
Agilent Technologies

Switch Advisor

Getting Started



Agilent Technologies

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Introduction to Switch Advisor

Introduction to Switch Advisor

Welcome to Agilent Technologies Switch Advisor

This Getting Started Guide walks you through everything you need to get started with the Agilent Switch Advisor, including:

- Requirements for running Switch Advisor
- How to install the Switch Advisor software
- How to use the main features of the Switch Advisor software
- Troubleshooting scenario

By following the troubleshooting scenario in Chapter 2, you will learn how to unleash the powerful troubleshooting features available to analyze your switched infrastructure.

What is Switch Advisor?

Collect Data from SNMP Managed Devices

Switch Advisor is a software product that allows you to collect data from any SNMP-managed device on your network. Switch Advisor displays how many packets were monitored going in and out of each port on the managed device, and other vital information about the operation of your network. Switch Advisor gives you the information you need to:

- Track faults
- Spot bottlenecks
- Identify overloaded ports and devices
- and much more

Switch Advisor provides real data about the day-to-day running of your managed devices and helps you to make sensible decisions about:

- How and when to segment your network
- How to plan for future growth
- How to optimize your network usage

What You Need to Run Switch Advisor

PC Requirements

Your PC must be a Pentium-based machine with a minimum of 64 Mbytes of RAM (128 Mbytes RAM for NT4 and Windows 2000), fitted with a LAN card, and running any one of these operating systems:

- Windows NT4
- Windows 2000
- Windows 98
- Windows 95


About the LAN Card

Most recent ISA, PCI, or PCMCIA LAN cards will work without any problems. Some older cards, such as NE2000 cards and clones, may not work reliably on large LANs and when network usage is heavy.

If you find that a particular card does not work, or stops working after a short time, try a different make or model.

Installing Switch Advisor

Switch Advisor has been shipped as part of the Advisor LAN/WAN/ATM software and Advisor Software Edition with software version 11.8 or higher, and is installed automatically when you load any one of these programs.

Once you have installed the application software, you will start one of the application programs, then click the Switch Advisor button  to launch Switch Advisor.

If you Purchased the RMON License

- 1 Launch the Advisor LAN, WAN, or ATM application program on the Advisor, or the Advisor Software Edition program on the PC.
- 2 Click the Configuration button.
- 3 Select the License Software tab.
- 4 Select the Switch Advisor RMON software (J5425A) checkbox.
- 5 Type in the Software License key and click OK. The license key number is on the J5425A RMON License Key document included in your shipment.



After you have entered the license key number, you will see a message indicating that the software license was successfully activated. If this message is not displayed, check your license key and re-enter the correct number.

Finding More Information

The Switch Advisor has online help. You can quickly find information for the currently displayed measurement view or dialog by pressing F1.

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Getting Started

Getting Started


Getting Started Using Switch Advisor

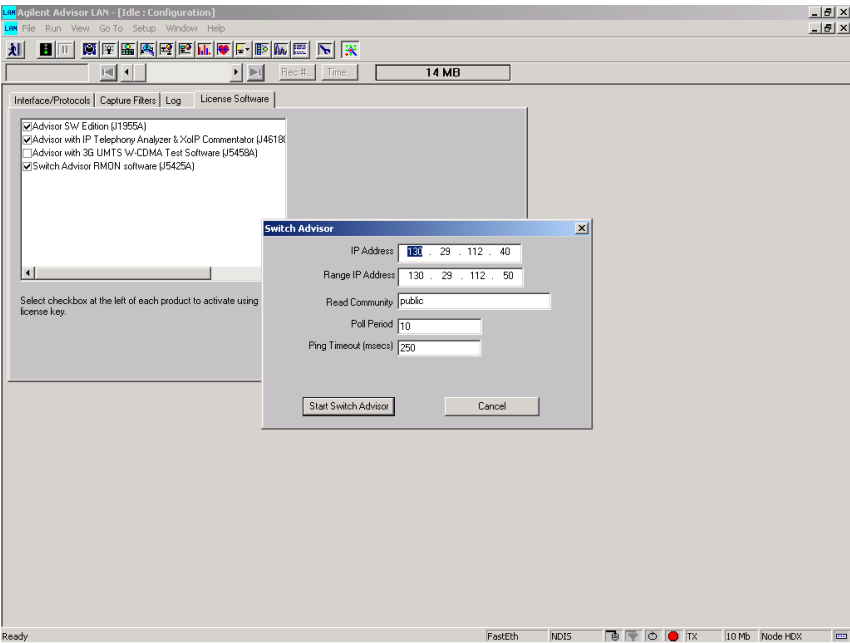
Switch Advisor is a complimentary tool of the Agilent Advisor protocol analyzer that helps troubleshoot your switched infrastructure by allowing access to MIB and RMON information that is stored in all SNMP-supported devices. By remotely viewing these statistics, you can quickly identify which collision domain(s) requires a more in-depth analysis to identify the source of a network problem.

Follow Along with Your Switch Advisor

The most effective way to learn how to use the Switch Advisor is to examine a typical troubleshooting scenario. Use your Switch Advisor in the following troubleshooting tasks to familiarize yourself with Switch Advisor functionality.

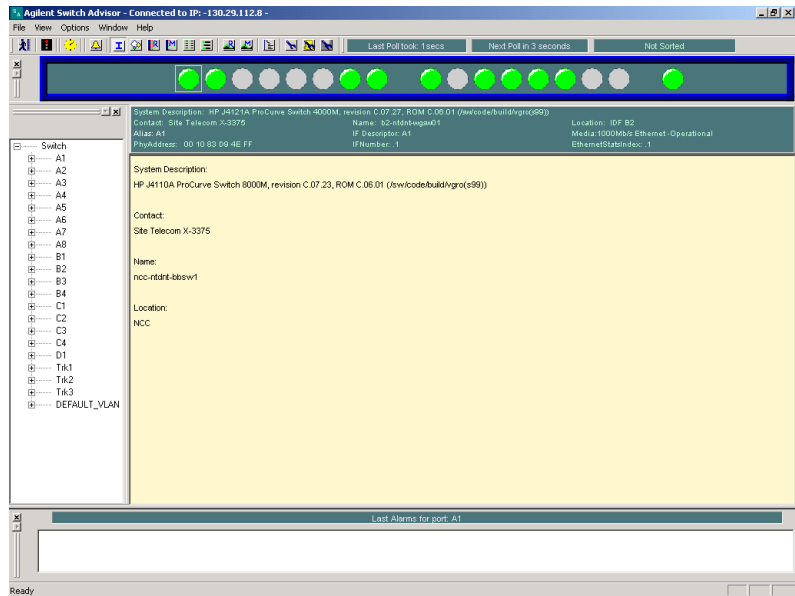
Start Up Switch Advisor

- 1 Click the Switch Advisor button  in the Advisor tool bar.
- 2 In the Switch Advisor configuration dialog that appears, type the IP address of the desired SNMP device. You can type in a range of IP addresses to scan for multiple SNMP-supported devices.



The default settings will work for most situations. However, you can modify the Read Community, Poll Period, and Ping Timeout default settings.

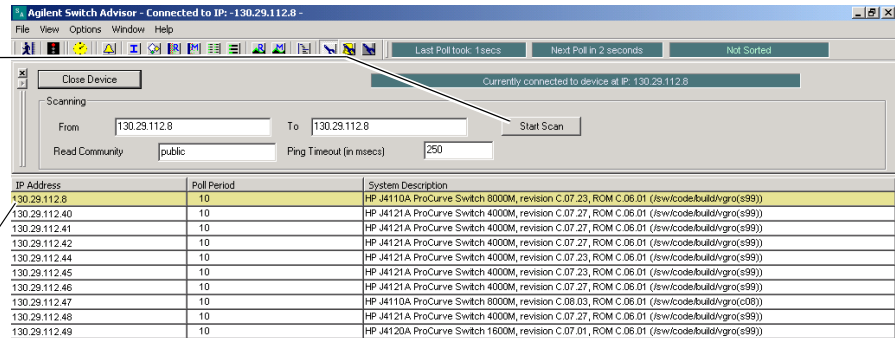
- 3 Whether you entered a single IP address or a range of IP addresses will determine which view will be used when Switch Advisor starts up.
- If you entered a single, valid IP address, Switch Advisor will open in the Information view, as shown here:



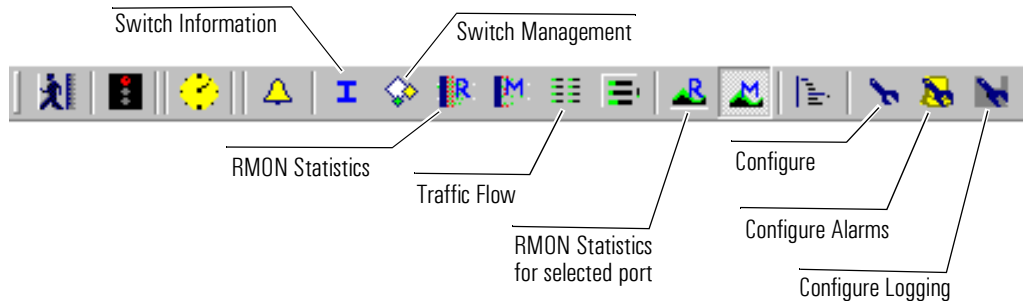
- If you entered a range of IP addresses, or you have entered an invalid IP address, Switch Advisor will open in the Configuration view, as shown here:

If no devices are listed, you will first need to enter an IP address or range, then select Start Scan to find valid devices on the network.

The selected device is highlighted in yellow.



- 4 If Switch Advisor opens in the Configuration view, select the desired device and click the Open Device button.
- 5 Once Switch Advisor opens in the Information view, select the RMON Statistics button.
- 6 View the Switch Advisor tool bar.



You can place the cursor over a button to display its function.

View Statistics

The RMON Statistics view provides statistical details for each port of the device you have selected. A very powerful feature of the Switch Advisor is its ability to sort on one of the RMON statistics columns displayed in the RMON Statistics view in ascending or descending order. The sort order is maintained for each view.

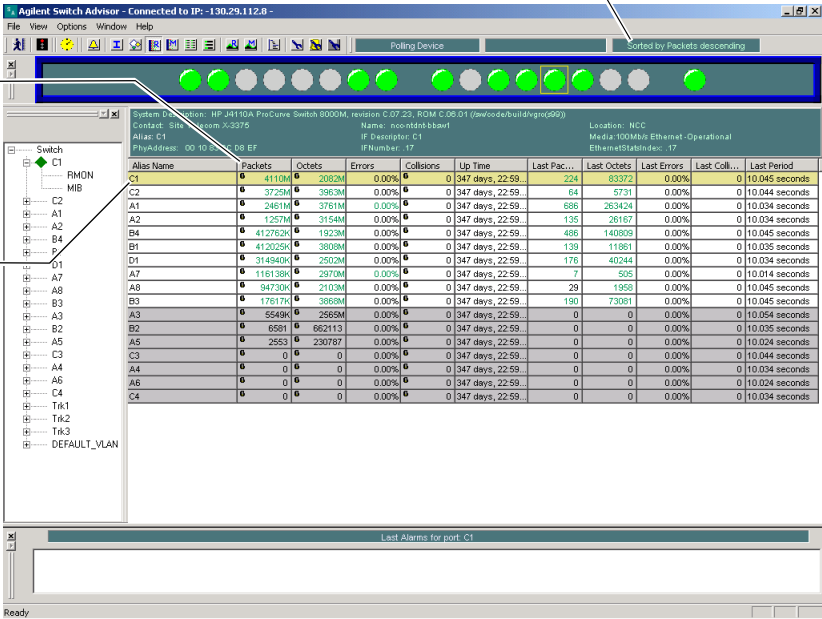
To view statistics:

- 1 Left-click the title of the column you want to sort. In this window, the column titled Packets is sorted in descending order. A second click on the title Packets would result in a sort in an ascending order.

“Sorted by” information is displayed here.


Descending sort on the Packets column.

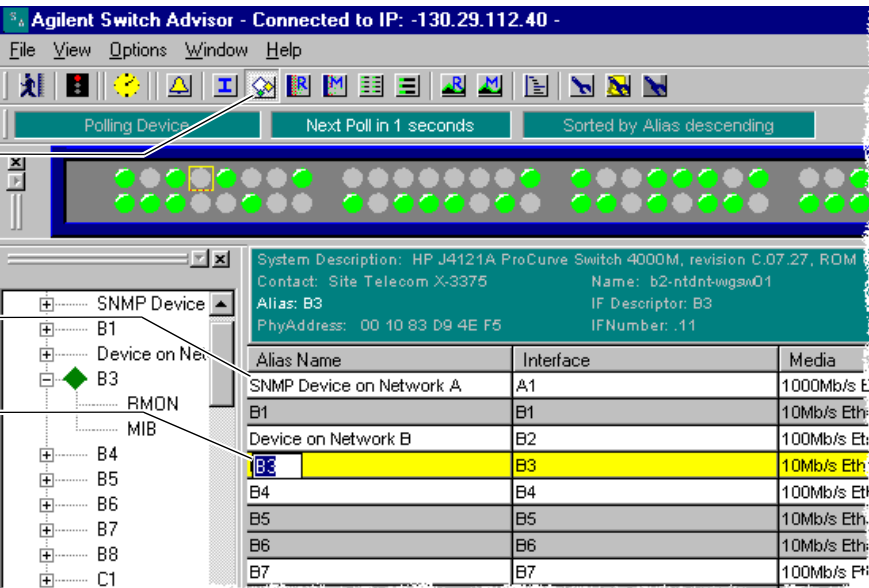
Port C1 has the highest packet count.



In this example, port C1 has the highest packet count. This is a quick way to see which ports of the selected device are the top talkers.

2 You can change the predefined “Alias Name” for a device.

To customize a device name, click the Switch Management button  then click to highlight the row that has the Alias Name you want to change. Click on the row again to highlight the name, type the new name, then press Enter, as shown here:



The screenshot shows the Agilent Switch Advisor interface connected to IP: -130.29.112.40-. The interface includes a menu bar (File, View, Options, Window, Help), a toolbar, and a main display area. The main display area is divided into several sections:

- Top Section:** Contains a "Polling Device" button, a "Next Poll in 1 seconds" timer, and a "Sorted by Alias descending" label.
- Left Panel:** A tree view showing the hierarchy of devices. The "SNMP Device" folder is expanded, showing a list of devices: B1, Device on Network A, B3 (highlighted with a green diamond), RMON, MIB, B4, B5, B6, B7, B8, and C1.
- Right Panel:** A table showing the details of the selected device (B3). The table has three columns: "Alias Name", "Interface", and "Media". The row for B3 is highlighted in yellow.

Annotations on the left side of the screenshot provide context for the actions being performed:

- Switch Management view button:** Points to the "Switch Management" button in the toolbar.
- New device name:** Points to the "B3" device in the left panel tree view.
- Changing the predefined device name by left-clicking on the row:** Points to the "B3" row in the table on the right panel.

Alias Name	Interface	Media
SNMP Device on Network A	A1	1000Mb/s Ethernet
B1	B1	10Mb/s Ethernet
Device on Network B	B2	100Mb/s Ethernet
B3	B3	10Mb/s Ethernet
B4	B4	100Mb/s Ethernet
B5	B5	10Mb/s Ethernet
B6	B6	10Mb/s Ethernet
B7	B7	100Mb/s Ethernet

The new name you entered will be used in all views in the Switch Advisor.

3 Sort the Errors in descending order. Notice that this sort is different from the sort done for Packets.

Descending sort on the Errors column.

You can select a device and view details about errors that occurred.

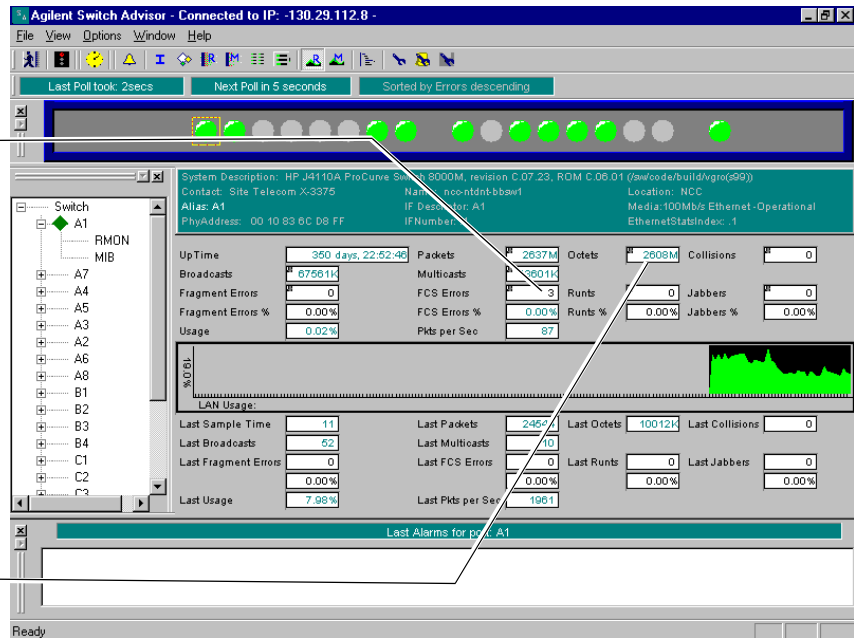
You can select a single port and view the errors details.

Alias Name	Packets	Octets	Errors	Collisions	Up Time	Last Pac...	Last Octets	Last Errors	Last Coll...	Last Period
D1	314962K	2509M	0.00%	0	347 days, 23:11...	142	35316	0.00%	0	10:054 seconds
C4	0	0	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:054 seconds
C3	0	0	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:054 seconds
C2	3725M	3964M	0.00%	0	347 days, 23:11...	47	3663	0.00%	0	10:045 seconds
C1	41108	2093M	0.00%	0	347 days, 23:11...	217	69090	0.00%	0	10:055 seconds
B4	412614K	1947M	0.00%	0	347 days, 23:11...	511	190368	0.00%	0	10:055 seconds
B3	17651K	3891M	0.00%	0	347 days, 23:11...	236	138519	0.00%	0	10:055 seconds
B2	6581	662113	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:035 seconds
B1	412035K	3800M	0.00%	0	347 days, 23:11...	114	7747	0.00%	0	10:035 seconds
A8	94732K	2103M	0.00%	0	347 days, 23:11...	28	1798	0.00%	0	10:034 seconds
A6	0	0	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:054 seconds
A2	1257M	3157M	0.00%	0	347 days, 23:11...	137	23388	0.00%	0	10:074 seconds
A3	5549K	2569M	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:064 seconds
A5	2553	230787	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:074 seconds
A4	0	0	0.00%	0	347 days, 23:11...	0	0	0.00%	0	10:054 seconds
A7	116139K	2971M	0.00%	0	347 days, 23:11...	8	567	0.00%	0	10:054 seconds
A1	24611K	3813M	0.00%	0	347 days, 23:11...	775	390091	0.00%	0	10:075 seconds

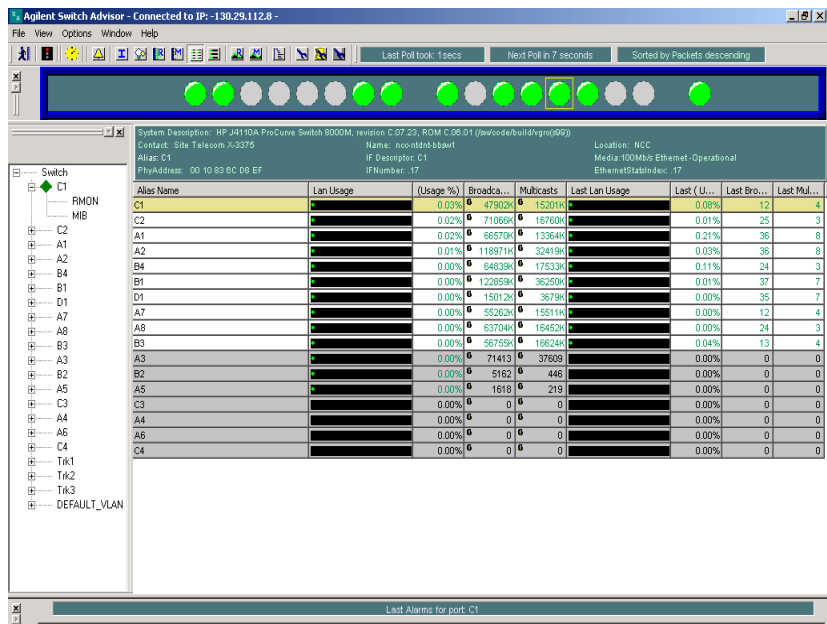
- To view details about errors that occurred, select the device, then select the “RMON Statistics for selected port” button and view the errors for that port.

This field shows FCS Errors that occurred on this port.

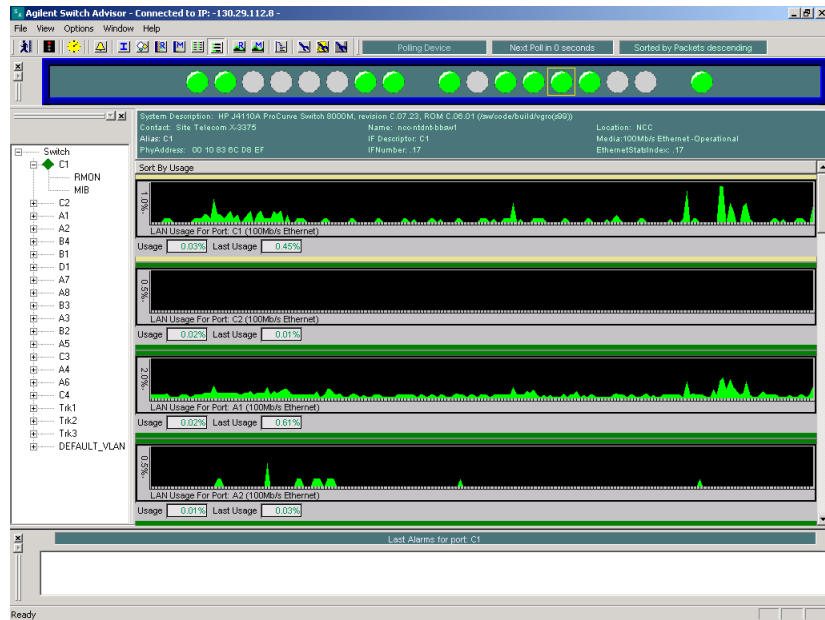
View the number of octets that occurred.



- 5 Select the Traffic Flow button. This view displays all ports showing LAN port usage and its associated percentage of utilization, along with number of packets that were Broadcast or Unicast.



- 6 Select the Port Usage button. This view graphically displays the utilization level on each port.



The sorting of Packets in descending order is maintained, so you visually see the utilization level of each port in the device under test.

- 7 Once you have identified one or more ports that require further analysis, select the Configure Alarms button. This view allows you to set up alarms on any port(s).
- To set up alarms on any port(s):
- a. Select the port on the port icon bar.
 - b. Highlight the desired alarm.
 - c. Select the Alarm Enabled checkbox.
 - d. Select the type of alarm under Alarm Action.
- 8 Select the Apply button to activate the alarm. This same alarm can now be applied to all ports of the device by selecting the “Pass values to all ports” button.

The port icon bar displays LEDs which correspond to each port in the list.

The LED enclosed in a box is the selected port (C1 in this case). The active LED corresponds to the opened port in the list.

Port Navigation Tree

Port icons

The screenshot shows the Agilent Switch Advisor interface. At the top, it says "Connected to IP: 130.29.112.8". Below the menu bar, there's a status bar with "Last Poll took: 1 sec" and "Next Poll in 7 seconds". The main area is divided into several sections. On the left, there's a "Port Navigation Tree" showing a list of ports: C1, C2, A1, A2, B4, B1, D1, A7, A8, B3, A3, B2, A5, C3, A4, A6, C4, Trk1, Trk2, Trk3, and DEFAULT_VLAN. Port C1 is selected and highlighted. In the center, there's a "Port status change" section with a "Configure Actions" button. Below this, there's a "Setting Alarms For Port: C1" section. It includes a "Setting for alarm: FCS Errors" section with a table of alarm items. The "Alarm Enabled" checkbox is checked. The "Alarm Period (in minutes)" is set to 1. The "Alarm Action" is set to "Action 2". The "Under Trigger" section has "Trigger Danger" set to 100, "Trigger Warning" set to 50, and "Trigger Below" set to 0. The "Pass values to all ports" button is also visible. At the bottom, there's a table of alarm items.

Alarm Item	Enabled	Period	Warning Level	Danger Level	Trigger Under	Action
Packets	No	1	50	100	0	No Action
Octets	No	1	50	100	0	No Action
Collisions	Yes	1	50	100	0	Action 2
Broadcasts	No	1	50	100	0	No Action
Multicasts	No	1	50	100	0	No Action
Fragment Errors	Yes	1	50	100	0	Action 1
FCS Errors	Yes	1	50	100	0	Action 2
Runts	No	1	50	100	0	No Action
Jabbers	No	1	50	100	0	No Action
In Octets	No	1	50	100	0	No Action
In Unicast	No	1	50	100	0	No Action
In Non-Unicast	No	1	50	100	0	No Action
In Discards	No	1	50	100	0	No Action
In Errors	No	1	50	100	0	No Action
Out Octets	No	1	50	100	0	No Action
Out Unicast	No	1	50	100	0	No Action
Out Non-Unicast	No	1	50	100	0	No Action

9 You can customize the alarm actions, as shown here:

Agilent Switch Advisor - Connected to IP: -130.29.112.40 -

File View Options Window Help

Sorted by Alias descending

1 Select a port device.

2 Select the Alarm Item, such as Collisions.

3 Enable the Alarm.

4 Select the Alarm Action.

5 Apply the new alarm settings.

System Description: HP J4121A ProCurve Switch 4200M, revision C-07.27, ROM C.06.01 (newcode/build/gro(s9e))
 Contact: Sita Telecom X3375 Name: b2.ndnfbgao1 Location: IDF B2
 Alias: SNMP Device on Network A IF Descriptor: A1 Media: 1000Mb/s Ethernet-Operational
 PhyAddress: 00 10 83 D9 4E FF IFNumber: 1 EthernetStatsIndex: 1

Port status change
 Raise alarm ☒ Action: Action 1 Configure Actions

Setting Alarms For Port: SNMP Device on Network Setting for alarm: Collisions

Alarm Enabled ☒ Alarm Period (in minutes): 1 Alarm Action: Action 1 Apply

Over Triggers: Trigger Danger: 100 Trigger Warning: 50 Under Trigger: 0 Pass values to all ports

Alarm Item	Enab...	Period	Warning L...	Danger Le...	Trigger Un...	Action
Packets	Yes	1	50	100	0	Action 2
Octets	Yes	1	50	100	0	Action 2
Collisions	Yes	1	50	100	0	Action 1
Broadcasts	No	1	50	100	0	No Action
Multicasts	No	1	50	100	0	No Action
Framecast Errors	No	1	50	100	0	No Action

Last Alarms for port: SNMP Device on Network A

SNMP Device on Network A:Octets: At 10:49:35 on 12th Apr 2001, DANGER Alarm. Count = 16395676 (thresholds: low=0, warning=50, danger=100, over 70 seconds)
 SNMP Device on Network A:Packets: At 10:49:25 on 12th Apr 2001, DANGER Alarm. Count = 33257 (thresholds: low=0, warning=50, danger=100, over 70 seconds)
 SNMP Device on Network A:Octets: At 10:48:25 on 12th Apr 2001, DANGER Alarm. Count = 6987023 (thresholds: low=0, warning=50, danger=100, over 70 seconds)
 SNMP Device on Network A:Packets: At 10:48:15 on 12th Apr 2001, DANGER Alarm. Count = 15759 (thresholds: low=0, warning=50, danger=100, over 70 seconds)

10 You can customize the Alarm Action names, as shown here:

1 Select the Configure Actions button.

2 Select the Alarm Action you want to change, then type the new name.

3 Select the sound file you want to apply to the alarm action.

4 Apply the changes. The new action name will be displayed in the Action column.

Configure Actions

Alarm Action Setup

Play Sound File: error.wav

Run Program: None

With Parameters:

Test Apply

Set Up a Log File

In a final step of troubleshooting, you would set up a Log File to record the statistics on the selected port (or all ports) of the device under test. The log file will be saved in comma-separated variable format (with a .csv extension) so that you can import it into a spreadsheet to further analyze the data.

- 1 Select the Configure Logging button. In this view you can set up a log file for individual ports.

The global logging selections shown here include Alarms and Port Status.

The port-specific logging selections shown here include MIB Statistics and RMON Statistics.

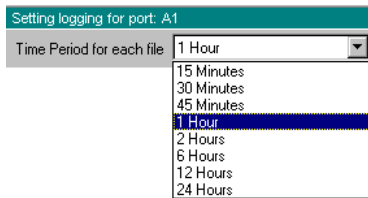
The Time Period for logging data is set to 1 hour.

You can select a number of files to log to.

Alias Name	Log...	RMON	MIB	File Period	Number of Files
A1	No	✓	✓	60	1
A7	No	✓	✓	60	1
A4	No	✓	✓	60	1
A5	No	✓	✓	60	1

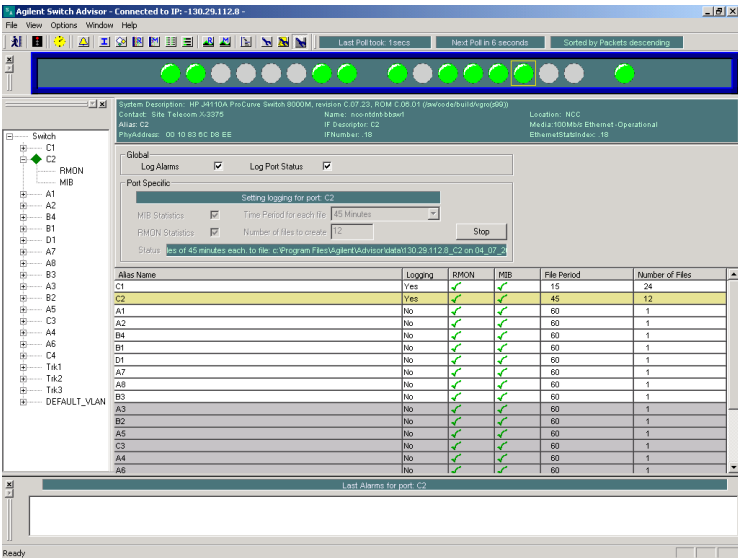
- 2 You can select to log any combination of the following statistics: MIB, RMON, Port Status, and Alarms. To log statistics, select the desired port on the Switch Advisor port navigation tree, then select the desired statistics you want to log.

- 3 Set the Time Period for each log file.



- 4 Set the number of files you want to create.

This example shows port C1 is logging RMON, MIB, Port Status, and Alarms for a period of 15 minutes with 24 files. This is equal to 6 hours of data being collected.



- 5 When the logging is complete, you can import the data into a spreadsheet to further analyze the data.

**Troubleshooting
Scenario is Complete**

This guide has introduced you to the Switch Advisor and some of its views by stepping through a troubleshooting scenario. By repeating this procedure for each of your SNMP-supported devices, you can quickly assess the health of your switched infrastructure.

