SPECTRUM®

3Com PortSwitch Hubs
Management Module Guide

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Preface

Use this guide as a reference for the 3Com PortSwitch Hubs management software. Before using this guide, you should be familiar with SPECTRUM's functions and navigational techniques as described in the Administration documentation and the Operation documentation.

For the purposes of this guide, the 3Com PortSwitch Hub is referred to as "device."

What Is in This Guide

The organization of the 3Com PortSwitch Hubs Management Module Guide is as follows:

Chapter	Description
Chapter 1 Introduction	Describes the device, the management module, and model types. This chapter also provides information on accessing device specific views.
Chapter 2 Device Views	Describes the Device views representing the device.
Chapter 3 Configuration Views	Describes the Configuration views for the device and the network management information provided by these views.
Chapter 4 Event and Alarm Messages	Lists and explains the event and alarm messages generated in the Event Log or Alarm Manager for the device.
Chapter 5 Application Views	Describes the Application views and application-specific information for this device.

Conventions

This guide uses the following conventions:

- Menu selections and buttons referenced in text appear in bold; for example, Configuration or Detail.

- Buttons names appear in shadowed boxes when introducing paragraphs describing their use; for example,

Help

- Menu navigation appears in order of selection; for example, Icon Subviews -> Utilities -> Application.

- Referenced chapter titles and section headings appear in italics.

- Referenced documents appear in bold italics.

- The 3ComPortSwitch Hub is referred to as "device."

- References in blue are hypertext links for online documents.

Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigational techniques as described in the Administration documentation, the Operation documentation, and the following documentation:

Report Generator User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

Martin, James, Kathleen Kavanagh Chapman, Joe Leben. Local Area Networks: Architectures and Implementations, 2d ed. Englewood Cliffs, NJ: Prentice Hall, 1994.

Rose, Marshall T. The Simple Book: An Introduction to Management of TCP/IP-based Internets. Englewood Cliffs, NJ: Prentice Hall, 1991.

Stallings, William. Data and Computer Communications, 4th ed. New York: Macmillan Publishing Company, 1994.

Tanenbaum, Andrew S. Computer Networks, 3d ed. Englewood Cliffs, NJ: Prentice Hall, 1996.

Introduction

What Is in This Chapter

This chapter introduces the SPECTRUM Management Module for 3Com PortSwitch Hubs. It describes the following:

- 3Com PortSwitch Hubs
- SPECTRUM Model Type
- Accessing SPECTRUM views
- SPECTRUM Views Roadmap

3Com PortSwitch Hubs

The 3Com PortSwitch Hubs are stackable Fast Ethernet hubs that provide Fast Ethernet uplinks. This device provides 12 or 24 ports for twisted pair connections via RJ-45 connectors.

SPECTRUM Model Type

The model type Hub3ComPortSw refers to the management module software package used to specify attributes, actions, and associations for the physical 3Com PortSwitch Hub device using the Simple Network Management Protocol (SNMP) and Management Information Bases (MIBs) for that device.

Accessing SPECTRUM Views

Icons and labels that display information within an icon provide access to SPECTRUM views. This is done using double-click zones (Figure 1-1) and Icon Subviews menu selections (Figure 1-2).

To access the Icon Subviews menu as shown in Figure 1-2 and Figure 1-3, do the following:

1. Highlight the icon or label.

2. From the View menu select Icon Subviews or click the applicable mouse button (middle or right). Refer to the SPECTRUM Icons Reference for information on configuring your mouse.

Figure 1-1.   Using Double-Click Zones to Access SPECTRUM Views

Accesses the Configuration views;
see Chapter 3, Configuration Views.

Accesses the Device Topology view;
refer to the SPECTRUM Views
Reference.

Model Name

Hub3ComPortSw

Accesses the Device views;
see Chapter 2, Device Views.

Accesses the Performance view;
refer to the SPECTRUM Views
Reference.

Accesses the Application views;
see Chapter 5, Application Views.

Accesses the Configuration views;
see Chapter 3, Configuration Views.

Accesses the Device views;
see Chapter 2, Device Views.

Model Name

Hub3ComPortSw

Accesses the Performance view;
refer to the SPECTRUM Views
Reference.

Accesses the Device Topology view;
refer to the SPECTRUM Views
Reference.

Accesses the Application view;
see Chapter 5, Application Views.

Figure 1-2.   Using the Icon Subviews Menu to Access SPECTRUM Views
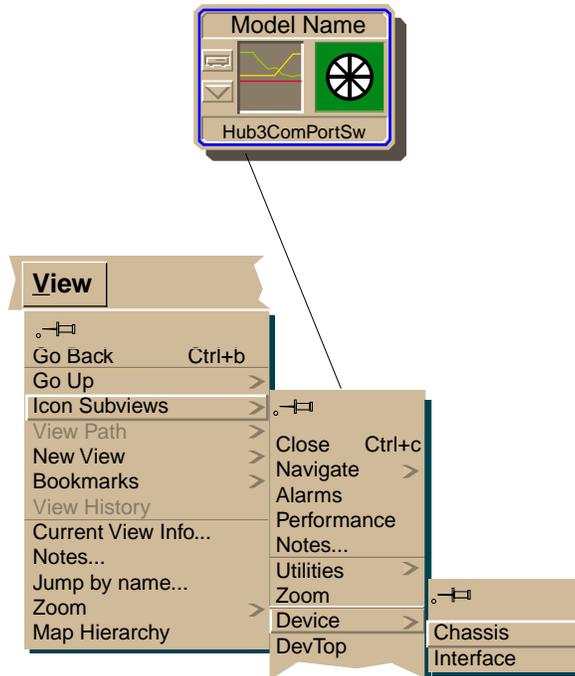
Figure 1-3.   Accessing Icon Subviews Menus from Labels
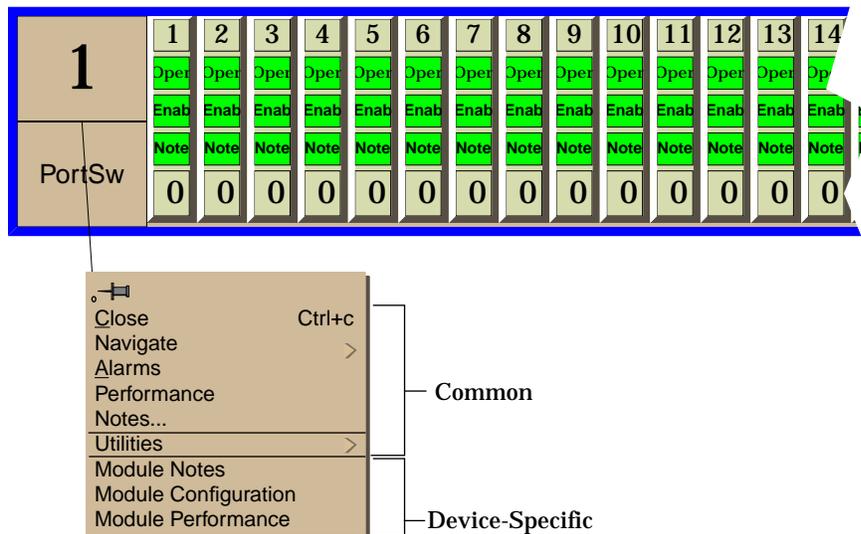
SPECTRUM Views Roadmap

Figure 1-4 shows a "roadmap" of the SPECTRUM views for this device. These views are accessible from double-click zones (Figure 1-1) and Icon Subviews menus (Figure 1-2 and Figure 1-3).

Figure 1-4.   SPECTRUM Views Roadmap
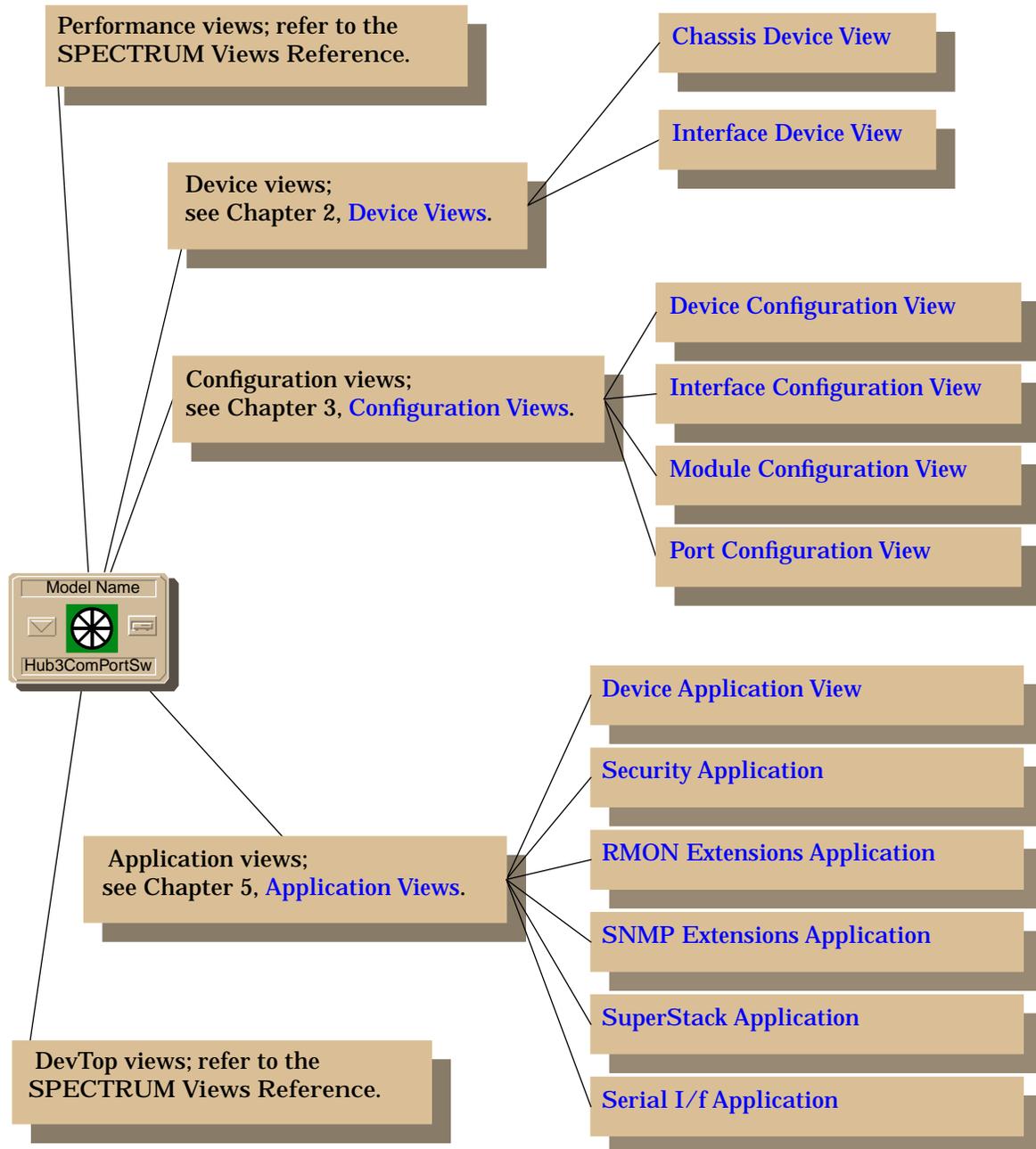
Device Views

What Is in This Chapter

This chapter describes the following device views available for 3Com PortSwitch Hubs.

- Chassis Device view
- Interface Device view

See Chapter 1, Introduction, for information on Accessing SPECTRUM Views.

Chassis Device View

This view shows a logical representation of the device chassis and its interfaces or ports. The Chassis Device icon provides menu and double-click zone access to the views that monitor the interfaces.

shows an example of the Chassis Device view for 3Com PortSwitch Hubs.

Figure 2-1.   Chassis Device View

Chassis Device Icon
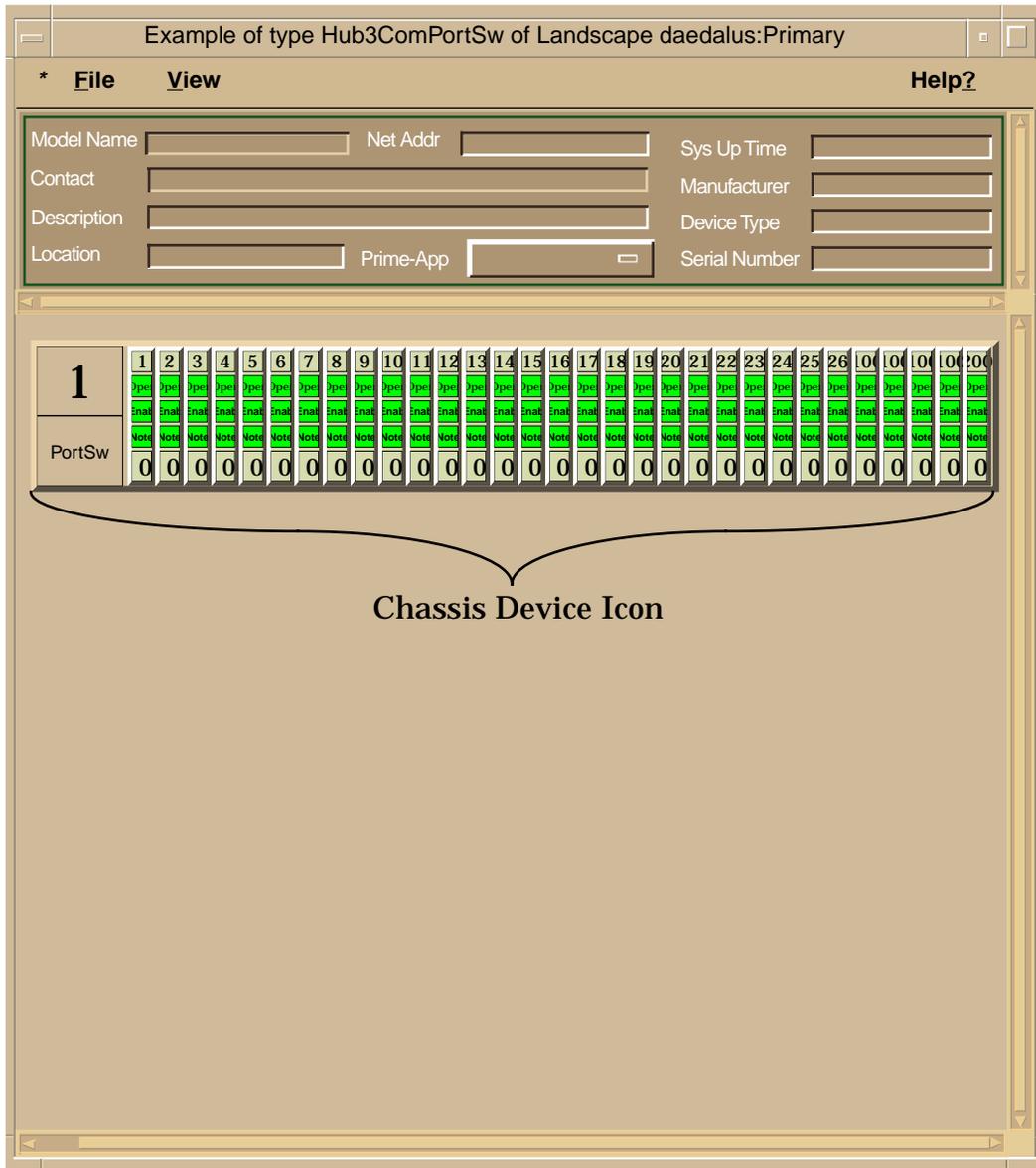
Chassis Device Icon

This icon is a logical representation of the physical device and its front panel interfaces. This section describes the information available from the Chassis Device icon. Figure 2-2 shows an example of the Chassis Device icon for 3Com PortSwitch Hubs.

NOTES

The callouts displayed in this illustration identify the label name and, when available, the view to which it provides double-click access. For example: Module Number/Module Notes View displays the device model number and provides double-click access to the Module Notes view.

The menus displayed in the illustration are the Icon Subviews menus for that label.

Figure 2-2.   Chassis Device Icon
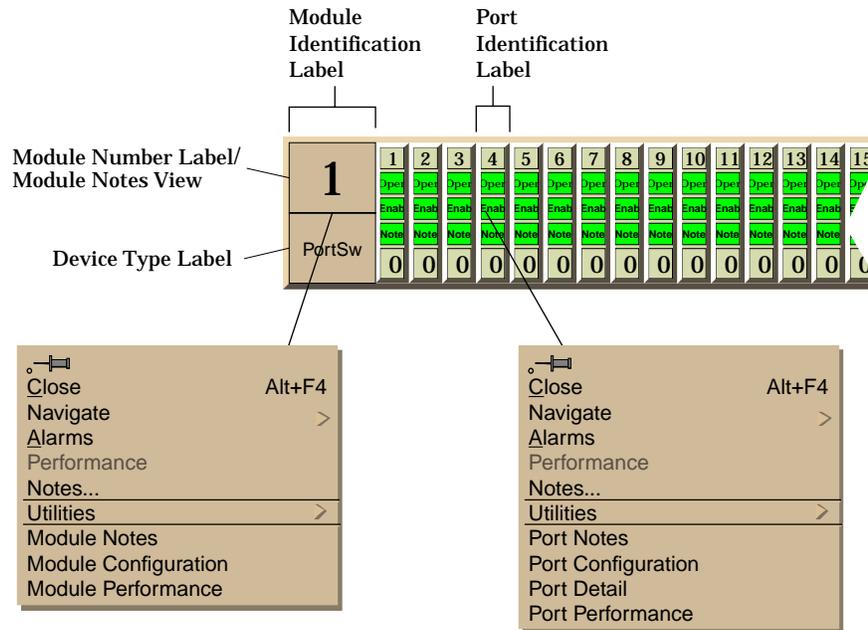
Module Identification Label

This label provides the following information (see Figure 2-2):

Module Number
Displays the position of the module in the hub stack. Double-click this area to open the Notes view described in the SPECTRUM Views Reference.

Device Type Label
Identifies the type of device.

Module Icon Subviews Menu

Table 2-1 lists each of the device-specific Icon Subviews menu selections available for this device. For information on Accessing SPECTRUM Views, see Chapter 1, Introduction.

Table 2-1.   Module Icon Subviews Menu

Menu Selection	Description
Module Notes	Opens the Notes view described in the SPECTRUM Views Reference.
Module Configuration	Opens the Module Configuration View described in Chapter 3, Configuration Views.
Module Performance	Opens the Module Performance view described in the SPECTRUM Views Reference.

Port Identification Label

These labels provide access to the Icon Subviews menu for the individual ports. The labels contain the following information (see Figure 2-3):

NOTES

The callouts displayed in this illustration identify the label name and the view to which it provides double-click access. For example: Port Number/Port Notes View displays the port number and provides double-click access to the Port Notes view.

The menu displayed in the illustration is the Icon Subviews menu for that label.

Figure 2-3.   Port Identification Label

Port
Identification
Label

11   Port Number/
            Port Notes View

Oper   Port Operation Label/
            Port Configuration View

Enab   Port Enable Label/
            Port Configuration View

Not   Port Partition Label/
            Error Breakdown View

0   Port Statistics Label/
            Port Performance View

Close   Alt+F4
Navigate   >
Alarms
Performance
Notes...
Utilities   >
Port Notes
Port Configuration
Port Detail
Port Performance

Port Number
Displays the number of the port within the module. Double-click this area to
open the Port Notes view described in the SPECTRUM Views Reference.

Port Operation Label
Displays the operational status of the port. Possible values are Operational
and Nonoperational. Double-click this area to open the Port Configuration
View described in Chapter 3, Configuration Views.

Port Enable Label
Displays the enable status of the port. Possible values are Enable and Disable.
Double-click this area to open the Port Configuration View described in
Chapter 3, Configuration Views.

Port Partition Label
Displays partition stus of the port. Possible values are Not Partitioned and
Auto Partitioned. Double-click this area to open the Error Breakdown view
described in the SPECTRUM Views Reference.

Port Statistics Label
Displays the number of packets transmitted. Double-click this area to open
the Port Performance view described in the SPECTRUM Views Reference.

Port Identification Label Subviews Menu

Table 2-2 describes the Port Identification Label Subviews menu selections. See Chapter 1, Introduction, for information on Accessing SPECTRUM Views.

Table 2-2.   Port Identification Label Subviews Menu

Menu Selection	Description
Port Notes	Opens the Port Notes view described in the SPECTRUM Views Reference.
Port Configuration	Opens the Port Configuration View described in Chapter 3, Configuration Views.
Port Detail	Opens the Error Breakdown view described in the SPECTRUM Views Reference.
Port Performance	Opens the Module Performance view described in the SPECTRUM Views Reference.

Interface Device View

This view shows a logical representation of the interfaces or ports on the device. The Interface Device icon provides menu and double-click zone access to the views that monitor the interfaces.

Figure 2-4 shows an example of the Interface Device view for 3Com PortSwitch Hubs.

Figure 2-4.　　　Interface Device View
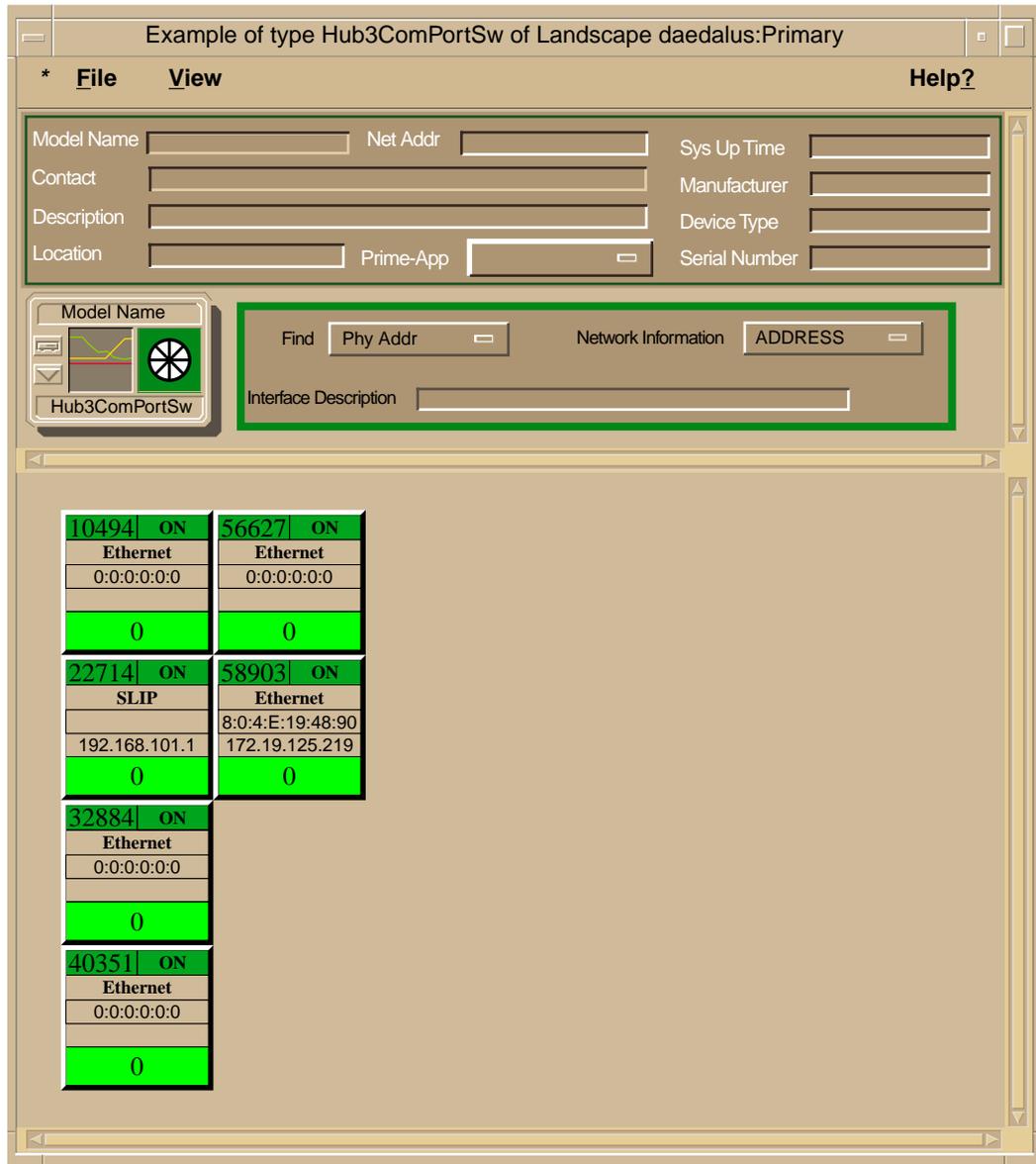
Interface Device Icon

This icon is a logical representation of the services provided by this device. This section describes the information available from the Interface Device icon. Figure 2-5 shows an example of the Interface Device icon for 3Com PortSwitch Hubs.

> **NOTES**
>
> The callouts displayed in this illustration identify the label name and, when available, the view to which it provides double-click access. For example: Interface Status Label/Interface Status View displays the operating status of the interface and provides double-click access to the Interface Status view.
>
> The menus displayed in the illustration are the Icon Subviews menus for that label.

Figure 2-5.   Interface Device Icon
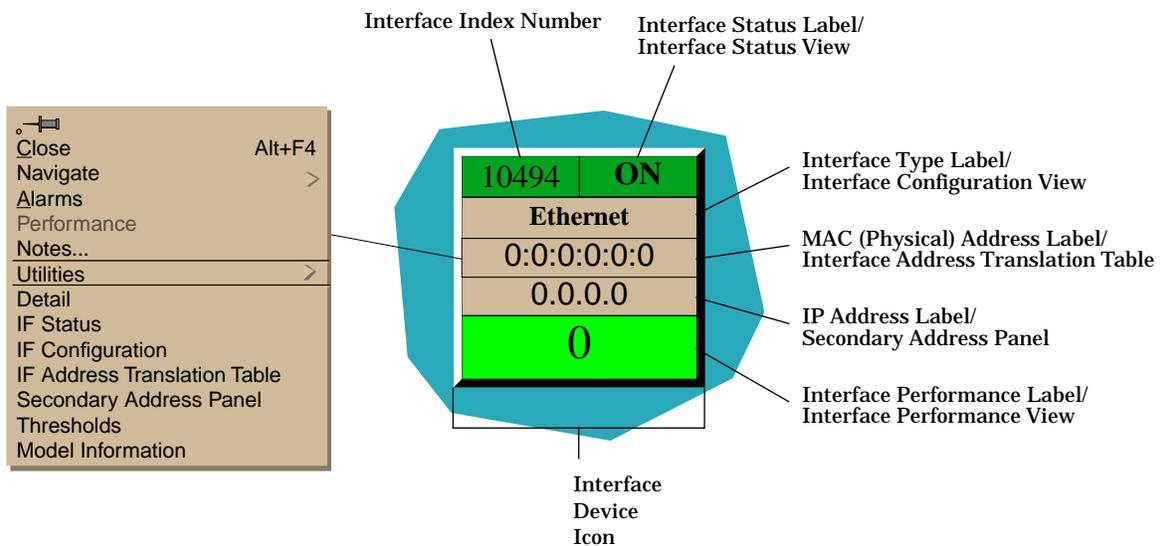
Interface Index Number
Displays the number used to refer to this interface.

Interface Status Label
Displays the operational status of this interface. Double-click this area to open the Interface Status view. Possible values are Default, ON, OFF, and Testing.

Interface Type Label
Displays the protocol in use on this interface. Double-click this area to open the Interface Configuration View described in Chapter 3, Configuration Views.

MAC (Physical) Address Label
Displays the MAC address of this interface. Double-click this area to open the
Interface Address Translation Table described in Chapter 3, Configuration
Views.

IP Address Label
Displays the IP address of this interface. Double-click this area to open the
Network Information Panel described below.

Interface Performance Label
Displays the number of packets transmitted. Double-click this area to open
the Interface Performance view described in the SPECTRUM Views
Reference.

Interface Icon Subviews Menu

Table 2-3 describes the Interface Icon Subviews menu selections. See Chapter
1, Introduction, for information on Accessing SPECTRUM Views.

Table 2-3.　　　Interface Icon Subviews Menu

| Menu Selection	Description
Detail	Opens the Interface Detail view described in the SPECTRUM Views Reference.
IF Status	Opens the Interface Status View described below.
IF Configuration	Opens the Interface Configuration View described in Chapter 3, Configuration Views.
IF Address Translation Table	Opens the Interface Address Translation Table described in Chapter 3, Configuration Views.
Network Information Panel	Opens the Network Information Panel described below.
Thresholds	Opens the Interface Threshold View described below.
Model Information	Opens the Model Information view described the SPECTRUM Views Reference.

Interface Status View

This view displays the operational status if the interface and allows you to set
the administrative status of the interface.

Network Information Panel

This panel displays the following information on the configuration of a network:

Name
Displays the name of the network in question.

Address
Displays the network address of the network in question.

Mask
Displays the subnet mask for the network in question.

Interface Threshold View

This view allows you to configure the values at which the following categories generate alarms. The value in the On field sets the value at which a device will send an alarm indicating that there is a fault. The value in the Off field sets the value at which the device will recover from the fault.

- Load Threshold
- Packet Rate Threshold
- Error Rate Threshold
- % Discarded Threshold

Chapter 3

Configuration Views

What Is in This Chapter

This chapter describes the Configuration views available for 3Com PortSwitch Hubs. These views display network configuration and operating information for the device and its interfaces.

The following Configuration views are available for this device:

- Device Configuration View
- Interface Configuration View
- Module Configuration View
- Port Configuration View

See Chapter 1, Introduction, for information on Accessing SPECTRUM Views.

Device Configuration View

This view provides device-specific configuration information as well as access to other views that allow you to configure device components.

To access the Device Configuration view do the following:

1. Highlight the device icon.

2. From the Icon Subviews menu, select Configuration.

Device Configuration Information

This section of the Configuration view displays the following device-specific information:

Device Name
Displays the user-setable name of the device.

Contact Status
Indicates whether a connection with the device has been established. Possible status messages include: Established, Lost and Initial.

Number of Interfaces
Displays the number of interfaces or ports available on this device.

Router Redundancy
This menu button allows you to set router redundancy to true or false.

This view also provides the following buttons:

IF Address Translation

Opens the Interface Address Translation Table, described below.

Reconfigure

Reconfigures the device with the current settings.

Interface Address Translation Table

This table provides the following fields:

Interface Index
Displays the number for a given interface or port.

Physical Address
Displays the physical (MAC) address of the interface or port.

Network Address
Displays the network address of the interface or port.

Interface Configuration Table

Double-click any entry in this table to access the Interface Configuration View described later in this chapter.

This table within the Device Configuration view provides the following configuration information about the device's interfaces or ports:

Index
Displays the index number for a given interface or port.

Description
Displays a brief description of the device.

Type
Displays the type of hardware interface for the port. See the Administration documentation for a full list of possible interface types.

Bandwidth
Displays the interface bandwidth in bits per second. For interfaces that do not vary in bandwidth or for those where no accurate estimation can be made, this will be the nominal bandwidth.

Physical Address
Displays the physical (MAC) address of the interface or port.

Operation Status
Displays the current operational state of this port. Possible values are On, Off, and Testing.

Admin Status
Displays the current operational state of this port. Possible values are On, Off, and Testing.

Last Change
Display the date and time of the last change to the port's status.

Queue Length
Displays the length of the queue.

Packet Size
Displays the size of packets moving through this port.

Interface Configuration View

This view provides information on the configuration and operating status of the interface.

To access the Interface Configuration view do the following:

1.   Within the Interface Device view, highlight the device icon.

2.   From the Icon Subviews menu, select IF Configuration.

The Interface Configuration view provides the following information:

Operation Status
Displays the status of the module. Possible values are operational, notoperational and unknown.

Admin. Status
Provides a menu button to set the Administrative status of the port. Once disabled, a port must be explicitly enabled to restore operation. A port that is already disabled when power is lost or when a reset is exerted will remain disabled when normal operation resumes. Possible values are On, Off, and Testing.

Last Change
Displays the system uptime at which the interface entered its current operational state. A value of zero indicates that the status has not changed since the agent was last restarted.

Network Name/Address
Displays the network name and the address at which it appears.

Physical Address
Displays the physical (MAC) address of the interface or port.

Bandwidth
Displays the interface bandwidth in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, this will be the nominal bandwidth.

Packet Size
Displays the largest Maximum Transmission Unit (MTU) that can be transmitted or recieved by the port, measured in octets.

Queue Length
Displays the length of the outbound packet queue in packets.

Module Configuration View

This view provides information on the configuration and operating status of the module.

To access the Module Configuration view do the following:

1. Within the Chassis Device view, highlight the module icon.

2. From the Icon Subviews menu, select Module Configuration.

The Module Configuration view provides the following information:

Operational Status
Displays the status of the module. Possible values are operational, notoperational and unknown.

Last Status Change
Displays the system up time at the time when the value of the operational status object for this group last changed. A value of zero indicates that the group's status has not changed since the agent was last restarted.

Port Capacity
Displays the number of ports on the module.

Module Type (OID)
Displays the Object ID of the MIB for this device.

Module Description
Displays a brief description of the device.

Port Configuration View

This view provides information on the configuration and operating status of a port within a module.

To access the Port Configuration view do the following:

1. Within the Chassis Device view, highlight the port icon.

2. From the Icon Subviews menu, select Port Configuration.

The Port Configuration view provides the following information:

Administrative Status
This menu button allows you to enable and disable the port. Once disabled, a port must be explicitly enabled to restore operation. A port which is already disabled when power is lost or when a reset is exerted will remain disabled when normal operation resumes.

The Administrative Status value takes precedence over Auto Partition and functionally operates between the auto-partition mechanism and the AUI/PMA.

Enabling the port sets it to notAutoPartitioned regardless of its pre-disabling state.

Operational Status
Displays the port's operational state. The operational state indicates that the port is enabled and working, even though it might be auto-partitioned. The notPresent state indicates the port is physically removed (note this may or may not be possible depending on the type of port). Possible values are operational, notOperational, and notPresent.

Auto Partition State
Indicates whether the port is currently partitioned by the repeater's auto-partition protection.

The conditions that cause port partitioning are specified in the IEEE 802.3 Standard.

Last Source Address
Displays the Source Address of the last readable frame received. If there is no data 0.0.0.0.0.0 is displayed.

Source Address Changes
This counter is incremented by one for each time the Last Source Address attribute changes. This may indicate whether a link is connected to a single DTE or another multi-user segment. The approximate minimum time for rollover of this counter is 81 hours.

Event and Alarm Messages

What Is in This Chapter

This chapter lists the types of events and alarms generated by 3Com PortSwitch Hubs and provides any probable cause messages corresponding to these alarms.

Device Events and Alarms

Table 4-1 lists the SPECTRUM database directory paths (in bold) and the messages displayed for the Event Log and Alarm Manager when applicable.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010306 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has been cold started. (event [{e}])	No Probable cause message.
CsEvFormat/Event00010307 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m} has been warm started. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010308 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}])	CsPCause/Prob00010308 Communication link is down.
CsEvFormat/Event00010309 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}])	No Probable cause message.
CsEvFormat/Event0001030a {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}])	CsPCause/Prob0001030a Authorization failure. Other user is trying to connect to device with an invalid community string.
CsEvFormat/Event0001030b {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {O 1}. (event [{e}])	CsPCause/Prob0001030b Lost contact with EGP neighbor.
CsEvFormat/Event00ea0013 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) Is informing the manager that the device is still operating. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0014 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) has had its configuration modified via the ascii agent. This may be through Telnet or the V24 port. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0015 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) An user "{S 1}" has attempted a login and failed three times. The cause was {T comstat 2}. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0016 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) a gauge {O 1} has gone over its threshold {I 3}. The sample period was {I 5} and the number of samples used is {I 7}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0017 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) a gauge {O 1} has gone below its recovery level {I 3}. The sample period was {I 5} and the number of samples used is {I 7}. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0018 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) has reported that a sytem load request has failed. The reason was {T slstat 1}. (event [{e}])	CsPCause/Prob00ea0018 When a system load is requested, a response is returned immediately and the load proceeds in the background. If an error is detected this trap is generated indicating the reason why in the status, as follows: (1) file not found; (2) access violation; (4) illegal TFTP operation; (5) unknown transfer ID; (7) no such user; (8) no response from the load server; (9) the download could not be started because of a lack of resources; (10) the length of a record differs from that implied by the value of the record length field; (11) the record type is not recognised; (12) record checksum error; (13) the device type in the file is incorrect; (14) the software image is not suitable for this version of the hardware; (15) the first record in the file was not a file header; (16) The byte count reported in the file trailer record differed from the number of bytes actually received. When loading a new image into the device containing the agent itself, the agent first reads the beginning of the image file to test if it is accessible and contains a valid image. If there is anything wrong, this trap is generated, no download is performed and the device continues to run uninterrupted. If this check is successful the download proper is begun. Should that fail, it is simply retried continuously until either an attempt succeeds or the device is reset.
CsEvFormat/Event00ea0019 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports the endstation table has moved to the modified state. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0020 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports the endstation table is full. (event [{e}])	CsPCause/Prob00ea0020 When the end-station table becomes full this trap is generated.
CsEvFormat/Event00ea0025 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the slot. port. index {I 2} mau has entered or left the available state. current state is {T maustate 1}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0027 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a new entity of service type {T service 1} has been installed at location {I 2}. The service ID is {I 5} and the entity has name {S 9} and {I 7} ports. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0028 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that an entity of service ID {I 1} and entity name {S 3} has been removed. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0029 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that an entity of service ID {I 1} at the slot. index is {I 4} has changed its facilitities for its type {T etype 3} to {I 5}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0030 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a card is added to the service {I 1}. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0031 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a card has been removed from the service {I 1}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0032 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a physical entity of service id {I 1} has changed state to {T estate 3}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0033 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the power requirements of the entities in the chassis exceed the power capacity of the power supplies. (event [{e}])	CsPCause/Prob00ea0033 The combination of the power requirements of all the entities in the chassis has been calculated to exceed the power capacity of the power supplies present in the chassis.
CsEvFormat/Event00ea0034 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the managemant card temperature sensing device is reporting DANGER. (event [{e}])	CsPCause/Prob00ea0034 Mounted on the Management card is a temperature sensing device. This device provides three output levels: OK, WARM and DANGER. DANGER causes a trap to be generated.
CsEvFormat/Event00ea0035 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the status input {I 2} of name {S 3} has changed state to {I 1} (1=Open, 2=Closed). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0036 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that port {I 2} has learned a staion address {H 3}. (event [{e}])	No Probable cause message.

Table 4-1. 3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0037 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has detected a security violation. (event [{e}])	CsPCause/Prob00ea0037 This trap indicates that this port has detected security violation.
CsEvFormat/Event00ea0038 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had its partion state changed to {I 1} (1=Partitioned, 2=UnPartitioned). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0039 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had its link state changed to {I 1} (1=Present, 2=Absent). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0040 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had its Admin state changed to {I 1} (1=Enabled, 2=Disabled) by a gauge. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0041 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had its Bandwith Used threshold {I 3} exceeded. The Bandwith used is {I 1} (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0042 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had its Errors/10000 packets threshold {I 3} exceeded. The Errors/ 10000 packets is {I 1} (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0043 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} in a resilience pair has had a change in state and the active port has been switched. The state of the main port is {I 1} the state of the backup port is {I 3} (1=Failed, 2=OK, 3=OK-And-Active) (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0044 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} in a resilience pair has had a change in state and the active port has not been switched. The state of the main port is {I 1} the state of the backup port is {I 3} (1=Failed, 2=OK, 3=OK-And-Active) (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0045 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a topology change has ocuured in the ring at time {I 1}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0046 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the main rings state has changed to {T rstate 1}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0047 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the backup rings state has changed to {T rstate 1}. (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0048 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that either the main and backup rings have wrapped or that the wrap condition has been removed. The new wrap state is {I 1} (1=NotWrapped, 2=Wrapped). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0049 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a MAU port {I 2} has had a change in attach state and the admin state of the port is disabled. The new attach state is {I 1} (1=Absent, 2=Present). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0050 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the Ring In port has changed state while the mode is fail-safe. The new Ring In state is {I 1} (1=Open, 2=Wrap). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0051 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the Ring Out port has changed state while the mode is fail-safe. The new Ring Out state is {I 1} (1=Open, 2=Wrap). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0060 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a MAU port {I 2} has changed state due to operation of ZDL or DRI. The new MAU port state is {I 1} (1=Enabled, 2=Disabled). If disabled the reason is {I 3} (1=None, 2=Mgmt, 3=ZDL, 4=DRI). (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0061 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the managed agent has recieved a reply to a poll after a sequence of four or more un-successfull polls. The addres is {S 1} with protocol {T pprot 3}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0062 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the managed agent has not recieved a reply to a poll after a sequence of four un-successfull polls. The address is {S 1} with protocol {T pprot 3}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0063 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the Resilient Backup Power Supply connected to this repeater has developed a fault. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0064 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that the Resilient Backup Power Supply connected to this repeater has recovered from a fault. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0066 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has seen an unrecognised MAC address and is doing the following action {I 1} (2=Notify, 3=Disconnect). (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0067 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a repeater {I 2} has had its Bandwith Used threshold {I 3} exceeded. The Bandwith used is {I 1} (event [{e}])	No Probable cause message.

Table 4-1.   3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0068 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a repeater {I 2} has had its Errors/10000 packets threshold {I 3} exceeded. The Errors/10000 packets is {I 1} (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0069 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a card {I 2} has had its Bandwith Used threshold {I 3} exceeded. The Bandwith used is {I 1} (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0070 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a card {I 2} has had its Errors/10000 packets threshold {I 3} exceeded. The Errors/10000 packets is {I 1} (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0071 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a new station has been learned. The station info is {I 2} (slot. port. MAC-Address) (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0074 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a poll has been replied to from address {I 1}. (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0075 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a poll has failed to be replied to from address {I 1}. (event [{e}])	No Probable cause message.

Table 4-1.　　　　　3Com PortSwitch Hubs Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00ea0078 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a security violation has occured on port {I 2} (slot. port. MAC-Address). The port's admin status is now {I 3} (1=Enabled, 2=Disabled) (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0079 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had a change in auto partition state. The new state is {I 1}. (1=Partitioned, 2=Unpartitioned) (event [{e}])	No Probable cause message.
CsEvFormat/Event00ea0080 {d "%w- %d %m-, %Y - %T"} A 3Com Hub, {t} (name {m}) reports that a port {I 2} has had a change in link state. The new state is {I 1}. (1=Partitioned, 2=Unpartitioned) (event [{e}])	No Probable cause message.

Chapter 5

Application Views

What Is in This Chapter

This chapter describes the device-specific applications listed below for 3Com PortSwitch Hubs. The corresponding application model type is shown in parentheses.

- 3Com Security Application (3ComSecApp)
  - Local SNMP Application (3ComSnmpApp2)
  - Power Supply Application (3CompowerApp)
  - System Loader Application (3ComsysLdApp2)
- 3Com RMON Extensions Application (3ComRmonExtApp)
- 3Com SNMP Extensions Application (3Com1516ExtApp)
- 3Com SuperStack Configuration Application (3ComSSConfApp)
- 3Com Serial Interface Application (3ComserIfApp)
  - Interface Extensions Application (3ComExtIfApp)
  - Port Security Application (3ComSecPortApp)
  - Mrm Resilience Standby Application (3CommrmResApp)

Common Applications

This device supports the following common applications described in the MIB II Applications Reference:

- MIB-II (SNMP2_Agent)
    - ICMP (ICMP_App)
    - IP (IP2_App)
    - System (System2_App)
    - TCP (TCP2_App)
    - UDP (UDP2_App)

The Standard RMON application is available if you purchase the associated service. This application is described in its management module guide.

Device Application View

This view shows the common and device-specific applications supported by this device and provides access to application-specific information.

See Chapter 1, Introduction, for information on Accessing SPECTRUM Views.

Figure 5-1 provides an example of an Application view in the icon mode. Figure 5-2 provides an example of an Application view in the list mode.

To change the display mode, select View -> Mode -> List or Icon.

Figure 5-1.   Device Application View (Icon Mode)
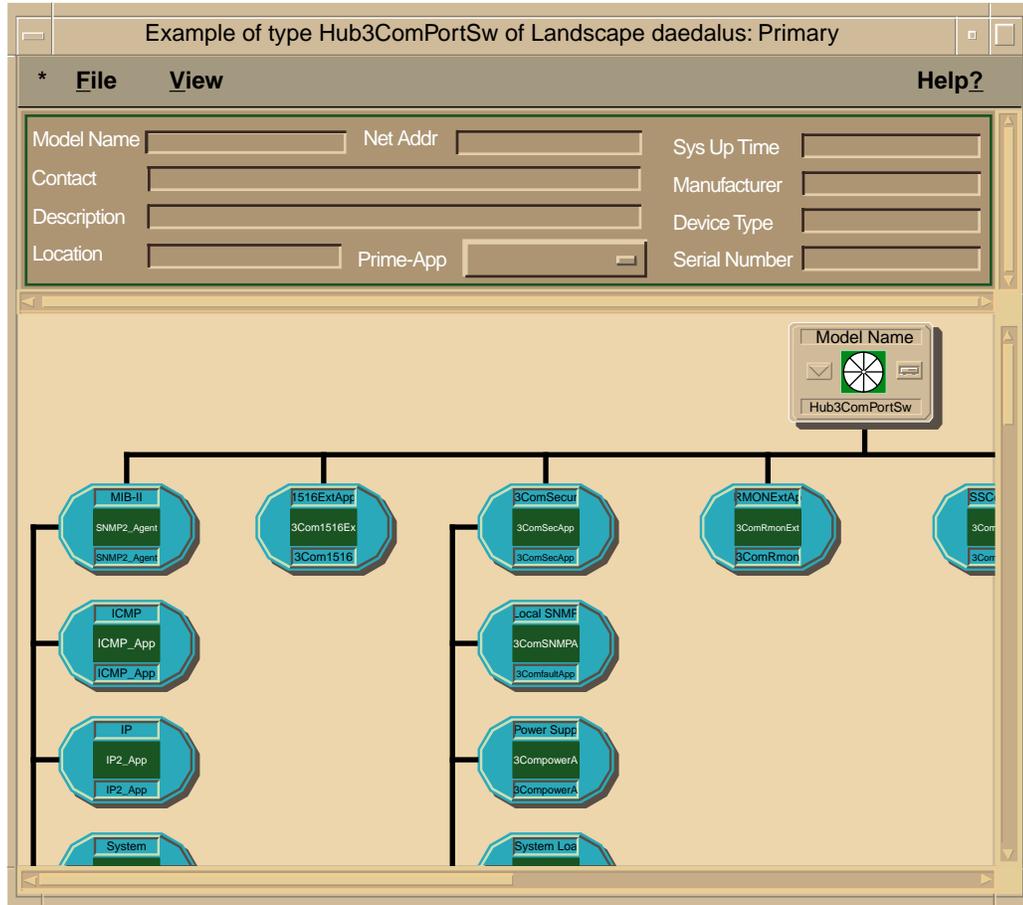
Figure 5-2.   Device Application View (List Mode)
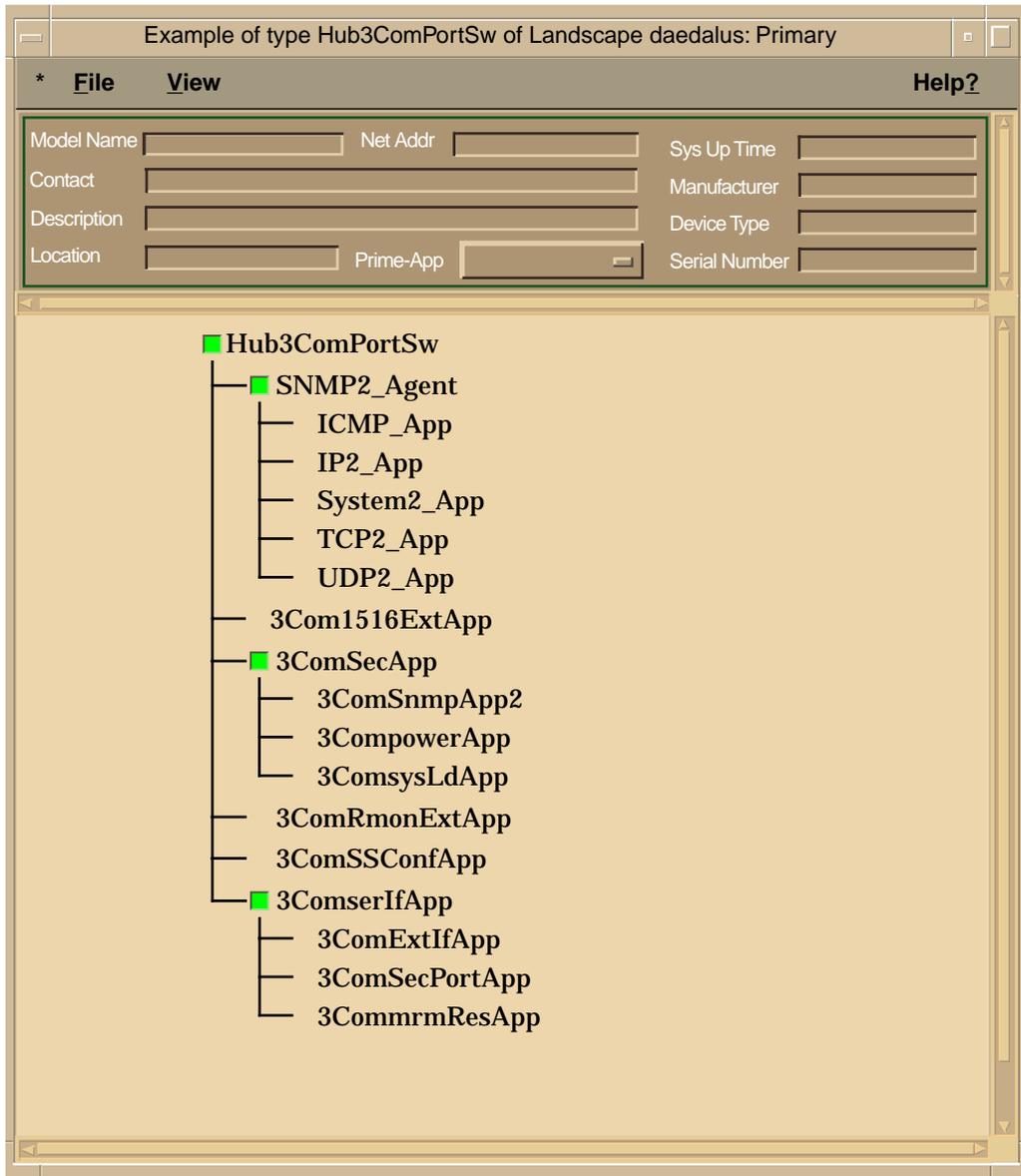
Security Application

This application supports security features on the device. The model type name is 3ComSecApp.

Security View

This view contains the Security Enable Table and the following buttons:

| Security Users |

Accesses the Security Users Table view, described below.

| Security Audit Log |

Accesses the Security Audit Table view, described below.

Security Enable Table

This table displays permission for access to the device from each of its interfaces. Users are assigned security levels in the Security Users Table view.

Security Level
Displays the security level for the table. This field also acts as the index for the table. Possible values are Monitor, SecureMonitor, Manager, Specialist, and Security.

The following fields have possible values of Enable, Disable, PermanentlyEnabled, and PermanantlyDisabled. You can change these fields from the Security Enable Table Entry view.

Community
The community SNMP access permission.

Secure
The secure SNMP access permission.

Terminal
The local terminal access permission.

Telnet
The Telnet access permission.

FrontPanel
The front panel access permission.

Security Users Table view

This view allows you to add and delete users and to modify their security levels. The default users, Monitor, Manager, and Security, cannot be deleted. Double-clicking an entry in this table displays the Security Enable Table Entry view.

This table displays the following:

Status
Displays the user status. Possible values are Valid and Invalid. A value of Invalid means the user can no longer access the device. The default users, Monitor, Manager, and Security, can not have their status changed to Invalid. You can update this field in the Security Users Table Entry view.

Name
Displays the user name. This is the index for the table. Empty user names are not allowed.

Level
Displays the user access level. This access level defines the scope of management this user can perform. The levels of security are the same as in the Security Enable Table described on Page 5-5. You can update this field for all users except the default users.

Password
Displays the password required for user confirmation when access is made from the local serial port, the front panel, or through Telnet. The Password field is only available in the Security Users Table Entry view and is a write-only field.

Community
Displays a string identifying the user when access is through the original community-based SNMP (RFC1157). You can update this field.

Local Party
Displays the local party identity of the user when access is through secure SNMP. You can update this field.

Manager Party
Displays the manager party identity of the user when access is through secure SNMP. You can update this field.

Add Entry

Allows you to add entries to the table.

Security Audit Table View

This view displays a record of all updates to the managed database of the device. When the log is full the oldest entry is overwritten. Therefore, this log should be read regularly by a management device so that a permanent record of the management history can be stored.

This view cannot be modified. It displays the following:

Index
Displays the index number for an entry. This is a value between 1 and 65535, which resets to 1 after reaching 65535.

Time
Displays the time of the last update request, in hundredths of a second since the last system restart.

User
Displays the name of the user making the request.

Object
Displays the object identifier for the item being updated. This includes any qualifier for the object.

Value
Displays the new value for the item.

Result
Displays the result of the update request. See Table 5-1 for possible responses.

Table 5-1.   Security Audit Log Results

Result	Meaning
Success	Update succeeded
Pending	Update not yet completed
Too-big	Value rejected as too big for the item
Failed	Value rejected by access function
Locked	Item is locked by another manager
Security-violation	User does not have privileges for this request
No-such-function	Item is read-only
No-such-item	Item does not exist

Local SNMP Application

This application provides access to the Local SNMP view, allowing you to set SNMP Traps for this device. The model type for this application is 3ComSnmpApp2.

Local SNMP View

This view contains the following:

Next Free Index
Displays the index value for the next table entry.

Add Entry

Accesses the Add SNMP Table Entry view, which allows you to set the following values for a new entry.

SNMP Trap Table

This table stores the destination addresses of SNMP managers that wish to receive traps from this device. Double-clicking an entry in this table displays the SNMP Trap Table Entry view in which you can update values.

Index
Displays the index for this entry.

Destination
Displays the network address of the device to which the SNMP traps will be sent.

Protocol
Displays the transport protocol to use when sending the trap. Possible values are IP, IPX, and None.

Community
Displays the SNMP community string to be used when sending the trap. You can update this field.

Category
Displays the categories of traps in which the Destination is interested. Table 5-2 shows possible values and descriptions.

Table 5-2.   SNMP Trap Categories

Value	Description
'00000001'h	High priority configuration traps
'00000002'h	Low priority configuration traps
'00000004'h	High priority security traps
'00000008'h	Low priority security traps
'00000010'h	Alarms and polling traps
'00000020'h	Regular heartbeat traps
'00000040'h	End Station Table traps
'00000080'h	Reserved
'00000100'h	Physical entity traps
'00000200'h	Facility traps
'00000400'h	Service related traps
0xFFFFFFFF	Enables all traps

Throttle
The maximum rate at which the Destination is willing to receive traps, in milliseconds. A value of 2000 will limit the traps to one every 2 seconds. A value of 0 indicates that no trap throttling is required. You can update this field.

Row Status
The status for this entry. Table 5-3 shows possible values and descriptions.

Table 5-3.   SNMP Trap Row Status Values

Value	Description
Active	This status can be displayed and set
NotinService	This status can be displayed and set
NotReady	This status can be displayed but not set
Create&Go	Used only when adding entries
Create&Wait	Used only when adding entries
Destroy	Deletes the entry

Power Supply Application

This application provides access to the Power Supply Configuration view, which presents a table containing power supply information for this device. The model type for this application is 3CompowerApp.

Power Supply Configuration View

This view contains the Power Supply Table and a description of how power supply information is generated.

Power Supply Table

This table displays the status of all power supply units in the stack. Double-click an entry in this table to display the Power Supply Table Entry view for that entry. You can not update information in either view.

Index
Displays the index number of the unit in question.

RBS Present
Indicates if a Resilient Backup Power Supply unit is attached to the unit.

RBS Status
Displays the status of the Resilient Backup Power Supply attached to the unit. Table 5-4 shows possible values and descriptions.

Table 5-4. Power Supply RBS Status Values

Value	Description
RBSNotApplicable	The unit does not support Resilient Power Supplies
RBSOK	The Resilient Power Supply is functioning with no faults
RBSFault	The Resilient Power Supply has a fault

System Loader Application

This application provides access to the System Loader View, which presents a table containing a history of software images loaded on this device. The model type for this application is 3ComsysLdApp2.

System Loader View

This view contains the System Loader Table. Double-click an entry in this table to display the System Loader Entry view in which you can update the Filename and Server Address fields for that entry and initiate downloads.

System Loader Table

This table is used to control the loading of new software images to the device controlled by the management agent. By convention, the first entry in the table (Type=System) controls the loading of the device containing the management agent itself. Agents that have no subsidiary devices will have only this entry in the System Loader Table. For agents with subsidiary devices, the other entries control the loading of software into these devices.

Type
Displays the type of device to load. Simple agents contain only one device type, which is always "System". Subsidiary agents have the type "Component". In general, a "System" device is one that monitors and manages the operation of component devices.

Inst
Displays the instance of the device type in the Type field.

Status
Displays the status of the last system load operation for this device, or the
reason for its failure. Table 5-5 shows possible status settings.

Table 5-5.　　　　System Loader Status States

State	Message
"Normal" states	LoadPending LoadActive Success Paused
Error states	FileNotFound AccessViolation IllegalOperation UnknownTransferID NoSuchUser NoResponse NoResource RecLenMismatch InvalidRecType ChecksumError WrongDevice WrongHardwareVersion NoFileHeader ByteCountError InvalidProgAddress EraseFailed ProgFailed ModInvalidAddress ModChecksumError ModTimeout ModBusy ModRemoved ModNoResource ModFailure

SWVers
Displays the version of the software running on this device.

HWVers
Displays the revision number of the hardware of this device.

Filename
Displays the name of the file that contains the software image to load or that
was last loaded. You can update this field.

Server Addr or Server IP
The IP address of the host containing the file which contains the software
image. You can update this field. This can be either an IP address in the
format nnn.nnn.nnn.nnn, or an IPX address in the format

AABBCCDD:112233445566. An error is returned if the agent does not support the download protocol implied by the address format.

Protocol
Displays the protocol to use when downloading the software. This is determined from the format of the address in the Server Addr field.

Load
This field is only available in the System Loader Entry view. It is always displayed as NoAction. Set the value to StartDownLoad to load the new software as specified in this entry.

RMON Extensions Application

This application supports the RMON Extensions View. The model type for this application is 3ComRMONExtApp.

RMON Extensions View

This view contains a Poll Table and the following buttons:

Host Tables

Accesses the RMON Extensions Host View described below.

Alarm Event Tables

Accesses the RMON Extensions Event Alarm View described below.

Poll Table

This table appears in two windows on the RMON Extensions View. It contains the following information:

Index
Identifier of a row in the Poll Table.

IP Address
Displays the network address of the device to monitor. Typically this is an IP, MAC, or IPX address. The following formats can be used.

- IP nnn.nnn.nnn.nnn - dotted format
- MAC AABBCCDDEEFF - hex notation
- IPX AABBCCDD:AABBCCDDEEFF - network : node

Protocol
Displays the protocol used to monitor the device. Writing to the address field causes a default protocol value, derived from the format/content of the address, to be setup. If the protocol is not supported or is not compatible with the address, an error is returned when the status is set to valid. Possible values are unknown, ip, ipx, netBIOS, appleTalk, and amp.

Timeout
Displays the time-out value in hundreds of a second for each request packet.

Attempt
Displays the number of unsuccessful requests necessary before deciding that the device is not responding.

Period
Displays how often the device will be polled, in seconds. The first poll is sent as soon as the status becomes valid.

Last Request
Displays the time, counting from the last system reset, at which the most recent request packet was sent.

LastReply
Displays the time, counting from the last system reset, at which the most recent request packet was received.

Information
After each poll, this field is updated with protocol-specific information from the packet exchange. For the IPX protocol, this displays the number of router hops made by the poll response packet. For the IP protocol, this displays the value of Time-To-Live from the IP packet header.

Success Index
Displays the index of the event that is used when a successful poll is made after a number of unsuccessful ones. If this value is zero, no event will be generated.

Failure Index
Displays the index of the event that is used when an unsuccessful poll is made after a number of successful ones. If this value is zero, no event will be generated.

Owner
Displays the owner of the device. RMON OwnerString conventions are used here to help control multi-manager situations.

Status
Displays the creation or deletion status of entries in the PollTable. RMON EntryStatus conventions are used.

RMON Extensions Host View

This view contains MAC to Port and Port to MAC tables. These tables provide cross references between the MAC address of a port and the complete Object ID string that refers to that port.

RMON Extensions Event Alarm View

This view contains the Alarm Table and the Event Table. The Alarm Table cross references the index number for an alarm with its peak value. The Event Table cross references the index number for an event with its action. Double-click the Event Action field to edit it.

SNMP Extensions Application

This application supports the SNMP-Repeater Configuration View. The model type name for this application is 3Com1516ExtApp

SNMP-Repeater Configuration View

This view contains the following buttons and fields:

Reset
Allows you to reset the repeater. Resetting does not affect the management counters or the Administrative State, but it does cause a disruptive Self-Test. As a result of this action a Reset trap may be sent. This action may result in the loss of packets. Possible values are noReset and reset.

NonDisrupt Test
Selecting selfTest performs an agent-specific, non-disruptive self-test. After performing this test the agent will update the repeater health information. If a change in the repeater health has occurred, the agent will send a trap. Possible values are noSelfTest and selfTest.

Operational Status
Displays the operational state of the repeater. In the case of multiple kinds of failures (for example, a repeater failure and a port failure), this value will reflect the highest priority failure.

See Table 5-6 for possible values and their meanings.

Table 5-6.   SNMP-Repeater Operational Status Values

Value	Description
other	Undefined or unknown
ok	No known failures
rptrFailure	Repeater related failure
groupFailure	Group related failure
portFailure	Port related failure
generalFailure	An unspecified failure

Health Text
Displays a string that provides information on the operational state of the repeater. This may be used to provide detailed failure information or instructions for problem resolution.

Partitioned Ports
Displays the number of ports in the repeater whose current state meets all the following criteria:

- The Port Operational Status does not have the value notPresent
- The Port Administrative Status is enabled
- The Port Auto Partition State is set to autoPartitioned

Group Capacity
Displays the number of groups that can be contained within the repeater. Within each managed repeater, groups are numbered from 1 to this number. Some groups may not be present in a given repeater, in which case the actual number of groups will be less than this number.

In practice, this will generally be the number of modules, cards, or boards that can fit in the physical repeater enclosure, and the group numbers will correspond to numbers marked on the physical enclosure.

Reconfigure Application

This button applies the current settings.

rfc1516 Extensions

This button accesses the RFC1516 Extensions view.

RFC1516 Extensions View

This view contains the RFC1516 Extensions Table, which displays information on the configuration of the ports on the device. Double-click any of the table entries to access the RFC1516 Extension Entry view, from which the Part Event, Link Event and Repeater Num can be modified.

RFC1516 Extensions Table

This table contains the following fields:

Index
Displays the specific port within the stack in the format "module.port".

Part Even
Displays whether an RMON event is generated when the port partition state changes. If no event is generated, this will be zero. The default value will be zero for point-to-point fiber and copper links like UTP, 10BaseF, etc. For multi-drop links, this will default to sending a trap and logging an event in the RMON log table.

LinkState Event
Displays the RMON event generated when the link signal is lost for this port. If no event is required, this object will be zero. The default value is zero.

Module
This attribute indicates whether the port is a modular port or not. Possible values are Unknown, Modular Port, and Not Modular Port.

Function
Displays the function of the port. Possible values are Unknown, Repeater, and Bridge.

Repeater Num
Displays the repeater to which this port is connected in a multiple repeater system. Setting this to a value that is illegal for a particular repeater will result in an error code being returned. By default each port is connected to a default repeater.

Each repeater in the stack is represented in the system by an entry in the interface table. To switch a repeater port between different repeaters, change the value of the interface index to the new value. An error is returned if the value cannot be used; for example, using an index number that does not represent a repeater, or attempting to connect to a repeater that is not in the same unit.

Allowed Reps
Displays the repeaters to which a particular port may be connected.

This is a sequence of 16-bit numbers, each a pair of octets. Each encoded value represents a repeater. The value of the field Repeater Num may be set to any of the values in this list.

For example, is a port can be connected to repeaters 55, 92, and 333, the encoding would be:

Repeater 55	Repeater 92	Repeater 333
00.37	00.5c	01.4d

The final value would be 00.37.00.5c.01.4d.

Conn Type
Displays the connector type. Possible values are Unknown, RJ45, Telco, ST, SMA, Female-DType-15, BNC, SC, Male-DType-15, and Cascade.

SuperStack Application

This application suppports the SuperStack Configuration view. The model type name for this application is 3ComSSConfApp.

SuperStack Configuration View

This view provides the SuperStack Table. Double-click any field to access the Stack Config Entry view, in which you can modify the Name and Attention settings of a device.

Index
Displays a number used to identify individual devices in the stack. This value will usually be contiguous but gaps may be present due, for example, to unpowered devices.

Address
Displays the physical (MAC) address. Note that the index value can change if devices are inserted into the stack, but that the physical address will not.

Last Reset
Displays the time, in hundredths of a second, since this device was last reset. If a device is not operational, this will be zero.

Type
Displays a number that represents this type of device in the MIB.

The values of this integer are administered by allocating a MIB object identifier for each type of unit from a common branch. The value of this object is then the last level in that identifier. The values are defined in this MIB

module, and unlikely to be contiguous. If a type value is not available for this device, this will return zero. There are two reasons why this value may not be available through this view of the MIB; the device may not currently be active, or the information is only available through the device's own agent.

Description
Displays a text string that describes the device. If it cannot provide a name, this will be empty.

Name
Displays a simple text string that can be used to assign a name to a device. By default this string is empty. If a management application writes to this field, the device will store the string in non-volatile storage.

State
Displays the state of a unit in the stack. Possible values are shown in Table 5-7:

Table 5-7.   SuperStack Table State Values

Value	Description
unitInactive	The unit fails to send out periodic messages, but still appears to be in the stack.
unitOperational	The unit sends out periodic messages indicating that it is operational.
unitLoading	The unit is in a special mode, which is unmanaged, while loading a new image. If the stack contains units which can download an image while still being managed, this will report 'unitOperational'.
unitStateUnknown	The unit is in an unknown state.

Management
Displays the management method used to access this unit. Possible values are shown in Table 5-8:

Table 5-8.   SuperStack Table Management Values

Value	Description
Unknown	The unit is either faulty or not managable.
Distributed	The unit can be managed, but may or may not have an active comm stack. If it does, the address for that agent can be determined from the address table.
Intelligent	The unit has its own SNMP agent, which is accessed seperately from the SuperStack management.

Capabilities
Displays the capabilities of the device. This is used in conjunction with the upgrade level of the stack to enable a management application to correctly enable and disable the various features of the application depending on the capabilities of the unit.

The object is an octet string, where each octet represents a capability. Possible values are shown in Table 5-9:

Table 5-9.   SuperStack Table Capability Values

Value	Description
01	Full RMON
02	3Com Proprietary repeater resilience
03	3Com Repeater Security MIB

If a unit has a value of '02 03' for this object, then it supports repeater resilience and security, but no other features such as RMON.

Prom Version
Displays the PROM version number on the device. If the unit has no PROM, does not correctly report the PROM version, or is currently non-operational, this will be empty.

HW Version
Displays the hardware version number of the device. If the hardware version is not available, this will be empty.

SW Version
Displays the software version number of the device. If a unit does not make its version number information available, or the device has no software, this will be empty.

Serial Number
Displays the serial number for the device.

Attention
Displays if there is an attention mechanism on a device. Possible values are No Attention and Attention.

Some units contain a mechanism for drawing attention, which is useful for directing maintainance personnel. This is often done by flashing a special LED.

Mgmt If
If the Management type is Distributed, this field displays the entry in the interface table which represents the potential management interface for the device. If this is zero, there is no management available for the device.

Slip Mgmt
If the Management type is Distributed, this field displays the entry in the interface table which represents the potential SLIP (serial port) management interface for the device. If this is zero there is no SLIP access port available on the device.

Serial I/f Application

The Serial Interface application supports the V.24 Port Config view, and serves as the anchor point for the Interface Extensions application, the Port Security application, and the Mrm Resilience application. The model type for this application is 3ComserIfApp.

V.24 Port Config View

This view contains the V.24 Port Config Table and Slip Port field.

Slip Port
The serial port which SLIP can use to send and receive packets. If this field has a value of 0xffff, then SLIP can not send or receive packets. You can update this field.

V.24 Port Config Table

This table describes the configuration parameters for the V.24 ports. Double-click an entry to accesses the V.24 Configuration Table Entry view in which you can update the selected entry.

This table contains the following:

Id
Displays the Port ID and index for this table.

Conn
Displays whether the port is connected Local to a terminal or terminal emulator, or Remote to a modem. If it is Local no interface signals need to be asserted unless by other management options. If it is Remote, at least DSR is required.

Auto Con
Displays Enabled if the next four parameter values are determined automatically from an initial character sequence entered by the user. Displays Disabled if the parameter values are entered explicitly.

Speed
Displays the receive and transmit speed of the port if AutoConfig is disabled. Different speeds for transmit and receive are not possible.

Char Size
Displays the character size if AutoConfig is disabled. Possible values are size7 and size8.

Stop Bits
Displays the number of stop bits, either 1, 1.5, or 2, if AutoConfig is disabled.

Parity
Displays the parity option to use if AutoConfig is disabled.

DSR Cont
This field only applies to Local connection types. It displays whether DSR needs to be asserted for a local connection to be made and if the connection needs to be released if the DSR is seen deasserted.

DCD Cont
This field only applies to Local connection types. It displays whether DCD needs to be asserted for a local connection to be made and if the connection needs to be released if the DCD is seen deasserted.

Flow Cont
Displays the flow control protocol to be used.

Update
Set this field to Change using the V.24 Configuration Table Entry view to force the port to update its parameters.

Interface Extensions Application

This application provides the Interface Extensions view. The model type for this application is 3ComExtIfApp.

Interface Extensions View

This view contains the Interface Extensions Table. Double-click an entry to access the RFC1516 Extension Entry view, which allows you to modify an interface.

If
Displays the interface number.

Enable Bootp
Displays whether BootP is enabled or not.

IP Address
Displays the IP address for this interface.

NOTE

This parameter can be changed to a new IP; however, changing this parameter by itself has no effect on the IP stack configuration and this value will not automatically be stored for the next restart.

The correct sequence is to make any changes, then Apply Changes. When Apply Changes is set to 'apply', the IP stack will store the changes permanently and will restart the stack.

Netmask
Displays the subnet mask for this interface. See the description of IP Address for a more information.

Default Router
Displays the IP address of the default router used by this interface. See the description of IP Address for a more information.

Apply Changes
This causes changes to the IP configuration of the device to be made permanent, reconfigures the stack to use the parameters, and optionally restarts the stack using these parameters. Store And Apply will store changes in non-volatile memory and reconfigure the stack to use those parameters.

Applying the new parameters may cause the device to reset. In this case there will be a delay of a few seconds before the new configuration is adopted, which will allow the SNMP response to the set request to be returned.

The correct procedure when changing IP configuration is to set all individual parameters and then apply changes. If the device resets before a Store And Apply is done, it will loose the changes.

Possible values are Not Applicable and Store And Apply.

Enable IPX
Displays whether IPX is enabled or not.

Possible values are Not Available, Enable, and Disable.

Name
Displays a short text name associated with an interface. Not all interface types can be named. If an instance of this object does not exist for a particular interface, then that interface cannot be named.

Port Security Application

This application provides access to the the Port Security View. The model for this application is 3ComSecPortApp.

Port Security View

This view contains the following security information:

Port Security Table

This table displays the security status of each port. A port can have a number of authorized MAC addresses, which are displayed in the Port Address Table.

Double-click any entry to edit information for that row.

Slot
Displays the unit on which a given port resides.

Port
Displays the number of the port in question.

Mode
Displays the learning and security modes of the port. Possible values are No Restrictions, Continuous Learning, Auto Learn, and Secure. No Restrictions disables all learning and security. Continuous Learning means that addresses are learned continually. If more addresses are learned than are permitted on the port, the older entries will be aged out. Auto Learn deletes all addresses for this port, learns addresses up to the number permitted, then sets Port Mode to secure. Secure disables learning.

When in a learning mode, Num Addr displays the maximum number of addresses that can be learned on the port. This can be set by the user.

A trap is sent whenever a station has been learned, and a different trap is sent whenever a packet is received from an unauthorized station.

Need To Know
Displays the way frames are to be forwarded to this port. Table 5-10 shows possible values and their meanings.

Table 5-10.   Port Security Need To Know Values

Value	Meaning
Not Available	Need to know is not available. This is not changeable.
Disabled	No restrictions are in place and all frames get sent.

Table 5-10. Port Security Need To Know Values (Continued)

Value	Meaning
Need To Know Only	Frames are restricted to those addressed to authorized devices.
Need To Know With Broadcast Allowed	Frames are restricted to those addressed to authorized devices and broadcast frames.
Need To Know With Multicast Allowed	Frames are restricted to those addressed to authorized devices. broadcast and multicast frames.
Permanent Need To Know Only	Frames are restricted to those addressed to authorized devices. This is not changeable.
Permanent Need To Know With Broadcast Allowed	Frames are restricted to those addressed to authorized devices and broadcast frames. This is not changeable.
Permanent Need To Know With Multicast Allowed	Frames are restricted to those addressed to authorized devices. broadcast and multicast frames This is not changeable.

Intr Action
Displays the action taken if an unauthorized device transmits on this port. Possible values are Not Available, No Action, and Disable Port.

Num Addr
Displays the maximum number of addresses that the port can learn or store. Reducing this number may cause some addresses to be deleted. This value is set by the user and cannot be automatically changed by the agent. This value must be less than or equal to Max Addr.

Num Addr Stored
Displays he number of addresses that are currently in the Port Address Table for this port. If this object has the same value as Num Addr, no more addresses can be authorized on this port. This value must be less than or equal to Num Addr.

Max Addr
Displays the maximum value that Num Addr can be set to. It is dependent on the system resources available, and so may change as system processes change. If resources are shared between ports, this value could increase or decrease as resources are shifted around.

Port Address Table

This table displays the MAC addresses assigned to each port. Addresses will normally be defined as authorized, and describe the devices which are permitted to transmit and receive on the corresponding port.

Slot
Displays the slot number of the port in question.

Port
Displays the port number of the port in question.

MAC Address
The MAC address of a station assigned to this port.

Row Status
The status for this entry.

Table 5-11 shows possible values and descriptions.

Table 5-11.   Row Status Values

Value	Description
Active	This status can be displayed and set
NotinService	This status can be displayed and set
NotReady	This status can be displayed but not set
Create&Go	Used only when adding entries
Create&Wait	Used only when adding entries
Destroy	Deletes the entry

Mrm Resilience Application

This application provides access to the Mrm Resilience Table view. The model for this application is 3CommrmResApp.

Mrm Resilience View

This view contains the Mrm Resilience Table and the following:

Flush Table
Setting this menu button to Flush empties the Resilience Table. Once flushed, no resilient links are configured. You can now configure new links.

Add Entry

This button opens the Add Resilient Table Entry view. Enter the Instance of the new pair and set the Under Mod field to Under-Mod. This creates an empty entry in the table. Double-click the entry to be able to enter the definition.

StandBy Map Table

This button opens the Mrm Resilience Standby Table.

Mrm Resilience Table

A device can be configured to have a number of "resilient pairs" 802.3 Point-to-Point connections; for example, UTP, which allows two repeaters to be connected in a resilient configuration. In such a pair, one port is the main port, the other the standby port. One of these ports is enabled and is the current active port, the other is present in case the active port fails. The device detects a failure and switches ports.

For a resilient pair definition to be valid, both ports must be on the same repeater. Also, the standby port must be configured to be "disabled on boot"; that is, it must recover from a power failure in a disabled state to prevent loops in the network.

This table allows creation and deletion or resilient pairs and provides status control and information. The entries are indexed on the repeater number and slot/port location of the main port.

Double-clicking an entry accesses the Mrm Resilience Table Entry View in which you can update the configuration of a resilient pair.

Repeater
Displays the repeater on which both ports in the pair are located.

Main Slot
Displays the slot number of the main port in the pair.

Main Port
Displays the port number of the main port in the pair.

Main State
Displays the state of the main port. Table 5-12 shows possible values and descriptions.

Table 5-12.   Mrm Resilience Main or Standby States

Value	Description
Failed	Loss of signal to the port
OK	Port is capable of carrying traffic but is in the standby state
OKandActive	Port is active

SBY Slot
Displays the slot number of the standby port in the pair. You can update this field using the Mrm Resilience Table Entry view.

SBY Port
Displays the port number of the standby port in the pair. You can update this field using the Mrm Resilience Table Entry view.

SBY State
Displays the state of the main port. Table 5-12 shows possible values and descriptions.

Pair State
Displays the state of the resilient pair. Possible values are Operational and Invalid. When this field is Operational, all of the parameters in the entry are valid. When this field is Invalid, either information has been omitted, or the resilient pair rules are no longer valid because of a change in the configuration of the device, such as moving a card.

Mod State
Displays the Modification State of the resilient pair. You must set the Under Mod field in the Mrm Resilience Table Entry view to a value of Under-Mod before changing the configuration of a pair. The changes are not applied until this field shows the value Stable.

Pair Action
This field is used to change the state of the pair. Setting a value of Create configures the pair using the definitions in the entry. Setting Delete removes the entry from the table and terminates operation of resilience on this pair of ports. The setting TogglePort swaps the currently active port with the standby one if, and only if, the standby port has a status of OK.

Pair Enable
This filed Enables or Disables both ports in the resilient pair.

Mrm Resilience Standby Table

The Mrm Resilience Standby Table is accessed by clicking the Standby Map Table button in the Mrm Resilience view. This is a read-only table which provides shortcut information to allow the translation of a port number to a corresponding main port number. This number can then be used to access the Mrm Resilience Table. Each resilient pair has two entries in the table, one for the main port and one for the standby.

Repeater
Displays the repeater on which the port is located.

Slot
Displays the slot number on which the port is located.

Port
Displays the port number of the port.

Type
Displays the type of the port. Possible values are Main and Standby.

Main Slot
Displays the slot number of the main port in the pair.

Main Port
Displays the port number of the main port in the pair.

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