



Avaya P330 Manager User Guide

April 2002



Avaya P330 Manager User Guide

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Preface

Welcome to Avaya P330 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 P330 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 P330 Manager** - Information pertaining to the entire Avaya P330 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 P330 Manager including instructions on starting the Avaya P330 Manager.

- **Avaya P330 Device Manager** - Information pertaining to Avaya P330 Device management.
 - **Device Manager** - An introduction to the Avaya P330 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.
 - **G700 Media Gateway** - An overview of the G700 Media Gateway and information on viewing and configuring G700 components.
 - **VoIP Engine Configuration** - An overview of VoIP Engine functionality and information on viewing and configuring VoIP Engine parameters.
 - **WAN Configuration** - An overview of the Avaya X330WAN expansion module functionality and information on viewing and configuring WAN parameters.
 - **Port RMON** - Viewing graphical representations of the traffic on the ports of the Avaya P330 Device.
 - **VLANs** - Viewing and editing VLAN information.
 - **Link Aggregation Groups (LAGs)** - Viewing and editing LAG information.
 - **Port Redundancy** - Configuring port redundancy for ports and LAGs in an Avaya P330 Device.
 - **Port Mirroring** - Setting up port mirroring for ports and LAGs in an Avaya P330 Device.
 - **IP Multicast Filtering** - Viewing and modifying IP Multicast filtering in an Avaya P330 Device.
 - **Trap Managers Configuration** - Viewing and modifying the Trap Managers table.
 - **Switch Connected Addresses** - Viewing devices connected to selected ports.
 - **Port Security** - Viewing and modifying port security settings.
 - **LANE Information** - Viewing LECs attached to a selected ATM Uplink expansion module and LE-ARP tables.

- **Avaya P330 Routing Manager** - Information pertaining to Avaya P330 routing management.
 - **Routing Manager** - An introduction to configuring routing with Avaya P333R modules, and a description of the Avaya P330 Routing Manager user interface.
 - **Device** - Detailed descriptions of routing device configuration that enable you to display and modify global parameters, reset the module, and upload or download configuration parameters.
 - **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, DHCP/BOOTP parameters, RIP interfaces, OSPF interfaces, area parameters, link-state database and neighbors, the IP access control table, and redundancy parameters.
 - **EZ2route** - Detailed descriptions of EZ2Route configuration that enable you to display and update the learning mode of EZ2Route modules and the routers that they have learned.
- **Appendices** - Additional information about the Avaya P330 Manager.
 - **Menus** - The full structure of the menus in the Avaya P330 Manager.
 - **Web Management** - Instructions on how to manage Avaya P330 Devices via the Internet.

1 Introduction

This chapter provides an introduction to the Avaya P330 Manager. It includes the following sections:

- **Avaya P330 Manager Overview** - An overview explaining the different aspects of Avaya P330 Device management.
- **Selecting a Device to Manage** - Instructions on how to select a Avaya P330 device to manage.
- **Starting the Avaya P330 Manager** - Instructions on how to access Avaya P330 Manager from your management platform.
- **The User Interface** - Detailed descriptions of the user interface common to all applications in the Avaya P330 Manager.
- **Managing Tables** - An explanation of the symbols used to label table rows.

Avaya P330 Manager Overview

The Avaya P330 Manager provides full management capabilities for Avaya P330 Devices. This includes the ability to view five aspects of device management:

- **Device Manager** - Provides a view of the configuration of the device including VLAN configuration, configured LAGs, port mirroring, and traps. For information specific to the Avaya P330 Device Manager, refer to chapters 2-17.
- **Routing Manager** - Provides a view of the third layer routing and forwarding functions of the device. For information specific to the Avaya P330 Routing Manager, refer to chapters 18-22.
- **Device SMON** - Provides advanced monitoring capabilities for the device. For information specific to Avaya P330 SMON, refer to *Avaya P330 SMON User Guide*.
- **AnyLayer SMON** - Provides advanced monitoring capabilities for Avaya P333R modules in the device. For information specific to Avaya P330R AnyLayer SMON, refer to *Avaya P330 SMON User Guide*.
- **Load Balancing Manager** - Provides load balancing capabilities using Avaya P333R-LB router modules. For information on Avaya P330R Load Balancing Manager, refer to *Avaya P330 Load Balancing Manager User Guide*.

For information on switching between the different views, refer to “Application Tabs” on page 5.

Starting the Avaya P330 Manager


This section provides instructions for starting Avaya P330 Manager.

Avaya P330 Manager as Part of MSNM

If you installed the Avaya P330 Manager as part of the Avaya MultiService Network Manager, the following sections provide instructions for starting Avaya P330 Manager.

Running Avaya P330 Manager from Avaya MultiService Console

From the management platform map:

1. Select the label representing the Avaya P330 Device you want to manage.
2. Click .

Or


Double-click the Avaya P330 Device.

Or

Select Tools > Avaya Device Manager.

Running Avaya P330 Manager from HP NNM

From the management platform map:

1. Select the Avaya P330 Device you want to manage.
2. Click  in the OpenView toolbar.

Or

Select Tools > Avaya > Device Manager.

Or

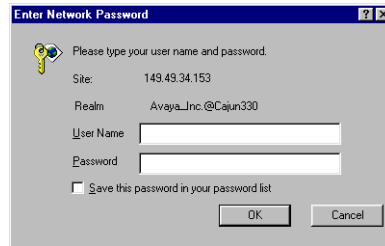
1. Right-click the Avaya P330 Device you want to manage.
2. Select Avaya > Device Manager.

Avaya P330 Manager via Web Management

To start Avaya P330 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 P330 Device you want to manage. The Password dialog box opens.

Figure 1-1. Network Password Dialog Box



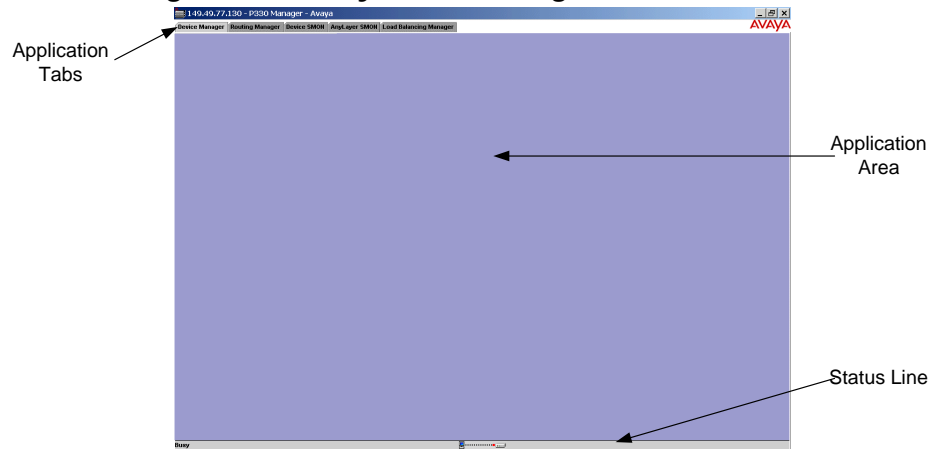
2. Enter **root** in the User Name field and the correct password in the Password field. (Use a valid CLI password.)
3. To save the password on your computer, check the Save this password in your password list checkbox.
4. Click OK. The Avaya P330 Welcome page opens.
 - If the required Java plug-in is 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 P330 Welcome page to install the plug-in.

The User Interface

The Avaya P330 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, Routing Manager, and SMON applications for the Avaya P330 Device.
- **Application Area** - An area where the selected application opens.
- **Status Line** - Displays the communication status between the Avaya P330 Manager and the Avaya P330 Device.

Figure 1-2. Avaya P330 Manager User Interface



Application Tabs

You can access the five main components of device management using the following Application Tabs in the Avaya P330 Manager:

- **Device Manager** - View the Avaya P330 Device Manager for device configuration and Port RMON.
- **Device SMON** - View SMON (Switch Monitoring) information for the Avaya P330 Device.
- **AnyLayer SMON** - View AnyLayer SMON information for Avaya P333R routing modules in the device.
- **Routing Manager** - View the Avaya P330 Routing configuration.

- **Load Balancing Manager** - View the load balancing configuration on Avaya P333R-LB modules in the device.




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

* **Note:** When the Avaya P330 Manager is installed as a standalone manager and when running the Avaya P330 Manager via Web Management, the Device SMON and AnyLayer SMON tabs do not appear.

Status Line

The Status Line shows the communication status between the application and the Avaya P330 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 1-1. Communication Statuses

Status	Graphic	Description
Ready		The application is ready to communicate with the Avaya P330 Device.
Communicating		The application is currently communicating with the Avaya P330 Device.
Communication Error		The last attempted communication with the Avaya P330 Device was not successful.

Managing Tables

The Avaya P330 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 1-2. 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.

2 Device Manager

This chapter provides an introduction to the Avaya P330 Device Manager. It includes the following sections:

- **The User Interface** - An introduction to the Avaya P330 Device Manager user interface, including instructions for selecting elements and using the toolbar buttons.
- **Avaya P330 Modes** - Instructions on switching between the configuration and Port RMON modes in the Avaya P330 Device Manager.
- **Refreshing Device Information** - Instructions on how to refresh the information in the Avaya P330 Manager.
- **Using Dialog Boxes and Tables** - An explanation of the icons found in the dialog boxes and tables in the Avaya P330 Device Manager.
- **Using Avaya P330 Device Manager Help** - An explanation of the options for accessing on-line help in the Avaya P330 Device Manager.

The User Interface

The Avaya P330 Device Manager user interface consists of the following elements:

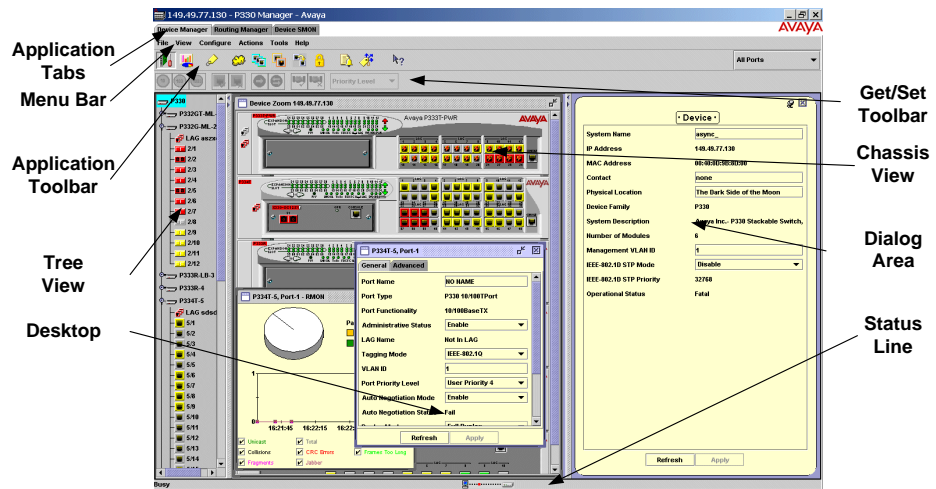
- **Menu Bar** - Menus for accessing Avaya P330 Device management functions.
- **Application Toolbar** - Toolbar buttons for accessing Avaya P330 Device management functions.
- **Get/Set Toolbar** - Toolbar buttons for viewing and changing the configuration of ports and LAGs.
- **Tree View** - A resizable window containing a hierarchical representation of the modules and ports of the Avaya P330 Device.
- **Desktop** - A resizable window where the Chassis View and all floating and minimized dialog boxes and tables are displayed.

- **Chassis View** - A graphical representation of the Avaya P330 Device.
- **Dialog Area** - A resizable 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 5.

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

Figure 2-1. The Avaya P330 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 2-1. 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

Table 2-1. Application Toolbar (Continued)

Button	Description	Menu Item
	Displays addresses of devices connected to the switch.	View > Switch Connected Addresses
	Displays the VLAN window.	Configure > VLAN
	Displays the LAG table.	Configure > Port LAG
	Displays the Port Redundancy table.	Configure > Port Redundancy
	Starts the Port Mirroring wizard.	Configure > Port Mirroring
	Displays the Port Security window.	Configure > Port Security
	Displays the Trap Manager Table.	Configure > Trap Managers
	Displays the IP Multicast Filtering dialog box.	Configure > IP Multicast Filtering
	Displays VoIP parameters for the selected Media Gateway.	Actions > VoIP Configuration
	Launches Avaya Call Processing on the selected G700 Media Gateway or Voice port.	Actions > Administer Station/Gateway
	Opens the on-line help.	Help > Context Sensitive Help
	Selects a VLAN. Ports that are not on the selected VLAN appear dark gray in the Chassis View.	

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 and LAGs. When a port or LAG 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 and LAGs can be configured using the Get/Set Toolbar. To change the configuration of a port or LAG, click the button which represents the value of the parameter you want to apply to the port or LAG. Click **apply** to update the device with the changes. Click **cancel** to discard the changes. Options not applicable to the selected port or LAG are dimmed.

To configure the ports of a LAG, select the LAG icon in the Tree View or the Chassis View. Ports belonging to a LAG may not be configured by selecting the port.

Multiple ports and LAGs can be simultaneously configured using the Get/Set Toolbar. When multiple ports or LAGs with non-identical configurations are selected, only the parameters whose settings are identical on the selected ports or LAGs 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 2-2. Get/Set Toolbar






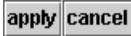
Button	Description
	Get and set the port/LAG's speed: 10 Mbps, 100 Mbps, 1000 Mbps.
	Get and set the port/LAG's status: Enabled, Disabled.
	Get and set the port/LAG's mode: Half duplex, Full duplex.
	Get and set the port/LAG's auto-negotiation status: Auto-negotiation Enabled, Auto-negotiation Disabled.
	Get and set the port/LAG's priority. Select a priority level between 1 and 8 using the pull-down listbox.

Table 2-2. Get/Set Toolbar (Continued)

Button	Description
	Apply or cancel the configuration changes made with the Get/Set Toolbar.

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 P330 Device. To select ports, LAGS, 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 and LAGs. 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.

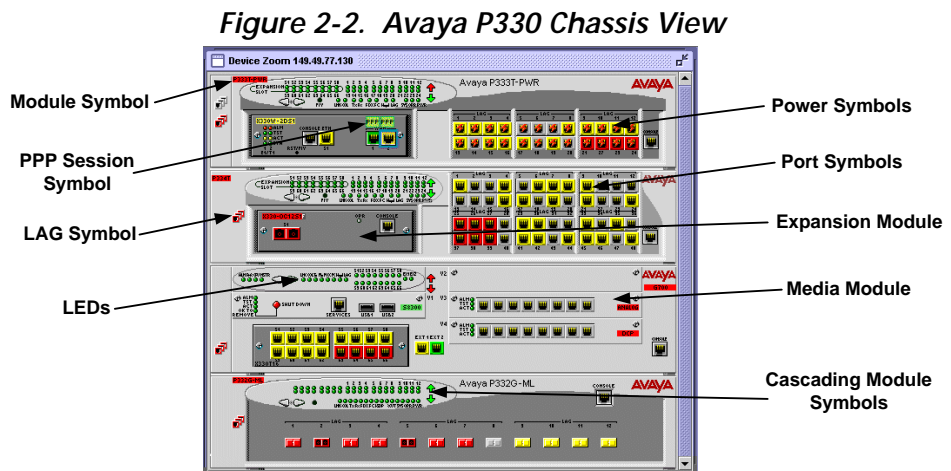
Desktop

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 P330 Device. The Avaya P330 Device can contain several Avaya P330 modules. The Chassis View shows all of the device's modules, LAGs, and ports, including ports on expansion modules and cascading modules (when present). The colors of the modules, LAGs, 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. When you hold the cursor over a LAG's icon in the Chassis View, a label appears with the name and VLAN number of the LAG, and the last fault that occurred on the LAG.



When viewing selected dialog boxes, the color of the port or LAG indicates the status of the port or LAG with regard to the application. For example: When creating a Link Aggregation Group (LAG), ports that can be selected appear white in the Chassis View. The port selected to be the base port appears dark blue. The ports selected to be additional ports appear cyan.

The Cascading Module symbols show the status of the links between adjacent modules in the device. The Cascading Module symbols at the top and bottom of the device show the status of the long cable link between the top and bottom modules in the device. If there is no Cascading Module in the device, the Cascading Module symbols do not appear.

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





Table 2-3. Chassis View Port/LAG Colors

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

GBIC Ports

Some Avaya P330 expansion modules contain GBIC (GigaBit Interface Converter) ports that house removable transceiver modules. The Chassis View reflects the management status of the ports. The following table shows the possible appearances of these ports in the Chassis View and provides the corresponding management status of the port.

Table 2-4. 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, LAGs, 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 LAG:

In the Chassis View, click the LAG's icon.

Or

In the Tree View, click the LAG's icon. The LAG 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 P330 Modes

The Avaya P330 Device Manager has two modes:

- Configuration mode
- Port RMON mode

When in configuration mode, you can view and change the configuration of the Avaya P330 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 P330 Device Manager. To refresh Avaya P330 device information, select **View > Refresh**. The Avaya P330 Device Manager refreshes its device information and updates the display.

Using Dialog Boxes and Tables

Dialog boxes and tables in the Avaya P330 Manager application have a common set of buttons. The following table displays the buttons and explains their functions:

Table 2-5. Dialog Box Icons

Icon	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.
Wizard	Starts a wizard.
Delete	Deletes the selected rows of the table.
Undo	Undoes all changes to the selected row in a table.

Using Avaya P330 Device Manager Help

This section explains how to use the on-line help in the Avaya P330 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 P330 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the Avaya P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Avaya P330 User's Guide*.

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

2. Click on a point of interest in the Avaya P330 Device Manager. The on-line help opens to a topic explaining the feature that was clicked.

3 Device Configuration

This chapter explains how to view and set the various configuration parameters relevant to the Avaya P330. It includes the following sections:

- **Viewing Device Information** - View high-level information about the Avaya P330 Device.
- **Viewing Module Configuration** - View information specific to an Avaya P330 module in the device.
- **Viewing LAG Configuration** - View information specific to a LAG on an Avaya P330 module in the device.
- **Viewing Port Configuration** - View information specific to the ports on the Avaya P330 Device.
- **Resetting the Device** - Reset the Avaya P330 Device.

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

Click .

Or

Select **View > Configuration**.

Viewing Device Information

The Device Information dialog box provides you with high-level information specific to the Avaya P330 Device. To view information about the Avaya P330 Device select **Configure > Device Information**. The Device Information dialog box opens.

Figure 3-1. Device Information Dialog Box

The screenshot shows a dialog box titled "Device" with a yellow background. It contains the following fields and values:

- System Name: AsnHull
- IP Address: 149.49.77.156
- MAC Address: 00:40:0D:8A:54:55
- Contact: (empty text box)
- Physical Location: (empty text box)
- Device Family: P330
- System Description: Avaya Inc. - P330 Stackal
- Number of Modules: 1
- Management VLAN ID: 1
- IEEE-802.1D STP Mode: Disable (dropdown menu)
- IEEE-802.1D STP Priority: 32768
- Operational Status: Fatal

At the bottom of the dialog box are two buttons: "Refresh" and "Apply".

The Device Information dialog box 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.

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

Table 3-1. Device Information Fields

Field	Description
System Name	Logical name of the device as defined on the SNMP agent of the device.
IP Address	The IP address of the device.
MAC Address	The MAC address of the device.
Contact	Individual responsible for maintenance of the device.

Table 3-1. Device Information Fields (Continued)

Field	Description
Physical Location	The current physical location of the device.
Device Family	The family of devices to which the device belongs.
System Description	A description of the device.
Number of Modules	The number of modules currently in the device.
Management VLAN ID	The VLAN ID (VLAN #) of the agent.
IEEE-802.1D STP Mode	<p>The state of Spanning Tree Protocol. Possible states are:</p> <ul style="list-style-type: none"> • Disable - STP is disabled. This is the default state. • Enable - STP is enabled. <p>When activating STP, keep in mind that:</p> <ul style="list-style-type: none"> • All bridges should run STP. • Redundancy applications and STP cannot co-exist. <p>For more information refer to <i>Spanning Tree Algorithm (STA)</i> in <i>The Reference Guide</i>.</p>
IEEE-802.1D STP Priority	The priority of the bridge as determined by the first quarter of the Bridge ID.
Operational Status	<p>The warning level of the device. Possible values are:</p> <ul style="list-style-type: none"> • OK • Warning • Fatal

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Viewing Module Configuration

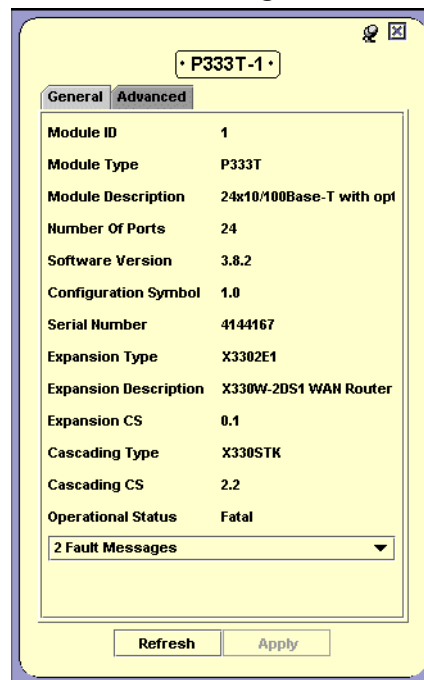
The Module Configuration dialog box provides you with information specific to a selected module. To view the configuration of a module:

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 3-2. Module Configuration Dialog Box



The Module Configuration dialog box 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. It also includes information about expansion, cascading, and BUPS (BackUp Power Supply) modules that are connected to the selected module.

In addition, the *Power* tab provides information about the module's Power over Ethernet (PoE) configuration. For more information, refer to Chapter 4, *Power Over Ethernet*.

If you have a G700 Media Gateway Module, the Module Configuration dialog box includes three additional tabs. For more information, refer to Chapter 5, *G700 Media Gateway*.

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

* **Note:** To view the configuration of an ATM Uplink or X330WAN expansion module, click the expansion module symbol in the Chassis View.

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

Table 3-2. Module Configuration Fields

Field	Description
Module ID	The position in which the module is located. There can be up to 10 modules in a device.
Module Type	The module type.
Module Description	A description of the module type.
Number of Ports	The number of ports located on the module.
Software Version	The version of the application software running on the module.
Configuration Symbol	The version of the module. The version is updated whenever there is a functional modification to the module.
Serial Number	A unique number assigned by Avaya Inc. to the selected module.
Expansion Type	The type of expansion module in the selected module.
Expansion Description	A description of the expansion module in the selected module.
Expansion CS	The version of the expansion module. The version is updated whenever there is a functional modification to the module.
Cascading Type	The type of cascading module in the selected module. The cascading module is needed to connect modules in the device.
Cascading CS	The version of the cascading module. The version is updated whenever there is a functional modification to the module.

Table 3-2. Module Configuration Fields (Continued)

Field	Description
Route Mode	<p>The routing mode configured on a P330R module. Routing modes include:</p> <ul style="list-style-type: none"> • Second Layer - The router module performs as a second layer module and performs no routing functions. • Router - The router module performs full routing functions. • EZ2Route - The router modules performs EZ2Route routing functions. (Not available on P333R-LB modules.) • Router And Web Switch - The router module performs full routing and load balancing functions. (Only available on P333R-LB modules.)
Operational Status	<p>The warning level of the module. Possible values are:</p> <ul style="list-style-type: none"> • OK • Warning • Fatal
BUPS Module Type	The type of BUPS (BackUp Power Supply) module in the selected module.
BUPS Module CS	The version of the BUPS (BackUp Power Supply) module. The version is updated whenever there is a functional modification to the module.
Cascading Up Mon.	<p>Determines if the devices in the system are monitored cascading up. The possible values are:</p> <ul style="list-style-type: none"> • Enable - Monitors devices in the network cascading up. If the connection is lost, the system reports a error. • Disable - Does not monitor devices in the network cascading up. If the connection is lost, the system does not report a error.
Cascade Down Mon.	<p>Determines if the devices in the system are monitored cascading down. The possible values are:</p> <ul style="list-style-type: none"> • Enable - Monitors devices in the network cascading down. If the connection is lost, the system reports a error. • Disable - Does not monitor devices in the network cascading down. If the connection is lost, the system does not report a error.

Table 3-2. Module Configuration Fields (Continued)

Field	Description
Fault Messages	A list of fault messages.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Viewing LAG Configuration

The LAG Configuration dialog box provides you with information specific to a selected LAG. To view the configuration of a LAG:

Click the LAG’s symbol in the Tree View.

Or

Click the LAG’s icon in the Chassis View. The LAG Configuration dialog box opens.

Figure 3-3. LAG Configuration Dialog Box

The LAG Configuration dialog box provides detailed information about the LAG, such as the LAG’s status, name, VLAN tagging mode, VLAN ID, priority level, and mode of operation.

The Get/Set Toolbar provides an alternative, quick method to view and change a LAG's configuration. For more information on the Get/Set Toolbar, refer to "Get/Set Toolbar" on page 11.

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

Table 3-3. LAG Configuration Fields

Field	Description
Port Type	The type of ports in the selected LAG.
Administrative Status	The administrative state of the selected LAG: <ul style="list-style-type: none"> • Enabled - The LAG is enabled and can transmit and receive packets. • Disabled - The LAG is disabled and cannot transmit or receive packets.
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 LAGs with 10BaseT and 100BaseT ports, Auto-Negotiation determines the speed and Duplex Mode of communication between the endstations. For LAGs with Gigabit ports, Auto-Negotiation determines the Flow Control setting of the ports. For more information, refer to <i>Auto-Negotiation in The Reference Guide</i> .
Duplex Mode	The state of communication of the selected LAG. Possible values are: <ul style="list-style-type: none"> • Full Duplex - The LAG can send and receive simultaneously. • Half Duplex - The LAG can either receive or send, but can not do both simultaneously.
Fault Messages	A list of fault messages.
Flow Control Advertisement	The flow control values advertised by the ports on the selected LAG. These values limit the flow control possibilities to be decided by Auto-Negotiation.
Flow Control Mode	The state of flow control on the selected LAG.
LAG Name	The name of the LAG.

Table 3-3. LAG Configuration Fields (Continued)

Field	Description
Operational Status	<p>The warning level of the ports on the selected LAG. Possible values are:</p> <ul style="list-style-type: none"> • OK • Warning • Fatal
Port Classification	<p>The classification of the LAG. Port Classification allows network managers to specify each port level's importance. The possible states are:</p> <ul style="list-style-type: none"> • Regular - Normal users. • Valuable - Servers or critical users. <p>For more information refer to <i>Port Classification</i> in <i>The Reference Guide</i>.</p>
Port Functionality	<p>The physical media type of the ports of the selected LAG. 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.</p>
Priority Level	<p>The priority level of packets exiting the LAG. For effective transmission, multimedia packets must be received isochronously (at regular intervals). To ensure this, you can assign priorities to packets coming out of a LAG.</p> <p>Whenever traffic load is extreme and a LAG cannot accept all incoming packets, packets sent from a LAG with the highest priority will pass through first. However, a fairness mechanism will allow low priority packets to eventually enter the bus.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Regular • High
Port STP Mode	<p>Enables Port Spanning Tree. The Spanning Tree mode creates a logical tree topology out of any arrangement of bridges, resulting in a single path between any two end stations. The Spanning Tree Mode also provides high fault tolerance. The possible states are:</p> <ul style="list-style-type: none"> • Enable - Enables the Spanning Tree Mode. • Disable - Disables the Spanning Tree Mode. <p>For more information refer to <i>Spanning Tree Algorithm (STA)</i> in <i>The Reference Guide</i>.</p>

Table 3-3. LAG Configuration Fields (Continued)

Field	Description
Port STP State	<p>The state of the LAG in terms of the Spanning Tree Protocol. The possible states are:</p> <ul style="list-style-type: none"> • Disable - The LAG is disabled. • Blocking - STP is enabled and currently blocking the LAG. The LAG is effectively disabled to prevent the formation of a loop in the network. • Forwarding - The LAG is currently forwarding information received.
Speed Mode	<p>The speed of communication of the ports on the selected LAG. Possible values are:</p> <ul style="list-style-type: none"> • Ethernet - 10 Mbps. • Fast Ethernet - 100 Mbps. • Gigabit Ethernet - 1000 Mbps.
STP Path Cost	<p>A 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.</p> <p>For more information refer to <i>Spanning Tree Algorithm (STA)</i> in <i>The Reference Guide</i>.</p>
Tagging Mode	<p>The LAG's operation mode regarding VLANs. The possible modes are:</p> <ul style="list-style-type: none"> • Clear - Transmits each outgoing packet in untagged format if it belongs to the LAG's VLAN. Otherwise, it discards the packet. • IEEE-802.1Q - VLAN tagging, per IEEE 802.1Q VLAN standard. The LAG will transmit frames with a VLAN ID of 1 - 3071.
VLAN ID	The VLAN number of the LAG.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Viewing Port Configuration

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

The Port Configuration dialog box 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.

In addition, the **Power** tab provides information about the port's PoE configuration. For more information about PoE, refer to Chapter 4, *Power Over Ethernet*.

The 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 11.

*** Note:** The configuration of ports that participate in a LAG cannot be changed using the Port Configuration dialog box. Use the LAG Configuration dialog box instead.

*** Note:** The information fields in the Port Configuration dialog box vary according to the type of port selected.

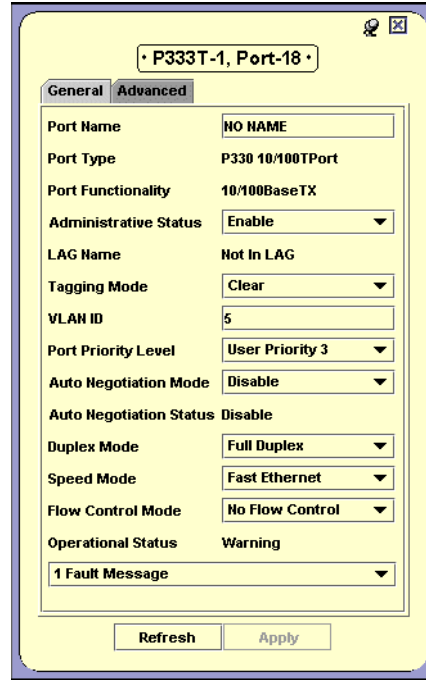
To view the configuration of a port:

Click the port symbol in the Chassis View.

Or

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

Figure 3-4. Port Configuration Dialog Box



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

Table 3-4. Port Configuration Fields

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.

Table 3-4. Port Configuration Fields (Continued)

Field	Description
Administrative Status	<p>The administrative state of the selected port:</p> <ul style="list-style-type: none"> • Enabled - The port is enabled and can transmit and receive packets. • Disabled - The port is disabled and cannot transmit or receive packets.
LAG Name	<p>The name of the LAG of which the port is a member. If the port is not a member of a LAG, the LAG Name is not in LAG.</p>
Tagging Mode	<p>The port's operation mode regarding VLANs. The possible modes are:</p> <ul style="list-style-type: none"> • 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.
VLAN ID	<p>The VLAN number of the port.</p>
Port Priority Level	<p>The priority level of packets exiting the port or ports on the module. For effective transmission, multimedia packets must be received isochronously (at regular intervals). To ensure this, you can assign priorities to packets coming out of a port.</p> <p>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.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Regular • High

Table 3-4. Port Configuration Fields (Continued)

Field	Description
Auto Negotiation Mode	<p>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.</p> <p>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.</p> <p>For more information, refer to <i>Auto-Negotiation</i> in <i>The Reference Guide</i>.</p>
Auto Negotiation Status	<p>The operational state of the Auto-Negotiation protocol between two stations. Possible statuses are:</p> <ul style="list-style-type: none"> • 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	<p>The state of communication of the selected port. Possible values are:</p> <ul style="list-style-type: none"> • Full Duplex - The port can send and receive simultaneously. • Half Duplex - The port can either receive or send, but can not do both simultaneously.
Speed Mode	<p>The speed of communication of the selected port. Possible values are:</p> <ul style="list-style-type: none"> • Ethernet - 10 Mbps. • Fast Ethernet - 100 Mbps. • Gigabit Ethernet - 1000 Mbps.
Flow Control Mode	<p>The state of flow control on the selected port.</p>

Table 3-4. Port Configuration Fields (Continued)

Field	Description
Operational Status	The warning level of the selected port. Possible values are: <ul style="list-style-type: none"> • OK • Warning • Fatal
Fault Messages	A list of fault messages.
Port STP Mode	Enables Port Spanning Tree. The Spanning Tree mode creates a logical tree topology out of any arrangement of bridges, resulting in a single path between any two end stations. The Spanning Tree Mode also provides high fault tolerance. The possible states are: <ul style="list-style-type: none"> • Enable - Enables the Spanning Tree Mode. • Disable - Disables the Spanning Tree Mode. For more information refer to <i>Spanning Tree Algorithm (STA)</i> in <i>The Reference Guide</i> .
Port STP State	The state of the port in terms of the Spanning Tree Protocol. The possible states are: <ul style="list-style-type: none"> • Disable - The port is disabled. • Blocking - STP is enabled and currently blocking the port. The port is effectively disabled to prevent the formation of a loop in the network. • Forwarding - The port is currently forwarding information received.
STP Path Cost	A 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. <p>For more information refer to <i>Spanning Tree Algorithm (STA)</i> in <i>The Reference Guide</i>.</p>
Port Classification	The classification of a specific port. Port Classification allows network managers to specify each port level's importance. The possible states are: <ul style="list-style-type: none"> • Regular - Normal users. • Valuable - Servers or critical users. For more information refer to <i>Port Classification</i> in <i>The Reference Guide</i> .

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Resetting the Device

You can reset the entire Avaya P330 Device, or one or more of its individual modules.

To reset the entire Avaya P330 Device:

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

To reset an individual Avaya P330 module:

1. Click the label of the module you want to reset.
 - To select multiple modules, press **CTRL** while clicking additional module labels.
2. Select **Actions > Reset Module(s)**. A confirmation dialog box opens.
3. Click **Yes**. The selected module resets.

To reset an individual G700 Media Module:

1. Click the label of the G700 Media Module you want to reset.
 - To select multiple modules, press **CTRL** while clicking additional module labels.
2. Select **Actions > Reset MM(s)**. A confirmation dialog box opens.
3. Click **Yes**. The selected module resets.

To reset an individual Avaya X330WAN module:

1. Click the label of the X330WAN module you want to reset.
 - To select multiple modules, press **CTRL** while clicking additional module labels.
2. Select **Actions > Reset WAN Plugin(s)**. A confirmation dialog box opens.
3. Click **Yes**. The selected module resets.

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 P330 devices.
- **Viewing PoE Information** - Information about viewing PoE port information and configuring PoE on a module and port level.

PoE Overview

PoE provides power to IP telephones over an Ethernet line using an Avaya P330 device. The power is transmitted via the device's ports to the IP telephones over the same cable carrying IP packets.

The Avaya P330 device automatically discovers the connection and removal of IP telephones from the in-line powered ports and provides power accordingly.

The Avaya P330 provides the power using an internal 225 watt power supply over a 48 volt feed. It is possible to attach an external power supply either for additional power, or as an alternative power supply should the internal power supply fail.

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 a lightning bolt.

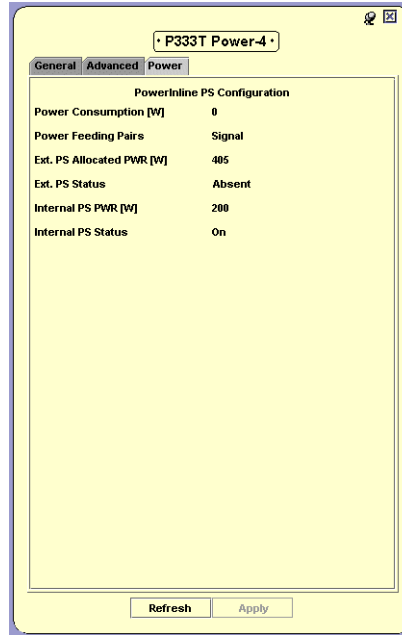
Viewing PoE Configuration

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 21.

Figure 4-1. 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:

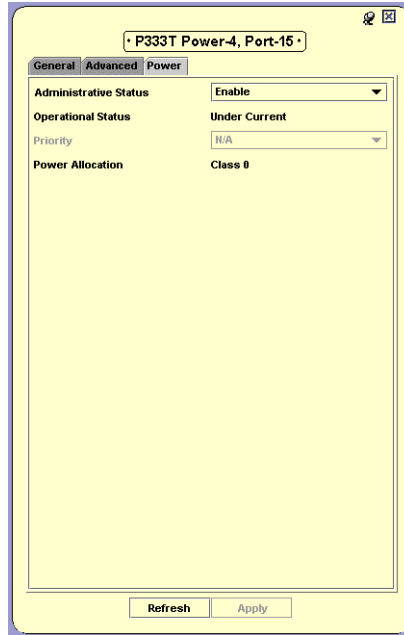
Table 4-1. Module Configuration - Power Fields

Field	Description
Power Consumption [W]	The current power consumption of the devices attached to the module.
Power Feeding Pairs	The capability of controlling the power pairs' functionality to switch pins for sourcing power.
Ext. PS Allocated PWR [W]	The amount of power, in Watts, that can be allocated by the external power supply.
Ext. PS Status	The status of the external power supply.
Internal PS PWR [W]	The total power output number of the module's internal power supply (in Watts).
Internal PS Status	The status of the internal power supply.

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 24.

Figure 4-2. 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 4-2. Port Configuration - Power Fields

Field	Description
Administrative Status	<p>The administrative state of power on this port. Possible states include:</p> <ul style="list-style-type: none"> • Enable - This port can supply power to IP telephones. • Disable - This port cannot supply power to IP telephones.

Table 4-2. Port Configuration - Power Fields (Continued)

Field	Description
Operational Status	<p>The port's operational power status. Possible statuses include:</p> <ul style="list-style-type: none"> • OK - The port current is within the normal range. • Under Current - The port current is below the minimum acceptable value. • Over Current - The port current is higher than the minimum acceptable value. • Both - Both Under Current and Over Current statuses have occurred since the last time the information was refreshed.
Priority	<p>The priority of the power being supplied by this port. 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:</p> <ul style="list-style-type: none"> • Critical • High • Low
Power Allocation	<p>The maximum amount of power allocated to this port, based on the class of device attached to the port. Possible values include:</p> <ul style="list-style-type: none"> • Class 1 - The port can supply between 0.5 - 15.0 Watts. • Class 2 - The port can supply between 0.5 - 4.0 Watts. • Class 3 - The port can supply between 4.0 - 7.0 Watts. • Class 4 - The port can supply between 7.0 - 15.0 Watts.

5 G700 Media Gateway

This chapter provides information about the Avaya G700 Media Gateway and includes the following sections:

- **G700 Media Gateway Overview** - An overview of G700 functionality in Avaya P330 Devices.
- **G700 Configuration** - Information about viewing and configuring G700 components.
- **Avaya Site Administration** - Information about Avaya's gatekeeper software.

G700 Media Gateway Overview

G700 is a family of components which can deliver data, voice, fax, and messaging capabilities over an IP network.

The heart of the G700 system is the Media Gateway. The Media Gateway 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.

G700 converges the power of Avaya Call Processing (ACP) software with the power of distributed switching from the Avaya P330 Device. It provides IP PBX functionality using open standards and an open operating system. The G700 device connects to ACP using either an internal or external call controller. The ACP serves as the G700's gatekeeper.

G700 Configuration

This section describes how to view and set the various configuration parameters relevant to the G700 Media Gateway. It includes the following sections:

- **Viewing Module Configuration** - View information specific to a G700 Media Gateway module in the device.
- **Viewing Media Module Configuration** - View information specific to a Media Module in the device.

Viewing Module Configuration

The Module Configuration dialog box provides you with information about a selected 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.

The Module Configuration dialog box for G700 modules contains four tabs:

- **Switch Config**
- **MG Config**
- **MGP Config**
- **MGC Config**

* **Note:** For information about configuring Avaya P330 Modules other than the G700 Media Gateway, refer to “Viewing Module Configuration” on page 21.

Switch Config

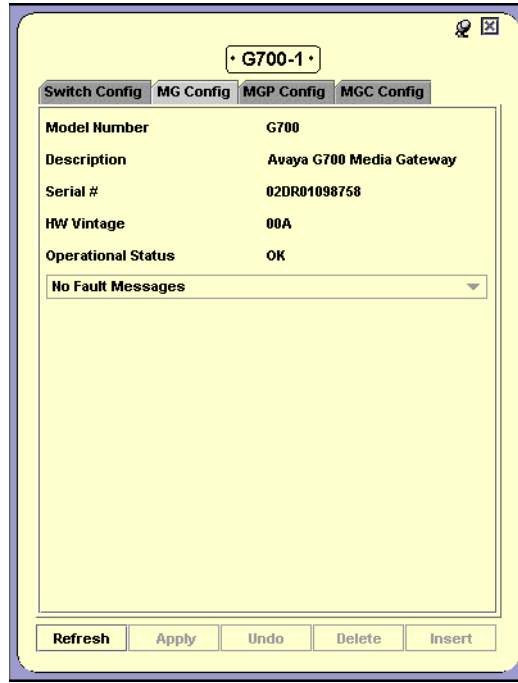
The Switch Config tab provides detailed information about the module, such as the module's position in the device, the module's type, description, number of ports, and any faults occurring on the module.

For information about the fields in the Switch tab, refer to “Viewing Module Configuration” on page 22.

MG Config

The MG Config tab provides information about the Media Gateway's hardware configuration and operational status.

Figure 5-1. MG Config Tab



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

Table 5-1. MG Config Parameters

Field	Description
Model Number	The model number of the media gateway.
Description	A description of the gateway.
Serial #	The serial number of the gateway.
HW Vintage	The hardware vintage version of the gateway.
Operational Status	The operational status of the media gateway.

MGP Config

The MGP Config tab provides hardware information about the Media Gateway Processor. In addition, the MGP Config tab is used to configure IP, VLAN, and QoS parameters.

Figure 5-2. MGP Config Tab

General

The upper section of the MGP Config tab provides general information about a specific Media Gateway Processor.

The following table lists the General fields and their description.

Table 5-2. MGP Config Tab - General Parameters

Field	Description
MG Identifier	The ID of the MG that helps link the P330 module's port identification with the G700 Media Gateway's port identification.
MAC address	The MAC address of the media gateway processor.
FW version	The firmware version of the media gateway processor.

IP Address Settings

You can manually configure the IP address settings for the Media Gateway, or you can use a DHCP server. If you choose to use a DHCP server and it is not available, the manually configured settings are used.

The Current IP box displays the IP address configuration currently being used. If you are using a DHCP server, the information is received from the DHCP server, unless the DHCP server is not reachable. The information in the Current IP box is Read-only.

The Configuration IP box displays the IP configuration that is used either when you are not using a DHCP server, or if the DHCP server is not reachable.

The following table lists the IP address settings fields and their descriptions.

Table 5-3. MGP Config - IP Address Settings Parameters

Field	Description
Use DHCP for IP	<p>The source of the Media Gateway's IP address, subnet mask, and gateway.</p> <ul style="list-style-type: none"> • Checked - The Media Gateway tries to receive the IP address, subnet mask, and gateway address from the DHCP server. • Unchecked - The Configuration IP settings are used. <p>* Note: The Use DHCP for IP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i>.</p>
IP Address	The IP address of the gateway processor.
Subnet Mask	The subnet mask of the gateway processor. When Use DHCP for IP is unchecked, the Subnet Mask is configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i> .
Default Gateway	The default gateway of the gateway processor. When Use DHCP for IP is unchecked, the Gateway is configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i> .

VLAN Settings

You can manually configure the VLAN to which the G700 Media Gateway belongs, or you can use a DHCP server.

The **Current VLAN field** displays the actual ID that you are using. If you are using a DHCP server, this information comes from the DHCP server, unless the server is not available. If you are not using a DHCP server, the information is taken from the **Configuration VLAN field**.

If you choose to use a DHCP server and it is not available, the VLAN ID is taken from the **Configuration VLAN field**.

The following table lists the VLAN settings fields and their descriptions.

Table 5-4. MGP Config - VLAN Settings Parameters

Field	Description
Use DHCP for VLAN	<p>The source of the Media Gateway's VLAN ID.</p> <ul style="list-style-type: none"> • Checked - The gateway receives its VLAN ID from the DHCP server. If the server is not available, the VLAN ID is taken from the Configuration VLAN field. • Unchecked - The gateway receives its VLAN ID from the Configuration VLAN field. <p>* Note: The Use DHCP for VLAN field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i>.</p>
VLAN ID	The VLAN ID of the gateway.

QoS Parameters

QoS can be controlled either locally or remotely. If control is remote, the information for these fields comes from the gatekeeper. If control is local, you can configure the 802 Priority and DSCP fields.

The following table lists the QoS parameters and their descriptions.

Table 5-5. MGP Config - QoS Parameters

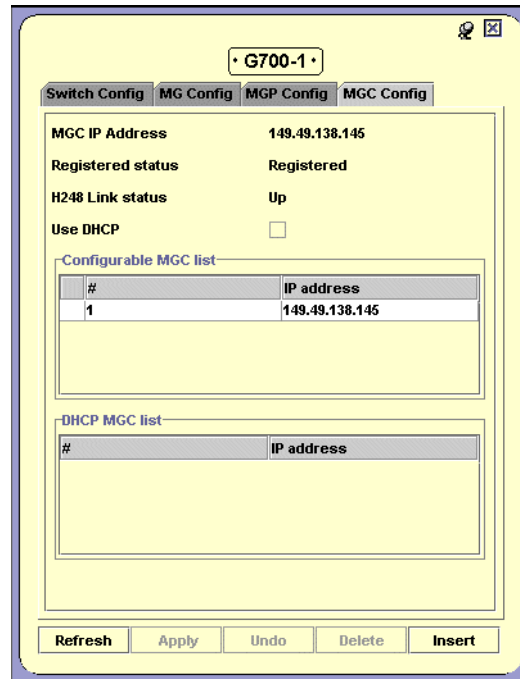
Field	Description
QoS Control	The source of QoS control. This parameter can only be changed via the CLI. Possible values are: <ul style="list-style-type: none"> • Local - The processor is using the local QoS parameters. The 802 Priority and DSCP fields can be configured. • Remote - The processor is receiving QoS parameters from the Media Gateway Processor. All QoS parameters are Read-only.
802 Priority	Priority based on a 802.1p standard, which assigns rights and privileges to users of a telephony network. Possible values are 0 - 7.
DSCP	Priority based on a technology by which packets are marked in the IP header Type of Service (ToS) byte as belonging to a certain class. Possible values range are 0 - 63.

In addition, the operational status of the MGP and any faults on the MGP appear at the bottom of the MGP Config tab.

MGC Config

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

Figure 5-3. MGC Config Tab



MGC IP Settings

The MGC registers with the Media Gateway, after which it receives its IP address from the Media Gateway. After you register, the Link Status will be Up, and an IP address will appear.

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

Table 5-6. 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.

Table 5-6. MGC Config - MGC IP Settings Parameters (Continued)

Field	Description
Use DHCP	<p>The source for the MGCs IP address.</p> <ul style="list-style-type: none"> • Checked - The gateway or VoIP engine receives its controller IP address from the DHCP server. If the DHCP server is not available, an IP address in the Configurable MGC List is used. • Unchecked - The gateway or VoIP engine will receive a static IP address from the Configurable MGC List. <p>* Note: The Use DHCP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i>.</p>

MGC Lists

The MGC List provides a list of controllers. If the MGP is unable to establish a connection with the first controller in the list, the MGP will try to establish a connection with the next controller in the list. This process continues until a connection is established with one of the controllers.

You can manually configure the MGC list or you can get the MGC list from the DHCP server.

To add an entry to the Configurable MGC list:

1. Click Insert. A new row appears.
2. Enter the IP address for the entry. The new entry is created.

The MGCs are registered in the order that they appear in the MGC list.

To modify an entry in the Configurable MGC list, modify the information in the entry's row in the table.

To delete an entry from the Configurable MGC list:

1. Select the entry in the list.
2. Click Delete. The entry is deleted.
 - To select more than one entry, press **SHIFT** while selecting additional entries.

* **Note:** To apply the changes to the MGC list, click **Apply**.

Viewing Media Module Configuration

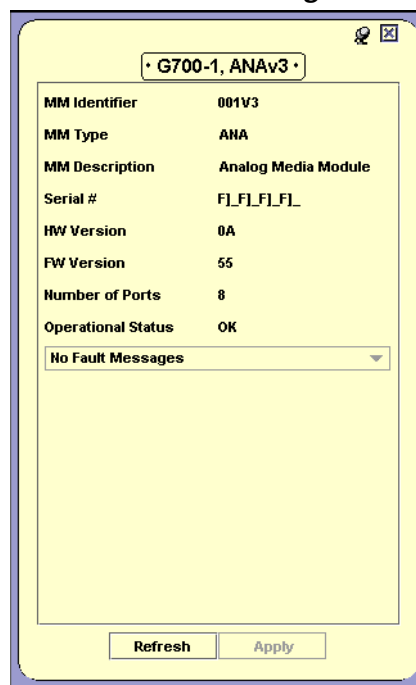
To view the Media Module Configuration dialog box:

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 5-4. Media Module Configuration Dialog Box



The Media Module Configuration dialog box provides information about a specific media module, including a brief description of the media module, the number of ports, and its operational status.

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


Table 5-7. Media Module Configuration Parameters

Field	Description
MM Identifier	The Media Module's identifier.
MM Type	The type of Media Module. Possible values are: <ul style="list-style-type: none"> • E1/T1 • ISDN BRI • Analog • Digital • VoIP • ICC
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.

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, G700 Media Gateway, or an individual voice port.

To launch ASA on an MGC, G700 Media Gateway, or voice port:

1. Click the component in the Tree View or Chassis View.
2. Click .

Or

Select **Action > Administer Station/Gateway**. ASA opens with the configuration form of the selected component.

If you have a registered call controller MM installed in your G700 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.

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 in G700 Media Gateway modules.
- **Configuring the VoIP Engine** - Instructions for viewing and configuring VoIP Engine parameters.

VoIP Overview

The VoIP Engine translates information between different VoIP and data protocols. The G700 device manager comes with an internal VoIP engine that supports up to 32 simultaneous sessions. Support for an additional 32 simultaneous sessions can be added by inserting a VoIP Media Module in the G700 Media Gateway Module.

Configuring the VoIP Engine

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

1. Select a G700 Media Gateway module.
2. Select **Configure > MediaGateway > VoIP Configuration**. The VoIP Engine dialog box opens.

The VoIP Configuration dialog box contains three tabs:

- **VoIP Resources**
- **VoIP Config**
- **VoIP Status**

VoIP Resources

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

Figure 6-1. 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 6-1. VoIP resources - General Parameters

Field	Description
VoIP Engine #	The number of VoIP engines in the media gateway.

Table 6-1. VoIP resources - General Parameters (Continued)

Field	Description
Use DHCP	<p>The source of the VoIP engine's controller IP address.</p> <ul style="list-style-type: none"> • Checked - Each VoIP engine receives its controller IP address from the DHCP server. • Unchecked - The VoIP engine uses a static IP address from the MGC list. <p>* Note: The Use DHCP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the <i>Avaya P330 User's Guide</i>.</p>
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.

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 6-2. VoIP resources - QoS Parameters

Field	Description
QoS Control	<p>The source of QoS control. This parameter can only be changed via the CLI. Possible values are:</p> <ul style="list-style-type: none"> • 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.
802 Priority	<p>Priority based on a CoS standard which assigns rights and privileges to users of a telephony network. Possible values are 0 - 7.</p>

Table 6-2. VoIP resources - QoS Parameters (Continued)

Field	Description
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 6-3. VoIP resources - RTCP monitoring Parameters

Field	Description
Monitoring Enabled	The status of RTCP monitoring. <ul style="list-style-type: none"> • 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 G700 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 6-4. VoIP resources - RSVP Parameters

Field	Description
RSVP Enabled	<p>The Status of RSVP usage.</p> <ul style="list-style-type: none"> • Checked - The G700 Media Gateway will try to reserve bandwidth per call. If it fails, the G700 Media Gateway will try again during the call. • Unchecked - RSVP is not enabled.
Retry on failure	<p>The action the VoIP engine takes after an RSVP request fails.</p> <ul style="list-style-type: none"> • 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	<p>The interval the VoIP Engine waits after a failed RSVP request before sending the new request. The interval ranges between 0.5 - 60 seconds.</p>
Service profile	<p>The type of service being provided.</p>

VoIP Config

The VoIP config tab allows you to view information about a specific VoIP engine's configuration.

Figure 6-2. VoIP config Tab

Slot #	MAC address	FW Version	IP Static address	IP current address	Total Voice Channels
V0	00-04-0...	67	149.49...	149.49...	64

If a DHCP server is being used, the IP address for the VoIP engine is taken from the DHCP server. Otherwise, you can configure the IP address to be used in the IP Static Address field. In addition, it is possible to see how many VoIP channels are available on this engine.

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

The following table lists the fields in the VoIP config tab and their description.

Table 6-5. VoIP config Parameters

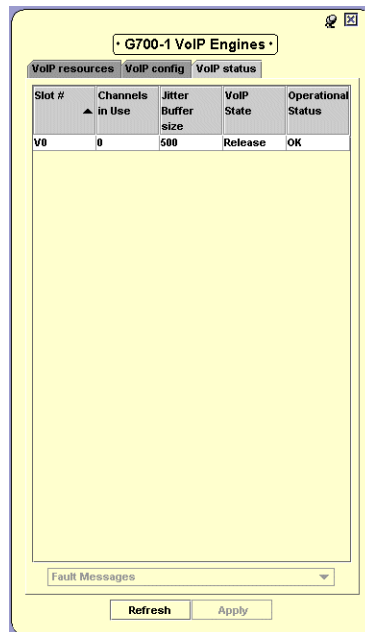
Field	Description
Slot #	The slot in which the VoIP media module engine is located.
MAC address	The MAC address of the VoIP engine.
FW Version	The firmware version on the VoIP engine.
IP Static address	The IP address assigned to the VoIP Engine when not using the DHCP server.

Table 6-5. VoIP config Parameters (Continued)

Field	Description
IP current address	The current IP address of the VoIP engine.
Total Voice Channels	Total number of channels available for this VoIP engine.

VoIP Status

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

Figure 6-3. VoIP status Tab

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 6-6. VoIP status Parameters

Field	Description
Slot #	The slot in which the VoIP engine is located.
Channels in Use	The number of channels currently being used.

Table 6-6. VoIP status Parameters (Continued)

Field	Description
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.
VoIP State	The state of the VoIP engine.
Operational Status	The operational status of the VoIP engine.

7 WAN Configuration

This chapter provides information about configuring Avaya X330WAN Expansion Modules and includes the following sections:

- **X330WAN Overview** - An overview of X330WAN functionality in Avaya P330 Devices.
- **Viewing Avaya X330WAN Configuration** - Information about viewing and configuring the X330WAN Expansion Module and its E1/T1 ports.
- **Channel Group Management** - Information about viewing Channel Groups and creating and editing Channel Groups using the Channel Group Wizard.
- **Viewing PPP Session Information** - Information about viewing and configuring PPP session information.

X330WAN Overview

The X330WAN is a WAN expansion module that can be inserted into modules of the Avaya P330 line that include an expansion slot.

The X330WAN Expansion Module adds WAN connectivity to the P330 stackable line. WAN connectivity provides a link over an E1/T1 leased line enabling heavy data transfer. A WAN connection can connect branch offices to headquarters. In addition, WAN connectivity is essential for providing access to the Internet.

Viewing Avaya X330WAN Configuration

This section describes how to view and set the various configuration parameters relevant to the Avaya X330WAN expansion module and its ports. It includes the following sections:

- **Avaya X330WAN Expansion Module Configuration** - Information on accessing and configuring X330WAN Expansion Module parameters.
- **E1/T1 Port Configuration** - Information on accessing and configuring parameters for the E1/T1 ports in an X330WAN Expansion Module.

Avaya X330WAN Expansion Module Configuration

The X330WAN Expansion Module configuration dialog box provides you with information specific to a selected WAN expansion module. To view the configuration of an expansion module:

Click the expansion module symbol in the Tree View.

Or

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


Figure 7-1. Expansion Module Dialog Box

X330W-2DS1-1	
System Name	
IP Address(PMI)	149.49.77.157
System Up Time	651665
MAC Address	08:40:0D:BF:10:00
Contact	
Physical Location	
Module Type	X330W-2DS1
System Description	Avaya X330W-2DS1 WAN Router
Device Mode	E1
Module ID	1
Software Version	3.8.35
Configuration Symbol	1.8.0
Serial Number	N/A
FabricFastEthernet	Enable
Commit	

The Expansion Module dialog box provides detailed information about the module, such as the module's name, IP address, location, description and serial number.

For information about the fields in the Expansion Module dialog box, refer to "Viewing Module Configuration" on page 21.

To apply changes to the X330WAN module configuration, click **Apply**.

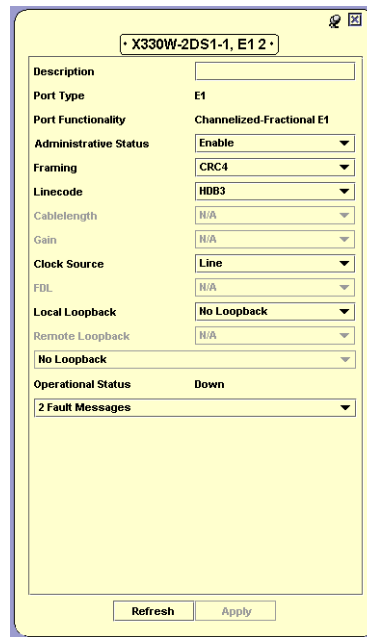
To save the changes to the X330WAN module configuration to the startup configuration, click . The configuration changes are saved.

E1/T1 Port Configuration

In addition to the Ethernet ports found on an Avaya P330 device, the X330WAN expansion module has 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 7-2. E1/T1 Port Configuration Dialog Box



The screenshot shows a configuration dialog box for an E1/T1 port. The title bar indicates the port is 'X330W-2DS1-1, E1 2'. The dialog is organized into several sections with labels on the left and values or dropdown menus on the right:

- Description:** An empty text input field.
- Port Type:** E1
- Port Functionality:** Channelized-Fractional E1
- Administrative Status:** Enable (dropdown)
- Framing:** CRC4 (dropdown)
- Linecode:** HD30 (dropdown)
- Cablelength:** N/A (dropdown)
- Gain:** N/A (dropdown)
- Clock Source:** Line (dropdown)
- FDL:** N/A (dropdown)
- Local Loopback:** No Loopback (dropdown)
- Remote Loopback:** N/A (dropdown)
- No Loopback:** No Loopback (dropdown)
- Operational Status:** Down
- Fault Messages:** 2 Fault Messages (dropdown)

At the bottom of the dialog are two buttons: 'Refresh' and 'Apply'.

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 7-1. E1/T1 Port Configuration Parameters

Field	Description
Description	The E1/T1 port description.
Port Type	The type of E1/T1 port. Possible values are: <ul style="list-style-type: none"> • 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 line.
Administrative Status	The state of the selected port. Possible values are: <ul style="list-style-type: none"> • Enabled - The port is enabled and can transmit and receive packets. • Disabled - The port is disabled and cannot transmit or receive packets.
Framing	The type of framing.
Linecode	The type of linecode. Possible values are: For an E1 line <ul style="list-style-type: none"> • HDB3 • AMI For a T1 line <ul style="list-style-type: none"> • B8ZS • AMI
Cablelength	The recommended maximum cable length.
Gain	The gain on this interface.
Clock Source	The source of the Transmit Clock. Possible sources include: <ul style="list-style-type: none"> • Line - The recovered receive clock is used as the transmit clock. • Internal - The local clock is used as the transmit clock.
Fdl	The type of Fdl used on this interface. Possible types include: <ul style="list-style-type: none"> • ANSI • AT&T

Table 7-1. E1/T1 Port Configuration Parameters (Continued)

Field	Description
Local Loopback	A request to use a local loopback. A local loopback can be performed using: <ul style="list-style-type: none"> • None • Payload Loopback • Line Loopback • Diag Loopback
Remote Loopback	A request to use a remote loopback. A remote loopback can be performed using: <ul style="list-style-type: none"> • No Remote Loopback • Remote Line • Remote Payload
Loopback status	The type of loopback currently used by the port. Possible values are: <ul style="list-style-type: none"> • Near End Payload • Near End Line • Near End Inward • Far End Payload • Far End Line
Operational Status	The operational status of the port.
Fault Messages	Any faults that occurred on the port.

Managing Channel Groups

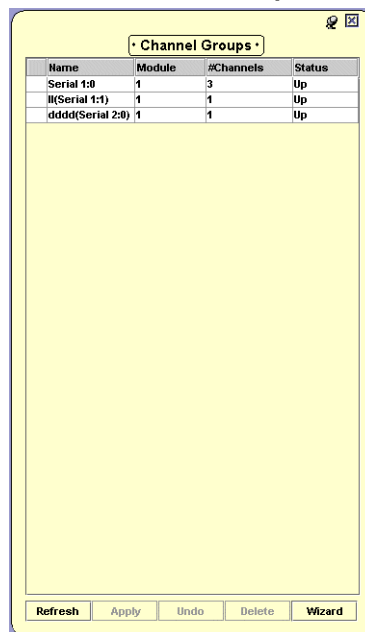
The Channel Groups dialog box provides information about existing channel groups and enables you to modify and delete channel groups. In addition, you can start the Channel Group Wizard to create and edit channel groups.

- **Viewing the Channel Groups Table**
- **Creating, Editing, and Deleting Channel Groups**
- **The Channel Group Wizard**

Viewing the Channel Groups Table

To view the Channel Groups table, select **Configure > WAN > Channel Groups**. The Channel Groups table opens.

Figure 7-3. Channel Groups Dialog Box



Name	Module	#Channels	Status
Serial 1:0	1	3	Up
ll(Serial 1:1)	1	1	Up
ddd(Serial 2:0)	1	1	Up

Refresh Apply Undo Delete Wizard

Each row of the Channel Groups table represents a valid Channel Group and provides the following information:

- **Name** - The Channel Group's name.
- **Module** - The number of the module in which the Channel Group exists.

- **#Channels** - The number of channels assigned to the Channel Group.
- **Status** - The status of the PPP session. Possible values are:
 - **Up**
 - **Down**

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 which you wish 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 wish 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:

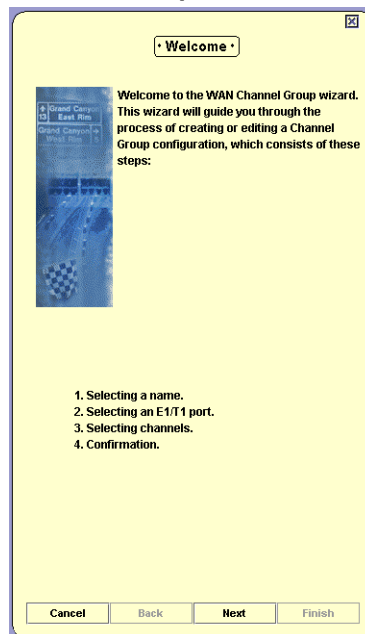
- **Welcome Screen**
- **Select Name Screen**
- **Select E1/T1 Port Screen**
- **Select Channels Screen**
- **Confirmation Screen**

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 7-4. Channel Group Wizard - Welcome Screen

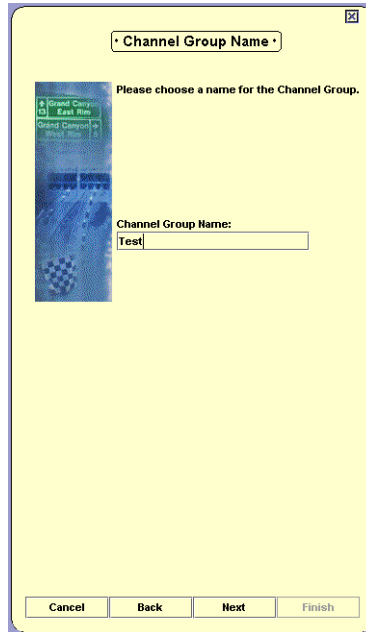


To continue, click **Next**. The Channel Group Wizard continues with the **Select Name Screen**.

Select Name Screen

The Select Name screen enables you to assign a name to the Channel Group.

Figure 7-5. Channel Group Wizard - Select Name Screen

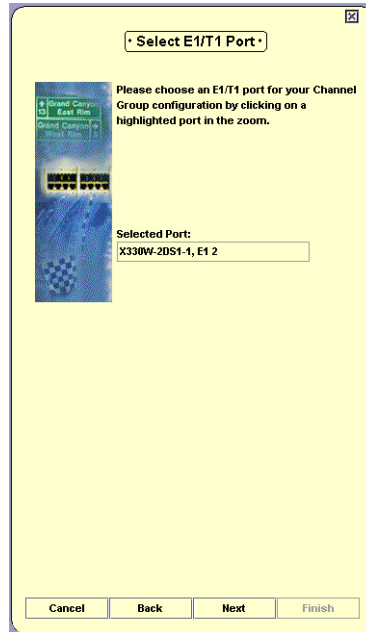


Enter a name for the Channel Group in the Channel Group Name field. To continue, click Next. The Channel Group Wizard continues with the Select E1/T1 Port Screen.

Select E1/T1 Port Screen

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

Figure 7-6. 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 Screen.

Select Channels Screen

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

Figure 7-7. Channel Group Wizard - Select Channel 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.

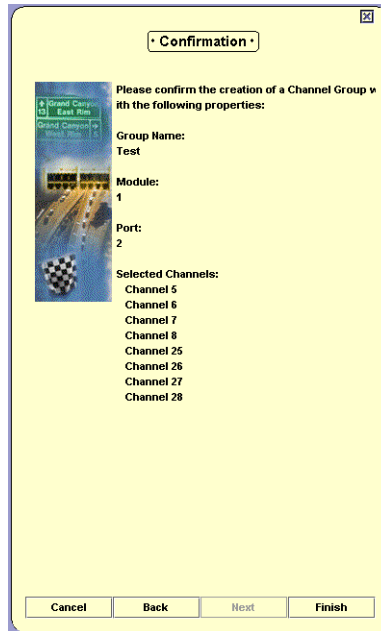
To continue, click Next. The Channel Group Wizard continues with the Confirmation Screen.

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 7-8. 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.

Viewing PPP Session Information

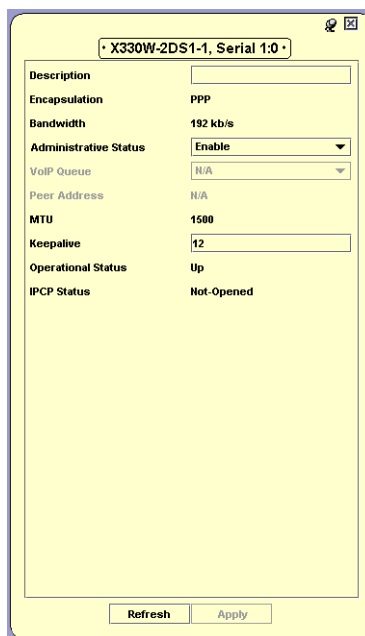
The PPP Session dialog box contains tabs that provide you with information specific to a selected PPP session.

The PPP Session dialog box provides detailed information about the PPP session, such as the session's description, encapsulation, bandwidth, and statuses.

To view the PPP Session dialog box for a specific PPP session:

1. Click a PPP session symbol in the Chassis View. A list of the PPP sessions appears.
2. Click the PPP session for which you want to view information. The PPP Session dialog box for the selected PPP session opens.

Figure 7-9. PPP Session Dialog Box



The screenshot shows a dialog box titled "X330W-2DS1-1, Serial 1:0". The dialog box contains the following information:

Description	
Encapsulation	PPP
Bandwidth	192 kb/s
Administrative Status	Enable
VoIP Queue	N/A
Peer Address	N/A
MTU	1500
Keepalive	12
Operational Status	Up
IPCP Status	Not-Opened

At the bottom of the dialog box, there are two buttons: "Refresh" and "Apply".

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

Table 7-2. PPP Session Fields

Field	Description
Description	A description of the PPP session.
Encapsulation	The encapsulation method for the PPP session.
Bandwidth	The effective bandwidth of the PPP session.
Administrative Status	The administrative state of the PPP session: <ul style="list-style-type: none"> • Enable - The PPP session is enabled. • Disable - The PPP session is disabled.
VoIP Queue	The state of VoIP queuing on the PPP session. VoIP queuing gives a higher priority to VoIP traffic over the PPP session. Possible states include: <ul style="list-style-type: none"> • On - Voip queuing is active on the PPP session. • Off - Voip queuing is not active on the PPP session.
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 selected PPP session. Possible values are: <ul style="list-style-type: none"> • Up • Down
IPCP Status	IP Control Protocol. The state of IPCP for this PPP session. IP packets can only be transmitted and received over the PPP session when the IPCP status is Open . Possible statuses include: <ul style="list-style-type: none"> • Open • Not-Opened

8 Port RMON

This chapter explains the port RMON options of the Avaya P330 Device. It includes the following sections:

- **Displaying the The Port RMON Window**- How to display the Port RMON window, and an explanation of the parts of the Port RMON window.
- **Traffic Types** - How to select traffic to monitor in the Port RMON window.

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

Click .

Or

Select **View > Port RMON**.

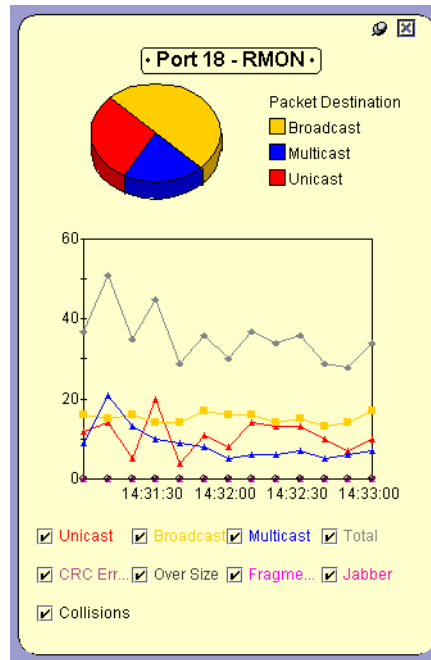
For more information on RMON, refer to *RMON* in *The Reference Guide*.

* **Note:** Port RMON is not available when running the Avaya P330 Manager via Web Management.

Displaying the The Port RMON Window

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

Figure 8-1. 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 or LAG. 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 appears 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 now.

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 8-1. Traffic Types

Field	Description
Collisions	Total number of Ethernet collisions in which the port was involved.
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.
Fragments	Total number of Ethernet packets received at this port whose octet count is less than the minimum standard packet length.
Frames Too Long	Total number of Ethernet packets received at this port whose octet count is more than the maximum standard packet length.
Jabber	Total number of Ethernet packets received at this port that are too long and include CRC errors.
Non-Unicast	Total number of good packets directed to non-unicast addresses that were received on the port.
Total Packets Received	Total number of packets of valid frame length that were received on the port.
Unicast	Total number of good packets received that were directed to a unicast address.

9 VLANs

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

- **VLAN Configuration Overview** - An overview of VLANs and their components.
- **Viewing the VLAN Configuration Dialog Box** - 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.

* **Note:** In this chapter, ports include LAGs. i.e. Any mention of a port refers to a port or LAG.

VLAN Configuration Overview

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

- **VLANs Overview**
- **Master VLAN List**
- **VLAN Tags**

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 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 MultiService 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 MultiService 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.

Viewing the VLAN Configuration Dialog Box

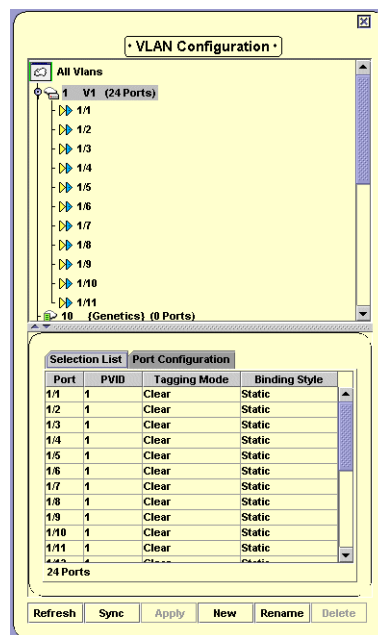
To view VLAN names, numbers, and component switch ports:

Click .

Or

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

Figure 9-1. 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 three 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 88.

* **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 83.

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 appears.

Figure 9-2. Selection List

Port	PVID	Tagging Mode	Binding Style
1/1	1	Clear	Static
1/2	1	Clear	Static
1/3	1	Clear	Static
1/4	1	Clear	Static
1/5	1	Clear	Static
1/6	1	Clear	Static
1/7	1	Clear	Static
1/8	1	Clear	Static
1/9	1	Clear	Static
1/10	1	Clear	Static
1/11	1	Clear	Static
24 Ports			

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

Table 9-1. Selection List Fields

Field	Description
Port	The module and port number.
PVID	The Port VLAN ID (PVID) of the port. This is the VLAN of which the port is a member.
Tagging Mode	The tagging mode of the port. For information on tagging modes, refer to “Port Configuration Area” on page 84.
Binding Style	The binding style configured on the port. For information on binding styles, refer to “Port Configuration Area” on page 84.

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 appears.

Figure 9-3. Port Configuration Area

The screenshot shows a configuration window titled "Port Configuration". It contains the following fields:

- PVID:** A dropdown menu set to "1 V1".
- Tagging Mode:** A dropdown menu set to "Clear".
- Binding Style:** A dropdown menu set to "Static".
- Static Binding VLANs:** A list of checkboxes with corresponding VLAN IDs and names:
 - 0 {Generic}
 - 1 V1
 - 255 {Global}
 - 888 {XXXXXXXX}

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

Table 9-2. 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: <ul style="list-style-type: none"> • 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-802.1Q standard.

Table 9-2. Port Configuration Area Parameters (Continued)

Field	Description
Binding Style	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>A list of VLANs known on the network and VLANs configured on the device. Each VLAN has an accompanying checkbox. Possible values are:</p> <ul style="list-style-type: none"> • Checked - The VLAN is bound to the port being configured. • Unchecked - The VLAN is not bound to the port being configured. <p>* Note: The settings are only used when the port is configured with the Static Binding Style.</p>

Managing VLANs

You can create, delete, and rename VLANs.

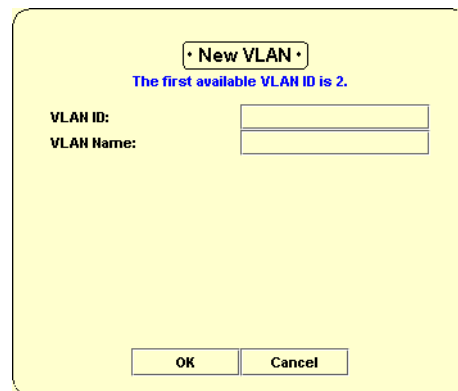
- **Creating VLANs**
- **Deleting VLANs**
- **Renaming VLANs**

Creating VLANs

To create a new VLAN:

1. Click **New**. The Create VLAN dialog box opens.

Figure 9-4. Create VLAN Dialog Box



The screenshot shows a dialog box titled "New VLAN". At the top, it says "The first available VLAN ID is 2." Below this, there are two input fields: "VLAN ID:" and "VLAN Name:". At the bottom, there are "OK" and "Cancel" buttons.

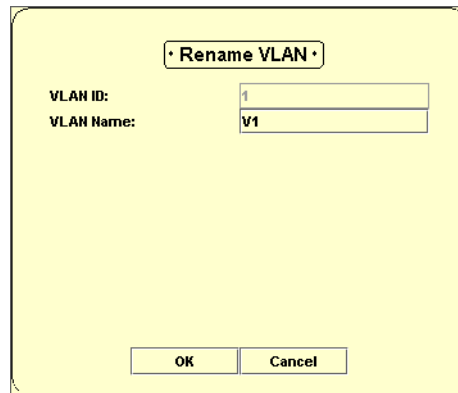
2. Enter a VLAN number in the VLAN ID field.
- * **Note:** The range of valid VLAN numbers is 1 to 3071.
3. Enter a name for the VLAN in the VLAN Name field.
 4. Click **OK**. The new VLAN is created.

Renaming VLANs

To rename a VLAN:

1. Select the VLAN whose name you want to edit.
2. Click Rename. The Rename VLAN dialog box opens.

Figure 9-5. Rename VLAN Dialog Box



The image shows a dialog box titled "Rename VLAN". It has a light yellow background. At the top center is a title bar with the text "Rename VLAN". Below the title bar, there are two labels: "VLAN ID:" and "VLAN Name:". To the right of "VLAN ID:" is a text input field containing the number "1". To the right of "VLAN Name:" is a text input field containing the text "V1". At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

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

Synchronizing VLAN Names

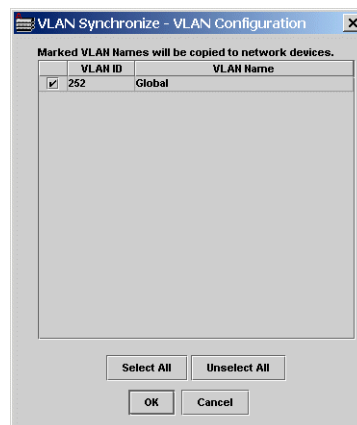
VLANs with the same VLAN number can be defined with different names on different devices in the network. In addition, VLAN names can be configured in the master VLAN list. This can cause confusion when referring to a VLAN by name rather than by number. The VLAN application enables you to synchronize 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. 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 9-6. 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 P330 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.
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

This section explains how to select ports for VLAN configuration.

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 83.

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 appears.
 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 89.
 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 84. 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.

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 89.
 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 17.

10 Link Aggregation Groups

This chapter provides the information and instructions for creating and using Link Aggregation Groups (LAGs). It includes the following topics:

- **LAGs Overview** - An overview of LAGs.
- **Viewing the LAG Table** - Instructions on accessing the LAG Table and a description of the LAG Table.
- **Creating LAGs** - Instructions on creating LAGs.
- **Editing LAGs** - Instructions on editing LAGs.
- **The LAG Wizard** - Detailed descriptions of the screens in the LAG Wizard.
- **Deleting LAGs** - Instructions on deleting LAGs.

For information on configuring LAGs, refer to “Viewing LAG Configuration” on page 23.

LAGs Overview

Link Aggregation Groups (LAGs) provide a method of creating a high-bandwidth link. A LAG consists of a group of ports acting as a single logical port. All ports participating must have the same configuration.

For more information on LAGs, refer to *Link Aggregation Groups (LAGs)* in *The Reference Guide*.

Viewing the LAG Table

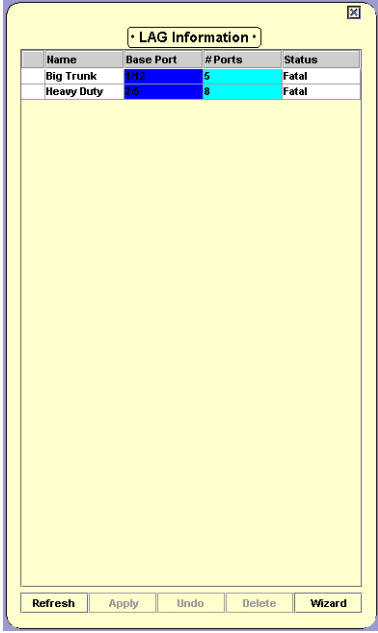
To view the LAG Table:

Click .

Or

Select **Configure > Port LAG**. The LAG Information table opens.

Figure 10-1. LAG Information Dialog Box



Name	Base Port	# Ports	Status
Big Trunk	1/12	5	Fatal
Heavy Duty	2/5	8	Fatal

Each row of the LAG table represents a valid Link Aggregation Group and provides the following information:

- **Name** - The LAG name.
- **Base Port** - The number of the LAG's base port.
- **# of Ports** - The number of ports assigned to the LAG.
- **Status** - The warning status of the LAG.

When a LAG is selected, the ports in the LAG appear highlighted in the Chassis and Tree View.

Creating LAGs

To create a new LAG, click **Wizard**. The LAG Wizard starts.

For more information, refer to “The LAG Wizard” on page 94.

Editing LAGs

To edit an existing LAG:

1. Select a LAG by clicking on the row representing the LAG.
2. Click **Wizard**. The LAG Wizard starts.

When editing a LAG, the LAG Wizard’s dialog boxes display the current LAG configuration parameters. To keep the values currently displayed in one of the dialog boxes, click **Next**. If you have changed some of the LAG’s parameters, and you want to keep the rest of the LAG’s configuration, click **Finish**. The device is updated with the LAG’s new configuration.

For more information, refer to “The LAG Wizard” on page 94.

The LAG Wizard

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

The LAG Wizard consists of the following screens:

- **Welcome**
- **Base Port Selection**
- **Member Port Selection**
- **LAG Name**
- **Confirmation**

The following sections describe each of the LAG Wizard screens.

LAG Wizard - Welcome

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

Figure 10-2. LAG Wizard - Welcome Screen



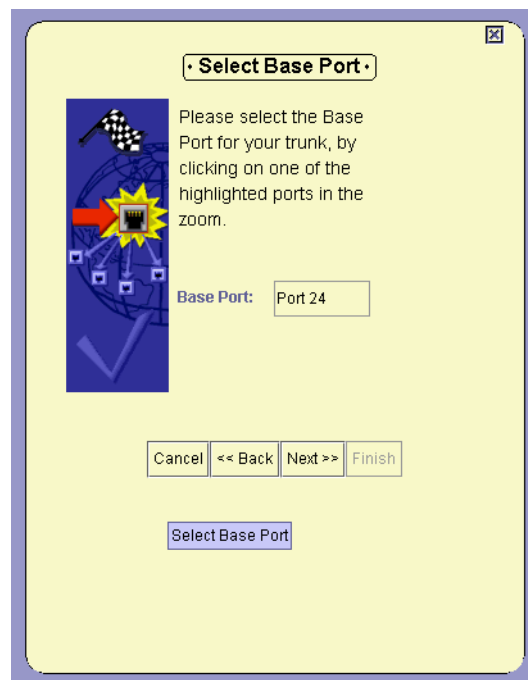
To continue, click **Next**. The LAG Wizard continues with the **LAG Wizard - Base Port Selection** screen.

LAG Wizard - Base Port Selection

The Base Port Selection screen of the LAG Wizard helps you select a base port for the LAG. The attributes of the base port (port speed, port mode, etc.) are applied to the other member ports of the LAG. Ports which can be selected as base ports appear white in the Chassis View.

* **Note:** Ports that participate in a Port Redundancy cannot be assigned to a LAG.

Figure 10-3. LAG Wizard - Base Port Selection Screen



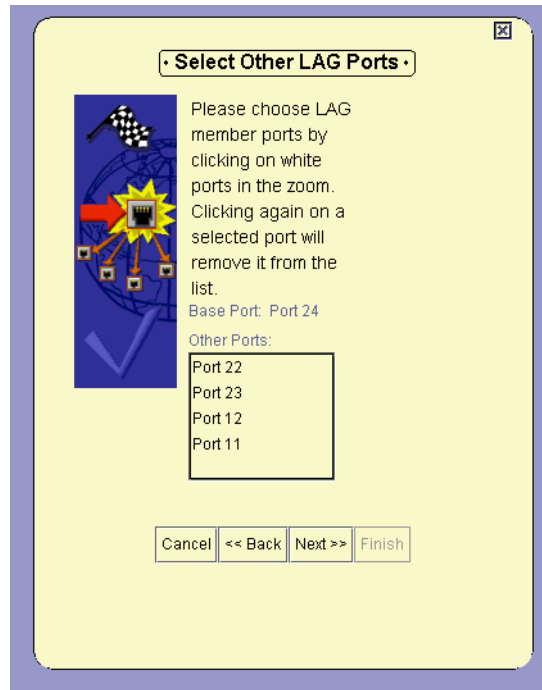
To select a base port for the LAG, click a port in the Chassis View. The selected port is listed in the Base Port field of the wizard and appears blue in the Chassis View and Tree View.

When you have selected the base port for the LAG, click Next. The LAG Wizard continues with the **LAG Wizard - Member Port Selection** screen.

LAG Wizard - Member Port Selection

The Member Port Selection screen of the LAG Wizard helps you select additional ports for the LAG. Ports which can be selected as additional ports appear in white in the Chassis View.

Figure 10-4. LAG Wizard - Member Port Selection Screen



To select additional ports for the LAG, click ports in the Chassis View. The selected ports appear cyan in the Chassis View and Tree View and are listed in the Other Ports field in the wizard.

To remove selected ports from the list, click the selected ports in the Chassis View. The selected ports appear white in the Chassis View and Tree View and are removed from the Other Ports field in the wizard.

When you have finished selecting the additional ports for the LAG, click Next. The LAG Wizard continues with the **LAG Wizard - LAG Name** screen.

LAG Wizard - LAG Name

The LAG Name screen of the LAG Wizard enables you to assign a name to the LAG.

Figure 10-5. LAG Wizard - LAG Name Screen



To assign a name to the LAG, enter the name for the LAG in the LAG Name field.

When you have entered a name for the LAG, click **Next**. The LAG Wizard continues with the **LAG Wizard - Confirmation** screen.

LAG Wizard - Confirmation

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

Figure 10-6. LAG Wizard - Confirmation Screen




To make any changes to the summary information:

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

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

Deleting LAGs

To delete an existing LAG:

1. Click the row representing the LAG you want to delete.
2. Click Delete.
3. The LAG is marked with the  symbol.
4. Click Apply to update the device.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

For more information on tables, refer to “Managing Tables” on page 7.

11 Port Redundancy

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

- **Overview of Port Redundancy** - An overview of port redundancy.
- **Viewing the Port Redundancy Table** - Instructions on accessing the Port Redundancy Table, and a description of the Port Redundancy Table.
- **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 Table.

Overview of Port Redundancy

Port Redundancy enables you to define a redundancy relationship between any two ports or LAGs in a device, or between a port and a LAG. One port or LAG 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.

An Intermodule Port Redundancy provides a port redundancy service that operates even when the primary port link fails as the result of a failure of the module. For example, if the module on which the primary port in an Intermodule Port Redundancy is located powers down or is removed from the device, the secondary port in the Intermodule Port Redundancy takes over.

* **Note:** Only one intermodule port redundancy can be configured on a device.

Individual member ports of a LAG can not participate in a Port Redundancy. However, you can define Port Redundancy on a complete LAG.

* **Note:** Port Redundancy cannot be used when Spanning Tree is activated.

* **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*.

Viewing the Port Redundancy Table

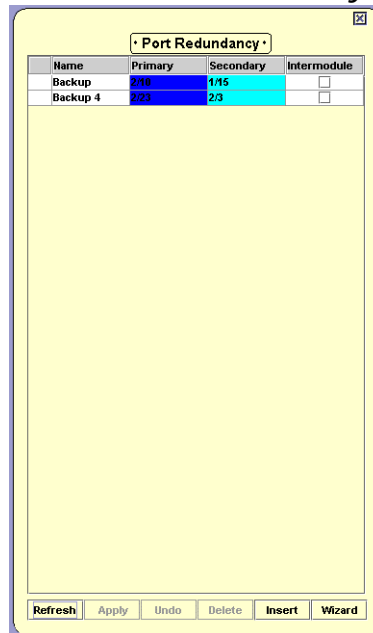
To view the Port Redundancy table:

Click .

Or

Select Configure > Port Redundancy. The Port Redundancy Table opens.

Figure 11-1. Port Redundancy Table



Name	Primary	Secondary	Intermodule
Backup	210	115	<input type="checkbox"/>
Backup 4	223	23	<input type="checkbox"/>

Refresh Apply Undo Delete Insert Wizard

The Port Redundancy table provides a list of all port redundancies configured on the switch, with their respective primary and secondary ports.

Adding a Port Redundancy

To add a new Port Redundancy:

1. Click **Wizard**. The Port Redundancy Wizard starts. For more information, refer to “Port Redundancy Wizard” on page 104.

Or

1. Click **Insert**. A row is added to the Port Redundancy Table.
2. Enter a name for the Port Redundancy in the **Name** field.
3. Select a port or a LAG from the **Tree View** or the **Chassis View** and drag it to the **Primary Port** field. The port number or LAG name appears in the **Primary Port** field.
4. Select a port or a LAG from the **Tree View** or the **Chassis View** and drag it to the **Secondary Port** field. The port number or LAG name appears in the **Secondary Port** field.
5. To configure the port redundancy as an extra resilient port redundancy, check the **Intermodule** checkbox.

*** Note:** Only one intermodule port redundancy can be configured on a device.

6. Update the device. For more information on updating the device, refer to “Updating the Device” on page 109.

*** 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:

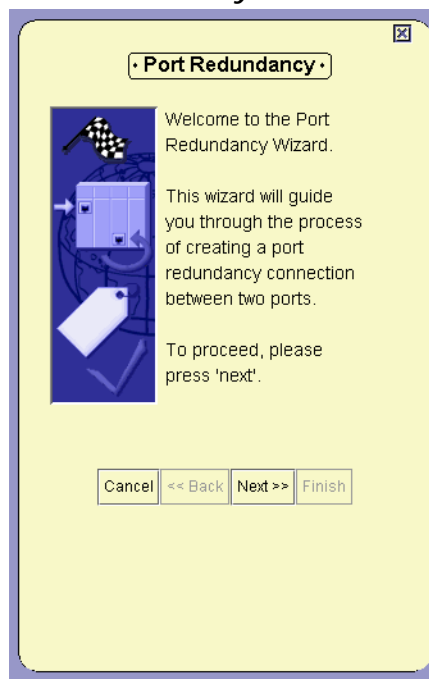
- **Welcome**
- **Primary Port Selection**
- **Secondary Port Selection**
- **Name and Type**
- **Confirmation**

The following sections describe each of the Port Redundancy Wizard screens.

Port Redundancy Wizard - Welcome

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

Figure 11-2. Port Redundancy Wizard - Welcome Screen

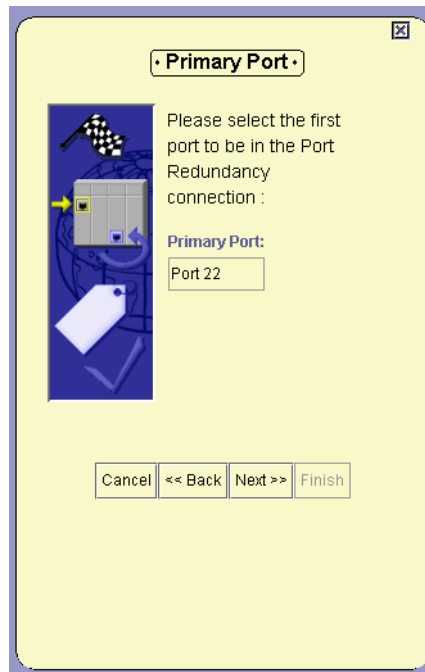


To continue, click **Next**. The Port Redundancy Wizard continues with the **Port Redundancy Wizard - Primary Port Selection** screen.

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 and LAGs which can be selected as primary ports appear in white in the Chassis View.

Figure 11-3. Port Redundancy Wizard - Primary Port Selection Screen



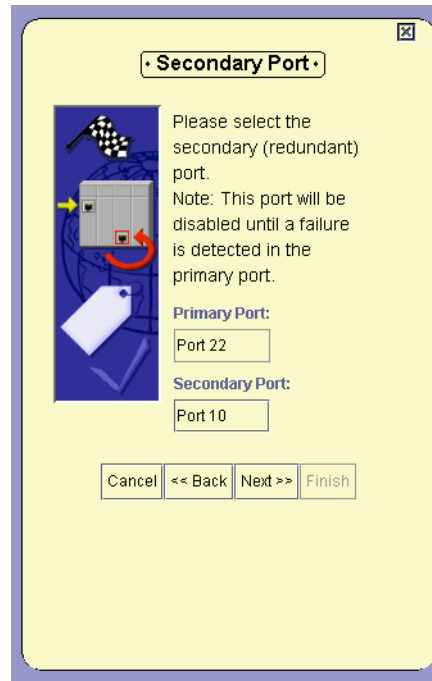
To select a primary port for the Port Redundancy, click a port or LAG in the Chassis View. The selected port or LAG appears blue in the Chassis View and Tree View and is listed in the Primary Port field in the wizard.

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 and LAGs that can be selected as secondary ports appear white in the Chassis View.

Figure 11-4. Port Redundancy Wizard - Secondary Port Selection Screen



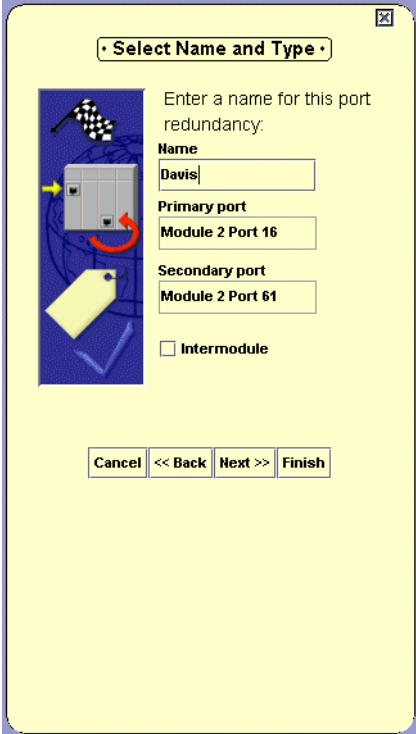
To select a secondary port for the Port Redundancy, click a port or LAG in the Chassis View. The selected port or LAG appears cyan in the Chassis View and Tree View, and is listed in the Secondary Port field in the wizard.

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, and determine if the redundancy is an intermodule port redundancy.

Figure 11-5. Port Redundancy Wizard - Name and Type Screen



• Select Name and Type •

Enter a name for this port redundancy:

Name
Davis

Primary port
Module 2 Port 16

Secondary port
Module 2 Port 61

Intermodule

Cancel << Back Next >> Finish

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

To configure the redundancy as an intermodule Port Redundancy, check the Intermodule checkbox.

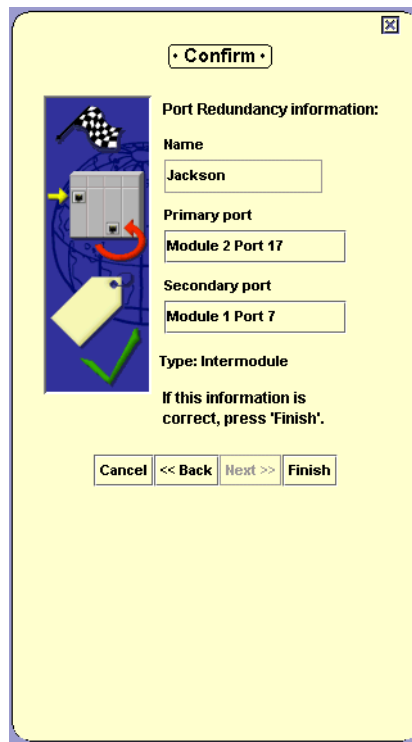
*** Note:** If an intermodule port Redundancy is already configured on the device, the Intermodule checkbox does not appear.

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 11-6. Port Redundancy Wizard - Confirmation Screen



• Confirm •

Port Redundancy information:

Name
Jackson

Primary port
Module 2 Port 17

Secondary port
Module 1 Port 7

Type: Intermodule

If this information is correct, press 'Finish'.

Cancel << Back Next >> Finish


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 table is refreshed.

Deleting Port Redundancies

To delete an existing Port Redundancy:

1. Select a Port Redundancy from the Port Redundancy Table.
 - 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 table, click **Apply**. The device is updated with all new information.

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

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

For more information on tables, refer to “Managing Tables” on page 7.

12 Port Mirroring

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

- **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 P330 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:

- **Create Welcome**
- **Edit/Delete Welcome**
- **Source Port Selection**
- **Destination Port Selection**
- **Frames Direction Selection**
- **VLAN Filtering**
- **Confirmation**

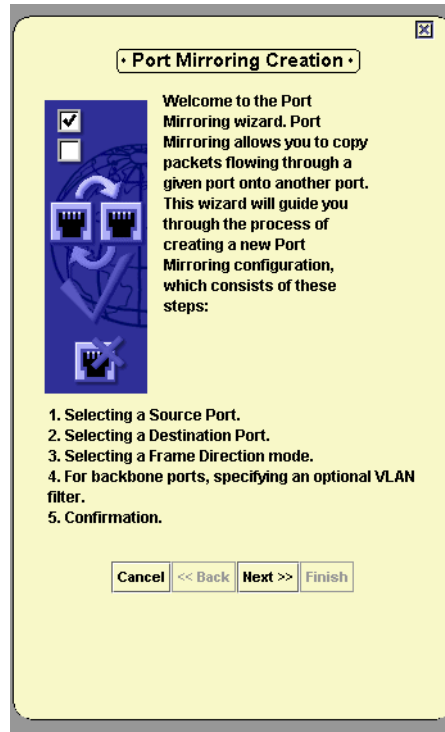
If Port Mirroring is not currently active on the device, the Port Mirroring Wizard starts with the Create Welcome screen. If Port Mirroring is currently active on the device, the Port Mirroring Wizard starts with the Edit/Delete Welcome screen.

The following sections describe each of the Port Mirroring Wizard screens.

Port Mirroring Wizard - Create Welcome

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

Figure 12-1. Port Mirroring Wizard - Create Welcome

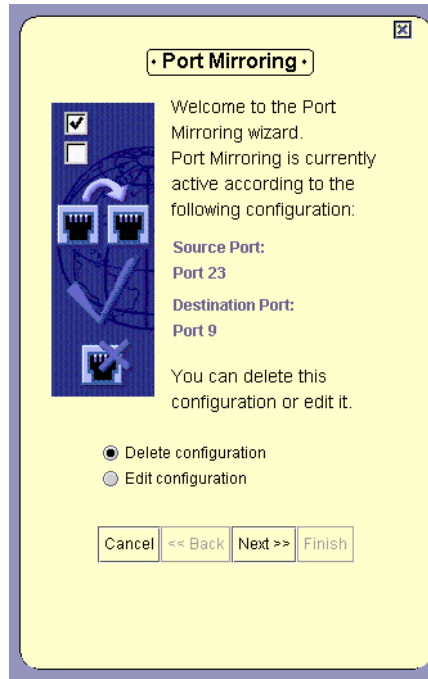


To continue, click Next. The Port Mirroring Wizard continues with the **Port Mirroring Wizard - Source Port Selection** screen.

Port Mirroring Wizard - Edit/Delete Welcome

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

Figure 12-2. 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.

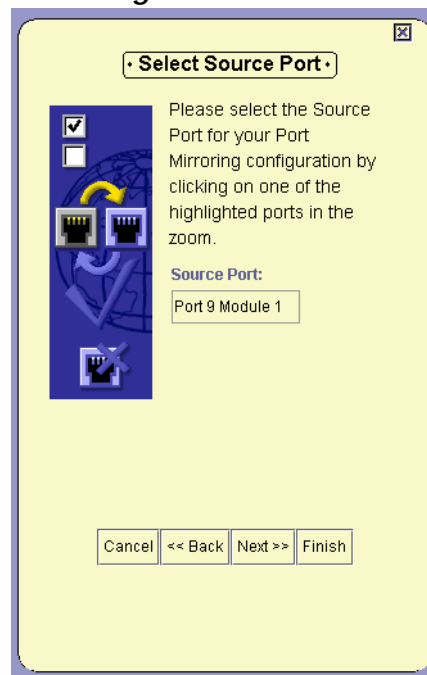
To edit the existing Port Monitoring configuration:

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 which can be selected as sources appear in white in the Chassis View.

Figure 12-3. Port Mirroring Wizard - Source Port Selection Screen



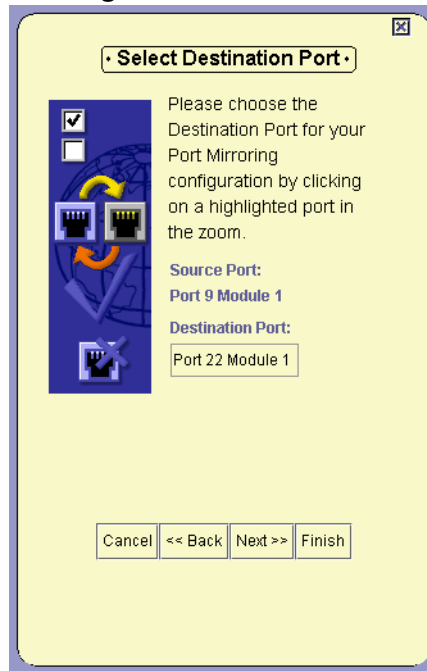
To select a source for the Port Mirroring pair, select a highlighted port in the Chassis View. The selected port appears blue in the Chassis View and Tree View and is listed in the Source Port field in the wizard.

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 or LAG for the Port Mirroring pair. Ports and LAGs which can be selected as destinations appear white in the Chassis View.

Figure 12-4. Port Mirroring Wizard - Destination Port Selection Screen



To select a destination for the Port Mirroring pair, select a port or LAG in the Chassis View. The selected port or LAG 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 12-5. 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** - Traffic received by the source port is copied to the destination port.

When you have finished selecting the traffic to be copied, click **Next**. If the source port is configured with IEEE 201.Q VLAN Tagging, the Port Mirroring Wizard continues with the **Port Mirroring Wizard - VLAN Filtering** screen. Otherwise, the Port Mirroring Wizard continues with the **Port Mirroring Wizard - Confirmation** screen.

Port Mirroring Wizard - VLAN Filtering

The VLAN Filtering screen of the Port Mirroring Wizard enables you to filter the information copied to the destination port by VLAN number.

Figure 12-6. Port Mirroring Wizard - VLAN Filtering Screen



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

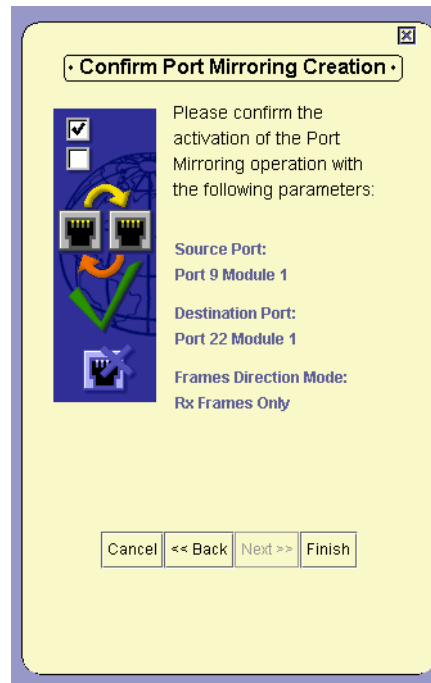
- **All VLANs** - The destination port is configured with IEEE 802.1Q VLAN Tagging, and all information from the source port is copied to the destination port.
- **VLAN x** - The destination port is configured with the selected VLAN, and only packets tagged with that VLAN number are copied to the destination 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 12-7. 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.

13 IP Multicast Filtering

This chapter provides information on configuring IP Multicast Filtering on the Avaya P330 Device. It includes the following sections:

- **IP Multicast Filtering Overview** - A brief overview of IP Multicast Filtering.
- **Configuring IP Multicast Filtering** - Instructions on accessing the IP Multicast Filtering dialog box and descriptions of the parameters in the IP Multicast Filtering dialog box.

IP Multicast Filtering Overview

IP Multicast Filtering provides a method for distributing high-bandwidth applications to specific stations that may be configured on different VLANs. It allows for a single copy of the data to be propagated on the network, copied only when the paths to endstations diverge.

Configuring IP Multicast Filtering

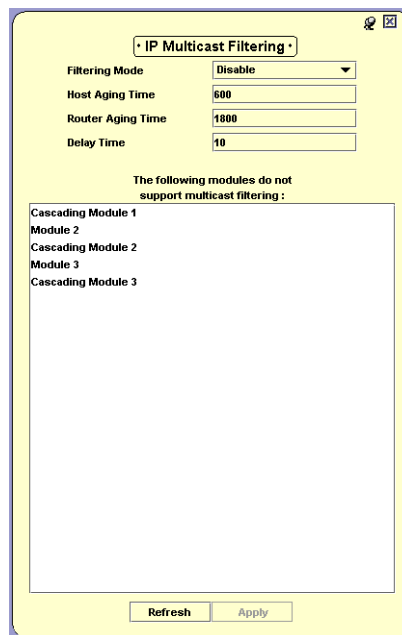
To configure IP Multicast Filtering:

Click .

Or

Select **Configure > IP Multicast Filtering**. The IP Multicast Filtering dialog box opens.

Figure 13-1. IP Multicast Filtering Dialog Box



The dialog box is titled "IP Multicast Filtering" and contains the following fields and controls:

- Filtering Mode:** A dropdown menu currently set to "Disable".
- Host Aging Time:** A text input field containing the value "600".
- Router Aging Time:** A text input field containing the value "1800".
- Delay Time:** A text input field containing the value "10".
- Warning:** A message stating "The following modules do not support multicast filtering:" followed by a list of modules: "Cascading Module 1", "Module 2", "Cascading Module 2", "Module 3", and "Cascading Module 3".
- Buttons:** "Refresh" and "Apply" buttons at the bottom.

The IP Multicast Filtering dialog box enables you to configure IP Multicast filtering parameters on the Avaya P330 Device.

The following table provides a list of the fields in the IP Multicast Filtering dialog box and their descriptions:

Table 13-1. IP Multicast Filtering Parameters

Field	Description
Filtering Mode	The mode of operation of the IP Multicast Filtering on the device. Possible Modes are: <ul style="list-style-type: none">• Enable - IP Multicast Filtering is enabled on the device.• Disable - IP Multicast Filtering in not enabled on the device.
Host Aging Time	The amount of time (in seconds) allowed to pass from a router's last IP Multicast request before the device stops forwarding all multicast sessions to a router. The valid range for this parameter is 30 - 7200 seconds.
Delay Time	The amount of time (in seconds) the device waits from receiving a request for a new IP Multicast session until IP Multicast filtering begins. This time allows other hosts to report to the device. The valid range for this parameter is 1 - 300 seconds.

To change the IP Multicast filtering configuration for the Avaya P330 Device, change the IP Multicast filtering parameters.

To apply the changes, click **Apply**.

To refresh the information in the IP Multicast Filtering dialog box, click **Refresh**.

14 Trap Managers Configuration

This chapter provides the information and instructions for configuring managers for the Avaya P330 Device. It includes the following topics:

- **Trap Manager Overview** - An overview on Traps and Managers.
- **Viewing the Trap Managers Table** - Instructions on accessing the 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 P330 can send traps to one or more Network Management Stations (NMS). To enable this feature, you must configure the Avaya P330 with a list of the managers' workstations. Traps are then sent to the stations listed in the Managers table.

* **Note:** Up to five 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 to specific managers. The columns to the right of the managers' IP addresses represent specific traps. Checking the checkbox in a trap column enables the manager to receive the checked trap. Managers only receive the traps which are checked.

Viewing the Trap Managers Table

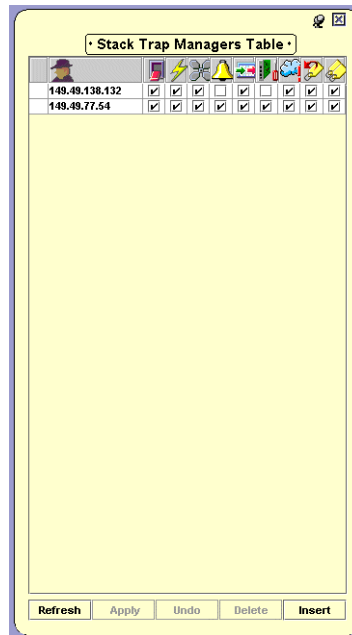
To view the Trap Managers table:

Click  .

Or

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

Figure 14-1. Trap Managers Table



Stack Trap Managers Table							
149.49.138.132	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
149.49.77.54	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>










The Device Trap Managers table is used to configure the IP addresses of the trap managers and their trap reporting statuses for device wide traps. Traps include power, fan, faults, and module insert/remove traps.

Each G700 Media Gateway module has its own Trap Managers table, which can be used to configure IP addresses and trap managers for the specific module.

* **Note:** Device wide trap settings do not apply to traps from G700 Media Gateways in the device.

The following table provides a list of trap types, their associated icons, and their descriptions.

Table 14-1. Trap Types

Icon	Field	Description
	Trap Enable	Enables trap reporting for the selected manager.
	Power Supply Traps	The trap reports the failure of a PSU.
	Fan Traps	The trap reports the failure of a fan.
	Fault Traps	A group of traps that report a fault in the device.
	Module Insert Remove Traps	The trap reports the insertion or removal of a module in the device.
	Configuration Changed Traps	A group of traps that report a change in the configuration of the device.
	IP Vlan Violation Traps	The trap reports the reception of a packet tagged with a VLAN ID not equal to the IP interface of the router.
	IP Access Control Traps	A trap that reports the arrival of a packet which is assigned not to enter the router.
	Duplicate IP Traps	A trap that reports that a user has configured a device on the network with an IP address that is already being used by the router.

Editing the Trap Managers Table

You can add and remove managers from the Trap Managers table, and you can edit the trap reporting status of specific managers.

Adding and Removing Managers

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.

Editing Trap Reporting Statuses

To edit the trap reporting status of a manager, check or uncheck the checkboxes next to the manager's IP address.

Checked traps will be reported to the manager.

*** Note:** If the Trap Enable checkbox is not checked, no traps will be reported to the selected manager.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 17.

For more information on tables, refer to "Managing Tables" on page 7.

15 Switch Connected Addresses

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

- **Switch Connected Addresses Overview** - An overview of the Switch Connected Addresses feature.
- **Viewing the Switch Connected Address 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 P330 Device. Keeping track of this network information can increase efficiency and security, and assist in troubleshooting network problems.

Viewing the Switch Connected Addresses Window

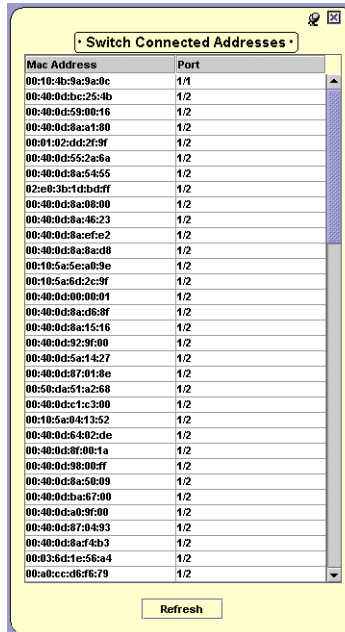
The Switch Connected Addresses window provides a list of MAC addresses along with the ports to which they are attached. To view the list of connected stations:

Click .

Or

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

Figure 15-1. Switch Connected Addresses Window



Mac Address	Port
00:10:4b:9a:9a:0c	1/1
00:40:0d:bc:25:4b	1/2
00:40:0d:59:00:16	1/2
00:40:0d:8a:c1:80	1/2
00:01:02:dd:2f:9f	1/2
00:40:0d:55:2a:6a	1/2
00:40:0d:8a:5:4:55	1/2
02:e0:3b:1d:bd:ff	1/2
00:40:0d:8a:08:00	1/2
00:40:0d:8a:46:23	1/2
00:40:0d:8a:ef:e2	1/2
00:40:0d:8a:8a:d8	1/2
00:10:5a:5e:a0:9e	1/2
00:10:5a:6d:2c:9f	1/2
00:40:0d:00:00:01	1/2
00:40:0d:8a:d6:8f	1/2
00:40:0d:8a:15:16	1/2
00:40:0d:92:9f:00	1/2
00:40:0d:5a:1:4:27	1/2
00:40:0d:87:01:8e	1/2
00:50:da:51:a2:68	1/2
00:40:0d:e1:c3:80	1/2
00:10:5a:04:13:52	1/2
00:40:0d:6:40:2:de	1/2
00:40:0d:8f:0b:1a	1/2
00:40:0d:98:00:ff	1/2
00:40:0d:8a:50:09	1/2
00:40:0d:ba:67:00	1/2
00:40:0d:a0:9f:00	1/2
00:40:0d:87:04:93	1/2
00:40:0d:8a:74:b3	1/2
00:03:6d:1e:56:a4	1/2
00:a0:cc:d6:f6:79	1/2

Refresh

All the connections to the Avaya P330 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 17.

16 Port Security

This chapter provides the information and instructions you need to use the Port Security feature. It includes the following topics:

- **Overview of Port Security** - An overview of port security.
- **Viewing the Port Security Window** - Instructions on accessing the Port Security window, and a description of the Port Security window.
- **Configuring Port Security** - Instructions on configuring port security.
- **Updating the Device** - Instructions on updating the device with Port Security changes.

Overview of Port Security

Port Security enables you to prevent unlearned devices from sending information through selected ports. Avaya P330 ports maintain a list of the MAC addresses of devices that are linked to them. This list is called the Content Address Memory (CAM). Before enabling security on a port, allow the port to learn the MAC addresses of the devices from which you want the port to forward traffic. Once Port Security is enabled on the port, it rejects all traffic from devices not listed in the CAM.

Viewing the Port Security Window

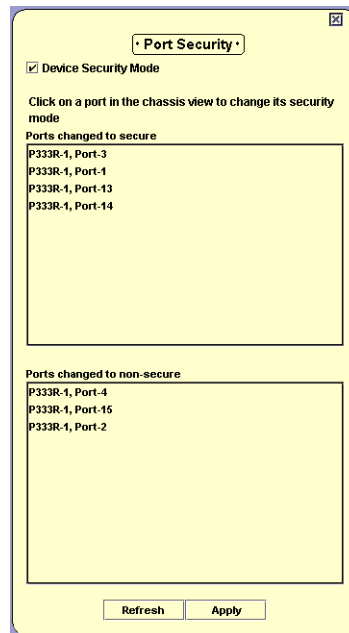
To view the Port Security window:


Click .

Or

Select **Configure > Port Security**. The Port Security window opens.

Figure 16-1. Port Security Window




The Port Security window shows the state of Port Security on the device. In the Tree View and Chassis View, ports which are configured with Port Security appear with the security symbol .

Configuring Port Security

To enable port security on an Avaya P330 Device, check the **Device Security Mode** checkbox. Port security is enabled on the device.

To disable port security on an Avaya P330 Device, clear the **Device Security Mode** checkbox. Port security is disabled on the device.

To toggle the state of port security activation on a port, click the port's symbol in the **Tree View** or **Chassis View**.

- If port security was not active on the port, the port is highlighted with the security symbol , and the port's module and port number appear in the **Ports changed to secure** list.
- If port security was active on the port, the port's security symbol disappears, and the port's module and port number appear in the **Ports changed to non-secure from** list.

Updating the Device

To update the device with all Port Security changes, click **Apply**. The device is updated with all of the new information.

To discard all Port Security changes, click **Refresh**. All Port Security changes are discarded.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

17 LANE Information

This chapter provides information and instructions on viewing LAN Emulation (LANE) information about the LECs that are attached to an ATM Access expansion module. It includes the following topics:

- **LEC Information Overview** - An overview of the LANE information available from the Avaya P330 Device Manager.
- **Viewing the LEC Information Window** - Instructions on accessing the LEC Information window and a description of the LEC Information window.
- **Viewing the LE-ARP Table** - Instructions on accessing the LE-ARP table and a description of the LE-ARP table.

LEC Information Overview

The LEC information feature allows you to see which LECs are attached to the ATM Access expansion module and provides information on the status of each LEC. In addition, you can view the LE-ARP (LAN Emulation - Address Resolution Protocol) table for each VLAN on the device.

Viewing the LEC Information Window

The LEC Information window provides a list of LEC devices attached to the ATM Access module, their ATM addresses, the ELAN to which each is attached, and the status of the LEC. To view the list of LEC devices, select **Configure > ATM > LEC Information**. The LEC Information window opens.

Figure 17-1. LEC Information Window

ID	ELAN Name	ATM Address	Status
0	default	00 00 00 00 00 00 00 0...	down
0	michael	00 00 00 00 00 00 00 0...	down

Refresh

All the LECs attached to the Avaya P330 are listed in the LEC Information window. The rows of the LEC Information window comprise the following information:

- **ID** - The ID number of the LEC.
- **ELAN Name** - The name of the LEC's ELAN.
- **ATM Address** - The ATM address of the LEC.
- **Status** - The status of the LEC.

To sort the list of LECs, 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 17.

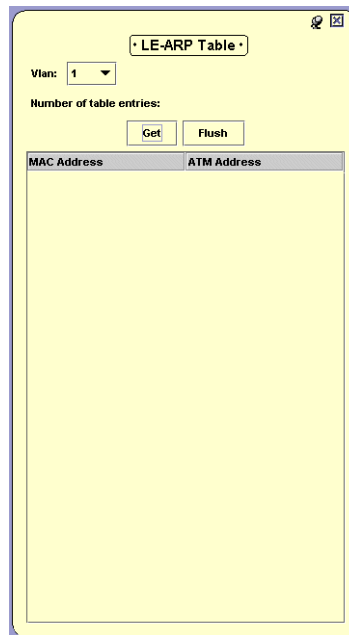
Viewing the LE-ARP Table

The ATM Uplink expansion module maintains a list of MAC addresses with their associated ATM addresses. This list is the LE-ARP table. When information is sent to the LEC, the ATM Uplink expansion module translates the MAC address to an ATM address and forwards the information with the ATM address to the LECS. The LECS can forward the information to the correct LEC using the ATM address. A separate LE-ARP table exists for each VLAN on the device.

To view the LE-ARP table for a specific VLAN:

1. Select an ATM Uplink expansion module in the Chassis View.
2. Select Configure > ATM > LE-ARP Table.

Figure 17-2. LE-ARP Table



3. Select a VLAN from the Vlan pull-down listbox.
4. Click Get. The LE-ARP table for the selected VLAN opens.

The LE-ARP table provides a list of MAC addresses with their associated ATM addresses.

To empty the LE-ARP table on the device for a specific VLAN:

- 1. Select a VLAN from the Vlan pull-down listbox.**
- 2. Click Flush. The LE-ARP table for the selected VLAN is emptied.**

18 Routing Manager

This chapter provides an introduction to the Avaya P330 Routing Manager. It includes the following sections:

- **Router Modes** - An introduction to the different modes of the Avaya P330 Router.
- **The User Interface** - An introduction to the Avaya P330 Routing Manager user interface.
- **Editing Tables** - An explanation of how to edit Avaya P330 Routing Manager tables.
- **Saving Table Information as Text** - 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 P330 Routing Manager Help** - An explanation of the options for accessing on-line help in the Avaya P330 Routing Manager.

Router Modes

The Avaya P333R module and Avaya X330WAN expansion module provide routing capabilities in an Avaya P330 Device. The Avaya P333R module can be configured with one of the following routing modes:

- **Router**
- **Router And Web Switch**
- **EZ2route**
- **Second Layer**

The default mode is Router. For information on changing the routing mode, refer to “Viewing Module Configuration” on page 21. Regardless of the routing mode, the Avaya P333R module performs as a second layer module.

* **Note:** The Avaya X330WAN expansion module always operates in Router mode.

Router

When configured with the Router mode, the Avaya P333R is a fully configurable router.

Router And Web Switch

When configured with the Router And Web Switch mode, the Avaya P333R-LB is a fully configurable router that is also capable of performing load balancing functions. For information on configuring load balancing functions, refer to *Avaya P330 Load Balancing Manager User Guide*.

* **Note:** This Router mode is only available for Avaya P333R-LB routers.

EZ2route

When configured with the EZ2route mode, the Avaya P333R performs true third layer forwarding with no configuration. The Avaya P333R automatically learns the routers in the network, and forwards packets addressed to those routers. This boosts the performance of the routers in the network without performing any active routing operations.

* **Note:** This Router mode is not available for Avaya P333R-LB routers.

For information on viewing the configuration of EZ2route routers and a table of the routers they have learned, refer to Chapter 22, *EZ2route*.

Second Layer

When the Avaya P333R routing mode is configured as Second Layer, the module performs no routing functions.

The User Interface

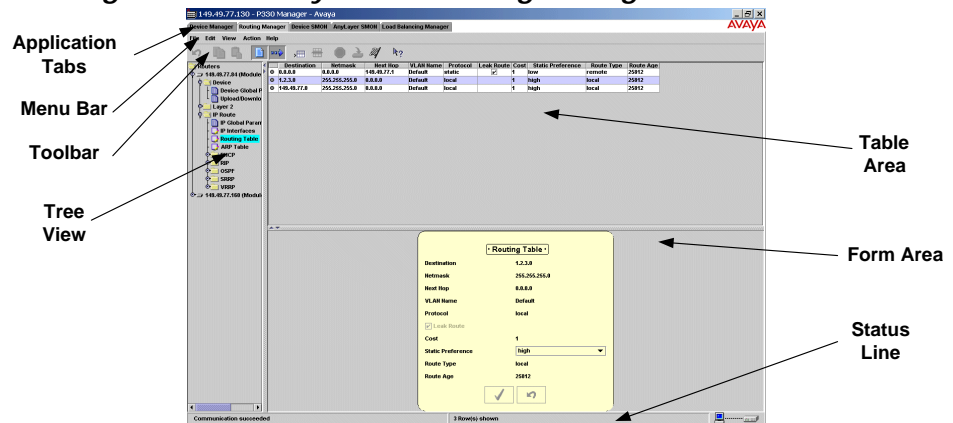
The user interface consists of the following elements:

- **Toolbar** - A toolbar providing shortcuts to the main Routing Manager functions.
- **Tree View** - A resizable window containing a hierarchical representation of the router modules in the device and configuration windows of Avaya P330 Routing Configuration.
- **Table Area** - A resizable window where all tables are displayed.
- **Form Area** - A resizable window where all forms appear.

For information on other parts of the user interface, refer to “The User Interface” on page 5.

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

Figure 18-1. Avaya P330 Routing Manager User Interface














To resize the main areas of the user interface, the Tree View, the Table Area, and the 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 18-1. 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
	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

Tree View

The Tree View shows the Avaya P333R modules and X330WAN expansion modules in the device and the applicable configuration windows for each module.

The highest level of the Tree View shows the device's router modules. Each module that is configured as a router is shown. All modules configured as EZ2route appear under a single EZ2route icon. The second and third levels show the configuration windows applicable to the modules.

*** Note:** Avaya P333R modules that are configured with SecondLayer mode do not appear in the Tree View.

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.

Table Area

The right side of the application window is the Table Area. This area can be resized by dragging the vertical splitter bar with the mouse. All tables appear in the Table 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.

Form Area

The area at the bottom of the Table Area is where all forms appear. This area can be resized by dragging the horizontal splitter bar with the mouse. When a form opens, it replaces the current form open in the Form Area.

Tables have associated forms that can be used to edit the information in a table row or insert information into a new table row.

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 as Text

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 as a text file 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 P330 Routing Manager Help


This section explains how to use the on-line help in the Avaya P330 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 P330 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the Avaya P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Avaya P330 User's Guide*.

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

19 Device

The Device folder provides access to the following windows:

- **Device Global Parameters**
- **Upload/Download Configuration**

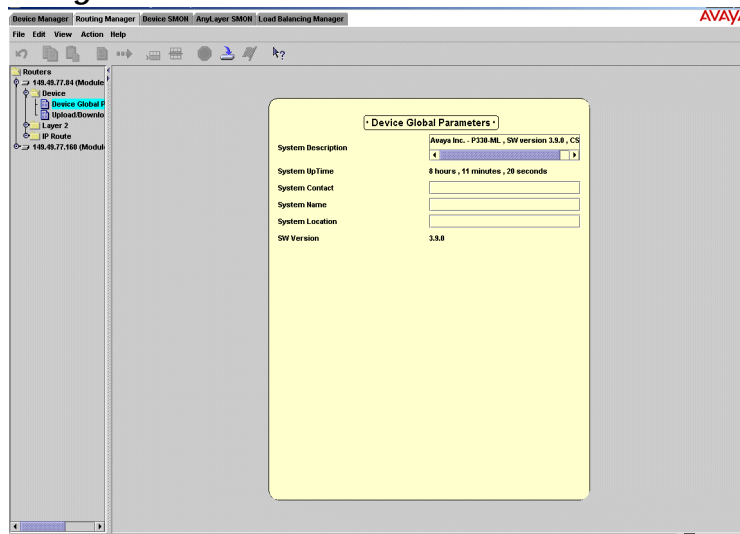
* **Note:** When configuring an Avaya X330WAN router, there is no Device Global Parameters window.

Device Global Parameters

* **Note:** When configuring an Avaya X330WAN router, there is no Device Global Parameters window.

To display and update global device parameters, select Device > Device Global Parameters. The Device Global Parameters window opens.

Figure 19-1. Device Global Parameters Window



The following parameters are displayed:

Table 19-1. Global Parameters

Field	Description
System Description	A general description of the device.

Table 19-1. Global Parameters

Field	Description
System UpTime	The time elapsed since the device was reset.
System Contact	The name of the person responsible for the device.
System Name	The user-assigned name of the device that appears in the windows describing the device.
System Location	The location of the device.
Primary Management Interface (X330WAN only)	The IP address of the router's main interface.
SW Version	The software version of the code on the device (for example, 2.5.7).

You can edit the System Contact, System Name, and System Location fields.

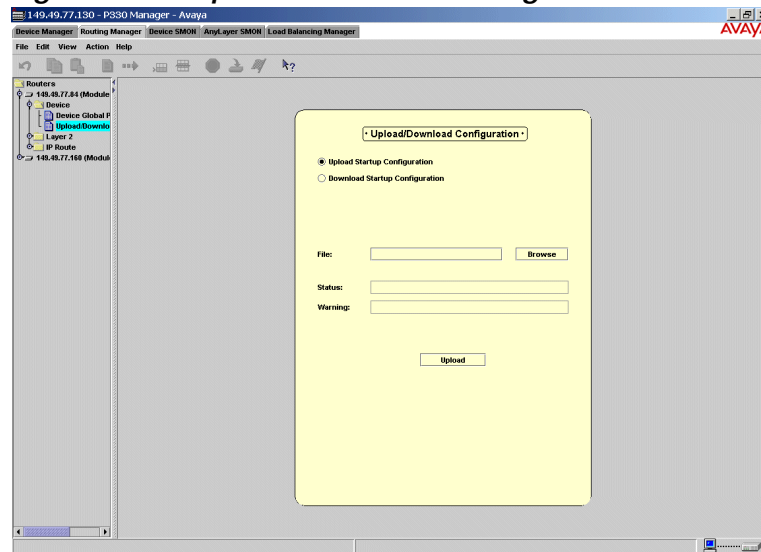
Upload/Download Configuration

The Upload/Download Configuration feature allows you to save the configuration of the router in a file, and to download a saved configuration to the router.

* **Note:** Only routing information is saved in this file.

To save or download routing parameters, select **Device > Upload/Download Configuration**. The Upload/Download Configuration window opens.

Figure 19-2. Upload/Download Configuration Window



Selecting TFTP Secure Mode

* **Note:** Selecting TFTP Secure Mode applies to Solaris only.

To limit the access of the TFTP client to a specified path on the disk, you must configure the TFTP Secure Mode and select a home directory. The TFTP Secure Mode configuration is required for both uploading and downloading configuration parameter files.

* **Note:** The Upload/Download Configuration feature uses TFTP. Ensure that the TFTP server is active before using this feature.

To activate TFTP Secure Mode:

1. Check the **Use TFTP Secure Mode** checkbox.
2. Enter the path of the home directory in the **Homedir** field.
3. Click **Set**.

* **Note:** The TFTP Secure Mode and the home directory must correspond to the TFTP configuration in the `inetd.conf` file.

Once TFTP Secure Mode is activated, it remains activated unless the TFTP parameter in the `inetd.conf` file is modified.

Uploading the Current Configuration to a File

To upload the current configuration to a file:

1. Select the **Upload Startup Configuration** option button.
2. In the **File** field, enter the name and path of the file into which you would like to save the current configuration.

Or

- a. Click **Browse**. A file browser window appears.
 - b. Select a folder using the browser.
 - c. Enter a filename into the **File name** field.
 - d. Click **Save**. The name of the selected file appears in the **Upload** field.
3. Click **Upload**. The current configuration is saved in the specified file.

Downloading a Saved Configuration to the Router

To download a saved configuration to the router:

1. Select the **Download Startup Configuration** option button.
2. In the **File** field, enter the file name from which you would like to download a configuration.

Or

- a. Click **Browse**. A file browser window appears.
 - b. Select a file using the browser.
 - c. Click **Open**. The name of the selected file appears in the **Download** field.
3. Click **Download**. The specified configuration is downloaded to the router.

Upload/Download Configuration Parameters

In addition, the following parameters are displayed.

Table 19-2. Upload/Download Configuration

Field	Description
Status	The status of the current upload or download operation.
Warnings	Non-fatal warnings issued by the router.

20 Layer 2

The Layer 2 folder provides access to the following window:

- **VLANs**

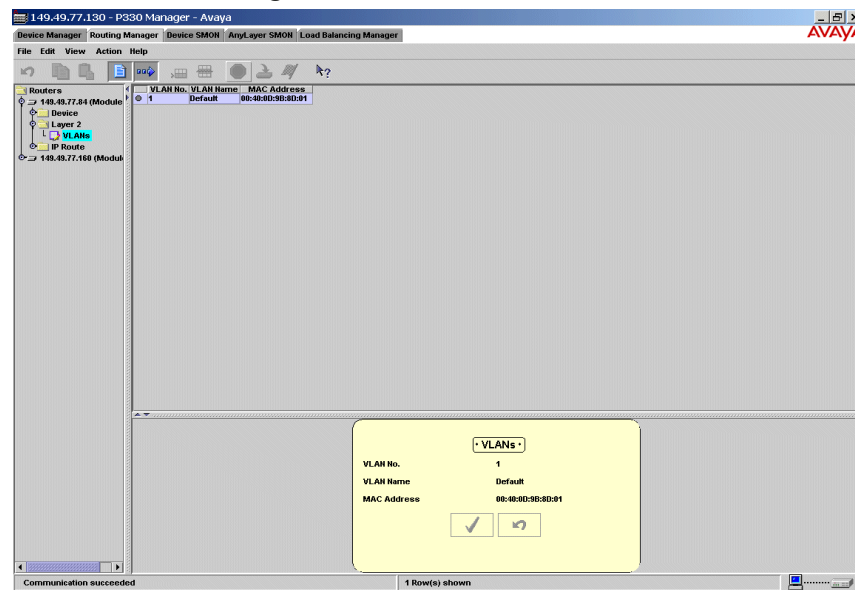
* **Note:** When configuring an Avaya X330WAN router, the Layer 2 folder provides access to the **L2 Interfaces** window.

VLANs

* **Note:** When configuring an Avaya X330WAN router, this window is called the **L2 Interfaces** window.

To display the layer 2 interfaces, select Layer 2 > VLANs. The VLANs window opens.

Figure 20-1. VLANs Window



The following parameters are displayed:

Table 20-1. VLANs Window Parameters

Field	Description
VLAN No. (not for X330WAN router)	The VLAN number of this VLAN.
Interface No. (X330WAN router only)	The number of this layer 2 interface.
VLAN Name (not for X330WAN router)	The VLAN name of this VLAN.
Interface Name (X330WAN router only)	The logical name of this layer 2 interface.
MAC Address	The MAC address of this VLAN or layer 2 interface.
Peer Address (X330WAN router only)	The IP address of the interface's peer.
Oper Status (X330WAN router only)	The operational status of this layer 2 interface.

The fields in the VLANs window are read-only.

21 IP Route

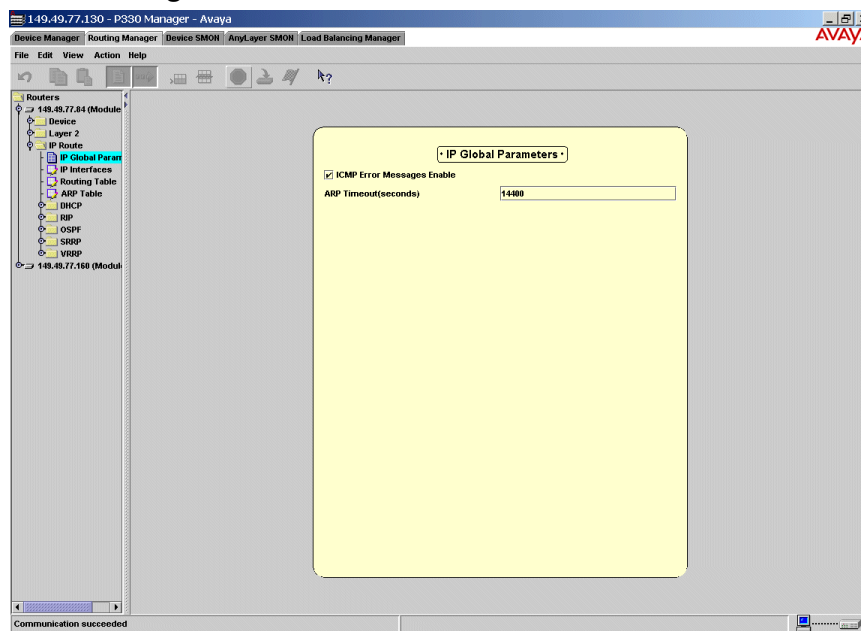
The IP Route folder provides access to the following windows:

- **IP Global Parameters**
- **IP Interfaces**
- **Routing Table**
- **ARP Table**
- **DHCP**
- **RIP**
- **OSPF**
- **SRRP**
- **VRRP**
- **C RTP**

IP Global Parameters

To display and update the IP global parameters, select IP Route > IP Global Parameters. The IP Global Parameters window opens.

Figure 21-1. IP Global Parameters Window



The following parameters are displayed:

Table 21-1. 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.

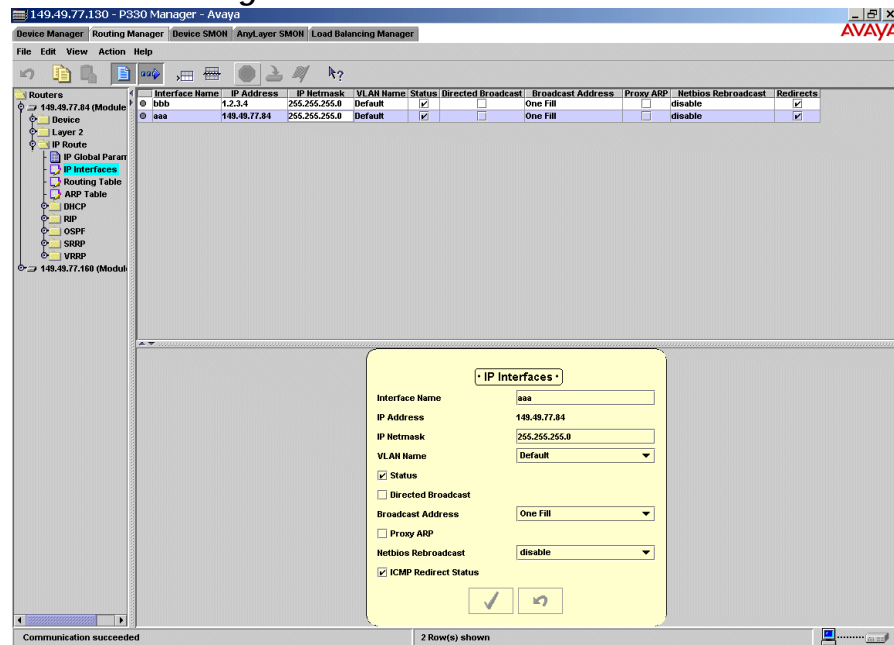
IP Interfaces

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.

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.

To define and display the IP interfaces, select IP Route > IP Interfaces. The IP Interfaces window opens.

Figure 21-2. IP Interfaces Window



The following parameters are displayed:

Table 21-2. IP Interface Table Parameters

Field	Description
Interface Name (not for X330WAN router)	The name assigned to the selected IP interface.
IP Interface Name (X330WAN router only)	The name assigned to the selected IP interface.
IP Address	The IP address assigned to the device on this subnet.
IP NetMask	The IP network mask of the attached net/subnet.

Table 21-2. IP Interface Table Parameters (Continued)

Field	Description
VLAN Name (not for X330WAN router)	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.
L2 Interface Name (X330WAN router only)	The name of the Layer 2 interface with which this subnet is associated. Multiple subnets may be associated with a single interface, so multiple IP interfaces may be associated with the same If Name.
Status	The status of the IP interface. If checked, the IP interface is enabled.
Directed Broadcast	The status of the forwarding of incoming net-directed broadcasts to this interface. If checked, the forwarding is enabled. If not checked, IP directed broadcast messages destined to this interface will be discarded and will not be forwarded to this interface.
Broadcast Address	Determines the format of IP broadcast messages generated by the device. Possible formats are: <ul style="list-style-type: none"> • One fill - The host ID in the broadcast address is filled with 'one' bits (e.g., 149.49.50.255). • Zero fill - The host ID in the broadcast address is filled with 'zero' bits (e.g., 149.49.50.0).
Proxy ARP	If checked, the device will respond with its own MAC address to ARP requests for stations that are on another VLAN.
NetBios Rebroadcast	The state of NetBios Rebroadcast on this interface. Possible values are: <ul style="list-style-type: none"> • both - NetBios are rebroadcast both to and from this interface. • disable - NetBios are not rebroadcast to or from this interface.
Redirects	The state of ICMP message redirection on the interface. Possible states are: <ul style="list-style-type: none"> • enable - ICMP redirect messages are enabled on this interface. • disable - ICMP redirect messages are disabled on this interface.

You can create, modify, and delete IP interfaces. For more information on editing tables, refer to “Editing Tables” on page 143.

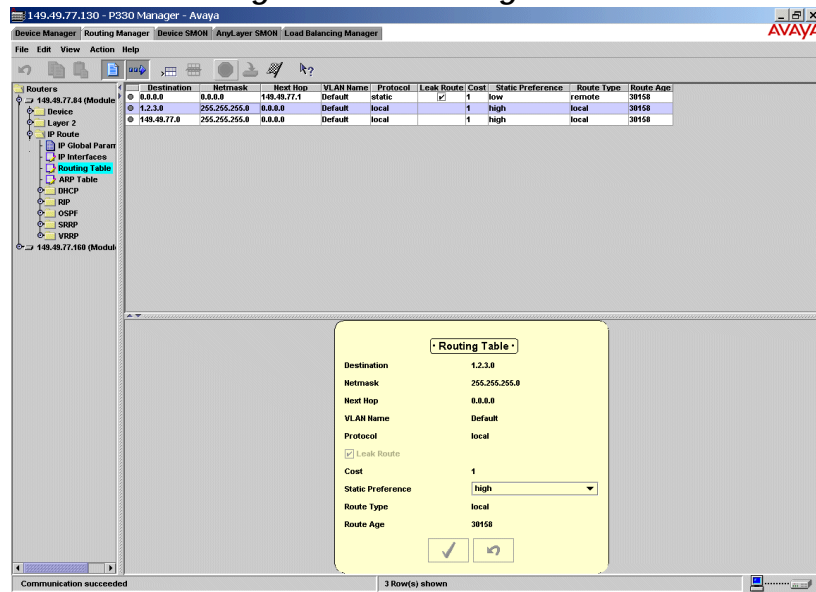
* **Note:** The IP Address, IP NetMask, If Name, and Status must be defined before creating an IP interface.

* **Note:** The list of VLANs allocated in the system is displayed in the If Name field.

Routing Table

To display and update the Routing Table, select IP Route > Routing Table. The Routing Table window opens.

Figure 21-3. Routing Table



The following parameters are displayed:

Table 21-3. 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.
VLAN Name (not for X330WAN)	The logical name of the local interface through which the next hop of this route is reached.
L2 Interface Name (X330WAN router only)	The logical name of the local interface through which the next hop of this route is reached.

Table 21-3. Routing Table Parameters (Continued)

Field	Description
Protocol	The protocol through which the route was learned. The following protocols can be specified: <ul style="list-style-type: none"> • 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.
Leak Route	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 (X330WAN router only)	The permanence status of the route. Possible statuses are: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • low - Dynamic routes are preferred on this static route. • high - This static route is preferred on dynamic routes.
Route Type	The type of route, either local or remote.
Route Age	The number of seconds since the route was last updated.

You can create, modify, or delete Routing Table static entries. For more information on editing tables, refer to “Editing Tables” on page 143.

* **Note:** Only static entries in the Routing Table can be modified. Entries learned from OSPF, RIP, or local cannot be modified.

When adding Routing Table entries on an Avaya X330WAN router, 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.
- **L2 Interface Name** - Select the L2 Interface Name option button, and select an interface from the pull-down listbox.
- **Discard** - Select the Discard option button.

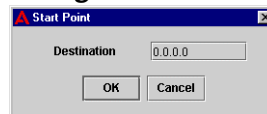
You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

Or

Select **Action > Start Point**. The Start Point dialog box opens.

Figure 21-4. 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 .

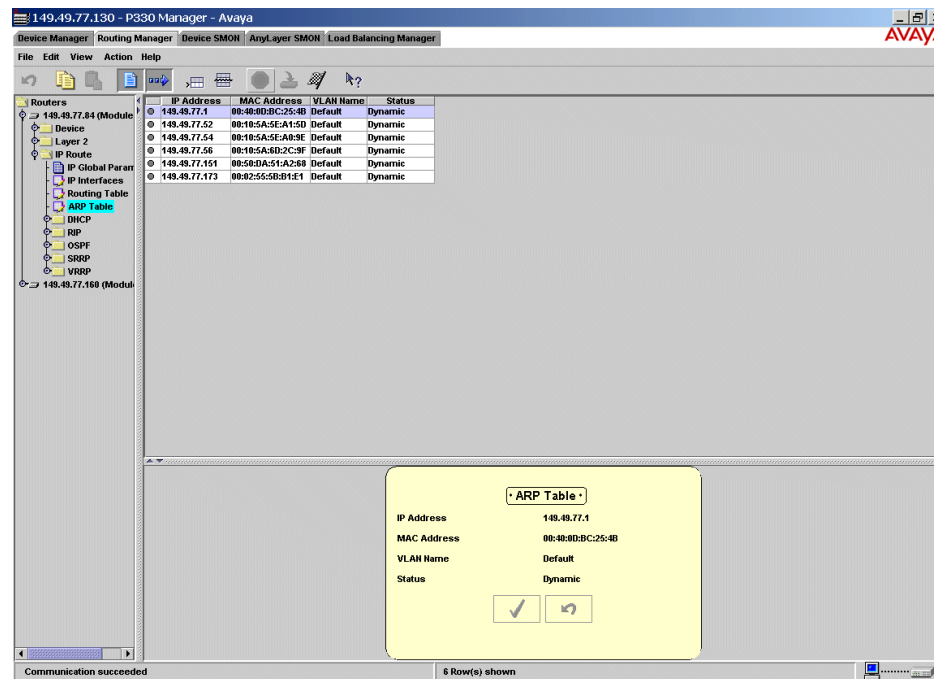
Or

Select **View > Refresh**. All entries appear in the table.

ARP Table

To display and update the ARP Table parameters, select IP Route > ARP Table. The ARP Table window opens.

Figure 21-5. ARP Table Window



The following parameters are displayed:

Table 21-4. ARP Parameters

Field	Description
IP Address	The IP address of the station.
MAC Address	The MAC address of the station.
VLAN Name (not for X330WAN)	The name of the interface.
L2 Interface Name (X330WAN router only)	The name of the interface.

Table 21-4. ARP Parameters (Continued)

Field	Description
Status	<p>The status of the interface. Possible status values are:</p> <ul style="list-style-type: none"> • 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 143.

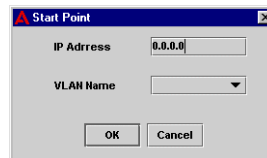
You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

Or

Select **Action > Start Point**. The Start Point dialog box opens.

Figure 21-6. 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.

DHCP

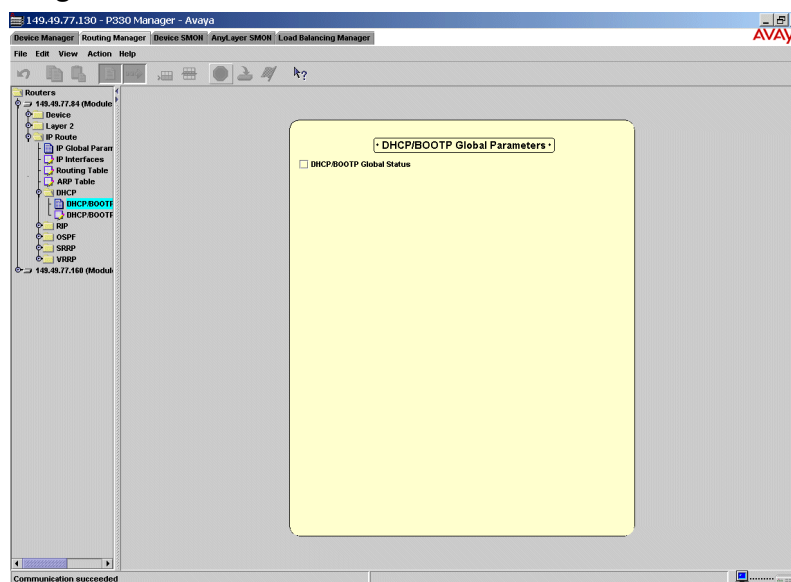
The DHCP folder provides access to the following windows:

- **DHCP/BOOTP Global Parameter**
- **DHCP/BOOTP Parameters**

DHCP/BOOTP Global Parameter

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 21-7. DHCP/BOOTP Global Parameters Window



The following parameter is displayed:

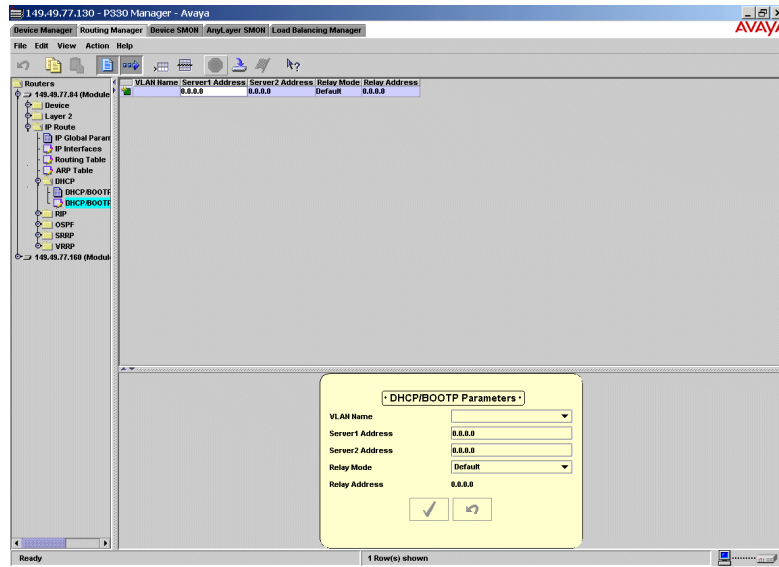
Table 21-5. DHCP/BOOTP Global Parameter

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.

DHCP/BOOTP Parameters

To display and update DHCP/BOOTP parameters, select IP Route > DHCP > DHCP/BOOTP Parameters. The DHCP/BOOTP Parameters window opens.

Figure 21-8. DHCP/BOOTP Parameters Window



The following parameters are displayed:

Table 21-6. DHCP/BOOTP Parameters

Field	Description
VLAN Name (not for X330WAN)	The interface name upon which the clients are located.
L2 Interface Name (X330WAN router only)	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.

Table 21-6. DHCP/BOOTP Parameters (Continued)

Field	Description
Relay Mode	<p>The method by which the DHCP relay chooses an IP address to include in the DHCP request.</p> <p>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.</p> <p>The Mode field controls the behavior of the DHCP relay in choosing the IP address to write into the DHCP request. Possible modes are:</p> <ul style="list-style-type: none"> • 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 .

You can create, modify, or delete DHCP/BOOTP parameters. For more information on editing tables, refer to "Editing Tables" on page 143.

RIP

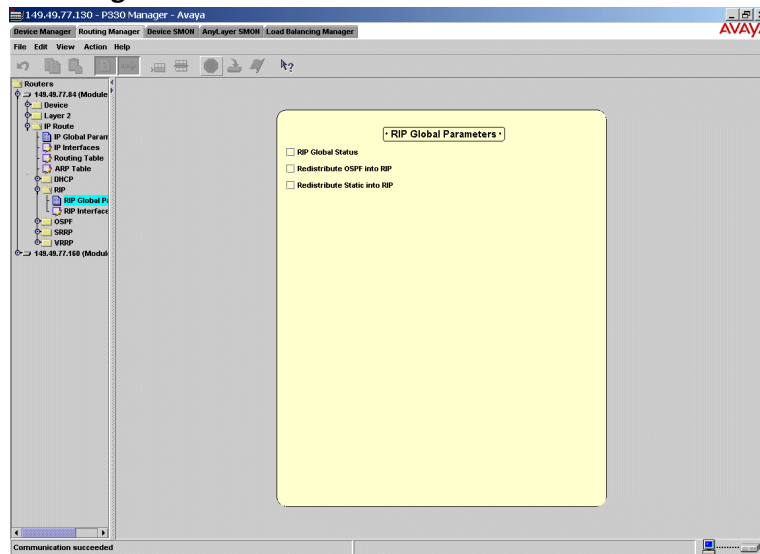
The RIP folder provides access to the following windows:

- **RIP Global Parameters**
- **RIP Interfaces**

RIP Global Parameters

To display and update RIP global parameters, select IP Route > RIP > RIP Global Parameters. The RIP Global Parameters window opens.

Figure 21-9. RIP Global Parameters Window



The following parameters are displayed:

Table 21-7. 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.

Table 21-7. RIP Global Parameters (Continued)

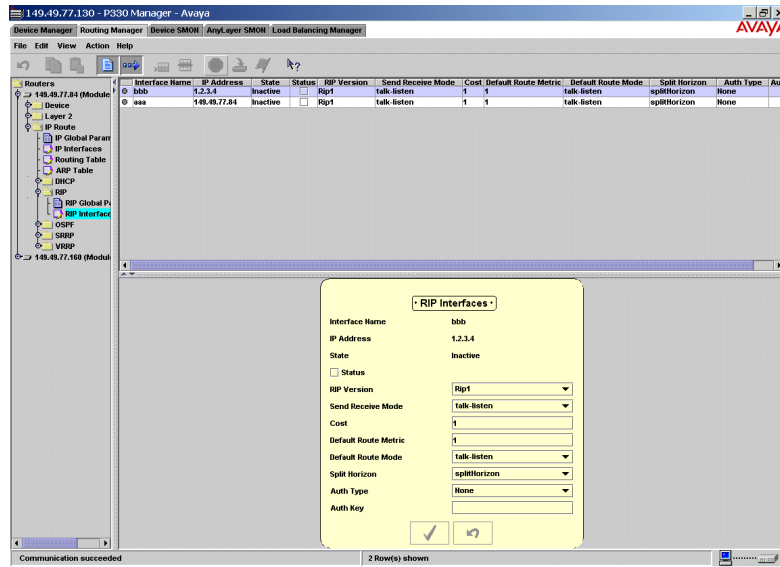
Field	Description
Redistribute Static into RIP	Controls redistribution of static routes into RIP. If checked, the static routes inserted into the IP Routing Table are advertised into RIP, according to the "Leak Route" definition for each static route.
Update Interval (seconds) (X330WAN router only)	The amount of time between each RIP periodic update.
Route Invalidate Timeout (seconds) (X330WAN router only)	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.

RIP Interfaces

To define and display RIP interfaces, select IP Route > RIP > RIP Interfaces. The RIP Interfaces window opens.

Figure 21-10. RIP Interfaces Window



The following parameters are displayed:

Table 21-8. RIP Interface Parameters

Field	Description
Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of the interface.
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.

Table 21-8. RIP Interface Parameters (Continued)

Field	Description
RIP Version	<p>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.</p> <p>When possible, homogeneous configuration of the RIP version in the network is recommended.</p> <ul style="list-style-type: none"> • 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	<p>What the device sends on this interface. Values are:</p> <ul style="list-style-type: none"> • 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	<p>The cost of using this interface. RIP chooses the route with the lowest total cost (metric) for each destination.</p>
Default Route Metric	<p>The metric of the default route entry in RIP updates originated on this interface, if configured to SendDefaultOnly.</p>
Default Route Mode	<p>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.</p>

Table 21-8. RIP Interface Parameters (Continued)

Field	Description
Split Horizon	<p>The method for handling routes learned from this interface, when sending updates to this interface. Possible methods are:</p> <ul style="list-style-type: none"> • 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	<p>Authentication Type. Possible methods are:</p> <ul style="list-style-type: none"> • None • Simple
Auth Key	<p>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.</p>

* **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 143.

OSPF

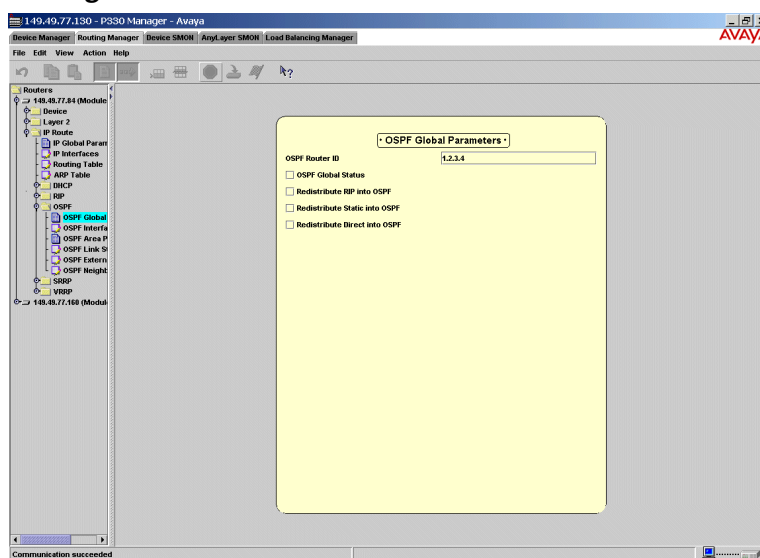
The OSPF folder provides access to the following windows:

- **OSPF Global Parameters**
- **OSPF Interfaces**
- **OSPF Area Parameters**
- **OSPF Link State Database**
- **OSPF External Database**
- **OSPF Neighbors**

OSPF Global Parameters

To define and display OSPF Global parameters, select **IP Route > OSPF > OSPF Global Parameters**. The OSPF Global Parameters window opens.

Figure 21-11. OSPF Global Parameters Window



The following parameters are displayed:

Table 21-9. 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.

Table 21-9. OSPF Global Parameters (Continued)

Field	Description
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.
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.

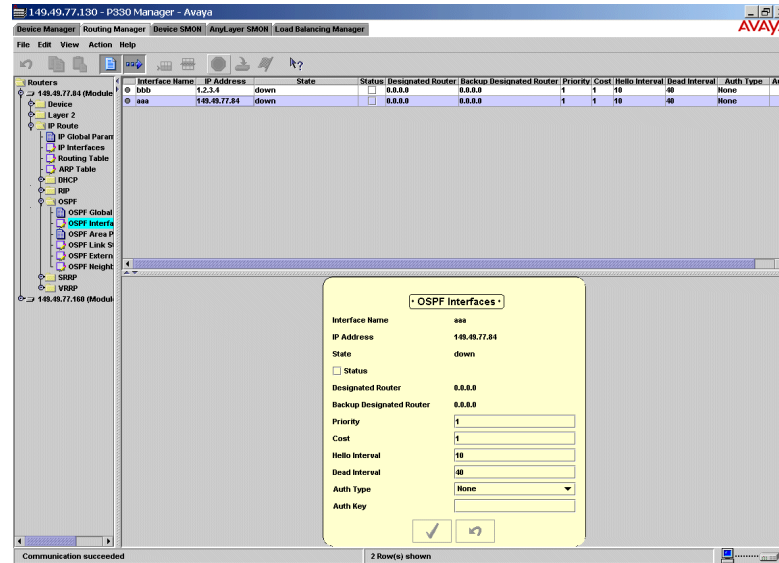
You can modify OSPF Global Parameters.

*** Note:** After updating the Router ID field, a message is displayed warning that the operation might cause the OSPF database to reset.

OSPF Interfaces

To define and display OSPF interfaces, select IP Route > OSPF > OSPF Interfaces. The OSPF Interfaces window opens.

Figure 21-12. OSPF Interfaces Window



The following parameters are displayed:

Table 21-10. OSPF Interfaces

Field	Description
Interface Name (not for X330WAN)	The name assigned to the selected IP interface.
IP Interface Name (X330WAN router only)	The name assigned to the selected IP interface.
IP Address	The IP address of this OSPF interface.
State	The interface state of the OSPF interface: <ul style="list-style-type: none"> • 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.

Table 21-10. OSPF Interfaces (Continued)

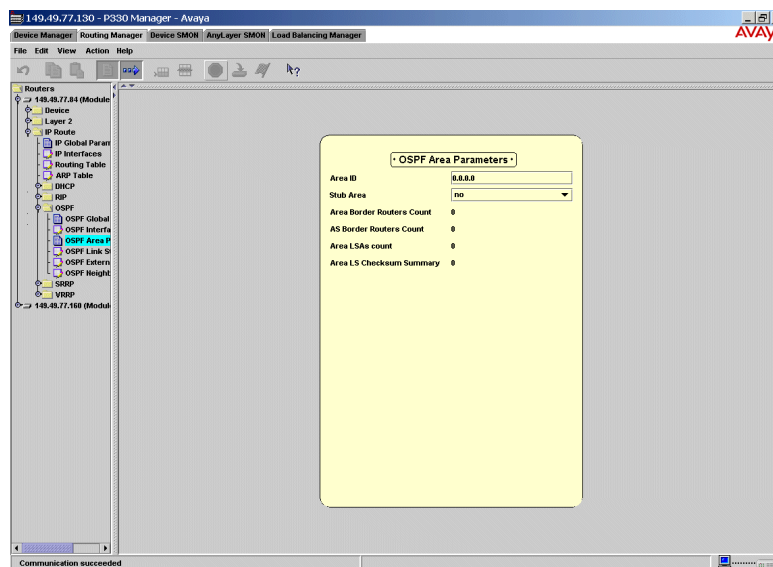
Field	Description
Status	If checked, this denotes that the interface may form neighbor relationships, and that the interface is advertised as an internal route to OSPF. If not checked, the interface is external to OSPF.
Designated Router	The IP Address of the designated router.
Backup Designated Router	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: <ul style="list-style-type: none"> • 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.

You can modify OSPF interfaces. For more information on editing tables, refer to “Editing Tables” on page 143.

OSPF Area Parameters

To define and display OSPF Area Parameters, select IP Route > OSPF > OSPF Area Parameters. The OSPF Area Parameters window opens.

Figure 21-13. OSPF Area Parameters Window



The following parameters are displayed:

Table 21-11. 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 total number of Area Border Routers reachable within this area. This number is initially zero and is calculated in each OSPF pass.
AS Border Routers Count	The total number of Autonomous System border routers reachable within this area. This number is initially zero and is calculated with each SPF pass.
Area LSAs Count	The number of link-state advertisements in the link-state database.

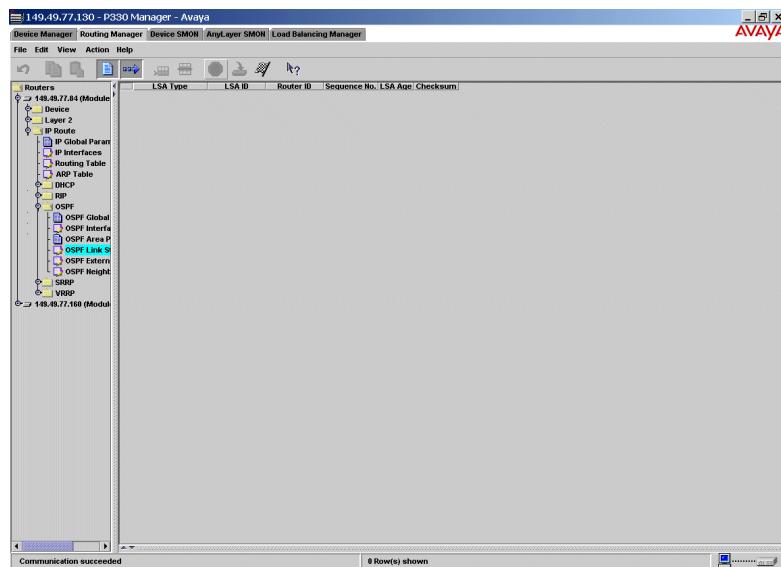
Table 21-11. OSPF Area Parameters (Continued)

Field	Description
Area LS Checksum Summary	The sum of LS checksums of LS advertisements contained in the LS database. Use this sum to determine if there has been a change in a router's LS database, and to compare the LS database of two routers.

You can modify OSPF Area parameters.

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 21-14. OSPF Link State Database Window

The following parameters are displayed:

Table 21-12. 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.

Table 21-12. OSPF Link State Database Window (Continued)

Field	Description
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.

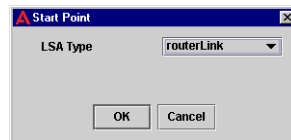
You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

Or

Select **Action > Start Point**. The Start Point dialog box opens.

Figure 21-15. 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 .

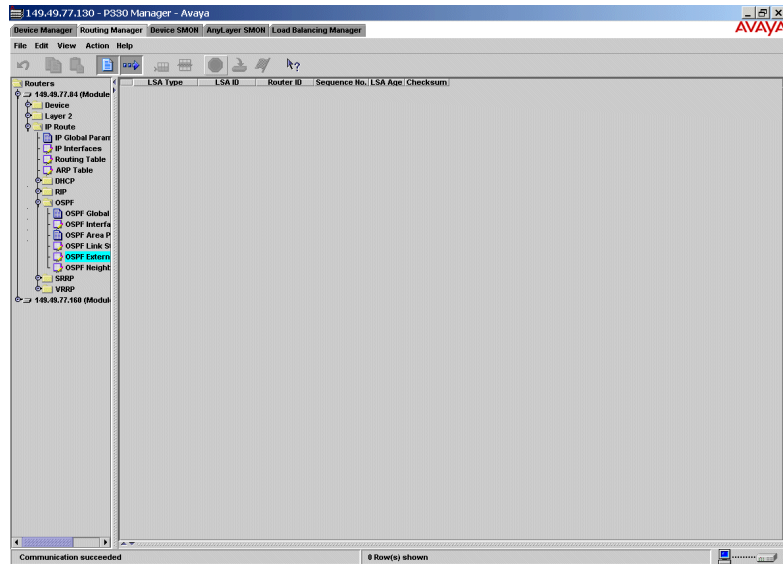
Or

Select **View > Refresh**. All entries appear in the table.

OSPF External Database

To display the OSPF External Database window, select **IP Route > OSPF > OSPF External Database**. The OSPF External Database window opens.

Figure 21-16. OSPF External Database Window



The following parameters are displayed:

Table 21-13. OSPF External Database Window

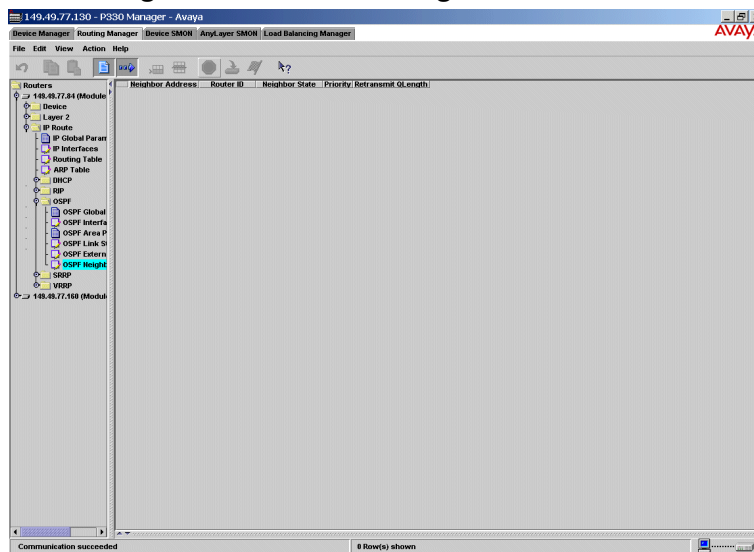
Field	Description
LSA Type	The type and format of the link state advertisement; for example, Router links and Network links.
LSA ID	Identifies the part of the routing domain that is described by the advertisement. The LSA ID can be either a router ID or an IP address.
Router ID	Identifies the originating 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.

OSPF Neighbors

To display the OSPF Neighbors window, select IP Route > OSPF > OSPF Neighbors. The OSPF Neighbors window opens.

Figure 21-17. OSPF Neighbors Window



The following parameters are displayed:

Table 21-14. 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: <ul style="list-style-type: none"> • Down • Attempt • Init • Two Way • Exchange Start • Exchange • Loading • Full
Priority	The priority of this neighbor in the Designated Router election.
Retransmit QLength	The current length of the retransmission queue.

The parameters in the OSPF Neighbors Table window are read-only.

SRRP

The SRRP folder provides access to the following windows:

- **SRRP Global Parameters**
- **SRRP Table**

* **Note:** SRRP is not available when configuring Avaya X330WAN routers.

SRRP Global Parameters

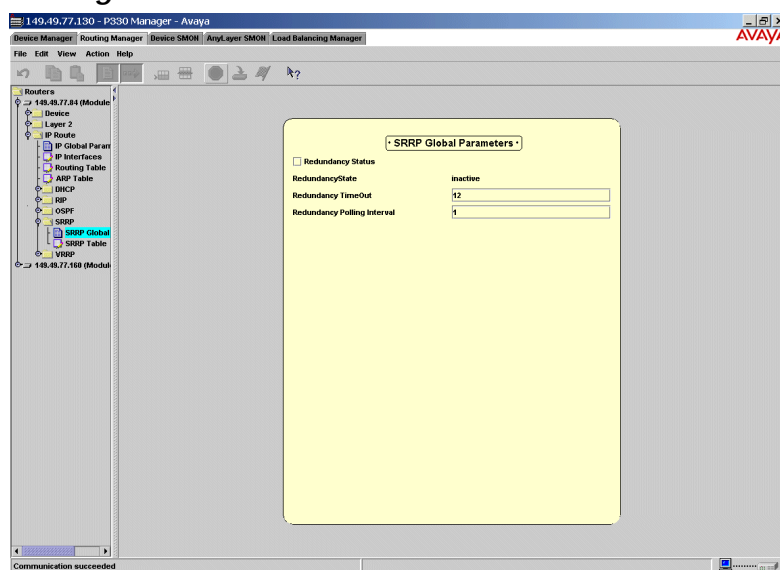
* **Note:** SRRP is not available when configuring Avaya X330WAN routers.

SRRP (Simple Router Redundancy Protocol) provides a method for configuring a redundancy between routers. A router can be assigned a backup router. The backup router functions normally, while checking the primary router. If the primary router fails, the backup router handles traffic directed to the primary router.

* **Note:** SRRP and VRRP are mutually exclusive.

To define and display SRRP Global Parameters, click the select IP Route > SRRP > SRRP Global Parameters. The SRRP Global Parameters window opens.

Figure 21-18. SRRP Global Parameters Window



The following parameters are displayed:

Table 21-15. Redundancy Global Parameters

Field	Description
Redundancy Status	If checked, enables IP Redundancy as configured in the IP Redundancy Table window.

Table 21-15. Redundancy Global Parameters (Continued)

Field	Description
RedundancyState	<p>When the IP Redundancy Status is enabled, the state of the backup router may be inactive or active.</p> <ul style="list-style-type: none"> • If active, the backup router detected the failure of the main router and is currently forwarding traffic in its place. It answers ARP requests for the main router, providing its own MAC address. While the Redundancy State is active, the backup router continues to poll the main router to check for recovery. • If inactive, no special function is performed by the secondary router except polling the main router. While the main router is operational, the Redundancy State remains inactive.
Redundancy TimeOut	The interval in seconds during which the main router must signal. If the main router does not signal within this interval, it is considered not operational.
Redundancy Polling Interval	The polling interval for this router, in seconds. If the interval is zero, then the router is not polled.

You can modify the Redundancy Global Parameters except for Redundancy State.

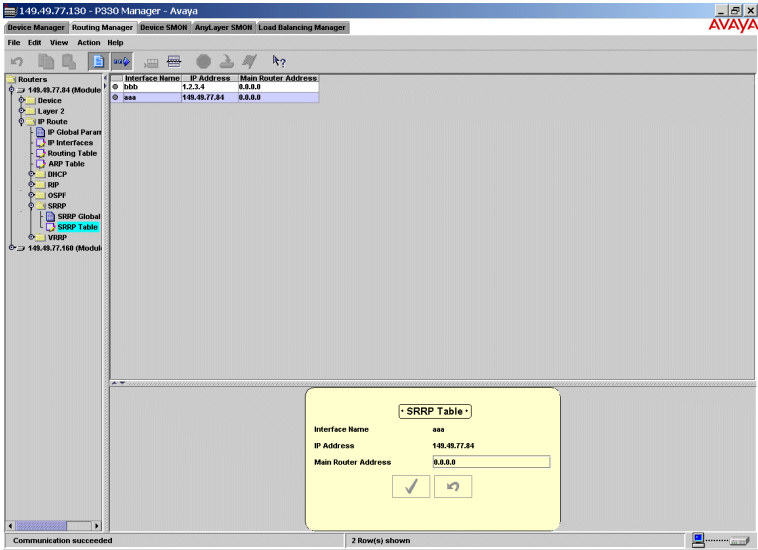
SRRP Table

* **Note:** SRRP is not available when configuring Avaya X330WAN routers.

In order for this device to back up the main router, the IP addresses of the main router must be configured in this window. This window contains an entry for each of the device’s IP interfaces. The corresponding IP address of the main router must be configured in each entry that represents a subnet common to this device and the main router. Entries cannot be deleted or added. Entries that do not specify an IP address of the main router do not participate in the redundancy function.

To define and display SRRP Parameters, select IP Route > SRRP > SRRP Table. The SRRP Table window opens.

Figure 21-19. SRRP Window



The following parameters are displayed:

Table 21-16. SRRP Parameters

Field	Description
Interface Name	The IP interface.
IP Address	The IP addresses of this device identifying the IP interface.
Main Router Address	The IP address of the main router to be polled and backed up. 0.0.0.0 denotes that the redundancy feature does not operate on this interface.

You can modify SRRP parameters. For more information on editing tables, refer to “Editing Tables” on page 143.

VRRP

The VRRP folder provides access to the following windows:

- **VRRP Global Parameters**
- **VRRP Table**

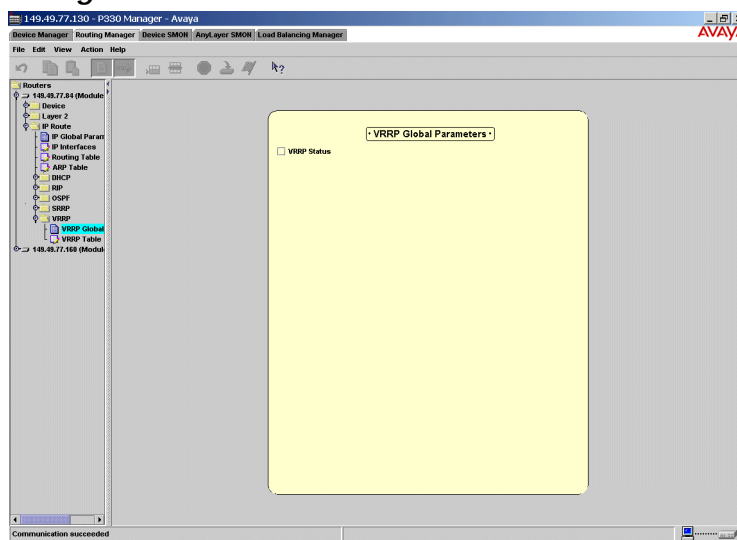
VRRP Global Parameters

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.

* **Note:** VRRP and SRRP are mutually exclusive.

To define and display the VRRP global parameters, select **IP Route > VRRP > VRRP Global Parameters**. The VRRP Global Parameters window opens.

Figure 21-20. VRRP Global Parameters Window



The following parameter is displayed:

Table 21-17. VRRP Global Parameter

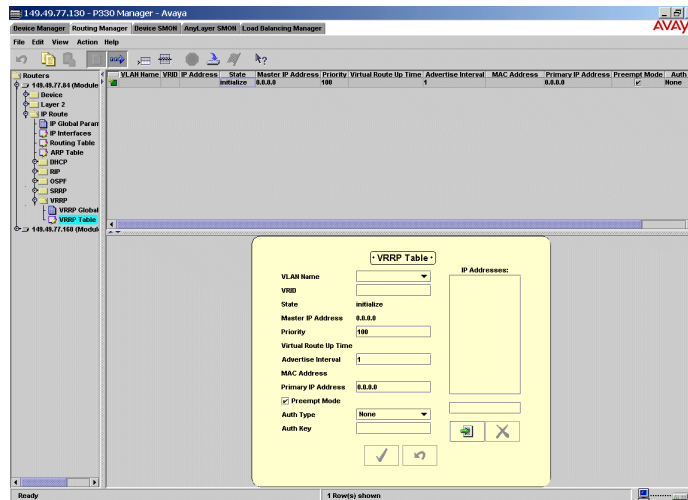
Field	Description
VRRP Status	When the VRRP global parameter checkbox is checked, VRRP is operational on the router. If unchecked, VRRP is not operational on the router.

You can modify the VRRP Global Parameter.

VRRP Table

To define and display the VRRP table, select IP Route > VRRP > VRRP Table. The VRRP table appears.

Figure 21-21. VRRP Table



The following parameters are displayed:


Table 21-18. VRRP Table Parameters

Field	Description
VLAN Name (not for X330WAN)	The name of the selected interface.
L2 Interface Name (X330WAN router only)	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.


Table 21-18. VRRP Table Parameters (Continued)

Field	Description
State	The state of the virtual router. Possible states are: <ul style="list-style-type: none"> • 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).
Advertise Interval	The interval, in seconds, between VRRP advertisement messages sent by the master router.
MAC Address	The virtual MAC address of the virtual router.
Primary IP Address	The physical router's IP address to be used if it is elected to be Master Router. The Primary IP Address must belong to the physical router and be on the selected VLAN. If this parameter is set to 0.0.0.0, the IP address which is numerically lowest will be selected.
Preempt Mode	If checked, the virtual router with the highest priority will preempt active routers and become the master router.
Auth Type	Authentication Type. Possible methods are: <ul style="list-style-type: none"> • None • Simple
Auth Key	The password for this interface. This is only used if the Auth Type is set to Simple . The password may contain up to 8 characters. It may be configured here, but not viewed.

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 143.

CRTP

The CRTP folder provides access to the following window:

- **CRTP Interfaces**

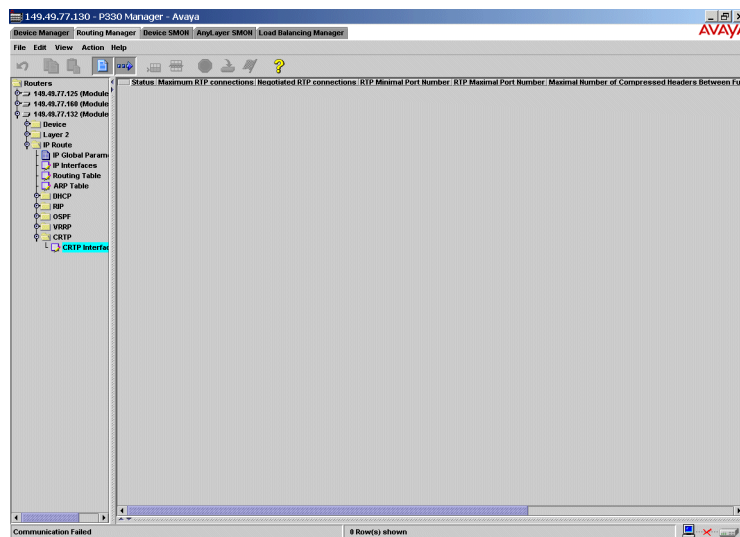
CRTP Interfaces

The Avaya X330WAN router 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 on the X330WAN router.

* **Note:** The CRTP Interfaces window is only available on an X330WAN router.

To define and display CRTP Interfaces, select IP Route > CRTP > CRTP Interfaces. The CRTP interfaces window appears.

Figure 21-22. CRTP Interfaces Window



The following parameters are displayed:

Table 21-19. CRTP Interface Table Parameters

Field	Description
L2 Interface Name	The name of the selected interface.

Table 21-19. CRTP Interface Table Parameters (Continued)

Field	Description
Status	The status of RTP compression on this interface. Possible statuses include: <ul style="list-style-type: none"> • Enabled - RTP compression is enabled on the interface. • Disabled - RTP compression is disabled on the interface.
Maximum RTP Connection	The maximum number of context identifiers for RTP connections on this interface. 0 means that no RTP headers will be compressed.
Negotiated RTP Connections	The negotiated number of context identifiers for RTP connections on this interface.
RTP Minimal Port Number	The minimal UDP destination port number to be considered as RTP traffic.
RTP Maximal Port Number	The maximal UDP destination port number to be considered as RTP traffic.
Maximal Number of Compressed Headers Between Full Headers	The maximum number of compressed packets that can be sent between full headers.
Maximal Period Between Full Headers (seconds)	The maximum number of seconds between full headers.
RTP Header 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.

You can modify CRTP parameters on PPP interfaces. For more information on editing tables, refer to “Editing Tables” on page 143.

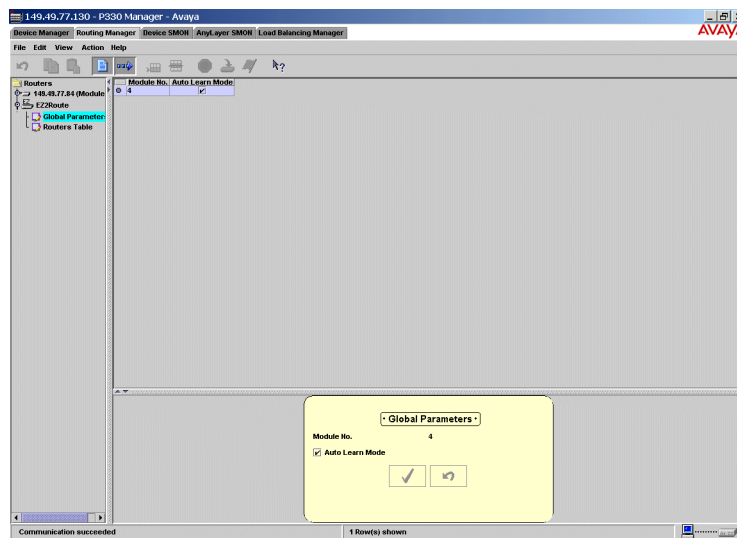
22 EZ2route

The EZ2route folder provides access to the following windows:

- **Global Parameters**
- **Routers Table**

Global Parameters

Figure 22-1. Global Parameters Window



The following parameters are displayed:

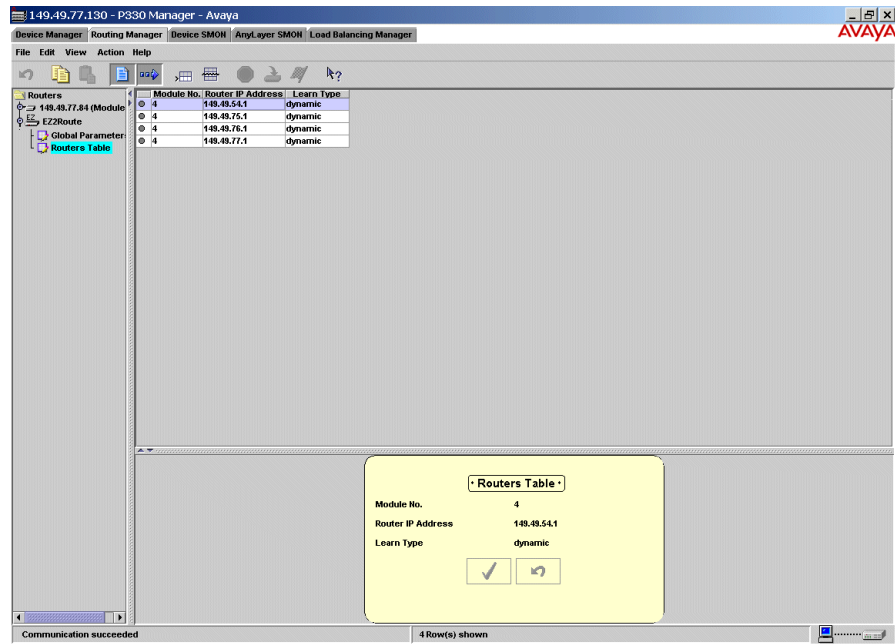
Table 22-1. Global Parameters

Field	Description
Module No.	The number of the module in the device.
Auto Learn Mode	The Auto Mode status of the module. If checked, the module automatically learns the routers in the network. If not checked, the module does not learn the routers in the network. Only routers entered manually are boosted.

Routers Table

To define and display a table of routers boosted by the EZ2route modules, select EZ2Route > Routers Table. The Routers Table opens.

Figure 22-2. Routers Table



The following parameters are displayed:

Table 22-2. Routers Table Parameters

Field Name	Description
Module No.	The number of the module in the device.
Router IP Address	The IP address of the router being boosted by the EZ2route module.
Learn Type	The method by which the router was learned by the EZ2route module. Possible methods are: <ul style="list-style-type: none"> • Dynamic - The route was learned dynamically. • Static - The route was entered manually.

You can create, modify and delete static entries in the Routers Table. For more information on editing tables, refer to “Editing Tables” on page 143.

A Menu

This appendix gives the full structure of the menus in the Avaya P330 Manager.

Device Manager Menu

This section provides the menu structure of the Avaya P330 Device Manager.

File Menu

Table A-1. File Menu - Device Manager

Item	Description
Change IP (for Standalone Manager only)	Opens the Device Parameters dialog box for selecting a different device to manage.
Exit	Exits the Avaya P330 Manager.

View Menu

Table A-2. 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	Displays a list of stations connected to each of the device's ports.
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 A-3. Configure Menu - Device Manager

Item	Description
Device Information	Displays information for the device.
VLAN	Displays and enables configuration of VLANs.
Port LAG	Displays and enables configuration of LAGs.
Port Redundancy	Displays and enables configuration of port redundancies.
Port Mirroring	Allows copying of all transmitted and received packets from one port to another.
Port Security	Displays the Port Security configuration window.
Trap Managers	Displays managers and traps configuration information.
IP Multicast Filtering	Displays the IP Multicast Filtering dialog box.
WAN > Channel Groups	Opens the Channel Groups table.
WAN > Commit	Saves the updated configuration to the X330WAN expansion module.
Media Gateway > VoIP Configuration	Opens the VoIP config tab of the VoIP Engine Dialog box.
ATM > LEC Information	Displays a list of LECs attached to an ATM Uplink expansion module.
ATM > LE-ARP Table	Displays the LE-ARP table.

Actions Menu

Table A-4. Actions Menu - Device Manager

Item	Description
Reset Device	Resets the entire device.
Reset Module(s)	Resets the selected modules.
Reset MM(s)	Reset the selected media modules.
Reset WAN Plugin(s)	Reset the selected X330WAN expansion modules.

Tools Menu

Table A-5. Tools Menu - Device Manager

Item	Description
Administer Station/Gateway	Opens Avaya Site Administrator on the station or the selected Media Gateway.
Administer Call Controller	Opens Avaya Site Administrator on the selected Media Call Controller.

Help Menu

Table A-6. Help Menu - Device Manager

Item	Description
Context Sensitive Help	Activates context sensitive help.
Help Contents	Opens the on-line help contents page.
About Avaya P330 Device Manager	Copyright information about the Avaya P330 Device Manager.

Routing Manager Menus

This section provides the menu structure of the Avaya P330 Routing Manager.

File Menu

Table A-7. 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 A-8. 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 A-9. 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 A-10. 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 A-11. 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 P330 Routing Manager.

B Web Management

This appendix provides instructions for managing Avaya P330 Devices via the Internet and contains the following topics:

- **Web Management Overview** - An overview on Web Management.
- **Configuring the Avaya P330 Device** - Instructions on how to configure the Avaya P330 Device for the first time.

Web Management Overview

Web Management provides a simple method of managing Avaya P330 Devices via the Internet. The Avaya P330 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 P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Avaya P330 User's Guide*.

Configuring the Avaya P330 Device

When an Avaya P333R module 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 *Avaya P330 User's Guide*.

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