routing for PT-AAL2](#)" (page 24).

### ATM routing configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
ModuleData (Md)				
AtmRouting (ARtg)				This component appears automatically when there is one FP in the shelf with atmpnni and atmuni configured on it.
	discardCalls OnOverload (disc)	enabled	Preset	Incoming calls on egress FPs will be discarded when the card is overloaded.

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmRouting (ARtg) SparedServices	sparing	enabled	Preset	For PT-AAL1/U A-AAL1.  If enabled, the active CP sends routing information to the standby CP. This decreases the routing outage during CP switchover and hitless software migration. The standby CP routing database is synchronized with the active CP routing database. All FPs continuously communicate with both CPs.
		disabled	Preset	For UA-IP and PT-IP.
Artg Pnni				
	nodeAddress Prefix	<customer defined>	User	This attribute is set to Atm address prefix or node prefix.
	avcrMt	1 (UA-AAL1) 3 (UA-IP/PT-IP- the default)	Preset	This attribute sets the average cell rate minimum threshold. This attribute multiplied by the Maximum Cell Rate specifies the minimum threshold used in the

Components	Attributes	Configured Values	Expected Audit Results	Notes
				algorithms that determine significant change for average cell rate parameters.  For UA-IP/PT-IP, sparing is disabled.
	avcrPm	50	Preset	This attribute sets the average cell rate proportional multiplier. This attribute multiplied by the current Available Cell Rate specifies the threshold used in algorithms that determine significant change for AVCR parameters.
	pathDiversity	<customer defined>	User	See <i>NN1060 0-702 Nortel Multiservice Switch 7400/15000/20000 ATM Routing and Signaling Fundamentals</i> for information on the path diversity attribute.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Pnni ConfiguredNode (CfgNode)				Configure one <i>CfgNode</i> component for each peer group in which the node participates. The <i>CfgNode</i> instance value defines the number of bits of the address prefix representing the prefix for the peer group. This component permits the configuration of summary addresses, which you will need if there are MG4000s whose AESA addresses are not the same as their node prefix. For more information, see <i>NN1060 0-702 Nortel Multiservice Switch 7400/15000/20000 ATM Routing and Signaling Fundamentals</i> .
	peerGroupId (pgId)	<customer defined>	User	
	nodeId	<customer defined>	User	
	reachability	internal	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
ARTg Pnni LoadBalancing (Lb)	cbr rtvbr nrtvbr ubr			Use load balancing to control route and path utilization behavior and to equalize the bandwidth usage on multiple links. See Nortel Multiservice Switch Release Notes for information on load balancing.
	maxPaths	<customer defined>	User	<p>If you set the <i>Lb maxPaths</i> attribute to a value of more than 3, you must set the <i>Lb method</i> attribute to <i>random</i>.</p> <p>When this attribute is set to a value greater than 3, <i>maxNumEntries</i> in the <i>ARTg Pnni Cache</i> subcomponent is limited to ensure that maximum memory consumption by the route cache on the CP does not increase when <i>maxPaths</i> is greater than 3. <i>maxNumEntries</i> may</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				not exceed the value of 30000/ <i>maxPaths</i> .
	method	maxAvCr random avCrProb optMetric Prob avCrOptMetric Prob	Preset	If you set the <i>Lb maxPaths</i> attribute to a value of more than 3, you must set the <i>Lb method</i> attribute to <i>random</i> .  Default value is <i>random</i> .
	minVariance (minVar)	Vector value of: Decimal (0 to 4294967295) Optimization metrics of: cdv maxCtd aw	Preset	This attribute is a vector value indexed by the optimization metric.  Default value is 0.
	slope Variance (slopeVar)	Vector value of: Decimal (0 to 1900). Optimization metrics of: cdv maxCtd aw	Preset	This attribute is a vector value indexed by the optimization metric. The vector value is expressed as a percentage.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Pnni Cache				Configure route caching to reduce the call loading on the control processors and improve call routing performance. Use <i>Nortel Multiservice Switch Release Notes</i> to understand your cache configuration.
	agingPeriod	600	Preset	Keep the aging period of the cache short because of the high call rate of the Packet Trunking - AAL1 solution network during congestion.
	maxNumEntries	Decimal (100 to 10000)	Preset	Default value is 5000.
	maxPathsToInter mediateNode	Decimal (1 to 20)	Preset	The value you set for this attribute ensures that up to that number of paths is kept to an intermediate node during a Dijkstra expansion.  Default value is 1.
	purgeEntryAtPath Invalid	yes	Preset	Setting this attribute to <i>no</i> reduces the frequency

Components	Attributes	Configured Values	Expected Audit Results	Notes
				of route computation because only invalid paths are cleared from the cache rather than the entire cache entry.

### ATM Routing for PT-AAL2

Review the following information to understand how ATM routing was configured on the Nortel Multiservice Switch 15000 nodes for the PT-AAL2 solution. To show the ATM routing component, at least one function processor (FP) must be configured with ATM.

#### ATM Routing for PT-AAL2

Components	Attributes	Configured values	Expected Audit Results	Notes
AtmRouting (ARtg)	discardCallsOnOverload	enabled	Preset	
AtmRouting Spared Services (ARtg SpServ)	sparing	disabled	Preset	Sparing must be set to disabled when <i>VirtualRouter/CallIP Ip OSPF spareInstance</i> is set to enabled.
AtmRouting Pnni (ARtg Pnni)	avcrMt	1	Preset	
	avcrPm	50	Preset	
AtmRouting Pnni CfgNode/80 (ARtg Pnni CfgNode/80)				80 is the default value
AtmRouting Pnni Cache (ARtg Pnni Cache)	agingPeriod	600	Preset	

## Data collection system configuration

The following types of data are collected by Nortel Multiservice Switch 15000 nodes: alarms, accounting, logs, debug information, state change notifications, traps, real time statistics, and statistics. In the PT-AAL1, UA-AAL1, UA-IP, and PT-IP solutions, only alarms, logs, state change notifications, and real time statistics are collected. The data collection system is configured through the *Collector* component. Review the following information to understand how data collection was configured on your nodes.

For PT-AAL2 solution specific components, see "[Data Collection for PT-AAL2](#)" (page 27).

### Data collection system configuration

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Collector (Col)				
Col/accounting (acc) Spooler (Sp)	Spooling (spool)	off	Preset	
Col/alarm (ala) Spooler (Sp)	Spooling (spool)	on	Preset	
	maximum NumberOfFiles (maxFile)	30	Preset	The <i>maxFile</i> attribute indicates how many closed spooling files are stored on the system for this data type.
Col/debug Spooler (Sp)	Spooling (spool)	on	Preset	
	maximum NumberOfFiles (maxFile)	2:PT-AAL1, UA-AAL1 30: UA-IP, PT-IP	Preset	
Col/log Spooler (Sp)	Spooling (spool)	on	Preset	
	maximum NumberOfFiles (maxFile)	0	Preset	This attribute cannot be set. The value 0 is set by the system. It means that the number of files is unlimited.
	daysToRetain Files	30	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
Col/scn Spooler (Sp)	Spooling (spool)	on	Preset	
	maximumNumberOfFiles (maxFiles)	30	Preset	
Col/trap Spooler (Sp)	Spooling (spool)	off	Preset	
Col/stats Spooler (Sp)	Spooling (spool)	off	Preset	
Col/rtStats (rts) Spooler (Sp)	Spooling (spool)	off	Preset	
Lp/0 Engineering (Eng)				CP card is always configured at LP/0.
Lp/0 Eng DataStream (DS)				
Lp/0 Eng DS/accounting (acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that will be stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/0 Eng DS/alarm (ala) Override (Ov)	agentQueueSize (agentQ)	100:PT-AAL1, UA-AAL1 500: UA-IP, PT-IP	Preset	
Lp/0 Eng DS/debug Override (Ov)	agentQueueSize (agentQ)	50: PT-AAL1, UA-AAL1 70: UA-IP, PT-IP	Preset	
Lp/0 Eng DS/log Override (Ov)	agentQueueSize (agentQ)	100	Preset	The <i>Lp Eng DS/log</i> component is only available on Lp/0 because only control processors generate log data.

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/0 Eng DS/scn Override (Ov)	agentQueueSize (agentQ)	200: PT-AAL1, UA-AAL1500: UA-IP, PT-IP	Preset	
Lp/0 Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/0 Eng DS/stats Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/0 Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	
Lp/0 Eng DS/app Override (Ov)	agentQueueSize (agentQ)	200: PT-AAL1, UA-AAL0: UA-IP, PT-IP	Preset	
Lp/0 Eng DS/Aalist Override (Ov)	maxListSize	100: PT-AAL1, UA-AAL unlimited: UA-IP, PT-IP	Preset	

### Data Collection for PT-AAL2

In the PT-AAL2 solution, only alarms, logs, state change notifications, and real time statistics are collected. The data collection system is configured through the *Collector* component. Review the following information to understand how data collection for PT-AAL2 was configured on your nodes.

#### Data collection configuration for PT-AAL2

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Collector/acc Spooler	Spooling	off	Preset	
Collector/alarm Spooler	Spooling	on	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	maxFile	30	Preset	The <i>maxFile</i> attribute indicates how many closed spooling files are stored on the system for this data type.
Collector/debug Spooler	Spooling	on	Preset	
	maxFile	2	Preset	
Collector/log Spooler	Spooling	on	Preset	
	daysToRetainFiles	30	Preset	
Collector/scn Spooler	Spooling	on	Preset	
	maxFile	30	Preset	
Collector/trap Spooler	Spooling	off	Preset	
Collector/stats Spooler	Spooling	off	Preset	
Collector/rtStats Spooler	Spooling	off	Preset	
Collector/app Spooler	Spooling	on	Preset	
	maxFile	200	Preset	
Lp Eng AAList Ov	maxList	unlimited	Preset	
Lp/0 Eng DS/acc Ov	agentQueue Size	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that will be stored in the queue for that data type. Any records received after the maximum is reached are discarded.  Applies to all Lp components.
Lp/0 Eng DS/alarm Ov	agentQueue Size	500	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/0 Eng DS/debug Ov	agentQueue Size	50	Preset	
Lp/0 Eng DS/log Ov	agentQueue Size	100	Preset	
Lp/0 Eng DS/scn Ov	agentQueue Size	1500	Preset	
Lp/0 Eng DS/trap Ov	agentQueue Size	0	Preset	
Lp/0 Eng DS/stats Ov	agentQueue Size	0	Preset	
Lp/0 Eng DS/rtStats Ov	agentQueue Size	200	Preset	

## LP feature configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how the features required for the Carrier VoIP portfolio have been configured on the Nortel Multiservice Switch 15000 logical processors (LPs).

See "Lp feature configuration (PT-AAL1/UA-AAL1) with Internode ESA" (page 30). If you will be using MG9000 internode ESA, also see "Configuration of Virtual Router for control traffic with Internode ESA (UA-AAL1)" (page 52).

## LP feature configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Software (Sw)	avList (avl)	base_XXX networking_XXX atmNetworking_XXX ip_XXX wanDte_XX X	n/a	For example, base_CD02S1A is added to the avList for PCR 4.2.  For in-band OAM only.
	patchList		n/a	Patches are not always required for every release.

Components	Attributes	Configured values	Expected Audit Results	Notes
Sw LogicalProcessorType (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming activeAlarmList	n/a	
Sw Lpt/<Lpt name>	featureList (fl)	atmUni atmPnni aps	n/a	4-port OC3 4-port OC12
		atmMpe ip	n/a	For in-band OAM only.
	featureList (fl)	atmUni imaAtmForumHot	n/a	4-port DS3 DS1-IMA
	featureList (fl)	atmPnni atmMpe ip atmUni	n/a	12-port DS3 12pDS3Atm  atmMpe and ip are in your software list only if have in-band OAM configured.
	featureList (fl)	atmUni atmPNNI aps pbg atmMpe ip	n/a	16-port OC3  atmMpe and ip are in your software list only if have in-band OAM configured.
Sw Lpt/ATM<fl>		atmmpe ip	n/a	

### Lp feature configuration (PT-AAL1/UA-AAL1) with Internode ESA

Review the following information to understand how Internode ESA for the Carrier VoIP portfolio has been configured on the Nortel Multiservice Switch 15000 logical processors (LPs).

See "LP feature configuration (PT-AAL1/UA-AAL1) with internode ESA" (page 31) for information about the Sw component. Also, see "Configuration of Virtual Router for control traffic with Internode ESA (UA-AAL1)" (page 52).

#### LP feature configuration (PT-AAL1/UA-AAL1) with internode ESA

Software Component	Attributes	Configured Values	Expected Audit Results	Notes
Sw	avList (avl)	ip_XXX wanDte_XXX	n/a	If not already in the list.
	patchList		n/a	Patches are not always required for every release.
sw lpt/cp	feature list <fl>	ip, mvr	n/a	Add if not already there
sw lpt/ATM<n>	feature list <fl>	ip, atmmppe	n/a	Add if not already there

#### LP feature configuration (PT-AAL2)

Review the following information to understand how the Carrier VoIP portfolio has been configured on the Nortel Multiservice Switch 15000 logical processors (LPs) for the PT-AAL2 solution. LPT components are provisioned manually as FP cards are added to the system.

#### LP feature configuration (PT-AAL2)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Software (Sw)	avList (avl)	base_XX networking_XX atmNetworki ng_XX ip_XX wanDte_XX pvg_XX patch_XX	n/a	
	patchList		n/a	Patches are not always required for a given release.

Components	Attributes	Configured values	Expected Audit Results	Notes
Sw LogicalProcessor Type (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming mvr activeAlarmList	n/a	
Sw Lpt/VSP<n>	featureList (fl)	aps dlep vgsAtm ip atmMpe	n/a	
Sw Lpt/ATM<n>	featureList (fl)	atmmpe aps ip atmUni atmPNNI	n/a	

### LP feature configuration (UA-IP)

This section presents the configuration of logical processor (LP) features for a Nortel Multiservice Switch 15000 node in a UA-IP solution.

See "[LP feature configuration \(UA-IP\)](#)" (page 32) for information.

See "[Media Gateway 15000 periodic routine exercise components and attributes](#)" (page 36) for information about how the REX application and feature are configured at initial setup.

### LP feature configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				

Components	Attributes	Configured Values	Expected Audit Results	Notes
Software (Sw)	avList (avl)	base_XXX networking_XXX atmNetworking_XXX ip_XXX wanDte_XXX ethernet_XXX	n/a	
		pvg_CXXXXXX	n/a	
		aal1Ces_CXXXXX	n/a	For VSP3 and 4pOC3TDM card configuration only.
	patchList		n/a	Patches are not always required for a given release.
Sw LogicalProcessorType (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming mvr activeAlarmList	n/a	
Sw LogicalProcessorType (Lpt)/GE<n>	featureList (fl)	lag ip atmmpe	n/a	
Sw Lpt/ATM<n>	featureList (fl)	aps atmUni atmPnni ip atmmpe	n/a	
Sw Lpt/TDM<n>	featureList	aps aal1Ces	n/a	For 4pOC3ChSmlr FP.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Sw Lpt/VSP<n>	featureList		n/a	For 2pOC3ChSmirVsp3 FP.
		ip	n/a	For <i>Vr CustSpec</i> component.
		vgslp	n/a	On Vsp3-o/2pVsp4e, handles either G.711 or G.729, with the number of DS0s at full capacity.
		dlep aps	n/a	
		atmMpe	n/a	Required when using VR for bearer/control traffic.
Sw Lpt/VSP<n>	featureList		n/a	For 2pGeMmSrVsp3 with G.711 only.
		ip	n/a	For <i>Vr CustSpec</i> component.
		vgslp	n/a	
		AtmMpe	n/a	Required with VR for bearer/control traffic.
		pvglpsec	n/a	For VSP3-o and 2pVsp4e only
Sw Lpt/VSP<n>	featureList		n/a	For 2pGeMmSrVsp3 with G.711 or G.729 only.
		ip	n/a	For <i>Vr CustSpec</i> component.
		vgslpG729	n/a	On VSP3, handles either G.711 or G.729, but limits the number of supported DS0s. Therefore, use only if G.729 is required.
		AtmMpe	n/a	Required when using VR for bearer/control traffic.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Sw Lpt/ATM<n>	featureList (fl)	atmUni	n/a	For 12pDS3.
		atmUni imaAtmForumHot	n/a	For 4pDS3ChAtm (DS1-IMA).

### LP feature configuration (PT-IP)

This section presents the configuration of logical processor (LP) features for a Media Gateway 15000 node in a PT-IP solution. For FP cards, the LPT components are provisioned manually as the FP cards are added to the system. (as part of the Installation Method).

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See ["Interpreting audit results"](#) (page 14) for more information.

See ["LP feature configuration \(PT-IP\)"](#) (page 35) for information.

See ["Media Gateway 15000 periodic routine exercise components and attributes"](#) (page 36) for information about how the REX applications and features are configured at initial setup.

### LP feature configuration (PT-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Software (Sw)	avList (avl)	base_CXXX XXX  networking_ CXXXXXX  atmNetworki ng_CXXXXX X  ip_CXXXXX X  wanDte_CX XXXXX  ethernet_CX XXXXX  pvg_CXXXX XX	n/a	

Components	Attributes	Configured Values	Expected Audit Results	Notes
		rex_CXXXX XX		
	patchList		n/a	Patches are not always required for a given release.
Sw LogicalProcessor Type (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming mvr activeAlarmList	n/a	For CPeD or CPeE.
Sw LogicalProcessor Type (Lpt)/GE<n>	featureList (fl)	lag ip atmmpe	n/a	For 4pGE FP.
Sw Lpt/VSP<n>	featureList		n/a	For 2pOC3ChSmirV sp3-o FP.
		ip	n/a	For <i>Vr CustSpec</i> component.
		vgslp dlep aps	n/a	On VSp3-o/2pVsp4e, handles either G.711U, G.711A, or G.729, with the number of DS0s at full capacity.
		atmMpe	n/a	Required when using VR for bearer/control traffic.
		pvglpsec (optional)	n/a	Activate IPSec between Media Gateway and Media Gateway Controller.

### Media Gateway 15000 periodic routine exercise components and attributes

Review the following table to understand how the periodic routine exercise (REX) application and feature are initially configured.

The SH-REX-Schedule template provisions the REX schedule to test the CP fabric cards or any card pairs in 1:1 or 1+1 sparing on the switch.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See ["Interpreting audit results" \(page 14\)](#) for more information.

#### REX components and attributes

Component	Attribute	Configured value	Expected Audit Results	Configured value
rex	enable	Yes   No	User	The default value is Yes.
	solutionType	PT-IP-GE/U A-IP-GE/NO NE.	User	Shows the solution type of the Carrier VoIP network which includes the switch running REX.  The default value is None.  In this release only PT-IPGe and UA-IPGe are supported.
rexDayOfWeek	RexSchedule d	Yes/No	User	Default value: Yes Shows if the Routine Exercise is scheduled for this day.
	cardPairsToTest	<fabric, 0, 1, 2, 3, 4, ..>  <b>Note:</b> Select only even numbers as required in 1:1 or 1+1 spare card pairs setup by solution NP templates and/or fabric Cards	User	The Default value is blank.  Shows a set of card pairs that are scheduled to run REX on this day. For load sharing FPs and fabrics, REX is run alternatively each day on one of the card pairs.  Value specifies fabric cards or the even card number of the card pairs, selected from the listbox after "Add"

				<p><b>Note:</b> At execution time, the order in which the "cardPairsToTest" is specified, will be enforced..</p>
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## Shelf/Module data configuration

Review the following information to understand how the various attributes used by internal and external systems were configured to identify Nortel Multiservice Switch 15000 nodes. Module data configuration is done through the *ModuleData* component.

For Module data configuration, see "[Module data configuration](#)" (page 38).

For Shelf data configuration, see "[Shelf configuration](#)" (page 39).

For shelf and module data configuration for the PT-AAL2 solution, see "[Shelf/Module data configuration \(PT-AAL2\)](#)" (page 40).

### Module data configuration

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
ModuleData (Mod)	nodeId	<customer defined>	n/a	<p>Decimal value from 1 through 4095.</p> <p>The <i>nodeId</i> value is typically unique across all Multiservice Switch nodes in the network.</p>
	nodeName	<customer defined>	n/a	<p>The <i>nodeName</i> value must be set to an 11-character string in ASCII format.</p> <p>The <i>nodeName</i> value is typically unique across all Multiservice Switch nodes in the network.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
	namslid	<customer defined>	n/a	Decimal value in the range of 256 to 49151.  The <i>namslid</i> value is typically unique across all Multiservice Switch nodes in the network.
	regionId	1	n/a	
	nodePrefix	<customer defined>	n/a	ASCII string of 0 to 26 characters.  The <i>nodePrefix</i> value is typically unique across all Multiservice Switch nodes in the network.

#### Shelf configuration

Components	Attributes	Configured values	Expected Audit Results	Notes
Shelf	repeatFanAlarm	on	Preset	
	cpEquipmentProtection	hot	Preset	
Shelf Card/<x>	cardType (card)	CPeD	Preset	<x> = 0, 1
prov	autoconfirm	off	Preset	
LogicalProcessor (Lp)/0	mainCard (main)	Shelf Card/0	Preset	The number of the card you configured.
	spareCard (spare)	Shelf Card/1	Preset	The number of the card acting as the spare to the one that you configured.

Components	Attributes	Configured values	Expected Audit Results	Notes
Prov Am	hitlessActivation	disabled	Preset	Set this attribute to enabled at the end of the overall commissioning activity.  Enabled is the recommended value for normal operation of all supported Carrier VoIP solutions. During commissioning, HCA is temporarily disabled when CPED template is applied and must be re-enabled as part of commissioning.
Lp/0 oamEnet/0	lineSpeed	autoConfig	Preset	
	duplexMode	autoConfig	Preset	
	switchoverHoldOff	10	Preset	
	switchoverOnFailure	enabled	Preset	

### Shelf/Module data configuration (PT-AAL2)

Review the following information to understand how the various attributes used by internal and external systems for networking were configured to identify Nortel Multiservice Switch 15000 nodes. Module data configuration is done through the *ModuleData* component.

For Module data configuration, see "[Module data configuration for PT-AAL2 solution](#)" (page 41).

For Shelf data configuration, see "Shelf configuration for PT-AAL2 solution" (page 41).

#### Module data configuration for PT-AAL2 solution

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
ModuleData	nodeId	<customer defined>	n/a	Decimal value from 1 through 4095.  The <i>nodeId</i> value is typically unique across all Multiservice Switch nodes in the network.
	nodeName	<customer defined>	n/a	The <i>nodeName</i> value must be set to an 11-character string in ASCII format.  The <i>nodeName</i> value is typically unique across all Multiservice Switch nodes in the network.
	nameSId	<customer defined>	n/a	Decimal value in the range of 256 to 49151.  The <i>nameSId</i> value is typically unique across all Multiservice Switch nodes in the network.
	nodePrefix	<customer defined>	n/a	ASCII string of 0 to 26 characters.  The <i>nodePrefix</i> value is typically unique across all Multiservice Switch nodes in the network.

#### Shelf configuration for PT-AAL2 solution

Components	Attributes	Configured values	Expected Audit Results	Notes
Shelf	repeatFanAlarm	on	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	cpEquipment Protection	hot	Preset	
sh ca/1	cardType	CPeD	Preset	<b>Note:</b> sh ca/0, mod, vr/0, static routes, etc. will have been configured already at the StartUp phase.
prov	autoconfirm	off	Preset	
Lp/0	spareCard	Shelf Card/1	Preset	
Lp/0 oamEnet/0	linespeed	autoConfig	n/a	Lp/0 oamEnet/0 linespeed and duplexmode attributes are provisioned manually
	duplexMode	full	n/a	
	switchoverHoldOff	10	User or Preset	
	Extendedstatistics	enabled	User or Preset	
	switchoverOnFailure	enabled	User or Preset	
Prov Am	hitlessActivation	disabled	Preset	<p>Set this attribute to enabled at the end of the overall commissioning activity.</p> <p>Enabled is the recommended value for normal operation of all supported Carrier VoIP solutions. During commissioning, HCA is temporarily disabled when CPED template is applied and must be re-enabled as part of commissioning.</p>

## Network clock synchronization configuration

Network clock synchronization (NCS) is configured on Nortel Multiservice Switch 15000/Media Gateway 15000 nodes to ensure that all the nodes in the network are operating at a synchronized clock rate. NCS on

Multiservice Switch/Media Gateway nodes is controlled through the *NetworkSynchronization* component. Review the following information to understand how network clock synchronization was configured on your nodes.

#### Network clock synchronization configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
lp/0 EDS1/0	lineType	esf	Preset	For CPEE, this is lp/0 EE1/0 and there is no lineType attribute.
lp/0 EDS1/1	lineType	esf	Default or User or Preset	For CPEE, this is lp/0 EE1/1 and there is no lineType attribute.
NetworkSynchronization (NS)	primaryReference (priRef)	LP/0 EDS1/0	Preset	The number of the port that is the first choice for a network clock source.
	secondaryReference (secRef)	LP/0 EDS1/1	Preset	The number of the port that is the second choice for a network clock source.
Time Server/1	ipAddress		Preset	
	ipStack	Vrlp	Preset	
Time Server/2	ipAddress		Preset	
	ipStack	Vrlp	Preset	

## Out-of-band OAM connectivity configuration

Review the following information to understand how out-of-band OAM connectivity was configured on your standalone or Gateway Nortel Multiservice Switch 15000 nodes.

### Out-of-band OAM connectivity configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Lp/0 OamEthernet (OamEnet)/0			n/a	The number of the ports on the CP that you configured.
	applicationFramerName (framer)	La/0 Framer	n/a	The value specifies which Lan Application is running on this port.
	lineSpeed	autoConfig	User or Preset	<p>The <i>lineSpeed</i> attribute indicates the operating speed of the OAM Ethernet port.</p> <p>When this attribute value is set to <i>autoConfig</i>, the autoNegotiation process determines the actual operating speed.</p> <p>You can see the actual line speed by displaying the operational attribute <i>Lp OamEnet actualLineSpeed</i>.</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	duplexMode	autoConfig	User or Preset	When this attribute value is set to <i>autoConfig</i> , the autoNegotiation process determines the duplex mode.  You can see the actual mode by displaying the operational attribute <i>Lp OamEnet actualDuplexMode</i> .
	switchoverHoldOff (soHoldoff)	10	User or Preset	This value indicates the time interval in seconds between the detection of a link or port failure, and the initiation of a CP switchover.
	switchoverOnFailure (switch)	enabled	User or Preset	This attribute indicates that a CP switchover will occur in the event of a link or port failure.
LanApplication (La)/0				
	linkToProtocolPort	Vr/0 PP/OamEnet	n/a	
La/0 Framer	interfaceName	Lp/0 OamEnet/0	n/a	This value specifies the port on which the LAN Application will run.

Components	Attributes	Configured Values	Expected Audit Results	Notes
VirtualRouter (Vr)				
Vr ProtocolPort (Pp)/OamEnet			n/a	This component links the protocol port to a media application.
	linkToMedia (media)	La/0	n/a	
Vr Pp IpPort				
Vr Pp IpPort IpLogicalInterface (LogicalIf)/<IP address>		<customer defined>	n/a	Defined according to the customer IP addressing/subnet plan.  The IP address of the node being managed out-of-band.
	netMask	<customer defined>	n/a	Defined according to the customer IP addressing/subnet plan.
	broadcast Address	<customer defined>	n/a	Defined according to the customer IP addressing/subnet plan.
	link Destination Address	<customer defined>	n/a	Defined according to the customer IP addressing/subnet plan.

## In-band OAM management connectivity configuration

Review the following information to understand how the management virtual routers (VR) for OAM connectivity were configured on your Remote and Gateway Nortel Multiservice Switch 15000 nodes.

### In-band OAM management connectivity configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf Card/<x>	cardType (card)	CPeD 16pOC3Smlr Atm 4pOC3SmlrA tm 4pOC12Smlr Atm 12pDS3Atm	n/a n/a	ATMMPE is only supported on PNNI links associated with the ATM card types.  4pDS3ChAtm (DS1-IMA) PNNI is not supported.  In-band over 12pDS3Atm or 16pOC3SmlrAtm is not supported for Multiservice Switch 15000 nodes in UA-IP.
Vr/0 ProtocolPort (Pp)/<MpeX>	linkToMedia (media)	ATMMpe/<x>	n/a	This component links the protocol port to a media application.
Vr/0 Pp IpPort/<MpeX> lpp Log /<IP address>	netMask	<customer defined>	n/a	Defined according to the customer IP addressing/subnet plan.
	broadcast Address	<customer n/defined>	n/a	Defined according to the customer IP addressing/subnet plan.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Vr/0 Ip Static Route/<Fwd entry> Nh/<Gateway addr>	metric	1	n/a	<Fwd entry> is the subnet in the direction of Gateway Multiservice Switch 15000 1 or Gateway Multiservice Switch 15000 2 together with a default entry of 0.0.0.0,0.0.0.0,0
	vrp	lp/0	n/a	
Lp/0 OamEthernet (OamEnet)/0	lineSpeed	autoConfig	n/a	The number of the ports on the CP that you configured.  Settings are recommended for a Remote Multiservice Switch 15000 nodes on which initial Ethernet connectivity remains in place for emergency access.
	duplexMode	autoConfig	n/a	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	switchoverHoldOff (switch)	10	n/a	
	switchoverOnFailure (switch)	enabled	n/a	For a remote Multiservice Switch 15000 nodes managed via in-band access, it is recommended to set this to disabled.

### Configuration of Virtual Router for bearer and control traffic (UA-IP)

Review the following information to understand how the bearer or user traffic virtual routers (VR) for OAM connectivity are configured on your Remote and Gateway Nortel Multiservice Switch 15000 nodes. See also: "[Vr for control traffic with internode ESA \(UA-AAL1\)](#)" (page 53).

For Virtual router configuration in a PT-AAL2 solution, see "[Configuration of Virtual Router for control traffic \(PT-AAL2\)](#)" (page 53).

### Configuration of Virtual Router for bearer and control traffic (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
Virtual Router/VOIP	vrp	lp/0	Preset	
	vpnMode	carrier	Preset	For PVG-specific setup.
VirtualRouter/VOIP CustomSpecification	customizationType	pvg	Preset	For a shelf that contains VSP or 4pGE cards.
VirtualRouter/VOIP DiffServDomain/packetVoice PerHopBehaviour/EF	dropPrecedence	high	Preset	
VirtualRouter/VOIP DiffServDomain/packetVoice PerHopBehaviour/CS5	trafficClass	network	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
VirtualRouter/VOIP DiffServDomain/packetVoicePerHopBehaviour/CS6	trafficClass	bronze	Preset	
Virtual Router/VOIP DiffServDomain/packetVoice TrafficClass/premium	sc8q	5	Preset	
Virtual Router/VOIP DiffServDomain/packetVoice TrafficClass/network	sc8q	4	Preset	
VirtualRouter/VOIP Ip	preConfigFwdPath	enabled	Preset	
VirtualRouter/VOIP Ip Static	maxEcmpNextHops	1	Preset	
	HeartbeatDeadInterval	4	Preset	
VirtualRouter/VOIP Ip Static DiscardRouteEntry/0.0.0.0,0.0.0.0,0				Cannot be configured on a node with both GE links in PCR6.1.
VirtualRouter/VOIP Ip Ospf	ecmpStatus	disabled	Preset	
	routerId	<customer defined>	User	
	alarmGeneration	all	Preset	
	spareInstance	enabled	Preset	
	asBdrRtrStatus	true	Preset	
VirtualRouter/VOIP Ip Ospf Area Entry/<customer defined>				Create only.
VirtualRouter/VOIP Ip Ospf Export/0	advertise	send	Preset	This component is optional depending on your deployment.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	protocol	all	Preset	
VirtualRouter/VOIP Ip Ospf Export/0 NetList/0	address	10.0.0.0	Preset	This component is optional depending on your deployment.
	mask	255.0.0.0	Preset	

## Configuration of Virtual Router for bearer and control traffic (PT-IP)

Review the following information to understand how the bearer or user traffic virtual routers (VR) for OAM connectivity are configured on your Media Gateway 15000 nodes. These attributes are applied to add another VR for MG15000 voice traffic in a PT-IP solution. They create the VR, the VM for all the VSP cards, and the protocol port for the VSP cards.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See ["Interpreting audit results" \(page 14\)](#) for more information.

## Configuration of Virtual Router for bearer and control traffic (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Virtual Router/<VOIP>	vrp	lp/0	Preset	
	vpnMode	carrier	Preset	For PVG-specific setup.
VirtualRouter/<VOIP> CustomSpecification	localHostDeviceTopology	layer2	Preset	The only circumstances under which the customSpecification component will exist is if there is a VSP card with IP in its feature list.
	customizationType	pvg	Preset	For a shelf that contains VSP cards.
VirtualRouter/<VOIP> DiffServDomain/packetVoice	phbRoutingSource	cs6	Preset	This is actually the default, it is included to distinguish between the PVG.
VirtualRouter/<VOIP> DiffServDomain/packetVoice PerHopBehaviour/EF	dropPrecedence	high	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
VirtualRouter/<VOIP> DiffServDomain/packetVoice PerHopBehaviour/CS5	trafficClass	network	Preset	
VirtualRouter/<VOIP> DiffServDomain/packetVoice PerHopBehaviour/CS6	trafficClass	bronze	Preset	
Virtual Router/<VOIP> DiffServDomain/packetVoice TrafficClass/premium	sc8q	5	Preset	
Virtual Router/<VOIP> DiffServDomain/packetVoice TrafficClass/network	sc8q	4	Preset	
VirtualRouter/<VOIP> Ip	preConfigFwdPath	enabled	Preset	
VirtualRouter/<VOIP> Ip Static	maxEcmpNextHops	1	Preset	
	HeartbeatDeadInterval	4	Preset	
Vr/<VOIP> PP/VRAP	linkToMedia	Vm/0 If/0	Preset	
Vr/<VOIP> PP/VRAP Ipp Logically/<ipaddress>	netmask	255.255.255.240	Preset	
Vm/0 If/0	linkToProtocolPort	Vr/<VOIP> PP/VRAP	Preset	

## Configuration of Virtual Router for control traffic with Internode ESA (UA-AAL1)

Review the following information to understand how the Virtual Router (Vr) has been configured for Internode ESA in the portfolio for Nortel Multiservice Switch 15000 logical processors (LPs).

See "Vr for control traffic with internode ESA (UA-AAL1)" (page 53) for information about the Vr component.

**Vr for control traffic with internode ESA (UA-AAL1)**

Virtual router Components	Attributes	Configured Values	Expected Audit Results	Notes
vr/ESA	vpnMode	customer	n/a	
	vrp	lp/0	n/a	
vr/ESA ip	preConfigFwd Path	enabled	n/a	
vr/ESA ip static	maxEcmpNext Hops	<n>	n/a	This is required to route traffic between MSS 15000s where InterNode ESA groups span more than one MSS15000.
	DiscardRouteEntry/0.0.0.0.0.0.0.0		n/a	
vr/ESA ip static Route/<sub-net> nextHop/<next-hop-address>	metric	1	n/a	

**Configuration of Virtual Router for control traffic (PT-AAL2)**

Review the following information to understand how the Virtual Router (Vr) has been configured for the PT-AAL2 solution of Nortel Multiservice Switch 15000 logical processors (LPs).

**Configuration of Virtual Router for control traffic (PT-AAL2)**

Components	Attributes	Configured Values	Expected Audit Results	Notes
Virtual Router/CallP	vrp	lp/0	Preset	
	vpnMode	carrier	Preset	
VirtualRouter/CallP CustomizationSpecification				This component to be added manually only on those nodes which have VSP3-o.

Components	Attributes	Configured Values	Expected Audit Results	Notes
VirtualRouter/CallP Ip Static	maxEcmpNext Hops	1	Preset	
VirtualRouter/CallP Ip Ospf	ecmp	disabled	Preset	
	spareInstance	enable	Preset	
	routerId	0.0.0.0	User	
VirtualRouter/CallP Ip Ospf AreaEntry/ 0.0.0.0	importAsExtern	ImportExterna l	Preset	Do not use 0.0 .0.0, use the Specifications Book value.
	areaSummary	sendAreaSum mary	Preset	

## Time-of-day configuration

There are three types of time to consider when configuring the time-of-day on a Nortel Multiservice Switch 15000 node:

- Reference time is the date and time that is the official reference around the world. The universally accepted reference time is Coordinated Universal Time (UTC).
- Network time is the date and time to which all nodes in the network synchronize internally.
- Module time is the time on a particular Multiservice Switch 15000 node.

Time-of-day on Multiservice Switch 15000 nodes is controlled through the *Time* component. Review the following information to understand how time of day was configured on your nodes.

### Time of day configuration

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Time				

Components	Attributes	Configured values	Expected Audit Results	Notes
	moduleTime	<yyyy-mm-dd> <hh:mm:ss>	n/a	This is an operational attribute indicating the current date and time on the Multiservice Switch 15000 node.
	offset	<customer defined>	n/a	<p>The offset attribute indicates the number of minutes to be added to the reference time.</p> <p>Decimal value in range of -720 and +900, which represents a range of 27 hours.</p> <p>A time offset between 0 and 900 minutes (+15 hours) represents a time ahead of UTC (or east of the prime meridian)</p> <p>A time offset value between 0 and -720 minutes (-12 hours) represents a time behind UTC (or west of the prime meridian)</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
Time Server/<n>		1	Preset	Instance value of the first MDM server acting as a network time server
	ipAddress (ipAddr)	<IP address of the first MDM server>	User	This value indicates the IP address of the network time server with which the node attempts to synchronize.
	ipStack	Vrlp	Preset	
Time Server/<n>		2	Preset	Instance value of the second MDM server acting as a network time server.
	ipAddress (ipAddr)	<IP address of the second MDM server>	User	This value indicates the IP address of the network time server with which the node attempts to synchronize.
	ipStack	vrlp	Preset	

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## Summary of FP configuration

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After configuring the base software, the function processors installed in Multiservice Switch 15000 nodes must be configured. This section describes how the function processors supported in the PT-AAL1, UA-AAL1, PT-AAL2, UA-IP, and PT-IP solutions are configured.

Function processor (FP) cards in a MSS15000/MG15000 node are typically configured at initial commissioning time, immediately after control processor (CP), and Shelf-level setup. You can add and configure an FP pair, one at a time, to increase capacity.



### CAUTION

#### Performance degrades and outages may occur

To ensure performance levels and prevent outages, Nortel recommends you DO NOT change the initial installation configuration, or configure additional components and services.

This chapter includes the following sections:

- "FP configuration for Multiservice Switch 15000 (PT-AAL1/UA-AAL1)" (page 57)
- "FP configuration for Multiservice Switch 15000 (PT-AAL2)" (page 66)
- "FP configuration for Multiservice Switch 15000 (UA-IP)" (page 71)
- "FP configuration for Multiservice Switch 15000 Media Gateway 15000 (UA-IP)" (page 80)
- "FP configuration for Multiservice Switch 15000 Media Gateway 15000 (PT-IP)" (page 84)

### FP configuration for Multiservice Switch 15000 (PT-AAL1/UA-AAL1)

This section includes function processor (FP) configurations for Nortel Multiservice Switch 15000 nodes in PT-AAL1 or UA-AAL1 solutions.

These configurations are as follows:

- "4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)" (page 58)

- "16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)" (page 59)
- "4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)" (page 62)
- "4-port DS3ChATM function processor configuration (UA-AAL1)" (page 64)
- "12-port DS3ATM function processor configuration (UA-AAL1)" (page 65)

#### 4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 node for a UA-AAL1 solution.

#### 4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pOC3Smlr Atm	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	Shelf Card/ <x>	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	User	
	spareCard		Preset	No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
Lp/<n> Sonet/<p>				The number of the port that you configured. This attribute will have a value between 0 and 3.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Eng AtmResource Control (Arc)				
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	13204	Preset or User	
	protectedConnectionPoolCapacity	13204	Preset or User	
Lp/<n> Eng FrameCoreResourceControl (Frc)				
Lp/<n> Eng Frc Pqc			Preset	
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096	Preset or User	

### 16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 node in a PT-AAL1 or UA-AAL1 solution.

#### 16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	16pOC3Sml rAtm	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	Shelf Card/ <x>	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	spareCard			No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
Lp/<n> Sonet/<p>				The number of the port that you configured. This attribute will have a value between 0 and 15.
	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Eng AtmResourceControl (Arc)				
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	3301	Preset or User	For in-band OAM or MG9000 internode ESA configurations, the combined total of this setting and the setting of protectedConnectionPoolCapacity cannot exceed 29440.  connectionPoolCapacity = 2101 * <n>; protectedConnectionPoolCapacity = 2101 * <m>. <n> is the number of unprotected links and <m> is the number of protected links.  For out-of-band, setting this attribute value to 3301

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<p>assumes that there is only one unprotected link on this FP.</p> <p>If additional unprotected links have been configured on this FP, this attribute value will have been configured as follows:</p> <p><math>(n * 3301)</math></p> <p>where <math>n</math> is the number of unprotected links.</p>
	protectedConnectionPoolCapacity		Preset or User	<p>For in-band OAM or MG9000 internode ESA configurations, the combined total of this setting and the setting of <i>connectionPoolCapacity</i> cannot exceed 29440.</p> <p><math>connectionPoolCapacity = 2101 * &lt;n&gt;</math>;  <math>protectedConnectionPoolCapacity = 2101 * &lt;m&gt;</math>. <math>&lt;n&gt;</math> is the number of unprotected links and <math>&lt;m&gt;</math> is the number of protected links.</p> <p>Setting this attribute value to 52816 assumes that there is only one unprotected link on this FP.</p> <p>If additional unprotected links have been configured on this FP, the <i>protectedConnectionPoolCapacity</i> attribute will have been configured as follows:</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				56117 - <value of the <i>connectionPoolCapacity</i> attribute>
Lp/<n> Eng Arc Apc/<m> Ov	connectionPoolCapacity	2101x <n>	Preset or User	<n> is the number of ports being used.  <i>Apc/0</i> represents the APC device managing ports 0-3, <i>Apc/1</i> manages ports 4-7, <i>Apc/2</i> manages ports 8-11, and <i>Apc/3</i> manages ports 12-15.
Lp/<n> Eng FrameCoreResourceControl (Fcrc)				
Lp/<n> Eng Fcrc Pqc				
lp/<n> eng fcrc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096 0	Preset or User	You must set this attribute to a non-zero value when this card terminates an inband OAM or MG9000 internode ESA connection (for example, 4096) and must be zero otherwise.

#### 4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 nodes in a PT-AAL1 or UA-AAL1 solution.

#### 4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pOC12Smlr Atm	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
LogicalProcessor (Lp)/<n>	mainCard (main)	Shelf Card/ <x>	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	User	
	spareCard		Preset	No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
Lp/<n> Sonet/ <p>				The port number for this attribute is a value between 0 and 3.
	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Eng AtmResource Control (Arc)				
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	6	Preset or User	
	protectedConnectionPoolCapacity	52816	Preset or User	
Lp/<n> Eng FrameCoreResourceControl (Fcrc)				

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng Fcrc Pqc				
Lp/<n> Eng Fcr c Pqc Override (Ov)	ipRoutesPo olCapacity (ipRtsCap)	4096  0	Preset or User	Provision a value of 0 if you want to use both types of 4-port OC-12 FPs, NTHW11 and NTWH86, together as a redundant FP pair. Change the configured value prior to installing the NTHW11 FP as a replacement FP.  <b>Note:</b> The NTHW11 FP cannot be deployed in a Carrier VoIP Network employing in-band OAM.

#### 4-port DS3ChATM function processor configuration (UA-AAL1)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 nodes in a UA-AAL1 solution only.

#### 4-port DS3ChATM function processor configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pDS3ChAt m	Preset	
	sparingConn ection	Not applicabl e	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	Shelf Card/ <x>	Preset	The even number of the card you configured.
	logicalProces sorType (lpt)	Sw Lpt/<Lpt name>	User	
	spareCard	Shelf Card/ <x>+1	Preset	The number of the spare card you configured.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Sw Lpt/atmlma	featureList	imaAtmForumHot atmUni	Preset	
Lp/<n> Eng AtmResourceControl (Arc)				
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity		Preset or User	
	protectedConnectionPoolCapacity	5000	Preset or User	
Lp/<n> Eng FrameCoreResourceControl (Fcrc)				
Lp/<n> Eng Fcrc Pqc				
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutesPoolCapacity	100	Preset or User	

For information about configuring the *Lp Eng DS* component, see "4-port OC-3 function processor configuration (UA-IP)" (page 71).

### 12-port DS3ATM function processor configuration (UA-AAL1)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 nodes in a UA-AAL1 solution only.

#### 12-port DS3ATM function processor configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	12pDS3Atm	Preset	<x> is the number of the card you are configuring

Components	Attributes	Configured Values	Expected Audit Results	Notes
	sparingConnection	notApplicable	Preset	Leave as default for 1:1 sparing
LogicalProcessor (Lp)/<x>	mainCard (main)	Shelf Card/ <x>	Preset	The even-numbered FP you are configuring
	spareCard (spare)	Shelf Card/ <x+1>	Preset	The adjacent (to the main FP) odd-numbered spare card you are configuring
	logicalProcessorType (lpt)	Sw Lpt/12pD S3ATM	User	
Lp/<n> Eng AtmResourceControl (Arc)				
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity		Preset or User	
	protectedConnectionPoolCapacity	15000	Preset or User	
Lp/<n> Eng FrameCoreResourceControl (Frc)				
Lp/<n> Eng Frc Pqc				
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096	Preset or User	

## FP configuration for Multiservice Switch 15000 (PT-AAL2)

This section includes the FP card configurations for MSS/MG15000 nodes in a PT-AAL2 solution.

These configurations are as follows:

- "4-port OC-3 function processor configuration (PT-AAL2)" (page 67)

- "4-port OC-12 function processor configuration (PT-AAL2)" (page 68)
- "2-port VSP3-o function processor configuration (PT-AAL2)" (page 69)

#### 4-port OC-3 function processor configuration (PT-AAL2)

Review the following information to understand how this function processor was configured on your Nortel Multiservice Switch 15000 node for the PT-AAL2 solution.

**Note:** The PT-AAL2 FP-4pOC3SmlrAtm\_Unprotected template for this configuration supports provisioning for a single, unprotected 4pOC3SmlrATM card with PEC NTHW15 (PQC12) only.

#### 4-port OC-3 function processor configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf Card	cardType (card)	4pOC3SmlrAtm	Preset	
LogicalProcessor (Lp)	mainCard	shelf card/*	Preset	
	logicalProcessorType (lpt)	default	User	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	13204	Preset or User	
	protectedConnectionPoolCapacity	13204	Preset or User	
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096	Preset or User	
Lp Eng Aalist Ov	maxList	100	Preset	
Lp/<n> Eng DS/acc Ov	agentQueueSize	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that will be stored in the queue for that data type. Any records received after the maximum is reached are discarded.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng DS/alarm Ov	agentQueueSize (agentQ)	100	Preset	
Lp/<n> Eng DS/debug Ov	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/scn Ov	agentQueueSize (agentQ)	200	Preset	
Lp/<n> Eng DS/trap Ov	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/stats Ov	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats Ov	agentQueueSize (agentQ)	200	Preset	

#### 4-port OC-12 function processor configuration (PT-AAL2)

This section presents the configuration of a 4-port OC-12 function processor (FP) on Nortel Multiservice Switch 15000 nodes in a PT-AAL2 solution. Review the following table to understand how this FP is configured on your nodes.

**Note:** The PT-AAL2 FP-4pOC12SmlrAtm template for this configuration supports provisioning for a pair of 4pOC3SmlrATM cards with the PEC NTHW86 (PQC12) only.

#### 4-port OC-12 function processor configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf Card	cardType	4pOC12SmlrAtm	Preset	
LogicalProcessor (Lp)	mainCard (main)	shelf card/*	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	default	User	
Lp/<n> Eng Arc Ov	connectionPoolCapacity	6	Preset or User	
	protectedConnectionPoolCapacity	52816	Preset or User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng Frcr Pqc Override (Ov)	ipRoutes	4096	Preset or User	
Lp Eng AAlst Ov	maxList	100	Preset	
Lp/<n> Eng DS/acc Ov	agentQueue Size	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that will be stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/alarm Ov	agentQueue Size (agentQ)	100	Preset	
Lp/<n> Eng DS/debug Ov	agentQueue Size (agentQ)	50	Preset	
Lp/<n> Eng DS/scn Ov	agentQueue Size (agentQ)	200	Preset	
Lp/<n> Eng DS/trap Ov	agentQueue Size (agentQ)	0	Preset	
Lp/<n> Eng DS/stats Ov	agentQueue Size (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats Ov	agentQueue Size (agentQ)	200	Preset	

## 2-port VSP3-o function processor configuration (PT-AAL2)

This section presents the configuration of a 2-port OC-3 ChSmlr voice services processor (VSP3-o) FP card on a Nortel Multiservice Switch 15000 Media Gateway in a PT-AAL2 solution.

Review "2-port OC-3 VSP3-o function processor configuration (PT-AAL2)" (page 70) to understand how this FP is configured on your nodes.

### 2-port OC-3 VSP3-o function processor configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pOC3ChSm IrVsp3	Preset	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> LogicalProcessor (Lp)/<n+1>	mainCard (main)	shelf card/*	Preset	The even-numbered FP you are configuring
	logicalProcessorType (lpt)	Sw LPT/VSP <n>	User	
Dlep/<n/2>	mainLp	Lp/<n>	Preset	The <i>DLEP</i> instance range is 0 through 7. The recommended convention is <n/2>, where <n> is the even-numbered slot in the card pair.
	spareLp	Lp/<n+1>	Preset	
Lp Eng Aalist Ov	maxList	unlimited	Preset	
Lp/<n> Eng DS/acc Ov	agentQueue Size	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that will be stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/alarm Ov	agentQueue Size (agentQ)	500	Preset	
Lp/<n> Eng DS/debug Ov	agentQueue Size (agentQ)	50	Preset	
Lp/<n> Eng DS/scn Ov	agentQueue Size (agentQ)	1500	Preset	
Lp/<n> Eng DS/trap Ov	agentQueue Size (agentQ)	0	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng DS/stats Ov	agentQueue Size (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats Ov	agentQueue Size (agentQ)	200	Preset	

## FP configuration for Multiservice Switch 15000 (UA-IP)

This section includes the function processor (FP) card configurations for Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

These configurations are as follows:

- ["4-port OC-3 function processor configuration \(UA-IP\)" \(page 71\)](#)
- ["16-port OC-3 function processor configuration \(UA-IP\)" \(page 73\)](#)
- ["4-port OC-12 function processor configuration \(UA-IP\)" \(page 74\)](#)
- ["1-port OC-48 function processor configuration \(UA-IP\)" \(page 75\)](#)
- ["4-port GE function processor configuration \(UA-IP\)" \(page 77\)](#)
- ["4-port DS3ChATM function processor configuration \(UA-IP\)" \(page 78\)](#)
- ["12-port DS3ATM function processor configuration \(UA-IP\)" \(page 79\)](#)
- ["2-port GE VSP3 function processor configuration \(UA-IP\)" \(page 81\)](#)
- ["2-port OC-3 VSP3-o/2 port VSP4e function processor configuration \(UA-IP\)" \(page 82\)](#)
- ["4-port OC-3 \(TDM\) function processor configuration \(UA-IP\)" \(page 83\)](#)

### 4-port OC-3 function processor configuration (UA-IP)

This section presents the configuration of a 4-port OC-3 function processor (FP), on Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review ["4-port OC-3 function processor configuration \(UA-IP\)" \(page 71\)](#) to understand how this FP is configured on your nodes.

### 4-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pOC3Smlr Atm	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	User	
	spareCard		Preset	No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
	logicalProcessorType		Preset	No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	13204	Preset or User	
	protectedConnectionPoolCapacity	13204	Preset or User	
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutes	96000	Preset or User	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rStats Override (Ov)	agentQueueSize (agentQ)	200	Preset	

### 16-port OC-3 function processor configuration (UA-IP)

This section presents the configuration of a 16-port OC-3 function processor (FP) on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review "16-port OC-3 function processor configuration (UA-IP)" (page 73) to understand how this FP is configured on your nodes.

**Note:** A nodal provisioning (NP) template is not available for this FP card. This configuration information is provided for your reference only.

### 16-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	16pOC3Sml rAtm	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	Preset	The number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	User	
	spareCard		Preset	No value is configured for this attribute. Sparing is accomplished for optical cards by defining APS-protection on at least one of the FP's ports.
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	Preset or User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	protectedConnectionPoolCapacity	29685	Preset or User	
lp/<n> eng frcr Pqc Override (Ov)	ipRoutes	96000	Preset or User	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	

#### 4-port OC-12 function processor configuration (UA-IP)

This section presents the configuration of a 4-port OC-12 function processor (FP) on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review ["4-port OC-12 function processor configuration \(UA-IP\)"](#) (page 74) to understand how this FP is configured on your nodes.

#### 4-port OC-12 function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pOC12Sml rAtm	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	Preset	The number of the card you configured.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	logicalProcessorType (lpt)	<customer defined>	User	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	Preset or User	If an OC-12 CS-LAN interface is added to either of these LPs, this value must be 257. The operator must add 256 to this number for each OC-12 CS-LAN link (unprotected) on one of these FP cards.
	protectedConnectionPoolCapacity	52816	Preset or User	
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutes	96000	Preset or User	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	

### 1-port OC-48 function processor configuration (UA-IP)

This section presents the configuration of a 1-port OC-48 function processor (FP) on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review "[1-port OC48ChATM function processor configuration \(UA-IP\)](#)" (page 76) to understand how this FP is configured on your nodes.

**Note:** A nodal provisioning (NP) template is not available for this FP card. This configuration information is provided for your reference only.

### 1-port OC48ChATM function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	1pOC48ChS mlrAtm	n/a	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	n/a	The even number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	n/a	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	n/a	
	protectedConnectionPoolCapacity	29685	n/a	
Lp/<n> Eng Frc Pqc Override (Ov)	ipRoutes	96000	n/a	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	n/a	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	n/a	The <i>agentQueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	n/a	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	n/a	

#### 4-port GE function processor configuration (UA-IP)

This section presents the configuration of a 4-port Gigabit Ethernet (GE) function processor (FP), on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review "4-port GE configuration (UA-IP)" (page 77) to understand how this FP is configured on your nodes.

#### 4-port GE configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n>	cardType (card)	4pGE	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	Preset	The even number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	User	
LpGroup/<n> Lp/<n>	migrationBehaviour	stayInServiceShelf	Preset	
LpGroup/<n> Lp/<n+1>	migrationBehaviour	moveToMigrationShelf	Preset	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agent QueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	

#### 4-port DS3ChATM function processor configuration (UA-IP)

This section presents the configuration of a 4-port DS3ChATM function processor (FP) on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review "4-port DS3ChATM function processor configuration (UA-IP)" (page 78) to understand how this FP is configured on your nodes.

#### 4-port DS3ChATM function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	4pDS3ChAtm	Preset	
	sparingConnection	NotApplicable	Preset	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/<x>	Preset	The even number of the card you configured.
	spareCard	shelf card/<x>+1	Preset	The number of the spare card you configured.
	logicalProcessorType (lpt)	<customer defined>	User	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	Preset or User	
	protectedConnectionPoolCapacity	5000	Preset or User	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agent QueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	

### 12-port DS3ATM function processor configuration (UA-IP)

This section presents the configuration of a 12-port DS3ATM function processor (FP) on a Nortel Multiservice Switch 15000 nodes in a UA-IP solution.

Review "[12-port DS3ATM function processor configuration \(UA-IP\)](#)" (page 79) to understand how this FP is configured on your nodes.

### 12-port DS3ATM function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<x>	cardType (card)	12pDS3Atm	Preset	<x> is the number of the card you are configuring
	sparingConnection	NotApplicable	Preset	Leave as default for 1:1 sparing

Components	Attributes	Configured Values	Expected Audit Results	Notes
LogicalProcessor (Lp)/<x>	mainCard (main)	shelf card/ <n>	Preset	The even-numbered FP you are configuring
	spareCard (spare)	shelf card/ <n+1>	Preset	The adjacent (to the main FP) odd-numbered spare card you are configuring
	logicalProcessorType (lpt)	<customer defined>	User	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	Preset or User	
	protectedConnectionPoolCapacity	15000	Preset or User	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	Preset	
Lp/<n> Eng DS/Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	Preset	The <i>agentQueueSize</i> attribute indicates the maximum number of records that are stored in the queue for that data type. Any records received after the maximum is reached are discarded.
Lp/<n> Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	Preset	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	Preset	

## FP configuration for Multiservice Switch 15000 Media Gateway 15000 (UA-IP)

This section includes configurations specific to the function processors (FPs) on a Nortel Multiservice Switch 15000 Media Gateway in a UA-IP solution.

These configurations are as follows:

- "2-port GE VSP3 function processor configuration (UA-IP)" (page 81)

- "2-port OC-3 VSP3-o/2 port VSP4e function processor configuration (UA-IP)" (page 82)
- "4-port OC-3 (TDM) function processor configuration (UA-IP)" (page 83)

### 2-port GE VSP3 function processor configuration (UA-IP)

Review "2-port GE VSP3 function processor configuration (UA-IP)" (page 81) to understand how this FP is configured on your nodes.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See "Interpreting audit results" (page 14) for more information.

#### 2-port GE VSP3 function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pGeMmSrV sp3	Preset	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> LogicalProcessor (Lp)/<n+1>	mainCard (main)	shelf card/<n >	Preset	The even-numbered FP you are configuring
	spareCard (main)	shelf card/<n +1>	Preset	
	logicalProcessorType (lpt)	Sw LPT/VSP <n>	User	
Lp/<n> Eng AaList Override (Ov) Lp/<n+1> Eng AaList Override (Ov)	maxListSize	200	Preset	
Lp/<n> Eng Ds/ala Override (Ov) Lp/<n+1> Eng Ds/ala Override (Ov)	agentQueue Size	200	Preset	
Lp/<n> Eng Ds/scn Override (Ov) Lp/<n+1> Eng Ds/scn Override (Ov)	agentQueue Size	400	Preset	

## 2-port OC-3 VSP3-o/2 port VSP4e function processor configuration (UA-IP)

This section presents the configuration of a 2-port OC-3 ChSmIr voice services processor (Vsp3-o) or a 2-port OC-3 VSP4e (2pVsp4e) FP card on a Nortel Multiservice Switch 15000 Media Gateway in a UA-IP solution.

Review "[VSP3-o/2pVsp4e function processor configuration \(UA-IP\)](#)" (page 82) to understand how this FP is configured on your nodes.

### VSP3-o/2pVsp4e function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pOC3ChSm IrVsp3/2pOC 3ChSMIrVsp 4e	Preset	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> LogicalProcessor (Lp)/<n+1>	mainCard (main)	shelf card/*	Preset	The even-numbered FP you are configuring
	logicalProcessorType (lpt)	Sw LPT/VSP <n>	User	
Dlep/<n/2>	mainLp	Lp/<n>	Preset	The <i>DLEP</i> instance range is 0 through 7. Therefore, the recommended convention is <n/2>, where <n> is the even-numbered slot in the card pair.
	spareLp	Lp/<n+1>	Preset	
Lp/<n> Eng AaList Override (Ov) Lp/<n+1> Eng AaList Override (Ov)	maxListSize	200	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng Ds/ala Override (Ov) Lp/<n+1> Eng Ds/ala Override (Ov)	agentQueueSize	200	Preset	
Lp/<n> Eng Ds/scn Override (Ov) Lp/<n+1> Eng Ds/scn Override (Ov)	agentQueueSize	400	Preset	

#### 4-port OC-3 (TDM) function processor configuration (UA-IP)

This section presents the configuration of a 4-port OC-3 time division multiplexing (TDM) function processor (FP) card on a Nortel Multiservice Switch 15000 Media Gateway in a UA-IP solution. The FP card is of type 4pOC3ChSmIrr.

Review "4-port OC-3 (TDM) function processor configuration (UA-IP)" (page 83) to understand how this FP is configured on your nodes.

#### 4-port OC-3 (TDM) function processor configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n>	cardType (card)	4pOC3ChSmIrr	Preset	<n> is the number of the FP card you are configuring
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	Preset	<n> is the even-numbered FP card you are configuring.
	logicalProcessorType (lpt)	Sw LPT/TDM <n>	User	
Lp/<n> Eng AaList Override (Ov) Lp/<n+1> Eng AaList Override (Ov)	maxListSize	200	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Eng Ds/ala Override (Ov) Lp/<n+1> Eng Ds/ala Override (Ov)	agentQueueSize	200	Preset	
Lp/<n> Eng Ds/scn Override (Ov) Lp/<n+1> Eng Ds/scn Override (Ov)	agentQueueSize	400	Preset	

## FP configuration for Multiservice Switch 15000 Media Gateway 15000 (PT-IP)

This section includes configurations specific to the function processors (FPs) on a Nortel Multiservice Switch 15000 Media Gateway in a PT-IP solution.

MG15000 VSP cards reside in the MG15000 shelf and connect to the Vr Pp through the Virtual Media interface. Each VSP card has 2 or 3 host interfaces that carry:

- bearer traffic: IpMConn component links to the Vm with a VrAP (Virtual Router Access Point)
- control traffic: H.248 messaging terminates on the Ctrl/mg component, which is also linked to the Vm by way of a VrAP sub-component.
- signaling backhaul: per-call signaling information from PRI and PTS trunks is backhauled to the GWC over the IP network. Ctrl/sg component is used, also with a VrAP sub-component.

These configurations are as follows:

- ["4-port GE function processor configuration \(PT-IP\)" \(page 84\)](#)
- ["2-port OC-3 VSP3-o/2-port OC-3 VSP4e function processor configuration \(PT-IP\)" \(page 86\)](#)

### 4-port GE function processor configuration (PT-IP)

This section presents the configuration of a 4-port Gigabit Ethernet (GE) multi-mode (MM) Voice Services Processor (VSP) function processor (FP) on a Nortel Multiservice Switch 15000 Media Gateway in a PT-IP solution.

Review ["4-port GE function processor configuration \(PT-IP\)" \(page 85\)](#) to understand how this FP is configured on your nodes.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See "Interpreting audit results" (page 14) for more information.

#### 4-port GE function processor configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	4pGE	Preset	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> Logical Processor (Lp)/<n+1>	mainCard (main)	shelf card/ <n> shelf card/ <n+1>	Preset	<n> is the even-numbered FP you are configuring
	spareCard (main)		Preset	
	logicalProcessorType (lpt)	Sw LPT/GE <n>	User	
Lp/<n>Eng AaList Override (Ov)	maxList	100	Preset	
Lp/<n> LP/<n+1> Eng Ds/ala Override (Ov)	agentQueueSize	100	Preset	
Lp/<n> LP/<n+1> Eng Ds/scn Override (Ov)	agentQueueSize	200	Preset	
Lp/n Eng Ds/log Ov	agentQueueSize	100	Preset	
Lp/n Eng Ds/deb Ov	agentQueueSize	70	Preset	
Lp/n Eng Ds/tra Ov	agentQueueSize	0	Preset	
Lp/n Eng Ds/sta Ov	agentQueueSize	0	Preset	
Lp/n Eng Ds/rts Ov	agentQueueSize	200	Preset	
Lp/n Eng Ds/app Ov	agentQueueSize	0	Preset	
Lp/n Eng Ds/acc Ov	agentQueueSize	0	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
LpG/<n/2> Lp<n>	migrationBehaviour	stayInServiceShelf	Preset	
LpG/<n/2> Lp<n+1>	migrationBehaviour	moveToMigrationShelf	Preset	

## 2-port OC-3 VSP3-o/2-port OC-3 VSP4e function processor configuration (PT-IP)

This section presents the configuration of a pair of 2-port OC3ChSmlrVsp3-o (2pVsp3-o) or 2-port OC3ChSmlrVsp4e (2pVsp4e) FP cards on a Nortel Multiservice Switch 15000 Media Gateway in a PT-IP solution.

Review ["2-port VSP3-o/2-port VSP4e function processor configuration \(PT-IP\)" \(page 86\)](#) to understand how this FP is configured on your nodes.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See ["Interpreting audit results" \(page 14\)](#) for more information

## 2-port VSP3-o/2-port VSP4e function processor configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Shelf				
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pOC3ChSmlrVsp3/ 2pOC3ChSmlrVsp4e	Preset	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> LogicalProcessor (Lp)/<n+1>	mainCard (main)	shelf card/*	Preset	<n> is the even-numbered FP you are configuring
	logicalProcessorType (lpt)	Sw LPT/VS P<n>	User	
Lp/<n> Eng Aalist Ov Lp/<n+1> Eng Aalist Ov	maxList	200	Preset	
Lp/<n> Eng Ds/alarm Override (Ov)	agentQueueSize	1500/500	Preset	configured values for VSP3-o and 2pVSP4e, respectively.

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> Eng Ds/scn Override (Ov)	agentQueueSize	1500	Preset	
	spareLp	Lp/<n+1>	Preset	
Lp/n Eng Ds/log Ov	agentQueueSize	100	Preset	2pVSP4e only
Lp/n Eng Ds/debug Ov	agentQueueSize	70 <n> & <n+1>	Preset	2pVSP4e only
Lp/n Eng Ds/trap Ov	agentQueueSize	0	Preset	2pVSP4e only
Lp/n Eng Ds/stats Ov	agentQueueSize	0	Preset	2pVSP4e only
Lp/n Eng Ds/rtstats Ov	agentQueueSize	200	Preset	2pVSP4e only
Lp/0 Eng Ds/app Ov	agentQueueSize	0	Preset	2pVSP4e only
Lp/n Eng Ds/acc Ov	agentQueueSize	0	Preset	2pVSP4e only
Dlep/<n/2>	mainLp	Lp/<n>	Preset	The <i>DLEP</i> instance range is 0 through 7. Therefore, the recommended convention is <n/2> where <n> is the even-numbered slot in the card pair.
	spareLp	Lp/<n+1>	Preset	



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## Summary of link configuration

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**CAUTION****Risk of performance degradation and outages**

To ensure performance levels and prevent outages, Nortel recommends you DO NOT change the initial installation configuration, or configure additional components and services.

An NP template audit or Node level configuration audit can be run at any time to verify the integrity of the values in the template. For each attribute in a table, the possible attribute source (Attr Source) values can be Preset, User, Calculated, or Default. Some attributes are set manually outside of the NP templates. These manual entries do not have Attr Source values and are treated as not applicable for the audit. If the Configured Values are "customer defined", the Attr Source is User if the value is set in the template. If the "customer defined values are not set in the templates, they are treated as not applicable for the audit. For more information, refer to Interpreting audit results 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*.

This section describes link configuration in Nortel Multiservice Switch 15000 for the following solutions:

- "Link configuration (PT-AAL1/UA-AAL1)" (page 90)
- "Link configuration (PT-AAL2)" (page 166)
- "Media Gateway 15000-specific interface configuration (PT-AAL2)" (page 178)
- "Link configuration (UA-IP)" (page 189)
- "Media Gateway 15000-specific interface configuration (UA-IP/PT-IP)" (page 228)
- "TDM trunk configuration (UA-IP/PT-IP)" (page 269)

## Link configuration (PT-AAL1/UA-AAL1)

This chapter describes link configuration in Nortel Multiservice Switch 15000 for PT-AAL1 or UA-AAL1 solutions including:

- "ATM PNNI link configuration (PT-AAL1/UA-AAL1)" (page 90)
- "CS2000 link configuration (PT-AAL1/UA-AAL1)" (page 99)
- "Bridged CS2000 link configuration (UA-AAL1)" (page 106)
- "DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)" (page 110)
- "MG4000 ATM interface configuration (PT-AAL1/UA-AAL1)" (page 116)
- "MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)" (page 125)
- "MG9000 DS3 ATM interface configuration (UA-AAL1)" (page 133)
- "MG9000 DS1-IMA ATM interface configuration (UA-AAL1)" (page 140)
- "SAM 21 SC link configuration (UA-AAL1)" (page 150)
- "UAS/MS2020 ATM UNI link configuration (UA-AAL1)" (page 155)
- "Bridged SAM 21 SC link configuration (UA-AAL1)" (page 161)

### ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how these asynchronous transfer mode (ATM) private network-to-network links are configured on Nortel Multiservice Switch 15000 nodes in PT-AAL1 and UA-AAL1 solutions. See the table "ATM PNNI link configuration (PT-AAL1/UA-AAL1)" (page 90) for the basic configuration of the components and values.

If MG9000 internode ESA support is required over the PNNI link, the AtmIf Vcc Nep, AtmMpe Ac, and Virtual Router Protocol Port components need to be configured as described in "MSS15000 to MSS15000 configuration to support MG9000 internode ESA" (page 98).

### ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	Preset	<p>This attribute value works in conjunction with the <i>protectionLine</i> attribute value. These attributes link ports on two different LPs.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/n must match port 0 on Lp/n+1.</p> <p>&lt;a&gt; is the instance value of the Laps component. &lt;a&gt; = &lt;n&gt; * 100 + &lt;p&gt;</p> <p>&lt;n&gt; is the lowest even-numbered LP that is available.</p> <p>&lt;p&gt; is the number of the port you configured.</p>
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	Preset	<p>This attribute value is configured on the LP paired with the workingLine LP.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/n+1 must match port 0 on Lp/n.</p> <p>&lt;n&gt; is the lowest even number of available Lp.</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<p> is the number of the port you configured.
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/<a> Sts/0	concatNumber	12	Preset	For 4pOC12 only.
Laps/<a> Sts/0 AtmCell	correctSingleBitHeader Errors	on	Preset	
AtmInterface (Atmf)/<c>	interface Name	Laps/<a> Sts/0  Lp<n> ds/<p>	Preset	<p><i>Laps/&lt;a&gt; Sts/0</i> is for a protected optical link.</p> <p>&lt;a&gt; is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured.</p> <p>For example, 200 would indicate that the LP in slot 2, and port 0 on that card and port 0 on its paired Lp are configured for Laps.</p> <p>c is equal to a.</p> <p><i>Lp&lt;n&gt; ds/&lt;p&gt;</i> is for a 12pDS3 card.</p> <p>&lt;n&gt; is the LP instance number.</p> <p>&lt;p&gt; is the number of the port you configured</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/<remoteNodeName> ATMIF/<remoteAtmInstance>	User	<remoteNodeName> is the unique node name on the remote Multiservice Switch 15000 node.  <remoteAtmInstance> is the instance number of the ATM interface component on the remote Multiservice Switch 15000 node.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf VirtualChannel Connection (Vcc)				If you are associating the virtual connection with a virtual path terminator, complete the values for the attributes below for the <i>AtmIf Vpt Vcc Nrp</i> component.
AtmIf Vcc NailedUp RelayPoint (Nrp)	nextHop	Atmif Vcc Nrp	n/a	For in-band OAM, this value is configured for intermediate Multiservice Switch 15000 nodes.  Enter the instance value of the second ATM interface and the instance value of the second Vcc component.
	oamSegmentboundary (sb)	sameAsInterface	n/a	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	bandwidthElastic (bwElastic)	no	n/a	Do not set the attribute to yes; leave the attribute value set as no.
	overrideHoldingPriority (ohpri)	noOverride	n/a	
Atmlf Vcc Nailed Up End Point (Nep)	applicationName	Atmmpe/<x> AC/<m>	Preset	For in-band OAM, this value terminates an ATMMPE connection on a Gateway or Remote Multiservice Switch 15000 nodes.
Atmmpe/<x>	mtu	9188	Preset	
	encapType	llcEncap	Preset	
	linkToProtocolPort	Vr/0 PP<MpeX>	Preset	There is only one ATMMPE for each subnet.
Atmmpe/<x> ATM connection (AC)/<m>	link	Atmif<n2> Vcc/<vpi.vci> Nep	Preset	For Sonet-APS PNNI, one AC per Remote Multiservice Switch 15000 node.  For DS3 PNNI, two AC's per Remote Multiservice Switch 15000 node.  <b>Note:</b> For DS3, there is still a single IP address, but it is distinguished by ipCos values.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	ipCos	0 1	Preset	Specific to DS3 PNNI. The AC with value 0 is used exclusively unless this AC is unavailable. The AC with a value 1 is used when other AC is unavailable.
Atmlf Vcc Virtual Channel Descriptor (Vcd)	atmServiceCategory	nrtVbr	n/a	For in-band OAM, this value terminates an ATMMPE connection on a Gateway or Remote Multiservice Switch 15000 nodes.
	txTdt	6	n/a	
	txTdp	1 <line rate> 2 1000 2 32	n/a	<line rate> is: 96000 for DS3 plcp 104268 for DS3 direct 353207 for OC-3 1412830 for OC-12
	endToEndLoopback	on	n/a	Configured on both ends when Vcc has intermediate hops.
Atmlf Vcc NailedUp RelayPoint (Nrp)	nextHop	Atmif/<n2> Vcc/<vpi.vci> Nrp	n/a	Configured for intermediate Multiservice Switch 15000 nodes.

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> Connection Administrator (CA)	maxVccs (vccs)	2100 1230 3300 13200	Preset or User	For in-band OAM, the combination of <i>maxVcc</i> and <i>maxVpc</i> must equal 2100.  For 12pDS3  For 4pOC3 and 16pOC3  For 4pOC12.  The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVciForVpiZero</i> attribute and the <i>minAutoSelectedVciForVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpi Zero)	4095 16383	Preset or User	For 4pOC3, 16pOC3, 12pDS3.  For 4pOC12.  The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmIfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelect</i>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<i>edVciForVpiZero</i> attribute as large as possible.
	<i>minAutoSelectedVciForVpiZero</i> ( <i>minVciVpiZero</i> )	380	Preset or User	
	<i>maxVpcs</i> (vpcs)	0	Preset or User	For in-band OAM, the combination of <i>maxVcc</i> and <i>maxVpc</i> must equal 2100.
	<i>maxVpts</i> (vpts)	0	Preset or User	
	<i>bandwidthPool</i> (bwPool)	Vector values of: 1 70 2 30	Preset or User	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	Preset	
	<i>usageParameterControl</i> (upc)	disabled	Preset	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	<i>usageParameterControl</i> (upc)	disabled	Preset	
	<i>txQueueLimit</i>	autoconfig	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	unshapedTransmitQueueing	perVc	Preset	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	disabled	Preset	
Atmlf/<c>CA Unspecified bit rate (Ubr)	minPerVcQLimit	92	Preset	
Atmlf/<c> Connection Mapping (ConnMap)			Preset	For 16pOC3 or 4pOC12.
Atmlf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096 16384	Preset	For 16pOC3. For 4pOC12.
Atmlf/<c> Private Network-Network Interface (PNNI)	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	The template default settings must be turned off.
	accountConnectionType (act)	origTerm	Preset	

### MSS15000 to MSS15000 configuration to support MG9000 internode ESA

Internode ESA is optional and requires extra configuration. The following table gives the extra configuration that is required to support MG9000 internode ESA.

The following components must be provisioned to support InterNode ESA IP MG9000 on MSS15000 interfaces. If an internode ESA group spans more than one Multiservice Switch 15000, there needs to be at least one IP path amongst all the MSS15000's over PNNI links.

### MSS15000 to MSS15000 configuration for internode ESA

Component	Attribute	Configured Values	Expected Audit Results	Notes
Atmlf/<n*100+p> Vcc/0.33 Nep	applicationName	AtmMpe/<n> Ac/1	n/a	
Atmlf/<n*100+p> Vcc/0.33 vcd Tm	atmServiceCategory	rtVbr	n/a	

Component	Attribute	Configured Values	Expected Audit Results	Notes
	txPacketWise Discard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters	1 4000 2 2000 3 32	n/a	
AtmMpe/<n>	linkToProtocolPort	Vr/ESA Pp/<EM><Atmlf>_ESA	n/a	
AtmMpe/<n> Ac/1	atmConnection	Atmlf/<n> Vcc/0.33 nep	n/a	
Vr/ESA Pp/PP<n>_ESA	linkToMedia	AtmMpe/<n>	n/a	
Vr/ESA Pp/PP<n>_ESA ipport LogicalInterface/<PP_IPAddr>	netMask	255.255.255 .252	n/a	

### CS2000 link configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in PT-AAL1 or UA-AAL1 solutions.

#### CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Sonet/<p> Sts/0			Preset	<n> is the number of the logical processor.  <p> is the number of the port you configured.
Lp/<n> Sonet/<p> > Sts/0 AtmCell (Cell)	correctSingle BitHeaderErrors	on	Preset	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> > Sts/0	Preset	<c> is the instance value of the ATM interface. <c> = <n> * 100 + <p>  <n> is the number of the logical processor.  <p> is the number of the port you configured.
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/CS2K_<uniqueLabel>	User	<uniqueLabel> is a string that uniquely identifies the far end CS2000 High-capacity Input/Output Processor (HIOP) port in your network. For example, <CLLI>_PO/slot<slot number>_port<port number> is a unique label.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	oamSegmentBoundary (sb)	no	Preset	
Atmlf/ConnectionAdministrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVciForVpiZero</i> attribute and the <i>minAutoSelectedVciForVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	Preset	
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
	trafficShaping (trShaping)	disabled	Preset	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
Atmlf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
Atmlf/<c> UserNetworkInterface (Uni) Sig	operatingMode	provisionOnly	Preset	
Atmlf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset	
Atmlf/<c> ConnectionMapping (ConnMap)			Preset	For 16pOC3 only.
Atmlf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset	
Atmlf/<c> Vcc/<d> Vcd TrafficManagement (Tm)	atmServiceCategory (service)	rtVbr	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	usageParameterControl	sameAsCA	Preset	To enable policing, the <i>upc</i> attribute must be set to enforced for the CA on the MG4000, LSA, STS1, IW-SPM, DPT-SPM, and XA-Core .
	txTrafficDescType (txTdt)	6	Preset	
	txTrafficDescParm (txTdp)	Vector values of: 1 1400 2 600 3 120	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>txtrafficDescType</i> attribute. The index entry indicates the traffic

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<p>descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.</p> <p>To configure two VCs on each of the MG4000 interfaces, the vector values for the MG4000 must be:</p> <p>1 1600, 2 850, and 3 225.</p>
	rxTrafficDesc Type (rxTdt)	6	Preset	
	rxTrafficDesc Parm (rxTdp)	Vector values of: 1 1600 2 850 3 225	Preset	<p>This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.</p> <p>The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by</p>

Carrier VoIP

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<p>the <i>rxtrafficD escType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.</p> <p>To configure two VCs on each of the MG4000 interfaces, the vector values for the MG4000 must be:</p> <ol style="list-style-type: none"> <li>1 1400,</li> <li>2 600, and</li> <li>3 120.</li> </ol>

### Bridged CS2000 link configuration (UA-AAL1)

Optional unprotected SONET links on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions are configured using the following two components:

- a bridged SONET component
- a port bridged group component

Hitless software migration (HSM) for unprotected SONET interface pairs allows the Communications Server 2000 (CS2000) platforms to be connected to a single Multiservice Switch 15000 node and not sustain an outage during a software migration.

Review the following information to understand how these links were configured on your nodes.

### Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp/<n>and Lp/<m>				<p>Lp/&lt;n&gt; and Lp/&lt;m&gt; are mated LPs. LPs linked to two cards in a shelf such that the two cards are in adjacent slots and the lowered slot is an even number. For example, slots 4 and 5 are typically Lp/4 and Lp/5.</p> <p>For Pbg, there will be at least two mated LPs, where one may be linked to Lp/4 so/0 and lp/5 bso/0, and the other is linked to lp/4 bso/1 and lp/5 so/1.</p>
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	Preset	
	commentText	<customer defined>	Preset	
Lp/<m> BridgeSonet/<p>				
Pbg/<c>	workingLine	Lp/<n> Sonet/<p>	Preset	
	bridgeLine	Lp/<m> BridgedSonet/<p>	Preset	
Pbg/<c> Sts/0 AtmCell (Cell)	correctSingleBigHeaderErrors	on	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmInterface (Atmif)/<c>	interfaceName	Pbg/<c> Sts/0	Preset	
	remoteAtmInterfaceLabel	GEN/CS2K-<unique-label>	User	The -<unique-label> string uniquely identifies the far end CS2000 HIOP port in your network. For example, -PO/slot<slot number>_port<port number>-<CLLI> is a unique label.
	oamSegmentBoundary	no	Preset	
AtmIf Connection Administrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVc iforVpiZero</i> attribute and the <i>minAutoSelectedVc iforVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	Preset	The default template value of 4095 must be changed.  The value entered for the <i>maxAutoSelectedVc iforVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmIfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<i>maxAutoSelectedVcif</i> or <i>VpiZero</i> attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf CA RealTimeVariableBitRate (RtVbr)	pool	pool2	Preset	
Atmlf CA RtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
	emissionPriority	2	Preset	
Atmlf CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Atmlf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	Preset	
Atmlf CA NrtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
Atmlf ConnectionMapping (ConnMap)			Preset	For 16pOC3 only.
Atmlf ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset or User	
Atmlf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
Atmlf Uni Sig	operatingMode	provisionOnly	Preset	
Atmlf Uni Ilmi	operatingMode	ilmiDisabled	Preset	

### DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 shelves in PT-AAL1 or UA-AAL1 solutions.

### DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				

Components	Attributes	Configured Values	Expected Audit Results	Notes
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	Preset	<p>This attribute value works in conjunction with the protectionLine attribute value. These attributes link ports on two different LPs.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/&lt;n&gt; must match port 0 on Lp/n+1.</p> <p>&lt;a&gt; = &lt;n&gt; * 100 + &lt;p&gt;</p> <p>&lt;n&gt; is the lowest even-numbered LP that is available.</p> <p>&lt;p&gt; is the number of the port you configured.</p>
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	Preset	<p>This attribute value is configured on the LP paired with the workingLine LP.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/n+1 must match port 0 on Lp/n.</p> <p>&lt;n&gt; is the lowest even number of available Lp.</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<p> is the number of the port you configured.
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/<a> Sts/0			Preset	
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	Preset	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	Preset	<a> is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured. <c> = <a>  For example, 200 would indicate that the LP in slot 2, and port 0 on that card and port 0 on its paired Lp are configured for Laps.
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/DPT-SPM-<SPMID>-<CLLI> or GEN/IW-SPM-<SPMID>-<CLLI>	User	The --<SPMID>-<CLLI> string uniquely identifies the far end DPT-SPM or IW-SPM in your network.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	Preset	The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	52	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.

114 Summary of link configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
	trafficShaping (trShaping)	disabled	Preset	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	txQueueLimit (txql)	230	Preset	
	unshapedTransmitQueueing (unshap)	perVc	Preset	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
Atmlf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	loopPrevention	disabled	Preset	
Atmlf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset	
Atmlf/<c> Uni Signalling (Sig)			Preset	
Atmlf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	Preset	
	atmServiceCategory (service)	rtVbr	Preset	
	trafficDescParam (tdp)	Vector values of: 1 500 2 300 3 50 4 0 5 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>trafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCA	Preset	To enable policing, the upc attribute must be set to enforced for the CA on the MG4000, LSA, STS1, IW-SPM, DPT-SPM, and XA-Core.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
AtmIf ConnectionMapping (ConnMap)			Preset	For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsF orVpiZero (nZVccs)	4096	Preset	

### MG4000 ATM interface configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how these links were configured on the Nortel Multiservice Switch 15000 nodes in PT-AAL1 or UA-AAL1 solutions.

### MG4000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	Preset	This attribute value works in conjunction with the protectionLine attribute value. These attributes link ports on two different LPs.  The port numbers must match on both LPs. Therefore, port 0 on Lp/<n> must match port 0 on Lp/n+1.

Components	Attributes	Configured values	Expected Audit Results	Notes
				<p><math>\langle a \rangle = \langle n \rangle * 100 + \langle p \rangle</math></p> <p><math>\langle n \rangle</math> is the lowest even-numbered LP that is available.</p> <p><math>\langle p \rangle</math> is the number of the port you configured.</p>
	protectionLine (protection)	Lp/ $\langle n+1 \rangle$ Sonet/ $\langle p \rangle$	Preset	<p>This attribute value is configured on the LP paired with the workingLine LP.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/<math>\langle n+1 \rangle</math> must match port 0 on Lp/<math>\langle n \rangle</math>.</p> <p><math>\langle n \rangle</math> is the lowest even number of available Lp.</p> <p><math>\langle p \rangle</math> is the number of the port you configured.</p>
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/ $\langle a \rangle$ Sts			Preset	
Laps/ $\langle a \rangle$ Sts/0 AtmCell	correctSingleBitHeaderErrors	on	Preset	
AtmInterface (AtmIf)/ $\langle c \rangle$	interfaceName	Laps/ $\langle a \rangle$ Sts/0	Preset	<p><math>\langle a \rangle</math> is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured.</p> <p>For example, 200 would indicate that the LP in slot 2, and port 0 on that</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
				card and port 0 on its paired Lp are configured for Laps. c is equal to a.
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG4K -<SPMID>- <CLLI>	User	The -<SPMID>-<CLLI> string uniquely identifies the far end MG4000 in your network.
	oamSegmentBoundary (sb)	no		
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVciForVpiZero</i> attribute and the <i>minAutoSelectedVciForVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	Preset	The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nVccs</i> parameter in <i>AtmIfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.

Components	Attributes	Configured values	Expected Audit Results	Notes
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
	trafficShaping (trShaping)	disabled	Preset	
Atmlf/<c> CA RtVbr/0	txQueueLimit (txql)	1440	Preset or User	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	usageParameterControl (upc)	disabled	Preset	
	unshaped Transmit Queueing (unshap)	perVc	Preset	
	txQueueLimit	230	Preset	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	Preset	
	usageParameterControl (upc)	enforced	Preset	
	cdvt	10000	Preset	
Atmlf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
	loopPrevention	disabled	Preset	
Atmlf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset	
Atmlf/<c> Uni Signalling (Sig)			Preset	
Atmlf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	atmServiceCategory (service)	rtVbr	Preset	
	trafficDescParam (tdp)	Vector values of: 1 500 2 300 3 50 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>trafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCA	Preset	To enable policing, the upc attribute must be set to enforced for the CA on the MG4000, LSA, STS1, IW-SPM, DPT-SPM, and XA-Core.
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).

Components	Attributes	Configured values	Expected Audit Results	Notes
Atmlf/<c> VirtualChannelConnection (Vcc)/<d>			n/a	To complete configuration of the MG4000 ATM interface, you must configure two PVC connections between each MG4000 and the CS2000.  If you are associating the virtual connection with a virtual path terminator, complete the values for the attributes below for the <i>Atmlf Vpt Vcc Vcd</i> component and Tm subcomponent.
Atmlf/<c> Vcc/<d> VirtualChannelDescriptor (Vcd)	segLinkSideLoopback (segLkLbk)	sameAsInterface	n/a	
	segSwitchSideLoopback (segSwLbk)	sameAsInterface	n/a	
	endToEndLoopback (eeLbk)	sameAsInterface	n/a	
Atmlf/<c> Vcc/<d> Vcd TrafficManagement (Tm)	atmServiceCategory (service)	rtVbr	n/a	
	usageParameterControl	sameAsCA	n/a	To enable policing, the upc attribute must be set to enforced for the CA on the MG4000, LSA, and STS1.
	txTrafficDescType (txTdt)	6	n/a	

Components	Attributes	Configured values	Expected Audit Results	Notes
	txTrafficDesc Parm (txTdp)	Vector values of: 1 1600 2 850 3 225	n/a	<p>This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.</p> <p>The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>txtrafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.</p> <p>To configure two VCs on each of the CS2000 interfaces, the vector values for the CS2000 must be: 1 1400, 2 600, and 3 120.</p>
	rxTraffic DescType (rxTdt)	6	n/a	
	rxTrafficDescParm (rxTdp)	Vector values of: 1 1400 2 600 3 120	n/a	<p>This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
				<p>The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>rxtrafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.</p> <p>To configure two VCs on each of the CS2000 interfaces, the vector values for the CS2000 must be: 1 1600, 2 850, and 3 225.</p>
				<p>If you provision the MG4000 PVCs using the Nodal Provisioning application, parameters 1 through 3 for both the <i>txTrafficDescParm</i> and <i>rxTrafficDescParm</i> attributes are provisioned with the same set of values. The correct values need to be entered.</p>
AtmIf VirtualChannelConnection (Vcc)			n/a	<p>If you are associating the virtual connection with a virtual path terminator, complete the values for the attributes below for the <i>AtmIf Vpt Vcc Nrp</i> component.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
AtmIf Vcc Naile dUpRelayPoint (Nrp)	nextHop	Atmif<n2> Vcc/<vpi.vci> Nrp	n/a	For in-band OAM, this value is configured for intermediate Multiservice Switch 15000 nodes.  Enter the instance value of the second ATM interface and the instance value of the second Vcc component.
	oamSegmentboundary (sb)	sameAsInterface	n/a	
	bandwidthElastic (bwElastic)	no	n/a	Do not set the attribute to yes; leave the attribute value set as no.
	overrideHoldingPriority (ohpri)	noOverride	n/a	
AtmIf ConnectionMapping (ConnMap)				For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset	

### MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Review the following information to understand how these links were configured on the Nortel Multiservice Switch 15000 nodes in PT-AAL1 or UA-AAL1 solutions. See the table "[MG9000 ATM interface configuration](#)" ([page 126](#)) for the basic configuration of the components and values.

Extra configuration is required if you have elected to use the optional MG9000 internode ESA. See "[OC-3 configuration for internode ESA](#)" (page 132) for information about the components that must be provisioned to support MG9000 internode ESA IP on 1+1 OC-3 interfaces.

**MG9000 ATM interface configuration**

Component	Attribute	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<p>&lt;n&gt; is the number of the logical processor you configured. The first LPs in the pair must occupy a slot with an even number.</p> <p>The second LP in the pair must occupy the adjacent slot to the right of the first FP. The slot number for the second FP must be an odd number and higher than the even numbered slot number.</p>
Lp/<n> Sonet	clockingSource	module	Preset	This attribute defines the type of clocking source used to synchronize the transmit clock.
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	Preset	<p>This attribute value works in conjunction with the protectionLine attribute value.</p> <p>These attributes link ports on two different LPs.</p> <p>The port numbers must match on both LPs. Therefore, port 0 on Lp/n must match port 0 on Lp/ n+1.</p> <p>&lt;n&gt; is the lowest even-numbered LP that is available.</p>

Component	Attribute	Configured Values	Expected Audit Results	Notes
				<p> is the number of the port you configured.
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	Preset	This attribute value is configured on the LP paired with the workingLine LP.  The port numbers must match on both LPs. Therefore, port 0 on Lp/n+1 must match port 0 on Lp/n.  <n> is the lowest even number of available Lp.  <p> is the number of the port you configured.
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/<a> Sts/0			Preset	<a> = <n> x 100 + <p>
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	Preset	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	Preset	<a> is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured.  <c> = <a>  For example, 200 would indicate that the LP in slot 2, and port 0 on that card and port 0 on its paired Lp are configured for Laps.

Component	Attribute	Configured Values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel (remoteAtmInterfaceLabel)	GEN/MG9K_ <uniqueLabel>	User	The <uniqueLabel> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf/<c>ConnectionAdministrator (CA)	maxVccs (vccs)	3285	Preset	The value entered for the maxVccs attribute must be greater than or equal to the difference between the values set for the maxAutoSelectedVciForVpiZero attribute and the minAutoSelectedVciForVpiZero attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	Preset	The value entered for the maxAutoSelectedVciForVpiZero attribute must be less than the value entered for the numVccsForVpiZero attribute (the nZvccs parameter in AtmIfConnMapOverride (Ov). However, for scalability reasons, you should set the value for the maxAutoSelectedVciForVpiZero attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	Preset	
	maxAutoSelectedVpi (maxVpi)	15	Preset	

Component	Attribute	Configured Values	Expected Audit Results	Notes
	minAutoSelectedVpi (minVpi)	1	Preset	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	Preset	
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	Preset	
	maxVpcs (vpcs)	15	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
AtmIf CA RealTimeVariable BitRate (RtVbr)	pool	pool1	Preset	
	cdvt	5000	Preset	
	emissionPriority	2	Preset	

Component	Attribute	Configured Values	Expected Audit Results	Notes
AtmIf CA ConstantBit Rate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	txQueueLimit (txql)	230	Preset	
	unshaped Transmit Queueing (unshap)	perVc	Preset	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	5000	Preset	
AtmIf CA Unspecified BitRate (Ubr)	minPerVcQLimit	92	Preset	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
AtmIf Uni Ilmi	operatingMode	addressReg Enabled	Preset	

Component	Attribute	Configured Values	Expected Audit Results	Notes
	prefixToRegister		Preset or User	Provision this value if different from the node prefix.
AtmIf Uni Signalling (Sig)			Preset	
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescriptorType (tdt)	6	Preset	
	atmServiceCategory (service)	nrtvbr	Preset	
	trafficDescriptorParam (tdp)	Vector values of: 1 1200 2 600 3 18 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the trafficDescriptorType attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).

Component	Attribute	Configured Values	Expected Audit Results	Notes
AtmIf ConnectionMapping (ConnMap)			Preset	For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	2048	Preset	
	numVccsPerNonZeroVpi (nVccs)	2048	Preset	
	numNonZeroVpisForVccs (nVpis)	2	Preset	
	firstNonZeroVpiForVccs (firstVpi)	15	Preset	

### OC-3 configuration for internode ESA

The following table lists components that must be provisioned to support MG9000 internode ESA IP on 1+1 OC-3 interfaces.

MG9000 does not support ARP, therefore, you must provision a static ARP entry into the MSS15000 for each IP "host" on the MG9000.

### OC-3 configuration for internode ESA

Component	Attribute	Configured value	Expected Audit Results	Notes
AtmIf/<n*100+p>Vcc/16.32 Nep	applicationName	AtmMpe/<n>Ac/1	n/a	
AtmIf/<n*100+p>Vcc/16.32 vcd Tm	atmServiceCategory	rtVbr	n/a	
	txPacketWiseDiscard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters	1 4000 2 2000 3 32	n/a	
AtmMpe/<n>	linkToProtocolPort	Vr/ESA Pp/9K <n>_ESA	n/a	

Component	Attribute	Configured value	Expected Audit Results	Notes
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<n> Vcc/<vpi.vci> nep	n/a	
Vr/ESA Pp/9K<n>_ESA	linkToMedia	AtmMpe/<n>	n/a	
Vr/ESA Pp/9K<n>_ESA ipport LogicalInterface/<ESA_I Paddr>	netMask	255.255.255.2 24	n/a	
Vr/ESA Ip Arp Host/ <ESA_IPaddr+m>,0	pvc	1	n/a	ARP entries must be provisioned for the 16 MG9000 ITP IP addresses

### MG9000 DS3 ATM interface configuration (UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions.

This information provisions a DS3 ATM interface to an MG9000 component on a protected pair of DS3 links on 12-Port-DS3 ATM-type cards. See the table "[MG9000 DS3 ATM interface configuration \(UA-AAL1\)](#)" (page 133) for the basic configuration of the components and values.

If you have elected to use MG9000 internode ESA in your network, see "[DS-3/STS-1 configuration to support MG9000 internode ESA](#)" (page 138).

### MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
LP/<n>		12pDS3Atm		These are the configuration values in " <a href="#">4-port DS3ChATM function processor configuration (UA-AAL1)</a> " (page 64).

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> DS3/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	cpbitParity	on	Preset	
	mapping	direct	Preset	
	lineLength	1	Preset	
	vendor	<customer defined>	Preset	
	commentText	<customer defined>	Preset	
Atmlf	interfaceName	Lp/n Ds3/m	Preset	
	remoteAtmlInterfaceLabel	GEN/MG9K_<unique label>	User	The -<unique label> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary	No	Preset	
Atmlf/<c> Connection Administrator (CA)	maxVccs (vccs)	1230	Preset	The value should be equal to $n * 44$ , where n is the maximum number of DS1s this interface will ever support.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	Preset	The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	Preset	
	maxAutoSelectedVpi (maxVpi)	15	Preset	
	minAutoSelectedVpi (minVpi)	1	Preset	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	32	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	Preset	
	maxVpcs (vpcs)	15	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool	1 100 2 0 3 0	Preset	
Atmlf CA RealTimeVariableBitRate (RtVbr)	pool	pool1	Preset	
	usageParameterControl (upc)	enabled	Preset	
	cdvt	5000	Preset	
Atmlf CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	txQueueLimit (txql)	autoconfig	Preset	
	unshapedTransmitQueueing (unshap)	perVc	Preset	
Atmlf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
	cdvt	5000	Preset	
	usageParameterControl (upc)	enforced	Preset	
Atmlf CA UnspecifiedBitRate (Ubr)	pool	pool1	Preset	
	usageParameterControl	disabled	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
AtmIf Uni Ilmi	operatingMode	addressRegEnabled	Preset	
	prefixToRegister		Preset or User	Provision this value if different from the node prefix.
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	Preset	
	atmServiceCategory (service)	nrtVbr	Preset	
	trafficDescParam (tdp)	Vector values of: 1 1200 2 600 3 18 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 4 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS

Components	Attributes	Configured Values	Expected Audit Results	Notes
				or CDVT depending on the type of traffic management defined by the <i>trafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).

### DS-3/STS-1 configuration to support MG9000 internode ESA

Internode ESA is optional and requires extra configuration. The following table gives the extra configuration that is required to support MG9000 internode ESA.

The following components must be provisioned to support MG9000 internode ESA IP on a DS-3 interface. The provisioning consists of a Vcc Network Relay Point (NRP) to a Hairpin ATM Interface.

#### DS-3/STS-1 interface configuration to support MG9000 internode ESA

Components	Attributes	Configured values	Expected Audit Results	Notes
Atmlf/<n*100+p> Vcc/16/32 Nrp	nextHop	Atmlf/<HAI> Vcc/<vpi.vci> Nrp	n/a	
Atmlf/<n*100+p> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	n/a	
	txPacketWise Discard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters	1 2000 2 1000 3 32	n/a	
<b>Note:</b> The hairpin interface configuration for the UA-AAL1 and UA-IP solutions are identical. Refer to the table "Optical hairpin ATM (HAI) interface configuration (UA-IP)" (page 220) and the table "Optical hairpin IP interface (HII) configuration (UA-IP)" (page 224).				
<b>MG9000 Vcc component Hairpin ATM Interface (HAI)</b>				
Atmlf/<HAI> Vcc/0.<vci> Nrp	nextHop	Atmlf/<MG> Vcc/16.32 Nrp	n/a	
Atmlf/<HAI> Vcc/0.<vci> Nrp Vcd Tm	atmServiceCategory	rtVbr	n/a	
	txPacketWise Discard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters		n/a	values depend on whether the MG9000 is IMA or DS3
<b>MG9000 Vcc and Vr component Hairpin IP Interfaces (HII)</b>				
Atmlf/<HII> Vcc/0.<vci> Nep	applicationName	AtmMpe/<n> Ac/1	n/a	
Atmlf/<HII> Vcc/0.<vci> vcd Tm	atmServiceCategory	rtVbr	n/a	

Components	Attributes	Configured values	Expected Audit Results	Notes
	txPacketWise Discard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters	7	n/a	
AtmMpe/<n>	linkToProtocol Port	Vr/ESA Pp/9K <n>_ESA	n/a	
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<n> Vcc/<vpi.vci> nep	n/a	
Vr/ESA Pp/9K<n>_ESA	linkToMedia	AtmMpe/<n>	n/a	
Vr/ESA Pp/9K<n>_ESA ipportLogicalInterface/<ESA_IPAddr>	netMask	255.255.255.224	n/a	
Vr/ESA Ip Arp Host/<ESA_IPAddr+m>,0	pvc	1	n/a	

### MG9000 DS1-IMA ATM interface configuration (UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions. See the table "[MG9000 DS1-IMA DS3 port interface configuration \(UA-AAL1\)](#)" (page 140) for the basic configuration of the components and values.

If you have elected to use MG9000 internode ESA in your network, see "[DS-1 IMA configuration to support MG9000 internode ESA](#)" (page 148).

### MG9000 DS1-IMA DS3 port interface configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
LP/<n>		4pDS3ChAtm		These are the configuration values in "4-port DS3ChATM function processor configuration (UA-AAL1)" (page 64).

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> DS3/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	cbitParity	on	Preset	
	mapping	direct	Preset	
	lineLength	1	Preset	
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	

**MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)**

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> DS3/<p>				These are the DS3 port configuration values in "MG9000 DS1-IMA ATM interface configuration (UA-AAL1)" (page 140).
Lp/<n> DS3/<p> DS1/<i>	clockingSource	sameAsDs3	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	lineType	esf	Preset	
	zeroCoding	none	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	vendor	<customer defined>	Preset	
	commentText	<customer defined>	Preset	
Lp/<n> DS3/<p> DS1/<i> Chan/0	timeslots	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Preset	Chan/0 is defined with all timeslots.
	timeslotData Rate	doNotOverride	Preset	
	vendor	<customer defined>	Preset	
	commentText	<customer defined>	Preset	
Lp/<n> DS3/<p> Ima<x>				x is the Ima instance number on the DS3 port.
	linkSelection Criterion	maxBandwidth	Preset or User	
	maxDiffDelay	25	Preset or User	msec
	linkRetryTime out	10	Preset or User	seconds
	transmitClock Mode	ctc	Preset	
	protocol	atmForum10	Preset	
Lp/<n> DS3/<p> Ima/<x> Link/<k>	interfaceName	Lp/<n> Ds3/<p> Ds1/<i> Chan/0	Preset	An Ima component has 2 to 8 link subcomponents and link/<k> points to a DS1 chan/0 component.  <c> = <n> * 100 + <p> * 10 + <x>
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Ds3/<p> Ima/<x>	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG9K_<unique label>	User	The -<unique label> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	350	Preset or User	The value should be equal to $n * 44$ , where n is the maximum number of DS1s this interface will ever support.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	Preset	The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nVccs</i> parameter in <i>AtmIfConnMapOverride (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.

Components	Attributes	Configured values	Expected Audit Results	Notes
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	Preset	
	maxAutoSelectedVpi (maxVpi)	15	Preset	
	minAutoSelectedVpi (minVpi)	1	Preset	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	Preset	
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	Preset	
	maxVpcs (vpcs)	15	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0 4 0 5 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800. The decimal entry sets the percentage of link bandwidth

Components	Attributes	Configured values	Expected Audit Results	Notes
				allowed in the bandwidth pool defined by the index entry.
AtmIf CA RealTimeVariable BitRate (RtVbr)	pool	pool1	Preset	
	usageParameterControl (upc)	enforced	Preset	
	holdingPriority	1	Preset	
	svcMpHoldingPriority	1	Preset	
	cdvt	10000	Preset	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	txQueueLimit (txql)	230	Preset	
	unshapedTransmitQueuein g (unshap)	perVc	Preset	
	holdingPriority	2	Preset	
	svcMpHoldingPriority	2	Preset	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
	holdingPriority	1	Preset	
	svcMpHoldingPriority	1	Preset	
	cdvt	10000	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	usageParameterControl (upc)	enforced	Preset	
AtmIf CA UnspecifiedBitRate (Ubr)	pool	pool1	Preset	
	usageParameterControl	disabled	Preset	
	holdingPriority	3	Preset	
	svcMpHoldingPriority	3	Preset	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
AtmIf Uni Address <address>	primary	<customer defined>	Preset	
AtmIf Uni Ilmi	operatingMode	addressRegEnabled	Preset	
	prefixToRegister		Preset or User	Provision this value if different from the node prefix.
AtmIf Uni Signalling (Sig)				
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescriptorType (tdt)	6	Preset	
	atmServiceCategory (service)	nrtvbr	Preset	

Components	Attributes	Configured values	Expected Audit Results	Notes
	trafficDescParam (tdp)	Vector values of: 1 400 2 200 3 32 4 0 5 0	Preset	<p>This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.</p> <p>The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>traffic DescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).

### DS-1 IMA configuration to support MG9000 internode ESA

Internode ESA is optional and requires extra configuration. The following table gives the extra configuration that is required to support MG9000 internode ESA.

The following components must be provisioned to support InterNode ESA IP MG9000 on a DS-1 IMA interface. This consists of a Vcc Network Relay Point (NRP) to a Hairpin ATM Interface.

### DS-1 IMA interface configuration to support MG9000 internode ESA

Components	Attributes	Configured values	Expected Audit Results	Notes
Atmlf/<n*100+p*20+x> Vcc/16.32 Nrp	nextHop	Atmlf/<HAI> Vcc/<vpi.vci> Nrp	n/a	
Atmlf/<n*100+p*20+x> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	n/a	
	txPacketWise Discard	enabled	n/a	
	txTrafficDescriptorType	6	n/a	
	txTrafficDescriptorParameters	1 950 2 380 3 32	n/a	

**Note:** The hairpin interface configuration for the UA-AAL1 and UA-IP solutions are identical. Refer to the table "Optical hairpin ATM (HAI) interface configuration (UA-IP)" (page 220) and the table "Optical hairpin IP interface (HII) configuration (UA-IP)" (page 224).

#### MG9000 Vcc component Hairpin ATM Interface (HAI)

Atmlf/<HAI> Vcc/0.<vci> Nrp	nextHop	Atmlf/<MG> Vcc/16.32 Nrp	n/a	
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Components	Attributes	Configured values	Expected Audit Results	Notes
AtmIf/<HAI> Vcc/0.<vci> Nrp Vcd Tm	atmServiceC ategory	rtVbr	n/a	
	txPacketWise Discard	enabled	n/a	
	txTrafficDescr iptorType	6	n/a	
	txTrafficDesc riptorParamet ers		n/a	values depend on whether the MG9000 is IMA or DS3
<b>MG9000 Vcc and Vr component Hairpin IP Interfaces (HII)</b>				
AtmIf/<HII> Vcc/0.<vci> Nep	applicationNa me	AtmMpe/<n> Ac/1	n/a	
AtmIf/<HII> Vcc/0.<vci> vcd Tm	atmServiceC ategory	rtVbr	n/a	
	txPacketWise Discard	enabled	n/a	
	txTrafficDescr iptorType	6	n/a	
	txTrafficDesc riptorParamet ers	7	n/a	
AtmMpe/<n>	linkToProtoco IPort	Vr/ESA Pp/ 9K<n>_ESA	n/a	
AtmMpe/<n> Ac/1	atmConnectio n	AtmIf/<n> Vcc/ <vpi.vci> nep	n/a	
Vr/ESA Pp/9K<n>_ES A	linkToMedia	AtmMpe/<n>	n/a	
Vr/ESA Pp/9K<n>_ES A ipport LogicalInterfac e/<ESA_IPaddr>	netMask	255.255.255.224	n/a	
Vr/ESA Ip Arp Host/ <ESA_IPaddr+m>,0	pvc	1	n/a	

### Hairpin Interfaces

A hairpin requires two 1+1 protected optical ATM interfaces (either OC-3 or OC-12). For example, two inter-connected SONET ports on one card protected by two inter-connected SONET ports on a mate card. One of the

protected port pairs is the ATM interface, the other is the IP interface. There is an MDM NP template to configure these interfaces in the UA-IP solution that can be re-used. See "Hairpin ATM (HAI) interface configuration (UA-IP)" (page 219) and "Hairpin IP (HII) interface configuration (UA-IP)" (page 223).

### SAM 21 SC link configuration (UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions.

#### SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Sonet/<p> Sts/0				
Lp/<n> Sonet/<p> Sts/0 AtmCell (Cell)	correctSingleBitHeaderErrors	on	Preset	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	Preset	<n> is the number of the Lp. <p> is the number of the port you configured. <c> = <n> * 100 + <p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/ SAM21_ <uniquelabel>	User	The <uniquelabel> string uniquely identifies the far end SAM21 Shelf Controller in your network. For example, <CLLI>_SHELF<shelf number>_PO/SC<slot number> is a unique label.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf Connection Administrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the maxVccs attribute must be greater than or equal to the difference between the values set for the maxAutoSelectedVciForVpiZero attribute and the minAutoSelectedVciForVpiZero attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	1023	Preset	The default template value of 4095 must be changed.  The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute

Components	Attributes	Configured Values	Expected Audit Results	Notes
				(the <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> . However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	52	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	
	bandwidthPool (bwPool)	Vector values of: 1 100	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf CA RealTimeVariableBitRate (RtVbr)	pool	pool1	Preset	
AtmIf CA RtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	5000	Preset	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	cdvt	250	Preset	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
	usageParameterControl (upc)	enforced	Preset	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	5000	Preset	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
AtmIf Uni Ilmi	operatingMode	addressRegEnabled	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	prefixToRegister		Preset or User	Provision this value if different from the default.
AtmIf Uni Signalling (Sig)				
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescriptor (tdt)	6	Preset	
	atmServiceCategory (service)	NrtVbr	Preset	
	trafficDescriptor (tdp)	Vector values of: 1 1200 2 600 3 18 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>trafficDescriptor</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR,

Components	Attributes	Configured Values	Expected Audit Results	Notes
				SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
AtmIf Connection Mapping (ConnMap)				For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset	

### UAS/MS2020 ATM UNI link configuration (UA-AAL1)

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions.

#### UAS/MS2020 ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Sonet/<p> Sts/0				
Lp/<n> Sonet/<p> > Sts/o AtmCell (Cell)	correctSingle BitHeaderErrors	on	Preset	
			Preset	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	Preset	<n> is the number of the Lp. <p> is the number of the port you configured. <c> = <n> * 100 + <p>
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/ UAS_<uniqueLabel>	User	The -<uniqueLabel> string uniquely identifies the far end UAS or MS2020. For example, <CLLI>_SHELF<shelf number>_PO/SC<slot number> is a unique label.
	oamSegmentBoundary (sb)	no	Preset	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVcforVpiZero</i> attribute and the <i>min</i>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<i>AutoSelectedVcforVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	Preset	The value entered for the <i>maxAutoSelectedVcforVpiZero</i> attribute must be less than the value entered for the <i>numVccsForVpiZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVcforVpiZero</i> attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	52	Preset	
	maxVpcs (vpcs)	0	Preset	
	maxVpts (vpts)	0	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariable BitRate (RtVbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	emissionPriority	2	Preset	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
	unshapedTrQueue	perVC	Preset	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf CA UnspecifiedBitRate (Ubr)	minPerVcQLimit	92	Preset	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	
AtmIf/<c> UniIImi	operatingMode	addressRegEnabled	Preset	
	prefixToRegister		Preset or User	Provision this value if different from the default.
AtmIf/<c> Uni Signalling (Sig)			Preset	
AtmIf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	Preset	
	atmServiceCategory (service)	nrtvbr	Preset	
	trafficDescParam (tdp)	Vector values of: 1 5000 2 500 3 16 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.

Components	Attributes	Configured Values	Expected Audit Results	Notes
				The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>trafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
Atmlf/<c> ConnectionMapping (ConnMap)			Preset	For 16pOC3 only.
Atmlf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset	

**Bridged SAM 21 SC link configuration (UA-AAL1)**

Review the following information to understand how these links were configured on Nortel Multiservice Switch 15000 nodes in UA-AAL1 solutions.

**Bridged SAM 21 SC link configuration (UA-AAL1)**

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/n				<n> is the number of the logical processor you configured
Lp/<n> Sonet/<p>	clockingSource	module	Preset	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	Preset	
	commentText	<customer defined>	Preset	
Lp/<n+1> BridgeSonet/<p>				
Pbg/<c>	workingLine	Lp/n <p> /0	Preset	
	bridgeLine	Lp/n+1 Bridge d <p>/0	Preset	
Pbg/<c> Sts/0 AtmCell (Cell)	correctSingleBigHeaderErrors	on	Preset	
AtmInterface (Atmif)/<c>	interfaceName	Pbg/<c> Sts/0	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel	GEN/SAM-<SPM ID>-<CLLI>	User	The -<SPM ID>-<CLLI> string uniquely identifies the far end SAM21 Shelf Controller in your network. For example, -SHELF<shelf number>_PO/SC<slot number>-<CLLI> is a unique label.
	oamSegmentBoundary	no	Preset	
AtmIfConnectionAdministrator (CA)	maxVccs (vccs)	3300	Preset	The value entered for the <i>maxVccs</i> attribute must be greater than or equal to the difference between the values set for the <i>maxAutoSelectedVciForVpiZero</i> attribute and the <i>minAutoSelectedVciForVpiZero</i> attribute.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	1023	Preset	The default template value of 4095 must be changed.  The value entered for the <i>maxAutoSelectedVciForVpiZero</i> attribute must be less than the value entered for the <i>numVccsForV</i>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<i>piZero</i> attribute (the <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability reasons, you should set the value for the <i>maxAutoSelectedVciForVpiZero</i> attribute as large as possible.
	<i>minAutoSelectedVciForVpiZero</i> ( <i>minVciVpiZero</i> )	52	Preset	
	<i>maxVpcs</i> ( <i>vpcs</i> )	0	Preset	
	<i>maxVpts</i> ( <i>vpts</i> )	0	Preset	
	<i>bandwidthPool</i> ( <i>bwPool</i> )	Vector values of: 1 100	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 12 800.  The decimal entry sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf CA RealTimeVariable BitRate (RtVbr)	pool	pool1	Preset	
AtmIf CA RtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	5000	Preset	
	emissionPriority	2	Preset	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	Preset	
	usageParameterControl (upc)	disabled	Preset	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	Preset	
	cdvt	5000	Preset	
AtmIf ConnectionMapping (ConnMap)				For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	Preset or User	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	Preset	
	side	network	Preset	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset	
	accountConnectionType (act)	origTerm	Preset	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Atmlf Uni Ilmi	operatingMode	addressRegEnabled	Preset	
	prefixToRegister		Preset or User	Provision this value if different from the default.
Atmlf Uni Signalling (Sig)				
Atmlf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	Preset	
	atmServiceCategory (service)	NrtVbr	Preset	
	trafficDescParam (tdp)	Vector values of: 1 5000 2 600 3 18 4 0	Preset	This attribute is a vector value. This vector consists of an index entry that ranges in value from 1 through 5 and a decimal entry that ranges in value from 0 to 2147483647.  The decimal entry sets the values for PCR, SCR, MBS or CDVT depending on the type of traffic management defined by the <i>trafficDescType</i> attribute. The index entry indicates the traffic descriptor parameter with which the PCR,

Components	Attributes	Configured Values	Expected Audit Results	Notes
				SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	Preset	
	qosClass (qos)	2	Preset	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video)

## Link configuration (PT-AAL2)

This chapter describes link configuration in Nortel Multiservice Switch 15000 for PT-AAL2 solutions including:

- ["4pOC12 ATM UNI interface between MG15000 and MGX \(PT-AAL2\)" \(page 166\)](#)
- ["4pOC12 ATM AAL2 PNNI Interface \(PT-AAL2\)" \(page 172\)](#)
- ["4pOC3 AS Interface \(PT-AAL2\)" \(page 176\)](#)

For information about link configuration for Nortel Multiservice Switch 15000 Media Gateway in PT-AAL2 solutions, see ["Media Gateway 15000-specific interface configuration \(PT-AAL2\)" \(page 178\)](#).

### 4pOC12 ATM UNI interface between MG15000 and MGX (PT-AAL2)

This configuration is for a 1+1 OC-12 interface that is connected to a third party ATM core switch (MGX) over AAL2 UNI. The PT-AAL2 IF-MGX-4pOC12SmlrAtm template for this configuration supports provisioning for a LAPS-protected pair of SONET ports with an ATMIF on 4pOC12SmlrATM FP's for a UNI interface to a 3rd-party core ATM switch.

### OC12 ATM UNI interface configuration between MG15000 and MGX (PT-AAL2)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Lp Sonet	clockingSource	module	Preset or Calculated	
	vendor	default	User	

Components	Attributes	Configured values	Expected Audit Results	Notes
	commentText	default	User	
LineAutomaticProtectionSwitching Laps	workingLine (working)	Lp/<n> Sonet/<m>	Preset or Calculated	<p>This attribute value works with the <i>protectionLine</i> attribute value. These attributes link ports on two different LPs.</p> <p>The port numbers on both LPs must match. Therefore, port 0 on Lp/n must match port 0 on Lp/n+1.</p> <p>&lt;n&gt; is the lowest even-numbered LP that is available.</p>
	protectionLine (protection)	Lp/<n+1> Sonet/<m>	Preset or Calculated	<p>This attribute value is configured on the LP paired with the <i>workingLine</i> LP.</p> <p>The port numbers on both LPs must match. Therefore, port 0 on Lp/&lt;n+1&gt; must match port 0 on Lp/&lt;n&gt;.</p>
	signalDegradeRatio (sdRatio)	-8	Preset or User	
	mode	unidirectional	Preset or Calculated	
Laps Sts	concatNumber	12	Preset or Calculated	
Laps Sts AtmCell	correctSingleBitHeaderErrors	on	Preset or Calculated	
AtmInterface AtmIf/<n*100+m>	interfaceName	Laps/ <n*100+m> Sts/0	Preset or Calculated	
	remoteAtmInterfaceLabel	GEN/ MGX_<CLLI>	User	

Components	Attributes	Configured values	Expected Audit Results	Notes
	oamSegmentBoundary (sb)	no		If the value in the Engineering Specifications book is Yes, manually change the value from no to yes in accordance with the Specifications book.
AtmIf UNI	version	atmforum40	Preset or Calculated	
	side	user	Preset or Calculated	
	accountCollection	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType (act)	origTerm	Preset or Calculated	
AtmIfUniSig	operatingMode	normal	Preset or Calculated	
AtmIf UNI Address/<AESA>, primary			Preset or Calculated	
AtmIf Uni Ilmi	operatingMode	ilmiDisabled	Preset or Calculated	
AtmIf Ca	maxVccs	13200	Preset or User	
	maxAutoSelectedVciForVpiZero	13560	Preset or User	
	minAutoSelectedVciForVpiZero	360	Preset or User	
	maxVpcs	0	Preset or Calculated	
	maxVpts	0	Preset or Calculated	
	bandwidthPool	1 80 2 20	Preset or User	

Components	Attributes	Configured values	Expected Audit Results	Notes
	maxAutoSelectedVciForNonZeroVpi	32	Preset or Calculated	
AtmIf Ca Rtvbr/0	pool	pool1	Preset or Calculated	
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	2	Preset or Calculated	
AtmIf Ca NrtVbr/0	pool	pool2	Preset or Calculated	
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	3	Preset or Calculated	
AtmIf Ca Cbr/0	unshapedTransmitQueueing	perVc	Preset or Calculated	
AtmIf Ca Ubr/0	minPerVcQueueLimit	92	Preset or Calculated	
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	4	Preset or Calculated	
AtmIf ConnMap Ov	numVccsForVpiZero	16384	Preset or Calculated	
	firstNonZeroVpiForVccs	15	Preset or Calculated	
	numNonZeroVpisForVccs	1	Preset or Calculated	
AtmIf Vcc/15.51 Nailed Up End Point (Nep)	applicationName	AtmMpe/<n*100+m>Ac/1	Preset or Calculated	
AtmIf Vcc/15.51 Vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	txTrafficDescriptorParameters	Vector values of: 1 10500 2 6500 3 4400	Preset or User	
AtmMpe/<n*100+m>	linkToProtocolPort	Vr/CallIP Pp/ERS8600-01	Preset or Calculated	
AtmMpe/ Ac/1	atmConnection	AtmIf/ <n*100+m> Vcc/15.51Nep	Preset or Calculated	
Vr/CallIP Pp/ERS8600-01	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/CallIP Pp/ERS8600-01 ipport LogicalInterface/<ERS8600-01>	netMask	255.255.255.252	Preset or User	The LogicalInterface instance is an IP address (e.g., 10.1.1.1)
Vr/CallIP Pp/<ERS8600-01> ipport LogicalInterface/<ERS8600-01> OSPF	areaid		User	The format is 0.0.0.0 Use the value from the Specifications book.
	ifType	Bcast	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDeadInt	4	Preset or Calculated	
AtmIf Vcc/15.52 Nailed Up End Point (Nep)	application name	AtmMpe/<n*100+m+100> Ac/1	Preset or Calculated	
AtmIf Vcc/15.52 vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 10500 2 6500 3 4400	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
AtmMpe/<n*100+m+100>	linkToProtocolPort	Vr/CallP Pp/<ERS8600-02>	Preset or Calculated	
AtmMpe Ac/1	atmConnection	AtmIf/<n*100+m+100> Vcc/15.52 Nep	Preset or Calculated	
Vr/CallP Pp/ERS8600-02>	linkToMedia	AtmMpe/<n*100+m+100>	Preset or Calculated	
Vr/CallP Pp/ERS8600-02 ipport LogicalInterface/<ERS8600-02>	netMask	255.255.255.252	Preset or User	
Vr/CallP Pp/ERS8600-02 ipport LogicalInterface/<ERS8600-02> OSPF	areaId		User	The format is 0.0.0.0 Use the value from the Specifications book.
	ifType	Bcast	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDeadInt	4	Preset or Calculated	
Vr/CallP ip arp host/<ERS8600-01>*, 0	pvcNo	1	Preset or Calculated	
Vr/CallP ip arp host/<ERS8600-02>*, 0	pvcNo	1	Preset or Calculated	
Vr/CallP ip static Route/0.0.0.0,0.0.0.0,0			Preset or Calculated	
Vr/CallP ip Static Route nextHop/<ERS8600-01>	metric	1	Preset or User	Typically, this would be one greater than the LogicalInterface instance.
Vr/CallP ip Static Route nextHop/<ERS8600-02>	metric	10	Preset or User	

### 4pOC12 ATM AAL2 PNNI Interface (PT-AAL2)

The following is the configuration for a protected OC-12 interface between two MG15000 nodes on AAL2 PNNI. The PT-AAL2 IFPNNI-4pOC12SMlrAtm template provisions a LAPS-protected pair of SONET ports with an ATMIF on 4pOC12SmlrAtm FP's for a PNNI interface to another MG15000.

#### 4pOC12AAL2 PNNI interface configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Lp/<n> Sonet/<m>	clockingSource	module	Preset or Calculated	
	vendor	default	User	
	commentText	default	User	
LineAutomaticProtectionSwitching Laps	workingLine (working)	Lp/<n> Sonet/<m>	Preset or Calculated	This attribute value works with the <i>protectionLine</i> attribute value. These attributes link ports on two different LPs.  The port numbers on both LPs must match. Therefore, port 0 on Lp/n must match port 0 on Lp/n+1.  <n> is the lowest even-numbered LP that is available.
	protectionLine (protection)	Lp/<n+1> Sonet/<m>	Preset or Calculated	This attribute value is configured on the LP paired with the workingLine LP.  The port numbers on both LPs must match. Therefore, port 0 on Lp/<n+1> must match port 0 on Lp/<n>.
	signalDegradeRatio (sdRatio)	-8	Preset or User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	mode	unidirectional	Preset or Calculated	
Laps Sts	concatNumber	12	Preset or Calculated	
Laps Sts AtmCell	correctSingleBitHeaderErrors	on	Preset or Calculated	
AtmInterface AtmIf/<n*100+m>	interfaceName	Laps/<n*100+m> Sts/0	Preset or Calculated	
	remoteAtmInterfaceLabel	EM/<remote name>ATMIF/<remoteAtmIfinstance>	User	
	oamSegmentBoundary (sb)	no	Preset or Calculated	
AtmIf PNNI				
	accountCollection	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType (act)	origTerm	Preset or Calculated	
AtmIf Ca	maxVccs	13200	Preset or User	
	maxAutoSelectedVciForVpiZero	13560	Preset or User	
	minAutoSelectedVciForVpiZero	360	Preset or User	
	maxVpcs	0	Preset or User	
	maxVpts	0		
	bandwidthPool	1 80 2 20	Preset or User	
AtmIf Ca RtVbr/0	pool	pool1	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	2	Preset or Calculated	
AtmIf Ca NrtVbr/0	pool	pool2	Preset or Calculated	
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	3	Preset or Calculated	
AtmIf Ca Cbr/0	unshapedTransmitQueueing	perVc	Preset or Calculated	
AtmIf Ca Ubr/0	minPerVcQueueLimit	92	Preset or Calculated	
	unshapedTransmitQueueing	perVc	Preset or Calculated	
	emissionPriority	4	Preset or Calculated	
AtmIf ConnMap Ov	numVccsForVpiZero	16384	Preset or Calculated	
AtmIf Vcc/0.32 Nailed Up End Point (Nep)	applicationName	AtmMpe/<n*100+m>Ac/1	Preset or Calculated	
AtmIf Vcc/0.32 Vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or User	
	txTrafficDescriptorParameters	Vector values of: 1 26200 2 16100 3 53020	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	forceTagging	enabled	Preset or Calculated	
AtmMpe/<n*100+m>	linkToProtocolPort	Vr/CallP Pp/<AGGn/MGn>	Preset or Calculated	
AtmMpe/ Ac/1	atmConnection	AtmIf/<n*100+m> Vcc/0.32 Nep	Preset or Calculated	
Vr/CallP Pp/<AGGn/MGn>	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/CallP Pp/<AGGn/MGn> ipport LogicalInterface/0.0.0.0	netMask	255.255.255.252	Preset or User	The LogicalInterface instance is an IP address (e.g., 10.1.1.1); use the Specifications Book value.
Vr/CallP Pp/<AGGn/MGn> ipport LogicalInterface/0.0.0.0 OSPF	areaid		User	The format is 0.0.0.0 Use the value from the Specifications book.
	ifType	Bcast	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDeadInt	4	Preset or Calculated	
Vr/CallP ip Static Route/<network> NextHop/<address>	metric	1 or 10	Preset or Calculated	These values are added manually, as per the Specifications book.  From the non-aggregation nodes, there can be nexthops for the default route (one to each aggregation node).  From the aggregation nodes, there can be nexthops for the default route northbound and for

Components	Attributes	Configured Values	Expected Audit Results	Notes
				a static route to the VSP subnet on the non-aggregation nodes.

#### 4pOC3 AS Interface (PT-AAL2)

The following is the configuration for an unprotected OC-3 interface connected to an audio server (AS) over an AAL2 interface. The PT-AAL2 IF-AS-4pOC3Atm template provisions an unprotected SONET port with an ATMIF on a 4pOC3SmlrAtm FP for a UNI interface to an audio server network element.

#### 4pOC3 AS interface configuration (PT-AAL2)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Lp/<n> Sonet/ <m>	clockingSource	module	Preset or Calculated	
	vendor	default	User	
	commentText	default	Preset or Calculated	
Lp Sonet Sts AtmCell	correctSingleBitHeaderErrors	on	Preset or Calculated	
AtmInterface AtmIf	interfaceName	Lp/<n*100+m> Sonet/* Sts/0	Preset or Calculated	
	remoteAtmInterfaceLabel	GEN/AS_<CELLI>	User	
	oamSegmentBoundary (sb)	no	Preset or Calculated	
AtmIf Ca CBR/0	pool	pool1	Preset or Calculated	
	usage ParameterControl	disabled	Preset or Calculated	
AtmIf Ca RtVbr/0	pool	pool1	Preset or Calculated	
	usage ParameterControl	disabled	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Atmlf Ca NRtVbr/0	pool	pool2	Preset or Calculated	
	usage ParameterControl	disabled	Preset or Calculated	
Atmlf Ca	maxVccs	3100	Preset or User	
	maxAutoSelectedVciForVp iZero	4096	Preset or User	
	minAutoSelectedVciForVp iZero	100	Preset or User	
	maxVpcs	3	Preset or User	
	maxVpts	0	Preset or Calculated	
	bandwidthPool	1 80 2 20	Preset or User	
Atmlf UNI	version	atmforum40	Preset or Calculated	
	side	network	Preset or Calculated	
	accountCollection	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType (act)	origTerm	Preset or Calculated	
Atmlf Uni Ilmi	operatingMode	addressReg Enabled	Preset or Calculated	
Atmlf Uni Sig Vcd	atmServiceCategory	nrtVbr	Preset or Calculated	
	trafficDescType	6	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	trafficDescParam	Vector values of: 1 5000 2 500 3 16 4 125	Preset or Calculated	
	usage ParameterControl	sameAsCa	Preset or Calculated	
	qosClass	2	Preset or Calculated	
	weight	1	Preset or Calculated	

### Media Gateway 15000-specific interface configuration (PT-AAL2)

This section describes the configuration of time division multiplexing (TDM) trunks and trunk profiles, as follows, on Nortel Multiservice Switch 15000 Media Gateway 15000s in PT-AAL2 solutions:

- ["TDM OC-3 interface configuration \(PT-AAL2\)" \(page 178\)](#)
- ["MGC-H.248 \(VSP3-o\) interface \(PT-AAL2\)" \(page 179\)](#)
- ["STS + 28ISUP Trunks \(2pOC3ChSmlrVsp3-o\) \(PT-AAL2\)" \(page 188\)](#)

### TDM OC-3 interface configuration (PT-AAL2)

This section presents the configuration of an interface to optical carrier level 3 (OC-3) time division multiplexing (TDM), on Nortel Multiservice Switch 15000 Media Gateway in PT-AAL2 solutions.

This template provisions a LAPS-protected pair of SONET ports on 2pOC3ChSmlrVsp3 FP's. Only port 0 is supported on this card. Use the PT-AAL2 IF-TDM-2pOC3ChSmlrVSP3-o template to configure this interface.

Review the following information to understand how these interfaces are configured on your Media Gateway nodes.

### TDM OC-3 interface configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Lp/<n> Sonet/<p> Lp/<n+1> Sonet/<p>	clockingSource	module	Preset or Calculated	Only port 0 is supported on this card.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Laps<nnmm>	workingLine	Lp/<n> Sonet/<m>	Preset or Calculated	
	protectionLine	Lp/<n+1> Sonet/<m>	Preset or Calculated	
	signalDegradeRatio	-8	Preset or Calculated	

### MGC-H.248 (VSP3-o) interface (PT-AAL2)

The following is the configuration for the MGC-H.248 interface on a 2pOC3ChSmlrVsp3-o on an AAL2 interface. The PT-AAL2 FP-2pOC3ChSmlrVsp3-o template provisions the NSTA component structure with an IP interface to the MGC using H.248 on 2pOC3ChSmlrVsp3 FP's.

### MGC-H.248 (VSP3-o) interface configuration (PT-AAL2)

Components	Attributes	Configured Values	Expected Audit Results	Notes
Dlep/<n/2> Vsp	linkToApplication	Nsta/<n>	Preset or Calculated	
Dlep/<n/2> Vsp PModule/1	moduleType	spm	Preset or Calculated	
Dlep/<n/2> Vsp PModule/2-23	moduleType	vpm	Preset or Calculated	
Nsta/<n>	linkToServer	Dlep/<n/2> Vsp	Preset or Calculated	
Nsta/<n> Vgs	defaultToneSet	canadaUsa	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	defaultPacketLogLaw	muLaw	Preset or Calculated	
	hostname	default	User	Must match the value in the associated GWC.  If the <i>hostname</i> value changes, calls are torn down.
	gatewayAtmAddress		User	Enter the value defined for the <i>Mod nodePrefix</i> .  If the <i>gatewayAtmAddress</i> value changes, calls are torn down.
Nsta/<n> Vgs Aal2Svc	svcPreCreation	disabled	Preset or Calculated	
	autocalcTrafficPrms	disabled	Preset or Calculated	
Nsta/<n> Vgs Aal2Svc Prof/1	maxNumberAal2Trunks	10	Preset or Calculated	
	atmServiceCategory	Rt-Vbr	Preset or Calculated	
	svcPersistence	60	Preset or Calculated	
	PCR	2000	Preset or Calculated	
	SCR	2000	Preset or Calculated	
	MBS	1	Preset or Calculated	
Nsta/<n> Vgs H248/0	mgMid	[<Ctrl/mg ipAddress>]:2944	Preset or Calculated	
	udpPortConnection	Nsta/<n> Vgs Ctrl/mg UdpPort/2944	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	mgcList	Nsta/<n> Vgs Mgc/<name>	User	Attribute type is List of Link. NP application requires user input.
Nsta/<n> Vgs Mgc/<name>	initialMgcAddress	0.0.0.0	User	The instance value is a string that allows values such as 0 or GWC-2.
	mgList	Nsta/<n> Vgs H248/0	Preset or Calculated	A List of Link attribute, but set from the other side, so no user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress	0.0.0.0	User	
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccessName	Vr/<CallP> PP/NSTA<n>_ MG lpp Logical If/<ipaddress>	User or Calculated	
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0	Preset or Calculated	
Vr/<CallP> PP/NSTA<n> >	linkToMedia	Vm/<v> If/0	Preset or Calculated	
Vm/<v> If/0	linkToProtocolPort	Vr/VOIP PP/N STA<n>_MG	Preset or Calculated	
Vr/<CallP> PP/NSTA<n> lpp LogicalIf/<ipaddress>	netMask	255.255.255.252	Preset or User	
	broadcastAddress		Preset or User	
Vr/<CallP> PP/NSTA<n> lpp LogicalIf/<ipaddress> Ospflf	areald		User	The format is 0.0.0.0  Use the value found in the Specifications book.
	ifType	passive	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Nsta/<n> Vgs PacketNetworkProf/0	defaultVoiceRate	64KG711	Preset or Calculated	
	tone2100Rate	64KG711	Preset or Calculated	
	SilenceSuppression	disabled	Preset or Calculated	
	stateChangeSignalling	itu	Preset or Calculated	
	digitTransport	relay	Preset or Calculated	
Nsta/<n> Vgs TdmNetworkProf/0	tdmLogLaw	MuLaw	Preset or Calculated	
	echoCancel	g165mode	Preset or Calculated	
Nsta/<n> Vgs SigTrace	asdsFilePrefix	sigTrace	Preset or Calculated	0 char<string <10 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes	Preset or Calculated	Range 1000 - 10000 Kbytes
	asdsFifoBufferSize	5000 Kbytes	Preset or Calculated	Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds	Preset or Calculated	Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	DS0Instances	nsta/<n> vts tag/<x> DS0, nsta/<y> vgs tag/<z> DS0	Preset or Calculated	Maximum of 10. Sets the number sigtrace links to DS0 instances.
	traceTimeout	300 seconds	Preset or Calculated	Range 60-18 00 seconds.
	startCounter		Preset or Calculated	Indicates the number of times the signaling trace has been started.
	errorCounter		Preset or Calculated	Indicates the number of times the signaling trace failed to start.
	tracingState		Preset or Calculated	Indicates current state of signaling trace. Possibl e values are: <ul style="list-style-type: none"> <li>• WaitForV ciRespon se</li> <li>• VciReqEx it</li> <li>• StoreVci</li> <li>• ProcessV ciRespon se</li> <li>• WaitForD spRespo nse</li> <li>• DspConfi gExit</li> <li>• Started</li> </ul>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<ul style="list-style-type: none"> <li>• WaitDsp Deconfig</li> <li>• WaitVciRelease</li> <li>• WaitOutputComplete</li> </ul>
	tracingTime		Preset or Calculated	Range 1-1800 seconds. Shows the time left to complete the signaling trace.
	allocatedVci		Preset or Calculated	Shows the VCI allocated for signaling trace.
	freeAsdsFifoSize		Preset or Calculated	Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	storedFifoData Size		Preset or Calculated	Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	highFifoWaterMark		Preset or Calculated	Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames		Preset or Calculated	Shows the number of captured AAL5 frames.
Nsta/<n> Vgs MediaTrace	asdsFilePrefix	mediaTrace	Preset or Calculated	0 char<string <11 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes	Preset or Calculated	Range 1000 - 10000 Kbytes
	asdsFifoBufferSize	5000 Kbytes	Preset or Calculated	Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds	Preset or Calculated	Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	DS0Instances	1	Preset or Calculated	Allows the operator to link the MediaTrace component to one DS0 instance for which the trace is turned on.
	traceTimeout	300 seconds	Preset or Calculated	Range 60-1800 seconds.
	startCounter		Preset or Calculated	Indicates the number of times the signaling trace has been started.
	errorCounter		Preset or Calculated	Indicates the number of times the signaling trace failed to start.
	tracingState		Preset or Calculated	Indicates current state of signaling trace. Possible values are: <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> <li>• ProcessVciResponse</li> <li>• WaitForDspResponse</li> <li>• DspConfigExit</li> </ul>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<ul style="list-style-type: none"> <li>Started</li> <li>WaitDsp Deconfig</li> <li>WaitVciRelease</li> <li>WaitOutputComplete</li> </ul>
	tracingTime		Preset or Calculated	Range 1-1800 seconds. Shows the time left to complete the signaling trace.
	allocatedVci		Preset or Calculated	Shows the VCI allocated for signaling trace.
	freeAsdsFifoSize		Preset or Calculated	Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	storedFifoData Size		Preset or Calculated	Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	highFifoWaterMark		Preset or Calculated	Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames		Preset or Calculated	Shows the number of captured AAL5 frames.
	discardedaal5Frames		Preset or Calculated	Shows the number of AAL5 frames discarded on the ingressPQC.
	discardedaal5Frames		Preset or Calculated	Shows the number of AAL5 frames discarded on the ingressPQC.

### STS + 28ISUP Trunks (2pOC3ChSmlrVsp3-o) (PT-AAL2)

The following is the configuration for the ISUP trunk interface on a previously configured 2pOC3ChSmlrVsp3-o FP. The PT-AAL2 TT-28ISUPTrunks-2pOC3ChSmlrVsp3-o template for this configuration supports provisioning the component structures for one LAPS STS component hierarchy with 28 VT1dot5s and corresponding Tag hierarchy under the NSTA VGS.

#### 2pOC3ChSmlrVsp3-o STS + 28ISUP trunk configuration (PT-AAL2)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
Laps/<nnmm> Sts/<v>			Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0	applicationFrameName	Nsta/<n> Vgs Tag/<nnmm*100>+ <v>*100+1 ...28	Preset or Calculated	<v> ranges in value from 0 through 2. <x> ranges in value from 1 through 7. <y> ranges in value from 1 through 4.
	timeslots	<all 24>	Preset or Calculated	
Nsta/<n> Vgs Tag/(nnmm*100) )+(<v>*100) +1...28	interfaceName	Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	Preset or Calculated	
	profile	Nsta/<n> Vgs TProf/0	Preset or Calculated	

## Link configuration (UA-IP)

The section describes link configurations for Nortel Multiservice Switch 15000 nodes in UA-IP solutions. It includes the following topics:

- ["Multiservice Switch inter-shelf IP interface configuration \(UA-IP\)" \(page 189\)](#)
- ["CS-LAN GE link configuration \(UA-IP\)" \(page 196\)](#)
- ["CS-LAN OC-12 link configuration \(UA-IP\)" \(page 200\)](#)
- ["MG9000 OC-3 link configuration \(UA-IP\)" \(page 204\)](#)
- ["MG9000 STS-1/ DS3 link configuration \(UA-IP\)" \(page 210\)](#)
- ["MG9000 DS1-IMA link configuration \(UA-IP\)" \(page 213\)](#)
- ["Hairpin ATM \(HAI\) interface configuration \(UA-IP\)" \(page 219\)](#)
- ["Hairpin IP \(HII\) interface configuration \(UA-IP\)" \(page 223\)](#)

For information about link configuration for Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions, see ["Media Gateway 15000-specific interface configuration \(UA-IP/PT-IP\)" \(page 228\)](#).

### Multiservice Switch inter-shelf IP interface configuration (UA-IP)

This section presents the configuration of Nortel Multiservice Switch inter-shelf IP interface, in UA-IP solutions. This is an interface to another Multiservice Switch 15000 node on either a 4pOC12SmlrAtm, or

4pOC3SmlrAtm FP card. It provisions a line automatic protection switching (LAPS)-protected pair of synchronous optical network (SONET) ports with an ATMIF.

Multiservice Switch 15000 nodes are connected either directly with fiber or through a synchronous optical network (SONET) transport network.

The RWC bearer VCC configuration provides an asynchronous transfer mode (ATM) virtual channel connection (VCC) for IP connectivity between remote wire centers (RWCs).

This configuration provisions an ATM multi-protocol encapsulation (ATMMPE) connection on either an OC-12 or OC-3 IPoATM trunk between two Multiservice Switch 15000 nodes, for the purpose of IP bearer path connectivity between RWCs.

The VCC, nailed-up endpoint (NEP), and so on, must not be previously configured.

Review "[Multiservice Switch IP over ATM inter-shelf trunk interface configuration \(UA-IP\)](#)" (page 190) to understand how these links are configured on your nodes.

#### Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset or Calculated	<p> is the number of the port you configured.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
LineAutomaticProtection Switching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/ <p>	Preset or Calculated	<p>This attribute value works with the <i>protectionLine</i> attribute value. These attributes link ports on two different LPs.</p> <p>The port numbers on both LPs must match. Therefore, port 0 on Lp/n must match port 0 on Lp/n+1.</p> <p>&lt;a&gt; is the instance value of the Laps component.</p> <p><math>\text{&lt;a&gt; = &lt;n&gt; * 100 + &lt;p&gt;}</math></p> <p>&lt;n&gt; is the lowest even-numbered LP that is available.</p>
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	Preset or Calculated	<p>This attribute value is configured on the LP paired with the <i>workingLine</i> LP.</p> <p>The port numbers on both LPs must match. Therefore, port 0 on Lp/&lt;n+1&gt; must match port 0 on Lp/&lt;n&gt;.</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/<a> Sts	concatNumber	12	Preset or Calculated	For OC-12 only.
Laps/<a> Sts AtmCell	correctSingleBitHeaderErrors	on	Preset or Calculated	
AtmInterface (AtmIf)	interfaceName	Laps/<n*100+p> Sts/0	Preset or Calculated	<c> = <a> <p> is the number of the port you configured.
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/<remoteNodeName> ATM IF/<remoteAtmIfinstance>	User	<remoteNodeName> is the unique node name on the remote Multiservice Switch 15000 node.  <remoteAtmIfinstance> is the instance number of the ATM interface component on the remote Multiservice Switch 15000 node.
	oamSegmentBoundary (sb)	no	Preset or Calculated	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	Preset or Calculated	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3250/ 13000	Preset or User	For OC-3. For OC-12.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	16383	Preset or User	
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	Preset or User	
	maxVpcs (vpcs)	50/ 200	Preset or User	For OC-3. For OC-12.
	maxVpts (vpts)	0	Preset or Calculated	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0	Preset or User	
AtmIf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	16384	Preset or Calculated	For access protocol control (APC)-based cards only (4pOC-12).
AtmIf/<c> CA RealTimeVariableBitRate (rtVbr)	ep	2	Preset or Calculated	
AtmIf/<c> Private Network-Network Interface (PNNI)	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset or Calculated	The template default settings must be turned off.
	accountConnectionType (act)	origTerm	Preset or Calculated	
AtmIf/<c> Vcc/0.32 Nailed Up End Point (Nep)	applicationName	AtmMpe/<n> Ac/1	n/a	For in-band OAM.
	atmServiceCategory	nrtVbr	n/a	For in-band OAM.
AtmIf/<c> Vcc/0.32 Vcd Tm	txPacketWiseDiscard	enabled	n/a	For in-band OAM.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	txTrafficDescriptorType	6	n/a	For in-band OAM.
	txTrafficDescriptorParameters	Vector values of: 1 353207/ 1412830 2 1000 3 32	n/a	For in-band OAM. For OC-3/OC-12.
AtmMpe/<n>	linkToProtocolPort	Vr/0 PP/<EM>><AtmIf>_OAM	n/a	For in-band OAM.
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<n> Vcc/0.32 nep	n/a	For in-band OAM.
Vr/0 Pp/<EM>><AtmIf>_OAM	linkToMedia	AtmMpe/<n>	n/a	For in-band OAM.
Vr/0 Pp/<EM>><AtmIf>OAM ipport LogicalInterface/<OAM_IPAddr>	netMask	255.255.255.0	Preset or User	For in-band OAM.
AtmIf/<c> Vcc/0.33 Nailed Up End Point (Nep)	application name	AtmMpe/<n> Ac/1	Preset or Calculated	
AtmIf/<c> Vcc/0.33 vcd Tm	atmServiceCategory	rtVbr	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	forcedTagging	enabled	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 <engineered> 2 <engineered> 3 1	Preset or User	For OC-3/OC-12.

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> Vcc/0.34 Nailed Up End Point (Nep)	application name	AtmMpe/<n> Ac/2	Preset or Calculated	
AtmIf/<c> Vcc/0.34 vcd Tm	atmServiceCategory	rtVbr	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 12000 2 6000 3 210	Preset or User	For OC-3
		Vector values of: 1 16000 2 8000 3 210	Preset or Calculated	For OC-12
AtmIf/<c> Vcc/0.35 Nailed Up End Point (Nep)	application name	AtmMpe/<n> Ac/3	Preset or Calculated	
AtmIf/<c> Vcc/0.35 vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	Required if the remote node routes the remote MG9000 OAM traffic.
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 5000 2 2385 3 32	Preset or User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmMpe/<n+100>	linkToProtocolPort	Vr/VOIP Pp/<EM><AtmIf>_CC	Preset or Calculated	
AtmMpe/<n+100> Ac/1	atmConnection	AtmIf/<n> Vcc/0.33 nep	Preset or Calculated	
	ipCos	3	Preset or Calculated	
AtmMpe/<n+100> Ac/2	atmConnection	AtmIf/<n> Vcc/0.34 nep	Preset or Calculated	
	ipCos	2	Preset or Calculated	
AtmMpe/<n+100> Ac/3	atmConnection	AtmIf/<n> Vcc/0.35 nep	Preset or Calculated	Required if the remote node routes the remote MG9000 OAM traffic.
	ipCos	1	Preset or Calculated	
Vr/VOIP Pp/<EM><AtmIf>_CC	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/VOIP Pp/<EM>><AtmIf>_CC ipport LogicalInterface/<PP_IPAddr>	netMask	255.255.255.252	Preset or User	

### CS-LAN GE link configuration (UA-IP)

This section presents the configuration of a link to a CS-LAN, via Gigabit Ethernet (GE), on Nortel Multiservice Switch 15000 node in UA-IP solutions. The interface uses either one GE port on a 4pGe FP or a pair of GE ports in a Link Aggregation Group (LAG) on a 4pGe FP.

If three ports are required in the LAG, provision the third one manually.

It also configures protected static routes to the CS-LAN, for the following:

- bearer
- callp
- MG9000 operations, administration, and maintenance (OAM) VLANs

Review "CS-LAN GE link configuration (UA-IP)" (page 197) to understand how these links are configured on your nodes.

### CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> Ethernet/<m>	autoNegotiation	on		
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Lp/<n> Ethernet/<m> Om	type	lx	Preset or User	
Lp/<n> Ethernet/<m> Tm Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
Lp/<n> Ethernet/<m> Tm Ep/6	minimumBandwidthGuarantee	5	Preset or Calculated	
Lp/<n> Lag/<x>	lacpMode	passive	Preset or User	If LAG is used to aggregate two or more links on the same card.
	partnerAdminSystemId	<customer defined>	Preset or User	
	collectorMaxDelay	10	Preset or User	
	minActiveLinks	1	Preset or User	
	partnerAdminKey	<customer defined>	Preset or User	
	partnerAdminSystemPriority	1	Preset or User	
Lp/<n> Lag/<x> link/<m>	interfaceName	Lp/<n> Eth/<m>	Preset or Calculated	If LAG is used to aggregate two or more links on the same card.
Lan/<l>	linkToProtocolPort	Vr/VOIP Pp/ 8600_<id>	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Lan/<l> Framer	interfaceName	Lp/<n> Ethernet/* or Lp/<n> Lag/<x>	Preset or Calculated	
Vr/VOIP Pp/8600_<id>	linkToMedia	Lan/<l>	Preset or Calculated	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS1_ipAddr>	netMask	255.255.255.252	Preset or User	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS1_ipAddr> Ospflf	type	broadCast	Preset or Calculated	
	AreaId	<customer defined>	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDead	4	Preset or Calculated	
Lp/<n+1> Ethernet/<m>	autoNegotiation	on	Preset or Calculated	
	vendor	<customer defined>	Preset or Calculated	
	commentText	<customer defined>	Preset or Calculated	
Lp/<n+1> Ethernet/<m> Om	type	lx	Preset or Calculated	
Lp/<n+1> Ethernet/<m> Tm Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
Lp/<n+1> Ethernet/<m> Tm Ep/6	minimumBandwidthGuarantee	5	Preset or Calculated	
Lp/<n+1> Lag/<x>	lacpMode	passive	Preset or Calculated	If LAG is used to aggregate two or more links on the same card.
	partnerAdminSystemId	<customer defined>	Preset or Calculated	
	collectorMaxDelay	10	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	minActiveLinks	1	Preset or Calculated	
	partnerAdminKey	1	Preset or Calculated	
	partnerAdminSystemPriority	1	Preset or Calculated	
Lp/<n+1> Lag/<x> link/<m>	interfaceName	Lp/<n+1> Eth/<m>	Preset or Calculated	If LAG is used to aggregate two or more links on the same card.
Lan/<l+1>	linkToProtocolPort	Vr/VOIP Pp/8600_<id>	Preset or Calculated	
Lan/<l+1> Framer	interfaceName	Lp/<n> Ethernet/* or Lp/<n> Lag/<x>	Preset or Calculated	
Vr/VOIP Pp/8600_<id>	linkToMedia	Lan/<l+1>	Preset or Calculated	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS2_IpAddr>	netMask	255.255.255.252	Preset or User	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS2_IpAddr> Ospflf	type	broadCast	Preset or Calculated	
	Areald	<customer defined>	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDead	4	Preset or Calculated	
Vr/VOIP Ip Static Route/0.0.0.0,0.0.0.0,0	protected	yes	Preset or Calculated	
	heartbeat	enabled	Preset or Calculated	
	staticRemoteRtePreference	1	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Vr/VOIP Ip Static Route/0.0.0.0,0.0.0.0.,0 nextHop/<8600-1_IP >	metric	1	n/a	
Vr/VOIP Ip Static Route/0.0.0.0,0.0.0.0,0 nextHop/<8600-2_IP >	metric	1	n/a	

### CS-LAN OC-12 link configuration (UA-IP)

This section presents the configuration of a link to the CS-LAN via synchronous optical network (SONET) on Nortel Multiservice Switch 15000 nodes in UA-IP solutions. The link is via IP on an ATM OC-12 FP card, specifically a 4pOC12SmlrAtm FP, to an Ethernet Routing Switch 8600 (Ethernet Routing Switch 8600) in the CS-LAN.

This interface is similar to a Multiservice Switch 15000-to-Multiservice Switch 15000 link, as described in "[Multiservice Switch inter-shelf IP interface configuration \(UA-IP\)](#)" (page 189), or in "option B" of section 10.1 of the Succession Engineering Guidelines. Ethernet Routing Switch 8600 nodes only support unspecified bit rate (UBR). However, on Multiservice Switch 15000 nodes the ATM Vcc carrying the bearer, control and all operations, administration, and maintenance (OAM) is configured as non-real time variable bit rate (nrtVBR).

Review "[CS-LAN OC-12 link configuration \(UA-IP\)](#)" (page 200) to understand how these links are configured on your nodes.

### CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> Sonet/<p>	clockingSource	module	Preset or Calculated	<n> is the number of the logical processor you configured. <p> is the number of the port you configured.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> Sonet/<p> Sts/0	concatNumber	12	Preset or Calculated	
Lp/<n> Sonet/<p> Sts/0 AtmCell (Cell)	correctSingleBitHeaderErrors	On	Preset or Calculated	
AtmInterface (Atmlf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	Preset or Calculated	<c> is the instance value of the ATM interface. <c>=<n>*100+<p>
	remoteAtmInterfaceLabel (remoteAtmlf)	GEN/8600_<ID>	User	<ID> is a string that uniquely identifies the far end Passport 8600 in your network.
	oamSegmentBoundary (sb)	No	Preset or Calculated	
Atmlf/<c> Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> Ep/4	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> Connection Administrator (CA)	maxVccs	256	Preset or User	
	maxAutoSelectedVciForVpiZero	4095	Preset or User	
	minAutoSelectedVciForVpiZero	4095	Preset or User	
	maxVpcs	0	Preset or User	
	maxVpts	0	Preset or Calculated	
	bandwidthPool	Vector values of: 1 100 2 0	Preset or User	
Atmlf/<c> ConnMap Ov	numVccsForVpiZero	16384	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
AtmIf/<c> Ca rtVbr	ep	2	Preset or Calculated	
AtmIf/<c> Vcc/0.32 Nep	applicationName	AtmMpe/<n> Ac/1	n/a	For in-band OAM.
AtmIf/<c> Vcc/0.32 vcd Tm	atmServiceCategory	nrtVbr	n/a	For in-band OAM.
	txPacketWise Discard	enabled	n/a	For in-band OAM.
	txTrafficDescriptorType	6	n/a	For in-band OAM.
	txTrafficDescriptorParameters	Vector values of: 1 2000 2 1000 3 32	n/a	For in-band OAM.
AtmMpe/<n>	linkToProtocolPort	Vr/0 Pp/8600_<id>_OAM	Preset or Calculated	For in-band OAM.
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<n> Vcc/0.32 Nep	Preset or Calculated	For in-band OAM.
Vr/0 Pp/8600_<id>_OAM	linkToMedia	AtmMpe/<n>	Preset or Calculated	For in-band OAM.
Vr/0 Pp/8600_<id>_OAM ipport LogicalInterface/<OAM_IPAddr>	netMask	255.255.255.252	Preset or User	For in-band OAM.
AtmIf/<c> Vcc/0.33 Nep	applicationName	AtmMpe/<n> Ac/1	Preset or Calculated	
AtmIf/<c> Vcc/0.33 vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	forcedTagging	enabled	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	txTrafficDescriptorParameters	Vector values of: 1 1401600 2 1401600 3 1	Preset or Calculated	
AtmMpe/<n+100>	linkToProtocolPort	Vr/VOIP Pp/8600_<id>_CC	Preset or Calculated	
AtmMpe/<n+100> Ac/1	atmConnection	AtmIf/<n> Vcc/0.33 nep	Preset or Calculated	
Vr/VOIP Pp/8600_<id>_CC	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/VOIP Pp/8600_<id>_CC ipport LogicalInterface/<CC_IPAddr>	netMask	255.255.255.252	Preset or User	
Vr/VOIP Pp/8600_<id>_CC ipport LogicalInterface/<CC_IPAddr> Ospflf	type	broadcast	Preset or Calculated	
	areald	<customer defined>	Preset or Calculated	
	helloInt	1	Preset or Calculated	
	rtrDead	4	Preset or Calculated	
Vr/VOIP Ip Static Route/<bearer_VLAN>,<mask>,0			Preset or Calculated	
Vr/VOIP Ip Static Route/<bearer_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	n/a	<local-8600_IP> is the Ethernet Routing Switch 8600 at the other end of the OC-12 link.
Vr/VOIP Ip Static Route/<callp_VLAN>,<mask>,0			Preset or Calculated	
Vr/VOIP Ip Static Route/<callp_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	n/a	

Components	Attributes	Configured values	Expected Audit Results	Notes
Vr/VOIP Ip Static Route/<oam_VLAN>,<mask>,0			Preset or Calculated	
Vr/VOIP Ip Static Route/<oam_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	n/a	

### MG9000 OC-3 link configuration (UA-IP)

This section presents the configuration of a 1+1 OC-3 link to an MG9000 on Nortel Multiservice Switch 15000 nodes in UA-IP solutions.

This configuration is for a LAPS-protected pair of synchronous optical network (SONET) ports with an ATMIF, on 4pOC3SmlrAtm FP cards.

**Note:** For MG9000 links, the nodal provisioning (NP) templates configure the basic CC (bearer and H.248) and the operations, administration, and maintenance (OAM) Vccs. They do not configure ABI connections. For these Vccs, the maximum traffic contract is given as the default. It assumes, for example, that 12 shelves are configured on the MG9000 OC-3. The installer must change this if necessary, using the values in the Specification Book.

Review the following information to understand how these links are configured on your nodes.

### MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
Lp/<n> Sonet/<p>	clockingSource	module	Preset or Calculated	This attribute defines the type of clocking source used to synchronize the transmit clock.  <n> is the number of the logical processor you configured.  <p> is the number of the port you configured.
	vendor		User	
	commentText		User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	Preset or Calculated	This attribute value works with the <i>protectionLine</i> attribute value. These attributes link ports on two different LPs. The port numbers on both LPs must match. Therefore, port 0 on Lp/<n> must match port 0 on Lp/<n+1>.  <a> = <n> * 100 + <p>
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	Preset or Calculated	This attribute value is configured on the LP paired with the <i>workingLine</i> LP. The port numbers on both LPs must match. Therefore, port 0 on Lp/<n+1> must match port 0 on Lp/<n>.
	signalDegradeRatio (sdRatio)	-8	Preset or User	
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	Preset or Calculated	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	Preset or Calculated	<c> = <a>  For example, 200 indicates that the LP in slot 2, and port 0 on that card and port 0 on its paired Lp are configured for Laps.
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG9K-<id>	User	The -<id> string uniquely identifies the far end MG9000 in your network.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	oamSegmentBoundary (sb)	no	Preset or Calculated	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	Preset or Calculated	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3285	Preset or Calculated	<i>maxVccs</i> must be greater than or equal to the difference between <i>maxAutoSelectedVciForVpiZero</i> and <i>minAutoSelectedVciForVpiZero</i> .
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	Preset or Calculated	<i>maxAutoSelectedVciForVpiZero</i> must be less than <i>numVccsForVpiZero</i> (the <i>nZvccs</i> parameter in <i>AtmIfConnMap Override (Ov)</i> ). However, for scalability, set <i>maxAutoSelectedVciForVpiZero</i> as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	Preset or Calculated	
	maxAutoSelectedVpi (maxVpi)	15	Preset or Calculated	
	minAutoSelectedVpi (minVpi)	1	Preset or Calculated	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	Preset or Calculated	
	maxVpcs (vpcs)	15	Preset or Calculated	
	maxVpts (vpts)	0	Preset or Calculated	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	Preset or Calculated	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset or Calculated	
	usageParameterControl (upc)	disabled	Preset or Calculated	
	txQueueLimit (txql)	230	Preset or Calculated	
AtmIf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool1	Preset or Calculated	
	emissionPriority	2	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
	usageParameterControl	disabled	Preset or Calculated	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
	usageParameterControl	disabled	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset or Calculated	
	side	network	Preset or Calculated	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType (act)	origTerm	Preset or Calculated	
AtmIf/<c> Uni Signalling (Sig)	operatingMode	provisioned Only	Preset or Calculated	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset or Calculated	
AtmIf/<c> Vcc/16.32 Nep	applicationName	AtmMpe/<n> Ac/1	Preset or Calculated	
AtmIf/<c> Vcc/16.32 Nep vcd Tm	atmServiceCategory	rtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 342600 2 342600 3 1	Preset or User	
AtmMpe/<n>	linkToProtocolPort	Vr/VOIP Pp/9K*_CC	Preset or Calculated	
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<n> Vcc/16.32 nep	Preset or Calculated	
Vr/VOIP Pp/9K/<n> _CC	linkToMedia	AtmMpe/<n>	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Vr/VOIP Pp/9K<n>_CC ipport LogicalInterface/<CC_IPAddr>	netMask	255.255.255.224	Preset or Calculated	
Vr/VOIP Ip Arp Host/<CC_IPAddr>,0w	pvc	1	Preset or Calculated	Provision address resolution protocol (ARP) entries for the 16 MG9000 CC IP addresses.
AtmIf/<c>Vcc/16.33 Nep	applicationName	AtmMpe/<n>Ac/1	Preset or Calculated	
AtmIf/<c>Vcc/16.33 Nep vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 5000 2 2358 3 32	Preset or User	
AtmMpe/<n+100>	linkToProtocolIPort	Vr/VOIP Pp/9K*_OAM	Preset or Calculated	
AtmMpe/<n+100>Ac/1	atmConnection	AtmIf/<n>Vcc/16.33 Nep	Preset or Calculated	
Vr/VOIP Pp/9K<n>_OAM	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/VOIP Pp/9K<n>_OAM ipport LogicalInterface/<OAM_IPAddr>	netMask	255.255.255.248	Preset or Calculated	
Vr/VOIP Ip Arp Host/<OAM_IPAddr>,0	pvc	1	Preset or Calculated	Provision address resolution protocol (ARP) entries for the 2 MG9000 OAM IP addresses.

### MG9000 STS-1/ DS3 link configuration (UA-IP)

This section presents the configuration of a DS3 ATM link to an MG9000, on Nortel Multiservice Switch 15000 nodes in UA-IP solutions. This is a protected pair of DS3 links on 12-port-DS3 ATM-type FP cards. This type of link is supported for ports 0 through 3 only on these FP cards.

This link requires the use of an optical hairpin, on either a 4-port, OC-12 or OC-3 ATM-type FP card. For more information, see "Hairpin ATM (HAI) interface configuration (UA-IP)" (page 219), and "Hairpin IP (HII) interface configuration (UA-IP)" (page 223).

The MG9000 STS-1/DS3 nodal provisioning (NP) template includes the information from the tables as follows:

- "MG9000 STS-1/DS3 link configuration (UA-IP)" (page 210)
- "MG9000 Vcc Nrp HAI interface configuration (UA-IP)" (page 222)
- "MG9000 Vcc and Vr HII component configuration (UA-IP)" (page 226)

Review the information in "MG9000 STS-1/DS3 link configuration (UA-IP)" (page 210) to understand how these links are configured on your nodes.

#### MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				
Lp/<n> DS3/<p>	clocking source	module	Preset or Calculated	
	cpbitparity	on	Preset or Calculated	
	mapping	direct	Preset or Calculated	
	linelength	1	Preset or Calculated	
	commentText		User	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Ds3/<p>	Preset or Calculated	<c> = <n> * 100 + <p>
	remoteAtmInterfaceLabel	GEN/MG9K_<id>	User	The <id> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary	No	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Atmlf/<c> ConnectionAdministrator (CA)	maxVccs	1230	Preset or Calculated	
	maxAutoSelectedVciForVpiZero	2047	Preset or Calculated	
	minAutoSelectedVciForVpiZero	32	Preset or Calculated	
	maxAutoSelectedVpi	15	Preset or Calculated	
	minAutoSelectedVpi	1	Preset or Calculated	
	maxAutoSelectedVciForNonVpiZero	2047	Preset or Calculated	
	minAutoSelectedVciForNonVpiZero	32	Preset or Calculated	
	maxVpcs	15	Preset or Calculated	
	maxVpts	0	Preset or Calculated	
	bandwidthPool	Vector values of: 1 100 2 0 3 0	Preset or Calculated	
Atmlf/<c> CA ConstantBitRate (Cbr)	pool	pool1	Preset or Calculated	
	usageParameterControl	disabled	Preset or Calculated	
	UnshapedTransmitQueueing	perVc	Preset or Calculated	
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)/0	pool	pool1	Preset or Calculated	

212 Summary of link configuration

Components	Attributes	Configured Values	Expected Audit Results	Notes
	usageParameterControl	disabled	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
	ep	2	Preset or Calculated	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset or Calculated	
	UsageParameterControl	disabled	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
Atmlf/<c> CA UnspecifiedBitRate (Ubr)	pool	pool1	Preset or Calculated	
	UsageParameterControl	disabled	Preset or Calculated	
Atmlf/<c> EP/2	minBw	5	Preset or Calculated	
Atmlf/<c> EP/4	minBw	5	Preset or Calculated	
Atmlf/<c> UserNetworkInterface (Uni)	version	atmForum40	Preset or Calculated	
	side	network	Preset or Calculated	
	accountCollection	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType	origTerm	Preset or Calculated	
Atmlf/<c> Uni Signalling (Sig)	operatingMode	provisionedOnly	Preset or Calculated	
Atmlf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	prefixToRegistrar		Preset or Calculated	
Atmlf/<c> Vcc/16.32 Nrp	nextHop	Atmlf/<HA> Vcc/0.<vci> Nrp	Preset or Calculated	
Atmlf/<c> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values are: 1 99000 2 99000 3 1	Preset or User	
Atmlf/<c> Vcc/16.33 Nrp	nextHop	Atmlf/<HA> Vcc/0.<vci+1> Nrp	Preset or Calculated	
Atmlf/<c> Vcc/16.33 Nrp Vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values are: 1 2000 2 1000 3 32	Preset or User	

### MG9000 DS1-IMA link configuration (UA-IP)

This section presents the configuration of a DS1 inverse multiplexing for ATM (IMA) link to an MG9000 with 8 DS1s in an IMA group, on Nortel Multiservice Switch 15000 nodes in UA-IP solutions.

The MG9000 DS1 IMA link requires the use of an optical hairpin interface, on either a 4-port OC-12 or OC-3 ATM-type card. For more information, see "Hairpin ATM (HAI) interface configuration (UA-IP)" (page 219) and "Hairpin IP (HII) interface configuration (UA-IP)" (page 223).

The MG9000 DS1-IMA template for UA-IP includes the information from the tables as follows:

- "MG9000 DS1 IMA link configuration (UA-IP)" (page 214)
- "MG9000 Vcc Nrp HAI interface configuration (UA-IP)" (page 222)
- "MG9000 Vcc and Vr HII component configuration (UA-IP)" (page 226)

#### MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
LP/<n>		4pDS3ChAt m		
Lp/<n> DS3/<p>	clockingSource	module	Preset or Calculated	This attribute defines the type of clocking source used to synchronize the transmit clock.
	cbitParity	on	Preset or Calculated	
	mapping	direct	Preset or Calculated	
	lineLength	1	User	
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Lp/<n> DS3/<p> DS1/<i>	clockingSource	sameAsDs3	Preset or Calculated	This attribute defines the type of clocking source used to synchronize the transmit clock.
	lineType	esf	Preset or Calculated	
	zeroCoding	none	Preset or Calculated	
	vendor	<customer defined>	User	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	commentText	<customer defined>	User	
Lp/<n> DS3/<p> DS1/<i> Chan/0	timeslots	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Preset or Calculated	Chan/0 is defined with all timeslots.
	timeslotData Rate	doNotOverri de	Preset or Calculated	
	vendor	<customer defined>	Preset or Calculated	
	commentText	<customer defined>	Preset or Calculated	
Lp/<n> DS3/<p> Ima<x>			Preset or Calculated	<x> is the IMA instance number on the DS3 port.
	linkSelection Criterion	maxBandwi dth	Preset or User	
	maxDiffDelay	25	Preset or User	msec
	linkRetryTime out	10	Preset or User	seconds
	transmitClock Mode	ctc	Preset or Calculated	
	protocol	atmForum10	Preset or Calculated	
Lp/<n> DS3/<p> Ima/<x> Link/<k>	interfaceNam e	Lp/<n> Ds3/<p> Ds1/<i> Chan/0	Preset or Calculated	An IMA component has 8 link subcomponents. Link/<k> points to a DS1 chan/0 component.
AtmlInterface (Atmlf)/<c>	interfaceNam e	Lp/<n> Ds3/<p> Ima/<x>	Preset or Calculated	<c> is the instance of Atmlf. It is a function of slot number <n>, DS3 port number <p>, and IMA instance <x>.  <c> = <n> * 100 + <p> * 20 + <x>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG9K_ _id>	User	The -<id> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	Preset or Calculated	
AtmIf/<c> EP/2	minBw	5	Preset or Calculated	
AtmIf/<c> EP/4	minBw	5	Preset or Calculated	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	350	Preset or User	The value must be equal to $n * 44$ , where $n$ is the maximum number of DS1s this interface can support.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2048	Preset or Calculated	<i>maxAutoSelectedVciForVpiZero</i> must be less than <i>numVccsForVpiZero</i> (the <i>nZvccs</i> parameter in <i>AtmIfConnMap Override (Ov)</i> ). However, for scalability, set <i>maxAutoSelectedVciForVpiZero</i> as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	Preset or Calculated	
	maxAutoSelectedVpi (maxVpi)	15	Preset or Calculated	
	minAutoSelectedVpi (minVpi)	1	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2048	Preset or Calculated	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	Preset or Calculated	
	maxVpcs (vpcs)	15	Preset or User	
	maxVpts (vpts)	0	Preset or Calculated	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0 4 0 5 0	Preset or Calculated	This attribute is a vector value. It consists of an index entry and a decimal entry.  The index entry ranges in value from 1 through 5.  The decimal entry ranges in value from 0 to 12 800. It sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool1	Preset or Calculated	
	cdvt	10000	Preset or Calculated	
	ep	2	Preset or Calculated	
	usageParameterControl (upc)	disabled	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	Preset or Calculated	
	cdvt	10000	Preset or Calculated	
	usageParameterControl (upc)	disabled	Preset or Calculated	
AtmIf/<c> UserNetworkInterface (Uni)	accountCollection (aco)	~bill ~test ~study ~audit ~force	Preset or Calculated	
	accountConnectionType (act)	origTerm	Preset or Calculated	
AtmIf/<c> Uni Signalling (Sig)	operatingMode	provisioned Only	Preset or Calculated	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	Preset or Calculated	
AtmIf/<c> Vcc/16.32 Nrp	nextHop	AtmIf/<HAI> Vcc/0.<vci> Nrp	Preset or Calculated	
AtmIf/<c> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	Preset or Calculated	
	txPacketWiseDiscard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 2500 2 2500 3 1	Preset or User	
AtmIf/<c> Vcc/16.33 Nrp	nextHop	AtmIf/<HAI> Vcc/0.<vci+ 1> Nrp	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> Vcc/16.33 Nrp Vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters	Vector values of: 1 667 2 333 3 32	Preset or User	

### Hairpin ATM (HAI) interface configuration (UA-IP)

This section presents the configuration of a hairpin ATM (HAI) interface on Nortel Multiservice Switch 15000 nodes in UA-IP solutions. This is used by MG9000 interfaces on electrical cards which do not support IP.

Review the following information to understand how these links are configured on your nodes.

["Optical hairpin ATM \(HAI\) interface configuration \(UA-IP\)" \(page 220\)](#) documents the components and attributes to provision for the optical Hairpin ATM Interface (HAI).

["MG9000 Vcc Nrp HAI interface configuration \(UA-IP\)" \(page 222\)](#) documents the Vcc Nrp components for one MG9000. A single hairpin can support many MG9000s, therefore, these components are typically applied several times.

If the MG9000 is on an FP pair that does not support IP (4pDS3ChAtm, 12pDS3Atm, 16pOC3SmlrAtm with ipRoutes = 0), the following is configured on the HII interface and a PVC (for example, two AtmIf vcc nrp

components, one on the MG9000 interface, one on the HAI interface) must also be provisioned to ATM switch the ESA IP traffic to the FP card pair that does support IP.

#### Optical hairpin ATM (HAI) interface configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset or Calculated	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Laps/<a>	workingLine	Lp/<n> Sonet/<p>	Preset or Calculated	<a> = <n> * 100 + <p> <n> is the number of the Lp. <p> is the number of the port you configured.
	protectionLine	Lp/<n+1> Sonet/<p>	Preset or Calculated	
	signalDegradationRatio	-8	Preset or User	
Laps/<a> Sts	concatNumber	12	Preset or Calculated	For OC-12 only.
Laps/<a> Sts AtmCell	correctSingleBitHeaderErrors	On	Preset or Calculated	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	Preset or Calculated	<c> = <a>
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/<nodeName> atmif/<n>	User	
	oamSegmentBoundary (sb)	no	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Atmlf/<c> Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> Ep/4	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> ConnMap Ov	numVccsForVpiZero	16384	Preset or Calculated	For 4pOC-12 only.
Atmlf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3250/13000	Preset or Calculated	For OC-3 /OC-12. <i>maxVccs</i> must be greater than or equal to the difference between <i>maxAutoSelectedVciforVpiZero</i> and <i>minAutoSelectedVciforVpiZero</i> .
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095/16383	Preset or Calculated	For OC-3/OC-12. <i>maxAutoSelectedVciForVpiZero</i> must be less than <i>numVccsForVpiZero</i> ( <i>nZvccs</i> in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability, set <i>maxAutoSelectedVciforVpiZero</i> as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	2048	Preset or Calculated	
	maxVpcs (vpcs)	0	Preset or Calculated	
	maxVpts (vpts)	0	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	Preset or Calculated	This attribute is a vector value. This vector consists of an index entry and a decimal entry.  The index entry ranges in value from 1 through 5.  The decimal entry ranges in value from 0 to 12 800. It sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
Atmlf/<c> CA RealTimeVariableBitRate (rtVbr)	emissionPriority (ep)	2	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
	usageParameterControl (upc)	disabled	Preset or Calculated	
Atmlf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	cdvt	5000	Preset or Calculated	
	usageParameterControl (upc)	disabled	Preset or Calculated	

"MG9000 Vcc Nrp HAI interface configuration (UA-IP)" (page 222) documents the configuration of Vcc Nrp components for one MG9000.

#### MG9000 Vcc Nrp HAI interface configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
Atmlf/<HAI> Vcc/0.<vci> Nrp	nextHop	Atmlf/<MG> Vcc/16.32 Nrp	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<HAI> Vcc/0.<vci> Nrp Vcd Tm	atmServiceC ategory	rtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDesc riptorType	6	Preset or Calculated	
	txTrafficDesc riptorParame ters	<customer defined>	Preset or Calculated	Values depend on whether the MG9000 is IMA or DS3.
AtmIf/<HAI> Vcc/0.<vci+1> Nrp	nextHop	AtmIf/<MG> Vcc/16.33 Nrp	Preset or Calculated	
AtmIf/<HAI> Vcc/0.<vci+1> Nrp Vcd Tm	atmServiceC ategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDesc riptorType	6	Preset or Calculated	
	txTrafficDesc riptorParame ters	<customer defined>	Preset or Calculated	Values depend on whether the MG9000 is IMA or DS3.

### Hairpin IP (HII) interface configuration (UA-IP)

This section presents the configuration of an optical hairpin IP (HII) interface to an MG9000 on Nortel Multiservice Switch 15000 nodes in UA-IP solutions. This is used by MG9000 interfaces on electrical cards that do not support IP.

["Optical hairpin IP interface \(HII\) configuration \(UA-IP\)" \(page 224\)](#) documents the components and attributes to provision for the optical Hairpin IP Interface (HII). It provides this information for OC-3 and OC-12.

["MG9000 Vcc and Vr HII component configuration \(UA-IP\)" \(page 226\)](#) documents the Vcc, AtmMpe and Vr components required to support one MG9000. A single hairpin can support many MG9000, therefore, you would typically apply these components several times. You can create a separate nodal provisioning (NP) template to do this.

Review the following information to understand how these links were configured on your nodes in a UA-IP solution.

If the MG9000 is on an FP pair that does not support IP (4pDS3ChAtm, 12pDS3Atm, 16pOC3SmlrAtm with ipRoutes = 0), the following is configured on the HII interface and a PVC (for example, two AtmIf vcc nrp components, one on the MG9000 interface, one on the HAI interface) must also be provisioned to ATM switch the ESA IP traffic to the FP card pair that does support IP.

#### Optical hairpin IP interface (HII) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
EM				
LogicalProcessor (Lp)/<n>				<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	Preset or Calculated	This attribute defines the type of clocking source used for synchronizing the transmit clock.  <p> is the number of the port you configured.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Laps<a>	workingLine	Lp/<n> Sonet/<p>	Preset or Calculated	<a> = <n> * 100 + <p>
	protectionLine	Lp/<n+1> Sonet/<p>	Preset or Calculated	
	signalDegradeRatio	-8	Preset or User	
Laps<a> Sts	concatNumber	12	Preset or Calculated	For OC-12 only.
Laps<a> Sts AtmCell	correctSingleBitHeaderErrors	On	Preset or Calculated	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<n*100+p> Sts/0	Preset or Calculated	<c> = <a>
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/<nodeName> atmif/<n>	User	

Components	Attributes	Configured values	Expected Audit Results	Notes
	oamSegmentBoundary (sb)	no	Preset or Calculated	
Atmlf/<c> Ep/2	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> Ep/4	minimumBandwidthGuarantee	5	Preset or Calculated	
Atmlf/<c> ConnMap Ov	numVccsForVpiZero	16384	Preset or Calculated	For 4pOC-12 only.
Atmlf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3250 13000	Preset or Calculated	For OC-3. For OC-12. <i>maxVccs</i> must be greater than or equal to the difference between <i>maxAutoSelectedVciforVpiZero</i> and <i>minAutoSelectedVciforVpiZero</i> .
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095 16383	Preset or Calculated	For OC-3. For OC-12. <i>maxAutoSelectedVciforVpiZero</i> must be less than <i>numVccsForVpiZero</i> ( <i>nZvccs</i> parameter in <i>AtmlfConnMap Override (Ov)</i> ). However, for scalability, set <i>maxAutoSelectedVciforVpiZero</i> as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	2048	Preset or Calculated	
	maxVpcs (vpcs)	0	Preset or Calculated	
	maxVpts (vpts)	0	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	Preset or Calculated	This attribute is a vector value. This vector consists of an index entry and a decimal entry.  The index entry ranges in value from 1 through 5.  The decimal entry ranges in value from 0 to 12 800. It sets the percentage of link bandwidth allowed in the bandwidth pool defined by the index entry.
AtmIf/<c> CA RealTimeVariableBitRate (RtVbr)	emissionPriority (ep)	2	Preset or Calculated	
	cdvt	5000	Preset or Calculated	
	usageParameterControl (upc)	Disabled	Preset or Calculated	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	cdvt	5000	Preset or Calculated	
	usageParameterControl (upc)	Disabled	Preset or Calculated	

"MG9000 Vcc and Vr Hll component configuration (UA-IP)" (page 226) documents the Vcc Nrp components for one MG9000. A single hairpin can support many MG9000.

#### MG9000 Vcc and Vr Hll component configuration (UA-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> Vcc/0.<vci> Nep	applicationName	AtmMpe/<n> Ac/1	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
AtmIf/<c> Vcc/0.<vci> vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters		Preset or Calculated	Values depend on whether MG9000 is IMA or DS3
AtmMpe/<n>	linkToProtocolPort	Vr/VOIP Pp/9k*_CC	Preset or Calculated	
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<HII> Vcc/0.<vci> nep	Preset or Calculated	
Vr/VOIP Pp/9K<n>_CC	linkToMedia	AtmMpe/<n>	Preset or Calculated	
Vr/VOIP Pp/9K<n>_CC ipport LogicalInterface/<CC_IPAddr>	netMask	255.255.255 .224	Preset or Calculated	
Vr/VOIP IP Arp Host/<CC_IPAddr>	pvc	1	Preset or Calculated	Provision address resolution protocol (ARP) entries for the 16 MG9000 CC IP addresses
AtmIf/<c> Vcc/0.<vci+1> Nep	applicationName	AtmMpe/<n+100> Ac/1	Preset or Calculated	
AtmIf/<c> Vcc/0.<vci+1> vcd Tm	atmServiceCategory	nrtVbr	Preset or Calculated	
	txPacketWise Discard	enabled	Preset or Calculated	
	txTrafficDescriptorType	6	Preset or Calculated	
	txTrafficDescriptorParameters		Preset or Calculated	Depends on whether the MG9000 is IMA or DS3.
AtmMpe/<n+100>	linkToProtocolPort	Vr/VOIP Pp/9K*_OAM	Preset or Calculated	
AtmMpe/<n+100> Ac/1	atmConnection	AtmIf/<HII> Vcc/0.<vci+1> nep	Preset or Calculated	

Components	Attributes	Configured Values	Expected Audit Results	Notes
Vr/VOIP Pp/9K<n>_OAM	linkToMedia	AtmMpe/<n+100>	Preset or Calculated	
Vr/VOIP Pp/9K<n>_OAM ipport LogicalInterface/<OAM_IPaddr>	netMask	255.255.255.248	Preset or Calculated	
Vr/VOIP IP Arp Host/<OAM_IPaddr>	pvc	1	Preset or Calculated	Provision ARP entries for the 2 MG9000 OAM IP addresses

The template for a single hairpin includes the following information from the tables:

- "Optical hairpin ATM (HAI) interface configuration (UA-IP)" (page 220)
- "Optical hairpin IP interface (HII) configuration (UA-IP)" (page 224)

### Media Gateway 15000-specific interface configuration (UA-IP/PT-IP)

This section describes the configuration of time division multiplexing (TDM) trunks and trunk profiles, as follows, on Nortel Multiservice Switch 15000 Media Gateway 15000s in UA-IP/PT-IP solutions:

- "TDM OC-3 interface configuration (UA-IP/PT-IP)" (page 228)
- "Core network GE interface configuration (PT-IP)" (page 229)
- "TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration (PT-IP)" (page 233)
- "TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (PT-IP)" (page 273)
- "MGC - H.248 (2pGeMmSrVSP3) interface configuration (UA-IP)" (page 233)
- "MGC - H.248 (VSP) interface configuration (UA-IP)" (page 243)
- MGC - H.248 (VSP) interface configuration (PT-IP)

### TDM OC-3 interface configuration (UA-IP/PT-IP)

This section presents the configuration of an interface to optical carrier level 3 (OC-3) time division multiplexing (TDM), on Nortel Multiservice Switch 15000 Media Gateway in UA-IP/PT-IP solutions.

This configuration provisions a LAPS-protected pair of synchronous optical network (SONET) ports on 4pOC3ChSmlrVsp3-0 FP or 2pOC3ChSmlrVsp4e cards.

Review the following information to understand how these interfaces are configured on your Media Gateway nodes.

### TDM OC-3 interface configuration (UA-IP/PT-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Lp/<n> Sonet/<p> Lp/<n+1> Sonet/<p> or Lp/<n> Sdh/<p> Lp/<n+1> Sdht/<p>	clockingSource	module	Preset or Calculated	This attribute defines the type of clocking source used for synchronizing the transmit clock.  <b>Note:</b> Only SONET/SDH port 0 is supported on this card
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Laps<nnpp>	workingLine	Lp/<n> Sonet/<p> or Lp/<n> Sdh/<p>	Preset or Calculated	
	protectionLine	Lp/<n+1> Sonet/<p> or Lp/<n+1> Sdh/<p>	Preset or Calculated	
	signalDegradeRatio	-8	Preset or User	
Laps/<nnpp> Vc4/0	concatNumber	1	Preset or Calculated	For European STM1 solution only

### Core network GE interface configuration (PT-IP)

This section presents the configuration of a link to a core network, via Gigabit Ethernet (GE), on Media Gateway 15000 node in PT-IP solutions. The interface uses either one GE port on a 4pGe FP or a pair of GE ports in a Link Aggregation Group (LAG) on a 4pGe FP. The following configures a pair of GE ports on two adjacent 4pGE FP cards and the protected default route to the IP Core or adjacent ERS8600s.

**Note:** When configuring using the SH-VR template, set the Local Host Device Topology (localHostDeviceTopology) attribute to layer 2. Apply IF-4pGE-noLAG according.

Review the following information to understand how these links are configured on your nodes.

#### Core network GE link configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp/<n> Ethernet/<m>	autoNegotiation	on		
	vendor	<customer defined>		
	commentText	<customer defined>		
	losDuring Migration	disabled		If the localHostDeviceTopology attribute in the Vr/VOIP0 CustSpec component is set to Layer 3, then this attribute should be enabled
Lp/<n> Ethernet/<m> Om	type	lx (Default)		This value depends on the optical module type that is inserted.
Lp/<n> Ethernet/<m> Tm Ep/2	minimumBandwidthGuarantee	5		
Lp/<n> Ethernet/<m> Tm Ep/6	minimumBandwidthGuarantee	5		
Lp/<n> Lag/<x>	lacpMode	active		If LAG is used to aggregate two or more links on the same card.
	partnerAdmin SystemId	<customer defined>		LAG MAC address and key for far-end
	collectorMaxDelay	10		
	minActiveLinks	2		
	partnerAdmin Key	<customer defined>		

Components	Attributes	Configured values	Expected Audit Results	Notes
	partnerAdmin SystemPriority	1		
Lp/<n> Lag/<x> link/<m>	interfaceName	Lp/<n> Eth<m>		
Lp/<n> Lag/<x> link/<m+1>	interfaceName	Lp/<n> Eth<m+1>		
Lan/<nm>	linkToProtocol Port	Vr/VOIP Pp/8600_<id>		
Lan/<nm> Framer	interfaceName	Lp/<drop> Ethernet/<m> or Lp/<n> Lag/<x>		
Vr/VOIP Pp/8600_<id>	linkToMedia	Lan/<nm>		
Vr/VOIP Pp/8600_<id> IpPort Logicalf/<CS1_IPAddr>	netMask	255.255.255.252		
Vr/VOIP Pp/8600_<id> IpPort	proxyArpStatus	disabled		
Lp/<n+1>Ethernet/<m>	autoNegotiation	on		
Lp/<n+1>Ethernet/<m> Om	type	lx (Default)		This value depends on the optical module type that is inserted.
Lp/<n+1> Ethernet/<m> Tm Ep/2	minimumBandwidthGuarantee	5		
Lp/<n+1> Ethernet/<m> Tm Ep/6	minimumBandwidthGuarantee	5		
Lp/<n+1> Lag/<x>	lacpMode	active		If LAG is used to aggregate two or more links on the same card.
	partnerAdmin SystemId	<customer defined>		LAG MAC address and key for far-end
	collectorMaxDelay	10		
	minActiveLinks	1		

Components	Attributes	Configured values	Expected Audit Results	Notes
	partnerAdmin Key	0		
	partnerAdmin SystemPriority	1		
Lp/<n+1> Lag/<x> link/<m>	interfaceName	Lp/<n+1> Eth/<m>		If LAG is used to aggregate two or more links on the same card.
Lp/<n+1> Lag/<x> link/<m+1>	interfaceName	Lp/<n+1> Eth/<m+1>		
Lan/<l+1>	linkToProtocol Port	Vr/VOIP Pp/8600_<id>		
Lan/<l+1> Framer	interfaceName	Lp/<drop> Ethernet/m or Lp/<n> Lag/<x>		
Vr/VOIP Pp/8600_<id2>	linkToMedia	Lan/<l+1>		Specific labeling of vr/VOIP and pp/8600 are just examples and not standard labeling notations.
Vr/<VoIP>Pp/8600_<id2> IpPort	proxyArpStatus	disabled		
Vr/<VoIP>Pp/8600_<id2> IpPort LogicalIf /<CS2_IpAddr>	netMask	255.255.255.252		
Vr/<VoIP> Ip Static Route/0.0.0.0,0.0.0.0,0	protected	yes		
	heartBeatDeadInterval	enabled		
	staticRemote RtePreference	1		
Vr/<VoIP> Ip Static Route/0.0.0.0,0.0.0.0,0 nextHop/<8600-1_IP>	metric	1		
Vr/<VoIP> Ip Static Route/0.0.0.0,0.0.0.0,0 nextHop/<8600-2_IP>	metric	2		

**TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration (PT-IP)**

This section presents the configuration of an interface to optical carrier level 3 (OC-3) time division multiplexing (TDM) or an STM1 TDM on the Nortel Multiservice Switch 15000 Media Gateway in PT-IP solutions.

This configuration provisions a LAPS-protected component either on synchronous optical network (SONET) ports for the interface to OC-3 TDM trunks or on SDH ports for the interface to STM1 TDM trunks, on the 2pOC3ChSmlrVsp3 or 2pOC3ChSmlrVsp4e FP cards.

Review "[TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration \(PT-IP\)](#)" (page 233) to understand how these interfaces are configured on your Media Gateway nodes.

**TDM OC-3/STM1 VSP3-o/2pVSP4e interface configuration (PT-IP)**

Components	Attributes	Configured Values	Expected Audit Results	Notes
EM				
Lp/<n> Sonet/<p> Lp/<n+1> Sonet/<p>	clockingSource	module	Preset or Calculated	Only port 0 is supported on these cards.  This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	User	
	commentText	<customer defined>	User	
Laps<nnpp>	workingLine	Lp/<n> Sonet/<p>	Preset or Calculated	
	protectionLine	Lp/<n+1> Sonet/<p>	Preset or Calculated	
	signalDegrade Ratio	-8	Preset or User	

**MGC - H.248 (2pGeMmSrVSP3) interface configuration (UA-IP)**

This section presents the configuration of an interface to a Media Gateway Controller (MGC), using H.248, on Nortel Multiservice Switch 15000 Media Gateway 15000s in UA-IP solutions.

This configuration uses H.248, the ITU-T gateway control protocol, as the control interface between the MGC and the Multiservice Switch Media Gateway. It provisions the NSTA component structure with an IP interface to the MGC on 2pGeMmSrVsp3 FP cards.

Review "[MGC-H.248 \(2pGeMmSrVSP3\) interface configuration \(UA-IP\)](#)" (page 234) to understand how these links are configured on your nodes.

#### MGC-H.248 (2pGeMmSrVSP3) interface configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Lp<n> Vsp	linkToApplication	Nsta/<n>		
Lp<n> Vsp PModule/1-3	moduleType	spm		
Lp<n> Vsp PModule/4-24	moduleType	vpm		
Nsta/<n>	linkToServer	Lp/<n>Vsp		
Nsta/<n> Vgs	defaultToneSet	canadaUsa		
	hostname	<customer defined>		Must match the value in the associated GWC.  If the <i>hostname</i> value changes, calls are torn down.
	gatewayAtmAddress	N/A		Is auto-populated by the system because <i>nodePrefix</i> is defined.  If the <i>gatewayAtmAddress</i> value changes, calls are torn down.
Nsta/<n> Vgs PktProf/0	digitTransport	relay		

Components	Attributes	Configured values	Expected Audit Results	Notes
	stateChange SignallingMode	itu		
Nsta/<n> Vgs H248/0	mgMid	[<Ctrl/mg ipAddress>]:2944		
	udpPortConnection	Nsta/<n> Vgs Ctrl/mg UdpPort/2944		
	mgcList	Nsta/<n> Vgs Mgc/0		Attribute type is List of Link. NP application requires user input.
Nsta/<n> Vgs Mgc/0	initialMgcAddress	<customer defined>		
	mgList	Nsta/<n> Vgs H248/0		Attribute type is List of Link, but set from other side. No user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress	<customer defined>		
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccessName	Vr/VOIP PP/NS TA<n>_MG lpp Logically/<ipaddress>		
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0		
Vr/VOIP PP/NS TA<n>_MG	linkToMedia	Vm/<v> lf/0		
Vm/<v> lf/0	linkToProtocolPort	Vr/VOIP PP/NS TA<n>_MG		
Vr/VOIP PP/NS TA<n>_MG lpp Logically/<ipaddress>	netMask	255.255.255.252		
Nsta/<n> Vgs IpMConn	ipAddress	<customer defined>		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs IpMConn Vrap	subnetAccessName	Vr/VOIP PP/NSTA<n>_IPMCONN Ipp LogicalIf/<ipaddress>		
Vr/VOIP PP/NSTA<n>_IPMCONN	linkToMedia	Vm/<w> If/0		
Vm/<w> If/0	linkToProtocolPort	Vr/VOIP PP/NSTA<n>_IPMCONN		
Vr/VOIP PP/NSTA<n>_IPMCONN Ipp LogicalIf/<ipaddress>	netMask	255.255.255.252		
Nsta/<n> Vgs FaxRelayOverlap (create only)				
Nsta/<n> Vgs DigitCollection (create only)				
Nsta/<n> Vgs BragS/0	localAddress	<customer defined>		Use the auto-default. If more than one is needed, add them manually.
Nsta/<n> Vgs SigTrace	asdsFilePrefix	sigTrace		0 char<string <10 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes

Components	Attributes	Configured values	Expected Audit Results	Notes
	asdsFifoBufferSize	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	nsta/<n> vts tag/<x> DS0, nsta/<y> vgs tag/<z> DS0		Maximum of 10. Sets the number sigtrace links to DS0 instances.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.
	errorCounter			Indicates the number of times the signaling trace failed to start.

Components	Attributes	Configured values	Expected Audit Results	Notes
	tracingState			<p>Indicates current state of signaling trace. Possible values are:</p> <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> <li>• ProcessVciResponse</li> <li>• WaitForDspResponse</li> <li>• DspConfigExit</li> <li>• Started</li> <li>• WaitDspDeconfig</li> <li>• WaitVciRelease</li> <li>• WaitOutputComplete</li> </ul>
	tracingTime			<p>Range 1-1800 seconds. Shows the time left to complete the signaling trace.</p>
	allocatedVci			<p>Shows the VCI allocated for signaling trace.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsds FifoBuffer
	storedFifoDataSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsds FifoBuffer.
	highFifoWaterMark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs MediaTrace	asdsFilePrefix	mediaTrace		0 char<string <11 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes
	asdsFifoBufferSize	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	1		Allows the operator to link the MediaTrace component to one DS0 instance for which the trace is turned on.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.

Components	Attributes	Configured values	Expected Audit Results	Notes
	errorCounter			Indicates the number of times the signaling trace failed to start.
	tracingState			Indicates current state of signaling trace. Possible values are: <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> <li>• ProcessVciResponse</li> <li>• WaitForDspResponse</li> <li>• DspConfigExit</li> <li>• Started</li> <li>• WaitDspDeconfig</li> <li>• WaitVciRelease</li> <li>• WaitOutputComplete</li> </ul>
	tracingTime			Range 1-1800 seconds. Shows the time left to complete the signaling trace.

Components	Attributes	Configured values	Expected Audit Results	Notes
	allocatedVci			Shows the VCI allocated for signaling trace.
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsds FifoBuffer.
	storedFifoDataSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsds FifoBuffer.
	highFifoWaterMark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.

Components	Attributes	Configured values	Expected Audit Results	Notes
	discardedaal5Frames			Shows the number of AAL5 frames discarded on the ingressPQC.
	discardedaal5Frames			Shows the number of AAL5 frames discarded on the ingressPQC.

### MGC - H.248 (VSP) interface configuration (UA-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC) using an optical link and H.248 on Nortel Multiservice Switch 15000 nodes in UA-IP solutions.

This configuration uses H.248, the ITU-T gateway control protocol, as the control interface between the MGC and the Multiservice Switch Media Gateway. It provisions the NSTA component structure with an IP interface to the MGC on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp43 FP cards.

NSTA component instances must match the lower card slot number of the VSP FP pair.

Review "[MGC-H.248 \(VSP\) interface configuration \(UA-IP\)](#)" (page 244) to understand how these interfaces are configured on your nodes.

IPSec can be optionally implemented over MGC-H.248 interface configurations for call control connections between a switched MG node and an MGC in a VOIP network. To implement IPSec on the H.248 interfaces on supported VSP cards (2pOC2ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e), apply the MGC-H248-IPSec NP template (see "[MGC-H.248 IPSec configuration \(UA-IP/PT-IP\)](#)" (page 252) following application of the MGC-H.248 interface NP template.

**Note:** Ping must be reactivated following application of the MGC-H248-IPSec template. To reactivate ping following application of the IPSec, apply the IF-MGC-IPSEC-Ping-VSP NP template (see "[MGC-H248-IPSec-Ping configuration \(UA-IP/PT-IP\)](#)" (page 254).

Refer to the following for more information about Media Gateway services:

- *NN10600-780 Nortel Media Gateway 7480/15000 Technology Fundamentals*

- *NN10600-782 Nortel Media Gateway 7480/15000 Switched Service Configuration Management*

**MGC-H.248 (VSP) interface configuration (UA-IP)**

Components	Attributes	Configured values	Expected Audit Results	Notes
Dlep/<n/2> Vsp	linkToApplication	Nsta/<n>		
Dlep/<n/2> Vsp PModule/1	moduleType	spm		
Dlep/<n/2> Vsp PModule/2-23	moduleType	vpm		
Nsta/<n>	linkToServer	Dlep/<n/2>Vsp		
Nsta/<n> Vgs	defaultToneSet	canadaUsa		
	hostname	<customer defined>		Must match the value in the associated GWC.  If the <i>hostname</i> value changes, calls are torn down.
	gatewayAtmAddress	N/A		Is auto-populated by the system because <i>nodePrefix</i> is defined.  If the <i>gatewayAtmAddress</i> value changes, calls are torn down.
	defaultPacketLogLaw	useAsProfile		
Nsta/<n> Vgs PktProf/0	digitTransport	relay		
	stateChangeSignalingMode	itu		
	lossIntegrationPeriod	0		

Components	Attributes	Configured values	Expected Audit Results	Notes
	defaultCodecList	64kG711U, 64kG711A, 8kG729, 32kG726ITU		
Nsta/<n> Vgs H248/0	mgMid	[<Ctrl/mg ipAddress]:2944		
	udpPortConnection	Nsta/<n> Vgs Ctrl/mg UdpPort/2944		
	mgcList	Nsta/<n> Vgs Mgc/0		Attribute type is List of Link. NP application requires user input.
Nsta/<n> Vgs Mgc/0	initialMgcAddress	<customer defined>		
	mgList	Nsta/<n> Vgs H248/0		Attribute type is List of Link, but set from the other side. No user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress	<customer defined>		
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccess Name	Vr/VOIP PP/Vrap Ipp LogicalIf/<ip address>		
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0		
Nsta/<n> Vgs IpMConn	ipAddress			
Nsta/<n> Vgw IpMConn Vrap	subnetAccess Name	Vr/<VOIP> PP/Vrap Ipp LogicalIf/<ip address>		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs SigTrace	asdsFilePrefix	sigTrace		0 char<string <10 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes
	asdsFifoBuffer Size	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	nsta/<n> vts tag/<x> DS0, nsta/<y> vgs tag/<z> DS0		Maximum of 10. Sets the number sigtrace links to DS0 instances.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.
	errorCounter			Indicates the number of times the signaling trace failed to start.

Components	Attributes	Configured values	Expected Audit Results	Notes
	tracingState			<p>Indicates current state of signaling trace. Possible values are:</p> <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> <li>• ProcessVciResponse</li> <li>• WaitForDspResponse</li> <li>• DspConfigExit</li> <li>• Started</li> <li>• WaitDspDeconfig</li> <li>• WaitVciRelease</li> <li>• WaitOutputComplete</li> </ul>
	tracingTime			<p>Range 1-1800 seconds. Shows the time left to complete the signaling trace.</p>
	allocatedVci			<p>Shows the VCI allocated for signaling trace.</p>

Components	Attributes	Configured values	Expected Audit Results	Notes
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	storedFifoData Size			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	highFifoWater Mark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.
Nsta/<n> Vgs MediaTrace	asdsFilePrefix	mediaTrace		0 char<string <11 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes

Components	Attributes	Configured values	Expected Audit Results	Notes
	asdsFifoBufferSize	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	1		Allows the operator to link the MediaTrace component to one DS0 instance for which the trace is turned on.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.
	errorCounter			Indicates the number of times the signaling trace failed to start.
	tracingState			Indicates current state of signaling trace. Possible values are: <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> </ul>

Components	Attributes	Configured values	Expected Audit Results	Notes
				<ul style="list-style-type: none"> <li>ProcessVciResponse</li> <li>WaitForDspResponse</li> <li>DspConfigExit</li> <li>Started</li> <li>WaitDspDeconfig</li> <li>WaitVciRelease</li> <li>WaitOutputComplete</li> </ul>
	tracingTime			Range 1-1800 seconds. Shows the time left to complete the signaling trace.
	allocatedVci			Shows the VCI allocated for signaling trace.
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.

Components	Attributes	Configured values	Expected Audit Results	Notes
	storedFifoData Size			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	highFifoWater Mark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.
	discardedaal5 Frames			Shows the number of AAL5 frames discarded on the ingressPQC.
	discardedaal5 Frames			Shows the number of AAL5 frames

Components	Attributes	Configured values	Expected Audit Results	Notes
				discarded on the ingressPQC.

**MGC-H.248 IPsec configuration (UA-IP/PT-IP)**

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/mg SPD/mg IkeProposal/1 IkeTransform/1				Define IKE rules to be selected in an IKE policy for key negotiation between the MG node and the MGC.
	encryptAlgorithm	<ul style="list-style-type: none"> <li>des: Data Encryption Standards (DES)</li> <li>3des: encryption using DES three times</li> </ul>		Default is des
	hashAlgorithm	<ul style="list-style-type: none"> <li>mdf: Message Digest</li> <li>sha1: Secure Hash Algorithm</li> </ul>		Default is sha1
	diffieHellmanGroup	<ul style="list-style-type: none"> <li>gp1: uses modulus of 768 bit prime number</li> <li>gp2: uses modules of 1024 bit prime number</li> </ul>		Specifies the group where the DH exchange is negotiated.
Nsta/<n> Vgs Ctrl/mg SPD/mg IkePolicy/1	remoteIpAddresses	<Nsta/<n> Vgs Mgc/0 initial/Mgc Address>		Remote media gateway controller IP address.
	description	IkeCCPolicy		

Components	Attributes	Configured values	Expected Audit Results	Notes
	ikePresharedKey	no-key		You must supply this value. The value must match the corresponding provisioning on the MGC IKE provisioning.
Nsta/<n> Vgs Ctrl/mg SPD/mg SecurityAssociationProposal1/ SecurityAssociationTransform/1	authAlgorithm			Define security rules to be selected in the security policies for securing ports between the MG node and the MGC.
	replayProtection			
	perfectForwardSecrecy			
Nsta/<n> Vgs Ctrl/mg SPD/mg policy/1	srcIpAddress	<Nsta/<n> Vgs Mgc/0 initialMgc Address		Apply IKE security policies to allow H.248 voice signaling traffic from MGC to MG (inbound) on a secured port.
	dstIpAddress	<Nsta/<n> Vgs Ctrl/mg ipAddress>		
	protocol	UDP		
	srcPort	2944		
	dstPort	2944		
	direction	inbound		
	action	apply		
	description	inboundCCPolicy		
	ikePolicy	Nsta/<n> Vgs Ctrl/mg SPD/mg IkePolicy/1		
	saProposal	Nsta/<n> Vgs Ctrl/mg SPD/mg SecurityAssociationProposal/1		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/mg SPD/mg policy/2	srcIpAddress	<Nsta/<n> Vgs Ctrl/mg ipAddress>		Apply IKE security policies to allow H.248 voice signaling traffic from MG to MGC (outbound) on a secured port.
	dstIpAddress	<Nsta/<n> Vgs Mgc/0 initialMgc Address		
	protocol	UDP		
	srcPort	2944		
	dstPort	2944		
	direction	outbound		
	action	apply		
	description	outboundCCPolicy		
	ikePolicy	Nsta/<n> Vgs Ctrl/mg SPD/mg IkePolicy/1		
	saProposal	Nsta/<n> Vgs Ctrl/mg SPD/mg SecurityAssociationProposal/1		

**MGC-H248-IPSec-Ping configuration (UA-IP/PT-IP)**

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/mg SPD/mg policy/3	srcIpAddress			Allow ICMP ping from any or a specific host IP to the Media Gateway. However, you may specify two IP address entries, each in a srcIpAddress, which define the upper and lower bound of the allowed IP addresses in the subnet.
	dstIpAddress	[Nsta/<n> Vgs Mgc/0 initial MgcAddress]		
	protocol	icmp		
	direction	inbound		
	action			
	description	inboundPing Policy		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/mg SPD/mg policy/4	srcIpAddress	[Nsta/<n> Vgs Mgc/0 initial MgcAddress]		Allow ICMP ping from the Media Gateway to any or a specific host IP. However, you may specify two IP address entries, each in a dstIpAddress, which define the upper and lower bound of the allowed IP addresses in the subnet. This must match the srcIpAddress in policy/3.
	dstIpAddress			
	protocol	icmp		
	direction	outbound		
	action			
	description	outboundPingPolicy		

### MGC - H.248 (VSP) interface configuration (PT-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC) using an optical link and H.248 on Media Gateway 15000 nodes in PT-IP solutions.

This configuration uses H.248, the ITU-T gateway control protocol, as the control interface between the MGC and the Multiservice Switch Media Gateway. It provisions the NSTA component structure with an IP interface to the MGC on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards.

NSTA component instances must match the lower card slot number of the VSP FP pair.

Review "[MGC-H.248 \(VSP\) interface configuration \(PT-IP\)](#)" (page 256) to understand how these interfaces are configured on your nodes.

IPSec can be optionally implemented over MGC-H.248 interface configurations for call control connections between a switched MG node and an MGC in a VOIP network. To implement IPSec on the H.248 interfaces on supported VSP cards (2pOC2ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e), apply the MGC-H248-IPSec NP template (see "[MGC-H.248 IPSec configuration \(UA-IP/PT-IP\)](#)" (page 252) following application of the MGC-H248 interface NP template.

**Note 1:** Ping must be reactivated following application of the MGC-H248-IPSec template. To reactivate ping following application of the IPSec, apply the IF-MGC-IPSEC-Ping-VSP NP template (see "[MGC-H248-IPSec-Ping configuration \(UA-IP/PT-IP\)](#)" (page 254).

**Note 2:** For provisioning MGC-H.248 (VSP) interfaces using Transcoder Free Operation (TrFO), refer to :

- "MGC-H.248 (VSP3-o) TrFO interface configuration (PT-IP)" (page 265)

Refer to the following for more information about Media Gateway services:

- *NN10600-780 Nortel Media Gateway 7480/15000 Technology Fundamentals*
- *NN10600-782 Nortel Media Gateway 7480/15000 Switched Service Configuration Management*

#### MGC-H.248 (VSP) interface configuration (PT-IP)

Components	Attributes	Configured Values	Expected Audit Results	Notes
Dlep/<n/2>Vsp	linkToApplication	Nsta/<n>		
Dlep/<n/2>Vsp PModule/1	moduleType	spm		
Dlep/<n/2>Vsp PModule/2-23	moduleType	vpm		
Nsta/<n>	linkToServer	Dlep/<n/2>Vsp		
Nsta/<n> Vgs	defaultToneSet	canadaUsa		
	hostname	<customer defined>		Must match the value in the associated GWC. If the hostname value changes, active calls are torn down.
	defaultPacketLogLaw	useAsProfile		
Nsta/<n> Vgs PktProf	digitTransport	relay		
	stateChangeSignalingMode	itu		
	lossIntegrationPeriod	0		

Components	Attributes	Configured Values	Expected Audit Results	Notes
	defaultCodecList	64kG711U 64kG711A 8kG729 32kG726ITU		
Nsta/<n> Vgs PktProf H248/0	mgMid	[<Ctrl/mg ipAddress>]:2944		
	udpPortConnection	Nsta/<n>Vgs Ctrl/mg UdpPort/2944		
	mgcList	Nsta/<n>Vgs Mgc/0		Attribute type is List of Link. NP application requires user input.
Nsta/<n>Vgs Mgc/0	initialMgcAddress	<customer defined>		
	mgList	Nsta/<n>Vgs H248/0		Attribute type is List of Link, but set from the other side. No user input required.
Nsta/<n>Vgs Ctrl/mg	ipAddress	<customer defined>		
Nsta/<n>Vgs Ctrl/mg Vrap	subnetAccess Name	Vr/VOIP PP/Vrap IppLogicalf/ <ipaddress>		
Nsta/<n>Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0		
Nsta/<n>Vgs IpMConn	ipAddress	<customer defined>		
Nsta/<n>Vgs IpMConn Vrap	subnetAccess Name	Vr/<VoIP> PP/Vrap Ipp Logicalf/<ipaddress>		
Nsta/<n>Vgs FaxRelayOverIpp				Create only.
Nsta/<n>Vgs DigitCollection				Create only.

Components	Attributes	Configured Values	Expected Audit Results	Notes
Nsta/<n>Vgs TdmNetworkProf/0				Create only. If more than one is needed, add manually.
Nsta/<n> Vgs SigTrace	asdsFilePrefix	sigTrace		0 char<string <10 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes
	asdsFifoBuffer Size	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	nsta/<n> vtag/<x> DS0, nsta/<y> vgs tag/<z> DS0		Maximum of 10. Sets the number sigtrace links to DS0 instances.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.
	errorCounter			Indicates the number of times the signaling trace failed to start.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	tracingState			<p>Indicates current state of signaling trace. Possible values are:</p> <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> <li>• ProcessVciResponse</li> <li>• WaitForDspResponse</li> <li>• DspConfigExit</li> <li>• Started</li> <li>• WaitDspDeconfig</li> <li>• WaitVciRelease</li> <li>• WaitOutputComplete</li> </ul>
	tracingTime			<p>Range 1-1800 seconds. Shows the time left to complete the signaling trace.</p>
	allocatedVci			<p>Shows the VCI allocated for signaling trace.</p>

Components	Attributes	Configured Values	Expected Audit Results	Notes
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	storedFifoData Size			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	highFifoWater Mark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.
Nsta/<n> Vgs MediaTrace	asdsFilePrefix	mediaTrace		0 char<string <11 chars. Provisionable string that sets the ASDS file name prefix. Alphanumeric characters only.
	asdsFileSize	10000 Kbytes		Range 1000 - 10000 Kbytes

Components	Attributes	Configured Values	Expected Audit Results	Notes
	asdsFifoBufferSize	5000 Kbytes		Range 5000-20000 Kbytes. Sets the PVG ASDS file size.
	asdsSpoolInterval	5 seconds		Range 1-20 seconds. Sets the time-out for the spooler to send a partial record.
	DS0Instances	1		Allows the operator to link the MediaTrace component to one DS0 instance for which the trace is turned on.
	traceTimeout	300 seconds		Range 60-1800 seconds.
	startCounter			Indicates the number of times the signaling trace has been started.
	errorCounter			Indicates the number of times the signaling trace failed to start.
	tracingState			Indicates current state of signaling trace. Possible values are: <ul style="list-style-type: none"> <li>• WaitForVciResponse</li> <li>• VciReqExit</li> <li>• StoreVci</li> </ul>

Components	Attributes	Configured Values	Expected Audit Results	Notes
				<ul style="list-style-type: none"> <li>ProcessVciResponse</li> <li>WaitForDspResponse</li> <li>DspConfigExit</li> <li>Started</li> <li>WaitDspDeconfig</li> <li>WaitVciRelease</li> <li>WaitOutputComplete</li> </ul>
	tracingTime			Range 1-1800 seconds. Shows the time left to complete the signaling trace.
	allocatedVci			Shows the VCI allocated for signaling trace.
	freeAsdsFifoSize			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.

Components	Attributes	Configured Values	Expected Audit Results	Notes
	storedFifoData Size			Range 1-20000 Kbytes. Shows the instantaneous value for free data space available in the PvgAsdsFifoBuffer.
	highFifoWater Mark			Range 1-20000 Kbytes. Shows the upper limit of the data size stored in the ASDS buffer reached during the current tracing interval.
	aal5Frames			Shows the number of captured AAL5 frames.
	discardedaal5 Frames			Shows the number of AAL5 frames discarded on the ingressPQC.
	discardedaal5 Frames			Shows the number of AAL5 frames discarded on the ingressPQC.

### MGC - H.248 (VSP3-o/2pVSP4e) TrFO interface configuration (PT-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC) using H.248, and specifically the Transcoder Free Operation (TrFO) codec, on a Nortel Multiservice Switch 15000 Media Gateway 15000 in SN09U release PT-IP solutions.

The following steps provide instruction on how to provision the NSTA component structure with an IP interface to the MGC using H.248 on 2pOC3ChSmlrVsp3-o FPs. These instructions are specific to the TrFO codec and are required for provisioning TrFO in SN09U release PT-IP configurations.

---

Step	Action
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*SN09U TrFO provisioning*

<b>ATTENTION</b>
------------------

Do not activate the following view following provisioning of the template.
--

- 1 Refer to "[MGC-H.248 \(VSP\) interface configuration \(PT-IP\)](#)" (page 256) to provision the OC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e
- 2 In the NP tool, navigate to the NSTA component created in step 1 and expand the NSTA component. Expand the Vgs sub-component. Delete the FaxR (fax relay) sub-component, displayed under the Vgs.
- 3 Navigate to the PktProf/0 component, displayed under the Vgs sub-component, and select "edit". Remove all entries in the "DefaultCodecList" attribute with the exception of 64kG711U and evrc0. If evrc0 does not exist, add another item to the list and set it to evrc0.
- 4 Navigate to the Tprof/0 component and select "edit". Set the value of the "Echo Cancellation" attribute to disabled.
- 5 Save (optional) and exit the NP tool (leaving the edit view in place).

<b>ATTENTION</b>
------------------

<i>Do not activate the view at this time.</i>
---

- 6 Open the Command Console, and open the newly provisioned session node.
- 7 Execute the following command to begin a provisioning session:  
`start prov`
- 8 Execute the following command to add the TrFO component to the newly created NSTA component:  
`add nsta/<x> Vgs Tprof/0 TrFo`
- 9 Execute the following commands to check, save, and optionally activate the view:  
`check prov`

- ```

save prov
act prov
confirm prov

```
- 10 Exit the provisioning:
- ```

end prov

```
- 11 Exit the command Console.

---

—End—

---

### MGC - H.248 (VSP3-o) TrFO interface configuration (PT-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC) using H.248, and specifically the Transcoder Free Operation (TrFO) codec, on a Nortel Multiservice Switch 15000 Media Gateway 15000 in PT-IP solutions.

This template provisions the NSTA component structure with an IP interface to the MGC using H.248 on 2pOC3ChSMIrvsp3-o FPs. This template is specific to the TrFO codec and is required for provisioning TrFO.

Review "[MGC-H.248 \(VSP3-o\) TrFO interface configuration \(PT-IP\)](#)" (page 265) to understand how these links are configured on your node.

#### MGC-H.248 (VSP3-o) TrFO interface configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Dlep/<n/2> Vsp	linkToApplication	Nsta/<n>	Preset or Calculated	
Dlep/<n/2> Vsp PModule1	moduleType	spm	Preset or Calculated	
Dlep/<n/2> Vsp PModule2-23	moduleType	vpm	Preset or Calculated	
Nsta/<n>	linkToServer	Dlep/<n/2> Vsp	Preset or Calculated	
Nsta/<n> Vgs	defaultToneSet	canadaUsa	Preset or Calculated	
	hostname		User	Must match the value in the associated GWC. If it changes, all calls are torn down.

Components	Attributes	Configured values	Expected Audit Results	Notes
	defaultPacketLogLaw	useAsProfile	Preset or Calculated	
Nsta/<n> Vgs PktProf/0	digitTransport	relay	Preset or Calculated	
	stateChangeSignalingMode	itu	Preset or Calculated	
	lossIntegrationPeriod	0	Preset or Calculated	
	defaultCodecList	64kG711U, 64kG711A, evrc0	Preset or Calculated	
Nsta/<n> Vgs H238/0	mgMid	[<Ctrl/mg ipAddress>]: 2944	Preset or Calculated	
	udpPortConnection	Nsta/<n> Vgs Ctrl/mg UdpPort/2944	Preset or Calculated	
	mgcList	Nsta/<n> Vgs Mgc/0	User	The attribute type is List of Link; NP application requires user input.
Nsta/<n> Vgs Mgc/0	initialMgcAddress		User	
	mgList	Nsta/<n> Vgs H248/0	Preset or Calculated	Also a Link of List attribute, but set from the other side. No user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress		User	
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccessName	Vr/<VOIP> PP/Vrap Ipp LogicalIf/<ip address>	User or Calculated	
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0	Preset or Calculated	
Nsta/<n> Vgs IpMConn	ipAddress			

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs IpMConn Vrap	subnetAccessName	Vr/<VOIP> PP/Vrap lpp LogicalIf/<ip address>	Preset or Calculated	
Nsta/<n> Vgs DigitCollection			Preset or Calculated	create only.
Nsta/<n> Vgs TdmNetwork Prof/0	echoCancellation	disabled	Preset or Calculated	If more than one is needed, assume that they are added manually.
Nsta/<n> Vgs TdmNetworkProf/0 TrFo			Preset or Calculated	create only.

### MGC - H.248 (2pVSP4e) TrFO interface configuration (PT-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC) using H.248, and specifically the Transcoder Free Operation (TrFO) codec, on a Nortel Multiservice Switch 15000 Media Gateway 15000 in PT-IP solutions.

This template provisions the NSTA component structure with an IP interface to the MGC using H.248 on 2pOC3ChSMlrVsp4e FPs. This template is specific to the TrFO codec and is required for provisioning TrFO.

Review "[MGC-H.248 \(2pVSP4e\) TrFO interface configuration \(PT-IP\)](#)" (page 267) to understand how these links are configured on your node.

### MGC-H.248 (2pVSP4e) TrFO interface configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Dlep/<n/2> Vsp	linkToApplication	Nsta/<n>		
Dlep/<n/2> Vsp PModule1	moduleType	spm		
Dlep/<n/2> Vsp PModule2-5,11,13 ,14,17,18,21,22,24,30-34,37-62,65	moduleType	vpm		
Nsta/<n>	linkToServer	Dlep/<n/2> Vsp		
Nsta/<n> Vgs	defaultToneSet	canadaUsa		

Components	Attributes	Configured values	Expected Audit Results	Notes
	hostname			Must match the value in the associated GWC. If it changes, all calls are torn down.
	defaultPacketLogLaw	useAsProfile		
Nsta/<n> Vgs PktProf/0	digitTransport	relay		
	stateChangeSignalingMode	itu		
	lossIntegrationPeriod	0		
	defaultCodecList	64kG711U, 64kG711A, evrc0		
Nsta/<n> Vgs H238/0	mgMid	[<Ctrl/mg ipAddress >]:2944		
	udpPortConnection	Nsta/<n> Vgs Ctrl/mg UdpPort/2944		
	mgcList	Nsta/<n> Vgs Mgc/0		The attribute type is List of Link; NP application requires user input.
Nsta/<n> Vgs Mgc/0	initialMgcAddress			
	mgList	Nsta/<n> Vgs H248/0		Also a Link of List attribute, but set from the other side. No user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress			
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccessName	Vr/<VOIP> PP/Vrap Ipp LogicalIf/<ip address>		
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs IpMConn	ipAddress			
	updPortBase	32768		
Nsta/<n> Vgs IpMConn Vrap	subnetAccess Name	Vr/<VOIP> PP/Vrap Ipp Logically/<ip address>		
Nsta/<n> Vgs DigitCollection				create only.
Nsta/<n> Vgs TdmNetwork Prof/0	echoCancellat ion	disabled		If more than one is needed, assume that they are added manually.
Nsta/<n> Vgs TdmNetworkProf/0 TrFo				create only.

## TDM trunk configuration (UA-IP/PT-IP)

This section presents the configuration of time division multiplexing (TDM) trunks for Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions. It addresses three types of TDM trunks:

- ISUP
- primary rate interface (PRI)
- PTS

This section includes the following topics:

- ["TDM trunk preparation - LAP STS \(UA-IP\)" \(page 270\)](#)
- ["TDM ISUP trunk \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)" \(page 270\)](#)
- ["TDM ISUP trunk \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)" \(page 270\)](#)
- ["TDM ISUP trunk configuration \(VSP3\) \(UA-IP\)" \(page 271\)](#)
- ["TDM PRI trunk profile \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)" \(page 274\)](#)
- ["TDM PRI trunk configuration \(VSP3-o/2pVSP4e\) \(UA-IP\)" \(page 276\)](#)
- ["TDM PRI trunk configuration \(VSP3-o/2pVSP4e\) \(PT-IP\)" \(page 277\)](#)
- ["TDM PRI trunk profile \(VSP3\) configuration \(UA-IP\)" \(page 279\)](#)
- ["TDM PRI trunk \(VSP3\) configuration \(UA-IP\)" \(page 280\)](#)

- ["TDM PTS trunk profile \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)" \(page 281\)](#)
- ["TDM CAS trunk profile configuration \(VSP3-o/2pVSP4e\) \(UA-IP\)" \(page 282\)](#)
- ["TDM PTS trunk configuration \(VSP3-o/2pVSP4e\) \(UA-IP\)" \(page 284\)](#)

### TDM trunk preparation - LAP STS (UA-IP)

This section presents the configuration of the line automatic protection switching (LAPS) Synchronous Transport Signal (STS) components needed for time division multiplexing (TDM) trunks on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions.

The TDM trunks must be provisioned on a TDM function processor (FP) card, the 4pOC3ChSmlr (TDM), 2pOC3ChSmlrVsp3 (VSP3o), or 2pOC3ChSmlrVsp4e. This configuration provisions a LAPS STS on the FPs.

Review ["VSP3 cards - TDM trunk preparation - LAPS STS \(UA-IP\)" \(page 270\)](#) to understand how these trunk preparations are configured on your Media Gateway nodes.

### VSP3 cards - TDM trunk preparation - LAPS STS (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v>			n/a	Create only.

### TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) ISUP trunk on Nortel Multiservice Switch 15000 Media Gateway 15000 in UA-IP solutions.

This configuration provisions a TDM ISUP trunk on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards.

Review "TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (UA-IP)" (page 271) to understand how these trunks are configured on your Media Gateway nodes.

#### TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x> >,<y> Ds1 Chan/0	applicationFr amerName	Nsta/<n> Vgs Tag/<t>	Preset or Calculated	<v> ranges in value from 0 through 2.  <x> ranges in value from 1 through 7.  <y> ranges in value from 1 through 4.
	timeslots	<all 24>	Preset or Calculated	
Nsta/<n> Vgs Tag/<t>			Preset or Calculated	Instance range is 0 through 16777215.  Suggested naming convention is <nnmmvxy>.
	interfaceNam e	Laps/<nnm m> Sts/<v> Vt1dot5/<x >,<y> Ds1 Chan/0	Preset or Calculated	
	profile	Nsta/<n> Vgs TProf/0	Preset or Calculated	

#### TDM ISUP trunk configuration (VSP3) (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) ISUP trunk on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions. On VSP3 FP cards, ISUP and primary rate interface (PRI) trunk settings are common.

This configuration provisions an ISUP trunk on a 2pGeMmSrVsp3 function processor (FP) card.

The Vt1Dot5 hierarchy and associated links must not have been configured previously.

Review "TDM ISUP trunk configuration (VSP3) (UA-IP)" (page 272) to understand how these trunks are configured on your nodes.

### TDM ISUP trunk configuration (VSP3) (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0..4	applicationFr amerName	Aal1Ces/<a>	Preset or Calculated	<v> ranges in value from 0 through 2.  <x> ranges in value from 1 through 7.  <y> = 1
	timeslots	<all 24>	Preset or Calculated	
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0 Tc			Preset or Calculated	Create only.
Aal1Ces/<a>	interfaceNam e	Laps/<nnm m> Sts/<v> Vt1dot5/<x >,<y> Ds1 Chan/0..4	Preset or Calculated	Instance range is 1 through 65535.
	serviceType	basicStructu red	Preset or Calculated	
	remoteEndty pe	pvgExclusiv ePrs	Preset or Calculated	
Aal1Ces/<a> Aep	addressToCa ll	<value of Nsta/<n> Vgs BragS/0 localAddress >	User	

### TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (PT-IP)

This section presents the configuration of a time division multiplexing (TDM) ISUP trunk on Nortel Multiservice Switch 15000Media Gateway 15000 in PT-IP solutions.

The TT-ISUP-63E1-Trunks template provisions 63 TDM ISUP E1 trunks on 2pOC3ChSmlrVsp3-o function processor (FP) cards. The TT-ISUP-E1-Trunk template provisions a single TDM ISUP E1 trunk on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. All Vc12 trunks under this Vc4 hierarchy must not be previously configured.

In the DS1 configuration, the TT-ISUP-28DS1-Trunks template provisions 28 TDM ISUP DS1 trunks on 2pOC3ChSmIrvsp3-o function processor (FP) cards. The TT-ISUP-DS1-Trunk template provisions a single TDM ISUP DS1 trunk on the 2pOC3ChSmIrvsp3-o or 2pOC3ChSmIrvsp4e FP cards. All trunks under this Laps Sts hierarchy must not be previously configured.

**Note:** Provision an FP card with either OC3 or STM service. Nortel does not recommend provisioning both services on one FP card.

Review the following information to understand how these trunks are configured on your Media Gateway nodes.

#### TDM ISUP trunk (VSP3-o/2pVSP4e) configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm>Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	applicationFramerName	Nsta/<n>Vgs Tag/<t>		<v> ranges in value from 0 through 2. <x> ranges in value from 1 through 7 <y> ranges in value from 1 through 4.
Laps/<nnmm>Vc4/0 Vc12/ <w>,<x>,<y> E1 Chan/0	applicationFramerName	Nsta/<n>Vgs Tag/<t>		where <w>=1 ...3 <x>=1 ...7 <y>=1 ...3
	timeslots	all 24 slots for DS1 or 31 for E1		
	lineType	ccs		
Nsta/<n>Vgs Tag/<t>				Instance range is 0 through 16777215. Suggested naming convention is <nnmm(v w)xy>

Components	Attributes	Configured values	Expected Audit Results	Notes
	interfaceName	Laps/<nnmm > Sts/<v> Vt1 dot5/<x>,<y> Ds1 Chan/0 or Laps/<nnmm >Vc4/0 Vc12 <w>,<x>,<y> E1 Chan/0		
	profile	Nsta/<n> Vgs TProf/0		

### TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) primary rate interface (PRI) trunk profile on Nortel Multiservice Switch 15000 Media Gateway in UA-IP/PT-IP solutions.

This configuration provisions a trunk profile on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. A PRI trunk profile is common to all PRI trunks on a VSP3-o or 2pVSP4e FP card.

The Vt1Dot5 hierarchy and associated links must not have been configured previously.

Review "[TDM PRI trunk profile \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)](#)" (page 274) to understand how these TDM trunk profiles are configured on your nodes.

### TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/sg	ipAddress	<customer defined>	User	
Nsta/<n> Vgs Ctrl/sg Vrap	subnetAccess Name	Vr/<VOIP> PP/NSTA<n >_SG lpp LogicalIf/<i paddress>	User or Calculated	
Nsta/<n> Vgs Ctrl/s g SctpPort/9900	linkToApplicat ion	Nsta/<n> Vgs lua	Preset or Calculated	
Vr/<VOIP> PP/NSTA<n>_SG	linkToMedia	Vm/<v> If/0	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Vm/<v> If/0	linkToProtocol Port	Vr/<VOIP> PP/NSTA<n>_SG	Preset or Calculated	
Vr/<VOIP> PP/NSTA<n>_SG lpp LogicalIf/<ipaddress>	netMask	255.255.255.252	Preset or Calculated	
Nsta/<n> Vgs lua	sctpPortConnection	Nsta/<n> Vgs Ctrl/sg SctpPort/9900	Preset or Calculated	
Nsta/<n> Vgs Q921Prof/0			User	Create only.

### TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (PT-IP)

This section presents the configuration of a time division multiplexing (TDM) primary rate interface (PRI) trunk profile on Media Gateway 15000 in PT-IP solutions.

This configuration provisions a trunk profile on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. A PRI trunk profile is common to all PRI trunks on a VSP3-o FP.

The Ctrl/SG hierarchy and associated links must not have been configured previously.

Review the following to understand how these TDM trunk profiles are configured on your nodes.

### TDM PRI trunk profile (VSP3-o/2pVSP4e) configuration (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/sg	ipAddress	<customer defined>		
Nsta/<n> Vgs Ctrl/sg Vrap	subnetAccess Name	Vr/<VoIP> PP/Vrap lpp LogicalIf/<ipaddress>		
Nsta/<n> Vgs Ctrl/sg SctpPort/9900	linkToApplication	Nsta/<n> Vgs lua		

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs lua	sctpPortConnection	Nsta/<n> Vgs Ctrl/sg SctpPort/9900		
Nsta/<n> Vgs Q921Prof/0				Create only.

### TDM PRI trunk configuration (VSP3-o/2pVSP4e) (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) primary rate interface (PRI) trunk on Nortel Multiservice Switch 15000 nodes in UA-IP solutions.

This configuration provisions a trunk on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards.

The Ctrl/SG hierarchy and associated links must not have been configured previously.

Review "[TDM PRI trunk configuration \(VSP3-o/2pVSP4e\) \(UA-IP\)](#)" (page 276) to understand how these trunks are configured on your nodes.

### TDM PRI trunk configuration (VSP3-o/2pVSP4e) (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	applicationFrameName	Nsta/<n> Vgs Tag/<t>	Preset or Calculated	<v> ranges in value from 0 through 2. <x> ranges in value from 1 through 7. <y> ranges in value from 1 through 4.
	timeslots	<1 to 23>	Preset or Calculated	
Nsta/<n> Vgs Tag/<t>	interfaceName	Laps/<nmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	Preset or Calculated	Instance range is 0 through 16777215. Suggested naming convention is <nmmvxy>.
	profile	Nsta/<n> Vgs TdmNetProf/0	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x >,<y> Ds1 Chan/1	applicationFramerName	Nsta/<n> Vgs Q921/ <q>	Preset or Calculated	
	timeslots	24	Preset or Calculated	
Nsta/<n> Vgs Q921/<q>	interface name	Laps/<nnm m> Sts/<v> Vt1dot5/<x >,<y> Ds1 Chan/1	Preset or Calculated	Instance range is 0 through 83. Therefore, there can be up to 84 instances per OC-3.
	profile	Nsta/<n> Vgs Q921 Prof/0	Preset or Calculated	

### TDM PRI trunk configuration (VSP3-o/2pVSP4e) (PT-IP)

This section presents the configuration of a time division multiplexing (TDM) primary rate interface (PRI) trunk on Nortel Multiservice Switch 15000 nodes in PT-IP solutions.

This configuration provisions a trunk on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards.

The Vt1Dot5 for DS1/Vc12 for E1 hierarchy and associated links must not have been configured previously.

**Note:** Provision an FP card with either OC3 or STM service. Nortel does not recommend provisioning both services on one FP card.

Review the following to understand how these trunks are configured on your nodes.

### TDM PRI trunk configuration (VSP3-o/2pVSP4e) (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/ <v> Vt1dot5/<x>,<y> Ds1 Chan/0	applicationFramerName	Nsta/<n> Vgs Tag/<t>		<v> ranges in value from 0 through 2. <x> ranges in value from 1 through 7. <y> ranges in value from 1 through 4.
	timeslots	1 to 23		

Components	Attributes	Configured values	Expected Audit Results	Notes
or Laps/<nnmm> Vc4 /0 Vc12/<w>,<x>,<y> E1 Chan/0	applicationFramerName	Nsta/<n> Vgs Tag/<t>		where <v>=1...3 <x>=1...7 <y>=1...3
	timeslots	1 to 30		
Nsta/<n> Vgs Tag/<t>	interfaceName	Laps/<nnm m> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0 or Laps/<nnm m> Vc4/0 Vc12/<w>,<x>,<y> E1 Chan/0		Instance range is 0 through 16777215. Suggested naming convention is <nnmmvxy> or <nnmmwxy>
	profile	Nsta/<n> Vgs TdmNetProf/0		
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/1	applicationFramerName	Nsta/<n> Vgs Q921/<q>		
	timeslots	24		
Laps/<nnmm> Vc4/0 Vc12/<w>,<x>,<y> E1 Chan/1	applicationFramerName	Nsta/<n> Vgs Tag/<t>		where <w>=1...3 <x>=1...7 <y>=1...3
	timeslots	31		
Nsta/<n> Vgs Q921/<q>	interface name	Laps/<nnm m> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/1 or Laps/<nnm m> Vc4/0 Vc12/<w>,<x>,<y> E1 Chan/1		Instance range is 0 through 83. Therefore, there can be up to 84 instances per OC-3.
	profile	Nsta/<n> Vgs Q921 Prof/0		

**TDM PRI trunk profile (VSP3) configuration (UA-IP)**

This section presents the configuration of a primary rate interface (PRI) trunk profile on Nortel Multiservice Switch 15000 Media Gateway 15000 in UA-IP solutions. A trunk profile is common to all PRI trunks on a VSP3 FP card.

This configuration provisions a PRI trunk profile on a 2pGeMmSrVsp3 function processor (FP) card.

The Ctrl/SG hierarchy and associated links must not have been configured previously.

Review "[TDM PRI trunk profile \(VSP3\) configuration \(UA-IP\)](#)" (page 279) to understand how these trunk profiles are configured on your nodes.

**TDM PRI trunk profile (VSP3) configuration (UA-IP)**

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Ctrl/sg	ipAddress	<customer defined>	User	
Nsta/<n> Vgs Ctrl/sg Vrap	subnetAccess Name	Vr/<VOIP> PP/NSTA<n> >_ SG lpp LogicalIf/<ip address>	User or Calculated	
Nsta/<n> Vgs Ctrl/sg SctpPort/9900	linkToApplication	Nsta/<n> Vgs lua	Preset or Calculated	
Vr/<VOIP> PP/NSTA<n>_SG	linkToMedia	Vm/<v> If/0	Preset or Calculated	
Vm/<v> If/0	linkToProtocol Port	Vr/<VOIP> PP/NSTA<n> >_ SG	Preset or Calculated	
Vr/<VOIP> PP/NSTA<n>_SG lpp LogicalIf/<ip address>	netMask	255.255.255.252	Preset or Calculated	
Nsta/<n> Vgs lua	sctpPortConnection	Nsta/<n> Vgs Ctrl/sg SctpPort/9900	Preset or Calculated	
Nsta/<n> Vgs BragS/1	localAddress	<NSAP address>	User	ISUP uses BragS/0. If more are needed, they are added manually.

Components	Attributes	Configured values	Expected Audit Results	Notes
	eCan	alwaysOn	Preset or Calculated	
Nsta/<n> Vgs BragS/1 Q921	side	N/A	Preset or Calculated	Use default value of network.

### TDM PRI trunk (VSP3) configuration (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) PRI trunk on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions. On VSP3 FP cards, ISUP and primary rate interface (PRI) trunk settings are common.

This configuration provisions a PRI trunk on a 2pGeMmSrVsp3 function processor (FP) card.

The Vt1Dot5 hierarchy and associated links must not have been configured previously.

Review "[TDM PRI trunk \(VSP3\) configuration \(UA-IP\)](#)" (page 280) to understand how these trunks are configured on your nodes.

### TDM PRI trunk (VSP3) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0..4	applicationFramerName	Aal1Ces/<a>	Preset or Calculated	<v> ranges in value from 0 through 2 <x> ranges in value from 1 through 7 <y> = 1
	timeslots	<all 24>	Preset or Calculated	
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0 Tc			Preset or Calculated	Create only.
Aal1Ces/<a>	interfaceName	Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0..4	Preset or Calculated	Instance range is 1 through 65535.
	serviceType	basicStructured	Preset or Calculated	

Components	Attributes	Configured values	Expected Audit Results	Notes
	remoteEndtype	pvgExclusivePrs	Preset or Calculated	
Aal1Ces/<a> Aep	addressToCall	<value of Nsta/<n> Vgs BragS/0 localAddress>	User	

### TDM PTS trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) Per Trunk Signalling (PTS) trunk profile on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions.

This configuration provisions a TDM PTS trunk profile on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. A trunk profile is common to all PTS trunks using a specific profile on a VSP3-o FP.

The CasDefn structure and associated links must not have been previously configured.

Review "[TDM PTS trunk profile \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)](#)" (page 281) to understand how these trunk profiles are configured on your nodes.

### TDM PTS trunk profile (VSP3-o/2pVSP4e) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs CasDefn/<c>	filename	<PTS profile>	User	There is more than one PTS profile. The instance range is 0 through 24.

### TDM PTS trunk profile configuration (VSP3-o/2pVSP4e) (PT-IP)

This section presents the configuration of a time division multiplexing (TDM) Per Trunk Signalling (PTS) trunk profile on Nortel Multiservice Switch 15000 Media Gateway in PT-IP solutions.

This configuration provisions a TDM PTS trunk profile on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. A trunk profile is common to all PTS trunks using a specific profile on a VSP3-o FP.

The PTS Profile template must be used if PTS trunks are used on the MG15000. The template is used to define the signaling information needed to handle PTS trunks.

The CasDefn structure and associated links must not have been previously configured.

Review the following to understand how these trunk profiles are configured on your nodes.

#### TDM PTS trunk profile configuration (VSP3-o/2pVSP4e) (PT-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs CasDefn/<c>	filename	<PTS profile >		There is more than one PTS profile. The instance range is 0 through 24. Use one of the following pre-defined profiles; ds1SigDtmf, ds1SigMfr1, ds1SigMsMfr1, fxsLsDpdt, gxGsDpdt, nullE1
	primaryRateType	DS1 (default)		Select E1 if this is a E1 trunk type

#### TDM CAS trunk profile configuration (VSP3-o/2pVSP4e) (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) Channel Associated Signalling (CAS) trunk profile on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions.

This configuration provisions a TDM CAS trunk profile on the 2pOC3ChSmlrVsp3-o or 2pOC3ChSmlrVsp4e FP cards. A trunk profile is common to all PTS trunks using a specific profile on a VSP3-o FP.

The CasDefn structure and associated links must not have been previously configured

Review "[TDM CAS trunk profile configuration \(VSP3-o/2pVSP4e\) \(UA-IP\)](#)" (page 283) to understand how these trunk profiles are configured on your nodes.

You can use the NP template audit or Node level configuration audit to verify the integrity of the values in the template and configuration. See "Interpreting audit results" (page 14) for more information.

#### TDM CAS trunk profile configuration (VSP3-o/2pVSP4e) (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs CasDefn/<y>	filename	<CAS profile>		There is more than one CAS profile. The instance range is 0 through 24.
	primaryRateType applicationList	ds1 - Default e1		
	fileTransferStatus	inProgress complete missing fileTooLong fileError cpNotResponding		
Nsta/<n>Vgs Tag/<y>CAS	casDefinition	Supplied by Nortel default: none		
	txSignals rxSignals busyChannels blockedChannels	32 bit unsigned integer initial value: 0 32 bit unsigned integer initial value: 0 0 - 30 0 - 30		counter wraps to 0 when it exceeds it's maximum value counter wraps to 0 when it exceeds it's maximum value
	signalFailureIndications status	32 bit unsigned integer Init value: 0 casNotReady		the operationalState of the CasDefn component linked to by the Cas subcomponent

				of this Tag is currently disabled.
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### TDM PTS trunk configuration (VSP3-o/2pVSP4e) (UA-IP)

This section presents the configuration of a time division multiplexed (TDM) PTS trunk on Nortel Multiservice Switch 15000 Media Gateway in UA-IP solutions. The trunk is configured on the 2pOC3ChSmlrVsp3 or 2pOC3ChSmlrVsp4e FP cards.

The Vt1Dot5 hierarchy and associated links must not have been configured previously.

Review "[TDM PTS trunk \(VSP3-o/2pVSP4e\) configuration \(UA-IP\)](#)" (page 284) to understand how these trunks are configured on your nodes.

### TDM PTS trunk (VSP3-o/2pVSP4e) configuration (UA-IP)

Components	Attributes	Configured values	Expected Audit Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1	lineType	d4Cas and esfCas	User or Preset	<v> ranges in value from 0 through 2 <x> ranges in value from 1 through 7 <y> ranges in value from 1 through 4
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0		Nsta/<n> Vgs Tag/<t>	Preset or Calculated	<v> ranges in value from 0 through 2 <x> ranges in value from 1 through 7 <y> ranges in value from 1 through 4
	timeslots	<all 24>	Preset or Calculated	
	noServiceRes ponse	noRespon se	Preset or Calculated	
Laps/<nnmm> Sts/<v> Vt1dot 5/<x>,<y> Ds1 Chan/0 Tc			Preset or Calculated	Create only.

Components	Attributes	Configured values	Expected Audit Results	Notes
Nsta/<n> Vgs Tag/<t>	interfaceName	Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0 Tc	Preset or Calculated	Instance range is 0 through 16777215. Suggested convention: <nnmmvxy>.
	profile	Nsta/<n> Vgs TProf/0	Preset or Calculated	
Nsta/<n> Vgs Tag/<t> Cas	casDefinition	Nsta/<n> Vgs CasDef n/<c>	User	

### TDM PTS trunk configuration (VSP3-o/2pVSP4e) (PT-IP)

This section presents the configuration of a time division multiplexed (TDM) PTS trunk on Nortel Multiservice Switch 15000 Media Gateway in PT-IP solutions. The trunk is configured on the 2pOC3ChSmlrVsp3 or 2pOC3ChSmlrVsp4e FP cards.

The Vt1Dot5 hierarchy and associated links must not have been configured previously.

Review ["TDM PTS trunk configuration \(VSP3-o/2pVSP4e\) \(PT-IP\)"](#) (page 285) to understand how these trunks are configured on your nodes.

### TDM PTS trunk configuration (VSP3-o/2pVSP4e) (PT-IP)

Components	Attributes	Configured values	Expected Results	Notes
Laps/<nnmm> Sts/<v> Vt1dot5 /<x>,<y> Ds1 or Laps/<nnmm> vc4/0 Vc12/ <w>,<m>,<n> E1	lineType	esfCas		<v> ranges in value from 0 through 2 <x> ranges in value from 1 through 7 <y> ranges in value from 1 through 4 <w> ranges in value from 1 through 3 <m> ranges in value from 1 through 7 <n> ranges in value from 1 through 3

Components	Attributes	Configured values	Expected Results	Notes
Laps/<nnmm> Sts/<v> Vt1 dot5/<x>,<y> Ds1 Chan/0 or Laps/<nnmm> vc4/0 Vc12/ <w>,<m>,<n> E1 Chan/0	applicationFr amerName	Nsta/<n> Vgs Tag/<t>		
	timeslots	<all 24>		
	noServiceRes ponse	noResponse		
Laps/<nnmm> Sts/<v> Vt1 dot5/<x>,<y> Ds1 Chan/0 or Laps/<nnmm> vc4/0 Vc12/ <x>,<y>,<z> E1 Chan/0 Tc				Create only.
Nsta/<n> Vgs Tag/<t>	interfaceNam e	Laps/<nnm m> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0 or Laps/ <nnmm> vc4/0 Vc12/ <x>,<y>,<z> E1 Chan/0		Instance range is 0 through 16777215. Suggested conventio n: <nnmmvxy>.
	profile	Nsta/<n> Vgs TProf/0		
Nsta/<n> Vgs Tag/<t> Cas	casDefinition	Nsta/<n> Vgs CasD efn/<c>		

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## Summary of Multiservice Data Manager server configuration

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When upgrading to new releases of Carrier VoIP software, configure or upgrade the Nortel Multiservice Data Manager (MDM) first, before upgrading Nortel Multiservice Switch 15000 nodes. MDM software is backwards compatible with Multiservice Switch software which means it supports earlier releases of Multiservice Switch 15000 software.

This chapter describes the configurations for MDM servers supported in the PT-AAL1, UA-AAL1, PT-AAL2, UA-IP, and PT-IP solutions. It includes the sections as follows:

- "Boot prompt configuration" (page 288)
- "Remote login configuration" (page 289)
- "IP address to host name mapping configuration" (page 289)
- "Default gateway configuration" (page 291)
- "MDM software license configuration" (page 291)
- "Shared memory segment size configuration" (page 292)
- "Host group directory server configuration" (page 292)
- "MDM server launch (SVMList) configuration" (page 293)
- "General Management Data Router server configuration" (page 300)
- "Security Audit Log Collector (SALC) server configuration" (page 301)
- "Network Time Synchronization system configuration" (page 304)
- "Workstation surveillance configuration" (page 308)
- "MDP user configuration" (page 310)
- "MDP server configuration" (page 310)
- "MDP configuration" (page 312)
- "MDP configuration for File Prober" (page 313)
- "Clean up of the cron file configuration" (page 313)

- "Firewall configuration" (page 314)
- "Policy and role configuration for Operator Client user administration in a VoA network on the MDM Ad" (page 323)
- "Auto-patching of MSS/MG15000 nodes from the MDM" (page 330)

## Boot prompt configuration

Review the following information to understand the initial configuration for Nortel Multiservice Data Manager UNIX workstations.

### Server configuration prompts and attribute values

Prompts	Attributes	Configured values	Notes
Language	English	0	
Version	USA English (ASCII)	0	
Network Interface	Twisted-Pair Ethernet (connector)	hme0 (V480) uplink0 (N240)	The connection between this MDM server and the Communication Server LAN goes across this interface.
Network Interface name		<host name>	This is the host name of the hme0 (V480) or uplink0 (N240) interface.
Network environment		yes	
IP address	MDM server	<xx.xxx.xxx.xxx>	This is the IP address of the MDM server.
Service Name	no service name	none	
Subnet	have subnet	yes	
Netmask	Netmask	<netmask>	
Time zone	Region	<region name>	This is the name of the region where the MDM server is located, for example, Canada.

Prompts	Attributes	Configured values	Notes
	Time zone	<time zone name>	This is the name of the time zone or the offset from GMT where the MDM server is located, for example, eastern time has an offset of +5.
Automatic shutdown	Active	N	N indicates that automatic shutdown is not active.

## Remote login configuration

Review the following information to understand how remote login is configured on Nortel Multiservice Data Manager servers.

### Remote login configuration and attribute values

File	Attributes	Configured values	Notes
/etc/default/login			Edit this file on the MDM server.
	CONSOLE=	#CONSOLE=/dev/console	By default, the root user is not allowed to login from a remote console. Adding a number sign comments the line and allows remote login.  <b>Note:</b> Configure this value when the Solaris software is installed.

## IP address to host name mapping configuration

Review the following information to understand how IP addresses map to host names for Nortel Multiservice Data Manager servers. A sample file appears in "[Sample /etc/hosts file](#)" (page 290).

**Note:** Values for the host names of the interfaces refer to the various ports of MDM servers connected to Nortel Multiservice Switch 15000

nodes. These are configured during the initial installation of MDM software.

#### IP address to host name mapping configuration and attribute values

File	Attributes	Configured values	Notes
/etc/hosts			<p>Edit this file on the MDM server.</p> <p>Entries in this file should correspond to entries made for attribute. Refer to NN10180-611 <i>Nortel Networks MultiService Switch 15000, Media Gateway 15000 and Multiservice Data Manager in Carrier Voice over IP Networks Security and Administration PT-AAL1/UA-AAL1/UA-A-IP</i>.</p>
	Localhost mapping	<xxx.x.x.x> <host name>	<xxx.x.x.x> is the IP address and <host name> is the local host name.
	Remotehost mapping	<x.x.x.x> <hostname>	<x.x.x.x> is the IP address and <hostname> of the redundant MDM server.

**Note:** Configure these values when the Solaris software is installed.

#### Sample /etc/hosts file

```
127.0.0.1 mdm2
127.0.0.1 localhost
47.1.2.3 mdm1 loghost
47.1.2.4 mdm2
```

## Default gateway configuration

Review the following information to understand how the default Nortel Multiservice Data Manager gateway server is configured.

### Default gateway configuration and attribute values

File	Attributes	Configured values	Notes
/etc/defaultrouter			Edit this file on the MDM server.
	Connection Host	<MDM_hme0_ IPAddress> (V480)  <MDM_uplink0_ IPAddress> (N240)	The IP address of the host connection.
<b>Note:</b> Configure these values when the Solaris software is installed.			

## MDM software license configuration

Review the following information to understand how the Nortel Multiservice Data Manager (MDM) software license is configured.

### MDM software license configuration and attribute values

File	Attributes	Configured values	Notes
/etc/opt/Magellan/LICcustName.cfg			Edit this file on the MDM server.
	Customer name	<customer name>	The customer name is your company's name.
/etc/opt/Magellan/LIClicenses.cfg			Edit this file on the MDM server.
	License number	NMS <release number> <customer name>	<release number> is the licence key provided to you by Nortel.  The customer name is your company's name.
<b>Note:</b> Configure these values using the QuickStart tool when the MDM software is installed.			

## Shared memory segment size configuration

Review the following information to understand how shared memory segment size is configured.

### Shared memory segment configuration commands and values

Command	Attributes	Configured values	Notes
/opt/MagellanNMS/system/config/config_sy s_shmem		256	This command creates segments of 32 Mbyte.
/opt/MagellanNMS/system/config/config_sy s_semaphores		50	

**Note:** Configure these values using the QuickStart tool when the MDM software is installed.

## Host group directory server configuration

The Host Group Directory Server (HGDS) provides network management information to Nortel Multiservice Data Manager that describes the system configuration of your network by reporting how Nortel Multiservice Switch 15000 nodes in the network are grouped.

For Multiservice Switch node access, the HGDS maps groups to their member hosts the following and node hostnames to their IP addresses. Then it provides the mapped information to the FMIP management data router (FMDR) on the MDM server. The FMDR process uses this information to login to Multiservice Switch nodes and manage the connections to them.

Review the following information to understand how the host group directory server is configured. Edit this file on the MDM server.

### Host group directory configuration component and attribute values

Attributes	Configured values	Notes
FGroup:	<cli>	The group name for the office is represented by the CLLI. This is used for real time statistics collection, MDM surveillance and command access. There may be multiple FGroups; one for each office.

**Note:** You can configure these values using the MDM Server Administration tool.

Attributes	Configured values	Notes
FMember:	<node name>	The node name identifies each node by name. These names are the same ones that are defined in the <i>/etc/hosts</i> file.  An FMember must be specified for each Multiservice Switch node.
IPAddress:	<xxx.x.x.x>	<xxx.x.x.x> is the IP address of the FMember.  An IPAddress must be specified for each Multiservice Switch node.
Member	<node name>	The lists of the nodes that are associated with the FGroup.

**Note:** You can configure these values using the MDM Server Administration tool.

## MDM server launch (SVMList) configuration

Review the following information to understand how Nortel Multiservice Data Manager server launches are configured.

Use SVMadm to configure servers. To manage the MDP servers, you must also use the Server Administration tool (SVMadm), see "[MDP server configuration](#)" (page 310).

For more information about the servers listed in the following table, see *241-6001-310 Nortel Multiservice Data Manager Server Reference*.

### SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
Backup Controller	/opt/MagellanNMS/bin/nsctlbck	The Backup Controller receives requests from the MSS/MG15000s and SNMP Backup tools (GUI and CLI) and connects to the PP Backup Provider. The Backup Controller and PP Backup Provider must be started as a pair. This server is required on the MDM server set. It is not required on the client set.

**Note:** You can configure these values using the MDM Server Administration tool.

Attributes	Configured values	Notes
Communication Manager (FDTM)	/opt/MagellanNMS/bin/fdtm -offset <offset from UTC> -reConnTime 10 -ping 2 -msgTransTime 10 -connHeartBeatTime 15	The offset value is the time difference between Coordinated Universal Time (UTC) and the time on this MDM workstation. This time difference is expressed in minutes (0 to 1440) and must be specified as though you are travelling around the globe in an easterly direction starting at UTC. The offset value that you enter will vary depending upon the time zone in which the node is located.  This server is required on the MDM server set. It is not required on the client set.
Context server	/opt/MagellanNMS/bin/ctxsvr	This server is required on the MDM server set and client set.
Data management agent (dma)	/opt/MagellanNMS/bin/dma -f	Supports global alarm clear. The file /opt/MagellanNMS/cfg/DmaClrPP.cfg must be present and filled.
Data Synchronization Server	/opt/MagellanNMS/bin/dataSyncServer	Supports the MSS Service Data Backup/Restore tool. Required on the server set only.
Data Viewer Agent (PMAGENT)	/opt/MagellanNMS/bin/pmagent	This server is required on the MDM server set. It is not required on the client set.
Fault Dev Access Agent (psvagent)	/opt/MagellanNMS/bin/psvagent	/opt/MagellanNMS/bin/psvagent
<b>Note:</b> You can configure these values using the MDM Server Administration tool.		

Attributes	Configured values	Notes
FMDR(s)	<pre> /opt/MagellanNMS/bin/fmdr -u &lt;MDM ID for Carrier VoIP office&gt; -p /opt/MagellanNMS/cfg/private/ &lt;password file&gt; -g &lt;CLLI group&gt; -l AL </pre>	<p>&lt;MDM ID for Carrier VoIP office&gt; is the surveillance user ID defined on the Multiservice Switch 15000 shelves.</p> <p>&lt;password file&gt; is the file that contains the encrypted MDM passwords for the Multiservice Switch 15000 node user ID, for the office.</p> <p>&lt;CLLI group&gt; reflects the HGDS group (defined earlier) used for surveillance of the office.</p> <p>This server is required on the MDM server set. It is not required on the client set.</p>
General Management Data Router (GMDR)	<pre> /opt/MagellanNMS/bin/gmdr /opt/MagellanNMS/bin/gmdr -W 30 </pre>	<p>GMDR with the option -W allows you to specify a window (in seconds) such that if all subservers report a loss of connection to a device within that window then a LOSS of connection is declared regardless of any reconnection messages received.</p> <p>-W argument 30 depends on the FDTM parameters being <math>\text{msgTransTime} + \text{connHeartBeatTime} = &lt; W</math></p> <p>This server is required on the MDM server set. It is not required on the client set.</p>
GMDRAGENT	<pre> /opt/MagellanNMS/bin/gmdragent </pre>	<p>GMDRAGENT provides the interface between the Operator Client and GMDR server to access alarm information, alarm counts, and status counts for devices in the network.</p>
<p><b>Note:</b> You can configure these values using the MDM Server Administration tool.</p>		

Attributes	Configured values	Notes
Host Group Directory Server HGDS	/opt/MagellanNMS/bin/hgds	This server is required on MDM server set. It is not required on the MDM client set.
idi_PP8600DCD	/opt/MagellanNMS/ext/lib/macros/idi_PP8600dcd -d 1	MDM server-set or standalone system only.
IP Discovery Server (ipdsvr)	/opt/MagellanNMS/bin/ipdsvr	This server is used for ERS 8600 enrolment.
Log collector (OAMC)	/opt/MagellanNMS/bin/oamc -logfile ALL	This server is required on MDM server set and client set.
MNSD agent	/opt/MagellanNMS/bin/mnsdagent	This server is required on the MDM server set and client set.
MNSD level 2	/opt/MagellanNMS/bin/mnsd -2 <MDMhost1> <MDMhost2>	MNSD level 2 communicates with the remote MDM hosts to track the service name and socket number of their server processes. It feeds the information to MNSD agent and allows an application to connect to the server remotely and automatically.
MSS Command Access Server	/opt/MagellanNMS/bin/eteserver -n PPAccessServer -p 6601	This server is required on the MDM server set. It is not required on the client set.
MSS Config Model Server	/opt/MagellanNMS/bin/pcms	This server is required for the MDM server set.
Network Data Access Mediator (NDAM)	/opt/MagellanNMS/bin/ndam	This server is required on the MDM server set. It is not required on the client set.
Network Model co-ordinator	/opt/MagellanNMS/bin/dnmnmc	This server is required on the MDM server set. It is not required on the client set.

**Note:** You can configure these values using the MDM Server Administration tool.

Attributes	Configured values	Notes
Network Model edit server	/opt/MagellanNMS/bin/edserver	This server is required on the MDM server set. It is not required on the client set.
Network Model server	/opt/MagellanNMS/bin/nmserver -c 5000	This server is required on the MDM server set. It is not required on the client set.
Network Model Surveillance updater	/opt/MagellanNMS/bin/surnup	This server is required on the MDM server set. It is not required on the client set.
NMAGENT	/opt/MagellanNMS/bin/nmagent	NMAGENT provides the interface between Operator Client and Multiservice Data Manager Network Model server to provide information about the states of components and devices in the network.
NP configuration manager	/opt/MagellanNMS/bin/configman -cfgSAL -cfgSAL - port 3463	This server is needed on the MDM server set. It is not needed on the client set.  -port 3463 applies only if SunScreen is deployed.
NP configuration server	/opt/MagellanNMS/bin/pcserver	This server is required by the MDM server set. It is not required by the client set.
Performance Measurement Stream Processor PMSP <b>Note:</b> This server is required for server-set and stand-alone MDMs only. PMSP is not required for the MDM Admin Server.	/opt/MagellanNMS/bin/pmsp -u <MDM ID for Carrier VoIP office> -p /opt/MagellanNMS/cfg/private/<password file> -g <CLLI group> -ppexpire 30 -nosync -hgds -officeId <Carrier VoIP office CLLI> -5port <5 min TCP port> -30port <30 min TCP port>	<MDM ID for Carrier VoIP office> is the user ID used to collect real-time performance data. This user ID is defined on Multiservice Switch 15000 shelves.  <password file> is the file that contains the encrypted MDM passwords for the Multiservice Switch 15000 node user ID, for the office.

**Note:** You can configure these values using the MDM Server Administration tool.

Attributes	Configured values	Notes
	-savefile	<p>&lt;CLLI group&gt; reflects the HGDS group (defined earlier) used to collect real-time performance data, for the Carrier VoIP office.</p> <p>&lt;Carrier VoIP office CLLI&gt; is the name of the office that appears in the performance records.</p> <p>&lt;5 min TCP port&gt; is the IP socket number where the 5-minute records are available.</p> <p>&lt;30 min TCP port&gt; is the IP socket number where the 30-minute records are available.</p> <p>This server is required on the MDM server set. PMSP runs on selected systems. It is not required on the client set.</p>
PP Backup Provider	/opt/MagellanNMS/bin/pbckpp	This server is required on the MDM server set. It is not required on the client set. The Backup Controller and PP Backup Provider must be started as a pair.
PP Restore Provider	/opt/MagellanNMS/bin/prstpp	This server is required on the MDM server set. It is not required on the client set. The Restore Controller and PP Restore Provider must be started as a pair.
<p><b>Note:</b> You can configure these values using the MDM Server Administration tool.</p>		

Attributes	Configured values	Notes
<p>pserver</p> <p><b>Note:</b> This server is required for server-set and stand-alone MDMs only. The pserver is not required for the MDM Admin Server.</p>	<pre>/opt/MagellanNMS/bin/pserver -m -e 3197 /opt/MagellanNMS/ bin/gmdrapi -h localhost</pre>	<p>This is used to communicate alarms to the SDM. The -h option specifies the host where the gmdrapi is running.</p> <p>This is used to communicate alarms to the SDM. The -h option specifies the host where the gmdrapi is running.</p> <p>This server is required on the MDM server-set. It is not required on the client-set.</p>
Real time alarm collection	<pre>/opt/MagellanNMS/bin/rtaccol -filecleanup10</pre>	This server is required on the MDM server set. It is not required on the client set.
Restore Controller	<pre>/opt/MagellanNMS/bin/nsctlrst</pre>	This server is required on the MDM server set. It is not required on the client set. The Restore Controller and PP Restore Provider must be started as a pair. The Restore Controller receives requests from the MSS/MG15000s and SNMP Backup tools (GUI and CLI) and connects to the PP Restore Provider.
RTACAGENT	<pre>/opt/MagellanNMS/bin/rtacagent</pre>	RTACAGENT provides the interface between Operator Client and Real Time Alarm Collection (RTAC) server to access archived information about alarms for devices in the network.
<p><b>Note:</b> You can configure these values using the MDM Server Administration tool.</p>		

Attributes	Configured values	Notes
SALCserver	<pre> /opt/MagellanNMS/data/log/salcserver and /opt/MagellanNMS/data/security  For example: SALC Server_sys_iems  /opt/MagellanNMS/bin/salcserver -OAMCFacility local3 -passportF acility local3 -outputSyslog &lt;iems ipaddress&gt; logFile DEBUG, INFO, NOTICE, CLEARED, WARN, ERROR, CRIT, ALERT, FATAL -name sys_iems  SALC Server_cust_iems  /opt/MagellanNMS/bin/salcserver -OAMCFacility local1 -passportF acility local1 -outputSyslog &lt;iems ipaddress&gt; outputFile -logFile DEBUG, INFO, NOTICE, CLEARED, WARN, ERROR, CRIT, ALERT, FATAL -name cust_iems -nodeld &lt;current mdm workstation&gt; </pre>	The logs are found in both of these directories.
SecureFTPD	/opt/MagellanNMS/bin/launchSecureFTPD	This server is required on the MDM server set. It is not required on the client set.
SMDR	/opt/MagellanNMS/bin/smdr	MDM server-set or standalone system only.
TSVR	/opt/MagellanNMS/bin/tsvr	MDM server-set or standalone system only.
Workstation Surveillance	/opt/MagellanNMS/bin/sfm	This server is required on the MDM server set and client set.
<b>Note:</b> You can configure these values using the MDM Server Administration tool.		

## General Management Data Router server configuration

Review the following information to understand how both the FMDR, OAMC, and SMDR, which make up the general management data router servers, are configured.

For more information on the GMDR, 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* and *241-6001-310 Nortel Multiservice Data Manager Server Reference*.

#### General Management Data Router server configuration and attribute values

Name	Host	Notes
FMDR_xxx	(local host)	xxx is the name provided in the MDM Server Administration tool. Repeat for each office.
FMDR_xxx	(remote host)	Requires a node user ID and password. Repeat for each office on the remote MDM server.
OAMC	(local host)	User capability left blank. To operate correctly, OAMC must connect to GMDR.
OAMC_xxx	(remote host)	Password left blank. Repeat for each remote MDM server in the network.
SMDR	(local host)	User capability and password left blank.
SMDR	(remote host)	User capability and password left blank.

**Note:** You can configure these values using the MDM GMDR Administration tool.

#### Security Audit Log Collector (SALC) server configuration

For each Carrier VoIP office, there is one SALC server configured on an MDM server platform. FMDR servers are added to each node cross feeding their alarms and log streams to each SALC server to provide redundant log information from the network. As well, MSS SAL records are captured from FMDR to SALC. The OAMC servers deliver security information about the MDMs to each SALC server process. The SALC server can be configured to send security audit logs in custlogV2 format to an SDM running SN08 or higher.

SALC server now has -name and -nodeId command line options. The -name option allows multiple SALC server processes to run independently and it affects the configuration file the SALC server reads as well as the target log files it creates. The -nodeId option identifies the nodeId in the log records from where the logs are sent. It also triggers the SALC server to change the log output format to custlogV2.

SALC server configuration requires a node access level of system administrator. If the FMDR userid is set to a level lower than system administrator, it needs to be modified.

Review the following information to understand the recommended SALC server command line options. See "[Security Audit Log \(SALC\) server configuration and attribute values](#)" (page 302).

For more information on SALC, 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* and *241-6001-310 Nortel Multiservice Data Manager Server Reference*.

### Security Audit Log (SALC) server configuration and attribute values

Option	SDM1	SDM N <sup>1</sup>	IEMS 1	IEMS N <sup>2</sup>	No Northbound
-OAMCFacility <sup>3</sup>	local1	local1	1) local1 2) local3	1) local1 2) local3	not used
-passportFacility <sup>4</sup>	local1	local1	1) local1 2) local3	1) local1 2) local3	not used
-queue <sup>5</sup>	5000	5000	5000	5000	5000
-outputSyslog <sup>6</sup>	W=<SDM1 name or address>	X=<SDM N name or address>	Z=<IEMS name or address>	Z=<IEMS N name or address>	not used
-outputFile <sup>7</sup>	yes	not used	1) yes	1) not used	yes
-logFile <sup>8</sup>	yes	yes	1) yes 2) yes	1) yes 2) yes	yes

**Note:** You can configure these values using the MDM GMDR Administration tool.

1. Any other SDM being fed by the same pair of MDMs.
2. Any other IEMS being fed by the same pair of MDMs.
3. Specifies how to handle security audit logs originated by the MDM. The default is local0.
4. Specifies how to handle security audit logs originated by MSS15000/MG15000. The default is local1.
5. Specifies how many security audit logs should be held to detect duplicates. The default is 5000.
6. Specifies one or more destinations for the security audit log stream. The default is localhost.
7. The default is "security.nlog". When -name is used, then the format is "security\_<name options value>.nlog".
8. The default is "salcserver.log". When -name is used, then the format is "salcserver\_<name options value>.log".

Option	SDM1	SDM N <sup>1</sup>	IEMS 1	IEMS N <sup>2</sup>	No Northbound
-name	custlog.<W>	custlog.<X>	1) custlog.<Y> 2) syslog.<Y>	1) custlog.<Z> 2) syslog.<Z>	not used
-nodeID	<local MDM name or address>	<local MDM name or address>	1) <local MDM name or address> 2) not used	1) local MDM name or address 2) not used	not used

**Note:** You can configure these values using the MDM GMDR Administration tool.

1. Any other SDM being fed by the same pair of MDMs.
2. Any other IEMS being fed by the same pair of MDMs.
3. Specifies how to handle security audit logs originated by the MDM. The default is local0.
4. Specifies how to handle security audit logs originated by MSS15000/MG15000. The default is local1.
5. Specifies how many security audit logs should be held to detect duplicates. The default is 5000.
6. Specifies one or more destinations for the security audit log stream. The default is localhost.
7. The default is "security.nlog". When -name is used, then the format is "security\_<name options value>.nlog".
8. The default is "salcserver.alog". When -name is used, then the format is "salcserver\_<name options value>.alog".

### SALC configuration file

A SALC server configuration file specifies the servers from which security audit logs should be retrieved.

The following information is required for SALC server configuration:

- FMDR entry for the <local> MDM platform
- FMDR entry for the <mate> MDM platform
- OAMC entry for the <local> MDM platform
- OAMC entry for the <mate> MDM platform

The following information is optional for SALC server configuration:

- OAMC for <client-set> platform
- OAMC for <admin server> platform

An example SALC configuration for OAMC and FMDR servers running on MDM is shown below:

```
Hostname: <local>
Servername: OAMC
```

```
Hostname: <mate>
Servername: OAMC

Hostname: <local>
Servername: FMDR_PPTEST
UserID: <userid>
Password: <password>
Emcrypted Password: xxxxxxxxxxxxxx

Hostname: <mate>
Servername: FMDR_PPTEST
UserID: <userid>
Password: <password>
EncryptedPassword: xxxxxxxxxxxxxx
```

## Network Time Synchronization system configuration

Network Time Synchronization (NTS) refers to the synchronization of the time-of-day on Nortel Multiservice Data Manager servers and Multiservice Switch nodes. This synchronization ensures that the clocks on the servers and nodes have a consistent time-of-day and that all accounting records, alarms, statistics, and logs bear a consistent timestamp.

MDM Release 15.3 uses Solaris NTP software to perform Network Time Synchronization. It uses the Solaris NTP software that is part of the SUNWnptr and SUNWnptu packages to do this. When the SUN NTP software is installed, MDM servers and Multiservice Switch nodes in the network form a timing hierarchy in which each device obtains its time-of-day from a time source and, optionally, acts as a time source for one or more other devices in the network.

The Solaris NTP software is configured to provide time-of-day synchronization for:

- MDM server-sets that are providing time-of-day synchronization for MSS/MG15000 switches
- MDM server-sets that are being synchronized to customer-provided time-of-day synchronization servers
- MDM server-sets that are time-of-day synchronization peers to each other

For information on configuring the Solaris NTP software, see "[Configuring Solaris NTP software](#)" (page 305).

To simplify NTP configuration for MDM servers that have SPFS installed, the SPFS NTP Configuration option can be used for:

- MDM consolidated management (CM) servers
- MDM client-set servers

For information on using the SPFS NTP Configuration option, 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*.

For more information on the NTS system, see *241-6001-303 Nortel Multiservice Data Manager Administration*.

**Note:** The NTS system synchronizes the time-of-day on MDM servers and Multiservice Switch nodes. Network clock synchronization (NCS) is responsible for clocking on synchronous data links but not with synchronizing the time-of-day.

### Configuring Solaris NTP software

The Solaris synchronization executable is located in directory `/etc/init.d/xntpd`. The file that defines the configuration of the synchronization process is `/etc/inet/ntp.conf`. The process automatically starts at system restart by the `/etc/rc2.d/S74xntpd` executable, if the file `/etc/inet/ntp.conf` exists.

### Setting up the NTP configuration

To set up the NTP configuration, proceed as follows, using UNIX commands:

Step	Action
1	Copy the file <code>ntp.server</code> to <code>ntp.conf</code> , using a UNIX command as follows:  <pre>cp /etc/inet/ntp.server /etc/inet/ntp.conf</pre>
2	Edit the <code>ntp.conf</code> file to set a particular server as the timing reference, as follows: <ol style="list-style-type: none"> <li>Find the line that begins with "server 127.127". Change it to:  <pre>server &lt;ip address of clocking source&gt; prefer</pre> For example, where the IP address is 127.127.1.1, change it as follows:  <pre>server 127.127.1.1 prefer</pre> </li> <li>The MDM server can be in a peer relationship, also known as a server set, with another MDM server. In that case, the <code>ntp.conf</code> file must exist on each of the servers. Each <code>ntp.conf</code> file must specify the IP addresses of both servers. Use the syntax as follows:   <pre>server &lt;ip address of clocking source&gt; prefer peer &lt;ip address of MDM server 1&gt;</pre> </li> </ol>

```
peer <ip address of MDM server 2>
```

- 3 Using the comment character (#), comment out the line that begins with "fudge 127.127".
- 4 Using the comment character (#), comment out the line that begins with "broadcast".
- 5 Using the comment character (#), comment out the lines that contains the encryption keys.

**Note:** If you do not comment out these key lines, the default value of 0 allows anyone to access the workspace and set the clock.

- 6 Save the file.

An example of an ntp.conf file is as follows:

```
server <ip address of clocking source> prefer
peer <ip address of MDM server 1>
peer <ip address of MDM server 2>
#fudge 127.127.XType.0 stratum 0
#broadcast 224.0.1.1 ttl 4
#trustedkey 0
#requestkey 0
#controlkey 0
```

---

—End—

---

### Set up the drift file

Set up the drift file. The drift file contains the oscillator frequency offset of the clocking source. If you know the oscillator frequency offset, enter it in this file. Otherwise, enter 0, and the XNTP daemon determines it automatically. It just takes a little longer for the time to stabilize to a consistent value.

---

#### Step Action

---

- 1 Edit the file /etc/inet/ntp.drift.
- 2 Enter the value of the oscillator frequency offset, if you know it. Otherwise, enter 0.
- 3 Save the file.

---

—End—

---

### Setting up file permissions and owner

Set up permissions for the configuration and drift files:

---

#### Step Action

---

- 1 Change the file permissions for the files ntp.conf and ntp.drift to 500.
- 2 Change the owner of both the files to root.

---

—End—

---

### Starting the server

Start the server, or XNTP daemon.

---

#### Step Action

---

- 1 Enter the command as follows:

```
/etc/init.d/xntpd start
```

The next time the system restarts, the server starts automatically.

**Note:** To query the ntpd configuration, and the ntpd status, enter the command as follows:

```
ntpq
```

---

—End—

---

See the table "Network time synchronization system configuration and attribute values" (page 307) to understand how the Network Time Synchronization system is configured.

**Note:** You can use the UNIX vi editor to configure these values.

#### Network time synchronization system configuration and attribute values

File	Attributes	Configured values	Notes
/etc/inet/ntp.conf			Create and edit this file on the MDM server.

File	Attributes	Configured values	Notes
	external clocking device server	server <xxx.x.x.x> prefer	<xxx.x.x.x> is the IP address of the external clocking device.  "prefer" indicates that this is the preferred clocking source.
	alternate clocking sources server	server <xxx.x.x.x>	<xxx.x.x.x> is the IP address of the alternate clocking servers
	MDM peer	peer <xxx.xxx.x.x>	<xxx.xxx.x.x> is the IP address of the peer MDM server, for servers in a server set.
	trustedkey	# trustedkey 0	Prevents unauthorized access to encryption keys.
	requestkey	# requestkey 0	
	controlkey	# controlkey 0	
	broadcast mode	# broadcast 224.0.1.1 ttl 4	Comment out this line.
	additional clock information	# fudge 127.127.XTy pe.0 stratum 0	Comment out this line.
/etc/inet/ntp.drift			Edit this file on the MDM server.
		<oscillator frequency offset>  0	If known.  Otherwise enter 0.

## Workstation surveillance configuration

The configuration of workstation surveillance permits the integrated surveillance of Nortel Multiservice Data Manager servers to ensure that a single hardware or software failure does not jeopardize Multiservice Switch system OAM. Workstation surveillance involves monitoring the usage of:

- the CPU, disks, and memory
- the state of the physical ports on the servers
- the connectivity between MDM servers
- the state of MDM software processes

Review the following information to understand how MDM workstation surveillance is configured.

#### Workstation surveillance configuration and attribute values

File	Configured values	Notes
/opt/MagellanNMS/cfg/SFM.cfg		Edit this file on the MDM server.
	Interval 30	
	CPU_Load Minor 70	Threshold for percentage of workstation CPU usage, minor alarm.
	CPU_Load Major 80	Threshold for percentage of workstation CPU usage, major alarm.
	CPU_Load Critical 90	Threshold for percentage of workstation CPU usage, critical alarm.
	Mem_Minor 80	Threshold for percentage of virtual memory usage, minor alarm.
	Mem_Major 90	Threshold for percentage of virtual memory usage, major alarm.
	Mem_Critical 95	Threshold for percentage of virtual memory usage, critical alarm.
	FS_Minor 80	Threshold for percentage of disk usage, minor alarm.
	FS_Major 90	Threshold for percentage of disk usage, major alarm.
	FS_Critical 95	Threshold for percentage of disk usage, critical alarm.
	Manage_FS /var /localdisk /tmp	The file system to be managed by the MDM. A space separates each file in the SFM configuration file.
	Local_Port_Connection <ipaddresses>	IP addresses for local workstation where connectivity should be monitored. A space separates each address in the SFM.cfg file.

File	Configured values	Notes
	Remote_Connection <ipaddresses>	IP addresses for remote workstation where connectivity should be monitored. This should include the case where the remote workstation is an MDM running the SPFS Network Patch Manager (NPM) that is used for patching the local SPFS-based system. A space separates each address in the SFM.cfg file.
<b>Note:</b> Configure these values using the /opt/MagellanNMS/bin/SFM_config script.		

## MDP user configuration

Review the following information to understand how MDP users are configured.

### MDP group configuration and attribute values

File	Attributes	Configured values	Notes
/etc/group			Edit this file with the Solaris Management Console.
	MDP group name	mdpgroup	Identifies the mdp administration group.
	MDP group userids	mdpadmin, mdpprobe	Identifies the mdp group member userids.
<b>Note:</b> Configure these values using the QuickStart tool when the MDM software is installed.			

## MDP server configuration

Review the following information to understand how to configure MDP servers. It lists the MDP servers that must be active.

To configure MDP servers, use the Server Administration tool (SVMadm). You must ensure that the MDP servers start in the correct order.

The following servers do not depend on other servers and can start in any order:

- MDP Disk Manager (mdpdiskmgr)
- MDP File Mover Manager (mdpfmmgr)
- MDP MSS Data Model Manager (mdpdm)

Some servers depend on other servers. These servers must start in a particular order. These servers include servers that manage file acquisition from Nortel Multiservice Switch nodes or that clean up disks so the workstation does not run out of file space. They are as follows:

- MDP File Prober Manager (mdpfpmgr). It requires:
  - the MDP MSS Data Model Manager and HGDS. This is the most important dependency. The MDP Data Model Manager and the HGDS must be running BEFORE this server starts. The activation describes a sane startup order for the servers.
  - the MDP MSS File Manager, for conversion of MSS files from fast management information protocol (FMIP) to BDF
  - the MDP File Mover Manager, to transfer files to the OSS.
- the MDP MSS File Manager (mdpppmgr). It requires:
  - the MDP MSS Prober Manager, to acquire node data.
  - the MDP Disk Manager, to manage disk space.
  - the MDP File Mover Manager, to transfer files to operational support systems (OSSs), and so on.

**Note 1:** Only active on MDM servers that are running the MDP application.

**Note 2:** MDP is running on selected MDM server-set systems.

**Note 3:** Use SVMadm to configure servers.

#### MDP server configuration

Attributes	Configured values	Notes
MDP Data Model Manager	/opt/MagellanMDP/bin/mdpdmm	MDP Data Model Manager identifies Multiservice Switch 15000 data models and determines if the data model exists on the MDP host. Manages the MDP daemon.  This server is not required on the MDM server set unless PM is running. Configuration daemon is not required on the client set.
MDP Disk Manager	/opt/MagellanMDP/bin/mdpdiskmgr	Disk Manager manages the disk space by deleting old files.  This server is not required on the MDM client set.

Attributes	Configured values	Notes
MDP File Mover Manager	/opt/MagellanMDP/bin/mdpfmmgr	MDP File Mover Manager manages the MDP File Mover.  This server is not required on the MDM client set.
MDP MSS File Manager	/opt/MagellanMDP/bin/mdppmgr	MDP MSS File Manager manages the access to the Multiservice Switch 15000s.  This server is not required on the MDM server set unless PM is running. MSS Manager is not required on the client set.
MDP MSS Prober Manager	/opt/MagellanMDP/bin/mdpfpmgr	MDP File Prober Manager controls the process that probes the Multiservice Switch 15000 for spooled information.  This server is not required on the MDM server set unless PM is running. File Prober Manager is not required on the client set.

## MDP configuration

Review the following information to understand how to configure Management Data Provider (MDP). For configuration tabs not listed in this table, use the defaults. To configure File Prober, see "[MDP configuration for File Prober](#)" (page 313).

### MDP configuration and attribute values

Executable	MDP configuration tabs	Configured values	Notes
/opt/MagellanMDP/bin/gmdpconfig			This is an executable that populates the following files with configuration data.
	Disk Manager	<customer defined>	
	Setup hosts	<customer defined>	
	MSS	Alarm Log SCN	For Convert raw files to BDF in dump directories, check each of the configured values.
		Alarm Log SCN	For BDF field delimiter, type colons (:) for the configured values.

Executable	MDP configuration tabs	Configured values	Notes
	Surveillance		Check Enable MDP to send MDM alarms.
	File Mover	Remote MDM name	Check the FTP destination directory, and use the following files:  /opt/MagellanMDP/data/mdp/dump/alarm  /opt/MagellanMDP/data/mdp/dump/scn  /opt/MagellanMDP/data/mdp/dump/log

## MDP configuration for File Prober

Review the following information to understand how to configure File Prober.

### File Prober configuration

Host	Configured values	Notes
Host1	ala log scn	In the Collection Time tab, set each configured value (ala, log, scn) as follows:  Every day on: all, all, all  Month: all, all, all  Hour: 0, 0, 0  Minute: 0, 15, 30
<b>Note:</b> Configure these values using the Management Data Provider Configuration tool.		

## Clean up of the cron file configuration

Review the following information to understand how regular clean up of the records in the root cron file are configured.

### File cleanup cron jobs configuration and attribute values

Attributes	Configured values	Notes
PMSP file cleanup	30 0 * * * (cd /opt/MagellanNMS/data/pmsp; /bin/rm -find . -name "*.csv" -mtime +1 -print)	The cron file for deleting temp PMSP files over a day old
<b>Note:</b> Configure these values by editing the crontab file using the crontab -e command.		

Attributes	Configured values	Notes
	40 0 * * * (cd /opt/MagellanNMS/data/pmsp; /bin/rm find . -name "*.THIRTY.CSV" -mtime +10 -print)	The cron file for deleting 30-minute PMSP files older than 10 days
	50 0 * * * (cd /opt/MagellanNMS/data/pmsp; /bin/rm find . -name "*.FIVE.CSV" -mtime +5 -print)	The cron file for deleting 5-minute PMSP files older than 5 days
MDMlogclean	55 0 * * * /opt/MagellanNMS/bin/mdmlogclean	The cron file, which is run daily, to delete MDM log files.
<b>Note:</b> Configure these values by editing the crontab file using the crontab -e command.		

## Firewall configuration

Review the following information to understand how the firewall has been configured to allow data to pass.

### Prerequisite

Restrict the range of dynamically allocated IP ports by creating the following file.

Step	Action
1	Using editor: vi /opt/MagellanNMS/cfg/private/IPCPortRange.cfg
2	Set the range of values: 11200 11700.
3	Save and close.
4	Link MDM servers to specific ports: vi /opt/MagellanNMS/cfg/private/IPCNameMap.cfg
5	Set the values: NMAGENT 3456 RTACAGENT 3457 GMDRAGENT 3458 CCAGENT 3459 PSVAGENT 3460 NSVAGENT 3461 PMAGENT 3462 CONFIGMAN 3463

6 Save and close the file.

---

—End—

---

### Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
apache	8080 8443  8090	configurable	Used by MDM Apache server when SPFS is not installed.  Used by MDM Apache server when SPFS is installed to prevent conflict with the SPFS WEBSERVER using port 8080.
Configman	6760 (for Operator Client desktop port 3463)	configurable	Used by the nodal provisioning application to communicate with Configman. Called by another MDM workstation nodal provisioning application, or internally on the server set.
DBsync Controller	5757		
FDTTr	>1024	dynamic configurable	Used for inter-process communication between MDM servers and nodes. The range is specified with an entry in <i>/opt/MagellanNMS/cfg/private/IPCPortRange.cfg</i> (The entry is the range allowed by the server).  FDTTr is called by MDM client set to the server set, and by the server set to the node (3 connections per node, 2 per client).

Port name	Port number	Configurable or fixed values	Notes
FMDR	IPI	configurable	Used in the node fault stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation Component Information Viewer application.
FMIP	5928		MDM/MSS/MG communications
FTP	20, 21		FTP between MDM servers and OSS, or another MDM server. Called by OSS. Can also be used to communicate with another MDM server or with nodes (where secure FTP is not deployed).
gmdpconfig	1099		For MDP communication
GMDR	3458	configurable	Used in the node fault stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation Component Information Viewer application.

Port name	Port number	Configurable or fixed values	Notes
HGDS	IPI	configurable	Used in the node connection stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation Command Console application.
Http server	80		Used by tomcat server. Internal to all MDM servers.
IPI	>1024 11200-11700	dynamic configurable	Used for inter-process communication between MDM servers and nodes. The range is specified with an entry in <i>/opt/MagellanNMS/cfg/private/IPCPortRange.cfg</i> (The entry is the range allowed by the server.)  IPI is internal to all MDM servers.  For MDM/MSS/MG communications, ports 11200-11700.
LDAP			
mdmftpd	2374	fixed	For secure FTP port. On MDM server set. Call out to node, called by node.
MDM help	8081	fixed	Used by the Help server to provide context sensitive help, local to the MDM server. Internal to MDM client set.

Port name	Port number	Configurable or fixed values	Notes
MNSD	5502 5503	fixed	Stores server port number and service names. Allows MDM servers to communicate with each other. Called by other MDM workstation MNSDagents.
MNSDagent	5934	configurable	Allows MDM applications to request port numbers for other applications from the MNSD server.
Network Model (NAGENT)	3456	configurable	Used in the node fault stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation Network Viewer application.
NFS	2049		Used to exchange Sun disk partitions between MDM servers. Called by another MDM server.
nsvagent	3461		For MDM/Operator Client desktop
NTP	123		MDM/MSS/MG communications

Port name	Port number	Configurable or fixed values	Notes
OAMC (formerly IMDR)	IPI	configurable	Used in the node fault stack. It is configurable by specifying the entry in /opt/MagellanNMS/lib/cfg/IPCNameMap.cfg. Used internally in MDM server sets and MDM Admin Servers. Can be called by another MDM workstation GMDR_sub.
pbckpp	5020	configurable	Called by the nsctlbck server (internal to MDM server set).
pcms	pcms	configurable	MSS Configuration Model Server administers the allocation of node provisioning models for nodal provisioning applications. Used internally in MDM server set.
pcserver	6767		pcserver is used by Configman to communicate with the MSS Configuration server. Used internally on the MDM server set.
ping	9595		Used between MDM servers and nodes to determine if the node is reachable. node connectivity, and called by MDM server set.

Port name	Port number	Configurable or fixed values	Notes
pmagent	5505 3462	configurable	Used for Data Viewer tool to communicate with its daemon.  It is configurable by specifying the entry in /opt/MagellanNMS/lib/cfg/IPCNameMap.cfg.  Used internally in the MDM server set, or called by Data Viewer tool.  For Operator Client desktop use port 3462.
PMSP	1646 1647	configurable configurable	For 5-minute and 30-minute NTM CSV records. Use one pair of port addresses per PMSP server on the MDM. On the MDM server set this port set communicates with the SDM or the Integrated EMS.
prstpp	5021	configurable	Called by the nsctlrst server (internal to MDM server set).
pserver	3197	configurable	You should only configure the port on the MDM server set. This port: <ul style="list-style-type: none"> <li>Communicates alarms to SDM or OSS</li> <li>Communicates between MDM and IEMS</li> </ul>

Port name	Port number	Configurable or fixed values	Notes
Fault Device Access Agent (psvagent)	3460	configurable	This server is required for the Shelf View application launch in the local MDM.  Can be called by another MDM workstation's psvagent, or internally in the MDM server set.
RADIUS	1812		
RTAC Agent	3457	configurable	Used in the node fault stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation Component Information Viewer application.
SALC	NA	NA	SALC needs to communicate with MNSD, MNSDagent, FMDRs, and OAMC.
SMDR	IPI	configurable	Used in the Ethernet Routing Switch 8600 fault stack. It is configurable by specifying the entry in <i>/opt/MagellanNMS/lib/cfg/IPCNameMap.cfg</i> . Used internally in MDM server set. Can be called by another MDM workstation GMDR_sub.

Port name	Port number	Configurable or fixed values	Notes
SNMP	161, 162		Port 162 is used to receive traps from Ethernet Routing Switch 8600. Port 161 is called by the Ethernet Routing Switch 8600. Port 161 is called by the MDM server set.
SPFS Faults	2222	Fixed	Used for SNMPv2c polling by IEMS for faults (RESMON, AlarmD).
SPFS Faults	162	Fixed	Used for SNMPv2c traps sent to IEMS (RESMON, AlarmD).
SPFS Operational Measurements (OMs)	1161	Fixed	Used for SNMPv1 polling by IEMS for operational measurements.
SPFS Patching	17405, 9550	Fixed	Used by NPM for TCP communication with PSE.
SPFS Patching	11701	Fixed	Used by PSE for TCP communication with Common User Interface Patching (CUIP).
SPFS Patching	20, 21	Fixed	Used by PSE for standard FTP communication.
SSH/SFTP	22		For MDM/MDM and MDM/Operator Client desktop.
Sun ONE DS	389		
Sun ONE IS admin	58888		
Sun ONE IS webserver	58080		

Port name	Port number	Configurable or fixed values	Notes
Telnet	23		Used between the operator desktop and MDM client-set or standalone server. Can also be used to communicate directly with a node. Called by operator desktop to all MDM servers.
Tomcat	8005, 8009 8006, 8010	Configurable Configurable	Used by the MDM Tomcat server when SPFS is not installed.  Used by the MDM Tomcat server when SPFS is installed to prevent conflict with the SPFS WEBSERVICES using ports 8005, 8009
UNIX central authentication	58081	Fixed	Used by PAM IS and NSSSaml interfaces (HTTPS).
X11	6000, 6001, 6602, 6603	X11	X11 clients.  Required between the MDM client-set (or standalone server) and the operator's desktop.

## Policy and role configuration for Operator Client user administration in a VoA network on the MDM Admin Server

Review the following tables for examples of Resource Type utilization and rule and role configuration in policies:

For the MSS NE Access Resource Type there is only one Resource, All Resources. The Actions allowed are as follows:

### MSS NE Resource Type

Resource	Action	Value
All	Customer Identifier:	Integer
	Command Scope:	Application, Device or Network

Resource	Action	Value
	Command Impact:	Passive, Service, Configuration, System Administration or Debug
	Local Access Allowed:	Yes or No
	Telnet Access Allowed:	Yes or No
	FMIP Access Allowed	Yes or No
	FTP Access Allowed:	Yes or No
	Telnet Out Access Allowed:	Yes or No
	Login Directory:	String
	Timeout Protocol:	Enabled or Disabled

For the MDM Applications Resource Type. The Resources are as follows:

**Note:** The only Action allowed for the Resources is Launch (Allow or Deny).

#### MDM Applications Resource Type

Resource	Action	Value
All Resources:	Launch	Allow or Deny
Security-User:		Allow or Deny
Performance:		Allow or Deny
Nodal Access-MPE:		Allow or Deny
Configuration-MSS:		Allow or Deny
Nodal Access-MSS15000:		Allow or Deny
Utilities:		Allow or Deny
Configuration-Admin:		Allow or Deny
Configuration-MPE:		Allow or Deny
Nodal Access:		Allow or Deny
Utilities-CLI:		Allow or Deny
Fault:		Allow or Deny

For the MDM Application Actions Resource Type, there is only one Resource, All Resources. The Actions are as follows:

**Application Action Resource Type**

Resource	Action	Value
All	Fault View:	Unset, Allow or Deny
	Fault Manage:	Unset, Allow or Deny
	Fault Admin:	Unset, Allow or Deny
	Config View:	Unset, Allow or Deny
	Config Manage:	Unset, Allow or Deny
	Config Admin:	Unset, Allow or Deny
	Accounting View:	Unset, Allow or Deny
	Accounting Manage:	Unset, Allow or Deny
	Accounting Admin:	Unset, Allow or Deny
	Performance View:	Unset, Allow or Deny
	Performance Manage:	Unset, Allow or Deny
	Performance Admin:	Unset, Allow or Deny
	Security View:	Unset, Allow or Deny
	Security Manage:	Unset, Allow or Deny
	Security Admin:	Unset, Allow or Deny
	Operational View:	Unset, Allow or Deny
	Operational Manage:	Unset, Allow or Deny
	Operational Admin:	Unset, Allow or Deny

Review the following tables to understand how the different roles and rules associated under each policy are configured.

**Access Configuration Attributes - MDM Applications**

Attribute	Value
Policy Name	Administrative MDM Applications
Subjects (Role)s	View, Manage and Administrative Role
Rule Name: Nodal Access	Resource Type: Applications Resources: Nodal Access-MSS15000 Actions: Launch: Allow
Rule Name: Utilities	Resource Type: Applications Resources: Utilities Actions: Launch: Allow

Attribute	Value
Rule Name: Fault	Resource Type: Applications Resources: Fault Actions: Launch: Allow
Rule Name: Performance	Resource Type: Applications Resources: Performance Actions: Launch: Allow
Rule Name: Utilities-CLI	Resource Type: Applications Resources: Utilities-CLI Actions: Launch: Allow
Rule Name: Nodal Access-MSS15000	Resource Type: Applications Resources: Nodal Access-MSS15000 Actions: Launch: Allow
Rule Name: Configuration-MSS15000	Resource Type: Applications Resources: Configuration-MSS15000 Actions: Launch: Allow
Rule Name: Security-User	Resource Type: Applications Resources: Security-User Actions: Launch: Allow
Rule Name: Configuration-Admin	Resource Type: Applications Resources: Configuration-Admin Actions: Launch: Allow

#### View Access Configuration Attributes - MSS15000 Access

Attribute	Value
Policy Name	MSS15000 Access View
Subjects (Role)	View Role
Rule Name: PP Access RO	Resource Type: MSS NE Access Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Customer Identifier: 0</li> <li>• Command Scope: Network</li> <li>• Command Impact: Passive</li> <li>• Local Access Allowed: No</li> <li>• Telnet Access Allowed: No</li> <li>• FMIP Access Allowed: Yes</li> <li>• FTP Access Allowed: No</li> <li>• Telnet Out Access Allowed: No</li> <li>• Login Directory: /</li> </ul>

	<ul style="list-style-type: none"> <li>• Timeout Protocol: Enabled</li> </ul>
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**View Access Configuration Attributes - MDM Application Actions**

Attribute	Value
Policy Name MDM	Application Actions View
Subjects (Role)	View Role
Rule Name: MDM View Actions	Resource Type: Application Actions Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Fault View: Allow</li> <li>• Fault Manage: Deny</li> <li>• Fault Admin: Deny</li> <li>• Config View: Allow</li> <li>• Config Manage: Deny</li> <li>• Config Admin: Deny</li> <li>• Accounting View: Deny</li> <li>• Accounting Manage: Deny</li> <li>• Accounting Admin: Deny</li> <li>• Performance View: Allow</li> <li>• Performance Manage: Deny</li> <li>• Performance Admin: Deny</li> <li>• Security View: Allow</li> <li>• Security Manage: Deny</li> <li>• Security Admin: Deny</li> <li>• Operational View: Allow</li> <li>• Operational Manage: Deny</li> <li>• Operational Admin: Deny</li> </ul>

**Manage Access Configuration Attributes - MSS15000**

Attribute	Value
Policy Name	MSS15000 Access Manage
Subjects (Role)	Manage Role

Attribute	Value
Rule Name: PP Access Manage	Resource Type: MSS NE Access Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Customer Identifier: 0</li> <li>• Command Scope: Network</li> <li>• Command Impact: System Administration</li> <li>• Local Access Allowed: No</li> <li>• Telnet Access Allowed: Yes</li> <li>• FMIP Access Allowed: Yes</li> <li>• FTP Access Allowed: Yes</li> <li>• Telnet Out Access Allowed: No</li> <li>• Login Directory: /</li> <li>• Timeout Protocol: Enabled</li> </ul>

#### Manage Policy Configuration Attributes - MDM Application Actions

Attribute	Value
Policy Name	Manage MDM Application Actions
Subjects (Role)	Manage Role
Rule Name: MDM Manage Actions	Resource Type: Application Actions Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Fault View: Allow</li> <li>• Fault Manage: Allow</li> <li>• Fault Admin: Deny</li> <li>• Config View: Allow</li> <li>• Config Manage: Allow</li> <li>• Config Admin: Deny</li> <li>• Accounting View: Deny</li> <li>• Accounting Manage: Deny</li> <li>• Accounting Admin: Deny</li> <li>• Performance View: Allow</li> <li>• Performance Manage: Allow</li> <li>• Performance Admin: Deny</li> <li>• Security View: Allow</li> </ul>

Attribute	Value
	<ul style="list-style-type: none"> <li>• Security Manage: Allow</li> <li>• Security Admin: Deny</li> <li>• Operational View: Allow</li> <li>• Operational Manage: Allow</li> <li>• Operational Admin: Deny</li> </ul>

**Administrative Policy Configuration Attributes - MSS15000**

Attribute	Value
Policy Name	MSS15000 Access Administrative
Subjects (Role)	Administrative Role
Rule Name: PP Access Manage	Resource Type: MSS NE Access Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Customer Identifier: 0</li> <li>• Command Scope: Network</li> <li>• Command Impact: System Debug</li> <li>• Local Access Allowed: Yes</li> <li>• Telnet Access Allowed: Yes</li> <li>• FMIP Access Allowed: Yes</li> <li>• FTP Access Allowed: Yes</li> <li>• Telnet Out Access Allowed: Yes</li> <li>• Login Directory: /</li> <li>• Timeout Protocol: Enable</li> </ul>

**Administrative Policy Configuration Attributes - MDM Application Actions**

Attribute	Value
Policy Name Manage	MDM Application Actions

Attribute	Value
Subjects (Role)	Administrate Role
Rule Name: View All Applications except Accounting	Resource Type: Application Actions Resources: All Resources Actions: <ul style="list-style-type: none"> <li>• Fault View: Allow</li> <li>• Fault Manage: Allow</li> <li>• Fault Admin: Allow</li> <li>• Config View: Allow</li> <li>• Config Manage: Allow</li> <li>• Config Admin: Allow</li> <li>• Accounting View: Deny</li> <li>• Accounting Manage: Deny</li> <li>• Accounting Admin: Deny</li> <li>• Performance View: Allow</li> <li>• Performance Manage: Allow</li> <li>• Performance Admin: Allow</li> <li>• Security View: Allow</li> <li>• Security Manage: Allow</li> <li>• Security Admin: Allow</li> <li>• Operational View: Allow</li> <li>• Operational Manage: Allow</li> <li>• Operational Admin: Allow</li> </ul>

### Auto-patching of MSS/MG15000 nodes from the MDM

Review the following table to understand how the auto-patch script is configured.

#### Auto-patching script attributes

Component	Attribute	Value
		The following must be configured for scheduling in the cron utility or your other chosen scheduling utility.

Component	Attribute	Value
Time interval	<min> <hour> <day> <mon> <dow>	<0 to 59> (minutes) <00 to 23> (hours) <1 to 31> (day of month) <1 to 12> (month of year) <0 to 6> (day of week, 0=Sunday) These values are the start times (T0) determined from the <Patch distribution completion> information for the MDM that is the SDS. For the mate MDM add the <Patch distribution completion> to the SDS's <max_duration> time to determine the start time.
The following parameters must be specified on the ppautopatch command string. Always specify the full executable path for the script (for example, /opt/MagellanNMS/bin/ppautopatch).		
ppautopatch	-download	To select the patch download operation at the time configured. This attribute downloads the patch from the SDS to the MSS/MG15000 nodes. <b>Note:</b> You must select at least one of the download or apply attributes or both in the script.
	-apply	To select the patch apply operation at the time configured. This attribute applies the downloaded patch on the node. <b>Note:</b> You must select at least one of the download or apply operations or both in the script.
	-host	<SDS hostname or SDS IP address>
	-huser	<<SDS userid><SDS password>> This is for authentication of the user ID and password required to connect to the SDS. It is recommended that any passwords provided on the command line are in an encrypted password file.

Component	Attribute	Value
	-nodes	<p>&lt;HGDS group name with all MSS/MG15000 nodes   node   &lt;filename&gt;&gt;</p> <p>This is one or more MSS nodes. You can enter a node name, a group of nodes, or a list of nodes that is stored in a file. All node or group names must be configured in HGDS. It is recommended that you use the &lt;HGDS group name&gt;.</p>
	-nuser	<p>&lt;&lt;MSS/MG15000 userid&gt;&lt;MSS/MG 15000 password&gt;&gt;</p> <p>This is for authentication of the user ID and password required to connect to the node(s). It is recommended that any passwords provided on the command line are in an encrypted password file.</p>
	-max_duration	<p>&lt;&lt;n&gt; h   m&gt;</p> <p>Defines the maximum time for the auto-patch tool to complete the patch download and, or application operations on each node. Specify the amount of time &lt;n&gt; with the units h for hour or m for minutes. One hour (1h) is the recommended amount of time.</p>
The following are three optional parameters that can be specified on the ppautopatch command string.		
	-successfile	<p>&lt;filename&gt;</p> <p>This is an option that lets you identify a file other than the default file to store the names of all of the nodes where the auto-patch tool successfully performed the download and, or apply operations.</p>

Component	Attribute	Value
	-failedfile	<filename>  This is an option that lets you identify a file other than the default file to store the names of all of the nodes where the auto-patch tool unsuccessfully performed the download and, or apply operations.
	-log_verbose	[-log_verbose]  This is an optional operation that you can include with the -apply attribute to show the output of the patch query that is run by the auto-patch tool.



## Appendix

# DS0 Visibility Tool configuration

Review the following information to understand how the DS0 Visibility tool is configured.

### DS0 Visibility Tool configuration

Component	Attributes	Configured Values	Notes
Nsta/x Vgs Tag/y DS0/n Nsta/x Vgs Brag/y DS0/n Nsta/x Vgs BragS/y DBrag/z DS0/n	terminationIdInfo (termidInfo)		The attribute indicates the Termination ID associated with this DS0 in HEX format (binary). Type: HEX integer. Value range: 0x000000000000 – 0xFFFFFFFFFFFFFFF
	contextId (contextID)		This attribute indicates the Context ID which this DS0 has been associated with. Type: decimal Value range:[0..4294967295]
	connectionMode (connMode)		TDM termination is in the context, then this is the mode on the TDM termination. If both TDM and ephemeral terminations are in the context, then this is a combination of the modes of the TDM termination, the ephemeral termination and the topology of the context. Type: enum

			Value range: [inactive, looparound, sendOnly, recvOnly, sendRecv]
	callState (callstate)		This attribute indicates the call state of this DS0. The possible values are: idle - The DS0 is not being used for a call. inCall - The DS0 is in a call. oos - The DS0 is out of service. oosGwc - The DS0 was placed out of service by the GWC
	connectionDuration (connDur)		This attribute indicates the time elapsed since the connection has been established. Type: decimal Value range: [0..4294967295] Unit: seconds
	resourceID (resID)		This attribute indicates the resource information associated with this DS0, if resources have been assigned. Range: [0x00000000..0xfffffff] The resource ID contains the DSP ID (Rtag) and channel ID (Lcid).
	codecType (codec)		This attribute indicates the codec being used if this DS0 is being used for a call. Type: enum Value range: [NA, EVRC, SMV, Q13, CSD, AMR, G711u, G711a, G729, G726-40, G726-32, G726-24, EVRC0]

	packetizationTime (pTime)		This attribute indicates the packetization time being used if this DS0 is being used for a call. Type: decimal Value range: [0, 5, 10, 15, 20, 25, 30, 35, 40] Unit: milliseconds Note: The PVG use currently only values 0, 5, 10, 20. The rest of values are reserved for future usage
	codecProfile (cProfile)		This attribute indicates the codec profile being used if this DS0 is being used for a Voice over ATM call. Type: enum Value range: [NA, P1, P2, P3, P7, Custom 100, Custom 200]
	codecDynPayload		This attribute indicates the type of the dynamic payload used for the codec profile. Type: enum Value range: [NA, G711u, G711a, CN, G729-8k, Microsoft-Rta, Evrc, Evrc0, CCD, G726-16-IETF, G726-24-IETF, G726-32-IETF, G726-40-IETF, G726-16-ITU, G726-24-ITU, G726-32-ITU, G726-40-ITU, Wildcard]
	callControllerIPAdress (controllerIp)		This attribute indicates the IP address of the call controller, if this DS0 is being used for a call. If the feature list is set to CdmaCodec, this represents the IP Address of the ACP. For all other features, it represents the Media

			Gateway Controller (MGC) IP address. Type: IP Address
	callControllerPort (controllerPort)		This attribute indicates the UDP port of the call controller, if this DS0 is being used for a call. If the featureList attribute is set to cdmaCodec, this attribute represents the UDP port of the Activity Concentration Point (ACP). For all other features, it represents the Media Gateway Controller (MGC) UDP port. Type: decimal Value range: [0..429496729 5]
	ephemeralId (ephemeralID)		This attribute indicates the Ephemeral ID which this DS0 has been associated with within the context. A value of 0 indicates no ephemeral is present in the context. Type: decimal Value range: [0..4294967295]
	localPort (localPort)		This attribute indicates the local UDP port of the ephemeral, if this DS0 is in a context containing an ephemeral endpoint. Type: decimal Value range: [0..4294967295 ] This attribute is only applicable to Voice over IP configurations.

	remoteIPAddress (remoteIp)		This attribute indicates the IP address of the remote endpoint the ephemeral is connected to if this DS0 is in a context containing an ephemeral endpoint. Type: IP Address This attribute is only applicable to Voice over IP configurations.
	remotePort (remotePort)		This attribute indicates the UDP port of the remote endpoint the ephemeral is connected to if this DS0 is in a context containing an ephemeral endpoint. Type: decimal Value range: [0..4294967295 ] This attribute is only applicable to Voice over IP configurations.
	remoteAtmAddress		This attribute indicates the ATM address of the remote endpoint the ephemeral is connected to if this DS0 is in a context containing an ephemeral endpoint. Type: ATMAddress This attribute is only applicable to Voice over ATM configurations.
	atmVcciCid		This attribute indicates the ATM VCCI and CID values used for connection. This attribute is only applicable to Voice over ATM configurations. Range: [ 0x00000000 .. 0xffff00ff ] The first 2 bytes represents the VCCI. The last byte represents CID.

	callType		This attribute indicates the type of the call. Type: enum Value range: [voice, VBD, CCD, T38]
	dtmfRelay		This attribute indicates if the DTMF relay is supported. Type: enum Value range: [On, Off]
	dtmfDynamicPayload Type		This attribute indicates the value of the dynamic payload type if this is available. Type: decimal Value range: [0 .. 65535]
	VBDupspeed		This attribute indicates if the upspeed is supported. Type: enum Value range: [On, Off]
	vbdCodec		This attribute is only applicable to Voice over IP configurations and indicates the coding law. Type: enum Value range: [Undefined, G711a, G711u, G726-32]
	faxRelay		This attribute indicates if the fax relay is supported. Type: enum Value range: [On, Off]
	t38RemoteUDP		This attribute indicates the UDP port for fax relay. Type: decimal Value range: [0 .. 65535]
	t38RedundancyDepth		This attribute indicates the redundancy depth for fax relay: Type: decimal Value range: [0 .. 256]
	t38PacketThreshold		This attribute indicates the packet threshold for fax relay. Type: decimal Value range: [0 ..65535]

	t38MaxBitRate		This attribute indicates the maximum bit rate supported for fax relay. Type: decimal Value range: [0 .. 4294967295]
	ds0Ecan		This attribute indicates if echo cancellation is set. Type: enum Value range: [On, Off, Undefined]
	ds0SilSuppression		This attribute indicates if silence suppression is set. Type: enum Value range: [On, Off, Undefined]
	tdmTrfo		This attribute indicates if TRFO is active. Type: enum Value range: [activ, inactiv, NA]
	digitCollection		This attribute indicates if digit collection is in progress. Type: enum Value range: [Yes, No]
	tonesPlaying		This attribute indicates if tones playing is in progress. Type: string
	veStatsPS		This attribute indicates the number of packets sent by voice engine. Type: decimal Value range: [0 .. 4294967295]
	veStatsPR		This attribute indicates the number of packets received by voice engine. Type: decimal Value range: [0 .. 4294967295]
	veStatsTPL		This attribute indicates the number of packets lost by voice engine. Type: decimal Value range: [0 .. 4294967295]

	veStatsBU		This attribute indicates voice engine buffer underflows. Type: decimal Value range: [0 .. 4294967295]
	veStatsBO		This attribute indicates voice engine buffer overflows. Type: decimal Value range: [0 .. 4294967295]
	veStatsPD		This attribute indicates the number of packets discarded by the voice engine. Type: decimal Value range: [0 .. 4294967295]
	veStatsI		This attribute indicates voice engine icmp errors Type: decimal Value range: [0 .. 4294967295] This attribute is valid only for voice over IP configuration.
	veStatsDuration		This attribute indicates voice engine connection duration. Type: decimal Value range: [0 .. 4294967295]
	veStatsJitter		This attribute indicates voice engine jitter. Type: decimal Value range: [0 .. 4294967295] This attribute is not valid for VSP2 15K MSS.
	veStatsLatency		This attribute indicates voice engine jitter latency. Type: decimal Value range: [0 .. 4294967295] This attribute is not valid for VSP2 15K MSS. This attribute is valid only for voice over IP configurations.
	veStatsCallType		This attribute indicates voice engine call type.



Carrier VoIP

## MSS15K, MG15K, and MDM Configuration Attribute Summary PT-AAL1/UA-AAL1/UA-IP/PT-AAL2

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