Avaya Integrated Management Release 5.0

G250/G350/G450 Manager User Guide

14-300166
Issue 5
October 2007

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Preface

Welcome to Avaya G250/G350/G450 Manager. This chapter provides an introduction to the structure and assumptions of this guide. It includes the following sections:

- The Purpose of This Guide - A description of the goals of this guide.
- Who Should Use This Guide - The intended audience of this guide.
- Organization of This Guide - A brief description of the subjects contained in the various sections of this guide.

The Purpose of This Guide

The Avaya G250/G350/G450 Manager guide contains information needed to use the management system efficiently and effectively.

Who Should Use This Guide

This guide is intended for network managers familiar with network management and its fundamental concepts.

Organization of This Guide

This guide is structured to reflect the following conceptual divisions

- **Avaya G250/G350/G450 Manager** - Information pertaining to the entire Avaya G250/G350/G450 Manager application and all of its aspects.
  - **Preface** - This section describes the guide's purpose, intended audience and organization.
  - **Introduction** - An introduction to the Avaya G250/G350/G450 Manager, including instructions on starting the Avaya G250/G350/G450 Manager.
- **Avaya G250/G350/G450 Device Manager** - Information pertaining to Avaya G250/G350/G450 Device Management.

- **Device Manager** - An introduction to the Avaya G250/G350/G450 Device Manager, including a description of the user interface.
- **Device Configuration** - Viewing and modifying the different device configurations.
- **Power over Ethernet** - An overview of Power over Ethernet (PoE) and instructions on viewing and configuring PoE parameters.
- **Media Gateway Functions** - An overview of the Media Gateway functions and information on viewing and configuring Media Gateway components.
- **VoIP Engine Configuration** - An overview of VoIP Engine functionality and information on viewing and configuring VoIP Engine parameters.
- **WAN Configuration** - An overview of and information on viewing and configuring WAN parameters.
- **Embedded Tools** - An overview of and information on configuring the Avaya G250/G350/G450's embedded server functions and tools.
- **VLANs** - Viewing and editing VLAN information.
- **Port Mirroring** - Configuring port mirroring for ports on an Avaya G250/G350/G450 device.
- **Port RMON** - Viewing graphical representations of the traffic on the ports of the Avaya G250/G350/G450 device.
- **Port Redundancy** - Configuring port redundancy for ports on an Avaya G350 or G450device.
- **Switch-Connected Addresses** - Viewing information on addresses connected to the device.
- **Trap Managers Configuration** - Viewing and modifying the Trap Managers table.

- **Avaya G250/G350/G450 Routing Manager** - Information pertaining to Avaya G250/G350/G450 routing management.
  - **Routing Manager** - An introduction to configuring routing and a description of the Avaya G250/G350/G450 Routing Manager user interface.
  - **Layer 2** - Detailed descriptions of layer 2 configuration that enable you to view layer 2 interfaces at the management station.
  - **IP Route** - Detailed descriptions of IP route configuration that enable you to display and update IP interfaces, the IP routing table, the ARP table, GRE tunneling parameters, DHCP/BOOTP parameters, RIP interfaces, OSPF interfaces, area parameters, link-state database and neighbors, the IP access control table, and redundancy parameters.
- **Avaya G250/G350/G450 Policy Based Routing Manager** - Information pertaining to Avaya G250/G350/G450 Policy Based Routing management.
  - **Policy Based Routing Manager** - An introduction to configuring Policy Based Routing and a description of the Avaya G250/G350/G450 Policy Based Routing Manager user interface.

- **Policy Based Routing** - Detailed descriptions of Policy Based Routing configuration that enable you to display and update Policy Based Routing lists, Next Hop routing tables, and Policy Enforcement Points.
- **Applications Editor Tool** - Detailed description of the Applications Editor Tool, which enables you to refine protocol traffic through Policy Based Routing by customizing individual protocols.

- **Appendices** - Additional information about the Avaya G250/G350/G450 Manager.
  - **Menus** - The full structure of the menus in the Avaya G250/G350/G450 Manager.
  - **Web Management** - Instructions on how to manage Avaya G350 and G450 devices via the Internet.
  - **ICMP Packet Types and Codes** - A list of ICMP Packet Types and Codes as used in IP SImulate.

Chapter 1: Introduction

This chapter provides an introduction to the Avaya G250/G350/G450 Manager. It includes the following sections:

- Avaya G250/G350/G450 Manager Overview - An overview explaining the different aspects of Avaya G250/G350/G450 Device management.
- Starting the Avaya G250/G350/G450 Manager - Instructions on how to access Avaya G250/G350/G450 Manager from your management platform.
- The User Interface - Detailed descriptions of the user interface common to all applications in the Avaya G250/G350/G450 Manager.
- Managing Tables - An explanation of the symbols used to label table rows.

Avaya G250/G350/G450 Manager Overview

The Avaya G250/G350/G450 Manager provides full management capabilities for Avaya G450, Avaya G350, and all G250 Devices. This includes the ability to view three aspects of device management:

- **Device Manager** - Provides a view of the configuration of the device, including VLAN configuration, port redundancy, port mirroring, switch connected addresses and traps. For more information refer to chapters 2-14.
- **Routing Manager** - Provides a view of the Layer 3 routing and forwarding functions of the device. For more information refer to chapters 15-17.
- **Policy Based Routing Manager** - Provides a view of the configuration and maintenance of Policy Based Routing on the Avaya G250/G350/G450 device. For information, refer to chapters 18-19.

For information on switching between the different views, refer to “Application Tabs” on page 20.

Starting the Avaya G250/G350/G450 Manager

This section provides instructions for starting Avaya G250/G350/G450 Manager.

Avaya G250/G350/G450 Device Manager as Part of Avaya Network Management

If you installed the Avaya G250/G350/G450 Device Manager as part of Avaya Network Management, the following sections provide instructions for starting Avaya G250/G350/G450 Manager.

Running Avaya G250/G350/G450 Manager from Avaya Network Management Console

From the management platform map:

1. Select the label representing the Avaya G250/G350/G450 Device you want to manage.
2. Click  .

   Or

   Double-click the Avaya G250/G350/G450 Device.

   Or

   Select **Tools > Avaya Device Manager**.

Avaya G350/G450 Manager via Web Management

Note:

The Avaya G250 Device does not support web management.

To start Avaya G350/G450 Web Management:

1. Point your web browser to **`http://`**`xxx.xxx.xxx.xxx`, where `xxx.xxx.xxx.xxx` is the IP address of the Avaya G350/G450 Device you want to manage. The Enter Network Password dialog box opens.

Figure 1: Enter Network Password Dialog Box

2. Select the desired SNMP mode of operation.

   If **SNMPv1** is selected, enter the correct SNMPv1 community string in the **Community** field.

   Or

   If **SNMPv3** is selected, enter a valid username from the SNMPv3 username list and corresponding authentication and privacy passwords.

   Note:

   Some operations in the Avaya G250/G350/G450 Manager require SNMPv3 authentication credentials. Verify that you are an SNMPv3 user or use the SAA application. You can use the CLI to create users on the media gateway.

3. Click **OK**. The Avaya G350/G450 Welcome page opens.

   If the required Java plug-in is installed on your computer, the Java Plug-in Security Warning dialog box opens after a few seconds.

   If the required Java plug-in is not installed, the plug-in is automatically downloaded to your computer. Follow the instructions on the Avaya G350/G450 Welcome page to install the plug-in.

The User Interface

The Avaya G250/G350/G450 Manager user interface is different for each of its management applications. However, the following elements of the user interface are common to all views:

- Application Tabs - Tabs for accessing the Device Manager, Policy Based Routing Manager, and Routing Manager applications for the Avaya G250/G350/G450 Device.
- Application Area - An area where the selected application opens.
- Status Line - Displays the communication status between the Avaya G250/G350/G450 Manager and the Avaya G250/G350/G450 Device.

Application Tabs

You can access the three main components of device management using the following Application Tabs in the Avaya G250/G350/G450 Manager:

- **Device Manager** - View the Avaya G250/G350/G450 Device Manager for device configuration and Port RMON.
- **Policy Based Routing Manager** - View the Policy Based Routing and Next Hop Routing configuration for the device.
- **Routing Manager** - View the Avaya G250/G350/G450 Routing configuration.

To switch to a different view, click the appropriate Application Tab. The selected application opens.

Status Line

The Status Line shows the communication status between the application and the Avaya G250/G350/G450 Device. The Status Line displays a status message and an appropriate graphic. The table below shows the possible statuses with their corresponding graphics, and provides an explanation for each status.

Table 1: Communication Statuses

Status	Graphic	Description
Ready		The application is ready to communicate with the Avaya G250/G350/G450 Device.
Communicating		The application is currently communicating with the Avaya G250/G350/G450 Device.
Communication Error		The last attempted communication with the Avaya G250/G350/G450 Device was not successful.

Managing Tables

The Avaya G250/G350/G450 Manager interface displays the status of each row in a table. The following table shows a list of symbols that can appear at the start of a table row, with their corresponding explanations.

Table 2: Table Symbols

Symbol	Explanation
	The row is a new entry.
	The row is to be deleted.
	The information in the row has been changed by the user.

To undo all the changes made to a table, click **Refresh**. To undo changes made to a selected row, click **Undo**. When all changes are finalized, click **Apply** to update the device.

Chapter 2: Device Manager

This chapter provides an introduction to the Avaya G250/G350/G450 Device Manager. It includes the following sections:

- The G250/G350/G450 Device Manager User Interface - An introduction to the Avaya G250/G350/G450 Device Manager user interface, including instructions for selecting elements and using the toolbar buttons.
- Avaya G250/G350/G450 Modes - Instructions on switching between the configuration and Port RMON modes in the Avaya G250/G350/G450 Device Manager.
- Refreshing Device Information - Instructions on how to refresh the information in the Avaya G250/G350/G450 Manager.
- Using Dialog Boxes and Tables - An explanation of the icons found in the dialog boxes and tables in the Avaya G250/G350/G450 Device Manager.
- Using Avaya G250/G350/G450 Device Manager Help - An explanation of the options for accessing on-line help in the Avaya G250/G350/G450 Device Manager.

The G250/G350/G450 Device Manager User Interface

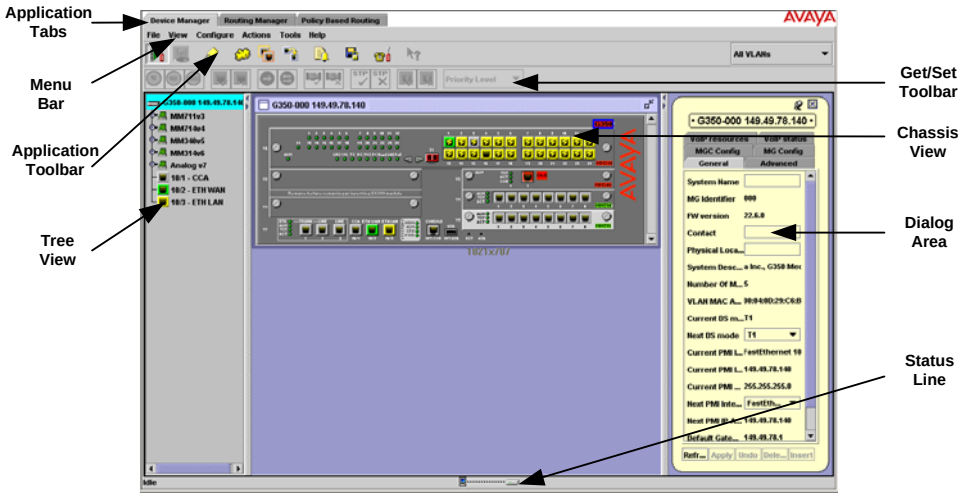
The Avaya G250/G350/G450 Device Manager user interface consists of the following elements:

- Application Tabs - Tabs for toggling between Avaya G250/G350/G450 Manager functions (Device Manager, Routing Manager, Policy-Based Routing Manager).
- Menu Bar - Menus for accessing Avaya G250/G350/G450 Device management functions. For more information, refer to Appendix A: *Menus*.
- Application Toolbar - Toolbar buttons for accessing Avaya G250/G350/G450 Device management functions.
- Get/Set Toolbar - Toolbar buttons for viewing and changing the configuration of ports.
- Tree View - A resizeable window containing a hierarchical representation of the modules and ports of the Avaya G250/G350/G450 Device.
- Chassis View - A graphical representation of the Avaya G250/G350/G450 Device.
- Dialog Area - A resizeable window where all dialog boxes and tables first open.

For information on other parts of the user interface, refer to “The User Interface” on page 19.

The figure below shows the user interface, with its various parts labeled.

Figure 2: The Avaya G250/G350/G450 Device Manager User Interface



To resize the three main areas of the user interface, the Tree View, the Chassis View, and the Dialog Area, use the splitter bars and their arrows.

Application Toolbar

The Application Toolbar provides shortcuts to the main Device Manager functions.

The table below describes the buttons on the Application Toolbar and gives the equivalent menu options.

Table 3: Application Toolbar

Button	Description	Menu Item
	Sets the Device Manager to Configuration Mode.	**View > Configuration**
	Sets the Device Manager to Port RMON mode.	**View > Port RMON**
	Shows Switch-Connected Addresses.	**View > Switch-Connected Addresses**
	Displays the VLAN window.	**Configure > VLAN**
	Displays the Port Redundancy table.	**Configure > Port Redundancy**
		1 of 2

Table 3: Application Toolbar (continued)

Button	Description	Menu Item
	Starts the Port Mirroring wizard.	**Configure > Port Mirroring**
	Displays the Trap Manager Table.	**Configure > Trap Managers**
	Commits configuration changes.	**Actions > Commit**
	Launches Avaya Call Processing on the selected Media Gateway or Voice port.	**Tools > Administer Station/Gateway**
	Opens the on-line help.	**Help > Help On**
	Selects a VLAN. Ports that are not on the selected VLAN appear dark gray in the Chassis View.	
		2 of 2

When you place the cursor on a toolbar icon for one second, a label appears with the name of the button.

You can toggle the display of the application toolbar. To toggle the display of the application toolbar, select **View > Toolbars > Show Application Toolbar**.

Get/Set Toolbar

The Get/Set Toolbar provides buttons for getting and setting configuration parameters for selected ports. When a port is selected, its configuration is reflected on the Get/Set Toolbar. Each group of buttons represents the various possible states of a configuration parameter. For example, the first group of buttons represents the possible speed of a port - 10 Mbps, 100 Mbps, or 1000 Mbps. If the center button is depressed, the port is currently configured to operate at 100 Mbps.

Selected ports can be configured using the Get/Set Toolbar. To change the configuration of a port, click the button that represents the value of the parameter you want to apply to the port. Click **apply** to update the device with the changes. Click **cancel** to discard the changes. Options not applicable to the selected port are greyed out.

Multiple ports can be simultaneously configured using the Get/Set Toolbar. When multiple ports with non-identical configurations are selected, only the parameters whose settings are identical on the selected ports are reflected in the Get/Set Toolbar. For example, if a port operating at full duplex and a port operating at half duplex are selected, neither of the duplex mode buttons on the Get/Set Toolbar are depressed.

The table below displays the buttons on the Get/Set Toolbar and explains their functions and settings.

Table 4: Get/Set Toolbar

Button	Description
	Get and set the port's speed: 10 Mbps, 100 Mbps, 1000 Mbps.
	Get and set the port's status: Enabled, Disabled.
	Get and set the port's mode: Half duplex, Full duplex.
	Get and set the port's auto-negotiation status: Auto-negotiation Enabled, Auto-negotiation Disabled.
	Get and set the port's STP mode: Enabled, Disabled.
	Get and set the port's Power over Ethernet (not relevant for G450).
	Get and set the port's priority. Select a priority level between 1 and 8 using the pull-down listbox.
	Apply or cancel the configuration changes made with the Get/Set Toolbar.

Note:

The Apply/Cancel buttons only appear when changes are made to the configuration.

You can toggle the display of the Get/Set toolbar. To toggle the display of the Get/Set toolbar, select **View > Toolbars > Show Get/Set Toolbar**.

Tree View

The Tree View shows a hierarchical representation of the structure of the Avaya G250/G350/G450 Device. To select ports, modules or media modules, click their icons in the Tree View. When an element is selected in the Tree View, the corresponding element is selected in the Chassis View.

The highest level of the Tree View represents the device. The second level shows modules. The third level shows ports. This includes ports on expansion modules.

To expand the view of a contracted element in the tree or to contract the view of an expanded element in the tree:

Double-click the element.

Or

Click the handle next to the element you want to expand or contract.

Desktop

The central section of the application window is the Desktop. This area can be resized by dragging the vertical splitter bars with the mouse. Floating dialog boxes and tables can be resized. The Chassis View and floating dialog boxes and tables can also be minimized. Minimized windows appear at the bottom of the Desktop.

Chassis View

The Chassis View is a graphical representation of the Avaya G250/G350/G450 device. The Avaya G250/G350/G450 device can contain several Avaya G250/G350/G450 modules. The Chassis View shows all of the devices' modules and ports. The colors of the modules and ports in the Chassis View reflect their status.

When you hold the cursor over a port's icon in the Chassis View, a label appears with the port number, its VLAN ID, and the last fault that occurred on the port.

Figure 3: Avaya G450 Chassis View

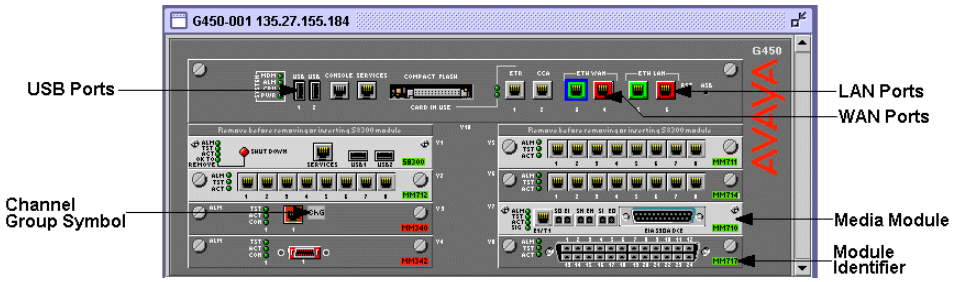


Figure 4: Avaya G350 Chassis View

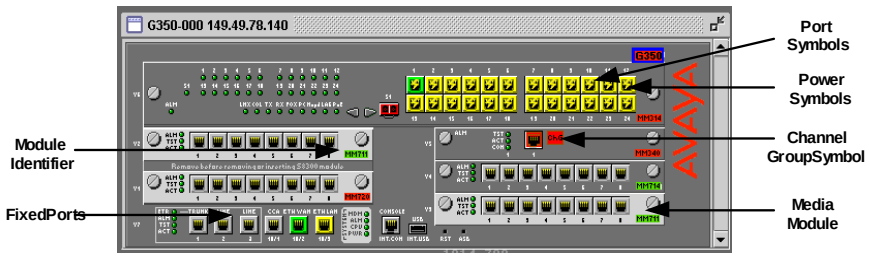


Figure 5: Avaya G250 Chassis View

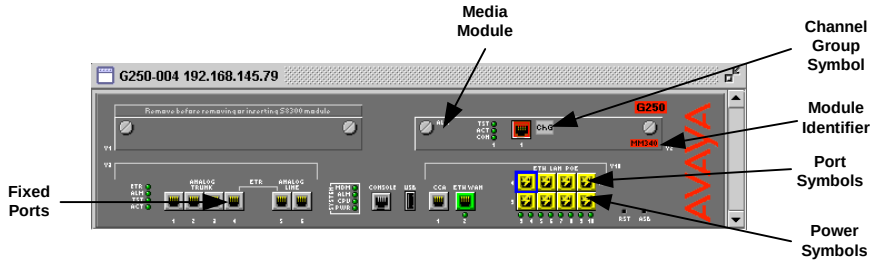


Figure 6: Avaya G250 - BRI Chassis View

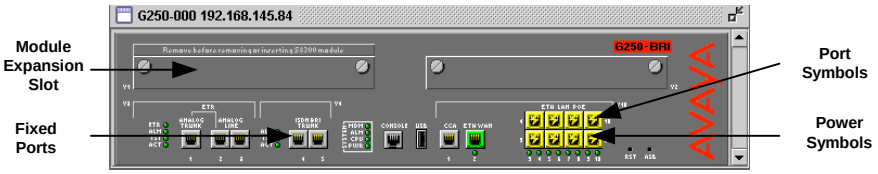


Figure 7: Avaya G250 - DCP Chassis View

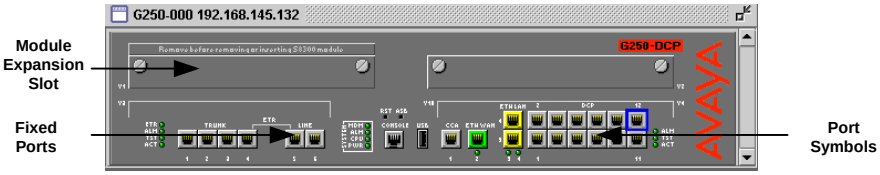
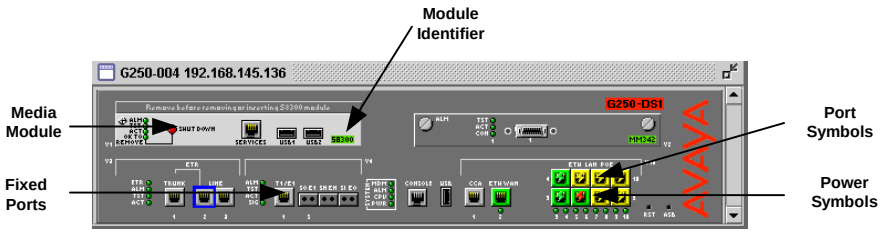


Figure 8: Avaya G250 - DS1 Chassis View



When viewing selected dialog boxes, the color of the port indicates the status of the port with regard to the application. The port selected to be the base port appears dark blue. The ports selected to be additional ports appear cyan.

The following table provides a list of the possible port colors in the Chassis View and their meaning.

Table 5: Chassis View Port Colors

Color	Meaning
Green	The port is enabled, and its status is Okay.
Yellow	The port is enabled, and its status is Warning.
Red	The port is enabled, and its status is Fatal.
Light Gray	The port is disabled.
Dark Gray	The port is not associated with the assignment.
White	The port is logically available for assignment.
Dark Blue	The port has been assigned the primary position in an application.
Cyan	The port has been assigned a secondary position in an application.

GBIC Ports

The Avaya MM314 media modules contain a GBIC (GigaBit Interface Converter) port that houses removable transceiver modules. The Chassis View reflects the management status of this ports. The following table shows the possible appearances of this port in the Chassis View and provides the corresponding management status of the port.

Table 6: GBIC Port Status

GBIC Port	Status
	The GBIC port contains a supported transceiver module.
	There is no transceiver module present in the GBIC port.
	The transceiver module in the GBIC port is not supported.
	The transceiver module in the GBIC port is of an unknown type.

GBIC ports that contain the following types of transceiver modules can be configured:

- Supported transceiver modules
- No transceiver modules
- Unknown transceiver modules

GBIC ports that contain unsupported transceiver modules cannot be configured.

Selecting Elements

You can select modules and ports.

To select a module:

In the Chassis View, click the module's label.

Or

In the Tree View, click the module's icon. The module's label is highlighted in the Chassis View and the Tree View.

To select a port:

In the Chassis View, click the port.

Or

In the Tree View, click the port's icon. The port is highlighted in the Chassis View and the Tree View.

To select multiple elements, press **CTRL** while clicking on each element to be selected.

Dialog Area

The area to the right of the Chassis View is where all dialog boxes, tables, and wizards first appear. This area can be resized by dragging the vertical splitter bar with the mouse. When a dialog box, table, or wizard opens, it replaces the current dialog box open in the Dialog Area. To view more than one dialog box or table simultaneously, click the pushpin in the upper right-hand corner of the dialog box. The dialog box becomes a floating dialog box and moves to the Desktop.

To restore a dialog box to the Dialog Area, click the toolbar button or icon that opened the dialog box. The dialog box returns to the Dialog Area.

Avaya G250/G350/G450 Modes

The Avaya G250/G350/G450 Device Manager has two modes:

- Configuration mode
- Port RMON mode

Note:

When the Avaya G250/G350/G450 Manager is installed as a standalone manager and when running the Avaya G350/G450 Manager via Web Management, Port SMON is not available.

When in configuration mode, you can view and change the configuration of the Avaya G250/G350/G450 Device and individual ports. When in Port RMON mode, you can view graphical representations of the traffic on individual ports.

To switch to configuration mode:

Click  .

Or

Select **View > Configuration**.

To switch to Port RMON mode:

Click  .

Or

Select **View > Port RMON**.

Refreshing Device Information

You can refresh the information in the Avaya G250/G350/G450 Device Manager. To refresh Avaya G250/G350/G450 Device information, select **View > Refresh**. The Avaya G250/G350/G450 Device Manager refreshes its device information and updates the display.

Using Dialog Boxes and Tables

Dialog boxes and tables in the Avaya G250/G350/G450 Manager application have a common set of buttons. The following table displays the buttons and explains their functions:

Table 7: Dialog Box Buttons

Button	Function
Refresh	Refreshes the information in the table or dialog box. This clears any changes made to the table or dialog box and not yet sent to the device.
Apply	Sends the information from the table or dialog box to update the device.
Insert	Adds a row to the table.
Delete	Deletes the selected rows of the table.
Undo	Undoes all changes to the selected row in a table.

Using Avaya G250/G350/G450 Device Manager Help

This section explains how to use the on-line help in the Avaya G250/G350/G450 Device Manager. The on-line help can be opened to the contents page or directly to a topic of interest.

Note:

When running the Avaya G350/G450 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the device with the location of the help files.

Opening the Help to the Contents Page

To open the help to the contents page, select **Help > Contents**. The on-line help opens to the contents page.

Opening the Help to a Topic of Interest

To open the help directly to a topic of interest:

1. Click  .

   Or

   Select **Help > Help On**. The cursor changes to the shape of an arrow with a question mark.

2. Click on a point of interest in the Avaya G250/G350/G450 Device Manager. The on-line help opens to a topic explaining the feature that was clicked.

Chapter 3: Device Configuration

This chapter explains how to view and set the various configuration parameters relevant to the Avaya G250/G350/G450 Device. It includes the following sections:

- Viewing Device Configuration - View high-level information about the Avaya G250/G350/G450 Device.
- Viewing Module Configuration - View information specific to an Avaya G250/G350/G450 module in the device.
- Viewing Port Configuration - View information specific to the ports on the Avaya G250/G350/G450 Device.
- Configuring the External Modem - View information specific to an external modem connected to the Avaya G250/G350/G450 Device.
- Configuring the Dialer - View information specific to an external dial-up modem connected to the Avaya G250/G350/G450 Device.
- Resetting the Device - Reset the Avaya G250/G350/G450 Device.

To view configuration information, you must be in Configuration mode. To switch to Configuration mode:

Click  .

Or

Select **View > Configuration**.

Viewing Device Configuration

The Device Configuration dialog box provides you with high-level configuration information specific to the Avaya G250/G350/G450 Device. This information is divided into the following:

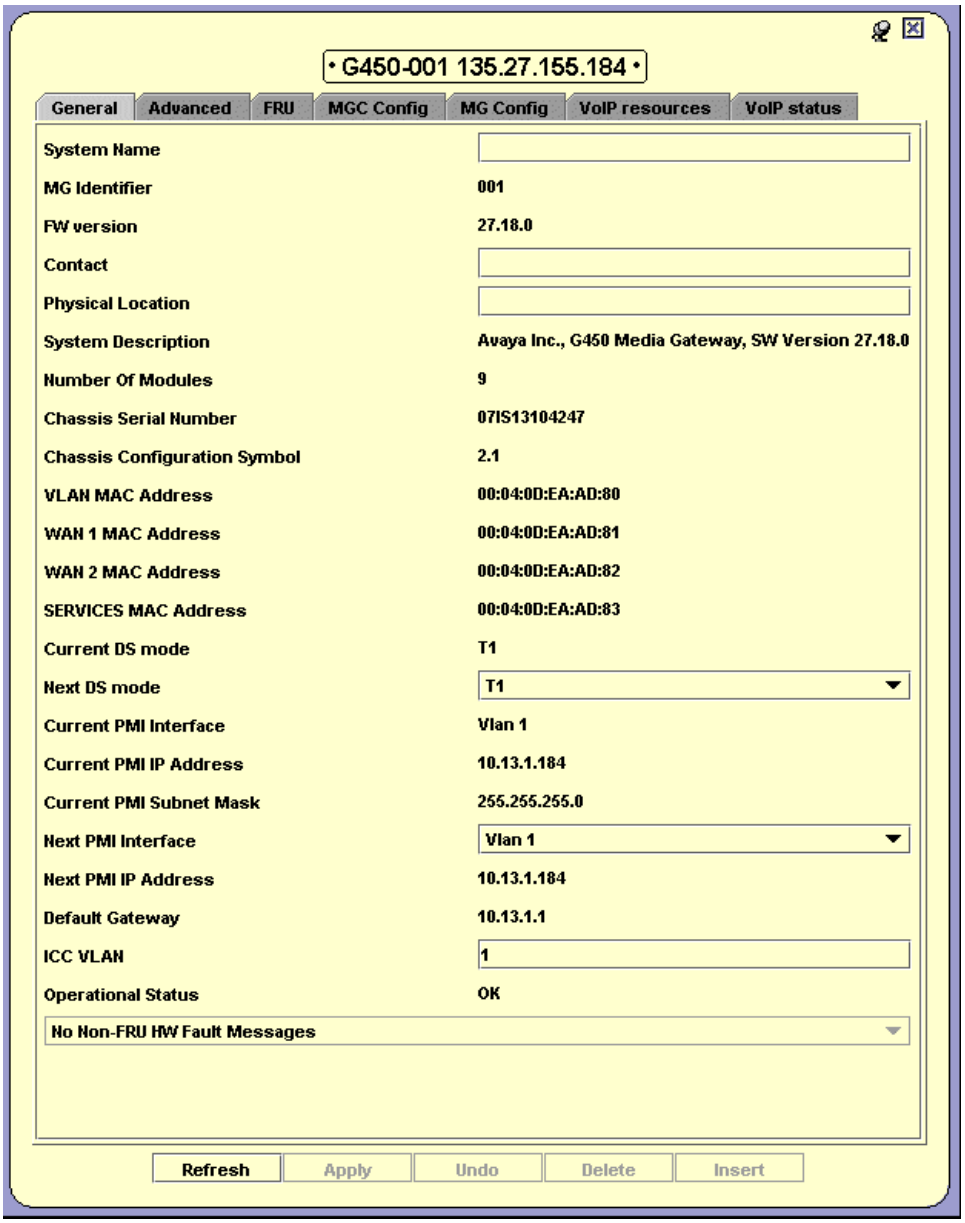
- Device Configuration - General Tab - Provides detailed information about the device such as the device's name, addresses, contact person, location, type, description, the number of modules in the device, and the management VLAN ID.
- Media Gateway Configuration Tab - Provides detailed information on the configuration settings of the Media Gateway function of the device. For more information on Media Gateway Configuration, refer to "Media Gateway Functions" on page 71.
- Media Gateway Controller Configuration Tab - Provides detailed Quality of Service statistics for the Media Gateway function of the device. For more information, refer to "Media Gateway Functions" on page 71.
- Voice over IP Resources Tab - Provides administration parameters for the VoIP engine. For more information on VoIP Resources, refer to "VoIP Engine Configuration" on page 77.
- Voice over IP Status Tab - Provides detailed operating statistics for the VoIP engine. For more information, refer to "VoIP Engine Configuration" on page 77.

Device Configuration - General Tab

To view the General tab of the Device Configuration dialog box:

Select **Configure > Device Information**. The Device Configuration dialog box opens to the General tab.

Figure 9: Device Configuration Dialog Box - General Tab



The following table provides a list of the fields in the General tab of the Device Configuration dialog box and their descriptions.

Table 8: Device Configuration Fields - General Tab

Field	Description
System Name	Logical name of the device, as defined on the SNMP agent of the device.
MG Identifier	Identification number of the Media Gateway.
FW version	Firmware release the device is running.
Contact	The individual responsible for the maintenance of this device.
Physical Location	The current physical location of this device.
System Description	A description of the device.
Number Of Modules	The number of Media Modules and expansion modules in the chassis.
Chassis Serial Number	The serial number of the chassis (read only) (relevant only for the Avaya G450 Device).
Chassis Configuration Symbol	The configuration symbol of the chassis (read only) (relevant only for the Avaya G450 Device).
VLAN MAC Address	The MAC address of the VLAN interface.
WAN1 MAC Address	The MAC address of the WAN1 port (relevant only for the Avaya G450 Device).
WAN2 MAC Address	The MAC address of the WAN2 port (relevant only for the Avaya G450 Device).
SERVICES MAC Address	The MAC address of the Services port (relevant only for the Avaya G450 Device).
Current DS Mode	Speed of serial link. Possible values are: • **T1** • **E1**
Next DS Mode	Speed of backup serial link, if configured. Possible values are: • **T1** • **E1**
Current PMI Interface	Interface currently designated as Primary Management Interface.
	1 of 2

Table 8: Device Configuration Fields - General Tab (continued)

Field	Description
Current PMI IP Address	IP address of Primary Management Interface.
Current PMI Subnet Mask	Subnet mask of Primary Management Interface.
Next PMI Interface	Interface configured by the gateway to be the new Primary Management Interface. If you set this parameter using the CLI, the new setting only takes effect after the next device reset.
Next PMI IP Address	IP address configured by the gateway to be the new Primary Management Interface. If you set this parameter using the CLI, the new setting only takes effect after the next device reset.
Default Gateway	IP address of the default network gateway device.
ICC VLAN	VLAN of which the device is a member.
Operational Status	The operational status of the device. Possible values are: • **OK** - Device is operational. • **Down** - Device is reporting faults making it unable to function. • **Fatal** - Device is reporting faults that are unrecoverable.
Fault Messages	Number of fault messages reported by the device.
	2 of 2

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

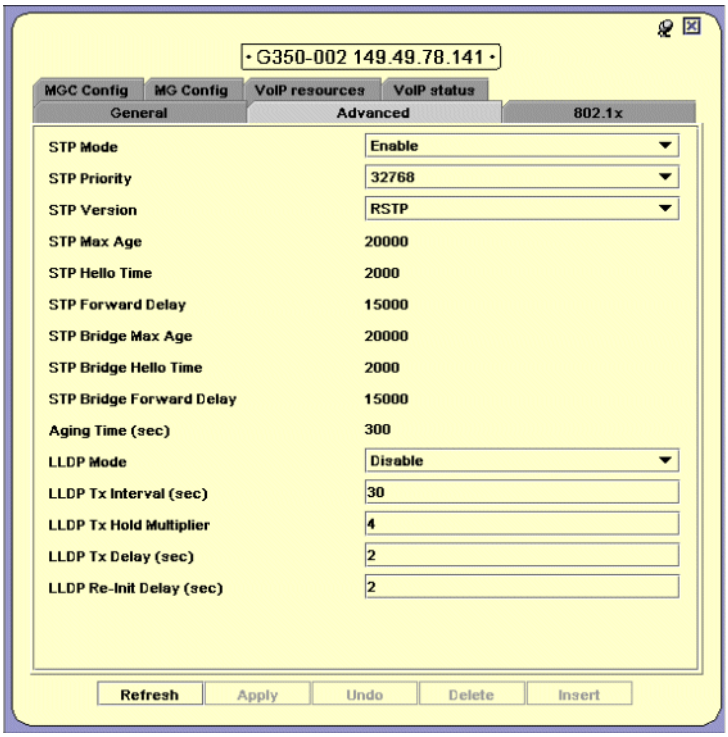
Device Configuration - Advanced Tab

The Device Configuration Dialog Box - Advanced Tab provides you with network bridging information about the Avaya G250/G350/G450 Device.

Note:

Avaya G250 Devices do not support the spanning tree protocol, therefore the STP fields do not appear for an Avaya G250 Device.

Figure 10: Device Configuration Dialog Box - Advanced Tab



The following table provides a list of the fields in the Advanced tab of the Device Configuration dialog box and their descriptions.

Table 9: Device Configuration Fields - Advanced Tab

Field	Description
STP Mode	Spanning Tree status of the device.
STP Priority	Priority value used in Spanning Tree calculations.
	1 of 2

Table 9: Device Configuration Fields - Advanced Tab (continued)

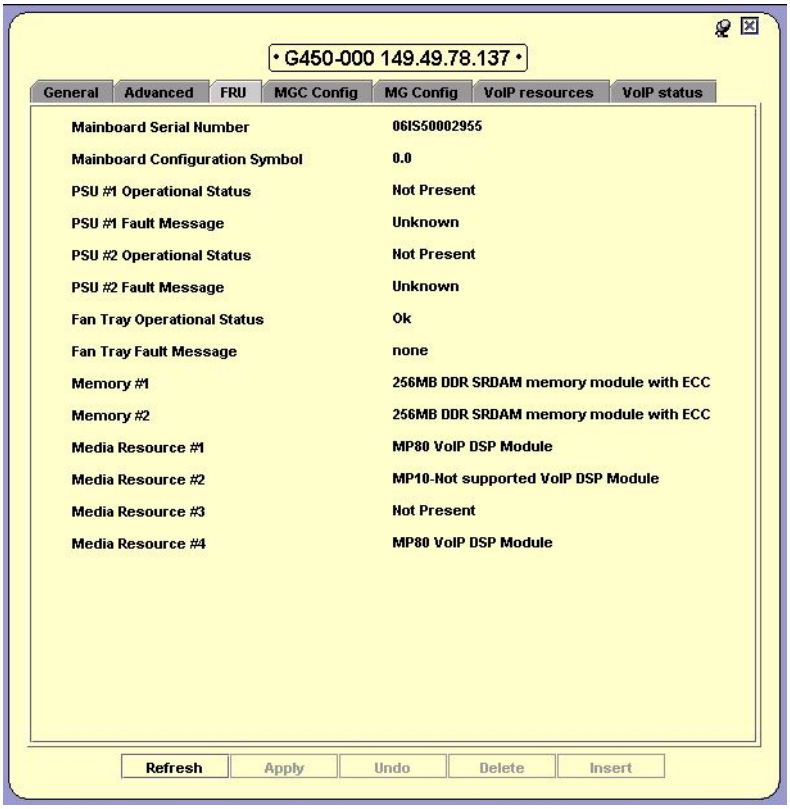
Field	Description
STP Version	Version of Spanning Tree on the device. Possible values are: • **STP Compatible** - Standard Spanning-Tree Protocol • **RSTP** - Rapid Spanning-Tree Protocol
STP Max Age	The maximum amount of time before the Spanning Tree table recalculates if there is no change in the device status, measured in milliseconds.
STP Hello Time	The amount of time between sending Spanning Tree updates if there are no detected changes in the device's network connections, measured in milliseconds.
STP Forward Delay	The amount of time for the device to begin forwarding packets when first joining a network, measured in milliseconds.
STP Bridge Max Age	The maximum amount of time before Spanning recalculates if there is no change in network bridging status, measured in milliseconds.
STP Bridge Hello Time	The amount of time between sending Spanning Tree updates if there are no detected changes in the overall bridged network topology, measured in milliseconds.
STP Bridge Forward Delay	The amount of time for the device to begin forwarding packets after recalculating its Spanning Tree table based on a change in network topology, measured in milliseconds.
Aging Time (sec)	The amount of time MAC addresses remain in the CAM table.
LLDP Mode	The status of Link Layer Discovery Protocol (LLDP) Mode on the device: • **Enable** - Use LLDP Mode. • **Disable** - Do not use LLDP Mode.
LLDP Tx Interval	The amount of time between packet transmissions on the device.
LLDP Tx Hold Multiplier	The LLDP time-to-live value expressed as a multiple of the value configured in the **LLDP Tx Interval** field.
LLDP Tx Delay	The delay between successive LLDP frame transmissions initiated by status changes in LLDP.
LLDP Re-Init Delay	The amount of time the device is instructed to wait before re-initiating LLDP.
	2 of 2

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Device Configuration - FRU Tab

The Device Configuration Dialog Box - FRU Tab provides you with information about the Field Replaceable Units (FRU) of the Avaya G450 Device.

Figure 11: Device Configuration Dialog Box - FRU Tab



The following table provides a list of the fields in the FRU tab of the Device Configuration dialog box and their descriptions.

Table 10: Device Configuration Fields - FRU Tab

Field	Description
Mainboard Serial Number	The serial number of the mainboard.
Mainboard Configuration Symbol	The configuration symbol of the mainboard.
	1 of 3

Table 10: Device Configuration Fields - FRU Tab (continued)

Field	Description
PSU #1 Operational Status	The operational status of Power Supply 1. Possible values are: • **OK** - The power supply is operational. • **Fault** - The power supply is reporting faults making it unable to function. • **Not Present** - The power supply is not installed. • **Unknown** - The power supply is reporting an unknown fault.
PSU #1 Fault Message	The fault message reported by Power Supply 1. Possible values are: • **No Fault** • **Malfunction** • **AC Fault** • **Malfunction & AC Fault** • **Single Fan Fault** • **Multiple Fan Fault**
PSU #2 Operational Status	The operational status of Power Supply 2. Possible values are: • **OK** - The power supply is operational. • **Fault** - The power supply is reporting faults making it unable to function. • **Not Present** - The power supply is not installed. • **Unknown** - The power supply is reporting an unknown fault.
PSU #2 Fault Message	The fault message reported by Power Supply 2. Possible values are: • **No Fault** • **Malfunction** • **AC Fault** • **Malfunction & AC Fault** • **Single Fan Fault** • **Multiple Fan Fault**
Fan Tray Operational Status	The operational status of the fan tray. Possible values are: • **OK** - The fan tray is operational. • **Fault** - The fan tray is reporting faults making it unable to function. • **Not Present** - The fan tray is not installed. • **Unknown** - The fan tray is reporting an unknown fault.
	2 of 3

Table 10: Device Configuration Fields - FRU Tab (continued)

Field	Description
Fan Tray Fault Message	The fault message reported by the fan tray. Possible values are: • **None** • **Malfunction** • **AC Fault** • **Malfunction & AC Fault** • **Single Fan Fault** • **Multiple Fan Fault**
Memory #1	Displays a description of the memory installed in slot 1.
Memory #2	Displays a description of the memory installed in slot 2.
Media Resource #1	Displays a description of the media resource installed in slot 1.
Media Resource #2	Displays a description of the media resource installed in slot 2.
Media Resource #3	Displays a description of the media resource installed in slot 3.
Media Resource #4	Displays a description of the media resource installed in slot 4.
	3 of 3

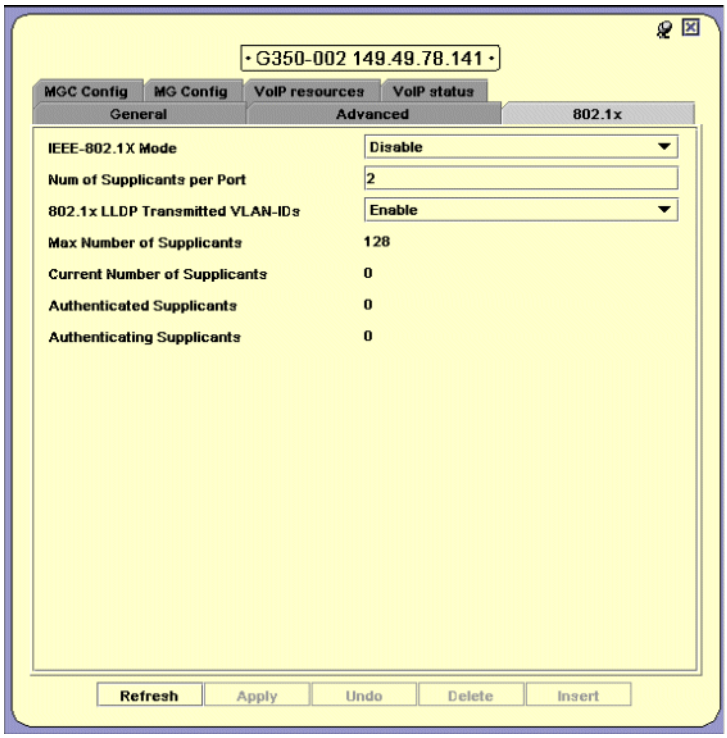
Device Configuration - 802.1x Tab

The Device Configuration Dialog Box - 802.1x tab provides you with support for the general configuration of the 802.1x application.

Note:

Avaya G450 Devices do not support the 802.1x protocol, therefore the 802.1x tab does not appear for an Avaya G450 Device.

Figure 12: Device Configuration Dialog Box - 802.1x Tab



The following table provides a list of the fields in the 802.1x tab of the Device Configuration dialog box and their descriptions.

Table 11: Device Configuration Fields - 802.1x Tab

Field	Description
IEEE-802.1x Mode	802.1x application status of the device. Possible values are: • **Enable** • **Disable**
	1 of 2

Table 11: Device Configuration Fields - 802.1x Tab (continued)

Field	Description
Num of Supplicants per Port	Number of supplicants per port allowed in MAC-Based-Authentication. This parameter is not relevant in port-based-authentication mode. Possible values are 1-8. The default value is **2**.
802.1x LLDP Transmitted VLAN-IDs	When enabled, allows transmission of port LLDP information (PVID, Port Vlan) in the LLDP packet sent to the Avaya IP phone connected to the port.
Max Number of Supplicants	The device/system maximum number of supplicants.
Current Number of Supplicants	The current number of supplicants connected to the device/system.
Authenticated Supplicants	The number of authenticated supplicants connected to the device/system.
Authenticating Supplicants	Number of supplicants connected to the device/system being authenticated (not authenticated yet).
	2 of 2

Viewing Module Configuration

The Module Configuration dialog box provides you with information specific to a selected module.

- Module Configuration - General Tab - Provides detailed information about the module, such as the module's position in the device, the module's type, description, number of ports, mode of operation, and any faults occurring on the module.
- Module Configuration - Power Tab - Provides information about the module's Power over Ethernet (PoE) configuration. For more information, refer to "Power over Ethernet" on page 67.

Note:

The information fields in the Module Configuration dialog box vary according to the type of module selected.

Module Configuration - General Tab

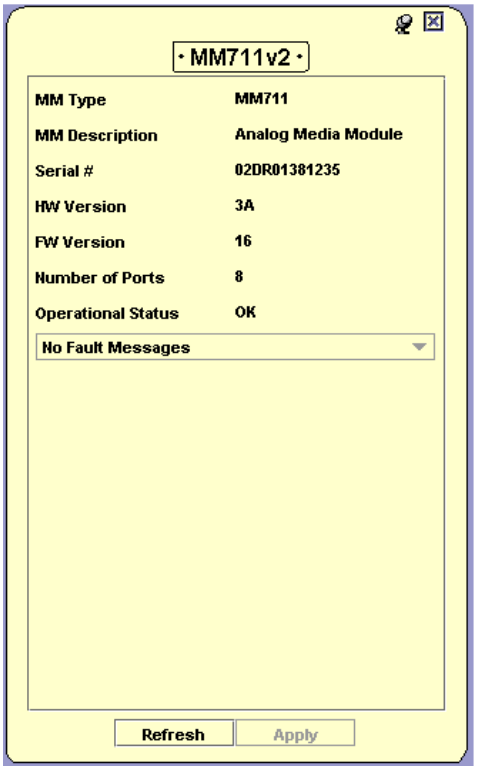
To view the General tab of the Module Configuration dialog box for a selected module:

Click the module symbol in the Tree View.

Or

Click the module's label in the Chassis View. The Module Configuration dialog box opens to the General tab.

Figure 13: Module Configuration Dialog Box - General Tab



Note:

Module Configuration fields may vary somewhat based on the Media Module.

The following table provides a list of the fields in the Module Configuration dialog box and their descriptions.

Table 12: Module Configuration Dialog Box

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>MM Type</td><td>Model of Media Module.
Support for the different devices is described below:

<table>
<tr><th>Module</th><th>Description</th><th>G250</th><th>G350</th><th>G450</th></tr>
<tr><td>MM710</td><td>1 x voice T1/E1 port</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM711</td><td>8 x universal analog</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM712</td><td>8 x DCP 2 wire ports</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM714</td><td>Analog 4 line + 4 trunk</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM720</td><td>8 x ISDN BRI</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM722</td><td>2 x ISDN BRI</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM717</td><td>24 x DCP 2 wire ports</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM716</td><td>24 analog stations</td><td></td><td>Y</td><td>Y</td></tr>
<tr><td>MM340</td><td>1 x T1/E1 data</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>MM342</td><td>1 x USP (V.35/X.21)</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>S8300B</td><td>Locally hosted CM server in ICC or LSP mode</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>S8300C</td><td>Locally hosted CM server in ICC or LSP mode</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>Mm312</td><td>24 DCP phone ports</td><td></td><td>Y</td><td></td></tr>
<tr><td>MM314</td><td>24 PoE Ethernet</td><td></td><td>Y</td><td></td></tr>
<tr><td>MM316</td><td>48 PoE Ethernet expansion module</td><td></td><td>Y</td><td></td></tr>
</table>
</td></tr>
<tr><td>MM Description</td><td>Description of Media Module.</td></tr>
<tr><td>Serial #</td><td>Unique identifier for individual Media Module.</td></tr>
<tr><td>HW Version</td><td>Release version of Media Module hardware.</td></tr>
<tr><td>FW Version</td><td>Release version of Media Module firmware.</td></tr>
<tr><td>Number of Ports</td><td>The number of ports in the Media Module.</td></tr>
</table>

1 of 2

Table 12: Module Configuration Dialog Box (continued)

Field	Description
Operational Status	The operational status of the Media Module. Possible values are: • **OK** - Media Module is operational. • **Down** - Media Module is reporting faults making it unable to function. • **Fatal** - Media Module is reporting faults that are unrecoverable.
Fault Messages	Number of fault messages reported by the Media Module.
	2 of 2

Viewing Port Configuration

The Port Configuration dialog box contains tabs that provide you with information specific to a selected port.

- Port Configuration - General Tab - Provides detailed information about the port, such as the port name, type, functionality, status, VLAN ID, mode of operation, and any faults occurring on the port.
- Port Configuration - Advanced Tab - Provides detailed information about the port's STP configuration and port classification.
- Port Configuration - Power Tab - Provides information about the port's PoE configuration. For more information about PoE, refer to "Power over Ethernet" on page 67.
- Port Configuration - 802.1X Tab - Provides detailed information about the port's 802.1x security configuration.
- Port Configuration - LLDP Tab - Provides detailed information about the port's LLDP configuration.
- Get/Set Toolbar - Provides an alternative, quick method to view and change the port's configuration. For more information on the Get/Set Toolbar, refer to "Get/Set Toolbar" on page 25.

Port Configuration - General Tab

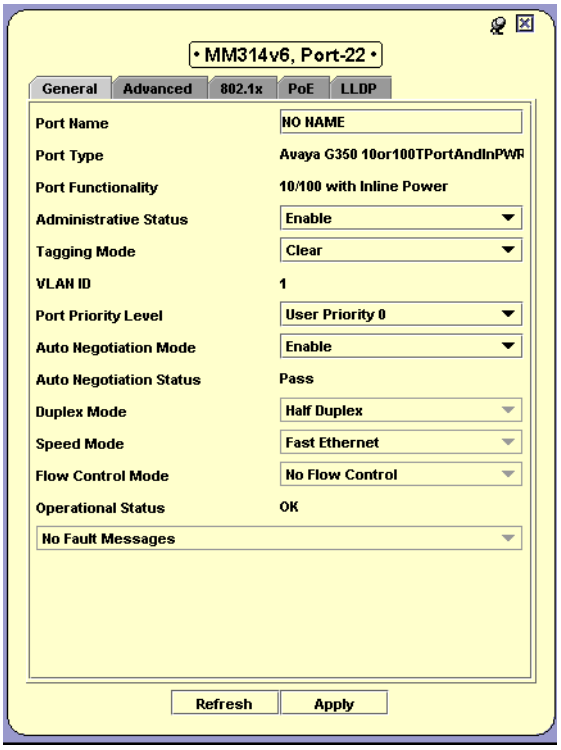
To view the General tab of the Port Configuration dialog box for a selected port:

Click the port symbol in the Chassis View.

Or

Click the port's icon in the Tree View. The Port Configuration dialog box opens to the General tab.

Figure 14: Port Configuration Dialog Box - General Tab



The following table provides a list of the fields in the Port Configuration Dialog Box - General tab and their descriptions.

Note:

Some fields will vary based on the Media Module on which the port resides.

Table 13: Port Configuration Dialog Box - General Tab

Field	Description
Port Name	The user can define a logical name to the port for ease of use.
	1 of 3

Table 13: Port Configuration Dialog Box - General Tab (continued)

Field	Description
Port Type	The port type; optionally includes reference to the module to which it is attached and port connector type.
Port Functionality	The physical media type of the selected port. If the port conforms to a certain standard (Repeater, Transceiver, 10BaseT, etc.), this standard is displayed. If the port does not conform to any standard, Private is displayed.
Administrative Status	The administrative state of the selected port: • **Enabled** - the port is enabled and can transmit and receive packets. • **Disabled** - the port is disabled and cannot transmit or receive packets.
Tagging Mode	The port's operational mode regarding VLANs. The possible modes are: • Transmits each outgoing packet in untagged format if it belongs to the port's VLAN. Otherwise, it discards the packet. • VLAN tagging, per IEEE 802.1Q VLAN standard. The port will transmit frames with a VLAN ID of **1 - 3071** for Avaya G250/ G350 Devices and **1 - 4090** for Avaya G450 Devices.
VLAN ID	The VLAN number of the port.
Port Priority Level	The priority level of packets exiting the port or ports on the module. For effective transmission, multimedia packets must be received at regular intervals. To ensure this, you can assign priorities to packets coming out of a port. Whenever traffic load is extreme and a port cannot accept all incoming packets, packets sent from a port with the highest priority will pass through first. However, a fairness mechanism will allow low priority packets to eventually enter the bus. Possible values are: **User Priority 0...User Priority 7**
Auto Negotiation Mode	The configured state of the Auto-Negotiation protocol between two stations. When enabled, Auto-Negotiation detects the highest common denominator for communication between endstations, and sets both to the same highest common setting. It also delivers remote link status. For 10BaseT and 100BaseT ports, Auto-Negotiation determines the speed and Duplex Mode of communication between the endstations. For Gigabit ports, Auto-Negotiation determines the Flow Control setting of the ports. For more information, refer to *Auto-Negotiation* in *The Reference Guide.*
	2 of 3

Table 13: Port Configuration Dialog Box - General Tab (continued)

Field	Description
Auto Negotiation Status	The operational state of the Auto-Negotiation protocol between two stations. Possible statuses are: • **Pass** - the Auto-Negotiation protocol is enabled and a common protocol has been established. • **In Progress** - the Auto-Negotiation protocol is in the process of detecting the communication capabilities of the endstations and setting them to the highest common denominator. • **Fail** - the Auto-Negotiation protocol was not able to detect the communication capabilities of the end station, or was unable to set them to the highest common denominator. • **Disabled** - The Auto-Negotiation protocol is disabled.
Duplex Mode	The state of communication of the selected port. Possible values are: • **Full Duplex** - the port can send and receive simultaneously. • **Half Duplex** - the port can either receive or send, but cannot do both simultaneously.
Speed Mode	The rate of communication of the selected port. Possible values are: • **Ethernet** • **Fast Ethernet** • **Gigabit Ethernet**
Flow Control Mode	The state of flow control on the selected port.
Operational Status	The warning level of the selected port. Possible values are: • **OK** • **Warning** • **Fatal**
Fault Messages	A list of fault messages.
	3 of 3

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Port Configuration - Advanced Tab

To view the Advanced tab of the Port Configuration dialog box for a selected port:

1. Click the port symbol in the Chassis View.

   Or

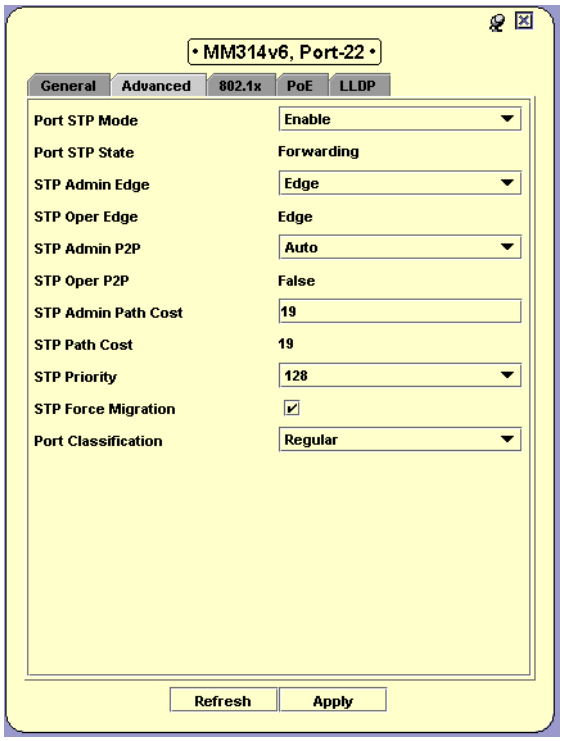
   Click the port's icon in the Tree View. The Port Configuration dialog box opens to the General tab.

2. Click the Advanced tab. The Port Configuration Dialog Box - Advanced Tab opens.

   Note:

   Avaya G250 Devices do not support the spanning tree protocol, therefore the STP fields do not appear for Avaya G250 Device ports.

Figure 15: Port Configuration Dialog Box - Advanced Tab



The following table provides a list of the fields in the Port Configuration Dialog Box - Advanced Tab and their descriptions.

Table 14: Port Configuration Dialog Box - Advanced Tab

Field	Description
Port STP Mode	Configured status of Spanning Tree. Possible values are: • **Enable** • **Disable**
Port STP State	Spanning Tree state on the port. Possible values are: • **Blocking** - Port is blocking attempts to join Spanning Tree. • **Listening** - Port is discovering other devices in the Spanning Tree. • **Learning** - Port is calculating Spanning Tree values prior to joining the Spanning Tree. • **Forwarding** - Port is forwarding traffic within the Spanning Tree.
STP Admin Edge	The administrative state of the edge port parameter. Possible states include: • **TRUE** - This port is assumed to be an edge port. • **FALSE** - This port is assumed not to be an edge-port.
STP Oper Edge	The operational state of the edge port parameter. • **TRUE** - This port is operating in the state specified in STP Admin Edge. • **FALSE** - A BPDU was received by the port.
STP Admin P2P	The administrative point-to-point status of the LAN segment attached to this port. Possible statuses include: • **True** - The port should always be treated as if it is connected to a point-to-point link. • **forceFalse** - The port should be treated as having a shared media connection. • **Auto** - The port is considered to have a point-to-point link if it is an Aggregator and all of its members are aggregative, or if the MAC entity is configured for full duplex operation, either through auto-negotiation or by management means.
STP Oper P2P	The operational point-to-point status of the LAN segment attached to this port. It indicates whether or not a port is considered to have a point-to-point connection. The value is determined by STP Admin P2P.
	1 of 2

Table 14: Port Configuration Dialog Box - Advanced Tab (continued)

Field	Description
STP Admin Path Cost	The administratively assigned value for the contribution of this port to the path cost of paths towards the spanning tree root. A value of 0 assigns the automatically calculated default Path Cost value to the port. STP Admin Path Cost complements STP Path Cost, which returns the operational value of the path cost.
STP Path Cost	The operational cost factor used by Spanning Tree Algorithm to determine the most efficient route for forwarding traffic to its destination while removing loops in the network.For more information, refer to *Spanning Tree Algorithm (STA)* in *The Reference Guide.*
STP Priority	The priority factor used by STP to determine the activity status of an individual port on the Spanning Tree.
STP Force Migration	When checked and in RSTP mode, the port is forced to transmit RSTP BPDUs.
Port Classification	The classification of a specific port. Port Classification allows network managers to specify each port level's importance. The possible states are: • **Regular** - Normal Users • **Valuable** - Servers or critical users. For more information refer to *Port Classification* in *The Reference Guide*.
	2 of 2

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Port Configuration - 802.1X Tab

802.1x port security requires a user connected to a port on the network to be authenticated by an authentication server.

When a user connects to a port configured with 802.1x port security, the port forwards an authentication packet to a Radius authentication server. The authentication server checks if the user is authorized to use the port, and either allows or blocks the user's access to the port.

The port can be configured to automatically reauthenticate the user. If the reauthentication fails, the user is denied further access to the port. For more information, refer to "Port Configuration - General Tab" on page 49.

The 802.1x application supports two modes of operation:

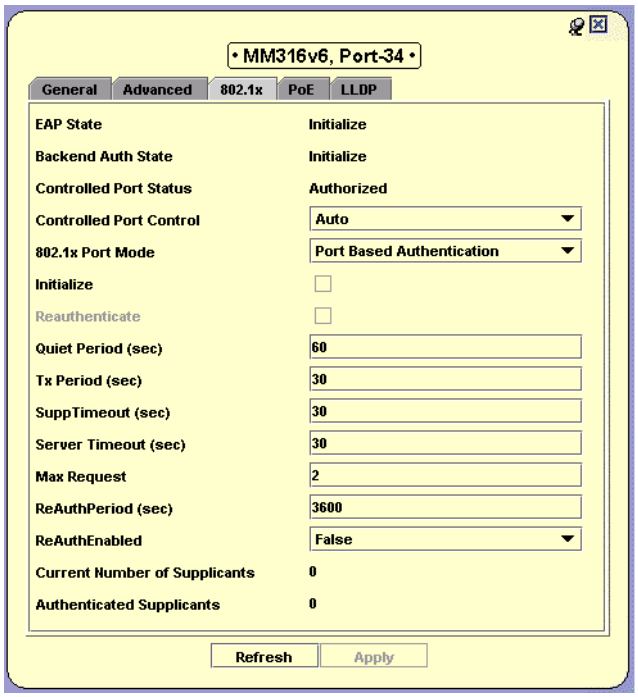
- Port-based-authentication, which is backwards compatible to the previous 802.1x application behavior, and is used for a single-supplicant case.
- MAC-based-authentication for cases where multiple supplicants are connected per port. For more information, refer to “Device Configuration - 802.1x Tab” on page 44.

The 802.1X tab of the Port Configuration dialog box provides you with detailed 802.1X authentication information about the selected port.

Note:

Avaya G450 Devices do not support the 802.1x protocol, therefore the 802.1x tab does not appear for an Avaya G450 Device.

Figure 16: Port Configuration Dialog Box - 802.1X Tab



The following table provides a list of the fields in the 802.1X table of the Port Configuration dialog box and their descriptions:

Table 15: Port Configuration Dialog Box - 802.1X Tab Parameters

Field	Description
EAP State	Entry Access Protocol authentication status. Possible values are: • **Initialize** • **Disconnected** • **Connecting** • **Authenticating** • **Authenticated** • **Aborting** • **Held** • **Force Auth** • **Force Unauth**
Backend Auth State	The current status of the Backend Authentication state machine. Possible values are: • **Request** • **Response** • **Success** • **Fail** • **Timeout** • **Idle** • **Initialize**
Controlled Port Status	The current value of the Controlled Port status. Possible values are: • **Authorized** • **Unauthorized**
Controlled Port Control	The current status of the Controlled Port control. Possible values are: • **Force Authorized** • **Force Unauthorized**
IEEE-802.1X Port Mode	The 802.1x mode of operation. Possible values are: • Port Based Authentication - used for a single-supplicant case. This mode is backwards compatible to the previous 802.1x application behavior. • MAC Based Authentication - for cases where multiple supplicants are connected per port. For more information, refer to “Device Configuration - 802.1x Tab” on page 44.
Initialize	Forces initialization of the port. Checking the **Initialize** checkbox and clicking **Apply** forces the port to be initialized immediately. This checkbox is only active when IEEE-802.1x mode is enabled.
	1 of 2

Table 15: Port Configuration Dialog Box - 802.1X Tab Parameters (continued)

Field	Description
Reauthenticate	Forces reauthentication of the port. Checking the **Reauthenticate** checkbox and clicking **Apply** forces the port to be reauthenticated immediately. This checkbox is only active when IEEE-802.1x mode is enabled.
Quiet Period (sec)	The amount of time, in seconds, between sending authentication requests.
Tx Period (sec)	The amount of time, in seconds, in which an authentication request must be answered.
Supp Timeout (sec)	The amount of time, in seconds, after which an authentication request is suppressed.
Server Timeout (sec)	The amount of time, in seconds, before timing out an authentication request.
Max Request	The maximum number of times a request for authentication is sent before timing out.
ReAuthPeriod (sec)	The amount of time, in seconds, after which the port connection should be reauthenticated.
ReAuth Enabled	The state of reauthentication on the port. Possible values are: • **True** - The port connection is reauthenticated after the **reAuth Period**. • **False** - The port connection is not reauthenticated. The **reAuth Period** is ignored.
Current Number of Supplicants	The current number of supplicants on this port.
Authenticated Supplicants	The number of authenticated supplicants on this port.
Authenticating Supplicants	The number of supplicants connected to the port being authenticated (not authenticated yet).
	2 of 2

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Port Configuration - LLDP Tab

Link Layer Discovery Protocol (LLDP) is a neighbor discovery protocol, which allows Ethernet network devices to search for, and request information from, other LLDP enabled devices on the network. LLDP defines a standard method for Ethernet network devices, such as switches, routers, and wireless LAN access points, to advertise information about themselves to other nodes on the network.

LLDP also allows Ethernet network devices to search for, and request information from, other devices using the LLDP protocol.

The following details can be advertised using LLDP on the Avaya G250/G350/G450 Device:

- System Name
- Chassis ID
- Port ID
- System Description
- System Capabilities
- Port Description
- Management Address

Note:

Chassis ID and Port ID are always advertised when LLDP is enabled.

To view the LLDP tab of the Port Configuration dialog box for a selected port:

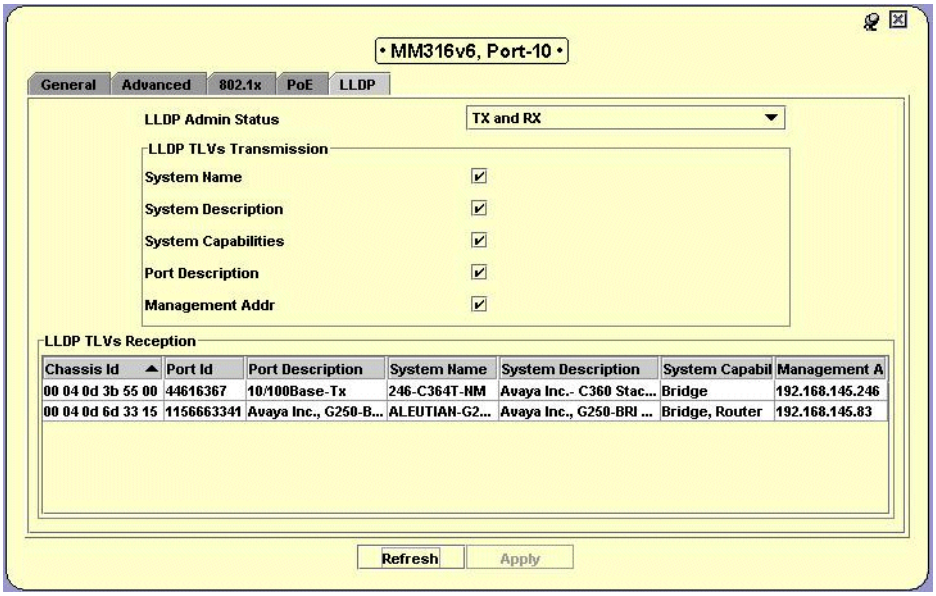
1. Click the port symbol in the Chassis View.

   Or

   Click the port's icon in the Tree View. The Port Configuration dialog box opens to the General tab.

2. Click **LLDP**. The Port Configuration dialog box - LLDP Tab opens.

Figure 17: Port Configuration Dialog Box - LLDP Tab



The following table provides a list of the fields in the LLDP tab of the Port Configuration dialog box and their descriptions:

Table 16: Port Configuration Dialog Box - LLDP Tab Parameters

Field	Description
LLDP Admin Status	The status of LLDP mode on the device. Possible values are: • **Tx Only** - LLDP mode is enabled, and is configured to only accept Tx traffic. • **Rx Only** - LLDP mode is enabled, and is configured to only accept Rx traffic. • **Tx and Rx** - LLDP mode is enabled and is configured to accept both Tx and Rx traffic. • **Disabled** - LLDP mode is disabled.
LLDP TLVs Transmission	
System Name	The system's network name. When checked, the system advertises its name to the network.
System Description	A brief description of the system (i.e., G250/G350/G450). When checked, this TLV is advertised.
System Capabilities	A brief description of the system's capabilities. When checked, this TLV is advertised.
Port Description	A brief description of the device port. When checked, this TLV is advertised.
	1 of 2

Table 16: Port Configuration Dialog Box - LLDP Tab Parameters (continued)

Field	Description
Management Addr	The device's management address. When checked, this TLV is advertised.
LLDP TLVs Reception	
Chassis Id	The received Chassis ID TLV.
Port Id	The received Port ID TLV of the device port.
Port Description	The received Port Description TLV of the device port.
System Name	The received System Name TLV associated with the Chassis ID.
System Description	The received System Description TLV associated with the Chassis ID.
System Capabilities	The received System Capabilities TLV associated with the Chassis ID.
Management Address	The received IP Management Address TLV associated with the Chassis ID.
	2 of 2

Configuring the External Modem

You can configure and view information specific to an external modem connected via the Console or USB ports using the L2 Device Manager dialog box. These ports are context sensitive, and the Modem tab for each port is distinct.

Note:

To configure a dial-up modem, refer to "Configuring the Dialer" on page 46.

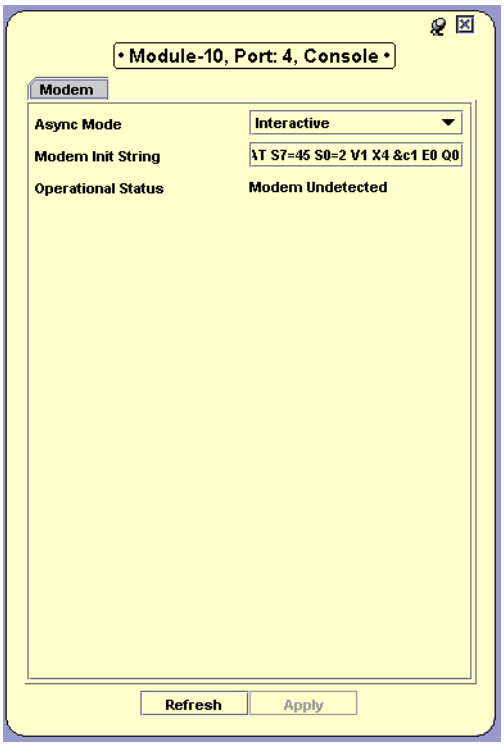
To view the L2 Device Manager for the Console port:

In the Chassis View, click the Console icon.

Or

In the Tree View, click the Console icon. The L2 Device Manager for the Console port opens.

Figure 18: L2 Device Manager - Console Port



The following table provides a list of the fields in the L2 Device Manager for the Console port.

Table 17: L2 Device Manager - Console Port

Field	Description
Asynch Mode	The interface admin status of the console port. Possible values include: • Interactive - the admin status is active. • **Terminal** - the admin status is inactive.
Modem Init String	The string used to initialize the external modem.
	1 of 2

Table 17: L2 Device Manager - Console Port (continued)

Field	Description
Connection Speed	The connection speed of the modem. **Note:** This field is only visible when a modem is connected.
Operational Status	The operational status of the external modem. Possible states include: • **Modem Undetected** - no modem is detected. • **Modem Ready** - the modem is ready. • **Modem Connected Dial-In** - the modem detected in a dial-in modem. • **Modem Connected Dial-Out** - the modem detected a dial-out modem.
	2 of 2

To view the L2 Device manager for a USB port:

In the Chassis View, click a USB icon.

Or

In the Tree View, click a USB icon. The L2 Device Manager for the USB port opens.

Figure 19: G250/G350 L2 Device Manager Dialog Box - USB Port

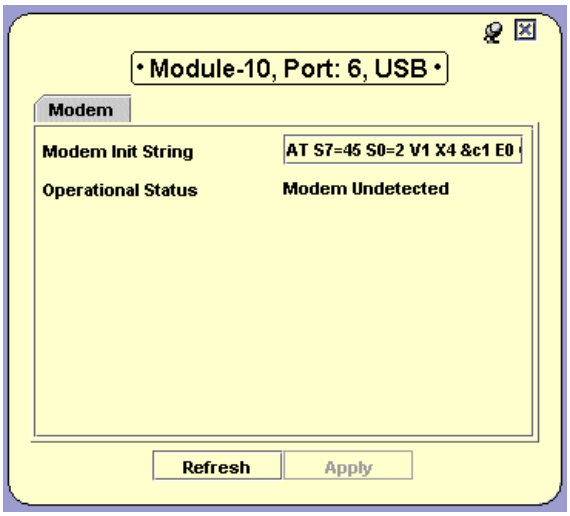
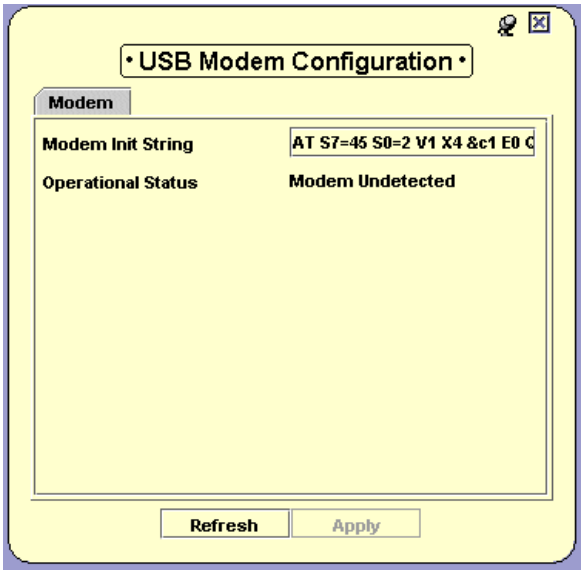


Figure 20: G450 L2 Device Manager Dialog Box - USB Port



Note:

The Avaya G450 Media Gateway has two USB ports. However, the Avaya G450 Manager cannot identify on which of the ports a modem is connected. Therefore, when you click either of the ports, you can configure a modem connected to either of the ports.

The following table provides a list of the fields in the L2 Device Manager for the USB port.

Table 18: L2 Device Manager Dialog Box - USB Port Parameters

Field	Description
Modem Init String	The string used to initialize the external modem.
Connection Speed	The connection speed of the modem. **Note:** This field is only visible when a modem is connected.
Operational Status	The operational status of the external modem. Possible states include: • **Modem Undetected** - no modem is detected. • **Modem Ready** - the modem is ready. • **Modem Connected Dial-In** - the modem detected in a dial-in modem. • **Modem Connected Dial-Out** - the modem detected a dial-out modem.

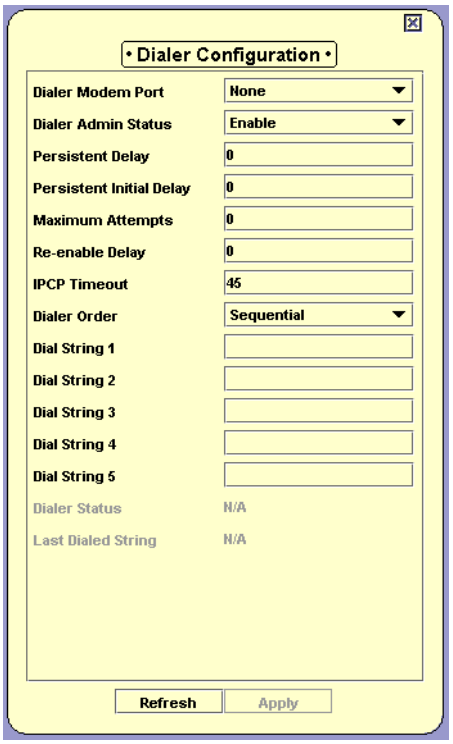
Configuring the Dialer

You can configure an external dial-up modem attached to the device using the Dialer Configuration dialog box.

To view the Dialer:

Select **Configure > Dialer**.

Figure 21: Dialer Configuration Dialog Box



The following table provides a list of the fields in the Dialer Configuration dialog box.

Table 19: Dialer Configuration Parameters

Field	Description
Dialer Modem Port	The port through which the dialer operates. Possible values include: • **Console** • **USB** • **None** Selecting Console or USB will automatically create the “Dialer PPP” interface.
	1 of 3

Table 19: Dialer Configuration Parameters (continued)

Field	Description
Dialer Admin Status	The admin status of the dialer. Possible values include: • **Enable** • **Disable**
Persistent Delay	The number of seconds the dialer waits, after an error disrupts the system, before attempting the reestablish a connection. The default value is 0.
Persistent Initial Delay	The number of seconds the dialer waits, after the system is configured or rebooted, before attempting to establish a connection. The default value is 0.
Maximum Attempts	The maximum number of connection attempts the dialer will make after an error has disrupted the system. The default value is 0.
Re-enable Delay	The amount of time the dialer will wait before re-enabling. The default value is 0.
IPCP Timeout	The number of seconds the dialer waits for a reply before considering the request a failure. The default value is 45.
Dialer Order	The order the dialer attempts its connection in. Possible values are: • **Sequential** - the dialer attempts each dial string in sequential order. • **Round Robin** - the dialer attempts each dial string in random order. • **Last Successful** - the dialer attempts the last dial string with which it made a successful connection.
Dial String 1	A string the dialer is instructed to dial.
Dial String 2	A string the dialer is instructed to dial.
Dial String 3	A string the dialer is instructed to dial.
Dial String 4	A string the dialer is instructed to dial.
Dial String 5	A string the dialer is instructed to dial.
	2 of 3

Table 19: Dialer Configuration Parameters (continued)

Field	Description
Dialer Status	The status of the dialer. Possible values include: • **Init Modem** • **Idle** • **Waiting for Modem** • **Max Attempts Disabled** • **Pre Dial Reset** • **Wait for Connect** • **Wait for DCD** • **Hang Up** • **Persistent Delay** • **Wait for IPCP** • **Connected**
Last Dialed String	The last string to which the dialer attempted to connect.
	3 of 3

Resetting the Device

You can reset the entire Avaya G250/G350/G450 Device, or one or more of its individual modules.

To reset the entire Avaya G250/G350/G450 Device:

1. Select **Action > Reset Device**. A confirmation dialog box opens.
2. Click **Yes**. The device resets.

To reset an individual Avaya G250/G350/G450 Media Module:

1. Click the label of the Media Module you want to reset.

   To select multiple modules, press **CTRL** while clicking additional module labels.
2. Select **Actions > Reset Media Module(s)**. A confirmation dialog box opens.
3. Click **Yes**. The selected Media Module resets.

To reset an external modem (Console or USB):

1. Click the label of the modem you want to reset.
2. Select **Actions > Reset Modem**. A confirmation dialog box opens.
3. Click **Yes**. The selected modem resets.

Chapter 4: Power over Ethernet

This chapter provides information about Power over Ethernet (PoE) and includes the following sections:

- PoE Overview - An overview of Power over Ethernet functionality in Avaya G250/G350 devices.
- Viewing PoE Information - Information about viewing PoE port information and configuring PoE on a module and port level.

Note:

The Avaya G450 Device does not provide support for PoE.

PoE Overview

PoE provides power to IP telephones over an Ethernet line. The power is transmitted via the device's ports to the IP telephones over the same cable carrying IP packets.

The Avaya G250/G350 Device automatically discovers the connection and removal of IP telephones from the in-line powered ports and provides power accordingly.

The Avaya G250/G350 Device provides power using an internal power supply over a 48 volt feed.

In addition, you can configure power priorities per port ensuring that important equipment is guaranteed power whenever necessary.

Viewing PoE Information

This section provides information about viewing port information and configuring PoE on the port and module level, and includes the following:

- Viewing PoE Port Information
- Viewing PoE Configuration

Viewing PoE Port Information

The Chassis View provides immediate information about PoE. Ports that are currently supplying power to IP telephones are labeled with the  icon.

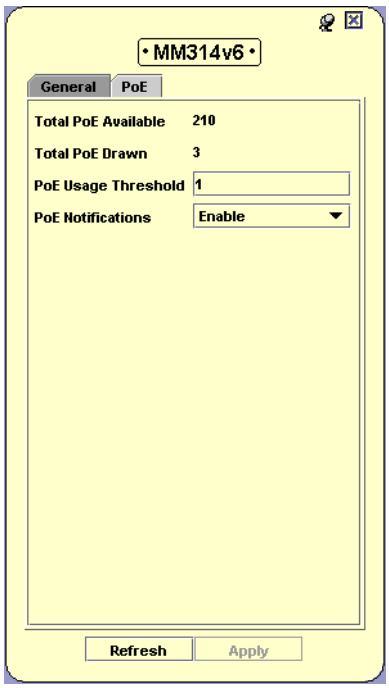
Viewing PoE Configuration

You can view PoE configuration information on the module and port levels.

PoE Module Configuration

To view the PoE configuration on a module that supports PoE, select the **Power** tab in the module's configuration dialog box. For information on opening the Module Configuration dialog box, refer to "Viewing Module Configuration" on page 45.

Figure 22: Module Configuration - Power Tab



The following table provides a list of the fields in the **Power** tab of the Module Configuration dialog box and their descriptions:

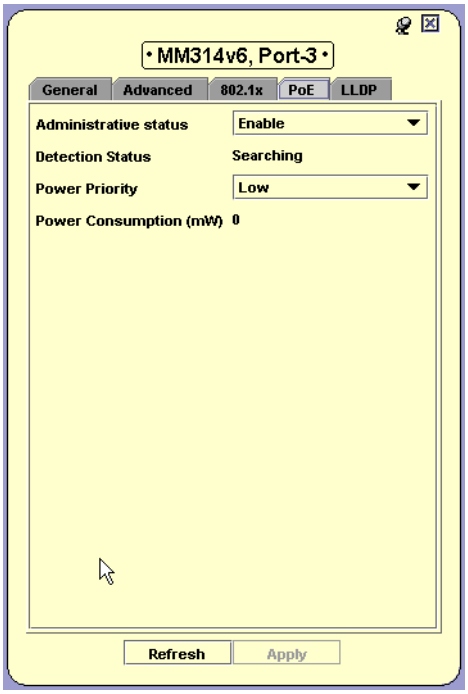
Table 20: Module Configuration - Power Fields

Field	Description
Total PoE Available	Power available to distribute to devices connected to this module.
Total PoE Drawn	Total power currently distributed to devices connected to this module.
PoE Usage Threshold	Percentage of total available power currently distributed to devices connected to this module.
PoE Notifications	When checked, PoE notifications are available at the module level.

PoE Port Configuration

To view the PoE configuration on a port that supports PoE, select the **Power** tab in the port's configuration dialog box. For more information on opening the Port Configuration dialog box, refer to "Viewing Port Configuration" on page 48.

Figure 23: Port Configuration - Power Tab



The following table provides a list of the fields in the **Power** tab of the Module Configuration dialog box and their descriptions:

Table 21: Port Configuration - Power Fields

Field	Description
Administrative Status	The administrative state of the port in terms of power management. Possible states include: • **Enable** - This port can supply power to IP telephones. • **Disable** - This port cannot supply power to IP telephones.
Detection Status	The operational status of port power detection. Possible states include: • **Searching** - This port is currently being polled. • **Delivering Power** - This port is supplying power to an IP telephone. • **Fault** - This port is currently not supplying power to an IP telephone due to a fault condition on the port. • **Disabled** - This port is currently not configured to supply power to an IP telephone. • **Test** - This port is being tested for its ability to deliver power. • **Other Fault** - This port is currently not delivering power to an IP telephone due to a fault condition other than on the port.
Power Priority	The priority of the port in terms of power management. When the demand for power exceeds the modules capacity, ports with lower priority will be prevented from supplying power before ports with a higher priority. Possible priorities include: • **Critical** • **High** • **Low**
Power Consumption (mW)	The power consumption of the port in milliwatts.

Chapter 5: Media Gateway Functions

This chapter provides information about the Avaya G250/G350/G450's Media Gateway functionality and includes the following sections:

- Viewing Media Gateway Configuration - An overview of Media Gateway functionality in Avaya G250/G350/G450 Devices.
- Media Gateway Configuration - Information about viewing and configuring Media Gateway components.
- Avaya Site Administration - Information about Avaya's gatekeeper software.

Media Gateway Overview

The Media Gateway is a family of components, which can deliver data, voice, fax, and messaging capabilities over an IP network. It is a VoIP system that acts as an IP PBX and messaging server and a VoIP gateway. In addition, it performs the function of a gatekeeper and an IP media management resource for tone detection and generation, conferencing, and call classification.

The Media Gateway components are controlled through the Media Gateway Processor (MGP). The MGP detects when a media module is inserted or removed and transfers information from the VoIP engine to the other components.

The Avaya G250/G350/G450's Media Gateway converges the power of Avaya Call Processing (ACP) software with the power of distributed switching from the Avaya G250/G350/G450 Device. It provides IP PBX functionality using open standards and an open operating system. The device connects to ACP using either an internal or external call controller. The ACP serves as the Avaya G250/G350/G450 Device's gatekeeper.

Media Gateway Configuration

This section describes how to view and set the various configuration parameters relevant to the G250/G350/G450 Media Gateway. It includes the following sections:

- Media Gateway Configuration - View information specific to a G250/G350/G450 Media Gateway module in the device.
- Viewing Media Module Configuration - View information specific to a Media Module in the device.

Viewing Media Gateway Configuration

The Media Gateway Configuration dialog box provides you with information about a selected module.

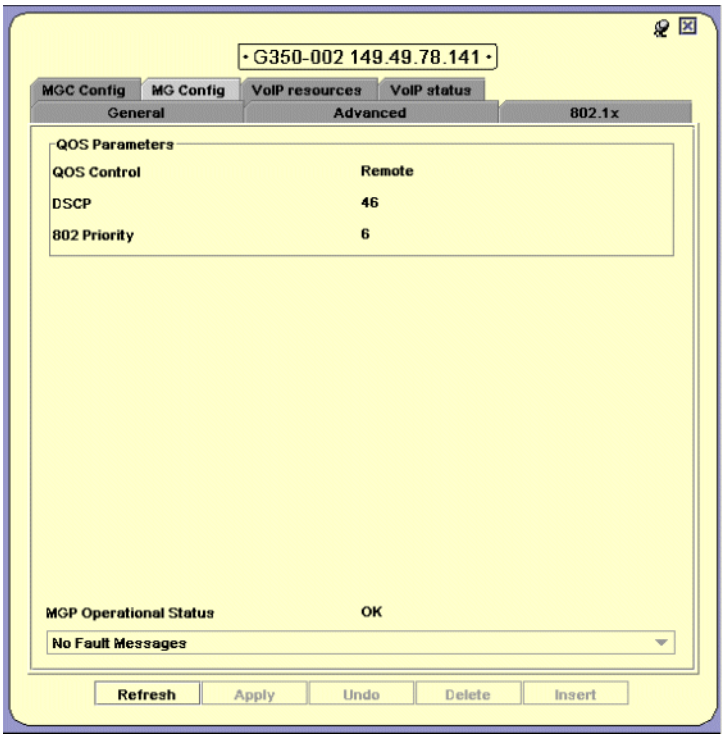
To view the configuration of the Media Gateway:

1. Select **Configure > Device Configuration**. The Device Manager dialog box opens.
2. Select the **MG Config** tab. The MG Config dialog box opens.

MG Config

The **MG Config** tab provides information about the Media Gateway QoS parameters.

Figure 24: MG Config Tab



The following table lists the fields in the MG Config tab of the Module Configuration dialog box and their descriptions.

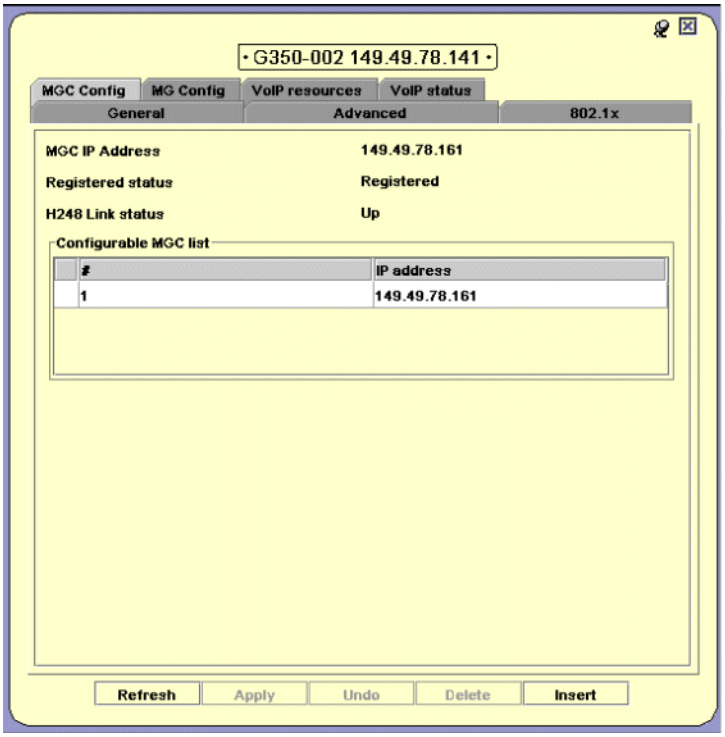
Table 22: MG Config Parameters

Field	Description
QOS Control	The source of QoS control. This parameter can only be changed via the CLI. Possible values are: • **Local** - The processor is using the local QoS parameters. The 802 priority and DSCP fields can be configured. • **Remote** - The processor is receiving QoS parameters from a remote Media Gateway. All QoS parameters are read only.
DSCP	Priority based on a technology by which packets are marked in the IP header Type of Service (ToS) byte as belonging to a specific class. Possible values are **0 - 63**.
802 Priority	Priority based on the 802.1p standard, which assigns rights and privileges to users on a telephony network. Possible values are **0 - 7**.
Operational Status	Operational Status of the Media Gateway. Possible values are: • **OK** - Media Gateway is operating properly. • **Fatal** - Media Gateway is down.
Fault Messages	A list of fault messages.

MGC Config

The **MGC Config** tab provides information about the Media Gateway Controller's settings, IP address, and registration information.

Figure 25: MGC Config Tab



The MGC registers with the Media Gateway, after which it receives its IP address from the Media Gateway. After you register, the **H.248 Link Status** changes to **Up**, and an IP address appears.

The following table lists the MGC IP Settings fields and their descriptions.

Table 23: MGC Config - MGC IP Settings Parameters

Field	Description
MGC IP Address	The IP address of the call controller serving the media gateway.
Registered status	Shows whether this media gateway is currently registered with any call controller.
H248 Link status	Status of the link connecting the media gateway to the active call controller.
Configurable MGC list	A list of Media Gateway Controllers accessible to the G250/G350/ G450 Device and their associated IP addresses.

Viewing Media Module Configuration

The Media Module Configuration dialog box enables you to view the hardware and firmware information for a specific Media Module, and its operational status.

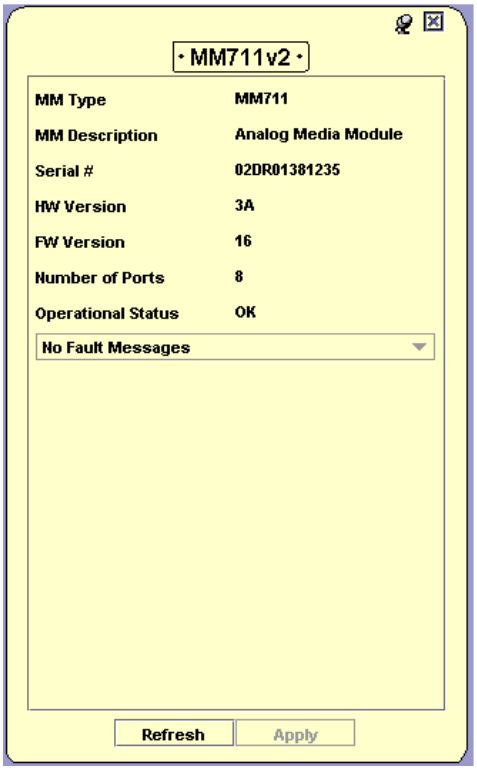
To view configuration for a selected Media Module:

In Configuration Mode, click the Media Module symbol in the Tree View.

Or

Click the Media Module's label in the Chassis View. The Media Module Configuration dialog box opens.

Figure 26: Media Module Configuration Dialog Box



The following table lists the fields in the Media Module Configuration dialog box and their description.

Table 24: Media Module Configuration Parameters

Field	Description
MM Type	The type of Media Module.
MM Description	An optional description of the specific Media Module.
Serial #	The serial number of the Media Module.
HW Version	The version of the Media Module's hardware.
FW Version	The firmware version of the Media Module.
Number of Ports	The number of ports on the Media Module.
Operational Status	The operational status of the Media Module. Possible values are: • **OK** - The Media Module is operating normally. • **Down** - The Media Module is down due to a fault. • **Fatal** - The Media Module is down due to a fatal error.
Fault Messages	A list of fault messages.

Avaya Site Administration

Avaya Site Administration (ASA) is an administration tool for Avaya Call Processing call control software. ASA is used to configure the current MGC or an individual voice port.

To launch ASA on an MGC or voice port:

1. Click the MGC or voice port in the Tree View or Chassis View.
2. Click  .

   Or

   Select **Action > Administer Station/Gateway**. ASA opens with the configuration form of the selected MGC or voice port.

If you have a registered call controller MM installed in your Avaya G250/G350/G450 Media Gateway, you can launch ASA on the call controller.

To launch ASA on a registered call controller Media Module:

1. Select the registered call controller Media Module.
2. Select **Tools > Administer Call Controller**. ASA opens on the selected call controller.

For more information about ASA, refer to Definity Enterprise Management documentation.

Chapter 6: VoIP Engine Configuration

This chapter provides information and instructions for viewing and configuring the VoIP Engine features. It includes the following sections:

- VoIP Overview - An overview of VoIP Engine functionality within the Media Gateway.
- VoIP Resources - Instructions for viewing and configuring VoIP Engine Parameters.
- VoIP Status - Instructions for determining operational status of the VoIP Engine.

VoIP Overview

The VoIP Engine translates information between different VoIP and data protocols. The Media Gateway comes with an internal VoIP engine that supports up to 32 simultaneous sessions. Each media gateway supports different numbers of channels.

You can view information and configure parameters for the VoIP Engine using the VoIP Engine dialog box.

To view the VoIP Engine dialog box:

Select **View > Configure.** The Device Manager dialog box opens.

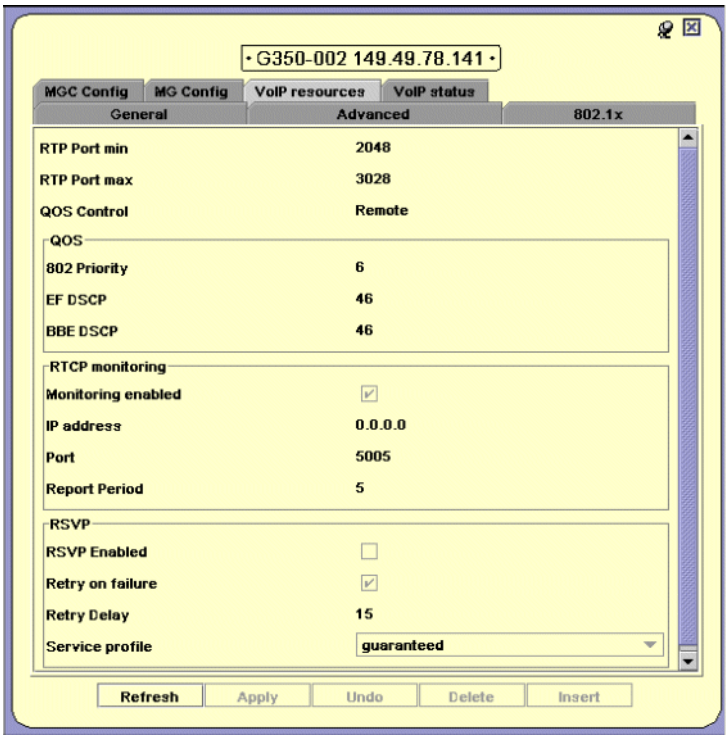
In the Device Manager dialog box, there are two tabs for managing the VoIP engine:

- VoIP Resources - Administrative parameters common to all VoIP engines.
- VoIP Status - Operating Status for a selected VoIP engine.

VoIP Resources

The **VoIP resources** tab provides administration parameters common to all VoIP engines, such as QoS parameters, RTCP configuration, and RSVP configuration.

Figure 27: VoIP resources Tab



General

The upper section of this dialog box displays general information common to all VoIP engines.

The following table lists the general fields in the **VoIP resources** tab of the VoIP Engine dialog box and their description.

Table 25: VoIP resources - General Parameters

Field	Description
RTP Port min	The minimum range of UDP ports assigned by the call controller for RTP traffic. The value ranges between **1 - 65534**.
RTP Port max	The maximum range of UDP ports assigned by the call controller for RTP traffic. The value ranges between **3 - 65535**.
	1 of 2

Table 25: VoIP resources - General Parameters (continued)

Field	Description
QOS Control	The source of QoS control. This parameter can only be changed via the CLI. Possible values are: • **Local** - The processor uses the local QoS parameters. If the processor is using the local QoS parameters, the **802 Priority**, **EF DSCP**, and **BBE DSCP** fields can be configured. • **Remote** - The processor receives its QoS parameters from the Media Gateway Controller. All QoS parameters are read-only.
	2 of 2

QoS

QoS can be controlled either locally or remotely. If control is local, it is possible to configure QoS, RTCP, and RSVP parameters. If control is remote, QoS parameters are determined by the MGC.

The following table lists the QoS fields and their descriptions.

Table 26: VoIP resources - QoS Parameters

Field	Description
802 Priority	Priority based on a CoS standard which assigns rights and privileges to users of a telephony network. Possible values are **0 - 7**.
EF DSCP	A type of differentiated service used to provide guaranteed bandwidth across a network. If sufficient bandwidth is available, the Expedited Forwarding class can be used. The values range are **0 - 63**.
BBE DSCP	A DiffServ class which is used per call to achieve the greatest possible bandwidth. The values range between **0 - 63**.

RTCP Monitoring

RTCP is an IP protocol that is used to monitor the quality of RTP packets. Quality is measured in terms of delay, jitter, and packet loss. If RTCP monitoring is enabled, the VoIP engines send RTCP packets to the RTCP monitor. You must configure an IP address for the RTCP monitor, and determine intervals at which the RTCP data is checked.

The following table lists the RTCP monitoring fields and their descriptions.

Table 27: VoIP resources - RTCP monitoring Parameters

Field	Description
Monitoring enabled	The status of RTCP monitoring. • **Checked** - RTCP monitoring is enabled. • **Unchecked** - RTCP monitoring is disabled.
IP address	The IP address of the RTCP monitor.
Port	The port monitored by RTCP.
Report Period	The interval for RTCP reports.

RSVP

RSVP is a protocol that signals the router to reserve bandwidth. If RSVP is enabled, the Media Gateway tries to reserve a specific amount of bandwidth per call session. If this fails, the Media Gateway tries to reallocate the bandwidth during the call session.

The following table lists the RSVP fields and their description.

Table 28: VoIP resources - RSVP Parameters

Field	Description
RSVP Enabled	The Status of RSVP usage. • **Checked** - The Media Gateway will try to reserve bandwidth per call. If it fails, the Media Gateway will try again during the call. • **Unchecked** - RSVP is not enabled.
Retry on failure	The action the VoIP engine takes after an RSVP request fails. • **Checked** - The VoIP engine resends a RSVP request if the first attempt failed. • **Unchecked** - The VoIP Engine drops the RSVP request, and the **Retry Delay** field is ignored.
Retry Delay	The interval the VoIP Engine waits after a failed RSVP request before sending the new request. The interval ranges between **0.5 - 60** seconds.
Service profile	The type of service being provided.

VoIP Status

The **VoIP status** tab provides information about a specific engine's operational status, jitter buffer size, and number of sessions open.

For Avaya G450 Devices, the VoIP status tab also provides the **VoIP DSP Core Status** table. This table displays information about the VoIP DSP Cores in the DSP media resource cards for the VoIP engine selected in the **VoIP Status** table.

Figure 28: VoIP Status Tab - G250/G350

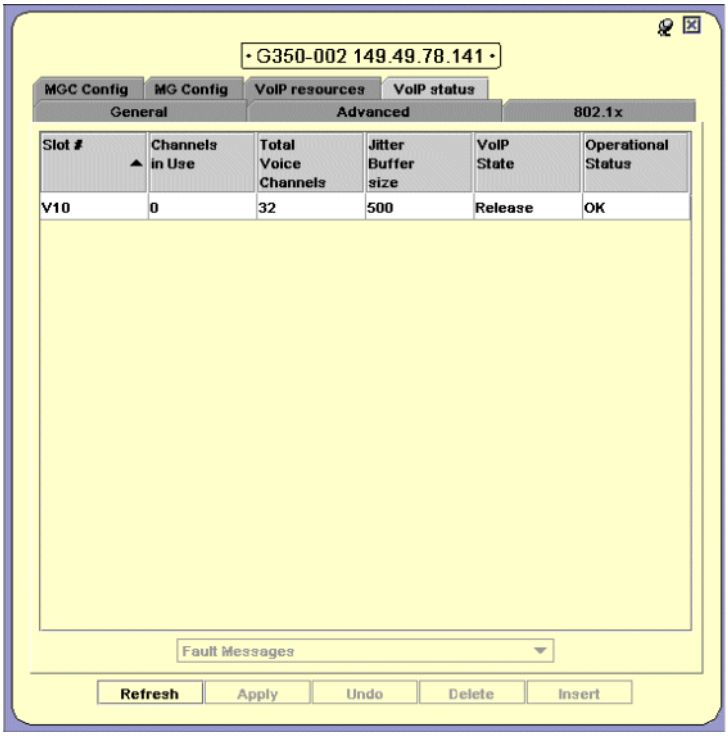
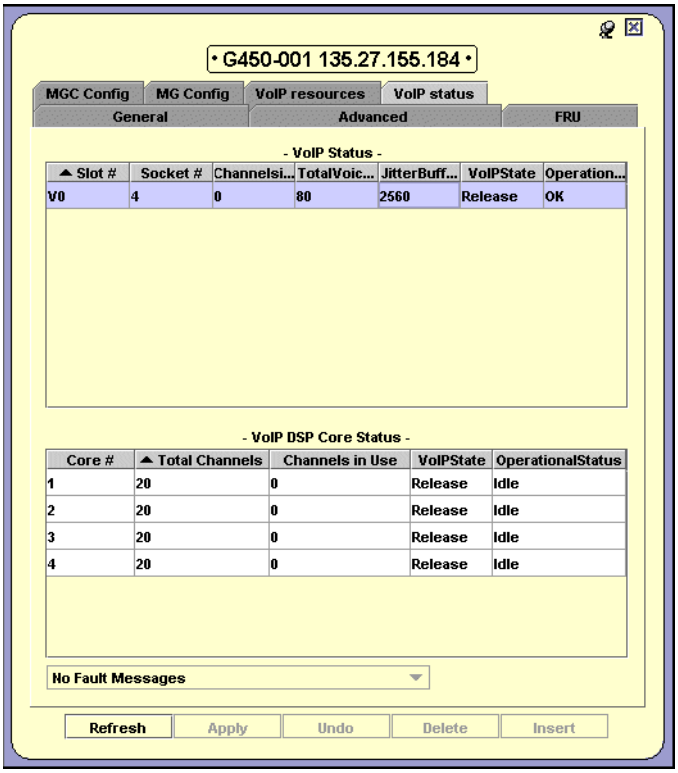


Figure 29: VoIP Status Tab - G450



The information in the **VoIP Status** tab is provided by the VoIP engine and is refreshed periodically.

The following table lists the fields in the **VoIP Status** tab and their descriptions.

Table 29: VoIP Status Parameters

Field	Description
Slot #	The slot in which the VoIP engine resides.
Socket #	The socket number of the VoIP engine (relevant only for the Avaya G450 Device).
Channels in Use	The number of channels currently being used.
Total Voice Channels	The total number of voice channels available.
Jitter Buffer size	The jitter buffer is a temporary storage area built into the receiver of each gateway. It uses a mechanism to remove the random delays between packets, which occur as the packets are routed through the network.
	1 of 2

Table 29: VoIP Status Parameters (continued)

Field	Description
VoIP State	The administrative state of the DSP core (read only). Possible values are: • **Busy Out** • **Release** • **Camp-On Busy Out** • **Unknown**
Operational Status	The operational status of the VoIP engine.
	2 of 2

The following table lists the fields in the **VoIP DSP Core Status** table and their descriptions.

Table 30: VoIP DSP Cores Status Parameters

Field	Description
Core #	The identification number of the DSP core in the selected DSP VoIP engine.
Total Channels	The total number of available DSP core channels.
Channels in Use	The number of channels currently in use in the DSP core.
VoIP State	The administrative state of the DSP core (read only). Possible values are: • **Busy Out** • **Release** • **Camp-On Busy Out** • **Unknown**
Operational Status	The operational status of the DSP core.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Chapter 7: WAN Configuration

This chapter provides information about configuring Avaya WAN Modules and includes the following sections:

- WAN Overview - An overview of WAN functionality in Avaya G250/G350/G450 Devices.
- WAN Module Configuration - Information about viewing and configuring WAN functions on Avaya G250/G350/G450 Devices.
- E1/T1 Port Configuration - Information about viewing and configuring E1/T1 ports in WAN Modules.
- Ethernet LAN Port Configuration - Information about viewing and configuring built-in Ethernet LAN ports on Avaya G250/G350/G450 Devices.
- Ethernet WAN Port Configuration - Information about viewing and configuring built-in Ethernet WAN ports on Avaya G250/G350/G450 Devices.
- Viewing Channel Group Information - Information about viewing and configuring channel groups on E1/T1 ports.
- Managing Channel Groups - Information about managing channel groups on E1/T1 ports.
- USP Configuration - Information about viewing and configuring the Universal Serial ports (USPs) on a WAN Expansion Module.
- Configuring the ETR Port - Information about viewing and configuring the ETR port.
- The Services Interface - Information about the Services port.
- Configuring Backup Interfaces - Information about viewing and configuring Backup interfaces.

WAN Overview

WAN Modules add WAN connectivity to the Avaya G250/G350/G450 Device. WAN connectivity provides a link to the WAN, enabling heavy data transfer over long distances. A WAN connection can connect branch offices to headquarters. In addition, WAN connectivity is essential for providing access to the Internet.

WAN Module Configuration

The WAN Module Configuration dialog box provides you with information specific to a selected WAN module.

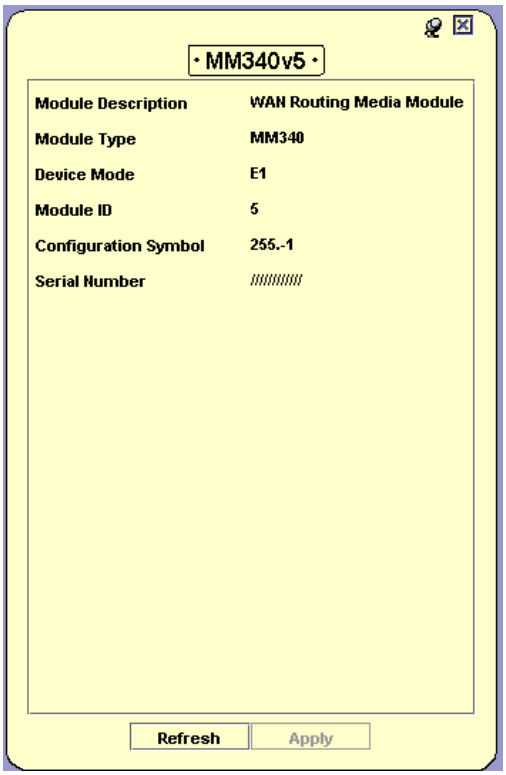
To view the configuration of a module:

Click the module symbol in the Tree View.

Or

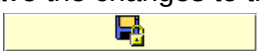
Click the module's label in the Chassis View. The Module Configuration dialog box opens.

Figure 30: Module Configuration Dialog Box



The Module Configuration dialog box provides detailed information about the module, such as the module's description, type, ID, and serial number. Exact fields vary based on the module selected.

To apply changes to the WAN module configuration, click **Apply**.

To save the changes to the WAN module configuration to the startup configuration, click  on the Toolbar. The configuration changes are saved.

Note:

WAN Modules MM340 and MM342 can be installed in the Avaya G450 in slots 3,4, and 8 and in any slot in the Avaya G250/G350.

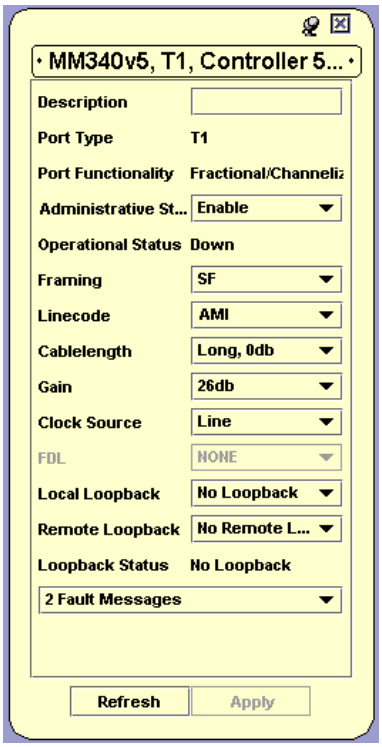
E1/T1 Port Configuration

In addition to the Ethernet ports found on an Avaya G250/G350/G450 Device, the WAN module may have E1/T1 ports. This section provides information on viewing and configuring E1/T1 port parameters.

To display the E1/T1 Port Configuration dialog box:

Click the E1/T1 port's symbol in the Chassis View or the Tree View. The E1/T1 Port Configuration dialog box opens.

Figure 31: E1/T1 Port Configuration Dialog Box



The E1/T1 port is used to connect to an E1 or T1 line. The E1/T1 Port Configuration dialog box provides configuration and status information about the E1/T1 port.

The following table lists the E1/T1 Port Configuration fields and their descriptions:

Table 31: E1/T1 Port Configuration Parameters

Field	Description
Description	A user-created text string describing the E1/T1 port. This field is optional.
Port Type	The type of E1/T1 port. Possible values are: • **E1** - For E1 and ISDN lines with 32 available channels. • **T1** - For T1 lines with 24 available channels.
Port Functionality	The type of E1 or T1 circuit. Possible values are: • **Fractional/Channelized** - The circuit is divided into logical channels that can be grouped together. • **Full** - The circuit is considered a single logical channel.
Administrative Status	The state of the selected port. Possible values are: • **Enable** - The port is enabled and can transmit and receive packets. • **Disable** - The port is disabled and cannot transmit or receive packets.
Operational Status	The operational status of the port. Possible values are: • **Up** - The port is operating normally. • **Down** - The port is down due to a fault. • **Fatal** - The port is down due to a fatal error.
Framing	The type of framing. For an E1 line: • **CRC4** • **no-CRC4** • **Unframed** **Note:** If **Unframed** is selected, all channels are used for an unframed Channel Group, and the **Advanced** tab does not appear in the Channel Group dialog box. For a T1 line: • **ESF** • **SF**
Linecode	The type of linecode. Possible values are: For an E1 line: • **HDB3** • **AMI** For a T1 line: • **B8ZS** • **AMI**
	1 of 2

Table 31: E1/T1 Port Configuration Parameters (continued)

Field	Description
Cablelength (T1 only)	The recommended maximum cable length.
Gain (T1 only)	The gain on this interface. Gain represents the level of signal boost required to transmit across the circuit at the maximum cable length.
Clock Source	The source of the Transmit Clock. Possible sources include: • **Line** - The recovered receive clock is used as the transmit clock. • **Internal** - The local clock is used as the transmit clock.
FDL (T1 only)	The type of FDL used on this interface. Possible types include: • **ANSI** • **AT&T** • **Both** - ANSI and AT&T FDL are both used on this interface. • **None** - FDL is not used on this circuit.
Local Loopback	A request to use a local loopback. A local loopback can be performed using: • **No Loopback** • **Payload Loopback** • **Line Loopback** • **Diag Loopback**
Remote Loopback (T1 only)	A request to use a remote loopback. A remote loopback can be performed using: • **No Remote Loopback** • **Remote Line** • **Reset Remote Loopback**
Loopback Status	The type of loopback currently used by the port. Possible values are: • **No Loopback** • **Near End Payload** • **Near End Line** • **Near End Inward** • **Far End Payload** • **Far End Line**
Fault Messages	Any faults that occurred on the port.
	2 of 2

Ethernet LAN Port Configuration

This section provides information on viewing and configuring parameters for the built-in Ethernet LAN port of the Avaya G250/G350 Device (the Avaya G450 Device has two LAN ports). The Ethernet LAN port can be used to connect to the campus switched backbone network or to an end-user device.

To display the Ethernet LAN Port Configuration dialog box:

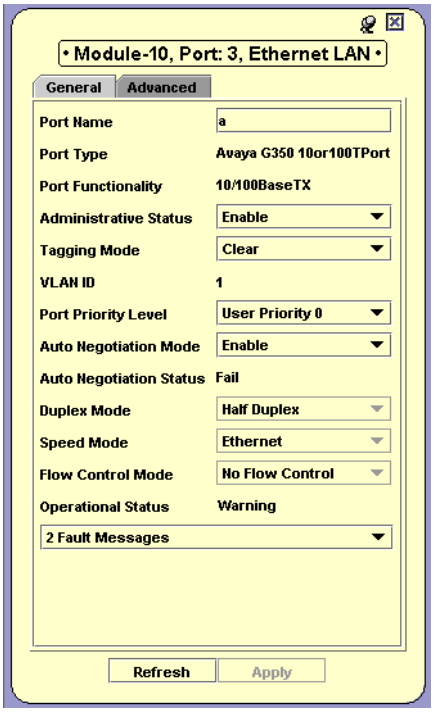
Click the Ethernet LAN port's symbol in the Chassis View or the Tree View. The Ethernet LAN Port Configuration dialog box opens, displaying two tabs:

- Ethernet LAN Port Configuration - General Tab
- Ethernet LAN Port Configuration - Advanced Tab

Ethernet LAN Port Configuration - General Tab

The General tab of the Ethernet LAN Port Configuration dialog box enables you to set general functional parameters for the built-in Ethernet LAN port(s) on the Avaya G250/G350/G450 device. These parameters define how the port interfaces with the network in terms of VLAN assignment, speed, duplex and flow control.

Figure 32: Ethernet LAN Port Configuration Dialog Box - General Tab



The following table lists the fields in the Ethernet LAN Port Configuration - General tab and their descriptions:

Table 32: Ethernet LAN Port Configuration - General Tab

Field	Description
Port Name	The user can define a logical name to the port for ease of use.
Port Type	The port type; optionally includes reference to the module to which it is attached and port connector type.
Port Functionality	The physical media type of the selected port. If the port conforms to a certain standard (Repeater, Transceiver, 10BaseT, etc.), this standard is displayed. If the port does not conform to any standard, **Private** is displayed.
Administrative Status	The administrative state of the selected port: • **Enable** - The port is enabled and can transmit and receive packets. • **Disable** - The port is disabled and cannot transmit or receive packets.
Tagging Mode	The port's operational mode regarding VLANs. The possible modes are: • **Clear** - Transmits each outgoing packet in untagged format if it belongs to the port's VLAN. Otherwise, it discards the packet. • **IEEE-802.1Q** - VLAN tagging, per IEEE 802.1Q VLAN standard. The port will transmit frames with a VLAN ID of **1 - 3071** for Avaya G250/G350 Devices and **1 - 4090** for Avaya G450 Devices.
VLAN ID	The VLAN number of the port.
Port Priority Level	The priority level of packets exiting the port or ports on the module. For effective transmission, multimedia packets must be received at regular intervals. To ensure this, you can assign priorities to packets coming out of a port. Whenever traffic load is extreme and a port cannot accept all incoming packets, packets sent from a port with the highest priority will pass through first. However, a fairness mechanism will allow low priority packets to eventually enter the bus. Possible values are: **User Priority 0, User Priority 7**.
	1 of 2

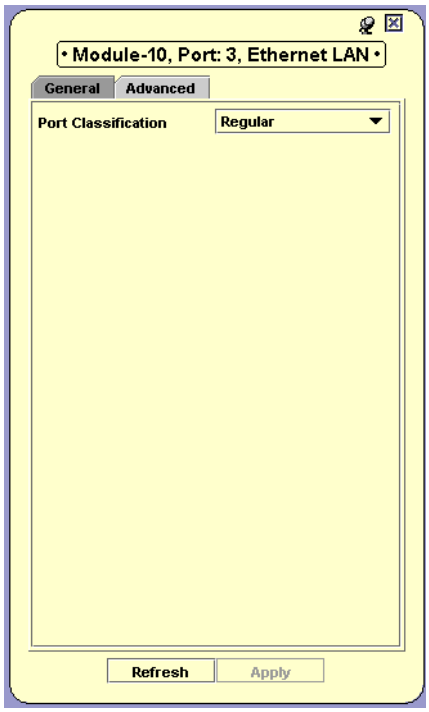
Table 32: Ethernet LAN Port Configuration - General Tab (continued)

Field	Description
Auto Negotiation Mode	The configured state of the Auto-Negotiation protocol between two stations. When enabled, Auto-Negotiation detects the highest common denominator for communication between endstations, and sets both to the same highest common setting. It also delivers remote link status. For 10BaseT and 100BaseT ports, Auto-Negotiation determines the speed and Duplex Mode of communication between the endstations. For Gigabit ports, Auto-Negotiation determines the Flow Control setting of the ports. For more information, refer to *Auto-Negotiation* in *The Reference Guide.*
Auto Negotiation Status	The operational state of the Auto-Negotiation protocol between two stations. Possible statuses are: • **Pass** - The Auto-Negotiation protocol is enabled and a common protocol has been established. • **In Progress** - The Auto-Negotiation protocol is in the process of detecting the communication capabilities of the endstations and setting them to the highest common denominator. • **Fail** - The Auto-Negotiation protocol was not able to detect the communication capabilities of the end station, or was unable to set them to the highest common denominator. • **Disabled** - The Auto-Negotiation protocol is disabled.
Duplex Mode	The state of communication of the selected port. Possible values are: • **Full Duplex**- The port can send and receive simultaneously. • **Half Duplex** - The port can either receive or send, but cannot do both simultaneously.
Speed Mode	The rate of communication of the selected port. Possible values are: • **Ethernet** • **Fast Ethernet** • **Gigabit Ethernet**
Flow Control Mode	The state of flow control on the selected port.
Operational Status	The warning level of the selected port. Possible values are: • **OK** • **Warning** • **Fatal**
Fault Messages	A list of fault messages.
	2 of 2

Ethernet LAN Port Configuration - Advanced Tab

The Advanced tab of the Ethernet LAN configuration dialog box enables you to define port classification for the built-in Ethernet LAN port(s) on the Avaya G250/G350/G450 Device. Port classification is used to identify the port as being connected to normal- or higher-priority users and devices.

Figure 33: Ethernet LAN Port Configuration Dialog Box - Advanced Tab



The following table lists the fields in the Ethernet LAN Port Configuration - Advanced tab, and their descriptions:

Table 33: Ethernet LAN Port Configuration - Advanced Tab

Field	Description
Port Classification	The classification of a specific port. Port Classification allows network managers to specify each port level's importance. The possible states are: • **Regular** - Normal users. • **Valuable** - Servers or critical users. For more information refer to *Port Classification* in *The Reference Guide*.

Ethernet WAN Port Configuration

This section provides information on viewing and configuring parameters for the built-in Ethernet WAN port of the Avaya G250/G350/G450 Device (the Avaya G450 Device has two WAN ports). Ethernet WAN ports are generally used to connect to an enterprise WAN or receive an Ethernet handoff from an Internet Service Provider.

To display the Ethernet WAN Port Configuration dialog box:

Click the Ethernet WAN port's symbol in the Chassis View or the Tree View.

The Ethernet WAN Port Configuration dialog box displays the following tabs:

- Ethernet WAN Port Configuration - General Tab
- Ethernet WAN Port Configuration - PPPoE Client Tab
- Ethernet WAN Port Configuration - DHCP Client Tab
- Ethernet WAN Port Configuration - Extended Keep Alive Tab

The tabs that are visible depend on the value for the Encapsulation parameter (this parameter can be viewed in the WAN Port Configuration tab but can only be changed via the CLI). The following table describes the WAN Port Configuration tab options:

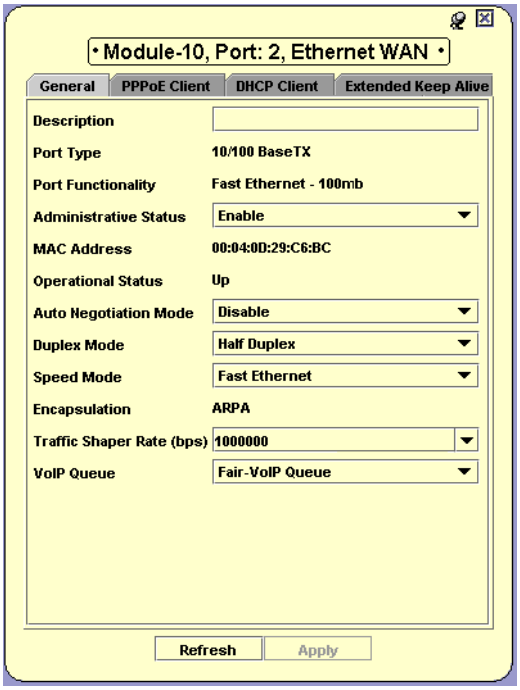
Table 34: WAN Port Configuration Tab Options

Encapsulation Value	Visible Tabs
ARPA	General, PPPoE, DHCP Client, Extended Keep Alive
PPoE	General, PPPoE

Ethernet WAN Port Configuration - General Tab

The General tab of the Ethernet WAN Configuration dialog box enables you to set general functional parameters for the built-in Ethernet WAN port. These parameters define how the port interfaces with the network in terms of speed, duplex, and Voice over IP (VoIP) queuing.

Figure 34: Ethernet WAN Port Configuration Dialog Box - General Tab



The following table lists the fields in the Ethernet WAN Port Configuration - General tab and their descriptions:

Table 35: Ethernet WAN Port Configuration - General Tab

Field	Description
Description	The user can define a logical name to the port for ease of use.
Port Type	The port type; optionally includes reference to the module to which it is attached and port connector type.
Port Functionality	The physical media type of the selected port. If the port conforms to a certain standard (Repeater, Transceiver, 10BaseT, etc.), this standard is displayed. If the port does not conform to any standard, Private is displayed.
	1 of 3

Table 35: Ethernet WAN Port Configuration - General Tab (continued)

Field	Description
Administrative Status	The administrative state of the selected port: • **Enable** - The port is enabled and can transmit and receive packets. • **Disable** - The port is disabled and cannot transmit or receive packets.
MAC Address	The MAC address of the WAN port.
Operational Status	The operational status of the WAN port. Possible values are: • **OK** • **Down** • **Fatal**
Auto Negotiation Mode	The configured state of the Auto-Negotiation protocol between two stations. When enabled, Auto-Negotiation detects the highest common denominator for communication between endstations, and sets both to the same highest common setting. It also delivers remote link status. For 10BaseT and 100BaseT ports, Auto-Negotiation determines the speed and Duplex Mode of communication between the endstations. For Gigabit ports, Auto-Negotiation determines the Flow Control setting of the ports. Possible values are: • **Enable** - Auto-Negotiation is enabled for this interface. • **Disable** - Auto-Negotiation is disabled for this interface. For more information, refer to *Auto-Negotiation* in *The Reference Guide.*
Duplex Mode	The state of communication of the selected port. Possible values are: • **Full Duplex** - The port can send and receive simultaneously. • **Half Duplex** - The port can either receive or send, but cannot do both simultaneously.
Speed Mode	The rate of communication of the selected port. Possible values are: • **Ethernet** • **Fast Ethernet** • **Gigabit Ethernet**
	2 of 3

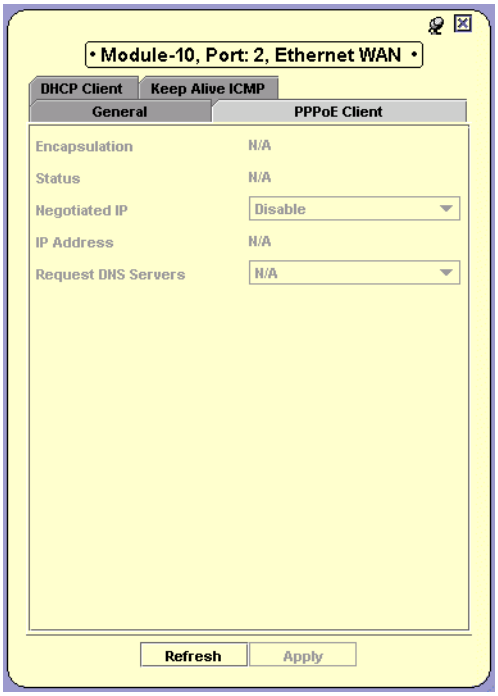
Table 35: Ethernet WAN Port Configuration - General Tab (continued)

Field	Description
Encapsulation	The WAN encapsulation method of the selected port. Possible values are: • **ARPA** - The port uses the ARPA protocol to establish a connection. • **PPPoE** - The port uses PPP over Ethernet to establish a connection. **Note:** This field is read-only.
Traffic Shaper Rate (bps)	Reserved bandwidth for VoIP traffic. Possible values are: • Integer values in the range **64000 - 2048000** • **Disable**
VoIP Queue	The state of VoIP queuing. VoIP queuing changes the length of the high priority queue providing support for the configuration of a maximum VoIP delay. Possible states include: • **On**- Standard VoIP queuing is active. • **Off** - VoIP queuing is not active. • **Fair-VoIP Queue** - VoIP fair queuing is active. **Note:** This option is not available when **Traffic Shaper Rate** is set to **Disable**.
	3 of 3

Ethernet WAN Port Configuration - PPPoE Client Tab

The PPPoE Client tab enables you to view configuration and status information for the PPPoE client available for the embedded Ethernet WAN port. PPPoE allows you to set up PPP WAN connections over long-haul Ethernet media.

Figure 35: Ethernet WAN Port Configuration Dialog Box - PPPoE Client Tab



The following table lists the fields in the Ethernet WAN Port Configuration - PPPoE Client tab and their descriptions:

Table 36: Ethernet WAN Port Configuration - PPPoE Client Tab

Field	Description
Encapsulation	The encapsulation method used for the PPPoE connection. Possible values are: • **PPP** • **N/A**
	1 of 2

Table 36: Ethernet WAN Port Configuration - PPPoE Client Tab (continued)

Field	Description
Status	The operational status of the PPPoE connection. Possible values are: ● **Up** - The interface is up and can transmit and receive packets. ● **Down** - The interface is down due to a fault and cannot transmit or receive packets. ● **Testing** - The interface is in testing mode and cannot transmit or receive regular data. ● **Partially Down** - The interface is up. However, some interfaces layered on top of this interface are Down. Some packets can be transmitted and received. ● **Admin Down** - The interface has been shut down in the device configuration and cannot transmit or receive packets. ● **Dormant Down** - The interface is down due to no packets being sent or received for a long period of time. For more information, refer to the *Administration for the Avaya G250 and Avaya G350 Media Gateways*. ● **KeepAlive Down** - The interface is down due to not having received a KeepAlive packet in the configured interval. For more information, refer to *Administration for the Avaya G250, Avaya G350, and Avaya G450 Media Gateways*. ● **N/A**
Negotiated IP	Enable/Disable PPP-IPCP IP address negotiation. When enabled, the WAN fast Ethernet interface receives an IP address from the remote peer.
IP Address	The IP address received from the remote peer during the IP negotiation phase.
Request DNS Servers	Whether to request DNS server information from the remote peer. Possible values are: ● **Enable** - Request DNS server information from the remote peer. ● **Disable** - Do not request DNS server information from the remote peer.
	2 of 2

Note:

If the **Encapsulation** field of the Ethernet WAN Port Configuration - General Tab is set to **ARPA**, the PPPoE client is not supported and returns a result of **N/A** in all fields of the Ethernet WAN Port Configuration - PPPoE Client Tab.

Note:

All fields in the Ethernet WAN Port Configuration - PPPoE Client tab are read-only except for **Negotiated IP** and **Request DNS Servers**.

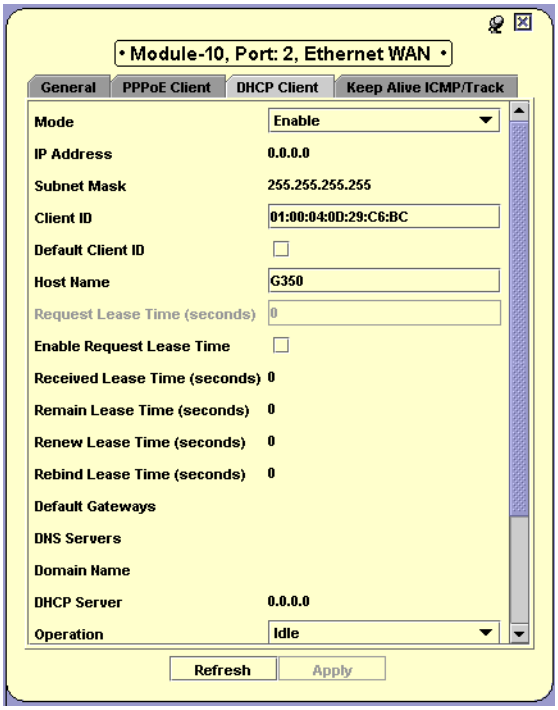
Ethernet WAN Port Configuration - DHCP Client Tab

The DHCP Client tab enables you to view configuration and status information for the DHCP client available for the embedded Ethernet WAN port.

Note:

The DHCP Client tab only appears if **Encapsulation** is set to **ARPA** in the Ethernet WAN Port Configuration - General Tab.

Figure 36: Ethernet WAN Port Configuration Dialog Box - DHCP Client Tab



The following table lists the fields in the Ethernet WAN Port Configuration - DHCP Client tab and their descriptions:

Table 37: Ethernet WAN Port Configuration - DHCP Client Tab

Field	Description
Mode	The row status for creating a new DHCP client on the VLAN or WAN fast ethernet connection. Possible values include: • **Enable** • **Disable**
IP Address	The IP Address allocated for the DHCP client.
	1 of 3

Table 37: Ethernet WAN Port Configuration - DHCP Client Tab (continued)

Field	Description
Subnet Mask	The subnet mask allocated for the DHCP client. The value of the mask is an IP address with all of its network bits set to **1** and all of its host bits set to **0**.
Client ID	The client identifier used by the DHCP client. This identifier can be up to 255 bytes.
Default Client ID	The default identifier used for manual leased DHCP clients. When checked, the client will use the default client identifier. The default client identifier is: **01:Inteface MAC Address**.
Host Name	The host name used by the DHCP client. The default value is **Default Host Name**.
Request Lease Time (seconds)	The finite lease time, in seconds, to be requested by the DHCP client. The default value is **0**.
Enable Request Lease Time	The status of the Request Lease Time option on the device. When checked, the client requests a finite amount of lease time.
Received Lease Time (seconds)	The lease time, in seconds, received by the DHCP client.
Remain Lease Time (seconds)	The lease time, in seconds, that remains for the DHCP client.
Renew Lease Time (seconds)	The time, in seconds, defined on the DHCP client for renewing a phase in seconds.
Rebind Lease Time (seconds)	The time, in seconds, defined on the DHCP client for rebinding a phase.
Default Gateways	The default gateways defined for the DHCP client. Up to 8 IP addresses can be defined as default gateways.
DNS Servers	The DNS servers defined for the DHCP clients. Up to 8 IP addresses can be defined as DNS servers.
Domain Name	The domain name designated for the DHCP client. This name can be up to 255B.
DHCP Server	The DHCP server that allocates the specific IP address to the DHCP client.
Operation	Instructs the client to perform **Release** or **Renew** operations.
	2 of 3

Table 37: Ethernet WAN Port Configuration - DHCP Client Tab (continued)

Field	Description
Status	Indicates the state of the DHCP client. Possible states include: • **Select** • **Request** • **Bound** • **Rebind** • **Renew** • **Release** • **Decline** • **Not Supported**
Request Default Router	Instructs the client to request a connection with the default router.
Request DNS Servers	Instructs the client to request a connection with a predefined DNS server.
Request Domain Name	Instructs the client to request a connection using a predefined domain name.
	3 of 3

Note:

If the **Encapsulation** field of the Ethernet WAN Port Configuration - General Tab is set to **ARPA**, the PPPoE client is not supported and returns a result of **N/A** in all fields of the Ethernet WAN Port Configuration - PPPoE Client Tab.

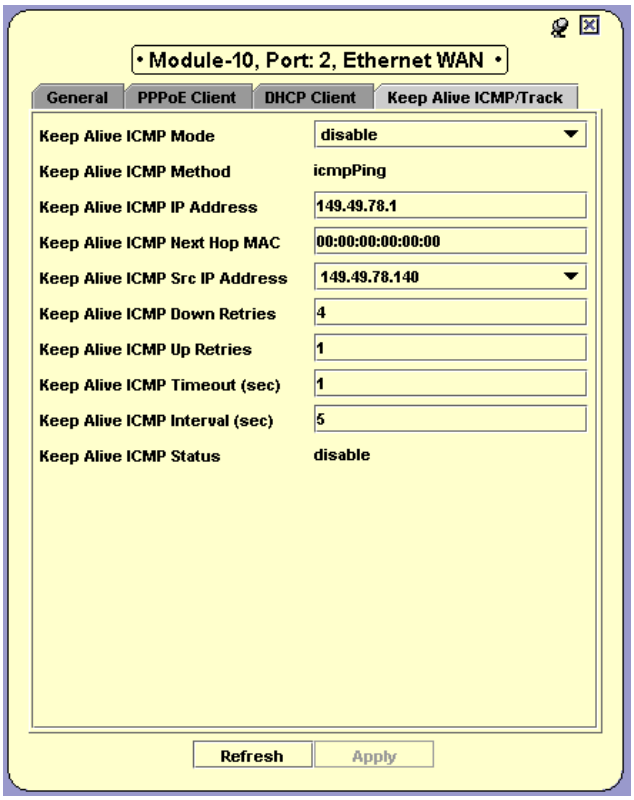
Note:

All fields in the Ethernet WAN Port Configuration - PPPoE Client tab are read-only.

Ethernet WAN Port Configuration - Extended Keep Alive Tab

The Extended Keep Alive tab of the Ethernet WAN Port Configuration dialog box enables you to set parameters for the Extended Keep Alive functionality of the Avaya G250/G350/G450 Device. Extended Keep Alive allows you to precisely tune network keep alive traffic to gain an accurate representation of your network's connection status.

Figure 37: Ethernet WAN Port Configuration Dialog Box - Extended Keep Alive Tab



The following table lists the fields in the Ethernet LAN Port Configuration - Extended Keep Alive tab, and their descriptions:

Table 38: Ethernet LAN Port Configuration - Advanced Tab

Field	Description
Keep Alive ICMP Mode	The keepalive operation mode. Possible values are: • **Enable** • **Disable**
	1 of 2

Table 38: Ethernet LAN Port Configuration - Advanced Tab (continued)

Field	Description
Keep Alive ICMP Method	The type of keepalive method used. Possible values are: • **icmpPing** - ICMP Ping packets are exchanged by the devices at the endpoints of the connection to verify connectivity. • **None**
Keep Alive ICMP IP Address	The IP address to be checked for connection status.
Keep Alive ICMP Next Hop MAC	The MAC address to be checked for connection status.
Keep Alive ICMP Src IP Address	The source IP address of the keepalive. The value can be any IP address on the source interface. Default: The primary IP address for the interface.
Keep Alive ICMP Down Retries	The number of unsuccessful keepalive attempts used to determine the failure of the next hop router. Possible values: **1-32**.
Keep Alive ICMP Up Retries	The number of successful keepalive attempts used to determine the operational status of the next hop router. Possible values: **1-32**.
Keep Alive ICMP Timeout	The number of seconds the interface waits for a reply from the next hop router before considering the request a failure. Possible values: **1-10**. Default: **1**
Keep Alive ICMP Interval	The keep alive interval in seconds. Possible values: **1-36**. Default: **5**
Keep Alive ICMP Status	The keep alive status. Possible values are: • **Up** • **Down** • **Disable**
	2 of 2

Viewing Channel Group Information

The Channel Group dialog box contains information specific to a selected Channel Group. The tabs that appear in the Channel Group dialog box are dependant on the encapsulation method of the selected Channel Group.

To view the Channel Group dialog box for a specific Channel Group:

1. Click a Channel Group symbol in the Chassis View. A list of Channel Groups appears.
2. Click the Channel Group for which you want to view information. The Channel Group dialog box for the selected Channel Group opens.

Note:

Clicking **New** opens the Channel Group wizard, enabling creation of a new Channel Group on the selected port. For information about the Channel Group Wizard, refer to "The Channel Group Wizard" on page 121.

Channel Group - PPP Session Information

The Channel Group dialog box for Channel Groups using PPP Sessions contains three tabs:

- Channel Group - Basic information about the Channel Group.
- Advanced - Information about the channels that comprise the Channel Group.
- PPP - Information about PPP on the Channel Group.

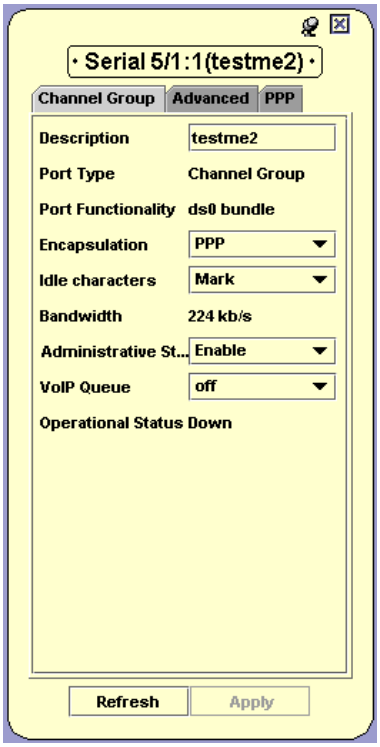
Channel Group

The Channel Group tab of the Channel Group dialog box provides basic information about the selected Channel Group.

To view the Channel Group tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.

Figure 38: Channel Group Dialog Box- Channel Group Tab



The following table provides a list of the fields in the Channel Group tab of the Channel Group dialog box and their descriptions:

Table 39: Channel Group Dialog Box - Channel Group Parameters

Field	Description
Description	A description of the PPP session.
Port Type	The port type.
Port Functionality	The framing mode of the port. Possible modes are: • **ds0 bundle** • **Unframed E1** (for E1 ports only)
Encapsulation	The encapsulation method for the PPP session. Possible encapsulation types are: • **PPP** • **Frame Relay** • **Frame Relay Non IETF** (for the MM340 Media Module)
	1 of 2

Table 39: Channel Group Dialog Box - Channel Group Parameters (continued)

Field	Description
Idle Characters	The bit pattern used to signify an idle line. Possible patterns include: • **Flags** • **Mark** • **PSAX**
Bandwidth	The effective bandwidth of the PPP session.
Administrative Status	The administrative state of the PPP session: • **Enable** - The Channel Group is enabled. • **Disable** - The Channel Group is disabled.
VoIP Queue	The state of VoIP queuing on the PPP session. VoIP queuing changes the length of the high priority queue providing support for the configuration of a maximum VoIP delay. Possible states include: • **On** - Standard VoIP queuing is active on the PPP session. • **Off** - VoIP queuing is not active on the PPP session. • **Fair-VoIP Queue** - VoIP weighted fair queuing is active in the PPP session.
Operational Status	The operational status of the interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
	2 of 2

Advanced

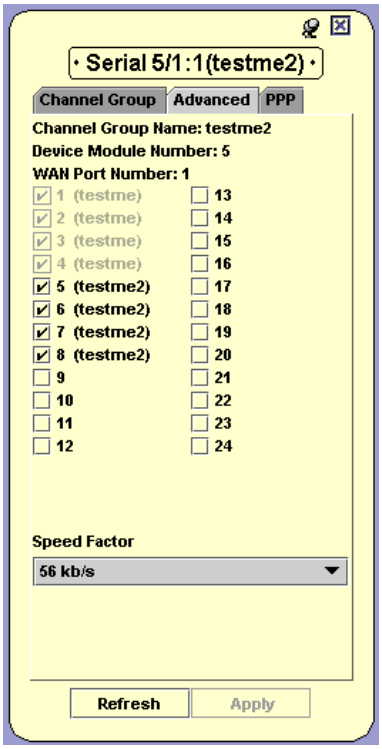
The Advanced tab of the Channel Groups dialog box provides information about the channels that comprise the selected Channel Group and the Channel Group's speed factor.

To view the Advanced tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.

3. Click **Advanced**. The **Advanced** tab of the Channel Group dialog box opens.

Figure 39: Channel Group Dialog Box - Advanced Tab



To configure the channels that comprise the Channel Group, check the checkboxes next to the channels you want included in the Channel Group. Uncheck the checkboxes next to the channels you want to remove from the Channel Group.

Note:

Channels that belong to other Channel Groups appear gray with the name of the Channel Group to which they belong. These channels cannot be added to the selected Channel Group.

To configure the speed factor of the Channel Group, select a Channel Group speed factor from the **Speed Factor** pull-down listbox.

PPP

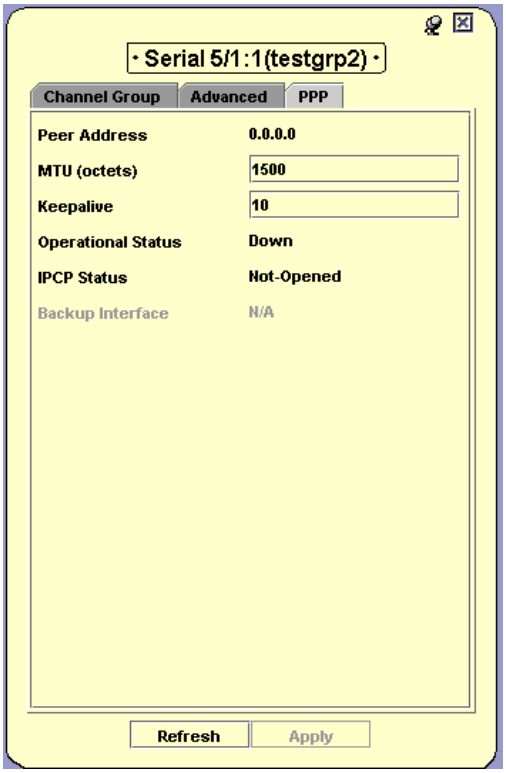
The PPP tab of the Channel Groups dialog box provides configuration information for the PPP interface of the selected Channel Group.

To view the PPP tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.

3. Click **PPP**. The **PPP** tab of the Channel Group dialog box appears.

Figure 40: Channel Group Dialog Box - PPP Tab



The following table provides a list of the fields in the PPP tab of the Channel Group dialog box and their descriptions:

Table 40: Channel Group Dialog Box - PPP Parameters

Field	Description
Peer Address	The IP address of the PPP session's peer device.
MTU (octets)	The size (in octets) of the largest datagram that can be sent via the PPP session.
Keepalive	The time, in seconds, between keepalive messages. A value of 0 means that keepalive messages are not sent.
	1 of 2

Table 40: Channel Group Dialog Box - PPP Parameters (continued)

Field	Description
Operational Status	The operational status of the PPP interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
IPCP Status	IP Control Protocol. The state of IPCP for this PPP session. Possible statuses include: • **Open** - IP packets can be transmitted and received over the PPP session. • **Not-Opened** - IP packets cannot be transmitted and received over the PPP session.
Backup Interface	The interface's backup status. Possible statuses include: • **Backup By - Interface x** - The selected interface is backed up by interface x. • **Backup Of - Interface x** - The selected interface is the backup interface for interface x. • **N/A** - The selected interface is not participating in a backup scheme.
	2 of 2

Channel Group - Frame Relay Information

The Channel Group dialog box for Channel Groups using frame relay contains five tabs:

- Channel Group - Basic information about the Channel Group. For information on the fields in the Channel Group tab of the Channel Group - Frame Relay dialog box, refer to "Channel Group" on page 105.
- Advanced - Information about the channels that comprise the Channel Group. For information on the fields in the Advanced tab of the Channel Group - Frame Relay dialog box, refer to "Advanced" on page 107.
- Frame Relay - Information about frame relay on the Channel Group.

- Sub-Interfaces - Information about the Channel Group's sub-frame relays.
- DLCIs - DLCI information for the Channel Group.

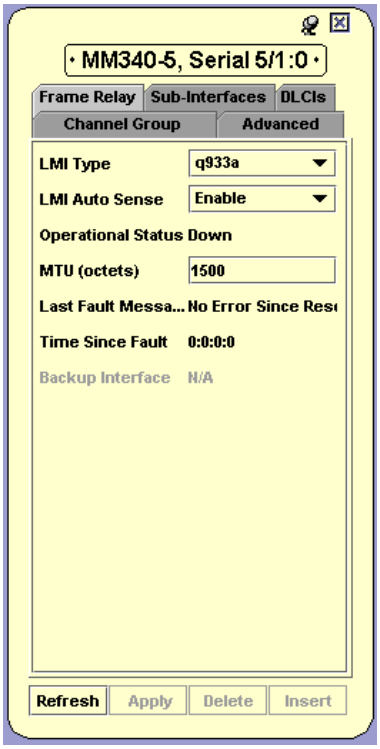
Frame Relay

The Frame Relay tab of the Channel Group dialog box provides information about the frame relay configuration of the Channel Group.

To view the Frame Relay tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.
3. Click **Frame Relay**. The **Frame Relay** tab of the Channel Group dialog box opens.

Figure 41: Channel Group Dialog Box - Frame Relay Tab



The following table provides a list of the fields in the Frame Relay tab of the Channel Group dialog box and their descriptions:

Table 41: Channel Group Dialog Box - Frame Relay Parameters

Field	Description
LMI Type	Local Management Interface Type. The Data Link Connection Management scheme used by the frame relay interface. Possible values are: • **ANSI** • **q933a** • **lmi-rev1**
LMI Auto Sense	Local Management Interface Auto-Sensing is a method for automatically determining the LMI Type for the interface. Possible values are: • **Enable** • **Disable**
Operational Status	The operational status of the interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
MTU (octets)	The size (in octets) of the largest datagram that can be sent via the interface.
	1 of 2

Table 41: Channel Group Dialog Box - Frame Relay Parameters (continued)

Field	Description
Last Fault Message	The type of error last occurring on the interface. Possible values are: • **Unknown Error** • **Receive Short** • **Receive Long** • **Illegal Address** • **Unknown Address** • **DLCMI Protocol Error** • **DLCMI Unknown IE** • **DLCMI Sequence Error** • **DLCMI Unknown Rpt** • **No Error Since Reset**
Time Since Fault	The amount of time the system was up before the last error occurred.
Backup Interface	The interface's backup status. Possible statuses include: • **Backup By - Interface x** - The selected interface is backed up by interface x. • **Backup Of - Interface x** - The selected interface is the backup interface for interface x. • **N/A** - The selected interface is not participating in a backup scheme.
	2 of 2

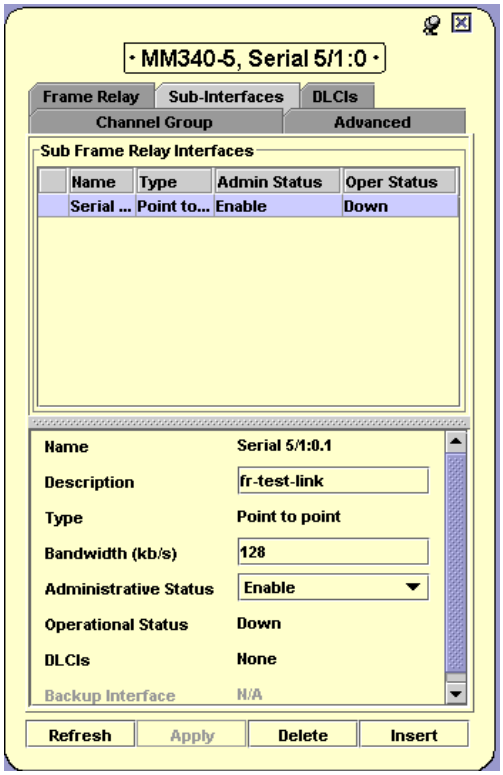
Sub-Interfaces

The Sub-Interfaces tab of the Channel Group dialog box provides information about the configuration of Frame Relay sub-interfaces in the Channel Group.

To view the Sub-Interfaces tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.
3. Click **Sub-Interfaces**. The Sub-Interfaces tab of the Channel Group dialog box opens.

Figure 42: Channel Group Dialog Box - Sub-Interfaces Tab



The Sub-Interfaces tab of the Channel Group dialog box provides a list of Frame Relay sub-interfaces in the upper section of the dialog box. To view configuration information for a specific Frame Relay sub-interface, click the Sub-Frame-Relay interface in the list. Configuration information for the selected Frame Relay sub-interface appears in the bottom of the dialog box.

You can create, modify, and delete Frame Relay sub-interfaces using the Sub-Interfaces tab of the Channel Group dialog box.

To create a new Frame Relay sub-interface:

1. Click **Insert**. A new row appears in the **Sub-Frame-Relay Interfaces** list.
2. Enter the parameters for the Frame Relay sub-interface using the fields at the bottom of the dialog box.
3. Click **Apply**. The Frame Relay sub-interface is created.

To modify the parameters of a Frame Relay sub-interface:

1. Click the Frame Relay sub-interface you want to modify. The configuration parameters of the selected Frame Relay sub-interface appear in the bottom of the dialog box.
2. Modify the parameters you want to change using the fields at the bottom of the dialog box.
3. Click **Apply**. The Frame Relay sub-interface parameters are modified.

To delete a Frame Relay sub-interface:

1. Click the Frame Relay sub-interface you want to delete.

   Note:

   You can only delete Frame Relay sub-interfaces on which no IP interfaces are defined.

2. Click **Delete**.
3. Click **Apply**. The Frame Relay sub-interface is deleted.

The following table provides a list of the fields in the Frame Relay sub-interfaces tab of the Channel Group dialog box and their descriptions.

Table 42: Channel Group Dialog Box - Sub-Interfaces Parameters

Field	Description
Name	The name of the interface.
Description	A user defined description of the Sub-Frame-Relay.
Type	The type of Frame Relay sub-interface. Currently, only Point to Point interfaces are supported.
Bandwidth (kb/s)	The bandwidth of the Frame Relay sub-interface in bits per second.
Administrative Status	The administrative status of the interface. Possible statuses include: • **Enable** • **Disable**
Operational Status	The operational status of the Frame Relay sub-interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
DLCIs	A list of all DLCIs associated with the Sub-Frame-Relay interface. If more than one DLCI is configured on the Sub-Frame-Relay interface, priority DLCI is active. The first DLCI is for high priority traffic, the second DLCI is for medium priority traffic, etc.
	1 of 2

Table 42: Channel Group Dialog Box - Sub-Interfaces Parameters (continued)

Field	Description
Backup Interface	The interface's backup status. Possible statuses include: • **Backup By - Interface x** - The selected interface is backed up by interface x. • **Backup Of - Interface x** - The selected interface is the backup interface for interface x. • **N/A** - The selected interface is not participating in a backup scheme.
	2 of 2

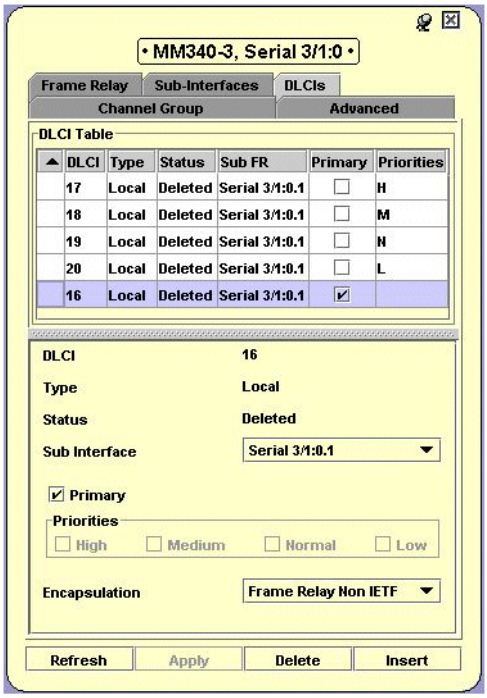
DLCIs

The DLCIs tab of the Channel Group dialog box provides information about the DLCIs (Data Link Connection Identifiers) in the Channel Group and enables you to create, modify, and delete DLCIs, and associate a DLCI with a specific Frame Relay sub-interface.

To view the DLCIs tab of the Channel Group dialog box:

1. Click a Channel Group icon in the Chassis View. A list of Channel Groups on the port appears.
2. Click the Channel Group you want to configure. The Channel Group dialog box opens with the Channel Group tab.
3. Click **DLCIs**. The DLCIs tab of the Channel Group dialog box opens.

Figure 43: Channel Group Dialog Box - DLCIs Tab



The DLCIs tab of the Channel Group dialog box provides a list of available DLCIs in the upper section of the dialog box. These DLCIs are learned via LMI. To view configuration information for a specific DLCI, click the DLCI in the list. Configuration information for the selected DLCI appears in the bottom of the dialog box.

You can create, modify, and delete DLCIs using the DLCIs tab of the Channel Group dialog box.

To create a new DLCI:

1. Click **Insert**. A new row appears in the DLCIs list.
2. Enter the parameters for the DLCI using the fields at the bottom of the dialog box.
3. Click **Apply**. The DLCI is created.

To modify the parameters of a DLCI:

1. Click the DLCI you want to modify. The configuration parameters of the selected DLCI appear in the bottom of the dialog box.
2. Modify the parameters you want to change using the fields at the bottom of the dialog box.
3. Click **Apply**. The DLCI parameters are modified.

To delete a DLCI:

1. Click the DLCI you want to delete.
2. Click **Delete**.
3. Click **Apply**. The DLCI is deleted.

The following table provides a list of the fields in the DLCIs tab of the Channel Group dialog box and their descriptions:

Table 43: Channel Group Dialog Box - DLCIs Parameters

Field	Description
DLCI	The DLCI for the circuit.
Type	The method used to create the DLCI. Possible methods include: • **Local** - The DLCI was created manually. • **Unused** - The DLCI was created using the LMI interface.
Status	The operational status of the DLCI. Possible statuses include: • **Active** - The DLCI is active. • **Inactive** - The DLCI is inactive. • **Deleted** - The DLCI has been deleted. • **Invalid** - The DLCI is not valid.
Sub FR	The Frame Relay sub-interface associated with the DLCI.
Primary	When the **Primary** box is checked, the selected DLCI is the primary carrier of traffic for the interface.
Priorities	Select the priority of traffic on the selected DLCI from the available check boxes. Possible priorities include: • **High** • **Medium** • **Normal** • **Low**
Encapsulation	The encapsulation method for the session. Possible encapsulation types are: • **Frame Relay** • **Frame Relay Non IETF**

To configure the priority of DLCI traffic, select the checkboxes for the priorities to use on the DLCI.

If only one DLCI is configured for the Channel Group, all traffic uses the DLCI.

If more than one DLCI is configured on the Channel Group, the priorities must be distributed among the DLCIs, and no priority can be configured on more than one DLCI. For example, if there are three DLCIs configured for a Channel Group, the first DLCI may be configured with **Primary** and **High** priority, the second with **Medium** and **Normal**, and the third with **Low**.

Managing Channel Groups

The Channel Groups dialog box provides information about existing channel groups and enables you to modify and delete channel groups. In addition, you can start the Channel Group Wizard to create and edit channel groups.

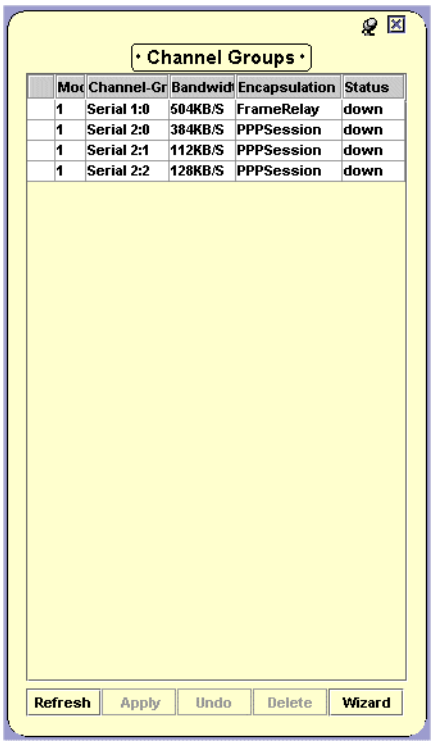
Viewing the Channel Groups Table

The Channel Groups table enables you to view previously created channel groups and launch the Channel Group Wizard to create a new Channel Group or modify an existing Channel Group.

To view the Channel Groups table:

Select **Configure > WAN > Channel Groups**. The Channel Groups dialog box opens.

Figure 44: Channel Groups Dialog Box



Each row of the Channel Groups table represents a valid Channel Group. The following table provides a list of the fields in the Channel Groups table and their descriptions:

Table 44: Channel Groups Table Parameters

Field	Description
Module Number	The module on which the Channel Group resides.
Channel-Group	The name of the Channel Group.
Bandwidth	The bandwidth of the Channel Group.
Encapsulation	The Channel Group's encapsulation. Possible values are: • **PPPSession** - The Channel Group uses PPP encapsulation to establish connectivity. • **FrameRelay** - The Channel Group uses Frame Relay to establish connectivity. • **FrameRelay Non-IETF** - The Channel Group uses non-IETF Frame Relay to establish connectivity.
Status	The status of the PPP or Frame Relay interface. Possible values are: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.

Creating, Editing, and Deleting Channel Groups

To create a new channel group, click **Wizard** in the Channel Groups table. The Channel Group Wizard starts.

To edit a channel group:

1. In the Channel Groups Table, select the channel group you want to edit.
2. Click **Wizard**. The Channel Group Wizard starts. The screens in the Channel Group Wizard display the parameters for the selected channel group.

To delete a channel group:

1. In the Channel Groups Table, select the channel group which you want to delete.
2. Click **Delete**. A confirmation box opens.
3. Click **Yes**. The channel group is deleted.

The Channel Group Wizard

This section provides detailed information on each of the Channel Group Wizard's screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Channel Group Wizard without making any changes, click **Cancel**.

The Channel Group Wizard consists of the following screens:

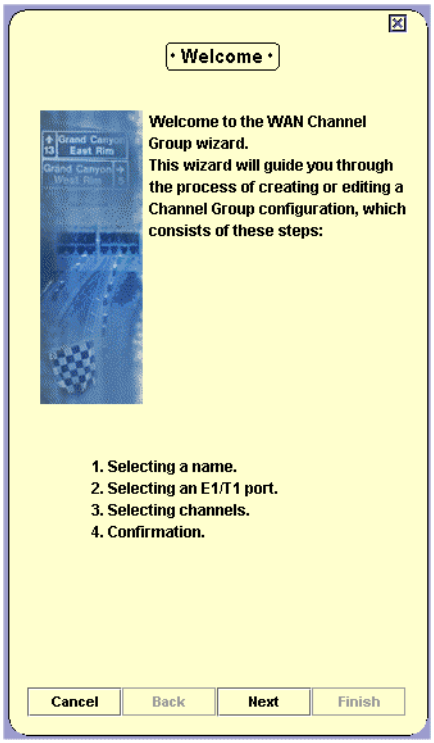
- Welcome Screen
- Select Name and Encapsulation Screen
- Select E1/T1 Port Screen
- Select Channels and Speed Screen
- Confirmation Screen

The following sections describe each of the Channel Group Wizard screens.

Welcome Screen

The Channel Group Wizard provides a simple, step-by-step method for creating or editing a Channel Group.

Figure 45: Channel Group Wizard - Welcome Screen

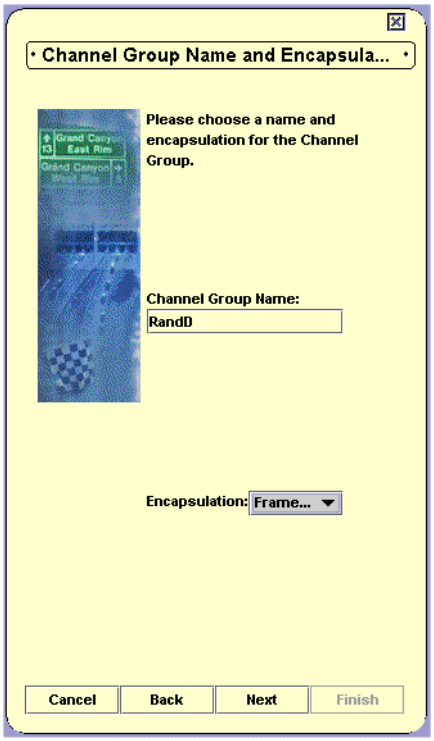


To continue, click **Next**. The Channel Group Wizard continues with the Select Name and Encapsulation Screen.

Select Name and Encapsulation Screen

The Select Name and Encapsulation screen enables you to assign a name to the Channel Group and configure the encapsulation method.

Figure 46: Channel Group Wizard - Select Name and Encapsulation Screen



Enter a name for the Channel Group in the **Channel Group Name** field.

Select an encapsulation method for the Channel Group from the pull-down listbox. Available encapsulation methods include:

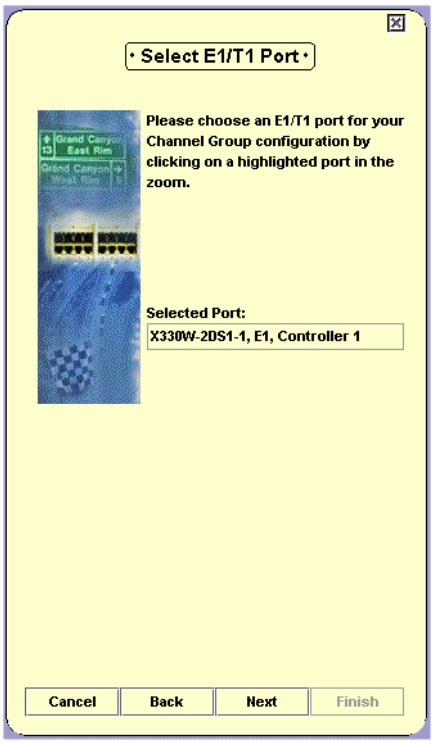
- **PPPSession** - The Channel Group uses PPP Sessions.
- **FrameRelay** - The Channel Group uses frame relay.
- **FrameRelay Non-IETF** - The Channel Group uses non-IETF frame relay.

To continue, click **Next**. The Channel Group Wizard continues with the Select E1/T1 Port Screen.

Select E1/T1 Port Screen

The Select E1/T1 Port screen enables you to select the E1/T1 port for your channel group.

Figure 47: Channel Group Wizard - Select E1/T1 Port Screen

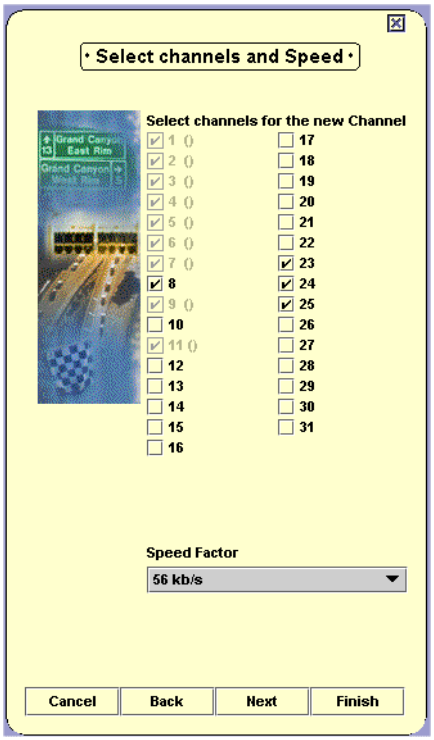


To select an E1/T1 port for the channel group, click an E1/T1 port in the Chassis View. The port designation appears in the Selected Port field. To continue, click **Next**. The Channel Group Wizard continues with the Select Channels and Speed Screen.

Select Channels and Speed Screen

The Select Channels and Speed screen enables you to select channels for the new Channel Group.

Figure 48: Channel Group Wizard - Select Channels and Speed Screen



To select channels, check the checkboxes next to the channels you want included in the channel group.

For T1 ports, you can also select a speed factor using the **Speed Factor** pull-down listbox.

To continue, click **Next**. The Channel Group Wizard continues with the Confirmation Screen.

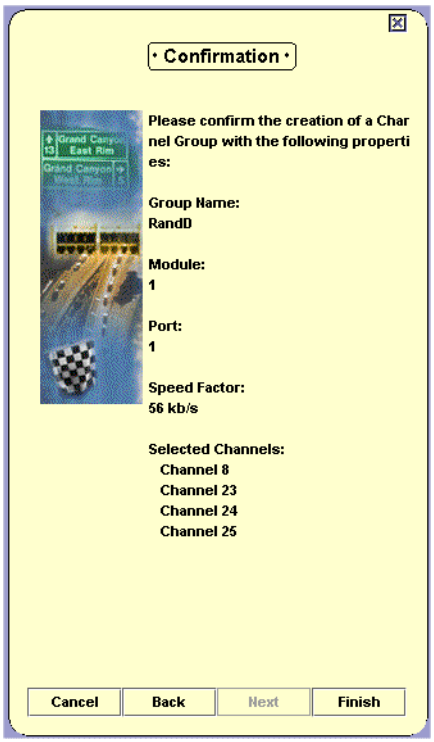
Confirmation Screen

The Channel Group Wizard displays a summary of the information entered using the previous screens.

Note:

The Channel Group has not yet been created.

Figure 49: Channel Group Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Channel Group's parameters.
3. Click **Next** until you reach the Confirmation screen.

To create the Channel Group or apply the changes to the Channel Group's configuration, click **Finish**. The Channel Group information is uploaded to the device, and the Channel Group table is refreshed.

USP Configuration

The USP (Universal Serial Port) is a physical interface designed to support multiple types of connections with the same hardware. The Avaya G250/G350/G450 Device supports Media Modules containing USPs. This section provides information on viewing and configuring USP parameters.

The tabs that appear in the USP dialog box are dependant on the encapsulation method of the selected Channel Group.

To view the USP dialog box:

Click a USP symbol in the Chassis View or Tree View. The USP dialog box opens to the Serial Port tab.

USP - PPP Interface

The USP - PPP Interface enables you to manage connections using USP hardware and PPP encapsulation. For USPs configured with a PPP interface, the USP dialog box contains three tabs:

- Serial Port
- Advanced
- PPP

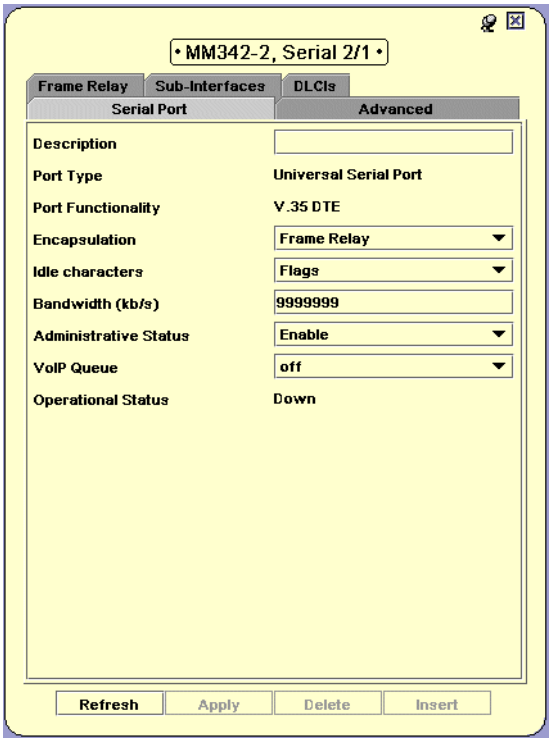
Serial Port

The Serial Port tab of the USP Configuration dialog box provides basic information about the configuration of the USP.

To view the Serial Port tab of the USP Configuration dialog box:

Click the USP symbol in the Chassis View or the Tree View. The USP Configuration dialog box opens displaying the Serial Port tab.

Figure 50: USP Dialog Box - Serial Port Tab



The USP Configuration dialog box provides configuration and status information about the USP.

The following table lists the fields in the Serial Port tab of the USP Configuration dialog box and their descriptions:

Table 45: USP Dialog Box - Serial Port Parameters

Field	Description
Description	The USP port description.
Port Type	The type of port - **Universal Serial Port**.
Port Functionality	The functionality of the port. Possible values include: • **V.35 DTE** • **X.21 DTE** • **EIA530A DTE**
Encapsulation	The encapsulation method for channel groups on the port. Possible methods include: • **PPP** • **Frame Relay** • **Frame Relay Non IETF**
	1 of 2

Table 45: USP Dialog Box - Serial Port Parameters (continued)

Field	Description
Idle characters	The bit pattern used to signify an idle line. Possible patterns include: ● **Flags** ● **Mark**
Bandwidth (kb/s)	The configured bandwidth of the port in kilobytes per second.
Administrative Status	The state of the selected port. Possible values are: ● **Enable** - The port is enabled and can transmit and receive packets. ● **Disable** - The port is disabled and cannot transmit or receive packets.
VoIP Queue	The state of VoIP queuing on the PPP session. VoIP queuing changes the length of the high priority queue providing support for the configuration of a maximum VoIP delay. Possible states include: ● **On** - Standard VoIP queuing is active on the PPP session. ● **Off** - VoIP queuing is not active on the PPP session. ● **Fair-VoIP Queue** - VoIP weighted fair queuing is active on the PPP session.
Operational Status	The operational status of the interface. Possible statuses include: ● **Up** - The interface is up and can transmit and receive packets. ● **Down** - The interface is down due to some failure, and cannot transmit or receive packets. ● **Testing** - The interface is in testing mode and cannot transmit or receive regular data. ● **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. ● **Disabled** - The interface is disabled. It cannot transmit or receive packets. ● **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
	2 of 2

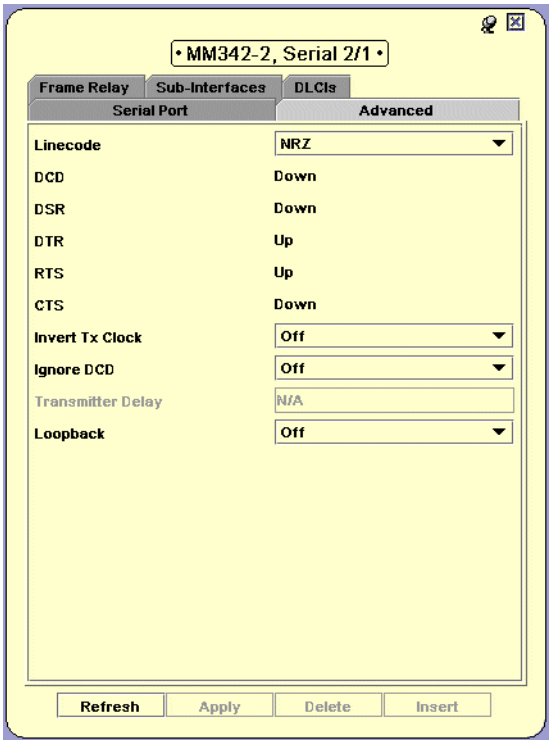
Advanced

The Advanced tab of the USP Configuration dialog box provides advanced information about the USP configuration.

To display the Advanced tab of the USP Configuration dialog box:

1. Click the USP symbol in the Chassis View or the Tree View. The USP Configuration dialog box opens displaying the Serial Port tab.
2. Click the **Advanced** tab. The Advanced tab of the USP Configuration dialog box opens.

Figure 51: USP Configuration Dialog Box - Advanced Tab



The following table lists the fields in the Advanced tab of the USP Configuration dialog box and their descriptions:

Table 46: USP Configuration - Advanced Parameters

Field	Description
Linecode	The type of linecode. Possible values are: • **NRZ** • **NRZI**
DCD	The port's Data Carrier Detect status. Possible values are: • **Up** - The port has successfully detected Data Carrier. This process takes place during initial line signalling. • **Down** - The port has either not detected Data Carrier or has completed the detection process.
DSR	The port's Data Set Ready status. Possible values are: • **Up** - The port's data set has successfully been prepared. This process takes place during initial line signalling. • **Down** - The port's data set has either failed preparation or has completed the preparation process.
	1 of 2

Table 46: USP Configuration - Advanced Parameters (continued)

Field	Description
DTR	The port's Data Terminal Ready status. Possible values are: ● **Up** - The port is physically prepared to transmit and receive packets. ● **Down** - The port is not physically prepared to transmit and receive packets. This generally indicates an error condition on the circuit.
RTS	The port's Ready To Send status. Possible values are: ● **Up** - The port is logically prepared to transmit and receive packets. ● **Down** - The port is not logically prepared to transmit and receive packets. This generally indicates an error condition either on the device or the circuit.
CTS	The port's Clear To Send status. Possible values are: ● **Up** - The port has successfully completed initial line signalling. CTS takes place at the end of the initial line signalling process and last for a short period of time. ● **Down** - The port has either failed to complete initial line signalling or the initial line signalling process has been completed.
Invert Tx Clock	The state of the Tx clock. Possible states are: ● **On** - The Tx clock is inverted. ● **Off** - The Tx clock is not inverted.
Ignore DCD	The signal type monitored to determine the interface's status. Possible values are: ● **On** - The interface monitors DSR/CTS signals and ignores DCD signals. ● **Off** - The interface monitors DCD signals.
Transmitter Delay	The delay between the CTS signal and the beginning of transmission.
Loopback	The status of the DTE loopback. Possible values are: ● **On** - DTE loopback is enabled, indicating a line test taking place. ● **Off** - DTE loopback is disabled, indicating normal circuit operation.
	2 of 2

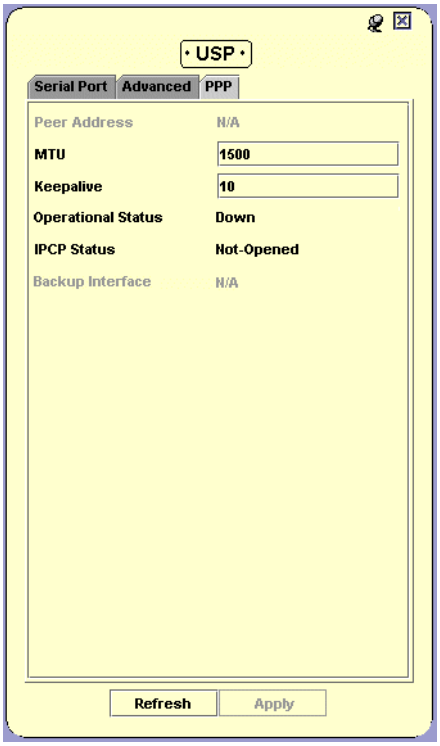
PPP

The PPP tab of the USP Configuration dialog box provides information about the USP's PPP configuration.

To display the PPP tab of the USP Configuration dialog box:

1. Click the USP symbol in the Chassis View or the Tree View. The USP Configuration dialog box opens displaying the Serial Port tab.
2. Click **PPP** tab. The **PPP** tab of the USP Configuration dialog box opens.

Figure 52: USP Configuration Dialog Box - PPP Tab



The following table lists the configuration fields in the PPP tab of the USP Configuration dialog box and their descriptions:

Table 47: USP Configuration - PPP Parameters

Field	Description
Peer Address	The IP address of the PPP session's peer.
MTU	Maximal Transmission Unit. The size of the largest packet that can be transmitted over this PPP session.
Keepalive	The number of seconds between keepalive messages. If this is 0, keepalive messages are not sent.
Operational Status	The operational status of the interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
IPCP Status	IP Control Protocol. The state of IPCP for this PPP session. Possible statuses include: • **Open -** IP packets can be transmitted and received over the PPP session. • **Not-Opened** - IP Packets cannot be transmitted and received over the PPP session.
Backup Interface	The interface configured to back up this interface.

USP - Frame Relay Interface

For USPs configured with a frame relay interface, the USP dialog box contains five tabs:

- Serial Port - Basic information abut the USP. For information on the fields in the Serial Port tab of the USP - Frame Relay dialog box, refer to "Serial Port" on page 127.
- Advanced - Information about the channels that comprise the interface. For information on the fields in the Advanced tab of the USP - Frame Relay dialog box, refer to "Advanced" on page 129.
- Frame Relay - Information about the frame relay configuration on the USP.

- Sub-Frame-Relays - Information about the Channel Group's sub-frame relays.
- DLCIs - DLCI information for the Channel Group.

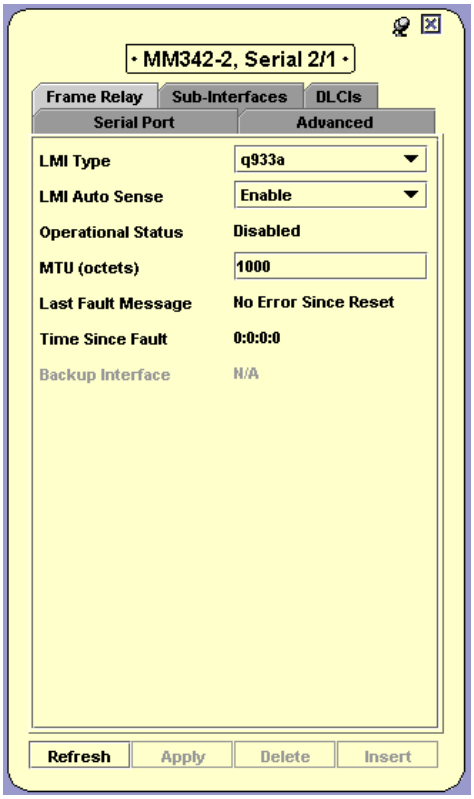
Frame Relay

The Frame Relay tab of the USP dialog box provides information about the frame relay configuration of the USP.

To view the Frame Relay tab of the USP dialog box:

1. Click a USP symbol in the Chassis View or Tree View. The USP dialog box opens with the Serial Port tab.
2. Click **Frame Relay**. The Frame Relay tab of the USP dialog box opens.

Figure 53: USP Dialog Box - Frame Relay Tab



The following table provides a list of the fields in the Frame Relay tab of the USP dialog box and their descriptions:

Table 48: USP Dialog Box - Frame Relay Parameters

Field	Description
LMI Type	Local Management Interface Type. The Data Link Connection Management scheme used by the frame relay interface. Possible values are: • **ANSI** • **itu933a** • **lmi-rev1**
LMI Auto Sense	The state of Local Management Interface Auto-Sensing on the interface. Possible states include: • **Enable** - The LMI type is received from the interface at the other end of the line. • **Disable** - The LMI Type is determined by the value in the LMI Type field.
Operational Status	The operational status of the interface. Possible statuses include: • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
MTU (octets)	The size (in octets) of the largest datagram that can be sent via the interface.
	1 of 2

Table 48: USP Dialog Box - Frame Relay Parameters (continued)

Field	Description
Last Fault Message	The type of error last occurring on the interface. Possible values are: • **Unknown Error** • **Receive Short** • **Receive Long** • **Illegal Address** • **Unknown Address** • **DLCMI Protocol Error** • **DLCMI Unknown IE** • **DLCMI Sequence Error** • **DLCMI Unknown Rpt** • **No Error Since Reset**
Time Since Fault	The amount of time the system was up before the last error occurred.
Backup Interface	The interface configured to back up this interface.
	2 of 2

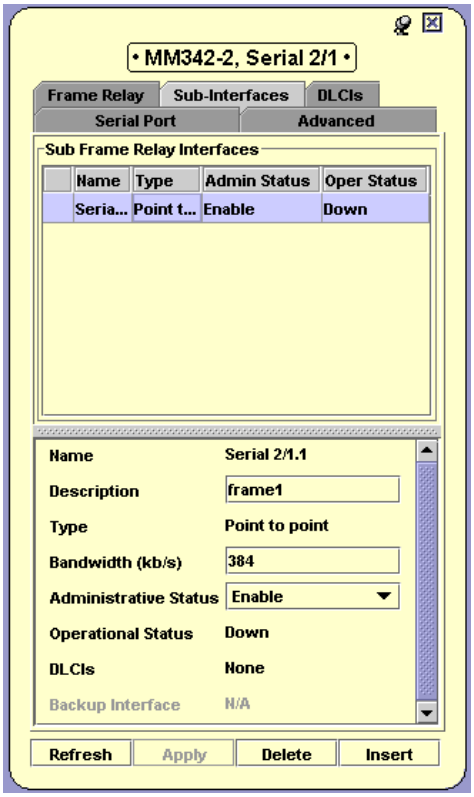
Sub-Frame-Relays

The Sub-Interfaces tab of the USP dialog box provides information about the configuration of Frame Relay sub-interfaces in the USP.

To view the Sub-Interfaces tab of the USP dialog box:

1. Click a USP symbol in the Chassis View or Tree View. The USP dialog box opens with the Serial Port tab.
2. Click **Sub-Interfaces**. The Sub-Interfaces tab of the USP dialog box opens.

Figure 54: USP Dialog Box - Sub-Interfaces Tab



The Sub-Interfaces tab of the USP dialog box provides a list of Frame Relay sub-interfaces in the upper section of the dialog box. To view configuration information for a specific Frame Relay sub-interface, click the sub-interface in the list. Configuration information for the selected Frame Relay sub-interface appears in the bottom of the dialog box.

You can create, modify, and delete Frame Relay sub-interfaces using the Sub-Interfaces tab of the USP dialog box.

To create a new Frame Relay sub-interface:

1. Click **Insert**. A new row appears in the **Sub-Frame-Relay Interfaces** list.
2. Enter the parameters for the Frame Relay sub-interface using the fields at the bottom of the dialog box.
3. Click **Apply**. The Frame Relay sub-interface is created.

To modify the parameters of a Frame Relay sub-interface:

1. Click the Frame Relay sub-interface you want to modify. The configuration parameters of the selected sub-interface appear in the bottom of the dialog box.
2. Modify the parameters you want to change using the fields at the bottom of the dialog box.
3. Click **Apply**. The Frame Relay sub-interface parameters are modified.

To delete a Frame Relay sub-interface:

1. Click the Frame Relay sub-interface you want to delete.

   Note:

   You can only delete Frame Relay sub-interfaces on which no IP interfaces are defined.

2. Click **Delete**. A confirmation dialog box opens.
3. Click **Yes**.
4. Click **Apply**. The Frame Relay sub-interface is deleted.

The following table provides a list of the fields in the Sub-Interfaces tab of the USP dialog box and their descriptions:

Table 49: USP Dialog Box - Sub-Interfaces Parameters

Field	Description
Name	The name of the Frame Relay sub-interface.
Description	A user defined description of the Frame Relay sub-interface.
Type	The provisioning of the Frame Relay sub-interface. Possible values are: • **Point to point** - The Frame Relay sub-interface is configured for connection with a single remote endpoint. • **Point to multipoint** - The Frame Relay sub-interface is configured for connection with multiple remote endpoints.
Bandwidth (kb/s)	The bandwidth of the Frame Relay sub-interface in bits per second.
Admin Status	The administrative status of the Frame Relay sub-interface. Possible values are: • **Enable** - The Frame Relay sub-interface is enabled for transmission and receiving of packets. • **Disable** - The Frame Relay sub-interface is disabled for transmission and receiving of packets.
	1 of 2

Table 49: USP Dialog Box - Sub-Interfaces Parameters (continued)

Field	Description
Operational Status	The operational status of the Sub-Frame-Relay interface. • **Up** - The interface is up and can transmit and receive packets. • **Down** - The interface is down due to some failure, and cannot transmit or receive packets. • **Testing** - The interface is in testing mode and cannot transmit or receive regular data. • **Standby** - The interface is a backup interface and cannot transmit or receive packets unless the primary interface it backs up fails. • **Disabled** - The interface is disabled. It cannot transmit or receive packets. • **Partially Down** - The interface is up. However, some interfaces (or PVCs) layered on top of this interface are Down. Some packets can be transmitted and received.
DLCIs	A list of all DLCIs associated with the Sub-Frame-Relay interface.
Backup Interface	The interface configured to back up this interface.
	2 of 2

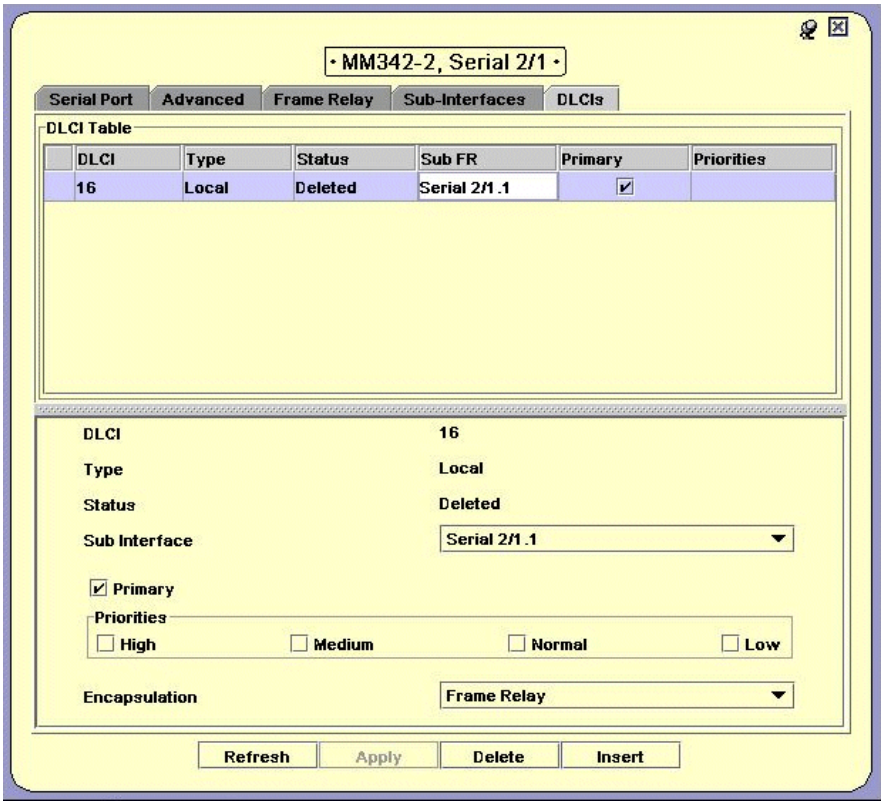
DLCIs

The DLCIs tab of the USP dialog box provides information about the DLCIs in the USP.

To view the DLCIs tab of the USP dialog box:

1. Click a USP symbol in the Chassis View or Tree View. The USP dialog box opens with the Serial Port tab.
2. Click **DLCIs**. The DLCIs tab of the USP dialog box opens.

Figure 55: USP Dialog Box - DLCIs Tab



The DLCIs tab of the USP dialog box provides a list of available DLCIs in the upper section of the dialog box. These DLCIs are learned via LMI. To view configuration information for a specific DLCI, click the DLCI in the list. Configuration information for the selected DLCI appears in the bottom of the dialog box.

You can create, modify, and delete DLCIs using the DLCIs tab of the USP dialog box.

To create a new DLCI:

1. Click **Insert**. A new row appears in the DLCIs list.
2. Enter the parameters for the DLCI using the fields at the bottom of the dialog box.
3. Click **Apply**. The DLCI is created.

To modify the parameters of a DLCI:

1. Click the DLCI you want to modify. The configuration parameters of the selected DLCI appear in the bottom of the dialog box.
2. Modify the parameters you want to change using the fields at the bottom of the dialog box.
3. Click **Apply**. The DLCI parameters are modified.

To delete a DLCI:

1. Click the DLCI you want to delete.
2. Click **Delete**. A confirmation dialog box opens.
3. Click **Yes**.
4. Click **Apply**. The DLCI is deleted.

The following table provides a list of the fields in the DLCIs tab of the USP dialog box and their descriptions:

Table 50: USP Dialog Box - DLCIs Parameters

Field	Description
DLCI	The DLCI for the circuit.
Type	The method used to create the DLCI. Possible methods include: • **Local** - The DLCI was created manually. • **Unused** - The DLCI was created using the LMI interface.
Status	The operational status of the DLCI. Possible statuses include: • **Active** - The DLCI is active. • **Inactive** - The DLCI is inactive. • **Deleted** - The DLCI has been deleted. • **Invalid** - The DLCI is not valid.
Sub FR	The Frame Relay sub-interface associated with the DLCI.
Primary	When the **Primary** box is checked, the selected DLCI is the primary carrier of traffic for the interface.
Priorities	Select the priority of traffic on the selected DLCI from the available check boxes. Possible priorities include: • **High** • **Medium** • **Normal** • **Low**
Encapsulation	The encapsulation method for the session. Possible encapsulation types are: • **Frame Relay** • **Frame Relay Non IETF**

To configure the priority of DLCI traffic, select the checkboxes for the priorities to use on the DLCI.

If only one DLCI is configured for the USP, all traffic uses the DLCI.

If more than one DLCI is configured on the USP, the priorities must be distributed among the DLCIs, and no priority can be configured for multiple DLCIs. For example, if there are three DLCIs configured for a USP, the first DLCI may be configured with **Primary** and **High** priority, the second with **Medium** and **Normal**, and the third with **Low**.

Configuring the ETR Port

The Emergency Transfer Relay (ETR) port provides a means of communication when there are severe network difficulties and other channels are down.

To view the ETR Interface table:

Select **Configure > WAN > ETR Interface**. The ETR Interface form opens.

Figure 56: ETR Interface - G250/G350

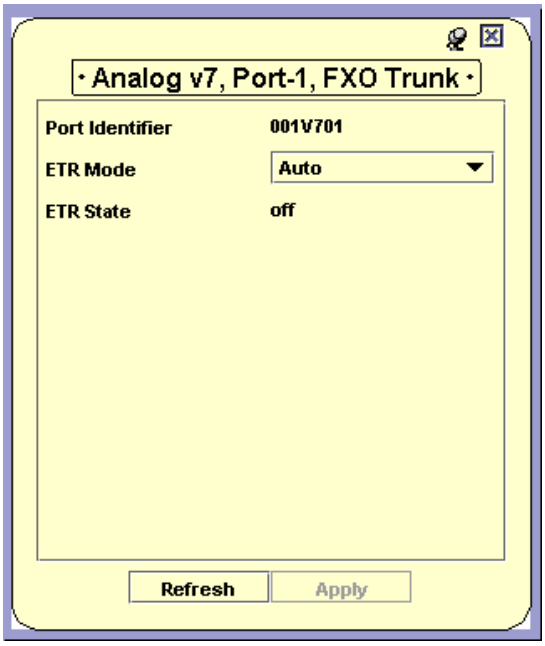
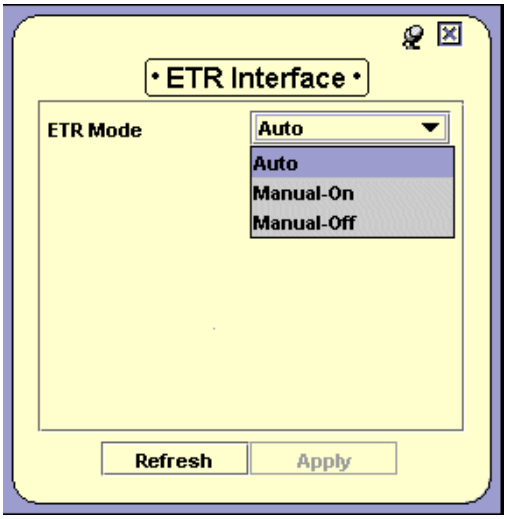


Figure 57: ETR Interface - G450



The following table provides a list of fields in the ETR Interface form and their descriptions:

Table 51: ETR Interface Form Parameters

Field	Description
Port Identifier	The port identifier string (not relevant for the Avaya G450 Device).
ETR Mode	The mode of operation.The status of Dynamic CAC on the WAN interface. Possible values are: • **Auto** • **Manual On** • **Manual Off**
ETR State	The current ETR state of operation (not relevant for the Avaya G450 Device).

The Services Interface

The Services port cannot be configured through the Avaya G250/G350/G450 Device Manager. The Services port allows an Out Of Band management interface to the Avaya G450 Device. The following table displays the fixed values of the Services port.

Table 52: Fixed Parameters for the Services Port

Parameter	Value
IP Address	192.11.13.6
Port Type	10/100 BaseTX
Port Functionality	100 mbit/sec or 10 mbit/sec
Administrative Status	Enabled
Operational Status	Possible values are: • **Up** • **Down**
Auto Negotiation Mode	Enabled

Configuring Backup Interfaces

The Backup interface feature enables you to configure backup interfaces for WAN interfaces. The backup interface feature includes a table for viewing all configured backup interfaces and a wizard for creating backup interfaces.

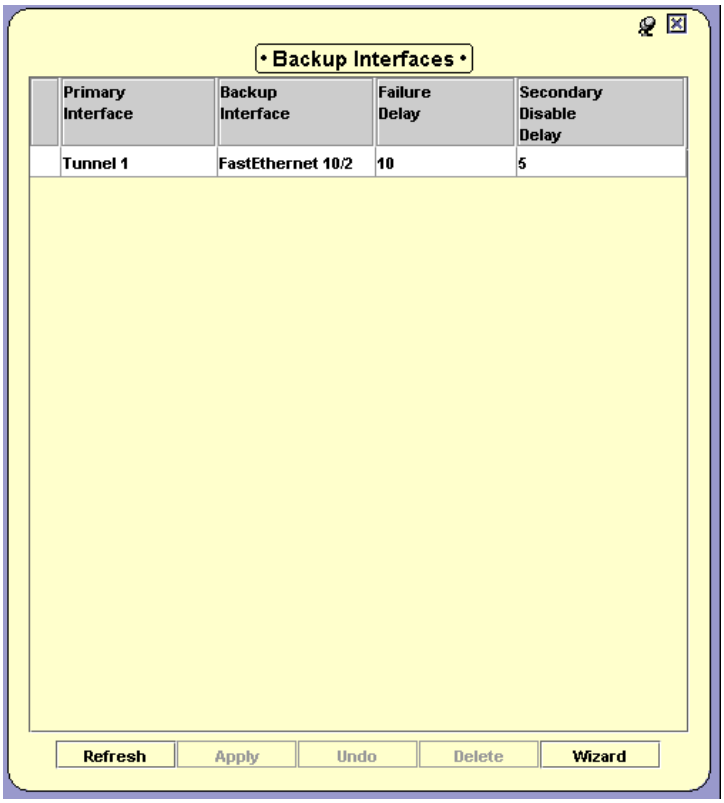
Viewing the Backup Interfaces Table

The Backup Interfaces table provides a list of all previously configured backup interfaces on the MM340 and MM342 WAN expansion modules.

To view the Backup Interfaces table:

Select **Configure > WAN > Backup Interfaces**. The BackUp Interfaces table opens.

Figure 58: Backup Interfaces Table



The Backup Interfaces table provides information about the Backup interfaces configured on the device.

To configure a new Backup interface, click **Wizard**. The Backup Interface Wizard opens. For information on the Backup Interface Wizard, refer to "The Backup Interface Wizard" on page 145.

To delete a Backup interface:

1. Select the interface in the table.
2. Click **Delete**. The interface is marked as deleted in the Backup Interfaces table with the  icon in the leftmost column.
3. Click **Apply**. The backup interface is deleted.

The following table provides a list of fields in the Backup Interfaces table and their descriptions:

Table 53: Backup Interfaces Table Parameters

Field	Description
Primary Interface	The name of the primary interface being backed up.
Backup Interface	The name of the Backup interface.
Failure Delay	The amount of time, in seconds, between the trigger event and the activation of the Backup interface.
Secondary Disable Delay	The amount of time, in seconds, between the primary interface returning to an acceptable operational status and the deactivation of the Backup interface.

The Backup Interface Wizard

This section provides detailed information on each of the Backup Interface Wizard's screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Backup Interface Wizard without making any changes, click **Cancel**.

The Backup Interface Wizard consists of the following screens:

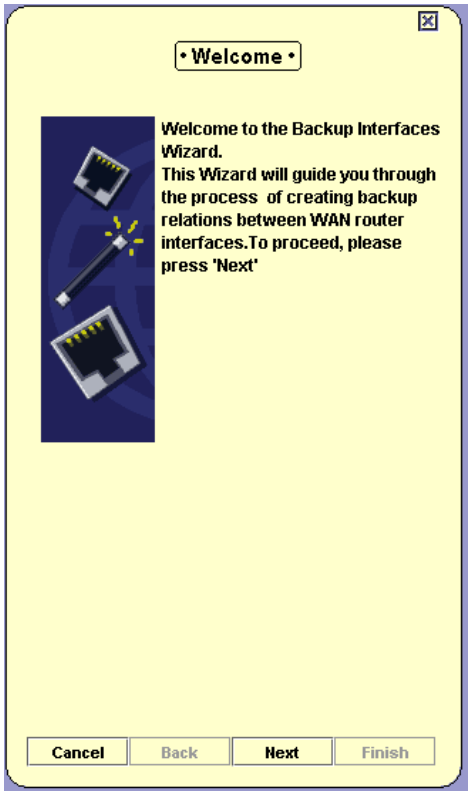
- Welcome Screen
- Primary Interface Screen
- Backup Interface Screen
- Backup Interface Parameters Screen
- Confirmation Screen

The following sections describe each of the Backup Interface Wizard screens.

Welcome Screen

The Backup Interface Wizard provides a simple, step-by-step method for creating or editing a Backup interface.

Figure 59: Backup Interface Wizard - Welcome Screen

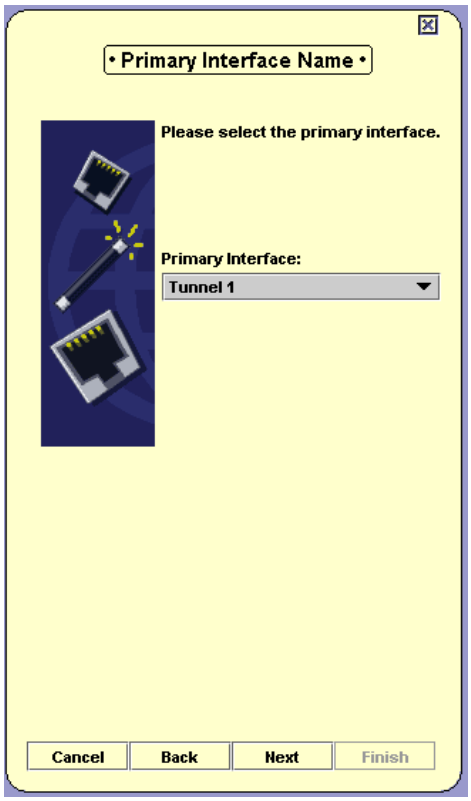


To continue, click **Next**. The Backup Interface Wizard continues with the "Primary Interface Screen" on page 147.

Primary Interface Screen

The Select Primary Interface screen enables you to select the interface to be backed up.

Figure 60: Backup Interface Wizard - Select Primary Interface Screen



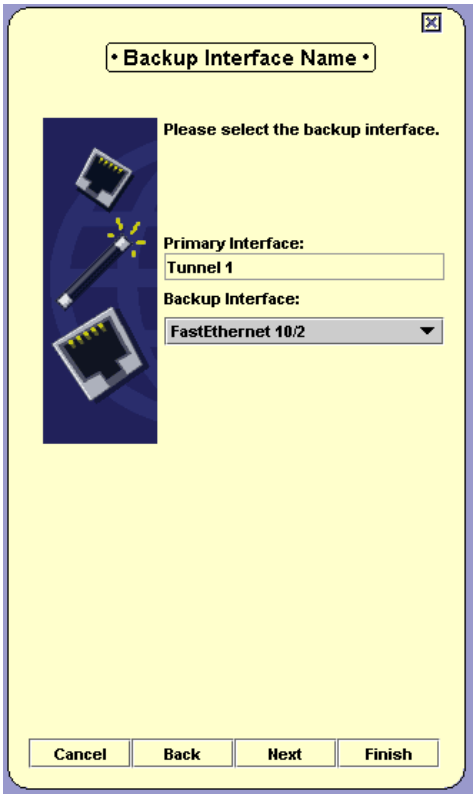
To select an interface to back up, select an interface name from the **Primary Interface** pull-down listbox.

To continue, click **Next**. The Backup Interface Wizard continues with the "Backup Interface Screen" on page 148.

Backup Interface Screen

The Select Backup Interface screen enables you to assign an interface to back up the primary interface.

Figure 61: Backup Interface Wizard - Select Backup Interface Screen



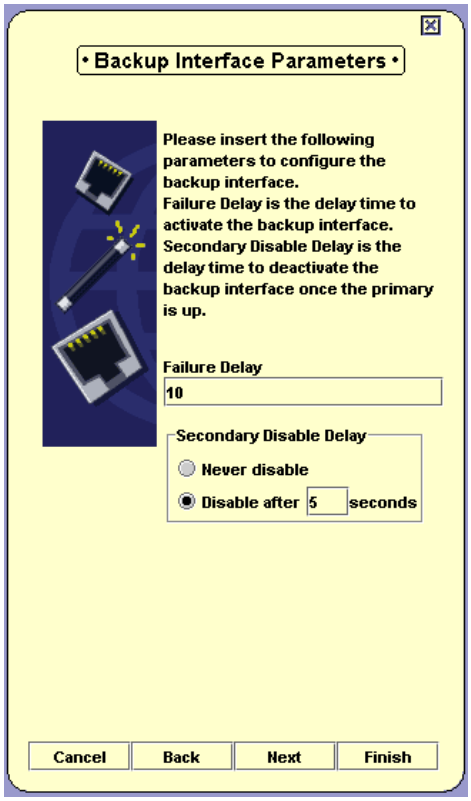
To select a Backup interface, select an interface name from the **Backup Interface** pull-down listbox.

To continue, click **Next**. The Backup Interface Wizard continues with the "Backup Interface Parameters Screen" on page 149.

Backup Interface Parameters Screen

The Backup Interface Parameters screen enables you to configure the conditions under which the Backup interface is activated and deactivated.

Figure 62: Backup Interface Wizard - Backup Interface Parameters Screen



To configure the number of seconds between the failure of the primary interface and the activation of the Backup interface, enter a number in the **Enable Delay** field.

To configure the number of seconds between the restoration of the primary interface and the deactivation of the Backup interface, enter a number in the **Disable Delay** field.

To continue, click **Next**. The Backup Interface Wizard continues with the "Confirmation Screen" on page 150.

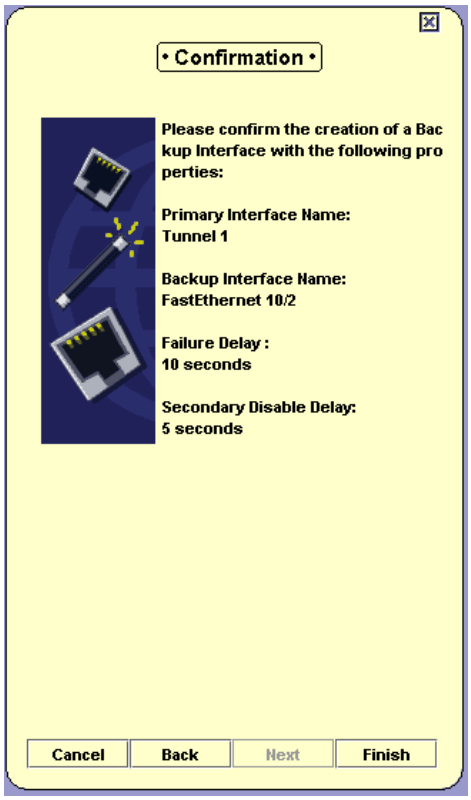
Confirmation Screen

The Backup Interface Wizard displays a summary of the information entered using the previous screens.

Note:

The Backup Interface has not yet been created.

Figure 63: Backup Interface Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Backup interface's parameters.
3. Click **Next** until you reach the Confirmation screen.

To create the Backup interface or apply the changes to the Backup interface's configuration, click **Finish**. The Backup interface information is uploaded to the device, and the Backup Interfaces table is refreshed.

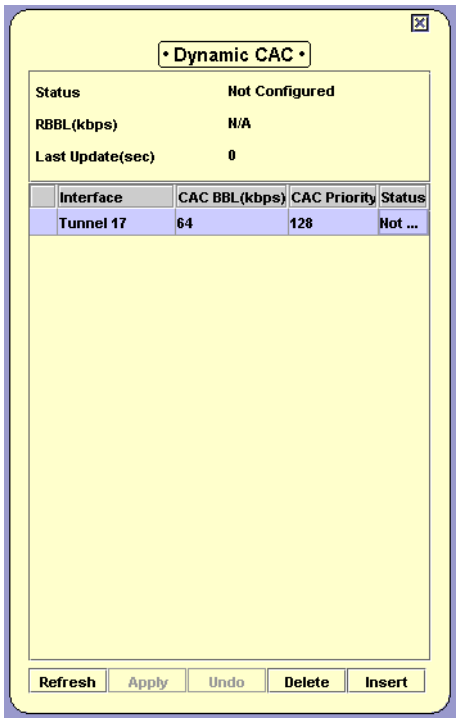
Dynamic CAC

The Dynamic CAC dialog box enables you to configure the Dynamic CAC function on a WAN interface. Dynamic CAC allows the Avaya G250/G350/G450 Device to control traffic flow between itself and a remotely located call controller.

To configure Dynamic CAC on a WAN interface:

1. Select **Configure > WAN > Dynamic CAC**. The Dynamic CAC dialog box opens.

Figure 64: Dynamic CAC Dialog Box



To add a new interface, click **Insert**. A blank row appears in the interface list.

To edit an existing interface, double-click the row in the interface list.

To delete an interface, select the interface you want to delete and click **Delete**. The row is deleted.

The following table provides a list of the fields in the Dynamic CAC dialog box and their descriptions.

Table 54: Dynamic CAC Dialog Box

Field	Description
Status	The status of Dynamic CAC on the WAN interface. Possible values are: • **Active** - Dynamic CAC is active on the WAN interface. • **Not Configured** - Dynamic CAC is not configured (but is supported) for the WAN interface. • **Not Armed** - Dynamic CAC is not armed (but is supported and configured) for the WAN interface. • **Armed Not Configured** - Dynamic CAC is armed (and supported, but not configured) for the WAN interface. • **Not Supported** - Dynamic CAC is not supported for the WAN interface. **Note:** This field is read-only.
RBBL (kbps)	Remote Bearer Bandwidth Limit. RBBL is the amount of bandwidth available for CAC on the remote controller. **Note:** This field is read-only.
Last Update (sec)	The last time the CAC values were updated (in seconds). **Note:** This field is read-only.
Interface	The local WAN interface supporting Dynamic CAC. Possible values are: • **Fast Ethernet** • **Serial** • **Tunnel**
CAC BBL (kbps)	The local interface bandwidth threshold after which CAC is activated.
CAC Priority	The CAC activation priority.
Status	Operational status of Dynamic CAC. Possible values are: • **Not Configured** • **Active** • **Not Active** • **Active ECMP** • **Not Supported**

Chapter 8: Embedded Tools

This chapter provides information and instructions for configuring the embedded tools of the Avaya G250/G350/G450. It includes the following sections:

- Configuring the DHCP Server - Instructions on configuring DHCP Server functionality.
- Configuring the TFTP Server - Instructions on configuring TFTP Server functionality.
- Configuring the Converged Network Analyzer Application - Instructions on configuring Converged Network Analyzer (CNA) functionality.

Configuring the DHCP Server

DHCP (Dynamic Host Configuration Protocol) server functionality enables you to automatically assign IP addresses and other network parameters to remote stations not configured with static network parameters. A pool of allocated addresses and parameters is created on the server. The remote station, on network login, requests network parameters from the DHCP server. The DHCP server provides the remote station with parameters such as IP address, subnet mask, default gateway, and Domain Name Server (DNS) information.

The Avaya G250/G350/G450 Device can act as a DHCP server both for devices physically connected to the Avaya G250/G350/G450 Device and for other devices on the same network.

Configuring DHCP

DHCP configuration includes the following four steps:

- Configuring Basic DHCP Options - Basic configuration options for DHCP service.
- Creating a New DHCP Pool - New allocation pool creation options for DHCP service.
- Configuring DHCP Pool Parameters - Allocation pool configuration options for DHCP service.
- Configuring DHCP Assignment Parameters - Parameter allocation options for DHCP service.

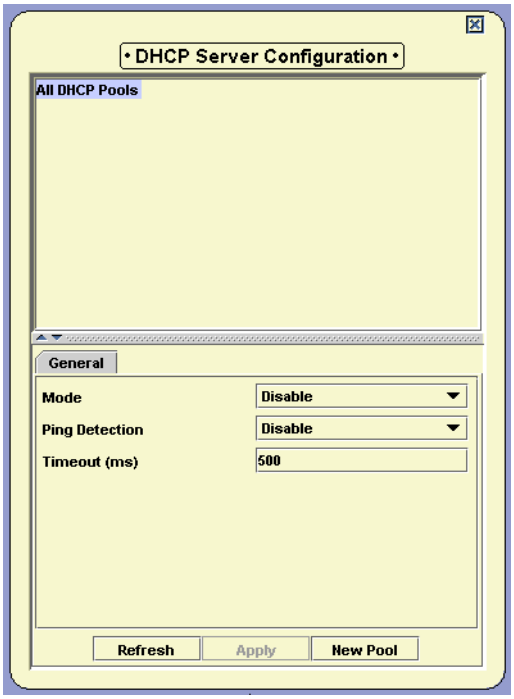
The DHCP Server dialog box is split into two sections. The top section shows the **All DHCP Pools** tree, a view of all available DHCP pools. You can click **All DHCP Pools** to manage the basic DHCP function and create a new pool, or click a specific pool to configure options for that pool.

To configure the DHCP server, select **Servers > DHCP Server** from the Configure Menu. The DHCP Server Configuration dialog box opens to the General Tab.

Configuring Basic DHCP Options

The DHCP Server - General Tab provides basic configuration options for activating the DHCP service.

Figure 65: DHCP Server Configuration - General Tab



The following table provides a list of the fields in the DHCP Server Configuration - General Tab and their descriptions:

Table 55: DHCP Server Configuration - General Tab Fields

Field	Description
Mode	Administrative status of the DHCP service. Possible values are: • **Enable** • **Disable**
Ping Detection	When enabled, the DHCP server sends a ping packet to detect an IP address conflict, before actually allocating the IP address to the DHCP client. Possible values are: • **Enable** • **Disable** (default value)
	1 of 2

Table 55: DHCP Server Configuration - General Tab Fields (continued)

Field	Description
Timeout (ms)	The timeout in milliseconds of the ping packet sent by the DHCP server to detect an IP address conflict, before allocating the new IP address. Possible values are 25ms – 1000 ms. The default value is 500 milliseconds.
	2 of 2

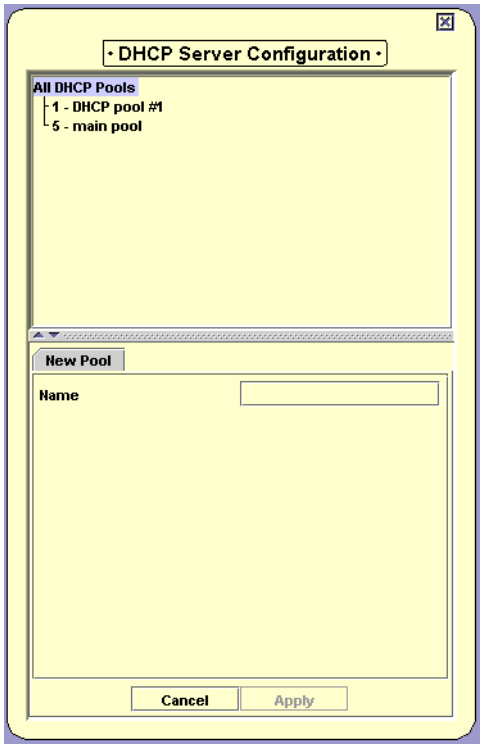
To refresh the tree view, click **Refresh**. To apply changes to DHCP general configuration, click **Apply**.

To create a new pool, click **New Pool**. The DHCP Server Configuration dialog box - New Pool tab opens.

Creating a New DHCP Pool

The DHCP Server -New Pool Tab provides configuration options for creating a new DHCP pool.

Figure 66: DHCP Server Configuration - New Pool Tab



The following table provides a list of the fields in the DHCP Server Configuration - New Pool Tab and their descriptions:

Table 56: DHCP Server Configuration - New Pool Tab Fields

Field	Description
Name	Name of the new pool to be created.

To cancel changes, click **Cancel**. To apply changes and create the new pool, click **Apply**. The newly created pool appears in the **All DHCP Pools** tree.

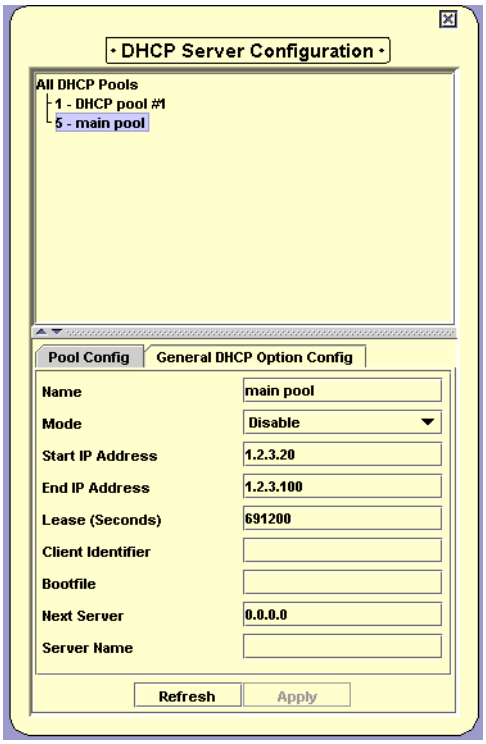
Configuring DHCP Pool Parameters

The DHCP Server - Pool Config Tab provides options for configuring parameters for the DHCP pool.

To open the DHCP Server Configuration - Pool Config Tab:

Click a specific pool in the **All DHCP Pools** tree.

Figure 67: DHCP Server Configuration - Pool Config Tab



The following table provides a list of the fields in the DHCP Server Configuration - Pool Configuration Tab and their descriptions:

Table 57: DHCP Server Configuration - Pool Config Tab Fields

Field	Description
Name	Name of the selected pool.
Mode	Administrative status of the DHCP pool. Possible options are: • **Enable** • **Disable**
Start IP Address	First IP address assigned in the DHCP pool.
End IP Address	Last IP address assigned in the DHCP pool.
Lease (Seconds)	Amount of time a client holds an allocation from DHCP before needing to make a new request.
Client Identifier	String identifying client station as eligible to receive allocation from the DHCP pool.
Bootfile	Bootfile assigned by DHCP.
Next Server	The next server to service DHCP allocations if this server is not available.
Server Name	The network name of the DHCP server. This field is optional. Default: None

To refresh the field information, click **Refresh**. To apply changes to the pool, click **Apply**.

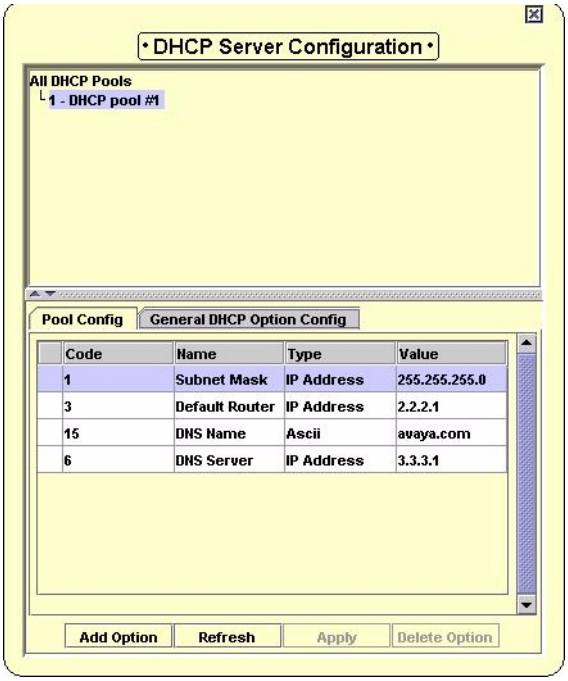
Configuring DHCP Assignment Parameters

The DHCP Server - General DHCP Options Config Tab provides options for configuring parameters to be assigned to a remote station requesting network parameter information from the DHCP service.

To open the DHCP Server Configuration - General DHCP Options Config Tab:

Click a specific pool entry in the All DHCP Pools tree.

Figure 68: DHCP Server Configuration - General DHCP Options Config Tab



The following table provides a list of the fields in the DHCP Server Configuration - General DHCP Options Config Tab and their descriptions:

Table 58: DHCP Server Configuration - General DHCP Options Config Tab Fields

Field	Description
Code	The system definition of the DHCP option. Possible values are: • **Subnet Mask** - The subnet mask to be assigned to the requesting device. • **Default Router** - The IP address of the router to be used as the default gateway for the requesting device. • **DNS Server** - The IP address of the DNS to be used for address resolution for the requesting device. • **DNS Name** - The name of the DNS to be used for address resolution for the requesting device.
	1 of 2

Table 58: DHCP Server Configuration - General DHCP Options Config Tab Fields

Field	Description
Name	The name of the DHCP option. Possible values are: • **Subnet Mask** - The value requested as Subnet Mask by the requesting device for which the associated **Code** value is to be returned. • **Default Router** - The value requested as Default Router by the requesting device for which the associated **Code** value is to be returned. • **DNS Server** - The value requested as DNS Server by the requesting device for which the associated **Code** value is to be returned. • **DNS Name** - The value requested as DNS Name by the requesting device for which the associated **Code** Value is returned.
Type	The format of the DHCP option. Possible values are: • **Ascii** - The value is assigned in ASCII character format. • **Hex** - The value is assigned in hexadecimal format. • **Integer** - The value is assigned in integer format. • **IP Address** - The value is assigned in IP address format. • **Word** - The value is assigned in text format.
Value	The value of the DHCP option, presented according to the Type field. **Note:** If the **Type** field is set to IP Address, this field is disabled.
	2 of 2

To add a new DHCP configuration option, click **Add Option**. To refresh the table view, click **Refresh**. To apply changes to the table, click **Apply**. To delete a DHCP configuration option, click **Delete Option**.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

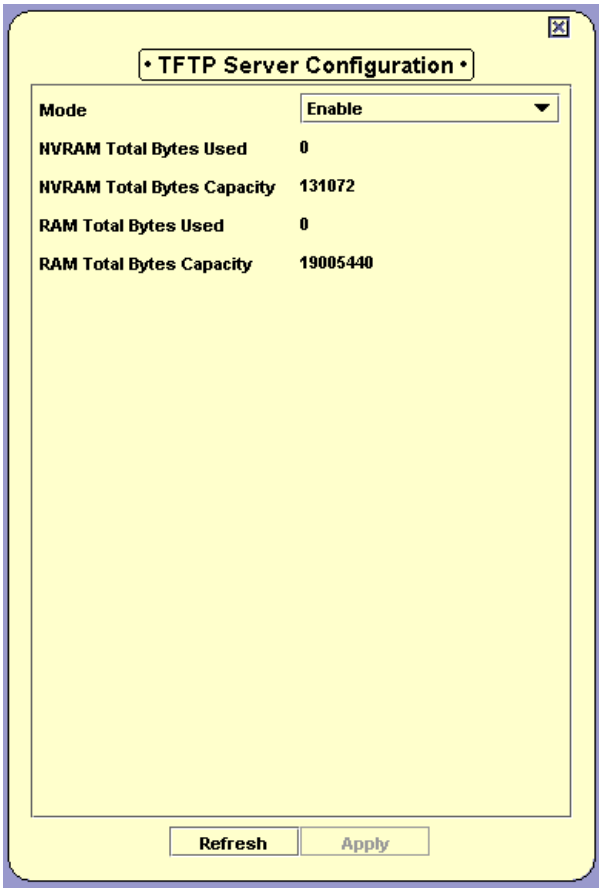
Configuring the TFTP Server

TFTP (Trivial File Transfer Protocol) service allows transfer of files across your network, using a connectionless, UDP-based protocol. TFTP is the protocol normally used for transferring stored device configuration files to and from remote devices, and for transferring device firmware updates.

To configure the TFTP server:

Select **Servers > TFTP Server** from the Configure Menu. The TFTP Server dialog box opens.

Figure 69: TFTP Server Configuration Dialog Box



The following table provides a list of the fields in the TFTP Server Configuration dialog box and their descriptions:

Table 59: TFTP Server Configuration Fields

Field	Description
Mode	Administrative status of the TFTP service. Possible values are: • **Enable** • **Disable**
NVRAM Total Bytes Used	Total bytes used for scripts in NVRAM.
NVRAM Total Bytes Capacity	Total byte capacity for scripts in NVRAM.
RAM Total Bytes Used	Total bytes used for scripts and images in RAM.
RAM Total Bytes Capacity	Total byte capacity for scrips and images in RAM.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Configuring the Converged Network Analyzer Application

Converged Network Analyzer (CNA) is a distributed system for real-time monitoring of IP networks, using active measurements. CNA can run connectivity tests with pings, topology tests with traceroute, and QoS tests with synthetic RTP streams. Test plugs are entities within the CNA system that receive instructions from a Scheduler for running tests, perform the tests, and send back the results.

The following options are available for configuring Converged Network Analyzer on the Avaya G250/G350/G450 Device:

- Configuring an External Test Plug - Configuration information for an external test plug.
- Configuring Schedulers - Scheduling information for the test plugs.

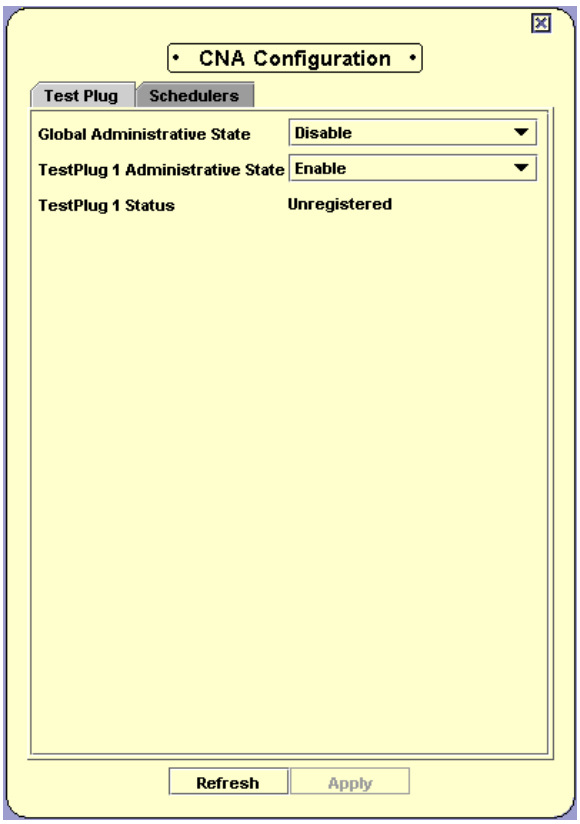
To access and configure the Converged Network Analyzer application:

Select **Configure > CNA**. The CNA Configuration dialog box opens.

Configuring an External Test Plug

The CNA Configuration - Test Plug Tab provides configuration options for an external test plug. A test plug is a piece of external hardware that connects to a device's network port and simulates network traffic without actually exposing the device to network traffic.

Figure 70: CNA Configuration - Test Plug Tab



The following table provides a list of the fields in the CNA Configuration - Test Plug Tab and their descriptions:

Table 60: CNA Configuration - Test Plug Parameters

Field	Description
Global Administrative State	Administrative status of the CNA application. Possible values are: • **Enable** • **Disable**
	1 of 2

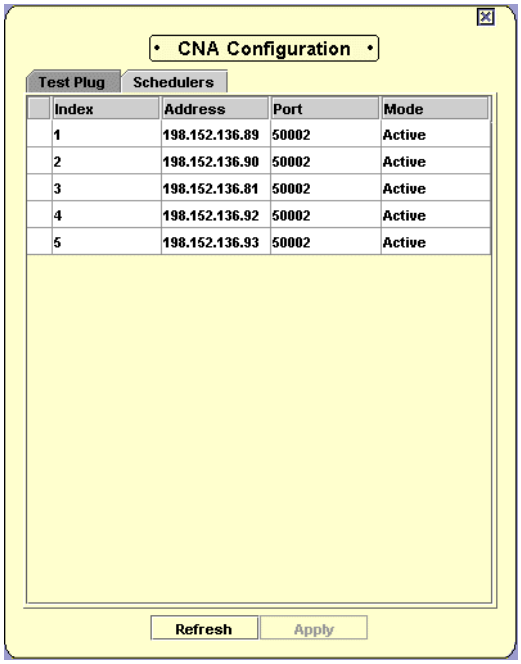
Table 60: CNA Configuration - Test Plug Parameters (continued)

Field	Description
Test Plug 1 Administrative State	Administrative status of the test plug. Possible values are: • **Enable** • **Disable**
Test Plug 1 Status	The status of the Test Plug operation. Possible values include: • **Unregistered** - The test plug is attempting to register and is currently unregistered. • **Scheduler List Exhausted** - The test plug has exhausted its scheduler list at least once, and is now attempting to register. • **Idle** - The test plug is registered, but idle. • **Test** - The test plug is running a test. • **Suspend** - The test plug is idle because a test was cancelled. • **No IP Address** - No IP address is configured for the test plug interface. • **Bad IP Address** - The configured test plug IP address is not properly configured for the test plug interface. • **Empty Scheduler List** - The scheduler list is empty. No testing events were configured for this device. • **Failed Control Port Bind** - The test plug failed to bind the UDP control port. • **Failed FTP Port Bind** - The test plug failed to bind to the UDP port for RTP tests. • **Suspend By Rate Limiter** - The test plug was suspended by its test rate limiter.
	2 of 2

Configuring Schedulers

The CNA Configuration - Schedulers Tab provides configuration options for scheduling test plugs.

Figure 71: CNA Configuration - Schedulers Tab



The following table provides a list of the fields in the CNA Configuration - Schedulers Tab and their descriptions:

Table 61: CNA Configuration - Schedulers Tab Fields

Field	Description
Index	The index of this scheduler in the scheduler list.
Address	Address of the scheduler.
Port	Scheduler registration TCP port. The default value is: **8888**.
Mode	Indicates whether the scheduler is active or inactive. Possible values include: • **Active** • **Not In Service**

Note:

Mode cannot be set to **Active** for a scheduler if **Address** is set to **0.0.0.0**.

Chapter 9: VLANs

This chapter provides the information and instructions you need to use VLANs. It includes the following sections:

- VLAN Configuration Overview - An overview of VLANs and their components.
- Configuring VLANs - Instructions on how to access the VLAN Configuration dialog box and a description of the VLAN Configuration dialog box.
- Managing VLANs - Instructions on how to create, delete, and rename VLANs.
- Viewing Port VLAN Settings - Instructions on how to view VLAN settings for ports on the device.
- Managing Port VLAN Settings - Instructions on how to configure VLAN settings for ports on the device.
- Updating the Device - Instructions on how to update the device with new VLAN information.

VLAN Configuration Overview

This section contains an overview of VLANs and how to configure them, and contains the following sections:

- VLANs Overview - A brief description of VLANs and their functions.
- Master VLAN List - A brief description of the Master VLAN List and it's functions.
- VLAN Tags - A brief description of VLAN tags and their functions.

VLANs Overview

The building blocks of VLANs are switch ports. To build a new VLAN you need to define a VLAN name and number. You can then add switch ports to the VLAN by configuring the PVID of the port to the VLAN number. The ports are members of the VLAN whose number is their PVID. In addition, you can configure the VLAN tagging mode and binding style of the switch ports. VLAN #1 is the default VLAN and is named **Default**.

For more information about VLANs, refer to *VLANs* in the *Network Protocols* section of *The Reference Guide.*

Master VLAN List

The master VLAN list is a file on the network management station that contains a list of globally defined VLANs and their names. This list is only available when running Avaya Network Manager. It is not available when running an Embedded Web Manager. To manage the master VLAN list, use Avaya VLAN Manager. For information on Avaya VLAN Manager, refer to the *Avaya VLAN Manager User Guide*.

VLANs that are listed in the master VLAN list are called globally known VLANs. VLANs that are not in the master VLAN list but are configured on a device are called locally known VLANs.

VLAN Tags

Packets can be tagged with VLAN information. When a tagged packet enters a switch port, it maintains its tag. When an untagged packet enters a switch port, the packet is tagged with the port's PVID (Port VLAN ID).

When a packet arrives at the egress port, the VLAN Binding Style is checked. If the packet's VLAN tag does not match a VLAN to which the egress port is bound, the packet is discarded. If the tag matches a VLAN to which the egress port is bound, the Tagging Mode is used. If the Tagging Mode is Clear, the packet is forwarded with no VLAN tag. If the Tagging Mode is anything else, the packet is forwarded with its VLAN tag.

Configuring VLANs

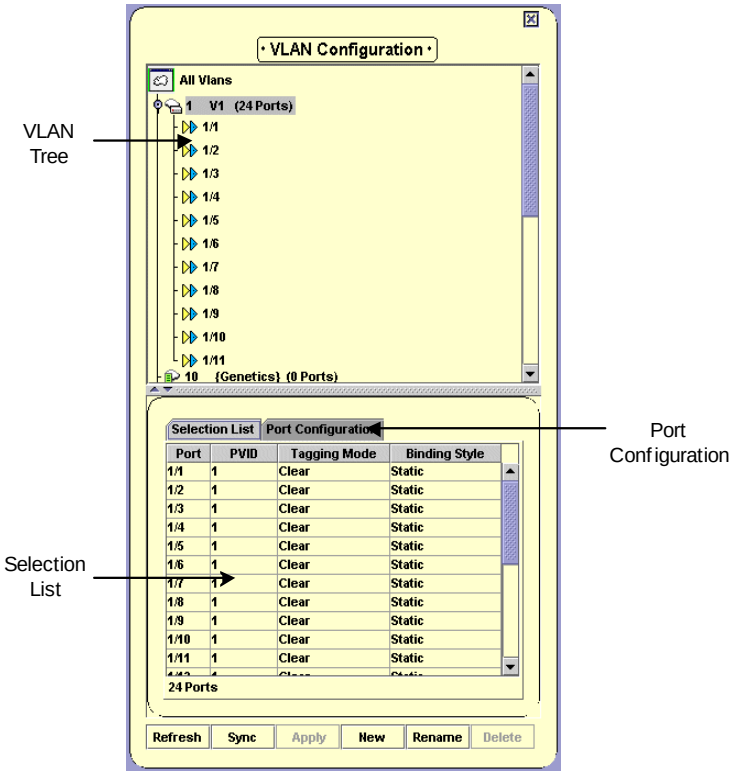
To view VLAN names, numbers, and component switch ports:

Click  .

Or

Select **Configure > VLANs**. The VLAN Configuration dialog box opens.

Figure 72: VLAN Configuration Dialog Box



The VLAN Configuration dialog box consists of the following components:

- VLAN Tree
- Selection List
- Port Configuration Area

To refresh the information in the VLAN Configuration dialog box and lose all unapplied changes, click **Refresh**.

To resize the various areas of the VLAN Configuration dialog box, use the splitter bars.

VLAN Tree

A tree providing a list of VLANs and their ports. The VLANs include all VLANs known on the network and all VLANs configured on the device. The ports listed under a VLAN include member ports and ports statically bound to the VLAN.

To expand or contract a branch of the table:

Double-click the VLAN's name.

Or

Click the handle next to the VLAN's name.

The VLAN symbol includes a green tag if the VLAN is listed in the master VLAN list, and a device symbol if it exists locally on the device. If it is listed in the master VLAN list and exists locally on the device, the VLAN symbol includes a green tag and a device symbol.

If the VLAN name on the device differs from the globally defined VLAN name, the local VLAN name appears after the VLAN number, followed by the global VLAN name in braces. For example, if VLAN 4 is locally named **RandD**, and globally named **Research**, the following string will appear in the VLAN Tree: **`4 RandD {Research}`**. To change all locally defined VLAN names to the globally defined names, you can synchronize the VLAN names on the device. For information on synchronizing VLAN names, refer to "Synchronizing VLAN Names" on page 173.

Note:

When using the Embedded Web Device Manager, global VLAN information is not available.

The VLAN's member ports appear with a yellow triangle and blue triangle next to the port name. Ports that are statically bound to the VLAN appear with a blue triangle attached to the port name. Member ports are automatically bound to the VLANs of which they are members. Ports whose VLAN information has changed but has not been applied, appear with gray triangles.

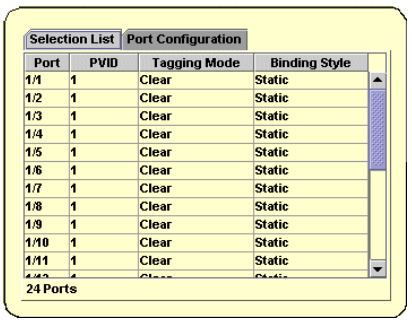
When a VLAN is selected in the VLAN Tree, member ports appear in the Chassis View with a yellow triangle and blue triangle on the port symbol, and statically bound ports appear in the Chassis View with a blue triangle on the port symbol. In addition, information about the member ports and statically bound ports appear in the Selection List.

For more information about the Selection List, refer to "Selection List" on page 169.

Selection List

The Selection List contains a table with VLAN information about the current selection. For example, if you select a module in the Tree View or Chassis View, a list of the ports in the module with their VLAN information appears in the Selection List. If the Port Configuration Area is open, click **Selection List**. The Selection List opens.

Figure 73: Selection List



The following table provides a list of the information fields in the Selection List and their descriptions.

Table 62: Selection List Fields

Field	Description
Port	The Module and Port number
PVID	The Port VLAN ID (PVID) of the ports. This is the VLAN of which the port is a member.
Tagging Mode	The tagging mode of the port. For information of tagging modes, refer to “Port Configuration Area” on page 170.
Binding Style	The binding style configured on the port. For information on binding styles, refer to “Port Configuration Area” on page 170.

To sort the Selection List table by any of its fields, click the field header. To reverse the order of the sort, click the field header a second time.

The information in the Selection List is read-only.

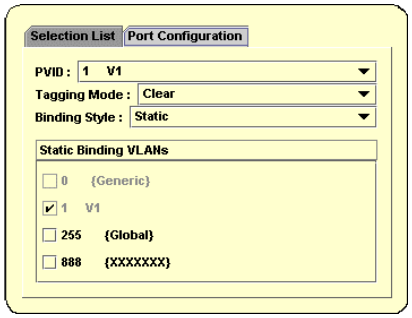
Port Configuration Area

The Port Configuration Area enables you to configure a port's VLAN configuration.

To view the Port Configuration Area:

Click **Port Configuration**. The Port Configuration Area opens.

Figure 74: Port Configuration Area



The following table provides a list of the configuration parameters in the Port Configuration Area and their description.

Table 63: Port Configuration Area Parameters

Field	Description
PVID	The Port VLAN ID (PVID) of the port. This is the VLAN of which the port is a member. THE PVID pull-down list contains all VLANS known to the network and VLANs on the device.
Tagging Mode	The tagging mode of the port. The tagging mode controls the tagging of packets that can be forwarded by the port. The following tagging modes are available. • **Clear** - The packet is forwarded with no VLAN tag. • **IEEE-802.1Q** - The packet is forwarded with a VLAN tag in conformance with the IEEE-802.q standard.
	1 of 2

Table 63: Port Configuration Area Parameters (continued)

Field	Description
Binding Style	The binding style configured on the port. The binding style defines which packets can be forwarded by the port. The following binding styles are available: • **Bind to All** - The port is bound to all VLANs known to the device. This is also known as persistent binding. If a packet is on a VLAN not known to the device, the packet is discarded. • **Bind to Configured** - The port is bound to all VLANs known to the device and to the VLANs with which packets reaching the ports are tagged. This is also known as dynamic binding. If a packet is on a VLAN not known to the device, the packet is discarded. • **Static** - The port is bound to the VLANs checked in the **Static Binding VLANs** list. Packets on all other VLANs are discarded.
Static Binding VLANs	A list of VLANs known on the network and VLANs configured on the device. Each VLAN has an accompanying checkbox. Possible values are: • **Checked** - The VLAN is bound to the port being configured. • **Unchecked** - The VLAN is not bound to the port being configured. **Note:** The settings are only used when the port is configured with the **Static** Binding Style.
	2 of 2

Managing VLANs

You can create, rename, synchronize, and delete VLANs.

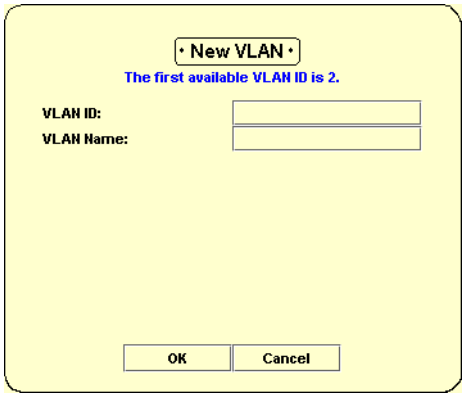
- Creating VLANs
- Renaming VLANs
- Synchronizing VLAN Names
- Deleting VLANs

Creating VLANs

To create a new VLAN:

1. From the VLAN Configuration dialog box, click **New**. The Create VLAN dialog box opens.

Figure 75: Create VLAN Dialog Box



2. Enter a VLAN number in the **VLAN ID** field.

   Note:

   The range of valid VLAN numbers is **1 - 3071** (up to 8 VLANs in total) for Avaya G250/G350 Devices and **1 - 4090** (up to 64 VLANs in total) for Avaya G450 Devices.

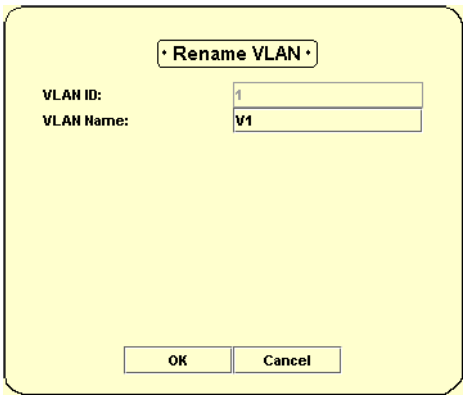
3. Enter a name for the VLAN in the **VLAN Name** field.
4. Click **OK**. The new VLAN is created.

Renaming VLANs

To rename a VLAN:

1. From the VLAN Configuration dialog box, select the VLAN whose name you want to edit.
2. Click **Rename**. The Rename VLAN dialog box opens.

Figure 76: Rename VLAN Dialog Box



3. Edit the VLAN's name in the **VLAN Name** field.
4. Click **OK**. The VLAN is renamed.

Synchronizing VLAN Names

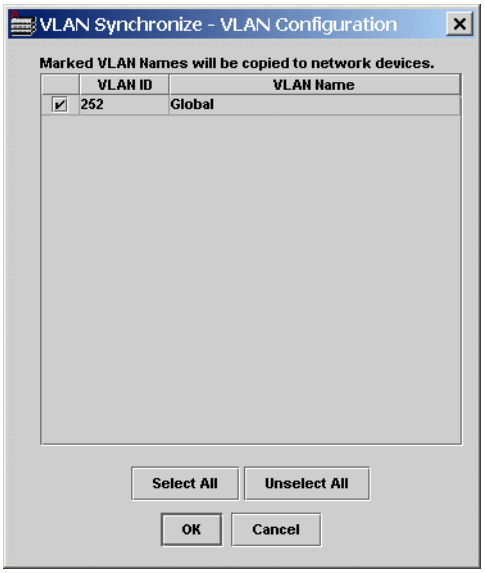
VLANs with the same VLAN number can be defined with different names on different devices in the network. In addition, VLAN names can be configured in the master VLAN list. This can cause confusion when referring to a VLAN by name rather than by number. The VLAN application enables you to synchronize the VLAN names on the device with those in the master VLAN list.

When synchronizing the VLAN names on the device with those in the master VLAN list, the VLANs on the device are renamed to provide consistency with the names in the master VLAN list.

To synchronize VLAN names on the device with the master VLAN list:

1. From the VLAN Configuration dialog box, click **Sync**. The VLAN Synchronize dialog box opens. The VLAN Synchronize dialog box contains a list of VLANs whose local names differ from the VLAN names in the master VLAN list. The following fields appear for each VLAN:
   - **VLAN ID** - The VLAN number (ID) for the VLAN.
   - **VLAN Name** - The VLAN name in the master VLAN list.

Figure 77: VLAN Synchronize Dialog Box



2. Check the checkboxes next to the VLANs whose names you want to synchronize.
   - To select all the VLANs in the VLAN Synchronize dialog box, click **Select All**.
   - To unselect all the VLANs in the VLAN Synchronize dialog box, click **Unselect All**.
3. Click **OK**. The marked VLANs on the device are renamed with the VLAN names in the master VLAN list.

Deleting VLANs

You can delete VLANs from the Avaya G250/G350/G450 Device. Globally known VLANs can be deleted from the device, but not from the master VLAN list. If you delete a VLAN that is on the master VLAN list and on the device, the VLAN remains in the VLAN Tree with a green tag.

To delete a VLAN:

1. Select the VLAN you want to delete.
2. Ensure that there are no member ports associated with the VLAN by deleting all ports from the VLAN.
3. Click **Delete**. The VLAN is deleted from the device.

Managing Port VLAN Settings

You can view and configure the PVID, Tagging Mode, and Binding Style of selected ports using the Selection List and Port Configuration Area. In addition, you can configure the PVID of selected ports using the drag-and-drop method.

Selecting Ports

Ports can be selected from the Tree View, Chassis View, or VLAN Tree for VLAN Configuration.

- To select a port, click the port in the Tree View, Chassis View, or VLAN Tree.
- To select multiple ports, press **CTRL** while selecting additional ports.
- To select all of the ports on a module, click the module icon in the Tree View or Chassis View.
- To select all of the ports on the device, click the device icon in the Tree View or Chassis View.
- To select all of the ports associated with a VLAN (including member ports and statically bound ports), click the VLAN in the VLAN Tree.

Viewing Port VLAN Settings

To view the VLAN configuration of a port, select a port in the Tree View, Chassis View, or VLAN Tree. The port's VLAN configuration appears in the Selection List. If you select multiple ports in the Tree View, Chassis View, or VLAN Tree, the VLAN configurations for all of the selected ports appear in the Selection List. In addition, parameters that are common to all ports in the selection appear in the Port Configuration Area.

For details on the information provided in the Selection List, refer to "Selection List" on page 169.

Using the Port Configuration Area

To configure the VLAN setting for ports on the device using the Port Configuration Area:

1. Click **Port Configuration**. The Port Configuration Area opens.
2. Select the ports you want to configure in the Tree View, Chassis View, or VLAN Tree. The settings that are common to all of the selected ports appear in the fields in the Port Configuration Area. For information on selecting ports, refer to "Selecting Ports" on page 175.
3. Change the settings in the Port Configuration Area using the pull-down lists and checkboxes. For information on the settings in the Port Configuration Area, refer to "Port Configuration Area" on page 170. The VLAN configuration for the selected ports is changed.

   Note:

   When changing the PVID of the selected ports, the ports do not appear selected in the VLAN Tree. However, the ports remain in the Selection List.

Configuring VLANs Using Drag-and-Drop

To configure the PVID of ports using drag-and-drop:

1. Select the ports you want to configure in the Tree View, Chassis View, or VLAN Tree. For information on selecting ports, refer to "Selecting Ports" on page 175.
2. Drag the ports until they are over a VLAN icon in the VLAN Tree. The ports are added to the desired VLAN.

   Note:

   When dragging ports from the VLAN Tree, only ports represented by PVID symbols are added to the desired VLAN. Dragged static binding icons are ignored and do not change port PVIDs.

Updating the Device

Ports whose VLAN information has changed appear dimmed in the VLANs table. To update the device with the changes, click **Apply**.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 32.

Chapter 10: Port Mirroring

This chapter provides information and instructions for using the Port Mirroring feature. It includes the following sections:

- Port Mirroring Overview - An overview of port mirroring.
- Configuring Port Mirroring - Instructions on adding, editing, and deleting a port mirroring pair.
- The Port Mirroring Wizard - Detailed descriptions of the screens in the Port Mirroring Wizard.

Port Mirroring Overview

Port Mirroring copies all received and transmitted packets (including local traffic) from a source port to a predefined destination port, in addition to the normal destination port of the packets. This is a useful method for monitoring all traffic traveling through a specific port.

For more information on Port Mirroring, refer to *Port Mirroring* in *The Reference Guide*.

CAUTION:

Do not change the VLAN of the source or destination port while the port mirroring mechanism is operating.

Configuring Port Mirroring

This section explains how to configure Port Mirroring on the Avaya G250/G350/G450 Device.

To configure Port Mirroring:

Click  .

Or

Select **Configure > Port Mirroring**. The Port Mirroring Wizard opens.

The Port Mirroring Wizard

This section provides detailed information on each of the Port Mirroring Wizard's screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Port Mirroring Wizard without making any changes, click **Cancel**.

The Port Mirroring Wizard consists of the following screens:

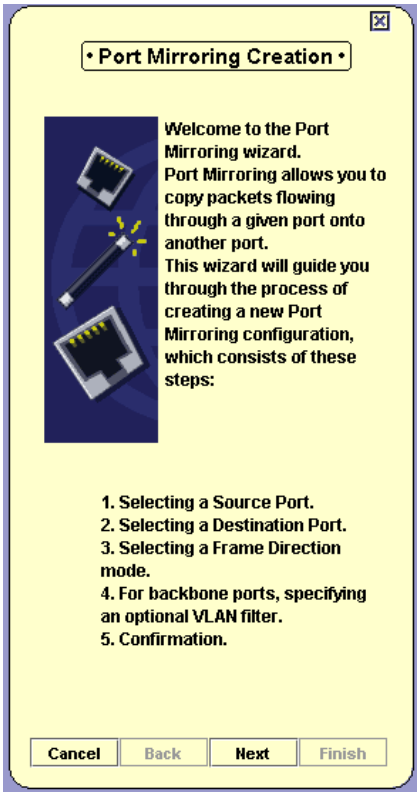
- Port Mirroring Wizard - Create Welcome
- Port Mirroring Wizard - Edit/Delete Welcome
- Port Mirroring Wizard - Source Port Selection
- Port Mirroring Wizard - Destination Port Selection
- Port Mirroring Wizard - Frames Direction Selection
- Port Mirroring Wizard - Confirmation

If Port Mirroring is not currently active on the device, the Port Mirroring Wizard starts with the Create Welcome screen. If Port Mirroring is currently active on the device, the Port Mirroring Wizard starts with the Edit/Delete Welcome screen.

Port Mirroring Wizard - Create Welcome

The Port Mirroring Wizard provides a simple, step-by-step method for defining a Port Mirroring pair.

Figure 78: Port Mirroring Wizard - Create Welcome

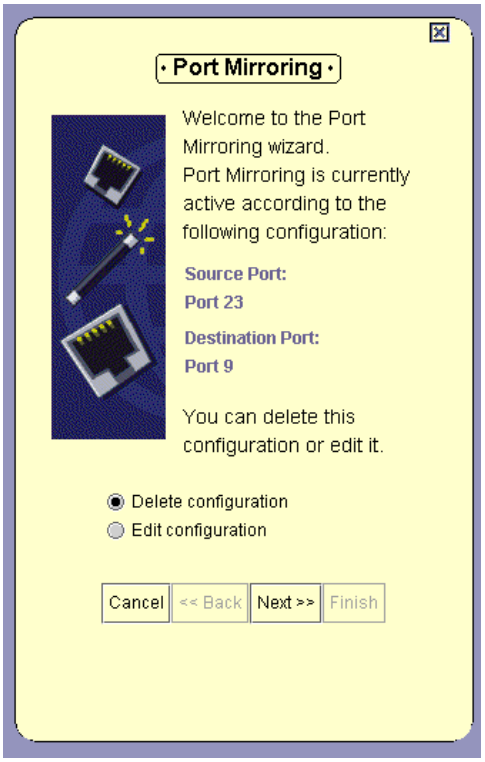


To continue, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Source Port Selection screen.

Port Mirroring Wizard - Edit/Delete Welcome

The wizard offers the choice of deleting or editing the existing Port Mirroring configuration.

Figure 79: Port Mirroring Wizard - Edit/Delete Welcome Screen



To delete the existing Port Mirroring configuration:

1. Select the **Delete configuration** option button.
2. Click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Confirmation screen.

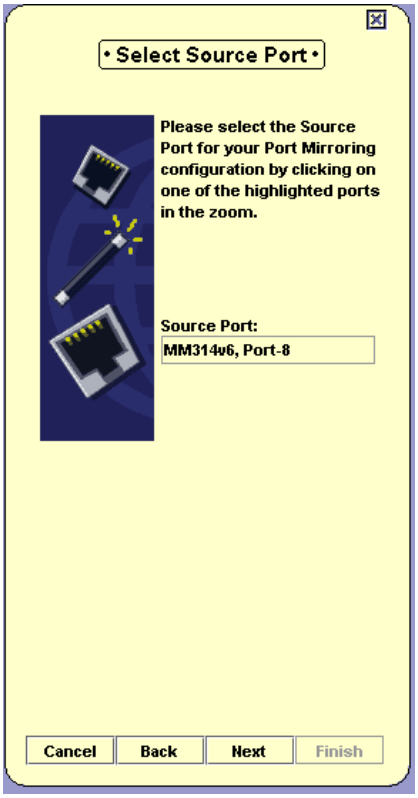
To edit the existing Port Monitoring configuration:

1. Select the **Edit configuration** option button.
2. Click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Source Port Selection screen. The current configuration is reflected in the wizard's screens.

Port Mirroring Wizard - Source Port Selection

The Source Port Selection screen of the Port Mirroring Wizard helps you select a source port for the Port Mirroring pair. Ports that can be selected as sources appear in white in the Chassis View.

Figure 80: Port Mirroring Wizard - Source Port Selection Screen



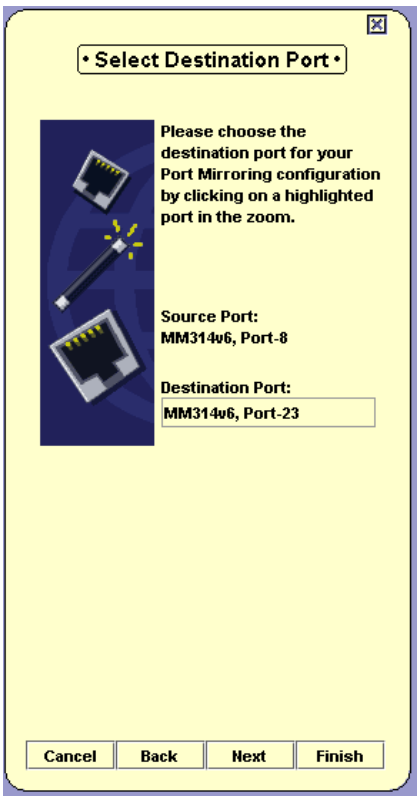
To select a source for the Port Mirroring pair, select a highlighted port in the Chassis View. The selected port appears blue in the Chassis View and Tree View and is listed in the **Source Port** field in the wizard.

When you have selected the source for the Port Mirroring, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Destination Port Selection screen.

Port Mirroring Wizard - Destination Port Selection

The Destination Port Selection screen of the Port Mirroring Wizard helps you select a destination port for the Port Mirroring pair. Ports which can be selected as destinations appear white in the Chassis View.

Figure 81: Port Mirroring Wizard - Destination Port Selection Screen



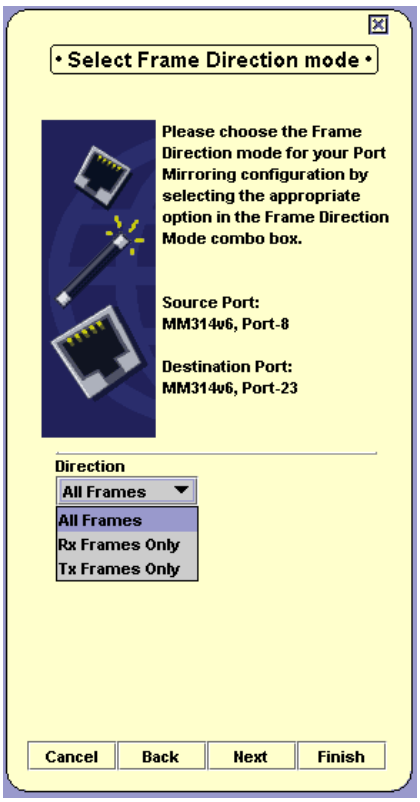
To select a destination for the Port Mirroring pair, select a port in the Chassis View. The selected port appears cyan in the Chassis View and Tree View and is listed in the **Destination Port** field in the wizard.

When you have finished selecting the destination for the Port Mirroring pair, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Frames Direction Selection screen.

Port Mirroring Wizard - Frames Direction Selection

The Frames Direction Selection screen of the Port Mirroring Wizard enables you to select the traffic to be copied to the destination port. You can configure the destination port to receive all traffic going through the source port, or only the traffic received by the source port.

Figure 82: Port Mirroring Wizard - Frames Direction Selection Screen



To configure which frames are copied to the destination port, select an option from the **Frames Direction Mode** pull-down list box. Possible options are:

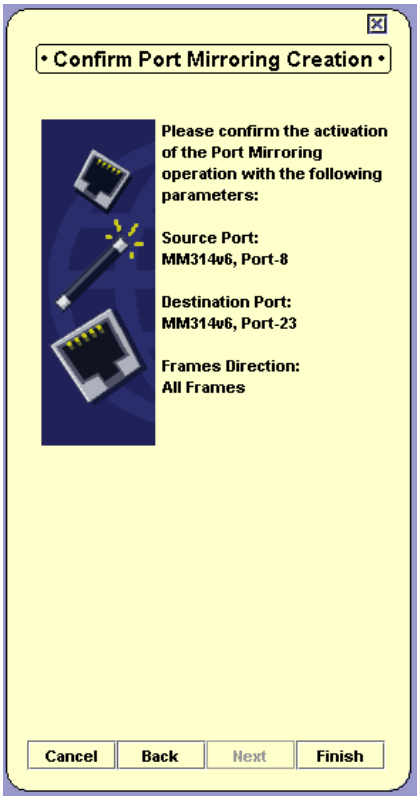
- **All Frames** - All traffic going through the source port is copied to the destination port.
- **Rx Frames Only** - Traffic received by the source port is copied to the destination port.
- **Tx Frames Only** - Traffic transmitted by the source port is copies to the destination port.

When you have finished selecting the traffic to be copied, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Confirmation screen.

Port Mirroring Wizard - Confirmation

The Port Mirroring Wizard displays a summary of the Port Mirroring information entered using the previous screens. The Port Mirroring configuration has not yet been uploaded to the device.

Figure 83: Port Mirroring Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Port Mirroring parameters.
3. Click **Next** until you reach the Confirmation screen.

To upload the Port Mirroring configuration to the device, click **Finish**. The Port Mirroring configuration is uploaded to the device.

Chapter 11: Port RMON

This chapter explains the port RMON options of the Avaya G250/G350/G450 Device.

To view Port RMON information, you must be in Port RMON mode.

To switch to Port RMON mode:

Click  .

Or

Select **View > Port RMON**.

For more information on RMON, refer to *RMON* in *The Reference Guide*.

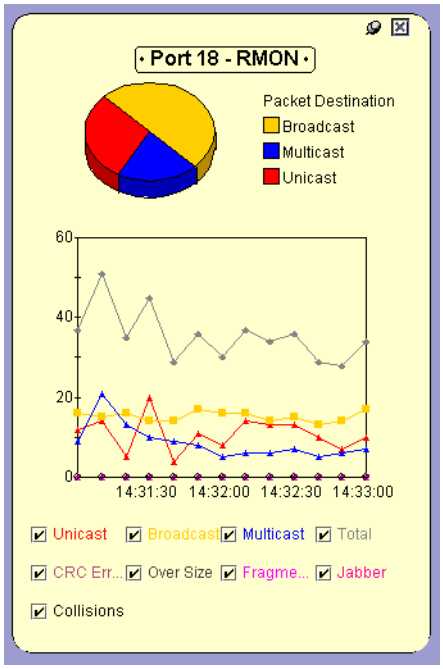
Note:

Port RMON is not available when running the Avaya G350 Manager via Web Management.

Displaying the Port RMON Window

To display the Port RMON window, select a port in the Chassis or Tree View. The Port RMON window opens.

Figure 84: Port RMON Window



The Port RMON window includes three sections. At the top of the window is a pie chart. In the center of the window is a graph. At the bottom of the window is a list of traffic types.

The Pie Chart

The pie chart shows the relative amounts of Unicast and Non-Unicast traffic on a selected port. The legend to the right of the pie chart shows the color representing each of the traffic types.

The Traffic Graph

The graph charts various traffic types over time. Each traffic type is represented by a different colored line. Using the mouse, you can view traffic statistics, zoom in or out of the graph, and scroll within the graph to view parts of the graph that are currently hidden.

When changing the view on the graph, the graph freezes. To unfreeze the graph and restore the display to the default display, click on the graph.

Viewing Traffic Statistics

To view traffic statistics, hold the mouse over a point on the graph representing the traffic for which you would like to see statistics. After two seconds, an info box opens displaying the name of the traffic type represented by the line in the graphic, and the traffic rate at the selected point.

Zooming In and Out of the Graph

To zoom out and view a graph of all the traffic on the selected port from the time the application was opened, double-click the graph. The graph is compressed to show all of the traffic on the port from the time the application was opened until the present time.

To zoom in on a portion of the graph, press **SHIFT** and select a portion of the graph using the mouse. The graph zooms in and shows only the portion of the graph that was selected.

Scrolling within the Graph

To scroll within the graph, hold the left mouse button down while moving the mouse from the graph in the direction you want to scroll. The graph scrolls in the selected direction.

Unfreezing the Graph

When zooming or scrolling within the graph, the display freezes and is not updated with the current information. To reactivate the display, click anywhere in the graph. The graph display is restored to normal, and the graph is reactivated.

Traffic Types

The bottom of the Port RMON window contains a list of various types of traffic. Each traffic type has a checkbox next to it. Only traffic types whose checkboxes are checked are displayed in the Port RMON graph.

The following table provides a list of the traffic types and their descriptions.

Table 64: Traffic Types

Field	Description
Unicast	Total number of good packets received that were directed to a unicast address.
Multicast	Total number of good packets directed to a multicast address.
Broadcast	Total number of good packets directed to a broadcast address.
Total	Total number of packets of valid frame length that were received on the port.
CRC Errors	Total number of Ethernet packets received at this port with FCS error and Framing error. This indicates the number of corrupted packets received.
Over Size	Total number of Ethernet packets received at this port whose octet count is more than the maximum standard packet length.
Fragments	Total number of Ethernet packets received at this port whose octet count is less than the minimum standard packet length.
Jabber	Total number of Ethernet packets received at this port that are too long and include CRC errors.
Collisions	Total number of Ethernet collisions in which the port was involved.

Chapter 12: Switch Connected Addresses

This chapter provides the information and instructions for viewing stations connected to the device. It includes the following sections:

- Switch Connected Addresses Overview - An overview of the Switch Connected Addresses feature.
- Viewing the Switch Connected Addresses Window - Instructions on accessing the Switch Connected for Device window, and a description of the Switch Connected for Device window.

Switch Connected Addresses Overview

The Switch Connected Addresses feature allows you to see which devices are connected to the ports on the Avaya G250/G350/G450 Device. Keeping track of this network information can increase efficiency and security, and assist in troubleshooting network problems.

Viewing the Switch Connected Addresses Window

The Switch Connected Addresses window provides a list of MAC addresses along with the ports to which they are attached.

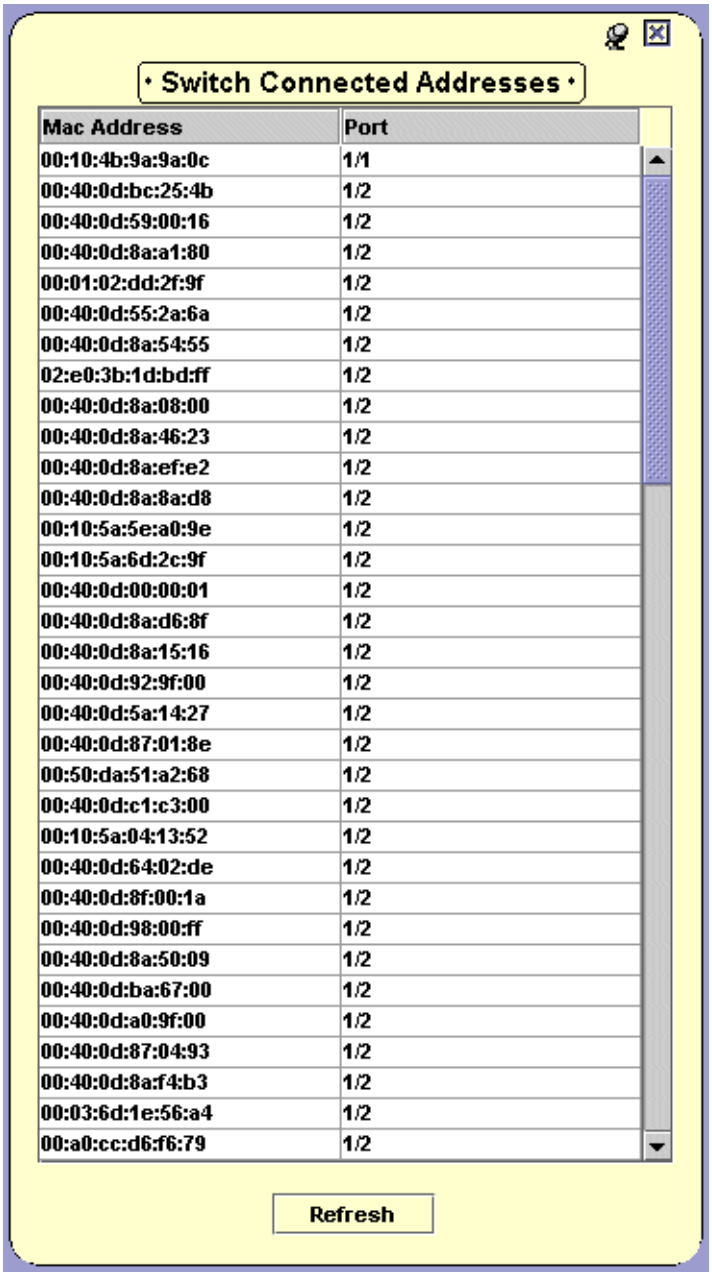
To view the list of connected stations:

Click  .

Or

Select **View > Switch Connected Addresses**. The Switch Connected Addresses window opens.

Figure 85: Switch Connected Addresses Window



All the connections to the Avaya G250/G350/G450 Device are listed with their respective ports in the Switch Connected Addresses window. The rows of the Switch Connected Addresses window comprise the following information:

- **Mac Address** - The MAC addresses of the stations connected to the switch.
- **Port** - The number of the module and port in the switch.

To refresh the information in the Switch Connected Addresses window, click **Refresh**.

Sorting the List of Stations

To sort the list of stations, click on a column heading to sort by that column. To change the order of the sort (e.g. from ascending to descending), click the column heading of the field by which the list is sorted.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 32.

Chapter 13: Port Redundancy

This chapter provides the information and instructions for using the Port Redundancy feature (not available in the G250). It includes the following sections:

- Overview of Port Redundancy - An overview of port redundancy.
- Configuring Port Redundancy - Instructions on accessing the Port Redundancy dialog box, and a description of the Port Redundancy dialog box.
- Adding a Port Redundancy - Instructions on configuring a new port redundancy.
- Port Redundancy Wizard - Detailed descriptions of the screens in the Port Redundancy Wizard.
- Deleting Port Redundancies - Instructions on deleting port redundancies.
- Updating the Device - Instructions on updating the device with the changes made to the Port Redundancy dialog box.

Overview of Port Redundancy

Port Redundancy enables you to define a redundancy relationship between any two ports in a device. One port is defined as the primary port and the other as the secondary port. In case the primary port link fails, the secondary port takes over. This connection between the two ports is called a Port Redundancy.

Note:

To edit Port Redundancy information, you must delete the Port Redundancy, and create a new one.

For more information on Port Redundancy, refer to *Redundancy* in *The Reference Guide*.

Configuring Port Redundancy

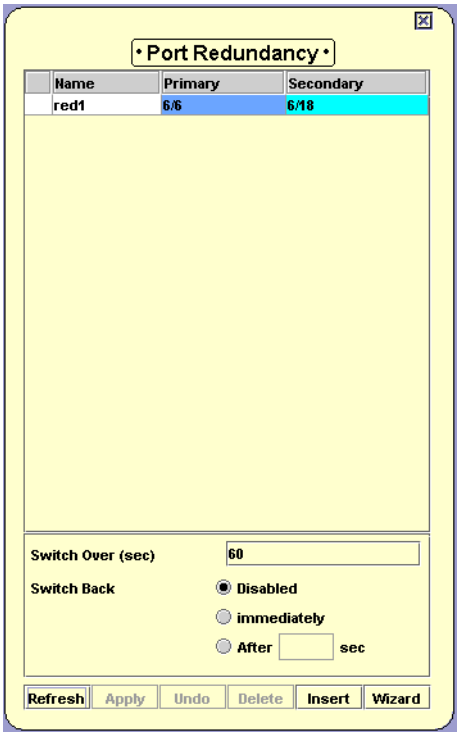
To view the Port Redundancy dialog box:

Click  .

Or

Select **Configure > Port Redundancy**. The Port Redundancy dialog box opens.

Figure 86: Port Redundancy Dialog Box



The Port Redundancy dialog box provides a list of all port redundancies configured on the switch, with their respective primary and secondary ports and the device's port redundancy configuration.

The following table provides a list of the fields in the Port Redundancy dialog box and their descriptions.

Table 65: Port Redundancy Fields

Field	Description
Name	The name of the port redundancy.
	1 of 2

Table 65: Port Redundancy Fields (continued)

Field	Description
Primary	The primary port of the port redundancy pair.
Secondary	The secondary port of the port redundancy pair.
Switch Over (sec)	The minimum time between switching between the ports in a port redundancy pair.
Switch Back	The amount of time after the primary port link is reestablished after which the primary port takes over from the secondary port. Possible values include: • **Disabled** - The primary port does not take over from the secondary port. • **Immediately** - The primary port takes over from the secondary port as soon as the primary port link is reestablished. • **After** *x* **sec**- The primary port takes over from the secondary port *x* seconds after the primary port link is reestablished.
	2 of 2

To configure the device's port redundancy configuration:

1. Enter an amount in the **Switch Over** field to determine initial switching time between ports in a port redundancy pair.
2. Select one of the **Switch Back** option buttons.
3. If you selected **After** *x* **sec**, enter the number of seconds for the switch back in the **After** *x* **sec** field.
4. Update the device. For more information on updating the device, refer to "Updating the Device" on page 202.

Adding a Port Redundancy

To add a new Port Redundancy:

1. From the Port Redundancy dialog box, click **Wizard**. The Port Redundancy Wizard starts. For more information, refer to "Port Redundancy Wizard" on page 196.

   Or

   From the Port Redundancy dialog box, click **Insert**. A row is added to the Port Redundancy dialog box.
2. Enter a name for the Port Redundancy in the **Name** field.

3. Select a port from the Tree View or the Chassis View and drag it to the **Primary Port** field. The port number name appears in the **Primary Port** field.
4. Select a port from the Tree View or the Chassis View and drag it to the **Secondary Port** field. The port number name appears in the **Secondary Port** field.
5. Update the device. For more information on updating the device, refer to "Updating the Device" on page 202.

Note:

A port cannot participate in more than one redundancy scheme.

Port Redundancy Wizard

This section provides detailed information on each of the Port Redundancy Wizard's screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Port Redundancy Wizard without making any changes, click **Cancel**.

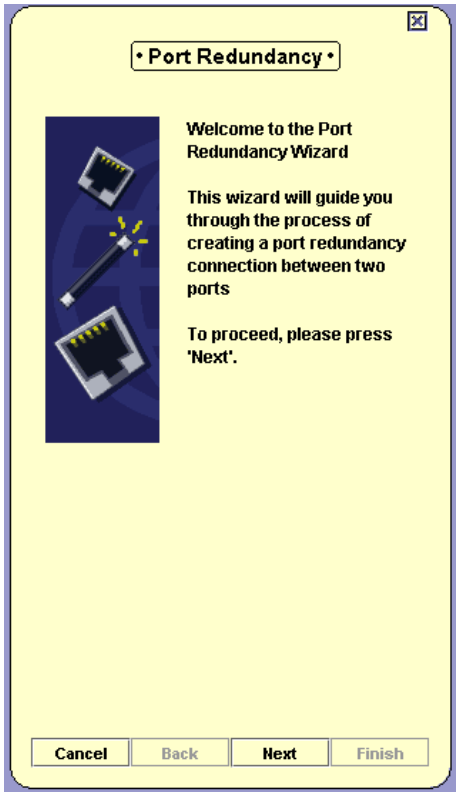
The Port Redundancy Wizard consists of the following screens:

- Port Redundancy Wizard - Welcome
- Port Redundancy Wizard - Primary Port Selection
- Port Redundancy Wizard - Secondary Port Selection
- Port Redundancy Wizard - Name and Type
- Port Redundancy Wizard - Confirmation

Port Redundancy Wizard - Welcome

The Port Redundancy Wizard provides a simple, step-by-step method for creating a Port Redundancy.

Figure 87: Port Redundancy Wizard - Welcome Screen

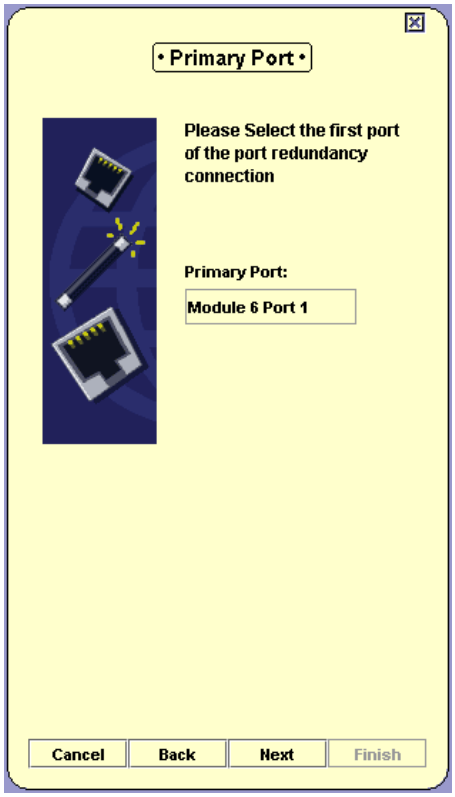


To continue, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Primary Port Selection screen.

Port Redundancy Wizard - Primary Port Selection

The Primary Port Selection screen of the Port Redundancy Wizard helps you select a primary port for the Port Redundancy. Ports which can be selected as primary ports appear in white in the Chassis View.

Figure 88: Port Redundancy Wizard - Primary Port Selection Screen



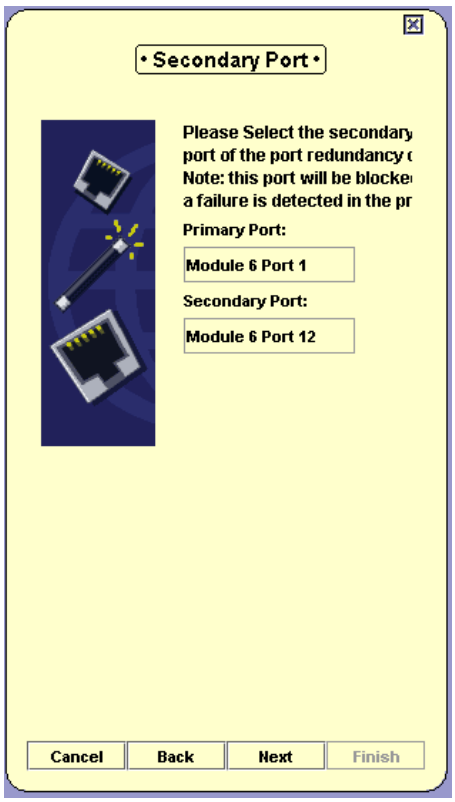
To select a primary port for the Port Redundancy, click a port in the Chassis View. The selected port appears blue in the Chassis View and Tree View and is listed in the **Primary Port** field in the wizard.

When you have selected the primary port for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Secondary Port Selection screen.

Port Redundancy Wizard - Secondary Port Selection

The Secondary Port Selection screen of the Port Redundancy Wizard allows you to select a secondary port for the Port Redundancy. Ports that can be selected as secondary ports appear white in the Chassis View.

Figure 89: Port Redundancy Wizard - Secondary Port Selection Screen



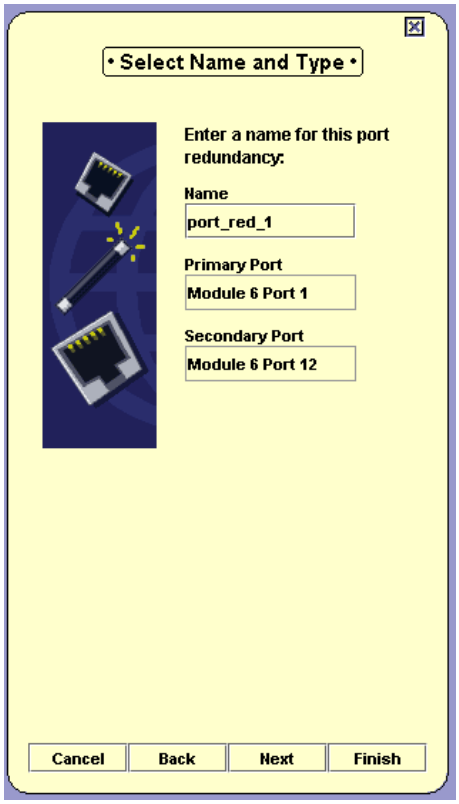
To select a secondary port for the Port Redundancy, click a port in the Chassis View. The selected port appears cyan in the Chassis View and Tree View, and is listed in the **Secondary Port** field in the wizard.

When you have finished selecting the secondary port for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Name and Type screen.

Port Redundancy Wizard - Name and Type

The Port Redundancy Name and Type screen of the Port Redundancy Wizard allows you to assign a name for the Port Redundancy.

Figure 90: Port Redundancy Wizard - Name and Type Screen



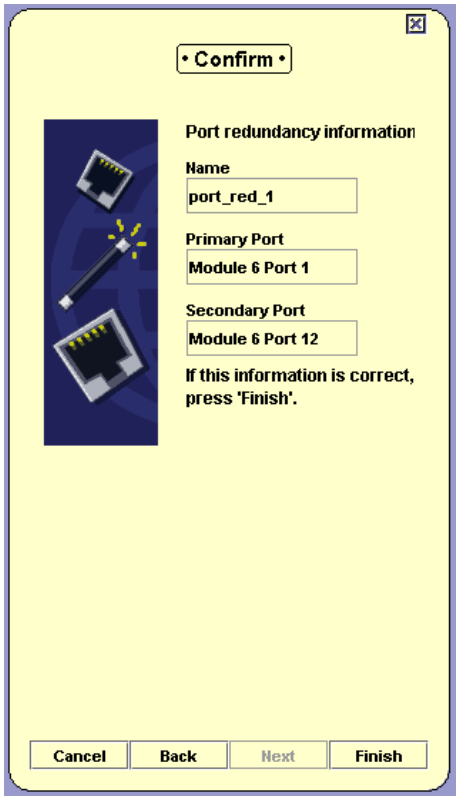
To assign a name to the Port Redundancy, enter the name for the Port Redundancy in the **Name** field.

When you have selected a name and a type for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Confirmation screen.

Port Redundancy Wizard - Confirmation

The Port Redundancy Wizard displays a summary of the Port Redundancy information entered using the previous screens. The Port Redundancy has not yet been created.

Figure 91: Port Redundancy Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Port Redundancy's parameters.
3. Click **Next** until you reach the Confirmation screen.

To create the Port Redundancy, click **Finish**. The Port Redundancy information is uploaded to the device, and the Port Redundancy dialog box is refreshed.

Deleting Port Redundancies

To delete an existing Port Redundancy:

1. Select a Port Redundancy from the Port Redundancy dialog box.

   To select more than one Port Redundancy, press **CTRL** while clicking on additional Port Redundancies.

2. Click **Delete**. The selected Port Redundancies are marked with the  symbol.

Updating the Device

To update the device with all changes made to the Port Redundancy dialog box, click **Apply**. The device is updated with all new information.

To discard all changes made to the Port Redundancy dialog box, click **Refresh**. All changes made to the Port Redundancy dialog box are discarded.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 32.

For more information on tables, refer to “Managing Tables” on page 21.

Chapter 14: Trap Managers Configuration

This chapter provides the information and instructions for configuring trap managers for the Avaya G250/G350/G450 Device. It includesthe following sections:

- Trap Manager Overview - An overview of trap managers.
- Configuring Trap Managers - Instructions on accessing the device's Trap Managers Table, and a description of the Trap Managers Table.
- Editing the Trap Managers Table - Instructions on how to edit the Trap Managers Table.

Trap Manager Overview

In the event of a fault or an unusual occurrence, the Avaya G250/G350/G450 Device can send traps to one or more Network Management Stations (NMS). To enable this feature, you must configure the Avaya G250/G350/G450 Device with a list of the managers' workstations. Traps are then sent to the stations listed in the Managers table.

Note:

Up to nine managers can be assigned per device. However, it is recommended to keep the list limited to actual and relevant managers so as not to place undue stress on the network.

Using the Trap Managers Table, you can also configure which traps are sent. Checking the checkbox for a trap enables the manager to receive the checked trap. Managers only receive the traps which are checked.

Configuring Trap Managers

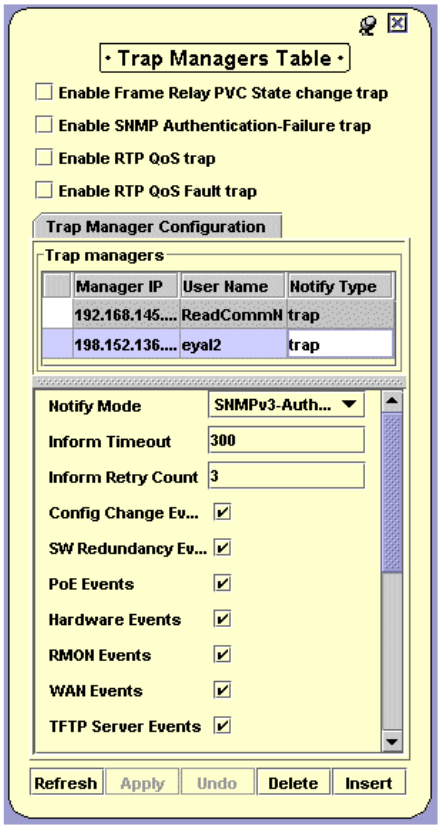
To view the Trap Managers table for the device:

Click  .

Or

Select **Configure > Trap Managers**. The Device Trap Managers table opens.

Figure 92: Device Trap Managers Table



The following table describes the information displayed in the Device Trap Managers table.

Table 66: Device Trap Managers Table

Item	Description
Enable Frame Relay PVC State change trap	When checked, enables Frame Relay PVC State Change trap.
	1 of 3

Table 66: Device Trap Managers Table (continued)

Item	Description
Enable SNMP Authentication-Failure trap	When checked, enables SNMP Authentication-Failure trap.
Enable RTP QoS trap	When checked, enables RTP QoS trap.
Enable RTP QoS Fault trap	When checked, enables RTP QoS Fault trap.
Manager IP	IP address of the management station that receives traps.
User Name	The SNMPv3 user authentication name.
Notify Type	The type of notification. Possible values are: • **Trap** • **Event**
Notify Mode	Select the notification Mode. Possible values are: • **SNMPv1** • **SNMPv3**
Inform Timeout	The number of seconds for an event message to connect to the manager before failing.
Inform Retry Count	The number of failed event attempts before an event is discarded.
Config Change Events	When checked, configuration change events are sent to the manager.
SW Redundancy Event	When checked, software redundancy events are sent to the manager.
PoE Events	When checked, PoE events are sent to the manager.
Hardware events	When checked, hardware events are sent to the manager.
RMON Events	When checked, RMON events are sent to the manager.
DHCP Client Events	When checked, DHCP client events are sent to the manager.
FileSys Events	When checked, Avaya Load MIB events such as download and upload success/failure/start, are sent to the manager.
DHCP Server Events	When checked, DHCP server events are sent to the manager.
TFTP Events	When checked, TFTP events are sent to the manager.
WAN Events	When checked, WAN events are sent to the manager.
Media Gateway Events	When checked, Media Gateway events are sent to the manager.
Security Events	When checked, security events are sent to the manager, including 802.1x and MSS notifications.
	2 of 3

Table 66: Device Trap Managers Table (continued)

Item	Description
TFTP Server Events	When checked, TFTP Server events are sent to the manager.
RADIUS Events	When checked, RADIUS authentication events are sent to the manager.
PoE Events	When checked, Power over Ethernet events are sent to the manager.
RTP Events	When checked, RTP events are sent to the manager.
L3 Events	When checked, Layer 3 events are sent to the manager.
Link Events	When checked, link events are sent to the manager.
Policy Events	When checked, policy events are sent to the manager.
Eth Port Fault Events	When checked, Ethernet port fault events are sent to the manager.
Generic Events	When checked, generic events are sent to the manager.
	3 of 3

The first row in the Device Trap Managers Table is reserved for the Dynamic Trap Manager entry. The Dynamic Trap Manager is discovered automatically and the IP address is read-only. The entry row for the Dynamic Trap Manager is highlighted in grey.

For information on adding and removing trap managers and editing their trap reporting statuses, refer to "Editing the Trap Managers Table" on page 206.

Editing the Trap Managers Table

You can add and remove managers from the Trap Managers table.

To add managers to the table:

1. Click **Insert**.
2. Enter the IP address of the designated management station.
3. Repeat the procedure for each manager.

To remove managers from the table:

1. Click the row with the manager's IP address.
2. Click **Delete**.
3. Repeat the procedure for each manager.

Chapter 15: Routing Manager

This chapter provides an introduction to the Avaya G250/G350/G450 Routing Manager. It includes the following sections:

- TheRouting Manager User Interface - An introduction to the Avaya G250/G350/G450 Routing Manager user interface.
- Editing Tables - An explanation of how to edit Avaya G250/G350/G450 Routing Manager tables.
- Saving Table Information in a File - Instructions on how to save the information in a table to a text file.
- Saving Configuration Changes - An explanation of how to apply and save configuration changes to routers.
- Resetting a Router - Instructions on how to reset routers.
- Using Avaya G250/G350/G450 Routing Manager Help - An explanation of the options for accessing on-line help in the Avaya G250/G350/G450 Routing Manager.

TheRouting Manager User Interface

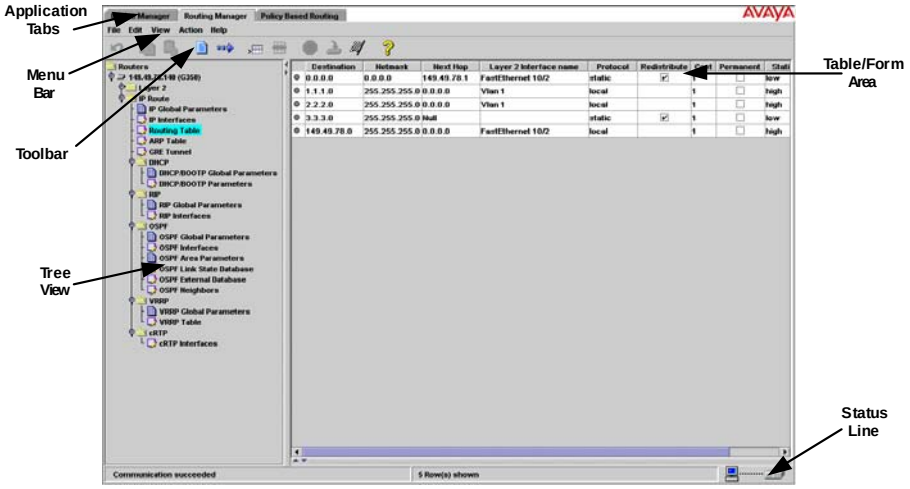
The user interface consists of the following elements:

- Toolbar - A toolbar providing shortcuts to the main Routing Manager functions.
- Tree View - A resizeable window containing a representation of the configuration windows of Avaya G250/G350/G450 Routing Configuration.
- Table/Form Area - A resizeable window where all tables and forms are displayed.

For information on other parts of the user interface, refer to “The User Interface” on page 19.

The figure below shows the user interface, with its various parts labeled.

Figure 93: Avaya G250/G350/G450 Routing Manager User Interface



To resize the main areas of the user interface, the Tree View, the Table Area, and the Table/ Form Area, use the splitter bars and their arrows.

Toolbar

The Toolbar provides shortcuts to the main Routing Manager functions.

The table below describes the buttons on the Application Toolbar and gives the equivalent menu options.

Table 67: Application Toolbar

Button	Description	Menu Item
	Undoes changes made to the table or form currently displayed.	**Edit > Undo**
	Copies the selected information to the clipboard.	**Edit > Copy**
	Pastes information from the clipboard into the selected table row.	**Edit > Paste**
	Toggles the display of a form corresponding to the current table.	**View > Form**

1 of 2

Table 67: Application Toolbar (continued)

Button	Description	Menu Item
	Toggles the display of additional table parameters.	**View > More**
	Adds a row to the table.	**Edit > Insert Row**
	Deletes the selected table row.	**Edit > Delete Row**
	Stops loading information into the current table.	**Action > Stop**
	Sends the configuration information to the device.	**Action > Apply**
	Opens a dialog box which enables you to specify the starting point in the display of a table.	**Action > Start Point**
	Opens the on-line help for context-sensitive information.	**Help > Context Sensitive Help**
		2 of 2

Tree View

The Tree View shows the applicable configuration windows for the Avaya G250/G350/G450 Device's routing function.

To expand the view of the element when it is contracted, or to contract the view when it is expanded in the tree:

Double-click the element.

Or

Click the handle next to the element you wish to expand or contract.

Table/Form Area

The right side of the application window is the Table/Form Area. This area can be resized by dragging the vertical splitter bar with the mouse. All tables and forms appear in the Table/Forms Area. Table columns can be resized by dragging the dividers in the table header.

To view additional parameters in the table:

Click  .

Or

Open Select **View > More**. Additional parameters appear in the table.

To hide additional parameters in the table:

Click  .

Or

Select **View > More**. Additional parameters do not appear in the table.

To toggle the display of forms associated with table rows:

1. Select a table row.
2. Click  .

   Or

   Select **View > Form**. The display of the associated form is toggled.

Editing Tables

The Avaya Routing Manager user interface enables you to create, modify, and delete table entries in selected windows. The information can be added directly into the table, or in the form associated with the table.

To undo all the changes made to a table, click  . When all changes are finalized, click  to update the router.

Creating New Table Entries

To create a new table entry:

1. Click  .

   Or

   Select **Edit > Insert Row**. A new table entry is created.
2. Enter data in the fields as required.
3. Click  to update the router.

Modifying Table Entries

To modify data in table entries:

1. Select the table entry you want to modify by clicking it.
2. Click a field.
3. Modify the value of the selected parameters.
4. When you are finished editing the table, click  to update the router.

Deleting Table Entries

To delete a table entry:

1. Select the table entry you want to delete by clicking it.
2. Click  .

   Or

   Select **Edit > Delete Row**. The selected entry is deleted from the table.
3. Click  to update the router.

Saving Table Information in a File

Information in tables can be saved to text files.

To save the information in the current table to a text file:

1. Select **File > Save**. The File Save dialog box opens.
2. Use the browser to select a directory.
3. Enter a filename in the **File name** field.
4. Click **Save**. The information is saved in text format to the specified file.

Saving Configuration Changes

There are two levels of applying routing configuration changes to the router:

- Running Changes - Changes are applied to the router, but are not saved.
- Committed Changes - Changes are saved to the router.

Running Changes

After finalizing all changes to a dialog box or table, the changes must be sent to the router. To send the changes to the router, click  . The configuration changes are applied to the router.

The changes remain in effect until the router is reset. When the router is reset, it is configured with the last saved configuration. All changes applied but not saved are lost.

Committed Changes

To make configuration changes permanent, the changes must be committed (saved) to the router. To commit the configuration to the router, select **File > Commit**. The changes are committed to the router.

Resetting a Router

To reset a router:

1. Click the router's icon in the Tree View.
2. Select **Action > Reset**. A confirmation dialog box opens.
3. Click **Yes**. The selected router is reset.

Using Avaya G250/G350/G450 Routing Manager Help

This section explains how to use the on-line help in the Avaya G250/G350/G450 Routing Manager. The on-line help can be opened to the contents page or directly to a topic of interest.

Note:

When running the Avaya G350/G450 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the device with the location of the help files.

Opening the Help to the Contents Page

To open the help to the contents page, select **Help > Help Contents**. The on-line help opens to the contents page.

Opening the Help to a Topic of Interest

To open the help directly to a topic of interest, click  . The on-line help opens to a topic explaining the option currently selected in the Tree View.

Chapter 16: Layer 2

The Layer 2 folder provides access to the following window:

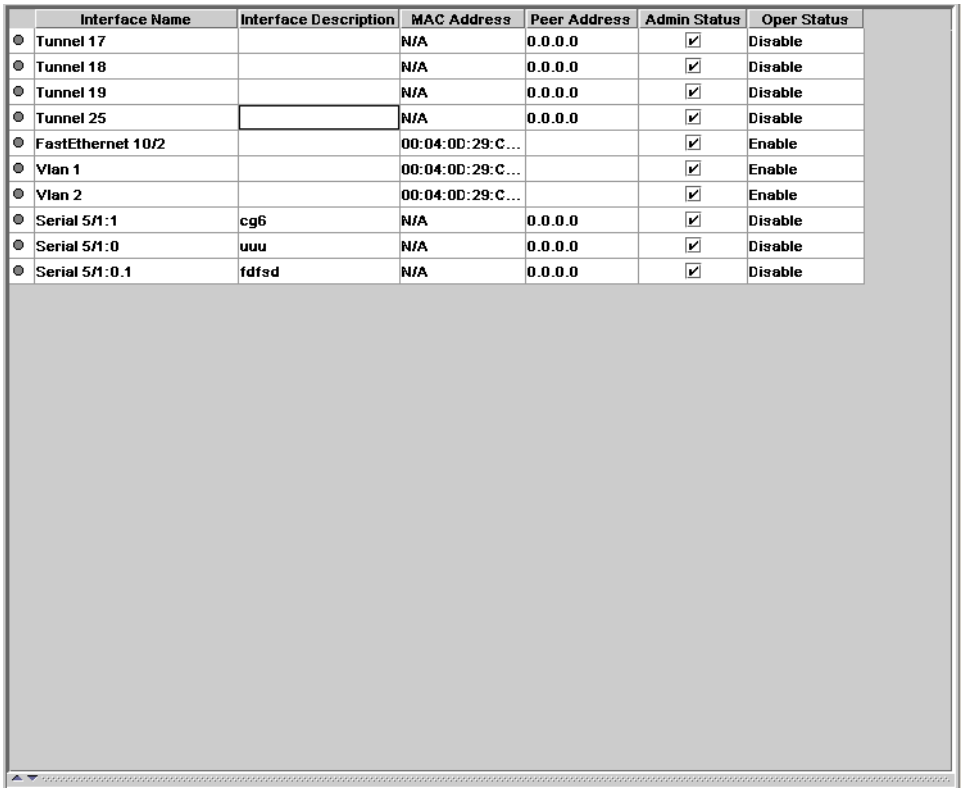
- Layer 2 Interfaces

Layer 2 Interfaces

To display the layer 2 interfaces:

Select **Layer 2 > Interfaces**. The Layer 2 Interfaces window opens.

Figure 94: Layer 2 Interfaces Window



Interface Name	Interface Description	MAC Address	Peer Address	Admin Status	Oper Status
Tunnel 17		N/A	0.0.0.0	☑	Disable
Tunnel 18		N/A	0.0.0.0	☑	Disable
Tunnel 19		N/A	0.0.0.0	☑	Disable
Tunnel 25		N/A	0.0.0.0	☑	Disable
FastEthernet 10/2		00:04:0D:29:C...		☑	Enable
Vlan 1		00:04:0D:29:C...		☑	Enable
Vlan 2		00:04:0D:29:C...		☑	Enable
Serial 5/1:1	cg6	N/A	0.0.0.0	☑	Disable
Serial 5/1:0	uuu	N/A	0.0.0.0	☑	Disable
Serial 5/1:0.1	fdfsd	N/A	0.0.0.0	☑	Disable

The following parameters are displayed:

Table 68: Layer 2 Interfaces Window Parameters

Field	Description
Interface Name	The name of this Layer 2 interface.
Interface Description	Description of this Layer 2 interface.
MAC Address	The MAC address of this Layer 2 interface.
Peer Address	The peer address of this Layer 2 interface.
Admin Status	The administrative status of this Layer 2 interface.
Oper Status	The operational status of this Layer 2 interface.

The fields in the Layer 2 Interfaces window, except for **Interface Description**, are read-only.

Chapter 17: IP Route

The IP Route folder provides access to the following windows:

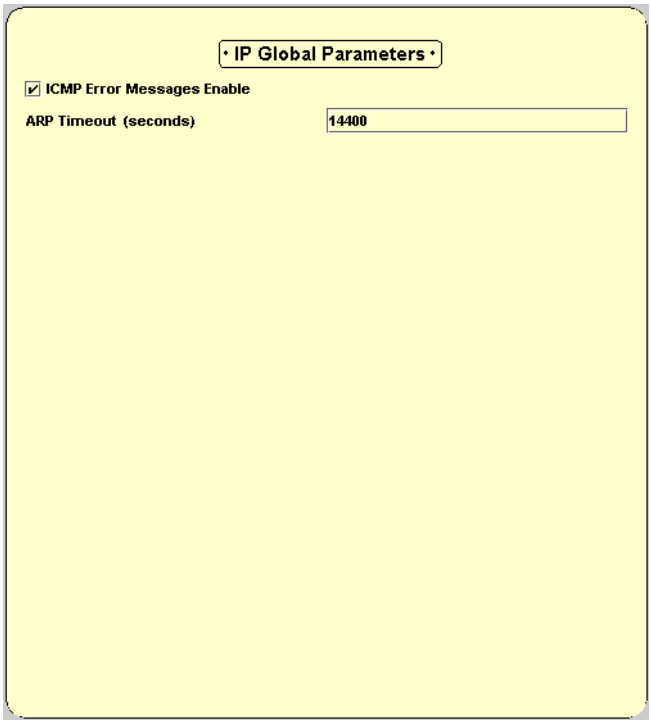
- Displaying IP Global Parameters
- Configuring IP Interfaces
- Viewing the Routing Table
- Viewing the ARP Table
- Configuring GRE Tunneling
- DHCP
- RIP
- OSPF
- VRRP
- Header Compression

Displaying IP Global Parameters

To display and update the IP global parameters:

Select **IP Route > IP Global Parameters**. The IP Global Parameters window opens.

Figure 95: IP Global Parameters Window



The following parameters are displayed:

Table 69: IP Global Parameters

Field	Description
ICMP Error Messages Enable	If checked, ICMP error messages should be sent. If not checked, ICMP error messages should not be sent.
ARP Timeout (seconds)	The number of seconds that may pass between ARP requests concerning entries in the ARP table. After this period, the entry is deleted from the table.

Configuring IP Interfaces

IP interfaces represent the logical connections of the device to the IP nets/subnets attached to it. Each IP interface corresponds to one net/subnet.

You can create either a static IP interface or an unnumbered IP interface. When you create a new IP interface, RIP and OSPF interfaces are automatically created and assigned enable status. When you delete an IP interface, the device deletes the associated RIP and OSPF interfaces.

Note:

An IP unnumbered interface can be configured on point-to- point Interfaces only. An IP unnumbered interface supports all the parameters of a static PPP IP interface except for **Broadcast address,** which cannot be configured on IP unnumbered interfaces.

To create entries in the IP interface table, first specify whether the interface is static or unnumbered using the **Type** field (the default value is static). Then configure the following fields:

- If you are configuring a static interface, configure the fields **IP Address**, **IP Netmask**, and **Layer 2 Interface Name**.
- If you are configuring an unnumbered interface, configure the fields **Layer 2 Interface Name** and **Reference Layer 2 Interface Name**. There is no need to configure **IP address** and **IP Netmask**.

To define and display the IP interfaces:

Select **IP Route > IP Interfaces**. The IP Interfaces window opens.

Figure 96: IP Interfaces Window

The following parameters are displayed:

Table 70: IP Interface Table Parameters

Field	Description
IP Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address assigned to the device on this subnet.
Reference IP Address	The IP address borrowed for an unnumbered IP interface. If the IP address is not unnumbered this field returns a value of **N/A**.
	1 of 3

Table 70: IP Interface Table Parameters (continued)

Field	Description
IP NetMask	The IP network mask of the attached net/subnet.
Layer 2 Interface name	The name of the Layer 2 interface with which this subnet is associated. Multiple subnets may be associated with a single VLAN, so multiple IP interfaces may be associated with the same If Name. **Note:** For unnumbered IP interfaces, this field shows only point-to-point interfaces such as GRE tunnel, Serial Interface, and Dialer.
Reference Layer 2 Interface Name	An 'alias' name for the lower layer interface used to borrow an unnumbered IP address. To designate the interface as unnumbered, enter a reference interface name. If the IP address is not unnumbered this field returns a value of **N/A**. **Note:** An unnumbered IP interface cannot point to another unnumbered IP interface.
Type	The type of IP address assignment on the interface. Possible values are: • **Static** - The address is assigned by user configuration. • **DHCP/IPCP** - The address is assigned remotely by a DHCP server or IPCP session. The DHCP/IPCP values are read only; they can be changed in the Dynamic IP Interfaces table (refer to "Viewing the Dynamic IP Interfaces Table" on page 222). **Unnumbered** - The interface is unnumbered and has no IP address.
Status	The status of the IP interface. If checked, the IP interface is enabled.
Oper Status	The operational status of the IP interface.
Directed Broadcast	When enabled, the router forwards directed broadcasts to an attached network. **Note:** This field is only available when additional parameters are selected. To select additional parameters, click  on the Routing Manager Application Toolbar.
	2 of 3

Table 70: IP Interface Table Parameters (continued)

Field	Description
Proxy ARP	When enabled, the router responds to ARP requests received on a Layer 2 interface for a device reachable on a different Layer 2 interface. The response is the MAC address of the router interface. **Note:** This field is only available when additional parameters are selected. To select additional parameters, click  on the Routing Manager Application Toolbar.
Netbios Rebroadcast	The status of Netbios rebroadcast service on the interface. Possible values are: • **Both** - Netbios messages are rebroadcasted both to and from this interface. • **Disable** - Netbios messages are rebroadcasted neither to nor from this interface. **Note:** This field is only available when additional parameters are selected. To select additional parameters, click  on the Routing Manager Application Toolbar.
ICMP Redirect Status	The status of ICMP Redirect service on the interface. Possible values are: • **Enable** - Redirect messages are sent if the router is forced to resend a packet through the same interface from which it was received. • **Disable** - Redirect messages are not sent. **Note:** This field is only available when additional parameters are selected. To select additional parameters, click  on the Routing Manager Application Toolbar.
Broadcast Address	Define the broadcast address value. Possible values are: • **Zero Fill** - defines the broadcast address as zero. For example, 192.92.0.0. • **One Fill** - defines the broadcast address as one. For example, 192.92.255.255.
	3 of 3

You can create, modify, and delete IP interfaces. For more information on editing tables, refer to "Editing Tables" on page 210.

Note:

IP Address, **IP NetMask**, **Layer 2 Interface Name**, and **Status** must be defined before creating an IP interface.

Note:

The list of VLANs allocated in the system is displayed in the **Layer 2 Interface Name** field.

Note:

IP Address for unnumbered interfaces or for interfaces receiving their IP address from a DHCP server or IPCP session cannot be modified.

There are certain constraints when configuring IP static or unnumbered interfaces. After clicking **Apply** in the IP Interfaces window, the software checks your configuration and displays error messages if applicable. The following table lists the possible errors and their descriptions:

Table 71: Error Messages

Error Text	Description
The Reference Layer 2 interface cannot be used because it is configured with IP unnumbered interface	**Reference Layer 2 Interface** points to an IP unnumbered interface.
There is already another IP unnumbered interface on the layer 2 interface	**Layer 2 interface** is already configured as an IP unnumbered interface, and you attempt to configure Layer 2 interface with a static IP.
There is already another IP static interface on the layer 2 interface	**Layer 2 interface** is already configured with a static IP, and you attempt to configure Layer 2 interface as an IP unnumbered interface.
There is already another IP unnumbered interface on the layer 2 interface.	**Layer 2 interface** is already configured as an IP unnumbered interface, and you attempt to add an IP unnumbered interface.
The Reference Layer 2 Interface has no Valid IP address	**Reference Layer 2 interface** is not configured, and you attempt to add an IP unnumbered interface.

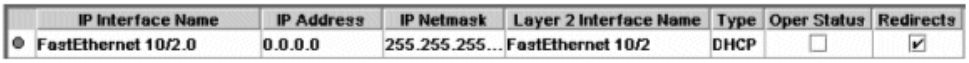
Viewing the Dynamic IP Interfaces Table

This table allows configuration of ICMP-redirect only. You cannot add/delete rows in the table.

To display the dynamic IP interfaces:

Select **IP Route > Dynamic IP Interfaces**. The Dynamic IP Interfaces Table window opens.

Figure 97: Dynamic IP Interfaces Table



The following parameters are displayed:

Table 72: Dynamic IP Interfaces Table Parameters

Field	Description
IP Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of this interface. This address is received from a remote peer during the PPP-IPCP session, or from a DHCP server using a DHCP client.
IP NetMask	The IP network mask of the attached net/subnet.
Layer 2 Interface name	The name of the Layer 2 interface with which this subnet is associated.
Type	The type of IP address assignment on the interface. Possible values are: • **DHCP** - a dynamic IP interface created by activating the DHCP client on the interface and getting an IP address from the DHCP server. • **Negotiated** - a dynamic IP interface created by activating PPP-IPCP on the interface and getting an IP address.
Oper Status	The operational status of the IP interface.
Redirects	The status of ICMP Redirect service on the interface. Possible values are: • **Enable** - Redirect messages are sent if the router is forced to resend a packet through the same interface from which it was received. • **Disable** - Redirect messages are not sent.

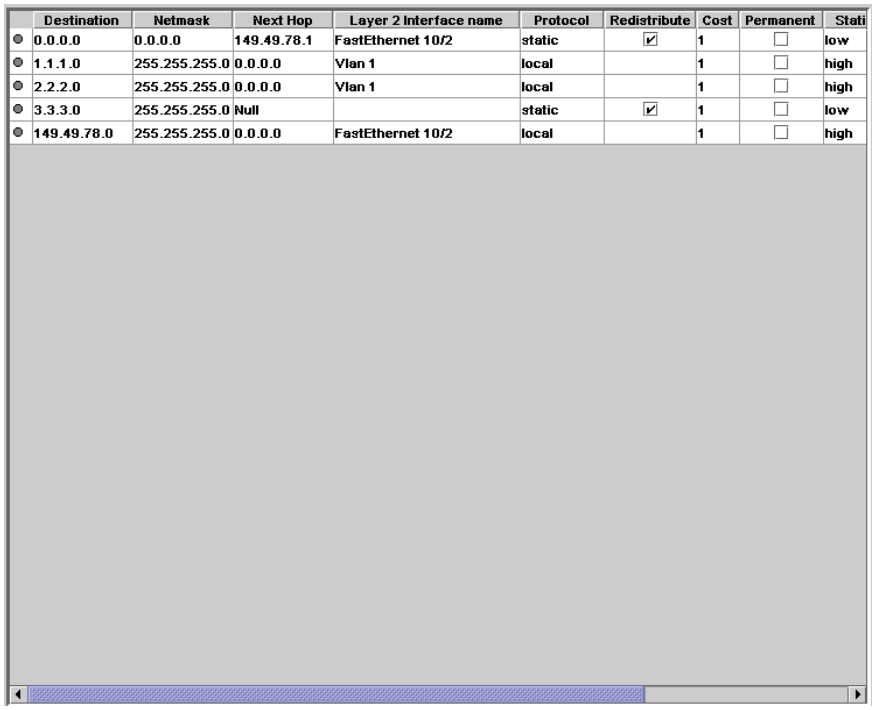
Viewing the Routing Table

To display and update the Routing Table:

Select **IP Route > Routing Table**. The Routing Table window opens.

Static routes are displayed as read-only in the Routing Table. To configure or create static routes, refer to "Viewing the Static Routing Table" on page 226.

Figure 98: Routing Table



Destination	Netmask	Next Hop	Layer 2 Interface name	Protocol	Redistribute	Cost	Permanent	Stati
0.0.0.0	0.0.0.0	149.49.78.1	FastEthernet 10/2	static	☑	1	☐	low
1.1.1.0	255.255.255.0	0.0.0.0	Vlan 1	local		1	☐	high
2.2.2.0	255.255.255.0	0.0.0.0	Vlan 1	local		1	☐	high
3.3.3.0	255.255.255.0	Null		static	☑	1	☐	low
149.49.78.0	255.255.255.0	0.0.0.0	FastEthernet 10/2	local		1	☐	high

The following parameters are displayed:

Table 73: Routing Table Parameters

Field	Description
Destination	The destination network IP address of this route. An IP address of 0.0.0.0 denotes a default router.
Netmask	The destination network mask of this route.
Next Hop	The address of the next router of this route, via which the destination of this route is reached. **Note:** If the static route is defined over the WAN Fast Ethernet interface configured as a DHCP client, then this field displays **IP address (DHCP)** if the DHCP client has a default route; otherwise, it displays **Unassigned (DHCP)**.
Layer 2 Interface Name	The logical name of the local interface through which the next hop of this route is reached.
	1 of 2

Table 73: Routing Table Parameters (continued)

Field	Description
Protocol	The protocol through which the route was learned. The following protocols can be specified: • **Static** - The route was manually configured to this device. • **Local** - The route represents a directly attached net/subnet and corresponds to one of the IP interfaces configured to this device. • **RIP** - The entry was learned from the RIP protocol. • **OSPF** - The entry was learned from the OSPF protocol.
Redistribute	If checked, static entries are advertised by RIP and OSPF. If unchecked, static entries are not advertised.
Cost	Number of hops to the destination network, or the cost of the route for OSPF routes.
Permanent	The permanence status of the route. Possible statuses are: • **Checked** - The route is not disabled when a link on the route is down. • **Unchecked** - The route is disabled when a link on the route is down.
Static Preference	The preference of this route. Possible values are: • **Low** - Dynamic routes are preferred on this static route. • **High** - This static route is preferred on dynamic routes.
Route Type	The type of route.
Route Age	The number of seconds since this route was last updated or otherwise determined to be correct.
	2 of 2

You can create, modify, or delete Routing Table static entries. For more information on editing tables, refer to "Editing Tables" on page 210.

You can limit the table entries displayed.

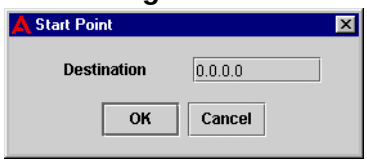
To start the display of entries from a specified interface and IP address:

1. Click  .

   Or

   Select **Action > Start Point**. The Start Point dialog box opens.

Figure 99: Routing Table Start Point Dialog Box



2. Enter an IP address in the **Destination** field.
3. Click **OK**. The Routing Table displays entries starting with the specified IP address.

To view all the entries in the Routing Table:

Click  .

Or

Select **View > Refresh**. All entries appear in the table.

Viewing the Static Routing Table

To display and update the Static Routing Table:

Select **IP Route > Static Routing Table**. The Static Routing Table window opens.

Figure 100: Static Routing Table

	Destination	Netmask	Next Hop	Layer 2 Interface name	Redistribute	Cost	Permanent	Static Preference	Route Type	Active
◉	0.0.0.0	0.0.0.0	149.49.78.1	FastEthernet 10/2	☑	1	☐	low	Regular	Yes
◉	58.0.0.0	255.255.255.0	149.49.78.18	FastEthernet 10/2	☑	1	☐	low	Regular	Yes
◉	58.3.0.0	255.255.0.0	149.49.78.12	FastEthernet 10/2	☑	1	☐	low	Regular	Yes

The following parameters are displayed:

Table 74: Static Routing Table Parameters

Field	Description
Destination	The destination network IP address of this route. An IP address of 0.0.0.0 denotes a default router.
Netmask	The destination network mask of this route.
	1 of 2

Table 74: Static Routing Table Parameters (continued)

Field	Description
Next Hop	The address of the next router of this route, via which the destination of this route is reached. **Note:** If the static route is over the WAN Fast Ethernet interface configured as a DHCP client, then this field displays **IP address (DHCP)** if the DHCP client has a default route; otherwise, it displays **Unassigned (DHCP)**. **Note:** You must specify **Route Type** before configuring **Next Hop**.
Layer 2 Interface Name	The logical name of the local interface through which the next hop of this route is reached. **Note:** You must specify **Route Type** before configuring **Layer 2 Interface Name**.
Redistribute	If checked, static entries are advertised by RIP and OSPF. If unchecked, static entries are not advertised.
Cost	Number of hops to the destination network, or the cost of the route for OSPF routes.
Permanent	The permanence status of the route. Possible statuses are: • **Checked** - The route is not disabled when a link on the route is down. • **Unchecked** - The route is disabled when a link on the route is down.
Static Preference	The preference of this route. Possible values are: • **Low** - Dynamic routes are preferred on this static route. • **High** - This static route is preferred on dynamic routes.
Route Type	The type of static route. Possible values are: • **Via** - via the interface static route. • **Discard** - using a route which discards traffic. • **DHCP** - using the DHCP client next hop. • **Regular** - the regular static route.
Active	The status of the route. Possible values are: • **Yes** - the route is active and affects traffic. • **No** - the route is not active and does not affect traffic.
	2 of 2

Note:

When editing an existing row, the following fields cannot be changed: **Destination**, **Netmask**, **Next Hop**, **Layer 2 Interface Name**, and **Static Preference**. To change these fields, you must create a new row and change those fields as desired, and then delete the original row.
All other fields can be edited in an existing row.

When adding Static Routing Table entries on an Avaya G250/G350/G450, you can configure the next hop method in the Form View. Available next hop methods include:

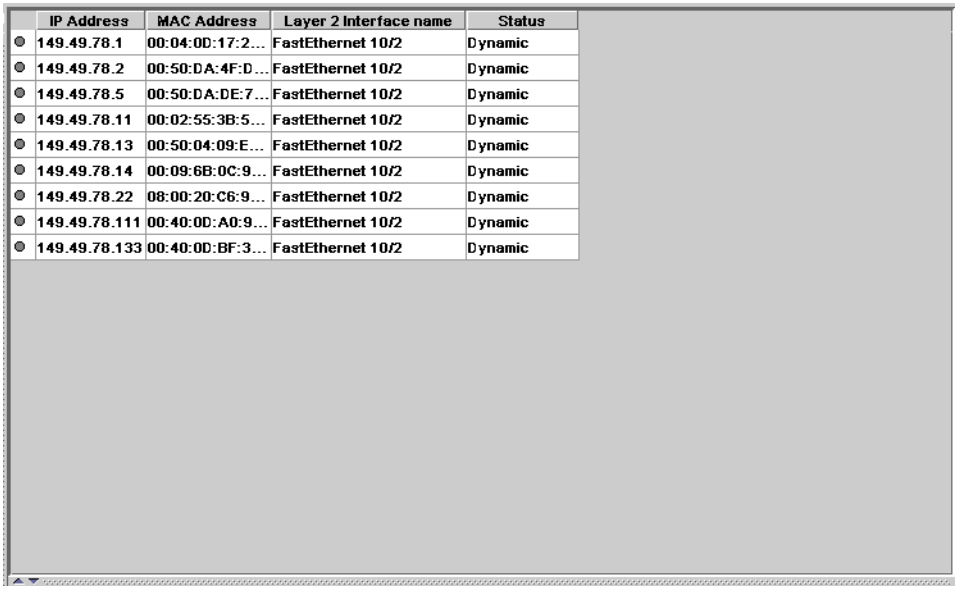
- **Next Hop** - Select the **Next Hop** option button, and enter the IP address of the next hop.
- **Layer 2 Interface Name** - Select the **Layer 2 Interface Name** option button, and select an interface from the pull-down listbox.
- **Discard** - Select the **Discard** option button.

Viewing the ARP Table

To display and update the ARP Table parameters:

Select **IP Route > ARP Table**. The ARP Table window opens.

Figure 101: ARP Table Window



The following parameters are displayed:

Table 75: ARP Parameters

Field	Description
IP Address	The IP address of the station.
MAC Address	The MAC address of the station.
Layer 2 Interface name	The name of the interface.
Status	The status of the interface. Possible status values are: • **Dynamic** - The entry is learned from the ARP protocol. If the station entry is not active for a predetermined time, the entry is deleted from the table. • **Static** - The entry has been configured by the network management station and is permanent. • **Invalid** - The entry in the table is invalid.

You can create or delete ARP table entries. For more information on editing tables, refer to "Editing Tables" on page 210.

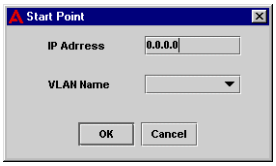
You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click  .

   Or

   Select **Action > Start Point**. The Start Point dialog box opens.

Figure 102: ARP Table Start Point Dialog Box



2. Enter an IP address in the **IP Address** field.
3. Select an interface from the **If Name** listbox.
4. Click **OK**. The ARP Table displays entries starting with the specified IP address and interface.

To view all the entries in the ARP Table:

Click  .

Or

Select **View > Refresh**. All entries appear in the table.

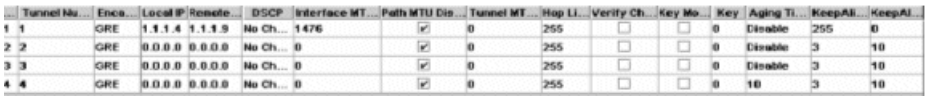
Configuring GRE Tunneling

GRE tunneling is used to reserve a path between two specific IP addresses on a network, enabling you to reserve bandwidth, set security policy, or set quality of service parameters between the two configured devices.

To create or modify an IP tunnel:

Select **IP Route > GRE Tunnel**. The GRE Tunnel Table window opens.

Figure 103: GRE Tunnel Table



	Tunnel Nu...	Enca...	Local IP	Remote...	DSCP	Interface MT...	Path MTU Dis...	Tunnel MT...	Hop Li...	Verify Ch...	Key Mo...	Key	Aging Ti...	KeepAli...	KeepAl...
1	1	GRE	1.1.1.4	1.1.1.9	No Ch...	1476	☑	0	255	☐	☐	0	Disable	255	0
2	2	GRE	0.0.0.0	0.0.0.0	No Ch...	0	☑	0	255	☐	☐	0	Disable	3	10
3	3	GRE	0.0.0.0	0.0.0.0	No Ch...	0	☑	0	255	☐	☐	0	Disable	3	10
4	4	GRE	0.0.0.0	0.0.0.0	No Ch...	0	☑	0	255	☐	☐	0	10	3	10

The following parameters are displayed:

Table 76: GRE Tunnel Parameters

Field	Description
Interface Name	Name of the Tunnel interface.
Tunnel No.	The index number of the Tunnel interface. Possible values: 1-50 **Note:** Tunnel numbers must be unique.
Encapsulation Method	The encapsulation method used for differentiating tunnel traffic from other traffic on a physical interface. Value is always **GRE**.
Local IP	The IP address of the local endpoint of the tunnel. **Note:** The local IP and remote IP must be different.
	1 of 3

Table 76: GRE Tunnel Parameters (continued)

Field	Description
Remote IP	The IP address of the remote endpoint of the tunnel. **Note:** The local IP and remote IP must be different.
DSCP	The offset to the DSCP value in the encapsulation header, which is used to show the difference between encapsulated traffic and regular traffic on a physical interface. Possible values are: • **No Change** • An integer between **0 - 63**
Interface MTU	The current Maximum Transmission Unit for the physical interface through which tunnel packets are sent. **Note:** This field is read-only.
Path MTU Discovery	When checked, the device actively polls the next hop device for MTU value.
Tunnel MTU	The Maximum Transmission Unit for the tunnel. **Note:** This field is read-only. **Note:** This field is only active when **Path MTU Discovery** is active.
Hop Limit	Maximum number of intervening devices between two endpoints of an IP tunnel.
Verify Checksum	When checked, the Avaya G250/G350/G450 verifies the checksum value in IP headers of packets traveling over the tunnel.
Key Mode	When checked, a shared key is used for envcrypting traffic over an IP tunnel.
Key	The shared key for encrypting traffic over an IP tunnel.
Aging Timer	The number of minutes **Path MTU Discovery** is aged. Default: **10.** A value of **0** indicates Aging Timer is disabled. **Note:** Aging Timer can only be changed if Path MTU Discovery is set.
	2 of 3

Table 76: GRE Tunnel Parameters (continued)

Field	Description
Keep Alive Retries	The number of keep alive requests sent before an interface becomes inactive. Default: 3 **Note:** Keep Alive Retries can only be changed in Keep Alive Rate is set.
Keep Alive Rate	The rate, in seconds, at which keep alive packets are sent. Default: **10**. A value of **0** indicated Keep Alive is disabled.
	3 of 3

You can create or delete GRE tunnel table entries. For more information on editing tables, refer to "Editing Tables" on page 210.

DHCP

The **DHCP** folder provides access to the following windows:

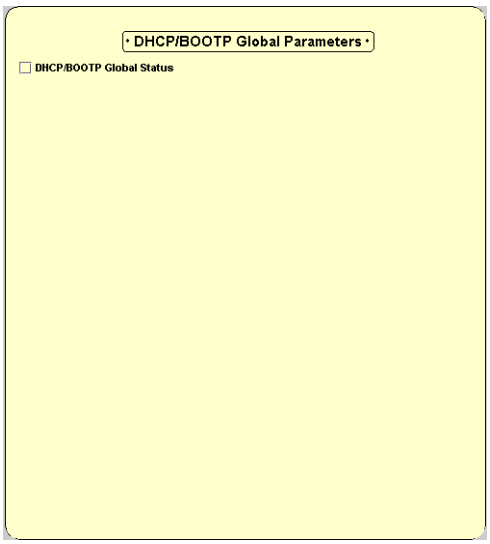
- Viewing DHCP/BOOTP Global Parameters
- Configuring DHCP/BOOTP Parameters

Viewing DHCP/BOOTP Global Parameters

To display and update the DHCP/BOOTP global parameters:

Select **IP Route > DHCP > DHCP/BOOTP Global Parameters**. The DHCP/BOOTP Global Parameters window opens.

Figure 104: DHCP/BOOTP Global Parameters Window



The following parameter is displayed:

Table 77: DHCP/BOOTP Global Parameter

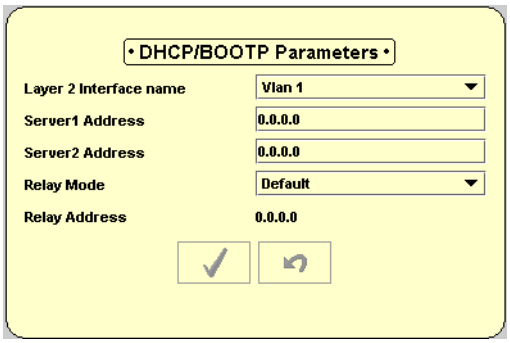
Field	Description
DHCP/BOOTP Global Status	If the DHCP/BOOTP Global Status checkbox is checked, DHCP/BOOTP is enabled according to the DHCP/BOOTP configuration of each interface. If it is not checked, DHCP/BOOTP relays over all interfaces are disabled.

Configuring DHCP/BOOTP Parameters

To display and update DHCP/BOOTP parameters:

Select **IP Route > DHCP > DHCP/BOOTP Parameters**. The DHCP/BOOTP Parameters window opens.

Figure 105: DHCP/BOOTP Parameters Window



The following parameters are displayed:

Table 78: DHCP/BOOTP Parameters

Field	Description
Layer 2 Interface name	The interface name upon which the clients are located.
Server1 Address	The IP address of the first of two possible DHCP servers for the interface.
Server2 Address	The IP address of the second of two possible DHCP servers for the interface.
Relay Mode	The method by which the DHCP relay chooses an IP address to include in the DHCP request. When relaying a DHCP/BOOTP request, the relay has to write its own IP address into the relayed DHCP request. This address is used by the DHCP server to determine the subnet from which the client's IP address has been allocated. When the router has multiple IP addresses on the same VLAN, any of these addresses can be used when relaying DHCP requests. The **Mode** field controls the behavior of the DHCP relay in choosing the IP address to write into the DHCP request. Possible modes are: • **Default** - The router chooses one of the addresses itself. The address chosen will be the lowest IP address on that VLAN. • **Specific** - The router is configured with a single IP address to be used with all relayed requests arriving on the VLAN. This address must be one of the router's IP addresses on the specified VLAN. It must be entered in the **Relay Address** field.
Relay Address	One of the router's IP addresses on the VLAN. This is used for all relayed requests, if **Mode** is set to **Specific**.

Note:

The available values of **Layer 2 Interface Name** do not include the Layer 2 interface on which dynamic IP address are defined.

You can create, modify, or delete DHCP/BOOTP parameters. For more information on editing tables, refer to "Editing Tables" on page 210.

RIP

The **RIP** folder provides access to the following windows:

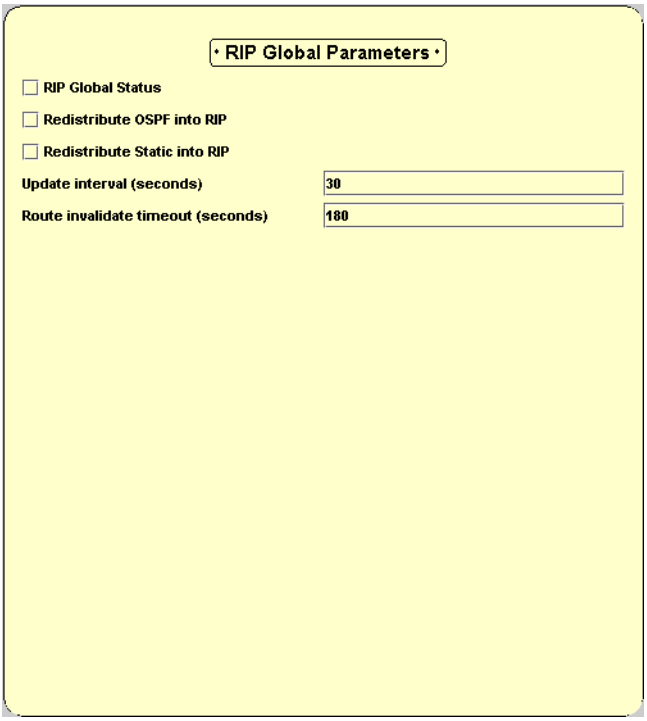
- Viewing RIP Global Parameters
- Configuring RIP Interfaces

Viewing RIP Global Parameters

To display and update RIP global parameters:

Select **IP Route > RIP > RIP Global Parameters**. The RIP Global Parameters window opens.

Figure 106: RIP Global Parameters Window



The following parameters are displayed:

Table 79: RIP Global Parameters

Field	Description
RIP Global Status	The status of RIP on the device. If checked, RIP is enabled. If not checked, RIP is disabled on all interfaces, regardless of the settings in the RIP Interfaces window.
Redistribute OSPF into RIP	Controls redistribution of routes from OSPF to RIP. If checked, all routes learned via OSPF are advertised into RIP.
Redistribute Static into RIP	Controls redistribution of static routes into RIP. If checked, the static routes inserted into the IP Routing Table are advertised into RIP, according to the "Leak Route" definition for each static route.
Update Interval (seconds)	The amount of time between each RIP periodic update.
Route invalidate timeout (seconds)	The amount of time after which a route becomes invalid in the routing table.

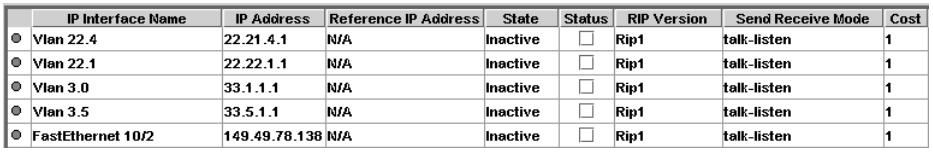
You can modify RIP Global Parameters by checking boxes as desired.

Configuring RIP Interfaces

To define and display RIP interfaces:

Select **IP Route > RIP > RIP Interfaces**. The RIP Interfaces window opens.

Figure 107: RIP Interfaces Window



	IP Interface Name	IP Address	Reference IP Address	State	Status	RIP Version	Send Receive Mode	Cost
◉	Vlan 22.4	22.21.4.1	N/A	Inactive	☐	Rip1	talk-listen	1
◉	Vlan 22.1	22.22.1.1	N/A	Inactive	☐	Rip1	talk-listen	1
◉	Vlan 3.0	33.1.1.1	N/A	Inactive	☐	Rip1	talk-listen	1
◉	Vlan 3.5	33.5.1.1	N/A	Inactive	☐	Rip1	talk-listen	1
◉	FastEthernet 10/2	149.49.78.138	N/A	Inactive	☐	Rip1	talk-listen	1

The following parameters are displayed:

Table 80: RIP Interface Parameters

Field	Description
Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of the interface. If the IP address is unnumbered this field returns a value of **N/A**.
	1 of 3

Table 80: RIP Interface Parameters (continued)

Field	Description
Reference IP Address	The IP address borrowed for an unnumbered interface. A value of 0.0.0.0 indicates either that the IP address is not valid, or that the IP interface is borrowing the IP address from a dynamic IP interface whose IP address is not allocated yet. If the IP address is not unnumbered this field returns a value of **N/A**.
State	The operational status of the RIP interface - active or inactive.
Status	The administrative status of the RIP interface. If checked, the RIP interface status is enabled. If unchecked, it is disabled.
RIP Version	The router can be configured to operate either RIP version 1 or RIP version 2 on each IP interface. The configuration of the RIP version must be consistent on each subnet. That is, all routers should be configured with the same RIP version on their interface to the subnet. When possible, homogeneous configuration of the RIP version in the network is recommended. • **Rip1** - The router runs regular RIP on that interface, following the RIP version 1 subnet aggregation rules. That is, it advertises an aggregate route for the net as opposed to advertising subnet routes across the network boundary. • **Rip2** - The router runs RIP version 2 on that interface. RIP version 2 advertisements are sent as multicast rather than broadcast. No route aggregation is done in RIP version 2. RIP version 2 allows for Variable Length Subnets Masks (VLSM), meaning that subnets of the same net may have masks of different lengths, and may be of different sizes.
Send Receive Mode	What the device sends on this interface. Values are: • **Talk-listen** - RIP updates contain the entire routing table. • **Talkdefault-listen** - RIP updates contain only a single entry. This advertises the router as the default router. • **Listen-only** - No RIP updates are sent.
Cost	The cost of using this interface. RIP chooses the route with the lowest total cost (metric) for each destination.
Default Route Metric	The metric of the default route entry in RIP updates originated on this interface, if configured to **SendDefaultOnly**.
Default Route Mode	If **talk-listen**, accepts default route entries in RIP messages received from other routes on this interface. If **talk-only**, does not accept default route entries in RIP messages received from other routes on this interface.
	2 of 3

Table 80: RIP Interface Parameters (continued)

Field	Description
Split Horizon	The method for handling routes learned from this interface, when sending updates to this interface. Possible methods are: • **Poisoned Reverse** - The routes are advertised to this interface as unreachable. • **Split Horizon** - The routes are not advertised to this interface at all. • **None** - The routes are advertised to this interface as is.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple**
Auth Key	The password for this interface. This is only used if the **Auth Type** is set to **Simple-password**. The password may contain up to 16 characters. It may be configured here, but not viewed.
	3 of 3

Note:

In the Send field, selecting '**listen-only**' or '**talk-listen**' will prevent updating the **Default Route Metric** field.

You can modify RIP interfaces. For more information on editing tables, refer to "Editing Tables" on page 210.

OSPF

The **OSPF** folder provides access to the following windows:

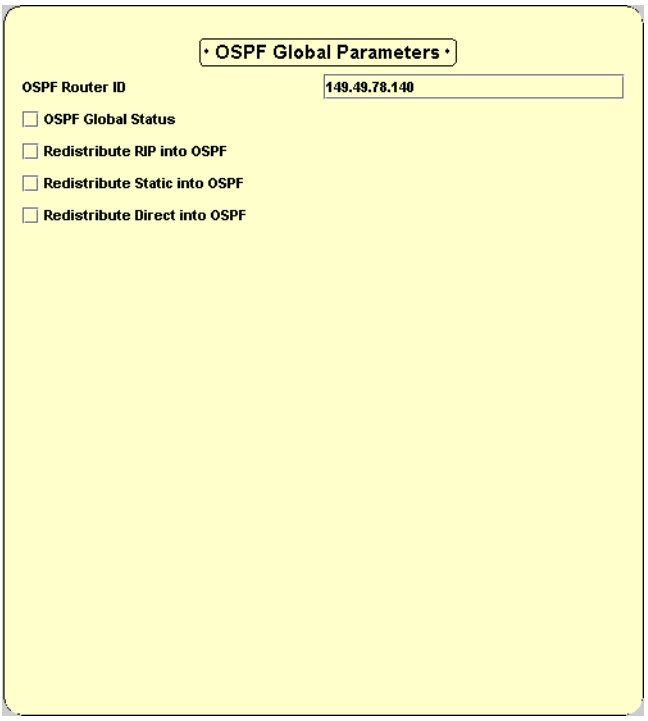
- Viewing OSPF Global Parameters
- Configuring OSPF Interfaces
- Configuring OSPF Area Parameters
- Viewing the OSPF Link State Database
- Viewing the OSPF External Database
- Viewing OSPF Neighbors

Viewing OSPF Global Parameters

To define and display OSPF Global parameters:

Select **IP Route > OSPF > OSPF Global Parameters**. The OSPF Global Parameters window opens.

Figure 108: OSPF Global Parameters Window



The following parameters are displayed:

Table 81: OSPF Global Parameters

Field	Description
OSPF Router ID	The ID number of the router. The router ID must be unique. By default, the router ID equals one of the router's IP addresses.
OSPF Global Status	The administrative status of OSPF in the router. If not checked, OSPF is not active on any interface, regardless of the settings in the OSPF Interfaces window.
Redistribute RIP into OSPF	Controls redistribution of routes from RIP to OSPF. If checked, all routes learned via RIP are advertised into OSPF as external routes.
	1 of 2

Table 81: OSPF Global Parameters (continued)

Field	Description
Redistribute Static into OSPF	Controls redistribution of static routes into OSPF. If checked, routes are advertised into OSPF as external routes, according to the "Leak Route" definition for each static route.
Redistribute Direct into OSPF	Controls redistribution of direct routes which are external to OSPF. If checked, local subnets on which OSPF is disabled are advertised into OSPF as external routes.
	2 of 2

You can modify OSPF Global Parameters.

Note:

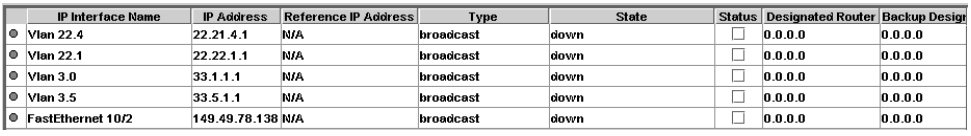
After updating the Router ID field, a message is displayed warning that the operation might cause the OSPF database to reset.

Configuring OSPF Interfaces

To define and display OSPF interfaces:

Select **IP Route > OSPF > OSPF Interfaces**. The OSPF Interfaces window opens.

Figure 109: OSPF Interfaces Window



IP Interface Name	IP Address	Reference IP Address	Type	State	Status	Designated Router	Backup Desigr
Vlan 22.4	22.21.4.1	N/A	broadcast	down	☐	0.0.0.0	0.0.0.0
Vlan 22.1	22.22.1.1	N/A	broadcast	down	☐	0.0.0.0	0.0.0.0
Vlan 3.0	33.1.1.1	N/A	broadcast	down	☐	0.0.0.0	0.0.0.0
Vlan 3.5	33.5.1.1	N/A	broadcast	down	☐	0.0.0.0	0.0.0.0
FastEthernet 10/2	149.49.78.138	N/A	broadcast	down	☐	0.0.0.0	0.0.0.0

The following parameters are displayed:

Table 82: OSPF Interfaces

Field	Description
IP Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of this OSPF interface. For an unnumbered IP interface, this field returns a value of **N/A**.
Reference IP Address	The IP address borrowed for an unnumbered interface. A value of 0.0.0.0 indicates either that the IP address is not valid, or that the IP interface is borrowing the IP address from a dynamic IP interface whose IP address is not yet allocated. If the IP address is not unnumbered, this field returns a value of **N/A**.
	1 of 3

Table 82: OSPF Interfaces (continued)

Field	Description
Type	The type of interface: • **Point To Point** • **Point To Multipoint** • **Broadcast**
State	The interface state of the OSPF interface: • **Down** - OSPF is not active on the interface. • **Waiting** - The identity of the designated router for this subnet is not yet determined. • **Designated Router** - This router is the Designated Router on this subnet. • **Backup Designated Router** - This router is the Backup Designated Router. • **Other Designated Router** - Another router is the Designated Router on this subnet.
Status	If checked, this denotes that the interface may form neighbor relationships, and that the interface is advertised as an internal route to OSPF. If not checked, the interface is external to OSPF.
Designated Router	The IP Address of the designated router.
Backup Designated Router	The IP Address of the backup designated router.
Priority	The priority of this router to become the designated router on this interface. A value of zero indicates that this router is not eligible to become the designated router on the current network. If more than one router has the same priority, then the router ID is used.
Cost	The cost of using this interface. OSPF will choose the route with the lowest total cost (metric) to each destination.
Hello Interval	The period of time (in seconds) between Hello packets. All routers attached to a common network must have the same Hello Interval.
Dead Interval	The period of time (in seconds) that a router's Hello packets have not been seen before the router's neighbors declare the router down. All routers attached to a common network must have the same Dead interval.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple-password** • **MD5** - Auth Type cannot be set to MD5 from Avaya G250/G350/G450 Manager. If MD5 authentication was configured from the CLI, you may view the existing Auth Type, or change Auth Type to **None** or **Simple-password**.
	2 of 3

Table 82: OSPF Interfaces (continued)

Field	Description
Auth Key	The password for this interface. This is only used if the **Auth Type** is set to **Simple-password**. The password may contain up to 8 characters. It may be configured here, but not viewed.
	3 of 3

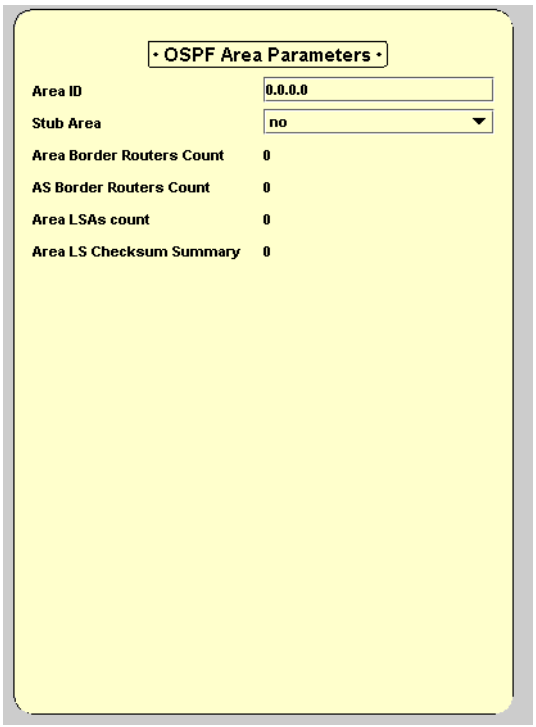
You can modify OSPF interfaces. For more information on editing tables, refer to "Editing Tables" on page 210.

Configuring OSPF Area Parameters

To define and display OSPF Area Parameters:

Select **IP Route > OSPF > OSPF Area Parameters**. The OSPF Area Parameters window opens.

Figure 110: OSPF Area Parameters Window



The following parameters are displayed:

Table 83: OSPF Area Parameters

Field	Description
Area ID	A unique number identifying the OSPF area to which this router belongs. Area ID 0.0.0.0 is used for the OSPF backbone.
Stub Area	If checked, external link-state advertisements are not imported into the area.
Area Border Routers Count	The number of routers designated as OSPF Area Border Routers for the area chosen.
AS Border Routers Count	The number of routers designated as OSPF Autonomous System Border Routers for the area chosen.
Area LSAs Count	The number of Link-State Advertisements for the area chosen.
Area LS Checksum Summary	Summary of Link-State Checksums for the area chosen.

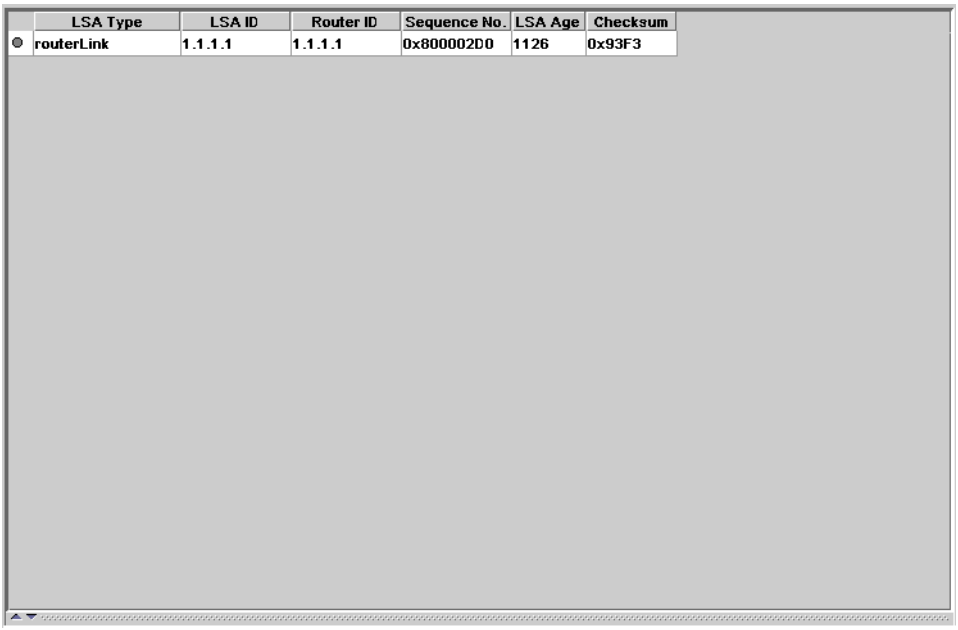
You can modify OSPF Area parameters.

Viewing the OSPF Link State Database

To display the OSPF Link State Database:

Select **IP Route > OSPF > OSPF Link State Database**. The OSPF Link State Database window opens.

Figure 111: OSPF Link State Database Window



The following parameters are displayed:

Table 84: OSPF Link State Database Window

Field	Description
LSA Type	The type and format of the link state advertisement; for example, Router links and Network links.
LSA ID	Identifies the part of the routing domain that is described by the advertisement. The LSA ID can be either a router ID or an IP address.
Router ID	Identifies the originating router in the autonomous system.
Sequence No.	The sequence number of the link state advertisement. Use this parameter to detect old and duplicate link state advertisements. The larger the sequence number, the more recent the advertisement. Note that the sequence number is usually negative.
LSA Age	The age of the link state advertisement (in seconds).
Checksum	This parameter is a checksum of the complete contents of the advertisement, not including the Age value.

The parameters in the OSPF Link State Database window are read-only.

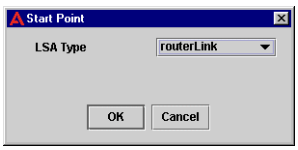
You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click  .

   Or

   Select **Action > Start Point**. The Start Point dialog box opens.

Figure 112: OSPF Link State Database Start Point Dialog Box



2. Select an LSA Type from the **LSA Type** listbox.
3. Click Start. The OSPF Link State Database displays entries starting with the specified LSA Type.

To view all the entries in the OSPF Link State Database:

Click  .

Or

Select **View > Refresh**. All entries appear in the table.

Viewing the OSPF External Database

To display the OSPF External Database window:

Select **IP Route > OSPF > OSPF External Database**. The OSPF External Database window opens.

Figure 113: OSPF External Database Window

The following parameters are displayed:

Table 85: OSPF External Database Window

Field	Description
LSA Type	The type and format of the link state advertisement; for example, Router links and Network links.
LSA ID	Identifies the part of the routing domain that is described by the advertisement. The LSA ID can be either a router ID or an IP address.
Router ID	Identifies the originating router in the autonomous system.
Sequence No.	The sequence number of the link state advertisement. Use this parameter to detect old and duplicate link state advertisements. The larger the sequence number, the more recent the advertisement. Note that the sequence number is usually negative.
LSA Age	The age of the link state advertisement (in seconds).
Checksum	This parameter is a checksum of the complete contents of the advertisement, not including the Age value.

The parameters in the OSPF External Database window are read-only.

Viewing OSPF Neighbors

To display the OSPF Neighbors window:

Select **IP Route > OSPF > OSPF Neighbors**. The OSPF Neighbors window opens.

Figure 114: OSPF Neighbors Window

The following parameters are displayed:

Table 86: OSPF Neighbors Parameters

Field	Description
Neighbor Address	The IP address of this neighbor.
Router ID	The unique OSPF identifier for the neighboring router.
Neighbor State	The state of the relationship with this neighbor: • **Down** • **Attempt** • **Init** • **Two Way** • **Exchange Start** • **Exchange** • **Loading** • **Full**
Priority	The priority of the path between the router and its neighbor for determining path calculations.
Retransmit QLength	The size of the queue for rentransmission packets.

The parameters in the OSPF Neighbors Table window are read-only.

VRRP

The **VRRP** folder provides access to the following windows:

- Viewing VRRP Global Parameters
- Viewing the VRRP Table

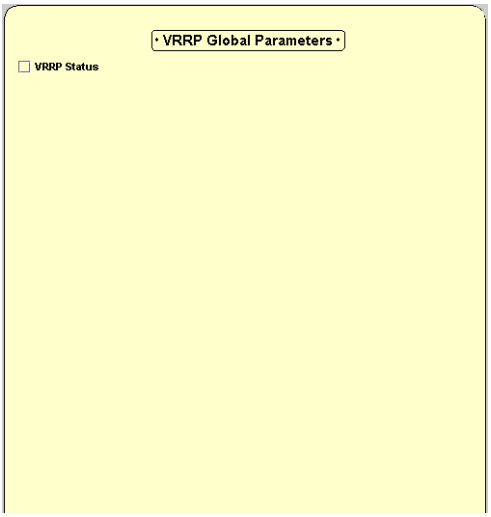
Viewing VRRP Global Parameters

VRRP (Virtual Router Redundancy Protocol) provides a method for configuring a redundancy between routers. A Master Router is selected for each Virtual Router. Backup routers function normally, while checking the Master Router. If the Master Router fails, the backup routers handle traffic directed to the Master Router.

To define and display the VRRP global parameters:

Select **IP Route > VRRP > VRRP Global Parameters**. The VRRP Global Parameters window opens.

Figure 115: VRRP Global Parameter Window



The following parameter is displayed:

Table 87: VRRP Global Parameter

Field	Description
VRRP Status	When the VRRP global parameter checkbox is checked, VRRP is operational on the router. If unchecked, VRRP is not operational on the router.

You can modify the VRRP Global Parameter.

Viewing the VRRP Table

To define and display the VRRP table:

Select **IP Route > VRRP > VRRP Table**. The VRRP table opens.

Figure 116: VRRP Table

The following parameters are displayed:

Table 88: VRRP Table Parameters

Field	Description
Layer 2 Interface Name	The name of the selected interface.
VRID	A number which, along with an interface index (ifIndex), serves to uniquely identify a virtual router on a given VRRP router. A set of one or more associated addresses is assigned to a VRID.
IP Address	The IP address associated with this virtual router. If more than one IP address is associated with this virtual router, `Click for Details` appears in the **IP Address** field. Clicking the field opens the Form View showing all IP addresses associated with this virtual router. The IP addresses must be on a local subnet on the VLAN.
State	The state of the virtual router. Possible states are: • **Initialize** - The virtual router is not functional. • **Backup** - The virtual router is monitoring the availability of the master router. • **Master** - The virtual router is forwarding packets with IP addresses associated with this virtual router.
Master IP Address	The IP address of the physical router currently acting as the Virtual Router's Master Router.
Priority	This object specifies the priority to be used for the virtual router master election process. Higher values imply higher priority. A priority of '0', although not settable, is sent by the master router to indicate that this router has ceased to participate in VRRP and a backup virtual router should transition to become a new master. A priority of 255 is used for the router that owns the associated IP address(es).
Virtual Route Up Time	The time when the virtual router's state changed from initialized to **backup** or **master**. The time is expressed in ticks (1/60 of a second).
	1 of 2

Table 88: VRRP Table Parameters (continued)

Field	Description
Advertise Interval	The interval of state advertisements from the primary interface to the backup interface.
MAC Address	MAC address of the VRRP interface.
Primary Interface	Logical name of the primary interface.
Preempt Mode	If **Preempt** is set, the interface becomes primary whenever it is active.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple**
Auth Key	The password for this interface. This is only used if the **Auth Type** is set to **Simple-password**. The password may contain up to 8 characters. It may be configured here, but not viewed.
	2 of 2

To associate IP addresses with a selected virtual router:

1. Select a virtual router in the VRRP table.
2. Ensure that the Form View is visible.
3. Enter the IP address to associate with the selected router in the textbox under the **IP Addresses** listbox in the Form View.
4. Click  . The IP address is associated with the virtual router.

To disassociate IP addresses from a selected virtual router:

1. Select a virtual router in the VRRP table.
2. Ensure that the Form View is visible.
3. Select the IP address from the **IP Addresses** listbox in the Form View.
4. Click  . The IP address is no longer associated with the virtual router.

You can modify VRRP parameters. For more information on editing tables, refer to "Editing Tables" on page 210.

Header Compression

The **Header Compression** folder provides access to the following windows:

- Configuring cRTP Interfaces
- Configuring TCP Header Compression Interfaces

Note:

All header compression methods apply to point-to-point interfaces only.

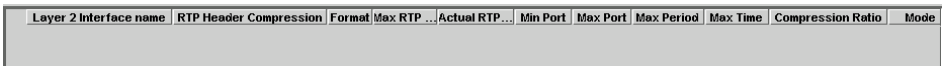
Configuring cRTP Interfaces

The Avaya G250/G350/G450 Device supports RTP compression, reducing the overhead of transmitting voice packets over the E1/T1 line. You can configure cRTP (Compressed RTP) parameters for each PPP interface.

To define and display CRTP Interfaces:

Select **IP Route > Header Compression> cRTP Interfaces**. The cRTP interfaces window opens.

Figure 117: cRTP Interfaces WIndow



The following parameters are displayed:

Table 89: cRTP Interface Table Parameters

Field	Description
Layer 2 Interface Name	The name of the selected interface.
RTP Header Compression	The status of RTP header compression on this interface. Possible values are: • **Enabled** - RTP header compression is enabled on the interface. • **Disabled** - RTP header compression is disabled on the interface.
Format	The IP header compression format. Possible values are: • **IPHC** - header compression is active. • **N/A** - header compression is not active.

Table 89: cRTP Interface Table Parameters (continued)

Field	Description
Max RTP Connection	The maximum number of context identifiers for RTP connections on this interface. 0 means that no RTP headers will be compressed.
Actual RTP Connections	The actual number of context identifiers for RTP connections on this interface.
Min Port	The minimal UDP destination port number to be considered as RTP traffic.
Max Port	The maximal UDP destination port number to be considered as RTP traffic.
Max Period	The maximum number of compressed packets that can be sent between full headers.
Max Time	The maximum number of seconds between full headers.
Compression Ratio	The average ratio between the compressed header size and the original header size on this interface. The value is expressed as a percentage.
Mode	Whether RTP Header compression is compliant with IETF or Non-IETF format. This field is relevant for Frame Relay interfaces only. For other interfaces this field returns a value of **N/A**.

You can modify cRTP parameters on PPP interfaces. For more information on editing tables, refer to "Editing Tables" on page 210.

Configuring TCP Header Compression Interfaces

The Avaya G250/G350/G450 Device supports TCP header compression, enabling compression of all TCP traffic. You can configure TCP header compression parameters for each PPP interface.

To define and display TCP header compression Interfaces:

Select **IP Route > Header Compression> TCP Header Compression Interfaces**. The TCP header compression interfaces window opens.

Figure 118: TCP Header Compression Interfaces WIndow

The following parameters are displayed:

Table 90: TCP Header Compression Interfaces Table Parameters

Field	Description
Layer 2 Interface Name	The name of the selected interface.
TCP Header Compression	The status of TCP header compression on this interface. Possible statuses include: • **Enabled** - TCP header compression is enabled on the interface. • **Disabled** - TCP header compression is disabled on the interface.
Format	The header compression format. Possible values are: • **IPHC** - IP header compression. • **VJ** - Van Jacobson compression.
Max TCP Connection	The maximum number of context identifiers for TCP connections on this interface. 0 means that no TCP headers will be compressed.
Actual TCP Connections	The actual number of context identifiers for TCP connections on this interface.
Compression Ratio	The average ratio between the compressed header size and the original header size on this interface. The value is expressed as a percentage.

For PPP and Frame Relay interfaces, available header compression values are as follows:

Table 91: Available Compression Values for PPP and Frame Relay Interfaces

Interface Type	Available Compression Values
PPP	• **IPHC** - TCP/RTP/UDP headers, or • **VJ** - TCP headers only
Frame Relay (IETF)	• **IPHC** - TCP/RTP/UDP headers
Frame Relay (Non-IETF)	• **IPHC** - RTP headers only, and/or • **VJ** - TCP headers only

Chapter 18: Policy Based Routing Manager

This chapter provides an introduction to the Avaya G250/G350/G450 Policy Based Routing Manager. It includes the following sections:

- The Policy Based Routing Manager User Interface - An introduction to the Avaya G250/G350/G450 Policy Based Routing Manager user interface.
- The Application Editor Tool - An explanation of how to launch the Application Editor tool.
- Saving Configuration Changes - An explanation of how to save changes to the Policy Based Routing configuration.
- Using Avaya G250/G350/G450 Policy Based Routing Manager Help - An explanation of the options for accessing on-line help in the Avaya G250/G350/G450 Routing Manager.

The Policy Based Routing Manager User Interface

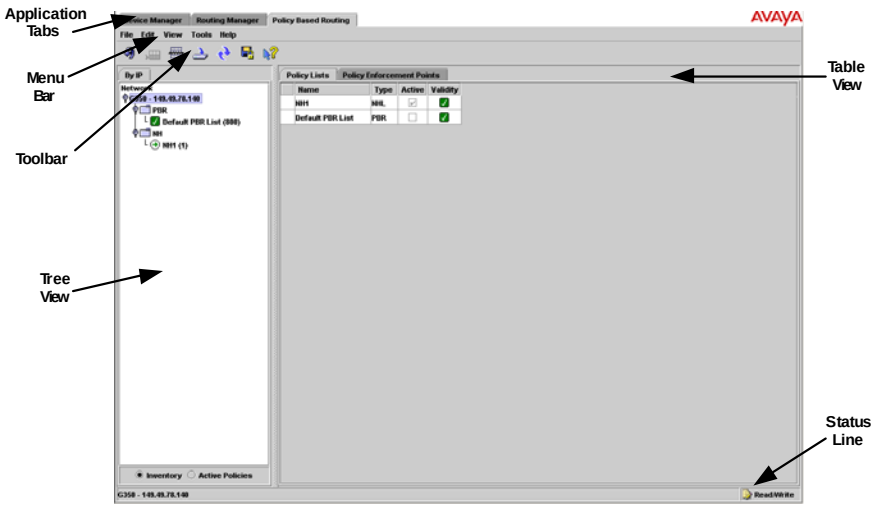
The user interface consists of the following elements:

- Toolbar - A toolbar providing shortcuts to the main Routing Manager functions.
- Tree View - A resizeable window containing a representation of the configuration windows of Avaya G250/G350/G450 Routing Configuration.
- Table View - A resizeable window where all tables and forms are displayed.

For information on other parts of the user interface, refer to “The User Interface” on page 19.

The figure below shows the user interface, with its various parts labeled.

Figure 119: Avaya G250/G350/G450 Routing Manager User Interface



To resize the main areas of the user interface, the Tree View, and the Table View, use the splitter bars and their arrows.

Toolbar

The Toolbar provides shortcuts to the main Policy Based Routing Manager functions.

The table below describes the buttons on the Application Toolbar and gives the equivalent menu options.

Table 92: Application Toolbar

Button	Description	Menu Item
	Clears applied changes and reverts to the last saved configuration.	**Edit > Revert**
	Adds a row to the table.	**Edit > Add**
	Deletes the selected table row.	**Edit > Delete**
	Sends the configuration to the device without saving.	
	Refreshes the information in the Table View.	**View > Refresh**
	Sends the configuration to the device and saves the configuration.	**File > Commit**
	Opens the on-line help for context-sensitive information.	**Help > Help On**

Tree View

The Tree View shows the applicable configuration windows for the Avaya G250/G350/G450 Device's Policy Based Routing function.

To expand the view of an element when it is contracted, or to contract the view when it is expanded in the tree:

Double-click the element.

Or

Click the handle next to the element you wish to expand or contract.

Table View

The right side of the application window is the Table View. This area can be resized by dragging the vertical splitter bar with the mouse. All tables and forms appear in the Table View. Table columns can be resized by dragging the dividers in the table header.

The Application Editor Tool

The Application Editor tool enables you to specify application protocols by selecting an application name that represents protocol and port number information. For more information on using the Applications editor tool, refer to "Applications Editor Tool" on page 277.

Saving Configuration Changes

There are two levels of applying routing configuration changes to the router:

- Applied Changes - Changes are applied to the router, but are not saved.
- Committed Changes - Changes are saved to the router.

Applied Changes

After finalizing all changes to a dialog box or table, the changes must be sent to the router. To send the changes to the router, click  . The configuration changes are applied to the router.

The changes remain in effect until the router is reset. When the router is reset, it is configured with the last saved configuration. All applied changes that have not been saved are lost.

Committed Changes

To make configuration changes permanent, the changes must be committed (saved) to the router. To commit the configuration to the router, select **File > Commit**. The changes are committed to the router.

Using Avaya G250/G350/G450 Policy Based Routing Manager Help

This section explains how to use the on-line help in the Avaya G250/G350/G450 Policy Based Routing Manager. The on-line help can be opened to the contents page or directly to a topic of interest.

Note:

When running the Avaya G350/G450 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the device with the location of the help files.

Opening the Help to the Contents Page

To open the help to the contents page, select **Help > Help Contents**. The on-line help opens to the contents page.

Opening the Help to a Topic of Interest

To open the help directly to a topic of interest, click  . The on-line help opens to a topic explaining the option currently selected in the Tree View.

Chapter 19: Policy Based Routing

This chapter describes the Policy Based Routing function in Avaya G250/G350/G450 Manager and how to use it to add, modify, and delete policies and rules. It includes the following sections:

- Policy Based Routing Overview - An overview of the different views in Avaya G250/G350/G450 Policy Based Routing.
- Using the Tree View - A detailed description of the Tree View including how to navigate between the different levels of the tree.
- Using the Table View - A detailed description of the Table View including a description of the table fields, instructions on adding, modifying, and deleting policies and rules, and a description of the different tabs and options.
- Using Address Wildcards - A description of address wildcards, and instructions on how to use them in Avaya G250/G350/G450 Policy Based Routing.
- Using the IP Simulate Function - A description of the IP Simulate function, and instructions on activating and using the IP Simulate function to simulate the effect of rules on information packets.

Policy Based Routing Overview

Policy Based Routing allows implementation of routing policies that selectively cause packets to take different paths. For example, in cases where the Avaya G250/G350/G450 Device has two WAN interfaces - Serial and xDSL - you can specify that voice packets be sent over the Serial link, and data packets over xDSL. Thus, it is only the voice packets, which require high QoS, that are sent over the more expensive Serial link.

Avaya Policy Based Routing has two main views. These views provide you with information about the network, and enable you to manage policies and rules.

Avaya Policy Based Routing's two main views are:

- **The Tree View** - Provides a hierarchical view of the device types in the network, the IP addresses of the devices in the network, the modules in the devices, and the existing policies. Refer to "Using the Tree View" on page 258.
- **The Table View** - Provides information about the contents of the elements in the Tree View. You can add, modify, and delete policies, composite actions, and rules in the Table View. Refer to "Using the Table View" on page 258.

Using the Tree View

This section provides an explanation of the Tree View hierarchy and how to use it.

You can select between the following Tree Views using the Option buttons at the bottom of the Tree View:

- **Inventory** - Displays all policy lists associated with each device, whether the lists are active or not.
- **Active Policies** - Displays only the active policy lists associated with each device.

The levels in the Tree View are:

- **Device** - IP addresses of devices. When a device is selected, the Policy Enforcement Points and Policy List tabs appear in the Table View.
- **Lists** - When a list is selected in the Tree View, the Policy Based Routing Rules (for Policy Based Routing lists), Next Hop (for Next Hop lists) and Configuration (for both types of list) tabs appear in the Table View. The list name appears in the tree with the list ID in parentheses.

To expand the view of a contracted element in the tree or to contract an expanded element in the tree:

Double-click the element you want to expand or contract.

Or

Click the handle next to the element.

Using the Table View

The Table View provides the following tables on individual tabs, depending on the entity selected in the Tree View:

- Policy Based Routing List - Appears on a tab labeled Policy Lists.
- Policy Based Routing Rules List - Appears on a tab labeled Policy Based Routing.
- Policy Enforcement Points - Appears on a tab labeled Policy Enforcement Points.
- Next Hop List - Appears on a tab labeled Next Hop.
- Configuration - Appears on a tab labeled Configuration.

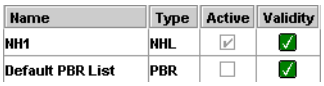
Policy Based Routing List

The Policy list provides a list of policies created for a selected module, and displays information about each of the policies. This section provides a description of the Policy list, and discusses the following topics:

- Adding Policies
- Deleting Policies

To view a Policy list, select a module in the Tree View. The module's Policy list opens in the Table View.

Figure 120: Policy List



The following table lists the fields in the Policy list and their descriptions:

Table 93: Policy List Fields

Field	Description
Name	The user defined policy name. The user defined name appears in the Tree View as the policy name. You can change the policy name by clicking the table cell and typing the new name.
Type	The type of list. Possible values are: • **PBR** • **NH**
Active	Whether or not the policy is active on the module. Possible statuses include: • **Active** - The policy is currently active. • **Not Active** - The policy is not currently active.
Validity	The status of the policy. Possible statuses are: • **Valid** - The policy is valid and can be used as the active policy. • **Partially Valid** - Some of the policy rules which comprise this list are invalid. However, the policy can still be activated on the module. • **Invalid** - At least one mandatory rule in the policy is not valid. An invalid policy cannot be made active on a module.

Adding Policies

To add a policy:

1. Click  .

   Or

   Select **File > New List** and choose a list type. A new policy appears in the policy list.

2. Define the user defined fields in the Policy List. For more information on the Policy fields, refer to "Policy Based Routing List" on page 259.
3. Click  . The module is updated with the new policy, and the table is refreshed.
4. Add rules to the new policy. For more information on adding rules, refer to "Adding Rules" on page 264.

   Note:

   Commit changes to the module to ensure that all changes are permanently saved.

Deleting Policies

To delete a policy:

1. Select the policy you want to delete.

   To select more than one policy, press **SHIFT** while selecting additional policies.

2. Click  . An  appears next to the policy.
3. Click  . The policy is deleted from the module, and the Table View is refreshed.

   Note:

   Commit changes to the module to ensure that all changes are permanently saved.

   Note:

   You cannot delete the active policy.

Policy Based Routing Rules List

The Policy Based Routing Rules list allows you to add, modify, move, and delete rules in a policy. Since rules are applied to packets in the order they appear in the table, the order of rules in the table is important. This section provides a description of the Rules list, and discusses the following topics:

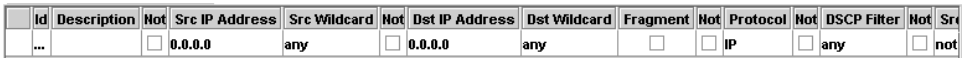
- Adding Rules
- Modifying Rules

- Copying Rules
- Moving Rules
- Deleting Rules

To view the Rules list, select the policy in the Tree View whose rules you wish to view, and then select the **Policy Based Routing Rules** tab in the Table View. If the Rules list is not in the active policy, the Rules list opens in the Table View.

If the selected Policy Based Routing Rules list is in the active policy, the Policy Based Routing Rules list appears as Read-only. To edit an active Rules list, activate a different policy on that interface and direction, and deactivate the policy with the Rules list you wish to edit.

Figure 121: Policy Based Routing Rules List



The following table lists the fields in the Rules list and their descriptions:

Table 94: Policy Based Routing Rules List Fields

Field	Description
ID	Index number of the rule in the Policy Based Routing Rules List.
Description	Description of the rule. You cannot configure this field for default rules.
Not	Logical not. The rule is disabled and bypassed.
Src IP Address	Source Address. The source address of the packet being matched by the rule.
Src Wildcard	Source Address Wildcard. A wildcard that can modify the definition of the specified source address. You can change the Source Address Wildcard by using the pull-down list or entering a user defined wildcard. Possible SrcAddWild values include: • **Host** • **Any** • **User Defined** For more information about using wildcards, refer to "Using Address Wildcards" on page 272.
Not	Logical not. This enables all addresses except for the address listed in the following **Dst IP Address** field.
Dst IP Address	Destination Address. The destination address of the packets matched by this rule.
	1 of 3

Table 94: Policy Based Routing Rules List Fields (continued)

Field	Description
Dst Wildcard	Destination Address Wildcard. A wildcard that can modify the definition of the destination addresses to which this rule applies. You can change the Destination Address Wildcard using the pull-down list or enter a user defined wildcard. Possible DestAddrWild values include: • **Host** • **Any** • **User Defined** For more information about using wildcards, refer to "Using Address Wildcards" on page 272.
Fragment	When enabled, the IP rule applies only to packets that are non-initial fragments, and does not apply to initial fragments or non-fragments. When enabled, the **Src Application** and **Dst Application** fields return a value of **N/A**.
Not	Logical not. This enables all protocols except for the protocol listed in the following **Protocol** field.
Protocol	Protocol. The protocol of the packets to which this rule applies. Possible values include: • **AH** • **ESP** • **GRE** • **ICMP** • **IGMP** • **IPComp** • **IP-in-IP** • **OSPF** • **PIM** • **RSVP** • **SpectraLink** • **TCP** • **UDP** • **VRRP** • **IP**
Not	Logical not. This enables all traffic except for the traffic affected by the following DSCP filter to flow normally.
DSCP Filter	DSCP Filter. The DSCP filter applied to the traffic to which this rule applies.
Not	Logical not. This enables all applications except for the application listed in the following **Src Application** field.
	2 of 3

Table 94: Policy Based Routing Rules List Fields (continued)

Field	Description
Src Application	Source Application. The source application protocol of the packets to which this rule applies. Select an application from the pull-down list. **Note:** Specifying a source application disables the **Fragment** checkbox.
Not	Logical not. This enables all applications except for the application listed in the following **Dst Application** field.
Dst Application	Destination Application. The destination application protocol of the packets to which this rule applies. Select an application from the pull-down list. **Note:** Specifying a destination application disables the **Fragment** checkbox.
Not	Logical not. This enables all ICMP codes and types except for the ICMP codes and types listed in the following **ICMP code/type** field.
ICMP code/type	ICMP code or type. Relevant when ICMP protocol is selected in the **Protocol** field.
Next-Hop	The policy to apply to the packet - either a specified Next-Hop list or Destination Based Routing. Possible values are: ● **NH1** - Next-Hop list 1 ● **NH2** - Next-Hop list 2 ● **.....** ● **NH20** - Next-Hop list 20 ● **DBR** - Destination Based Routing
Validity	The validity of the rule. Possible values are: ● **Applicable** - The rule is valid and can be applied to packets. ● **Best Effort** - The rule may or may not be applied to packets. ● **Not Applicable** - The rule contains invalid values or conflicts with other rules. ● **Unknown** - The rule status is unknown. The rule status is unknown if changes have been made but not applied.
	3 of 3

Adding Rules

To add a new rule to a policy:

1. Click  .

   Or

   Select **Edit > Add**. The new rule appears in the Rules List.

2. Define the fields in the table cells. For more information on the Rule's fields refer to "Policy Based Routing Rules List" on page 260.
3. Click  . The policy is updated with the added rule, and the Table View is refreshed.

   Note:

   A mandatory but invalid rule is highlighted in red.

Modifying Rules

To modify a rule:

1. Click on the rule you want to modify.
2. Define the fields in the table cells. For more information on the Rules' fields refer to "Policy Based Routing Rules List" on page 260.
3. Click  . The policy is updated with the modified rule, and the Table View is refreshed.

   Note:

   Modifying a rule may invalidate other rules.

Copying Rules

You can copy a rule to a different position in the Rules List or to a different policy.

To copy a rule:

1. Select the rule from the Rules List.

   To select more than one rule, press **SHIFT** while selecting additional rules.

2. Select **Edit > Copy**. The selected rule is copied to the clipboard.
3. If you want to copy the rule to a different policy, select the policy to which you want the copied rule pasted.
4. Select the rule above which you want the copied rule to be pasted.
5. Select **Edit > Paste**. The rule is pasted above the selected rule.
6. Click  . The policy is updated with the copied rule, and the Table View is refreshed.

   Note:

   If no rule is selected, the copied rule is added to the bottom of the table.

Moving Rules

You can move a rule's position in a policy or move it from one policy to another.

To move a rule:

1. Select a rule from the Rules List.

   To select more than one rule, press **SHIFT** while selecting additional rules.

2. Select **Edit > Cut**. The selected rule is cut to the clipboard.
3. To copy the rule to a different policy, select the policy to which you want the copied rule pasted.
4. Select the rule above which you want to move the rule.
5. Select **Edit > Paste**. The rule is inserted into the policy above the highlighted rule.
6. Click  . The module is updated with the moved rule, and the Table View is refreshed.

   Note:

   If no rule is selected, the copied rule is added to the bottom of the table.

Deleting Rules

To delete a rule:

1. Select a rule from the Rules List.

   To select more than one rule, press **SHIFT** while selecting additional rules.

2. Click  . The rule is marked for deletion, and an  appears next to the rule.
3. Click  . The rule is deleted from the policy, and the Table View is refreshed.

   Note:

   Commit changes to the module to ensure that all changes are permanently saved.

Next Hop List

You can define up to 20 Next Hop lists, with 20 entries each. Each item in a list specifies an IP Address or Interface to route the packet to. If an item is down (interface down), the packet is routed according to the next item, and so on until the end of the list. If all items are down, the packet is routed according to Destination Based Routing.

The Next Hop tab enables you to add, modify, move, and delete entries in the Next Hop table of a Next Hop list. This section provides a description of the Next Hop table.

Note:

The following interfaces are supported as next hops:

- WAN Fast Ethernet, if it is configured either with encapsulation PPPoE or with no encapsulation but running DHCP client.
- Dialer
- Tunnel
- Null0 (discard the packets)
- Serial

Figure 122: Next Hop Table

Id	Type	IP Address	Interface	Status
1	Null0	0.0.0.0	Null0	up

The following table provides a list of the fields in the Next Hop Table:

Table 95: Next Hop Fields

Fields	Description
Id	Index of the Next Hop entry.
Type	The type of Next Hop entry. Possible values are: • **Interface** • **IP Address**
IP Address	IP address of the Next Hop.
Interface	Interface of the Next Hop.
Status	Operational status of the next hop.

Adding Routes

To add a new Next Hop route to a Next Hop routing table:

1. Click  .

   Or

   Select **Edit > Add**. The new route appears in the Next Hop table.

2. Define the fields in the table cells. For more information on the route's fields refer to "Next Hop List" on page 265.
3. Click  . The table is updated with the added route, and the Table View is refreshed.

   Note:

   A mandatory but invalid route is highlighted in red.

Modifying Routes

To modify a route:

1. Click the route you want to modify.
2. Define the route's fields in the table cells. For more information on the route's fields refer to "Next Hop List" on page 265.
3. Click  . The table is updated with the modified route, and the Table View is refreshed.

Note:

Modifying a route may invalidate other routes.

Copying Routes

You can copy a route to a different position in the Next Hop table or to a different list.

To copy a route:

1. Select the route from the Next Hop List.

   To select more than one route, press **SHIFT** while selecting additional routes.
2. Select **Edit > Copy**. The selected route is copied to the clipboard.
3. If you want to copy the route to a different policy, select the table to which you want the copied route pasted.
4. Select the route above which you want the copied route to be pasted.
5. Select **Edit > Paste**. The route is pasted above the selected route.
6. Click  . The table is updated with the copied route, and the Table View is refreshed.

Note:

If a route is not selected, the copied route will be added to the bottom of the table.

Moving Routes

You can move a route's position in a table or move it from one table to another.

To move a route:

1. Select a route from the Next Hop List.

   To select more than one route, press **SHIFT** while selecting additional routes.
2. Select **Edit > Cut**. The selected route is cut to the clipboard.
3. If you want to copy the route to a different table, select the table to which you want the copied route pasted.
4. Select the route above which you want to move the route.
5. Select **Edit > Paste**. The route is inserted into the table above the highlighted route.
6. Click  . The module is updated with the moved route, and the Table View is refreshed.

Note:

If a route is not selected, the moved route will be added to the bottom of the table.

Deleting Routes

To delete a route:

1. Select a route from the Next Hop table.

   To select more than one route, press **SHIFT** while selecting additional routes.
2. Click  . The route is marked for deletion, and an  appears next to the route.
3. Click  . The route is deleted from the table, and the Table View is refreshed.

Note:

Commit changes to the module to ensure that all changes are permanently saved.

Policy Enforcement Points

The Policy Enforcement Points (PEPs) table allows you to add, modify, move, and delete policies to an interface. This section provides a description of the Policy Enforcement Points list.

Figure 123: Policy Enforcement Points Table

	Interface	Active PBR
	Tunnel 17	<none>
	Tunnel 18	<none>
	Tunnel 19	<none>
	Tunnel 25	<none>
	FastEthernet 10/2	<none>
	Vlan 1	<none>
	Vlan 2	<none>
	Serial 5/1:1 - (cg6)	<none>
	Serial 5/1:0.1 - (fdfsd)	<none>

The Policy Enforcement Points Table allows you to apply PBR lists to specific interfaces in Avaya G250/G350/G450 Policy Based Routing. The following interfaces are supported:

- Vlan
- Wan Fast Ethernet
- Tunnel
- Dialer
- Loopback
- Serial

The following table provides a list of the fields in the Policy Enforcement Points Table:

Table 96: Policy Enforcement Points Fields

Fields	Description
Interface	The interface name and description.
Active PBR	The Policy Based Route active on this interface.

To modify a Policy Enforcement Points table, select policies for interfaces using the pull-down list in the **Active PBR** field.

Configuration

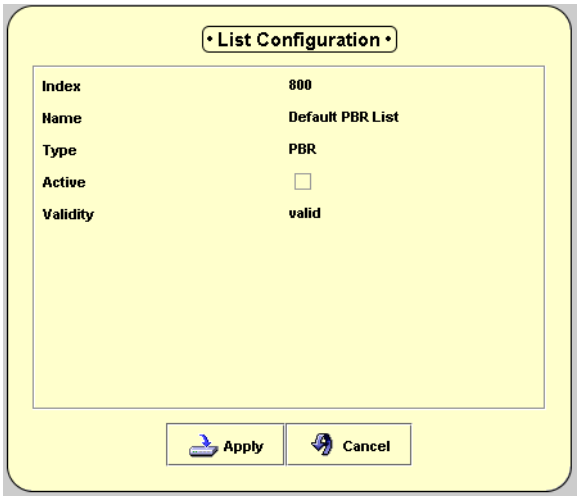
The Configuration tabs perform the following function:

- Policy Based Routing List Configuration - This tab opens in the Table View when a Policy Based Routing list is selected, and enables viewing the Policy Based Routing list's configuration attributes, and changing its name.
- Next Hop List Configuration - This tab opens in the Table View when a Next Hop list is selected, and enables viewing the Next Hop list's configuration attributes, and changing its name.

Policy Based Routing List Configuration

To view the Policy Based Routing List Configuration form, select the policy list whose configuration form you wish to view from the Tree View, and then select the **Configuration** tab in the Table View. The Policy Based Routing List Configuration Dialog Box opens.

Figure 124: Policy Based Routing List Configuration Dialog Box



Note:

Only the Name field is configurable in the Policy Based Routing List Configuration Dialog Box.

The following table lists the fields in the Policy Based Routing List Configuration form and their descriptions:

Table 97: Policy Based Routing List Configuration Fields

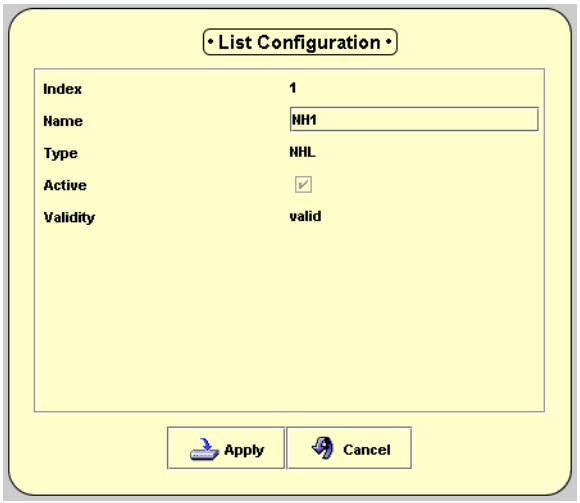
Field	Description
Index	The identification number of the policy list.
Name	The user defined policy name that appears in the Tree View as the policy name.
Type	The type of policy list. Possible values include: • **PBR** - For a Policy Based Routing policy, this field always returns a value of PBR. • **NH** - For a Next Hop policy, this field will always return a value of NH.
Active	Whether or not the policy is active on the module. Possible statuses include: • **Active** - The policy is currently active. • **Not Active** - The policy is not currently active.
Validity	Determination of whether this list is valid.

After changing any of the fields, click **Apply** to implement the changes or **Cancel** to revert to the previous values.

Next Hop List Configuration

To view the Next Hop List Configuration form, select the policy list whose configuration form you wish to view from the Tree View, and then the **Configuration** tab in the Table View. The Next Hop List Configuration Dialog Box opens.

Figure 125: Next Hop List Configuration Dialog Box



Note:

Only the Name field is configurable in the Next Hop List Configuration Dialog Box.

The following table lists the fields in the Next Hop Configuration form and their descriptions:

Table 98: Next Hop List Configuration Fields

Field	Description
Index	The identification number of the policy list.
Name	The user defined policy name that appears in the Tree View as the policy name.
Type	The type of policy list. Possible values include: • **PBR** - For a Policy Based Routing policy, this field always returns a value of PBR. • **NH** - For a Next Hop policy, this field will always return a value of NH.
Active	Whether or not the policy is active on the module. Possible statuses include: • **Active** - The policy is currently active. • **Not Active** - The policy is not currently active.
Validity	Determination of whether this list is valid.

Using Address Wildcards

Wildcards are used to mask all or part of a source or destination IP address. Using wildcards, you can create filters for IP addresses. A wildcard can also be used to mask specific bits of an IP address. This mask is used to specify which bits are used and which bits are ignored.

If you specify **Host**, the wildcard is set to 0.0.0.0 and the entire address is used. If you specify **Any**, the wildcard is set to 255.255.255.255 and the IP address is ignored. You can also specify a custom wildcard to mask part of the IP address.

Examples:

- If the source IP address is 149.36.184.189 and the wildcard is 255.0.255.255, the rule will apply to all packets, where the second byte of the IP address is 36. The 255 in the first, third, and fourth bytes allow any value in the corresponding bytes of the source address to match this rule.
- If the destination address is 149.36.184.189 and the destination wildcard is 255.255.127.0, the rule will only apply to traffic directed to IP addresses whose third byte is between 128-255 and whose fourth byte is 189.

Using the IP Simulate Function

This section provides instructions on activating and using the IP Simulate function to simulate the effect of rules on information packets. It discusses the following topics:

- IP Simulate Overview - An overview of the IP Simulate function.
- Using IP Simulate - Instructions for using the IP Simulate function to simulate the actions of a policy on defined packets.

IP Simulate Overview

The IP Simulate function allows you to view the results of a policy on a simulated packet.

The IP Simulate function tests a simulated packet against the rules in a policy. The rules are applied to the simulated packets in the order they appear in the Rules List, and the resulting operation is reported in the **Result** field of the IP Simulate dialog box.

The rule that matched the packet is highlighted in the Rules List. This enables you to view the outcome of a policy before activating it. It also eases the editing of rules in a policy to provide the desired results.

Note:

IP Simulate only operates on saved policies. Ensure that any changes to the policy have been applied before testing packets.

Note:

IP Simulate can only be used when a specific Rules List is selected in the Tree View.

Using IP Simulate

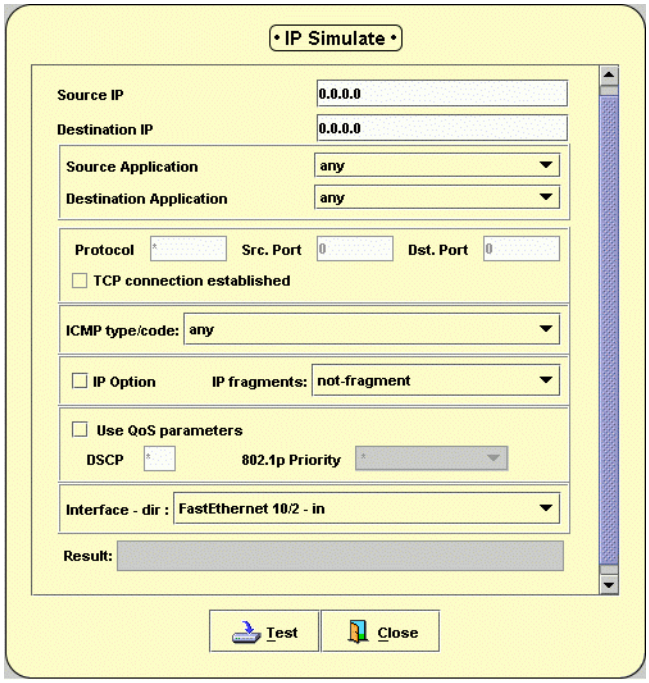
To analyze the results of a policy on simulated packets:

1. Select a policy.
2. Click  .

   Or

   Select **Actions > Simulate.** The IP Simulate dialog box opens in the Form View area.

Figure 126: IP Simulate



3. Define a simulated packet using the fields in the IP Simulate dialog box. For more information on the fields in IP Simulate, refer to the table below.
4. Click **Test.** The effect of the policy on the simulated packet appears in the **Result** field and the matching rule is highlighted in the Rules Table.

The following table provides a list of the fields in IP Simulate and their descriptions:

Table 99: IP Simulate Fields

Field	Description
Source IP	The IP address of the device from which the simulated packet originated.
Destination IP	The IP address of the device to which the simulated packet is addressed.
Source Application	The application from which the simulated packet was sent. Select an application from the pull-down list or select **custom** and define the **Protocol** and **Port** fields.
Destination Application	The application to which the simulated packet is being sent. Select an application from the pull-down list or select **custom** and define the **Protocol** and **Port** fields.
Protocol	The number of the application protocol. The number can be in the range of 0-255. • **TCP** - The protocol number is 6. • **UDP** - The protocol number is 17.
Src. Port	A specific application source. When combined with the protocol number this identifies the application from which the packet was sent.
Dst. Port	A specific application destination. When combined with the protocol number, this identifies the application to which the packet was sent.
TCP connection established	The type of session to which the rule applies. If checked, the simulated packet is from an established session. An established session occurs when the packets entering the module respond to a previously established communications session. If unchecked, the simulated packet is from a not established session.
ICMP type/code	Type of ICMP packet to be used in this simulation. For possible values, refer to Appendix C: "ICMP Packet Types & Codes" on page 293.
IP Option	Enables setting of IP Fragmentation options.
IP fragments	Options for IP packet fragmentation. Possible values are: • **Not fragmented** • **First packet fragmented** • **Packet fragmented non-l4**
	1 of 2

Table 99: IP Simulate Fields (continued)

Field	Description
Use QoS parameters	Enables QoS parameters for forwarding the packet. The possible options are: • **Checked** • **Unchecked** If the **Use QoS Parameters** box is checked the IP simulate function uses the values in the DSCP and 802.1p fields in determining the action to be taken on the simulated packet. The DSCP and 802.1p fields must contain valid values. If the **Use QoS Parameters** is unchecked, the IP simulate function ignores the DSCP and 802.1p fields. **Note:** This field does not appear if the simulation is based on an ACL.
DSCP	The value of the DSCP tag on the simulated packet. Valid values are 0-63. The value of * indicates that this field should be ignored. This value affects the forwarding priority of the packet when the operation to be taken on the packet is **permit**.
802.1p Priority	The value of the CoS tag on the simulated packet. The tag value of CoS runs from 0-7. The value of * indicates that this field should be ignored. This value affects the forwarding priority of the packet when the operation to be taken on the packet is **permit**.
Interface - dir	The interface and direction on an X330WAN expansion module for which the rule applies. Select an interface and direction using the pull-down list.
Result	The operation that would be carried out on the simulated packet, if the selected policy was active.
	2 of 2

Chapter 20: Applications Editor Tool

This chapter provides instructions on how to use the Application Editor Tool and how to customize application protocols. It contains the following sections:

- Applications Editor Overview - An overview of the Applications Editor.
- Using the Applications Editor - Detailed instructions on how to use the Applications Editor including adding, modifying, and deleting application protocols, and creating ASCII reports.
- Reports - Detailed instructions on how to create an ASCII report of the application protocols listed in the Applications Editor.

Applications Editor Overview

Avaya G250/G350/G450 Policy Based Routing allows you to specify application protocols by selecting an application name that represents protocol and port number information. The mapping of the application name to the information it represents is managed by the Applications Editor.

Using the Applications Editor you can add, modify, and delete custom application protocols. Default application protocols cannot be modified or deleted. You can also create ASCII reports of the applications listed in the Applications Editor.

Using the Applications Editor

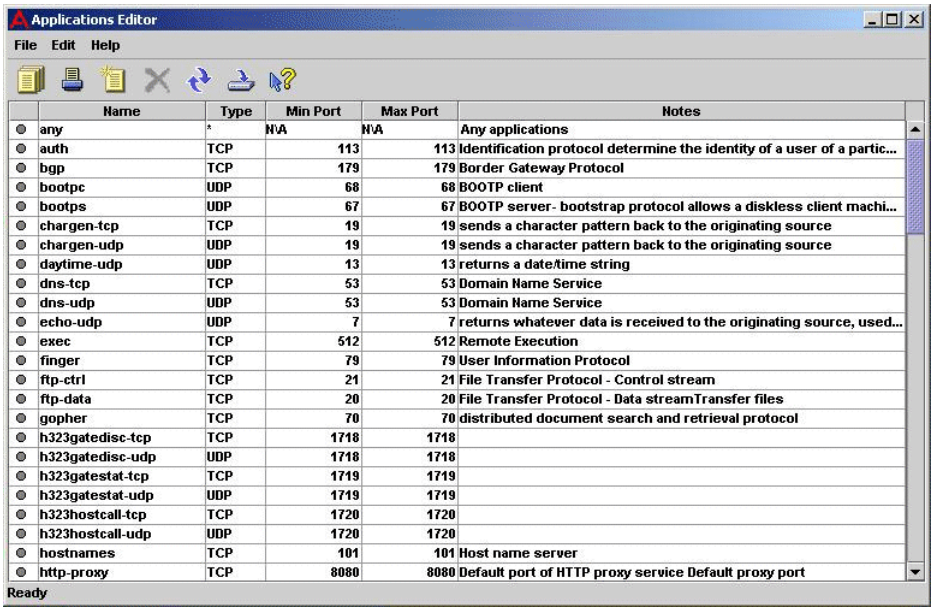
This section provides a description of the Applications Editor, and discusses the following topics:

- Adding Application Protocols
- Modifying an Application Protocol
- Deleting an Application Protocol
- Applying Changes

To open the Applications Editor:

Select **Tools > Applications Editor**. The Applications Editor opens.

Figure 127: Applications Editor



	Name	Type	Min Port	Max Port	Notes
	any	*	N\A	N\A	Any applications
	auth	TCP	113	113	Identification protocol determine the identity of a user of a partic...
	bgp	TCP	179	179	Border Gateway Protocol
	bootpc	UDP	68	68	BOOTP client
	bootps	UDP	67	67	BOOTP server- bootstrap protocol allows a diskless client machi...
	chargen-tcp	TCP	19	19	sends a character pattern back to the originating source
	chargen-udp	UDP	19	19	sends a character pattern back to the originating source
	daytime-udp	UDP	13	13	returns a date/time string
	dns-tcp	TCP	53	53	Domain Name Service
	dns-udp	UDP	53	53	Domain Name Service
	echo-udp	UDP	7	7	returns whatever data is received to the originating source, used...
	exec	TCP	512	512	Remote Execution
	finger	TCP	79	79	User Information Protocol
	ftp-ctrl	TCP	21	21	File Transfer Protocol - Control stream
	ftp-data	TCP	20	20	File Transfer Protocol - Data streamTransfer files
	gopher	TCP	70	70	distributed document search and retrieval protocol
	h323gatedisc-tcp	TCP	1718	1718	
	h323gatedisc-udp	UDP	1718	1718	
	h323gatestat-tcp	TCP	1719	1719	
	h323gatestat-udp	UDP	1719	1719	
	h323hostcall-tcp	TCP	1720	1720	
	h323hostcall-udp	UDP	1720	1720	
	hostnames	TCP	101	101	Host name server
	http-proxy	TCP	8080	8080	Default port of HTTP proxy service Default proxy port

The following table provides a list of the fields in the Application Editor and a description of each field:

Table 100: Applications Editor Fields

Field	Description
Name	The name of the application protocol.
Type	The application type. Possible types are: • **TCP** • **UDP** • ***** (Other protocols)
Min Port	The low end of the range of ports for this protocol.
Max Port	The high end of the range of ports for this protocol.
Notes	A user defined description of the protocol.

Adding Application Protocols

To add a new application protocol:

1. Click  .

   Or

   Select **Edit > Add**. A new protocol appears in the Application Protocols Tool.

2. Define the application protocol using the fields in the table.

Modifying an Application Protocol

To modify an application protocol:

1. Select the application protocol you want to modify.
2. Edit the application protocol's fields in the table.

Deleting an Application Protocol

To delete an application protocol:

1. Select the application protocol you want to delete.
2. Click  .

   Or

   Select **Edit > Delete**. An appears next to the protocol.

Applying Changes

When Avaya G250/G350/G450 Policy Based Routing is updated with the changes to the Applications Editor table, the pull-down list in the Rules List is updated.

Added protocols appear in the Application pull-down list, and deleted applications no longer appear in the Application pull-down list.

To update Avaya G250/G350/G450 Policy Based Routing with the changes to the Applications Editor table, click  . The Application pull-down list in the Rules List is updated.

Reports

You can create an ASCII report of the application protocols listed in the Applications Editor. The report is a text file with the information in each column separated by tabs.

To create an ASCII report of the Applications Editor table:

1. Click  .

   Or

   Select **File > Report**. The Save dialog box opens.
2. Select a directory for the report.
3. Enter a name for the report.
4. Click **Save.** The report is saved to the specified file.

Appendix A: Menus

This appendix gives the full structure of the menus in the Avaya G250/G350/G450 Manager.

- Device Manager Menus
- Routing Manager Menus
- Policy Based Routing Menus
- Applications Editor Menus

Device Manager Menus

This section provides the menu structure of the Avaya G250/G350/G450 Device Manager.

- File Menu
- View Menu
- Configure Menu
- Actions Menu
- Tools Menu
- Help Menu

File Menu

Table 101: File Menu - Device Manager

Item	Description
Exit	Exits the Avaya G250/G350/G450 Manager. **Note:** This function is not supported when running the Avaya G250/G350/G450 Manager in a web browser. Close the browser to exit the application.

View Menu

Table 102: View Menu - Device Manager

Item	Description
Refresh	Refreshes the display with information from the device.
Configuration	Switches the Device Manager to configuration mode.
Port RMON	Switches the Device Manager to monitoring mode.
Switch-Connected Addresses	Opens the Switch-Connected Addresses table.
Toolbars > Show Application Toolbar	Toggles the display of the application toolbar.
Toolbars > Show Get/ Set Toolbar	Toggles the display of the Get/Set toolbar.

Configure Menu

Table 103: Configure Menu - Device Manager

Item	Description
Device Configuration	Displays configuration information for the device.
VLAN	Displays and enables configuration of VLANs.
	1 of 2

Table 103: Configure Menu - Device Manager (continued)

Item	Description
Port Redundancy	Displays and enables configuration of port redundancies.
Port Mirroring	Allows copying of all transmitted and received packets from one port to another.
Trap Managers	Displays managers and traps configuration information.
WAN > Channel Groups	Opens the Channel Groups table.
WAN > Backup Interfaces	Opens the Backup Interfaces table.
WAN > Dynamic CAC	Allows configuration of Dynamic CAC.
Dialer	Allows configuration of the Dialer.
Servers > DHCP Server	Allows configuration of DHCP server.
Servers > TFTP Server	Allows configuration of TFTP server.
CNA	Allows configuration of DNS clients through the Converged Network Analyzer application.
	2 of 2

Actions Menu

Table 104: Actions Menu - Device Manager

Item	Description
802.1X > Initialize Selected Ports	Initialize 802.1x security on the selected ports (not displayed for Avaya G450 Devices).
802.1X > Initialize All Ports	Initialize 802.1x security on all ports on the device (not displayed for Avaya G450 Devices).
802.1X > Reauthenticate Selected Ports	Reauthenticate 802.1x security on the selected ports (not displayed for Avaya G450 Devices).
802.1X > Reauthenticate All Ports	Reauthenticate 802.1x security on all ports on the device (not displayed for Avaya G450 Devices).
Reset Device	Resets the entire device.
Reset Media Module	Resets the selected modules.
Commit	Saves the updated configuration to the device.
Clear CAM	Clears the CAM table for the device.

Tools Menu

Table 105: Tools Menu - Device Manager

Item	Description
Administer Station/ Gateway	Opens Avaya Site Administrator on the selected station or gateway.
Administer Call Controller	Opens Avaya Site Administrator on the selected Media Call Controller.

Help Menu

Table 106: Help Menu - Device Manager

Item	Description
Help Contents	Opens the on-line help contents page.
Help On	Activates on-line help.
About Avaya G250/ G350/G450 Manager	Copyright information about the Avaya G250/G350/G450 Device Manager.

Routing Manager Menus

This section provides the menu structure of the Avaya G250/G350/G450 Routing Manager.

- File Menu
- Edit Menu
- View Menu
- Action Menu
- Help Menu

File Menu

Table 107: File Menu - Routing Manager

Item	Description
Save	Saves the current table to a text file.
Commit	Saves the current configuration to the router.

Edit Menu

Table 108: Edit Menu - Routing Manager

Item	Description
Undo	Undoes changes made to the table or form currently displayed.
Copy	Copies the selected information to the clipboard.
Paste	Pastes information from the clipboard into the selected table row.
Insert Row	Adds a row to the table.
Delete Row	Deletes the selected table row.

View Menu

Table 109: View Menu - Routing Manager

Item	Description
Refresh	Refreshes the information in the current table.
Form	Toggles the display of a form corresponding to the current table.
More	Toggles the display of additional table parameters.

Action Menu

Table 110: Action Menu - Routing Manager

Item	Description
Stop	Stops loading information into the current table.
Apply	Sends the configuration information to the device.
Start Point	Opens the Start Point dialog box for specifying the starting point of entries displayed in the table.
Reset	Reset the selected router.

Help Menu

Table 111: Help Menu - Routing Manager

Item	Description
Context Sensitive Help	Activates context sensitive help.
Contents	Opens the on-line help contents page.
About Routing Manager	Copyright information about the Avaya G250/G350/G450 Routing Manager.

Policy Based Routing Menus

This section provides the menu structure of G250/G350/G450 Policy Based Routing.

- File Menu
- Edit Menu
- View Menu
- Tools Menu
- Help Menu

File Menu

Table 112: File Menu - Policy Based Routing

Item	Description
New List	Creates a new policy list.
New List > PBR List	Creates a new Policy Based Routing list.
New List > NH List	Creates a new Next Hop list.
Commit	Saves the current configuration to the device.

Edit Menu

Table 113: Edit Menu - Policy Based Routing

Item	Description
Revert	Clear uncommitted changes and revert to the last saved configuration of a list.
Add	Add a line to a list.
Cut	Cut a line from a list and buffer it for copying.
Copy	Copy a line from a list.
Paste	Paste a copied line to a list.
Delete	Delete a line from a list.
Select All	Select all lines in a list.

View Menu

Table 114: View Menu - Policy Based Routing

Item	Description
Tooltip	Enables viewing of tooltips.
Refresh	Refreshes information in the current table.

Tools Menu

Table 115: File Menu - Policy Based Routing

Item	Description
Applications Editor	Launches the Application Editor.

Help Menu

Table 116: Help Menu - Policy Based Routing

Item	Description
Contents	Opens the on-line help contents page.
Help On	Activates context sensitive help.
About Avaya Policy Based Routing	Copyright information about Avaya Policy Based Routing.

Applications Editor Menus

This section provides the menu structure for the Applications Editor tool.

- File Menu
- Edit Menu
- Help Menu

File Menu

Table 117: File Menu - Applications Editor

Item	Description
Report	Generate the selected report.
Print	Print the current report.
Exit	Exit the Applications Editor tool.

Edit Menu

Table 118: Edit Menu - Applications Editor

Item	Description
Refresh	Refreshes the information in the current table.
Add	Add a new entry to the current table.
Delete	Delete an entry from the current table.

Help Menu

Table 119: Help Menu - Applications Editor

Item	Description
Help Contents	Opens the on-line help contents page.

Appendix B: Web Management

This appendix provides instructions for managing Avaya G350/G450 Devices via the Internet and contains the following sections:

- **Web Management Overview** - An overview on Web Management.
- **Configuring the Avaya G350/G450 Device** - Instructions on how to configure the Avaya G350/G450 Device for the first time.

Note:

Web Management is not supported on the G250.

Web Management Overview

Web Management provides a simple method of managing Avaya G350/G450 Devices via the Internet. The Avaya G350/G450 Manager software does not need to be installed on your computer.

Instead, a small plug-in for your web browser activates the embedded manager software. This plug-in loads automatically when you use Web Management.

Note:

Port RMON is not available via Web Management.

On-line help is only available if you have installed the on-line help on your network and configured the Avaya G350/G450 Device with the location of the help files.

Configuring the Avaya G350/G450 Device

When an Avaya G350/G450 is initially configured as a full router, it must be assigned an IP address. The IP address must be assigned using the CLI (Command Line Interface) setup screens. For information on assigning an IP address to the router module, refer to the *Administration for the Avaya G250 and Avaya G350 Media Gateways*.

Appendix C: ICMP Packet Types & Codes

This appendix lists the various ICMP Packet Types and Codes as used in "Using IP Simulate" on page 273.

Note:

Some ICMP Packet Types have no corresponding Code.

ICMP Packet Type/Code List

Table 120: ICMP Packet Types/Codes

Description	ICMP Type	ICMP Code
Echo Reply	0	0
Unreachable	3	--
Network Unreachable	3	--
Host Unreachable	3	1
Protocol Unreachable	3	2
Port Unreachable	3	3
Fragmentation Needed but DF Bit Set	3	4
Source Route Failed	3	5
Destination Network Unknown	3	6
Destination Host Unknown	3	7
Destination Network Administratively Prohibited	3	9
Network Unreachable for TOS	3	11
Host Unreachable for TOS	3	12
Communication Administratively Prohibited by Filtering	3	13
Host Precedence Violation	3	14
Precedence Cutoff in Effect	3	15
		1 of 3

Table 120: ICMP Packet Types/Codes (continued)

Description	ICMP Type	ICMP Code
Source Quench	4	0
Redirect	5	--
Redirect for Network	5	0
Redirect for Host	5	1
Redirect for Type-of-Service and Network	5	2
Redirect for Type-of-Service and Host	5	3
Echo Request	8	0
Router Advertisement	9	0
Router Solicitation	10	0
Time Exceeded	11	--
Time-to-Live Equals 0 During Transit	11	0
Time-to-Live Equals 0 During Reassembly	11	1
Parameters Problem	12	--
Bad IP Header	12	0
Required Option Missing	12	1
Timestamp Requested	13	0
Timestamp Reply	14	0
Address Mask Request	17	0
Address Mask Reply	18	0
Traceroute	30	--
Traceroute Outbound Packet Successfully Forwarded	30	0
Traceroute No Route for Outbound Packet	30	1
Conversion Errors	31	--
Mobile Host Redirect	32	--
IPv6 Where-Are-You	33	--
IPv6 I-Am-Here	34	--

2 of 3

Table 120: ICMP Packet Types/Codes (continued)

Description	ICMP Type	ICMP Code
Mobile Registration Request	35	--
Mobile Registration Reply	36	--
Domain Name Request	37	0
Domain Name Reply	38	0
Skip Algorithm Discovery Protocol	39	0
Security Failure	40	--
		3 of 3

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