Avaya P130 SMON User Guide

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Avaya P130 SMON User Guide

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Preface

Welcome to Avaya P130 SMON. This chapter provides an introduction to the structure and assumptions of the guide. It includes the following sections:

- **The Purpose of this Guide** - A description of the intended purpose of this guide.
- **Who Should Use this Guide** - A description of the intended audience of this guide.
- **Organization of the Guide** - A brief description of the subjects covered in each chapter of this guide.

The Purpose of this Guide

This guide contains the information needed to operate Avaya P130 SMON switch monitoring application efficiently and effectively.

The following table provides information about where to find documentation about Enterprise SMON and Device SMON for other devices.

Table 1. SMON Documentation

Application	Document
Enterprise SMON	*Avaya SMON User Guide*
SMON for Avaya M770 Devices	*Avaya M770 and M-MLS SMON User Guide*
SMON for Avaya P120 Devices	*Avaya P120 SMON User Guide*
SMON for Avaya P330 Devices	*Avaya P330 SMON User Guide*
SMON for Avaya P580/P882 Devices	*Avaya P580/P882 SMON User Guide*

Who Should Use this Guide

This guide is intended for use by network managers familiar with network management and its fundamental concepts. It is assumed that the user has the basic responsibility for monitoring Avaya Technologies' intelligent switching devices and the network traffic.

Organization of this Guide

This guide is structured to reflect the following conceptual divisions:

- **Preface** - This chapter describes the guide's purpose, intended audience, and organization.
- **Overview** - This chapter provides an overview of the RMON standard and Avaya Inc's SMON concepts and an introduction to the SMON tools.
- **Device SMON** - This chapter describes how to launch Avaya P130 SMON and the Device SMON tools. It also describes the Device SMON user interface.
- **Switch Statistics** - This chapter describes the Switch Statistics tool in detail, including sample screens and filtering options.
- **Port Statistics** - This chapter describes the Port Statistics tool in detail, including sample screens and filtering options.
- **Extended Port Statistics** - This chapter describes the Port Extended Statistics tool in detail, including sample screens and filtering options.
- **VLAN Statistics** - This chapter describes the VLAN Statistics tool in detail, including sample screens and filtering options.
- **Alarms and Events** - This chapter describes the Alarms Table, Alarms Wizard, and Device Event Log in detail, with instructions on how to define and activate alarms.

The following Appendices are included at the end of this guide:

- **Appendix A** - Dialog boxes that appear in SMON tools.
- **Appendix B** - How to set up the SMON license so that SMON will work with Avaya P130 Devices.

1 SMON Overview

This describes SMON, Avaya Inc.'s switched network monitoring system. This chapter includes the following s:

- **What is RMON** - A brief description of the RMON standard.
- **What is SMON** - A general description of SMON switch monitoring technology.
- **Overview of SMON** - An introduction to SMON.
- **Device SMON Tools** - The Device SMON tools and how they function.

What is RMON

RMON is the internationally recognized and approved standard for detailed analysis of shared Ethernet and Token Ring media. It ensures consistency in the monitoring and display of statistics between different vendors.

RMON's advanced remote networking capabilities provide the tools needed to monitor and analyze the behavior of segments on a network. In conjunction with an RMON agent, RMON gathers details and logical information about network status, performance, and users running applications on the network.

An RMON agent is a probe that collects information about segments, hosts, and traffic, and sends it to a management station.

The network administrator uses software tools to view the information collected by the RMON agent on the management station.

RMON has two levels:

- RMON I analyzes the MAC layer (Layer 2 in the OSI seven-layer model).
- RMON II analyzes the upper layers (Layers 3 and above).

RMON is an industry standard that Avaya Inc. and other companies have adopted in their network management applications. SMON takes the RMON standard and extends it to the switching environment.

What is SMON

SMON is an extension of the RMON standard. SMON adds to the monitoring capabilities of RMON in the following ways:

- It provides additional tools and features for monitoring in the switch environment.
- It provides a global view of traffic flow in a network with multiple switches.

Device SMON extends RMON I for the MAC layer, and AnyLayer SMON extends RMON II for the network layer and above. SMON monitoring collects and displays data in real-time.

Using SMON monitoring, you can get:

- A global view of traffic for all switches on the network.
- An overall view of traffic passing through a specific switch.
- Detailed data about the hosts transmitting packets through a switch.
- An analysis of traffic passing through each port connected to a switch.
- A view of traffic between various hosts connected to a switch.

Overview of SMON

SMON is an RMON-compliant network management suite that implements the SMON extensions to RMON. SMON works with the other components of Avaya Network Management to provide a full spectrum of in-depth monitoring of switch traffic and network performance.

SMON consists of a software console application on a workstation and remote monitoring probes in network devices that support SMON.

The SMON console communicates constantly with the SMON devices on your network. The console uses the SNMP protocol to gather information from the devices. SMON provides a suite of powerful graphic display tools to view this information.

SMON gives you detailed analysis of the traffic flow on your switched network, from a global view down to a specific host, and from total MAC layer traffic down to a specific application protocol - all in real-time.

In addition, SMON allows you to set alarms based on traffic thresholds. When an alarm is triggered, a trap can be sent to the device's manager and the event that triggered the alarm can be entered in SMON's Event Log.

SMON Devices

SMON provides monitoring capabilities for Avaya Inc's network devices that support the SMON extensions of the RMON standard.

Filtering Options

SMON tools provide different methods of filtering the information displayed on the screen. These method include:

- **Specific filtering**
- **TopN filtering**

For information on how to use filters, refer to Appendix A, *SMON Dialog Boxes*.

Specific Filtering

Specific filtering options provide the ability to specify the switches, VLANs, or ports for which you want to view SMON information.

TopN Filtering

TopN filtering provides the ability to filter information based on the amount of a particular type of traffic being monitored. When using TopN filtering, specify the number of switches, VLANs, or ports for which you want to view SMON information. Then select a statistic which will be used as the basis for the filtering.

Using TopN filtering you can, for example, view information on only the top 5 most active ports, or on the 8 switches generating the most error traffic.

TopN filtering is powerful in that it allows you to focus on the information that is important to you.

Device SMON Tools

The Device SMON tools for Avaya P130 Devices include:

- **Switch Statistics** - Detailed information on traffic passing through the switch fabric.
- **VLAN Statistics** - Detailed information on switch traffic associated with a VLAN.
- **Port Statistics** - Detailed information on port traffic to help determine the precise cause of a problem.
- **Extended Port Statistics** - Detailed information on a specific port's traffic to help determine the precise cause of a problem.
- **Alarms and Events** - Notification of user defined Events that help monitor a rise or fall of the rate of specified packets on selected ports.

Switch Statistics Overview

The Switch Statistics tool provides details of the traffic passing through the switch fabric and allows you to detect problems on the switch. Once a problem has been detected, you can use VLAN or Port Statistics to determine more precisely the cause of the problem.

The display includes two sections:

- Pie charts and gauges showing traffic breakdown.
- A traffic graph that describes the characteristics of the traffic passing through the device.

You can use the Switch Statistics tool for the following purposes:

- Gaining an overall view of the switched traffic over a specific time period. This can help in discovering problems and analyzing traffic trends.
- Discovering whether the device is being utilized efficiently or not.
- Monitoring the load distribution among VLANs.

- Detecting a large number of broadcast messages sent. This indicates there may be a problem with a station on the network.
- Treating any variable with abnormal behavior as an issue that should be investigated further using other SMON tools.

In general, the Switch Statistics tool can help you spot problems that only become apparent from a high-level view over time. By periodically viewing Switch Statistics, you can detect normal and abnormal behavior of the specific switch configuration.

SMON collects and displays all information in real-time. In addition, information collected during a session can be saved in a report.

Port Statistics Overview

The Port Statistics tool measures the traffic travelling through each port on the selected device. For each port, SMON summarizes the traffic, such as packets into the device and packets from the device. You can sort by port name or by any of the packet types. You can see, for example, the ports generating the most errors.

If you notice that a particular port displays a disproportionate amount of errors, this may suggest that a device connected to the port is responsible for the problem.

You select the most active ports by using a rate base. SMON measures the rate base for all the ports to find the most active ports and then displays these ports and their statistics. This process is called Port TopN.

Using the Port Statistics tool in conjunction with VLAN Statistics and Switch Statistics makes it straightforward to discover the cause of a problem. For example, using Switch Statistics you may discover that there are too many errors on a specific switch. You could then use Port Statistics to help indicate the port from which the problem originates.

Extended Port Statistics Overview

The Extended Port Statistics tool measures the traffic travelling through a specific port. SMON shows details of the traffic on the port, including packet types and error types.

If you notice that a particular port displays a disproportionate amount of errors, Extended Port Statistics can help you identify the type of error occurring most often. This can help you pinpoint the cause of the problem.

VLAN Statistics Overview

The VLAN Statistics tool measures the switched traffic travelling through VLANs on the selected switch. A VLAN consists of stations connected logically rather than physically. A VLAN can be used, for example, to distribute network resources by department, even if the department's stations are not all located in the same area. Therefore, a VLAN can incorporate stations from different devices.

By comparing the load of each VLAN you can discover which VLANs are:

- Utilizing their full capacity.
- Under capacity.
- Over-extended and probably causing a degradation in performance to the users.

VLAN Statistics represents the information as a horizontal bar chart. Using this tool in conjunction with Port Statistics and Switch Statistics makes it straightforward to discover the cause of a problem. For example, using VLAN Statistics you may discover that there are too many broadcast errors on a specific VLAN. You could then use Port Statistics to help indicate from which port the problem originates.

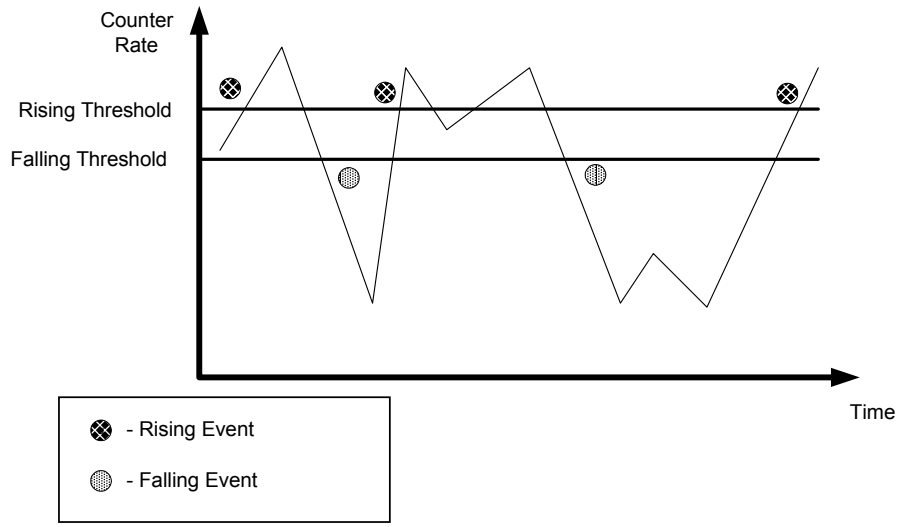
Alarms and Events Overview

The Alarms and Events tool reports when a specified counter on selected ports, or on a device, cross user defined thresholds. The Alarm Wizard provides a simple method for defining upper and lower thresholds of a counter on selected ports or on the device. This definition of the thresholds is an Alarm.

An Event is the crossing of a defined threshold in the direction it was defined. For example, a Rising Event is when the rate of a specified counter on a selected port rises above the defined Rising (upper) Threshold. A Falling Event is when the rate of a specified counter on a selected port falls below the defined Falling (lower) Threshold.

The following figure shows the scheme used to generate Events.

Figure 1-1. Events Overview



The first Event is a Rising Event, caused by the counter rate rising above the Rising Threshold. The second Event is a Falling Event, caused by the counter rate falling below the Falling Threshold. The third Event is a Rising Event. Note, that although the rate falls below the Rising Threshold and then rises above it again, no Event is generated. A new Rising Event can only be generated **after** the rate falls below the Falling Threshold. Similarly, after the fourth Event, although the rate rises above the Falling Threshold and then falls below it again, no Event is generated. A new Falling Event can only be generated **after** the rate rises above the Rising Threshold.

If you want to be informed of the rise or fall of the rate of a particular type of packet on a port, you could use the Alarm Wizard to define thresholds for the packet type on the port. You could then specify whether an Event causes a trap to be sent to the device's manager, or is listed in SMON's Device Event Log, or both.

If you suspect a problem on a port, you can use Alarms and Events to notify you when a problem occurs. You could then use the Port History tool to identify the duration and frequency of the problem. This can help you locate the cause of the problem.

2 Device SMON

This chapter provides information about SMON for Avaya P130 Devices, and contains the following sections:

- **Accessing Device SMON** - Instructions on accessing the Device SMON window.
- **The Device SMON User Interface** - A detailed description of the user interface for Avaya P130 SMON.
- **Working with Device SMON Tools** - Techniques for using Device SMON more effectively.

Accessing Device SMON

To access SMON for the Avaya P130 Devices, click the **Device SMON** tab in the Avaya P130 Manager.

Or

1. Open Avaya SMON Manager Enterprise Switch Statistics.
2. Double-click on the bar corresponding to an Avaya P130 Device.

   Or

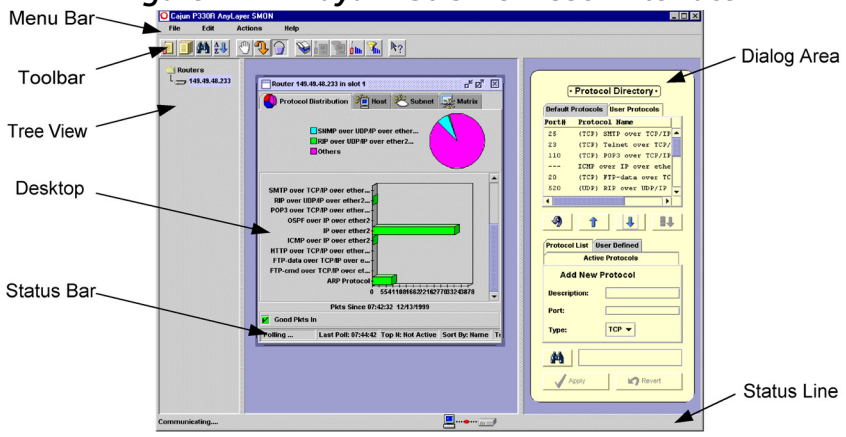
   Right-click on the bar corresponding to an Avaya P130 Device and select **Execute Device SMON**. SMON for the selected Avaya P130 Device opens.

The Device SMON User Interface

The user interface consists of the following elements:

- **Application Tabs** - Tabs for switching between the different views of the Avaya P130 Device.
- **Menu Bar** - Menus for accessing SMON functions.
- **Device SMON Toolbar** - Buttons providing shortcuts to important functions in SMON tools.
- **Dialog Area** - A resizeable window where all dialog boxes appear.
- **Desktop** - A resizeable window where SMON windows are displayed.
- **Status Bar** - An area at the bottom of each application window where information about the current application is displayed.
- **Status Line** - An area at the bottom of the SMON window where the communication status between Avaya P130 SMON and the Avaya P130 Device is displayed.

Figure 2-1. Avaya P130 SMON User Interface



Application Tabs

The Application Tabs provide a method for selecting the view of the device.

To switch to the device management view of the Avaya P130, click **Device Manager**. The Avaya P130 Device Manager opens.

To switch to the Device SMON view of the Avaya P130, click **Device SMON**. Avaya P130 SMON opens.

Device SMON Toolbar

The Toolbar provides shortcuts to the main Device SMON functions and tools. The following table describes the buttons on the toolbar and lists the equivalent menu options.

Table 2-1. Toolbar Buttons

Button	Description	Menu
	Activates the Switch Statistics tool.	**View > Switch Statistics**
	Activates the Port Statistics tool.	**View > Port Statistics**
	Activates the VLAN Statistics tool.	**View > VLAN Statistics**
	Opens the Alarms Table.	**Tools > Alarms Table**
	Toggles Extended Port Statistics.	**Actions > ExtPort Mode**
	Opens the General Options dialog box. For more information, refer to Appendix A, *Using the General Options Dialog Box*.	**File > Options**
	Produces a report file for importing to a spreadsheet or word processor. For more information, refer to Appendix A, *Report Setting*.	**File > Report Now**
	Searches for a specific item. For more information, refer to Appendix A, *Using the Find Dialog Box*.	**Edit > Find**

Table 2-1. Toolbar Buttons (Continued)

Button	Description	Menu
	Temporarily stops and then restarts collection of SMON data. When the collection of SMON data is paused, the background of the chart appears white.	**Actions > Pause**
	Updates the data immediately rather than at the next specified polling time. Resets the polling interval timer.	**Actions > Poll Now**
	Selects a specific list of ports for display and analysis. For more information, refer to Appendix A, *Using the Define Port Filter Dialog Box*.	**Actions > Define Port Filter**
	Activates or deactivates the filter specified in Define Port Filter.	**Actions > Activate Port Filter**
	Selects a specific list of VLANs for display and analysis. For more information, refer to Appendix A, *Using the Define VLAN Filter Dialog Box*.	**Actions > Define VLAN Filter**
	Activates/Deactivates the filter specified in Define VLAN Filter.	**Actions > Activate VLAN Filter**
	Selects the criterion and number of items for TopN filtering. For more information, refer to Appendix A, *Using the Define TopN Filter Dialog Box*.	**Actions > Define TopN Filter**
	Activates/Deactivates the filter specified in Define TopN Filter.	**Actions > Activate TopN Filter**
	Starts the Alarm Wizard.	**Edit > Add Alarm**
	Deletes the selected Alarm.	**Edit > Delete Alarm**
	Saves all changes to the Alarms Table.	**Edit > Apply**
	Undoes all unsaved changes to the Alarms Table.	**Edit > Undo**
	Opens the Device Event Log.	**View > Event Log**
	Opens the online-help.	**Help > Contents**

Dialog Area

The area on the right side of the user interface is where all dialog boxes appear. This area can be resized by dragging the vertical splitter bar with the mouse. When a dialog box opens it replaces the current dialog box open in the Dialog Area.

Desktop

The left side of the application window is the Desktop. This area can be resized by dragging the vertical splitter bar with the mouse. Device SMON application windows can be resized and minimized. Minimized windows are shown at the bottom of the Desktop.

Status Bar

The Status Bar provides important information about the current window. The table below describes the items found in the status bar.

*** Note:** The table below describes all the items that can appear on Avaya P130 SMON window status bars. Only some of the items appear in the status bar for each individual window.

Table 2-2. Status Bar Items

Item	Description
Graph Status	Status of the display. Possible statuses are: frozen, alive.
Last Poll	Time when the last poll was made.
Next Poll	Time remaining before the next poll.
Session Start	Date and time at which this session started.
Sort By	The active sort options (port or VLAN).
TopN	The active TopN variable, or TopN is not active.
Total Number of Items	Total number of items in the collection.
Total Number of Samples	Total number of samples in the collection.

Status Line

The Status Line provides important information about the communication status between the application and the Avaya P130 Device. The following table shows the messages and icons that can appear in the Status Line with a description of their meaning.

Table 2-3. Status Line Items

Message	Icon	Description
`Ready`		The application is ready to communicate with the device.
`Communicating`		The application is currently communicating with the device.
`Error`		The last attempted communication with the device was not successful.

Working with Device SMON Tools

The following sections describe techniques that can help you use Avaya P130 SMON tools more effectively. The topics include:

- **Mouse Actions** - Information on the application's response to various mouse actions.
- **Using Dialog Box Options** - Instructions on using the dialog box options.
- **Generating Reports** - Instructions on how to generate reports.

Mouse Actions

The mouse actions that can be performed in Avaya P130 SMON windows allow you added flexibility when using the applications. describes some of the mouse actions available in some of the SMON applications.

Table 2-4. Mouse Actions

Action	Description
Movement on a graph, bar, or pie	The Info Box is displayed.
Double-click in a graph	The graph freezes and is compressed to show all of the traffic on the device from the time the application was opened until now.
Press **SHIFT** and select a portion of the graph using the mouse	The graph freezes, zooms in, and shows only the portion of the graph that was selected.
Left-click in a graph	Unfreezes the graph.

Using Dialog Box Options

Information entered in a dialog box is not saved until you click the **Apply** button. If you want to undo all changes made to the information in the dialog box, click **Revert**. The information in the dialog box reverts to what it was when the dialog box was first opened. If you have already sent information to the device from the dialog box and you click **Revert**, the information in the dialog box will revert to what it was when it was last saved.

*** Note:** When clicking **Revert**, the application does not poll the device for information. It is therefore possible that the dialog box may not reflect the true state of the device.

To apply the changes made in the dialog box, click **Apply**.

To undo all changes made in the dialog box, click **Revert**.

Generating Reports

SMON allows you to produce two types of reports:

- **Report Now**
- **Auto Report**

Generated reports are text files that can be imported into spreadsheets such as Excel and database programs such as Access. The reports can be generated in a tab delimited format or a comma separated format. When a report is generated, it is saved to the directory specified in the Reports Directory field in the General Options dialog box.

Data in a Report Now includes only the statistics collected during the last polling interval.

For more information on selecting a format and a default directory for reports, refer to Appendix A, *Using the General Options Dialog Box*.

For more information on generating a Report Now, refer to "Using the Report Now Dialog Box" on page 51. For more information on generation Auto Reports, refer to "Using the Auto Report Dialog Box" on page 51.

3 Switch Statistics

Switch Statistics provides you with detailed information about the traffic passing through a switch. For a detailed overview of Switch Statistics, refer to "Switch Statistics Overview" on page 4.

Using Switch Statistics

To access the Switch Statistics window:

Click  .

Or

Select **View > Switch Statistics**. The Switch Statistics window opens.

Switch Statistics displays information using different types of graphs:

- Gauges that show error packets and capacity.
- A pie chart that shows the ratio of Unicast to Non-Unicast packets.
- A traffic graph section that contains line graphs describing the characteristics of the traffic traveling through the switch.

The title of the Switch Statistics window displays the Device IP Address.

The gauges, pie charts and bar graph show data for the time furthest to the right currently visible on the traffic graph. For more information, refer to "Traffic Graph in the Switch Statistics Window" on page 18.

You can use the gauges, pie charts, and the traffic graph to view data from an earlier point in time by scrolling the traffic graph. For more information about modifying the display, refer to Appendix A, *Using the General Options Dialog Box*. For more information on the available toolbar, status bar, and mouse movement options, refer to Chapter 2, *Working with Device SMON Tools*.

Gauges and Pie Charts in the Switch Statistics Window

For Avaya P130 Devices, the gauges at the top of the window display the following information:

Table 3-1. Gauge Variables in Switch Statistics

Variable	Description
Errors	Displays the percentage of packets that contain errors going through the device on a logarithmic scale. If this percentage is high, this indicates that there may be a problem.
Capacity	Displays the proportion of traffic in relation to the device's configured capacity, as a percentage. If the capacity used nears the device's total capability, this indicates there may be a problem.

For Avaya P130 Devices, the pie chart at the top of the window displays the following information:

Table 3-2. Pie Chart Variables in Switch Statistics

Variable	Description
Good Unicasts Into Switch	Displays the percentage of unicast packets entering the device. On most networks, the unicast packets should constitute the vast majority of the pie graph. If non-unicast packets begin to increase, this indicates there may be a problem.
Good Bcasts/ Mcasts Into Switch	Displays the percentage of non-unicast packets entering the device.

SMON updates these gauges and pie charts in real-time according to the specified sampling interval. By viewing the relationships among these two variables, you can learn a lot about the general behavior of the switch.

*** Note:** If contact with the device is lost, then the graphs will display the last data received until communications are restored.

Traffic Graph in the Switch Statistics Window

The lower portion of the Switch Statistics window is a traffic graph. The traffic graph displays selected variables as a line graph, in real-time. To select the color coded variables you want graphed, use the check boxes under the traffic graph.

For more information about available traffic variables, refer to the table below.

Table 3-3. Traffic Variables in Switch Statistics

Variable	Description
Errors Filtered Out By Switch	Error packets reaching the switch.
Good Bcasts/Mcasts Into Switch	Good non-unicast packets traveling into the switch.
Good Pkts In	Good packets traveling into the switch.
Good Unicasts Pkts In	Good unicast packets traveling into the switch.
In Bandwidth (Kbits)	Total number of Kilobits entering the device.
Total Pkts In	Total packets traveling into the switch.

SMON continuously monitors statistics for all available Switch Statistics traffic variables, even those that are not currently selected. For information on finding the 5 highest peaks of traffic, refer to Appendix A, *Using the Find Top5 Peaks Dialog Box*.

The X axis of the graph represents time. The scale on the X axis can be changed using the Samples Per Screen field in the Switch Options dialog box. For more information, refer to Appendix A, *Using the General Options Dialog Box*.

The units of the Y axis for all variables are packets. The scale on the Y axis depends on the maximum value among all of the variables. If the spread of values is wide, the graphs of variables with small values may not be visible. In this case, use the logarithmic traffic display to produce better results (refer to Appendix A, *Logarithmic Display*).

Comparing the traffic graphs to the meters can often point you in the right direction for locating a problem. For example, the pie chart may show an abnormal amount of non-unicast packets, while the bandwidth usage shown in the traffic graph has increased significantly. This may suggest that one of the stations attached to the switch is generating the non-unicast packets. By using VLAN Statistics you can locate the VLAN where the problem originates. By using Port Statistics you can locate the port to which the suspected station is attached.

*** Note:** All counters are in packets except counters that measure bandwidth, which are in kilobits (Kbps), and utilization, which is a percentage.

4 Port Statistics

Port Statistics allows you to see the data passing through each port and LAG connected to the switch. For a detailed overview of Port Statistics, refer to "Port Statistics Overview" on page 5.

Using Port Statistics

To select a set of statistics to display, click one of the radio buttons on the lower right-hand corner of the window. The statistics sets are:

- **Packets** - Counters for selected packet types for each port and LAG.
- **Bandwidth** - The rate at which traffic is entering and exiting each port and LAG.
- **Utilization** - The utilized capacity of each port and LAG.

The variables relevant to the selected set of statistics appear under the graph. Check the variables you want displayed. Statistics for the checked variables are displayed as bar graphs.

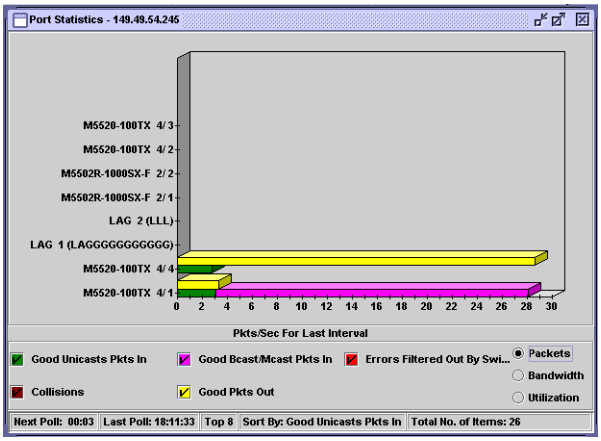
Selecting Ports to Display

By default, information from all ports and LAGs is displayed in the Port Statistics window. You can limit information being displayed to specific ports using Port, VLAN, and TopN filters. For more information, refer to Appendix A, *Using the Define Port Filter Dialog Box*, Appendix A, *Using the Define VLAN Filter Dialog Box*, and Appendix A, *Using the Define TopN Filter Dialog Box*.

Port Statistics Variables

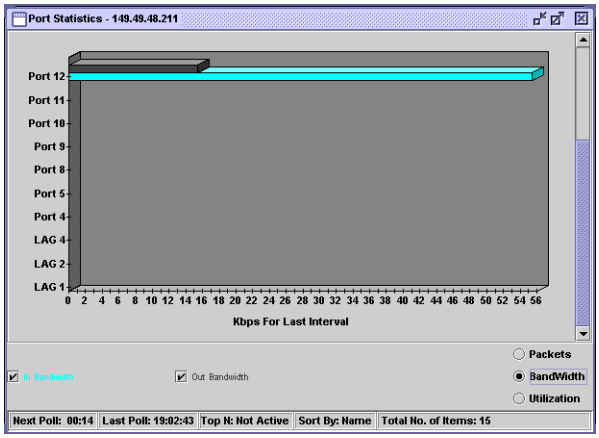
The following graphics provide examples of Avaya P130 Port Statistics windows. Each figure is followed by a list of variables available in each of the windows.

Table 4-1. Port Statistics Variables - Packets



Variable	Description
Collisions	The number of collisions occurring on the port or LAG.
Errors Filtered Out By Switch	The number of error packets filtered out by the switch.
Good Pkts Out	The number of good packets leaving the switch.
Good Unicast Pkts In	The number of good unicast packets entering the switch.

Table 4-2. Port Statistics Variables - BandWidth



Variable	Description
In Bandwidth (Kbits)	The rate at which traffic is entering the port or LAG.
Out Bandwidth (Kbits)	The rate at which traffic is exiting the port or LAG.

Figure 4-1. Port Statistics Window- Utilization

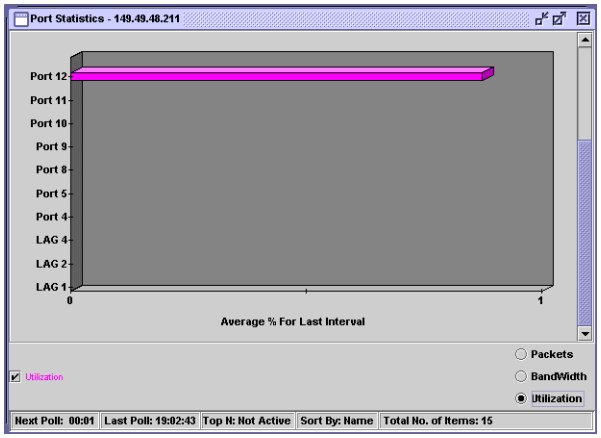


Table 4-3. Port Statistics Variables - Utilization

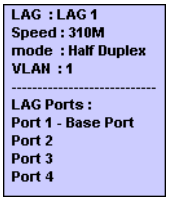
Variable	Description
Utilization	The percentage of the port or LAG's capacity currently being utilized.

The Port Statistics Window

The Port Statistics window is organized as follows:

- The title of the Port Statistics window shows the IP address of the device.
- The X axis represents packets or percentage for Utilization.
- The Y axis represents ports and LAGs. Each row on the graph corresponding to a port or LAG is labeled on the Y axis with a port number, LAG number, or with the user defined name for a port.
- Link Aggregation Groups (LAGs) are displayed. These are a group of ports serving as one logical link. When referencing the LAG's information box (place your cursor over the LAG bar), each port within the LAG appears. In addition, the speed of the LAG is the sum of the speed of all the ports within the LAG.

Figure 4-2. LAG Information Box



To display user defined names for ports, open the View menu and select **Show User Defined Port Names**. A checkmark appears next to Show User Defined Port Names, and the user defined names for ports are displayed in the Port Statistics window.

To hide user defined names for ports, open the View menu and select **Show User Defined Port Names**. The checkmark next to Show User Defined Port Names disappears, and port numbers are displayed in the Port Statistics window.

*** Note:** For high-speed ports with large polling intervals, bandwidth and utilization counters may be inaccurate.

For more information about modifying the display, and the available toolbar, status bar, and mouse movement options, refer to Chapter 2, *Working with Device SMON Tools*.

5 Extended Port Statistics

Extended Port Statistics allows you to see details about the data passing through a specific port or LAG connected to the switch. For a detailed overview of Extended Port Statistics, refer to "Extended Port Statistics Overview" on page 5.

Using Extended Port Statistics

To access the Extended Port Statistics window:

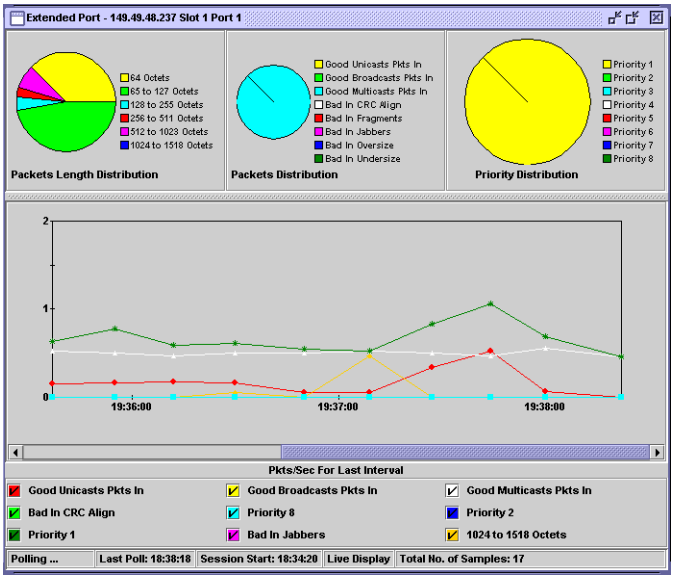
1. Depress  .

   Or

   Select **Actions > ExtPort Mode**.

2. Double-click the port or LAG's bar in the Port Statistics window. The Extended Port Statistics application opens.

Figure 5-1. Extended Port Statistics Window



Extended Port Statistics displays information using two types of graphs:

- Pie charts that shows the ratio of different types of packets.
- A traffic graph section that contains line graphs describing the characteristics of the traffic traveling through the port or LAG.

The title of the Extended Port Statistics window displays the name of the port or LAG selected.

The pie charts show data for the time furthest to the right currently visible on the traffic graph. For more information, refer to "Traffic Graph in the Extended Port Statistics Window" on page 26.

You can use the pie charts and the traffic graph to view data from an earlier point in time by scrolling the traffic graph. For more information on the available toolbar, status bar, and mouse movement options, refer to Chapter 2, *Working with Device SMON Tools*.

Pie Charts in the Extended Port Statistics Window

For Avaya P130 Devices, there are two pie charts at the top of the window. The leftmost pie chart displays Packets Length Distribution and the rightmost pie chart displays Packets Distribution. The following tables provide a list of the statistics found in each of the pie charts:

Table 5-1. Extended Port Statistics - Packets Length Distribution

Variable	Description
64 Octet	Displays the distribution of packets on the port with a packet length of 64 octets.
65 to 127 Octets	Displays the distribution of packets on the port with a packet length of between 65 and 127 octets.
128 to 255 Octets	Displays the distribution of packets on the port with a packet length of between 128 and 255 octets.
256 to 511 Octets	Displays the distribution of packets on the port with a packet length of between 256 and 511 octets.
512 to 1023 Octets	Displays the distribution of packets on the port with a packet length of between 512 and 1023 octets.
1024 to 1518 Octets	Displays the distribution of packets on the port with a packet length of between 1024 and 1518 octets.

Table 5-2. Extended Port Statistics - Packets Distribution

Variable	Description
Good Unicasts Pkts In	Displays the distribution of unicast packets entering the port. On most networks, the unicast packets should constitute the vast majority of the pie graph. If non-unicast packets begin to increase, this indicates there may be a problem.
Good Bcasts/ Mcasts On Segment	Displays the distribution of non-unicast packets entering the port.
Bad In CRC Align	Displays the distribution of packets entering the port with a CRC Alignment error.
Bad In Undersize	Displays the distribution of undersize packets entering the port.
Bad In Oversize	Displays the distribution of oversize packets entering the port.
Bad In Fragments	Displays the distribution of fragmented packets entering the port.
Bad In Jabber	Displays the distribution of jabber packets entering the port.

SMON updates these pie charts in real-time according to the specified sampling interval. By viewing the relationships among these variables, you can learn a lot about the traffic on the port.

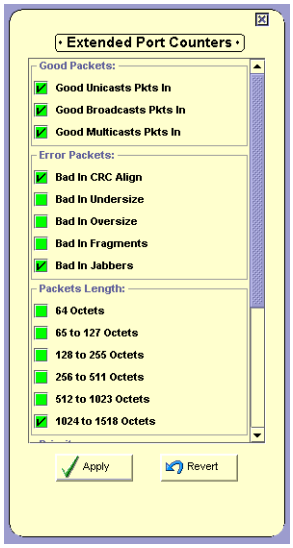
*** Note:** If contact with the device is lost, then the graphs will display the last data received until communications are restored.

Traffic Graph in the Extended Port Statistics Window

The lower portion of the Extended Port Statistics window is a traffic graph. The traffic graph displays selected variables as a line graph, in real-time. To select a set of statistics to display:

1. Select **Actions > ExtPort Counters**. The Extended Port Counters dialog box opens.

Figure 5-2. Extended Port Counters Dialog Box



2. Check the checkboxes next to the counters you want displayed in the traffic graph.

*** Note:** A maximum of 9 counters can be displayed in the traffic graph.

3. Click **Apply**. The selected counters appear under the traffic graph.

4. Check the variables you want displayed. Statistics for the checked variables are displayed as line graphs.

SMON continuously monitors statistics for all available Extended Port Statistics traffic variables, even those that are not currently selected. For information on finding the 5 highest peaks of traffic, refer to Appendix A, *Using the Find Top5 Peaks Dialog Box*.

The following table lists the counters available for display in the Extended Port Statistics traffic graph.

Table 5-3. Traffic Graph Counters in Extended Port Statistics

Variable	Description
Good Unicasts Pkts In	The number of unicast packets entering the port. On most networks, the unicast packets should constitute the vast majority of the pie graph. If non-unicast packets begin to increase, this indicates there may be a problem.
Good Bcasts/ Mcasts On Segment	The number of non-unicast packets on the port segment.

Table 5-3. Traffic Graph Counters in Extended Port Statistics (Continued)

Variable	Description
Bad In CRC Align	The number of packets entering the port with a CRC Alignment error.
Bad In Undersize	The number of undersize packets entering the port.
Bad In Oversize	The number of oversize packets entering the port.
Bad In Fragments	The number of fragmented packets entering the port.
Bad In Jabber	The number of jabber packets entering the port.
64 Octet	The number of packets on the port with a packet length of 64 octets.
65 to 127 Octets	The number of packets on the port with a packet length of between 65 and 127 octets.
128 to 255 Octets	The number of packets on the port with a packet length of between 128 and 255 octets.
256 to 511 Octets	The number of packets on the port with a packet length of between 256 and 511 octets.
512 to 1023 Octets	The number of packets on the port with a packet length of between 512 and 1023 octets.
1024 to 1518 Octets	The number of packets on the port with a packet length of between 1024 and 1518 octets.

SMON continuously monitors statistics for all available Extended Port Statistics traffic variables, even those that are not currently selected. For information on finding the 5 highest peaks of traffic, refer to Appendix A, *Using the Find Top5 Peaks Dialog Box*.

The X axis of the graph represents time. The units of the Y axis for all variables are packets. The scale on the Y axis depends on the maximum value among all of the variables. If the spread of values is wide, the graphs of variables with small values may not be visible. In this case, use the logarithmic traffic display to produce better results (refer to Appendix A, *Logarithmic Display*).

6 VLAN Statistics

VLAN Statistics displays detailed statistics for each VLAN. These statistics can help you maintain proper VLAN configuration. They can also help you pinpoint problems you may discover using Switch Statistics. For a detailed overview of VLAN Statistics, refer to "VLAN Statistics Overview" on page 6.

*** Note:** The statistics collected for each VLAN only include the packets that are sent to and from stations connected to the switch of the device being analyzed. Therefore, any traffic that does not pass through the switch fabric of the selected device is not included in the statistics.

Using VLAN Statistics

To access the VLAN Statistics window:

Click  .

Or

Select **View > VLAN Statistics**. The VLAN Statistics application opens.

To select a set of statistics to display, click one of the radio buttons on the lower right-hand corner of the window. The statistics sets are:

- **Packets** - Counters for selected packet types for each VLAN.
- **Bandwidth** - The rate at which traffic is entering and exiting each VLAN.

The variables relevant to the selected set of statistics appear under the graph. Check the variables you want displayed. Statistics for the checked variables are displayed as bar graphs.

Selecting VLANs to Display

By default, information from all VLANs is displayed in the VLAN Statistics window. You can limit information being displayed to specific VLANs using VLAN and TopN filters. For more information, refer to Appendix A, *Using the Define VLAN Filter Dialog Box*, and Appendix A, *Using the Define TopN Filter Dialog Box*.

VLAN Statistics Variables

The following graphics provide examples of VLAN Statistics windows. Each figure is followed by a list of variables available in each of the windows.

Figure 6-1. VLAN Statistics Window - Packets

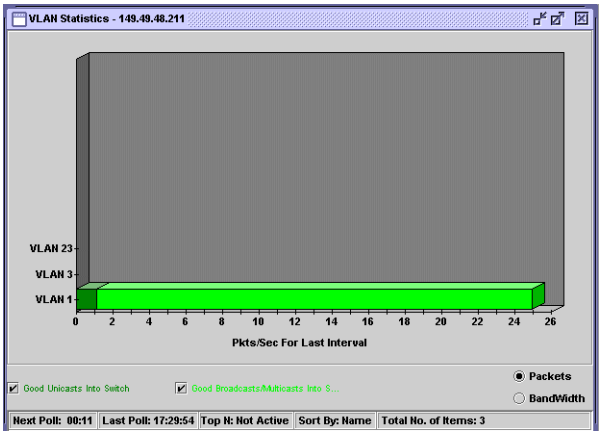


Table 6-1. VLAN Statistics Variables - Packets

Variable	Description
Good Broadcasts/ Multicasts Into Switch	The number of good non-unicast packets entering the switch.
Good Unicasts Into Switch	The number of good unicast packets entering the switch.

Figure 6-2. VLAN Statistics Window - Bandwidth

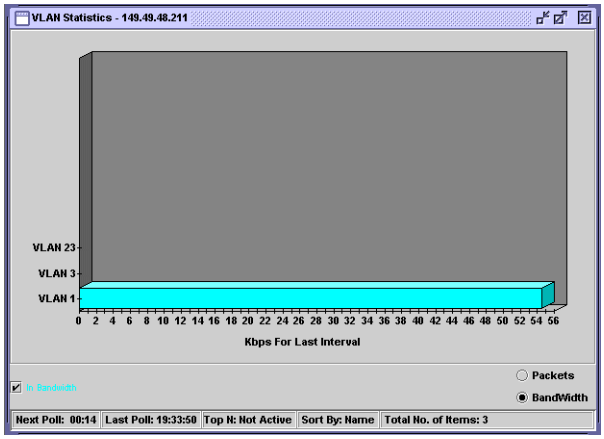


Table 6-2. VLAN Statistics Variables - Bandwidth

Variable	Description
In Bandwidth (Kbits)	The rate at which traffic is entering the VLAN.

VLAN Statistics Window

The VLAN Statistics window is organized as follows:

- The title of the VLAN Statistics window displays the IP address of the device.
- The X axis relates to packets over time or total packets, depending on the display mode (refer to Appendix A, *Display Mode*).
- The Y axis relates to the VLAN name. Only VLANs with member ports or LAGs appear in the window. If no VLANs have been defined, the “Default” or “Generic” VLAN includes all traffic.

For more information about modifying the display, and the available toolbar, status bar and mouse movement options, refer to Chapter 2, *Working with Device SMON Tools*.

7 Alarms and Events

The Alarms and Events tool provides a method for defining thresholds for packet types on a port. When a threshold is crossed, a trap is sent to the device's manager, or the Event is listed in SMON's Device Event Log. The Alarms and Events tool consists of the following parts:

- **Alarms Table** - A table showing the alarms defined for the device.
- **Alarm Wizard** - A wizard that enables you to add new Alarms.
- **Device Event Log** - A list of Events that occurred on the device.

Using Alarms and Events

To use Alarms and Events:

1. Add Alarms using the Alarm Wizard.
2. Review, edit, and delete Alarms defined for the device in the Alarms Table.
3. View Events in SMON's Device Event Log or in the Trap Log of Avaya Network Management Console or HP-OV NNM.

Alarms Table

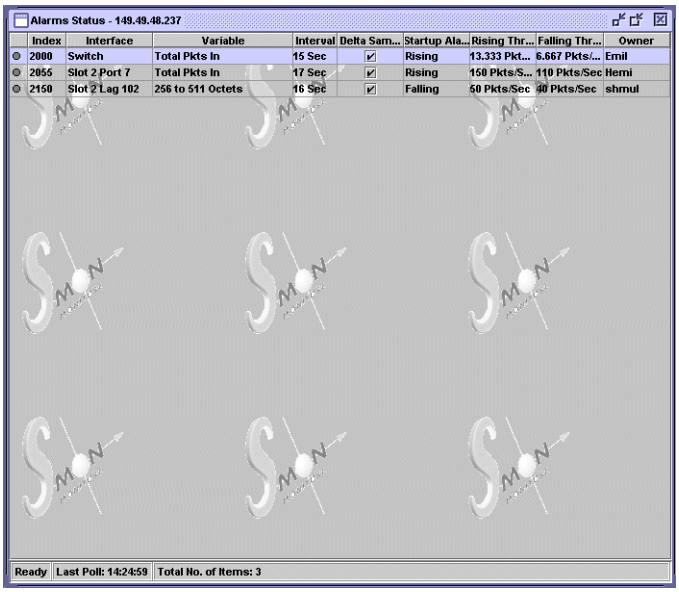
To view a table of all the alarms defined for the device:

Click  .

Or

Select **Tools > Alarms Table**. The Alarms Table opens.

Figure 7-1. Alarms Table



All the Alarms defined for the device are listed in the Alarms Table.

Alarms Table Fields

The following table provides a list of the fields in the Alarms Table with their description.

Table 7-1. Alarms Table Fields

Field	Description
Index	A number identifying the Alarm.
Port	The port or LAG for which the Alarm was configured.
Counter	The counter being monitored by the Alarm.
Interval	The interval at which the counter is compared to the defined thresholds.

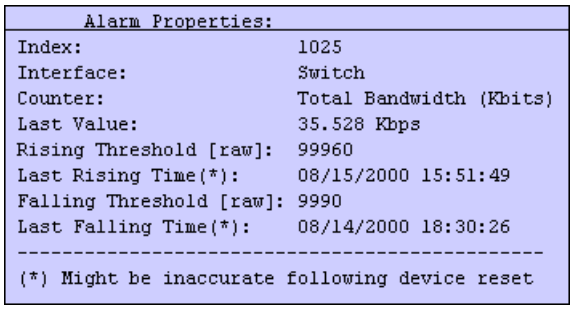
Table 7-1. Alarms Table Fields (Continued)

Field	Description
Method	The method used for monitoring the variable. Possible options are: • **Rate @ Interval** - The Alarm uses the counter's rate in the last interval. • **Total** - The Alarm uses the absolute number of the counter from the time the device was last reset. *** Note:** The Alarms and Events tool can only configure Alarms using the **Rate @ Interval** method. To configure Alarms based on the absolute number of packets, use the CLI (Command Line Interface) or a third-party application.
Startup Alarm	The type of Event that can be generated as the first Event for the Alarm. Possible types are: • **Rising** - The first Event that can be generated must be a Rising Event. If the rate falls below the Falling Threshold before it rises above the Rising Threshold, a Falling Event is not generated. • **Falling** - The first Event that can be generated must be a Falling Event. If the rate rises above the Rising Threshold before it falls below the Falling Threshold, a Rising Event is not generated. • **Rising and Falling** - The first Event generated can be a Rising or a Falling Event.
Rising Threshold	The upper threshold for the counter.
Falling Threshold	The lower threshold for the counter.
Owner	The owner of the Alarm. This is usually the person who created the Alarm.

Tooltips

Tooltips in the Alarms and Events tool provide information about an Alarm. When the cursor is held over the Index field of a row in the Alarms Table a tooltip appears.

Figure 7-2. Alarm Tooltip



The tooltip provides information about the Alarm's definition. In addition, it shows the 'raw' number of packets (or octets) which will generate a Rising or Falling Event. The raw number is the actual number of packets (or octets) that must enter the port in order to generate an Event. This number is equal to the defined rate times the interval.

For example, if an Alarm is defined for Broadcast packets with an Interval of 15 seconds, a Rising Threshold of 1,000 packets per second and a Falling Threshold of 100 packets per second, the raw number for a Rising Event is 15,000 and for a Falling Event 1,500. If 15,000 or more Broadcast packets enter the port in a 15 second interval, a Rising Event is generated.

The following table provides a list of the fields in Tooltip with their descriptions.

Table 7-2. Tooltip Fields

Field	Description
Index	A number identifying the Alarm.
Port	The port or LAG for which the Alarm was configured.
Counter	The counter being monitored by the Alarm.
Last Value	The value of the counter calculated for the last interval.
Rising Threshold [raw]	The Rising Threshold expressed as the number of packets or octets in an interval.
Last Rising Time	The time of the last Rising Event.
Falling Threshold [raw]	The Falling Threshold expressed as the number of packets or octets in an interval.

Table 7-2. Tooltip Fields (Continued)

Field	Description
Last Falling Time	The time of the last Falling Event.

Editing Alarms

Alarms can be edited and deleted using the Alarms Table.

To edit an Alarm, change the Alarm's parameters in the Alarms Table.

To delete an Alarm:

1. Select an Alarm.
2. Click  .

   Or

   Select **Edit > Delete Alarm**. The Alarm is deleted from the Alarms Table.

To save the changes to the Alarms Table:

Click  .

Or

Select **Edit > Apply**. All changes to the Alarm Table are saved.

To undo all unsaved changes to the Alarms Table:

Click  .

Or

Select **Edit > Undo**. All changes to the Alarm Table are undone.

Alarm Wizard

This section provides the information you need to use the Alarm Wizard. It contains the following topics:

- **Overview of the Alarm Wizard** - An overview of the function of the Alarm Wizard.
- **Activating the Alarm Wizard** - Instructions on how to run the Alarm Wizard.
- **Alarm Wizard Screens** - Detailed explanations about each of the steps in the Alarm Wizard.

Overview of the Alarm Wizard

The Alarm Wizard consists of several screens designed to enable you to easily define Alarms for ports on the device. You can use the wizard to define an alarm for a single port or for multiple ports. When defining an alarm for more than one port, the wizard creates a separate Alarm for each port.

*** Note:** A maximum of 150 Alarms can be defined on a single device.

Activating the Alarm Wizard

To activate the Alarm Wizard:

Click  .

Or

Select **Edit > Add Alarm**. The Welcome screen of the Alarm Wizard opens.

Alarm Wizard Screens

This section provides detailed information on each of the Alarm Wizard's screens. To accept the default options for any screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Alarm Wizard without making any changes, click **Cancel**.

Welcome to the Alarm Wizard

Welcome to the Alarm Wizard. The Alarm Wizard provides a simple method for defining Alarms for the device.

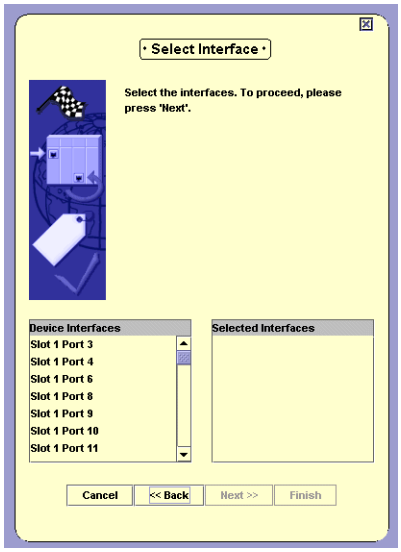
Figure 7-3. Alarm Wizard - Welcome Screen

To continue, click **Next**. The Alarm Wizard continues with the **Select Port** screen.

Select Port

The Select Port screen of the Alarm Wizard allows you to select ports and LAGs to be monitored by the Alarm.

Figure 7-4. Alarm Wizard - Select Port



The ports and LAGs on the device are listed in the Device Ports list.

To select ports and LAGs to monitor, double-click a port or LAG in the Device Ports list. The selected port or LAG appears in the Selected Ports list.

To remove ports or LAGs from the Selected Ports list, double-click a port or LAG in the Selected Ports list. The selected port or LAG is removed from the Selected Ports list and appears in the Device Ports list.

To define an Alarm for the entire device, add **Device** to the Selected Ports list.

When defining an Alarm for more than one port, a separate Alarm is created for each port.

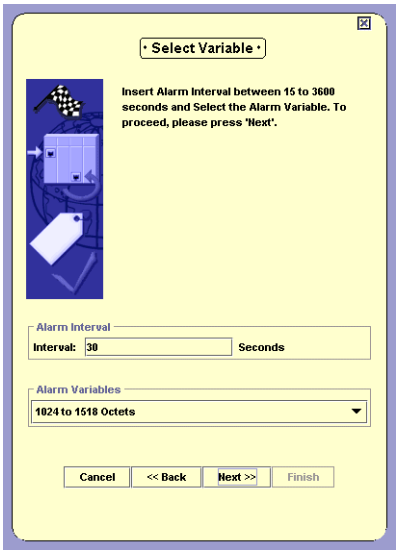
*** Note:** A maximum of 150 Alarms can be defined on a device.

When you finish selecting ports and LAGs to monitor, click **Next**. The Alarm Wizard continues with the **Select Interval and Counter** screen.

Select Interval and Counter

The Select Interval and Counter screen of the Alarm Wizard enables you to select a variable to be monitored by the Alarm, and the interval at which SMON gets the rate for the counter from the device.

Figure 7-5. Alarm Wizard - Select Interval and Counter Screen



Enter a number in the Alarm Interval field. This is the interval at which SMON will get the rate of the counter from the device.

Select a counter from the Alarm Counters pull-down list. This is the counter that will be monitored by the Alarm.

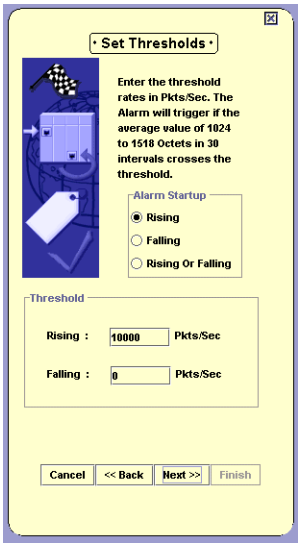
When you finish configuring the polling interval and selecting a counter to monitor, click **Next**. The Alarm Wizard continues with the **Set Thresholds** screen.

Set Thresholds

The Set Thresholds screen enables you to configure the behavior of the Alarms and Events tool when SMON is started, and to configure thresholds for the Alarm.

There are two thresholds, a Rising Threshold and a Falling Threshold. If the rate of the selected counter rises above the selected Rising Threshold, an Event is generated. If the rate of the selected counter falls below the selected Falling Threshold, an Event is generated. For more information about Thresholds, refer to "Alarms and Events Overview" on page 6.

Figure 7-6. Alarm Wizard - Set Thresholds



To configure the behavior of the Alarms and Events tool when SMON is started, select a radio button in the Alarm Startup field. The options are:

- **Rising** - The first Event that can be generated must be a Rising Event. If the rate falls below the Falling Threshold before it rises above the Rising Threshold, a Falling Event is not generated.
- **Falling** - The first Event that can be generated must be a Falling Event. If the rate rises above the Rising Threshold before it falls below the Falling Threshold, a Rising Event is not generated.
- **Rising and Falling** - The first Event generated can be a Rising or a Falling Event.

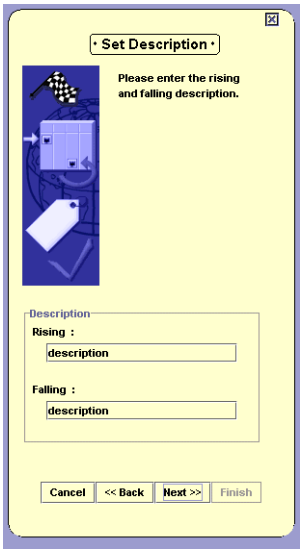
To configure the thresholds, enter values in the Rising and Falling fields. The threshold levels are in packets or octets per second.

When you finish configuring the startup behavior and thresholds, click **Next**. The Alarm Wizard continues with the **Descriptions** screen.

Descriptions

The Descriptions screen enables you to give names to the Rising and Falling Events of the Alarm.

Figure 7-7. Alarm Wizard - Descriptions



To configure the names of Rising and Falling Events, enter a description in the appropriate fields. These descriptions will appear in SMON's Device Event Log.

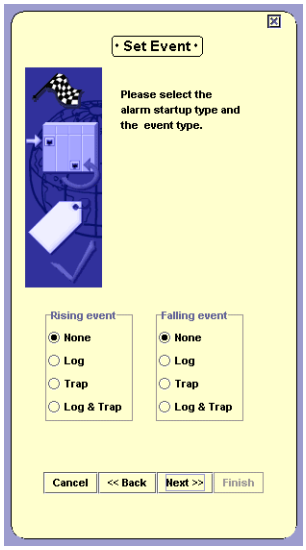
*** Note:** When configuring Alarms for multiple ports, the Event descriptions will be identical for the Events of all the Alarms being created.

When you finish configuring Event descriptions, click **Next**. The Alarm Wizard continues with the **Set Event** screen.

Set Event

The Set Event screen of the Alarm Wizard allows you to determine the action SMON takes when an Event occurs.

Figure 7-8. Alarm Wizard - Set Event



To configure the action SMON takes when a Rising Event occurs, select a radio button in the Rising event fields. To configure the action SMON takes when a Falling Event occurs, select a radio button in the Falling event fields. The possible actions are:

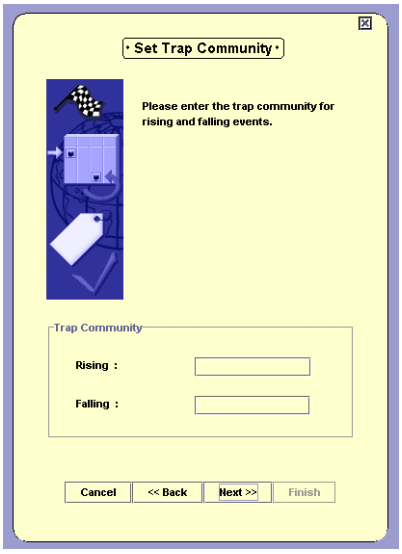
- **None** - No action is taken when the Event occurs.
- **Log** - The Event is recorded in SMON's Device Event Log.
- **Trap** - A trap is sent to the manager of the device. This trap can be viewed in the Trap Log in Avaya Network Management Console or HP NNM.
- **Log & Trap** - The Event is recorded in SMON's Device Event Log and a trap is sent to the manager of the device.

When you finish configuring Event parameters, click **Next**. If one or more of the Event actions is **Trap** or **Log & Trap**, the Alarm Wizard continues with the **Set Trap Community** screen. Otherwise, the Alarm Wizard continues with the **Summary** screen.

Set Trap Community

The Set Trap Community screen of the Alarm Wizard allows you to configure community for Rising and Falling Events. The community is needed to send traps to the station of the device's manager.

Figure 7-9. Alarm Wizard - Set Trap Community



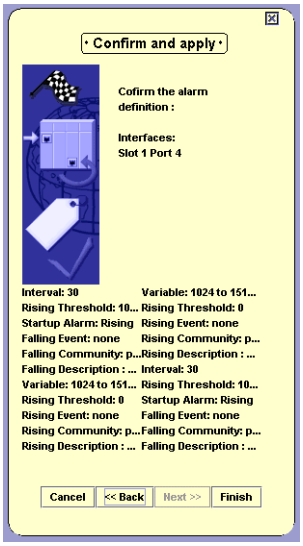
To configure the community for Events, enter the community of the station of the device's manager in the Rising and Falling fields.

When you finish configuring the trap community, click **Next**. The Alarm Wizard continues with the **Summary** screen.

Summary

The Summary screen of the Alarm Wizard provides a summary of the options selected in the previous screens.

Figure 7-10. Summary



To make any changes to the summary information:

1. Click **Back** until you reach the appropriate screen.
2. Change the configuration parameters.
3. Click **Next** until you reach the Summary screen.

To create the Alarm, click **Finish**. The Alarm is created and appears in the Alarms Table.

Device Event Log

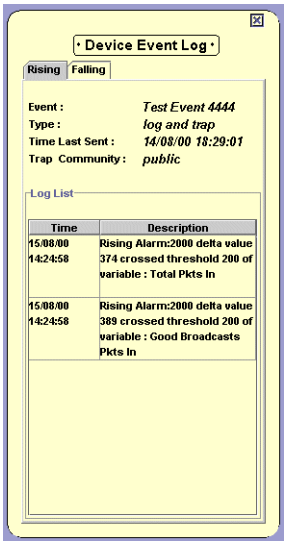
The Device Event Log provides a list of Events that triggered Alarms with an action of **Log**. To view the Event Log:

Click  .

Or

Select **View > Event Log**. The Device Event Log opens.

Figure 7-11. Device Event Log



The Device Event Log has two tabs, one for Rising Events and one for Falling Events. To view the Device Event Log for Rising or Falling Events:

1. Select an Alarm in the Alarms Table.
2. Click the appropriate tab. The Device Event Log opens to the selected Event type for the Alarm.

The Device Event Log window has two parts. The upper part provides a description of the Event. The following table provides a list of the fields describing the Event and their descriptions.

Table 7-3. Event Description Fields

Field	Description
Event	A user defined description of the Event.
Type	The action taken by SMON. Possible actions are: • **None** - No action was taken when the event occurred. • **Log** - The Event was recorded in SMON's Device Event Log. • **Trap** - A trap was sent to the manager of the device. This trap can be viewed in the Trap Log in Avaya Network Management Console or HP NNM. • **Log & Trap** - The Event was recorded in SMON's Device Event Log and a trap was sent to the manager of the device.
Time Last Sent	The latest date and time this Event occurred.
Trap Community	The Trap Community of the Event.

The lower part of the window is the Log List. This is a log of the selected Alarm's Events. Entries will appear in the Log List only if the Type of Event is **Log** or **Log & Trap**. The following table provides a list of the fields in the Log List and their descriptions.

Table 7-4. Event Log Fields

Field	Description
Time	The date and time of the Event.
Description	A detailed description of the traffic that triggered the Event.

A SMON Dialog Boxes

This appendix consists of dialog boxes that appear within the Avaya P130 SMON tools.

Using the General Options Dialog Box

This dialog box enables you to change the general options for SMON for the Avaya P130 Device.

To access the General Options dialog box:

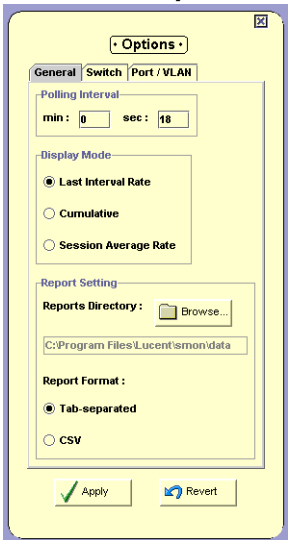
1. Click  .

   Or

   Select **File > Options**. The Options dialog box opens.

2. Click the **General** tab at the top of the dialog box. The General Options dialog box opens.

Figure A-1. General Options Dialog Box



The General Options dialog box enables you to change the following options:

- **Polling Interval**
- **Display Mode**
- **Report Setting**

Polling Interval

The Polling Interval option allows you to configure the way in which information is collected. If you make the polling interval smaller, you receive more accurate data at the expense of using more network resources. The objective is to use the ideal polling interval that provides accurate data using minimum network resources.

To change the polling interval, enter the number of minutes and seconds for the new polling interval in the min and sec fields.

*** Note:** The polling interval must be between 15 seconds and 59 minutes and 59 seconds.

*** Note:** The new polling interval will take effect when the device is next polled.

Display Mode

The Display Mode option allows you to select one of three display modes. Select a display mode using the radio buttons.

The display mode options are:

- Last Interval Rate - The statistics gathered since the last poll.
- Cumulative - The accumulated statistics gathered since the start of the session.
- Session Average Rate - The average of the statistics per polling interval since the start of the session.

Report Setting

The Report Setting option enables you to select a default directory for saving reports and configure the report format.

To select a default directory for saving reports:

1. Click **Browse**. A directory browser window opens.
2. Navigate to the directory in which you want to save reports.
3. Click **Open**. The path appears in the Reports Directory field.

Select a report format using the radio buttons.

The report format options are:

- Tab-separated - The report is formatted as a tab-delimited file.
- CSV - The report is formatted as a comma-delimited file.

Using the Report Now Dialog Box

This dialog box enables you to generate a report with the statistics from the last time the device was polled.

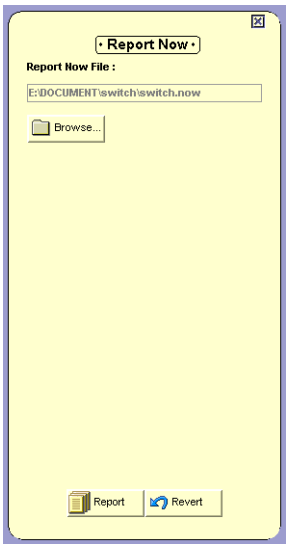
To access the Report Now dialog box:

1. Click  .

   Or

   Select **File > Report Now**. The Report Now dialog box opens.

Figure A-2. Report Now Dialog Box



2. To change the filename and directory in which to save the report:

   a. Click **Browse**. A file browser window opens.

   b. Select a directory and filename for the reports.

3. Click **Report**. The report is generated.

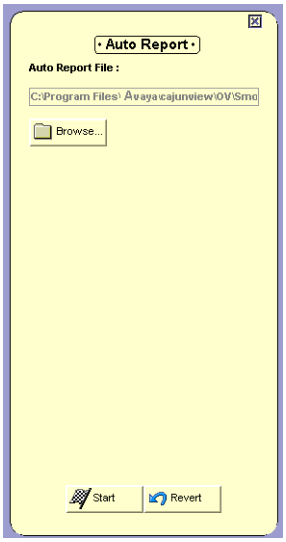
Using the Auto Report Dialog Box

This dialog box enables you to start and stop generating reports automatically.

To access the Auto Report dialog box:

1. Select **File > Auto Report**. The Auto Report dialog box opens.

Figure A-3. Auto Report Dialog Box



2. To change the filename and directory in which to save the reports:
   a. Click **Browse**. A file browser window opens.
   b. Select a directory and filename for the reports.
3. Click **Start**. The first report is generated immediately. Subsequent reports are generated according to the polling interval.

To stop generating Auto Reports:

1. Select **File > Auto Report**. The Auto Report dialog box opens.
2. Click **Stop**.

Or

1. Close the application for which you are running the Auto Report. Auto Reports are no longer generated.

CAUT

Auto Reports are automatically saved to the network management station (NMS). If Auto Reports are generated on many devices for a long period of time, and none of the files are deleted, the NMS's hard disk may become full.

If this occurs, stop the applications that are generating automatic reports and delete the files that are not required.

Using the ExtPort/Switch Options Dialog Box

This dialog box enables you to change the display options for Switch Statistics and Extended Port Statistics for the Avaya P130 Device.

To access the Switch Options dialog box:

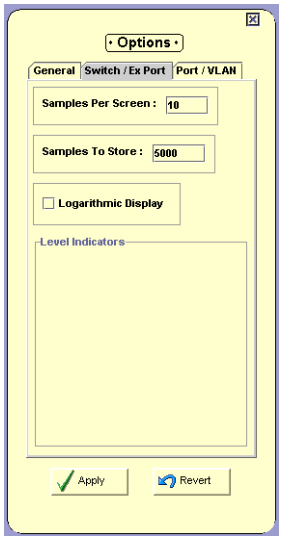
1. Click  .

   Or

   Select **File > Options**. The Options dialog box opens.

2. Click the **ExtPort/Switch** tab at the top of the dialog box. The Extended Port/Switch Options dialog box opens.

Figure A-4. ExtPort/Switch Options Dialog Box



*** Note:** Changes made in the ExtPort/Switch Statistics Options dialog box apply to Extended Port Statistics and Switch Statistics.

The ExtPort/Switch Options dialog box enables you to change the following options:

- **Samples Per Screen**
- **Samples To Store**
- **Logarithmic Display**
- **Level Indicators**

Samples Per Screen

The Samples Per Screen option enables you to configure the number of samples visible in the Traffic Graph. To change the number of samples visible on the screen, enter a number in the Samples Per Screen field.

*** Note:** The number of samples per screen must be between 3 and 500.

Samples To Store

The Samples To Store option enables you to configure the number of samples saved in the Traffic Graph. You can scroll the Traffic Graph to view all of the saved samples. To change the number of stored samples, enter a number in the Samples To Store field.

*** Note:** The number of samples to store must be between 100 and 8000.

Logarithmic Display

The Logarithmic Display option enables you to specify whether or not you want the Traffic Graph to be displayed on a logarithmic scale. This is useful when the values in the graph are small.

To view the traffic graph with a logarithmic display, check the Logarithmic Display checkbox.

To view the traffic graph with a non-logarithmic display, uncheck the Logarithmic Display checkbox.

Level Indicators

The Level Indicators option enables you to change the appearance of the gauges at the top of the Switch Statistics window. This allows you to determine the range corresponding to the colors of the gauge.

To configure the level indicators, slide the markers for each of the gauges to the desired percentages.

The leftmost marker sets the percentage at which the color on the gauge changes from green to yellow. The rightmost marker sets the percentage at which the color on the gauge changes from yellow to red.

Using the Port/VLAN Options Dialog Box

This dialog box enables you to change the display options for Port and VLAN Statistics for the Avaya P130 Device.

To access the Port/VLAN Options dialog box:

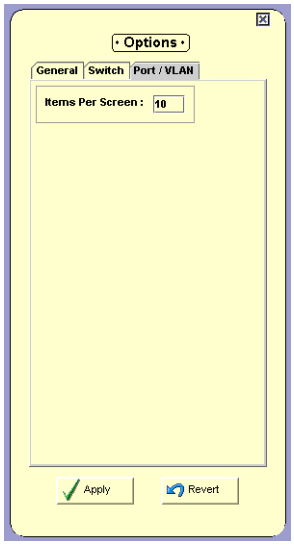
1. Click  .

   Or

   Select **File > Options**. The Options dialog box opens.

2. Click the **Port/VLAN** tab at the top of the dialog box. The Port/VLAN Options dialog box opens.

Figure A-5. Port/VLAN Options Dialog Box



The Port/VLAN Options dialog box enables you to change the following option:

- **Items Per Screen**

Items Per Screen

The Items Per Screen option enables you to configure the number of ports, LAGs, and VLANs visible in the Port and VLAN Statistics windows. To change the number of items visible on the screen, enter a number in the Items Per Screen field.

*** Note:** The number of items per screen must be between 1 and 15.

Using the Find Dialog Box

Depending on the application you have initiated this option from, the Find option allows you to locate a specific VLAN/port/LAG intersection in the application window.

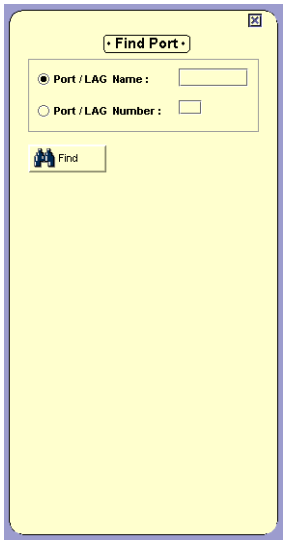
To search:

1. Click  .

   Or

   Select **Edit > Find**. The Find dialog box opens.

Figure A-6. Find Dialog Box (for Ports)



   The information you are prompted for in the Find dialog box differs depending on the application from which you have initiated it.

   For more detail, refer to "Finding a Port" on page 57, "Finding a VLAN" on page 57, "Finding a LAG" on page 57.

2. Enter the information in the dialog box and click **Find**. The VLAN/port/LAG intersection found is highlighted in the application for easy identification.

To remove the highlight from the application window, click the graph. The highlight disappears.

*** Note:** The Find button changes to Find Next until all instances of the search information have been found.

*** Note:** Since the number of VLANs/ports/LAG intersections may change between sampling intervals, the one you search for may move out of focus with the next refresh. In this case, you may search again or scroll the display.

Finding a VLAN

There are several ways to enter a value to find a VLAN. The following is a list of the types of values to enter in the Find dialog box:

- The full VLAN Name, such as "`Marketing`".
- The first part of the VLAN's name, such as "`Mark`". SMON will find the first time the value appears.
- The VLAN Number.

Finding a Port

There are several ways to enter a value to find a port.

To search for a port by name:

1. Click the Port Name radio button.
2. Enter the port name or part of the port name in the Port Name field.
3. Click **Find**.

*** Note:** If you enter only part of the name, SMON will find the first time the value appears.

To search for a port by number:

1. Enter the port number in the Port field.
2. Click **Find**.

Finding a LAG

To find a LAG:

1. Click the Port Name radio button.
2. Enter the LAG name in the Port Name field.
3. Click **Find**.

Using the Define Port Filter Dialog Box

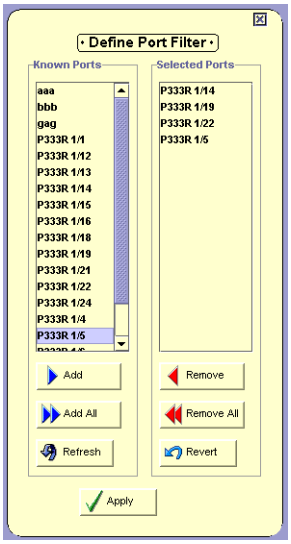
To open the Define Port Filter dialog box:

1. Click  .

   Or

   Select **Actions > Define Port Filter**. The Define Port Filter dialog box opens.

Figure A-7. Define Port Filter Dialog Box



*** Note:** Filtering changes are only applied after clicking **Apply**.

To add ports to the List of Selected Ports:

Select ports from the List of Known Ports and click **Add**.

Or

Double-click ports in the List of Known Ports. The selected ports appear in the List of Selected Ports.

To select all ports, click **Add All**. All ports are added to the List of Selected Ports.

To remove ports from the List of Selected Ports:

Select the ports in the List of Selected Ports and click **Remove**.

Or

Double-click ports in the List of Selected Ports. The selected ports are removed from the List of Selected Ports.

To remove all items from the List of Selected Ports, click **Remove All**. All ports are removed from the List of Selected Ports.

To refresh the list of ports in the Known Ports list, click **Refresh**.

To activate the port filter, click **Apply**.

To deactivate the port filter, click  .

Using the Define VLAN Filter Dialog Box

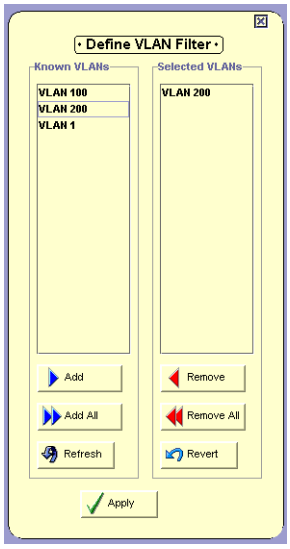
To open the Define VLAN Filter dialog box:

Click  .

Or

Select **Actions > Define VLAN Filter**. The Define VLAN Filter dialog box opens.

Figure A-8. Define VLAN Filter Dialog Box



*** Note:** Filtering changes are only applied after clicking **Apply**.

To add VLANs to the List of Selected VLANs:

Select VLANs from the List of Known VLANs and click **Add**.

Or

Double-click VLANs in the List of Known VLANs. The selected VLANs appear in the List of Selected VLANs.

To select all VLANs, click **Add All**. All VLANs are added to the List of Selected VLANs.

To remove VLANs from the List of Selected VLANs:

Select the VLANs in the List of Selected VLANs and click **Remove**.

Or

Double-click on a VLAN the List of Selected VLANs. The selected VLANs are removed from the List of Selected VLANs.

To remove all items from the List of Selected VLANs, click **Remove All**. All VLANs are removed from the List of Selected VLANs.

To refresh the list of VLANs in the Known VLANs list, click **Refresh**.

To activate the VLAN filter, click **Apply**.

To deactivate the VLAN filter, click  .

2. Enter the subnet mask in the Mask field.

Using the Define TopN Filter Dialog Box

You can also filter using the TopN option. TopN filtering differs from item filtering in that SMON chooses the items with the heaviest traffic. The TopN filter produces a report for the 1-15 (*N*) most active items on the network.

SMON chooses the TopN items by a rate base which you select from the Define TopN Filter dialog box. SMON measures the rate base for all the items to find the TopN items and then displays these items and their statistics.

*** Note:** If you previously defined a filter, TopN will select the TopN items from the specified subset.

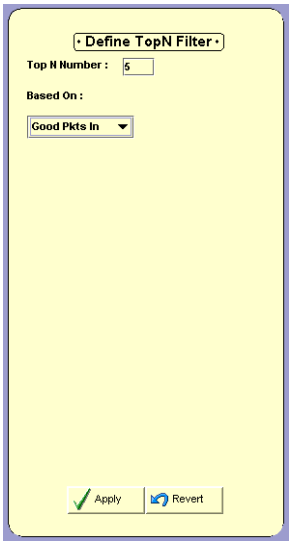
To select the criterion for TopN Configuration:

1. Click  .

   Or

   Select **Actions > Define TopN Filter**. The Define TopN Filter dialog box opens.

Figure A-9. Define TopN Filter Dialog Box



2. Select the number of items and the criterion for the TopN filter.

*** Note:** Filtering changes are only applied after clicking **Apply**.

The dialog box contains the following fields:

- TopN Number - Enter the number of items to be displayed when you activate TopN.
- Based On - Select the criterion for deciding which items fall in the TopN. The rate base can be any one of the available counters.

Using the Find Top5 Peaks Dialog Box

In Switch Statistics, you can use the Find Top5 Peaks option to find the largest value of any counter. This can help you find when a problem occurred or when a problem was most severe.

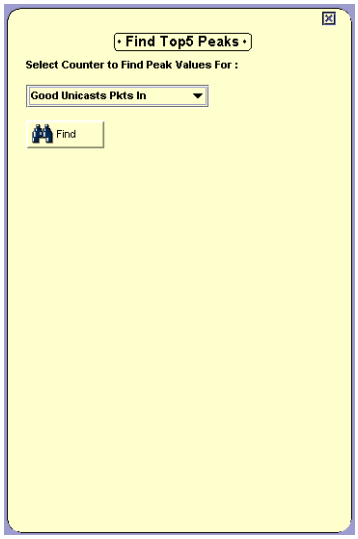
To select the criterion for Find Top5 Peaks:

1. Click  .

   Or

   Select **Edit > Find**. The Find Top5 Peaks dialog box opens.

Figure A-10. Find Top5 Peaks Dialog Box



2. Select a counter.
3. Click **Find**. The display scrolls the graph to the peak value and a vertical line appears at the peak value. The pie values at the top are correct for this time period. The graph is frozen.

To find the next highest peak:

1. Click **Find Next**. The displays scrolls to the next highest peak value in the graph.

In Switch Statistics, all counters are listed in the Find Top5 Peaks dialog box, including those counters not currently displayed in the Traffic Graph.

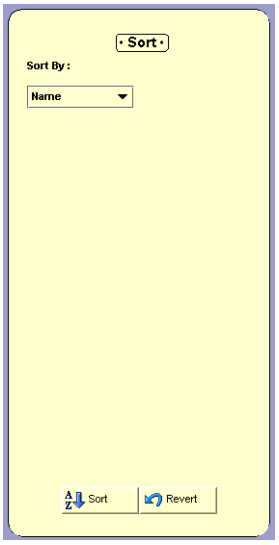
Using the Sort Dialog Box

You may sort the display by one of the available categories in the list.

To perform a sort:

1. Select **Actions > Sort**. The Sort dialog box opens.

Figure A-11. Sort Dialog Box



2. Select the appropriate sorting criterion from the Sort By drop-down listbox.

3. Click **Sort**. Sorting begins immediately. New information is sorted at each subsequent polling.

When sorting by Name, the bars appear in ascending order from bottom to top. When sorting by packets, the bars appear in descending order (most traffic at the bottom, least traffic at the top).

B Setting Up the SMON License

The Avaya SMON Manager (with Avaya Network Management) package contains a license which allows you to use SMON on a permanent basis. Avaya Network Management does not include this license. Instead a trial version of SMON is included. This trial version expires 60 days after its first use. In addition, an embedded license is required for SMON for Avaya P130 Devices.

For information on entering the SMON license, refer to the *Avaya SMON Manager User Guide*.

SMON Embedded License

To use SMON with Avaya P130 Devices, you must enter a valid embedded license via the Avaya P130 CLI. A unique License is required for each Avaya P130 Device. A group License is valid for the number of devices for which it was purchased.

For information on entering the Avaya P130 embedded SMON License, refer to the *SMON Installation Guide*.

Device SMON for Avaya P130 Devices does not require a license for the first 60 days. After 60 days, this application will not run unless you enter a valid embedded SMON license.

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