



Nortel Networks Media Gateway 7480/
15000

Non-Switched Service Configuration Management

NN10600-781

Nortel Networks Media Gateway 7480/15000

Non-Switched Service Configuration Management

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About this document

This guide contains information about configuring and maintaining non-switched Media Gateway. To use this guide effectively, see the following sections:

- “Who should read this guide” (page 13)
- “How this guide is organized” (page 13)
- “What’s new in this document” (page 13)
- “What you need to know” (page 14)
- “Text conventions” (page 14)
- “Procedure conventions” (page 16)
- “Related documents” (page 18)

Who should read this guide

This guide is useful for anyone who installs, configures, and maintains non-switched ATM Media Gateway (MG) in Nortel Networks Multiservice Switch networks.

How this guide is organized

See the “Non-switched Media Gateway configuration task flow” (page 21) for information about the organization of this document.

What’s new in this document

There were no new features added to this document.

Other change made to this document include the following:

- The terms Passport and PVG have been rebranded in conjunction with the new Nortel Networks' brand simplified naming format. Passport is now referred to as the Nortel Networks Multiservice Switch, and PVG is now Media Gateway 7480/15000. For more information on the product rebranding, refer to NN10600-000 *Nortel Networks Multiservice Switch 7400/15000/20000 What's New in PCR6.1*.
- Clarified notes and corrected a default value in procedures "Creating a link from an STM-1/OC3 TDM FP to NSTA (VSP)" (page 34), "Configuring clear channel data to transport signaling" (page 61), "Configuring clear channel data for non-switched Media Gateway" (page 65).

What you need to know

In order to understand and configure non-switched Media Gateway in Nortel Networks Multiservice Switch networks, you need a basic understanding of the following areas:

- Multiservice Switch hardware, including installation and maintenance procedures
- Multiservice Switch operations and maintenance procedures, including how to configure a node
- Multiservice Switch ATM services

Text conventions

There are a number of documentation conventions you should know about.

- `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

Nortel Networks Multiservice Switch system commands are not case-sensitive and do not have to match commands and parameters exactly as shown in this document, with the exception of string options values (for example, file and directory names) and string attribute values.

- ...

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

- |

This symbol separates items from which you can 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.

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 /).

Procedure conventions

This document uses the following procedure conventions:

- You can enter commands using full component and attribute names, or you can abbreviate them. The commands used in the procedures contain the full component and attribute names in the first instance. In the second instance, the component and attribute names are abbreviated. For more information on abbreviating component and attribute names, see *NN10600-060 Nortel Networks Multiservice Switch 7400/15000/20000 Component Reference*. All component and attribute names are formatted in italics.
- The introduction of every procedure states whether you must perform the procedure in operational mode or provisioning mode. For more information on these modes, see “Operational mode” (page 16) or “Provisioning mode” (page 17).
- When you complete a procedure, you can verify your changes and then activate them as the new node configuration. For more information on completing configuration changes and exiting provisioning mode, see “Activating configuration changes” (page 17).

Operational mode

Procedures contained within this document can either be performed in operational mode or provisioning mode. When you initially log into a Nortel Networks Multiservice Switch node, you are in operational mode. The system uses the following command prompt when you are in operational mode:

```
#>
```

where:

is the current command number

In operational mode, you work with operational components and attributes. In operational mode, you can

- list operational components and display operational attributes to determine the current operating parameters for the node
- control the state of parts of the node by locking and unlocking components

- set certain operational attributes and enter commands to perform diagnostic tests

Provisioning mode

To change from operational mode to provisioning mode, type the following command at the operator prompt:

```
start Prov
```

Only one user can be in provisioning mode at a time. The system uses the following command prompt whenever you are in provisioning mode:

```
PROV #>
```

where:

is the current command number

In provisioning mode, you work with the provisionable components and attributes that contain the current and future configurations of the node. You can add and delete components, and display and set provisionable attributes. For information on completing the configuration changes, exiting provisioning mode, and returning to operational mode see “Activating configuration changes” (page 17).

For information on operational and provisionable attributes, see NN10600-060 *Nortel Networks Multiservice Switch 7400/15000/20000 Component Reference*.

Activating configuration changes

Several procedures in this document ask that you complete the configuration changes. When you complete the configuration changes, you are activating the configuration changes, confirming that you want to activate them, and saving the changes. You are instructed to complete the configuration changes only at the end of procedures that you perform in provisioning mode.



CAUTION

Activating a provisioning view can affect service

Activating a provisioning view can result in a CP reload or restart, causing all services on the node to fail. See NN10600-050 *Nortel Networks Multiservice Switch 7400/15000/20000 Command Reference*, for more information.

- 1 Verify that the provisioning changes you have made are acceptable:

check Prov

Correct any errors and then verify the provisioning changes again.

- 2 If you want to store the provisioning changes in a file, save the provisioning view:

save Prov

- 3 If you want these changes as well as other changes made in the edit view to take effect immediately, activate, confirm, and commit the provisioning changes:

activate Prov

confirm Prov

commit Prov

- 4 End the provisioning session:

end Prov

Related documents

This guide makes reference to several documents. Some procedures require you to use one or more documents in conjunction with a given procedure. Other documents are sources of more detailed or related information.

- NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*
- NN10600-175 *Nortel Networks Multiservice Switch 7400 Hardware Installation, Maintenance, and Upgrade*
- NN10600-130 *Nortel Networks Multiservice Switch 15000/20000 Hardware Installation, Maintenance, and Upgrade*

- *NN10600-550 Nortel Networks Multiservice Switch 7400/15000/20000 Common Configuration Procedures*
- *NN10600-551 Nortel Networks Multiservice Switch 7400/15000/20000 FP Configuration Reference*
- *NN10600-700 Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals*

Chapter 1

Non-switched Media Gateway configuration task flow

The non-switched Media Gateway configuration task flow is based on the Open Systems Interconnection (OSI) reference model. This book deals with non-switched Media Gateway configuration in Nortel Networks Multiservice Switch networks at the Transport Layer. See the figure “Non-switched Media Gateway Multiservice Switch configuration according to the OSI reference model” (page 22).

For a detailed view of the sequence of tasks you perform to configure non-switched Media Gateway in Multiservice Switch networks, see the figure “Non-switched Media Gateway configuration task flow” (page 23). Each box in the task flow represents a task that comprises one or more procedures. Each task has a corresponding section in this guide that contains the relevant procedures. To link to any task, go to the list that follows the task flow.

Prerequisites to non-switched Media Gateway configuration

- Install the required Media Gateway hardware. See the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals* and NN10600-130 *Nortel Networks Multiservice Switch 15000/20000 Hardware Installation, Maintenance, and Upgrade* or NN10600-175 *Nortel Networks Multiservice Switch 7400 Hardware Installation, Maintenance, and Upgrade*.
- Configure the required base Multiservice Switch node software. See the NN10600-270 *Nortel Networks Multiservice Switch 7400/15000/20000 Software Installation*.

- Configure the required ATM software. See the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals* and NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management*
- Install the Media Gateway software. See the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*, NN10600-550 *Nortel Networks Multiservice Switch 7400/15000/20000 Common Configuration Procedures*, and NN10600-270 *Nortel Networks Multiservice Switch 7400/15000/20000 Software Installation*.
- See the non-switched Media Gateway functionality section in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

Figure 1
Non-switched Media Gateway Multiservice Switch configuration according to the OSI reference model

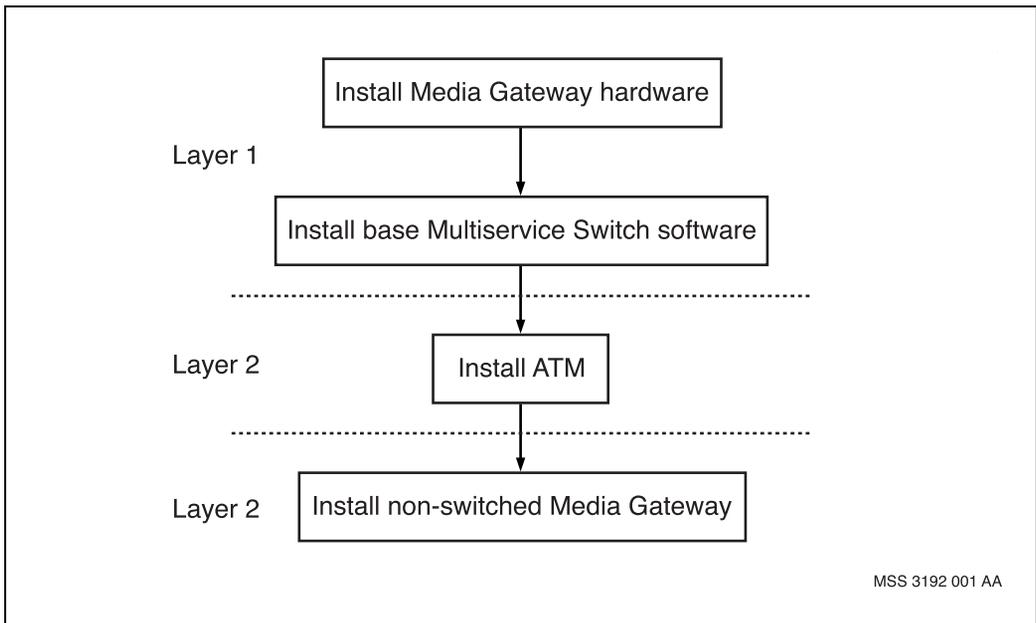
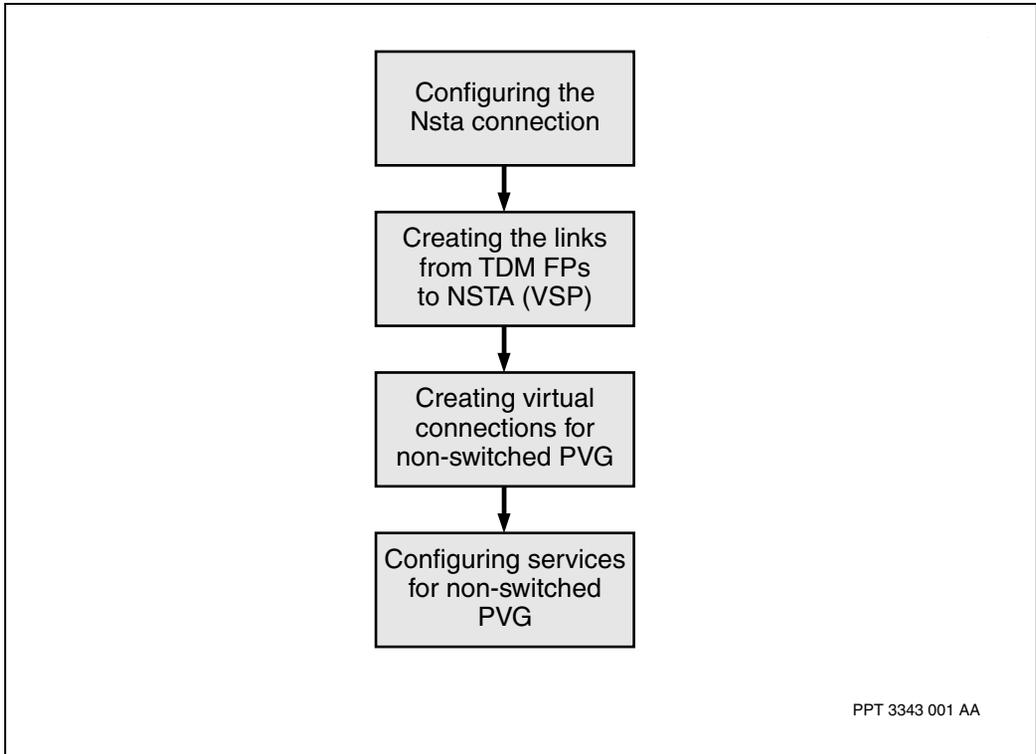


Figure 2
Non-switched Media Gateway configuration task flow



Navigation links

- “Configuring the Nsta Connection” (page 25)
- “Creating links from TDM FPs to NSTA (VSP)” (page 27)
- “Creating virtual connections for non-switched Media Gateway” (page 37)
- “Configuring services for non-switched Media Gateway” (page 49)

Chapter 2

Configuring the Nsta Connection

Configure the *NarrowbandServicesTrunkOverATM (Nsta)* and *Connection (Conn)* components to establish the *BasicRateGroup* and the attributes necessary to configure non-switched Media Gateway services and the link to ATM.

Prerequisites

- Perform the prerequisites required for this task. See “Prerequisites to non-switched Media Gateway configuration” (page 21).

Procedure steps

- 1 Add the *NarrowbandServicesTrunkOverATM (Nsta)* component. You need one *Nsta* for each voice services FP:

```
add Nsta/<n>
```

- 2 Add an AAL2 connection beneath the *Nsta* component:

```
add Nsta/<n> Connection/<m>
```

Note: The system automatically adds the subcomponents *BasicRateGroup/0 (Brag)* and *NailedupAdaptionPoint (Nap)*. The system dynamically creates a *BasicRateChannel (Brac)* component for each *Connection* component identified by the system when you activate the provisioning changes.

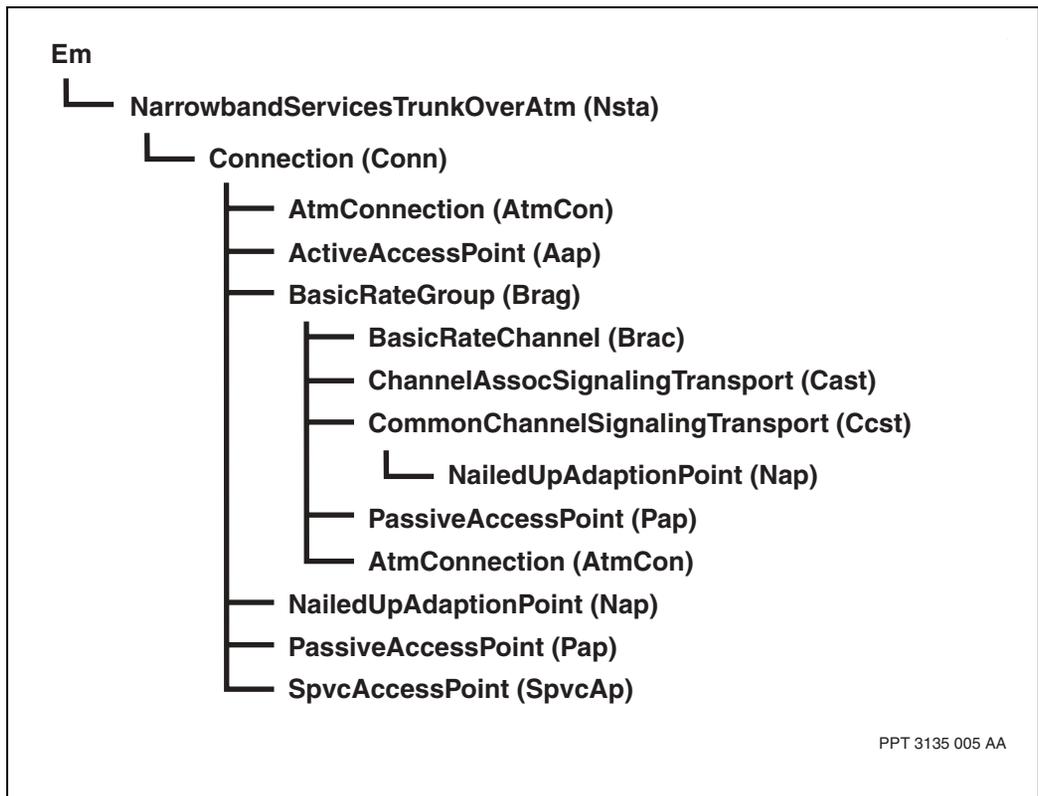
Note: You can configure a different instance value for the *Brag* component if you delete *Brag/0* and add a new instance. You can configure only one *Brag* component for each *Connection* component.

Variable definitions

Variable	Value
<n>	is the value for the <i>Nsta</i> component
<m>	is the value for a <i>Connection</i> component

Procedure job aid

Figure 3
Configuring Nsta Connection component hierarchy



Chapter 3

Creating links from TDM FPs to NSTA (VSP)

Create links from the TDM FPs to the narrowband services trunk over ATM (NSTA), also known as the voice services processor (VSP). For information about configuring the ATM part of the connection, see “Creating virtual connections for non-switched Media Gateway” (page 37).

- “Prerequisites to creating links from TDM FPs to NSTA (VSP)” (page 27)
- “Creating links from TDM FPs to NSTA (VSP) task flow” (page 28)

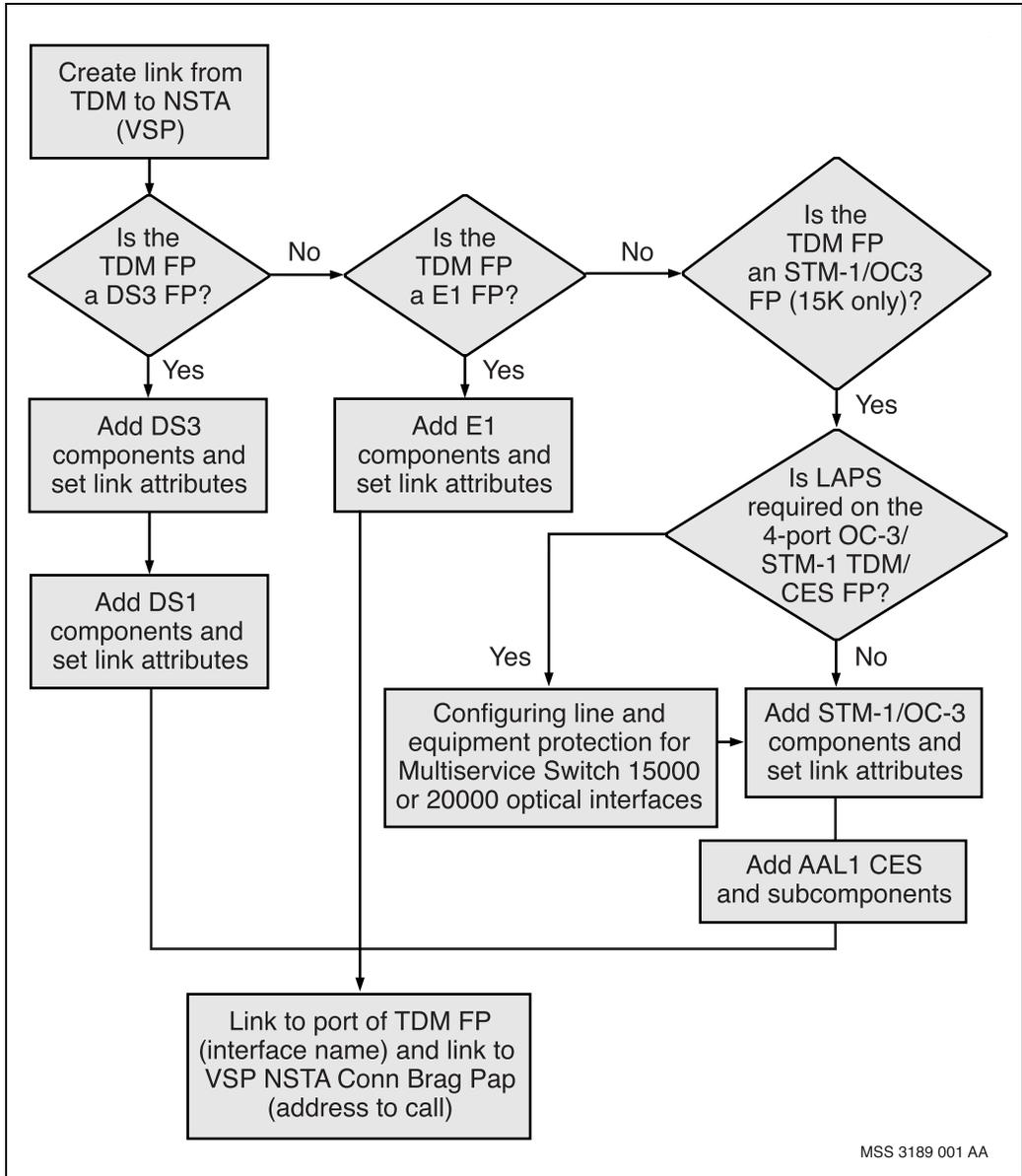
Prerequisites to creating links from TDM FPs to NSTA (VSP)

- The logical processor types and logical processors required for Media Gateway are installed and configured as described in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.
- For supporting information for the procedures in this section, see NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.
- This task may require the provisioning of line automatic protection switching (LAPS) for the 4-port OC-3/STM-1 Ch TDM/CES FP. If you choose this configuration you will need the procedure “Configuring line and equipment protection for Multiservice Switch 15000 and Multiservice Switch 20000 optical interfaces” in NN10600-550 *Nortel Networks Multiservice Switch 7400/15000/20000 Common Configuration Procedures*.

Creating links from TDM FPs to NSTA (VSP) task flow

This task flow shows you the sequence of procedures you perform to create links from TDM FPs to NSTA (VSP). To link to any procedure, go to the list that follows the task flow.

Figure 4
Creating links from TDM FPs to NSTA (VSP) task flow



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Navigation links

- “Creating a link from a DS3 TDM FP to NSTA (VSP)” (page 31)
- “Creating a link from an E1 TDM FP to NSTA (VSP)” (page 33)
- “Configuring line and equipment protection for Multiservice Switch 15000 and Multiservice Switch 20000 optical interfaces” in NN10600-550 *Nortel Networks Multiservice Switch 7400/15000/20000 Common Configuration Procedures*
- “Creating a link from an STM-1/OC3 TDM FP to NSTA (VSP)” (page 34)

Creating a link from a DS3 TDM FP to NSTA (VSP)

Create a link from DS3 TDM FPs to NSTA to associate the Nsta services to an interface on the 2-port DS3 TDM FP.

Prerequisites

- The logical processor types and logical processors for the DS3 FP have been configured as described in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

Procedure steps

- Set the card's *cardtype* attribute to *2pDS3cAa1*.
- Add to the associated LP any required interface components. For the 2-port DS3C TDM, you would add *DS3* and *DS1* components under the LP component.

```
add Lp/<p> DS3/<x> DS1/<y>
```

- Set the *clockingSource* attribute of the DS1 tributary port to module.

```
set Lp/<o> DS3/<x> DS1/<y> clockingSource module
```

- Connect the NSTA AAL2 connection to a port.

```
set Nsta/<n> Connection/<m> Brag/0 interfaceName Lp/<p> <path>
```

- Link the *Nsta* component to the logical processor you defined for the voice services FP.

```
set Nsta/<n> linktoserver lp/<p> vsp
```

Variable definitions

Variable	Value
<m>	is the value for the <i>Connection</i> component.
<n>	is the value for the <i>Nsta</i> component
<p>	is the value for the LP
<path>	is the path for the DS1 channel, for example, DS3/0 DS1/1 Channel/0.
(Sheet 1 of 2)	

Variable	Value
<x>	is the value of the DS3
<y>	is the value of the DS1
(Sheet 2 of 2)	

Creating a link from an E1 TDM FP to NSTA (VSP)

Create a link from an E1 TDM FPs to NSTA to associate the Nsta services to an interface on the 32-port E1 TDM FP.

Prerequisites

- The logical processor types and logical processors for the E1 FP have been configured as described in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

Procedure steps

- Set the card's *cartype* attribute to *32pE1Aal*.
- Add to the associated LP any required interface components. For a 32-port E1 TDM FP, you would add the *E1* component under the *Lp* component.


```
set Lp/<p> E1/<x>
```
- Connect the Nsta AAL2 connection to a port on the 32-port E1 TDM FP.


```
set Nsta/<n> Connection/<m> Brag/0 interfaceName Lp/<p> <path>
```
- Link the *Nsta* component to the logical processor you defined for the voice services FP.


```
set Nsta/<n> linktoserver lp/<p> vsp
```

Variable definitions

Variable	Value
<n>	is the value for the <i>Nsta</i> component
<p>	is the value for the LP
<path>	is the path for the E1 channel, for example, E1/8 Channel/0
<x>	is the value for the E1 instance

Creating a link from an STM-1/OC3 TDM FP to NSTA (VSP)

Create a link from an STM-1/OC3 FPs to NSTA to associate the Nsta services to an interface on the 4-port OC-3/STM-1 Ch TDM/CES FP.

Prerequisites

- The logical processor types and logical processors for the STM-1/OC3 FP have been configured as described in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

Procedure steps

1 Set the card's *cardtype* attribute to *4pOC3ChSmlr*.

2 Add to the associated LP the AAL1 CES components and subcomponents.

```
set Lp/<p> sdh/<z> vc4/0 vc12/<k,1,m>
```

3 For the 4-port OC-3/STM-1Ch TDM/CES FP, connect the AAL1CES component to the port.

```
set aal1ces/x interfacename lp/q sdh/<z> vc4/0 vc12/<k,1,m> E1 chan/0
```

4 For the 4-port OC-3/STM-1Ch TDM/CES FP, add an aep component under the AAL1CES component.

```
add aal1ces/<x> aep
```

5 For the 4-port OC-3/STM-1Ch TDM/CES FP, set the aep component

```
set aal1ces/<x> aep addresstocall <v>
```

Note: Ensure the *trafficChannelIdentifierList* under the *NSTA Conn Brag* has the equivalent number of AAL2 channels to the number of timeslots under the *E1 chan/0 timeslot* list or under the *DS1 chan/0 timeslot* list.

6 Link the *Nsta* component to the logical processor you defined for the voice services FP.

```
set Nsta/<n> linktoserver lp/<p> vsp
```

Variable definitions

Variable	Value
<k,l,m>	are the instance of the low order path
<m>	is the value for the <i>Connection</i> component
<n>	is the value for the <i>Nsta</i> component
<p>	is the value for the logical processor of an FP.
<path>	is the path for the DS1 or E1 channel, for example, DS3/0 DS1/1 Channel/0 or E1/8 Channel/0
<v>	is the <i>Pap</i> localaddress value
<x>	is the instance number of the <i>aal1ces</i> component
<z>	is the value of the port

Chapter 4

Creating virtual connections for non-switched Media Gateway

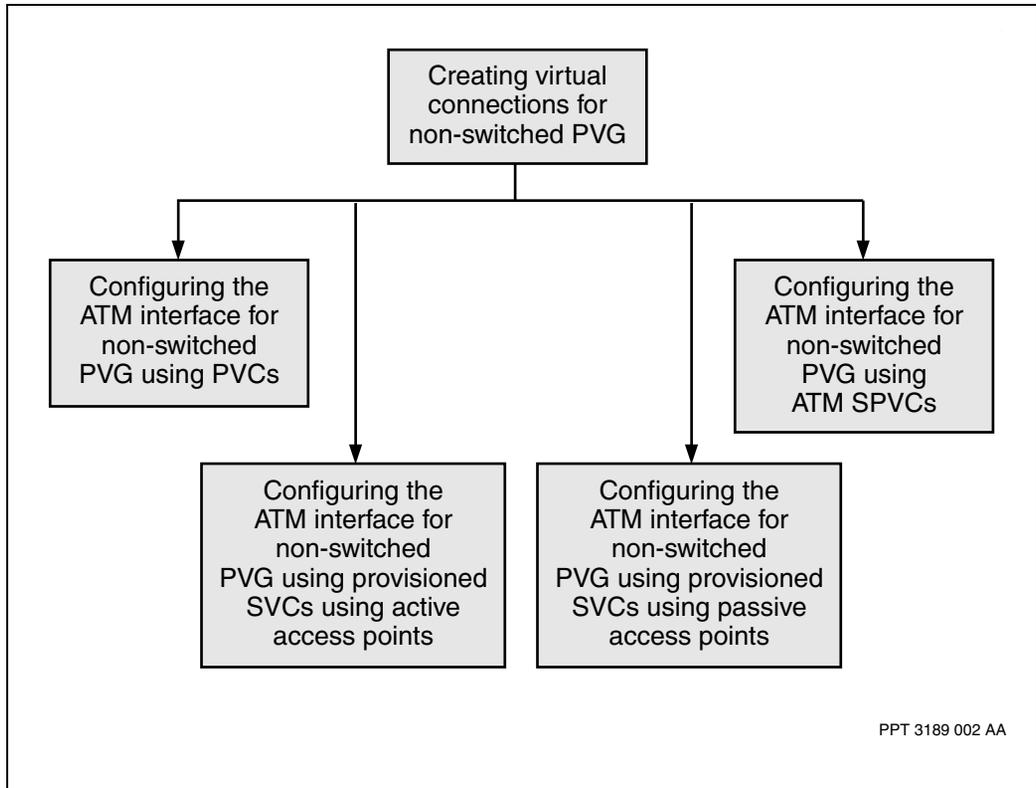
Create the ATM virtual connections required for non-switched Media Gateway. For information about configuring the TDM and VSP parts of the connection, see “Creating links from TDM FPs to NSTA (VSP)” (page 27).

- “Creating virtual connections for non-switched Media Gateway task flow” (page 37)

Creating virtual connections for non-switched Media Gateway task flow

This task flow shows you the sequence of procedures you perform to create virtual connections for non-switched Media Gateway. To link to any procedure, go to the list that follows the task flow.

Figure 5
Creating virtual connections for non-switched Media Gateway task flow



Navigation links

- “Configuring the ATM interface for non-switched Media Gateway using PVCs” (page 39)
- “Configuring the ATM interface for non-switched Media Gateway using provisioned SVCs using active access points” (page 41)
- “Configuring the ATM interface for non-switched Media Gateway using provisioned SVCs using passive access points” (page 44)
- “Configuring the ATM interface for non-switched Media Gateway using ATM SPVCs” (page 46)

Configuring the ATM interface for non-switched Media Gateway using PVCs

Create the PVC virtual channel connections (VCCs) and link them to the ports on the ATM FPs in the shelf. For additional information about how to configure ATM connections, see NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management*.

Procedure steps

- 1 Add an ATM interface.

```
add AtmIf /<n>
```

- 2 Add a VCC to the ATM interface.

```
add AtmIf /<n> Vcc /<VPI.VCI>
```

Permitted values depend on the connection map for the *AtmIf* component. You may need to edit the *ConnectionAdministrator* or *ConnectionMapping* component. See NN10600-700 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals*.

- 3 Add a *NailedUpEndPoint* component to the VCC.

```
add AtmIf /<n> Vcc /<VPI.VCI> Nep
```

- 4 Configure ATM traffic management.

```
set AtmIf /<n> Vcc /<VPI.VCI> Vcd Tm <attribute>  
<attributevalue>
```

Set the traffic management attributes as required. For more information, see the traffic management section in the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

- 5 Link the ATM interface to an ATM port.

```
set AtmIf /<n> interfaceName lp /<m> <port>
```

- 6 Optionally, if you plan to oversubscribe the connection pool capacity for the ATM interface, edit the connection administrator to accommodate the appropriate bandwidth.

```
set AtmIf /<n> Ca bandwidthPool 1 <percentage>
```

- 7 Add a permanent access point to the AAL2 connection.

```
add Nsta /<p> Connection /<r> Nap
```

- 8 Map a *Nap* component to a *Nep* component.

```
set Nsta/<p> Connection/<r> Nap atmConnection AtmIf/
<n> Vcc/<VPI.VCI> Nep
```

- 9 Configure signaling. For details, see “Configuring services for non-switched Media Gateway” (page 49).

Variable definitions

Variable	Value
<n>	is the instance value of the <i>AtmIf</i> component and can be any value from 1 to 1024
<VPI,VCI>	is the instance value of the VCC. The VPI value can be from 0 to 255. The VCI value can be from 32 to 65535
<attribute>	is any of the configurable attributes
<attributevalue>	is a permitted value for the attribute
<m>	is the LP number
<port>	is the port type and instance value, for example, <i>E1/1</i> or <i>Sonet/0 Path/0</i> or <i>DS3/0</i> . If the FP is channelized, include the channel instance as well, for example, <i>DS1/1 Channel/0</i> .
<percentage>	is the percentage of the pool, between 0 and 1000, that is reserved for pool1. For more information about bandwidth pools, see NN10600-700 <i>Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals</i>
<p>	is the value for the <i>Nsta</i> component
<r>	is the value for a <i>Connection</i> component

Configuring the ATM interface for non-switched Media Gateway using provisioned SVCs using active access points

Create basic ATM interfaces, link them to the ports on the ATM FPs in the shelf, and configure bearer channels to use ATM provisioned SVCs with active access points. For additional information about how to configure ATM connections for Nortel Networks Multiservice Switch networks, see NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management*.

Prerequisites

- The ATM network and the ATM interfaces must be configured to provide switched ATM connections (provisioned SVCs or SPVCs). Refer to NN10600-702 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Routing and Signalling Fundamentals* for a description of switched ATM connections. See NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management* for procedures on configuring the connections.

Procedure steps

- 1 Add an ATM interface.

```
add AtmIf/<n>
```

- 2 Link the ATM interface to an ATM port.

```
set AtmIf/<n> interfaceName lp/<m> <port>
```

- 3 Optionally, if you plan to oversubscribe the connection pool capacity for the ATM interface, edit the *ConnectionAdministrator* component to accommodate the appropriate bandwidth.

```
set AtmIf/<n> Ca bandwidthPool 1 <percentage>
```

- 4 Add an active access point to the AAL2 connection.

```
add Nsta/<p> Connection/<r> Aap
```

- 5 Specify the ATM service category.

```
set Nsta/<p> Connection/<r> Aap atmServiceCategory  
<cat>
```

- 6 Specify the peak cell rate.

- set Nsta/<p> Connection/<r> Aap pcr <p_cell_rate>**
- 7 Specify the sustained cell rate.
- set Nsta/<p> Connection/<r> Aap scr <s_cell_rate>**
- 8 Specify the maximum burst size.
- set Nsta/<p> Connection/<r> Aap mbs <max_burst_size>**
- 9 Specify the retry limit.
- set Nsta/<p> Connection/<r> Aap limit <max_retry>**
- 10 Configure signaling. For details, see “Configuring services for non-switched Media Gateway” (page 49).

Variable definitions

Variable	Value
<n>	is the instance value of the <i>Atmlf</i> component and can be any value from 1 to 1024
<VPI,VCI>	is the instance value of the VCC. The VPI value can be from 0 to 255. The VCI value can be from 32 to 65535
<attribute>	is any of the configurable attributes
<cat>	is either <i>constantBitRate</i> or <i>rtVariableBitRate</i> (the value <i>rtVariableBitRate</i> is recommended for real-time voice data through the <i>Nsta Conn</i> component)
<attributevalue>	is a permitted value for the attribute
<m>	is the LP number
<port>	is the port type and instance value, for example, <i>E1/1</i> or <i>Sonet/0 Path/0</i> or <i>DS3/0</i> . If the FP is channelized, include the channel instance as well, for example, <i>DS1/1 Channel/0</i> .
<percentage>	is the percentage of the pool, between 0 and 1000, that is reserved for pool1. For more information about bandwidth pools, see NN10600-700 <i>Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals</i>
<p>	is the value for the <i>Nsta</i> component
<r>	is the value for a <i>Connection</i> component
(Sheet 1 of 2)	

Variable	Value
<p_cell_rate>	is a number representing the peak cell rate
<s_cell_rate>	is a number representing the sustained cell rate. It must be zero if the ATM service category is <i>constantBitRate</i> . It must not be zero if the ATM service category is something other than <i>constantBitRate</i> . The number of the sustained cell rate must not equal the number of the peak cell rate.
<max_burst_size>	is a number representing the maximum burst size. It must be zero if the ATM service category is <i>constantBitRate</i> . It must not be zero if the ATM service category is something other than <i>constantBitRate</i> .
<max_retry>	is a number representing the maximum number of retry rounds the application tries to connect to the far end before setting an alarm and forcing manual intervention. A value of 0 indicates that the application tries indefinitely to connect to the far end.
(Sheet 2 of 2)	

Configuring the ATM interface for non-switched Media Gateway using provisioned SVCs using passive access points

Create basic ATM interfaces, link them to the ports on the ATM FPs in the shelf, and configure bearer channels to use ATM provisioned SVCs with passive access points. For additional information about how to configure ATM connections for Nortel Networks Multiservice Switch networks, see NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management*.

Prerequisites

- The ATM network and the ATM interfaces must be configured to provide switched ATM connections (provisioned SVCs or SPVCs). See NN10600-702 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Routing and Signalling Fundamentals* for a description of switched ATM connections. See NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management* for procedures on configuring the connections.

Procedure steps

- 1 Add an ATM interface.

```
add AtmIf/<n>
```
- 2 Link the ATM interface to an ATM port.

```
set AtmIf/<n> interfaceName lp/<m> <port>
```
- 3 Optionally, if you plan to oversubscribe the connection pool capacity for the ATM interface, edit the *ConnectionAdministrator* component to accommodate the appropriate bandwidth.

```
set AtmIf/<n> Ca bandwidthPool 1 <percentage>
```
- 4 Add a passive access point to the AAL2 connection.

```
add Nsta/<p> Connection/<r> Pap
```
- 5 Configure signaling. For details, see “Configuring services for non-switched Media Gateway” (page 49).

Variable values

Variable	Value
<n>	is the instance value of the <i>Atmlf</i> component and can be any value from 1 to 1024
<m>	is the LP number
<port>	is the port type and instance value, for example, <i>E1/1</i> or <i>Sonet/0 Path/0</i> or <i>DS3/0</i> . If the FP is channelized, include the channel instance as well, for example, <i>DS1/1 Channel/0</i> .
<percentage>	is the percentage of the pool, between 0 and 1000, that is reserved for pool1. For more information about bandwidth pools, see NN10600-700 <i>Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals</i>
<p>	is the value for the <i>Nsta</i> component
<r>	is the value for a <i>Connection</i> component

Configuring the ATM interface for non-switched Media Gateway using ATM SPVCs

Create basic ATM interfaces, link them to the ports on the ATM FPs in the shelf, and configure SPVCs. For additional information about how to configure ATM connections for Nortel Networks Multiservice Switch networks, see NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management*.

Prerequisites

- The ATM network and the ATM interfaces must be configured to provide switched ATM connections (provisioned SVCs or SPVCs). See NN10600-702 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Routing and Signalling Fundamentals* for a description of switched ATM connections. See NN10600-710 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Configuration Management* for procedures on configuring the connections.

Procedure steps

- 1 Add an ATM interface.

```
add AtmIf/<n>
```
- 2 Link the ATM interface to an ATM port.

```
set AtmIf/<n> interfaceName lp/<m> <port>
```
- 3 Optionally, if you plan to oversubscribe the connection pool capacity for the ATM interface, edit the *ConnectionAdministrator* component to accommodate the appropriate bandwidth.

```
set AtmIf/<n> Ca bandwidthPool 1 <percentage>
```
- 4 Add a SPVC access point to the AAL2 connection.

```
add Nsta/<p> Connection/<r> SpvcAp
```
- 5 Specify the remote address of the ATM interface to call.

```
set Nsta/<p> Connection/<r> SpvcAp addrToCall  
<rem_addr>
```
- 6 Specify the remote VPI VCI combination of the ATM interface to call.

```
set Nsta/<p> Connection/<r> SpvcAp rVpiVci <VPI.VCI>
```
- 7 Specify the ATM service category.

- ```
set Nsta/<p> Connection/<r> SpvcAp service <cat>
```
- 8 Specify the peak cell rate.
- ```
set Nsta/<p> Connection/<r> SpvcAp pcr <p_cell_rate>
```
- 9 Specify the sustained cell rate.
- ```
set Nsta/<p> Connection/<r> SpvcAp scr <s_cell_rate>
```
- 10 Specify the maximum burst size.
- ```
set Nsta/<p> Connection/<r> SpvcAp mbs
<max_burst_size>
```
- 11 Specify the retry limit.
- ```
set Nsta/<p> Connection/<r> SpvcAp limit <max_retry>
```
- 12 Configure signaling. For details, see “Configuring services for non-switched Media Gateway” (page 49).

## Variable values

| Variable         | Value                                                                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <n>              | is the instance value of the <i>Atmlf</i> component and can be any value from 1 to 1024                                                                                                                        |
| <VPI,VCI>        | is the instance value of the VCC. The VPI value can be from 0 to 255. The VCI value can be from 32 to 65535                                                                                                    |
| <attribute>      | is any of the configurable attributes                                                                                                                                                                          |
| <cat>            | is either <i>constantBitRate</i> or <i>rtVariableBitRate</i> (the value <i>rtVariableBitRate</i> is recommended for real-time voice data through the <i>Nsta Conn</i> component)                               |
| <attributevalue> | is a permitted value for the attribute                                                                                                                                                                         |
| <m>              | is the LP number                                                                                                                                                                                               |
| <port>           | is the port type and instance value, for example, <i>E1/1</i> or <i>Sonet/0 Path/0</i> or <i>DS3/0</i> . If the FP is channelized, include the channel instance as well, for example, <i>DS1/1 Channel/0</i> . |
| (Sheet 1 of 2)   |                                                                                                                                                                                                                |

| Variable         | Value                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <percentage>     | is the percentage of the pool, between 0 and 1000, that is reserved for pool1. For more information about bandwidth pools, see NN10600-700 <i>Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals</i>                                                                                |
| <p>              | is the value for the <i>Nsta</i> component                                                                                                                                                                                                                                                                        |
| <r>              | is the value for a <i>Connection</i> component                                                                                                                                                                                                                                                                    |
| <p_cell_rate>    | is a number representing the peak cell rate                                                                                                                                                                                                                                                                       |
| <s_cell_rate>    | is a number representing the sustained cell rate. It must be zero if the ATM service category is <i>constantBitRate</i> . It must not be zero if the ATM service category is something other than <i>constantBitRate</i> . The number of the sustained cell rate must not equal the number of the peak cell rate. |
| <max_burst_size> | is a number representing the maximum burst size. It must be zero if the ATM service category is <i>constantBitRate</i> . It must not be zero if the ATM service category is something other than <i>constantBitRate</i> .                                                                                         |
| <max_retry>      | is a number representing the maximum number of retry rounds the application tries to connect to the far end before setting an alarm and forcing manual intervention. A value of 0 indicates that the application tries indefinitely to connect to the far end.                                                    |
| <rem_addr>       | is the address of the remote ATM interface                                                                                                                                                                                                                                                                        |

(Sheet 2 of 2)

## Chapter 5

# Configuring services for non-switched Media Gateway

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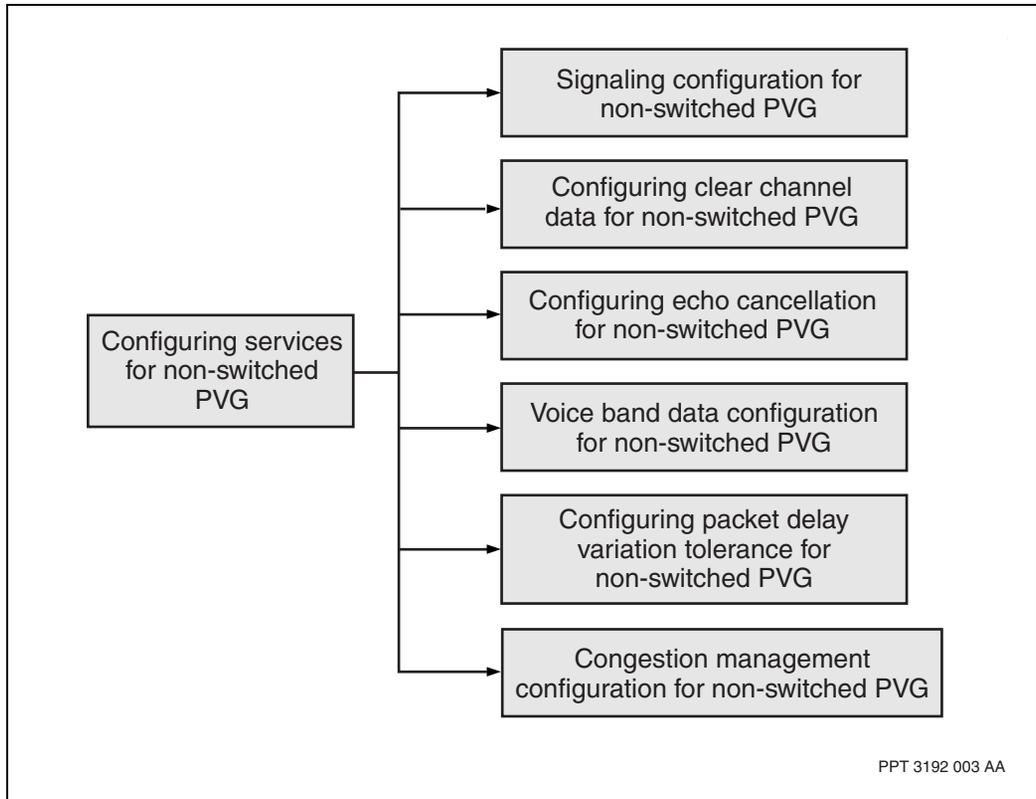
Configure services for non-switched Media Gateway to define Media Gateway behavior for services such as, signaling, clear channel data, echo cancellation, voice band data, packet delay variation tolerance, and congestion management.

- “Configuring services for non-switched Media Gateway task flow” (page 49)

## Configuring services for non-switched Media Gateway task flow

This task flow shows you the sequence of procedures you perform to configure services for non-switched Media Gateway. To link to any procedure, go to the list that follows the task flow.

**Figure 6**  
**Configuring services for non-switched Media Gateway task flow**



### Navigation links

- “Signaling configuration for non-switched Media Gateway” (page 53)
- “Configuring clear channel data for non-switched Media Gateway” (page 65)
- “Configuring echo cancellation for non-switched Media Gateway” (page 67)
- “Voice band data configuration for non-switched Media Gateway” (page 69)
- “Configuring packet delay variation tolerance for non-switched Media Gateway” (page 75)

- “Congestion management configuration for non-switched Media Gateway” (page 77)



## Chapter 6

# Signaling configuration for non-switched Media Gateway

---

Configure signaling for non-switched Media Gateway to define the type of signaling in the network.

- “Prerequisites to signaling configuration for non-switched Media Gateway” (page 53)
- “Signaling configuration for non-switched Media Gateway task flow” (page 53)

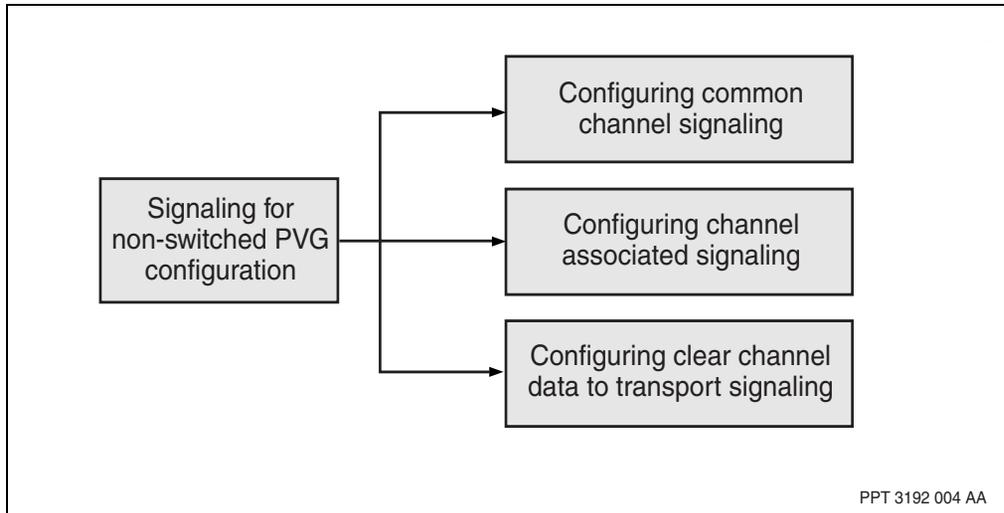
## Prerequisites to signaling configuration for non-switched Media Gateway

- See “Supporting information for configuring signaling for non-switched Media Gateway” (page 63) for additional information about this task.
- See the sections on signaling and unsignaled trunks in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

## Signaling configuration for non-switched Media Gateway task flow

This task flow shows you the sequence of procedures you perform to configure signaling for non-switched Media Gateway. To link to any procedure, go to the list that follows the task flow.

**Figure 7**  
**Signaling configuration for non-switched Media Gateway task flow**



### Navigation links

- “Configuring common channel signaling” (page 55)
- “Configuring channel associated signaling” (page 58)
- “Configuring clear channel data to transport signaling” (page 61)

## Configuring common channel signaling

Configure common channel signaling to define how signaling information is passed through the network.

### Prerequisites

- See “Supporting information for configuring common channel signaling” (page 63) for additional information

### Procedure steps

- 1 Add a *CommonChannelSignalingTransport (Ccst)* component to an *Nsta Connection* component.

```
add Nsta/<n> Connection/<m> Brag/0 Ccst
```

- 2 Set the configurable attributes for the *Ccst* component.

```
set Nsta/<n> Connection/<m> Brag/0 Ccst <attribute>
<attribute value>
```

If you set the *ccsMonitoring* attribute to enabled, the connection uses all time slots. If you set the *ccsMonitoring* attribute to disabled, you can delete time slots from the connection. Nortel Networks Multiservice Switch Media Gateway software does not support CCS monitoring for E1 or OC3/STM-1 interfaces.

- 3 If you do not want to use all time slots, you must remove channel identifiers (CID) from the *cidList* attribute.

```
set Nsta/<n> Connection/<m> Brag/0 cidList ~<t>
```

If you delete time slots from the *cidList* attribute, you must also delete time slots from the channel on the FP. This is done by modifying the *timeslot* attribute of the appropriate port and channel. For example:

```
set lp/<x> <port> chan/0 timeslot ~<tt>
```

- 4 Add a *Nap* component beneath the *Ccst* component.

```
add Nsta/<n> Connection/<m> Brag/0 Ccst Nap
```

- 5 Add a VCC to carry the signaling for the Media Gateway connection.

```
add AtmIf/<p> Vcc/<VPI.VCI>
```

Permitted values depend on the connection map for the *AtmIf* component. You may have to edit the *ConnectionAdministrator* or *ConnectionMapping* components. For details, see NN10600-700 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals*.

- 6 Configure ATM traffic management.
 

```
set AtmIf/<p> Vcc/<VPI.VCI> Vcd Tm <attribute>
<attributevalue>
```
- 7 Add a *NailedUpEndPoint* component to the VCC.
 

```
add AtmIf/<p> Vcc/<VPI.VCI> Nep
```
- 8 Connect the *Ccst Nap* component to the VCC.
 

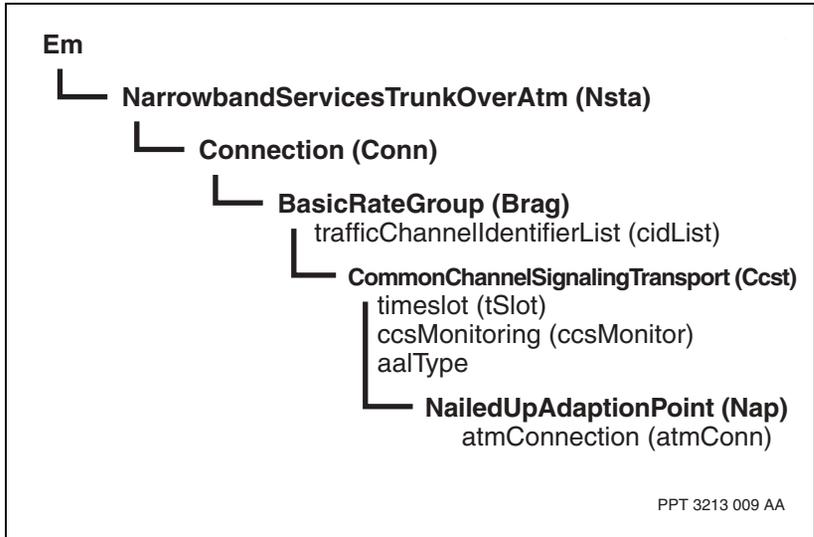
```
set Nsta/<n> Connection/<m> Brag/0 Ccst Nap
atmConnection AtmIf/<p> Vcc/<VPI.VCI> Nep
```

## Variable definitions

| Variable         | Value                                                                                                                                                                                                                                                                                                                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <n>              | is the value for the <i>Nsta</i> component                                                                                                                                                                                                                                                                                          |
| <m>              | is the value for a <i>Connection</i> component                                                                                                                                                                                                                                                                                      |
| <attribute>      | is any of the configurable attributes                                                                                                                                                                                                                                                                                               |
| <attributevalue> | is a permitted value for that attribute                                                                                                                                                                                                                                                                                             |
| <t>              | is a value assigned to a time slot you want to remove. The default mapping for time slots is fixed as explained in NN10600-780 <i>Nortel Networks Media Gateway 7480/15000 Technology Fundamentals</i> . Ensure that the number of time slots and the channel identifiers to which they are mapped match the device on the far end. |
| <x>              | is the LP number                                                                                                                                                                                                                                                                                                                    |
| <port>           | is the port type and instance value, for example <i>E1/1</i> or <i>DS3/1 DS1/1</i>                                                                                                                                                                                                                                                  |
| <tt>             | is a the value of the time slot you want to delete                                                                                                                                                                                                                                                                                  |
| <p>              | is the value of an <i>AtmIf</i> component                                                                                                                                                                                                                                                                                           |
| <VPI,VCI>        | is the instance value of the VCC. The VPI value can be from 0 to 255. The VCI value can be from 32 to 65,535                                                                                                                                                                                                                        |

## Procedure job aid

**Figure 8**  
**Configuring common channel signaling component hierarchy**



## Configuring channel associated signaling

Configure channel associated signaling to define how signaling information is passed through the network.

### Prerequisites

- See “Supporting information for configuring channel associated signaling” (page 64) for additional information

### Procedure steps

- 1 Add a *ChannelAssociatedSignalingTransport (Cast)* component to an *Nsta Connection* component.

```
add Nsta/<n> Connection/<m> Brag/0 Cast
```

- 2 Set configurable CAS attributes.

```
set Nsta/<n> Connection/<m> Brag/0 Cast <attribute>
<attributevalue>
```

If you leave the *casMonitoring* attribute set to enabled (enabled is the default setting) the system adds the *CasStats* component under the *Brac* component when you activate the provisioning.

- 3 If you do not want to use all time slots, remove channel identifiers (CID) from the *cidList* attribute.

```
set Nsta/<n> Connection/<m> Brag/0 cidList ~<t>
```

If you delete time slots from the *cidList* attribute, you must also delete time slots from the channel on the FP. This is done by modifying the *timeslot* attribute of the appropriate port and channel. For example:

```
set lp/<x> <port> chan/0 timeslot ~<tt>
```

- 4 For CAS signaling for E1 interfaces, specify the time slot for clear channel data channel.

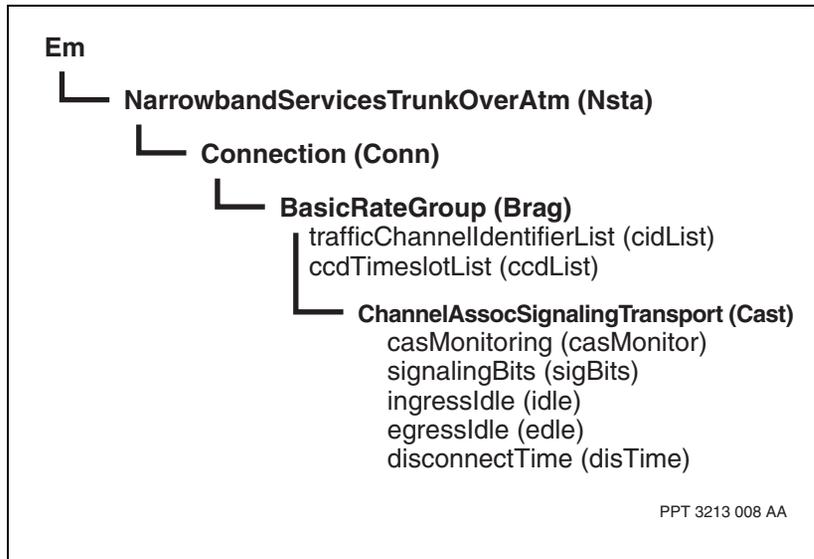
```
set Nsta/<n> Connection/<m> Brag/0 ccdTimeslotList
<ccdList_value>
```

## Variable definitions

| Variable         | Value                                                                                                                                                                                                                                                                                                                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <n>              | is the value for the <i>Nsta</i> component                                                                                                                                                                                                                                                                                          |
| <m>              | is the value for a <i>Connection</i> component                                                                                                                                                                                                                                                                                      |
| <attribute>      | is any of the configurable attributes                                                                                                                                                                                                                                                                                               |
| <attributevalue> | is a permitted value for that attribute                                                                                                                                                                                                                                                                                             |
| <t>              | is a value assigned to a time slot you want to remove. The default mapping for time slots is fixed as explained in NN10600-780 <i>Nortel Networks Media Gateway 7480/15000 Technology Fundamentals</i> . Ensure that the number of time slots and the channel identifiers to which they are mapped match the device on the far end. |
| <x>              | is the LP number                                                                                                                                                                                                                                                                                                                    |
| <port>           | is the port type and instance value, for example <i>E1/1</i> or <i>DS3/1 DS1/1</i>                                                                                                                                                                                                                                                  |
| <tt>             | is a the value of the time slot you want to delete                                                                                                                                                                                                                                                                                  |
| <ccdList_value>  | is the value of the <i>ccdTimeslotList</i> attribute. There is no default value. For E1, use timeslot 15, 16, or 31.                                                                                                                                                                                                                |

## Procedure job aid

**Figure 9**  
**Configuring channel associated signaling component hierarchy**



## Configuring clear channel data to transport signaling

Configure clear channel data to define non-switched Media Gateway signaling using clear channel data timeslots.

### Prerequisites

- See the section on data calls in the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the timeslots to be transported as clear channel data:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
ccdTimeslotList <ccdList_value>
```

- 2 Set the maximum number of channels permitted to transport clear data during congestion:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
ccsClearDataMaxChannels <clrDataMaxChan_value>
```

*Note:* The number of timeslots specified in <ccdList\_value> cannot exceed the number specified in <trafficChannelIdentifierList> or the number specified in <clrDataMaxChan\_value>.

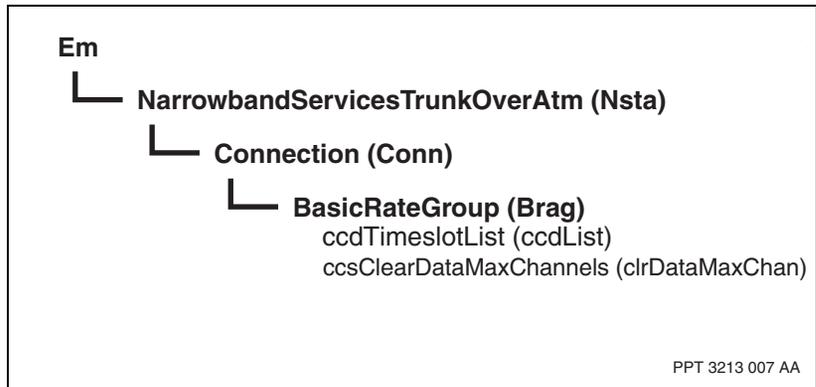
### Variable definitions

| Variable               | Value                                                                             |
|------------------------|-----------------------------------------------------------------------------------|
| <n>                    | is the value for the <i>Nsta</i> component                                        |
| <m>                    | is the value for a <i>Connection</i> component                                    |
| <ccdList_value>        | is the value for the <i>ccdTimeslotList</i> attribute. There is no default value. |
| <clrDataMaxChan_value> | is the value for the <i>ccsClearDataMaxChannels</i> attribute. The default is 0.  |
|                        |                                                                                   |

## Procedure job aid

Figure 10

### Configuring clear channel data signaling component hierarchy



## Supporting information for configuring signaling for non-switched Media Gateway

For each *Connection* component, you can configure signaling. Media Gateway provides three signaling choices: common channel signaling (CCS), channel associated signaling (CAS), or unsignaled trunks. For overview information about signaling, see the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

If you do not configure any signaling, all the channels for the Media Gateway connection are automatically unsignaled and therefore unmonitored. Because the system does not monitor signaling, unsignaled trunks do not suppress idle channels.

Regardless of the type of signaling you configure, you can specify that a number of channels are to be carried as clear channel data. The *ccdTimeslotList* attribute of the *Brag* component enables you to specify which time slots you want the system to carry as clear channel data. The system transports these time slots as clear channel data, regardless of the signaling monitoring status (enabled or disabled for the Media Gateway connection), and regardless of the type of information transported on that time slot.

**Note:** CCST traffic is not supported on the 12mVspAal FP. The Ccst or Cast components are also not available if provisioned SVCs, provisioned SPVCs, or the 4-port OC-3/STM-1Ch TDM/CES FP are used.

## Supporting information for configuring common channel signaling

To configure common channel signaling (CCS) for each non-switched Media Gateway connection, you must create and configure the *Ccst* component and then create and map a *Ccst Nap* component to a separate ATM VCC.

The *timeslot* attribute of the *Ccst* component specifies which time slot carries the signaling information. By default, Media Gateway sets the *timeslot* attribute to *autoConfigure*, which means that the type of TDM interface determines the signaling time slot. For DS1 interfaces, the system uses time slot 24. For E1 interfaces, the system uses time slot 16.

For CCS, you must set the *lineType* attribute for DS1 ports to *d4* or *esf*. You must set the *linetype* attribute for E1 ports to *ccs*.

**Note:** CCST traffic is not supported on the 12mVspAal FP. The Ccst components are also not available if provisioned SVCs, provisioned SPVCs, or the 4-port OC-3/STM-1Ch TDM/CES FP are used.

## Supporting information for configuring channel associated signaling

For channel associated signaling (CAS) with AB signaling, the *lineType* attribute for the DS1 port must be set to *d4Cas*. For CAS with ABCD signaling, the *lineType* attribute for the DS1 port must be set to *esfCas*.

E1 CAS information is transported in time slot 16. For E1 interfaces Media Gateway transports CAS information as clear channel data. Therefore, to configure Media Gateway to support E1 CAS, configure time slot 16 as a clear channel data channel. Clear channel data channels are transported at 64 kbit/s.

**Note:** The Cast component is not available for DS1 or E1 interfaces if provisioned SVCs, provisioned SPVCs, or the 4-port OC-3/STM-1Ch TDM/CES FP are used.

**Note:** The 4-port OC-3/STM-1Ch TDM/CES FP can only be configured for DS1 or E1, it cannot support both interface types at the same time.

---

## Chapter 7

# Configuring clear channel data for non-switched Media Gateway

---

Configure clear channel data to define the number of timeslots to be transported as clear channel data.

### Prerequisites

- See the section about data calls in the NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the timeslots to be transported as clear channel data:  

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
ccdTimeslotList <ccdList_value>
```
- 2 Set the maximum number of channels permitted to transport clear data during congestion:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
ccsClearDataMaxChannels <clrDataMaxChan_value>
```

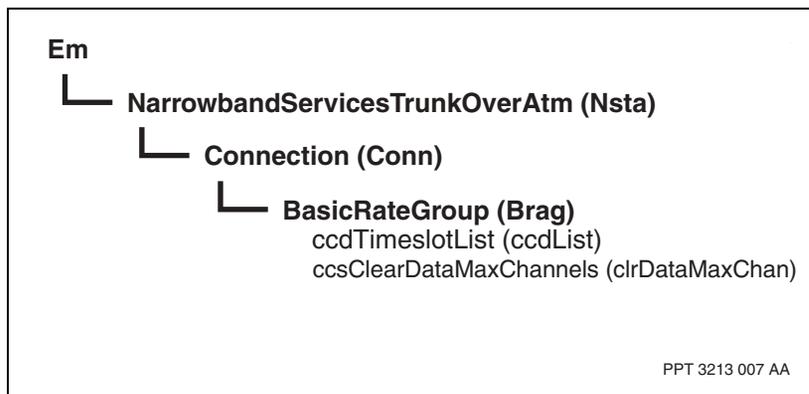
*Note:* The number of timeslots specified in <ccdList\_value> cannot exceed the number specified in <trafficChannelIdentifierList> or the number specified in <clrDataMaxChan\_value>.

## Variable definitions

| Variable               | Value                                                                             |
|------------------------|-----------------------------------------------------------------------------------|
| <n>                    | is the value for the <i>Nsta</i> component                                        |
| <m>                    | is the value for a <i>Connection</i> component                                    |
| <ccdList_value>        | is the value for the <i>ccdTimeslotList</i> attribute. There is no default value. |
| <clrDataMaxChan_value> | is the value for the <i>ccsClearDataMaxChannels</i> attribute. The default is 0.  |

## Procedure job aid

**Figure 11**  
Configuring clear channel data component hierarchy



---

## Chapter 8

# Configuring echo cancellation for non-switched Media Gateway

---

Configure echo cancellation to define how Media Gateway deals with echo within the network.

### Prerequisites

- See the sections on echo cancellation for non-switched Media Gateway and echo canceller options in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the value for echo cancellation that determines whether echo cancellation will be on or off when a 2100Hz tone is detected:  

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
echoCancellation <eCan_value>
```
- 2 Set the value for the minimum echo return loss expected on the line.  

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
minimumEchoReturnLoss <minEchoRetLoss_value>
```
- 3 Set the comfort noise generation as enabled or disabled. If the *echoCancellation* attribute is set to disabled this attribute has no affect.  

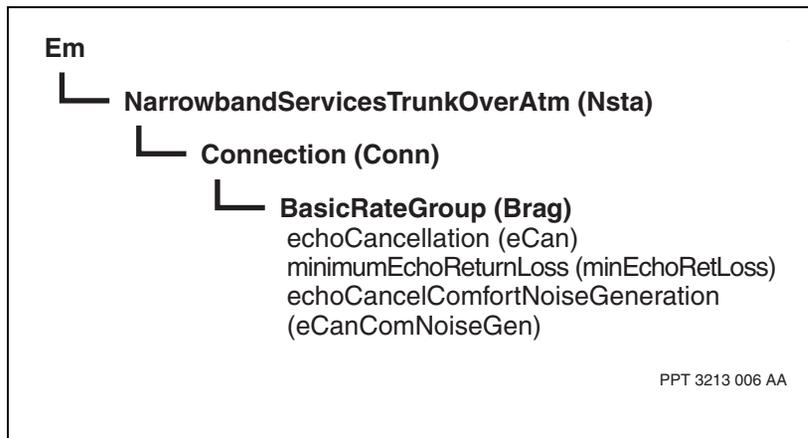
```
set Nsta/<n> Connection/<m> BasicRateGroup/0
echoCancelComfortNoiseGeneration
<eCanComNoiseGen_value>
```

## Variable definitions

| Variable                | Value                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------|
| <n>                     | is the value for the <i>Nsta</i> component                                                            |
| <m>                     | is the value for the <i>Connection</i> component                                                      |
| <eCan_value>            | is the value for the <i>echoCancellation</i> attribute. The default value is g165Mode.                |
| <minEchoRetLoss_value>  | is the value for the <i>minimumEchoReturnLoss</i> attribute. The default value is 6 dB.               |
| <eCanComNoiseGen_value> | is the value for the <i>echoCancelComfortNoiseGeneration</i> attribute. The default value is enabled. |

## Procedure job aid

**Figure 12**  
Configuring echo cancellation component hierarchy



## Chapter 9

# Voice band data configuration for non-switched Media Gateway

---

Configure voice band data to determine how non-switched Media Gateway will handle data calls.

- “Prerequisites to voice band data configuration” (page 69)
- “Voice band data configuration task flow” (page 69)

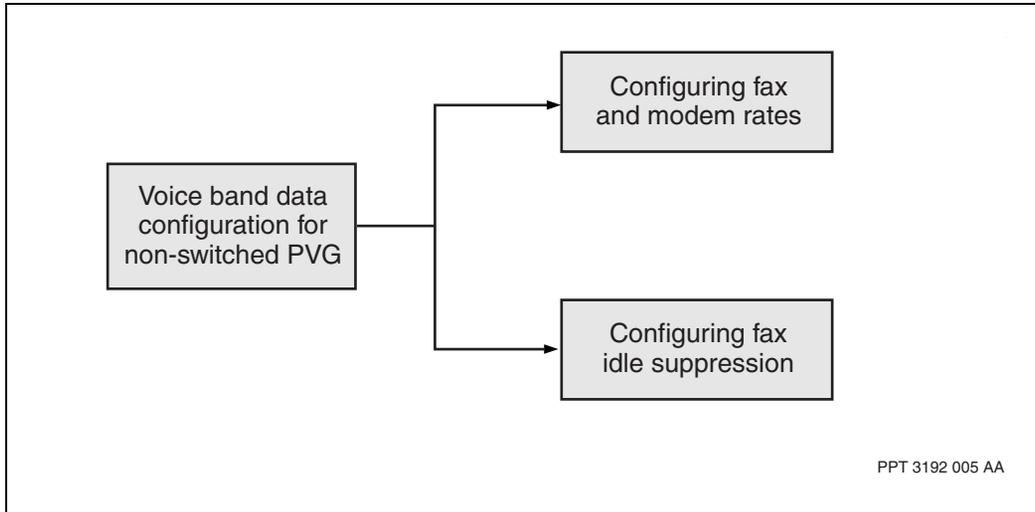
### Prerequisites to voice band data configuration

- See the section on fax and modem calls in *NN10600-780 Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*

### Voice band data configuration task flow

This task flow shows you the sequence of procedures you perform to configure voice band data. To link to any procedure, go to the list that follows the task flow.

**Figure 13**  
**Voice band data configuration for non-switched Media Gateway task flow**



### Navigation links

- “Configuring fax and modem rates” (page 71)
- “Configuring fax idle suppression” (page 73)

## Configuring fax and modem rates

Configure fax and modem rates to define how non-switched Media Gateway deals with data calls during compression situations.

### Procedure steps

- 1 Set the value for the encoding algorithm to be used for AAL2 channels when a 2100Hz tone is detected:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
tone2100Rate <toneRate_value>
```

- 2 Set the maximum number of voice band data channels that are permitted at modem rate during congestion:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
voicebandDataMaxChannels <vbdMaxChan_value>
```

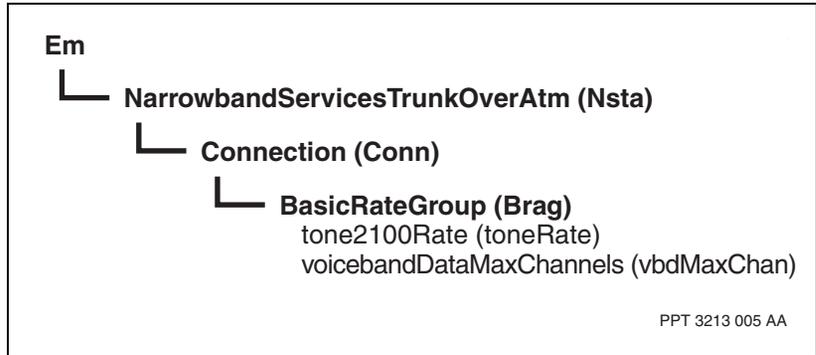
### Variable definitions

| Variable           | Value                                                                                    |
|--------------------|------------------------------------------------------------------------------------------|
| <n>                | is the value for the <i>Nsta</i> component                                               |
| <m>                | is the value for the <i>Connection</i> component                                         |
| <toneRate_value>   | is the value for the <i>tone2100Rate</i> attribute. The default value is 64kG711.        |
| <vbdMaxChan_value> | is the value for the <i>voicebandDataMaxChannels</i> attribute. The default value is 12. |
|                    |                                                                                          |

## Procedure job aid

Figure 14

Configuring fax and modem rates component hierarchy



## Configuring fax idle suppression

Configure fax idle suppression to reduce the amount of bandwidth used during fax transmission.

### Prerequisites

- See the section on silence suppression in *NN10600-780 Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the value for fax idle suppression:

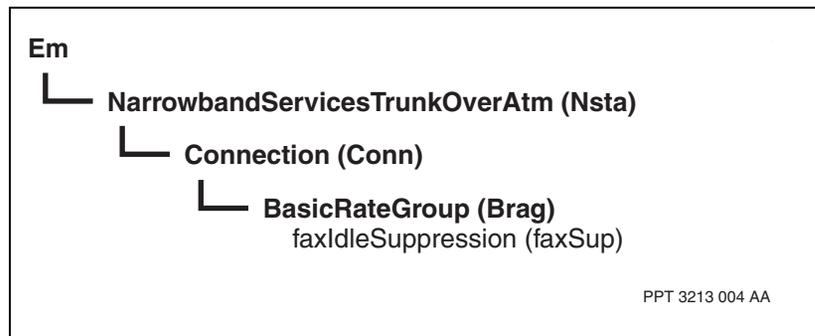
```
set Nsta/<n> Connection/<m> BasicRateGroup/0
faxIdleSuppression <faxSup_value>
```

### Variable definitions

| Variable       | Value                                                                                   |
|----------------|-----------------------------------------------------------------------------------------|
| <n>            | is the value for the <i>Nsta</i> component                                              |
| <m>            | is the value for the <i>Connection</i> component                                        |
| <faxSup_value> | is the value for the <i>faxIdleSuppression</i> attribute. The default value is enabled. |
|                |                                                                                         |

### Procedure job aid

Figure 15  
Configuring fax idle suppression component hierarchy





---

## Chapter 10

# Configuring packet delay variation tolerance for non-switched Media Gateway

---

Configure packet delay variation tolerance to determine the size of the packet buffer and the amount of delay before data transmission.

### Prerequisites

- See the section on packet delay variation tolerance and the de-jitter buffer in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the capacity of the packet delay variation buffer:
 

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
bufferize <bufsize_value>
```
- 2 Set the initial delay that occurs before any data is transmitted:
 

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
packetDelayVariationTolerance <pdvt_value>
```

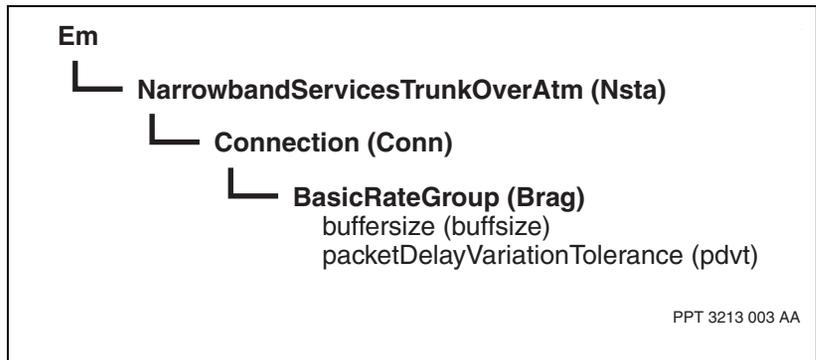
### Variable definitions

| Variable       | Value                                          |
|----------------|------------------------------------------------|
| <n>            | is the value for the <i>Nsta</i> component     |
| <m>            | is the value for a <i>Connection</i> component |
| (Sheet 1 of 2) |                                                |

| Variable        | Value                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <bufsize_value> | is the value for the <i>bufsize</i> attribute. The default value is 40 msec, however, Nortel Networks recommends a value of 50 msec on all connections to reduce the risk of overflow. |
| <pdvt_value>    | is the value of the <i>packetDelayVariationTolerance</i> attribute. The default is 20 msec.                                                                                            |
| (Sheet 2 of 2)  |                                                                                                                                                                                        |

## Procedure job aid

**Figure 16**  
**Configuring packet delay variation tolerance component hierarchy**



# Chapter 11

## Congestion management configuration for non-switched Media Gateway

---

Configure congestion management to define voice compression rates and silence suppression levels.

- “Prerequisites to congestion management configuration” (page 77)
- “Congestion management configuration task flow” (page 77)

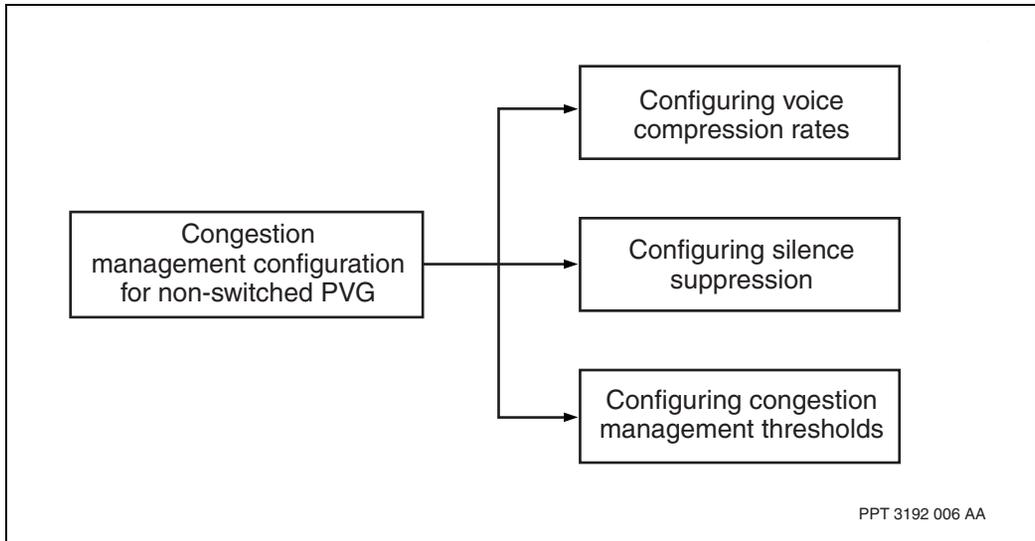
### Prerequisites to congestion management configuration

- See the sections on congestion management, voice compression and silence suppression in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.
- Set the maximum number of clear channel data channels and voice band data for congestion management see “Configuring clear channel data for non-switched Media Gateway” (page 65) and “Configuring fax and modem rates” (page 71).

### Congestion management configuration task flow

This task flow shows you the sequence of procedures you perform to configure congestion management. To link to any procedure, go to the list that follows the task flow.

**Figure 17**  
**Congestion management configuration for non-switched Media Gateway task flow**



### Navigation links

- [“Configuring voice compression rates”](#) (page 79)
- [“Configuring silence suppression”](#) (page 82)
- [“Configuring congestion management thresholds”](#) (page 84)

## Configuring voice compression rates

Configure voice rates to define how non-switched Media Gateway deals with voice calls during compression situations.

### Prerequisites

- You must set the value for the *maxVoiceRate* attribute to be equal or higher than the value for the *minVoiceRate* attribute.
- Configuring the *dtmfTransport* attribute is required because the 8kG729AB rate cannot reliably transport DTMF tones.
- See the sections on considerations for congestion management for non-switched Media Gateway, voice compression for non-switched Media Gateway in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

The attribute values for this procedure can be found in the table “Compression rates and attribute values” (page 81).

- 1 Set the value for the maximum voice rate, this attribute selects the encoding algorithm to be used on voice channels:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
maxVoiceRate <maxVRate_value>
```

- 2 Set the value for the minimum voice rate, this attribute selects the encoding algorithm to be used during periods of congestion:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
minVoiceRate <minVRate_value>
```

- 3 Set how DTMF tones are handled during voice compression:

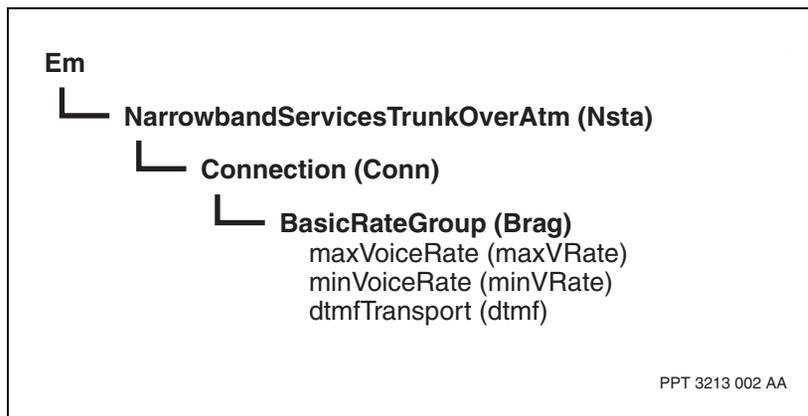
```
set Nsta/<n> Connection/<m> BasicRateGroup/0
dtmfTransport <dtmf_value>
```

## Variable definitions

| Variable         | Value                                                                             |
|------------------|-----------------------------------------------------------------------------------|
| <n>              | is the value for the <i>Nsta</i> component                                        |
| <m>              | is the value for the <i>Connection</i> component                                  |
| <maxVRate_value> | is the value for the <i>maxVoiceRate</i> attribute. The default value is 32kG726. |
| <minVRate>       | is the value for the <i>minVoiceRate</i> attribute. The default value is 16kG726. |
| <dtmf_value>     | is the value for the <i>dtmfTransport</i> attribute. There is no default value.   |

## Procedure job aid

**Figure 18**  
Configuring voice rates component hierarchy



**Table 1**  
**Compression rates and attribute values**

| Attributes                                                                                                                                                                                                                                                                                                                            | Compression Rates |                              |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|---------------------|
|                                                                                                                                                                                                                                                                                                                                       | G.711             | G.726                        | G.729 Annex A and B |
| <i>maxVoiceRate</i>                                                                                                                                                                                                                                                                                                                   | 64kG711           | 32kG726, 24kG726,<br>16kG726 | 8kG729AB            |
| <i>minVoiceRate</i>                                                                                                                                                                                                                                                                                                                   | 64kG711           | 32kG726, 24kG726,<br>16kG726 | 8kG729AB            |
| <i>dtmfTransport</i>                                                                                                                                                                                                                                                                                                                  | disabled          | disabled                     | upspeed             |
| <p><b>Note 1:</b> The <i>maxVoiceRate</i> attribute must be equal to or higher than the value for the <i>minVoiceRate</i> attribute.</p> <p><b>Note 2:</b> The compression rate of 16kG726 should only be used under periods of congestion. DTMF tones cannot be reliably transported at this rate and voice quality can be poor.</p> |                   |                              |                     |
|                                                                                                                                                                                                                                                                                                                                       |                   |                              |                     |

## Configuring silence suppression

Configure silence suppression to define when suppression will be applied, the maximum level for silence suppression, and the amount of time before silence suppression is applied.

### Prerequisites

- See the section on silence suppression in *NN10600-780 Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Set the value for silence suppression to specify when silence suppression is performed:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
silenceSuppression <silSup_value>
```

- 2 Set the value for the silence suppression threshold to specify the level above which silence suppression is not performed:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
silenceSuppressionThreshold <silSupThresh_value>
```

- 3 Set the value for the amount of time a timeslot speech path is left alone before suppression is applied:

```
set Nsta/<n> Connection/<m> BasicRateGroup/0
silenceDetectionHangOverTime <silDetTime_value>
```

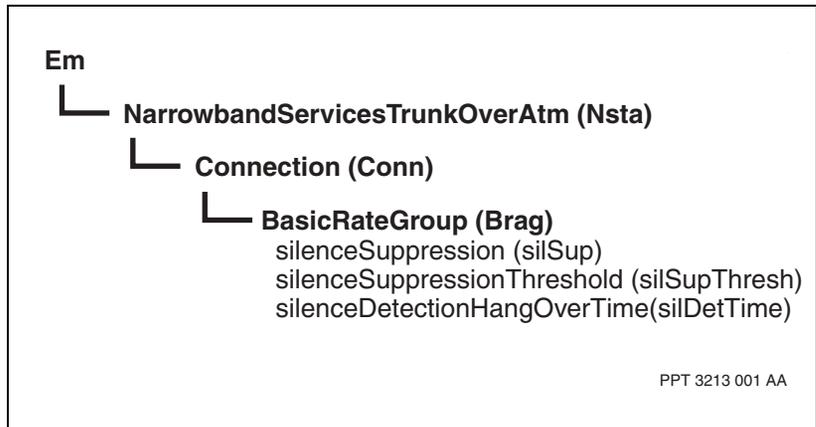
### Variable definitions

| Variable             | Value                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------|
| <n>                  | is the value for the <i>Nsta</i> component                                                         |
| <m>                  | is the value for the <i>Connection</i> component                                                   |
| <silSup_value>       | is the value for the <i>silenceSuppression</i> attribute. The default value is enabled.            |
| <silSupThresh_value> | is the value for the <i>silenceSuppressionThreshold</i> attribute. The default value is -40.       |
| <silDetTime_value>   | is the value for the <i>silenceDetectionHangOverTime</i> attribute. The default value is 200 msec. |
|                      |                                                                                                    |

## Procedure job aid

Figure 19

### Configuring silence suppression component hierarchy



## Configuring congestion management thresholds

Configure congestion management thresholds to define the threshold levels for when congestion management will be applied.

### Prerequisites

- See the section on congestion management in NN10600-780 *Nortel Networks Media Gateway 7480/15000 Technology Fundamentals*.

### Procedure steps

- 1 Specify the cell rate above which the most severe congestion management measures will take effect.
 

```
set Nsta/<n> Connection/<m> pcrHighCongThreshold
<phct_level>
```
- 2 Specify the upper cell rate threshold of normally acceptable operation for the PCR-based congestion control mechanism.
 

```
set Nsta/<n> Connection/<m> pcrLowCongThreshold
<plct_level>
```
- 3 Specify how often the cell rate is sampled by the PCR congestion management algorithm.
 

```
set Nsta/<n> Connection/<m>
basicTrafficManagementInterval <basTrafManInt_level>
```

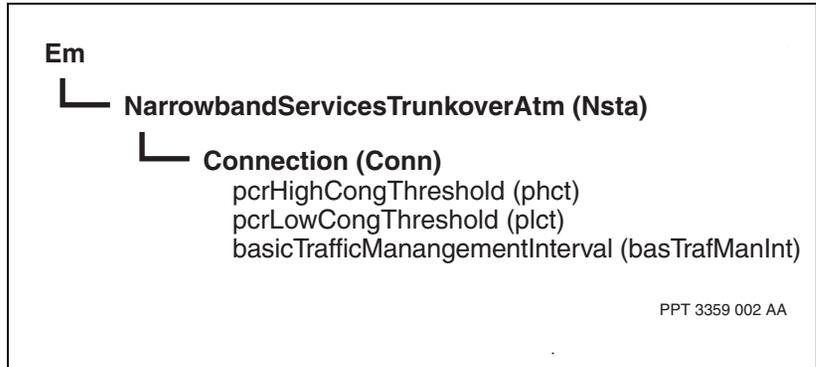
### Variable definitions

| Variable              | Value                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <basTrafManInt_level> | is the value for the <i>basicTrafficManagementInterval</i> attribute. The default value is 100 msec. The value range is 50-100 msec. |
| <m>                   | is the value for the <i>Connection</i> component                                                                                     |
| <n>                   | is the value for the <i>Nsta</i> component                                                                                           |
| <phct_level>          | is the value for the <i>pcrHighCongThreshold</i> attribute. The default value is 90%. The value range is 50-100%.                    |
| <plct_level>          | is the value for the <i>pcrLowCongThreshold</i> attribute. The default value is 80%. The value range is 10-100%.                     |

## Procedure job aid

**Figure 20**

### Configuring silence suppression component hierarchy





## Chapter 12

# Monitoring non-switched Media Gateway

---

Monitor non-switched Media Gateway to display operational and statistics attributes and OSI states. Use the operational commands, unlock, lock, add, delete, display, and list, to monitor component and attribute states.

- “Displaying operational and statistics attributes for non-switched Media Gateway” (page 88)
- “Displaying OSI states for non-switched Media Gateway” (page 92)

## Displaying operational and statistics attributes for non-switched Media Gateway

Display operational and statistics attributes for non-switched Media Gateway to view information about the state of your node. You can display operational attributes or statistics at any time.

### Prerequisites

- For information about ATM operational attributes, see NN10600-700 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals*.
- For information about all Nortel Networks Multiservice Switch components and attributes, see NN10600-060 *Nortel Networks Multiservice Switch 7400/15000/20000 Component Reference*.
- For more information about using Multiservice Switch commands to monitor your node, see NN10600-050 *Nortel Networks Multiservice Switch 7400/15000/20000 Command Reference*.

### Procedure steps

---

**ATTENTION** Do not use wildcards to display the *BasicRateChannel* (*Brac*) component. SPM overload may occur

---

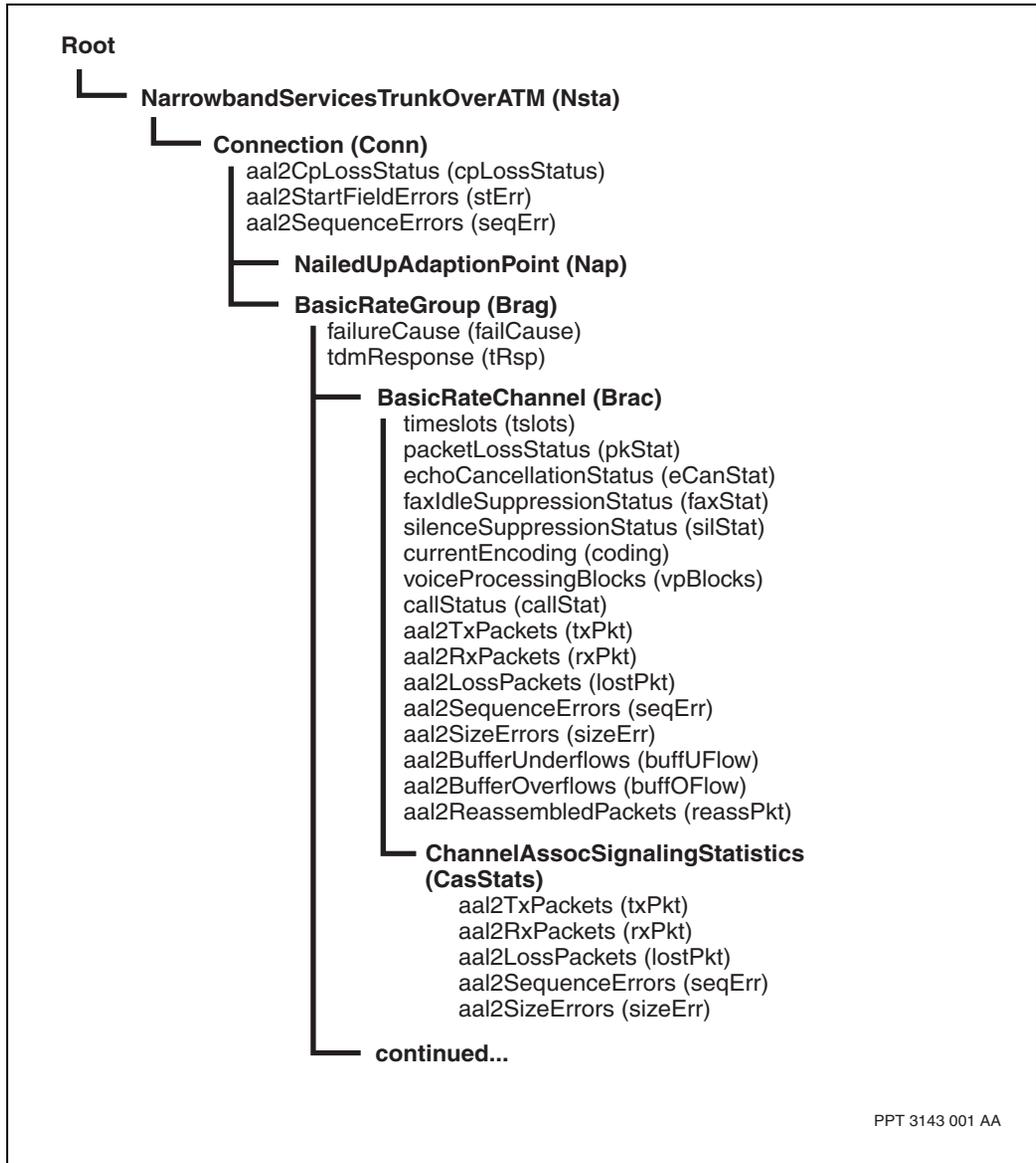
- 1 To display the names and values for all operational attributes associated with a *Connection* component, enter  
**display Nsta/<n> Connection/<m>**
- 2 To display the value of a specific operational attribute for a connection, enter  
**display Nsta/<n> Connection/<m> <attribute>**
- 3 To list all of the subcomponents of a connection, enter  
**list Nsta/<n> Connection/<m>**

## Variable definitions

| Variable | Value                                               |
|----------|-----------------------------------------------------|
| <m>      | is the connection you want to display               |
| <n>      | is the instance value for the <i>Nsta</i> component |
|          |                                                     |

## Procedure job aid

**Figure 21**  
**Displaying operational and statistics attributes for non-switched Media Gateway component hierarchy—Part1**



PPT 3143 001 AA

**Figure 22**  
**on-switched Media Gateway operational and statistics attribute—Part 2**

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| continued...                 |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>BasicRateGroup (Brag)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| —                            | <b>ChannelAsscoSignalingTransport (Cast)</b><br>signalingProcessingBlock (SigProcBlock)                                                                                                                                                                                                                                                                                                                                    |
| —                            | <b>CommonChannelSignalingTransport (Ccst)</b><br>aal2TxPackets (txPkt)<br>aal2RxPackets (rxPkt)<br>aal2LostPackets (losPkt)<br>aal2SequenceErrors (seqErr)<br>aal2SizeErrors (sizeErr)<br>layer2Status (l2stat)<br>hdlcTxFrames (txFrm)<br>hdlcRxFrames (rxFrm)<br>hdlcErroredFrames (errorFrm)<br>atmRxMessages (atmRxMesg)<br>atmTxMessages (atmTxMesg)<br>atmErroredMessages (atmErrorMesg)<br>signalingProcessingBlock |
| —                            | <b>PassiveAccessPoint (Pap)</b><br>expectedRemoteAddress (expectedAddr)<br>localAddress (localAddr)<br>svcStatus (status)<br>remoteAddress (rAddr)<br>lastTearDownCause (cause)<br>lastTearDownDiagnostic (diagn)<br>remoteChannelDetail<br>remoteChannelStatus                                                                                                                                                            |
| PPT 3135 003 AA              |                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Displaying OSI states for non-switched Media Gateway

Display OSI states for non-switched PCG to view the component state definitions according to OSI standards. You can display the OSI state of any component that supports OSI states, at any time.

### Prerequisites

- For information about OSI states for Nortel Networks Multiservice Switch hardware, see NN10600-551 *Nortel Networks Multiservice Switch 7400/15000/20000 FP Configuration Reference*.
- For information about OSI states for ATM components, see NN10600-700 *Nortel Networks Multiservice Switch 7400/15000/20000 ATM Technology Fundamentals*.

### Procedure steps

- 1 Display the OSI state for the *Nsta* component:  

```
display Nsta/<n> OsiState
```
- 2 Display the OSI state for a *Connection* component:  

```
display Nsta/<n> Connection/<m> OsiState
```
- 3 Display the OSI state for a *BasicRateGroup* (*Brag*) component:  

```
display Nsta/<n> Connection/<m> Brag/<x> OsiState
```
- 4 Display the OSI state for a *BasicRateChannel* (*Brac*) component:  

```
display Nsta/<n> Connection/<m> Brag/<x> Brac/<y> OsiState
```

### Variable definitions

| Variable | Value                                                      |
|----------|------------------------------------------------------------|
| <m>      | is the instance value of the <i>Connection</i> component   |
| <n>      | is the instance value of the <i>Nsta</i> component         |
| <x>      | is the instance value of the <i>Brag</i> component         |
| <y>      | is the channel identification of the <i>Brac</i> component |
|          |                                                            |

## Procedure job aid

**Table 2**  
State combinations for the *Nsta* component

| Combination (Administrative, Operational, Usage) | Details                                                                                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Unlocked, Disabled, Idle                         | The component is unlocked, but the voice services FP to which it links is disabled, or all of the <i>Connection</i> subcomponents are disabled. |
| Unlocked, Enabled, Active                        | At least one connection is configured.                                                                                                          |
| Locked, Disabled, Idle                           | The component is locked.                                                                                                                        |
|                                                  |                                                                                                                                                 |

**Table 3**  
State combinations for the *Connection* component

| Combination (Administrative, Operational, Usage) | Details                                                                                                                                                                                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unlocked, Disabled, Idle                         | The <i>Nsta</i> component is disabled. The connection is not transferring any data or collecting any traffic statistics.                                                                                                                        |
| Unlocked, Enabled, Active                        | The connection is receiving and transmitting data. The connection is also collecting traffic statistics.<br><br>If there is no traffic for a period of time, the component remains in this state as it can still gather operational statistics. |
| Locked, Disabled, Idle                           | The component is locked. The connection carries no traffic and collects no traffic statistics.                                                                                                                                                  |
|                                                  |                                                                                                                                                                                                                                                 |

**Table 4**  
**State combinations for the *BasicRateGroup* component**

| <b>Combination (Administrative, Operational, Usage)</b> | <b>Details</b>                                                                                                                                                                                     |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unlocked, Disabled, Idle                                | Channels in the group are not being processed due to a problem in the path (for example, the <i>Channel</i> component is disabled or locked) or because the <i>Connection</i> component is locked. |
| Unlocked, Enabled, Active                               | At least one channel is carrying and processing data.                                                                                                                                              |
| Locked, Disabled, Idle                                  | The operator has locked the channel group.                                                                                                                                                         |
|                                                         |                                                                                                                                                                                                    |

**Table 5**  
**State combinations for the *BasicRateChannel* component**

| <b>Combination (Administrative, Operational, Usage)</b> | <b>Details</b>                                                                       |
|---------------------------------------------------------|--------------------------------------------------------------------------------------|
| Unlocked, Disabled, Idle                                | The channel is not carrying traffic because the channel group is locked or disabled. |
| Unlocked, Enabled, Active                               | The channel is carrying and processing data.                                         |
|                                                         |                                                                                      |



# Nortel Networks Media Gateway 7480/15000 Non-Switched Service Configuration Management

Release 6.1

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