NORTEL NETWORKS

Nortel Networks Multiservice Switch 15000, Media Gateway 15000 and Preside MDM in Succession Networks

Configuration Attribute Summary

PT-AAL1/UA-AAL1/UA-IP

NN10225-512

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About this document

Within the Succession portfolio's solutions for PT-AAL1, UA-AAL1, and UA-IP, most configuration for the Nortel Networks 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 Networks recommends that you DO NOT change the initial installation configuration, or configure additional components and services on Multiservice Switch 15000 nodes.

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

This document focuses on those components and attribute values specific to the Succession portfolio. Any values listed in the summaries are specific to the Succession portfolio. In addition, the document may not describe the complete hierarchy of a component if the subcomponents and attributes under that component are not relevant to Succession. It does not include or describe default values unless the defaults are relevant to Succession. It also does not include detailed descriptive information about the components. See NN10600-060 *Nortel Networks Multiservice Switch 7400/15000/20000 Component Reference* for complete component descriptions and hierarchies.

The following topics are discussed in this section:

- "Who should read this document and why" (page 16)

- "What you need to know" (page 16)

- "How this document is organized" (page 16)

- "Related documents" (page 21)

- "How to get more help" (page 21)

Who should read this document and why

This document is intended for network operators that want a greater understanding of how Nortel Networks Multiservice Switch 15000 equipment within the PT-AAL1, UA-AAL1, and UA-IP Succession solutions are initially installed or configured during incremental commissioning.

What you need to know

Before you read this document, you need to have a general understanding of how Nortel Networks Multiservice Switch 15000 nodes are configured within the PT-AAL1, UA-AAL1, and UA-IP solutions. For more information, see NN10114-511 *Nortel Networks Multiservice Switch 15000, Media Gateway 15000 and Preside MDM in Succession Networks Configuration Overview PT-AAL1/UA-AAL1/UA-IP*.

You also should have a general understanding of Multiservice Switch software and the component hierarchies. For more information, see NN10600-060 *Nortel Networks Multiservice Switch 7400/15000/20000 Component Reference*.

How this document is organized

The summary of the configuration of Nortel Networks Multiservice Switch 15000 nodes is broken down into three main areas:

- the base software configuration

- the configuration of the function processors

- the configuration of the links between Succession components

Within each of these areas there is a further focus on related components and attributes.

NN10225-512 *Nortel Networks Multiservice Switch 15000 and Media Gateway 15000 in Succession Networks Configuration Attribute Summary PT-AAL1/UA-AAL1/UA-IP* contains the following sections:

- "Shelf-wide and CP configuration" (page 23)

- "Summary of FP configuration" (page 59)

- "Summary of link configuration" (page 91)

- "Summary of Preside MDM server configuration" (page 239)

Note: Succession supports the configuration of DSL. However, this version of the NN10225-512 *Nortel Networks Multiservice Switch 15000 and Media Gateway 15000 in Succession Networks Configuration Attribute Summary PT-AAL1/UA-AAL1/UA-IP* does not include the configuration attribute values. Please contact Nortel Networks Global Professional Services for more information on how to configure DSL features.

What's new in this document

This document includes the following new features:

- "Standardized Multiservice Switch 15000 configuration for Succession UA-IP" (page 17).

- "Configuration of Multiservice Switch 15000/Media Gateway 15000 for Succession UA-IP" (page 18).

- "DS3 interface between Multiservice Switch 15000 and MG9000 for Succession UA-AAL1" (page 19).

- "MDP administration enhancements for Preside MDM in Succession PT-AAL1/UA-AAL1 and UA-IP" (page 20)

Standardized Multiservice Switch 15000 configuration for Succession UA-IP

This document is enhanced to describe a standardized Multiservice Switch 15000 configuration in a Succession UA-IP solution. In this solution, Nortel Networks Preside Multiservice Data Manager (MDM) is the Element

Management System (EMS) for Multiservice Switch 15000 network elements (NE). This includes Multiservice Switch 15000 nodes configured as a packet/core aggregator or as a Media Gateway 15000. Some configuration is common to both of these applications, while other configuration aspects are unique to one of the applications. For information about the standard configuration for Media Gateway 15000, see "Configuration of Multiservice Switch 15000/Media Gateway 15000 for Succession UA-IP" (page 18).

Generally standardized templates simplify the configuration task, as compared to using manual configuration. In some instances, however, to allow flexibility, the user is required to apply a template repetitively. For example, to configure one OC-3 time division multiplexing (TDM) port, 84 trunks must be configured.

The same components are not necessarily configured for all Succession solutions.Therefore, the tables in this document specify whether they are for Succession PT-AAL1, UA-AAL1, and UA-IP, or for all of these solutions. A table indicates each component or logical group of components to create or change using the Nodal Provisioning (NP) tool. Where possible, the component and attribute values in UA-IP are the same as those in PT-AAL1/ UA-AAL1.

For more information, see the chapters as follows:

- Chapter 1, "Shelf-wide and CP configuration," (page 23)

- Chapter 2, "Summary of FP configuration," (page 59)

- Chapter 3, "Summary of link configuration," (page 91)

Configuration of Multiservice Switch 15000/Media Gateway 15000 for Succession UA-IP

Configuration templates are now available to configure Multiservice Switch 15000/Media Gateway 15000, for specific common scenarios, in a Succession UA-IP solution.

As well, configuration templates are available for TDM trunking. They focus on three types of TDM trunks:

1   ISUP trunks

2   primary rate interface (PRI) trunks

3   PTS trunks

In a Succession UA-IP solution, these trunks communicate with:

• other tandem or end office (EO) offices in the same Succession UA-IP network

• IXCs

• private branch exchanges (PBXs)

Separate templates are available for provisioning ISUP, PRI, and PTS trunks. Attribute settings are different for each type of trunk.

For more information, see the chapters as follows:

• Chapter 1, "Shelf-wide and CP configuration," (page 23)

• Chapter 2, "Summary of FP configuration," (page 59)

• Chapter 3, "Summary of link configuration," (page 91)

DS3 interface between Multiservice Switch 15000 and MG9000 for Succession UA-AAL1

A DS3 MG9000 interface is now available for Nortel Networks Multiservice Switch 15000 nodes in a Succession Universal Access (UA-AAL1) solution. This interface requires the 12-port DS3 function processor (FP) card. To configure this FP card, use the existing *FP-12pDS3Atm* template. To provision the 12pDS3 MG9000 interface, use the *MG9000 DS3 ATM Interface-12pDS3Atm* template.

For more information, see the sections as follows:

• "12-port DS3ATM function processor configuration (UA-AAL1)" (page 70)

• "MG9000 DS3 ATM interface configuration (UA-AAL1)" (page 135)

MDP administration enhancements for Preside MDM in Succession PT-AAL1/UA-AAL1 and UA-IP

The SN07 release simplifies management data provider (MDP) administration by taking advantage of existing Nortel Networks Preside Multiservice Data Manager (MDM) services. These services are SVM, Host Group Directory Server (HGDS), and the Multi-nodal Name Server Daemon (MNSD). MDP configuration is now simpler. The process for installing servers is significantly different, as follows:

•   Use the Server Administration (SVMadm) tool to install MDP servers, activate them, and also rollback if necessary.

•   The MDP administration tool (mdpadm) and the MDP configuration daemon (mdpconfigd) are obsolete. This manual no longer references them.

•   When using the SVMadm tool to manage MDP servers, start the MDP servers in the specified order.

For more information, see the chapter about "Summary of Preside MDM server configuration" (page 239)

Branding changes

The terms Passport 15000 and PVG have been rebranded in conjunction with the new Nortel Networks brand simplified naming format:

•   The Passport 15000 is now referred to as the Nortel Networks Multiservice Switch 15000.

•   The packet voice gateway (PVG) is now referred to as the Media Gateway 15000.

The Multiservice Switch 15000 and Media Gateway 15000 network elements continue to share common hardware and software aspects. Hybrid systems can combine these network elements' capabilities, despite the fact that no specific brand exists for such hybrids.

For more information on the product rebranding, refer to NN10600-000 *Nortel Networks Multiservice Switch 7400/15000/20000 What's New in PCR6.1.*

Related documents

See the following documents for related information:

- NN10114-511 *Nortel Networks Multiservice Switch 15000, Media Gateway 15000 and Preside MDM in Succession Networks Configuration Overview PT-AAL1/UA-AAL1/UA-IP*

- NN10028-111 *Nortel Networks Multiservice Switch 15000, Media Gateway 15000 and Preside MDM in Succession Networks Product and Technology Basics PT-AAL1/UA-AAL1/UA-IP*

How to get more help

For information on training, problem reporting, and technical support, see "Nortel Networks support services" section in the *NN10600-030 Nortel Networks Multiservice Switch 7400/15000/20000 Overview*.

Chapter 1
Shelf-wide and CP configuration

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

> **CAUTION**
> **Performance degrades and outages may occur**
> To ensure performance levels and prevent outages, Nortel
> Networks recommends you DO NOT change the initial
> installation configuration, or configure additional
> components and services.

- "Access control configuration" (page 24)

- "ATM routing configuration" (page 30)

- "Data collection system configuration" (page 37)

- "LP feature configuration (PT-AAL1/UA-AAL1)" (page 40)

- "LP feature configuration (UA-IP)" (page 42)

- "Shelf/Module data configuration" (page 45)

- "Network clock synchronization configuration" (page 47)

- "Out-of-band OAM connectivity configuration" (page 48)

- "In-band OAM management connectivity configuration" (page 51)

- "Time-of-day configuration" (page 56)

Access control configuration

Nortel Networks 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 *AccessControl* component and subcomponents. Review the following information to understand how access control was configured on your nodes. This table lists the base set for Nortel Networks Preside Multiservice Data Manager to manage Multiservice Switch nodes. You may need to add your own user IDs and passwords for other network devices that need IP access to the node.

Table 1
Access control configuration

Components	Attributes	Configured values	Notes
EM			
Access Control (Ac)			
Ac Userid/root	password (passwd)	<customer defined>	ASCII string of 5 to 8 characters
	customerIdentifier (cid)	0	Default value
	commandScope (scope)	network	A commandScope of *network* indicates that the userid can manage components that affect the operation of the network. The commandScope attribute is hierarchical: a userid provisioned with *network* scope can issue components at lower scope levels.
(Sheet 1 of 6)			

Table 1 (Continued)
Access control configuration

Components	Attributes	Configured values	Notes
	commandImpact (impact)	debug	A commandImpact of *debug* indicates that the userid can issue all debugging commands. The commandImpact attribute is hierarchical: a userid provisioned with *debug* impact can issue all other commands at lower impact levels.
	allowedAccess (nmifs)	local fmip ~telnet ftp	Indicates the set of network management interfaces through which this userid is allowed incoming access to the nodes.
	loginDirectory (dir)	/	The user logging in with this userid will be placed in this directory after login.
Ac Userid/mdm	password (passwd)	<customer defined>	ASCII string of 5 to 8 characters
	customerIdentifier (cid)	0	Default value
(Sheet 2 of 6)			

Table 1 (Continued)
Access control configuration

Components	Attributes	Configured values	Notes
	commandScope (scope)	network	A commandScope of *network* indicates that the userid can manage components that affect the operation of the network.
			The commandScope attribute is hierarchical: a userid provisioned with *network* scope can issue all other commands at lower impact levels.
	commandImpact (impact)	sysAdmin	A commandImpact of *sysAdmin* indicates that the userid can issue commands on security components, such as the Userid and IpAccess components.
	allowedAccess (nmifs)	~local fmip ~telnet ftp	Indicates the set of network management interfaces through which the userid is allowed incoming access to the nodes.
			Access can be configured. For example, some ILECs allow the use of telnet, others do not.
	loginDirectory (dir)	/	The user logging in with this userid will be placed in this directory after login.
(Sheet 3 of 6)			

Table 1 (Continued)
Access control configuration

Components	Attributes	Configured values	Notes
Ac Userid/maint	password (passwd)	\<customer defined\>	ASCII string of 5 to 8 characters
	customerIdentifier (cid)	0	This is the default value.
	commandScope (scope)	network	A commandScope of *network* indicates that the userid can manage components that affect the operation of the network. The commandScope attribute is hierarchical: a userid provisioned with *network* scope can issue all other commands at lower impact levels.
	commandImpact (impact)	config	A commandImpact of *config* indicates that the userid can issue commands to alter the configuration of the nodes.
	allowedAccess (nmifs)	~local fmip ~telnet ftp	Indicates the set of network management interfaces through which the userid is allowed incoming access to the nodes.
	loginDirectory (dir)	/	The user logging in with this userid will be placed in this directory after login.
(Sheet 4 of 6)			

Table 1 (Continued)
Access control configuration

Components	Attributes	Configured values	Notes
IpAccess/<IP address>		<IP address of a Preside MDM server>	This is the IP address of a MDM server that can access the node. The number and type of Preside MDM servers that will need to access the nodes and will need to have IpAccess components configured for them varies based on customer deployment scenarios. These scenarios will determine how many IpAccess components were configured on your nodes.
(Sheet 5 of 6)			

Table 1 (Continued)
Access control configuration

Components	Attributes	Configured values	Notes
	ipAddress Mask (mask)	<customer defined>	Defined according to the customer IP addressing/ subnet plan.
			This is a mask indicating which byte of the IP address to ignore when evaluating an incoming IP address. For example, 255.255.255.0 tells the node to ignore the last byte in the address, allowing all devices with the first three bytes identical to the IpAccess/ <IP address> to access the node.
			When the mask is combined with the IP address, it defines a subnetwork.
(Sheet 6 of 6)			

ATM routing configuration

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

Table 2
ATM routing configuration

Components	Attributes	Configured values	Notes
EM			
ModuleData (Md)			
	nodePrefix	<customer defined>	This is defined according to your addressing plan. Node prefix can be set with either the mod node Prefix attribute or the Artg pnni nodeAddressPrefix.
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	Incoming calls on egress FPs will be discarded when the card is overloaded.
(Sheet 1 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
ARtg SparedServices	sparing	enabled	For PT-AAL1/UA-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	For UA-IP.
Artg Pnni			
	nodeAddress Prefix	<customer defined>	This attribute is set to Atm address prefix or node prefix.
(Sheet 2 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
	avcrMt	1 (UA-AAL1) 3 (UA-IP- the default)	This attribute sets the average cell rate minimum threshold. This attribute multiplied by the Maximum Cell Rate specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters. For UA-IP, sparing is disabled.
	avcrPm	50	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>	See *NN10600-702 Nortel Networks Multiservice Switch 7400/15000/20000 ATM Routing and Signalling Fundamentals* for information on the path diversity attribute.
(Sheet 3 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
Pnni ConfiguredNode (CfgNode)			Configure one *CfgNode* component for each peer group in which the node participates. The *CfgNode* 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 NN10600-702 *Nortel Networks Multiservice Switch 7400/15000/ 20000 ATM Routing and Signalling Fundamentals*.
	peerGroupId (pgId)	<customer defined>	
	nodeId	<customer defined>	
	reachability	internal	
(Sheet 4 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	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 Networks Multiservice Switch Release Notes for information on load balancing.
	maxPaths	<customer defined>	If you set the *Lb maxPaths* attribute to a value of more than *3*, you must set the *Lb method* attribute to *random*. When this attribute is set to a value greater than 3, *maxNumEntries* in the *ARtg Pnni Cache* subcomponent is limited to ensure that maximum memory consumption by the route cache on the CP does not increase when *maxPaths* is greater than 3. *maxNumEntries* may not exceed the value of *30000/ maxPaths*.
(Sheet 5 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
	method	maxAvCr random avCrProb optMetric Prob avCrOptMetricProb	If you set the *Lb maxPaths* attribute to a value of more than *3*, you must set the *Lb method* attribute to *random*. Default value is *random*.
	minVariance (minVar)	Vector value of: Decimal (0 to 4294967295) Optimization metrics of: cdv maxCtd aw	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	This attribute is a vector value indexed by the optimization metric. The vector value is expressed as a percentage.
(Sheet 6 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
Pnni Cache			Configure route caching to reduce the call loading on the control processors and improve call routing performance. Use *Nortel Networks Multiservice Switch Release Notes* to understand your cache configuration.
	agingPeriod	600	Keep the aging period of the cache short because of the high call rate of the Succession Network Packet Trunking - AAL1 solution during congestion.
	maxNumEntries	Decimal (100 to 10000)	Default value is *5000*.
	maxPathsToIntermediateNode	Decimal (1 to 20)	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*.
	purgeEntryAtPathInvalid	yes	Setting this attribute to *no* reduces the frequency of route computation because only invalid paths are cleared from the cache rather than the entire cache entry.
(Sheet 7 of 8)			

Table 2 (Continued)
ATM routing configuration

Components	Attributes	Configured values	Notes
Shelf	repeatFanAlarm cpEquipmentProte ction	on hot	Provisioning data is delivered to the standby CP. Changing the value of the attribute causes the standby CP to reset. ***Note:*** Setting the cpEquipmentProtection attribute to hot causes the standby CP to reset.
	commentText	\<customer defined\>	The Succession release, the patch level of the Preside MDM server used to commission the node, and the version of the Engineering Specification Book used to commission the node. For example: SN07, MDM 134-09, Spec 2.01.
(Sheet 8 of 8)			

Data collection system configuration

The following types of data are collected by Nortel Networks Multiservice Switch 15000 nodes: alarms, accounting, logs, debug information, state change notifications, traps, real time statistics, and statistics. In the Succession PT-AAL1, UA-AAL1, and UA-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.

Table 3
Data collection system configuration

Components	Attributes	Configured values	Notes
EM			
Collector (Col)			
Col/accounting (acc) Spooler (Sp)	Spooling (spool)	off	
Col/alarm (ala) Spooler (Sp)	Spooling (spool)	on	
	maximum NumberOfFiles (maxFile)	30	The *maxFile* attribute indicates how many closed spooling files are stored on the system for this data type.
Col/debug Spooler (Sp)	Spooling (spool)	on	
	maximum NumberOfFiles (maxFile)	2	
Col/log Spooler (Sp)	Spooling (spool)	on	
	maximum NumberOfFiles (maxFile)	0	This attribute cannot be set. The value 0 is set by the system. It means that the number of files is unlimited.
	daysToRetainFiles	30	
Col/scn Spooler (Sp)	Spooling (spool)	on	
	maximum NumberOfFiles (maxFile)	30	
Col/trap Spooler (Sp)	Spooling (spool)	off	
Col/stats Spooler (Sp)	Spooling (spool)	off	
Col/rtStats (rts) Spooler (Sp)	Spooling (spool)	off	
(Sheet 1 of 2)			

Table 3 (Continued)
Data collection system configuration

Components	Attributes	Configured values	Notes
Lp/0 Engineering (Eng)			*<n>* represents the number of the logical processor that you configured
Lp/0 Eng DataStream (DS)			
Lp/0 Eng DS/accounting (acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/0 Eng DS/debug Override (Ov)	agentQueueSize (agentQ)	50	
Lp/0 Eng DS/log Override (Ov)	agentQueueSize (agentQ)	100	The *Lp Eng DS/log* component is only available on Lp/0 because only control processors generate log data.
Lp/0 Eng DS/scn Override (Ov)	agentQueueSize (agentQ)	200	
Lp/0 Eng DS/trap Override (Ov)	agentQueueSize (agentQ)	0	
Lp/0 Eng DS/stats Override (Ov)	agentQueueSize (agentQ)	0	
Lp/0 Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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

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

See Table 4, "LP feature configuration (PT-AAL1/UA-AAL1)," (page 40).

Table 4
LP feature configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Software (Sw)	avList (avl)	base_XXXX networking_XXXX atmNetworking_X XXX ip_XXXX wanDte_XXXX	For example, base_*CD02S1A* is added to the avList for PCR 4.2. For in-band OAM only.
Sw LogicalProcessorType (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming activeAlarmList	
Sw Lpt/<Lpt name>	featureList (fl)	atmUni atmPnni aps	4-port OC3 4-port OC12
		atmMpe ip	For in-band OAM only.
	featureList (fl)	atmUni imaAtmForumHot	4-port DS3 DS1-IMA
(Sheet 1 of 2)			

Table 4 (Continued)
LP feature configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	featureList (fl)	atmPnni atmMpe ip atmUni	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	16-port OC3 atmMpe and ip are in your software list only if have in-band OAM configured.
Sw Lpt/ATM<fl>		atmmpe ip	
(Sheet 2 of 2)			

LP feature configuration (UA-IP)

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

See Table 5, "LP feature configuration (UA-IP)," (page 42) for information.

Table 5
LP feature configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Software (Sw)	avList (avl)	base_CF01XXX networking_CF01XXX atmNetworking_CF01 XXX ip_CF01XXX wanDte_CF01XXX ethernet_CF01XXX	
		pvg_CXXXXXX	
		aal1Ces_CXXXXXX	For VSP3 and 4pOC3TDM card configuration only.
Sw LogicalProcessorType (Lpt)/CP	featureList (fl)	oamEnet ip externalTiming mvr activeAlarmList	
Sw LogicalProcessorType (Lpt)/GE<n>	featureList (fl)	lag ip atmmpe	
(Sheet 1 of 3)			

Table 5 (Continued)
LP feature configuration (UA-IP)

Components	Attributes	Configured values	Notes
Sw Lpt/ATM<n>	featureList (fl)	aps	
		atmUni	
		atmPnni	
		ip	
		atmmpe	
Sw Lpt/TDM<n>	featureList	aps	For 4pOC3ChSmlr FP.
		aal1Ces	
Sw Lpt/VSP<n>	featureList		For 2pOC3ChSmirVsp3 FP.
		ip	For *Vr CustSpec* component.
		vgslp	On VSp3-o, handles either G.711 or G.729, with the number of DS0s at full capacity.
		dlep	
		aps	
		atmMpe	Required when using VR for bearer/control traffic.
Sw Lpt/VSP<n>	featureList		For 2pGeMmSrVsp3 with G.711 only.
		ip	For *Vr CustSpec* component.
		vgslp	
		AtmMpe	Required when using VR for bearer/control traffic.
(Sheet 2 of 3)			

Table 5 (Continued)
LP feature configuration (UA-IP)

Components	Attributes	Configured values	Notes
Sw Lpt/VSP<n>	featureList		For 2pGeMmSrVsp3 with G.711 or G.729 only.
		ip	For *Vr CustSpec* component.
		vgsIpG729	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	Required when using VR for bearer/control traffic.
Sw Lpt/ATM<n>	featureList (fl)	atmUni	For 12pDS3.
		atmUni imaAtmForumHot	For 4pDS3ChAtm (DS1-IMA).
(Sheet 3 of 3)			

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 Networks Multiservice Switch 15000 nodes. Module data configuration is done through the *ModuleData* component.

For Module data configuration, see Table 6, "Module data configuration," (page 45).

For Shelf data configuration, see Table 7, "Shelf configuration," (page 46).

Table 6
Module data configuration

Components	Attributes	Configured values	Notes
EM			
ModuleData (Mod)	nodeId	<customer defined>	Decimal value from 1 through 4095. The *nodeId* value is typically unique across all Multiservice Switch nodes in the network.
	nodeName	<customer defined>	The *nodeName* value must be set to an 11-character Common Language Location Identifier (CLLI). The *nodeName* value is typically unique across all Multiservice Switch nodes in the network.
	namsId	<customer defined>	Decimal value in the range of 256 to 49151. The *namsId* value is typically unique across all Multiservice Switch nodes in the network.
(Sheet 1 of 2)			

Table 6 (Continued)
Module data configuration

Components	Attributes	Configured values	Notes
	regionId	1	
	nodePrefix	<customer defined>	ASCII string of 0 to 26 characters. The *nodePrefix* value is typically unique across all Multiservice Switch nodes in the network.
(Sheet 2 of 2)

Table 7
Shelf configuration

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

Network clock synchronization configuration

Network clock synchronization (NCS) is configured on Nortel Networks Multiservice Switch 15000 nodes to ensure that all the nodes in the network are operating at a synchronized clock rate. NCS on Multiservice Switch nodes is controlled through the *NetworkSynchronization* component. Review the following information to understand how network clock synchronization was configured on your nodes.

Table 8
Network clock synchronization configuration

Components	Attributes	Configured values	Notes
EM			
lp/0 EDS1/0	lineType	esf	
lp/0 EDS1/1	lineType	esf	
NetworkSynchronization (NS)	primaryReference (priRef)	LP/0 EDS1/0	The number of the port that is the first choice for a network clock source.
	secondaryReference (secRef)	LP/0 EDS1/1	The number of the port that is the second choice for a network clock source.
	tertiaryReference (tertRef)	!	

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 Networks Multiservice Switch 15000 nodes.

Table 9
Out-of-band OAM connectivity configuration

Components	Attributes	Configured values	Notes
EM			
Shelf			
Lp/0 OamEthernet (OamEnet)/0			The number of the ports on the CP that you configured.
	applicationFramerName (framer)	La/0 Framer	The value specifies which Lan Application is running on this port.
	lineSpeed	autoConfig	The *lineSpeed* attribute indicates the operating speed of the OAM Ethernet port. When this attribute value is set to *autoConfig*, the autoNegotiation process determines the actual operating speed. You can see the actual line speed by displaying the operational attribute *Lp OamEnet actualLineSpeed*.
(Sheet 1 of 3)			

Table 9 (Continued)
Out-of-band OAM connectivity configuration

Components	Attributes	Configured values	Notes
	duplexMode	autoConfig	When this attribute value is set to *autoConfig*, the autoNegotiation process determines the duplex mode. You can see the actual mode by displaying the operational attribute *Lp OamEnet actualDuplexMode*.
	switchoverHoldOff (soHoldoff)	10	This value indicates the time interval in seconds between the detection of a link or port failure, and the initiation of a CP switchover.
	switchoverOn Failure (switch)	enabled	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	
La/0 Framer	interfaceName	Lp/0 OamEnet/0	This value specifies the port on which the LAN Application will run.
VirtualRouter (Vr)			
Vr ProtocolPort (Pp)/ OamEnet			This component links the protocol port to a media application.
	linkToMedia (media)	La/0	
Vr Pp IpPort			
(Sheet 2 of 3)			

Table 9 (Continued)
Out-of-band OAM connectivity configuration

Components	Attributes	Configured values	Notes
Vr Pp IpPort IpLogicalInterface (LogicalIf)/<IP address>		<customer defined>	Defined according to the customer IP addressing/subnet plan. The IP address of the node being managed out-of-band.
	netMask	<customer defined>	Defined according to the customer IP addressing/subnet plan.
	broadcast Address	<customer defined>	Defined according to the customer IP addressing/subnet plan.
	link Destination Address	<customer defined>	Defined according to the customer IP addressing/subnet plan.
(Sheet 3 of 3)			

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 Networks Multiservice Switch 15000 nodes.

Table 10
In-band OAM management connectivity configuration

Components	Attributes	Configured values	Notes
EM			
Shelf Card/<x>	cardType (card)	CPeD 16pOC3SmIrAtm 4pOC3SmIrAtm 4pOC12SmIrAtm 12pDS3Atm	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 16pOC3SmIrAtm is not supported for Multiservice Switch 15000 nodes in UA-IP.
Vr/0 ProtocolPort (Pp)/ <MpeX>	linkToMedia (media)	ATMMpe/<x>	This component links the protocol port to a media application.
Vr/0 Pp IpPort/ <MpeX> Ipp Log /<IP address>	netMask	<customer defined>	Defined according to the customer IP addressing/subnet plan.
	broadcast Address	<customer defined>	Defined according to the customer IP addressing/subnet plan.
(Sheet 1 of 3)			

Table 10 (Continued)
In-band OAM management connectivity configuration

Components	Attributes	Configured values	Notes
Vr/0 Ip Static Route/ <Fwd entry> Nh/ <Gateway addr>	metric	1	*<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 *<Gateway addr>* is either the Ethernet-connected IP LAN/ WAN router or a Multiservice Switch 15000 node.
	vrp	lp/0	
Lp/0 OamEthernet (OamEnet)/0	lineSpeed	autoConfig	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	
(Sheet 2 of 3)			

Table 10 (Continued)
In-band OAM management connectivity configuration

Components	Attributes	Configured values	Notes
	switchoverHoldOff (switch)	10	
	switchoverOn Failure (switch)	enabled	For a remote Multiservice Switch 15000 nodes managed via in-band access, it is recommended to set this to disabled.
(Sheet 3 of 3)			

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 Networks Multiservice Switch 15000 nodes.

Table 11
Configuration of Virtual Router for bearer and control traffic (UA-IP)

Components	Attributes	Configured values	Notes
Virtual Router/VOIP	vrp	lp/0	
	vpnMode	carrier	For PVG-specific setup.
VirtualRouter/VOIP CustomSpecification	customizationType	pvg	For a shelf that contains VSP or 4pGE cards.
VirtualRouter/VOIP DiffServDomain/ packetVoice PerHopBehaviour/EF	dropPrecedence	high	
VirtualRouter/VOIP DiffServDomain/ packetVoice PerHopBehaviour/ CS5	trafficClass	network	
VirtualRouter/VOIP DiffServDomain/ packetVoice PerHopBehaviour/ CS6	trafficClass	bronze	
Virtual Router/VOIP DiffServDomain/ packetVoice TrafficClass/premium	sc8q	5	
(Sheet 1 of 3)			

Table 11 (Continued)
Configuration of Virtual Router for bearer and control traffic (UA-IP)

Components	Attributes	Configured values	Notes
Virtual Router/VOIP DiffServDomain/ packetVoice TrafficClass/network	sc8q	4	
VirtualRouter/VOIP Ip	diffServAssignment	Vr/VOIP Ip Diffserv/VOIP	
	preConfigFwdPath	enabled	
VirtualRouter/VOIP Ip Static	maxEcmpNextHops	1	
	defaultHeartBeatDe adInterval1	10	
	defaultHeartBeatFai lureBehaviour	soft	
	defaultProtectedFail ureBehaviour	discard	
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	
	routerId	<customer defined>	
	alarmGeneration	all	
	spareInstance	enabled	
	asBdrRtrStatus	true	
VirtualRouter/VOIP Ip Ospf AreaEntry/ <customer defined>			Create only.
(Sheet 2 of 3)			

Table 11 (Continued)
Configuration of Virtual Router for bearer and control traffic (UA-IP)

Components	Attributes	Configured values	Notes
VirtualRouter/VOIP Ip Ospf Export/0	advertise	send	
	protocol	all	
VirtualRouter/VOIP Ip Ospf Export/0 NetList/0	address	10.0.0.0	
	mask	255.0.0.0	
(Sheet 3 of 3)			

Time-of-day configuration

There are three types of time to consider when configuring the time-of-day on a Nortel Networks 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.

Table 12
Time of day configuration

Components	Attributes	Configured values	Notes
EM			
Time			
(Sheet 1 of 3)			

Table 12 (Continued)
Time of day configuration

Components	Attributes	Configured values	Notes
	moduleTime	<yyyy-mm-dd> <hh:mm:ss>	This is an operational attribute indicating the current date and time on the Multiservice Switch 15000 node.
	offset	<customer defined>	The offset attribute indicates the number of minutes to be added to the reference time. Decimal value in range of -720 and +720, which represents a range of 24 hours. A time offset between 0 and 720 minutes (+12 hours) represents a time ahead of UTC (or east of the prime meridian). A time offset value between 0 and -720 minutes (-12 hours) represents a time behind UTC (or west of the prime meridian).
Time Server/<n>		1	Instance value of the first Preside MDM server acting as a network time server
	ipAddress (ipAddr)	<IP address of the first MDM server>	This value indicates the IP address of the network time server with which the node attempts to synchronize.
	ipStack	Vrlp	
Time Server/<n>		2	Instance value of the second Preside MDM server acting as a network time server.
(Sheet 2 of 3)			

Table 12 (Continued)
Time of day configuration

Components	Attributes	Configured values	Notes
	ipAddress (ipAddr)	<IP address of the second MDM server>	This value indicates the IP address of the network time server with which the node attempts to synchronize.
	ipStack	vrlp	
(Sheet 3 of 3)			

Chapter 2
Summary of FP configuration

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

Function processor (FP) cards in a Multiservice Switch 15000 node are typically configured at initial commissioning time, immediately after control processor (CP), and Shelf-level setup. For incremental commissioning, one typically adds and configures an FP pair one at a time, in order to increase capacity.

CAUTION
Performance degrades and outages may occur
To ensure performance levels and prevent outages, Nortel Networks 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 60)

- "FP configuration for Multiservice Switch 15000 (UA-IP)" (page 72)

- "FP configuration for Multiservice Switch 15000 PVG (UA-IP)" (page 86)

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

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

These configurations are as follows:

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 Networks Multiservice Switch 15000 node for a Succession UA-AAL1 solution.

Table 13
4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pOC3SmIrAtm	
(Sheet 1 of 3)			

Table 13 (Continued)
4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
LogicalProcessor (Lp)/<n>	mainCard (main)	Shelf Card/<x>	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	
	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 3.
	clockingSource	module	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	13204	
	protectedConnectionPoolCapacity	13204	
Lp/<n> Eng FrameCoreResourceControl (Fcrc)			
(Sheet 2 of 3)			

Table 13 (Continued)
4-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Eng Fcrc Pqc			
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096	
(Sheet 3 of 3)			

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 Networks Multiservice Switch 15000 node in a Succession PT-AAL1 or UA-AAL1 solution.

Table 14
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	16pOC3SmIrAtm	
LogicalProcessor (Lp)/ <n>	mainCard (main)	Shelf Card/<x>	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	
	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.
(Sheet 1 of 5)			

Table 14 (Continued)
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Sonet/<p>			The number of the port that you configured. This attribute will have a value between 0 and 15.
	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Eng AtmResourceControl (Arc)			
(Sheet 2 of 5)			

Table 14 (Continued)
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	3301	For in-band OAM 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 assumes that there is only one unprotected link on this FP.
			If additional unprotected links have been configured on this FP, this attribute value will have been configured as follows:
			(n * 3301)
			where *n* is the number of unprotected links.
(Sheet 3 of 5)			

Table 14 (Continued)
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	protectedConnection PoolCapacity		For in-band OAM configurations, the combined total of this setting and the setting of *connectionPoolCapacity* cannot exceed 29440.
			connectionPoolCapacity = 2101 * <n>; *protectedConnectionPoolCapacity*= 2101 * <m>. <n> is the number of unprotected links and <m> is the number of protected links.
			Setting this attribute value to 52816 assumes that there is only one unprotected link on this FP.
			If additional unprotected links have been configured on this FP, the *protectedConnectionPoolCapacity* attribute will have been configured as follows:
			56117 - <value of the *connectionPoolCapacity* attribute>
(Sheet 4 of 5)			

Table 14 (Continued)
16-port OC-3 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Eng Arc Apc/<m> Ov	connectionPoolCapacity	2101x <n>	<n> is the number of ports being used. *Apc/0* represents the APC device managing ports 0-3, *Apc/1* manages ports 4-7, *Apc/2* manages ports 8-11, and *Apc/3* manages ports12-15.
Lp/<n> Eng FrameCoreResource Control (Fcrc)			
Lp/<n> Eng Fcrc Pqc			
lp/<n> eng fcrc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096 0	You must set this attribute to a non-zero value when this card terminates an inband OAM connection (for example, 4096) and must be zero otherwise.
(Sheet 5 of 5)			

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 Networks Multiservice Switch 15000 nodes in a Succession PT-AAL1 or UA-AAL1 solution.

Table 15
4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pOC12SmIrAtm	
LogicalProcessor (Lp)/ <n>	mainCard (main)	Shelf Card/<x>	The number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	
	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 port number for this attribute is a value between 0 and 3.
	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
(Sheet 1 of 2)			

Table 15 (Continued)
4-port OC-12 function processor configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Eng AtmResourceControl (Arc)			
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	6	
	protectedConnectionPoolCapacity	52816	
Lp/<n> Eng FrameCoreResource Control (Fcrc)			
Lp/<n> Eng Fcrc Pqc			
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096 0	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. ***Note:*** The NTHW11 FP cannot be deployed in a Succession Network employing in-band OAM.
(Sheet 2 of 2)			

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

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

Table 16
4-port DS3ChATM function processor configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pDS3ChAtm	
	sparingConnection	Not applicable	
LogicalProcessor (Lp)/ <n>	mainCard (main)	Shelf Card/<x>	The even number of the card you configured.
	logicalProcessorType (lpt)	Sw Lpt/<Lpt name>	
	spareCard	Shelf Card/<x>+1	The number of the spare card you configured.
Sw Lpt/atmIma	featureList	imaAtmForumHot atmUni	
Lp/<n> Eng AtmResourceControl (Arc)			
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity		
	protectedConnectionPoolCapacity	5000	
(Sheet 1 of 2)			

Table 16 (Continued)
4-port DS3ChATM function processor configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Eng FrameCoreResource Control (Fcrc)			
Lp/<n> Eng Fcrc Pqc			
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutesPoolCapacity	100	
(Sheet 2 of 2)			

For information about configuring the *Lp Eng DS* component, see "4-port OC-3 function processor configuration (UA-IP)" (page 73).

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

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

Table 17
12-port DS3ATM function processor configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	12pDS3Atm	<x> is the number of the card you are configuring
	sparingConnection	notApplicable	Leave as default for 1:1 sparing
LogicalProcessor (Lp)/ <x>	mainCard (main)	Shelf Card/<x>	The even-numbered FP you are configuring
(Sheet 1 of 2)			

Table 17 (Continued)
12-port DS3ATM function processor configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	spareCard (spare)	Shelf Card/<x+1>	The adjacent (to the main FP) odd-numbered spare card you are configuring
	logicalProcessorType (lpt)	Sw Lpt/ 12pDS3ATM	
Lp/<n> Eng AtmResourceControl (Arc)			
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity		
	protectedConnectionPoolCapacity	15000	
Lp/<n> Eng FrameCore ResourceControl (Fcrc)			
Lp/<n> Eng Fcrc Pqc			
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutesPoolCapacity (ipRtsCap)	4096	
(Sheet 2 of 2)			

FP configuration for Multiservice Switch 15000 (UA-IP)

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

These configurations are as follows:

- "4-port OC-3 function processor configuration (UA-IP)" (page 73)

- "16-port OC-3 function processor configuration (UA-IP)" (page 75)

- "4-port OC-12 function processor configuration (UA-IP)" (page 77)

- "1-port OC-48 function processor configuration (UA-IP)" (page 79)

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

- "4-port DS3ChATM function processor configuration (UA-IP)" (page 83)

- "12-port DS3ATM function processor configuration (UA-IP)" (page 85)

- "2-port GE VSP3 function processor configuration (UA-IP)" (page 87)

- "2-port OC-3 VSP3-o function processor configuration (UA-IP)" (page 87)

- "4-port OC-3 (TDM) function processor configuration (UA-IP)" (page 88)

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 Networks Multiservice Switch 15000 nodes in a Succession UA-IP solution.

Review Table 18, "4-port OC-3 function processor configuration (UA-IP)," (page 73) to understand how this FP is configured on your nodes.

Table 18
4-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pOC3SmIrAtm	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	The number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	
	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.
	logicalProcessorType		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.
(Sheet 1 of 2)			

Table 18 (Continued)
4-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	13204	
	protectedConnectionPoolCapacity	13204	
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutes	96000	
Lp/<n> Eng DS/Debug Override (Ov)	agentQueueSize (agentQ)	50	
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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 Networks Multiservice Switch 15000 nodes in a Succession UA-IP solution.

Review Table 19, "16-port OC-3 function processor configuration (UA-IP)," (page 75) 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.

Table 19
16-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	16pOC3SmIrAtm	
LogicalProcessor (Lp)/ <n>	mainCard (main)	shelf card/*	The number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	
	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> Eng Arc Override (Ov)	connectionPoolCapacity	1	
	protectedConnection PoolCapacity	29685	
(Sheet 1 of 2)			

Table 19 (Continued)
16-port OC-3 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
lp/<n> eng fcrc Pqc Override (Ov)	ipRoutes	96000	
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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 Networks Multiservice Switch 15000 nodes in a Succession UA-IP solution.

Review Table 20, "4-port OC-12 function processor configuration (UA-IP)," (page 77) to understand how this FP is configured on your nodes.

Table 20
4-port OC-12 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pOC12SmIrAtm	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	The number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	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	
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutes	96000	
(Sheet 1 of 2)			

Table 20 (Continued)
4-port OC-12 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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 Networks Multiservice Switch 15000 nodes in a Succession UA-IP solution.

Review Table 21, "1-port OC48ChATM function processor configuration (UA-IP)," (page 79) 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.

Table 21
1-port OC48ChATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	1pOC48ChSmIrAtm	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/*	The even number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	
	protectedConnectionPoolCapacity	29685	
Lp/<n> Eng Fcrc Pqc Override (Ov)	ipRoutes	96000	
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
(Sheet 1 of 2)			

Table 21 (Continued)
1-port OC48ChATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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 Networks Multiservice Switch 15000 nodes in a Succession UA-IP solution.

Review Table 22, "4-port GE configuration (UA-IP)," (page 81) to understand how this FP is configured on your nodes.

Table 22
4-port GE configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<n>	cardType (card)	4pGE	
LogicalProcessor (Lp)/ <n>	mainCard (main)	shelf card/*	The even number of the card you configured.
	logicalProcessorType (lpt)	<customer defined>	
LpGroup/<n> Lp/ <n>	migrationBehaviour	stayInServiceShelf	
LpGroup/<n> Lp<n+1>	migrationBehaviour	moveToMigrationShelf	
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
(Sheet 1 of 2)			

Table 22 (Continued)
4-port GE configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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

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

Review Table 23, "4-port DS3ChATM function processor configuration (UA-IP)," (page 83) to understand how this FP is configured on your nodes.

Table 23
4-port DS3ChATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	4pDS3ChAtm	
	sparingConnection	NotApplicable	
LogicalProcessor (Lp)/<n>	mainCard (main)	shelf card/<x>	The even number of the card you configured.
	spareCard	shelf card/<x>+1	The number of the spare card you configured.
	logicalProcessorType (lpt)	<customer defined>	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	
	protectedConnectionPoolCapacity	5000	
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
(Sheet 1 of 2)			

Table 23 (Continued)
4-port DS3ChATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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

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

Review Table 24, "12-port DS3ATM function processor configuration (UA-IP)," (page 85) to understand how this FP is configured on your nodes.

Table 24
12-port DS3ATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<x>	cardType (card)	12pDS3Atm	<x> is the number of the card you are configuring
	sparingConnection	NotApplicable	Leave as default for 1:1 sparing
LogicalProcessor (Lp)/ <x>	mainCard (main)	shelf card/<n>	The even-numbered FP you are configuring
	spareCard (spare)	shelf card/<n+1>	The adjacent (to the main FP) odd-numbered spare card you are configuring
	logicalProcessorType (lpt)	<customer defined>	
Lp/<n> Eng Arc Override (Ov)	connectionPoolCapacity	1	
	protectedConnectionPoolCapacity	15000	
Lp/<n> Eng DS/ Debug Override (Ov)	agentQueueSize (agentQ)	50	
(Sheet 1 of 2)			

Table 24 (Continued)
12-port DS3ATM function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Eng DS/ Accounting (Acc) Override (Ov)	agentQueueSize (agentQ)	0	The *agentQueueSize* 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	
Lp/<n> Eng DS/ rtStats (rts) Override (Ov)	agentQueueSize (agentQ)	200	
(Sheet 2 of 2)			

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

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

These configurations are as follows:

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

This section presents the configuration of a 2-port Gigabit Ethernet (GE) multi-mode (MM) Voice Services Processor (VSP) function processor (FP) on a Nortel Networks Multiservice Switch 15000 Media Gateway in a Succession UA-IP solution.

Review Table 25, "2-port GE VSP3 function processor configuration (UA-IP)," (page 87) to understand how this FP is configured on your nodes.

Table 25
2-port GE VSP3 function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pGeMmSrVsp3	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/ <n>	mainCard (main)	shelf card/<n>	The even-numbered FP you are configuring
	spareCard (main)	shelf card/<n+1>	
	logicalProcessorType (lpt)	Sw LPT/VSP<n>	

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

This section presents the configuration of a 2-port OC-3 ChSmIr voice services processor (VSP3-o) FP card on a Nortel Networks Multiservice Switch 15000 Media Gateway in a Succession UA-IP solution.

Review Table 26, "2-port OC-3 VSP3-o function processor configuration (UA-IP)," (page 88) to understand how this FP is configured on your nodes.

Table 26
2-port OC-3 VSP3-o function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<n> Shelf Card/<n+1>	cardType (card)	2pOC3ChSmIrVsp3	<n> is the number of the card you are configuring
LogicalProcessor (Lp)/<n> LogicalProcessor (Lp)/<n+1>	mainCard (main)	shelf card/*	The even-numbered FP you are configuring
	logicalProcessorType (lpt)	Sw LPT/VSP<n>	
Dlep/<n/2>	mainLp	Lp/<n>	The *DLEP* 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>	
Lp/0 Eng AAList Override (Ov)	maxListSize	200	For 4pOC3ChSmIr (TDM) and 2pOC3ChSmIrVsp3 (VSP3-o) FPs only.

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 Networks Multiservice Switch 15000 Media Gateway in a Succession UA-IP solution. The FP card is of type 4pOC3ChSmIr.

Review Table 27, "4-port OC-3 (TDM) function processor configuration (UA-IP)," (page 89) to understand how this FP is configured on your nodes.

Table 27
4-port OC-3 (TDM) function processor configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Shelf			
Shelf Card/<n>	cardType (card)	4pOC3ChSmlr	<n> is the number of the FP card you are configuring
LogicalProcessor (Lp)/ <n>	mainCard (main)	shelf card/*	<n> is the even-numbered FP card you are configuring.
	logicalProcessorType (lpt)	Sw LPT/TDM<n>	
Lp/0 Eng AAList Override (Ov)	maxListSize	200	For 4pOC3ChSmlr (TDM) and 2pOC3ChSmlrVsp3 (VSP3-o) FPs only.

Chapter 3
Summary of link configuration

> ⚠ **CAUTION**
> **Performance degrades and outages may occur**
> To ensure performance levels and prevent outages, Nortel Networks recommends you DO NOT change the initial installation configuration, or configure additional components and services.

Link configuration (PT-AAL1/UA-AAL1)

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

- "ATM PNNI link configuration (PT-AAL1/UA-AAL1)" (page 92)

- "CS2000 link configuration (PT-AAL1/UA-AAL1)" (page 101)

- "Bridged CS2000 link configuration (UA-AAL1)" (page 109)

- "DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)" (page 115)

- "MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)" (page 122)

- "MG9000 DS1-IMA ATM interface configuration (UA-AAL1)" (page 140)

- "SAM 21 SC link configuration (UA-AAL1)" (page 148)

- "UAS ATM UNI link configuration (UA-AAL1)" (page 154)

- "Bridged SAM 21 SC link configuration (UA-AAL1)" (page 160)

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 Networks Multiservice Switch 15000 nodes in Succession PT-AAL1 and UA-AAL1 solutions.

Table 28
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
(Sheet 1 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
LineAutomaticProtectionSwitching (Laps)/\<a\>	workingLine (working)	Lp/\<n\> Sonet/\<p\>	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.
			\<a\> is the instance value of the *Laps* component. \<a\> = \<n\> * 100 + \<p\>
			\<n\> is the lowest even-numbered LP that is available.
			\<p\> is the number of the port you configured.
	protectionLine (protection)	Lp/\<n+1\> Sonet/\<p\>	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.
(Sheet 2 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	signalDegradeRatio (sdRatio)	-8	
Laps/<a> Sts/0	concatNumber	12	For 4pOC12 only.
Laps/<a> Sts/0 AtmCell	correctSingleBitHeader Errors	on	
AtmInterface (AtmIf)/<c>	interface Name	Laps/<a> Sts/0 Lp<n> ds/<p>	*Laps/<a> Sts/0* is for a protected optical link. <a> is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured. 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. c is equal to a. *Lp<n> ds/<p>* is for a 12pDS3 card. <n> is the LP instance number. <p> is the number of the port you configured
(Sheet 3 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/ \<remoteNodeName\> ATMIF/ \<remoteAtmIfinstance\>	\<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	
AtmIf VirtualChannelConnection (Vcc)			If you are associating the virtual connection with a virtual path terminator, complete the values for the attributes below for the *AtmIf Vpt Vcc Nrp* component.
AtmIf Vcc NailedUpRelayPoint (Nrp)	nextHop	Atmif Vcc Nrp	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	
(Sheet 4 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthElastic (bwElastic)	no	Do not set the attribute to yes; leave the attribute value set as no.
	overrideHoldingPriority (ohpri)	noOverride	
AtmIf Vcc Nailed Up End Point (Nep)	applicationName	Atmmpe/ \<x\> AC/ \<m\>	For in-band OAM, this value terminates an ATMMPE connection on a Gateway or Remote Multiservice Switch 15000 nodes.
Atmmpe/\<x\>	mtu	9188	
	encapType	llcEncap	
	linkToProtocolPort	Vr/0 PP\<MpeX\>	There is only one ATMMPE for each subnet.
Atmmpe/\<x\> ATM connection (AC)/\<m\>	link	Atmif\<n2\> Vcc/ \<vpi.vci\> Nep	For Sonet-APS PNNI, one AC per Remote Multiservice Switch 15000 node. For DS3 PNNI, two AC's per Remote Multiservice Switch 15000 node. *Note:* For DS3, there is still a single IP address, but it is distinguished by ipCos values.
(Sheet 5 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	ipCos	0 1	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.
AtmIf Vcc Virtual Channel Descriptor (Vcd)	atmServiceCategory	nrtVbr	For in-band OAM, this value terminates an ATMMPE connection on a Gateway or Remote Multiservice Switch 15000 nodes.
	txTdt	6	
	txTdp	1 <line rate> 2 1000 2 32	<line rate> is: 96000 for DS3 plcp 104268 for DS3 direct 353207 for OC-3 1412830 for OC-12
	endToEndLoopback	on	Configured on both ends when Vcc has intermediate hops.
AtmIf Vcc NailedUpRelayPoint (Nrp)	nextHop	Atmif/<n2> Vcc/ <vpi.vci> Nrp	Configured for intermediate Multiservice Switch 15000 nodes.
(Sheet 6 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	2100	For in-band OAM, the combination of *maxVcc* and *maxVpc* must equal 2100.
		1230	For 12pDS3
		3300	For 4pOC3 and 16pOC3
		13200	For 4pOC12.
			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.
(Sheet 7 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpi Zero)	4095 16383	For 4pOC3, 16pOC3, 12pDS3. For 4pOC12. The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	
	maxVpcs (vpcs)	0	For in-band OAM, the combination of *maxVcc* and *maxVpc* must equal 2100.
	maxVpts (vpts)	0	
(Sheet 8 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 70 2 30	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/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	
	usageParameterControl (upc)	disabled	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	txQueueLimit	autoconfig	
	unshapedTransmitQueueing	perVc	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	
	usageParameterControl (upc)	disabled	
(Sheet 9 of 10)			

Table 28 (Continued)
ATM PNNI link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c>CA Unspecified bit rate (Ubr)	minPerVcQLimit	92	
AtmIf/<c> ConnectionMapping (ConnMap)			For 16pOC3 or 4pOC12.
AtmIf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096 16384	For 16pOC3. For 4pOC12.
AtmIf/<c> Private Network-Network Interface (PNNI)	accountCollection (aco)	~bill ~test ~study ~audit ~force	The template default settings must be turned off.
	accountConnectionType (act)	origTerm	
(Sheet 10 of 10)			

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

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

Table 29
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			<n> is the number of the logical processor you configured.
(Sheet 1 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
Lp/<n> Sonet/<p> Sts/0			<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)	correctSingleBitHeaderErrors	on	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	<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.
(Sheet 2 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/ CS2K_<uniquelabel>	*<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.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	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.
	maxAutoSelectedVciForVpZero (maxVciVpiZero)	4095	
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	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/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	
	usageParameterControl (upc)	enforced	
	cdvt	10000	
	trafficShaping (trShaping)	disabled	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
AtmIf/<c> CA NonRealTimeVariableBit Rate (NrtVbr)	pool	pool2	
(Sheet 4 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	usageParameterControl (upc)	enforced	
	cdvt	10000	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf/<c> UserNetworkInterface (Uni) Sig	operatingMode	provisionOnly	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
AtmIf/<c> ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
AtmIf/<c> Vcc/<d> Vcd TrafficManagement (Tm)	atmServiceCategory (service)	rtVbr	
(Sheet 5 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	usageParameterControl	sameAsCA	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.
	txTrafficDescType (txTdt)	6	
(Sheet 6 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	txTrafficDescParm (txTdp)	Vector values of: 1 1400 2 600 3 120	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 *txtrafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated. To configure two VCs on each of the MG4000 interfaces, the vector values for the MG4000 must be: 1 1600, 2 850, and 3 225.
(Sheet 7 of 8)			

Table 29 (Continued)
CS2000 link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	rxTrafficDescType (rxTdt)	6	
	rxTrafficDescParm (rxTdp)	Vector values of: 1 1600 2 850 3 225	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 *rxtrafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated. To configure two VCs on each of the MG4000 interfaces, the vector values for the MG4000 must be: 1 1400, 2 600, and 3 120.
(Sheet 8 of 8)			

Bridged CS2000 link configuration (UA-AAL1)

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

- a bridged SONET component

- a port bridged group component

Hitless software migration (HSM) for unprotected SONET interface pairs allows the Succession 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.

Table 30
Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)</n>and Lp/<m>			*Lp/<n>* and *Lp/<m>* 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. 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.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	
	commentText	<customer defined>	
Lp/<m> BridgeSonet/<p>			
Pbg/<c>	workingLine	Lp/<n> Sonet/<p>	
	bridgeLine	Lp/<m> BridgedSonet/<p>	
(Sheet 1 of 5)			

Table 30 (Continued)
Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
Pbg/<c> Sts/0 AtmCell (Cell)	correctSingleBigHeaderErrors	on	
AtmInterface (Atmif)/<c>	interfaceName	Pbg/<c> Sts/0	
	remoteAtmInterfaceLabel	GEN/CS2K-<uniquelabel>	The *-<uniquelabel>* 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	
AtmIf ConnectionAdministrator (CA)	maxVccs (vccs)	3300	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.
(Sheet 2 of 5)			

Table 30 (Continued)
Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	The default template value of 4095 must be changed.
			The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 5)			

Table 30 (Continued)
Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	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 RealTimeVariableBitRate (RtVbr)	pool	pool2	
AtmIf CA RtVbr/0	usageParameterControl (upc)	enforced	
	cdvt	10000	
	emissionPriority	2	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	
	cdvt	10000	
AtmIf ConnectionMapping (ConnMap)			For 16pOC3 only.
(Sheet 4 of 5)			

Table 30 (Continued)
Bridged CS2000 link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnection Type (act)	origTerm	
AtmIf Uni Sig	operatingMode	provisionOnly	
AtmIf Uni Ilmi	operatingMode	ilmiDisabled	
(Sheet 5 of 5)			

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

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

Table 31
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	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. <a> = <n> * 100 + <p> <n> is the lowest even-numbered LP that is available. <p> is the number of the port you configured.
(Sheet 1 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	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	
Laps/<a> Sts/0			
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	
(Sheet 2 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	<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>	The -*<SPMID>*-*<CLLI>* string uniquely identifies the far end DPT-SPM or IW-SPM in your network.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	
(Sheet 3 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	52	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 4 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	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/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	
	usageParameterControl (upc)	enforced	
	cdvt	10000	
	trafficShaping (trShaping)	disabled	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	txQueueLimit (txql)	230	
	unshapedTransmitQueueing (unshap)	perVc	
(Sheet 5 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	
	usageParameterControl (upc)	enforced	
	cdvt	10000	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
	loopPrevention	disabled	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
AtmIf/<c> Uni Signalling (Sig)			
AtmIf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	rtVbr	
(Sheet 6 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 500 2 300 3 50 4 0 5 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCA	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	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
(Sheet 7 of 8)			

Table 31 (Continued)
DPT-SPM and IW-SPM link configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
(Sheet 8 of 8)			

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

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

Table 32
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
(Sheet 1 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	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. <a> = <n> * 100 + <p> <n> is the lowest even-numbered LP that is available. <p> is the number of the port you configured.
(Sheet 2 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	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	
Laps/<a> Sts			
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	
(Sheet 3 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	<a> is the numerical designation of the slot number and port numbers of the Lp on which Laps has been configured. 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. c is equal to a.
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG4K-<SPMID>-<CLLI>	The -*<SPMID>-<CLLI>* string uniquely identifies the far end MG4000 in your network.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	The value entered for the *maxVccs* attribute must be greater than or equal to the difference between the values set for the *maxAutoSelectedVcif orVpiZero* attribute and the *minAutoSelectedVci forVpiZero* attribute.
(Sheet 4 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 5 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 98 2 10000	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/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool2	
	usageParameterControl (upc)	enforced	
	cdvt	10000	
	trafficShaping (trShaping)	disabled	
AtmIf/<c> CA RtVbr/0	txQueueLimit (txql)	1440	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	unshapedTransmitQueueing (unshap)	perVc	
	txQueueLimit	230	
(Sheet 6 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool2	
	usageParameterControl (upc)	enforced	
	cdvt	10000	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
	loopPrevention	disabled	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
AtmIf/<c> Uni Signalling (Sig)			
AtmIf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	rtVbr	
(Sheet 7 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 500 2 300 3 50 4 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCA	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	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
(Sheet 8 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> VirtualChannelConnection (Vcc)/<d>			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 *AtmIf Vpt Vcc Vcd* component and *Tm* subcomponent.
AtmIf/<c> Vcc/<d> VirtualChannelDescriptor (Vcd)	segLinkSideLoopback (segLkLbk)	sameAsInterface	
	segSwitchSideLoopback (segSwLbk)	sameAsInterface	
	endToEndLoopback (eeLbk)	sameAs Interface	
AtmIf/<c> Vcc/<d> Vcd TrafficManagement (Tm)	atmServiceCategory (service)	rtVbr	
	usageParameterControl	sameAsCA	To enable policing, the upc attribute must be set to enforced for the CA on the MG4000, LSA, and STS1.
(Sheet 9 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	txTrafficDescType (txTdt)	6	
	txTrafficDescParm (txTdp)	Vector values of: 1 1600 2 850 3 225	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 *txtrafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated. 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.
	rxTraffic DescType (rxTdt)	6	
(Sheet 10 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	rxTrafficDescParm (rxTdp)	Vector values of: 1 1400 2 600 3 120	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 *rxtrafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated. 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.
(Sheet 11 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
			If you provision the MG4000 PVCs using the Nodal Provisioning application, parameters 1 through 3 for both the *txTrafficDescParm* and *rxTrafficDescParm* attributes are provisioned with the same set of values. The correct values need to be entered.
AtmIf VirtualChannelConnection (Vcc)			If you are associating the virtual connection with a virtual path terminator, complete the values for the attributes below for the *AtmIf Vpt Vcc Nrp* component.
AtmIf Vcc NailedUpRelayPoint (Nrp)	nextHop	Atmif<n2> Vcc/ <vpi.vci> Nrp	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.
(Sheet 12 of 13)			

Table 32 (Continued)
MG9000 ATM interface configuration (PT-AAL1/UA-AAL1)

Components	Attributes	Configured values	Notes
	oamSegmentboundary (sb)	sameAsInterface	
	bandwidthElastic (bwElastic)	no	Do not set the attribute to yes; leave the attribute value set as no.
	overrideHoldingPriority (ohpri)	noOverride	
AtmIf ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
(Sheet 13 of 13)			

MG9000 DS3 ATM interface configuration (UA-AAL1)

Review the following information to understand how these links were configured on Nortel Networks Multiservice Switch 15000 nodes in Succession 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.

Table 33
MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
LP/<n>		12pDS3Atm	These are the configuration values in "4-port DS3ChATM function processor configuration (UA-AAL1)" (page 69).
Lp/<n> DS3/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	cpbitParity	on	
	mapping	direct	
	lineLength	1	
	vendor	<customer defined>	
	commentText	<customer defined>	
AtmIf	interfaceName	Lp/n Ds3/m	
(Sheet 1 of 5)			

Table 33 (Continued)
MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	remoteAtmInterfaceLabel	GEN/MG9K_<uniquelabel>	The -<*uniquelabel*> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary	No	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	1230	The value should be equal to n * 44, where n is the maximum number of DS1s this interface will ever support.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
(Sheet 2 of 5)			

Table 33 (Continued)
MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	
	maxAutoSelectedVpi (maxVpi)	15	
	minAutoSelectedVpi (minVpi)	1	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	32	
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	
	maxVpcs (vpcs)	15	
	maxVpts (vpts)	0	
	bandwidthPool	1 100 2 0 3 0	
AtmIf CA RealTimeVariableBitRate (RtVbr)	pool	pool1	
	usageParameterControl (upc)	enabled	
	cdvt	5000	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	txQueueLimit (txql)	autoconfig	
(Sheet 3 of 5)			

Table 33 (Continued)
MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	unshapedTransmitQueueing (unshap)	perVc	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	cdvt	5000	
	usageParameterControl (upc)	enforced	
AtmIf CA UnspecifiedBitRate (Ubr)	pool	pool1	
	usageParameterControl	disabled	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf Uni Ilmi	operatingMode	addressRegEnabled	
	prefixToRegister		Provision this value if different from the node prefix.
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
(Sheet 4 of 5)			

Table 33 (Continued)
MG9000 DS3 ATM interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	atmServiceCategory (service)	nrtVbr	
	trafficDescParm (tdp)	Vector values of: 1 1200 2 600 3 18 4 0	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 or CDVT depending on the type of traffic management defined by the *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	
	qosClass (qos)	2	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
(Sheet 5 of 5)			

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

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

Table 34
MG9000 DS1-IMA DS3 port interface configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
LP/<n>		4pDS3ChAtm	These are the configuration values in "4-port DS3ChATM function processor configuration (UA-AAL1)" (page 69).
Lp/<n> DS3/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	cbitParity	on	
	mapping	direct	
	lineLength	1	
	vendor	<customer defined>	
	commentText	<customer defined>	

Table 35
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	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	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	lineType	esf	
	zeroCoding	none	
	vendor	<customer defined>	
	commentText	<customer defined>	
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	Chan/0 is defined with all timeslots.
	timeslotDataRate	doNotOverride	
	vendor	<customer defined>	
	commentText	<customer defined>	
(Sheet 1 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
Lp/<n> DS3/<p> Ima<x>			x is the Ima instance number on the DS3 port.
	linkSelectionCriterion	maxBandwidth	
	maxDiffDelay	25	msec
	linkRetryTimeout	10	seconds
	transmitClockMode	ctc	
	protocol	atmForum10	
Lp/<n> DS3/<p> Ima/<x> Link/<k>	interfaceName	Lp/<n> Ds3/<p> Ds1/<i> Chan/0	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>	
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG9K_<uniquelabel>	The -<uniquelabel> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	
(Sheet 2 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	350	The value should be equal to n * 44, where n is the maximum number of DS1s this interface will ever support.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	
	maxAutoSelectedVpi (maxVpi)	15	
	minAutoSelectedVpi (minVpi)	1	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	
(Sheet 3 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2047	
	maxVpcs (vpcs)	15	
	maxVpts (vpts)	0	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0 4 0 5 0	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 RealTimeVariableBitRate (RtVbr)	pool	pool1	
	usageParameterControl (upc)	enforced	
	holdlingPriority	1	
	svcMpHoldingPriority	1	
	cdvt	10000	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	
(Sheet 4 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	usageParameterControl (upc)	disabled	
	txQueueLimit (txql)	230	
	unshapedTransmitQueueing (unshap)	perVc	
	holdlingPriority	2	
	svcMpHoldingPriority	2	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	holdingPriority	1	
	svcMpHoldingPriority	1	
	cdvt	10000	
	usageParameterControl (upc)	enforced	
AtmIf CA UnspecifiedBitRate (Ubr)	pool	pool1	
	usageParameterControl	disabled	
	holdingPriority	3	
	svcMpHoldingPriority	3	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
(Sheet 5 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	accountConnectionType (act)	origTerm	
AtmIf Uni Address<address>	primary	<customer defined>	
AtmIf Uni Ilmi	operatingMode	addressReg Enabled	
	prefixToRegister		Provision this value if different from the node prefix.
AtmIf Uni Signalling (Sig)			
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	nrtvbr	
(Sheet 6 of 7)			

Table 35 (Continued)
MG9000 DS1-IMA DS1 channel and IMAlink configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 400 2 200 3 32 4 0 5 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	
	qosClass (qos)	2	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
(Sheet 7 of 7)			

SAM 21 SC link configuration (UA-AAL1)

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

Table 36
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			*<n>* is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	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)	correctSingleBitHea derErrors	on	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	*<n>* is the number of the Lp. *<p>* is the number of the port you configured. *<c> = <n> * 100 + <p>*
(Sheet 1 of 6)			

Table 36 (Continued)
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	remoteAtmInterface Label (remoteAtmIf)	GEN/ SAM21_<uni quelabel>	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.
	oamSegmentBound ary (sb)	no	
AtmIf ConnectionAdministrator (CA)	maxVccs (vccs)	3300	The value entered for the *maxVccs* attribute must be greater than or equal to the difference between the values set for the *maxAutoSelectedVcif orVpiZero* attribute and the *minAutoSelectedVcifo rVpiZero* attribute.
(Sheet 2 of 6)			

Table 36 (Continued)
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVci ForVpiZero (maxVciVpiZero)	1023	The default template value of 4095 must be changed. The value entered for the *maxAutoSelectedVcif orVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVcif orVpiZero* attribute as large as possible.
	minAutoSelectedVci ForVpiZero (minVciVpiZero)	52	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 6)			

Table 36 (Continued)
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100	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 RealTimeVariableBitRate (RtVbr)	pool	pool1	
AtmIf CA RtVbr/0	usageParameterControl (upc)	enforced	
	cdvt	5000	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	cdvt	250	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	usageParameterControl (upc)	enforced	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	
(Sheet 4 of 6)			

Table 36 (Continued)
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	cdvt	5000	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf Uni Ilmi	operatingMode	addressReg Enabled	
	prefixToRegister		Provision this value if different from the default.
AtmIf Uni Signalling (Sig)			
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	NrtVbr	
(Sheet 5 of 6)			

Table 36 (Continued)
SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 1200 2 600 3 18 4 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	
	qosClass (qos)	2	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
AtmIf ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
(Sheet 6 of 6)			

UAS ATM UNI link configuration (UA-AAL1)

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

Table 37
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			*<n>* is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	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/o AtmCell (Cell)	correctSingleBitHeaderErrors	on	
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	*<n>* is the number of the Lp. *<p>* is the number of the port you configured. *<c> = <n> * 100 + <p>*
(Sheet 1 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/ UAS_<uniquelabel>	The -*<uniquelabel>* string uniquely identifies the far end UAS. For example, *<CLLI>_SHELF<shelf number>_PO/ SC<slot number>* is a unique label.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3300	The value entered for the *maxVccs* attribute must be greater than or equal to the difference between the values set for the *maxAutoSelectedVcif orVpiZero* attribute and the *minAutoSelectedVcif orVpiZero* attribute.
(Sheet 2 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095	The value entered for the *maxAutoSelectedVciforVpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVciforVpiZero* attribute as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	52	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100	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/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	emissionPriority	2	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	unshapedTrQueue	perVC	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
(Sheet 4 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf CA UnspecifiedBitRate (Ubr)	minPerVcQLimit	92	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf/<c> Uni Ilmi	operatingMode	addressReg Enabled	
	prefixToRegister		Provision this value if different from the default.
AtmIf/<c> Uni Signalling (Sig)			
AtmIf/<c> Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	nrtvbr	
(Sheet 5 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 5000 2 500 3 16 4 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	
	qosClass (qos)	2	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video).
(Sheet 6 of 7)			

Table 37 (Continued)
UAS ATM UNI link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf/<c> ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
(Sheet 7 of 7)			

Bridged SAM 21 SC link configuration (UA-AAL1)

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

Table 38
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/n			<n> is the number of the logical processor you configured
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	
	commentText	<customer defined>	
Lp/<n+1> BridgeSonet/<p>			
(Sheet 1 of 6)			

Table 38 (Continued)
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
Pbg/<c>	workingLine	Lp/n <p> /0	
	bridgeLine	Lp/n+1 Bridged <p>/0	
Pbg/<c> Sts/0 AtmCell (Cell)	correctSingleBigHeaderErrors	on	
AtmInterface (Atmif)/<c>	interfaceName	Pbg/<c> Sts/0	
	remoteAtmInterfaceLabel	GEN/SAM-<SPMID>-<CLLI>	The -*<SPMID>-<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	
AtmIfConnectionAdministrator (CA)	maxVccs (vccs)	3300	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.
(Sheet 2 of 6)			

Table 38 (Continued)
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVci ForVpiZero (maxVciVpiZero)	1023	The default template value of 4095 must be changed. The value entered for the *maxAutoSelectedVcifor VpiZero* attribute must be less than the value entered for the *numVccsForVpiZero* attribute (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability reasons, you should set the value for the *maxAutoSelectedVcifo rVpiZero* attribute as large as possible.
	minAutoSelectedVci ForVpiZero (minVciVpiZero)	52	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 6)			

Table 38 (Continued)
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100	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 RealTimeVariableBitRate (RtVbr)	pool	pool1	
AtmIf CA RtVbr/0	usageParameterControl (upc)	enforced	
	cdvt	5000	
	emissionPriority	2	
AtmIf CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
AtmIf CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
AtmIf CA NrtVbr/0	usageParameterControl (upc)	enforced	
	cdvt	5000	
(Sheet 4 of 6)			

Table 38 (Continued)
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
AtmIf ConnectionMapping (ConnMap)			For 16pOC3 only.
AtmIfConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	4096	
AtmIf UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf Uni Ilmi	operatingMode	addressReg Enabled	
	prefixToRegister		Provision this value if different from the default.
AtmIf Uni Signalling (Sig)			
AtmIf Uni Sig VirtualChannelDescriptor (Vcd)	trafficDescType (tdt)	6	
	atmServiceCategory (service)	NrtVbr	
(Sheet 5 of 6)			

Table 38 (Continued)
Bridged SAM 21 SC link configuration (UA-AAL1)

Components	Attributes	Configured values	Notes
	trafficDescParm (tdp)	Vector values of: 1 5000 2 600 3 18 4 0	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 *trafficDescType* attribute. The index entry indicates the traffic descriptor parameter with which the PCR, SCR, MBS or CDVT value is associated.
	usageParameterControl (upc)	sameAsCa	
	qosClass (qos)	2	Supports a QoS that meets Service Class B performance requirements (Vbr audio and video)
(Sheet 6 of 6)			

Link configuration (UA-IP)

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

- "Multiservice Switch inter-shelf IP interface configuration (UA-IP)" (page 166)

- "CS-LAN GE link configuration (UA-IP)" (page 174)

- "CS-LAN OC-12 link configuration (UA-IP)" (page 179)

- "MG9000 OC-3 link configuration (UA-IP)" (page 183)

- "MG9000 STS-1/ DS3 link configuration (UA-IP)" (page 191)

- "MG9000 DS1-IMA link configuration (UA-IP)" (page 195)

- "Hairpin ATM (HAI) interface configuration (UA-IP)" (page 202)

- "Hairpin IP (HII) interface configuration (UA-IP)" (page 207)

For information about link configuration for Nortel Networks Multiservice Switch 15000 Media Gateway in Succession UA-IP solutions, see "Media Gateway 15000-specific interface configuration (UA-IP)" (page 213).

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

This section presents the configuration of Nortel Networks Multiservice Switch inter-shelf IP interface, in Succession UA-IP solutions. This is an interface to another Multiservice Switch 15000 node on either a 4pOC12SmIrAtm, or 4pOC3SmIrAtm 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 multiprotocol 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 Table 39, "Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)," (page 167) to understand how these links are configured on your nodes.

Table 39
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			<n> is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	<p> is the number of the port you configured.
	vendor	<customer defined>	
	commentText	<customer defined>	
(Sheet 1 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	This attribute value works with the *protectionLine* 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>* is the instance value of the Laps component. *<a> = <n> * 100 + <p>* *<n>* is the lowest even-numbered LP that is available.
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	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	
Laps/<a> Sts	concatNumber	12	For OC-12 only.
Laps/<a> Sts AtmCell	correctSingleBitHeader Errors	on	
(Sheet 2 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmInterface (AtmIf)/<c>	interface Name	Laps/ <n*100+p> Sts/0	*<c> = <a>* *<p>* is the number of the port you configured.
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/ <remoteNodeName> ATMIF/ <remoteAtmIfinstance>	*<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	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3250/ 13000	For OC-3. For OC-12.
	maxAutoSelectedVciForVpiZero (maxVciVpi Zero)	16383	
	minAutoSelectedVciForVpiZero (minVciVpiZero)	380	
	maxVpcs (vpcs)	50/ 200	For OC-3. For OC-12.
(Sheet 3 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	maxVpts (vpts)	0	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0	
AtmIf/<c> ConnMap Override (Ov)	numVccsForVpiZero (nZVccs)	16384	For access protocol control (APC)-based cards only (4pOC-12).
AtmIf/<c> CA RealTimeVariableBitRate (rtVbr)	ep	2	
AtmIf/<c> Private Network-Network Interface (PNNI)	accountCollection (aco)	~bill ~test ~study ~audit ~force	The template default settings must be turned off.
	accountConnectionType (act)	origTerm	
AtmIf/<c> Vcc/0.32 Nailed Up End Point (Nep)	applicationName	AtmMpe/<n> Ac/1	For in-band OAM.
	atmServiceCategory	nrtVbr	For in-band OAM.
AtmIf/<c> Vcc/0.32 Vcd Tm	txPacketWiseDiscard	enabled	For in-band OAM.
	txTrafficDescriptorType	6	For in-band OAM.
(Sheet 4 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	txTrafficDescriptor Parameters	Vector values of: 1 353207/1412830 2 1000 3 32	For in-band OAM. For OC-3/OC-12.
AtmMpe	linkToProtocolPort	Vr/0 PP/ <EM><AtmIf>_OAM	For in-band OAM.
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/0.32 nep	For in-band OAM.
Vr/0 Pp/<EM><AtmIf>_OAM	linkToMedia	AtmMpe/ <n>	For in-band OAM.
Vr/0 Pp/<EM><AtmIf>OAM ipport LogicalInterface/ <OAM_IPaddr>	netMask	255.255.255.0	For in-band OAM.
AtmIf/<c> Vcc/0.33 Nailed Up End Point (Nep)	application name	AtmMpe/ <n> Ac/1	
AtmIf/<c> Vcc/0.33 vcd Tm	atmServiceCategory	rtVbr	
	txTrafficDescriptor Type	6	
	forcedTagging	enabled	
	txPacketWiseDiscard	enabled	
(Sheet 5 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	txTrafficDescriptor Parameters	Vector values of: 1 <engine ered> 2 <engine ered> 3 1	For OC-3/OC-12.
AtmIf/<c> Vcc/0.34 Nailed Up End Point (Nep)	application name	AtmMpe/ <n> Ac/2	
AtmIf/<c> Vcc/0.34 vcd Tm	atmServiceCategory ry	rtVbr	
	txPacketWiseDiscard ard	enabled	
	txTrafficDescriptor Type	6	
	txTrafficDescriptor Parameters	Vector values of: 1 12000 2 6000 3 210	For OC-3
		Vector values of: 1 16000 2 8000 3 210	For OC-12
AtmIf/<c> Vcc/0.35 Nailed Up End Point (Nep)	application name	AtmMpe/ <n> Ac/3	
(Sheet 6 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Vcc/0.35 vcd Tm	atmServiceCategory	nrtVbr	Required if the remote node routes the remote MG9000 OAM traffic.
	txPacketWiseDiscard	enabled	
	txTrafficDescriptor Type	6	
	txTrafficDescriptor Parameters	Vector values of: 1 5000 2 2385 3 32	
AtmMpe	linkToProtocolPort	Vr/VOIP Pp/ <EM><AtmIf>_CC	
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/0.33 nep	
	ipCos	3	
AtmMpe Ac/2	atmConnection	AtmIf/<n> Vcc/0.34 nep	
	ipCos	2	
AtmMpe Ac/3	atmConnection	AtmIf/<n> Vcc/0.35 nep	Required if the remote node routes the remote MG9000 OAM traffic.
	ipCos	1	
(Sheet 7 of 8)			

Table 39 (Continued)
Multiservice Switch IP over ATM inter-shelf trunk interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vr/VOIP Pp/PP<n>_CC	linkToMedia	AtmMpe/<n>	
Vr/VOIP Pp/PP<n>_CC ipport LogicalInterface/<PP_IPaddr>	netMask	255.255.255.252	
(Sheet 8 of 8)			

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 Networks Multiservice Switch 15000 node in Succession 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 Table 40, "CS-LAN GE link configuration (UA-IP)," (page 174) to understand how these links are configured on your nodes.

Table 40
CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Ethernet/<m>	autoNegotiation	on	
Lp<n> Ethernet/<m> Om	type	lx	
Lp<n> Ethernet/<m> Tm Ep/2	minimumBandwidthGuarantee	5	
(Sheet 1 of 5)			

Table 40 (Continued)
CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp<n> Ethernet/<m> Tm Ep/6	minimumBandwidthGuarantee	5	
Lp/<n> Lag/<x>	lacpMode	passive	If LAG is used to aggregate two or more links on the same card.
	partnerAdminSystemId	<customer defined>	
	collectorMaxDelay	25000	The default value for this attribute is 10. Please disregard the displayed default value of 25000 and enter 10 in its place.
	minActiveLinks	1	
	partnerAdminKey	<customer defined>	
	partnerAdminSystemPriority	1	
Lp/<n> Lag/<x> link/<m>	interfaceName	Lp/<n> Eth/<m>	If LAG is used to aggregate two or more links on the same card.
Lan/<l>	linkToProtocolPort	Vr/VOIP Pp/ 8600_<id>	
Lan/<l> Framer	interfaceName	Lp/<n> Ethernet/* or Lp/<n> Lag/<x>	
Vr/VOIP Pp/8600_<id>	linkToMedia	Lan/<l>	
(Sheet 2 of 5)			

Table 40 (Continued)
CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS1_IpAddr>	netMask	255.255.255.252	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS1_IpAddr> OspfIf	type	broadCast	
	AreaId	<customer defined>	
	helloInt	1	
	rtrDead	4	
Lp/<n+1> Ethernet/<m>	autoNegotiation	on	
Lp/<n+1> Ethernet/<m> Om	type	lx	
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	passive	If LAG is used to aggregate two or more links on the same card.
	partnerAdminSystemId	<customer defined>	
	collectorMaxDelay	25000	The default value for this attribute is 10. Please disregard the displayed default value of 25000 and enter 10 in its place.
	minActiveLinks	1	
	partnerAdminKey	1	
(Sheet 3 of 5)			

Table 40 (Continued)
CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	partnerAdminSyste mPriority	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.
Lan/<l+1>	linkToProtocolPort	Vr/VOIP Pp/ 8600_<id>	
Lan/<l+1> Framer	interfaceName	Lp/<n> Ethernet/* or Lp/<n> Lag/ <x>	
Vr/VOIP Pp/8600_<id>	linkToMedia	Lan/<l+1>	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS2_IpAddr>	netMask	255.255.25 5.252	
Vr/VOIP Pp/8600_<id> IpPort LogicalIf/<CS2_IpAddr> OspfIf	type	broadCast	
	AreaId	<customer defined>	
	helloInt	1	
	rtrDead	4	
Vr/VOIP Ip Static Route/ 0.0.0.0,0.0.0.0,0	protected		
	staticRemoteRtePr eference	253	
(Sheet 4 of 5)			

Table 40 (Continued)
CS-LAN GE link configuration (UA-IP)

Components	Attributes	Configured values	Notes
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	1	
(Sheet 5 of 5)			

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 Networks Multiservice Switch 15000 nodes in Succession UA-IP solutions. The link is via IP on an ATM OC-12 FP card, specifically a 4pOC12SmIrAtm FP, to a Passport 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 166), or in "option B" of section 10.l of the Succession Engineering Guidelines. Passport 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 Table 41, "CS-LAN OC-12 link configuration (UA-IP)," (page 179) to understand how these links are configured on your nodes.

Table 41
CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Sonet/<p>	clockingSource	module	<n> is the number of the logical processor you configured. <p> is the number of the port you configured.
	vendor	<customer defined>	
	commentText	<customer defined>	
Lp/<n> Sonet/<p> Sts/0	concatNumber	12	
Lp/<n> Sonet/<p> Sts/0 Atm-Cell (Cell)	correctSingleBit-HeaderErrors	On	
(Sheet 1 of 5)			

Table 41 (Continued)
CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Sonet/<p> Sts/0	<c> is the instance value of the ATM interface. <c>=<n>*100+<p>
	remoteAtmInter-faceLabel (remoteAtmIf)	GEN/ 8600_<ID>	<ID> is a string that uniquely identifies the far end Passport 8600 in your network.
	oamSegment-Boundary (sb)	No	
AtmIf/<c> Ep/2	minimumBand-widthGuarantee	5	
AtmIf/<c> Ep/4	minimumBand-widthGuarantee	5	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs	256	
	maxAutoSelected-VciForVpiZero	4095	
	minAutoSelected-VciForVpiZero	4095	
	maxVpcs	0	
	maxVpts	0	
	bandwidthPool	Vector values of: 1 100 2 0	
AtmIf/<c> ConnMap Ov	numVccsForVpiZero	16384	
(Sheet 2 of 5)			

Table 41 (Continued)
CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Ca rtVbr	ep	2	
AtmIf/<c> Vcc/0.32 Nep	applicationName	AtmMpe/<n> Ac/1	For in-band OAM.
AtmIf/<c> Vcc/0.32 vcd Tm	atmServiceCate-gory	nrtVbr	For in-band OAM.
	txPacketWiseDiscard	enabled	For in-band OAM.
	txTrafficDescriptor-Type	6	For in-band OAM.
	txTrafficDescriptor-Parameters	Vector values of: 1 2000 2 1000 3 32	For in-band OAM.
AtmMpe	linkToProtocolPort	Vr/0 Pp/ 8600_<id>_ OAM	For in-band OAM.
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/0.32 Nep	For in-band OAM.
Vr/0 Pp/8600_<id>_OAM	linkToMedia	AtmMpe/<n>	For in-band OAM.
Vr/0 Pp/8600_<id>_OAM ipport LogicalInterface/ <OAM_IPaddr>	netMask	255.255.255 .252	For in-band OAM.
AtmIf/<c> Vcc/0.33 Nep	applicationName	AtmMpe/<n> Ac/1	
(Sheet 3 of 5)			

Table 41 (Continued)
CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Vcc/0.33 vcd Tm	atmServiceCate-gory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptor-Type	6	
	forcedTagging	enabled	
	txTrafficDescriptor-Parameters	Vector values of: 1 1401600 2 1401600 3 1	
AtmMpe	linkToProtocolPort	Vr/VOIP Pp/8600_<id>_CC	
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/0.33 nep	
Vr/VOIP Pp/8600_<id>_CC	linkToMedia	AtmMpe/<n>	
Vr/VOIP Pp/8600_<id>_CC ipport LogicalInterface/ <CC_IPaddr>	netMask	255.255.255.252	
Vr/VOIP Pp/8600_<id>_CC ipport LogicalInterface/ <CC_IPaddr> OspfIf	type	broadcast	
	areaId	<customer defined>	
	helloInt	1	
	rtrDead	4	
(Sheet 4 of 5)			

Table 41 (Continued)
CS-LAN OC-12 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vr/VOIP Ip Static Route/ <bearer_VLAN>,<mask>,0			
Vr/VOIP Ip Static Route/ <bearer_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	<local-8600_IP> is the Passport 8600 at the other end of the OC-12 link.
Vr/VOIP Ip Static Route/ <callp_VLAN>,<mask>,0			
Vr/VOIP Ip Static Route/ <callp_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	
Vr/VOIP Ip Static Route/ <oam_VLAN>,<mask>,0			
Vr/VOIP Ip Static Route/ <oam_VLAN>,<mask>,0 nextHop/<local-8600_IP>	metric	1	
(Sheet 5 of 5)			

MG9000 OC-3 link configuration (UA-IP)

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

This configuration is for a LAPS-protected pair of synchronous optical network (SONET) ports with an ATMIF, on 4pOC3SmIrAtm 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.

Table 42
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Lp/<n> Sonet/<p>	clockingSource	module	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		
	commentText		
LineAutomaticProtectionSwitching (Laps)/<a>	workingLine (working)	Lp/<n> Sonet/<p>	This attribute value works with the *protectionLine* 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>
(Sheet 1 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	protectionLine (protection)	Lp/<n+1> Sonet/<p>	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	
Laps/<a> Sts/0 AtmCell	correctSingleBitHeaderErrors	on	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	<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>	The *-<id>* string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	
(Sheet 2 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3285	*maxVccs* must be greater than or equal to the difference between *maxAutoSelectedVciforVpiZero* and *minAutoSelectedVciforVpiZero*.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2047	*maxAutoSelectedVciforVpiZero* must be less than *numVccsForVpiZero* (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability, set *maxAutoSelectedVciforVpiZero* as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	
	maxAutoSelectVpi (maxVpi)	15	
	minAutoSelectVpi (minVpi)	1	
	minAutoSelectedVciForNonZero Vpi (minVciNonZeroVpi)	1024	
(Sheet 3 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForNonZero Vpi (maxVciNonZeroVpi)	2047	
	maxVpcs (vpcs)	15	
	maxVpts (vpts)	0	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl (upc)	disabled	
	txQueueLimit (txql)	230	
AtmIf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool1	
	emissionPriority	2	
	cdvt	5000	
	usageParameterControl	disabled	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	cdvt	5000	
	usageParameterControl	disabled	
(Sheet 4 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf/<c> Uni Signalling (Sig)	operatingMode	provisioned Only	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
AtmIf/<c> Vcc/16.32 Nep	applicationName	AtmMpe/<n> Ac/1	
AtmIf/<c> Vcc/16.32 Nep vcd Tm	atmServiceCategory	rtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	Vector values of: 1 342600 2 342600 3 1	
AtmMpe	linkToProtocolPort	Vr/VOIP Pp/ 9K*_CC	
(Sheet 5 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/16.32 nep	
Vr/VOIP Pp/9K<n>_CC	linkToMedia	AtmMpe/<n>	
Vr/VOIP Pp/9K<n>_CC ipport LogicalInterface/ <CC_IPaddr>	netMask	255.255.255 .224	
Vr/VOIP Ip Arp Host/ <CC_IPaddr>,0w	pvc	1	Provision address resolution protocol (ARP) entries for the 16 MG9000 CC IP addresses.
AtmIf/<c> Vcc/16.33 Nep	applicationName	AtmMpe/<n> Ac/1	
AtmIf/<c> Vcc/16.33 Nep vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorTyp e	6	
	txTrafficDescriptorPar ameters	Vector values of: 1 5000 2 2358 3 32	
AtmMpe	linkToProtocolPort	Vr/VOIP Pp/ 9K*_OAM	
AtmMpe Ac/1	atmConnection	AtmIf/<n> Vcc/16.33 Nep	
Vr/VOIP Pp/9K<n>_OAM	linkToMedia	AtmMpe/<n>	
(Sheet 6 of 7)			

Table 42 (Continued)
MG9000 OC-3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vr/VOIP Pp/9K<n>_OAM ipport LogicalInterface/ <OAM_IPaddr>	netMask	255.255.255 .248	
Vr/VOIP Ip Arp Host/ <OAM_IPaddr>,0	pvc	1	Provision address resolution protocol (ARP) entries for the 2 MG9000 OAM IP addresses.
(Sheet 7 of 7)			

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

This section presents the configuration of a DS3 ATM link to an MG9000, on Nortel Networks Multiservice Switch 15000 nodes in Succession 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 202), and "Hairpin IP (HII) interface configuration (UA-IP)" (page 207).

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

- Table 43, "MG9000 STS-1/DS3 link configuration (UA-IP)," (page 191)

- Table 46, "MG9000 Vcc Nrp HAI interface configuration (UA-IP)," (page 206)

- Table 48, "MG9000 Vcc and Vr HII component configuration (UA-IP)," (page 211)

Review the information in Table 43, "MG9000 STS-1/DS3 link configuration (UA-IP)," (page 191) to understand how these links are configured on your nodes.

Table 43
MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			
Lp/<n> DS3/<p>	clocking source	module	
	cpbitparity	on	
	mapping	direct	
(Sheet 1 of 5)			

Table 43 (Continued)
MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	linelength	1	
	commentText		
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Ds3/<p>	<c> = <n> * 100 + <p>
	remoteAtmInterface Label	GEN/ MG9K_<id>	The <id> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary	No	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs	1230	
	maxAutoSelectedVci ForVpiZero	2047	
	minAutoSelectedVci ForVpiZero	32	
	maxAutoSelectVpi	15	
	minAutoSelectVpi	1	
	maxAutoSelectedVci ForNonVpiZero	2047	
	minAutoSelectedVci ForNonVpiZero	32	
	maxVpcs	15	
	maxVpts	0	
(Sheet 2 of 5)			

Table 43 (Continued)
MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	bandwidthPool	Vector values of: 1 100 2 0 3 0	
AtmIf/<c> CA ConstantBitRate (Cbr)	pool	pool1	
	usageParameterControl	disabled	
	UnshapedTransmitQueueing	perVc	
AtmIf/<c> CA RealTimeVariableBitRate (RtVbr)/0	pool	pool1	
	usageParameterControl	disabled	
	cdvt	5000	
	ep	2	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	UsageParameterControl	disabled	
	cdvt	5000	
AtmIf/<c> CA UnspecifiedBitRate (Ubr)	pool	pool1	
	UsageParameterControl	disabled	
AtmIf/<c> EP/2	minBw	5	
(Sheet 3 of 5)			

Table 43 (Continued)
MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> EP/4	minBw	5	
AtmIf/<c> UserNetworkInterface (Uni)	version	atmForum40	
	side	network	
	accountCollection	~bill ~test ~study ~audit ~force	
	accountConnectionType	origTerm	
AtmIf/<c> Uni Signalling (Sig)	operatingMode	provisioned Only	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
	prefixToRegistrar		
AtmIf/<c> Vcc/16.32 Nrp	nextHop	AtmIf/<HAI> Vcc/0.<vci> Nrp	
AtmIf/<c> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
(Sheet 4 of 5)			

Table 43 (Continued)
MG9000 STS-1/DS3 link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	txTrafficDescriptorParameters	Vector values are: 1 99000 2 99000 3 1	
AtmIf/<c> Vcc/16.33 Nrp	nextHop	AtmIf/<HAI> Vcc/ 0.<vci+1> Nrp	
AtmIf/<c> Vcc/16.33 Nrp Vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	Vector values are: 1 2000 2 1000 3 32	
(Sheet 5 of 5)			

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 Networks Multiservice Switch 15000 nodes in Succession 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 202) and "Hairpin IP (HII) interface configuration (UA-IP)" (page 207).

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

- Table 44, "MG9000 DS1 IMA link configuration (UA-IP)," (page 196)
- Table 46, "MG9000 Vcc Nrp HAI interface configuration (UA-IP)," (page 206)
- Table 48, "MG9000 Vcc and Vr HII component configuration (UA-IP)," (page 211)

Table 44
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
LP/<n>		4pDS3ChAtm	
Lp/<n> DS3/<p>	clockingSource	module	This attribute defines the type of clocking source used to synchronize the transmit clock.
	cbitParity	on	
	mapping	direct	
	lineLength	1	
	vendor	<customer defined>	
	commentText	<customer defined>	
Lp/<n> DS3/<p> DS1/<i>	clockingSource	sameAsDs3	This attribute defines the type of clocking source used to synchronize the transmit clock.
	lineType	esf	
	zeroCoding	none	
(Sheet 1 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	vendor	<customer defined>	
	commentText	<customer defined>	
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	Chan/0 is defined with all timeslots.
	timeslotDataRate	doNotOverride	
	vendor	<customer defined>	
	commentText	<customer defined>	
Lp/<n> DS3/<p> Ima<x>			<x> is the IMA instance number on the DS3 port.
	linkSelectionCriterion	maxBandwidth	
	maxDiffDelay	25	msec
	linkRetryTimeout	10	seconds
	transmitClockMode	ctc	
	protocol	atmForum10	
Lp/<n> DS3/<p> Ima/<x> Link/<k>	interfaceName	Lp/<n> Ds3/<p> Ds1/<i> Chan/0	An IMA component has 8 link subcomponents. Link/<k> points to a DS1 chan/0 component.
(Sheet 2 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmInterface (AtmIf)/<c>	interfaceName	Lp/<n> Ds3/<p> Ima/<x>	<c> is the instance of AtmIf. It is a function of slot number <n>, DS3 port number <p>, and IMA instance <x>. <c> = <n> * 100 + <p> * 20 + <x>
	remoteAtmInterfaceLabel (remoteAtmIf)	GEN/MG9K_<id>	The -<id> string uniquely identifies the far end MG9000 in your network.
	oamSegmentBoundary (sb)	no	
AtmIf/<c> EP/2	minBw	5	
AtmIf/<c> EP/4	minBw	5	
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	350	The value must be equal to n * 44, where n is the maximum number of DS1s this interface can support.
(Sheet 3 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	2048	*maxAutoSelectedVciforVpiZero* must be less than *numVccsForVpiZero* (the *nZvccs* parameter in *AtmIfConnMap Override (Ov)*. However, for scalability, set *maxAutoSelectedVciforVpiZero* as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	32	
	maxAutoSelectVpi (maxVpi)	15	
	minAutoSelectVpi (minVpi)	1	
	maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)	2048	
	minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)	1024	
	maxVpcs (vpcs)	15	
	maxVpts (vpts)	0	
(Sheet 4 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0 4 0 5 0	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.
AtmIf/<c> CA RealTimeVariableBitRate (RtVbr)	pool	pool1	
	cdvt	10000	
	ep	2	
	usageParameterControl (upc)	disabled	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	pool	pool1	
	cdvt	10000	
	usageParameterControl (upc)	disabled	
(Sheet 5 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> UserNetworkInterface (Uni)	accountCollection (aco)	~bill ~test ~study ~audit ~force	
	accountConnectionType (act)	origTerm	
AtmIf/<c> Uni Signalling (Sig)	operatingMode	provisioned Only	
AtmIf/<c> Uni Ilmi	operatingMode	ilmiDisabled	
AtmIf/<c> Vcc/16.32 Nrp	nextHop	AtmIf<HAI> Vcc/0.<vci> Nrp	
AtmIf/<c> Vcc/16.32 Nrp Vcd Tm	atmServiceCategory	rtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	Vector values of: 1 2500 2 2500 3 1	
AtmIf/<c> Vcc/16.33 Nrp	nextHop	AtmIf/<HAI> Vcc/ 0.<vci+1> Nrp	
AtmIf/<c> Vcc/16.33 Nrp Vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
(Sheet 6 of 7)			

Table 44 (Continued)
MG9000 DS1 IMA link configuration (UA-IP)

Components	Attributes	Configured values	Notes
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	Vector values of: 1 667 2 333 3 32	
(Sheet 7 of 7)			

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

This section presents the configuration of a hairpin ATM (HAI) interface on Nortel Networks Multiservice Switch 15000 nodes in Succession 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.

Table 45, "Optical hairpin ATM (HAI) interface configuration (UA-IP)," (page 203) documents the components and attributes to provision for the optical Hairpin ATM Interface (HAI).

Table 46, "MG9000 Vcc Nrp HAI interface configuration (UA-IP)," (page 206) documents the Vcc Nrp components for one MG9000. A single hairpin can support many MG9000s, therefore, these components are typically applied several times.

Table 45
Optical hairpin ATM (HAI) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			*<n>* is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	
	commentText	<customer defined>	
Laps/<a>	workingLine	Lp/<n> Sonet/<p>	*<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>	
	signalDegradeRatio	-8	
Laps/<a> Sts	concatNumber	12	For OC-12 only.
Laps/<a> Sts AtmCell	correctSingleBitHeaderErrors	On	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/<a> Sts/0	*<c> = <a>*
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/ <nodeName > atmif/<n>	
(Sheet 1 of 3)			

Table 45 (Continued)
Optical hairpin ATM (HAI) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	oamSegmentBoundary (sb)	no	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	
AtmIf/<c> ConnMap Ov	numVccsForVpiZero	16384	For 4pOC-12 only.
AtmIf/<c> ConnectionAdministrator (CA)	maxVccs (vccs)	3250/13000	For OC-3 /OC-12. *maxVccs* must be greater than or equal to the difference between *maxAutoSelectedVciforVpiZero* and *minAutoSelectedVciforVpiZero*.
	maxAutoSelectedVciForVpiZero (maxVciVpiZero)	4095/16383	For OC-3/OC-12. *maxAutoSelectedVci-ForVpiZero* must be less than *numVccs-ForVpiZero* (*nZvccs* in *AtmIfConnMap Override (Ov)*. However, for scalability, set *maxAutoSelect-edVciforVpiZero* as large as possible.
	minAutoSelectedVciForVpiZero (minVciVpiZero)	2048	
	maxVpcs (vpcs)	0	
(Sheet 2 of 3)			

Table 45 (Continued)
Optical hairpin ATM (HAI) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	maxVpts (vpts)	0	
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	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	
	cdvt	5000	
	usageParameterControl (upc)	disabled	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	cdvt	5000	
	usageParameterControl (upc)	disabled	
(Sheet 3 of 3)			

Table 46, "MG9000 Vcc Nrp HAI interface configuration (UA-IP)," (page 206) documents the configuration of Vcc Nrp components for one MG9000.

Table 46
MG9000 Vcc Nrp HAI interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<HAI> Vcc/0.<vci> Nrp	nextHop	AtmIf/<MG> Vcc/16.32 Nrp	
AtmIf/<HAI> Vcc/0.<vci> Nrp Vcd Tm	atmServiceCategory	rtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	<customer defined>	Values depend on whether the MG9000 is IMA or DS3.
AtmIf/<HAI> Vcc/0.<vci+1> Nrp	nextHop	AtmIf/<MG> Vcc/16.33 Nrp	
AtmIf/<HAI> Vcc/0.<vci+1> Nrp Vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters	<customer defined>	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 Networks Multiservice Switch 15000 nodes in Succession UA-IP solutions. This is used by MG9000 interfaces on electrical cards that do not support IP.

Table 47, "Optical hairpin IP interface (HII) configuration (UA-IP)," (page 207) documents the components and attributes to provision for the optical Hairpin IP Interface (HII). It provides this information for OC-3 and OC-12.

Table 48, "MG9000 Vcc and Vr HII component configuration (UA-IP)," (page 211) 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 Succession UA-IP solution.

Table 47
Optical hairpin IP interface (HII) configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
LogicalProcessor (Lp)/<n>			*<n>* is the number of the logical processor you configured.
Lp/<n> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock. *<p>* is the number of the port you configured.
(Sheet 1 of 4)			

Table 47 (Continued)
Optical hairpin IP interface (HII) configuration (UA-IP)

Components	Attributes	Configured values	Notes
	vendor	<customer defined>	
	commentText	<customer defined>	
Laps<a>	workingLine	Lp/<n> Sonet/<p>	<a> = <n> * 100 + <p>
	protectionLine	Lp/<n+1> Sonet/<p>	
	signalDegradeRatio	-8	
Laps<a> Sts	concatNumber	12	For OC-12 only.
Laps<a> Sts AtmCell	correctSingleBitHeaderErrors	On	
AtmInterface (AtmIf)/<c>	interfaceName	Laps/ <n*100+p> Sts/0	<c> = <a>
	remoteAtmInterfaceLabel (remoteAtmIf)	EM/ <nodeName> atmif/<n>	
	oamSegmentBoundary (sb)	no	
AtmIf/<c> Ep/2	minimumBandwidthGuarantee	5	
AtmIf/<c> Ep/4	minimumBandwidthGuarantee	5	
AtmIf/<c> ConnMap Ov	numVccsForVpiZero	16384	For 4pOC-12 only.
(Sheet 2 of 4)			

Table 47 (Continued)
Optical hairpin IP interface (HII) configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/\<c\> ConnectionAdministrator (CA)	maxVccs (vccs)	3250	For OC-3.
		13000	For OC-12.
			maxVccs must be greater than or equal to the difference between *maxAutoSelectedVcif orVpiZero* and *minAutoSelectedVcif orVpiZero.*
	maxAutoSelectedVciFor VpiZero (maxVciVpiZero)	4095	For OC-3.
		16383	For OC-12.
			maxAutoSelectedVcif orVpiZero must be less than *numVccsForVpiZero* (*nZvccs* parameter in *AtmIfConnMap Override (Ov)*). However, for scalability, set *maxAutoSelectedVcif orVpiZero* as large as possible.
	minAutoSelectedVciForV piZero (minVciVpiZero)	2048	
	maxVpcs (vpcs)	0	
	maxVpts (vpts)	0	
(Sheet 3 of 4)			

Table 47 (Continued)
Optical hairpin IP interface (HII) configuration (UA-IP)

Components	Attributes	Configured values	Notes
	bandwidthPool (bwPool)	Vector values of: 1 100 2 0 3 0	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	
	cdvt	5000	
	usageParameterControl (upc)	Disabled	
AtmIf/<c> CA NonRealTimeVariableBitRate (NrtVbr)	cdvt	5000	
	usageParameterControl (upc)	Disabled	
(Sheet 4 of 4)			

Table 48, "MG9000 Vcc and Vr HII component configuration (UA-IP),"
(page 211) documents the Vcc Nrp components for one MG9000. A single
hairpin can support many MG9000.

Table 48
MG9000 Vcc and Vr HII component configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Vcc/0.<vci> Nep	applicationName	AtmMpe/<n> Ac/1	
AtmIf/<c> Vcc/0.<vci> vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters		Values depend on whether MG9000 is IMA or DS3
AtmMpe/<n>	linkToProtocolPort	Vr/VOIP Pp/9k*_CC	
AtmMpe/<n> Ac/1	atmConnection	AtmIf/<HII> Vcc/0.<vci> nep	
Vr/VOIP Pp/9K<n>_CC	linkToMedia	AtmMpe/<n>	
Vr/VOIP Pp/9K<n>_CC ipport LogicalInterface/<CC_IPaddr>	netMask	255.255.255.224	
Vr/VOIP IP Arp Host/<CC_IPaddr>	pvc	1	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	
(Sheet 1 of 2)			

Table 48 (Continued)
MG9000 Vcc and Vr HII component configuration (UA-IP)

Components	Attributes	Configured values	Notes
AtmIf/<c> Vcc/0.<vci+1> vcd Tm	atmServiceCategory	nrtVbr	
	txPacketWiseDiscard	enabled	
	txTrafficDescriptorType	6	
	txTrafficDescriptorParameters		Depends on whether the MG9000 is IMA or DS3.
AtmMpe/<n+100>	linkToProtocolPort	Vr/VOIP Pp/ 9K*_OAM	
AtmMpe/<n+100> Ac/1	atmConnection	AtmIf/<HII> Vcc/ 0.<vci+1> nep	
Vr/VOIP Pp/9K<n>_OAM	linkToMedia	AtmMpe/ <n+100>	
Vr/VOIP Pp/9K<n>_OAM ipport LogicalInterface/ <OAM_IPaddr>	netMask	255.255.255 .248	
Vr/VOIP IP Arp Host/ <OAM_IPaddr>	pvc	1	Provision ARP entries for the 2 MG9000 OAM IP addresses
(Sheet 2 of 2)			

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

- Table 45, "Optical hairpin ATM (HAI) interface configuration (UA-IP)," (page 203)

Media Gateway 15000-specific interface configuration (UA-IP)

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

TDM OC-3 interface configuration (UA-IP)

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

This configuration provisions a LAPS-protected pair of synchronous optical network (SONET) ports on 4pOC3ChSmIr FP cards.

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

Table 49
TDM OC-3 interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Lp/<n> Sonet/<p> Lp/<n+1> Sonet/<p>	clockingSource	module	This attribute defines the type of clocking source used for synchronizing the transmit clock.
(Sheet 1 of 2)			

Table 49 (Continued)
TDM OC-3 interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	vendor	<customer defined>	
	commentText	<customer defined>	
Laps<nnpp>	workingLine	Lp/<n> Sonet/<p>	
	protectionLine	Lp/<n+1> Sonet/<p>	
	signalDegradeRatio	-8	
(Sheet 2 of 2)			

TDM OC-3 VSP3-o interface configuration (UA-IP)

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

This configuration provisions a LAPS-protected pair of synchronous optical network (SONET) ports on 2pOC3ChSmIrVsp3 FP cards. Review Table 50, "TDM OC-3 VSP3-o interface configuration (UA-IP)," (page 215) to understand how these interfaces are configured on your Media Gateway nodes.

Table 50
TDM OC-3 VSP3-o interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
EM			
Lp/<n> Sonet/<p> Lp/<n+1> Sonet/<p>	clockingSource	module	Only port 0 is supported on this card. This attribute defines the type of clocking source used for synchronizing the transmit clock.
	vendor	<customer defined>	
	commentText	<customer defined>	
Laps<nnpp>	workingLine	Lp/<n> Sonet/<p>	
	protectionLine	Lp/<n+1> Sonet/<p>	
	signalDegradeRatio	-8	

MGC - H.248 (VSP3) interface configuration (UA-IP)

This section presents the configuration of an interface to a Media Gateway Controller (MGC), using H.248, on Nortel Networks Multiservice Switch 15000 Media Gateway 15000s in Succession 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 Table 51, "MGC-H248 (VSP3) interface configuration (UA-IP)," (page 216) to understand how these links are configured on your nodes.

Table 51
MGC-H248 (VSP3) interface configuration (UA-IP)

Components	Attributes	Configured values	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 *hostname* value changes, calls are torn down.
	gatewayAtmAddress		Is auto-populated by the system because *nodePrefix* is defined. If the *gatewayAtmAddress* value changes, calls are torn down.
(Sheet 1 of 3)			

Table 51 (Continued)
MGC-H248 (VSP3) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs PktProf/0	digitTransport	relay	
	stateChangeSignallingMode	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/ NSTA<n>_ MG Ipp Logicalif/ <ipaddress>	
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0	
Vr/VOIP PP/NSTA<n>_MG	linkToMedia	Vm/<v> If/0	
(Sheet 2 of 3)			

Table 51 (Continued)
MGC-H248 (VSP3) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vm/<v> If/0	linkToProtocolPort	Vr/VOIP PP/ NSTA<n>_ MG	
Vr/VOIP PP/NSTA<n>_MG Ipp LogicalIf/<ipaddress>	netMask	255.255.255 .252	
Nsta/<n> Vgs IpMConn	ipAddress	<customer defined>	
Nsta/<n> Vgs IpMConn Vrap	subnetAccessName	Vr/VOIP PP/ NSTA<n>_I PMCONN Ipp LogicalIf/ <ipaddress>	
Vr/VOIP PP/ NSTA<n>_IPMCONN	linkToMedia	Vm/<w> If/0	
Vm/<w> If/0	linkToProtocolPort	Vr/VOIP PP/ NSTA<n>_I PMCONN	
Vr/VOIP PP/ NSTA<n>_IPMCONN Ipp LogicalIf/<ipaddress>	netMask	255.255.255 .252	
Nsta/<n> Vgs FaxRelayOverIp (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.
(Sheet 3 of 3)			

MGC - H.248 (VSP3-o) 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 Networks Multiservice Switch 15000 nodes in Succession 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 2pOC3ChSmIrVsp3 FP cards.

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

Review Table 52, "MGC-H248 (VSP3-o) interface configuration (UA-IP)," (page 219) to understand how these interfaces are configured on your nodes.

Table 52
MGC-H248 (VSP3-o) interface configuration (UA-IP)

Components	Attributes	Configured values	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, calls are torn down.
(Sheet 1 of 4)			

Table 52 (Continued)
MGC-H248 (VSP3-o) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
	gatewayAtmAddress	N/A	Is auto-populated by the system because *nodePrefix* is defined. It the *gatewayAtmAddress* value changes, calls are torn down.
Nsta/<n> Vgs PktProf	digitTransport	relay	
	stateChangeSignalingMode	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 the other side. No user input required.
Nsta/<n> Vgs Ctrl/mg	ipAddress	<customer defined>	
(Sheet 2 of 4)			

Table 52 (Continued)
MGC-H248 (VSP3-o) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs Ctrl/mg Vrap	subnetAccessName	Vr/VOIP PP/ NSTA<n>_ MG IppLogicalIf/ <ipaddress>	
Nsta/<n> Vgs Ctrl/mg UdpPort/2944	linkToApplication	Nsta/<n> Vgs H248/0	
Vr/VOIP PP/NSTA<n>_MG	linkToMedia	Vm/<v> If/0	
Vm/<v> If/0	linkToProtocolPort	Vr/VOIP PP/ NSTA<n>_ MG	
Vr/VOIP PP/NSTA<n>_MG Ipp LogicalIf/<ipaddress>	netMask	255.255.255 .252	
Nsta/<n> Vgs IpMConn	ipAddress	<customer defined>	
Nsta/<n> Vgs IpMConn Vrap	subnetAccessName	Vr/VOIP PP/ NSTA<n>_ IPMCONN IppLogicalIf/ <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 FaxRelayOverIp			Create only.
(Sheet 3 of 4)			

Table 52 (Continued)
MGC-H248 (VSP3-o) interface configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs DigitCollection			Create only.
Nsta/<n> Vgs TdmNetworkProf/0			Create only. If more than one is needed, add manually.
(Sheet 4 of 4)			

TDM trunk configuration (UA-IP)

This section presents the configuration of time division multiplexing (TDM) trunks for Nortel Networks Multiservice Switch 15000 Media Gateway in Succession 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)

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 Networks Multiservice Switch 15000 Media Gateway in Succession UA-IP solutions.

The TDM trunks must be provisioned on a TDM function processor (FP) card, either 4pOC3ChSmIr (TDM) or 2pOC3ChSmIrVsp3 (VSP3o). This configuration provisions a LAPS STS on the FPs.

Review Table 53, "VSP3 cards - TDM trunk preparation - LAPS STS (UA-IP)," (page 224) to understand how these trunk preparations are configured on your Media Gateway nodes.

Table 53
VSP3 cards - TDM trunk preparation - LAPS STS (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v>			Create only.

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

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

This configuration provisions a TDM ISUP trunk on 2pOC3ChSmIrVsp3 function processor (FP) cards.

Review Table 54, "TDM ISUP trunk (VSP3-o) configuration (UA-IP)," (page 225) to understand how these trunks are configured on your Media Gateway nodes.

Table 54
TDM ISUP trunk (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	linkToApplication	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	<all 24>	
Nsta/<n> Vgs Tag/<t>			Instance range is 0 through 16777215. Suggested naming convention is <nnmmvxy>.
(Sheet 1 of 2)			

Table 54 (Continued)
TDM ISUP trunk (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
	interfaceName	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0	
	profile	Nsta/<n> Vgs TProf/0	
(Sheet 2 of 2)			

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

This section presents the configuration of a time division multiplexing (TDM) ISUP trunk on Nortel Networks Multiservice Switch 15000 Media Gateway in Succession 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 Table 55, "TDM ISUP trunk (VSP3) configuration (UA-IP)," (page 227) to understand how these trunks are configured on your nodes.

Table 55
TDM ISUP trunk (VSP3) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0..4	linkToApplication	Aal1Ces/<a>	<v> ranges in value from 0 through 2. <x> ranges in value from 1 through 7. <y> = 1
	timeslots	<all 24>	
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0 Tc			Create only.
Aal1Ces/<a>	interfaceName	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0..4	Instance range is 1 through 65535.
	serviceType	basicStructured	
	remoteEndtype	pvgExclusivePrs	
Aal1Ces/<a> Aep	addressToCall	<value of Nsta/<n> Vgs BragS/0 localAddress>	

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

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

This configuration provisions a trunk profile on 2pOC3ChSmIrVsp3 function processor (FP) cards. A PRI trunk profile is common to all PRI trunks on a VSP3-o FP.

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

Review Table 56, "TDM PRI trunk profile (VSP3-o) configuration (UA-IP)," (page 228) to understand how these TDM trunk profiles are configured on your nodes.

Table 56
TDM PRI trunk profile (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs Ctrl/sg	ipAddress	<customer defined>	
Nsta/<n> Vgs Ctrl/sg Vrap	subnetAccessName	Vr/<VOIP> PP/ NSTA<n>_S G Ipp Logicallf/ <ipaddress>	
Nsta/<n> Vgs Ctrl/sg SctpPort/9900	linkToApplication	Nsta/<n> Vgs Iua	
Vr/<VOIP> PP/NSTA<n>_SG	linkToMedia	Vm/<v> If/0	
Vm/<v> If/0	linkToProtocolPort	Vr/<VOIP> PP/ NSTA<n>_S G	
Vr/<VOIP> PP/NSTA<n>_SG Ipp Logicallf/<ipaddress>	netMask	255.255.255 .252	
(Sheet 1 of 2)			

Table 56 (Continued)
TDM PRI trunk profile (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs Iua	sctpPortConnection	Nsta/<n> Vgs Ctrl/sg SctpPort/ 9900	
Nsta/<n> Vgs Q921Prof/0			Create only.
(Sheet 2 of 2)			

TDM PRI trunk (VSP3-o) configuration (UA-IP)

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

This configuration provisions a trunk on 2pOC3ChSmIrVsp3 function processor (FP) cards.

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

Review Table 57, "TDM PRI trunk configuration (VSP3-o) (UA-IP)," (page 230) to understand how these trunks are configured on your nodes.

Table 57
TDM PRI trunk configuration (VSP3-o) (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	linkToApplication	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>	
Nsta/<n> Vgs Tag/<t>	interfaceName	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0	Instance range is 0 through 16777215. Suggested naming convention is <nnmmvxy>.
	profile	Nsta/<n> Vgs TdmNetProf/ 0	
(Sheet 1 of 2)			

Table 57 (Continued)
TDM PRI trunk configuration (VSP3-o) (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/1	linkToApplication	Nsta/<n> Vgs Q921/<q>	
	timeslots	24	
Nsta/<n> Vgs Q921/<q>	interface name	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/1	Instance range is 0 through 83. Therefore, there can be up to 84 instances per OC-3.
	profile	Nsta/<n> Vgs Q921Prof/0	
(Sheet 2 of 2)			

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

This section presents the configuration of a primary rate interface (PRI) trunk profile on Nortel Networks Multiservice Switch 15000 Media Gateway 15000 in Succession 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 Table 58, "TDM PRI trunk profile (VSP3) configuration (UA-IP)," (page 232) to understand how these trunk profiles are configured on your nodes.

Table 58
TDM PRI trunk profile (VSP3) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs Ctrl/sg	ipAddress	<customer defined>	
Nsta/<n> Vgs Ctrl/sg Vrap	subnetAccessName	Vr/<VOIP> PP/ NSTA<n>_ SG Ipp LogicalIf/ <ipaddress>	
Nsta/<n> Vgs Ctrl/sg SctpPort/9900	linkToApplication	Nsta/<n> Vgs lua	
Vr/<VOIP> PP/NSTA<n>_SG	linkToMedia	Vm/<v> If/0	
Vm/<v> If/0	linkToProtocolPort	Vr/<VOIP> PP/ NSTA<n>_ SG	
(Sheet 1 of 2)			

Table 58 (Continued)
TDM PRI trunk profile (VSP3) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Vr/<VOIP> PP/NSTA<n>_SG Ipp LogicalIf/<ipaddress>	netMask	255.255.255 .252	
Nsta/<n> Vgs Iua	sctpPortConnection	Nsta/<n> Vgs Ctrl/sg SctpPort/ 9900	
Nsta/<n> Vgs BragS/1	localAddress	<NSAP address>	ISUP uses *BragS/0.* If more are needed, they are added manually.
	eCan	alwaysOn	
Nsta/<n> Vgs BragS/1 Q921	side	N/A	Use default value of network.
(Sheet 2 of 2)			

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

This section presents the configuration of a time division multiplexing (TDM) PRI trunk on Nortel Networks Multiservice Switch 15000 Media Gateway in Succession 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 Table 59, "TDM PRI trunk (VSP3) configuration (UA-IP)," (page 234) to understand how these trunks are configured on your nodes.

Table 59
TDM PRI trunk (VSP3) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0..4	linkToApplication	Aal1Ces/<a>	<v> ranges in value from 0 through 2 *<x>* ranges in value from 1 through 7 *<y>* = 1
	timeslots	<all 24>	
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0 Tc			Create only.
Aal1Ces/<a>	interfaceName	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0..4	Instance range is 1 through 65535.
	serviceType	basicStructured	
	remoteEndtype	pvgExclusivePrs	
Aal1Ces/<a> Aep	addressToCall	<value of Nsta/<n> Vgs BragS/0 localAddress>	

TDM PTS trunk profile (VSP3-o) configuration (UA-IP)

This section presents the configuration of a time division multiplexing (TDM) Per Trunk Signalling (PTS) trunk profile on Nortel Networks Multiservice Switch 15000 Media Gateway in Succession UA-IP solutions.

This configuration provisions a TDM PTS trunk profile on a 2pOC3ChSmIrVsp3 function processor (FP) card. 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 Table 60, "TDM PTS trunk profile (VSP3-o) configuration (UA-IP)," (page 235) to understand how these trunk profiles are configured on your nodes.

Table 60
TDM PTS trunk profile (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs CasDefn/<c>	filename	<PTS profile>	There is more than one PTS profile. The instance range is 0 through 24.

TDM PTS trunk (VSP3-o) configuration (UA-IP)

This section presents the configuration of a time division multiplexed (TDM) PTS trunk on Nortel Networks Multiservice Switch 15000 Media Gateway in Succession UA-IP solutions. The trunk is configured on 2pOC3ChSmIrVsp3 function processor (FP) cards.

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

Review Table 61, "TDM PTS trunk (VSP3-o) configuration (UA-IP)," (page 236) to understand how these trunks are configured on your nodes.

Table 61
TDM PTS trunk (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1	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
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0	linkToApplication	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	<all 24>	
	noServiceResponse	noResponse	
Laps/<nnmm> Sts/<v> Vt1dot5/<x>,<y> Ds1 Chan/0 Tc			Create only.
(Sheet 1 of 2)			

Table 61 (Continued)
TDM PTS trunk (VSP3-o) configuration (UA-IP)

Components	Attributes	Configured values	Notes
Nsta/<n> Vgs Tag/<t>	interfaceName	Laps/ <nnmm> Sts/<v> Vt1dot5/ <x>,<y> Ds1 Chan/0 Tc	Instance range is 0 through 16777215. Suggested convention: *<nnmmvxy>*.
	profile	Nsta/<n> Vgs TProf/0	
Nsta/<n> Vgs Tag/<t> Cas	casDefinition	Nsta/<n> Vgs CasDefn/ <c>	
(Sheet 2 of 2)			

Chapter 4
Summary of Preside MDM server configuration

When upgrading to new releases of Succession software, configure or upgrade the Nortel Networks Preside Multiservice Data Manager (MDM) first, before upgrading Nortel Networks Multiservice Switch 15000 nodes. Preside MDM software is backwards compatible with Multiservice Switch software which means it supports earlier releases of Multiservice Switch 15000 software.

This chapter describes how Preside MDM servers supported in the Succession PT-AAL1, UA-AAL1, and UA-IP solutions are configured. It includes the sections as follows:

- "Boot prompt configuration" (page 240)

- "Remote login configuration" (page 242)

- "IP address to host name mapping configuration" (page 242)

- "Default gateway configuration" (page 244)

- "Preside MDM software license configuration" (page 245)

- "Shared memory segment size configuration" (page 246)

- "Host group directory server configuration" (page 246)

- "Preside MDM server launch (SVMList) configuration" (page 248)

- "General Management Data Router server configuration" (page 253)

- "Network Time Synchronization system configuration" (page 254)

- "Workstation surveillance configuration" (page 258)

Boot prompt configuration

Review the following information to understand the initial configuration for
Nortel Networks Preside Multiservice Data Manager (MDM) UNIX
workstations.

Table 62
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	The connection between this Preside MDM server and the Communication Server LAN goes across this interface.
Network Interface name		<host name>	This is the host name of the hme0 interface.
Network environment		yes	
IP address	MDM server	<xx.xxx.xxx.xxx>	This is the IP address of the Preside MDM server.
Service Name	no service name	none	
Subnet	have subnet	yes	
(Sheet 1 of 2)			

Table 62 (Continued)
Server configuration prompts and attribute values

Prompts	Attributes	Configured values	Notes
Netmask	Netmask	<netmask>	
Time zone	Region	<region name>	This is the name of the region where the Preside MDM server is located, for example, Canada.
	Time zone	<time zone name>	This is the name of the time zone or the offset from GMT where the Preside 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.
(Sheet 2 of 2)			

Remote login configuration

Review the following information to understand how remote login is configured on Nortel Networks Preside Multiservice Data Manager (MDM) servers.

Table 63
Remote login configuration and attribute values

File	Attributes	Configured values	Notes
/etc/default/login			Edit this file on the Preside 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. *Note:* 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 Networks Preside Multiservice Data Manager (MDM) servers. A sample file appears in "Sample /etc/hosts file" (page 243).

Note: Values for the host names of the interfaces refer to the various ports of Preside MDM servers connected to Nortel Networks Multiservice Switch 15000 nodes. These are configured during the initial installation of Preside MDM software.

Table 64
IP address to host name mapping configuration and attribute values

File	Attributes	Configured values	Notes
/etc/hosts			Edit this file on the Preside MDM server. Entries in this file should correspond to entries made for attribute *IpAccess/<IP address>* in table "Access control configuration" (page 24).
	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 Preside MDM server.
Note: Configure these values when the Solaris software is installed.			

Figure 1
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 Networks Preside Multiservice Data Manager (MDM) gateway server is configured.

Table 65
Default gateway configuration and attribute values

File	Attributes	Configured values	Notes
/etc/defaultrouter			Edit this file on the Preside MDM server.
	Connection Host	<MDM_hme0_IP Address>	The IP address of the host connection.
Note: Configure these values when the Solaris software is installed.			

Preside MDM software license configuration

Review the following information to understand how the Nortel Networks Preside Multiservice Data Manager (MDM) software license is configured.

Table 66
Preside MDM software license configuration and attribute values

File	Attributes	Configured values	Notes
/etc/opt/Magellan/ LICcustName.cfg			Edit this file on the Preside MDM server.
	Customer name	<customer name>	The customer name is your company's name.
/etc/opt/Magellan/ LIClicenses.cfg			Edit this file on the Preside MDM server.
	License number	NMS <release number> <customer name>	<release number> is the licence key provided to you by Nortel Networks. The customer name is your company's name.
Note: Configure these values using the QuickStart tool when the Preside MDM software is installed.			

Shared memory segment size configuration

Review the following information to understand how shared memory segment size is configured.

Table 67
Shared memory segment configuration commands and values

Command	Attributes	Configured values	Notes
/opt/MagellanNMS/system/ config/config_sys_shmem		256	This command creates segments of 32 Mbyte.
/opt/MagellanNMS/system/ config/ config_sys_semaphores		50	
Note: Configure these values using the QuickStart tool when the Preside MDM software is installed.			

Host group directory server configuration

The Host Group Directory Server (HGDS) provides network management information to Nortel Networks Preside Multiservice Data Manager (MDM) that describes the system configuration of your network by reporting how Nortel Networks 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 Preside 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.

Table 68
Host group directory configuration component and attribute values

Attributes	Configured values	Notes
		Edit this file on the Preside MDM server.
FMember:	<node name>	The node name identifies each node by name. These names are the same ones that are defined in the */etc/hosts* 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.
FGroup:	<clli>	The group name for the Succession office is represented by the CLLI. This is used for real time statistics collection, Preside MDM surveillance and command access. There may be multiple FGroups; one for each Succession office.
Member	<node name>	The lists of the nodes that are associated with the FGroup.
Note: You can configure these values using the Preside MDM Server Administration tool.		

Preside MDM server launch (SVMList) configuration

Review the following information to understand how Nortel Networks Preside Multiservice Data Manager (MDM) server launches are configured.

To manage the MDP servers, you must also use the Server Administration tool (SVMadm). For more information, see "MDP server configuration" (page 260).

Table 69
SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
	0	Use SVMadm to configure servers.
Log collector	/opt/MagellanNMS/bin/oamc -f /opt/MagellanNMS/data/log/oamc.log	This server is required on Preside MDM server set and client set.
HGDS	/opt/MagellanNMS/bin/hgds	This server is required on Preside MDM server set. It is not required on the MDM client set.
Passport comms manager	/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 Preside MDM server set. It is not required on the client set.
DMA	/opt/MagellanNMS/bin/dma -g IMDR	This server is required on the Preside MDM server set and client set.
(Sheet 1 of 5)		

Table 69 (Continued)
SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
Network Model co-ordinator	/opt/MagellanNMS/bin/dnmnmc	This server is required on the Preside 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 Preside 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 Preside MDM server set. It is not required on the client set.
Network Model edit server	/opt/MagellanNMS/bin/edserver	This server is required on the Preside MDM server set. It is not required on the client set.
FMDR(s)	/opt/MagellanNMS/bin/fmdr -u \<MDM ID for Succession office> -p /opt/MagellanNMS/cfg/private/ \<password file> -g \<CLLI group> -l AL	*\<MDM ID for Succession office>* is the surveillance user ID defined on the Multiservice Switch 15000 shelves. *\<password file>* is the file that contains the encrypted Preside MDM passwords for the Multiservice Switch 15000 node user ID, for the Succession office. *\<CLLI group>* reflects the HGDS group (defined earlier) used for surveillance of the Succession office. This server is required on the Preside MDM server set. It is not required on the client set.
General Management Data Router	/opt/MagellanNMS/bin/gmdr	This server is required on the Preside MDM server set. It is not required on the client set.
(Sheet 2 of 5)		

Table 69 (Continued)
SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
Network Data Access Manager	/opt/MagellanNMS/bin/ndam	This server is required on the Preside MDM server set. It is not required on the client set.
Real time alarm collection	/opt/MagellanNMS/bin/rtaccol -filecleanup10	This server is required on the Preside MDM server set. It is not required on the client set.
PMSP	/opt/MagellanNMS/bin/pmsp -u <MDM ID for Succession office> -p /opt/MagellanNMS/cfg/private/ <password file> -g <CLLI group> -ppexpire 30 -nosync -hgds -officeId <Succession office CLLI> -5port <5 min TCP port> -30port <30 min TCP port> -savefile	*<MDM ID for Succession 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 Preside MDM passwords for the Multiservice Switch 15000 node user ID, for the Succession office. *<CLLI group>* reflects the HGDS group (defined earlier) used to collect real-time performance data, for the Succession office. *<Succession office CLLI>* is the name of the Succession office that appears in the performance records. *<5 min TCP port>* is the IP socket number where the 5-minute records are available. *<30 min TCP port>* is the IP socket number where the 30-minute records are available. This server is required on the Preside MDM server set. PMSP runs on selected systems. It is not required on the client set.
(Sheet 3 of 5)		

Table 69 (Continued)
SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
pserver	/opt/MagellanNMS/bin/pserver -m -e 3197 /opt/MagellanNMS/ bin/gmdrapi	This is used to communicate alarms to the SDM. This server is required on the Preside MDM server set. It is not required on the client set.
Workstation Surveillance	/opt/MagellanNMS/bin/sfm	This server is required on the Preside MDM server set and client set.
End to end server	/opt/MagellanNMS/bin/eteserver	This server is required on the Preside MDM server set. It is not required on the client set.
NP configuration server	/opt/MagellanNMS/bin/pcserver	This server is required by the Preside MDM server set. It is not required by the client set.
NP configuration manager	/opt/MagellanNMS/bin/configman	This server is needed on the Preside MDM server set. It is not needed on the client set.
MDM context server	/opt/MagellanNMS/bin/ctxsvr	This server is required on the Preside MDM server set and client set.
IMDR	/opt/MagellanNMS/bin/imdr	This server is required on the Preside MDM server set and client set.
MNSD Level 2	/opt/MagellanNMS/bin/mnsd	This server is required on the Preside MDM server set and client set.
MNSD agent	/opt/MagellanNMS/bin/nmsagent	This server is required on the Preside MDM server set and client set.
SecureFTPD	/opt/MagellanNMS/bin/ launchSecureFTPD	This server is required on the Preside MDM server set. It is not required on the client set.
(Sheet 4 of 5)		

Table 69 (Continued)
SVMList server configuration prompts and attribute values

Attributes	Configured values	Notes
Performance Viewer Agent	/opt/MagellanNMS/bin/pmagent	This server is required on the Preside MDM server set. It is not required on the client set.
PP CMD Access Server	/opt/MagellanNMS/bin/eteserver - nPPAccessServer -p 6601	This server is required on the Preside MDM server set. It is not required on the client set.
PP Backup Controller	/opt/MagellanNMS/bin/nsctlbck	This server is required on the Preside MDM server set. It is not required on the client set.
PP Backup Provider	/opt/MagellanNMS/bin/pbckpp	This server is required on the Preside MDM server set. It is not required on the client set.
PP Restore Controller	/opt/MagellanNMS/bin/nsctlrst	This server is required on the Preside MDM server set. It is not required on the client set.
PP Restore Provider	/opt/MagellanNMS/bin/prstpp	This server is required on the Preside MDM server set. It is not required on the client set.
PP Config Model Server	/opt/MagellanNMS/bin/pcms	This server is not required for the Preside MDM server set or the client set.
Data Sync Server	/opt/MagellanNMS/bin/ dataSyncServer	Supports the Passport Service Data Backup/Restore tool. Required on the server set only.
SMDR	/opt/MagellanNMS/bin/smdr	Preside MDM server-set or standalone system only.
TSVR	/opt/MagellanNMS/bin/tsvr	Preside MDM server-set or standalone system only.
idi_PP8600DCD	/opt/MagellanNMS/ext/lib/macros/ idi_PP8600dcd -d 1	Preside MDM server-set or standalone system only.
Note: You can configure these values using the Preside MDM Server Administration tool.		
(Sheet 5 of 5)		

General Management Data Router server configuration

Review the following information to understand how the general management data router server is configured.

For more information on the GMDR, see NN10180-611 *Nortel Networks Multiservice Switch 15000, Media Gateway 15000 and Preside MDM in Succession Networks Security and Administration PT-AAL1/UA-AAL1/UA-IP* and 241-6001-310 *Preside MDM Server Reference Guide*.

Table 70
General Management Data Router server configuration and attribute values

Name	Host	Notes
FMDR_xxx	(local host)	xxx is the name provided in the Preside MDM Server Administration tool.
		Repeat for each Succession office.
FMDR_xxx	(remote host)	Requires a node user ID and password.
		Repeat for each Succession office on the remote Preside MDM server.
IMDR	(local host)	User capability left blank.
IMDR	(remote host)	Password left blank.
		Repeat for each remote Preside 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 Preside MDM GMDR Administration tool.		

Network Time Synchronization system configuration

Network Time Synchronization (NTS) refers to the synchronization of the time-of-day on Nortel Networks Preside Multiservice Data Manager (MDM) 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.

Preside MDM Release 15.1 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, Preside 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.

For more information on the NTS system, see 241-6001-303 *Preside MDM Administrator Guide*.

Note: The NTS system synchronizes the time-of-day on Preside 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.

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:

1   Copy the file ntp.server to ntp.conf, using a UNIX command as follows:

```
cp /etc/inet/ntp.server /etc/inet/ntp.conf
```

2   Edit the ntp.conf file to set a particular server as the timing reference, as follows:

   a.   Find the line that begins with "server 127.127". Change it to:

   server <ip address of clocking source> prefer

   For example, where the IP address is 127.127.1.1, change it as follows:

   server 127.127.1.1 prefer

   b.   Add references to any other servers from which Preside MDM can obtain time synchronization information. In Succession, this is usually the Integrated Element Management System (IEMS) or the SuperNode Data Manager (SDM).

   c.   The Preside MDM server can be in a peer relationship, also known as a server set, with another Preside MDM server. In that case, the ntp.conf file must exist on each of the servers. Each ntp.conf file must specify the IP addresses of both servers. Use the syntax as follows:

   server <ip address of clocking source> prefer

   peer <ip address of MDM server 1>

   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
```

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.

1   Edit the file /etc/inet/nts.drift.

2   Enter the value of the oscillator frequency offset, if you know it. Otherwise, enter 0.

3   Save the file.

Setting up file permissions and owner

Set up permissions for the configuration and drift files:

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.

Starting the server

Start the server, or XNTP daemon.

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

See the table "Network time synchronization system configuration and attribute values" (page 257) to understand how the Network Time Synchronization system is configured.

Note: You can use the UNIX vi editor to configure these values.

Table 71
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.
	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 Preside 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.XType.0 stratum 0	Comment out this line.
/etc/inet/ntp.drift			Edit this file on the Preside 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 Networks Preside Multiservice Data Manager (MDM) 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 Preside MDM servers

- the state of Preside MDM software processes

Review the following information to understand how Preside MDM workstation surveillance is configured.

Table 72
Workstation surveillance configuration and attribute values

File	Configured values	Notes
/opt/MagellanNMS/bin/ SFM_config		Edit this file on the Preside MDM server.
	Interval 30	
	CPU_Load Minor 70	
	CPU_Load Major 80	
	CPU_Load Critical 90	
	Mem_Minor 80	
	Mem_Major 90	
	Mem_Critical 95	
	FS_Minor 80	
	FS_Major 90	
	FS_Critical 95	
	Manage FS /var /localdisk /tmp	
	Local_Port_Connection (ipaddress>	IP address of each workstation where connectivity should be monitored.
	Remote_Connection <>	IP address of each workstation where connectivity should be monitored.
Note: Configure these values using the WSF GUI.		

MDP user configuration

Review the following information to understand how MDP users are configured.

Table 73
MDP group configuration and attribute values

File	Attributes	Configured values	Notes
/etc/group			Edit this file with the Sun admintool.
	MDP group name	mdpgroup	Identifies the mdp administration group.
	MDP group userids	mdpadmin, mdpprobe	Identifies the mdp group member userids.
Note: Configure these values using the QuickStart tool when the Preside 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 Passport Data Model Manager (mdpdmm)

Some servers depend on other servers. These servers must start in a particular order. These servers include servers that manage file acquisition from Nortel Networks 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 Passport 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 Passport File Manager, for conversion of Passport files from fast management information protocol (FMIP) to BDF

— the MDP File Mover Manager, to transfer files to the OSS.

• the MDP Passport File Manager (mdpppmgr). It requires:

— the MDP Passport 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 Preside MDM servers that are running the MDP application.

Note 2: MDP is running on selected Preside MDM server-set systems.

Table 74
MDP server configuration

Attributes	Configured values	Notes
	0	Use SVMadm to configure servers.
MDP Disk Manager	/opt/ MagellanMDP/bin/ mdpdiskmgr	Disk Manager manages the disk space by deleting old files. This server is not required on the Preside MDM client set.
MDP PP File Manager	/opt/ MagellanMDP/bin/ mdpppmgr	MDP Passport File Manager manages the access to the Multiservice Switch 15000s. This server is not required on the Preside MDM server set unless PM is running. Passport Manager is not required on the client set.
(Sheet 1 of 2)		

Table 74 (Continued)
MDP server configuration

Attributes	Configured values	Notes
MDP PP 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 Preside MDM server set unless PM is running. File Prober Manager is not required on the client set.
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 Preside MDM server set unless PM is running. Configuration daemon is not required on the client set.
MDP File Mover Manager	/opt/ MagellanMDP/bin/ mdpfmmgr	MDP File Mover Manager manages the MDP File Mover.
		This server is not required on the Preside MDM client set.
(Sheet 2 of 2)		

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 264).

Table 75
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>	
	Passport	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.
(Sheet 1 of 2)			

Table 75 (Continued)
MDP configuration and attribute values

Executable	MDP configuration tabs	Configured values	Notes
	Surveillance		Check Enable MDP to send Preside 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
(Sheet 2 of 2)			

MDP configuration for File Prober

Review the following information to understand how to configure File Prober.

Table 76
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
Note: Configure these values using the GMDR Administration tool.		

Clean up of the cron file configuration

Review the following information to understand how regular clean up of the records in the cron file is configured.

Table 77
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
	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
Note: 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.

Table 78
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
pserver	3197	configurable	On the Preside MDM server set. Communicates alarms with SDM or OSS.
PMSP	1646 1647	configurable configurable	For 5-minute and 30-minute NTM CSV records. Use one pair of port address per PMSP server on the MDM. On the Preside MDM server set. Communicates with SDM.
mdmftpd	2374	fixed	For secure FTP port. On Preside MDM server set. Call out to node, called by node.
pbckpp	5020	configurable	Called by the nsctlbck server (internal to Preside MDM server set).
prstpp	5021	configurable	Called by the nsctlrst server (internal to Preside MDM server set).
(Sheet 1 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
MNSD	5502 5503	fixed	Stores server port number and service names. Allows Preside MDM servers to communicate with each other. Called by other Preside MDM workstation MNSDagents.
MNSDagent	5934	configurable	Allows Preside MDM applications to request port numbers for other applications from the MNSD server.
IPI	>1024	dynamic configurable	Used for inter-process communication between Preside MDM servers and nodes. The range is specified with an entry in /opt/MagellanNMS/cfg/private/IPCPortRange.cfg (The entry is the range allowed by the server.). IPI is internal to all Preside MDM servers.
(Sheet 2 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
FDTr	>1024	dynamic configurable	Used for inter-process communication between Preside MDM servers and nodes. The range is specified with an entry in */opt/MagellanNMS/cfg/ private/ IPCPortRange.cfg* (The entry is the range allowed by the server.). FDTr is called by Preside MDM client set to the server set, and by the server set to the node (3 connections per node, 2 per client).
GMDR	5	configurable	Used in the node fault stack. It is configurable by specifying the entry in / opt/MagellanNMS/lib/cfg/ IPCNameMap.cfg. Used internally in Preside MDM server set. Can be called by another Preside MDM workstation Component Information Viewer application.
(Sheet 3 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
HGDS		configurable	Used in the node connection stack. It is configurable by specifying the entry in */opt/MagellanNMS/lib/ cfg/IPCNameMap.cfg.* Used internally in Preside MDM server set. Can be called by another Preside MDM workstation Command Console application.
FMDR		configurable	Used in the node fault stack. It is configurable by specifying the entry in */opt/MagellanNMS/lib/ cfg/IPCNameMap.cfg.* Used internally in Preside MDM server set. Can be called by another Preside MDM workstation Component Information Viewer application.
Network Model		configurable	Used in the node fault stack. It is configurable by specifying the entry in */opt/MagellanNMS/lib/ cfg/IPCNameMap.cfg.* Used internally in Preside MDM server set. Can be called by another Preside MDM workstation Network Viewer application.
(Sheet 4 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
IMDR		configurable	Used in the node fault stack. It is configurable by specifying the entry in */opt/MagellanNMS/lib/ cfg/IPCNameMap.cfg.* Used internally in Preside MDM server set. Can be called by another Preside MDM workstation GMDR_sub.
SMDR		configurable	Used in the Passport 8600 fault stack. It is configurable by specifying the entry in */opt/MagellanNMS/lib/ cfg/IPCNameMap.cfg.* Used internally in Preside MDM server set. Can be called by another Preside MDM workstation GMDR_sub.
Telnet	23		Used between the operator desktop and Preside MDM client-set or standalone server. Can also be used to communicate directly with a node. Called by operator desktop to all Preside MDM servers.
(Sheet 5 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
XNTP	123		Used between Preside MDM servers to synchronize from a network time protocol source and to communicate with nodes to node connectivity, and called by nodes for all Preside MDM servers.
ping	9595		Used between Preside MDM servers and nodes to determine if the node is reachable. node connectivity, and called by Preside MDM server set.
SNMP	161, 162		Port 162 is used to receive traps from Passport 8600. Port 161 is called by the Passport 8600. Port 161 is called by the Preside MDM server set.
FTP	20, 21		FTP between Preside MDM servers and OSS, or another Preside MDM server. Called by OSS. Can also be used to communicate with another Preside MDM server or with nodes (where secure FTP is not deployed).
(Sheet 6 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
Http server	80		Used by tomcat server. Internal to all Preside MDM servers.
NFS	2049		Used to exchange Sun disk partitions between Preside MDM servers. Called by another Preside MDM server.
gmdpconfig	1099		For MDP communication
pcms	pcms	configurable	Passport Configuration Model Server administers the allocation of node provisioning models for nodal provisioning applications. Used internally in Preside MDM server set.
apache	8080	configurable	Internal to Preside MDM.
MDM help	8081	fixed	Used by the Help server to provide context sensitive help, local to the Preside MDM server. Internal to Preside MDM client set.
X11	6000, 6001, 6602, 6603	X11	X11 clients. Required between the Preside MDM client-set (or standalone server) and the operator's desktop.
(Sheet 7 of 8)			

Table 78 (Continued)
Firewall port configuration

Port name	Port number	Configurable or fixed values	Notes
Configman	6760	configurable	Used by the nodal provisioning application to communicate with Configman. Called by another Preside MDM workstation nodal provisioning application, or internally on the server set.
pcserver	6767		pcserver is used by Configman to communicate with the Passport Configuration server. Used internally on the Preside MDM server set.
pmagent	5505	configurable	Used for Data Viewer tool to communicate with its daemon. Used internally in the Preside MDM server set, or called by Data Viewer tool.
psvagent	5934	configurable	Can be called by another Preside MDM workstation Fault Dev Access Agent, or internally in the Preside MDM server set.
(Sheet 8 of 8)			

Nortel Networks Multiservice Switch 15000, Media
Gateway 15000 and Preside MDM in Succession
Networks
Configuration Attribute Summary
PT-AAL1/UA-AAL1/UA-IP

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