NORTEL NETWORKS

Preside Multiservice Data Manager

Nodal and Service Provisioning

Reference Guide

241-6001-611

Preside Multiservice Data Manager
Nodal and Service Provisioning
Reference Guide

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Contents

Chapter 6
MPLS templates   99

Chapter 7
MPLS provisioning sessions   113

About this document

The following topics are discussed in this section:

- "Who should read this document and why" (page 11)

- "What you need to know" (page 11)

- "How this document is organized" (page 12)

- "What's new in this document" (page 12)

- "Text conventions" (page 13)

- "Related documents" (page 14)

Who should read this document and why

This document contains sample provisioning sessions that show how you can use the Nodal Provisioning (NP) tool, IP VPN Global Update tool, and ATM Service Provisioning tool to provision certain services.

This guide is intended for personnel who are managing and provisioning Passports.

What you need to know

This document assumes that you have knowledge of Nortel Networks' Preside Multiservice Data Manager (MDM) and an understanding of the Passport product.

How this document is organized

241-6001-611 *Preside MDM Nodal and Service Provisioning Reference Guide* contains the following sections:

- "ATM service templates" (page 15) provides descriptions of the templates that are available to provision an ATM service.

- "Frame Relay service templates" (page 25) provides descriptions of the templates that are available to provision a Frame Relay service.

- "FrAtm service templates" (page 29) provides descriptions of the templates that are available to provision Frame Relay ATM access interfaces. These templates provision the service interworking function that performs FRF.8 conversion to ATM on the access side of the Passport.

- "VPN service templates" (page 41) provides a description of the templates available to provision FR DTE services.

- "Succession service templates" (page 47) provides descriptions of the templates that are available to provision Succession services on a Passport 15000 node. For Succession (Packet Trunking - AAL1 and Wireline Universal Access - AAL1) provisioning sessions, refer to the Succession documentation.

- "MPLS templates" (page 99) provides descriptions of the templates that are available to provision Multi-Service applications on MPLS over ATM for 1-port OC-48 functional processor cards for Passport 15000 switches.

- "MPLS provisioning sessions" (page 113) contains procedures for provisioning Multi-Service applications on MPLS over ATM for the 1-port OC48 functional processor card on Passport 15000 switches.

What's new in this document

There are no changes to this document for this release.

Text conventions

This document uses the following text conventions:

• `nonproportional spaced plain type`

Nonproportional spaced plain type represents system generated text or text that appears on your screen.

• `nonproportional spaced bold type`

Nonproportional spaced bold type represents words that you should type or that you should select on the screen.

• *italics*

Statements that appear in italics in a procedure explain the results of a particular step and appear immediately following the step.

Words that appear in italics in text are for naming.

• `[optional_parameter]`

Words in square brackets represent optional parameters. The command can be entered with or without the words in the square brackets.

• `<general_term>`

Words in angle brackets represent variables which are to be replaced with specific values.

• UPPERCASE,lowercase

In MDM uppercase and lowercase letters that appear in UNIX commands and parameters must be matched exactly. The system matches upper and lowercase characters differently.

• |

This symbol separates items from which you may select one; for example, ON|OFF indicates that you may specify ON or OFF. If you do not make a choice, a default ON is assumed.

- ...

  Three dots in a command indicate that the parameter may be repeated more than once in succession.

The term absolute pathname refers to the full specification of a path starting from the root directory. Absolute pathnames always begin with the slash (/) symbol. A relative pathname takes the current directory as its starting point, and starts with any alphanumeric character (other than /).

Related documents

See the following documents for related information:

- 241-5701-710 *Passport 7400, 15000, 20000 ATM Configuration Guide*

- 241-5701-815 *Passport 7400, 15000 IP Access Media Guide*

- 241-5701-820 *Passport 7400, 15000, 20000 IP Virtual Private Network Planning and Application*

- 241-5701-901 *Passport 7400, 15000, 20000 Frame Relay Fundamentals*

- 241-5701-902 *Passport 7400, 15000, 20000 Configuring Frame Relay*

- 241-6001-011 *Preside MDM Fault Management User Guide*

- 241-6001-023 *Preside MDM Configuration Management for Passport User Guide*

- 241-6001-100 *Preside MDM Installer Guide*

- 241-6001-310 *Preside MDM Server Reference Guide*

- 241-6001-600 *Preside MDM Service Provisioning for ATM User Guide*

- 241-6001-601 *Preside MDM Service Provisioning for IP VPN Global Update User Guide*

- 241-6001-603 *Preside MDM Service Provisioning for Frame Relay User Guide*.

- 241-6001-610 *Preside MDM Nodal Provisioning User Guide*

Chapter 1
ATM service templates

This section describes the ATM service provisioning templates under the ATM tab in the Nodal Provisioning window.

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

The following ATM service templates are found under the ATM tab in the Nodal Provisioning tool window:

- "ATM Interface" (page 17)

- "ATM Interface with UNI" (page 18)

- "ATM Interface with PNNI" (page 18)

- "ATM Interface with IISP" (page 18)

- "AtmIf-Vcc" (page 19)

When you provision an ATM service, you can drop the ATM service template on any of the following ports under the logical processor (LP) component:

- Sdh Vc4
- Sdh Path
- Sonet Sts
- Sonet Path
- E3
- E1 Chan
- Ds3
- Ds3 Ds1 Chan
- Ds1 Chan
- JT2

To provision ATM access on a device you need to complete the following procedures:

- configure ATM on the devices, see 241-5701-710 *Passport 7400, 15000, 20000 ATM Configuration Guide*.

- load the ATM software, use the Software Download and Configuration tool. For more information, see 241-6001-023 *Preside MDM Configuration Management for Passport User Guide*.

- add and provision the port component. You can use the Nodal Provisioning tool to add a port, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

- provision the ATM service using the service templates in Nodal Provisioning

You can use the ATM service provisioning tool to create a circuit. For information about the ATM service provisioning tool and how to use it, see 241-6001-600 *Preside MDM Service Provisioning for ATM User Guide*.

ATM Interface

This service template is for the basic ATM interface. This service does not support a signaling and routing protocol, that is, it is not a UNI, PNNI, or IISP interface. When you provision this service, the ATM Interface (AtmIf) component and its subcomponent, ConnectionAdministrator (CA) are always created.

In addition, the following subcomponents of the CA are always created:

- ConstantBitRate (Cbr/0)

- RealTimeVariableBitRate (RtVbr/0)

- NonRealTimeVariableBitRate (NrtVbr/0)

- UnspecifiedBitRate (Ubr/0)

ATM Interface with UNI

This service template is for ATM Interface with UNI (User to network interface).The UNI is used between ATM terminal equipment and the network. When you provision this service, the ATM Interface (AtmIf) component and its subcomponents, ConnectionAdministrator (CA) and UserNetworkInterface (Uni) are always created.

In addition, the following subcomponents of the CA are always created:

- ConstantBitRate (Cbr/0)

- RealTimeVariableBitRate (RtVbr/0)

- NonRealTimeVariableBitRate (NrtVbr/0)

- UnspecifiedBitRate (Ubr/0)

ATM Interface with PNNI

This service template is for ATM Interface with PNNI (Private network to network interface). The PNNI is used between networks. When you provision this service, the ATM Interface (AtmIf) component and its subcomponents, ConnectionAdministrator (CA) and Private Network-Network Interface (Pnni) are always created.

In addition, the following subcomponents of the CA are always created:

- ConstantBitRate (Cbr/0)

- RealTimeVariableBitRate (RtVbr/0)

- NonRealTimeVariableBitRate (NrtVbr/0)

- UnspecifiedBitRate (Ubr/0)

ATM Interface with IISP

This service template is for ATM Interface with IISP (Interim inter-switch signaling protocol). The IISP is used between network nodes. When you provision this service, the ATM Interface (AtmIf) component and its subcomponents, ConnectionAdministrator (CA) and Interim Inter-Switch signaling Protocol (Iisp) are always created.

In addition, the following subcomponents of the CA are always created:

- ConstantBitRate (Cbr/0)

- RealTimeVariableBitRate (RtVbr/0)

- NonRealTimeVariableBitRate (NrtVbr/0)

- UnspecifiedBitRate (Ubr/0)

AtmIf-Vcc

The AtmIf Vcc template creates a Virtual Channel Connection (VCC) under the selected ATM Interface. In addition, the Traffic Management parameters can be provisioned. The drop site for the AtmIf-Vcc template is the ATM Interface.

ATM Interface-SPVC

Passport SPVC (soft permanent virtual connection) removes the need to manually provision each node along a connection. When you provision the end point, the connection route is automatically selected so you do not have to manually provision each node along the connection. SPVCs also support automatic route selection and lets you establish and reestablish connections. ATMIf-SPVC has two templates:

- "AtmUni with Terminate SPVC" (page 19) lets you provision the port for the Interface name and enter the address for the ATM Uni Address.

- "Atm Vcc with Src Pvc" (page 20) lets you create the end point for an ATM SPVC.

AtmUni with Terminate SPVC

The AtmUni with Terminate SPVC template is for AtmIf with Terminate SPVC (Soft Permanent Virtual Connections). When you provision this service, the ATM Interface(AtmIf) component and its subcomponents, Uni and AtmUni Address (Addr) are created. Also, the TerminateSPvpAndSPvc (TermSP) is created under Addr, and the Signaling (Sig) and Ilmi are created under Uni.

In addition the following subcomponents of the CA are always created:

- ConstantBitRate (Cbr/0)

- RealTimeVariableBitRate (RtVbr/0)

- NonRealTimeVariableBitRate (NrtVbr/0)

- UnspecifiedBitRate (Ubr/0)

Atm Vcc with Src Pvc

The Atm. Vcc with SrcPVC template creates an end point for ATM SPVC (soft permanent virtual connection). When you drop this template on an ATM Interface (AtmIf) the virtual channel connection (VCC) is created. The AtmSrcPvc (source PVC) components is also created under the VCC and its callingAddress, calledAddress and calledVpiVci attributes are set:

- Called Address
  This is the address associated with the destination interface.

- CalledVPI Vci
  This is the remote virtual path identifier number and channel identifier number.

ATM SPVC with MDTL

The ATM SPVC with MDTL template creates an end point for ATM SPVC (soft permanent virtual connection) with user-specific paths enabled. When you drop this template on an ATM Interface (ATMIf) the virtual channel connection (VCC) is created.

The ATMSrcPvc (source PVC) component is also created under the VCC and its attributes are set:

- Calling Address
  This is the calling address associated with the source interface. If you do not specify an address, the node uses the default source interface address.

- Called Address
  This is the address associated with the destination interface.

- CalledVPI Vci
  This is the remote virtual path identifier number and channel identifier number.

Under the AtmSrcPvc component, the AtmSrcMdtl (Manual DTL) component is created. You are prompted to select the primary path, alternate path and whether automatic PNNI routing is used on primary/secondary MDTL routing failures:

- primaryPath
  This identifies the primary path. This is a mandatory attribute and the string that you enter must match an instance of MdtlPath.

- alternatePath
  This identifies the alternate path. This attribute is optional, but if you do enter a value, the string that you enter must match an instance of MdtlPath. If you do not set the alternatePath, the retry sequence will not try to connect using the alternate path. The option -alternate of the reconnect command will also be disabled.

- automaticFallback
  If you enable this value, the default retry procedure is followed. If you disable this value, the retry sequence using PNNI routing capability is not attempted on routing failures. The option -automatic of the reconnect command is also disabled. The automaticFallback value is enabled by default.

CES over ATM SVC

Passport AAL1 CES converts DS1 or E1 circuit constant bit rate (CBR) traffic into ATM cells for transport over an ATM network. Upon arrival at their destination, Passport AAL1 CES converts these cells back to DS1 or E1 circuit CBR traffic.

For an SVC, each CES instance requires exclusive use to an ATM VCC (SVC) on the same Passport node. All required signaling is done by the CES. The ATM VCC (EP) is linked to the CES (ATMCONN) application.

Circuit emulation service on a switched virtual circuit connection requires provisioning of an active end point (AEP) on the calling (source) end of the connection and a passive end point (PEP) on the called (destination) end of the connection.

AAL1 CES PEP

This service template creates an instance of the Aal1Ces component and the Pep subcomponent. The Pep component provides a passive end point for a switched virtual connection between two applications. The Pep defines the CES access information, which includes local and remote addresses for the connection.

The following attributes can be provisioned:

- Interface Name. This attribute identifies the instance of Chan to which an instance of Aal1Ces is linked.

- Local Address. This attribute specifies the NSAP address.

AAL1 CES AEP

This service template creates an instance of the Aal1Ces component and the AEP subcomponent. The Aep defines logical connectivity information for CES components that initiates calls. You can provision the following attributes:

- Interface Name. This attribute identifies the instance of Chan to which an instance of Aal1Ces is linked.

- Address To Call. This attribute specifies the remote NSAP address which the active end point will call.

Atm-Vcc Nrp (Nailed-up Relay Point)

This template creates a Virtual Channel Connection (VCC) with a Nailed-up Relay Point (NRP) on a selected ATM interface.

The Atm-Vcc Nrp template

- adds the following subcomponents below the AtmIf component:

    — Vcc/<VPI.VCI>
        Vcd
            Tm
    Nrp

- selects the NRP of the VCC you wish to use for the next hop

Drop-sites: AtmIf/<?>

Pre-requisites: None

Atm-Vpc Nrp (Nailed-up Relay Point)

This template creates a virtual path connection (VPC) with a Nailed-up Relay Point (NRP) on an ATM interface.

*   adds the following subcomponents below the AtmIf component:

    — Vpc/<VPI.VCI>
        Vpd
          Tm
      Nrp

*   lets you select the NRP for the next hop

Drop-sites: AtmIf/<?>

Pre-requisites: None

Atm-Vcc Nep (Nailed-up End Point)

This template creates a virtual channel connection (Atmif-Vcc) with a Nailed-up End Point (NEP) on a selected ATM interface.

The Atm-Vcc Nep template Adds the following subcomponents below the AtmIf/<?> component:

*   Vcc/VPI.VCI

    — Vcd
        Tm

    — Nep

Drop-sites: AtmIf/<?>

Pre-requisites: None

ATM Logical Trunk

This template creates an ATM logical trunk on the selected ATM connection.

The Atm Logical Trunk template

- adds the following subcomponents:

    — Trk/<?>

    — Atm

- links the Atm component with the Nep component

Drop-sites: Root (EM)

Pre-requisites:

- The routing (RTG) component must be configured with a routing ID and a module ID.

- You must have configured the ATM interface VCC nailed-up end point.

Atm-Vpt with PNNI

This template creates an ATM Virtual Path Termination (VPT) with a Private Network-to-Network Interface (PNNI) component under the selected ATM interface (AtmIf).

The Atm-Vpt with PNNI template adds the following components below the AtmIf/<?> component

- Vpt/VPI

    — Vpd
        Tm

- Pnni

    — Sig

    — Rcc

Drop-sites: AtmIf/<?>

Pre-requisites: You must have applied the Atm Interface with PNNI template.

Chapter 2
Frame Relay service templates

This section describes the Frame Relay service provisioning templates under the FRS tab in the Nodal Provisioning window.

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

The following templates are found under the FRS tab in the Nodal Provisioning tool window:

Before you can provision Frame Relay access with the Nodal Provisioning tool, you need to complete the following:

- configure Frame Relay on the devices. Refer to 241-5701-901 *Passport 7400, 15000, 20000 Frame Relay Fundamentals* and 241-5701-902 *Passport 7400, 15000, 20000 Configuring Frame Relay* for information on Frame Relay services.

- install the Frame Relay software, see 241-6001-100 *Preside MDM Installer Guide*.

You can use the Frame Relay service provisioning tool to create a Frame Relay circuit. For information on the Frame Relay service provisioning tool and how to use it, see 241-6001-603 *Preside MDM Service Provisioning for Frame Relay User Guide*.

Frame RelayUni with Framer

The frame relay user-to-network interface service (UNI) provides a standard interface between the user device and the network.

This service template is used to create an instance of the FR UNI service using a physical access link.

When you provision this service, the FrameRelayUni (FR UNI) component is always created. In addition, the following subcomponents of the FR UNI are always created:

- Framer
- DataNetworkAddress (Dna)
- LogicalManagementInterface (Lmi)
- ConnectionAdministrator (Ca)

Frame RelayUni with VFramer

The frame relay user-to-network interface service (UNI) provides a standard interface between the user device and the network.

This service template is used to create an instance of the FR UNI service using a logical access link.

When you provision this service, the FrameRelayUni (FR UNI) component is always created. In addition, the following subcomponents of the FR UNI are always created:

- VirtualFramer (VFramer)

- DataNetworkAddress (Dna)

- LogicalManagementInterface (Lmi)

- ConnectionAdministrator (Ca)

Frame RelayNni with Framer

The Passport frame relay (FR) network-to-network interface service (NNI) provides a communication interface between two frame relay networks.

This service template is used to create an FR NNI service using a physical access link.

When you provision this service, the FrameRelayNni (FR NNI) component is always created. In addition, the following subcomponents of the FR NNI are always created:

- Framer

- DataNetworkAddress (Dna)

- LogicalManagementInterface (Lmi)

- ConnectionAdministrator (Ca)

Frame RelayNni with VFramer

The Passport frame relay (FR) network-to-network interface service (NNI) provides a communication interface between two frame relay networks.

This service template is used to create an instance of the FR NNI service using a physical access link.

When you provision this service, the FrameRelayNni (FR NNI) component is always created. In addition, the following subcomponents of the FR NNI are always created:

- VirtualFramer (VFramer)

- DataNetworkAddress (Dna)

- LogicalManagementInterface (Lmi)

- ConnectionAdministrator (Ca)

Chapter 3
FrAtm service templates

You can use the following templates to provision Frame Relay ATM (FR-ATM) access interfaces. These templates provision the service interworking function that performs FRF.8 conversion to ATM on the access side of the Passport.

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

The following templates are found under the FrAtm tab in the Nodal Provisioning window:

- "FrAtm Dlci FRF.8 - SPVC (Calling)" (page 37)

- "FrAtm Dlci FRF.8 - SPVC (Called)" (page 39)

For information about FrAtm, see 241-5701-920 *Passport 7400, 15000, 20000 Frame Relay to ATM Interworking Guide*.

You can provision FR.8 FrAtm connections, see 241-6001-600 *Preside MDM Service Provisioning for ATM User Guide*.

FrAtm Interface with LMI

This template provisions a Frame Relay ATM (FrAtm) access interface with Local Management Interface (LMI). This template creates the following components and subcomponents:

- FrAtm

  — LMI

  — Framer

The drop site, prerequisites, and actions are summarized in the following table "FrAtm Interface with LMI template description" (page 31).

Table 1
FrAtm Interface with LMI template description

Template name	Drop Site	Prerequisites	Action
FrAtm Interface with LMI	LogicalProcessor, X21, V35, PmsHssi, E3, E1, Ds1Trib, Ds1Chan, E1Chan, DS1, DS3, MlfrMultiLinkFrameRelay Sonet, Sdh, LineAutomaticProtection Switching AutomaticProtection Switching	A valid drop site must be configured.	• provisions the FrAtm interface • adds the LMI component • adds the Framer component • links the interface to the drop site

The defaults are summarized in the following table "FrAtm Interface with LMI template defaults" (page 31).

Table 2
FrAtm Interface with LMI template defaults

Field name	Default value
FrAtm:	User supplied
Side:	Network
(Sheet 1 of 2)	

Table 2 (continued)
FrAtm Interface with LMI template defaults

Field name	Default value
Procedures:	autoConfigure
Account Collection:	bill
Sd Mode:	translationMode
(Sheet 2 of 2)	

FrAtm Interface with LMI and Addr for PNNI

This template provisions a FrAtm access interface with Local Management Interface (LMI) and Addr for PNNI. This template creates the following components and subcomponents:

- FrAtm

    — Framer

    — Addr

    — LMI

The drop site, prerequisites, and actions are summarized in the following table "FrAtm Interface with LMI and Addr for PNNI template description" (page 33).

Table 3
FrAtm Interface with LMI and Addr for PNNI template description

Template name	Drop Site	Prerequisites	Action
FrAtm Interface with LMI and Addr for PNNI	LogicalProcessor, X21, V35, PmsHssi, E3, E1, Ds1Trib, DS1Chan, E1Chan, DS1, DS3, MlfrMultiLinkFrameRelay Sonet, Sdh, LineAutomaticProtection Switching, AutomaticProtection Switching	A valid drop site must be configured.	• provisions the FrAtm interface • adds the LMI component • adds the Framer component • adds the Addr component • links the interface to the drop site

The defaults are summarized in the following table "FrAtm Interface with LMI and Addr for PNNI template defaults" (page 34).

Table 4
FrAtm Interface with LMI and Addr for PNNI template defaults

Field name	Default value
FrAtm:	User supplied
Address:	User supplied
Side:	Network
Procedures:	autoConfigure
Account Collection:	bill
Sd Mode:	translationMode

FrAtm Dlci FRF.8 - NPVC

This template provisions the FrAtm Data Link Connection Identifier (DLCI) components on a FrAtm interface configured for FRF.8 using an ATM nailed-up permanent virtual connection (NPVC).

The following subcomponents are provisioned:

- Dlci

  — Sp

  — Siwf NPvc

- Vcc

  — Nep

  — Vcd

  — Tm

The drop site, prerequisites, and actions are summarized in the following table "FrAtm Dlci FRF.8 - NPVC template description" (page 35).

Table 5
FrAtm Dlci FRF.8 - NPVC template description

Template name	Drop Site	Prerequisites	Action
FrAtm Dlci FRF.8 - Npvc	FrAtmInterface	A FrAtm interface must be previously configured and an AtmIf must be available for the egress Vcc.	• provisions the Dlci and subcomponents • adds the Vcc and subcomponents

The defaults are summarized in the following table "FrAtm Dlci FRF.8 - NPVC template defaults" (page 36).

Table 6
FrAtm Dlci FRF.8 - NPVC template defaults

Tab	Field name	Default value
General	Dlci:	User supplied
	Correlation tag:	User supplied
	Vcc:	User supplied
	Correlation tag:	User supplied
Traffic Management	Accounting	off
	Measurement interval:	0
	Excess Burst Size:	0
	Committed Burst Size:	64000
	Committed Information Rate:	64000
	Rate Enforcement:	On
	Maximum Frame Size:	2100
	Atm Service Category	unspecifiedBitRate

FrAtm Dlci FRF.8 - SPVC (Calling)

This template provisions the Calling portion of FrAtm Data Link Connection Identifier (DLCI) component on a FrAtm interface configured for FRF.8 using an ATM soft permanent virtual connection (SPVC).

The following subcomponents are provisioned:

- Dlci

    — Sp

    — Siwf SPvc

The drop site, prerequisites, and actions are summarized in the following table "FrAtm Dlci FRF.8 - Spvc (Calling) template description" (page 37).

Table 7
FrAtm Dlci FRF.8 - Spvc (Calling) template description

Template name	Drop Site	Prerequisites	Action
FrAtm Dlci FRF.8 - Spvc (Calling)	FrAtmInterface	A FrAtm interface must be previously configured.	• provisions the Dlci and subcomponents

The defaults are summarized in the following table "FrAtm Dlci FRF.8 - NPVC template defaults" (page 36).

Table 8
FrAtm Dlci FRF.8 - SPVC (Calling) template defaults

Tab	Field name	Default value
General	Dlci:	User supplied
	Correlation tag:	User supplied
	RemoteConnectionIdentifier:	User supplied
	Remote Address:	User supplied
(Sheet 1 of 2)		

Table 8 (continued)
FrAtm Dlci FRF.8 - SPVC (Calling) template defaults

Tab	Field name	Default value
Service Parameters	Accounting	off
	Measurement interval:	0
	Excess Burst Size:	0
	Committed Burst Size:	64000
	Committed Information Rate:	64000
	Rate Enforcement:	On
	Maximum Frame Size:	2100
(Sheet 2 of 2)		

FrAtm Dlci FRF.8 - SPVC (Called)

This template provisions the Called portion of FrAtm Data Link Connection Identifier (DLCI) component on a FrAtm interface configured for FRF.8 using an ATM soft permanent virtual connection (SPVC).

The following subcomponents are provisioned:

• Dlci

— Sp

— Siwf SPvc

The drop site, prerequisites, and actions are summarized in the following table "FrAtm Dlci FRF.8 - Spvc (Called) template description" (page 39).

Table 9
FrAtm Dlci FRF.8 - Spvc (Called) template description

Template name	Drop Site	Prerequisites	Action
FrAtm Dlci FRF.8 - Spvc (Called)	FrAtmInterface	A FrAtm interface must be previously configured.	• provisions the Dlci and subcomponents

The defaults are summarized in the following table "FrAtm Dlci FRF.8 - SPVC (Called) template defaults" (page 39).

Table 10
FrAtm Dlci FRF.8 - SPVC (Called) template defaults

Field name	Default value
Dlci:	User supplied
Accounting	off
Measurement interval:	0
Excess Burst Size:	0
(Sheet 1 of 2)	

Table 10 (continued)
FrAtm Dlci FRF.8 - SPVC (Called) template defaults

Field name	Default value
Committed Burst Size:	64000
Committed Information Rate:	64000
Rate Enforcement:	On
Maximum Frame Size:	2100
(Sheet 2 of 2)	

Chapter 4
VPN service templates

This section describes the the templates that are used to provision VPN FR DTE access from the Nodal Provisioning tool window.

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

Before you can provision VPN FR DTE access on a device you need to have completed the following tasks:

•   installed the Frame Relay software. See 241-6001-100 *Preside MDM Installer Guide*.

•   installed the Frame Relay DTE access software. See 241-5701-815 *Passport 7400, 15000 IP Access Media Guide*

•   installed the IP software. See 241-6001-100 *Preside MDM Installer Guide*.

- configured the network backbone following the procedures in 241-5701-820 *Passport 7400, 15000, 20000 IP Virtual Private Network Planning and Application*

- created the Virtual Connection Gateway. You can use the Nodal Provisioning tool to add a virtual router (VR) component to the device. See 241-6001-610 *Preside MDM Nodal Provisioning User Guide* for the procedure to add components.

- created the VPN and associated customer VRs using the IP VPN Global Update tool. See 241-6001-601 *Preside MDM Service Provisioning for IP VPN Global Update User Guide*.

The following VPN FR DTE templates are found under the VPN tab in the Nodal Provisioning main window:

FR DTE access with RIP

This service template is for VPN FR DTE Access with Routing Information Protocol (RIP). Provisioning this service causes certain components to be created automatically. An FR DTE is always created. Two FR UNI components are also always created: the FR UNI (DCE) for the data circuit terminating equipment and the FR UNI (DTE) for the data terminal equipment.

The following subcomponents are automatically created for the FR DTE:

- LocalManagementInterface (Lmi)

- RemoteGroup (Rg)

- DynamicDlciDefaults (DynDlciDefs)

- VirtualFramer (VFramer)

- StaticDlci (StDlci)

The following subcomponents are automatically created for the FR UNI (DCE):

- LocalManagementInterface (Lmi)

- DataNetworkAddress (Dna)

- Framer

- DataLinkConnectionIdentifier (Dlci)

    — DirectCall (DC)

    — ServiceParametersProv (Sp)

The following subcomponents are automatically created for the FR UNI (DTE):

- LocalManagementInterface (Lmi)

- DataNetworkAddress (Dna)

- VirtualFramer (VFramer)

- DataLinkConnectionIdentifier (Dlci)

    — DirectCall (DC)

    — ServiceParametersProv (Sp)

Before provisioning the VPN FR DTE service, it is assumed that you have already created a Virtual Router (VR) component for the customer virtual router using the IP VPN Global Update tool. The VR component must have been created with the IpAddress (Ip) component. When you provision a VPN FR DTE service, the following subcomponents are automatically created for the existing VR component:

- ProtocolPort (Pp)

    — IpPort

    — IpLogicalInterface (LogicalIf), which is a subcomponent of IpPort

When you provision the RIP service, the following subcomponents are automatically created:

- under the LogicalIf component

    — RipInterface (RipIf)

- under the Ip component

    — RoutingInformationProtocol (Rip)

- under the Rip component

    — Import

    — Export

When you provision a FR DTE service, you can drop the service template on either a V35 or X21 port under the Logical Processor (LP) comonent.

FR DTE access with OSPF

This service template is for VPN FR DTE Access with Open Shortest Path First (OSPF). Provisioning this service causes certain components to be created automatically. An FR DTE is always created. Two FR UNI components are also always created: the FR UNI (DCE) for the data circuit terminating equipment and the FR UNI (DTE) for the data terminal equipment.

The following subcomponents are automatically created for the FR DTE:

- LocalManagementInterface (Lmi)

- RemoteGroup (Rg)

- DynamicDlciDefaults (DynDlciDefs)

- VirtualFramer (VFramer)

- StaticDlci (StDlci)

The following subcomponents are automatically created for the FR UNI (DCE):

- LocalManagementInterface (Lmi)

- DataNetworkAddress (Dna)

- Framer

- DataLinkConnectionIdentifier (Dlci)

    — DirectCall (DC)

    — ServiceParametersProv (Sp)

The following subcomponents are automatically created for the FR UNI (DTE):

- LocalManagementInterface (Lmi)

- DataNetworkAddress (Dna)

- VirtualFramer (VFramer)

- DataLinkConnectionIdentifier (Dlci)

    — DirectCall (DC)

    — ServiceParametersProv (Sp)

Before provisioning the VPN FR DTE service, it is assumed that you have already created a Virtual Router (VR) component for the customer virtual router using the IP VPN Global Update tool. The VR component must have been created with the IpAddress (Ip) component. When you provision a VPN FR DTE service, the following subcomponents are automatically created for the existing VR component:

- ProtocolPort (Pp)

    — IpPort

    — IpLogicalInterface (LogicalIf), which is a subcomponent of IpPort

When you provision the Open Shortest Path First (OSPF) service, the following subcomponents are automatically created:

- under the LogicalIf component

    — OspfInterface (OspfIf)

- under the Ip component

    — OpenShortestPathFirst (Ospf)

- under the Ospf component

    — Export

    — AreaEnry (Area)

When you provision a FR DTE service, you can drop the service template on either a V35 or X21 port under the Logical Processor (LP) comonent.

Chapter 5
Succession service templates

This section describes the templates that are used to provision Passport 15000 devices in a Succession network. In the Nodal Provisioning tool main window, Succession templates are available for Packet Trunking - AAL1 (found in the PT-AAL1 palette), and Wireline Universal Access - AAL1 (found in the WUA-AAL1 palette).

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

For additional information, see the following sections:

In Succession, a number of the components and their attributes are configured identically for all instances of the switch, card type, or interface type. The templates contains these attribute values, and these values are set when the templates is applied. Only the attributes that vary from instance to instance, for example, AtmIf Addr for specifying the MG4000 ATM End System Address, are presented to the user for configuration. For components whose configuration varies widely from installation to installation (for example, Artg PNNI optional subcomponents), no template is provided. The user then has maximum flexibility to configure these components, either through the template editor or through the Command Console using the CLI.

Packet Trunking - AAL1 templates (PT-AAL1)

You can use the following templates to provision Packet Trunking AAL1 services on a Passport 15000 node. These templates are found under the PT-AAL1 palette.

Wireline Universal Access - AAL1 templates (WUA-AAL1)

You can use the following templates to provision Universal Access - AAL1 services on a Passport 15000 node. These templates are found in the WUA-AAL1 palette.

Commissioning templates

The commissioning templates provision the SW component and the CP cards to be used as part of the initial commissioning. These templates do the following:

- set the software logical processor type for the CP and ATM

- Set the software avList based on the version of software

- configure external timing ports on each of the CPs

- configure the network clock synchronization component

- configure the time of day

- custom the data collection system

- configure the maximum number of closed spooling option

- set the agent queue sizes

- configure ATM routing component

- configure basic PNNI dynamic routing

- change the cell rate thresholds for the node

- customize the control processor port configuration

- configure Access Control

There are two commissioning templates:

- "Sw_Commissioning" (page 50)

- "CPeD_Commissioning" (page 53)

Sw_Commissioning

The Sw Commissioning template does not create components, but lets you reset the attributes for the following components.

- Software LogicalProcessorType/CP

- Software LogicalProcessorType/ATM

- Software LogicalProcessorType/ATMIMA

- Software

For the attribute avList, you are prompted to enter a version number in the xxxxx portion for the following avList values:

Note: The xxxxx represents the version number.

- base_CDxxxxx (for example base_CD01C)

- networking_CDxxxxx

- atmnetworking_CDxxxxx

- ip_CDxxxxx

Table 11
SW_Commissioning template description

Template name	Drop Site	Prerequisites	Action
Sw_Commissioning	Em	None	• set Sw Lpt/CP featureList: oamEnet, ip, and externaltiming
			• set Sw avList: base_CD<version>, atmNetworking_CD<version>, networking_CD <version>, and ip_CD <version>
			• set Sw Lpt/ATM featureList: atmUni, atmPnni, and aps
			• set Sw Lpt/ATMIMA featureList: atmUni, atmPnni, imaAtmForumHot

The default values are summarized in the following table

Table 12
Sw_Commissioning template defaults

Tab	Group	Field name	Default value
Sw	Sw	Av List	base_CDxxxxx, networking_CDxxxxx, atmNetworking_CDxxxxx, ip_CDxxxxx
			Note: You need to enter a version number in the xxxxx.

CPeD_Commissioning

The CPeD_Commissioning template creates the following components and subcomponents:

- NetworkSynchronization

- Logical Processor/0

  — EDS1/0

  — EDS1/1

- Time Server/1

- Time Server2

- LogicalProcessor/0 Engineering DataStream/xxx Override

- ARtg

  — Pnni

  — Pnni CfgNode/<CfgNode_level>

- Accesscontrol

- Access

  — UserId/mdm

  — UserId/maint

  — IPAccess/<mdm1 IP>

  — IPAccess/<mdm2 IP>

In addition, the following components exist before applying the template, but you can override the attributes of existing components:

- Collector/xxx Spooler

- ModuleData

- LogicalProcessor/0 oamEnet/0

You are prompted for the following:

- MDM1 and MDM2 IP addresses for the AccessControl IPAccess instances as well as the ipAddress attribute under the Time Server/1 and Time Server/2 components

- nodeAddressPrefix attribute under the ARtg Pnni

- peerGroupId attribute under the ARtg Pnni CfgNode component

- password attribute under the AccessControl User/maint and AccessControl User/mdm component

You can override the defaults values for the following:

- AccessControl IPAccess/<MDM1 Ip> mask

- AccessControl IPAccess/<MDM2 Ip> mask

- LP oamEnet lineSpeed, duplexMode, switchoverHoldOff, switchoverOnFailure

- LogicalProcessor/0 EDS1/0 lineType

- LogicalProcessor/0 EDS1/0 lineType

The defaults are summarized in the following tale "CPed Commissioning template defaults" (page 54).

Table 13
CPed Commissioning template defaults

Tab	Group	Field name	Default value
Network Clock Synchronization	EDS1/0	Line Type:	esf
	EDS1/1	Line Type:	esf
Time	Server/1	Ip Address:	user specified
	Server/2	Ip Address:	user specified
ARtg	Pnni	Node Address Prefix:	user specified
Access Control	UserId/mdm	Password:	user specified
(Sheet 1 of 2)			

Table 13 (continued)
CPed Commissioning template defaults

Tab	Group	Field name	Default value
	UserId/maint	Password:	user specified
	IpAccess/ mdm1	IpAccess:	255.255.255.255
	IpAccess/ mdm2	IpAccess:	255.255.255.255
oamEnet	OamEnet	Line Speed:	autoConfig
		Duplex Mode:	autoConfig
		Switchover HoldOff:	10
		Switchover On Failure:	enabled
(Sheet 2 of 2)			

ATM PNNI 2xDS1-IMA Interface template - 4pDS3ChAtm

This template provisions an ATM PNNI DS1-IMA Interface to another Passport 15000 on a DS3 port of a protected pair of 4-port DS3 channelized ATM-type cards.

The template adds the following components:

- Under the DS3 port:

  — 2 DS1/n Chan/0

  — IMA/x
    - 2 Links/n

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr
    - Ubr
    - Abr

  — Pm

  — Pnni
    -Rcc
    - Sig

The template name, drop site, prerequisites, and actions are summarized in the following table "ATM PNNI 2xDS1-IMA interface template description" (page 57).

To create additional DS1's on this interface, use the "DS1-IMA Link template - 4pDS3ChAtm" (page 72).

Table 14
ATM PNNI 2xDS1-IMA interface template description

Template name	Drop Site	Prerequisites	Action
ATM PNNI 2xDS1-IMA Interface-4pDS3ChAtm	LP DS3	DS3 port-4pDS3ChAtm	• adds two DS1 ports with a single Chan component under the DS3 port • adds an IMA group under the DS3 port • adds two IMA links under the IMA group • links each of the 2 IMA Link's interfaceName to the corresponding DS1 Chan • adds the AtmIf component and its subcomponents • links the AtmIf interfaceName attribute to the IMA Group under the DS3 port

The defaults are summarized in the following table "ATM PNNI 2xDS1-IMA interface template defaults" (page 57).

Table 15
ATM PNNI 2xDS1-IMA interface template defaults

Tab	Field name	Default value
DS1 Ports	Vendor:	User supplied
	Comment Text	User supplied
IMA Group	Link Retry Timeout	10 seconds
	Max. Diff Delay	25 milliseconds
	Link Selection Criterion:	maxBandwidth
AtmIf	Remote Atm Interface Label:	User supplied
	maxVccs	1230
	maxVpcs	15

ATM PNNI interface template - 12pDS3Atm

This template provisions an ATM PNNI DS3 ATM interface to another Passport 15000 on a protected pair of DS3 links on a 12-port DS3 ATM-type cards.

The template adds the following components:

- two protected DS3 ports

- AtmIf

    — Ca
    -RtVbr
    -Cbr
    -NrtVbr
    - Ubr
    - Abr

    — Pnni

The template name, drop site, prerequisites, and actions are summarized in the following table "12pDS3-ATM PNNI interface template description" (page 58).

Table 16
12pDS3-ATM PNNI interface template description

Template name	Drop Site	Prerequisites	Action
12pDS3-Passport ATM Interface	LP	12pDS3Atm	• adds two DS1 ports under the DS3 port • adds the AtmIf component and its subcomponents • links the AtmIf interfaceName attribute to the DS3 port

The defaults are summarized in the following table "12pDS3 - ATM PNNI interface template defaults" (page 59).

Table 17
12pDS3 - ATM PNNI interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
AtmIf tab	Remote Atm Interface Label:	EM/<switchname>ATMif/<x+p>
	maxVccs	1230
	maxAutuoSelectedVpi:	0
	minAutoSelectedVpi:	0
	maxAutoSelectedVciForNonZero Vpi:	3300
	minAutoSelectedVciForVpiZero Vpi:	32
	maxVpcs:	0

ATM PNNI templates

The ATM PNNI Interfaces template provisions an ATM interface with Private Network-to-Network Interface (AtmIf with PNNI). Templates are available for 4pOC3, 16pOC3, 4pOC12, and 1pOC48.

The templates add the following components and subcomponents:

- Sonet subcomponent to the Lp drop-site

- LAPS component and subcomponents:

  — Sts
    -AtmCell

- AtmIf component and subcomponents:

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap (16pOC3, 4pOC12)
    -Ov (16pOC3, 4pOC12)

  — PNNI

There are four templates for ATM PNNI interfaces:

- ATM PNNI Interfaces - 4pOC3

- ATM PNNI Interfaces - 16pOC3

- ATM PNNI Interfaces - 4pOC12

- ATM PNNI Interfaces - 1pOC48

The template type, drop site, prerequisites, and actions are summarized in the following table " ATM PNNI interface template description" (page 61).

Table 18
ATM PNNI interface template description

Template name	Drop Site	Prerequisites	Action
ATM PNNI Interfaces-4pOC3	Lp	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
ATM PNNI Interfaces-16pOC3	Lp	FP16pOC3SmIrAtm	• adds a Line Automatic Protection Switching (Laps) component and its subcomponents
ATM PNNI Interfaces-4pOC12	Lp	FP4pOC12SmIrAtm	• links the Laps working line attribute to one of the Sonet components
ATM PNNI Interfaces-1pOC48	Lp	FP1pOC48ChSmIr Atm	• links the Laps protection line attribute to the other Sonet component
			• adds the AtmIf component and its subcomponents
			• links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "ATM PNNI interface template defaults" (page 61).

Table 19
ATM PNNI interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps tab	Signal Degrade Ratio	-8
AtmIf tab	Remote Atm Interface Label:	EM/<remoteNodeName>ATMIF/ <remote AtmIf instance>
	maxVccs:	3300 (4pOC3, 16pOC3), 13200 (4pOC12), 16384 (1pOC48)
(Sheet 1 of 2)		

Table 19 (continued)
ATM PNNI interface template defaults

Tab	Field name	Default value
	maxAutuoSelectedVciForVpiZero:	4095 (4pOC3, 16pOC3), 16383 (4POC12), 65535 (1pOC48)
	minAutoSelectedVciForVpiZero:	360
	maxVpcs:	0
	maxVpts	0
	bandwidthPool	1 70 2 30
(Sheet 2 of 2)		

ATM Trunk Interfaces templates

The ATM Trunk Interfaces templates provision both working line and protection line interfaces to ATM trunks for a pair of functional processor cards.

There are four templates for provisioning ATM Trunk interfaces:

• ATM Trunk Interfaces-4pOC3

• ATM Trunk Interfaces-16pOC3

• ATM Trunk Interfaces-4pOC12

• ATM Trunk Interfaces-1pOC48

The templates add the following components and subcomponents:

• Sonet subcomponent under the Lp drop-site

• LAPS component and subcomponents:

— Sts
-AtmCell

• AtmIf component and subcomponents:

— Ca
-RtVbr
-Cbr
-NrtVbr

— ConnMap (16pOC3, 4pOC12)
-Ov (16pOC3, 4pOC12)

— Uni
-Ilmi
- Sig Vcd
-Addr

The template type, drop site, prerequisites, and actions are summarized in the following table "ATM trunk interface template description" (page 64).

Table 20
ATM trunk interface template description

Template type	Drop Site	Prerequisites	Action
ATM Trunk Interfaces-4pOC3	Lp	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
ATM Trunk Interfaces-16pOC3	Lp	FP16pOC3SmIrAtm	• adds a Line Automatic Protection Switching (Laps) component and its subcomponents
ATM Trunk Interfaces-4pOC12	Lp	FP4pOC12SmIrAtm	• links the Laps working line attribute to one of the Sonet components
ATM Trunk Interfaces-1pOC48	Lp	FP1pOC48ChSmIr Atm	• links the Laps protection line attribute to the other Sonet component
			• adds the AtmIf component and its subcomponents
			• links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "ATM trunk interface template defaults" (page 64).

Table 21
ATM trunk interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps tab	Signal Degrade Ratio	-8
AtmIf tab	Remote Atm Interface Label:	[BB] <CLLI>
	maxVccs:	2047 (4pOC3, 16pOC3), 8065 (4pOC12), 16384 (1pOC48)
	maxAutuoSelectedVciForVpiZero:	2047 (4pOC3, 16pOC3), 8065 (4POC12) 16383 (1pOC48)
(Sheet 1 of 2)		

Table 21 (continued)
ATM trunk interface template defaults

Tab	Field name	Default value
	minAutoSelectedVciForVpiZero:	32
	maxAutuoSelectedVciForVpiNon Zero:	2047 (4pOC3, 16pOC3), 8065 (4POC12), 16383 (1pOC48)
	minAutoSelectedVciForVpiNon Zero:	32
	MinAutoSelectedVpi:	4
	maxVpcs:	0
	maxVpts:	0
	bandwidthPool:	1 98 2 10000
	Side:	user
	Addr:	User supplied
(Sheet 2 of 2)		

CS2000 Interface templates

The CS2000 Interface templates (4pOC3 and 16pOC3) provision an interface to a CS2000 device.

For each card type (4pOC3 and 16pOC3), there are two templates available. One configures the ATM interface with UPC policing disabled by default for all traffic classes. The other template has UPC policing enabled by default for the rt-VBR and nrt-VBR traffic classes.

The CS2000 template adds the following components and their subcomponents:

- Sonet subcomponent under the Lp drop-site

  — Sts
    -AtmCell

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap (16pOC3)
    -Ov (16pOC3)

  — Uni

There are four templates for CS2000 interfaces:

- CS2000 Interface-4pOC3

- CS2000 Interface -16pOC3

- CS200 Interface with UPC on 16pOC3

- CS200 Interface with UPC on 4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "CS2000 Interface template description" (page 67).

Table 22
CS2000 Interface template description

Template name	Drop Site	Prerequisites	Action
CS2000 Interface-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to an existing LP
CS2000 Interface-16pOC3	LP	FP16pOC3SmIrAtm	• adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sonet Sts component
CS2000 Interface with UPC on 4pOC3	LP	FP4pOC3SmIrAtm	
CS2000 Interface with UPC on 16pOC3	LP	FP16pOC3SmIrAtm	

The defaults are summarized in the following table "CS2000 Interface template defaults" (page 67).

Table 23
CS2000 Interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
AtmIf	Remote Atm Interface Label:	<CLLI> AMDI <slot>RL

CS2000 Interface-16p0C3 (Bridged) template

This template provides a Bridged CS2000 interface to a CS2000 for a 16p0C3 type card.

The Bridged CS2000 Interface template adds the following components and their subcomponents:

- Sonet subcomponent under the Lp drop-site

- Sonet bridge on mate Lp

- Port bridge

  — Sts

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap (16pOC3)
    -Ov (16pOC3)

  — Uni

The template type, drop site, prerequisites, and actions are summarized in the following table "Bridged CS2000 Interface template description" (page 69).

Table 24
Bridged CS2000 Interface template description

Template name	Drop Site	Prerequisites	Action
Bridged CS Interface-16pOC3	LP	FP16pOC3SmIrAtm	• adds a Sonet component to an existing LP • adds the Sonet bridge component for sparing bus on the mate LP • links the Sonet and Sonet bridge components with the Port Bridge group component • adds the SONET path Sts component to the Port bridge • adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sonet Sts component

The defaults are summarized in the following table "Bridged CS2000 Interface template defaults" (page 69).

Table 25
Bridged CS2000 Interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
AtmIf	Remote Atm Interface Label:	<CLLI> AMDI <slot>RL

DPT-SPM interface templates

The DPT-SPM Interfaces templates (16pOC3 and 4pOC3) provision both working and protection line interfaces to DPT Spectrum Peripheral Module (DPT-SPM) for a pair of FP cards.

The DPT-SPM interface template adds the following components and their subcomponents:

- Sonet subcomponent to the Lp drop-site

- Laps

 — Laps
 -Sts AtmCell

- AtmIf

 — Ca
 -RtVbr
 -Cbr
 -NrtVbr

 — ConnMap (16pOC3)
 - Ov (16pOC3)

 — Uni
 -Ilmi
 -Sig Vcd
 -Addr

There are two templates for DPT-SPM interfaces:

- DPT-SPM Interfaces - 16pOC3

- DPT-SPM Interfaces - 4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "DPT-SPM interface template description" (page 71).

Table 26
DPT-SPM interface template description

Template name	Drop Site	Prerequisites	Action
DPT-SPM Interfaces-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
DPT-SPM Interfaces-16pOC3	LP	FP16pOC3SmIrAtm	• adds a Laps component and its subcomponents • links the Laps working line attribute to one of the Sonet components • links the Laps protection line attribute to the other Sonet component • adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "DPT-SPM Interface template defaults" (page 71).

Table 27
DPT-SPM Interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps	Signal Degrade Ratio:	-8
AtmIf	Remote Atm Interface Label:	<CLLI> SPM <nodeid>;class=IW
	Addr	User supplied

DS1-IMA Link template - 4pDS3ChAtm

This template provisions an additional DS1-IMA link on an IMA virtual port of a DS3 port on a protected pair of 4-port DS3 channelized ATM-type cards.

The template adds the following components:

- Under the DS3 port:

    — 1 DS1/n Chan/0

    — IMA/x
       - 1 Link/n

    Note: The Multiple Creations button can be used with this template to create multiple additional links in a single application of the template.

The drop site, prerequisites, and actions are summarized in the following table "DS1-IMA Link template description" (page 72).

Table 28
DS1-IMA Link template description

Template name	Drop Site	Prerequisites	Action
1xDS1-IMA Link 4pDS3ChAtm	LP DS3 IMA	MG9000 2xDS1-IMA ATM Interface - 4pDS3ChAtm or ATM PNNI 2xDS1-IMA Interface - 4pDS3ChAtm	• adds one DS1 port with a single Chan component under the DS3 port • adds one IMA link under the IMA group • links the IMA Link's interfaceName to the corresponding DS1 Chan

The defaults are summarized in the following table "DS1-IMA Link template defaults" (page 73).

Table 29
DS1-IMA Link template defaults

Field name	Default value
Vendor:	User supplied
Comment Text	User supplied

DS3 port template - 4pDS3ChAtm

This template provisions a DS3 port on a protected pair of 4pDS3ChAtm type cards. The template adds a DS3 port (DS3/m) under the existing logical processor (LP).

The following table "DS3 port - 4pDS3ChAtm template description" (page 74) summarizes the drop site, prerequisites, and actions.

Table 30
DS3 port - 4pDS3ChAtm template description

Template name	Drop Site	Prerequisites	Action
DS3 port- 4pDS3ChAtm	LP	FP4pDS3ChAtm	• provisions a DS3 port on a pair of 4-port DS3ChAtm type cards. • adds the DS3 port component under the existing logical processor (LP)

The defaults are summarized in the following table "DS3 port - 4pDS3ChAtm template defaults" (page 74).

Table 31
DS3 port - 4pDS3ChAtm template defaults

Field name	Default value
lineLength	1
vendor	User-supplied
commentText	User-supplied

Functional Processor templates - DS3

The Functional Processor (FP) template provisions two Functional Processor card components and the linked Logical Processor for a protected pair of DS3 ATM-type cards.

There are two templates for provisioning functional processors:

- 4pDS3ChAtm

- 12pDS3Atm

The following components and their subcomponents are provisioned:

- shelf
    - main card
    - spare card

- Lp

    — Eng
        -Arc Ov
        -Fcrc Pqc Ov
        -Ds/rtStats Ov
        -Ds/accounting Ov
        -Ds/alarm Ov (12pDS3 only)
        -Ds/scr Ov (12pDS3 only)

The following table "DS3 functional processor template description" (page 76) summarizes the drop site, prerequisites, and actions.

Table 32
DS3 functional processor template description

Template name	Drop Site	Prerequisites	Action
FP - 4pDS3ChAtm	Em	Sw_Commissioning	• provisions the two functional processor components for the
FP - 12pDS3Atm	Em	Sw_Commissioning	protected pair of 4-port or 12-port DS3 ATM-type cards
			• creates the associated logical processor (LP) and subcomponents for each of the two cards
			• adds the data collection subcomponents to the LPs

The defaults are summarized in the following table "DS3 functional processor template defaults" (page 76).

Table 33
DS3 functional processor template defaults

Field name	Default value
logicalProcessorType:	Sw Lpt/atmIma(4pDS3), Sw Lpt < >(12pDS3)
protectedConnectionPoolCapacity	5000 (4pDS3), 15000 (12pDS3)
ipRoutes	100 (4pDS3), 4096 (12pDS3)

Functional Processor templates - OC3, OC12, and OC48

The Functional Processor (FP) templates provision a Functional Processor component and adds a linked Logical Processor for a pair of FP cards.

There are four templates for provisioning functional processors:

- FP4pOC3SmIrAtm

- FP16pOC3SmIrAtm

- FP4pOC12SmIrAtm

- FP1pOC48ChSmIrAtm

The following components and their subcomponents are provisioned for a pair of FP cards:

- card component

- Lp

    — Eng
       -Arc Ov
       -Fcrc Pqc Ov
       -Ds/rtStats Ov
       -Ds/accounting Ov

The following table "Functional processor template description" (page 78) summarizes the template types, drop site, prerequisites, and actions.

Table 34
Functional processor template description

Template name	Drop Site	Prerequisites	Action
FP4pOC3SmIrAtm	Em	None	• provisions the functional processor components for the pair of FP cards
FP16pOC3SmIrAtm	Em	None	• creates the associated logical processor (LP) and subcomponents for each of the two cards
FP4pOC12SmIrAtm	Em	None	
FP1pOC48ChSmIr Atm	Em	None	• adds the data collection subcomponents to the LPs

The defaults are summarized in the following tables "4pOC12 functional processor template defaults" (page 78) and "4pOC12 functional processor template defaults" (page 78).

Table 35
Functional processor template defaults

Field name	Default value
logicalProcessorType:	Sw Lpt/ATM

Table 36
4pOC12 functional processor template defaults

Tab	Field name	Default value
General	logicalProcessorType:	Sw Lpt/ATM
Component1	IP Route Pool Capacity:	4096
Component2	IP Route Pool Capacity:	4096

IW-SPM Interface templates

The Interworking Spectrum Peripheral Module (IW-SPM) Interface templates provision both working line and protection line interfaces to IW-SPM for a pair of functional processor cards, either 4pOC3 or 16pOC3.

For each card type (4pOC3 and 16pOC3), there are two templates available. One configures the ATM interface with UPC policing disabled by default for all traffic classes. The other template has UPC policing enabled by default for the rt-VBR and nrt-VBR traffic classes.

There are four templates for IW-SPM interfaces:

- IW-SPM Interfaces-4pOC3

- IW-SPM Interfaces-16pOC3

- IW-SPM Interface with UPC on 16pOC3

- IW-SPM Interface with UPC on 4pOC3

The IW-SPM Interface templates create the following components and subcomponents:

- Sonet subcomponent under the Lp drop-site

- LAPS

  — Sts
    -AtmCell

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap (16pOC3)
    -Ov (16pOC3)

  — Uni
    -Ilmi
    -Sig Vcd
    -Addr

The template type, drop site, prerequisites, and actions are summarized in the following table "IW-SPM interface template description" (page 80).

Table 37
IW-SPM interface template description

Template name	Drop Site	Prerequisites	Action
IW-SPM Interfaces-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
IW-SPM Interfaces-16pOC3	LP	FP16pOC3SmIrAtm	• adds a line automatic protection switching (Laps) component and its subcomponents
IW-SPM Interfaces with UPC on 4pOC3	LP	FP4pOC3SmIrAtm	• links the Laps working line attribute to one of the Sonet components • links the Laps protection line attribute to the other Sonet component
IW-SPM Interfaces with UPC on 16pOC3	LP	FP16pOC3SmIrAtm	• adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "IW-SPM Interface template defaults" (page 80).

Table 38
IW-SPM Interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps	Signal Degrade Ratio:	-8
(Sheet 1 of 2)		

Table 38 (continued)
IW-SPM Interface template defaults

Tab	Field name	Default value
AtmIf	Remote Atm Interface Label:	<CLLI> SPM <nodeid>;class=IW
	Addr	User supplied
(Sheet 2 of 2)		

MG4000 Interface templates

The MG4000 Interface templates (4pOC3 and 16pOC3) provision both the working line and protection line interfaces to the MG4000 for a pair of functional processor cards.

For each card type (4pOC3 and 16pOC3), there are two templates available. One configures the ATM interface with UPC policing disabled by default for all traffic classes. The other template has UPC policing enabled by default for the rt-VBR and nrt-VBR traffic classes.

The templates add the following components and subcomponents:

- Sonet subcomponent to the Lp drop-site

- Laps

    — Laps
      -Sts AtmCell

- AtmIf

    — Ca
      -RtVbr
      -Cbr
      -NrtVbr

    — ConnMap (16pOC3)
      -Ov (16pOC3)

    — Uni
      -Ilmi
      -Sig Vcd
      -Addr

There are four templates for MG4000 interfaces:

- MG4000 ATM Interfaces - 16pOC3

- MG4000 ATM Interfaces - 4pOC3

- MG4000 ATM Interfaces with UPC on 16pOC3

- MG4000 ATM Interfaces with UPC on 4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "MG4000 ATM Interface template description" (page 83).

Table 39
MG4000 ATM Interface template description

Template name	Drop Site	Prerequisites	Action
MG4000 ATM Interfaces-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
MG4000 ATM Interfaces-16pOC3	LP	FP16pOC3SmIrAtm	• adds a line automatic protection switching (Laps) component and its subcomponents
MG4000 ATM Interfaces with UPC on 4pOC3	LP	FP4pOC3SmIrAtm	• links the Laps working line attribute to one of the Sonet components • links the Laps protection line attribute to the other Sonet component
MG4000 ATM Interfaces with UPC on 16pOC3	LP	FP16pOC3SmIrAtm	• adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "MG4000 ATM Interface template defaults" (page 83).

Table 40
MG4000 ATM Interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps	Signal Degrade Ratio:	-8
(Sheet 1 of 2)		

Table 40 (continued)
MG4000 ATM Interface template defaults

Tab	Field name	Default value
AtmIf	Remote Atm Interface Label	\<CLLI\> SPM \<nodeid\>;class=SMG4 Note: The \<CLLI\> should be replaced by the CLLI and \<nodeid\> by the SPM number for that MG, as shown on the MAP display.
	Addr:	User supplied
(Sheet 2 of 2)		

MG9000 2xDS1-IMA ATM Interface template - 4pDS3ChAtm

This template provisions a DS1-IMA ATM Interface (with two DS1's) to an MG9000 on a DS3 port of a protected pair of 4-port DS3 channelized ATM-type cards.

The template adds the following components:

- Under the DS3 port:

  — 2 DS1/n Chan/0

  — IMA/x
    - 2 Links/n

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr
    - Ubr
    - Abr

  — Uni
    -Ilmi
    -Sig Vcd

  — Pm

The template name, drop site, prerequisites, and actions are summarized in the following table "MG9000 2xDS1-IMA ATM interface template description" (page 86).

To create additional DS1's on the interface, use the "DS1-IMA Link template - 4pDS3ChAtm" (page 72).

Table 41
MG9000 2xDS1-IMA ATM interface template description

Template name	Drop Site	Prerequisites	Action
MG9000 2xDS1-IMA ATM Interface-4pDS3ChAtm	LP DS3	DS3port-4pDs3ChAtm	• adds two DS1 ports with a single Chan component under the DS3 port • adds an IMA group under the DS3 port • adds two IMA links under the IMA group • links each of the two IMA Link's interfaceName to the corresponding DS1 Chan • adds the AtmIf component and its subcomponents • links the AtmIf interfaceName attribute to the IMA Group under the DS3 port

The defaults are summarized in the following table "MG9000 2xDS1-IMA ATM interface template defaults" (page 86).

Table 42
MG9000 2xDS1-IMA ATM interface template defaults

Tab	Field name	Default value
DS1 Ports	Vendor:	User supplied
	Comment Text	User supplied
IMA Group	Link Retry Timeout	10 seconds
	Max. Diff Delay	25 milliseconds
	Link Selection Criterion:	maxBandwidth
AtmIf	Remote Atm Interface Label:	User supplied
	Prefix To Register:	User supplied
(Sheet 1 of 2)		

Table 42 (continued)
MG9000 2xDS1-IMA ATM interface template defaults

Tab	Field name	Default value
	maxVccs	350
	maxVpcs	15
(Sheet 2 of 2)		

MG9000 ATM interface templates - 4pOC3 and 16pOC3

The MG9000 ATM Interface templates (16pOC3 and 4pOC3) provision both the working line and protection line interfaces to the MG9000 for a pair of functional processor (FP) cards.

The templates add the following components:

- Sonet subcomponent to the Lp drop-site

- Laps

  — Laps
    -Sts AtmCell

- AtmIf

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap (16pOC3)
    -Ov (16pOC3)

  — Uni
    -Ilmi
    -Sig Vcd

There are two templates for MG9000 interfaces:

- MG9000 ATM Interfaces - 16pOC3

- MG9000 ATM Interfaces - 4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "MG9000 ATM interface template description" (page 89).

Table 43
MG9000 ATM interface template description

Template name	Drop Site	Prerequisites	Action
MG9000 ATM Interfaces-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
MG9000 ATM Interfaces-16pOC3	LP	FP16pOC3SmIrAtm	• adds a line automatic protection switching (Laps) component and its subcomponents
			• links the Laps working line attribute to one of the Sonet components
			• links the Laps protection line attribute to the other Sonet component
			• adds the AtmIf component and its subcomponents
			• links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "MG9000 ATM interface template defaults" (page 89).

Table 44
MG9000 ATM interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps tab	Signal Degrade Ratio	-8
AtmIf tab	Remote Atm Interface Label:	User supplied
	Prefix To Register:	User supplied

Passport Intershelf Links template - OC3

The Passport Intershelf Links template provisions both working line and protection line interfaces for Passport-to-Passport intershelf links for a pair of 16-port OC3 functional processor cards.

The template adds the following components and subcomponents:

- Sonet subcomponent to the Lp drop-site

- LAPS component and subcomponents:

  — Sts
    -AtmCell

- AtmIf component and subcomponents:

  — Ca
    -RtVbr
    -Cbr
    -NrtVbr

  — ConnMap
    -Ov

  — PNNI

The template type, drop site, prerequisites, and actions are summarized in the following table "Passport Intershelf line interface template description" (page 91).

Table 45
Passport Intershelf line interface template description

Template name	Drop Site	Prerequisites	Action
Passport Intershelf Link Interfaces	Lp	FP16pOC3SmIrAtm	• adds a Sonet component to each LP of the existing LP pair
			• adds a line automatic protection switching (Laps) component and its subcomponents
			• links the Laps working line attribute to one of the Sonet components
			• links the Laps protection line attribute to the other Sonet component
			• adds the AtmIf component and its sub-components
			• links the AtmIf interfaceName attribute to the Sts subcomponent of the Laps component

The defaults are summarized in the following table "Passport Intershelf line interface template defaults" (page 91).

Table 46
Passport Intershelf line interface template defaults

Tab	Field	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps tab	Signal Degrade Ratio	-8
AtmIf	Remote Atm Interface Label:	EM/<remoteNodeName>ATMIF/ <remote AtmIf instance>
	maxVccs:	3300
	maxAutuoSelectedVciForVpiZero:	4095
(Sheet 1 of 2)		

Table 46 (continued)
Passport Intershelf line interface template defaults

Tab	Field	Default value
	minAutoSelectedVciForVpiZero:	238
	maxVpcs:	0
	maxVpts:	0
	bandwidthPool:	1 97 2 10000
(Sheet 2 of 2)		

SAM 21 SC interface templates

The SAM 21 SC Interface templates (16pOC3 and 4pOC3) provision an interface to the SAM 21 SC for functional processor card.

The SAM 21 SC interface template adds the following components and their subcomponents:

- Sonet subcomponent to the Lp drop-site

- AtmIf

  — Ca
     -RtVbr
     -Cbr
     -NrtVbr

  — ConnMap (16pOC3)
     -Ov (16pOC3)

  — Uni
     -Ilmi
     -Sig Vcd

There are two templates for SAM 21 SC interfaces:

- SAM 21 SC Interface-16pOC3

- SAM 21 SC Interface -4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "SAM 21 SC interface template description" (page 94).

Table 47
SAM 21 SC interface template description

Template name	Drop Site	Prerequisites	Action
SAM 21 SC Interface-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to an existing LP
SAM 21 SC Interface-16pOC3	LP	FP16pOC3SmIrAtm	• adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sts component

The defaults are summarized in the following table "SAM 21 SC interface template defaults" (page 94).

Table 48
SAM 21 SC interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
AtmIf tab	Remote Atm Interface Label:	User supplied
	Prefix To Register:	User supplied

SAM 21 SC interface-16pOC3 (Bridged) template

This template provides an interface to the SAM 21 SC for a 16pOC3 type card with protection using the port bridging functionality.

The Bridged SAM 21 SC interface template adds the following components and their subcomponents:

- Sonet subcomponent to the Lp drop-site

- Sonet bridge on mate Lp

- Port bridge

- AtmIf

    — Ca
      -RtVbr
      -Cbr
      -NrtVbr

    — ConnMap (16pOC3)
      -Ov (16pOC3)

    — Uni
      -Ilmi
      -Sig Vcd

The template type, drop site, prerequisites, and actions are summarized in the following table "Bridged SAM 21 SC interface template description" (page 96).

Table 49
Bridged SAM 21 SC interface template description

Template name	Drop Site	Prerequisites	Action
Bridged SAM 21 SC Interface-16pOC3	LP	FP16pOC3SmIrAtm	• adds a Sonet component to an existing LP
			• adds the Sonet bridge component for the sparing bus on the mate LP
			• links the Sonet and Sonet bridge components with the Port Bridge group component
			• adds the SONET path Sts component to the Port bridge
			• adds the AtmIf component and its sub-components
			• links the AtmIf interfaceName attribute to the Sts component

The defaults are summarized in the following table "Bridged SAM 21 SC interface template defaults" (page 96).

Table 50
Bridged SAM 21 SC interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
AtmIf tab	Remote Atm Interface Label:	User supplied
	Prefix To Register:	User supplied

UAS ATM Interface templates

The UAS ATM Interface templates (16pOC3 and 4pOC3) create an interface to the UAS ATM UNI for a functional processor.

The UAS ATM interface template adds the following components and their subcomponents:

- Sonet subcomponent to the Lp drop-site

- AtmIf

    — Ca
      -RtVbr
      -Cbr
      -NrtVbr

    — ConnMap (16pOC3)
      -Ov (16pOC3)

    — Uni
      -Ilmi
      -Sig Vcd

There are two templates for UAS ATM UNI interfaces:

- UAS ATM Interfaces-16pOC3

- UAS ATM Interfaces-4pOC3

The template type, drop site, prerequisites, and actions are summarized in the following table "UAS ATM interface template description" (page 98).

Table 51
UAS ATM interface template description

Template name	Drop Site	Prerequisites	Action
UAS ATM Interfaces-4pOC3	LP	FP4pOC3SmIrAtm	• adds a Sonet component to an existing LP
UAS ATM Interfaces-16pOC3	LP	FP16pOC3SmIrAtm	• adds the AtmIf component and its sub-components • links the AtmIf interfaceName attribute to the Sts component

The defaults are summarized in the following table "UAS ATM interface template defaults" (page 98).

Table 52
UAS ATM interface template defaults

Tab	Field name	Default value
Sonet	Vendor:	User supplied
	Comment Text	User supplied
Laps	Signal Degrade Ratio:	-8
AtmIf tab	Remote Atm Interface Label:	User supplied
	Prefix To Register:	User supplied

Chapter 6
MPLS templates

This section describes the templates that are used to provision Multi-Service applications over ATM over Multi-Protocol Label Switching (MPLS) over Packet Over SONET (POS) from the Nodal Provisioning tool main window.

For a description of the Nodal Provisioning tool and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

You can use the Nodal Provisioning Template Editor to create and modify service templates. Once you have applied a template, you can view and modify the attribute values for the components created by the template by opening up the template editor form. To open the template editor form for the component whose attribute values you want to view or modify, select the component in the component hierarchy, left click, and then select Edit from the pop-up menu. The form contains all the attributes values for the selected component.

For a description of the template editor and how to use it, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

For procedures for using the Nodal Provisioning tool to add Multi-Service applications over ATM over Multi Protocol Label Switching (MPLS) over Packet Over SONET (POS) on Passport 15000 switches for the 1port OC-48 POS Functional Processor (FP) card see "MPLS provisioning sessions" (page 113).

For additional information, see the following sections:

- "MPLS - Infrastructure templates" (page 100)

- "MPLS services templates" (page 110)

MPLS - Infrastructure templates

The MPLS - Infrastructure templates and their purposes are as follows:

- "A: POS FP Software for Static LSP" (page 100) adds the software features required to support Packet Over SONET (POS) Functional Processor cards and MPLS services

- "A: First FP - 1pOC48SmSrPOS, SONET" (page 102) adds the first Packet Over SONET (POS) Functional Processor (FP) for SONET

- "A: First FP - 1pOC48SmSrPOS, SDH" (page 103) adds the first (POS) Functional Processor (FP) for SDH

- "A: MPLS Services on switch" (page 104) enables the MPLS software on the switch

- "A: PPP and PP for First POS FP" (page 105) configures Point-to-Point Protocol (PPP) and Protocol Port (PP) for the first POS FP that you add to the Passport switch.

- "B:Additional FP-1pOC48SmSrPOS, SONET (with PPP and PP)" (page 106) adds the Functional Processor (FP) and the Logical Processor (LP) with Point-to-Point Protocol (PPP) and Protocol Port (PP) for each additional POS FP (SONET) card you add to the Passport switch.

- "B:Additional FP-1pOC48SmSrPOS, SDH (with PPP and PP)" (page 107) adds the Functional Processor (FP) and the Logical Processor (LP) with Point-to-Point Protocol (PPP) and Protocol Port (PP) for each additional POS FP (SDH) card you add to the Passport switch.

- "C: LSP Group and Static T-Lsp - Destination with n QoS (ATMoMPLS)" (page 108) adds a Label Switched Path (LSP) group and its associated ATM interface with its static Transport LSP (the Out-Segment) and its associated static route LSP. One LSP group is created for each QoS category. Four templates are provided based on the number of QoS categories required.

A: POS FP Software for Static LSP

This template adds the software features required for Packet Over SONET (POS) Functional Processor (FP) cards and MPLS services.

The FP Software for Static LSP template creates the following subcomponent under the Software (Sw) component

• Lpt

Drop-sites: Sw

Pre-requisites: None

A: First FP - 1pOC48SmSrPOS, SONET

This template adds and configures the Functional Processor (FP) and Logical Processor (LP) for the first 1 port OC48 POS card (SONET) that you add to the switch.

The First FP - 1pOc48SmSrPOS, SONET template:

• adds the following subcomponents

— logical processor (Lp/<?>)
Eng
Sonet
Sts

• links the Lp/<?> subcomponent with existing Logical Processor type (Lpt/<?>) component and Main Card (shelf card/<?>) components

Drop-sites: EM

Pre-requisites: You must have applied the POS FP Software for Static LSP template.

A: First FP - 1pOC48SmSrPOS, SDH

This template adds and configures the Functional Processor (FP) and Logical Processor (LP) for the first 1 port OC48 POS card (SDH) that you add to the switch.

The First FP - 1pOc48SmSrPOS, SDH template:

- adds the following subcomponents

  — logical processor (Lp/<?>)
        Eng
        Sdh
          Vc4

- links the Lp/<?> subcomponent with existing Logical Processor type (Lpt/<?>) component and Main Card (shelf card/<?>) components

Drop-sites: EM

Pre-requisites: You must have applied the POS FP Software for Static LSP template.

A: MPLS Services on switch

This template adds the MPLS component to an existing Virtual Router (Vr). The addition of the MPLS component enables MPLS services for the Passport switch.

The MPLS Services on the switch template adds the Mpls subcomponent under a Virtual Router (Vr) component.

Drop-sites: Vr</?>

Pre-requisites:

- You have configured at least one Virtual Router (Vr) component on the switch.

- You have applied the First FP - 1pOc48SmSrPOS, SONET template or the First FP - 1pOc48SmSrPOS, SDH template, and you have saved and committed the view.

A: PPP and PP for First POS FP

This template adds PPP (Point-to-Point Protocol) and PP (Protocol Port) with an MplsPort component for the first 1p OC48 POS Functional Processor (FP) that is added to the switch.

This template does the following:

- adds the following subcomponents under the root (EM) component:

  — ppp/<?>
       Ca
       Framer
       Lnk
       Lqm
       Ncp

- adds the following subcomponents under the Virtual Router (Vr) component:

  — Pp/<?>
       MplsPort

- links the Framer subcomponent to the Sts component for SONET or Vc4 for SDH, and links the Pp/<?> subcomponent to the Ppp/<?> component

Drop-sites: Lp, Sonet, Sts, Sdh, Vc4

Pre-requisites:

- saved and committed the view with the A: First FP - 1pOc48SmSrPOS, SONET template or the A: First FP - 1pOc48SmSrPOS, SDH template

- applied the A: MPLS Services on switch template

B:Additional FP-1pOC48SmSrPOS, SONET (with PPP and PP)

This template adds and configures the Functional Processor (FP) and the Logical Processor (LP) with Point-to-Point Protocol (PPP) and Protocol Port (PP) for each additional 1 port OC48 POS SONET card you add to the Passport switch.

This template does the following

- adds the following subcomponents under the root component

    — Lp/<?>
        Eng
        Sonet
            Sts

    — Ppp/<?>
        Ca
        Framer
        Lnk
        Lqm
        Ncp

    — Pp/<?>
        MplsPort

- links

    — the Lp/<?> component with the Lpt/<?> and Main Card (shelf card/<?>) components

    — the Framer component with the Sts component

    — the Pp/<?> component with the Ppp/<?> component

Drop-sites: root (EM/<?>)

Pre-requisites: You have

- saved and committed the view with the A: First FP - 1pOc48SmSrPOS, SONET template or the A: First FP - 1pOc48SmSrPOS, SDH template

- applied the A: MPLS Services on switch template

B:Additional FP-1pOC48SmSrPOS, SDH (with PPP and PP)

This template adds and configures the Functional Processor (FP) and the Logical Processor (LP) with Point-to-Point Protocol (PPP) and Protocol Port (PP) for each additional 1 port OC48 POS SDH card you add to the Passport switch.

This template does the following

- adds the following subcomponents under the root component

    — Lp/<?>
        Eng
        Sdh
            Vc4

    — Ppp/<?>
        Ca
        Framer
        Lnk
        Lqm
        Ncp

    — Pp/<?>
        MplsPort

- links

    — the Lp/<?> component with the Lpt/<?> and Main Card (shelf card/<?>) components

    — the Framer component with the Vc4/<?> component

    — the Pp/<?> component with the Ppp/<?> component

Drop-sites: root (EM/<?>)

Pre-requisites: You have

- saved and committed the view with the A: First FP - 1pOc48SmSrPOS, SONET template or the A: First FP - 1pOc48SmSrPOS, SDH template

- applied the A: MPLS Services on switch template

C: LSP Group and Static T-Lsp - Destination with n QoS (ATMoMPLS)

The Lsp Group and Static T-Lsp template adds the Label Switched Path (LSP) group and its associated ATM interface, its Static Point Transport Lsp (Out Segment), and the Static Route Lsp. Four templates are available, each one supporting a different number of Quality of Service categories for each 1-port OC48 POS card that has been added to the switch. The following templates can be used:

- C: LSP Group and Static T-Lsp - Destination with 1QoS (ATMoMPLS)

- C: LSP Group and Static T-Lsp - Destination with 2QoS (ATMoMPLS)

- C: LSP Group and Static T-Lsp - Destination with 3QoS (ATMoMPLS)

- C: LSP Group and Static T-Lsp - Destination with 4QoS (ATMoMPLS)

The LSP Group template does the following:

- add the following subcomponents under the root (EM) component

    — Atmif<?>
        Ca
         Abr
         Cbr
         NrtVbr
         RtVbr
         Ubr
        PM

- adds the following subcomponents under Virtual Router (Vr/<?>) mpls component:

    — LspGroup/<?>
        Lgd
        AtmSap
        Lsp/<?>
         msc elsp
         strt

- adds the following subcomponents under the Vr<?>/PP<?> MplsPort component.

— OutSegment/<?>
     QoS
     stpt

- links

    — the AtmSap with an AtmIf/<?> component

    — the logical group descriptor (Lgd) with the a selected Packet Over
       SONET (POS) logical processor (LP)

    — the stpt component with the strt component

Drop-sites: Lp (POS FP)

Pre-requisites: You have

- added and configured at least one OC48 POS Functional Processor (FP)
  with PPP and PP

- the Mpls component has been added to one Virtual Router

    Note: Egress cell bundling is not available on older Passport releases.

MPLS services templates

The MPLS service templates let you

- create an ATM Virtual Channel Connection (VCC) between the ATM
  interface (AtmIf) for the POS FP and the ATM Interface (AtmIf) for the
  ATM Access FP and assign a service label to the connection

- create an ATM Virtual Path Connection (VPC) between the ATM
  interfaces (AtmIf) for the POS FP and the ATM Interface (AtmIf) for the
  ATM Access FP and assign a service label to the connection

  Note: Egress cell bundling is not available on older Passport releases.

See the following sections for information about the MPLS services
templates:

- "Atm-Vcc Service Lsp (POS FP to ATM Access FP)" (page 110)

- "Atm-Vpc Services LSP (POS FP to ATM Access FP)" (page 112)

Atm-Vcc Service Lsp (POS FP to ATM Access FP)

This template creates an ATM Virtual Channel Connection (VCC) between
the ATM interface (AtmIf) for the POS FP and the ATM Interface (AtmIf) for
the ATM Access FP and assigns a service label to the connection.

This template

- adds the following subcomponents to the AtmIf component for the POS
  FP

  — Vcc/<VPI.VCI>
      Nrp
      Vcd
        Tm

- adds the following subcomponents to the AtmIf component for the ATM
  access FP

  — Vcc/<VPI.VCI>
      Nrp
      Vcd
        Tm

- adds the following subcomponents to the Vr/<?>mpls LspG/<?>
  AtmSap component:

  — ConnId/<VPI.VCI>
       Lbls

- links the Nrp (nailed-up relay point) of the POS FP VCC with the Nrp of
  the ATM access FP VCC

Drop-sites: Atmif/<?> (POS FP)

Pre-requisites: You must have added all the MPLS - Infrastructure templates.

  Note: Egress cell bundling is not available on older Passport releases.

Atm-Vpc Services LSP (POS FP to ATM Access FP)

This template creates an ATM Virtual Path Connection (VPC) between the ATM interface (AtmIf) for a POS FP and the ATM Interface (AtmIf) for the ATM Access FP and assigns a service label to the connection.

This template

- adds the following subcomponents to the AtmIf component for the POS FP

    — Vcc/<VPI.VCI>
        Nrp
        Vpd
            Tm

- adds the following subcomponents to the AtmIf component for the ATM access FP

    — Vcc/<VPI.VCI>
        Nrp
        Vpd
            Tm

- adds the following subcomponents to the Vr/<?>mpls LspG/<?> AtmSap component:

    — ConnId/<VPI.VCI>
        Lbls

- links the Nrp (nailed-up relay point) of the POS FP VPC to the Nrp of the ATM access FP VPC

Drop-sites: Atmif/<?> (POS FP)

Pre-requisites: You must have added all of the MPLS- Infrastructure templates.

Note: Egress cell bundling is not available on older Passport releases.

Chapter 7
MPLS provisioning sessions

This section contains procedures for using the Nodal Provisioning tool to add Multi-Service applications over ATM over Multi Protocol Label Switching (MPLS) over Packet Over SONET (POS) on Passport 15000 switches for the 1port OC-48 POS Functional Processor (FP) card.

This section contains information about the following main topics:

   Note: You cannot use the MPLS templates for provisioning the ATM Interface; you need to use the ATM templates for this purpose. See ATM service templates.

If you want to modify existing templates or create new templates, you need to use the Nodal Provisioning Template Editor. See 241-6001-610 *Preside MDM Nodal Provisioning User Guide* for information on the Template Editor and how to use it.

Provisioning overview

To provision Multi-Service applications over ATM over Multi Protocol Label Switching (MPLS) over POS with the Nodal Provisioning tool you need to perform three main tasks:

1   Ensure that the pre-requisites tasks are complete.

2   Provision the MPLS infrastructure.

3   Provision the MPLS services.

For information about the pre-requisite tasks you need to perform before starting to provision, see "Prerequisites" (page 116).

To support MPLS over POS you need to add at least one POS FP card to the switch. Provisioning the MPLS infrastructure requires you to use a different subset of the MPLS-Infrastructure templates according to whether you are adding the first POS FP card for MPLS to the switch or additional POS FP cards.

The MPLS-Infrastructure templates you need to use for the first POS FP card are as follows:

1   A: POS FP Software for Static LSP

2   A: First FP - 1pOC48SmSrPOS, SONET or
    A: First FP - 1pOC48SmSrPOS, SDH

3   A: MPLS Services on switch

4   A: PPP and PP for First POS FP

5   One of the following templates based on the number of Quality of Service (QoS) categories required:

    C: LSP Group and static T-Lsp - Destination with 1 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 2 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 3 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 4 QoS (ATMoMPLS)

The MPLS-Infrastructure templates you need to use for each additional FP card are as follows:

1   B: Additional FP - 1pOC48SmSrPOS, SONET (with PPP and PP) or
    B: Additional FP - 1pOC48SmSrPOS, SDH (with PPP and PP)

2   One of the following templates based on the number QoS categories required:

    C: LSP Group and static T-Lsp - Destination with 1 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 2 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 3 QoS (ATMoMPLS)
    C: LSP Group and static T-Lsp - Destination with 4 QoS (ATMoMPLS)

For the instructions to use these templates for provisioning the MPLS infrastructure, see "Provisioning the MPLS infrastructure" (page 118).

Once you have added the infrastructure, you are ready to provision MPLS services. There are two templates for provisioning MPLS services. These are:

•   Atm-Vcc Service Lsp (POS FP to ATM Access FP)

•   Atm-Vpc Service Lsp (POS FP to ATM Access FP)

These two templates can be used for taking data input from an ATM Access Card on a VCC or a VPC and encapsulating it in Multiprotocol Label Switching (MPLS) protocol for transmission over Packet Over SONET (POS) links to a remote switch.

These two templates can also be used in combination with ATM templates to provide a means to:

•   Take data from an ATM trunk running DPRS connected to a Passport 15000 switch and encapsulate it in Multi Protocol Label Switching (MPLS) protocol for transmission over POS links to a remote switch.

•   Take data from remote equipment connected to a Passport 15000 switch by an ATM UNI and encapsulate it in MPLS protocol for transmission over POS links to a remote switch.

The templates to use for encapsulating data from the ATM trunk running DPRS in MPLS over POS are:

- ATM Interface

- Atm-Vcc Nep

- ATM Logical Trunk

- Atm-Vcc Service Lsp (POS FP to ATM Access FP)

The templates to use for encapsulating data from remote equipment over an ATM UNI in MPLS over POS are:

- ATM Interface with UNI

- ATM Interface with PNNI

- ATM Interface

- ATM Vpt with PNNI

- Atm-Vpc

- Atm-Vpc Service Lsp (POS FP to ATM Access FP)

For instructions to provision MPLS services, see:

- "Adding an Atm-Vcc Service Lsp (POS FP to ATM Access FP)" (page 125)

- "Adding an Atm-Vpc Service Lsp (POS FP to ATM Access FP)" (page 127)

- "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 129)

- "Encapsulating data from an ATM UNI into MPLS over POS" (page 132)

Prerequisites

Ensure the following prerequisites are met:

- The connection to the Preside Multiservice Data Manager is established. See 241-5701-270 *Passport 7400, 15000, 20000 Software Installation Guide*.

- The servers for the Nodal Provisioning tool are running. For more information, see Configuration Manager (CONFIGMAN) and Passport Configuration server (PCSERVER) in 241-6001-310 *Preside MDM Server Reference Guide*.

Provisioning the MPLS infrastructure

You must use the MPLS Infrastructure templates each time you add a POS Functional Processor (FP) card to the switch.

Perform one of the following sets of procedures according to whether you are adding the first POS FP card or an additional POS FP card:

- first POS FP card

    — "Adding MPLS software to the switch" (page 118)

    — "Creating the first POS Functional Processor" (page 119)

    — "Enabling MPLS services" (page 119)

    — "Adding PPP and PP to the first POS Functional Processor" (page 120)

    — "Adding an LSP Group and its static point Transport LSP" (page 121)

- additional POS FP card

    — "Creating an additional POS Functional Processor" (page 123)

    — "Adding an LSP Group and its static point Transport LSP" (page 121)

Adding MPLS software to the switch

Use this procedure to add the MPLS software to the switch.

1   Launch the Nodal Provisioning tool and load the required view.

2   In the Nodal Provisioning window, select the MPLS-Infrastructure tab.

3   Drag the A: POS FP Software for Static Lsp template onto the software (Sw) component.

    The Create A: POS FP Software for Static Lsp form opens.

4   In the Logical Processor field, type a name that identifies the type of Logical Processor. We suggest using a name that reflects the purpose of the Logical Processor, for example: mpls.

5   Click OK.

Creating the first POS Functional Processor

Use this procedure to add the first 1-port OC-48 POS (SONET or SDH) Functional Processor (FP) card to a Passport 15000 switch. You can use one of the following templates:

- A: First FP - 1pOC48SmSrPOS, SONET

- A: First FP - 1pOC48SmSrPOS, SDH

1   Drag the A: First FP - 1pOC48SmSrPOS (SONET or SDH) template onto the root (EM/<switch name>) component.

The Create A: First FP - 1pOC48SmSrPOS (SONET or SDH) form opens.

2   In the Card field, type the number of the slot that contains the Functional Processor card, for example: 5.

3   The Lp field is automatically filled in with the number of the logical processor that is created.

4   From the Logical Processor Type list, select the name of the Logical Processor you assigned in step 4 of "Adding MPLS software to the switch" (page 118), for example, mpls.

5   From the Clocking Source list, select a timing source. Choices are:

- local: the oscillator in the card, (the least precise source)

- line: the remote switch

- module: the timing source used for the switch, for example: a stratum 3 clock

6   Click OK.

7   Check and activate the provisioning view. For the procedure to check and activate the view, see 241-6001-610 *Preside MDM Nodal Provisioning User Guide*.

Note: You need to check and activate the provisioning view to be able to successfully launch the templates you are about to use.

Enabling MPLS services

Use this procedure to enable the MPLS services on the Passport 15000 switch.

1   Drag the A: MPLS services on Switch template onto the Virtual Router (Vr/<?>) component. If there is only one Virtual Router on the switch, drop it on Vr/0.

The Create A: MPLS Services on Switch form opens.

Note 1: If no Virtual Router exists, create a Virtual Router at the root (EM) level using the Add function of the Nodal Provisioning tool.

Note 2: To create an additional Virtual Router, open the Sw component and select the Lpt/CP component. Press the right mouse button to open a pop-up menu, and select Edit. Check to make sure the mvr feature appears in the Edit window. If not, you need to add this feature before you can add the Virtual Router.

2 If OSPF is configured on the switch, enter the address you configured for OSPF into the Lsrd Id Prov field. Otherwise, use the default value of 10.10.10.10.

3 Click OK.

Adding PPP and PP to the first POS Functional Processor

Use this procedure to add Point-to Point Protocol (PPP) and Protocol Port (PP) to the first 1-port OC-48 Packet Over SONET (POS) Functional Processor card added to the switch.

1 Drag the A: PPP and PP for first POS FP template onto the Lp/<?> you created in step 2 of "Creating the first POS Functional Processor" (page 119); for example, drag the template onto Lp/5.

The Create A: PPP and PP for First POS FP form opens.

2 Type the Ppp number in the Ppp field. By convention, the Ppp number matches the Logical Processor number and the port number. For example, if the Logical Processor is 5, and the port number is 0, the Ppp number is 50.

3 From the Interface Name list, select the interface name. The interface name is Lp</x> Sonet/0 Sts/0 (for SONET) or Lp</x> Sdh/0 Vc4/0 (for SDH), where x is the number of the Logical Processor you dropped the template on in step 1.

4 The Pp field is filled in automatically. Change the Pp name in the Pp field or accept the default. By convention, the Pp name is ppp<x>, where x is the number of the Logical Processor and port number, for example: ppp50.

5 In the Vr field, select the Vr for the Virtual Router on which you enabled MPLS services. See Step 1 of "Enabling MPLS services" (page 119); for example, select Vr/0.

6 Click OK.

7   Perform the following procedure:

-

Adding an LSP Group and its static point Transport LSP

Use this procedure to add an LSP Group and its associated ATM interface, and the static point Transport LSP (the Out-Segment) and its associated static route LSP. The LSP Group consists of a set of Logical Switched Paths (LSPs) that all go to the same destination.

Four templates are available. The first template C: LSP Group and Static T-Lsp - Destination with 1QoS (ATMoMPLS) creates one LSP group for applications where only one Quality of Service (QoS) is required. The second template C: LSP Group and Static T-Lsp - Destination with 2QoS (ATMoMPLS) creates two LSP groups where two QoS categories are necessary. The third and fourth templates create three and four LSP groups, respectively.

Each LSP group supports a different QoS category. For example, the C: LSP Group and Static T-Lsp - Destination with 4QoS (ATMoMPLS) template creates four LSP groups. LSP Group 1 is for High Priority traffic, LSP Group 2 is for Medium Priority traffic, LSP Group 3 is for Low Priority traffic, and LSP Group 4 is for Best Effort traffic. The Exp Bits field on the template form specifies the priority.

You can use the following templates based on the number of QoS categories required:

- C: LSP Group and Static T-Lsp - Destination with 1QoS (ATMoMPLS) for one QoS category

- C: LSP Group and Static T-Lsp - Destination with 2QoS (ATMoMPLS) for two QoS categories

- C: LSP Group and Static T-Lsp - Destination with 3QoS (ATMoMPLS) for three QoS categories

- C: LSP Group and Static T-Lsp - Destination with 4QoS (ATMoMPLS) for four QoS categories

1   Select the MPLS-Infrastructure tab.

2   Drag the selected C: Lsp Group and Static T-Lsp template with the desired number of QoS categories into desired Lp component; for example, Lp/13. The template opens with the Lsp Group 1 tab open.

3   Do the following in the Lsp Group 1 tab:

a.   Type in a number for the LSP Group in the LspG field. By convention, the number is the Lp number followed by the Lsp group number. For example, for Lp 13 with the first Lsp group, the number is 1300, for the second Lsp group, the number is 1301, and so forth.

b.   Type the ATM interface number in the AtmIf field. By convention, the interface number is the LP number, followed by the ATM interface number for the selected card. For example, for the first ATM interface on card 13, the ATM interface number is 1300, for the second ATM interface on the card, the ATM interface number is 1301 and so forth.

c.   From the Aal5 Egress Reassembly list select none or change the default as required. Choose AutoDetect if reassembly of Aal5 frames is required.

d.   From the Egress Cell Bundling list, accept the default disabled or change to enabled as required.

   Note: Egress Cell Bundling is not available on older Passport releases.

e.   Type in the static Transport LSP number in OutSeg field. The static Transport LSP number must match the static Transport LSP number configured on the remote switch. The range must be between 16 to 511. For example, type in 50

f.   The Lsp number in the Lsp field is automatically filled in from the OutSeg field. Change the Lsp number in the Lsp field or accept the default.

g.   Change the value for the bandwidth of the static Transport LSP (Out-Segment) or accept the default value of 10000 kbps.

h.   From the MplsPort field, select the Mpls Port. For example, for Vr/0 and Lp/13, the Mpls port is Vr/0 Pp/PPP130 MplsPort.

i.   Change the value for the per hop behavior Scheduling Class or accept the default value.

   Important: The per hop behavior Scheduling Class MUST MATCH the values provisioned on the far end switch. Suggested defaults are provided.

4   Select the next Lsp Group Tab (if applicable) and repeat step 3. Repeat all sub-steps in Step 3, except for sub-step g. The MplsPort field is only required for Lsp Group 1.

   Note: The settings for ExpBits determine the priority of the T-Lsp in the core MPLS network. By default, the settings between Lsp Group tabs are different. Lsp Group 1 is set to a high priority followed by Lsp Group 2 and so forth.

5   Repeat step 3 for all the remaining Lsp Group tabs. Repeat all sub-steps in Step 3, except for sub-step g. The MplsPort field is only required for Lsp Group 1.

6   Click OK.

Creating an additional POS Functional Processor

Use this procedure to create an additional Packet Over SONET (POS) Functional Processor (FP) with Point-to-Point protocol (PPP) and Protocol Port (PP) subcomponents on the switch. You can use the following templates:

•   B: Additional FP - 1pOC48SmSrPOS, SONET (with PPP and PP)

•   B: Additional FP - 1pOC48SmSrPOS, SDH (with PPP and PP)

1   Select the MPLS-Infrastructure tab.

2   Drag the B: Additional FP - 1pOC48SmSrPOS (SONET or SDH) template and onto the root (EM) component.

   The Create B: Additional FP - 1pOC48SmSrPOS (SONET or SDH) form opens.

3   In the Card field, type the number of the slot that contains the Functional Processor card, for example: 6.

4   The Lp field is filled in automatically with the number of the logical processor that is created.

5   From the Logical Processor Type list, select the name of the Logical Processor you assigned in step 4 of "Adding MPLS software to the switch" (page 118), for example, Mpls.

6   From the Clocking Source list, select a timing source. Choices are:

   local: the oscillator in the card, (the least precise source)

   line: the remote switch

module: the timing source used for the switch, for example: a stratum 3 clock

7   The Ppp field is filled in automatically. Change the number in the Ppp field or accept the default. By convention, the Ppp number matches the Logical Processor number and port number. For example, if the Logical Processor is 6 and the port number is 0, the Ppp number is 60.

8   The Pp field is filled in automatically. Change the number in the Pp field or accept the default. By convention, the Pp number is ppp<x>, where x is the number of the Logical Processor and port number, for example: ppp60.

9   In the Vr field, select the Vr for the Virtual Router on which you enabled MPLS services. See Step 1 of "Enabling MPLS services" (page 119); for example, select Vr/0.

10   Click OK.

11   Perform the following procedure:

   •   "Adding an LSP Group and its static point Transport LSP" (page 121)

Provisioning Multi-Service applications on MPLS (ATMoMPLS)

See one of the following sections:

- "Adding an Atm-Vcc Service Lsp (POS FP to ATM Access FP)" (page 125)

- "Adding an Atm-Vpc Service Lsp (POS FP to ATM Access FP)" (page 127)

- "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 129)

- "Encapsulating data from an ATM UNI into MPLS over POS" (page 132)

Adding an Atm-Vcc Service Lsp (POS FP to ATM Access FP)

The following procedure

- configures an ATM Virtual Circuit Connection (VCC) between the POS FP and the ATM access FP card

- assigns an Lsp service label to the VCC

The following must be provisioned before you begin this procedure: all of the MPLS-Infrastructure templates for the selected POS FP, and the ATM access card with the AtmIf interface.

1   From the MPLS-Services palette, select the Atm-Vcc Service Lsp (POS FP ATM Access FP) template and drag it onto the selected AtmIf<?> component for the desired POS FP.

    The Create Atm-Vcc Service Lsp form opens. The form opens with the POS FP -Vcc tab selected.

2   Do the following in the POS FP - Vcc tab:

    a. Type the transmit label in the Transmit Label field. The transmit label must match the receive label from the far end. The range is 0 to 1048575.

    b. Type the receive label in the Receive Label field.The receive label must match the transmit label from the far end. The range is 65539 to 98303.

    c. Select the Aal5EgressReasembly from the list. The default is the sameasAtmSap. If using Aal5 frames, and Aal5 reassembly is required, set this value to AutoDetect. For non Aal5 frames, set Aal5EgressReasembly to none.

    Important: If the corresponding LSP group created in the procedure "Adding an LSP Group and its static point Transport LSP" (page 121) has Aal5 Egress Reassembly set to autoDetect, and Aal5 Egress Assembly is required, the value can be left as sameAsAtmSap.

    d. From the AtmSap field, choose the desired Lsp group. Typically, the ATM interface number and the LSP group number are the same. For example, for ATM interface 1300, the AtmSap is Vr/0 Mpls LspG/ 1300 AtmSap.

    e. From the Egress Cell Bundling field, choose the desired cell bundling method:

    If the ATM service category is nrtVariableBitRate or unspecificedBitRate, and Cell Bundling is desired, select enabled.

    If the ATM service category is rtVariableBitRate or constantVariableBitRate, and Cell Bundling is desired, select disabled.

    Important: If the corresponding LSP group created in the procedure "Adding an LSP Group and its static point Transport LSP" (page 121) has Cell Bundling enabled, and Cell Bundling is required, the value can be left as sameAsAtmSap.

    Note: Egress Cell Bundling is not available on older Passport releases.

    f. Type the Vcc number in the Vcc (VPI.VCI) field.

    g. The ConnId field is automatically filled in. The connection identifier is: <vpi number>.<vci number>, where the vpi number and vci number match those you typed in the Vcc field.

    h. Modify the other Traffic Management parameters as required

    i. Select the desired ATM Service Category.

3 Select the Atm Access FP-Vcc tab.

4 Do the following in the Atm Access FP-Vcc tab:

    a. Select the ATM interface number from the AtmIf list. By convention the ATM interface number for ATM Access cards consists of the LP number followed by the port number for the selected ATM Access FP.

> For example, if the Functional Processor is a 1-port OC48 ATM Functional Processor in Lp/7, then the AtmIf is 70.

    b. Type the Vcc number in the VCC (VPI.VCI) field.

    c. Alter the other Traffic Management parameters as required.

    d. Select the desired ATM Service Category. The default is nrtVariableBitRate.

5   Click OK.

Adding an Atm-Vpc Service Lsp (POS FP to ATM Access FP)

The following procedure

- configures an ATM Virtual Path Connection (VPC) between the POS FP and ATM access FP

- assigns an Lsp service label to the VPC

The following must be provisioned before you begin this procedure: all of the MPLS-Infrastructure templates for the selected POS FP, and the ATM access card with the AtmIf interface.

1   From the MPLS-Services palette, select the Atm-Vpc Service LSP (POS FP ATM Access FP) template and drag it onto the selected AtmIf<?> component.

    The Create Atm-Vpc Service Lsp form opens. The form opens with the POS FP -Vcc tab selected.

2   Do the following in the POS FP - Vpc tab:

    a. Type the transmit label in the Transmit Label field. The transmit label must match the receive label from the far end. The range is 0 to 1048575.

    b. Type the receive label in the Receive Label field.The receive label must match the transmit label from the far end. The range is 65539 to 98303.

    c. Select none for the Aal5EgressReasembly. The default is the sameasAtmSap.

    d. From the AtmSap field, choose the desired Lsp group. Typically, the ATM interface number and the LSP group number are the same. For example, for ATM interface 1300, the AtmSap is Vr/0 Mpls LspG/1300 AtmSap.

e. From the Egress Cell Bundling field, choose the desired cell bundling method:

If the ATM service category is nrtVariableBitRate or unspecificedBitRate, and Cell Bundling is desired, select enabled.

If the ATM service category is rtVariableBitRate or constantVariableBitRate, and Cell Bundling is desired, select disabled.

Important: If the corresponding LSP group created in the procedure "Adding an LSP Group and its static point Transport LSP" (page 121) has Cell Bundling enabled, and Cell Bundling is required, the value can be left as sameAsAtmSap.

**Note:** Egress Cell Bundling is not available on older Passport releases.

f. Type the Vpc number in the Vpc (VPI) field.

g. The ConnId field is automatically filled in. The connection identifier is: <vpi number>, where the vpi number matches the value you typed in the Vpc field.

h. Alter the other Traffic Management parameters as required.

i. Select the desired ATM Service Category.

3 Select the Atm Access FP-Vpc tab.

4 Do the following in the Atm Access FP-Vpc tab:

a. Select the ATM interface number from the AtmIf list. By convention the ATM interface number for ATM Access cards consists of the LP number followed by the port number for the selected ATM Access FP. For example, if the Functional Processor is a 1-port OC48 ATM Functional Processor in Lp/7, then the AtmIf is 70.

b. Type the Vpc number in the Vpc (VPI) field.

c. Alter the other Traffic Management parameters as desired.

d. Select the desired ATM Service Category.

5 Click OK.

Encapsulating data from an ATM trunk running DPRS in MPLS over POS

Use this procedure configure a Passport 15000 switch to take data from an ATM trunk running DPRS connected to the switch and encapsulate it in Multi Protocol Label Switching (MPLS) protocol for transmission over POS links to a remote switch.

See the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130) for a representation of the connections and mapping involved.

Figure 1
Encapsulating data from an ATM trunk running DPRS in MPLS over POS
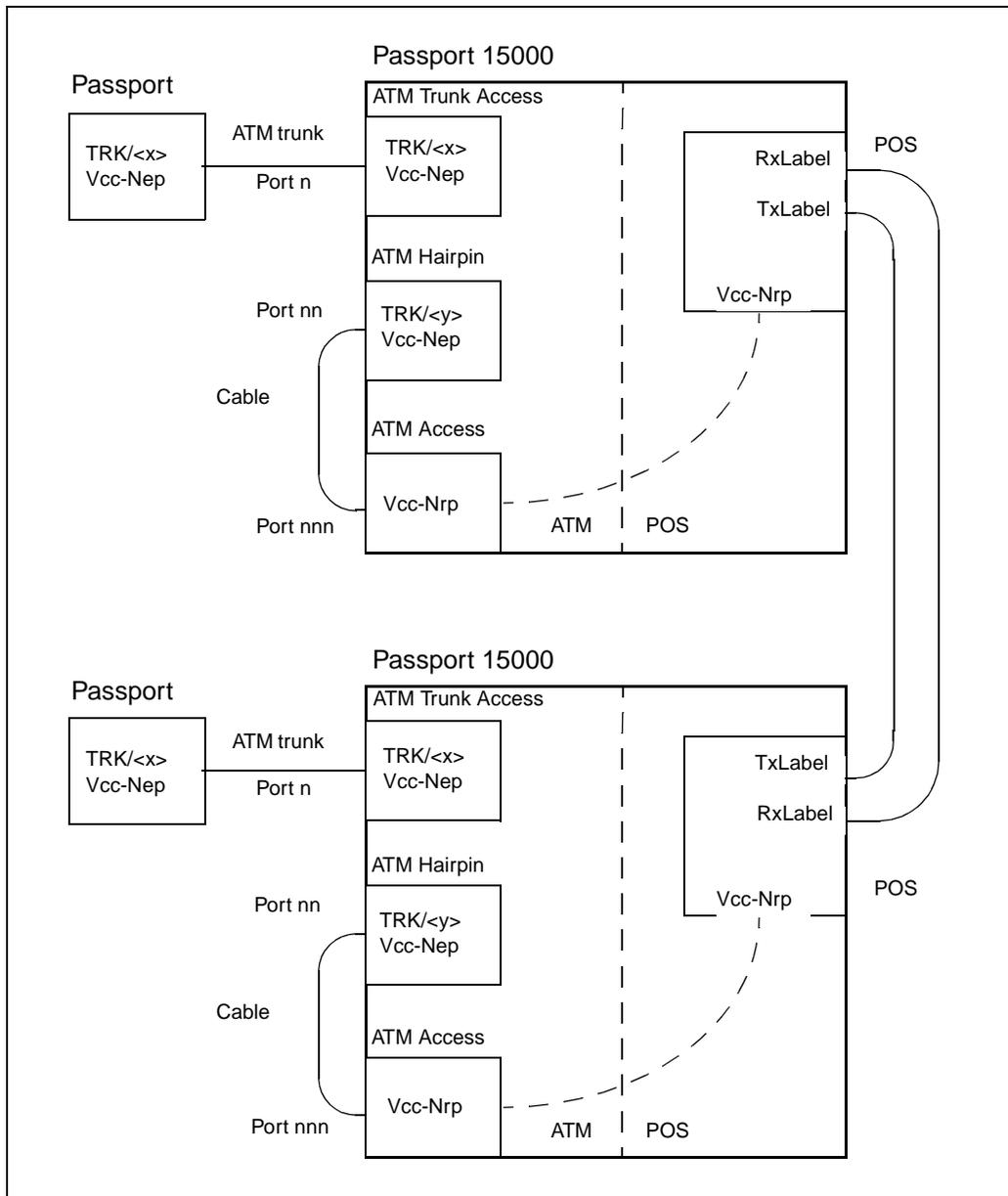
Before you begin the following must have been done:

- The Rid and Mid must already be configured on the Passport.

- The Logical Processors (LP) for the ATM trunk termination, ATM hairpin and access cards must be created and configured.

1   Select the ATM tab.

2   Create an ATM interface for the ATM trunk running DPRS that connects to the ATM trunk access card on the Passport 15000 (Port n in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)):

   a.   Drag the ATM-Interface template onto the LP/<?> you are going to use for the ATM trunk access (Port n in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

      The Create ATM interface form opens.

   b.   Enter the ATM Interface number in the AtmIf field. By convention, the ATM interface number is the LP number followed by the port number. For example, ATM interface 50.

   c.   From the Interface Name list, select the name of the ATM Interface associated with the Logical Processor. The ATM interface name takes the form Lp/<?> Sonet/0 Sts/0 (for SONET) or Lp/<?> Sdh/0 Vc4/0 (for SDH), where LP/<?> is the number of the Logical Processor. For example, LP/5 Sonet/0 Sts/0.

   d.   Type a name that identifies the remote ATM interface, for example: AtmIf 60

   e.   Click OK

3   Repeat step 2 to create an ATM interface for the ATM trunk that connects to the ATM hairpin (Port nn in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

4   Repeat step 2 to create an ATM interface for the ATM Access connection (Port nnn in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

5   Create a Vcc Nailed-Up End point for the ATM trunk that provides ATM trunk access on the Passport 15000 (Port n in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)):

    a. Drag the Atm-Vcc NEP (Nailed-up End Point) template onto the ATM interface you created for Port n.

    The Create Atm-Vcc Nep (Nailed up End Point) form opens.

    b. Type the VCC number in the Vcc field. The Vcc number takes the form <VPI number>.<VCC number>; for example: 0.34.

    c. Alter the Traffic Management parameters as required.

    d. Click OK.

6 Repeat step 5 to create a VCC Nailed-up End Point for the ATM trunk that connects to the ATM hairpin (Port nn in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

7 Create a Logical Trunk for the ATM trunk that provides ATM trunk access on the Passport 15000 (Port n in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

    a. Drag the ATM Logical Trunk template onto the root component.

    The Create ATM Logical Trunk form opens.

    b. Type a unique trunk number in the Trk field.

    c. From the Atm Connection list, select the Nailed-up End Point connection you created in step 5 b. For example 0.34 Nep.

    d. Click OK

8 Repeat step 7 to create a Logical Trunk for the ATM trunk that connects to the ATM hairpin (Port nn in Figure 1).

9 Connect a cable between the ports on the ATM hairpin card and the ATM access card (Ports nn and nnn in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)).

10 Add an Atm-Vcc Service Lsp from the POS FP to the ATM access card (Port nnn in the figure "Encapsulating data from an ATM trunk running DPRS in MPLS over POS" (page 130)) as described in "Adding an Atm-Vcc Service Lsp (POS FP to ATM Access FP)" (page 125).

Encapsulating data from an ATM UNI into MPLS over POS

Use this procedure to configure a Passport 15000 switch to take data from an ATM UNI interface from remote equipment connected to the Passport 15000 switch and encapsulate it in Multi Protocol Label Switching (MPLS) protocol for transmission over POS links to a remote switch.

See the figure "Encapsulating data on an ATM UNI into MPLS for POS"
(page 134) for a representation of the connections and mapping involved.

Figure 2
Encapsulating data on an ATM UNI into MPLS for POS
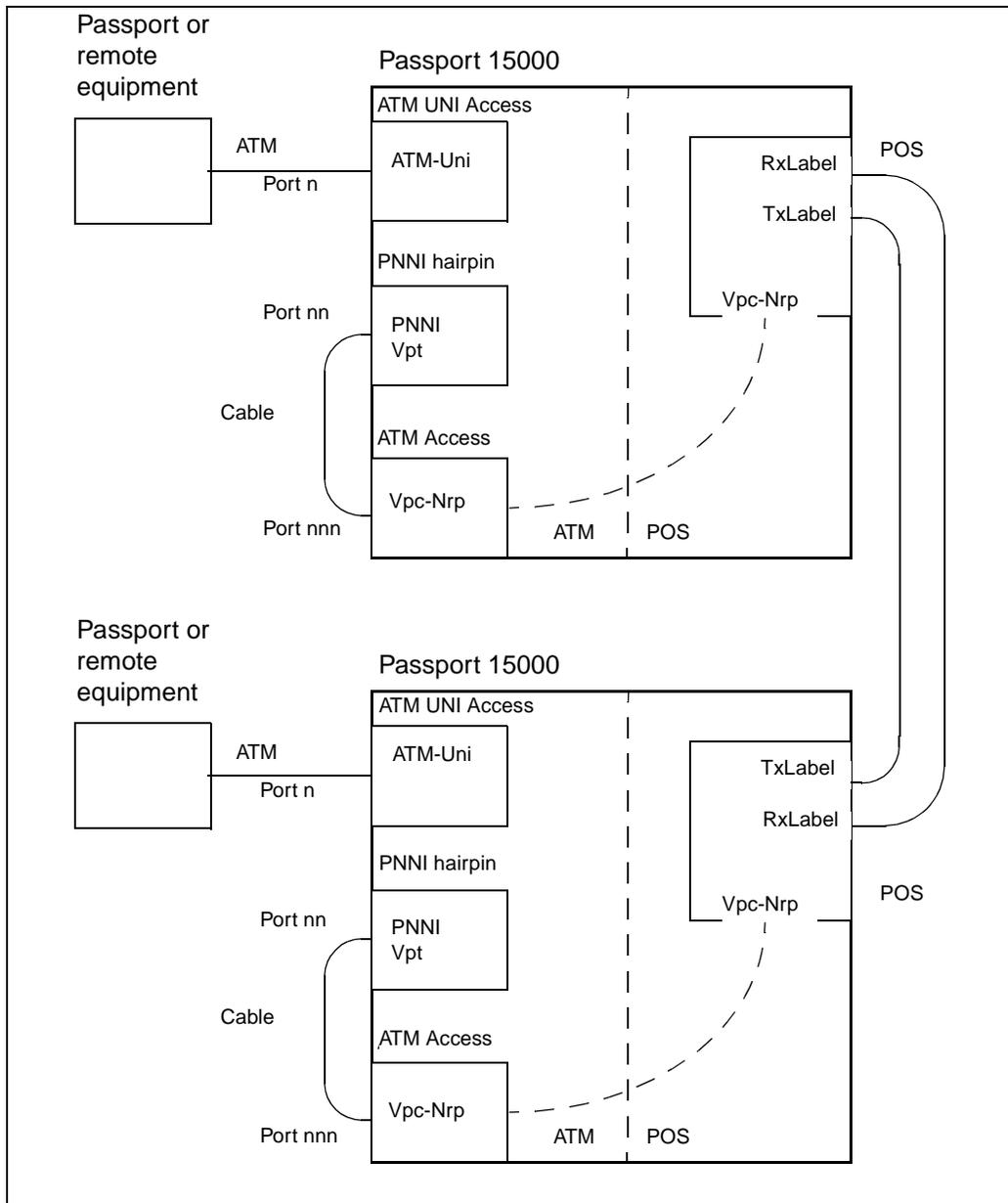
Before you begin the following must have been done:

- The Logical Processors (LPs) for the ATM remote equipment access, PNNI hairpin and ATM access cards must be created and configured.

1   Select the ATM tab.

2   Create an ATM interface with a User-Network Interface (UNI) for connecting the remote equipment to the Passport 15000 (Port n in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)):

    a.   Drag the ATM-Interface with UNI template onto the Lp/<?> you are going to use for ATM UNI access to the Passport 15000 (Port n in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)).

        The Create ATM interface with UNI form opens.

    b.   Type the ATM Interface number in the AtmIf field. By convention, the ATM interface number is the LP number followed by the port number. For example, ATM interface 70.

    c.   From the Interface Name list, select the name of the ATM Interface The ATM interface name takes the form Lp/<?> Sonet/0 Sts/0 (for SONET) or Lp/<?> Sdh/0 Vc4/0 (for SDH), where LP/<?> is the number of the Logical Processor. For example, LP/7 Sonet/0 Sts/0.

    d.   Type a name that identifies the remote ATM interface, for example: AtmIf 80

    e.   Click OK

3   Create an ATM interface with a PNNI that connects to the PNNI hairpin (Port nn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)):

    a.   Drag the ATM-Interface with PNNI template onto the LP/<?> you are going to use for the PNNI hairpin (Port nn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)).

        The Create ATM interface with PNNI form opens.

    b.   Enter the ATM Interface number associated with the Logical Processor in the AtmIf field. For example, ATM interface 80.

    c.   From the Interface Name list, select the name of the ATM Interface For example, LP/8 Sonet/0 Sts/0.

       d.   Type a name that identifies the remote ATM interface with PNNI, for example: AtmIf 90

       e.   Click OK

4   Create an ATM interface for ATM Access (Port nnn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)):

       a.   Drag the ATM-Interface template onto the Lp/<?> you are going to use for ATM access (Port nnn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)).

        The Create ATM interface form opens.

       b.   Enter the ATM Interface number in the AtmIf field. By convention, the ATM interface number is the LP number followed by the port number. For example, ATM interface 60.

       c.   From the Interface Name, list select the name of the ATM Interface The ATM interface name takes the form Lp/<?> Sonet/0 Sts/0 (for SONET) or Lp/<?> Sdh/0 Vc4/0 (for SDH), where LP/<?> is the number of the Logical Processor. For example, LP/6 Sonet/0 Sts/0.

       d.   Type a name that identifies the remote ATM interface, for example: AtmIf 70

       e.   Click OK

5   Create an ATM Virtual Path Termination (VPT) with PNNI for the PNNI hairpin (Port nn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)):

       a.   Drag the ATM-Vpt with PNNI template onto the AtmIf you created for the PNNI hairpin (Port nn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)).

        The Create ATM-Vpt with PNNI form opens.

       b.   Enter the VPT number in the Vpt field. For example, Vpt 80.

       c.   Alter the Traffic Management parameters as required.

       d.   Click OK

6   Connect a cable between the port on the PNNI hairpin and the port on the ATM access card (Port nn and Port nnn in the figure "Encapsulating data on an ATM UNI into MPLS for POS" (page 134)).

7   Add an Atm-Vpc Service Lsp from the POS FP to the ATM access card Functional Processor, as described in "Adding an Atm-Vpc Service Lsp (POS FP to ATM Access FP)" (page 127).

Preside Multiservice Data Manager
Nodal and Service Provisioning
Reference Guide

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