EPICenter™ Software Installation and User Guide

Version 4.0

Extreme Networks, Inc.
3585 Monroe Street
Santa Clara, California 95051
(888) 257-3000
http://www.extremenetworks.com

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Preface

This preface provides an overview of this guide, describes guide conventions, and lists other useful publications.

Introduction

This guide provides the required information to use the EPICenter software. It is intended for use by network managers who are responsible for monitoring and managing Local Area Networks, and assumes a basic working knowledge of:

- Local Area Networks (LANs)
- Ethernet concepts
- Ethernet switching and bridging concepts
- Routing concepts
- The Simple Network Management Protocol (SNMP)

NOTE

If the information in the EPICenter Release Note and Quick Start Guide *shipped with your software differs from the information in this guide, follow the Release Note.*

Terminology

When features, functionality, or operation is specific to the Summit, Alpine, or BlackDiamond switch family, the family name is used. Explanations about features and operations that are the same across all Extreme switch product families simply refer to the product as the "Extreme device" or "Extreme switch." Explanations about features that are the same for all devices managed by EPICenter (both Extreme devices and others) are simply refer to "devices."

Conventions

Table 1 and Table 2 list conventions that are used throughout this guide.

Table 1: Notice Icons

Icon	Notice Type	Alerts you to...
ℹ	Note	Important features or instructions.
⚠	Caution	Risk of unintended consequences or recoverable loss of data.
⚡	Warning	Risk of permanent loss of data.

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Table 2: Text Conventions

Convention	Description
`Screen displays`	This typeface represents information as it appears on the screen.
`Screen displays bold`	This typeface indicates how you would type a particular command.
The words "enter" and "type"	When you see the word "enter" in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says "type."

Table 2: Text Conventions (continued)

Convention	Description
[Key] names	Key names appear in text in one of two ways. They may be • referred to by their labels, such as “the Return key” or “the Escape key.” • written with brackets, such as [Return] or [Esc]. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). For example: Press [Ctrl]+[Alt]+[Del].
Words in **bold** type	Bold text indicates a button or field name.
Words in *italicized* type	Italics emphasize a point or denote new terms at the place where they are defined in the text.

Related Publications

The EPICenter documentation set includes the following:

- The *EPICenter Software Installation and User Guide* (the manual you are reading)
- *EPICenter SE Release Note and Quick Start Guide*
- EPICenter License Agreement

The two manuals and the Release Note can be found online in Adobe Acrobat PDF format, in the `docs` subdirectory of the EPICenter installation directory. You must have Adobe Acrobat Reader version 3.0 or later (available from http://www.adobe.com free of charge).

Other manuals that you will find useful are:

- *ExtremeWare Software User Guide*
- *ExtremeWare Quick Reference Guide*

For documentation on Extreme Networks products, and for general information about Extreme Networks, see the Extreme Networks home page:

- http://www.extremenetworks.com

Customers with a support contract can access the Technical Support pages at:

- http://www.extremenetworks.com/support/database.htm

The technical support pages provide the latest information on Extreme Networks software products, including the latest Release Notes, information on known problems, downloadable updates or patches as appropriate, and other useful information and resources.

Customers without contracts can access manuals and patches at:

- http://www.extremenetworks.com/support/documentation.asp

1 EPICenter Overview

This chapter describes:

- Features of the EPICenter™ software
- EPICenter software components

Introduction

Today's corporate networks commonly encompass hundreds or thousands of systems, including individual end user systems, servers, network devices such as printers, and internetworking systems. Extreme Networks™ recognizes that network managers have different needs, and delivers a suite of ExtremeWare™ management tools to meet those needs.

EPICenter is a powerful yet easy-to-use application suite that facilitates the management of a network of Summit™, BlackDiamond™, and Alpine™ switches, as well as selected third-party switches. EPICenter makes it easier to perform configuration and status monitoring, create virtual LANs (VLANs), and implement policy-based networking in enterprise LANs with Extreme Networks switches. EPICenter offers a comprehensive set of network management tools that are easy to use from a client workstation running EPICenter client software, or from a workstation configured with a web browser and the Java plug-in.

EPICenter leverages the three-tier client/server architecture framework represented by Java applets, and can be accessed using Microsoft Internet Explorer or Netscape Navigator with Sun's Java Plug-in. The EPICenter application and database support two of the most popular operating environments in the marketplace, Microsoft Windows NT/2000 and Sun Microsystems' Solaris. Integration with HP OpenView and other third-party network management software products provides additional flexibility.

Summary of Features

In large corporate networks, network managers need to manage systems "end to end." The EPICenter software is a powerful, flexible and easy-to-use application for centralizing the management of a network of Extreme switches and selected third-party devices, regardless of the network size. The EPICenter software provides the vital SNMP, HTML, and CLI-based tools you need for network-wide management of Extreme Networks Summit, Black Diamond, and Alpine switches.

- **Network Control**. The EPICenter software provides configuration and monitoring of Extreme Networks' switches and selected third-party devices anywhere on the network simultaneously.
- **Intelligent Management**. Extreme SmartTraps™ (patent pending) automatically gather switch configuration changes and forward them to the EPICenter server, thereby minimizing network management traffic. EPICenter separates its "heartbeat" polling, used to asses a device's connectivity, from its less frequent and more data-intensive status polling.
- **Hierarchical Displays**. Most information, including that found in EPICenter topology maps, VLAN management, configuration management, and real-time statistics, is dynamically presented in an easy-to-navigate hierarchical tree.
- **Multi-platform capability**. The EPICenter server supports both Sun SPARC/Solaris and Intel/Windows NT 4.0 or Windows 2000. Client applications on either of these platforms can connect to servers on either platform.
- **Support for multiple users with security**. Users must log in to the application, and can be granted different levels of access to the application features.
- **Web-based or installed clients**. The EPICenter software gives you a choice of installing client software, or connecting to the EPICenter server through a web-browser-based client, available on Windows client machines.
- **Manage large numbers of devices.** The EPICenter server can manage up to 2000 devices with a single installation of the EPICenter software. For even larger networks you can split the management task among several EPICenter servers in a distributed server mode that lets you monitor the status of those servers from a single client.

Extreme Networks switches and many other MIB-2 compatible devices can be monitored and controlled from a central interface, without exiting EPICenter to run a separate program or telnet session. Features such as SmartTraps and the EPICenter alarm system further maximize network monitoring capability while maintaining network usage efficiency.

You can organize your network resources into groups (including groups made up of selected ports from multiple switches) that you can manage as a single entity. You can set VLAN configurations across the network without having to log into switches individually. You can search for individual IP addresses and identify their connections into the network. You can monitor the status of your network devices either visually, through the ExtremeView applet, or by setting alarms that will notify you about conditions or events on your network devices. You can get a high-level overview of the status of your network devices displayed as a hierarchical topology map.

These features and more are described in more detail in the following sections, and in the remaining chapters of this manual.

Simple Inventory Management

EPICenter's Inventory Manager applet keeps a database of all the devices managed by the EPICenter software. Any EPICenter user can view status information about the switches currently known to the EPICenter database.

The EPICenter Inventory Management applet provides an automatic discovery function. Users with the appropriate access can use this feature to discover Extreme and other MIB-2 devices by specific IP address or within a range of IP addresses.

Network devices can also be added to the EPICenter database manually, using the Inventory Manager Add function. Once a network device is known to the EPICenter database, you can assign it to a specific device group, and configure it using the VLAN Manager, the Configuration Manager, or the ExtremeView tool.

EPICenter also provides a command-line utility that lets you create device groups and import large numbers of devices into the inventory database through scripts, to streamline the process of adding and organizing devices for management purposes.

The Alarm System

The EPICenter Alarm System provides fault detection and alarm handling for the network devices monitored by the EPICenter software. This includes Extreme devices and some third-party devices—those that the EPICenter software can include in its Inventory database. The Alarm System also lets you define your own alarms that will report errors under conditions you specify, such as repeated occurrences or exceeding threshold values. You can specify the actions that should be taken when an alarm occurs, and you can enable and disable individual alarms.

Fault detection is based on SNMP traps, RMON traps, Syslog messages, and some limited polling. The Alarm System supports SNMP MIB-2 and the Extreme Networks private MIB. You can also configure alarms based on certain event thresholds, or on the content of Syslog messages. When an alarm occurs you can specify actions such as sending e-mail, forwarding a trap, running a program, running a script, or sounding an audible alert.

The Configuration Manager

The EPICenter Configuration Manager applet provides a mechanism and a graphical interface for uploading and downloading configuration files to and from managed devices. It can also download ExtremeWare software images and BootROM images to Extreme Networks devices, or to Extreme modules that include software .

The Configuration Manager provides a framework for storing the configuration files, to allow tracking of multiple versions. Configuration file uploads can be performed on demand, or can be scheduled to occur at regular times—once a day, once a week, or at whatever interval is appropriate.

The Grouping Manager

One of the powerful features of the EPICenter software is its ability to take actions on multiple devices or resources with a single user action. The Grouping Manager facilitates this by letting you organize various resources into hierarchical groups, which can then be referenced in other applets. You can then take actions on a group, rather than having to specify the individual devices or ports that you want to affect.

You can also create or import named resources such as users and workstations, which can be mapped through the Grouping Manager to IP addresses and ports. This capability is especially important in relationship to the optional Policy Manager applet, which takes advantage of these types of resources to simplify the creation of QoS and Access List policies.

The IP/MAC Address Finder

The IP/MAC Address Finder applet lets you search for specific network addresses (MAC or IP addresses) and identify the Extreme Networks switch and port on which the address resides. You can also use the IP/MAC Finder applet to find all addresses on a specific port or set of ports. You can export the results of your search to a file , either on the server or on your local (client) system.

Interactive Telnet Applet

The ExtremeView Telnet feature includes a macro capability that lets you create and execute scripts of CLI commands repeatedly on multiple devices in one operation. You can save your macros for reuse at other times. Results of the most recent macro run on each device are saved into log files, and can be viewed from within the Telnet applet.

You can also use the interactive Telnet capability to view and modify configuration information for some Cisco and 3COM devices as well as for Extreme Networks devices.

ExtremeView Configuration and Status Monitoring

With the ExtremeView applet, any Extreme Networks switch can be monitored through a front panel image that provides a visual device representation, and can be configured without leaving the EPICenter client to invoke another program or Telnet session.

The ExtremeView applet displays detailed information about the status of Extreme switches in a number of categories. Any EPICenter user can view status information about the network devices known to the EPICenter database. Users with the appropriate access permissions can also view and modify configuration information for those switches through the ExtremeWare Vista graphical user interface, accessed through the ExtremeView applet.

Real-Time Statistics

The Real-Time Statistics feature of the EPICenter software provides a graphical presentation of utilization and error statistics for Extreme switches in real time. The data is taken from Management Information Base (MIB) objects in the etherHistory table of the Remote Monitoring (RMON) MIB. You can choose from a variety of styles of charts and graphs as well as a tabular display.

You can view data for multiple ports on a device, device slot, or within a port group, optionally limiting the display to the “top N” ports (where N is a number you can configure). You can also view historical statistics for an individual port. If you choose to view a single port, the display shows the value of the selected variable(s) over time, and can show utilization history, total errors history, or a breakdown of individual errors.

In addition, the Real-Time Statistics applet lets you “snapshot” a graph or table as a separate browser page. You can then save, print, or e-mail the page.

Topology Views

The EPICenter software’s Topology applet allows you to view your network (EPICenter-managed devices and the links between Extreme Networks devices) as a set of maps. These maps can be organized as a tree of submaps that allow you to represent your network as a hierarchical system of campuses, buildings, floors, closets, or whatever logical groupings you want.

The Topology applet can automatically add device nodes to your map as devices are added to EPICenter software’s device inventory. The EPICenter software automatically detects and adds links that exist between Extreme Networks devices, and organizes the device nodes into submaps as appropriate. The links between devices provide information about the configuration and status of the links.

You can customize the resulting maps by creating submaps, moving map elements within or between supmaps, adding new elements, such as links, “decorative” (non-managed) nodes, and text, and customizing the look and labeling of the discovered nodes themselves. In addition, options are available to organize and optimize the map layout to display very large numbers of devices with the minimum of device and link overlap.

The Topology applet also provides information about the VLANs configured on devices in a topology view. Using the Display VLANs feature, you can visually see which links and devices are configured for a selected VLAN, or select a specific device or link to see what VLANs are configured on that device.

Finally, from a managed device node on the map, you can invoke other EPICenter functions such as the alarm browser, telnet, real-time statistics, a front panel view, the VLAN Manager, or ExtremeWare Vista for the selected device.

Enterprise-wide VLAN Management

A virtual LAN (VLAN) is a group of location- and topology-independent devices that communicate as if they were on the same physical local area network (LAN).

The EPICenter VLAN Manager is an enterprise-wide application that manages many aspects of VLANs on Extreme Network's Summit, BlackDiamond, and Alpine switches. Any EPICenter user can view status information about the VLANs known to EPICenter across the network. Users with the appropriate access can create and delete VLANs, add and remove ports from existing VLANs, and create and modify the protocol filters used to filter VLAN traffic. When creating or modifying a VLAN, you can get EPICenter to determine whether there is connectivity between the devices you have included in the VLAN, and if not, it can recommend what ports and devices you should add to achieve connectivity.

The ESRP Manager

The Extreme Standby Router Protocol (ESRP) is a feature of ExtremeWare that allows multiple switches to provide redundant layer 3 routing services, as well as layer 2 redundancy, to users. The ESRP Manager displays the status of ESRP-enabled VLANs and the ESRP-enabled switches in those VLANs. You can view a summary status for all the ESRP-enabled VLANs being monitored by the EPICenter software. You can also view detailed information for an individual ESRP-enabled VLAN and the switches in those VLANs.

The STP Monitor

The EPICenter Spanning Tree Protocol (STP) Monitor module displays information about STP domains network-wide at the domain, VLAN, device, and port levels. The STP Monitor can monitor STP domains configured on devices running ExtremeWare 6.2.2 or later. Earlier versions of ExtremeWare supported the Spanning Tree protocol, but STP information via SNMP was not available until version 6.2.2.

Dynamic Reports

EPICenter Reports are HTML pages that can be accessed separately from the main EPICenter user interface, without logging in to the Java user interface. The Reports module can also be accessed from the EPICenter Navigation toolbar. A Summary Report is also displayed on the main EPICenter "home" page that provides basic information on the status of EPICenter devices and alarms. From this report you can access other more detailed reports.

The EPICenter reports are HTML pages that do not require Java capability, and thus can be accessed from browsers that do not have the ability to run the full EPICenter user interface. This means reports can be loaded quickly, even over a dial-up connection, and it also provides the ability to print the reports.

The Reports capability provides a number of predefined HTML reports that present information from the EPICenter database. You can also create your own reports by writing Tcl scripts.

Distributed Server Mode

To manage very large numbers of network devices, or devices that are geographically distributed, the management task can be divided up betweeen multiple EPICenter servers. Each server in the server group is updated at regular intervals with network summary and status information from the other servers in the group. From the EPICenter home page, a client attached to any one of the servers in the server group can view summary status information from the other servers in the group in addition to the standard Network Summary report. The EPICenter client also lets the user easily navigate between the different servers in the group to see detailed management information about the devices managed by thosse servers.

Security Management

In order to access EPICenter features, a user must log in with a user name and a password.

EPICenter provides three access levels:

- Monitor—users who can view status information only.
- Manager—users who can modify device parameters as well as view status information.
- Administrator—users who can create, modify and delete EPICenter user accounts as well as perform all the functions of a user with Manager access.

The EPICenter Admin applet enables configuration of EPICenter as a Remote Authentication Dial In User Service (RADIUS) server. As an alternative, it can be configured as a RADIUS client, or RADIUS authentication functionality can be disabled.

When EPICenter acts as a RADIUS server, it can be contacted by RADIUS clients (such as Extreme Networks switches) to configure access permissions for Extreme switches, and to authenticate user names and passwords. The use of the RADIUS server avoids the need to maintain user names, passwords, and access permissions in each switch, and instead centralizes the configuration in one location in EPICenter.

EPICenter Stand-alone Utilities

The EPICenter software provides several stand-alone utilities or scripts that streamline the process of getting information into and out of the EPICenter database, or facilitate certain device troubleshooting functions. These are the following:

- The DevCLI utility lets you add devices to and remove devices from the EPICenter inventory database via command, and supports batch additions and deletions specified via a file.
- A set of Inventory Export scripts that enable you to export information from the EPICenter database about the devices that are being managed. The information is provided in a format suitable for import into other applications, such as a spreadsheet.
- The SNMPCLI utility provides SNMP Get, GetNext, and SNMP walk features that may be needed to obtain device MIB information for troubleshooting.
- A set of utilities that provide a command line interface to several EPICenter software functions. These include the AlarmMgr utility, FindAddr utility, TransferMgr utility, and VlanMgr utility. These utilities enable you to perform certain EPICenter functions from the command line (or through a script) rather than through the EPICenter graphical user interface. Results from the Alarm Manager utility and the Find Address utility can be output to a file.

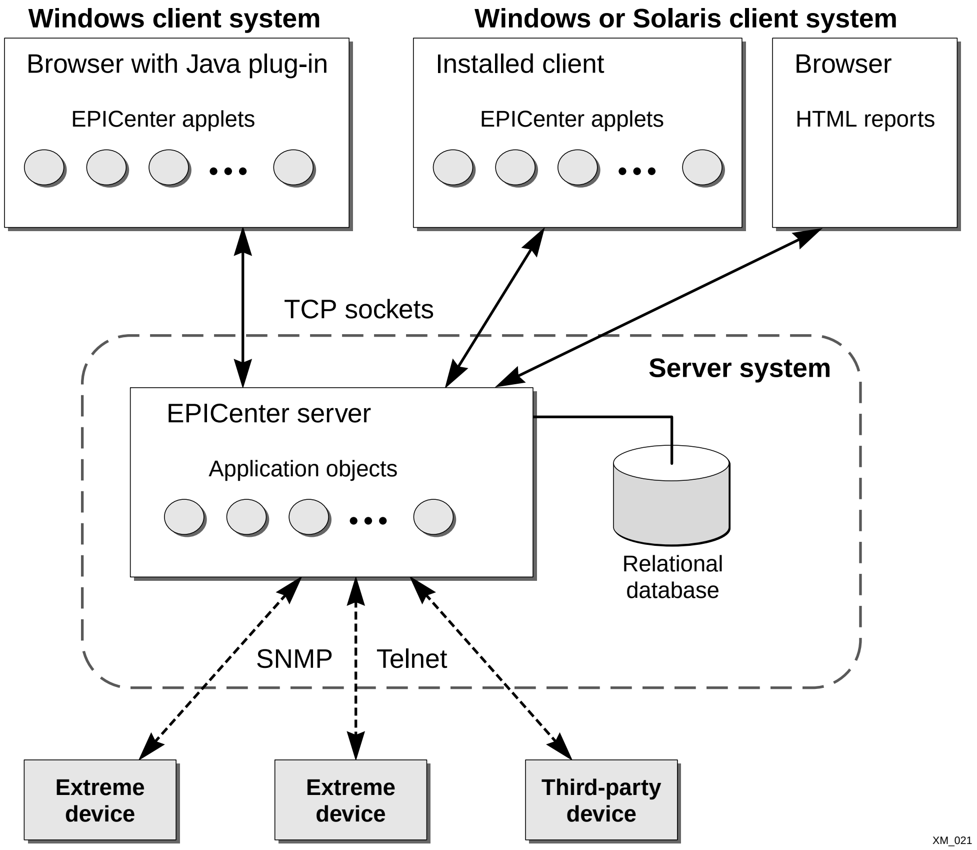
EPICenter Components

The EPICenter software is made up of three major functional components:

- The EPICenter Server, which is based on the Tomcat Java server. The server is responsible for downloading applets, running servlets, managing security, and communicating with the database.
- A Relational Database Management System (RDBMS), Sybase Adaptive Server Anywhere, which is used as both a persistent data store and a data cache.
- EPICenter client applications. This can be an installed client application that runs on a Windows NT/2000 or Solaris system. For Windows systems only, the client can also be a set of Java applets downloaded from the server to the client on demand into a Java-enabled browser running the Java plug-in (Java 1.3.1_03).

Figure 1 illustrates the architecture of the EPICenter software.

Figure 1: EPICenter software architecture



Extreme Networks Switch Management

The EPICenter software uses SNMP to monitor and manage the devices in the network. To avoid the overhead of frequent device polling, the EPICenter software also uses a mechanism called SmartTraps to identify changes in Extreme Networks device configuration.

When an Extreme Networks switch is added to the EPICenter database, the EPICenter software creates a set of SmartTraps rules that define what events (status and configuration changes) the EPICenter server needs to know about. These rules are downloaded into the Extreme Networks switch, and the EPICenter server is automatically registered as a trap receiver. Subsequently, whenever a status or configuration change takes place, the ExtremeWare software in the switch uses the SmartTraps rules to determine if the EPICenter server should be notified. These changes can be changes in device status, such as fan failure or overheating, or configuration changes made on the switch through the ExtremeWare CLI or ExtremeWare Vista.

The EPICenter server does a “heartbeat” check, by default every five minutes, of all the devices it is managing to determine if the devices are still accessible. It also does a full poll of each device at longer intervals. This interval for this less frequent status polling can be adjusted on each individual device. The EPICenter software also gives you the ability to gather device status at any time using the **Sync** feature in the Inventory Manager applet.

Extreme Networks Device Support

Extreme Networks devices running the ExtremeWare software version 2.0 or later, are supported by most features in the EPICenter system, including the VLAN Manager and the graphical display features of the ExtremeView applet. Some features, such as ESRP, or the Policy Manager, require more recent versions of the ExtremeWare software.

NOTE

See the EPICenter Release Note and Quick Start Guide *or the Extreme Networks web site for the most current information on device support in the EPICenter software.*

Third-Party Device Support

Any device running a MIB-2 compatible SNMP agent can be discovered by the EPICenter Inventory manager, and saved in the Inventory database. All devices in the database can also appear on a topology map. The EPICenter alarm system can handle SNMP traps from any device in the inventory database, including RMON traps from devices with RMON enabled. The Real-Time Statistics module can display statistics for any device with RMON enabled, the IP/MAC Finder applet supports all devices running MIB-2 and the Bridge MIB, with the exception of user mapping, which is specific to Extreme devices.

In the Telnet applet, you can use the Telnet feature with any device that supports a Telnet interface. In the ExtremeView applet, all Extreme devices and selected third-party devices (including certain Cisco and 3COM devices) can display a device-specific front panel view in the Summary view. In addition, vendor-specific generic images are available for additional devices, such as Sun and Nortel, and a standard generic image can be displayed for all other “unknown” devices. New device images and configuration description files may be added over time—check the Extreme Networks web site for information on new device support.

2 Installing the EPICenter Software

This chapter describes:

- Hardware and software requirements for the EPICenter server and client
- Procedure for obtaining an evaluation or permanent license key for the software
- Installing the EPICenter server software under either Windows NT or Windows 2000
- Installing the EPICenter client software under either Windows NT or Windows 2000
- Setting up Internet Explorer for use with the EPICenter client on a Windows system
- Installing the EPICenter server software under the Solaris Operating Environment
- Installing the EPICenter client software under the Solaris Operating Environment

Installation Overview

The EPICenter software includes a set of Java applications, a Web Server, database software, and a client application. The installation process installs all of these components on a Windows NT 4.0 or Windows 2000 system, or under Solaris 2.6, Solaris 7, or Solaris 8.

The EPICenter software offers two different clients. One is an installed client that runs as a stand-alone application on the client workstation. The other client runs within a web browser (Microsoft Internet Explorer under Windows) with the Java Plug-in version 1.3.1 or later. The browser-based client does not require installation, you just point your browser to the EPICenter server. The installed client is installed along with the EPICenter server, and can be installed separately on a client workstation.

NOTE

See the EPICenter Release Note and Quick Start Guide *for the most current information on installation requirements.*

The EPICenter server installation process installs two components:

- The EPICenter Database Engine
- The EPICenter Web Server

Under Windows NT/2000 you can run these as services, or just as an application. Running them as services is recommended.

Server Requirements

The EPICenter server can run under Microsoft Windows NT 4.0, Microsoft Windows 2000, or Sun Microsystems' Solaris Operating Environment, SPARC Platform Edition.

Windows NT or Windows 2000

For installation under Windows NT or Windows 2000, the requirements are:

- Microsoft Windows NT 4.0 or Windows 2000 running on an Intel platform.
- 128 MB RAM (256 MB recommended, especially if you plan to run an EPICenter client on the same system).
- Disk space depends on the file system used on the disk as well as the number of items (devices, ports, alarms etc.) that the system must handle:
  - 130 MB of disk space for the server installation.
  - Up to 150-200 MB for runtime usage (log files, database, user-defined scripts, reports, and so on).
  - If the disk is using the FAT file system, the EPICenter server could use 20% of the disk (i.e 300MB on a 1 GB disk, 600 MB on a 2GB disk and so on). Installing on a FAT file system is not recommended.

    You can tell the type of file system by looking at the disk properties. Right-click on the drive letter in the Windows Explorer or My Computer windows.
- 300 Mhz Pentium-compatible processor.

- CDROM drive (for installation).
- A network connection.

Solaris

For installation under Solaris, the requirements are:

- Solaris Operating Environment 2.6, Solaris 7, or Solaris 8 with required patches already installed.
- 128 MB RAM (256 MB recommended, especially if you plan to run an EPICenter client on the same system).
- As much as 300 MB disk space:
  - — 130 MB of disk space for the server installation
  - — Up to 150-200 MB for runtime usage (log files, database, user-defined scripts, reports and so on)
- CDROM drive (for installation)
- A network connection

Both the Solaris 2.6 and Solaris 7 operating environments may require patches for EPICenter to function properly. Make certain these patches have been installed before you install the EPICenter server software. See “Required Patches” on page 45 for more information on obtaining any needed patches.

For the most current information on required patches, see the *EPICenter Release Note and Quick Start Guide* that accompanies your EPICenter software, or check the Extreme Networks web site at www.extremenetworks.com.

Client Requirements

The EPICenter software provides two options for connecting to an EPICenter server from a client system: a stand-alone client application, or a browser-based client you can run from a web browser such as Microsoft Internet Explorer.

On Solaris-based systems, only the stand-alone client is supported.

NOTE

The browser-based client is supported on Windows-based systems only.

The EPICenter client requires a monitor that supports 1024 x 768 resolution, and at least 16-bit color. Your system Display Settings must be set for 65536 colors.

The client can also use large amounts of memory. 128 MB of RAM is recommended for best performance (256 MB is recommended if you plan to run the client on the same system as the EPICenter server).

The browser-based client is a Java-based application that runs within a web browser such as Microsoft Internet Explorer. Under Windows NT 4.0 or Windows 2000, install Internet Explorer 5.0, or Internet Explorer 5.5 with Service Pack 1, and the Java 1.3.1 plug-in.

NOTE

See the EPICenter Release Note and Quick Start Guide *shipped with the software for the latest information about configuration requirements.*

Browser Requirements for Reports

Even if you are running the stand-alone client application, a browser is required to run the EPICenter HTML reports. The EPICenter dynamic reports are HTML pages that do not require Java capability, and thus can be accessed from browsers that do not have the ability to run the full EPICenter user interface. The following browser clients are supported for displaying reports:

- Under Windows NT 4.0 or Windows 2000, install Internet Explorer 5.0, or Internet Explorer 5.5 with Service Pack 1
- On a Solaris system, install Netscape Navigator/Communicator 4.7 or later

To launch the browser and view the EPICenter HTML reports on a Solaris system, you need to include Netscape on the search path. If you do not want to add Netscape to the search path, edit the `launchURL.sh` script from either the EPICenter server install directory (by default, `/opt/epc4_0)` or the EPICenter client install directory (by default, `/opt/epc4_0_client)`. In the `launchURL.sh` script, replace the word “netscape” with the full path to the Netscape program installed on your system.

EPICenter Software Licensing

In order to log in to the EPICenter server from an EPICenter client, the product must be configured with a valid license. Optional products such as the Policy Manager also require their own license keys.

An evaluation license allows you to run the product for 30 days. A permanent license has no time limit. You can install the software without a license key, but you will not be able to connect to it from an EPICenter client. (If you need to install the product without a license key, you can add the key at a later time using a license key upgrade utility.)

You must obtain both evaluation and permanent license keys from the Extreme Networks licensing web site. The license key should be sent to you as e-mail within minutes of submitting your request.

Both evaluation and permanent license keys are 14-character keys that start with EP and are followed by 12 additional characters that are a combination of upper- and lower-case case alphabetic characters, numbers, and special characters such as "+"

If you have purchased the product, you should have received an activation key, found on the License Agreement included in your software package. This key starts with "AC," and can be used to obtain a permanent license key. You do not need an activation key to obtain an evaluation license key.

NOTE

See the EPICenter Release Note and Quick Start Guide *shipped with the software for the latest information about obtaining a license key.*

Obtaining an Evaluation License

To obtain an evaluation license key, use your browser to connect to the license page at http://www.extremenetworks.com/go/epickey.htm.

Select the option to obtain an evaluation license key. You will be asked to enter your name, company information, and other similar information, and an e-mail address to which your license key should be sent.

You license key will be sent to you by return e-mail.

Obtaining a Permanent License

To obtain a permanent license key, use your browser to connect to the license page at http://www.extremenetworks.com/go/epickey.htm.

Select the option to obtain a permanent license key.

Fill in the requested information, and enter your activation key. The activation key is a 14-character key that starts with "AC" and is found on the License Agreement included with your software package.

Your permanent license key will be sent to you by return e-mail.

Upgrading an Evaluation License

To update an evaluation license of EPICenter to a permanent license, use the `instlic` utility.

In Windows, run the `instlic` command using the **Run** command from the Windows Start menu, or from an MS-DOS command window. From Solaris, run the command from a command shell. The `instlic` utility is found in the EPICenter install directory, by default `epc4_0` in Windows, or `/opt/epc4_0` on a Solaris system.

Enter the command followed by the 14-character license key, as follows:

```
instlic <license_key>
```

See "Adding or Updating the License Key" on page 44 (for Windows) or "Adding or Updating a License Key" on page 52 (for Solaris) for further instructions.

Adding a License for an Optional Product

When you purchase a product option such as the EPICenter Policy Manager, you receive a separate key to enable the optional module. If you purchase the optional module at the same time as the main EPICenter software, you can use the use the optional module key when you do the EPICenter installation, and it will enable both the EPICenter software and the additional module.

However, if you purchase the additional module at a later time, you must update your license key to enable the new module.

To add a license key for an optional EPICenter product module, use the `instlic` utility.

In Windows, run the `instlic` command using the **Run** command from the Windows Start menu, or from an MS-DOS command window. From Solaris, run the command from a command shell. The `instlic` utility is found in the EPICenter install directory, by default `epc4_0` in Windows, or `/opt/epc4_0` on a Solaris system.

Enter the command followed by the 14-character license key, as follows:

```
instlic <license_key>
```

See "Adding or Updating the License Key" on page 44 (for Windows) or "Adding or Updating a License Key" on page 52 (for Solaris) for further instructions.

Upgrading from a Previous Release

If you have the previous software release installed, the installation script can also migrate your database information to the new EPICenter software version. The installation process will upgrade only the previous release of the software—for the EPICenter SE release 4.0, you can upgrade from EPICenter 3.0 or 3.1, but not from any earlier versions of the ExtremeWare Enterprise Manager software. If you are running one of the older versions (ExtremeWare Enterprise Manager 1.0, 1.1, 2.0, or 2.1) you must do a new install of the EPICenter 4.0 software.

Installing on a Windows NT or Windows 2000 System

The following sections assume that Microsoft Windows NT 4.0 or Windows 2000 is already running.

NOTE

For information on installing and running Windows NT or WIndows 2000, refer to the documentation supplied with your Microsoft Windows software.

To install the EPICenter software components under Windows NT you must have Windows NT administrator privileges on that system.

If you have the previous software release installed, the installation script will also migrate your database information to the new EPICenter software version.

CAUTION

If you are running an evaluation version of the EPICenter software, DO NOT REINSTALL *the EPICenter software to upgrade to a permanent license if you want to retain the information in your EPICenter database. Using the license installation utility will preserve the contents of the database.*

To update an evaluation copy of the EPICenter server to a licensed copy without reinitializing the database, follow the update procedure described in “Adding or Updating the License Key” on page 44.

NOTE

If you already installed the EPICenter client software, you need to UNINSTALL the client software before you begin the EPICenter server installation.

To install the EPICenter server, follow these steps:

1 Close any open applications.

2 Insert the CDROM into the CDROM drive.

3 In most cases, the Extreme Networks EPICenter Welcome screen appears automatically. If it does not:

   a Open **My Computer** or **Windows Explorer**, and go to your CDROM drive.

   b Go to the `nt` directory, open the **server** sub-directory, and start `setup.exe`.

   The EPICenter Welcome screen appears.

4 Follow the on-screen instructions to progress through the Welcome screen.

5 If you have a previous version of EPICenter installed, you are notified that the services will be stopped in order to install the new EPICenter software. If this is acceptable, click **Yes**.

6 Click **Yes** to accept the license agreement.

7 Enter your company information.

8 Enter your license key and click **Next** to continue.

The license key is a case-sensitive string starting with “EP” and followed by 12 characters (a mixture of uppercase and lowercase letters, numbers, and special characters) that you obtained from the Extreme Networks web site.

The license key is NOT the same as the activation key, which starts with “AC,” and found on the License Agreement shipped with your purchased product. You use the activation key to obtain a permanent license key from the Extreme Networks web site at http://www.extremenetworks.com/go/epickey.htm

See “EPICenter Software Licensing” on page 37, or the *EPICenter Release Notes and Quick Start Guide* for details on obtaining an evaluation or permanent license key.

If you have purchased the EPICenter software and an additional module such as the Policy Manager, you can use the key you received for the optional module here. It will enable both the EPICenter software and the additional module.

If you do not yet have a key, you can still install the product, and then update the key later using the `instlic.exe` utility. See “Adding or Updating the License Key” on page 44.

— To skip entering a key, leave the field blank and click **Next**.

— A warning box pops up; click **OK** to continue.

9 In the Destination dialog box, choose one of two options:

— Accept the default target drive and folder displayed in the Destination Directory box.

— Click **Browse** and select or enter a new folder, a new drive, or both.

NOTE

Make sure there are no spaces in the directory name.

If you are installing on a disk that uses the FAT file system rather than the NTFS file system, a warning message pops up when you click **Next**. This is because under the FAT file system, the EPICenter software can take up as much as 20% of your partition, regardless of the size of the partition.

10 Accept the default program folder, EPICenter 4.0, or enter a different program folder name, and click **Next**.

In the Database Server Information dialog box, enter a number into the **Port** field for the TCP port that the EPICenter Web Server will use to communicate with the database, or accept the default (10551). You can use any port number (a number between 1024 and 65535 is recommended) except a port number already in use by another process.

NOTE

Extreme Networks recommends that you choose a port number that is not currently registered at Internet Assigned Numbers Authority (IANA). To check if a port number is registered, go to http://www.iana.org/assignments/port-numbers*.*

11 In the Get HTTP Port dialog box, you are asked for two ports that the EPICenter Web Server will use:

— The HTTP Port for communication with clients (default 80).

— The Admin Port used by the EPICenter web server (default 8007).

Accept any or all of the default port numbers, or enter different port numbers. You can use any port number (a number between 1024 and 9999 is recommended) except:

— The port number you just entered for the database TCP port.

— Any port number already in use by another process.

12 If there is an EPICenter 3.0 or 3.1 server running as a service, a notice appears advising you that the services are being shut down.

The installation software then copies the EPICenter program files from the CD to your system.

13 When the files have been copied, the Install as a Service dialog box asks if you want to install the EPICenter database and web server components as Windows NT services.

— Click **Yes** to install the EPICenter components as services. This is strongly recommended. If the EPICenter components run as services, they will be started automatically on system boot, and will persist across user logins and logouts.

NOTE

You must have NT Administrator privileges to install the EPICenter components as services.

In addition, if you want to be able to import user and host information from a Windows NT Domain Controller, the EPICenter server must run with permissions that allow it to get user information from a Domain Controller.

— Click **No** if you do not want to install the components as services.

14 If you are upgrading from the previous release of the EPICenter software, you are asked whether you want to copy the database and other persistent data to the new installation. Click **Yes** to copy the data, or **No** to continue without doing so.

If you answer **Yes**, an MS-DOS window will appear briefly while the database contents are dumped from the old database and loaded into the new database.

NOTE

This installation utility will upgrade the database from EPICenter 3.0 or 3.1 to EPICenter 4.0. Database upgrades from earlier versions are not supported.

15 If you elect to copy your previous data, the EPICenter installation process also notifies you that you must copy from the old installation any switch software image files or report files you may have modified or added. The installation process does not copy these files. You can do this after the installation has finished.

16 The installation procedure now installs the license key. An MS-DOS window will appear briefly while this occurs.

If the license key you entered is invalid, an error window pops up. If you did not enter a license key, a warning pops up. In either case, you can use the `instlic` utility to enter a valid license key after you have completed your installation.

17 In the final dialog box, EPICenter Setup Complete, you can do the following.

— Click the checkbox to indicate you want to view the Readme file

— If you have installed the EPICenter components as services, click the second checkbox to indicate you want your system to be restarted. If you choose not to restart your system at this time, you must either restart the server or start the services manually before you can log in to the EPICenter server from a client.

— Click **Finish** to complete the installation process.

18 If you added or modified any reports, or added new switch software images to the previous EPICenter installation, you should copy these files to the new installation. You must manually copy the following files:

- Image files you have placed in the subdirectories under the *<EPICenter_install_dir>*`\user\tftp` directory
- Reports you have modified or added in the *<EPICenter_install_dir>*`\user\reports\html` or *<EPICenter_install_dir>*`\user\reports\tcl` directories

Copy these to the corresponding directories in the new installation.

Adding or Updating the License Key

To update an evaluation license of EPICenter to a permanent license, or to install a license key after the original installation is complete, use the `instlic` utility provided.

CAUTION

DO NOT reinstall the software if you have any data or configurations of value in the EPICenter database. Re-installation will re-initialize the database.

To update your license key, follow these steps:

1 Select **Run...** from the Start menu, or start an MS-DOS command window.

NOTE

Because you must enter the license key on the command line, you cannot run this utility from a Windows Explorer or My Computer window.

2 Enter the command ***<EPICenter_install_dir>*\instlic *<key>***

<EPICenter_install_dir> is the directory (path) where you installed the EPICenter components. If you installed in the default directory, the path is `c:\EPC4_0\`

<key> is the 14-character license key, starting with “EP,” that you obtained from Extreme Networks. Type the key *exactly* as it is shown in the e-mail you received from Extreme Networks. The key is case sensitive.

For example: **c:\EPC4_0\instlic EP1a2B3c4D5+eF**

If the license update is successful, the message “`License Installed`” is displayed.

If the update is not successful, the message “`Invalid argument key : <key>`” is displayed. *<key>* is the license key you entered with the `instlic` command. Verify that you typed the key exactly as shown in the e-mail you received from Extreme Networks.

Installing on a Solaris System

The EPICenter server software, version 4.0, is supported under Solaris 2.6, Solaris 7, and Solaris 8. See “Server Requirements” on page 34 for the hardware requirements. Also, check the *EPICenter Release Notes and Quick Start Guide* for any additional issues.

Required Patches

Both the Solaris 2.6 and Solaris 7 operating environments require patches for the EPICenter software to function properly. Make certain these patches have been installed before you install the EPICenter server software.

For the most current information on required patches, see the *EPICenter Release Note and Quick Start Guide* that accompanies your EPICenter software, or the Extreme Networks web site at www.extremenetworks.com.

Sun Microsystems makes these patches available on the Java download site in the form of tar files. They can be found at:

http://www.sun.com/software/solaris/jre/download.html

On this page, select Java 2 Standard Edition (J2SE) 1.3.0_03 Production Release for Solaris, English, SPARC Edition. The patches listed for this release apply to the 1.3.1 Plug-in as well.

You must register or log in, and then you will be presented with the download page that includes Solaris patch bundles.

Local Name Resolution

The Solaris system on which EPICenter is installed must be able to resolve both its own local name and its domain name. For example if you install EPICenter on a system named `system1`, then it must be able to resolve both `system1` and its domain name, such as `system1.company.com`. You can test for this by attempting to ping the system using both the local name and the domain name. If there are problems resolving either of these names, make sure the `etc/hosts` file contains the correct information.

Installing the EPICenter Server

The instructions that follow assume that you are running in a command shell or Xterm window.

You can install the EPICenter components without being logged in as root, as long as you do not use port numbers less than 1024 (for example, port 80 for the EPICenter web server, which is the default).

CAUTION

When you install the EPICenter Server, it initializes the database. If you attempt to re-install the server once you have installed it, the installation process reinitializes the database, and your existing data and configurations will be lost.

To update an evaluation copy of the EPICenter software to a licensed copy without reinitializing the database, follow the update procedure described in the section "Adding or Updating a License Key" on page 52.

NOTE

If you already installed the EPICenter client software, you need to UNINSTALL the client software before you begin the EPICenter server installation.

To install the EPICenter server software, follow these steps:

1 Insert the CDROM into the CDROM drive.

2 If you are running CDE, the contents of the CDROM are displayed in the File Manager. Go to the **`sol`** directory.

To run from an Xterm window:

```
cd /cdrom<x>/sol
```

where *<x>* is your CDROM drive number (e.g. `cdrom0`). The volume label of the installation CD is `epc40b<xx>`, where *<xx>* is the build number, for example `epc40b34`.

3 Run the installation script:

```
./install.sh
```

The EPICenter Welcome message appears as follows:

```
******************************************************************

  Welcome to the Extreme Networks EPICenter
  install program. This program will install:
   EPICenter version 4.0.0 on this system.

******************************************************************
```

```
Please review the following software license terms
and conditions.  You will need to accept this license
to continue the installation.  Press space to page
through the license.
Press <enter> to view the license:
```

4 When you press [Enter], the text of the license is displayed. You can use the space bar to page through it. When you reach the end, you are asked:

```
Do you agree to the above conditions? (Y/N):
```

5 Enter **Y** if you agree and want to proceed. Enter **N** to terminate the installation process. This question does not have a default, you must enter Y or N.

6 Next, you are prompted for the directory where the EPICenter server software should be installed:

```
Please enter the directory in which the software will be installed.
The default directory is /opt/epc4_0, but the product may be installed
anywhere.

Install Directory [/opt/epc4_0]:
```

Enter the directory or accept the default (`/opt/epc4_0`).

NOTE

Make sure there are no spaces in the directory names.

If you specify a directory that does not exist, you are asked whether it should be created:

```
/opt/epc4_0: No such directory.  Do you wish to create it? (y/n)[y]
```

Assuming you want to create the directory, accept Y as the default. If you answer N, the script will assume the directory already exists.

7 The installation script now copies and installs the EPICenter files:

```
Installing EPICenter files...
```

After copying a number of files, the following message appears:

```
File copy complete.
Configuring Installation.
```

At this point additional files are copied and the EPICenter installation tree is created, and filled out. This will take several minutes.

When the files are complete, you are asked for a set of configuration information.

```
To configure EPICenter, we will need to ask you for some information.
In most case the default answers will work correctly.
```

8 First you are asked whether you want to upgrade from a previous installation of EPICenter. You can upgrade from EPICenter 3.1.

```
*** Upgrade Parameters

If there is a previous installation of EPICenter installed,
you may import the database from the previous
installation.  If there is no previous install, or you would
like to start from scratch, select new installation.

Would you like to upgrade from a previous install? (Y/N) [N]:
```

Answer Y to upgrade.

If you answer **Yes**, the install script asks for the location of the previous version of EPICenter.

```
Old install directory [/opt/epc3_1]:
```

Accept the default or enter the actual location (full path name).

9 Next, you are asked for a license key.

```
*** License Key


Please enter the license key for the product.
This will be a string starting with EP followed by 12 characters.
To obtain a license (evaluation or permanent) visit the web site
http://extremenetworks.com/go/epickey.htm
Refer to the product release notes for more information on obtaining
a license key. Enter s to skip and install the license later.

Please enter the license key:
```

The license key is NOT the same as the activation key, which starts with “AC,” and is found on the License Agreement shipped with your purchased product. You use the activation key to obtain a permanent license key from the Extreme Networks web site at http://www.extremenetworks.com/go/epickey.htm

See “EPICenter Software Licensing” on page 37, or the *EPICenter Release Notes and Quick Start Guide* for details on obtaining an evaluation or permanent license key.

If you do not yet have a key, you can still install the product, and then update the key later using the `instlic` utility. See “Adding or Updating a License Key” on page 52.

If you have purchased the EPICenter software and an additional module such as the Policy Manager, you can use the key you received for the optional module here. It will enable both the EPICenter software and the additional module.

10 Next, you are asked to enter a port for communication between the Web server and the database server:

```
*** Database Parameters

EPICenter will run an SQL database server on this machine.  The database
needs the name of this machine and an unused port to listen on.

Please enter the port for the database: [10551]
```

Accept the default (10551) for the TCP port that the EPICenter Web Server will use to communicate with the database, or enter a different port number. You can use any port number (a number between 1024 and 65535 is recommended) except a port number already in use by another process.

NOTE

Extreme Networks recommends that you choose a port number that is not currently registered at Internet Assigned Numbers Authority (IANA). To check if a port number is registered, go to http://www.iana.org/assignments/port-numbers*.*

11 You are now asked for three ports that the EPICenter Web Server will use.

```
*** Web Server Parameters

EPICenter runs as a web server and by default accepts HTTP requests
on port 80. You may specify an alternative. Additionally EPICenter needs
another unused port for server administration.
If you are not sure what to enter, the defaults
should be acceptable.

Please enter the http port for the web server: [80]

Please enter the http port for the admin web server: [8007]
```

Accept any or all of the default port numbers, or enter different port numbers. You can use any port number (a number between 1024 and 9999 is recommended) except:

- The port number you just entered for the database TCP port.
- Any port number already in use by another process.

12 Finally, you are asked to confirm the configuration parameters:

```
*** Configuration

Please review the following items.

    Upgrade           = NO
    License           = <the key you entered or “s”>
    Database Port     = <the port you entered or 10551>
    HTTP Port         = <the port you entered or 80>
    HTTP Admin Port   = <the port you entered or 8007>

Are these correct? (Y to accept / N to re-enter) [N]:
```

13 If you accept the parameters by entering Y, the installation script will finish with the following messages:

```
Installing License...
License properties = Type: License, Version: 4
License installed.
Done.

Updating ./extreme/WEB-INF/web.xml

Updating ./tomcat/conf/server.xml
```

If you are upgrading from an earlier version of EPICenter, you will also see the following:

```
*** Database Upgrade


Upgrading Database...
Upgrading from EPICenter 3.1

Generating sql files...
Dumping data from tables in old database ...
Loading data into tables in new database ...
```

```
Database Upgrade Complete.
```

Next, you are asked to move or copy any previous switch software images or uploaded switch configuration files.

```
from: /export/home/epc3_1/user/tftp
to: /export/home/epc4_0/user/tftp
```

If you modified any reports or created custom reports, you are asked to move or copy these files from:

```
/export/home/epc3_1/user/reports/html
and /export/home/epc3_1/user/reports/tcl
to /export/home/epc4_0/user/reports/html
and /export/home/epc4_0/user/reports/tcl
```

Next, the installation process creates a script and some symbolic links.

```
Adding EPICenter to /etc/init.d
Adding link from rc3.d to /etc/init.d/
Adding link from rc2.d to /etc/init.d/
```

14 Finally, you are given the opportunity to have the EPICenter server started for you.

```
Would you like to start the server now? (Y/N): n
```

Answer **Yes** to start the server immediately, or **No** if you want to start it at a later time.

The final messages are:

```
The EPICenter software installation is complete.

Once the server is running, you can run the client in
a supported web browser with the following URL:

http://<host>:<port>/

INSTALL COMPLETE
```

<host> is the name of the system you've just installed on, and *<port>* is the HTTP port you entered (or 80 if you accepted the default).

Adding or Updating a License Key

To update an EPICenter evaluation license to a permanent license, or to install a license key after the original software installation is complete, use the `instlic` utility provided.

CAUTION

DO NOT reinstall the software if you have any data or configurations of value in the EPICenter database. Re-installation will re-initialize the database.

Run the installation script found in the EPICenter installation directory:

```
<install_dir>/instlic <key>
```

<install_dir> is the directory (path) where you installed the EPICenter components.

<key> is the 14-character license key, starting with "EP," that you obtained from Extreme Networks. Type the key *exactly* as it is shown in the e-mail you received from Extreme Networks. The key is case sensitive.

For example, if you installed in the default directory, enter:

```
/opt/epc4_0/instlic EP1a2B3c4D5+eF
```

You must have write permission for the EPICenter install directory.

If the license update is successful, the message "`License Installed`" is displayed in the xterm or command window.

If the update is not successful, the message "`Invalid argument key : <key>`" is displayed. *<key>* is the license key you entered with the `instlic` command. Verify that you typed the key exactly as shown in the e-mail you received from Extreme Networks.

Installing the EPICenter Client

The EPICenter software provides two options for connecting to an EPICenter server from a client system: a stand-alone client application, or a browser-based client you can run from a web browser such as Microsoft Internet Explorer.

On Solaris-based systems, only the stand-alone client is supported.

NOTE

The browser-based client is supported on Windows-based systems only.

When you run the EPICenter stand-alone client on Solaris-based systems, unset the following localization environment variables:

- LANG
- LC_MONETARY
- LC_NUMERIC
- LC_COLLATE
- LC_TIME
- LC_CTYPE
- LC_MESSAGES

In order to run the EPICenter web browser client, web browser software must be installed. An EPICenter client can run on a system with a different operating system than the EPICenter server.

Under Windows NT, or Windows 2000, install Microsoft Internet Explorer 5.0 with the Java Plug-in version 1.3.1, or Internet Explorer 5.5 with Service Pack 1 and the Java Plug-in.

To download the latest version of Internet Explorer, go to http://www.microsoft.com/ie/

If you do not have the required Java plug-in installed when you start the EPICenter client, you will be prompted to download it, and will be led through the brief installation process. This obtains the plug-in from the Sun Microsystems web site, and requires Internet access.

You can also install the Java Plug-in directly from the EPICenter browser-based client Start-up page. See Chapter 3 for details on starting the client and obtaining the plug-in, if needed.

Installing the Stand-Alone Client Application in Windows NT or Windows 2000

The following instructions assume that Microsoft Windows NT or Windows 2000 is already running.

NOTE

If you installed the EPICenter server software, the client has already been installed as part of the server installation. Do not re-install the client.

To install the stand-alone client application on a client-only workstation, do the following:

1 Close any open applications.

2 Insert the CDROM into the CDROM drive.

3 If the CD starts up automatically, click **cancel** to exit the server installation process, the do the following steps. If the CD does not start up automatically, follow these steps:

- **a** Open **My Computer** or **Windows Explorer**, and go to your CDROM drive.
- **b** Go to the **nt** directory, open the **client** sub-directory, and start **setup.exe**.

  The EPICenter Client Welcome screen appears.

4 Follow the on-screen instruction to progress through the Welcome screen.

5 Click **Yes** to accept the license agreement.

6 Enter your company information and click **Next** to continue.

7 In the **Choose Destination Location** dialog box, choose one of two options:

- Accept the default target drive and folder displayed in the Destination Folder box.
- Click **Browse** and select or enter a new folder, a new drive, or both.

NOTE

Make sure there are no spaces in the directory names.

8 Accept the default program folder, EPICenter 4.0 Client Application, or enter a different program folder name and click **Next**.

9 In the **Server Information** dialog box, enter the name or IP address of the server to which you want to connect into the **Server** field. Enter the HTTP port to use to connect to the server in the **HTTP Port** field. The port must match the HTTP port configured for the EPICenter server that you entered into the **Server** field. The default is port 80.

Click **Next** to continue the client installation process.

NOTE

You must enter both the Server and HTTP port information, or leave both fields empty. If you leave the fields empty, you can enter the server and port information each time you run the client.

10 The installation software then copies the EPICenter Client files from the CD to your system.

11 In the final dialog box, **Setup Complete**, you can do the following:

- Click the checkbox to indicate you want to view the Read Me file and start the EPICenter client application.
- Click **Finish** to complete the installation process.

Installing the Stand-Alone Client Application in the Solaris Operating Environment

The instructions that follow assume that you are running in a command shell or Xterm window.

NOTE

If you installed the EPICenter server software, the client has already been installed as part of the server installation. Do not re-install the client.

To install the stand-alone client application on a client-only workstation, do the following:

1 Insert the CDROM into the CDROM drive.

2 If you are running CDE, the contents of the CDROM are displayed in the File Manager. Go to the `sol` directory, then to the `client` sub-directory.

To run an Xterm window:

```
cd /cdrom<x>/sol/client
```

where *<x>* is your CDROM drive number (e.g. `cdrom0`). The volume label of the installation CD is `epc40b`*<xx>*, where *<xx>* is the build number, for example `epc40b34`.

3 Run the installation script:

```
./client.sh
```

The EPICenter Client Welcome message appears as follows:

```
*******************************************************************

       Welcome to the Extreme Networks EPICenter Client
       install program. This program will install:
       EPICenter Client version 4.0.0 on this system.

*******************************************************************


Please review the following software license terms
and conditions.  You will need to accept this license
to continue the installation.  Press space to page
through the license.
Press <enter> to view the license:
```

4 When you press [Enter], the text of the license is displayed. You can use the space bar to page through it. When you reach the end, you are asked:

```
Do you agree to the above conditions? (Y/N):
```

5 Enter **Y** if you agree and want to proceed. Enter **N** to terminate the installation process. This question does not have a default, you must enter Y or N.

6 Next, you are prompted for the directory where the EPICenter Client software should be installed.

```
Please enter the directory in which the software will be installed.
The default directory is /opt/epc4_0_client, but the product may be
installed
anywhere.

Install Directory [/opt/epc4_0_client]:
```

Enter the directory or accept the default (`/opt/epc4_0_client`).

NOTE

Make sure there are no spaces in the directory names.

If you specify a directory that does not exist, you are asked whether it should be created:

```
/opt/epc4_0_client: No such directory. Do you wish to create it? (y/n)
[y]
```

Assuming you want to create the directory, accept Y as the default. If you answer N, the script will assume the directory already exists.

7 The installation script now copies and installs the EPICenter Client files:

```
Installing EPICenter Client files...
```

After copying a number of files, the following message appears:

```
File copy complete.
Configuring Installation.
```

At this point, additional files are copied and the EPICenter Client installation tree is created and filled out. This will take several minutes.

When the files are complete, you are asked for a set of configuration information.

```
To configure the EPICenter client, we will need to ask you for some
information.  In most case the default answers will work correctly.
Please enter the host name for the EPICenter server: [] localhost
Please enter the http port for the EPICenter server: [80]
```

The Server Name is the server name or IP address of the EPICenter server to which the client should connect.

The Server Port is the HTTP port that the client will use to communicate with the server (default is 80).

8 You are asked to confirm the configuration parameters:

```
*** Configuration

Please review the following items.

    Server Name          = localhost
    Server Port          = 80


Are these correct? (Y to accept / N to re-enter) [N]:
```

9 If you accept the parameters by entering Y, the installation script will finish with the following message:

```
Would you like to start the client now? (Y/N):
```

Enter Y to start the EPICenter client now, or N to start it at a later time.

The final messages are:

```
The EPICenter Client software installation is complete.

INSTALL COMPLETE
```

When you run the EPICenter stand-alone client on Solaris-based systems, unset the following localization environment variables:

- LANG
- LC_MONETARY
- LC_NUMERIC
- LC_COLLATE
- LC_TIME
- LC_CTYPE
- LC_MESSAGES

Uninstalling the EPICenter Software

To uninstall the EPICenter software, you must first shut down the server components (database and web server). Then you can remove the program components from your system.

Uninstalling the EPICenter Server in Windows NT or Windows 2000

Under either of these Windows Operating Systems versions, you can run the EPICenter server components as services, or as regular applications. The uninstall procedure is slightly different for these two situations.

To uninstall the EPICenter server software and all of the EPICenter components, including the stand-alone client, do the following:

1 Shut down the EPICenter components if they are still running.

If they are **running as services**:

a From the **Start** menu, highlight **Settings**, then select the **Control Panel**.

b Double-click **Services** to display the Services Properties window.

c Highlight **EPICenter 4.0 Server** and click **Stop** to stop the EPICenter 4.0 Server

d Stop the EPICenter 4.0 Database Engine in the same manner.

If they are **running as applications**:

a From the **Start** menu, highlight **Programs**, then **EPICenter 4.0**, then select **Stop EPICenter 4.0 Server**. This opens an MS-DOS command window and shuts down the EPICenter server and database.

2 From the Control Panel folder, double-click **Add/Remove Programs**. This displays the **Add/Remove Program Properties** window (**Add/Remove Programs** window under Windows 2000).

3 From the list of installed programs, select **EPICenter 4.0** and click **Add/Remove** (or **Change/Remove** in Windows 2000). Follow the instructions to remove the component.

4 If the Add/Remove utility is not able to remove all the files, it will inform you of that fact. You must then delete the remaining files manually.

Uninstalling the EPICenter Stand-Alone Client Application in Windows NT or Windows 2000

To uninstall the stand-alone client on a client-only workstation, do the following:

1 From the Control Panel folder, double-click **Add/Remove Programs**. This displays the **Add/Remove Program Properties** window (**Add/Remove Programs** window under Windows 2000).

2 From the list of installed programs, select **EPICenter 4.0 Client Application** and click Add/Remove (or **Change/Remove** in Windows 2000). Follow the instructions to remove the application.

3 If the Add/Remove utility is not able to remove all the files, it will inform you of that fact. You must then delete the remaining files manually.

Uninstalling the EPICenter Server in Solaris

To remove the EPICenter server software from a Solaris host, stop the server using the **stopserv** command, then remove the all the files in the installation directory.

To remove the EPICenter server software, including the stand-alone client, follow these steps:

1 Run the **stopserv** command found in the root installation directory.

The installation directory is the directory (path) where you installed the EPICenter components.

For example, if you installed in the default directory, enter:

```
/opt/epc4_0/stopserv
```

This shuts down the EPICenter server if it is running.

2 Make the parent of the installation directory the current directory, and remove all files from the directory and its sub-directories.

For example, if you installed using the default directory path, `/opt/epc4_0`, enter:

```
cd opt
```

3 Remove all files from the installation directory tree.

For example, if you installed using the default directory path, enter:

```
rm -rf epc4_0
```

This removes all the EPICenter components, including the database and the stand-alone client, from the system.

4 The EPICenter installation created a script, `EPICenter`, in the `/etc/init.d` directory, and links to `/etc/init.d` in the `/etc/rc2.d` and `etc/rc3.d` directories. You should remove these as well:

```
cd /etc/init.d
rm EPICenter

cd /etc/rc2.d
rm K10EPICenter

cd /etc/rc3.d
rm S90EPICenter
```

The EPICenter software is now completely uninstalled.

Uninstalling the EPICenter Stand-Alone Client Application in Solaris

To uninstall the stand-alone client on a client-only workstation, do the following:

1 Make the parent of the installation directory the current directory, and remove all files from the directory and its sub-directories.

For example, if you installed using the default directory path, `/opt/epc4_0_client`, enter:

```
cd opt
```

2 Remove all files from the installation directory tree.

For example, if you installed using the default directory path, enter:

```
rm -rf epc4_0_client
```

This removes the EPICenter stand-alone client from the system.

3 Starting EPICenter

This chapter describes:

- Starting the EPICenter Server.
- Launching an EPICenter Client.
- Navigating the EPICenter pages.

When you log in for the first time after installing the EPICenter server software, there are only two user accounts enabled—an Administrator account “admin,” and a user account “user” with Monitor access privileges. Neither account has a password. Follow the instructions in Chapter 16 to change the admin password and to create additional EPICenter user accounts.

Running the EPICenter Server Software under Windows

The following instructions assume that the Windows NT operating system is already running, and that the EPICenter server software is already installed.

If you have installed the EPICenter components as services under Windows NT, the EPICenter Server and database component will start automatically when you boot the server. This is the recommended method of installing EPICenter.

Starting the EPICenter Server

If you have not installed the EPICenter server components as a service, you must start the server manually after you boot your server system. You can do this from the Windows NT **Start** menu.

The EPICenter Server consists of two components:

- The EPICenter Database Engine
- The EPICenter Web Server

Both components must be running in order to run the EPICenter client applets.

To start the EPICenter Server and database components, follow these steps:

1 From the **Start** menu, highlight **Programs**, then **EPICenter 4.0** to display the EPICenter menu.

2 Click **Start EPICenter 4.0 Server.** This runs `runserv.exe`, a program that starts the two components in the required order.

Two windows are displayed briefly as the EPICenter Server starts up:

- Sybase Adaptive Server Anywhere. An icon representing this window is placed on the right side of the Windows task bar.
- An MS-DOS window that shows the processes being started.

If you need to start the server manually, you can use the `runserv` command in an MSDOS command window to start the server:

1 Change to the EPICenter install directory, **`cd`** `<`*`EPICenter_install_directory`*`>`

2 Enter the command **`runserv`**

You can also select **Run** from the **Start** menu and enter the command `<`*`EPICenter_install_directory`*`>\runserv`

Shutting Down the EPICenter Server Components

There may be occasions when you need to shut down the EPICenter server, such as to upgrade a license key from an evaluation to a permanent license, or to add an optional module license.

Components Running as Services

If the EPICenter server components are **running as services**, follow these steps to shut them down:

1. Open the Control Panel folder.
2. From the Control Panel, double-click **Services**. This displays the Services Properties window. You must have NT Administrator privileges to access this function.
3. From the list of installed programs select **EPICenter 4.0 Server** and click **Stop**.
4. Repeat the same actions for the **EPICenter 4.0 Database Engine**.

   The EPICenter 4.0 server should be stopped before the database to avoid error messages.

Components Running as Applications

If the EPICenter server components are **running as applications**, you can shut it down directly from the EPICenterprograms menu.

1. From the **Start** menu, highlight **Programs**, then **EPICenter 4.0** to display the EPICenter menu.
2. Click **Stop EPICenter 4.0 Server.** This runs `stopserv.exe`, a program that starts the two components in the required order.

Restarting the EPICenter Server Components as Services

If you have installed the EPICenter server components as services, follow these steps to restart them:

1. From the Start menu, open the Control Panel folder.
2. From the Control Panel folder, double-click **Services**. This displays the Services Properties window. You must have NT Administrator privileges to access this function.
3. From the list of installed programs select **EPICenter 4.0 Database Engine** and click **Start**.
4. Repeat the same action for the **EPICenter 4.0 Server**
5. If you want to change the start-up parameters, click **Startup...** instead of **Start**.

   For example, if you plan to import users from an NT Domain Controller through the Grouping Manager, the **EPICenter 4.0** server must be running with permissions that enable it to get user information from the Domain Controller. If you do not have those permissions as you are currently logged on, you can specify a different log on account for the EPICenter web server as a start-up parameter:

— In the **Log On As:** section of the **Startup...** pop up window, enter the account name and password for a user that has the appropriate permissions to access the Domain Controller.

Running the EPICenter Server Software under Solaris

The following instructions assume that you are using a command or Xterm window running the C shell.

Starting or Restarting the EPICenter Server

To run the EPICenter Server:

1 Set the current directory:

```
cd <install_dir>
```

`<install_dir>` is the directory (path) where you installed the EPICenter components. If you installed in the default directory, the path is `/opt/epc4_0`.

2 Execute **`runserv`** to start the two EPICenter components in the required order.

```
runserv &
```

Shutting Down the EPICenter Server Components

To shut down the EPICenter Server:

1 Set the current directory:

```
cd <install_dir>
```

`<install_dir>` is the directory (path) where you installed the EPICenter components. If you installed in the default directory, the path is `/opt/epc4_0`.

2 Execute **`stopserv`** to shut down the EPICenter components in the required order.

```
stopserv &
```

The EPICenter Client

On Windows NT or Windows 2000 systems, the EPICenter software provides two options for connecting to an EPICenter server from a client system:

- A stand-alone client application. This is the recommended client option.
- A browser-based client you can run from Microsoft Internet Explorer.

On Solaris-based systems, only the stand-alone client is supported.

The stand-alone client is installed along with the EPICenter server on the system where the server resides. The stand-alone client can also be installed by itself on any system you want to use as an EPICenter client. See Chapter 2 for instructions on installing the client on a system without the EPICenter server.

For Windows NT 4.0 or Windows 2000, the browser-based client is a Java applet that is downloaded from the EPICenter server whenever you run it, and requires the following software on the client:

- Internet Explorer 5.0, or Internet Explorer 5.5 with Service Pack 1, and the Java 1.3.1_03 plug-in.

Running the EPICenter Stand-alone Client

To start the EPICenter stand-alone client interface on a system different from where the EPICenter server is installed:

1. From the **Start** menu, highlight **Programs**, then **EPICenter 4.0 Client** to display the EPICenter Client menu.
2. Select **Client Application** to start the EPICenter client.

   An MS-DOS window appears briefly before the EPICenter Client Login window opens, as shown in Figure 2.

To run the stand-alone client on the same system as the EPICenter server:

1. From the **Start** menu, highlight **Programs**, then **EPICenter 4.0** to display the EPICenter menu.
2. Select **EPICenter 4.0 Client** to start the EPICenter client.

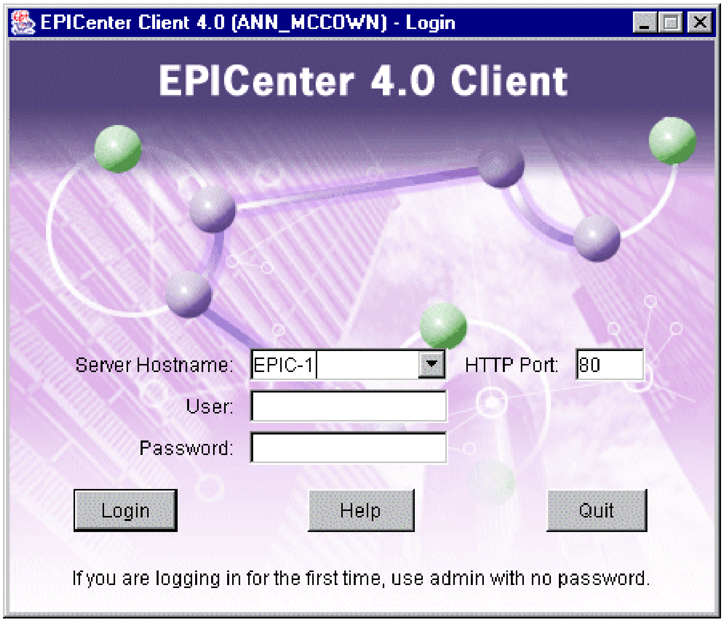
If you need to start the client manually, you can use the `runclient` command in an MSDOS command window to start the server:

1 Change to the EPICenter install directory, **`cd`** *`<EPICenter_install_directory>`*

2 Enter the command **`runclient`**

You can also select **Run** from the **Start** menu and enter the command *`<EPICenter_install_directory>`*`\runclient`

Figure 2: EPICenter installed client Login window



EPICenter Client 4.0 (ANN_MCCOWN) - Login

EPICenter 4.0 Client

Server Hostname: EPIC-1

HTTP Port: 80

User:

Password:

If you are logging in for the first time, use admin with no password.

3 In the **Server Hostname** field, type the name or IP address of the server you want to connect to. If you are running the client on a system where an EPICenter server is installed, that server name will appear by default in the Server Hostname field.

4 Type the HTTP port to use to connect to the server in the **HTTP Port** field. The default is port 80. The port must match the HTTP port configured for the EPICenter server.

5 If you already have an EPICenter user account, type your EPICenter user name in the **User** field.

- If you are the network administrator logging in to the EPICenter server for the first time since it has been installed, log in as “admin.”

  You will be able to change the administrator password (*strongly recommended*) and to create additional user accounts.
- If you are a new user without your own account on the EPICenter server, type “user” as the **User Name**. You will be able to view information in the various modules, but will not be able to change any configurations.

6 Type your password in the **Password** field.

Both default names (“user” and “admin”) initially have no password, so you can leave the field blank.

7 Click **Login**.

If you are using an evaluation copy of the EPICenter, a dialog box appears notifying you how much longer the copy is valid.

Click **OK**.

The **Network Summary Report** page appears, as shown in Figure 5 on page 74.

For information on the Network Summary Report, see “The Network Summary Report Page” on page 73.

When you disconnect from an EPICenter server, the Login page appears again, allowing you to log in again, to the same server or to a different EPICenter server.

To exit the EPICenter client, click **Quit**.

Viewing Reports from the Stand-Alone Client

EPICenter’s HTML reports are always displayed in a browser window, even if you are running the stand-alone client. See “Browser Requirements for Reports” on page 36 in Chapter 2 for supported browsers.

Running the EPICenter Client in a Browser

NOTE

The browser-based client is supported on Windows-based systems only.

To start the EPICenter client in a browser window:

1. Launch your web browser.
2. Enter the following URL:

   `http://<host>:<port>/`

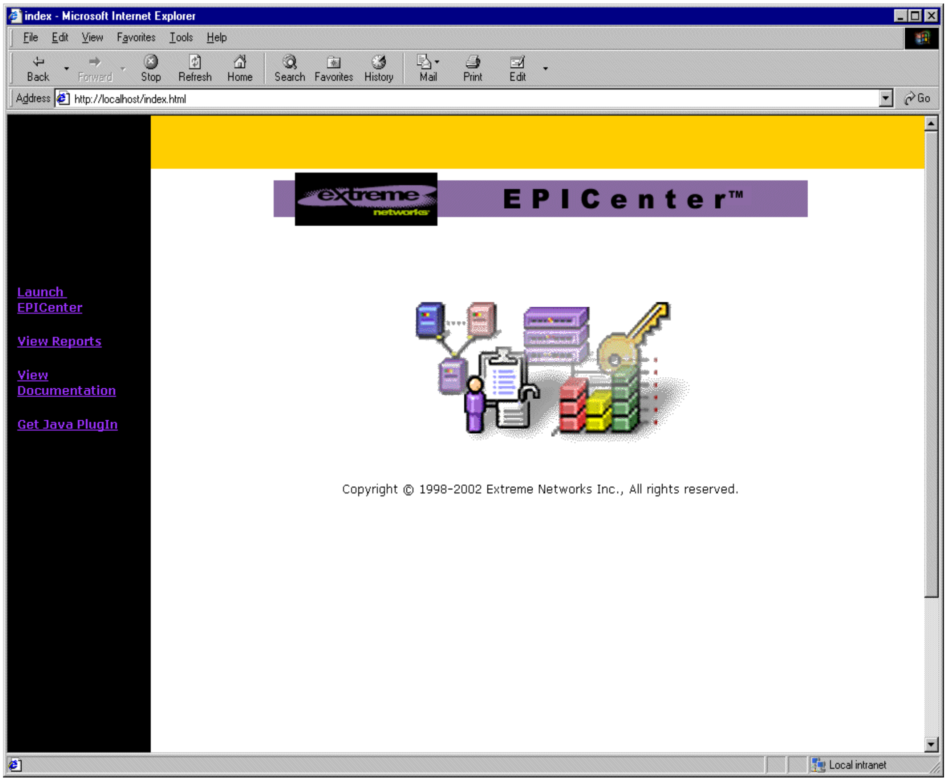
   In the URL, replace *<host>* with the name of the system where the EPICenter server is running. Replace *<port>* with the TCP port number that you assigned to the EPICenter Web Server during installation.

   NOTE

   If the EPICenter server uses the default web server port, 80, you do not need to include the port number.

The EPICenter Start-up page opens. Figure 3 shows the Start-up page in Internet Explorer under Windows NT.

Figure 3: The EPICenter browser client start-up page


index - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address http://localhost/index.html
Go
extreme networks
EPICenter™
Launch EPICenter
View Reports
View Documentation
Get Java PlugIn
Local intranet

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From the Start-up page you can run the EPICenter client interface, view the online documentation, or log into the EPICenter reports module.

- To launch the EPICenter client interface, click the **Launch EPICenter** link. This requires that the Java Plug-in version 1.3.1_03 be installed in your browser.

  If the required version of the plug-in is not installed, you will be prompted to download it, and will be led through the brief installation process. This obtains the plug-in from the Sun Microsystems web site, and requires Internet access.

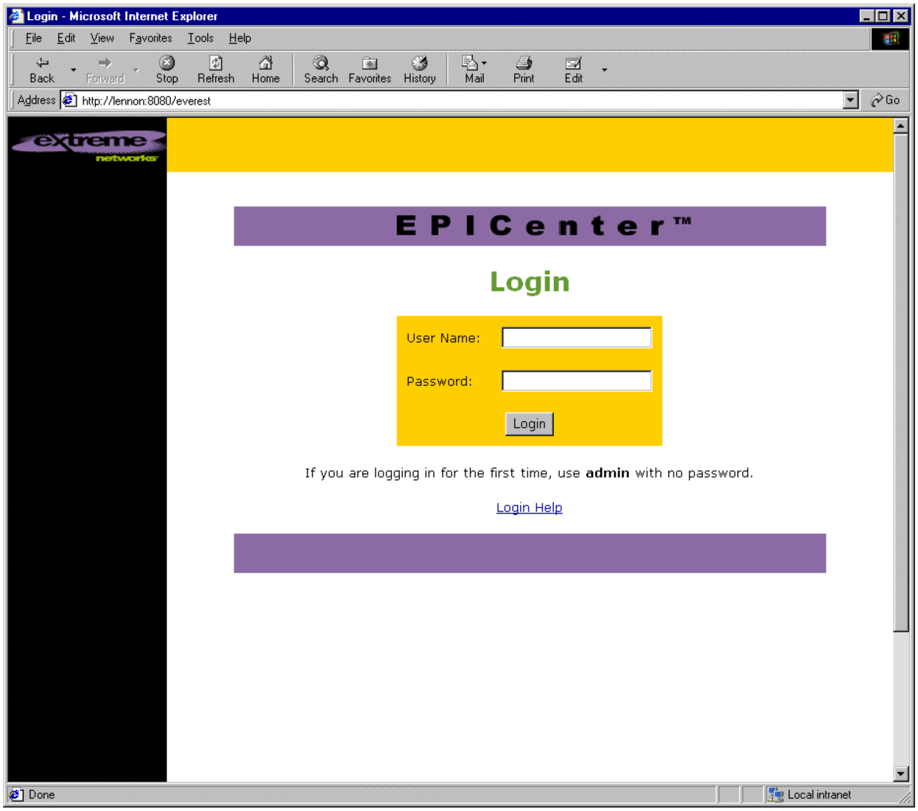
  You can also install the Java Plug-in directly, if you know you do not have the correct version installed, or if you encountered problems downloading it. Click the **Get Java PlugIn** link, which will install the required version from the EPICenter server installation. This requires access to the system where the EPICenter server is installed, and does not require Internet access.

The EPICenter Login page appears, as shown in Figure 4.

- From the start-up page you can view a variety of reports about EPICenter devices and functions, without requiring the Java Plug-in. Click the **View Reports** link to log into the EPICenter Reports applet, which provides a number of HTML-based reports. See Chapter Chapter 17 for more information on using these reports.
- Click the **View Documentation** link to display the online *EPICenter Software Installation and User Guide*. This requires that you have a copy of Adobe's Acrobat Reader (version 4.0 or later) installed.

If you do not have the Acrobat Reader installed, you can download it free of charge from Adobe's web site, at http://www.adobe.com.

Figure 4: The EPICenter browser client login page


Login - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go
extreme networks
EPICenter™
Login
User Name:
Password:
Login
Login Help
Done
Local intranet

Address: http://lennon:8080/everest

If you are logging in for the first time, use **admin** with no password.

To log into EPICenter:

1 If you already have an EPICenter user account, type your EPICenter user name in the **User Name** field.

   - If you are the network administrator logging in to the EPICenter server for the first time since it has been installed, log in as “admin.”

     You will be able to change the admin password (*strongly recommended*) and to create additional user accounts.

   - If you are a new user without your own account on the EPICenter server, type “user” as the **User Name**. You will be able to view information in the various modules, but will not be able to change any configurations.

2 Type your password in the **Password** field.

   Both default names (“user” and “admin”) initially have no password, so you can leave the field blank.

3 Click **Login**.

   If you are using an evaluation copy of the EPICenter, a dialog box appears notifying you how much longer the copy is valid.

   Click **OK**.

   The **Network Summary Report** page appears, as shown in Figure 5 on page 74.

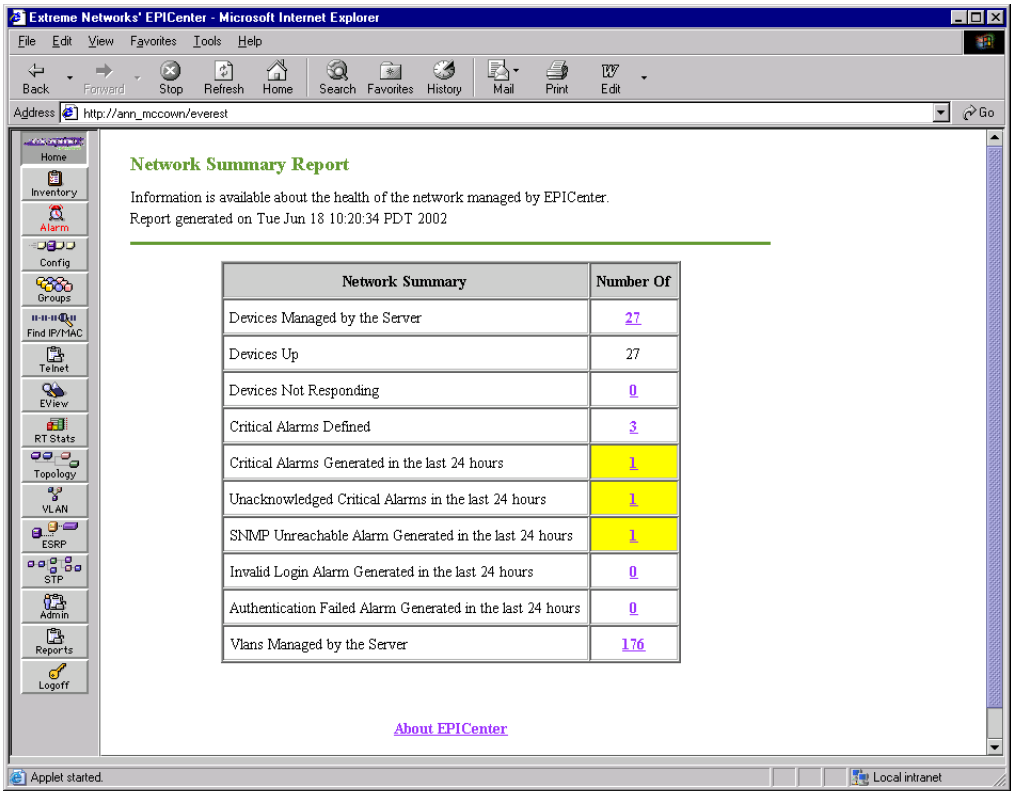
NOTE

If you have problems with the client display the first time you try to run EPICenter after installing it, try clearing all browser cache (both memory and disk), then closing and re-opening the browser.

The Network Summary Report Page

The Network Summary Report page displays a simple HTML report with some basic statistics on the status of your network. Click on the values in the right-hand column (**Number Of**) to display a detail report about a specific status item.

Figure 5: The Network Summary Report page



Network Summary Report

Information is available about the health of the network managed by EPICenter.
Report generated on Tue Jun 18 10:20:34 PDT 2002

Network Summary	Number Of
Devices Managed by the Server	27
Devices Up	27
Devices Not Responding	0
Critical Alarms Defined	3
Critical Alarms Generated in the last 24 hours	1
Unacknowledged Critical Alarms in the last 24 hours	1
SNMP Unreachable Alarm Generated in the last 24 hours	1
Invalid Login Alarm Generated in the last 24 hours	0
Authentication Failed Alarm Generated in the last 24 hours	0
Vlans Managed by the Server	176

About EPICenter

From this summary report you can view the following reports:

- Summary status of all the devices known to the EPICenter server.
- Summary status of the devices known to the EPICenter server that are not responding to EPICenter queries.
- A summary of the state of alarm definitions that have severity levels of Critical or Major. By default there are three such definitions.
- A summary of critical alarms that have occurred in the last 24 hours.
- A summary of critical alarms in the last 24 hours that have not been acknowledged.
- A summary of SNMP Unreachable alarms that have occurred in the last 24 hours.
- A summary of Invalid Login alarms that have occurred in the last 24 hours.

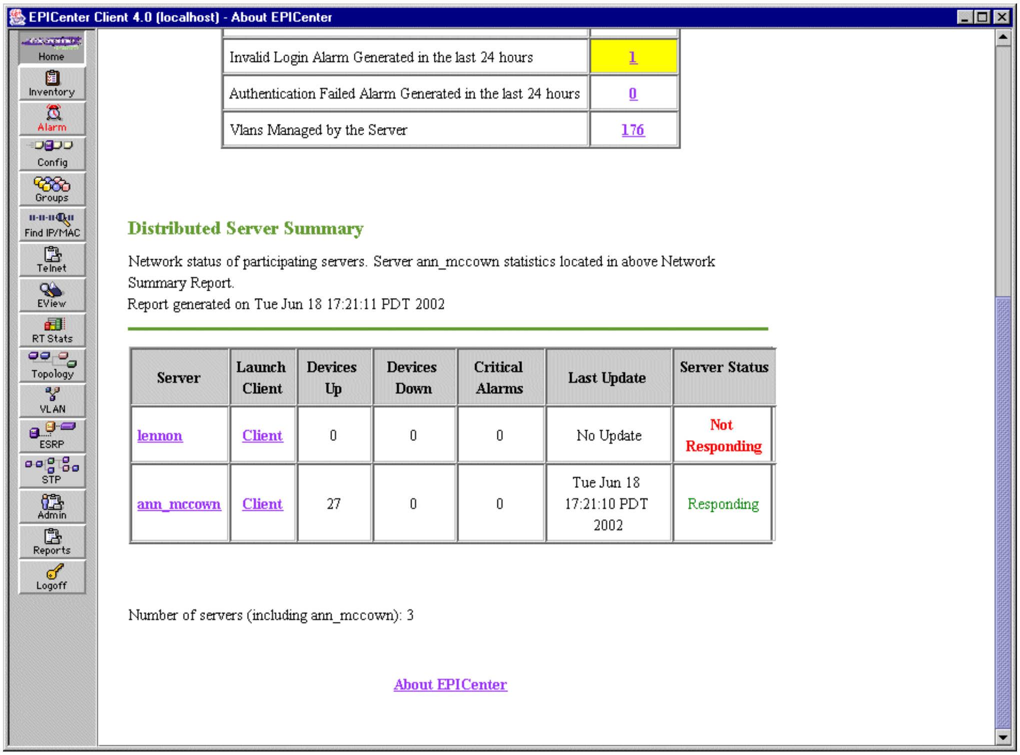
- A summary of Authentication Failure alarms that have occurred in the last 24 hours.
- Summary information on all VLANs being managed by the EPICenter server.

The Network Summary Report can also be accessed from the Reports applet. See Chapter 17 for a more detailed discussion of these reports.

The Distributed Server Summary

If you are running in a Distributed server configuration, a Distributed Server summary appears below the Network Summary, as shown in Figure 6.

Figure 6: Distributed Server Summary Report



Invalid Login Alarm Generated in the last 24 hours	1
Authentication Failed Alarm Generated in the last 24 hours	0
Vlans Managed by the Server	176

Distributed Server Summary

Network status of participating servers. Server ann_mccown statistics located in above Network Summary Report.
Report generated on Tue Jun 18 17:21:11 PDT 2002

Server	Launch Client	Devices Up	Devices Down	Critical Alarms	Last Update	Server Status
lennon	Client	0	0	0	No Update	Not Responding
ann_mccown	Client	27	0	0	Tue Jun 18 17:21:10 PDT 2002	Responding

Number of servers (including ann_mccown): 3

About EPICenter

Each row in the summary provides the status of one of the EPICenter server group members. It provides the following information about each server:

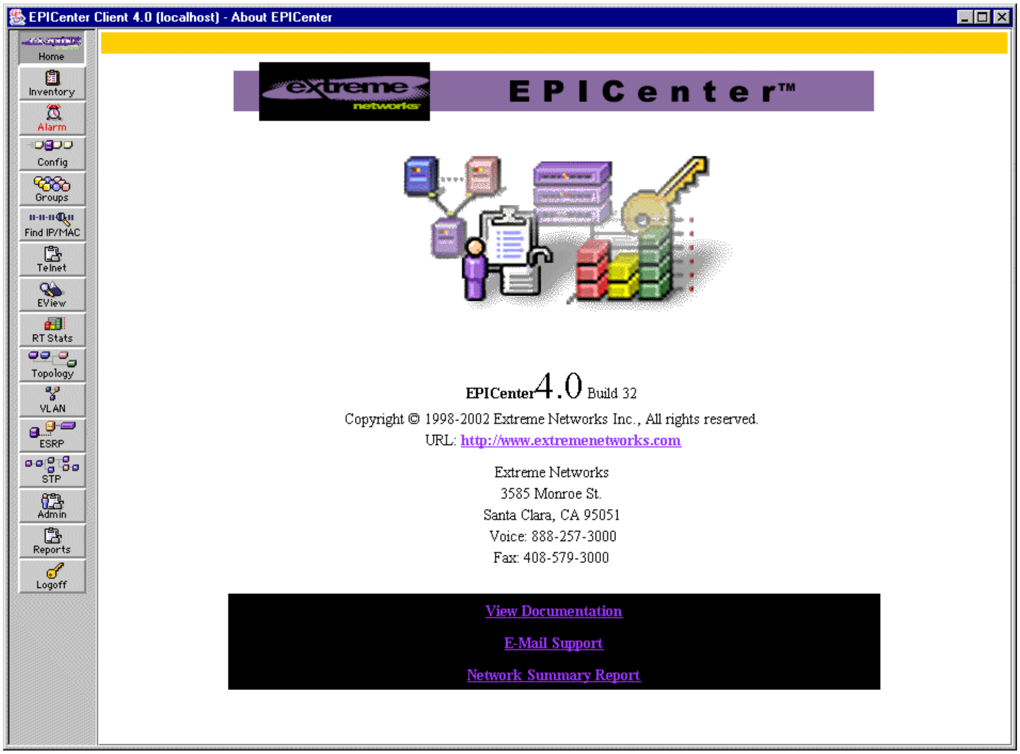
- The server name. Clicking on the server name initiates the Dynamic Reports module for that server.You can then run any of the available HTML reports.
- A link that can launch a client connection to the server. Clicking on the **Client** link launches a client that attempts to connect to that server.
- The number of devices managed by the server that are up or down
- The number of critical alarms that have occurred on devices managed by the server
- The date and time of the last update of the server summary information for this server
- The status of the server (whether it is responding to the periodic poll)

The “About EPICenter” Page

From the bottom of the Summary Report panel you can navigate to the **About EPICenter** page.

The **About EPICenter** page, shown in Figure 7, provides information about the version of EPICenter that you are running. This information may be needed if it becomes necessary for you to contact Extreme Networks’ Technical Support.

Figure 7: The About EPICenter page



EPICenter4.0 Build 32

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URL: http://www.extremenetworks.com

Extreme Networks
3585 Monroe St.
Santa Clara, CA 95051
Voice: 888-257-3000
Fax: 408-579-3000

View Documentation

E-Mail Support

Network Summary Report

From this page you can do the following:

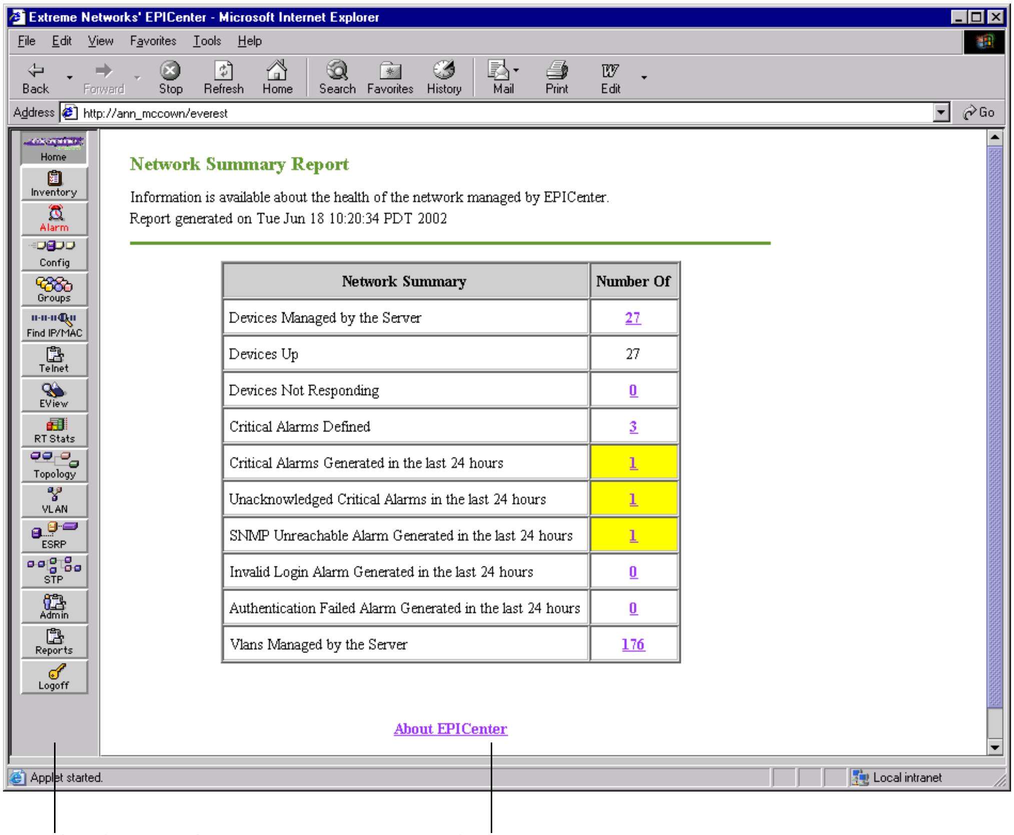
- Access the online *EPICenter Software Installation and User Guide*.
- Send e-mail to Extreme Networks' technical support organization.
- Return to the Network Summary Report page.

Navigating the EPICenter Applications

The EPICenter client consists of two frames, as shown in Figure 8:

- The Navigation Toolbar, from which you can access the EPICenter applets
- The Main Applet frame, where the currently active applet runs.

Figure 8: The EPICenter Home page



Network Summary Report

Information is available about the health of the network managed by EPICenter.
Report generated on Tue Jun 18 10:20:34 PDT 2002

Network Summary	Number Of
Devices Managed by the Server	27
Devices Up	27
Devices Not Responding	0
Critical Alarms Defined	3
Critical Alarms Generated in the last 24 hours	1
Unacknowledged Critical Alarms in the last 24 hours	1
SNMP Unreachable Alarm Generated in the last 24 hours	1
Invalid Login Alarm Generated in the last 24 hours	0
Authentication Failed Alarm Generated in the last 24 hours	0
Vlans Managed by the Server	176

About EPICenter

Navigation Toolbar

Main applet frame

The Navigation Toolbar

The Navigation Toolbar, on the left, displays a set of buttons you can use to access various EPICenter modules. The buttons that appear in this Toolbar may include additional modules, such as the EPICenter Policy Manager, if you have a license for those modules.

- **Home** returns you to the Network Summary Report display shown in Figure 8. From this page, you can access the About EPICenter page.

- **Inventory** runs the Inventory Manager, where you can discover devices on your network, and set up device groups and port groups so you can manage network elements in sets rather than individually.
- **Alarm** runs the Alarm Manager, where you can view and browse alarms that have occurred on your network devices, as well as define alarms and the actions that should occur when an alarm happens. This button also indicates that a new alarm has been received by displaying its label in red text instead of black text.
- **Config** runs the Configuration Manager, where you can upload and download switch configuration files, and download ExtremeWare software to your switches.
- **Find IP/MAC** runs the IP/MAC Address Finder applet, where you can search for the ports associated with one or more MAC or IP addresses, or identify the IP or MAC addresses connected to a set of ports.
- **Groups** runs the Grouping applet.
- **Telnet** runs an interactive Telnet application where you can create and run command-line macros on multiple devices in one operation. You can also establish telnet sessions with individual switches, both Extreme Networks and third-party devices.
- **EView** runs the ExtremeView applet, where you can view status and statistics about your managed devices, and do Extreme device configuration through Extreme Networks' interactive web-based device interface, ExtremeView Vista.
- **RT Stats** runs the Real Time statistics applet, that provides graphs of various device and port statistics.
- **Topology** runs the Topology applet, which gives you a hierarchical, logical map-based view of your network topology.
- **VLAN** runs the VLAN Manager, where you can set up and manage VLANs.
- **ESRP** runs the ESRP Manager, which lets your view the status of your ESRP-enabled switches and VLANs.
- **Admin** runs the Administration module, where a user with Administrator access can administer EPICenter user accounts and the RADIUS server. Other users can change their own password using this applet.
- **STP** runs the STP Monitor, which lets you view the status of devices and VLANs configured for STP. The devices must be running ExtremeWare 6.2.2 or later in order to be monitored by EPICenter.
- **Reports** runs the Dynamic Reports module, where you can run a number of pre-defined HTML-based reports from data in EPICenter's inventory database. You can also define your own reports.

- **Logoff** ends your session and returns you to the Login display.

NOTE

Note that you must have Administrator or Manager access in order to use most of the functions of these applets. Users with Monitor access will be able to view status, statistics etc., but will not be able to set up or change EPICenter or device configurations.

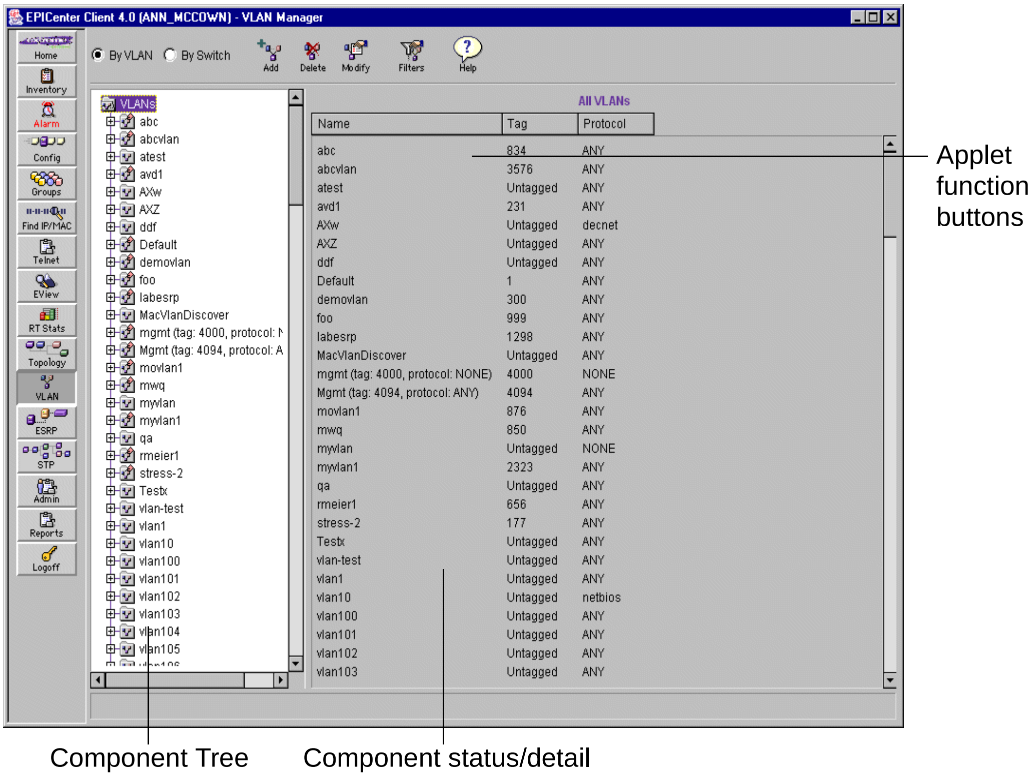
In addition to the applets described above, the Navigation Toolbar may include icons for other optional applications that have been integrated into the EPICenter server. These modules or products are typically purchased separately, and enabled via special license keys. Documentation for these modules is provided separately from the main EPICenter documentation. These include:

- **Policy** runs the EPICenter Policy Manager, where you can define QoS policies and access list rules for implementation on Extreme Networks and Cisco devices. This applet is an optional module that is licensed separately. It requires the installation of a separate license key. This applet is not available in scalability mode.
- **ServiceWatch** runs the EPICenter ServiceWatch software within the EPICenter client browser. ServiceWatch is not an EPICenter module, but a separate product. You can enable the integration into the EPICenter Navigation Toolbar through the Server Properties pages in the EPICenter Administration applet.

Main Applet Frame

The main applet frame is used to display the active EPICenter applet. For example, in Figure 9, the VLAN Manager is displayed in the main applet frame.

Figure 9: VLAN Manager applet



Name	Tag	Protocol
abc	834	ANY
abcvlan	3576	ANY
atest	Untagged	ANY
avd1	231	ANY
AXw	Untagged	decnet
AXZ	Untagged	ANY
ddf	Untagged	ANY
Default	1	ANY
demovlan	300	ANY
foo	999	ANY
labesrp	1298	ANY
MacVlanDiscover	Untagged	ANY
mgmt (tag: 4000, protocol: NONE)	4000	NONE
Mgmt (tag: 4094, protocol: ANY)	4094	ANY
movlan1	876	ANY
mwq	850	ANY
myvlan	Untagged	NONE
myvlan1	2323	ANY
qa	Untagged	ANY
rmeier1	656	ANY
stress-2	177	ANY
Testx	Untagged	ANY
vlan-test	Untagged	ANY
vlan1	Untagged	ANY
vlan10	Untagged	netbios
vlan100	Untagged	ANY
vlan101	Untagged	ANY
vlan102	Untagged	ANY
vlan103	Untagged	ANY

EPICenter applets use a two-panel display within the main applet frame. The two panels are:

- The Component Tree.
- A component status/detail information panel.

In addition, some applets provide an applet-specific set of buttons at the top of the main applet frame. These provide access to specific applet functions, such as adding, deleting, or configuring components managed by the applet. Other applets provide tabbed pages for different functions within the applet.

The Component Tree

The left side panel shows the Component Tree. The Component Tree is a nested tree that displays the components known to the EPICenter database that are relevant to the active module. The Component Tree may display different types of components depending on which EPICenter module you are viewing. For example, in the Inventory Manager, the Component Tree shows all the Extreme and third-party devices known to the EPICenter. In the VLAN Manager, the Component Tree displays VLANs, as shown in Figure 9. In the Topology view, the Component Tree shows the maps nested within a topology view.

The Component Tree often includes both folders and individual objects. If a component in the tree has a plus sign to its left, that means there are subcomponents nested below it. For example, if the component is a VLAN, then it typically has Extreme switches as subcomponents. A switch may have ports as subcomponents, or slots which in turn have ports.

- Click on the **plus** sign to display the nested subcomponents.

  The plus sign changes to a minus sign.
- Click on the **minus** sign to hide the subcomponents.

Most objects in the Component Tree are represented both by a text identifier and by a small icon that represents the type of object. Following are some examples of icons used in the Component Tree:

indicates a device group.

48i, 5i, , and are examples of device icons.

indicates an untagged VLAN, and is a tagged VLAN.

, , 48i, and are examples of folder icons.

indicates a general-purpose group in the Grouping module.

indicates a host resource in the Grouping module.

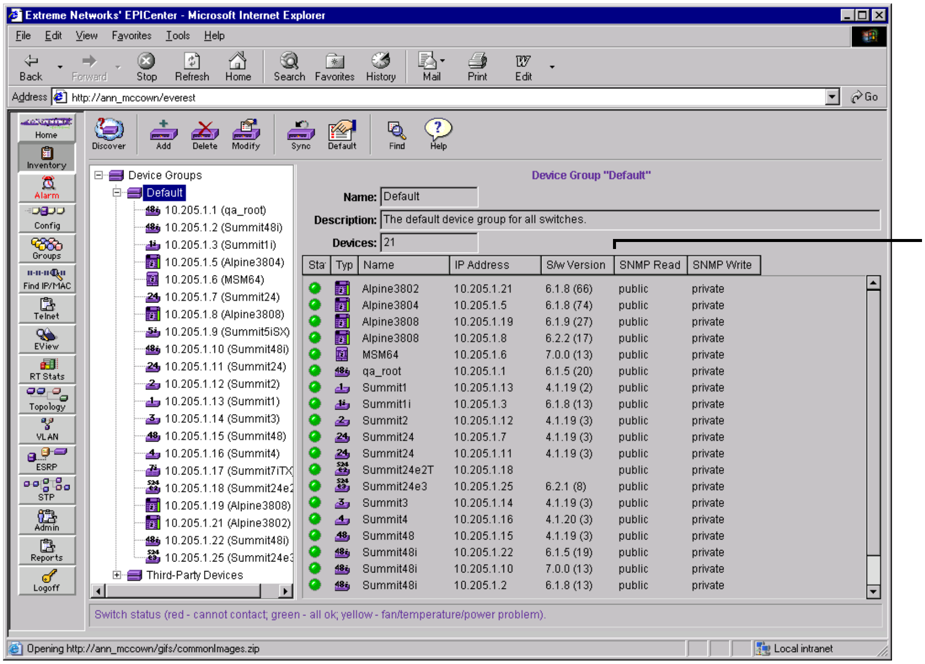
indicates a user resource in the Grouping module.

Devices are identified in the tree by their device name (as defined in the `SysName` MIB variable) and IP address. A user with administrator access can change this to reverse the order of the IP address and device name, or to display the device name only. This is done through a server property set in the Administration module. See “Other Properties” in Chapter 16 for details on how to do this.

The Status/Detail Information Panel

The right side panel displays information about the component selected in the tree on the left. For example, Figure 10 shows the Inventory Manager applet, with basic information about the devices known to the EPICenter.

Figure 10: Inventory Manager applet



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Device Groups
- Default
  - 10.205.1.1 (qa_root)
  - 10.205.1.2 (Summit48i)
  - 10.205.1.3 (Summit1i)
  - 10.205.1.5 (Alpine3804)
  - 10.205.1.6 (MSM64)
  - 10.205.1.7 (Summit24)
  - 10.205.1.8 (Alpine3808)
  - 10.205.1.9 (Summit5iSX)
  - 10.205.1.10 (Summit48i)
  - 10.205.1.11 (Summit24)
  - 10.205.1.12 (Summit2)
  - 10.205.1.13 (Summit1)
  - 10.205.1.14 (Summit3)
  - 10.205.1.15 (Summit48)
  - 10.205.1.16 (Summit4)
  - 10.205.1.17 (Summit7iTX
  - 10.205.1.18 (Summit24e2
  - 10.205.1.19 (Alpine3808)
  - 10.205.1.21 (Alpine3802)
  - 10.205.1.22 (Summit48i)
  - 10.205.1.25 (Summit24e3
- Third-Party Devices

Device Group "Default"

Name: Default

Description: The default device group for all switches.

Devices: 21

Sta	Typ	Name	IP Address	S/w Version	SNMP Read	SNMP Write
●		Alpine3802	10.205.1.21	6.1.8 (66)	public	private
●		Alpine3804	10.205.1.5	6.1.8 (74)	public	private
●		Alpine3808	10.205.1.19	6.1.9 (27)	public	private
●		Alpine3808	10.205.1.8	6.2.2 (17)	public	private
●		MSM64	10.205.1.6	7.0.0 (13)	public	private
●		qa_root	10.205.1.1	6.1.5 (20)	public	private
●		Summit1	10.205.1.13	4.1.19 (2)	public	private
●		Summit1i	10.205.1.3	6.1.8 (13)	public	private
●		Summit2	10.205.1.12	4.1.19 (3)	public	private
●		Summit24	10.205.1.7	4.1.19 (3)	public	private
●		Summit24	10.205.1.11	4.1.19 (3)	public	private
●		Summit24e2T	10.205.1.18		public	private
●		Summit24e3	10.205.1.25	6.2.1 (8)	public	private
●		Summit3	10.205.1.14	4.1.19 (3)	public	private
●		Summit4	10.205.1.16	4.1.20 (3)	public	private
●		Summit48	10.205.1.15	4.1.19 (3)	public	private
●		Summit48i	10.205.1.22	6.1.5 (19)	public	private
●		Summit48i	10.205.1.10	7.0.0 (13)	public	private
●		Summit48i	10.205.1.2	6.1.8 (13)	public	private

Switch status (red - cannot contact; green - all ok; yellow - fan/temperature/power problem).

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Local intranet

Column heading separators

- Click on a component in the Component Tree to display information about that component.

In Figure 10, the selected component is the Default device group. The component status/detail panel displays summary status information about each device in this device group.

A red circle with the white “S” next to a device indicates that the device is not reachable through SNMP. This indicator may appear in any of the applets where a list of switches is displayed.

The buttons and frame contents change depending on which applet you are viewing, and also on the permissions associated with your user account.

Moving the Component Tree Boundary

You can move the boundary between the Component Tree panel and the main applet panel by following these steps:

1. Place the cursor over the line separating the panels.
2. Click and hold the left mouse button to “grab” the panel separator.
3. Drag the separator until the panels are the desired widths.

Resizing Columns

In a wide columnar display such as shown in Figure 10, you can resize the widths of each column. To do this, follow these steps:

1. Place the cursor over the line separating the column you want to resize from the column to its right.
2. Click and hold the left mouse button to “grab” the column separator.
3. Drag the separator until the column is are the desired width.

Sorting Columns

You can sort the rows of a columnar display according to the contents of any individual column.

- To sort the rows, click on the column heading you want to use as the sort criteria. Click once to sort in ascending order; click a second time to reverse the sort order.

In most applets, the column that is currently being used as the sort criteria is indicated with a small triangle in the the column heading cell. The direction of the triangle (facing up or facing down) indicates whether the sort is ascending or descending.

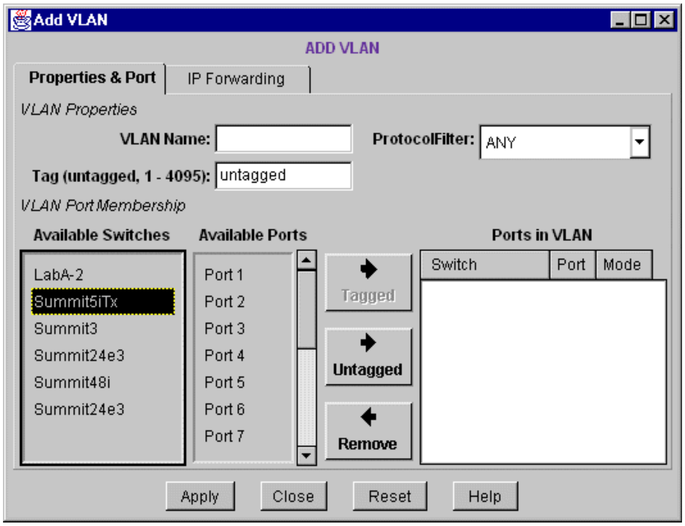
Applet Function Buttons

For most EPICenter applets, stand-alone buttons at the top of the applet frame provide access to the functions provided by the current applet. Each button invokes a pop-up dialog box for the function, as shown in Figure 11.

NOTE

If you have Monitor access, some or all of the buttons in a given applet are not available to you. For example, in the VLAN Manager, a user with Monitor access can view *information about the components in the Component Tree, but cannot Add, Delete, or Modify VLANs, or perform any port configurations.*

Figure 11: Pop-up dialog box for adding a VLAN in the VLAN Manager



VLAN Name:

ProtocolFilter: ANY

Tag (untagged, 1 - 4095): untagged

Available Switches: LabA-2, Summit5iTx, Summit3, Summit24e3, Summit48i, Summit24e3

Available Ports: Port 1, Port 2, Port 3, Port 4, Port 5, Port 6, Port 7

A dialog box can contain the following types of fields:

- *Page tabs*, such as the **Properties & Port** and **IP Forwarding** tabs in Figure 11. These are used when there are multiple pages of settings for a specific function. Clicking a tab displays its page.
- *Text fields*, such as the **VLAN Name** field in Figure 11. Enter text or numbers by clicking in the field and then typing.

  To clear a value from a text field, highlight the value with the cursor and press the Del or Backspace key on the keyboard. You can also highlight the value and just type a new value over the old one.
- *Drop-down menu fields*, such as the **Protocol Filter** field in Figure 11. Click in the field to drop down a menu of choices, then click on your selection to enter the value into the field.
- *List box fields*, such as the **Available Switches** field in Figure 11. Click to highlight a value in the field. Click again to unselect a value.

  If there are more entries in the list than can be displayed in the box, a scrollbar is provided at the right side of the field.

Some list boxes allow multiple selections. Simply click on multiple items to select them. You can also use [Shift]-click to select the first and last items in a group of contiguous items; all the items between your first and last selection will be highlighted.

To have the settings you've entered take effect, many dialog boxes provide an **Apply** button. This saves the settings on the page you are viewing, but the dialog box remains open so you can make additional changes or change the settings on one of the other pages. For example, you can specify a new VLAN on the **Properties & Ports** page as shown in Figure 11, click **Apply** to commit those settings, then display the **IP Forwarding** settings and make changes on that page.

Other dialog boxes may provide a button that executes the function of the dialog, such as **Add**, or **Delete**. Like the **Apply** button, these often perform the function but leave the dialog box open so you can perform additional operations.

Most dialog boxes also provide a **Close** button you can use to exit the dialog box when you are finished.

In addition, most dialog boxes provide a **Reset** button. This typically restores the dialog box to the state it was in when it was invoked, clearing any selections on the screen and resetting the data to the current information from the EPICenter database.

Printing from EPICenter

Printing is not supported in most of the EPICenter applets. The exceptions are the RT Stats and Topology applets, which each provide a print function, and the HTML-based reports (the Network Summary report and the Reports described in Chapter 17.

You can print the HTML reports using the browser print button. However, you should click in the panel where the report is displayed to ensure that only that panel will be printed. If you print without doing this, the Navigation Toolbar may not be refreshed, and you will need to refresh the client manually.

4 Using the Inventory Manager

This chapter describes how to use the EPICenter Inventory Manager applet for:

- Viewing the EPICenter device inventory
- Discovering network devices
- Adding network devices to the EPICenter database
- Modifying device contact parameters
- Deleting a device from the EPICenter database
- Updating device information in the database
- Creating default access parameters for network devices
- Finding specific network devices in the database
- Displaying device and device group parameters

Overview of the EPICenter Device Inventory

The Inventory Manager applet keeps a database of all the network devices managed by EPICenter. EPICenter can discover any devices running MIB-2 compatible agents. It can manage Extreme switches, and a number of third-party devices.

The EPICenter software provides an automatic discovery function. This feature can discover Extreme and MIB-2 compatible devices by specific IP address or within a range of IP addresses.

You can also add network devices to the EPICenter database manually, using the Inventory Manager **Add** function. Once a network device is known to the EPICenter database, you can assign it to a specific device group, and configure it using the Inventory Manager, VLAN Manager, Configuration Manager, Interactive Telnet, ExtremeView, or the optional Policy Manager. You can receive alarms about faults on the device, and you can view a hierarchical topology layout of the devices known to the Inventory Manager.

Any EPICenter user can view status information about the network devices currently known to EPICenter. Users with Administrator or Manager access can run Discovery, and add devices to or delete devices from the list of managed devices in the database. These users can also explicitly refresh the information in the database related to the devices that the EPICenter is managing.

Device Groups

Devices in the EPICenter are organized into one or more *device groups*. A device group is a set of network devices that have something in common, and that can be managed as a group. For example, devices might be grouped by physical location (Building 1, Building 2, first floor, second floor) or by functional grouping (engineering, marketing, finance) or by any other criteria that makes sense within the managed network environment.

An individual device must belong to one, and only one, device group. All devices become members of a device group when they are added to the EPICenter database, either through Add Devices or as a part of the Discovery process. By default, devices are added to the device group “Default,” if you do not specify otherwise. A device may then be moved to another device group as appropriate.

Gathering Device Status Information

The EPICenter retrieves information about the devices it manages in several ways:

- EPICenter uses SNMP polling for the IP addresses specified in a Discovery request to retrieve the status information needed by the various EPICenter applets.
- When a switch is added manually to the EPICenter database, EPICenter uses SNMP to retrieve status information needed by the various EPICenter applets.
- Extreme switches send SmartTraps to EPICenter whenever a change occurs in a switch status variable in which the EPICenter has registered interest. These include changes to operating variables as well as configuration changes made through other

management entities such as the switch command line interface or ExtremeWare Vista.

These traps are based on a set of SmartTraps rules that the Inventory Manager creates on the switch when it is added to the switch inventory. The rules tell the switch what events or changes EPICenter wants to be notified about. The rules are created on the switch using SNMP. EPICenter also adds itself on the switch as a trap receiver. The switch uses the SmartTraps rules to determine what traps to send to EPICenter.

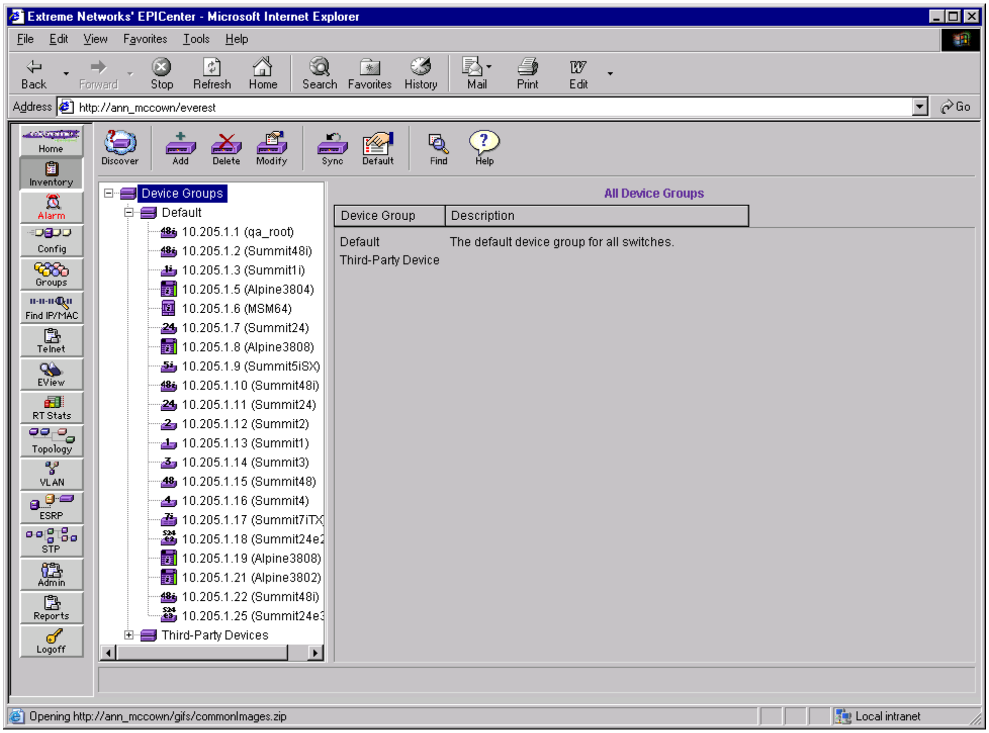
When EPICenter receives a trap from a switch, it then polls the switch for detailed status information.

- EPICenter polls every network device periodically (approximately every five minutes by default) to update basic switch status, which is a subset of the status and configuration information kept in the database. This poll interval is set globally for all devices being managed by the EPICenter server, and can be changed through the Server Properties settings in the Administration applet. See “Server Properties Administration” in Chapter 16.
- The EPICenter server polls each device periodically for detailed status information. This is done much less frequently than the basic status polling—by default, once every 30 minutes for core (chassis) devices, and once every 90 minutes for edge devices. In EPICenter 4.0, the default is 90 minutes for both the core and edge devices. This poll interval can be set individually for devices through the Modify Device interface in the Inventory applet (see the discussion “Modifying a Device” on page 109).
- A user with Administrator or Manager access can use the **Sync** command from the Inventory Manager. **Sync** is a manual update of the regular data gathering mechanisms, for use when the users believes that the device configuration or status is not correctly reported in EPICenter applets. **Sync** causes EPICenter to poll the switch and update *all* configuration and status information. During a **Sync** operation the SmartTraps rules are also reset in case the user has accidentally deleted the trap receiver or any SmartTrap rules.

Displaying the Network Device Inventory

When you click the **Inventory** button in the Navigation Toolbar, the main Inventory Manager page appears as shown in Figure 12.

Figure 12: The Inventory Manager applet, main page


Extreme Networks' EPICenter - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go
Home
Inventory
Alarm
Config
Groups
Find IP/MAC
Telnet
EView
RT Stats
Topology
VLAN
ESRP
STP
Admin
Reports
Logoff
Discover Add Delete Modify Sync Default Find Help
Local intranet

Address: http://ann_mccown/everest

- Device Groups
  - Default
    - 10.205.1.1 (qa_root)
    - 10.205.1.2 (Summit48i)
    - 10.205.1.3 (Summit1i)
    - 10.205.1.5 (Alpine3804)
    - 10.205.1.6 (MSM64)
    - 10.205.1.7 (Summit24)
    - 10.205.1.8 (Alpine3808)
    - 10.205.1.9 (Summit5iSX)
    - 10.205.1.10 (Summit48i)
    - 10.205.1.11 (Summit24)
    - 10.205.1.12 (Summit2)
    - 10.205.1.13 (Summit1)
    - 10.205.1.14 (Summit3)
    - 10.205.1.15 (Summit48)
    - 10.205.1.16 (Summit4)
    - 10.205.1.17 (Summit7iTX
    - 10.205.1.18 (Summit24e2
    - 10.205.1.19 (Alpine3808)
    - 10.205.1.21 (Alpine3802)
    - 10.205.1.22 (Summit48i)
    - 10.205.1.25 (Summit24e3
  - Third-Party Devices

All Device Groups

Device Group	Description
Default	The default device group for all switches.
Third-Party Device	

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NOTE

You must add network devices to the database using Discovery or the Add Devices function in order to make them “known” to EPICenter. Until this is done, no devices are displayed in the Inventory Manager.

The Device Groups currently defined in the EPICenter database are displayed in the Component Tree in the left panel.

The panel on the right shows the All Device Groups page, a list of the currently defined device groups with their descriptions.

The first time you run EPICenter, there is only one device group, **Default**. You cannot delete or change the name of the Default device group.

Click on the plus sign to the left of a Device Group name to display the list of switches that are members of that group.

A red circle with a white “S” next to a device indicates that the device is not reachable through SNMP.

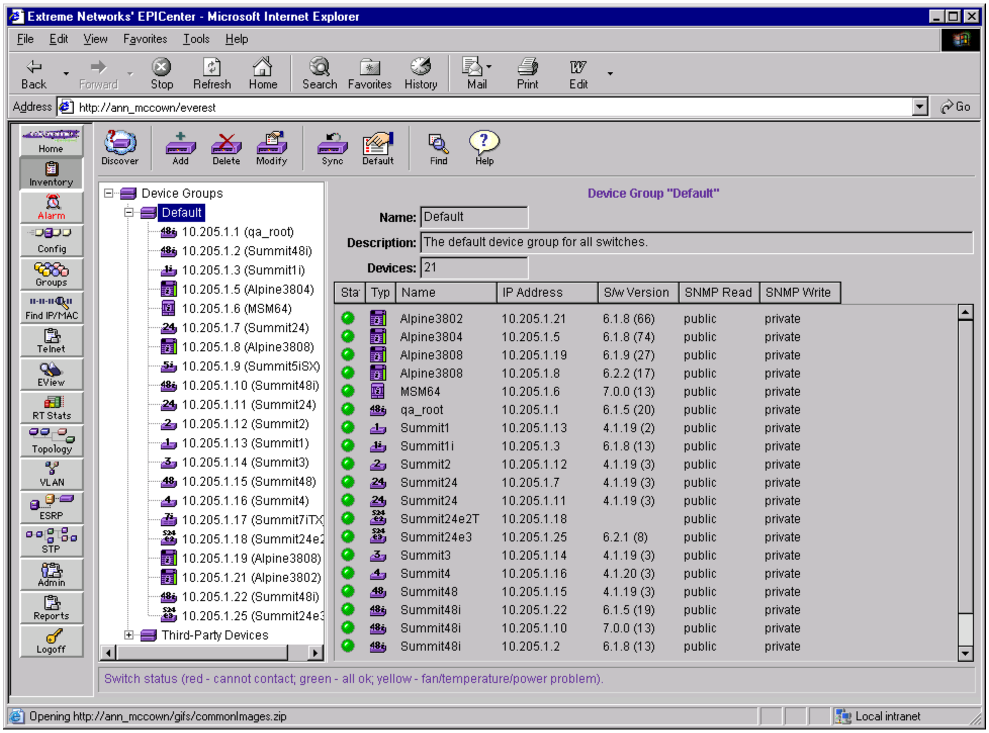
The buttons at the top of the page provide the following functions:

- **Discover** lets you find network devices by IP address or range of addresses.
- **Add** lets you add individual devices and device groups to the database.
- **Delete** removes a device or device group from the database.
- **Modify** lets you change the members of a device group, or update a device’s contact parameters in the database.
- **Sync** updates the EPICenter database with current device configuration and status information.
- **Default** lets you create default access parameters for network devices.
- **Find** searches for devices by name, IP address, or device type, and returns information such as the device group to which the device belongs.
- **Help** displays an on-line help page for the Inventory Manager.

Viewing Device Status Information

When you select a device group in the Component Tree, the panel on the right displays a summary status of the devices in the selected device group (see Figure 13).

Figure 13: Inventory Manager device group summary status


Extreme Networks' EPICenter - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go
Home
Inventory
Alarm
Config
Groups
Find IP/MAC
Telnet
EView
RT Stats
Topology
VLAN
ESRP
STP
Admin
Reports
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Discover Add Delete Modify Sync Default Find Help
Local intranet

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- Device Groups
  - Default
    - 10.205.1.1 (qa_root)
    - 10.205.1.2 (Summit48i)
    - 10.205.1.3 (Summit1i)
    - 10.205.1.5 (Alpine3804)
    - 10.205.1.6 (MSM64)
    - 10.205.1.7 (Summit24)
    - 10.205.1.8 (Alpine3808)
    - 10.205.1.9 (Summit5iSX)
    - 10.205.1.10 (Summit48i)
    - 10.205.1.11 (Summit24)
    - 10.205.1.12 (Summit2)
    - 10.205.1.13 (Summit1)
    - 10.205.1.14 (Summit3)
    - 10.205.1.15 (Summit48)
    - 10.205.1.16 (Summit4)
    - 10.205.1.17 (Summit7iTX
    - 10.205.1.18 (Summit24e2
    - 10.205.1.19 (Alpine3808)
    - 10.205.1.21 (Alpine3802)
    - 10.205.1.22 (Summit48i)
    - 10.205.1.25 (Summit24e3
  - Third-Party Devices

Device Group "Default"

Name: Default

Description: The default device group for all switches.

Devices: 21

Sta	Typ	Name	IP Address	S/w Version	SNMP Read	SNMP Write
●	▤	Alpine3802	10.205.1.21	6.1.8 (66)	public	private
●	▤	Alpine3804	10.205.1.5	6.1.8 (74)	public	private
●	▤	Alpine3808	10.205.1.19	6.1.9 (27)	public	private
●	▤	Alpine3808	10.205.1.8	6.2.2 (17)	public	private
●	▤	MSM64	10.205.1.6	7.0.0 (13)	public	private
●	48i	qa_root	10.205.1.1	6.1.5 (20)	public	private
●	1	Summit1	10.205.1.13	4.1.19 (2)	public	private
●	1i	Summit1i	10.205.1.3	6.1.8 (13)	public	private
●	2	Summit2	10.205.1.12	4.1.19 (3)	public	private
●	24	Summit24	10.205.1.7	4.1.19 (3)	public	private
●	24	Summit24	10.205.1.11	4.1.19 (3)	public	private
●	S24 e2	Summit24e2T	10.205.1.18		public	private
●	S24 e3	Summit24e3	10.205.1.25	6.2.1 (8)	public	private
●	3	Summit3	10.205.1.14	4.1.19 (3)	public	private
●	4	Summit4	10.205.1.16	4.1.20 (3)	public	private
●	48	Summit48	10.205.1.15	4.1.19 (3)	public	private
●	48i	Summit48i	10.205.1.22	6.1.5 (19)	public	private
●	48i	Summit48i	10.205.1.10	7.0.0 (13)	public	private
●	48i	Summit48i	10.205.1.2	6.1.8 (13)	public	private

Switch status (red - cannot contact; green - all ok; yellow - fan/temperature/power problem).

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- The status “lights” show the status of each device as detected by EPICenter.

Table 3: Inventory Manager Device Status Indicators

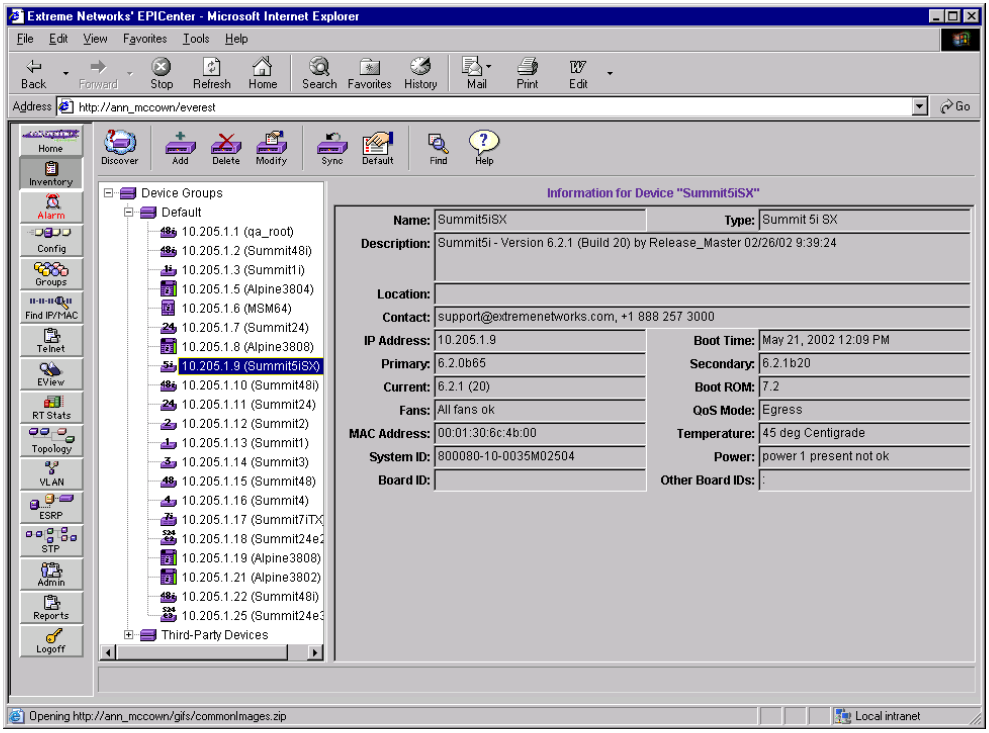
Status Light	Device Status
● Green	Device is up and OK
● Yellow	Device is responding, but reports an error condition such as a fan or power supply failure, or excessive temperature
● Red	Device is not responding to EPICenter status queries. This may mean that the device is down, that it is unreachable on the network, or that the SNMP community strings have changed and EPICenter can no longer contact the switch.

- The name and type of the device are detected by EPICenter.

- The IP address and read/write community strings are also detected by the EPICenter discovery, or are those entered into the EPICenter database manually if the switch was added using the Add command.

Select a switch in the Component Tree on the left to display detailed configuration and status information, as shown in Figure 14. This display shows additional information that EPICenter has gathered from the switch agent.

Figure 14: Inventory Manager device status information

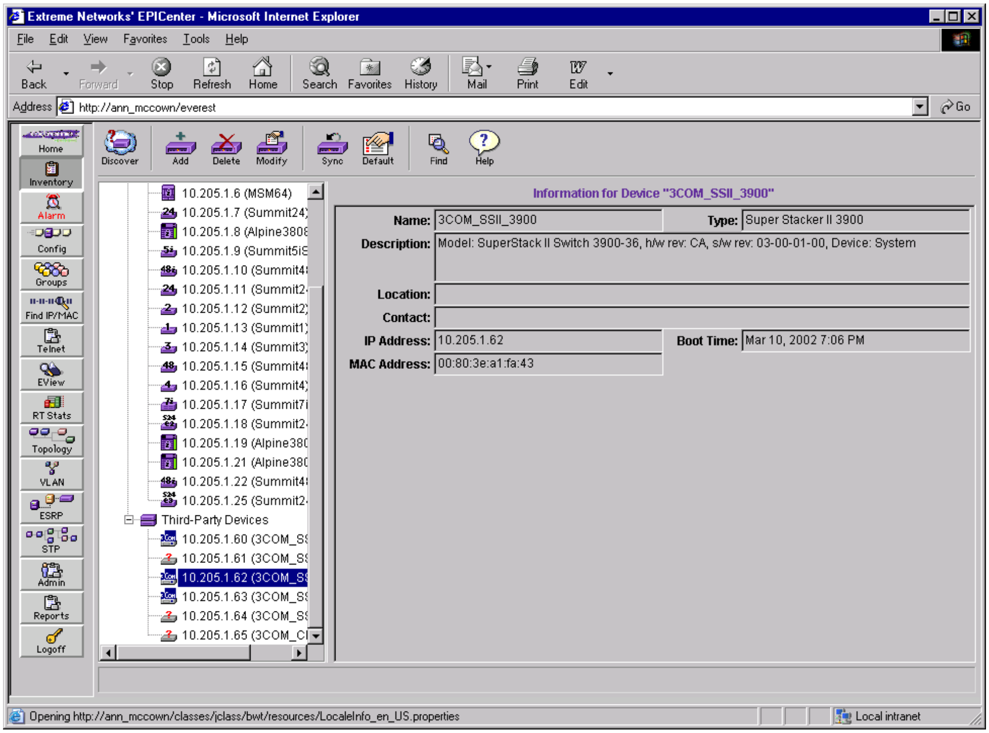


Information for Device "Summit5iSX"

Name: Summit5iSX
Type: Summit 5i SX
Description: Summit5i - Version 6.2.1 (Build 20) by Release_Master 02/26/02 9:39:24
Location:
Contact: support@extremenetworks.com, +1 888 257 3000
IP Address: 10.205.1.9
Boot Time: May 21, 2002 12:09 PM
Primary: 6.2.0b65
Secondary: 6.2.1b20
Current: 6.2.1 (20)
Boot ROM: 7.2
Fans: All fans ok
QoS Mode: Egress
MAC Address: 00:01:30:6c:4b:00
Temperature: 45 deg Centigrade
System ID: 800080-10-0035M02504
Power: power 1 present not ok
Board ID:
Other Board IDs: :

The information displayed in Figure 14 is for an Extreme switch. The ExtremeWare software running in the switch provides comprehensive status information through the Extreme MIB. Figure 15 show the information displayed for a Cisco device—a subset of the information available for an Extreme device.

Figure 15: Inventory Manager information for a 3Com device



Information for Device "3COM_SSII_3900"

Name: 3COM_SSII_3900

Type: Super Stacker II 3900

Description: Model: SuperStack II Switch 3900-36, h/w rev: CA, s/w rev: 03-00-01-00, Device: System

Location:

Contact:

IP Address: 10.205.1.62

Boot Time: Mar 10, 2002 7:06 PM

MAC Address: 00:80:3e:a1:fa:43

Opening http://ann_mccown/classes/jclass/bwt/resources/LocaleInfo_en_US.properties

Viewing Device Information from Pop-up Menus

You can select a device group or a device in the Component Tree, then right-click to display a pop-up menu that contains the Modify, Delete, Sync, and Properties commands. All of the commands—with the exception of the Properties command—perform the same functions as the buttons at the top of the page, but with the appropriate device or device group displayed. The Properties command displays the attributes for a specific device group or device. The device pop-up menu also contains the Alarms, Browse, Statistics, Telnet, EView, and VLANs commands. All of these commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with the appropriate device displayed.

Modify

The Modify function lets you change the members of a device group, or update a device's contact parameters in the EPICenter database.

To view the Modify Device display for a selected device group or device:

- Right-click on the device group or device, then select **Modify** from the pop-up menu that appears

This opens the Modify Devices and Device Group window. If you selected a device, the Modify Devices page is displayed. If you selected a device group, the Modify Device Group page is displayed.

See "Modifying Devices and Device Groups" on page 109 for details on using this feature.

Delete

The Delete function lets you delete devices and device groups from the EPICenter database.

To view the Delete display for a selected device group:

- Right-click on the device group, then select **Delete** from the pop-up menu that appears

This opens the Delete Devices and Device Group window. The Delete Device Group window displays the device group name and a description of the device, if available.

To view the Delete display for a selected device:

- Right-click on the device, then select **Delete** from the pop-up menu that appears

The Inventory dialog box appears and prompts you to delete the selected device.

See "Deleting Devices and Device Groups from the Database" on page 113 for details on using this feature.

Sync

The Sync function lets you manually update device configuration and status information.

To view the Sync display for a selected device group or device:

- Right-click on the device group, then select **Sync** from the pop-up menu that appears

This opens the Synchronize Devices window and displays statistics for devices that are members of a device group.

See “Updating Device Information” on page 116 for details on using this feature.

Properties

The Properties function lets you view the attributes for a device group or a device.

To view the Properties display for all device groups:

- Right-click on the Device Groups component, then select **Properties** from the pop-up menu that appears

The Device Groups Properties window appears and displays the number of device groups and the names of the device groups that are known to EPICenter.

To view the Properties display for a selected device group:

- Right-click on the device group, then select **Properties** from the pop-up menu that appears

The Device Group Properties window appears and displays the attributes for the selected device group.

To view the Properties display for a selected device:

- Right-click on the device, then select **Properties** from the pop-up menu that appears

The Device Properties window appears and displays the attributes for the selected device.

See “Displaying Properties” on page 121 for details on using this feature.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new web browser window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

Statistics

The Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7 for details on using this feature.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10 for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

See Chapter 13 for details on using this feature.

Discovering Network Devices

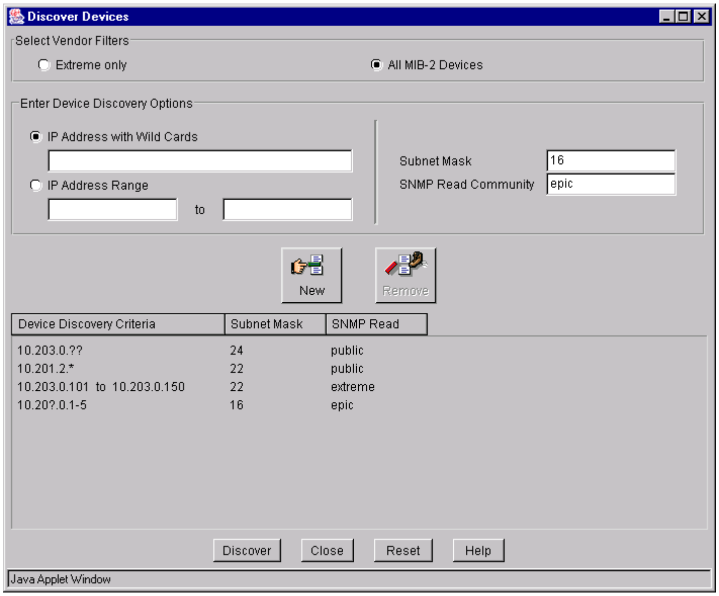
EPICenter provides an automatic Discovery function that lets you discover network devices by IP address.

To discover network devices, do the following:

1 Click the **Discovery** button at the top of the Inventory Manager main window.

The Discover Devices window, shown in Figure 16, is displayed.

Figure 16: Inventory Manager Device Discovery set up window



Discover Devices

Select Vendor Filters

○ Extreme only ● All MIB-2 Devices

Enter Device Discovery Options

● IP Address with Wild Cards

○ IP Address Range to

Subnet Mask: 16

SNMP Read Community: epic

Device Discovery Criteria	Subnet Mask	SNMP Read
10.203.0.??	24	public
10.201.2.*	22	public
10.203.0.101 to 10.203.0.150	22	extreme
10.20?.0.1-5	16	epic

2 Click the appropriate boxes to select the types of devices you want to include in the discovery. You can discover Extreme devices only, or all devices with MIB-2 compatible agents.

3 Specify the device address range you want to discover. You may specify the range in one of two ways:

— As an **IP Address with Wildcards** (such as 10.203.10.* or 10.203.?.??)

Valid wildcard characters are *****, **?**, and **-** (dash):

***** acts as a wildcard for the entire octet (0-255).

? is a wildcard for a single digit (0-9).

- lets you specify a range for any octet. You can use this in more than one octet.

NOTE

You cannot combine the dash with another wildcard in the same octet.

You can also use the IP Address with Wildcards field to specify a single IP address.

Examples:

IP Address Specification	Addresses Generated
10.203.0.*	polls 10.203.0.0 through 10.203.0.255
10.203.?.??	polls 10.203.0.0 through 10.203.9.99
0.203.0.1? or 10.203.0.10-19	both specify the same range: 10.203.0.10 through 10.203.0.19
10.203.0-2.10-30	polls 10.203.0.10 through 10.203.0.30 10.203.1.10 through 10.203.1.30 10.203.2.10 through 10.203.2.30

— As an **IP address Range** (such as 10.203.10.20 to 10.203.10.45)

NOTE

There are certain IP addresses that are reserved. You should not include these addresses in your discovery.

• Class A networks: 0 and 127 are reserved.
• Class D networks: 224 - 239 are reserved for multicasting.
• All addresses above 239 are reserved.
• 255 is reserved for broadcast datagrams for either the host or network portion of the IP address.

In addition, certain host addresses may be interpreted as broadcast addresses, depending on the subnetting of your network.

IP addresses are processed prior to starting the discovery, and IP addresses that contain 255's in the host portion are eliminated. This is based on the IP address as well as the subnet mask.

4 Specify (or verify) the **Subnet Mask** size as appropriate. The value in the Subnet Mask field is the number of bits to be masked, starting from the high-order (left-hand) octet. The default subnet mask of 24 will mask the three high-order octets.

5 Specify (or verify) the **SNMP Read Community** string so that EPICenter will be able to retrieve information from any devices it discovers.

6 Click the **New** button to add the range into the **Device Discovery Criteria** list.

7 Repeat steps 3 through 6 to specify any additional device addresses or ranges for the discovery.

8 If necessary, you can remove an address range from the Device Discovery Criteria list at any time before you initiate the discovery by selecting the range and clicking the **Remove** button.

You can remove all address ranges using the **Reset** button at the bottom of the page.

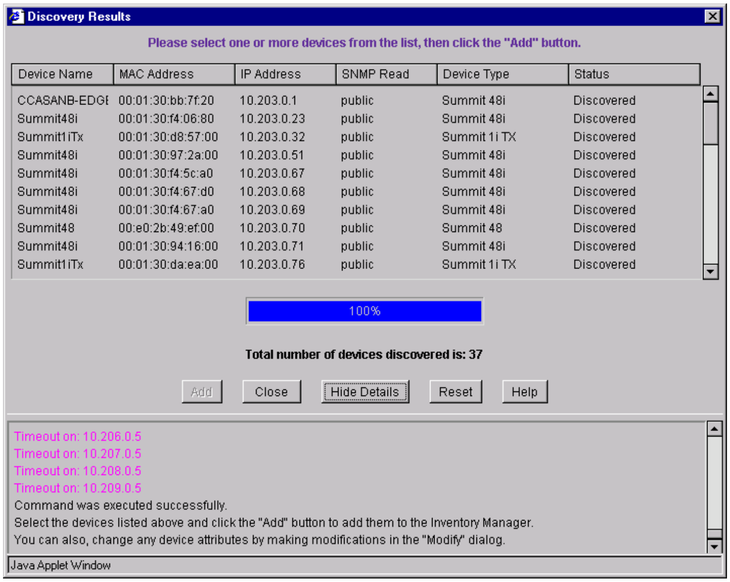
9 Click the **Discover** button at the bottom of the window to initiate the discovery.

NOTE

If a discovery request is too large, your browser may not have sufficient memory resources available to handle it. It is recommended that you break a large discovery task into multiple separate tasks.

A Discovery Results window is displayed as soon as the discovery process begins, as shown in Figure 17. The panel at the bottom of the window shows the progress of the discovery and displays status messages for each device it finds as it works through the set of IP addresses you have specified.

Figure 17: Results of a discovery, with details visible



Please select one or more devices from the list, then click the "Add" button.

Device Name	MAC Address	IP Address	SNMP Read	Device Type	Status
CCASANB-EDGI	00:01:30:bb:7f:20	10.203.0.1	public	Summit 48i	Discovered
Summit48i	00:01:30:f4:06:80	10.203.0.23	public	Summit 48i	Discovered
Summit1iTx	00:01:30:d8:57:00	10.203.0.32	public	Summit 1i TX	Discovered
Summit48i	00:01:30:97:2a:00	10.203.0.51	public	Summit 48i	Discovered
Summit48i	00:01:30:f4:5c:a0	10.203.0.67	public	Summit 48i	Discovered
Summit48i	00:01:30:f4:67:d0	10.203.0.68	public	Summit 48i	Discovered
Summit48i	00:01:30:f4:67:a0	10.203.0.69	public	Summit 48i	Discovered
Summit48	00:e0:2b:49:ef:00	10.203.0.70	public	Summit 48	Discovered
Summit48i	00:01:30:94:16:00	10.203.0.71	public	Summit 48i	Discovered
Summit1iTx	00:01:30:da:ea:00	10.203.0.76	public	Summit 1i TX	Discovered

Total number of devices discovered is: 37

```
Timeout on: 10.206.0.5
Timeout on: 10.207.0.5
Timeout on: 10.208.0.5
Timeout on: 10.209.0.5
Command was executed successfully.
Select the devices listed above and click the "Add" button to add them to the Inventory Manager.
You can also, change any device attributes by making modifications in the "Modify" dialog.
```

— Click the **Hide Details** button at the bottom of this window to hide the detail display.

— Click **View Details** to re-display the discovery details.

When the discovery has completed, the set of discovered devices is listed in the top panel of the Discovery Results window.

NOTE

These devices are NOT automatically entered into the EPICenter database. You must explicitly select and add devices to the database.

10 To add devices to the EPICenter database, select individual devices or a range of devices in the Results list, and click the **Add** button at the bottom of the window.

NOTE

*If you select multiple devices, make sure the devices you select are similarly configured. As part of the Add process, you will be asked for a **single** password that will apply to all the selected devices. If the password is specified incorrectly for any of these devices, the add will fail for those devices.*

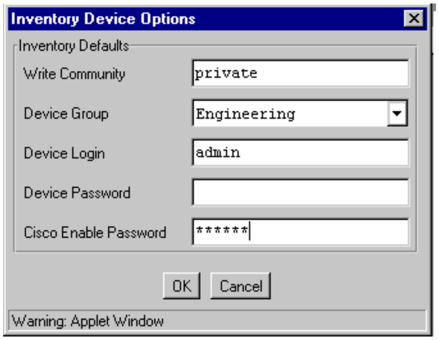
11 A window appears where you must set additional device options such as a write community string, the device group to which the devices should be added, and a default device login and password (see Figure 18). If there are Cisco devices among the set being added, you must also enter a Cisco enable password.

Enter or make changes to any of these fields. These options will apply to the entire set of devices you are adding.

NOTE

Make sure the device passwords are correct for the selected devices. If you are adding multiple devices in one operation, make sure the passwords you specify are correct for each device. A device cannot be added if the password is not correct.

Figure 18: Setting default device options for discovered devices



Inventory Device Options

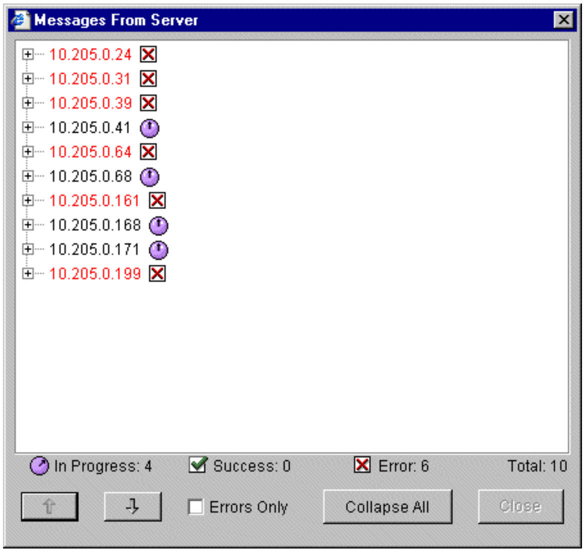
Inventory Defaults

Write Community	private
Device Group	Engineering
Device Login	admin
Device Password	
Cisco Enable Password	******

12 Click **OK** to proceed with the Add process.

A message window (shown in Figure 19) appears to show you the progress of the Add command.

Figure 19: Message window showing Add Device progress



Messages From Server

```
10.205.0.24 ☒
10.205.0.31 ☒
10.205.0.39 ☒
10.205.0.41 🕒
10.205.0.64 ☒
10.205.0.68 🕒
10.205.0.161 ☒
10.205.0.168 🕒
10.205.0.171 🕒
10.205.0.199 ☒
```

🕒 In Progress: 4 ☑ Success: 0 ☒ Error: 6 Total: 10

Devices are listed followed by a small purple rotating clock icon 🕒 while the add function is in progress.

- When a device has been successfully added, the clock turns into a green checkbox ☑.

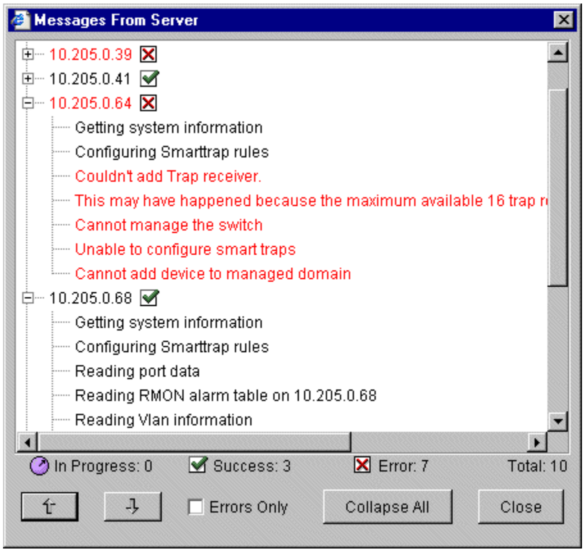
- If the device cannot be added, the clock turns into a red X in the checkbox ☒ and the device name is displayed in red.

The indicators just below the tree area of the window show the number of devices currently in each state.

To see the messages related to an Add function (either successful or unsuccessful), select a device in the list. The messages related to the device are displayed as lines under the device node, as shown in Figure 20.

- Click the plus sign at the left of the device name to display server messages related to adding the device.
- Click the minus sign at the left of the device to hide the server messages.
- The up and down arrow buttons let you move up and down the device tree, displaying the server messages associated with each device.
- If you check the **Errors Only** box, the up and down arrow buttons will expand only devices that had errors.
- The **Collapse All** button collapses all the device nodes, hiding all the server messages.

Figure 20: Message window showing errors from the Add Device process



```
⊞ 10.205.0.39 ☒
⊞ 10.205.0.41 ☑
⊟ 10.205.0.64 ☒
    Getting system information
    Configuring Smarttrap rules
    Couldn't add Trap receiver.
    This may have happened because the maximum available 16 trap r
    Cannot manage the switch
    Unable to configure smart traps
    Cannot add device to managed domain
⊟ 10.205.0.68 ☑
    Getting system information
    Configuring Smarttrap rules
    Reading port data
    Reading RMON alarm table on 10.205.0.68
    Reading Vlan information
```

In Progress: 0 ☑ Success: 3 ☒ Error: 7 Total: 10

CAUTION

If you close the Discovery Results window without adding devices, the results for devices not already in the EPICenter database are lost. You must perform a discovery again to regenerate information on those devices.

After the Add has finished, the Discovery Results window is re-displayed. You can select more devices and specify a different set of Inventory Device Options, and add those devices to the Inventory Manager.

Adding Devices and Device Groups

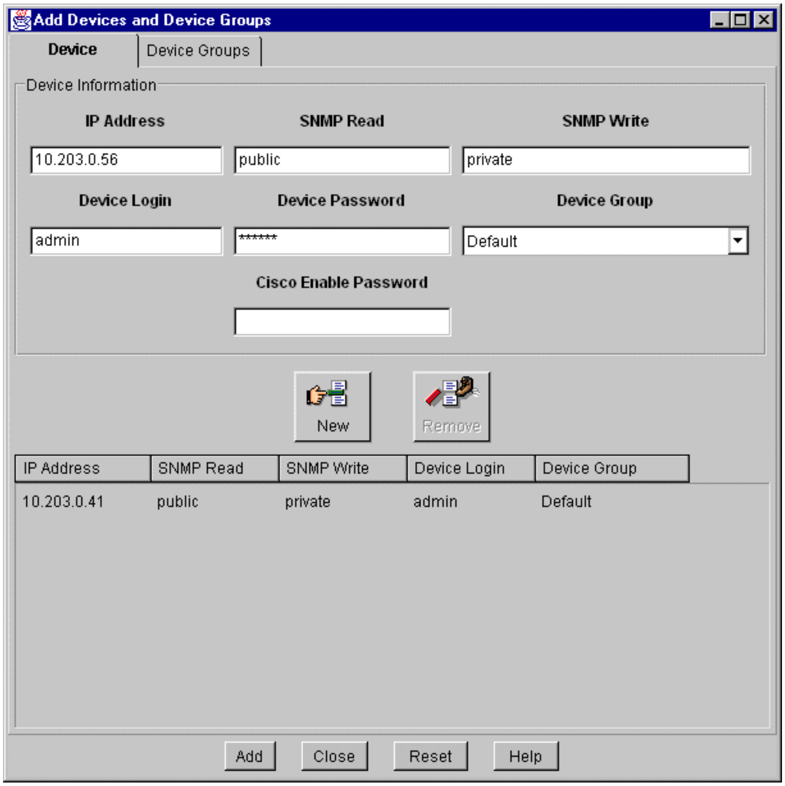
Users with Administrator or Manager access can add devices to the EPICenter database, and create Device Groups. If you have Monitor access only, you may not use this function.

Adding a Device

1 Click the **Add** button at the top of the Inventory Manager main window.

Select the appropriate tab to display the Add Device window, as shown in Figure 21.

Figure 21: Add Device window in the Inventory Manager



IP Address: 10.203.0.56

SNMP Read: public

SNMP Write: private

Device Login: admin

Device Password: ******

Device Group: Default

Cisco Enable Password:

IP Address	SNMP Read	SNMP Write	Device Login	Device Group
10.203.0.41	public	private	admin	Default

2 Enter the device IP address, community strings, device login and password into the appropriate fields. These are the parameters that EPICenter uses to access the switch.

You may also enter a DNS-resolvable host name in place of the Switch IP address.

3 Select the device group to which this device should belong. It can belong to only one device group. **Default** is the default group for managed devices.

4 To clear the contents of the fields and reset them to their default values, click **Reset**.

5 To add the new device into the database, click **Add**.

When you click **Add**, the Inventory Manager adds the devices to the database. It makes a set of SNMP requests to retrieve data that is needed from the devices by EPICenter applets. If the device is an Extreme switch, it also creates a set of SmartTraps rules that tell the switch what status and configuration changes are of interest to EPICenter.

Creating a Device Group

Device groups are sets of managed network devices that have something in common, and that can be managed as a group. For example, devices might be grouped by physical location (Building 1, Building 2, first floor, second floor), by department (engineering, marketing, finance), or by any other criteria that makes sense within the managed network environment.

Every device belongs to one, and only one, device group. All devices become members of a device group when they are added to the EPICenter database, either through Add Devices or as a part of the Discovery process. A device may then be moved to another device group as appropriate.

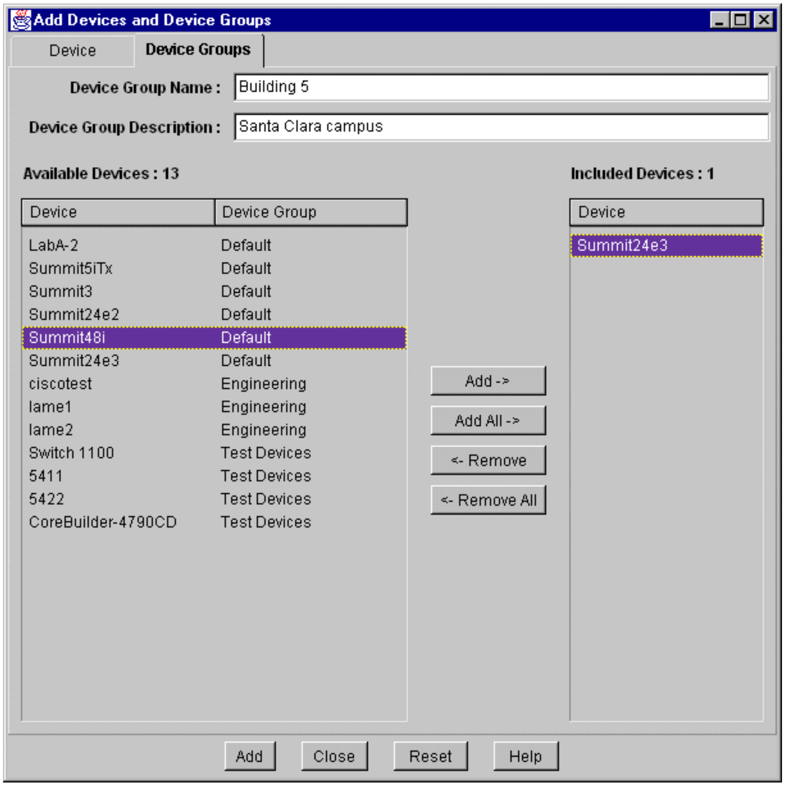
One device group may contain a maximum of 100 devices.

To create a new device group, follow these steps:

1 Click the **Add** button at the top of the Inventory Manager main window.

Select the appropriate tab to display the Device Groups window, as shown in Figure 22.

Figure 22: Add Device Group window in the Inventory Manager



Add Devices and Device Groups

Device | Device Groups

Device Group Name : Building 5

Device Group Description : Santa Clara campus

Available Devices : 13

Device	Device Group
LabA-2	Default
Summit5iTx	Default
Summit3	Default
Summit24e2	Default
Summit48i	Default
Summit24e3	Default
ciscotest	Engineering
lame1	Engineering
lame2	Engineering
Switch 1100	Test Devices
5411	Test Devices
5422	Test Devices
CoreBuilder-4790CD	Test Devices

Included Devices : 1

Device
Summit24e3

2 Type a name for the device group into the **Device Group Name** field, and a description (optional) into the **Device Group Description** field.

3 To add a device to the selected device group, select one or more devices in the Available Devices list and click **Add ->**. To add all devices in the Available Devices list, click **Add All ->**.

4 To remove a device from the device group, select one or more devices in the Included Devices list, and click **<- Remove**. The device(s) will be moved from the selected device group to the Default device group. To return all devices in the Included Devices list to the Default device group, click **<- Remove All**.

5 Repeat steps 3 and 4 until you have included all the devices that should be members of this device group.

6 To add the newly created device group to the database, click the **Add** button at the bottom of the window.

Modifying Devices and Device Groups

You can use the Modify function to modify the access parameters for an individual device, or to add and delete members of a device group. Users with Administrator or Manager access can modify device contact information and device groups.

If you have Monitor access only, you cannot use this function.

Modifying a Device

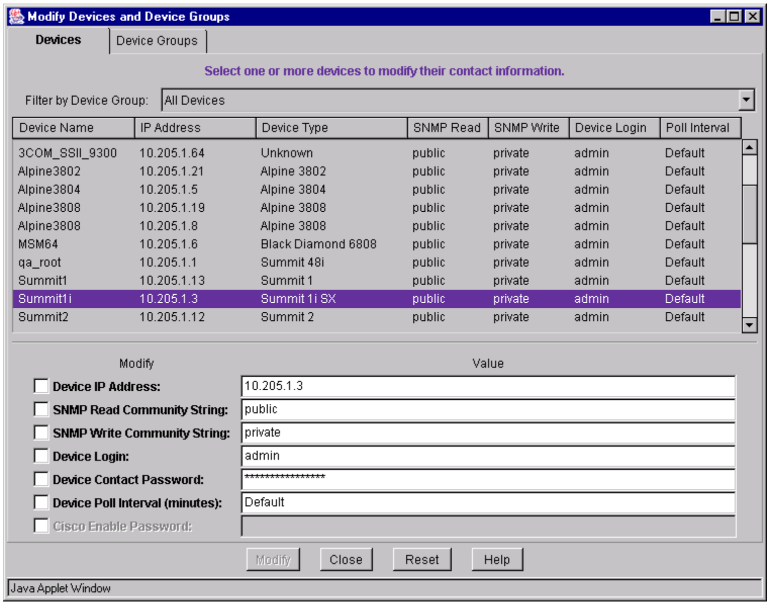
You can begin the modify function using the **Modify** button on the toolbar, or by selecting a device in the Component Tree, right-clicking to display the pop-up menu, and selecting Modify.

To modify the contact information for a managed device in the database, do the following:

1 Click the **Modify** button at the top of the Inventory Manager main page.

Select the appropriate tab to display the Modify Device window, as shown in Figure 23.

Figure 23: Devices tab of the Modify Devices and Device Groups window



Select one or more devices to modify their contact information.

Filter by Device Group: All Devices

Device Name	IP Address	Device Type	SNMP Read	SNMP Write	Device Login	Poll Interval
3COM_SSII_9300	10.205.1.64	Unknown	public	private	admin	Default
Alpine3802	10.205.1.21	Alpine 3802	public	private	admin	Default
Alpine3804	10.205.1.5	Alpine 3804	public	private	admin	Default
Alpine3808	10.205.1.19	Alpine 3808	public	private	admin	Default
Alpine3808	10.205.1.8	Alpine 3808	public	private	admin	Default
MSM64	10.205.1.6	Black Diamond 6808	public	private	admin	Default
qa_root	10.205.1.1	Summit 48i	public	private	admin	Default
Summit1	10.205.1.13	Summit 1	public	private	admin	Default
Summit1i	10.205.1.3	Summit 1i SX	public	private	admin	Default
Summit2	10.205.1.12	Summit 2	public	private	admin	Default

Modify	Value
□ Device IP Address:	10.205.1.3
□ SNMP Read Community String:	public
□ SNMP Write Community String:	private
□ Device Login:	admin
□ Device Contact Password:	****************
□ Device Poll Interval (minutes):	Default
□ Cisco Enable Password:	

2 To select a device from a specific device group, select the device group from the pull-down list in the **Filter by Device Group** field. Select **All Devices** to view the list of all devices from all device groups.

3 Select one or more devices in the Devices list for which you want to change contact information.

4 Enter the changed information in the appropriate fields.

The **Device Login** and **Device Contact Password** are the login and password needed in order to Telnet to the device or to use ExtremeWare Vista.

The **Device Poll Interval** lets you specify how frequently the EPICenter server should poll the for detailed device information, such as software version, bootrom version, and so on. This also includes EDP and ESRP information for non-”*i*” series devices. To avoid a potentially large amount of polling traffic, this detailed polling is only done every 30 minutes for core (chassis) devices and 90 minutes for edge devices. In EPICenter 4.0, the default is 90 minutes for both the core and edge devices. You can change this detailed polling interval by entering a different value in this field.

NOTE

Note that the Device Poll Interval set here is different from the global Poll Interval you can set in the Administration applet. The global poll interval controls the basic status polling needed to ensure SNMP reachability, and is typically done much more frequently than detailed device polling.

5 Click **Modify** to add the changed information to the EPICenter database.

6 Click **Cancel** to cancel the Modify process**.**

WARNING!

If you change the community string for a device so that it no longer matches the string configured in the device, EPICenter will no longer be able to communicate with the device. For Extreme devices, EPICenter will display an error message, but it will not necessarily do so for third-party devices. To avoid this problem, change the community string on the device first, then change it in EPICenter.

Modifying a Device Group

Devices are always a member of a device group; devices not explicitly assigned to another device group are members of the Default device group. This has two effects related to modifying device groups:

- When devices are removed from a device group, they are automatically added to the Default device group
- Devices cannot be removed from the Default device group using the Remove button in the Modify dialog. To remove a device from the default device group, you must add it to another device group.

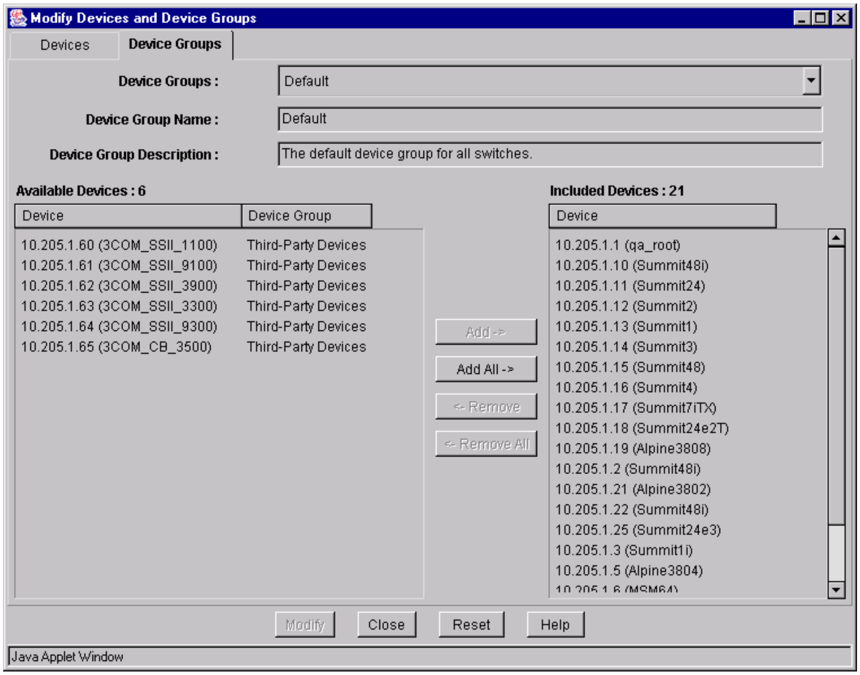
You can begin the modify function using the **Modify** button on the toolbar, or by selecting a device group in the Component Tree, right-clicking to display the pop-up menu, and selecting Modify Device Group.

To add or remove devices in a device group, do the following:

1 Click the **Modify** button at the top of the Inventory Manager main page.

Select the appropriate tab to display the Modify Device Group window, as shown in Figure 24.

Figure 24: Device Groups tab of the Modify Devices and Device Groups window



Device Groups : Default

Device Group Name : Default

Device Group Description : The default device group for all switches.

Available Devices : 6

Device	Device Group
10.205.1.60 (3COM_SSII_1100)	Third-Party Devices
10.205.1.61 (3COM_SSII_9100)	Third-Party Devices
10.205.1.62 (3COM_SSII_3900)	Third-Party Devices
10.205.1.63 (3COM_SSII_3300)	Third-Party Devices
10.205.1.64 (3COM_SSII_9300)	Third-Party Devices
10.205.1.65 (3COM_CB_3500)	Third-Party Devices

Included Devices : 21

Device
10.205.1.1 (qa_root)
10.205.1.10 (Summit48i)
10.205.1.11 (Summit24)
10.205.1.12 (Summit2)
10.205.1.13 (Summit1)
10.205.1.14 (Summit3)
10.205.1.15 (Summit48)
10.205.1.16 (Summit4)
10.205.1.17 (Summit7iTX)
10.205.1.18 (Summit24e2T)
10.205.1.19 (Alpine3808)
10.205.1.2 (Summit48i)
10.205.1.21 (Alpine3802)
10.205.1.22 (Summit48i)
10.205.1.25 (Summit24e3)
10.205.1.3 (Summit1i)
10.205.1.5 (Alpine3804)
10.205.1.6 (MSM64)

2 Select the device group you want to modify. The Included Devices list displays the devices that are currently members of this group. The Available Devices list displays the other devices known to EPICenter, and their current device group membership.

3 To change the name or description of the group, type the new text into the **Device Group Name** and **Description** fields.

4 To add a device to the selected device group, select the device in the Available Devices list and click **Add ->**. To add all devices in the Available Devices list, click **Add All ->**.

5 To remove a device from the device group and return it to the Default device group, select the device in the Included Devices list, and click **<- Remove**. The device will be moved from the selected device group to the Default device group. To return all devices in the Included Devices list to the Default device group, click **<- Remove All**.

Because devices not otherwise assigned are members of the Default device group, you cannot remove devices from the Default device group. Devices are removed from the Default device group only when they are added to another device group.

6 Repeat steps 4 and 5 until you have included all the devices that should be members of this device group.

The **Reset** button will undo all your add and remove actions, and return both the **Available Devices** and **Included Devices** lists to the state they were in when you started the Modify command.

7 To replace the modified device group in the database, click the **Modify** button at the bottom of the window.

Moving a device from one device group to another requires two steps. First, remove it from its current device group (returning it to the Default group). Then select the new device group, and move the device from the Default device group to the new group.

Deleting Devices and Device Groups from the Database

Users with Administrator or Manager access can delete devices and device groups from the EPICenter database. If you have Monitor access only, you cannot access this function.

Deleting a Device

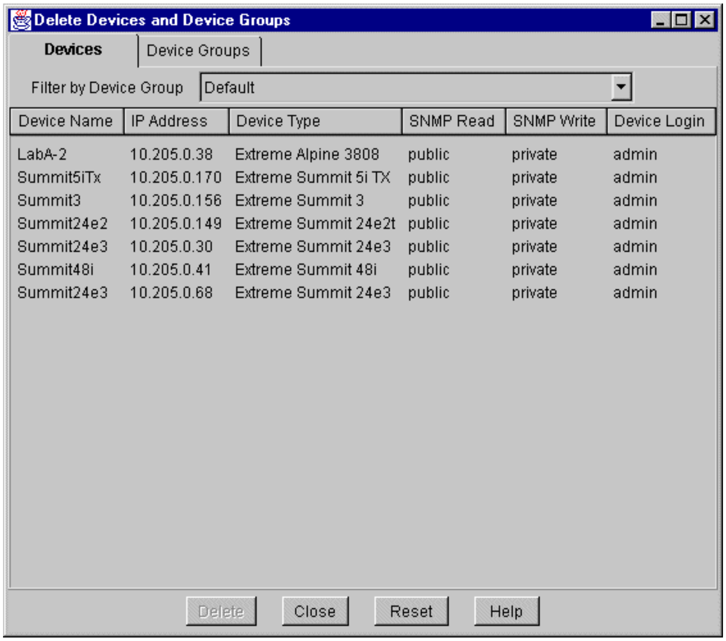
You can begin the delete function using the **Delete** button on the toolbar, or by selecting a device in the Component Tree, right-clicking to display the pop-up menu, and selecting Delete Device.

To delete a device from the EPICenter database, follow these steps:

1 Click the **Delete** button at the top of the Inventory Manager main page.

Select the appropriate tab to display the Delete Devices window (see Figure 25).

Figure 25: Devices tab of the Delete Devices and Device Groups window



Filter by Device Group: Default

Device Name	IP Address	Device Type	SNMP Read	SNMP Write	Device Login
LabA-2	10.205.0.38	Extreme Alpine 3808	public	private	admin
Summit5iTx	10.205.0.170	Extreme Summit 5i TX	public	private	admin
Summit3	10.205.0.156	Extreme Summit 3	public	private	admin
Summit24e2	10.205.0.149	Extreme Summit 24e2t	public	private	admin
Summit24e3	10.205.0.30	Extreme Summit 24e3	public	private	admin
Summit48i	10.205.0.41	Extreme Summit 48i	public	private	admin
Summit24e3	10.205.0.68	Extreme Summit 24e3	public	private	admin

2 To select a device from a specific device group, select the device group from the pull-down list in the **Filter by Device Group** field. Select **All Devices** to view the list of all devices from all device groups.

3 Select one or more devices in the Devices list, and click **Delete**.

4 Click **OK** to confirm that you want to delete the device information from the database.

Deleting a device removes the information about the device from the EPICenter database. This means that the device can no longer be monitored and managed from the EPICenter application. If the device is an Extreme switch, deleting it removes any SmartTraps rules, both from the database and the switch change table. It also removes all information about VLANs, QoS Policy, and Virtual Chassis connections associated with this switch from the EPICenter database.

NOTE

Deleting a device from EPICenter has no effect on the configuration of the device itself.

Deleting a Device Group

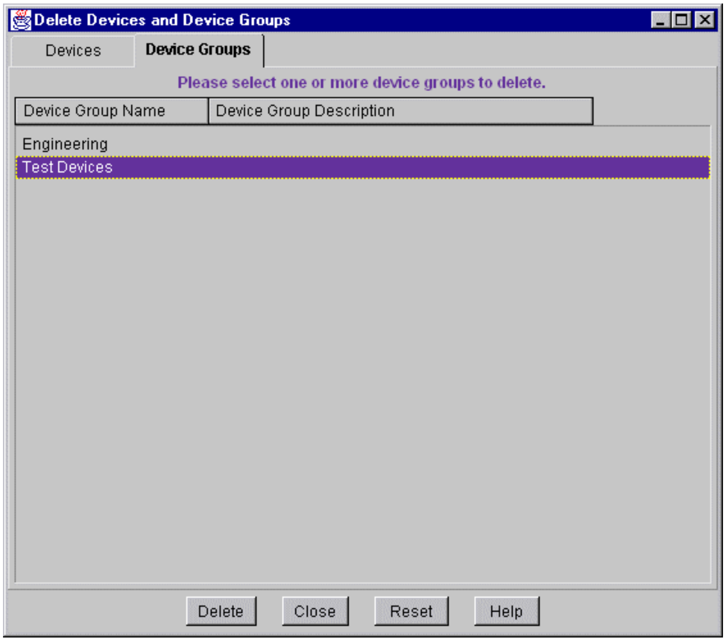
You can begin the delete function using the **Delete** button on the toolbar, or by selecting a device in the Component Tree, right-clicking to display the pop-up menu, and selecting Delete Device Group.

To delete a device group from the EPICenter database, follow these steps:

1 Click the **Delete** button at the top of the Inventory Manager main page.

Select the appropriate tab to display the Delete Device Groups window (see Figure 26).

Figure 26: Device Groups tab of the Delete Devices and Device Groups window



Delete Devices and Device Groups

Please select one or more device groups to delete.

Device Group Name	Device Group Description
Engineering	
Test Devices	

2 Select one or more device groups in the Device Groups list, and click **Delete**.

3 Click **OK** to confirm that you want to delete the device group information from the database.

The devices in the deleted device group automatically become members of the Default device group.

Updating Device Information

Occasionally, you may want to update the configuration and status information for one or more devices in the EPICenter database. The **Sync** operation is a manual update you can use if you believe that the device configuration is not correctly represented in EPICenter applets. It updates all information for a selected set of devices, except for the contact information.

If you have Administrator or Manager access to EPICenter, you can perform a **Sync**. If you have Monitor access only, you can not use this function.

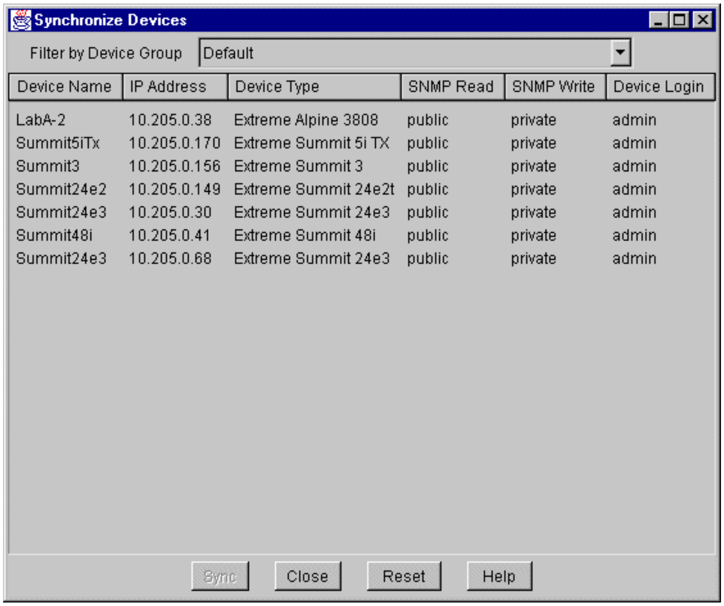
You can begin the synchronize function using the **Sync** button on the toolbar, or by selecting a device or device group in the Component Tree, right-clicking to display the pop-up menu, and selecting the Sync command.

To refresh the configuration and status information, follow these steps:

1 Click **Sync** at the top of the Inventory Manager page.

The Synchronize Devices dialog, shown in Figure 27, is displayed, listing the devices in the EPICenter database.

Figure 27: Synchronize Devices dialog



Filter by Device Group: Default

Device Name	IP Address	Device Type	SNMP Read	SNMP Write	Device Login
LabA-2	10.205.0.38	Extreme Alpine 3808	public	private	admin
Summit5iTx	10.205.0.170	Extreme Summit 5i TX	public	private	admin
Summit3	10.205.0.156	Extreme Summit 3	public	private	admin
Summit24e2	10.205.0.149	Extreme Summit 24e2t	public	private	admin
Summit24e3	10.205.0.30	Extreme Summit 24e3	public	private	admin
Summit48i	10.205.0.41	Extreme Summit 48i	public	private	admin
Summit24e3	10.205.0.68	Extreme Summit 24e3	public	private	admin

2 To select a device from a specific device group, select the device group from the pull-down list in the **Filter by Device Group** field. Select **All Devices** to view the list of all devices from all device groups.

3 Select one or more devices in the Device list.

4 Click **Reset** at any time prior to initiating the Sync to deselect all device selections and start over.

5 Click **Sync** to initiate the synchronization process.

The Inventory Manager uses SNMP to retrieve configuration and status information from each selected switch, and updates the database with that information.

6 The **Sync** function displays a dialog box with status or error information. Click **OK** to continue.

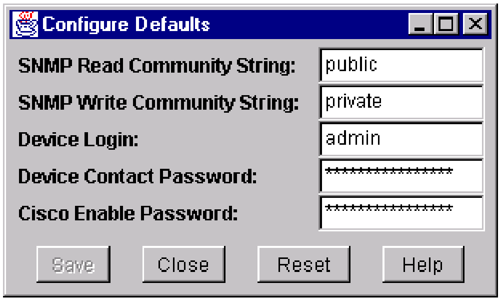
Configuring Default Access Parameters

The **Default** button allows you to configure a set of default access parameters for network devices you have not yet discovered. After you configure the default access parameters, the network devices you discover and add to the EPICenter database will have these default parameters.

1 Click the **Default** button at the top of the Inventory Manager main window.

The Configure Defaults window, shown in Figure 28, is displayed.

Figure 28: Configure Defaults window



SNMP Read Community String: public

SNMP Write Community String: private

Device Login: admin

Device Contact Password: ****************

Cisco Enable Password: ****************

2 Enter or make changes to any of the fields. These options will apply to future network devices that you add to the EPICenter database.

The **SNMP Read Community String** and the **SNMP Write Community String** are necessary so EPICenter can communicate with the devices.

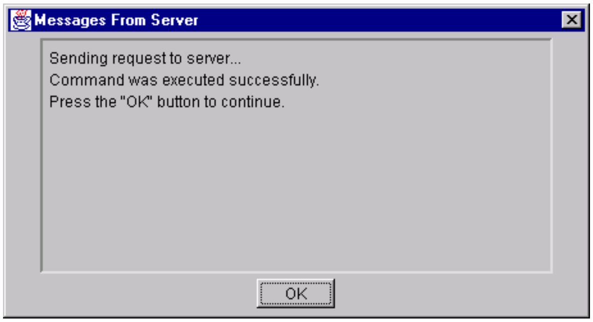
The **Device Login** and **Device Contact Password** are the login and password needed in order to Telnet to the device or to use ExtremeWare Vista.

3 Click **Reset** to clear the contents of the fields and reset them to their default values.

4 Click **Save** to save your changes to the EPICenter database.

A message window (shown in Figure 29) appears to show you the progress of the Save command.

Figure 29: Message window showing Save progress



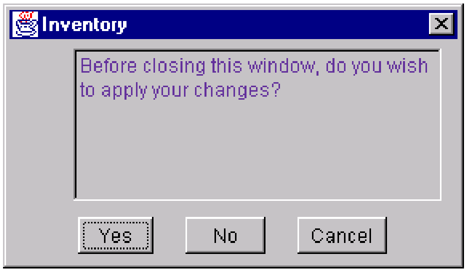
Sending request to server...
Command was executed successfully.
Press the "OK" button to continue.

5 Click **OK** to return to the Configure Defaults window.

6 Click **Close** to exit the Configure Defaults window.

If you make changes to the access parameters and you do not save those changes, the Inventory dialog box (shown in Figure 30) appears. From the Inventory dialog box, you can apply or not apply the changes you made, or you can cancel out of the dialog box.

Figure 30: Inventory dialog box



Before closing this window, do you wish to apply your changes?

Finding Devices

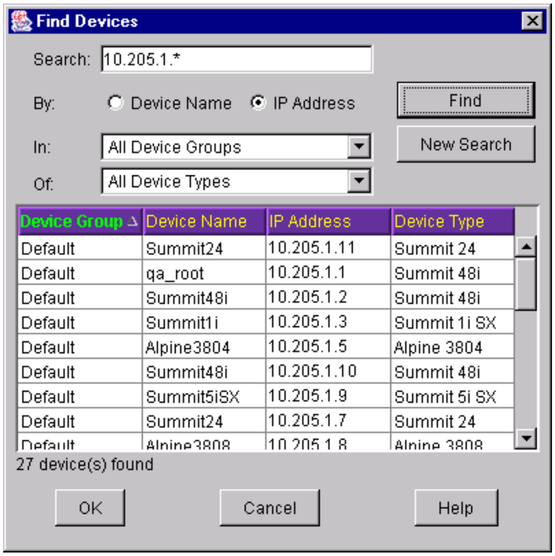
You can search for a device in the EPICenter database by name, by IP address, or by type of device. This may be useful if you have a large number of devices in your inventory.

To search for a device, follow these steps:

1 Click **Find** at the top of the Inventory Manager page.

The Find Devices dialog, shown in Figure 31, is displayed.

Figure 31: Find Devices dialog



Find Devices

Search: 10.205.1.*

By: ○ Device Name ● IP Address

In: All Device Groups

Of: All Device Types

Device Group	Device Name	IP Address	Device Type
Default	Summit24	10.205.1.11	Summit 24
Default	qa_root	10.205.1.1	Summit 48i
Default	Summit48i	10.205.1.2	Summit 48i
Default	Summit1i	10.205.1.3	Summit 1i SX
Default	Alpine3804	10.205.1.5	Alpine 3804
Default	Summit48i	10.205.1.10	Summit 48i
Default	Summit5iSX	10.205.1.9	Summit 5i SX
Default	Summit24	10.205.1.7	Summit 24
Default	Alpine3808	10.205.1.8	Alpine 3808

27 device(s) found

2 Enter your search criteria:

You can search for devices by name or by IP address. You can limit the search to a specific device group, or to a specific type of Extreme device. Search criteria can include:

— A device name. Click the **Device Name** button, and enter a complete or partial name in the **Search:** field.

— An IP address. Click the IP Address button and enter a complete or partial IP address in the **Search:** field. You can use the wild card characters * or ? in your search criteria.

***** acts as a wildcard for an entire octet (0-255)

? is a wildcard for a single digit (0-9)

— A device group. Select the device group from the drop-down menu in the device group field. If you do not specify a name or IP address in the Search field, all devices in the device group you select will be found.

— A device type. Select the device type from the drop-down menu in the type field. If you do not specify a name or IP address in the Search field, all devices of the type you select will be found.

3 Click **Find** to search for devices that meet the criteria you have specified. All devices found are listed in the center panel. Information includes the device group in which the device can be found, its name, IP address, and the type of device.

4 Double-click on a device in the results table to highlight the device in the Component Tree, or select a device in the results table and click **OK**, to display the associated status information for that device (see “Viewing Device Status Information” on page 91). If you click **OK**, the search window will close.

5 Click **New Search** to clear all search criteria.

6 Click **Cancel** to close the search window.

Displaying Properties

You can view the properties of a device group or a device in the EPICenter database. This section describes how to view the device group properties and the device properties.

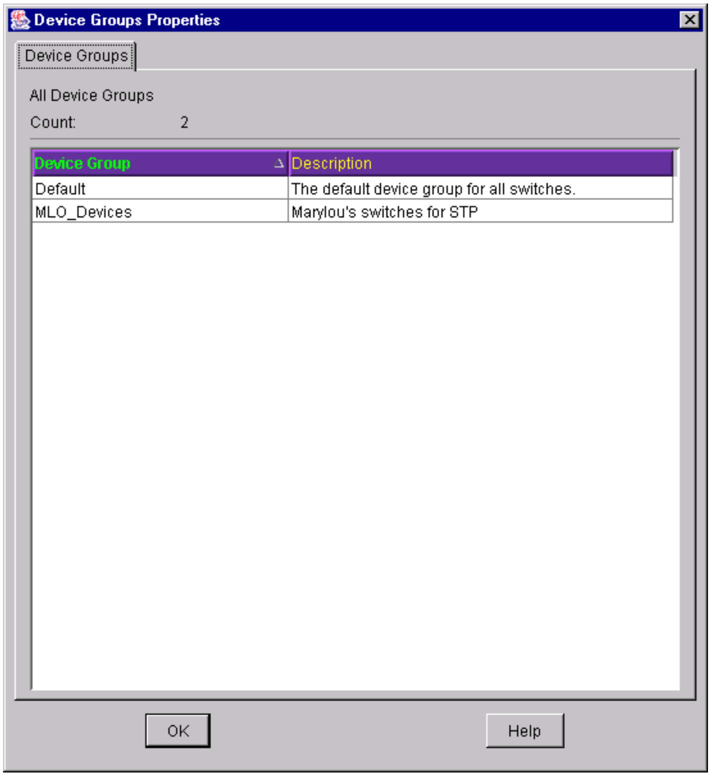
All Device Group Properties

You can view summary information for all device groups, or view information about individual device groups.

To view summary information for all device groups, right-click on the **Device Groups** component and select **Properties** from the pop-up menu.

The Device Groups Properties window appears, showing the All Device Groups display (see Figure 32).

Figure 32: Device Groups Properties for all Device Groups



All Device Groups

Count: 2

Device Group	Description
Default	The default device group for all switches.
MLO_Devices	Marylou's switches for STP

The Device Groups Properties window displays the following information:

- **Count**—The number of device groups known to EPICenter

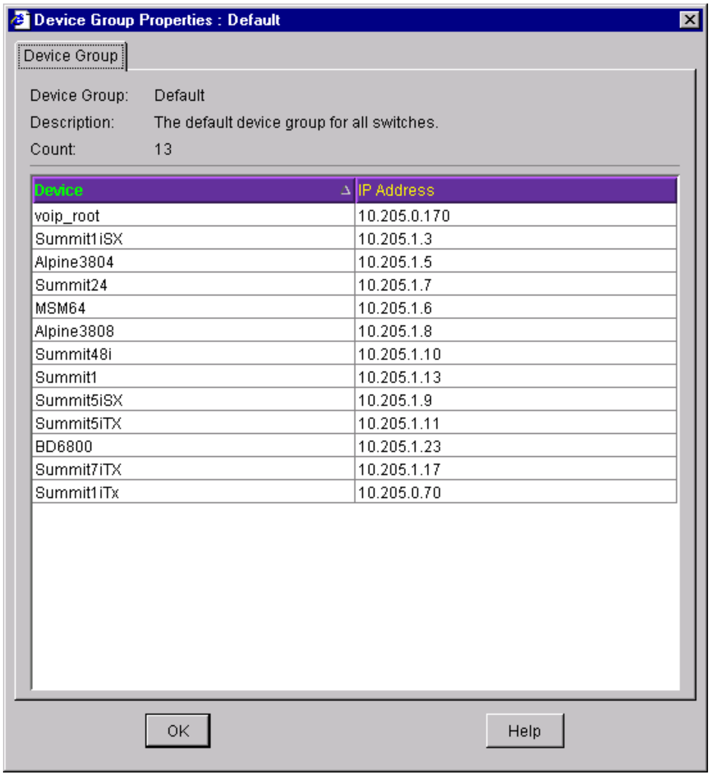
There is also a table which contains the following columns:

- **Device Group**—The name(s) of the device group(s) known to EPICenter
- **Description**—A description of each device group known to EPICenter

You can also view properties for a specific device group. To view properties for a specific device group, right-click on a device group in the Component Tree and select **Properties** from the pop-up menu.

The Device Group Properties window appears, showing information about the selected group (see Figure 33).

Figure 33: Device Group Properties for an individual device



Device Group: Default
Description: The default device group for all switches.
Count: 13

Device	IP Address
voip_root	10.205.0.170
Summit1iSX	10.205.1.3
Alpine3804	10.205.1.5
Summit24	10.205.1.7
MSM64	10.205.1.6
Alpine3808	10.205.1.8
Summit48i	10.205.1.10
Summit1	10.205.1.13
Summit5iSX	10.205.1.9
Summit5iTX	10.205.1.11
BD6800	10.205.1.23
Summit7iTX	10.205.1.17
Summit1iTx	10.205.0.70

The Device Group Properties window displays the following information:

- **Device Group**—The name of the device group
- **Description**—A description of the device group
- **Count**—The number of devices in the device group

There is also a table which contains the following columns:

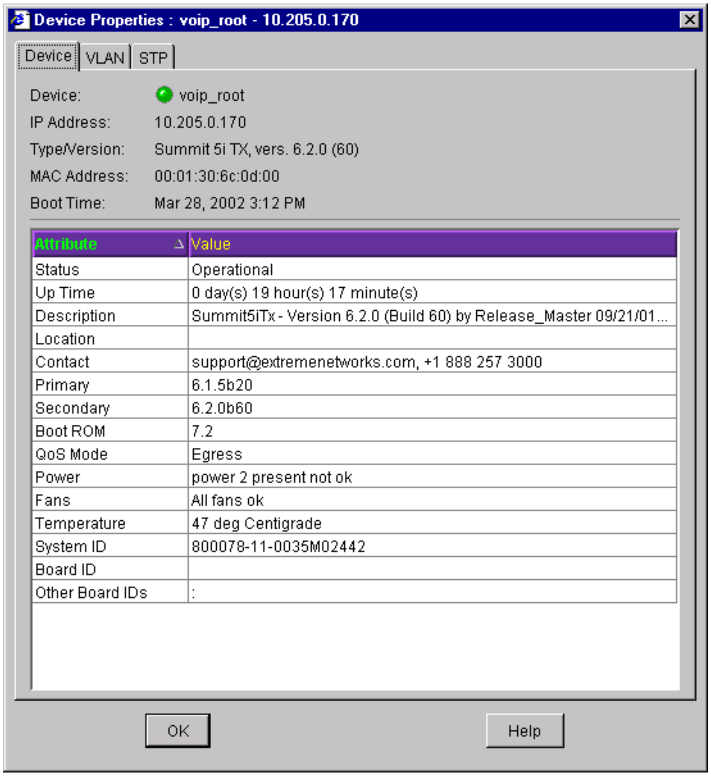
- **Device**—The name of the devices that are members of this device group
- **IP Address**—The IP addresses of the devices that are members of this device group

Device Properties

To view properties for a device, right-click on a device in the Component Tree and select **Properties** from the pop-up menu that appears.

The Device Properties window opens, as shown in Figure 34.

Figure 34: Device Properties window



Device: ● voip_root
IP Address: 10.205.0.170
Type/Version: Summit 5i TX, vers. 6.2.0 (60)
MAC Address: 00:01:30:6c:0d:00
Boot Time: Mar 28, 2002 3:12 PM

Attribute	Value
Status	Operational
Up Time	0 day(s) 19 hour(s) 17 minute(s)
Description	Summit5iTx - Version 6.2.0 (Build 60) by Release_Master 09/21/01...
Location	
Contact	support@extremenetworks.com, +1 888 257 3000
Primary	6.1.5b20
Secondary	6.2.0b60
Boot ROM	7.2
QoS Mode	Egress
Power	power 2 present not ok
Fans	All fans ok
Temperature	47 deg Centigrade
System ID	800078-11-0035M02442
Board ID	
Other Board IDs	:

The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab

The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab

The **VLAN** tab lists the VLANs configured on the device. This window shows the following information about the VLANs on the device:

VLAN	VLAN name
Tag	VLAN tag
Protocol	Protocol filter for the VLAN
IP Address	IP address of the VLAN
Subnet Mask	Subnet Mask for the VLAN
QoS Profile	The QoS profile configured for this VLAN
ESRP	Whether ESRP is configured for this device.

The STP Tab

The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

STP	The STP Domain name
State	The domain state (Enabled or Disabled)
VLAN	The name of the VLAN participating in this domain
Tag	The 802.1Q tag of one of the wholly-contained VLANs in the domain.
Root	Indicates whether this device is currently the STP root bridge for this domain (Yes or No).

No. of Ports The number of ports on this bridge participating in this VLAN in this domain. Will be N/A if the STP domain is disabled on this VLAN.

NOTE

A device must be running ExtremeWare 6.2.2 or later in order for EPICenter to access STP information for the device. Devices running earlier versions of ExtremeWare may have STP configured, but EPICenter will not be able to provide information about the configuration.

5 The EPICenter Alarm System

This chapter describes how to use the EPICenter Alarm System applet for:

- Viewing the alarms that have occurred
- Defining new alarms and modifying current alarm definitions
- Configuring threshold-based alarms
- Configuring EPICenter as a trap receiver
- Configuring EPICenter as a syslog receiver

Overview of the EPICenter Alarm System

The EPICenter Alarm System provides fault detection and alarm handling for the network devices monitored by EPICenter. This includes Extreme Networks devices and some third-party devices—those that EPICenter can include in its Inventory database. The Alarm System provides a set of predefined, enabled alarms that will immediately report conditions such as authentication or login failures, device problems such as power supply or fan failures, reachability problems, or device reboots.

The Alarm System also lets you define your own alarms that will report errors under conditions you specify, such as repeated occurrences or exceeding threshold values. You can specify the actions that should be taken when an alarm occurs, and you can enable and disable individual alarms.

Fault detection is based on Simple Network Management Protocol (SNMP) traps, syslog messages, and some limited polling. The Alarm System supports SNMP Management

Information Base-2 (MIB-2), the Extreme Networks private MIB, Remote Monitoring (RMON) traps, and selected traps from other MIBs. When an alarm occurs you can specify actions such as sending e-mail, running a program, running a script, or sounding an audible alert.

For convenience, the EPICenter Alarm System provides a number of predefined alarms. These alarms are enabled by default and are active as soon as the EPICenter server starts up. These include the following alarms:

- Authentication failure (SNMP MIB-2 trap)
- Invalid login (Extreme proprietary trap)
- Redundant Power Supply (RPS) alarm condition (Extreme proprietary trap)
- ESRP state change (Extreme proprietary trap)
- SNMP unreachable (EPICenter event)
- Configuration upload failure for an upload attempted from the EPICenter system (EPICenter event)
- Overheat (EPICenter event)
- Fan failure (EPICenter event)
- Device reboot (EPICenter event)
- Health Check Failed (Extreme proprietary trap)
- Device Warning from EPICenter (EPICenter event)

NOTE

When Extreme Networks devices are added to the EPICenter Inventory database, they are automatically configured to send traps to the EPICenter server. To receive traps from non-Extreme Networks devices, you must manually configured the devices send traps to the EPICenter server.

To receive syslog messages from an Extreme Networks device, EPICenter must be configured as a syslog receiver on the device. See "Configuring EPICenter as a Syslog Receiver" on page 172 for more information.

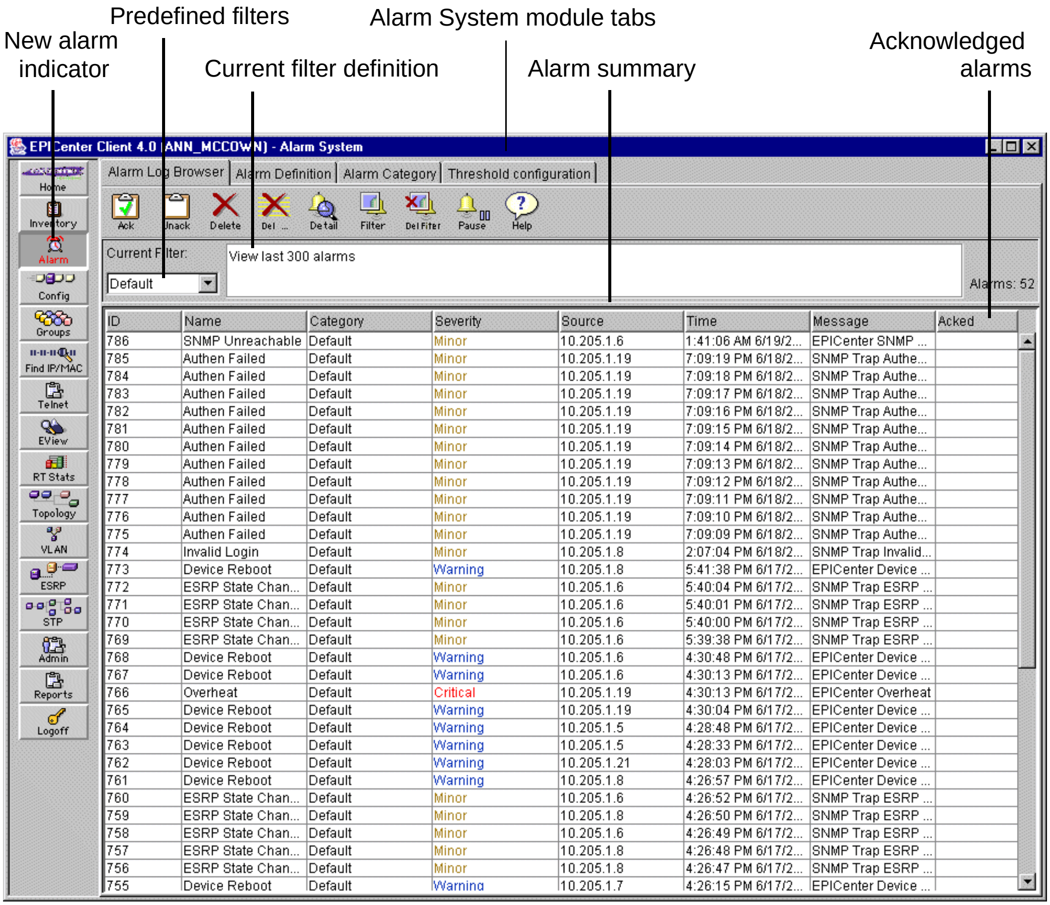
Not all trap events are supported in older versions of the ExtremeWare software. Please refer to Appendix D for information on the switch software required for specific traps.

The Alarm Log Browser

Click the **Alarm** button in the Navigation Toolbar to run the Alarm System applet and view the Alarm Log Browser. The **Alarm** button (icon) acts as an alarm indicator — if it is displayed in red instead of black, it indicates that at least one new alarm has occurred.

The Alarm Log Browser page appears, as shown in Figure 35.

Figure 35: The Alarm Log Browser page



Current Filter: Default

View last 300 alarms

Alarms: 52

ID	Name	Category	Severity	Source	Time	Message	Acked
786	SNMP Unreachable	Default	Minor	10.205.1.6	1:41:06 AM 6/19/2...	EPICenter SNMP ...	
785	Authen Failed	Default	Minor	10.205.1.19	7:09:19 PM 6/18/2...	SNMP Trap Authe...	
784	Authen Failed	Default	Minor	10.205.1.19	7:09:18 PM 6/18/2...	SNMP Trap Authe...	
783	Authen Failed	Default	Minor	10.205.1.19	7:09:17 PM 6/18/2...	SNMP Trap Authe...	
782	Authen Failed	Default	Minor	10.205.1.19	7:09:16 PM 6/18/2...	SNMP Trap Authe...	
781	Authen Failed	Default	Minor	10.205.1.19	7:09:15 PM 6/18/2...	SNMP Trap Authe...	
780	Authen Failed	Default	Minor	10.205.1.19	7:09:14 PM 6/18/2...	SNMP Trap Authe...	
779	Authen Failed	Default	Minor	10.205.1.19	7:09:13 PM 6/18/2...	SNMP Trap Authe...	
778	Authen Failed	Default	Minor	10.205.1.19	7:09:12 PM 6/18/2...	SNMP Trap Authe...	
777	Authen Failed	Default	Minor	10.205.1.19	7:09:11 PM 6/18/2...	SNMP Trap Authe...	
776	Authen Failed	Default	Minor	10.205.1.19	7:09:10 PM 6/18/2...	SNMP Trap Authe...	
775	Authen Failed	Default	Minor	10.205.1.19	7:09:09 PM 6/18/2...	SNMP Trap Authe...	
774	Invalid Login	Default	Minor	10.205.1.8	2:07:04 PM 6/18/2...	SNMP Trap Invalid...	
773	Device Reboot	Default	Warning	10.205.1.8	5:41:38 PM 6/17/2...	EPICenter Device ...	
772	ESRP State Chan...	Default	Minor	10.205.1.6	5:40:04 PM 6/17/2...	SNMP Trap ESRP ...	
771	ESRP State Chan...	Default	Minor	10.205.1.6	5:40:01 PM 6/17/2...	SNMP Trap ESRP ...	
770	ESRP State Chan...	Default	Minor	10.205.1.6	5:40:00 PM 6/17/2...	SNMP Trap ESRP ...	
769	ESRP State Chan...	Default	Minor	10.205.1.6	5:39:38 PM 6/17/2...	SNMP Trap ESRP ...	
768	Device Reboot	Default	Warning	10.205.1.6	4:30:48 PM 6/17/2...	EPICenter Device ...	
767	Device Reboot	Default	Warning	10.205.1.6	4:30:13 PM 6/17/2...	EPICenter Device ...	
766	Overheat	Default	Critical	10.205.1.19	4:30:13 PM 6/17/2...	EPICenter Overheat	
765	Device Reboot	Default	Warning	10.205.1.19	4:30:04 PM 6/17/2...	EPICenter Device ...	
764	Device Reboot	Default	Warning	10.205.1.5	4:28:48 PM 6/17/2...	EPICenter Device ...	
763	Device Reboot	Default	Warning	10.205.1.5	4:28:33 PM 6/17/2...	EPICenter Device ...	
762	Device Reboot	Default	Warning	10.205.1.21	4:28:03 PM 6/17/2...	EPICenter Device ...	
761	Device Reboot	Default	Warning	10.205.1.8	4:26:57 PM 6/17/2...	EPICenter Device ...	
760	ESRP State Chan...	Default	Minor	10.205.1.6	4:26:52 PM 6/17/2...	SNMP Trap ESRP ...	
759	ESRP State Chan...	Default	Minor	10.205.1.8	4:26:50 PM 6/17/2...	SNMP Trap ESRP ...	
758	ESRP State Chan...	Default	Minor	10.205.1.6	4:26:49 PM 6/17/2...	SNMP Trap ESRP ...	
757	ESRP State Chan...	Default	Minor	10.205.1.8	4:26:48 PM 6/17/2...	SNMP Trap ESRP ...	
756	ESRP State Chan...	Default	Minor	10.205.1.8	4:26:47 PM 6/17/2...	SNMP Trap ESRP ...	
755	Device Reboot	Default	Warning	10.205.1.7	4:26:15 PM 6/17/2...	EPICenter Device ...	

The Alarm Log Browser page displays a summary of the alarms that have occurred, optionally filtered based on criteria you can specify. An alarm can be generated due to an SNMP or RMON trap, a syslog message, or based on the results of a poll.

By default, the predefined alarms are all enabled; therefore, you may see alarm log entries the first time you run the Alarm System, even if you have not defined any alarms of your own.

The Alarm Log Browser summary displays the following information for each alarm instance:

- **ID** — An integer number assigned by the EPICenter Alarm System based on the order in which the alarm occurred
- **Name** — A name for the alarm, provided when the alarm is defined
- **Category**— An optional user-defined classification that defaults to “Default”
- **Severity** — The severity level associated with the alarm when it was defined
- **Source** — The IP address of the device that generated the trap or responded to a poll
- **Time** — The date and time at which the alarm was received
- **Message** — The message generated by the alarm
- **Acked** — A green check will be present in this column if the alarm has been acknowledged

The summary is initially sorted by ID in descending numerical order, so that the most recent alarm appears at the top of the list.

You can sort the display by the contents of any column by clicking on the column heading. Click the heading a second time to reverse the sort order based on that column.

Acknowledging an Alarm

To acknowledge an alarm:

1 Select the alarm or alarms you want to acknowledge.

2 Click the Acknowledge (**Ack**) button at the top of the page.

Ack

This sets the state of the selected alarms to “acknowledged,” and places a green check in the **Acked** field of the selected alarm log entries.

When you acknowledge the most recent alarm, the state of the Alarm button in the EPICenter Navigation Toolbar also returns to black.

You can “unacknowledge” alarms, if needed, by selecting the alarms and clicking the **Unack** button. Unack

The Ack or Unack operation may take a few seconds to update the database. When the update is complete, the rows are deselected.

Deleting Alarm Log Entries

To delete an alarm log entry:

1 Select the alarm entry or entries you want to delete.

2 Click the **Delete** button at the top of the page. Delete

This removes the selected alarm log entries entirely from the EPICenter database.

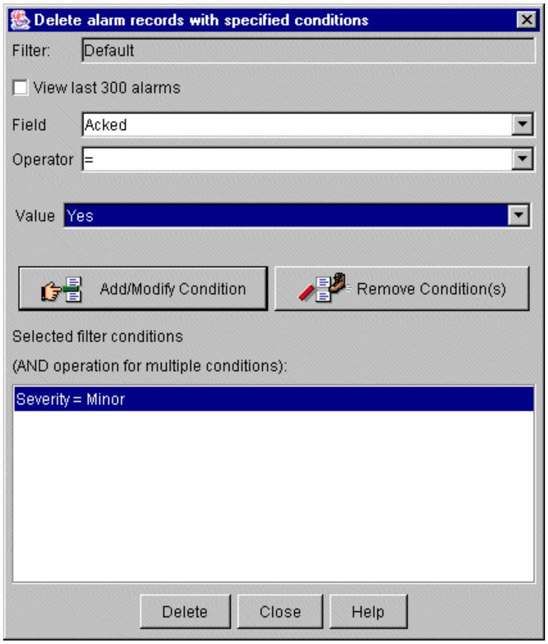
Deleting Groups of Log Entries

You can also delete groups of alarm log entries based on specific filtering criteria that you set, such as all entries in a certain timeframe, all entries for selected devices, and so on.

To delete a group of alarm entries, click the **Delete alarms with specified conditions** button at the top of the page. Del ...

The **Delete alarm records with specified conditions** window opens, as shown in Figure 36.

Figure 36: Delete alarm records filter definition window



Delete alarm records with specified conditions

Filter: Default

□ View last 300 alarms

Field: Acked

Operator: =

Value: Yes

Selected filter conditions

(AND operation for multiple conditions):

Severity = Minor

In this window you can define a filter — a set of conditions — to use to evaluate whether an alarm record should be deleted. See “Deleting Groups of Log Entries” on page 131 for more detailed information.

To create a delete filter, do the following:

1. If the “**View last 300 alarms**” check box is checked, the remaining fields will be greyed-out. Uncheck the check box to enable the other fields.
2. Select the parameter you want to use as a filter criterion from the pull-down menu in the **Field** field.
3. Select an operator using the pull-down menu in the **Operator** field.
4. Enter the value (or values) against which the parameter should be tested. If you have chosen the **Between** operator (available for Log ID, Source IP, and Port IfIndex) you will be asked to enter two values. For some parameters you can select values from a drop-down list.

   For a more detailed explanation of defining a filter condition. see “Filtering the Alarm Display” on page 134.

5 Click the **Add/Modify Condition** button to add this specification to the filter definition.

You can create a multi-criteria specification using more than one parameter, as shown in Figure 36, as long as each parameter is different. You cannot filter using multiple specifications of the same parameter.

For example, in order to delete alarms for IP addresses 10.205.0.55 and 10.205.0.61, you must do this in two operations.

6 To remove an individual criteria, select it in the current filter list and click the **Remove Condition(s)** button. You can select and remove multiple filter criteria.

7 When your filter definition is complete, click **Delete**.

The alarm records that meet the conditions are deleted.

If you simply want to delete that last 300 alarms, leave the "**View last 300 alarms**" box checked, and click **Delete**.

Viewing Alarm Details

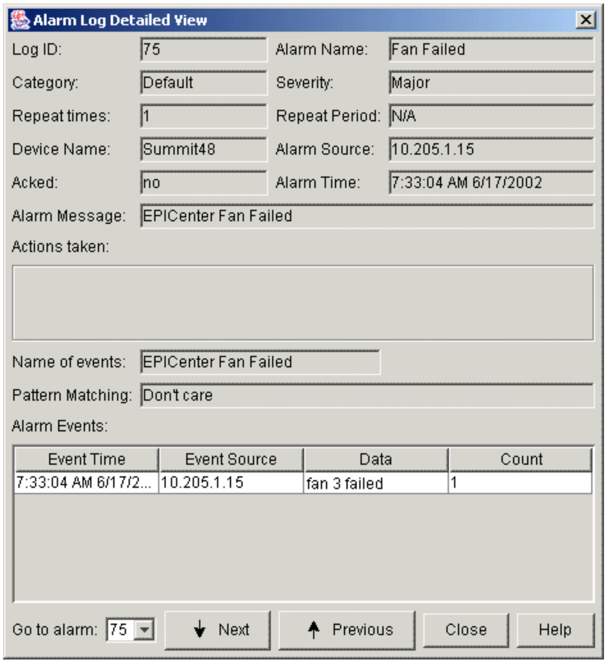
To view the details of an individual alarm:

1 Select the alarm you want to view.

2 Click the **Detail** button at the top of the page, Detail or double-click on the alarm entry in the log.

The **Alarm Log Detailed View** is displayed, as shown in Figure 36.

Figure 37: Detailed view of an Alarm Log entry



Log ID: 75
Alarm Name: Fan Failed
Category: Default
Severity: Major
Repeat times: 1
Repeat Period: N/A
Device Name: Summit48
Alarm Source: 10.205.1.15
Acked: no
Alarm Time: 7:33:04 AM 6/17/2002
Alarm Message: EPICenter Fan Failed
Actions taken:
Name of events: EPICenter Fan Failed
Pattern Matching: Don't care
Alarm Events:

Event Time	Event Source	Data	Count
7:33:04 AM 6/17/2...	10.205.1.15	fan 3 failed	1

Go to alarm: 75

This displays detailed information for the selected alarm.

From this window you can view details for other alarms:

- Enter or select an Alarm ID in the **Go to alarm** field.
- Click the **Next** button to view the next alarm down in the list (the next earlier alarm based on the default sorting order).
- Click the **Previous** button to view the next alarm higher in the list (the next later alarm based on the default sorting order).

Filtering the Alarm Display

The alarms you see in the Alarm Log browser are displayed based on a filtering criteria. The default criteria is to display the last 300 alarms from the EPICenter database (assuming you invoked the Alarm browser from EPICenter’s Navigation Toolbar). You can select other filters from the pull-down field at the top of the alarm summary display. There are three predefined filters based on time: “7 days ago,”, Last 24 hours,” and “Yesterday.”

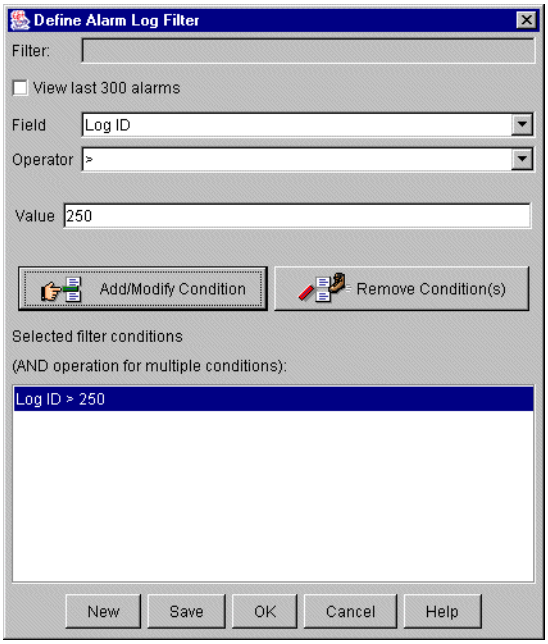
If you invoke the Alarm Browser from the Topology applet (using the pop-up menu for a specific node) the default filter is set to filter on the Source IP of the node you selected.

You can create your own filters based on criteria such as Source IP, Severity, Alarm Name, LogID, and a number of others. You filter can combine multiple criteria.

To specify your own filter, click the **Filter** button at the top of the page. Filter

The Define Alarm Log Filter window is displayed, as shown in Figure 36.

Figure 38: Alarm Log filter definition window



Define Alarm Log Filter

Filter:

□ View last 300 alarms

Field: Log ID

Operator: >

Value: 250

Selected filter conditions
(AND operation for multiple conditions):

Log ID > 250

The Define Alarm Log Filter window opens displaying either the last filter definition you created, or the default filter (View last 300 alarms).

To create your own filter, do the following:

1 Click the **New** button to clear the previous filter definition. If, the **View last 300 alarms** check box is checked, this will uncheck it and enable the other fields in the window.

2 Select the parameter you want to use as a filter criterion from the pull-down menu in the **Field** field.

3 Select an operator using the pull-down menu in the **Operator** field.

4 Enter the value (or values) against which the parameter should be tested.

The criteria you can specify are as follows:

- **Log ID**: An integer. You can test equality relationships (equal, not equal, greater than. less than, greater than or equal, less than or equal) or for a range (**Between**). If you choose **Between** you are asked to enter two values.
- **Alarm Name**: Text string. You can select an alarm name from the drop-down list in the Value field, or enter a text string. You can test for an exact match or non-match, or a substring (**Contains**). The **Contains** operator lets you match against a substring (portion of text) that should be contained in the parameter value.
- **Category**: Text string. You can select a category from the drop-down list in the Value field, or enter a text string. You can test for an exact match or non-match, or a substring (**Contains**).
- **Severity**: An alarm severity level. You must select a severity level from the drop-down list in the Value field. You can test for an exact match or non-match.
- **Source IP**: IP address. Can test for exact match or non-match, or for a range (**Between**). If you choose **Between** you are asked to enter two values. You cannot match on a subnet.
- **PortIfIndex**: An integer. Can test equality relationships (equal, not equal, greater than. less than, greater than or equal, less than or equal) or for a range (**Between**). If you choose **Between** you are asked to enter two values.
- **Time**: You must select a time period from the drop down list in the Value field. Criteria include periods such as Last 1 Hour, Yesterday, 2 Days Ago, etc. The filter will match all alarms within the time period.
- **Acked:** Tests for Yes (matches all Acknowledged alarms) or No (matches all unacknowledged alarms).

5 Click the **Add/Modify Condition** button to add this specification to the filter definition.

You can create a multi-criteria specification using more than one parameter, as shown in Figure 36, as long as each parameter is different. You cannot filter using multiple specifications of the same parameter.

For example, in order to find and view alarms for IP addresses 10.205.0.55 and 10.205.0.61, you must use the **Between** operator to test for all Source IP addresses between these two IP addresses. You cannot create a filter that includes both Source IP = 10.205.0.55 and Source IP = 10.205.0.61.

6 To remove an individual criteria, select it in the current filter list and click the **Remove Condition(s)** button. You can select and remove multiple filter criteria.

7 When your filter definition is complete, you can save it as a named filter, or you can just apply it to the Alarm Log without saving it. To save it, click **Save**, and enter a name into the dialog box that appears.

8 To apply the filter to the Alarm Log summary, click **OK**. This filters the display based on the criteria you defined. You do not need to save the filter before you do this.

If you do not save the filter definition before you apply it to the Alarm Log, you can re-open the Define Alarm Log Filter window and save it then. The filter definition will be retained in the Define Alarm Log Filter window until you either crete another filter definition, or exit the Alarm System applet.

To restore the default filter definition, click the **View last 300 alarms** check box and click OK.

Deleting Alarm Log Filters

You can delete any saved alarm log filters except for the default filter. To delete a filter, do the following:

1 Click the **Delete saved alarm log filters** button. Del Fiter

This opens the **Delete Filters** window.

2 Select the filter you want to delete, and click **OK**.

Pausing All Alarms

You can temporarily stop the processing of all enabled alarms using the Pause/Resume feature.

Click **Pause** Pause to stop processing enabled alarms. EPICenter ignores all traps when its alarms are paused.

To resume processing traps, click **Resume** Resume.

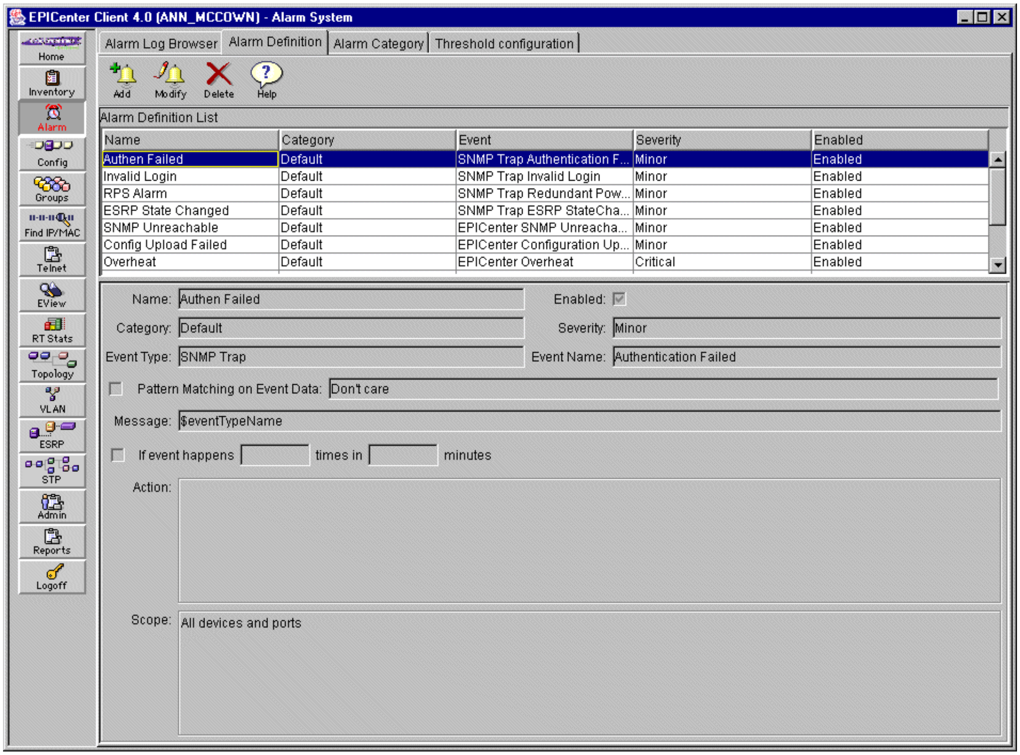
Defining Alarms

For convenience, the EPICenter Alarm System provides a number of predefined alarms. These alarms are all enabled by default and are active as soon as the EPICenter server starts up. The predefined alarms generate alarm log entries upon occurrence, but no other actions are specified.

You can modify the predefined alarms, or define additional alarms based on a fairly large number of events.

To view the current alarm definitions, to create new definitions, or to modify existing definitions, click the **Alarm Definition** tab at the top of the page. The Alarm System: Alarm Definition page is displayed, as shown in Figure 39.

Figure 39: Alarm System: Alarm Definition page



Alarm Definition List

Name	Category	Event	Severity	Enabled
Authen Failed	Default	SNMP Trap Authentication F...	Minor	Enabled
Invalid Login	Default	SNMP Trap Invalid Login	Minor	Enabled
RPS Alarm	Default	SNMP Trap Redundant Pow...	Minor	Enabled
ESRP State Changed	Default	SNMP Trap ESRP StateCha...	Minor	Enabled
SNMP Unreachable	Default	EPICenter SNMP Unreacha...	Minor	Enabled
Config Upload Failed	Default	EPICenter Configuration Up...	Minor	Enabled
Overheat	Default	EPICenter Overheat	Critical	Enabled

Name: Authen Failed
Enabled: ☑
Category: Default
Severity: Minor
Event Type: SNMP Trap
Event Name: Authentication Failed
□ Pattern Matching on Event Data: Don't care
Message: $eventTypeName
□ If event happens ____ times in ____ minutes
Action:
Scope: All devices and ports

To view the settings for an individual alarm, select the alarm. Its definition appears in the fields below the alarm list. For a definition of the fields in the top portion of the alarm definition, see the section “The Basic Alarm Properties” on page 141.

Alarm Actions — An *alarm action* is a function that the alarm system executes when an alarm occurs, in addition to logging the occurrence of the alarm. By default the predefined alarms have no actions defined for them (other than logging). Alarm actions can include sending e-mail, sounding an audible alert, running a program or executing a script. For the predefined alarms, an alarm event will create an entry in the Alarm Log, but no other actions will occur. You can define additional actions for any of these alarms.

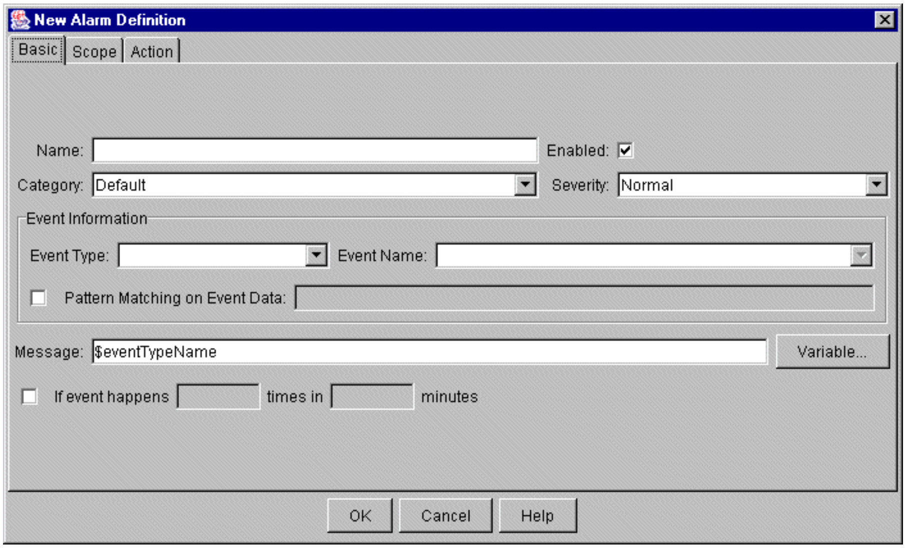
Alarm Scope — *Alarm scope* defines which devices can trigger an alarm. The predefined alarms are scoped by default for all devices and ports. Thus, a trap received from any port or any device will trigger the corresponding alarm. You can modify the scope of any of these alarms.

Creating a New Alarm Definition

To create a new alarm, click the **Add** button at the top of the page.

The **New Alarm Definition** window appears, as shown in Figure 40, and displays the Basic page of the three-page alarm definition.

Figure 40: The New Alarm Definition window, Basic definition



New Alarm Definition

Basic | Scope | Action

Name:

Enabled: ☑

Category: Default

Severity: Normal

Event Information

Event Type:

Event Name:

□ Pattern Matching on Event Data:

Message: $eventTypeName

□ If event happens times in minutes

There are three parts to an alarm definition: the Basic definition, the Scope definition, and the Action definition. Each is represented on its own page in the New Alarm Definition window.

Use the tabs at the top of the window to move between the three pages. When you are finished with your alarm definition, click OK, and the alarm will be entered into the Alarm Definition List.

The Basic Alarm Properties

On the **Basic** page, you define the event-related parameters of the alarm: its name, severity, the event that will trigger it, and so on. The fields in this window are defined as follows:

- **Name —** The name of the alarm as it will appear in the alarm log and (optionally) elsewhere. This defines the variable **alarmName**
- **Enabled —** Indicates whether the alarm is "turned on" or not. If you uncheck this box, the alarm will remain defined but will not be operational
- **Category —** The category assigned to this alarm. Select the category using the pull-down menu at the end of the field (see the section "Creating a New Alarm Category" on page 152 for more information). This defines the variable **alarmCategory**.
- **Severity —** The severity of the alarm. Select one of the five severity levels from the pull-down menu (normal, warning, minor, major, critical). This defines the variable **alarmSeverity**. The severity level also determines the sound that will be played as an audible alert.
- **Event Type —** The type of event (SNMP trap, RMON Trap Rising Alarm, RMON Trap Falling Alarm, EPICenter, or Syslog message). This determines the list of events you can select in the Event Name field.

  An EPICenter event is generated by EPICenter based on the results of its periodic polling. In some cases, a condition that causes an EPICenter event may also generate an SNMP or other trap. Creating an alarm triggered by an EPICenter event guarantees that the condition will eventually be detected by polling even if the corresponding trap is missed.

  See Appendix Dfor a description of the EPICenter and SNMP events supported by the EPICenter Alarm System.

  Certain SNMP events require configuration on the switch in order to enable specific trap conditions.

  RMON events (including Port utilization, temperature, or STP topology change events) and events based on CPU utilization, are defined through the Threshold Configuration page of the EPICenter Alarm System. RMON event rules can be configured only on switches running ExtremeWare 6.1 or later. CPU Utilization rules can only be configured on switches running ExtremeWare 6.2 or later.

  To receive Syslog messages, the Syslog receiver function of EPICenter must be enabled, and remote logging must be enabled with EPICenter configured as a Syslog receiver on the devices from which you want to receive Syslog messages. See

"Configuring EPICenter as a Syslog Receiver" on page 172 for more information. Syslog messages received from devices not managed by EPICenter are ignored.

For certain other events, you must do the configuration on the switch using an SNMP configuration tool such as SNMPc. See "Configuring Other SNMP Trap Events" on page 172 for more information.

The event type is concatenated with the event name to define the variable **eventTypeName**.

- **Event Name —** The specific event (trap) that should trigger this alarm. Select the event from the pull-down list provided. For RMON Rising or RMON Falling trap types, the RMON rule name is used as the event name. The full-down list includes the configured RMON rule names. See Appendix D for a description of the EPICenter and SNMP events from which you can choose.

  The event name is concatenated with the event type to define the variable **eventTypeName**.

- **Pattern Matching on Event Data** — You can specify that the alarm should be triggered only if the data provided with the event matches a specific pattern. If you leave this unchecked, the default is "Don't Care." Pattern matching is done on the contents of the **eventData** variable.

  The pattern matching syntax uses regular expressions. You can use "*" or "%" (asterisk or percent) to match any sequence of characters. "?" or "_" (question mark or underscore) can be used to match a sequence of characters.

  To match one of a set of characters, enclose the characters in brackets. For example, [abcd] will match one of a, b, c, or d.

- **Message —** A message you specify that will be transmitted whenever the alarm occurs. By default, this field contains the variable **eventTypeName**. You can delete this variable, add other variables as provided in the variable pop-up list, and add your own text. For Syslog messages, use the **eventData** variable to display the Syslog message.

- **Variables... —** A pop-up list that provides a list of variables you can select to include in the Message field. See Table 4 for a definition of the Alarm System variables you can use in the message field.

- **Repetitive occurrence specification (If event happens...) —** The required number of repeated occurrences of the event that must occur before an alarm is generated. You can specify both the number of times the event must occur, and the time frame within which these events must occur. This lets you define alarms that will filter out short-lived or non-repeatable events, and will only take action if the triggering event occurs repeatedly within a sufficiently short time frame.

Table 4: EPICenter Alarm Variables

Variable Name	Description
alarmID	An integer number assigned by the EPICenter Alarm System based on the order in which the alarm occurred
alarmName	The name of the alarm as defined in the Name field
alarmCategory	The user-defined alarm category assigned to the alarm
alarmSeverity	The severity level assigned to the alarm
alarmRepeatTimes	The number of times the event must occur before an alarm is generated
alarmRepeatPeriod	The time frame within which the repeated events must occur for the alarm to be generated
alarmSourceDeviceName	The name of the device on which the event(s) occurred (taken from the EPICenter database)
alarmSourceIP	The IP address of the device on which the event(s) occurred
alarmSourceIfIndex	The interface on the device on which the event(s) occurred
alarmGMTTime	The time at which the alarm occurred, in Greenwich Mean Time
alarmLocalTime	The time at which the alarm occurred, in local time
alarmMessage	The message defined for the alarm (for use by an external program executed as an alarm action)
alarmActions	The list of actions defined for the alarm
eventLogID	The ID of the event in EPICenter’s event log
eventTypeName	The type of event (SNMP Trap, RMON Rising Trap, RMON Falling Trap, or EPICenter event) concatenated with the Event Name (the SNMP trap name, RMON rule name, or EPICenter event name).
eventGenericType	The SNMP Generic Type number of the trap
eventSpecificType	The SNMP Specific Type number for an enterprise-specific trap
eventSpecificTypeStr	The event description
eventEnterprise	The Enterprise portion of the Object ID (OID) of the event

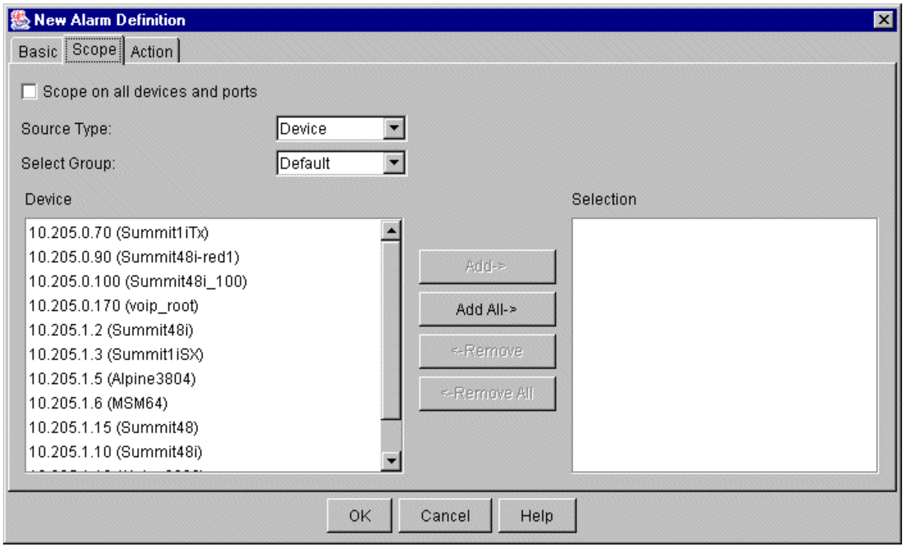
Table 4: EPICenter Alarm Variables

Variable Name	Description
eventData	The data associated with the trap, or the Syslog message content

The Alarm Scope

To define a scope for the alarm, click the **Scope** tab. The Scope definition page is displayed, as shown in Figure 41.

Figure 41: The New Alarm Definition window, Scope definition



☐ Scope on all devices and ports

Source Type: Device

Select Group: Default

Device

10.205.0.70 (Summit1iTx)
10.205.0.90 (Summit48i-red1)
10.205.0.100 (Summit48i_100)
10.205.0.170 (voip_root)
10.205.1.2 (Summit48i)
10.205.1.3 (Summit1iSX)
10.205.1.5 (Alpine3804)
10.205.1.6 (MSM64)
10.205.1.15 (Summit48)
10.205.1.10 (Summit48i)

Selection

In this window you define the scope of the alarm—the set of devices that can trigger the alarm. You can define the scope as a set of individual devices, one or more device groups, as a set of individual ports, or as one or more port groups.

To define the alarm scope, you select a Source Type (and Device Group, if appropriate), select individual devices, ports, device groups, or port groups, and add them to the Selections list. The scope can contain a combination of source types.

The fields and buttons in this window are defined as follows:

- **Scope on all devices and ports** — When this is checked, an event received from any device or device port will trigger the alarm. In addition, as new devices are added to the EPICenter inventory database, those devices and ports will also be included in the device scope.

  Uncheck the checkbox to enable scoping by specific devices, device groups, ports or port groups.

- **Source Type —** The source of the scoping definition (Device, Device Group, Port, or Port Group). Select the type you want from the pull-down list.

  Selecting Device Group or Port Group will scope the alarm on all members of the selected group. Group membership is evaluated every time a trap is received. Therefore, changes to the group membership (adding or removing devices or ports) will have an immediate effect on alarm processing.

  To scope the alarm on individual devices or ports, select Device or Port.

  For events that originate from a device port (such as link down) the scope will determine whether the alarm is generated based on an event from a single port, or on events from any port on a device, or from any port on any device in a device group.

  For example, if you want to define an alarm that is fired for any port on device A, you can scope the alarm as “Device,” select the appropriate device group, and select Device A. If you want to define the alarm only to be fired on selected ports on Device A, then you would scope the alarm as “Port,” select Device A, and then select the individual ports. You could also define a port group for the specific ports of interest, the scope the alarm as Port Group and select the appropriate group.

- **Select Group —** If you select Device or Port as the Source Type, you must select a Device Group to indicate what set of devices (and ports) you want to see in the Source List.

- **Source list (Device/Device Group/Port Group) —** The list of components of the specified type. The field label changes based on the Source Type. It is labeled Device when you select either Device or Port as the Source Type.

- **ifIndex —** The list of ports available on the device selected in the Devices Source list. This list appears only if you have selected Port as the Source Type. Select a device from the Device list, and the appropriate set of ports for the device appears.

- **Selection —** The devices, ports, device groups, or port groups that are currently included in the scope.

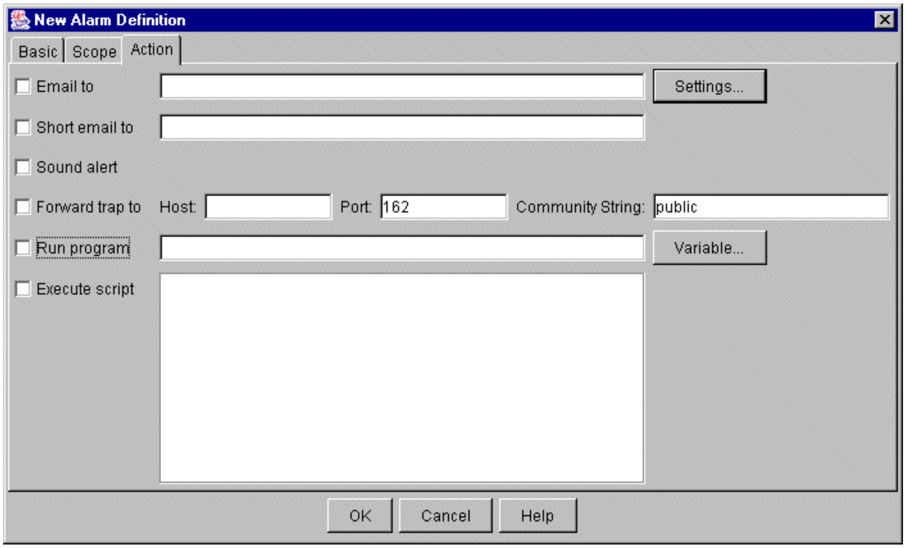
- **Add-> —** Adds the selected Device(s), Port(s), Device Groups or Port Groups to the Selections list, for inclusion in the scope of this alarm.

- **Add All-> —** Adds all the components in the Source list to the Selection list.
- **<-Remove —** Removes the selected components from the Selection list.
- **<-Remove All —** Removes all the components from the Selection list.

The Alarm Actions

To define actions for the alarm, click the **Actions** tab. The Action definition page is displayed, as shown in Figure 42.

Figure 42: The New Alarm Definition window, Action definition



Port: 162

Community String: public

In this window you define the actions for the alarm—the functions that should be performed when the alarm occurs. You can have the alarm perform any or all of the actions defined here.

The fields and buttons in this window are defined as follows:

- **Sound Alert —** Click the check box to have the alarm system play an audible alert on the client computer when the alarm occurs. The alarm will sound on all EPICenter clients currently connected to the EPICenter server. The sound that is played will depend on the severity level of the alarm.

The alert sound files are kept on the EPICenter server in the directory `<epicenter_installdir>\extreme`, and are named according to the severity level they represent (`normal.wav`, `warning.wav` and so on). `<epicenter_installdir>` is the directory where EPICenter is installed, by default `epc4_0` in the Windows operating environment, or `/opt/epc4_0` on a Solaris system.

- **Email to —** Click this check box to indicate that e-mail should be sent, then enter the e-mail address(es) of the recipients for the e-mail. E-mail addresses in a list can be separated by commas, semicolons, or spaces.

  Full email provides the alarm number, alarm name, source IP address and ifIndex, severity and message in the subject header. In the body of the email it provides the alarm time, alarm name, alarm category, severity, source IP address and ifIndex, alarm message, the event name that triggered the alarm, the result of the alarm action, and a URL link to the EPICenter server.

- **Short email to —** Click this check box to indicate that a short e-mail (appropriate for text paging) should be sent. Then enter the e-mail address(es) of the recipients for the e-mail. E-mail addresses in a list can be separated by commas, semicolons, or spaces.

  Short email provides the alarm number in the subject header, and the alarm name, source IP address and ifIndex, severity, and alarm message in the body of the email.

  For example, a short email might contain the following information:

  Subject: Alarm #4017

  Body: link down, 10.255.59.150, ifIndex 17, Normal, SNMP Trap Link Down

  If this email format is still too long, you can write a customized email message by writing a script using the `::extr::sendMail` command. See “Writing Tcl Scripts for Alarm Actions” on page 174 for more information.

  NOTE

  If this box is greyed out, you must first configure your e-mail settings. See “Setting Up E-mail for the Alarm System” on page 148 for details.

- **Forward Trap to**: Click this checkbox to forward the trap event that caused this alarm. Specify the forwarding instructions in the fields to the right of the check box as follows:

  — **Host**: Enter the host name or host IP address of the system to which the trap should be forwarded.

  — **Port**: Enter the port on which the specified host receives traps.

— **Community String**: Enter the community string for the specified host.

- **Run program:** Click the check box to have the Alarm System run a program when this alarm occurs. Enter the command string for the program you want to run. You can include Alarm System variables as arguments by clicking the **Variables...** button and selecting the variables you want. See Table 4 on page 143 for a definition of the Alarm System variables you can use in the message field.

NOTE

On a Windows NT or WIndows 2000 system, if you are running the EPICenter server as a service, and if you want to run a program that does output to the desktop, you must specify that output to the desktop is allowed when you start the server service. Otherwise, the program will not run. See the Alarm System section in Appendix A for instructions on restarting the EPICenter server service with this option enabled. If you are running the EPICenter server as a regular program, this is not a problem.

NOTE

If you want to specify a batch file that does output to the desktop, you must specify the ".bat" file within a DOS "cmd" command, as follows:

```
cmd /c start <file.bat>
```

where <file.bat> is the batch file you want to run.

- **Execute script:** Click the check box to have the Alarm System execute a Tcl script when this alarm occurs. Enter the script commands into the window provided.

You can write your own scripts that access selected EPICenter database variables. See "Writing Tcl Scripts for Alarm Actions" on page 174 for more information.

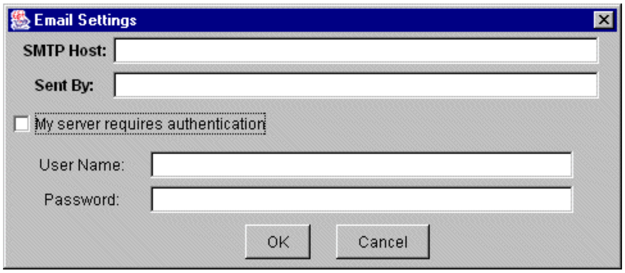
Setting Up E-mail for the Alarm System

Before you can use the e-mail action, you must configure the e-mail capability. Until you do so, the **Email To** field and check box will not be available. To configure the e-mail capability, do the following:

1 Click the **Settings...** button on the Action page.

This displays the **Email Settings** window, as shown in Figure 43.

Figure 43: Setting up E-mail for EPICenter alarm actions



2 Enter your outgoing mail server name (or IP address) into the **SMTP Host:** field.

3 Enter into the **Sent By:** field the e-mail address that should be used as the sender of the e-mail.

4 If your mail server authenticates the user before sending out e-mail, check the **My server requires authentication** check box, and enter the user name and password of an account that the SMTP server will accept. Usually this will be the account you use to log into your network.

If you don't know whether your server requires authentication, you can go ahead and enter the authentication information—it will be ignored if it is not actually needed.

Alarm Definition Examples

Example 1: Define an alarm that will page "Joe" at "4083236789@paging.com" if port 10 on device "switch8" goes down.

1 Bring up the **New Alarm Definition** dialog. On the **Basic** page, do the following:

- **a** Type a name for the alarm (for example, `WAN Link Down`) in the **Name** field.
- **b** Make sure the **Enabled** checkbox is checked.
- **c** Select a category (e.g. "Default") in the **Category** field.
- **d** Select "SNMP Trap" in the **Event Type** field.
- **e** Select "Link Down" in the **Event Name** field.

2 Click the **Scope** tab, and do the following:

- **a** Uncheck the **All devices and ports** checkbox.
- **b** Select "Port" in the **Source Type** field.

- **c** Select “switch8” from the **Device** list.
- **d** Select “10” from the **ifIndex** list.
- **e** Click the **Add** button to add port 10 to the **Selection** list.

3 Click the **Action** tab, and do the following:

- **a** Click the **Short email to:** check box to turn on the check.
- **b** Type `4083236789@paging.com` in the text field next to the checkbox.

4 Click **OK** to finish the alarm definition.

Example 2: Define an alarm that will page “Joe” at “4083236789@paging.com” if any port on device “switch8” goes down.

1 Bring up the **New Alarm Definition** dialog. Fill in the fields on the Basic page just as you did in Example 1.

2 Under the **Scope** tab, do the following:

- **a** Uncheck the **All devices and ports** checkbox.
- **b** Select “Device” in the **Source Type** field, instead of “Port.”
- **c** Select “switch8” from the **Device** list as in Example 1.
- **d** Click the **Add** button to add switch8 to the **Selection** list. No ifIndex list will be displayed.

3 Click the **Action** tab, and enter Joe’s paging information as you did in Example 1.

4 Click **OK** to finish the alarm definition.

Example 3: In a Windows NT environment (where both the EPICenter server and client are running under Windows), define an alarm that will pop up a message on the Windows client system “joe” if the port utilization on port 10 on device “switch8” exceeds 15 percent.

This alarm requires an RMON rule with a Rising Threshold of 15 percent for port utilization. You can define the RMON rule either before or after you define the alarm. See “RMON Rule Configuration Example” on page 168for an example of how to create the RMON rule.

To create the alarm definition:

1 Bring up the **New Alarm Definition** dialog. On the **Basic** page, fill in the **Name** and **Category** fields, and check the **Enabled** checkbox, just as you did in Example 1.

- **a** Select “RMON Rising Trap” in the **Event Type** field.

   b Enter the RMON rule name in the **Event Name** field:

   If you have already created the RMON rule, you can select it from the pull-down menu in the **Event Name** field. For example, if you named the rule “WAN Link 15%”, that name should appear in the pull-down menu.

   If you have not yet created the RMON rule, type in a name for the rule (for example, “WAN Link 15%”). You will need to use this name for the rule when you create it.

   See “RMON Rule Configuration Example” on page 168 for an example of how to create the RMON rule.

2 Click the **Scope** tab, and enter the port information as you did in Example 1:

   a Uncheck the **All devices and ports** checkbox.

   b Select “Port” in the **Source Type** field.

   c Select “switch8” from the **Device** list.

   d Select “10” from the **ifIndex** list.

   e Click the **Add** button to add port 10 to the **Selection** list.

3 Click the **Action** tab, and do the following:

   a Click the **Run Program** checkbox to turn on the check.

   b Type **`net send joe "$alarmName"`** in the text field next to the checkbox.

NOTE

This program is only available on the Windows platform.

4 Click **OK** to finish the alarm definition.

Modifying Alarm Definitions

To modify an alarm, select the alarm in the Alarm Definition List, and click the Modify button at the top of the page.

The Modify Alarm Definition window is displayed. This window, and its Basic, Scope and Action pages, are identical to the New Alarm Definition window, except that the current information for the alarm you selected is filled in.

To modify the alarm, make any changes you want, then click OK. For definitions of the various fields, see the section “Creating a New Alarm Definition” on page 140.

Deleting Alarm Definitions

To delete an alarm definition, select the alarm in the Alarm Definition List, and click the Delete button at the top of the page. Delete

After you verify that you want to delete the alarm, the definition is removed from the Alarm Definition List and from EPICenter’s database. You must remove alarm definitions one at a time.

Alarm Categories

Alarm categories are arbitrary collections of alarms that you can define as appropriate to your needs, and then assign to specific alarm definitions. For example, you might use categories to designate alarms from individual buildings, floors, or workgroups. An ISP might define categories for alarms from a specific customer’s equipment.

By default, all alarms are assigned to the category named Default. This category can be renamed, but it cannot be deleted.

Creating a New Alarm Category

To create a new alarm category, click the **Add** button at the top of the window. Add

A small pop-up window appears into which you can enter the name of the new category. Click **OK** to enter the new category into the Category List.

Modifying an Alarm Category

To rename an alarm category, click the **Modify** button at the top of the window. Modify

A small pop-up window appears and displays the current name of the category. Modify the name and click **OK** to enter the revised category into the Category List.

When an alarm category is renamed, all alarms assigned to that category are updated to use the new category name.

Deleting an Alarm Category

To delete an alarm category, select the category from the Category List, then click the **Delete** button at the top of the window.

Delete

WARNING!

Deleting a category also deletes all the alarm definitions that are assigned to that category. If you do not want to delete those alarm definitions, you must first modify the alarm definitions to use a different alarm category before you delete the category.

A warning message appears to let confirm that you want to delete the category and the alarm definitions that are assigned to it. Click **OK** to delete the category and the alarms from the EPICenter database.

The Default category cannot be deleted.

Threshold Configuration

The Threshold Configuration page lets you define the conditions or rules that will cause certain trap events to occur, and specify the devices on which these rules should be configured. You can use this page to define thresholds for RMON utilization or CPU utilization. You can configure RMON threshold traps for a wide range of variables, but several (specifically port utilization, temperature, and STP topology change) have been partially predefined to make the rule definition process easier.

In these types of events, traps are generated based on comparing the value of the relevant sample variable with a threshold value. The rules you set up specify the threshold values. Once these rules are in place, you can use them in your EPICenter alarm definitions to create alarms that will take actions when a trap is received for a sample value that crosses one of the thresholds you've defined.

There are other SNMP traps supported by the EPICenter Alarm System, but not included in the threshold configuration function, that may require conditions to be set on the switch to define when a trap should occur. See "Configuring Other SNMP Trap Events" on page 172 for additional information.

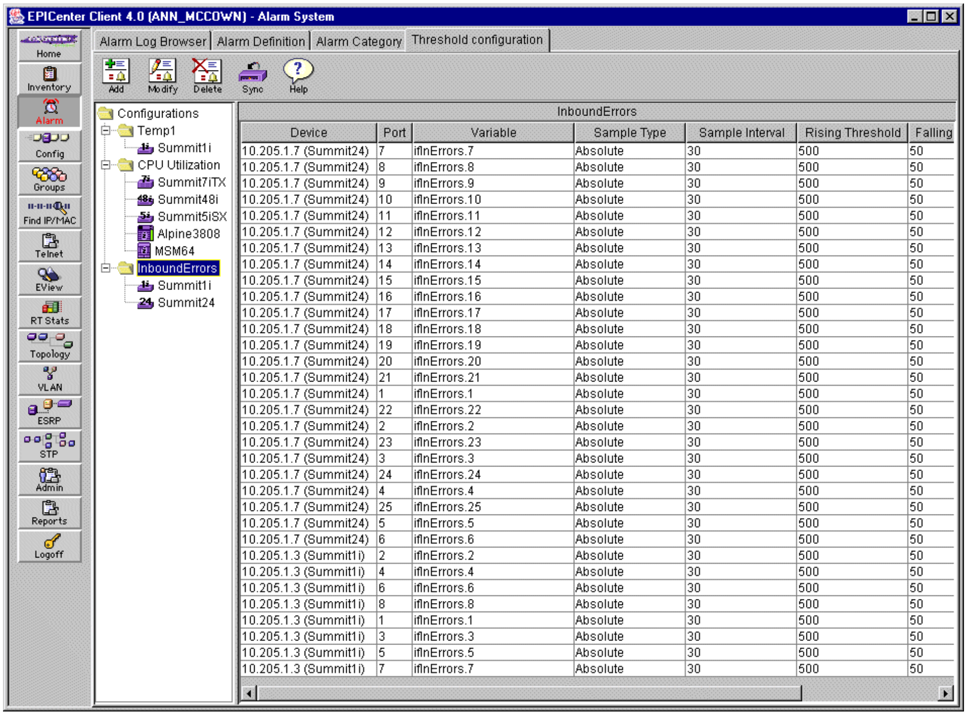
In addition to specifying the conditions under which trap events should be generated, you also use this page to define the target devices on which the event rules should be configured.

NOTE

Creating the rules that control trap (event) generation is only the first of the two steps required to create EPICenter alarms for these events. Even though you have set up these rules, the trap events generated as a result will be ignored by the Alarm System until you define alarms that take actions on those events. See "Defining Alarms" on page 138 for more information.

To view the current threshold configuration rules, and to create new rules or modify existing rules, click the **Threshold Configuration** tab at the top of the page. The Alarm System Configuration page is displayed. Figure 44 shows the Alarm System Configuration page as it appears when displaying RMON rules for a device.

Figure 44: The Threshold Configuration window showing RMON rules



- Configurations
  - Temp1
    - Summit1i
  - CPU Utilization
    - Summit7iTX
    - Summit48i
    - Summit5iSX
    - Alpine3808
    - MSM64
  - InboundErrors
    - Summit1i
    - Summit24

InboundErrors

Device	Port	Variable	Sample Type	Sample Interval	Rising Threshold	Falling
10.205.1.7 (Summit24)	7	ifInErrors.7	Absolute	30	500	50
10.205.1.7 (Summit24)	8	ifInErrors.8	Absolute	30	500	50
10.205.1.7 (Summit24)	9	ifInErrors.9	Absolute	30	500	50
10.205.1.7 (Summit24)	10	ifInErrors.10	Absolute	30	500	50
10.205.1.7 (Summit24)	11	ifInErrors.11	Absolute	30	500	50
10.205.1.7 (Summit24)	12	ifInErrors.12	Absolute	30	500	50
10.205.1.7 (Summit24)	13	ifInErrors.13	Absolute	30	500	50
10.205.1.7 (Summit24)	14	ifInErrors.14	Absolute	30	500	50
10.205.1.7 (Summit24)	15	ifInErrors.15	Absolute	30	500	50
10.205.1.7 (Summit24)	16	ifInErrors.16	Absolute	30	500	50
10.205.1.7 (Summit24)	17	ifInErrors.17	Absolute	30	500	50
10.205.1.7 (Summit24)	18	ifInErrors.18	Absolute	30	500	50
10.205.1.7 (Summit24)	19	ifInErrors.19	Absolute	30	500	50
10.205.1.7 (Summit24)	20	ifInErrors.20	Absolute	30	500	50
10.205.1.7 (Summit24)	21	ifInErrors.21	Absolute	30	500	50
10.205.1.7 (Summit24)	1	ifInErrors.1	Absolute	30	500	50
10.205.1.7 (Summit24)	22	ifInErrors.22	Absolute	30	500	50
10.205.1.7 (Summit24)	2	ifInErrors.2	Absolute	30	500	50
10.205.1.7 (Summit24)	23	ifInErrors.23	Absolute	30	500	50
10.205.1.7 (Summit24)	3	ifInErrors.3	Absolute	30	500	50
10.205.1.7 (Summit24)	24	ifInErrors.24	Absolute	30	500	50
10.205.1.7 (Summit24)	4	ifInErrors.4	Absolute	30	500	50
10.205.1.7 (Summit24)	25	ifInErrors.25	Absolute	30	500	50
10.205.1.7 (Summit24)	5	ifInErrors.5	Absolute	30	500	50
10.205.1.7 (Summit24)	6	ifInErrors.6	Absolute	30	500	50
10.205.1.3 (Summit1i)	2	ifInErrors.2	Absolute	30	500	50
10.205.1.3 (Summit1i)	4	ifInErrors.4	Absolute	30	500	50
10.205.1.3 (Summit1i)	6	ifInErrors.6	Absolute	30	500	50
10.205.1.3 (Summit1i)	8	ifInErrors.8	Absolute	30	500	50
10.205.1.3 (Summit1i)	1	ifInErrors.1	Absolute	30	500	50
10.205.1.3 (Summit1i)	3	ifInErrors.3	Absolute	30	500	50
10.205.1.3 (Summit1i)	5	ifInErrors.5	Absolute	30	500	50
10.205.1.3 (Summit1i)	7	ifInErrors.7	Absolute	30	500	50

The Configurations tree shows the existing RMON rule definitions as nodes in the tree, with the devices to which they are applied shown as subnodes. The main panel shows the definition for the selected rule on each target device.

CPU Utilization is a predefined node in the Configurations tree. Devices on which a CPU utilization rule is configured are shown as subnodes of the CPU Utilization node. There can be only one CPU utilization rule per device.

Click the small plus next to a rule node to display in the tree the devices associated with that rule.

To display the definition of a rule, click the rule node.

RMON Rule Display

For RMON rules, the display shows the following for each device targeted by that rule:

- **Device**: The name of the device
- **Variable**: The MIB variable being monitored
- **Sample Type**: Absolute or Delta
- **Sample Interval**: The time between samples, in seconds.
- **Rising Threshold**: A threshold value that will trigger an event when the value of the variable increments past this value.
- **Falling Threshold**: A threshold value that will trigger an event when the value of the variable decreases past this value.
- **Startup**: The condition that will cause the initial event (Rising, Falling, or RisingOrFalling).
- **Index**: the device index as obtained by the EPICenter server from the device.

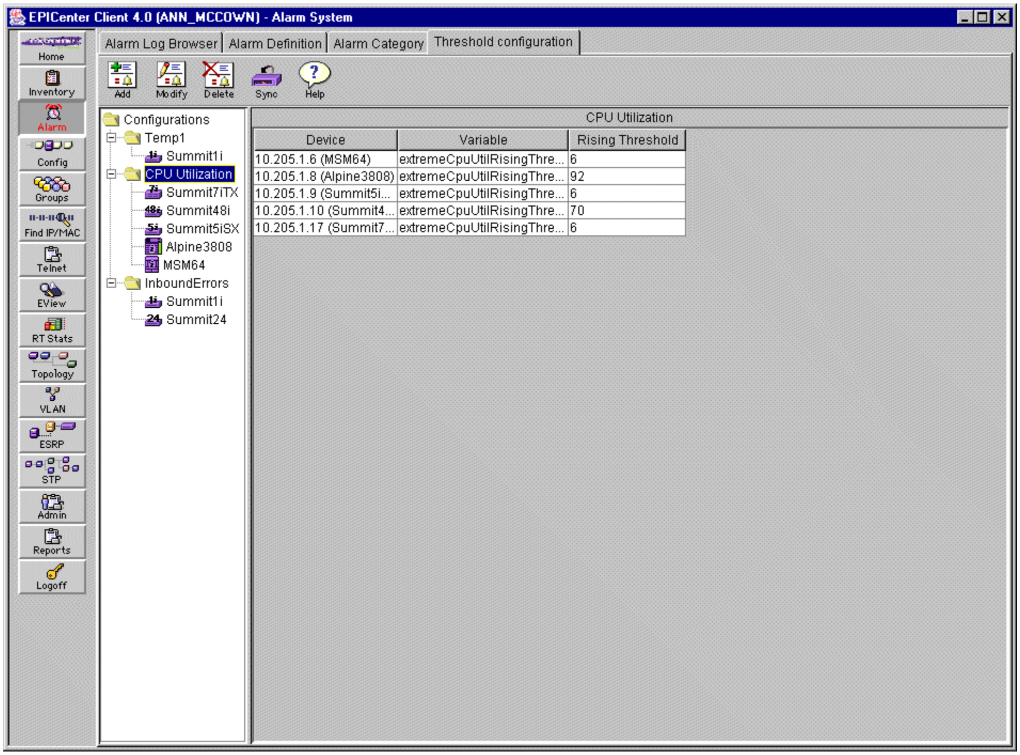
For a detailed definition of these parameters, see “Configuring an RMON Rule” on page 159.

CPU Utilization Rule Display

To display the CPU Utilization rules, click the CPU Utilization node in the Configurations tree.

Figure 45 shows the Alarm System Configuration page as it appears when displaying CPU Configuration rules for a selected device.

Figure 45: The Threshold Configuration window showing CPU Configuration rules



CPU Utilization

Device	Variable	Rising Threshold
10.205.1.6 (MSM64)	extremeCpuUtilRisingThre...	6
10.205.1.8 (Alpine3808)	extremeCpuUtilRisingThre...	92
10.205.1.9 (Summit5i...	extremeCpuUtilRisingThre...	6
10.205.1.10 (Summit4...	extremeCpuUtilRisingThre...	70
10.205.1.17 (Summit7...	extremeCpuUtilRisingThre...	6

For each device targeted by that rule, the CPU Utilization rule display shows the following:

- **Device**: The name of the device
- **Variable**: The MIB variable being monitored (always `extremeCpuUtilRisingThreshold.0`)
- **Rising Threshold**: A threshold value that will trigger an event when the CPU Utilization value (a percentage) increments past this value.

  This value is also used to calculate a Falling Threshold value, which is to be 90% of the Rising Threshold value.

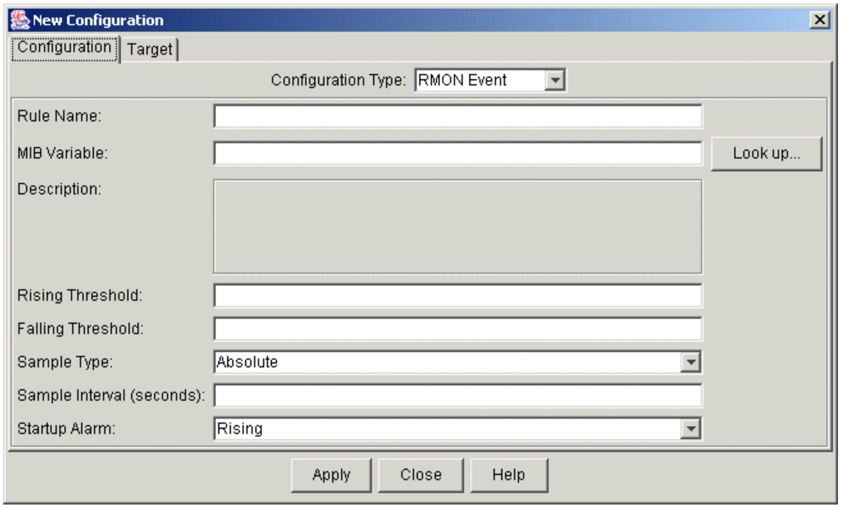
For a detailed definition of these parameters, see “Rule Configuration for the Predefined RMON Event Types” on page 166.

Creating an Event Rule

To create a new event rule, click the **Add** button at the top of the page.

The **New Configuration** window is displayed, as shown in Figure 46.

Figure 46: New Configuration window for an RMON Rule



New Configuration

Configuration | Target

Configuration Type: RMON Event

Rule Name:

MIB Variable:

Description:

Rising Threshold:

Falling Threshold:

Sample Type: Absolute

Sample Interval (seconds):

Startup Alarm: Rising

There are two parts to an event rule; the rule configuration itself, and the association of the rule to its target devices.

The **New Configuration** window comes up with the Configuration page displayed.

In the **Configuration Type** field, select the type of rule you want to create (RMON Event, CPU Utilization, Port Utilization, Temperature, or Topology change) from the drop-down list.

NOTE

CPU Utilization is only supported on switches running ExtremeWare 6.2 or later. STP Topology change traps are only supported on switches running ExtremeWare 6.2.2 or later.

When you finish entering the configuration and target information, click the **Apply** button, and the new rule is added to the Configurations tree. For RMON rules, the rule name is included as a “folder” and each target device for the rule appears as a separate component under that rule. The rule name will also appear in the Event Name list.

For CPU Utilization rules, each target device for a CPU utilization rule appears as a separate component under the CPU Utilization “folder” in the Configurations tree.

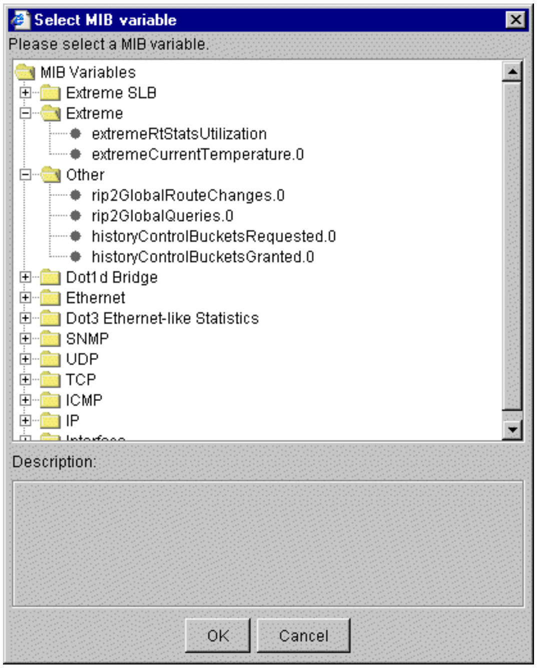
Configuring an RMON Rule

If you select RMON Event as the Configuration Type, the fields and buttons in this window are defined as follows:

- **Name:** The name for this rule.
- **MIB Variable:** The MIB variable that the rule will monitor.

  Type in the complete OID, or click the **Look Up...** button to bring up a list of variables that are available, organized by MIB groups, as shown in Figure 47.

Figure 47: A list of MIB variables available for use in RMON rules



Select MIB variable

Please select a MIB variable.

- MIB Variables
  - Extreme SLB
  - Extreme
    - extremeRtStatsUtilization
    - extremeCurrentTemperature.0
  - Other
    - rip2GlobalRouteChanges.0
    - rip2GlobalQueries.0
    - historyControlBucketsRequested.0
    - historyControlBucketsGranted.0
  - Dot1d Bridge
  - Ethernet
  - Dot3 Ethernet-like Statistics
  - SNMP
  - UDP
  - TCP
  - ICMP
  - IP

Click on a variable group to display the individual variables within the group. You can use the up and down arrow keys to scroll the list.

You can also type the beginning of a variable name into the MIB Variable field, then type a space, and the Alarm System will attempt to match your typing to the variable list and auto-complete your entry.

MIB variables that apply to the entire device will have the suffix “.0” appended to them to create the complete OID. MIB variables that apply per port will be combined with the port ifIndex to generate the OID.

NOTE

The MIB variable list displays only the MIBs that were shipped with the EPICenter software. It does not display table variables in tables indexed by an index other than (or in addition to) ifIndex.

If the MIB variable you want to monitor does not appear in the MIB Variable lookup list, you can still use the variable by typing its complete OID into the MIB Variable field. Enter the OID in its numeric form, ending in .0 if it is a per device variable, or in the specific index if it is a per-port variable. If it is a table variable, you may need to enter each index and apply it to each target device one by one.

- **Description:** The description of the MIB variable. This description should specify the units of measure for the variable, needed in order to correctly specify the Rising Threshold and Falling Threshold values.
- **Rising Threshold:** A threshold value that will trigger an event when the value of the variable increments past this value. An event will be generated when the sample value meets the following conditions:
  - — When the sample value becomes greater than or equal to the Rising Threshold for the first time after the alarm is enabled, if the Startup Alarm condition is set to Rising or RisingOrFalling
  - — The first time the sample value becomes greater than or equal to the Rising Threshold, *after having become less than or equal to the Falling Threshold*
- **Falling Threshold**: A threshold value that will trigger an event when the value of the variable decreases past this value. An event will be generated when the sample value meets the following conditions:
  - — When the sample value becomes less than or equal to the Falling Threshold for the first time after the alarm is enabled, if the Startup Alarm condition is set to Falling or RisingOrFalling
  - — The first time the sample value becomes less than or equal to the Falling Threshold, *after having become greater than or equal to the Rising Threshold*

- **Sample Type:** The method used to compare the variable to the threshold. Specify the type as follows:
  - **Absolute** to use the actual sample value of the variable
  - **Delta** to calculate the difference between the current sample value and the previous sample value of the variable, and use the difference in the comparison
- **Sample Interval (seconds):** The interval, in seconds, over which the data is sampled and compared to the rising and falling thresholds.
- **Startup Alarm:** The condition that should be met to cause the initial occurrence of this event. Select from the following:
  - **Rising**: an event will be generated the first time the sample value becomes greater than or equal to the Rising Threshold value. No events will be generated related to the Falling threshold until after this has occurred.
  - **Falling**: an event will be generated the first time the sample value becomes less than or equal to the Falling Threshold value. No events will be generated related to the Rising threshold until after this has occurred.
  - **RisingOrFalling**: an event will be generated the first time the sample value becomes either greater than or equal to the Rising Threshold value, or less than or equal to the Falling Threshold value.

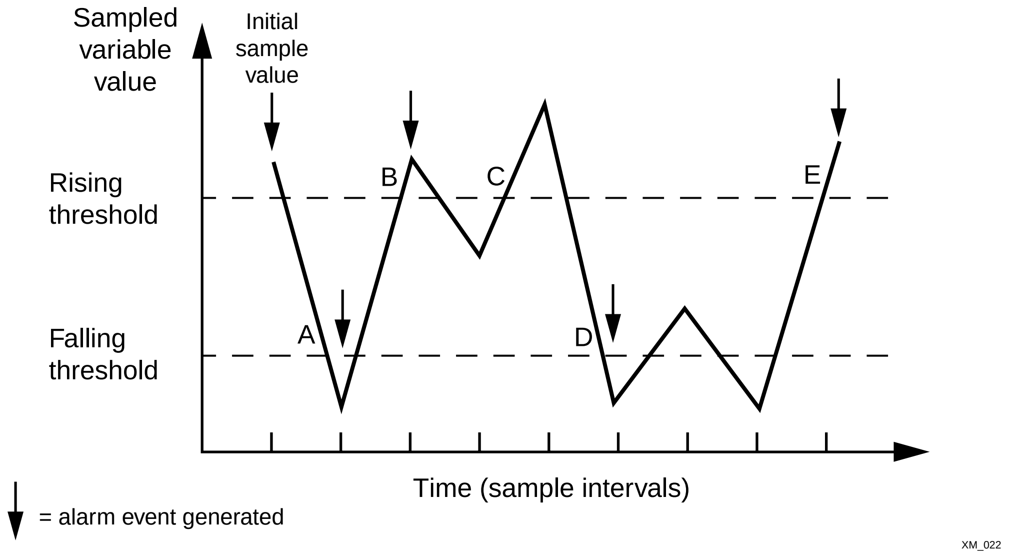
It is important to understand that, except for the initial occurrence of the alarm, an RMON alarm event will be generated only the when the sample value of the variable crosses one of the thresholds for the first time after having crossed the other threshold.

NOTE

To configure an alarm using an RMON threshold event, select RMON Rising or RMON Falling as the Event Type.

The following diagram, shown in Figure 48, shows how alarms are generated for an RMON rule using Delta values, where the startup alarm condition is set to “Rising” or “RisingOrFalling.”

Figure 48: RMON Alarm event generation



Because the initial sample value of the variable is greater than the value of the Rising threshold, an RMON rising threshold trap is generated. A second trap occurs at the next sample interval (point A) because the sample variable value is now less than the Falling Threshold. At point B the value again passes the Rising Threshold, and another trap event is generated. However, no trap occurs at point C, even though the value of the variable again becomes greater than the Rising Threshold, because the value has not yet become less than the Falling threshold. Another Rising threshold trap event cannot occur until after a Falling threshold alarm has occurred, as happens at point D.

Note that in order to have any of these trap events cause an alarm in the EPICenter Alarm System, you need to define an alarm that responds to a RMON Rising Threshold or RMON Falling Threshold event.

- If you define an alarm based on the RMON Rising Threshold event, then EPICenter alarms will occur at the initial sample, and at points B and E. Because the alarm is defined to respond to RMON Rising Threshold events, the falling threshold trap events that occur at points A and D do not trigger an EPICenter alarm.
- If you also define an alarm based on an RMON Falling Threshold event, then EPICenter alarms would also be generated at points A and D.

For a more detailed discussion of Remote Network Monitoring alarm behavior, refer to a book such as SNMP, SNMPv2, SNMPv3, and RMON 1 and 2, Third Edition, by William Stallings (Addison-Wesley, 1999).

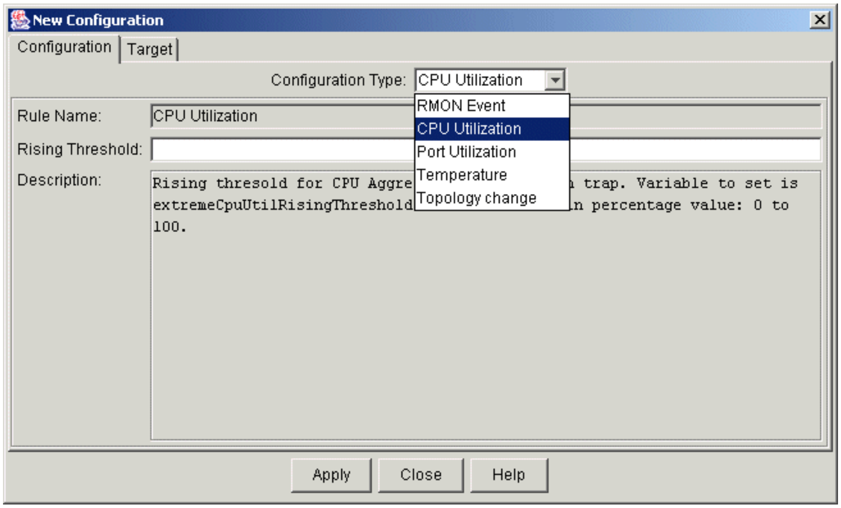
Configuring a CPU Utilization Rule

NOTE

CPU Utilization is only supported on switches running ExtremeWare 6.2 or later.

If you select CPU Utilization, only the Rising Threshold field allows input, as shown in Figure 49. The other fields and buttons in this window are predefined.

Figure 49: New Configuration window for a CPU Utilization Rule



Configuration Type: CPU Utilization

Rule Name: CPU Utilization

Rising Threshold:

Description: Rising thresold for CPU Aggre trap. Variable to set is extremeCpuUtilRisingThreshold n percentage value: 0 to 100.

The fields displayed are defined as follows:

- **Rule Name—** For CPU Utilization, the name is predefined because there can only be one rule of this type on a device.
- **Rising Threshold—** A threshold value, in percent, that will trigger an event when the CPU utilization rises past this value. This value is also used to compute a falling threshold, which is defined as 80% of the rising threshold.
- **Description:** The description of the `extremeCpuUtilRisingThreshold` MIB variable.

The other parameters that you can set when you configure an RMON event, are predefined in the Extreme switch agent for a CPU Utilization event. These are:

- **MIB Variable**: The MIB variable is predefined to be `extremeCpuUtilRisingThreshold.0`.
- **Falling Threshold**: This is predefined as 80% of the rising threshold
- **Sample Interval:** The sample interval for a CPU Utilization alarm is also predefined, and is set to 3 seconds
- **Sample Type**: The sample value (a percentage) is always an absolute value
- **Startup Alarm**: The Startup condition is predefined to be **Rising**

NOTE

To define an alarm for a CPU Utilization threshold event, select SNMP Trap as the Event Type, then select CPU Utilization Rising Threshold or CPU Utilization Falling Threshold as the Event Name.

If you define an alarm for a CPU Utilization Rising Threshold event, an alarm will be generated each time the sample value meets the following conditions:

— When the sample value becomes greater than or equal to the Rising Threshold for the first time (including the initial sample) after the alarm is enabled.

— The first time the sample value becomes greater than or equal to the Rising Threshold, *after having become less than or equal to the Falling Threshold* (80% of the Rising threshold).

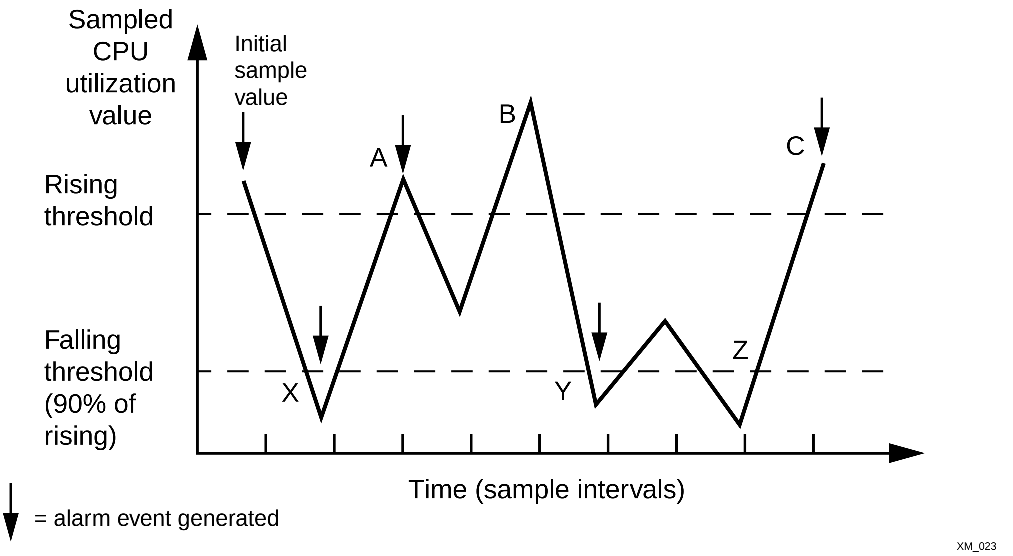
If you define an alarm for CPU Utilization Falling Threshold events, an event will be generated each time the sample value meets the following conditions:

— The first time the sample value becomes less than or equal to 80% of the Rising Threshold, *after having become greater than or equal to the Rising Threshold.*

It is important to understand that, except for the initial occurrence of a Rising Threshold alarm, a CPU Utilization alarm will be generated only the when the sample value of the variable crosses the target threshold for the first time after having crossed the other threshold.

The diagram shown in Figure 50 illustrates how CPU Utilization trap events will occur once you have configured a CPU Utilization rising threshold. The startup condition for a CPU Utilization event is always predefined to be Rising.

Figure 50: CPU Utilization event generation



The first CPU Utilization trap occurs at the initial sample value, since the value is above the CPU Utilization Rising threshold. If the initial value were below the Rising threshold, no event would occur.

The second event occurs at point X, because the sample value has fallen below the falling threshold, which is defined as 80% of the rising threshold value. The third event occurs at point A because the sample value is again above the Rising Threshold after having fallen below the Falling threshold. At point B the value again passes the Rising Threshold, but no alarm is generated because the value has not yet become less than the Falling threshold. Another Rising threshold alarm cannot occur until after a Falling threshold event has occurred, which happens at point Y. The next Rising threshold event happens at point C.

Note that in order to have any of these events cause an alarm in the EPICenter Alarm System, you need to define an alarm that responds to a CPU Utilization Rising Threshold or CPU Utilization Falling Threshold event.

- If you define an alarm based on the CPU Utilization Rising Threshold event, an EPICenter alarm will occur at the initial sample, and at points A and C. Because the alarm was defined to respond to CPU Utilization Rising Threshold events, the falling threshold trap events that occur at points X and Y do not trigger an EPICenter alarm.

- If you also define an alarm based on a CPU Utilization Falling Threshold event, then EPICenter alarms would be generated at points X and Y.

Rule Configuration for the Predefined RMON Event Types

The Port Utilization, Temperature and Topology Change configuration types are actually RMON utilization rules with a predefined configuration interface. The New Configuration window is the same (see Figure 49), except that you must provide a name for the rule

NOTE

STP Topology change traps are only supported on switches running ExtremeWare 6.2.2 or later.

The fields in this window are defined as follows:

- **Rule Name:** The name for this rule. For these events, this is user-defined.
- **Rising Threshold:** A threshold value that will trigger a trap event when the value of relevant variable rises past this value. The thresholds are specified based on the configuration type as follows:
  - **Port Utilization** — A threshold value, in 100ths of a percent, that will trigger an event when the port utilization rises past this value.
  - **Temperature** — A threshold value, in degrees celsius, that will trigger an Overheat event when the temperature rises past this value.
  - **Topology Change** — An integer threshold value that will trigger a topology change event when the total number of topology changes seen by this device since the management entity was last reset or initialized, rises past this value.

  For these rules, like a CPU utilization rule, the falling threshold is automatically defined based on the value of the rising threshold. The falling threshold is set to be 90% of the rising threshold value.
- **Description:** The description of the relevant MIB variable for the selected rule type.

The other parameters that you can set when you configure an RMON event, are predefined in the Extreme switch agent for these three events. These are:

- **MIB Variable**: The MIB variable is predefined to be one of the following:
  - For Port utilization: `extremeRtStatsUtilization.0`
  - For Temperature: `extremeCurrentTemperature.0`

— For Topology Change: `dot1dStpTopChanges.0`

- **Falling Threshold**: This is predefined as 90% of the rising threshold.
- **Startup Alarm**: The Startup condition is predefined to be **Rising or falling**.
- **Sample Interval:** The sample interval is also predefined, and is set to 15 seconds.
- **Sample Type**: The sample value is an absolute value.

NOTE

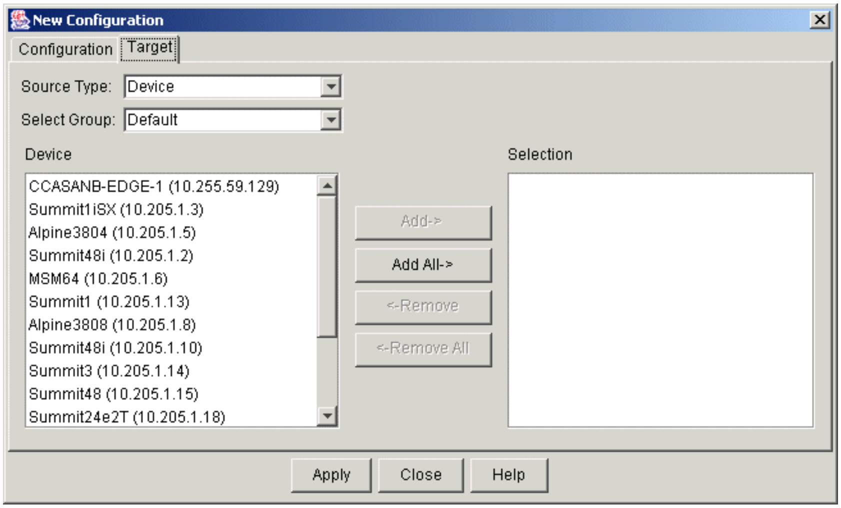
To define an alarm using one of these predefined threshold events, select RMON Trap Rising Alarm or RMON Trap Falling Alarm as the Event Type in the Alarm Definition window.

Configuring the Rule Target

Click the **Target** tab to display the New Configuration Target page, as shown in Figure 51.

This page lets you specify which devices should be configured to generate the event you have defined.

Figure 51: RMON target selection window



Source Type: Device

Select Group: Default

Device

CCASANB-EDGE-1 (10.255.59.129)
Summit1iSX (10.205.1.3)
Alpine3804 (10.205.1.5)
Summit48i (10.205.1.2)
MSM64 (10.205.1.6)
Summit1 (10.205.1.13)
Alpine3808 (10.205.1.8)
Summit48i (10.205.1.10)
Summit3 (10.205.1.14)
Summit48 (10.205.1.15)
Summit24e2T (10.205.1.18)

Selection

The fields and buttons in this window are defined as follows:

- **Source Type:** The source of the RMON rule targets (Devices, Device Groups, Ports, or Port Groups). Select the type you want from the pull-down list. The choices you have are determined by the variable you selected for the rule. For example, if the variable you have selected to monitor is applied per port, you will be able to select by Port or Port Group.
- **Source List (Device/Device Group/Port Group):** The list of components (devices or groups) of the specified type. The field label changes based on the Source Type. It is labeled **Device** when you select either Device or Ports (a second Port field is provided for port selection).

  Note that when you leave your cursor on a device for a moment, a pop-up displays the IP address of the device.
- **Source List (Port):** The list of ports available on the device selected in the Devices Source list. This list appears only if you've selected Ports as the Source Type. Select a device from the Device list, and the appropriate set of ports for the device appears.
- **Selection:** The devices, ports, device groups, or port groups that are currently targets for the RMON rule.
- **Add->:** Adds the selected Device(s), Port(s), Device Groups or Port Groups to the Selections list, for inclusion as a target for this rule.
- **Add All->:** Adds all the components in the Source list to the Selection list
- **<-Remove:** Removes the selected components from the Selection list.
- **<-Remove All:** Removes all the components from the Selection list.

RMON Rule Configuration Example

Example: Create an RMON rule that will cause an RMON Rising Trap when port utilization on port 10 of device “switch8” exceeds 15%.

1 Bring up the **New Configuration** dialog. On the **Configuration** page, do the following:

   a Type a name for the rule in the **Name** field (for example, “WAN Link 15%”).

   If you have already created an alarm definition that will use this rule, make sure the name matches the name you entered in the alarm definition.

   b Click the **Look up...** button to display the **Select MIB Variable** dialog.

   c Expand the Extreme folder, select the `extremeRtStatsUtilization` variable, and click OK to enter it into the **MIB Variable** field.

- d Type “1500” in the **Rising Threshold** field. Note that for this variable the value must be in hundredths of a percent.
- e Type a smaller value, for example “1450” in the **Falling Threshold** field.
- f Leave the **Sample Type** as “Absolute” and the **Sample Interval** at the default value (15).
- g Select **Rising** for the **Startup Alarm** field.

2 Click the **Target** tab and do the following:

- a Select Port as the **Source Type**
- b Select “switch8” from the **Device** list
- c Select 10 from the **ifIndex** list
- d Click **Add** to add the port to the **Selection** list

3 Click the **Apply** button to configure the rule on device switch8.

A message window will appear with the device configuration results.

4 Verify that no switch configuration errors have been reported, and click **OK** to dismiss the window.

5 Click **Close** to dismiss the **New Configuration** dialog.

Modifying a Rule

Once a set of RMON rules have been created, they must be modified individually. To modify a RMON rule do the following:

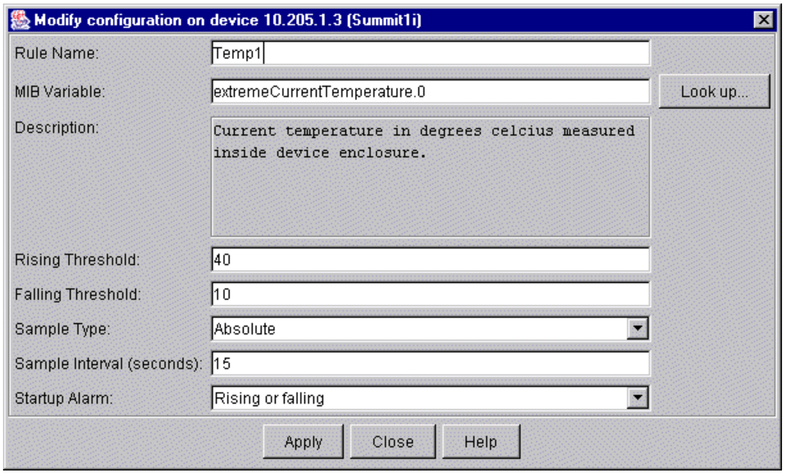
1 Select the rule folder or the individual rule name in the Configurations tree to display the rule details in the main panel of the window.

2 Select the individual rule you want to modify

3 Click the **Modify** button at the top of the page.

The **Modify Configuration** window is displayed for the target you selected.

Figure 52: Modify Configuration window for RMON rules



Modify configuration on device 10.205.1.3 (Summit1i)

Rule Name: Temp1

MIB Variable: extremeCurrentTemperature.0

Description: Current temperature in degrees celcius measured inside device enclosure.

Rising Threshold: 40

Falling Threshold: 10

Sample Type: Absolute

Sample Interval (seconds): 15

Startup Alarm: Rising or falling

The window shows the same information as the Configuration page of the **New Configuration** window, but with the information for the current target filled in.

See “Configuring an RMON Rule” on page 159 for a definition of the fields on this page. This window is displayed for all existing RMON rules, including the three predefined rules (Temperature, Port Utilization, and Topology Change). For CPU Utilization rules, only three fields are shown, and only the Rising Threshold field can be changed.

Note that if you change the name of this rule, the new rule will be added as a “folder” in the Configurations tree, and this specific rule target will be moved under the new rule.

Deleting a Rule

To delete an RMON or CPU Utilization rule, do the following:

1. Select the rule folder or the individual rule name in the Configurations tree to display the rule details in the main panel of the window.
2. Select the individual rule or rules you want to delete
3. Click the **Delete** button at the top of the window.
4. When the warning asking you to confirm that you want to delete is displayed, click **Yes** to delete the rule(s) or **No** to cancel the action.

When you delete a rule, the alarm definition that references the rule is not deleted.

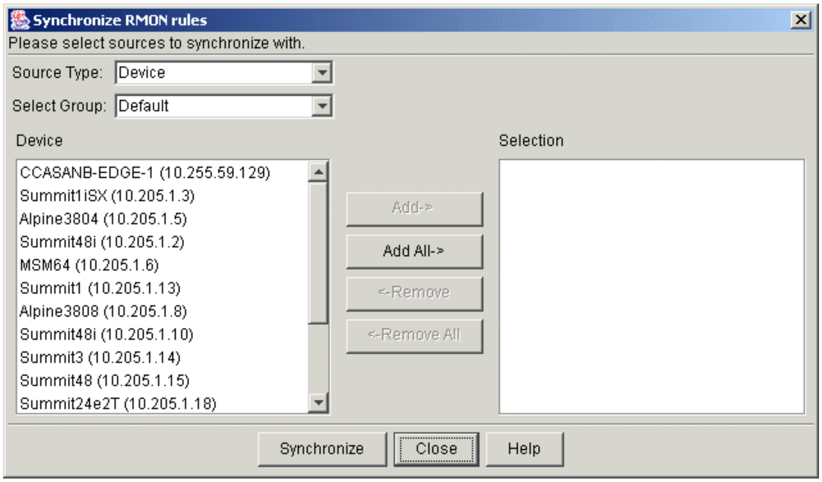
Resynchronizing the RMON Rules

To resynchronize EPICenter's database with the RMON rules in place on a switch, do the following:

1 Click the **Sync** button at the top of the window.

The **Synchronize RMON Rules** window is displayed, as shown in Figure 53.

Figure 53: The Synchronize RMON Rules window



Please select sources to synchronize with.

Source Type: Device

Select Group: Default

CCASANB-EDGE-1 (10.255.59.129)
Summit1iSX (10.205.1.3)
Alpine3804 (10.205.1.5)
Summit48i (10.205.1.2)
MSM64 (10.205.1.6)
Summit1 (10.205.1.13)
Alpine3808 (10.205.1.8)
Summit48i (10.205.1.10)
Summit3 (10.205.1.14)
Summit48 (10.205.1.15)
Summit24e2T (10.205.1.18)

You can resynchronize individual devices or all devices in a device group.

2 To select a device group, select Device Group from the pull-down list in the **Source Type** field. A list of device groups will be displayed.

To select individual devices, select Devices in the **Source Type** field. A list is displayed showing all the Extreme Networks devices managed by EPICenter.

3 To add a device or device group to the Selection list, select the device or device group and click **Add ->**. To add all devices or device groups in the list, click **Add All ->**.

4 To remove a device or device group from Selection list, select the item and click **<- Remove**. To remove all devices or device groups, click **<- Remove All.**

5 Click **Synchronize** to initiate the synchronization process.

The Alarm Manager uses SNMP to retrieve configuration and status information from each selected switch, and updates the database with that information.

6 The **Synchronize** function displays a dialog box with status or error information. Click **OK** to continue.

7 Click **Close** to exit the **Synchronize RMON Rules** window.

Configuring Other SNMP Trap Events

There are a number of SNMP events that require configuration on the switch before they can be used in EPICenter alarm definitions. If the configuration is not done on the switch, no trap events are generated, and no EPICenter alarms for those events can occur. The Ping and OSPF traps fall into this category.

To configure the switch to send one of these traps, you must use a tool that allows you to set the value of the appropriate SNMP variable. Tools such as SNMPc can be used to perform this function. The following information assumes that you have a thorough understanding of SNMP and an appropriate SNMP utility.

Refer to the appropriate MIBs for details of the variable settings:

- Ping MIB: pingmib.mib (RFC 2925)
- OSPF v2 MIB: RFC 1850 or RFC 1850t

Configuring EPICenter as a Syslog Receiver

To receive Syslog messages, the Syslog receiver function of EPICenter must be enabled, and remote logging must be enabled with EPICenter configured as a Syslog receiver on the devices from which you want to receive Syslog messages.

The Syslog server function within EPICenter can be enabled through the Administration applet. See “Devices Properties”in Chapter 16 for more information.

On the device side, remote logging must be enabled, and the switch must be configured to log to the EPICenter server. The default on Extreme Networks switches is for logging to be disabled. You must use the EPICenter Telnet applet or the ExtremeWare CLI to configure your switches. To enable remote logging on a switch, enter the ExtremeWare command:

```
enable syslog
```

To configure the EPICenter server as a Syslog server, enter the ExtremeWare command:

```
config syslog <EPICenter IP address> <facility>
```

You must enter the IP address of the EPICenter server, and a facility level, which can be `local0` through `local7`. See the *ExtremeWare Software User Guide* or the *ExtremeWare Software Command Reference Guide* for more information on these commands.

To configure remote logging on multiple devices, you can run these commands as a macro in the EPICenter Telnet module.

You can also include a severity in the `config syslog` command, which will filter log messages before they are sent to the EPICenter Syslog server. The EPICenter Syslog server will in turn filter the incoming messages based on the severity you set using the **Accept SysLog messages with Min Severity** property setting in the Administration applet.

Setting EPICenter as a Trap Receiver

When Extreme devices are added to the EPICenter inventory, they are automatically configured to send traps to the EPICenter server. However, third-party devices are not automatically configured to do so.

If you want alarms to function for third-party devices, you must manually configure the devices to send traps to the EPICenter server.

The information required to set up EPICenter as a trap receiver is the following:

- The IP address of the system where the EPICenter server is running.
- The EPICenter server trap port. By default this is 10550. (This is set in the properties file `extreme.properties`, found in the `<epicenter_installdir>/extreme` subdirectory).
- The EPICenter server community string. This is a string in the form:

  ```
  ST.<value of IP address>.<value of trap port>
  ```

  The value of the IP address is the decimal equivalent of the hex value of the IP address.

  For example, if the IP address of the EPICenter server is `10.0.4.1`, you would calculate the decimal equivalent by doing the following:

a Convert each quad of the IP address to its hex equivalent:

Decimal	Hex
10	a
0	00
4	04
1	01

b Convert the hex value `a000401` into a decimal value, in this case `167773185`

c Put the three components together to form the community string:

```
ST.167773185.10550
```

You can find and verify the value of the community string by using Telnet to log into an Extreme Networks device that is being managed by EPICenter, and using the ExtremeWare CLI command **`show management`** to display the list of trap receivers configured for that device. The EPICenter server, and its community string, should be included in this list.

To receive RMON traps, you need to ensure that RMON is enabled on the device. For Extreme devices, you can do this through the ExtremeWare CLI with the command **`enable rmon`**.

Writing Tcl Scripts for Alarm Actions

An EPICenter alarm can call a Tcl function as an alarm action. This Tcl function can be a user-defined Tcl script that is executed in the EPICenter server.

There is an example script in the `<`*`epicenter_install_dir`*`>/user/alarms` directory called `example.tcl` that you can use as a guide to writing a Tcl function for an alarm action.

You can access the EPICenter alarm variables for use in your script, as demonstrated in the example script. These variables are defined in Table 4 on page 143.

The Tcl Scripting Environment

The scripting environment for alarm actions is a fully operational Tcl environment. In this environment, a Tcl action script can save states across multiple alarms using global variables, access alarm instance data, access event log data, and access other EPICenter server-side data. In order to protect the EPICenter server from malicious or erroneous alarm action scripts, the alarm script execution environment uses the “safe interpreter” ability of the Tcl system.

The safe interpreter is a slave of the main EPICenter server-side Tcl interpreter (master interpreter). The functions of the safe interpreter are restricted so that it cannot do harm to the overall EPICenter server. A safe interpreter creates a private “sandbox” in which the alarm action scripts executes. The master interpreter hides certain functions from the scripts inside the sandbox. The master interpreter performs some other functions on behalf of the slave interpreter. By performing functions for the slave, the master has a chance to check to see if the slave’s request is valid. If not, the master rejects the slave’s request.

The following table summarizes the Tcl commands that are deemed dangerous for use by a Tcl alarm action script. Some of these commands are removed entirely from the Alarm Tcl environment. Others are aliases so that the master interpreter can intercept the command call to provide restricted operations.

Table 5: Command Restrictions in EPICenter Tcl Safe Interpreter

Tcl Command	Hidden in Safe Interp	Explicit Hide by EPICenter	Alias in Master	Description
cd	✔			Not allowed
file	✔		✔	Only allow: attime, attributes (read-only), dirname, executable, exists, extension, isdirectory, isfile, join, lstat, mtime, nativename, owned, pathtype, readable, readlink, rootname, size, split, stat, tail, type, volume, writable
pwd	✔			Not allowed
exec	✔			Not allowed
glob	✔		✔	Full functions
socket	✔		✔	No server-side socket, client socket is opened in async mode; the opened client socket is placed in nonblocking mode using the default buffer size; the number of open socket is restricted
exit	✔			Not allowed
load	✔			Not allowed

Table 5: Command Restrictions in EPICenter Tcl Safe Interpreter

source	✔		✔	Only from standard `$tcl_library` and `user/alarm` directory, and subdirectories
fconfigure	✔		✔	All channels are non-blocking by default, cannot set channel to blocking; cannot set channel buffer size
open	✔		✔	Can only open file in `user/alarm` and its subdirectories; file is opened in nonblocking mode using the default buffer size; number of open file is restricted
vwait	✔			not Allowed
encoding	✔		✔	Cannot change system encoding scheme
after		✔	✔	Cannot do “after ms”, which does not respond to events
puts			✔	puts data to stdout

The following table outlines the EPICenter server side commands that available in the slave interpreter through aliases.

EPICenter Command	**Alias in Master**	**Description**
extr::query	✔	Retrieve server-side data from the database. Syntax: **`extr::query {} ?-raw? sql ?arg arg ...?`** **`{}`** The first argument must be {}. Using {} signals the command to retrieves data from the EEM server, in which the alarm action scripts are executing. **`-raw`** (Optional) If specified, the result of the query is returned unparsed as a string containing the data in the XML format. **`sql`** The sql query **`arg ...`** Arguments to the sql query for variable substitution

extr::sendMail	✔	Sends e-mail through the EPICenter server. Syntax: **extr::sendMail toList from subject body ?smtpHost? ?login? ?password?** **toList** A list of recipient's email addresses **from** The email address of the sender **subject** The subject of the email **body** The text of the email **smtpHost** (Optional) The host ip address of the SMTP host. If not specified, use the default as defined in the alarm system. **login** (Optional) The login name to the SMTP host **password** (Optional) The password to the SMTP host
extr::postEvent	✔	Log an event to the server's event log. The event time is logged. Syntax: extr::postEvent message message - the message of the event

6 Configuration Manager

This chapter describes how to use the EPICenter Configuration Manager applet for:

- Uploading configuration settings from one or more devices to EPICenter, on demand or at a predefined (scheduled) time.
- Downloading configuration settings from EPICenter to a device.
- Downloading an incremental configuration to one or more devices.
- Downloading a new ExtremeWare image to one or more devices.
- Downloading a BootROM image to one or more devices.
- Downloading a new ExtremeWare image to one or more Extreme modules.
- Downloading a BootROM image to one or more Extreme modules.
- Specifying an ExtremeWare software image as the “recommended” image. The Configuration Manager will compare the image currently running in a switch to determine if the switch is running the recommended or most current image.
- Performing a live software update by retrieving the latest ExtremeWare software images from Extreme Networks.
- Specifying and configuring the TFTP server to be used for uploading and downloading configuration settings and software images.
- Searching for a specific device or group of devices.
- Displaying device and device group parameters

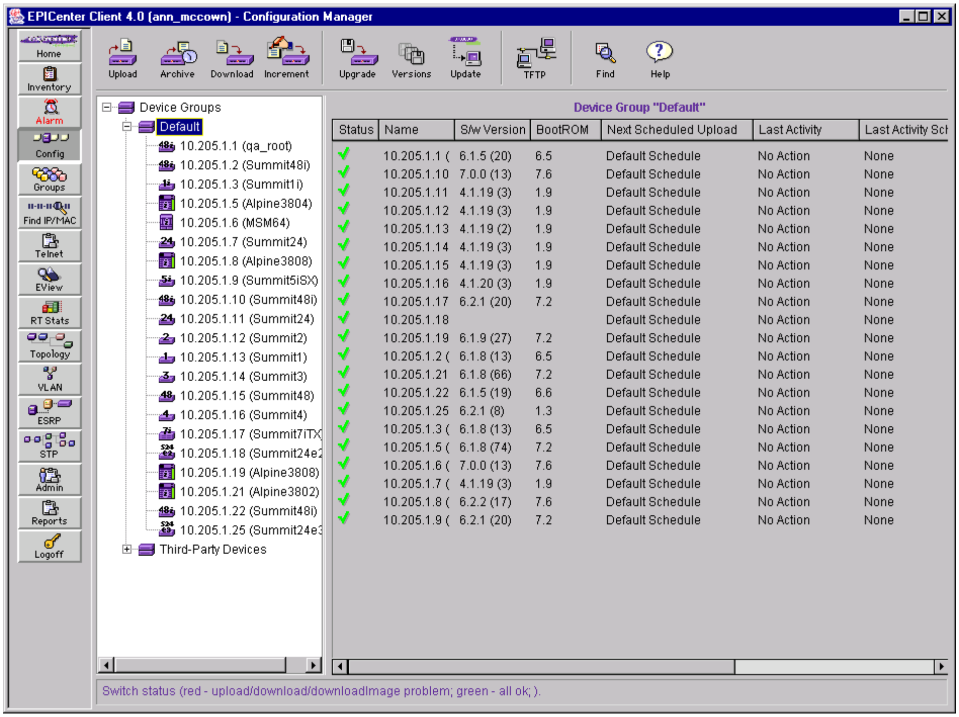
Overview of the Configuration Manager

The EPICenter Configuration Manager applet provides a graphical interface for uploading and downloading files to and from managed devices. The Configuration Manager also provides a framework for storing the configuration files, to allow tracking of multiple versions. Configuration file uploads can be performed on demand, or can be scheduled to occur at regular times—once a day or once a week. The Configuration Manager supports Extreme Networks and Cisco devices.

To start the Configuration Manager applet, click the **Config** button in the EPICenter Navigation Toolbar. The Configuration Manager applet appears (see Figure 54).

When the applet initially appears, it shows the status of the device group(s) defined in EPICenter. Click a device group name in the Component Tree to display the summary status for the devices in the group, as shown in Figure 54.

Figure 54: Configuration Manager showing summary device status



EPICenter Client 4.0 (ann_mccown) - Configuration Manager

- Device Groups
  - Default
    - 10.205.1.1 (qa_root)
    - 10.205.1.2 (Summit48i)
    - 10.205.1.3 (Summit1i)
    - 10.205.1.5 (Alpine3804)
    - 10.205.1.6 (MSM64)
    - 10.205.1.7 (Summit24)
    - 10.205.1.8 (Alpine3808)
    - 10.205.1.9 (Summit5iSX)
    - 10.205.1.10 (Summit48i)
    - 10.205.1.11 (Summit24)
    - 10.205.1.12 (Summit2)
    - 10.205.1.13 (Summit1)
    - 10.205.1.14 (Summit3)
    - 10.205.1.15 (Summit48)
    - 10.205.1.16 (Summit4)
    - 10.205.1.17 (Summit7iTX
    - 10.205.1.18 (Summit24e2
    - 10.205.1.19 (Alpine3808)
    - 10.205.1.21 (Alpine3802)
    - 10.205.1.22 (Summit48i)
    - 10.205.1.25 (Summit24e3
  - Third-Party Devices

Device Group "Default"

Status	Name	S/w Version	BootROM	Next Scheduled Upload	Last Activity	Last Activity Sch
✓	10.205.1.1 (	6.1.5 (20)	6.5	Default Schedule	No Action	None
✓	10.205.1.10	7.0.0 (13)	7.6	Default Schedule	No Action	None
✓	10.205.1.11	4.1.19 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.12	4.1.19 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.13	4.1.19 (2)	1.9	Default Schedule	No Action	None
✓	10.205.1.14	4.1.19 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.15	4.1.19 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.16	4.1.20 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.17	6.2.1 (20)	7.2	Default Schedule	No Action	None
✓	10.205.1.18			Default Schedule	No Action	None
✓	10.205.1.19	6.1.9 (27)	7.2	Default Schedule	No Action	None
✓	10.205.1.2 (	6.1.8 (13)	6.5	Default Schedule	No Action	None
✓	10.205.1.21	6.1.8 (66)	7.2	Default Schedule	No Action	None
✓	10.205.1.22	6.1.5 (19)	6.6	Default Schedule	No Action	None
✓	10.205.1.25	6.2.1 (8)	1.3	Default Schedule	No Action	None
✓	10.205.1.3 (	6.1.8 (13)	6.5	Default Schedule	No Action	None
✓	10.205.1.5 (	6.1.8 (74)	7.2	Default Schedule	No Action	None
✓	10.205.1.6 (	7.0.0 (13)	7.6	Default Schedule	No Action	None
✓	10.205.1.7 (	4.1.19 (3)	1.9	Default Schedule	No Action	None
✓	10.205.1.8 (	6.2.2 (17)	7.6	Default Schedule	No Action	None
✓	10.205.1.9 (	6.2.1 (20)	7.2	Default Schedule	No Action	None

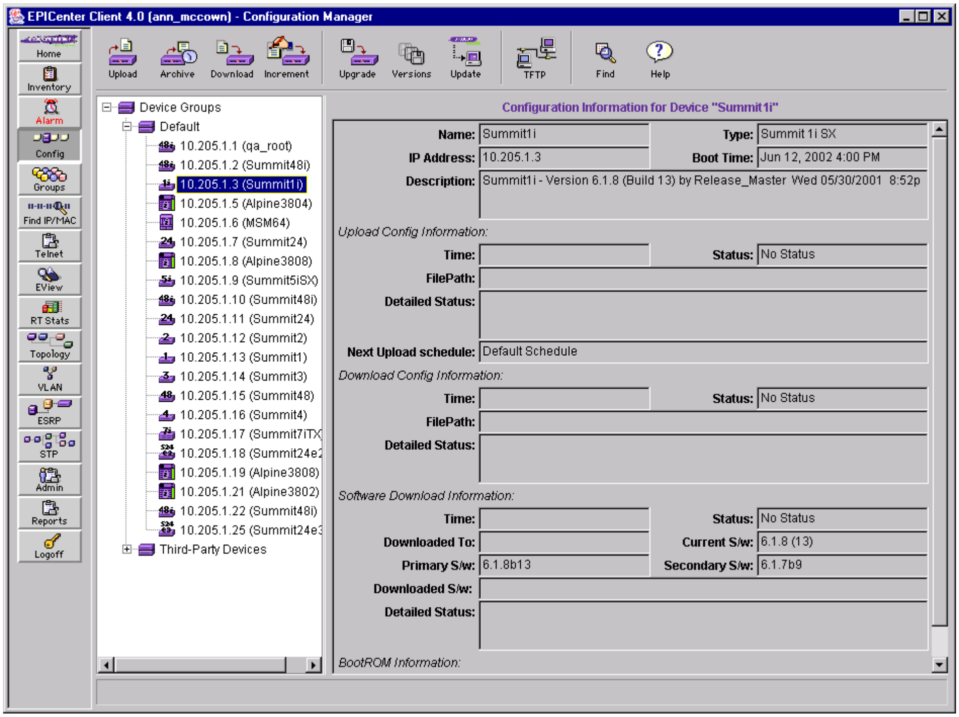
Switch status (red - upload/download/downloadImage problem; green - all ok;).

This display shows a summary of the upload and download activity for each managed device, as follows:

- **Status**—The status of the most recent configuration activity. A green check ✓ indicates that the activity was successful. A red X ✗ means that the activity (upload or download) did not complete successfully.
- **Name**—The device name.
- **S/w Version**—The version of the ExtremeWare software that is currently running in the device.
- **BootROM**—The version of the bootROM currently running in the device.
- **Next Scheduled Upload**—The date and time for the next Archival upload, if one is scheduled.
- **Last Activity**—The last activity (upload or download of a configuration file, software image, or BootROM) that has taken place through the EPICenter Configuration Manager for this device.
- **Last Activity Schedule**—The date and time that the activity occurred.
- **Last Activity FilePath**—The name and path of the configuration file or image file that was involved in the last activity.

You can display the upload and download status of the configuration information, software, and BootROM by clicking on an individual device in the Component Tree in the left-hand panel of the window. This displays a status window for the device similar to the one shown in Figure 55.

Figure 55: Configuration and Software status for an individual device



Configuration Information for Device "Summit1i"

Name: Summit1i
Type: Summit 1i SX
IP Address: 10.205.1.3
Boot Time: Jun 12, 2002 4:00 PM
Description: Summit1i - Version 6.1.8 (Build 13) by Release_Master Wed 05/30/2001 8:52p

Upload Config Information:

Time:
Status: No Status
FilePath:
Detailed Status:
Next Upload schedule: Default Schedule

Download Config Information:

Time:
Status: No Status
FilePath:
Detailed Status:

Software Download Information:

Time:
Status: No Status
Downloaded To:
Current S/w: 6.1.8 (13)
Primary S/w: 6.1.8b13
Secondary S/w: 6.1.7b9
Downloaded S/w:
Detailed Status:

BootROM Information:

The device status window displays the following information:

- The success status, timestamp, and file name and location for configuration uploads and downloads. If archiving is scheduled, it also displays the time of the next scheduled archive.
- The success status, timestamp, and versions for software downloads, as well as version information for both the primary and secondary software stores.
- BootROM version information (at the bottom of the scrollable window, not visible in Figure 55).

Viewing Device Information from Pop-up Menus

You can select a device group or a device in the Component Tree, then right-click to display a pop-up menu that contains the Upload, Archive, Download, Increment, Upgrade, and Properties commands. All of the commands—with the exception of the

Properties command—perform the same functions as the buttons at the top of the page, but with the appropriate device or device group displayed. The Properties command displays the attributes for a specific device group or device. The device pop-up menu also contains the Alarms, Browse, Statistics, Telnet, Eview, and VLANs commands. All of these commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with the appropriate device displayed.

Upload

The Upload function lets you upload configuration information from one or more devices to EPICenter.

To view the Upload Config display for a selected device group or device:

- Right-click on the device group or device, then select **Upload** from the pop-up menu that appears

This opens the Upload Config from Devices window.

See “Uploading Configurations from Devices” on page 187 for details on using this feature.

Archive

The Archive function lets you schedule device configuration archive uploads.

To view the Archive display for a selected device group or device:

- Right-click on the device group or device, then select **Archive** from the pop-up menu that appears

This opens the Schedule Upload window. Select the appropriate tab to display the Device Schedule window or the Global Schedule window.

See “Archiving Configuration Settings” on page 190 for details on using this feature.

Download

The Download function lets you manually update device configuration and status information.

To view the Download display for a selected device group or device:

- Right-click on the device group or device, then select **Download** from the pop-up menu that appears

This opens the Download Configuration to Devices window and displays the devices in a device group. If configuration information has been uploaded from the device, the file where it was saved is listed in the **Last Upload Configuration** column.

See “Downloading Configuration Information to a Device” on page 194 for details on using this feature.

Increment

The Increment function lets you execute only the commands specified in the incremental download file. The incremental download file is used as a baseline configuration for devices running ExtremeWare 6.0 or later.

To view the Incremental display for a selected device group or device:

- Right-click on the device group or device, then select **Increment** from the pop-up menu that appears

This opens the Download Incremental Configuration to Devices window.

See “Downloading an Incremental Configuration to Devices” on page 196 for details on using this feature.

Upgrade

The Upgrade function lets you upgrade the ExtremeWare software or BootROM image on Extreme devices or to Extreme modules that include software.

To view the Upgrade display for a selected device group or device:

- Right-click on the device group or device, then select **Upgrade** from the pop-up menu that appears

This opens the Download Image window. Select the appropriate tab to display the Device window or the Device Slot window.

See “Upgrading Software Images” on page 199 for details on using this feature.

Properties

The Properties function lets you view the attributes for a device group or a device.

To view the Properties display for all device groups:

- Right-click on the Device Groups component, then select **Properties** from the pop-up menu that appears

The Device Groups Properties window appears and displays the number of device groups and the names of the device groups that are known to EPICenter.

To view the Properties display for a selected device group:

- Right-click on the device group, then select **Properties** from the pop-up menu that appears

The Device Group Properties window appears and displays the attributes for the selected device group.

To view the Properties display for a selected device:

- Right-click on the device, then select **Properties** from the pop-up menu that appears

The Device Properties window appears and displays the attributes for the selected device.

See "Displaying Properties" on page 213 for details on using this feature.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new web browser window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

Statistics

The Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7 for details on using this feature.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10 for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

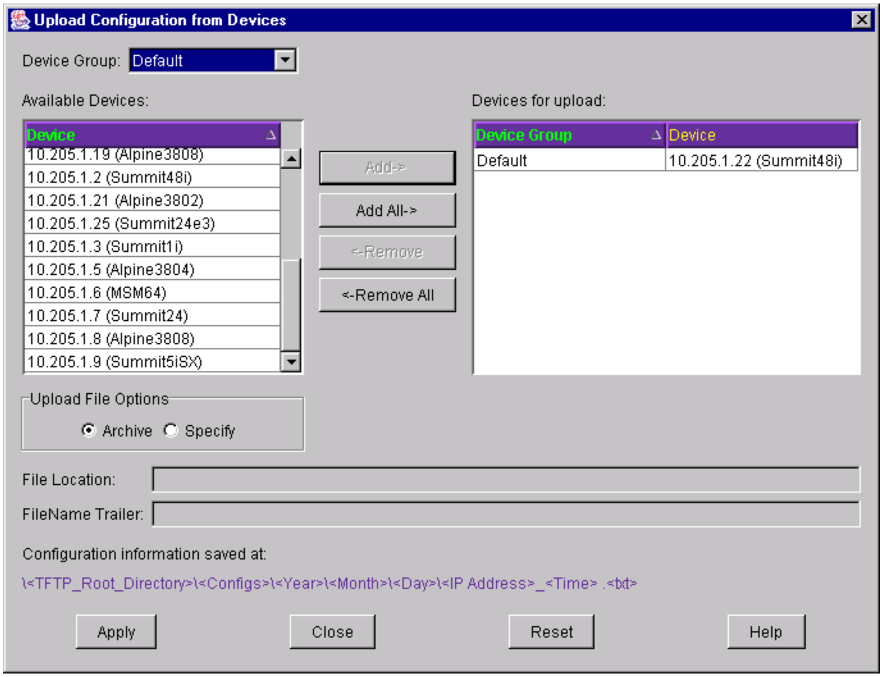
See Chapter 13 for details on using this feature.

Uploading Configurations from Devices

To upload the configuration information from one or more devices, click the **Upload** button at the top of the window.

The **Upload Config from Devices** window appears, as shown in Figure 56.

Figure 56: The Upload Config window



Device Group: Default

Available Devices:

Device
10.205.1.19 (Alpine3808)
10.205.1.2 (Summit48i)
10.205.1.21 (Alpine3802)
10.205.1.25 (Summit24e3)
10.205.1.3 (Summit1i)
10.205.1.5 (Alpine3804)
10.205.1.6 (MSM64)
10.205.1.7 (Summit24)
10.205.1.8 (Alpine3808)
10.205.1.9 (Summit5iSX)

Devices for upload:

Device Group	Device
Default	10.205.1.22 (Summit48i)

Upload File Options

● Archive ○ Specify

Configuration information saved at:

\<TFTP_Root_Directory>\<Configs>\<Year>\<Month>\<Day>\<IP Address>_<Time> .<txt>

To upload device configurations to EPICenter, do the following:

1. Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.
2. From the **Available Devices** list, select the devices from which you want to upload configuration information, then click the **Add->** button.

   If you want to upload from all the devices in the device group, click the **Add All->** button.

   The devices you select will be moved to the **Devices for Upload** list.

   To remove devices from the **Devices for Upload** list, select the devices and click the **<-Remove** button. This moves the selected devices back to the **Available Devices** list. Click **<-Remove All** to move all the devices in the **Devices for Upload** list back to the **Available Devices** list.
3. Specify where the uploaded information should be stored:

a Select **Archive** to create files for each upload under the EPICenter **Configs** directory, in a subdirectory hierarchy organized by year, month, and day. The form of the fully-qualified file names for these files is:

```
<tftp_root>\configs\<year>\<month>\<day>\<device_address>_<time>.txt
```

where *<tftp_root>* is the location of your TFTP server. By default, *<tftp_root>* is *<EPICenter_install_dir>*\user\tftp.

<EPICenter_install_dir> is the EPICenter installation directory, by default epc4_0.

For example, a file uploaded from device Summit24 (10.205.0.25) on September 1, 2000 at 8:06 am, would be saved as follows:

```
EPC4_0\user\tftp\configs\2000\Sept\01\10.205.0.25_0806.txt
```

NOTE

If you have reconfigured your TFTP root directory (see "Configuring the TFTP Server" on page 211), the configs subdirectory will be found directly below (as a child of) your TFTP root directory.

b Select **Specify** to specify your own directory structure and file naming convention relative to the TFTP root's configs subdirectory. The structure will be of the form:

```
<tftp_root>\configs\<file_location>\
<device_address>_<filename_trailer>.txt
```

In the **File Location** field, specify the *<file_location>* path where the files should be stored, starting from the **configs** subdirectory. DO NOT include *<tftp_root>*\configs as part of the path; just include the remaining path.

In the **FileName Trailer** field, you can specify a string to be appended to the device address to create a file name. For example, if you specify a file name trailer of "week_8_backup" then the filename for the device Summit24 would be 10.205.0.25_week_8_backup.txt.

4 Click **Apply** to start the upload process.

The **Reset** button restores all the fields to their initial state.

Archiving Configuration Settings

You can schedule the uploading (archiving) of configuration information so that it is done automatically, either once a day or once a week. By default, all new devices added to the EPICenter database use the global schedule and do not have a set schedule for uploading configuration information.

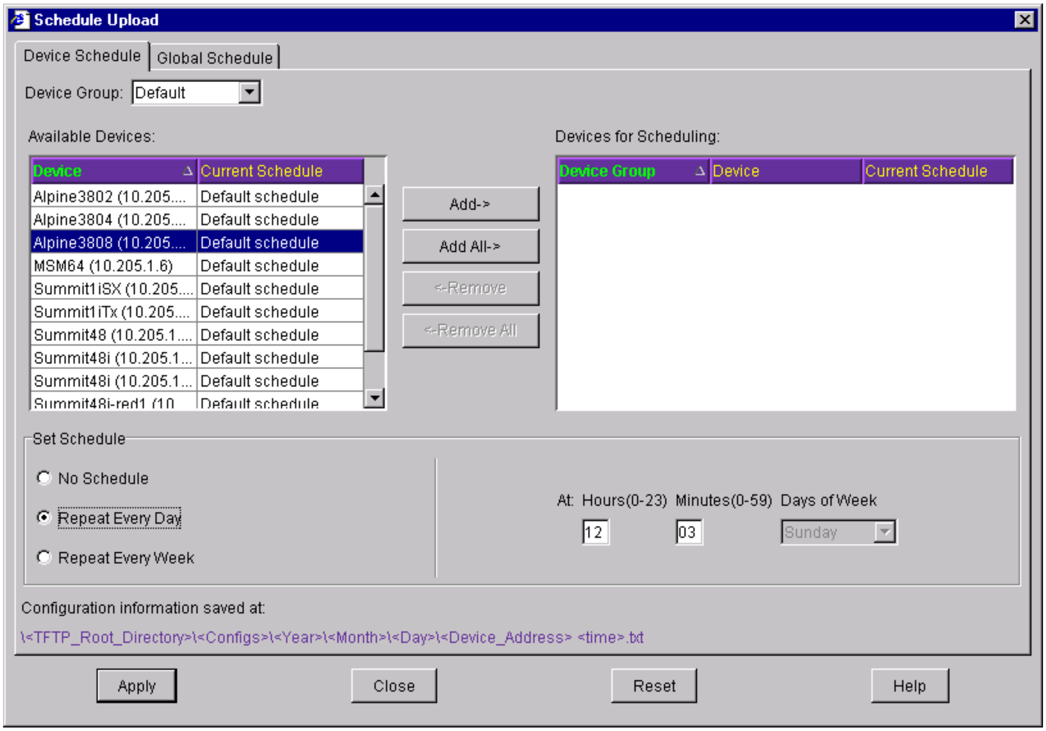
In the Admin applet, you can specify whether the device configurations are uploaded only when the device configuration has changed, or if switch configurations are always uploaded at the scheduled archive time. See Chapter 16 for more information about how to set the uploading configuration settings.

Device Schedules

A device, a set of devices, or one or more device groups can be scheduled for archive individually and independently of other device upload schedules. To schedule device configuration archive uploads, click the **Archive** button at the top of the window.

The **Schedule Upload** window appears, as shown in Figure 57.

Figure 57: Schedule Upload window



Device Group: Default

Available Devices:

Device	Current Schedule
Alpine3802 (10.205....	Default schedule
Alpine3804 (10.205....	Default schedule
Alpine3808 (10.205....	Default schedule
MSM64 (10.205.1.6)	Default schedule
Summit1iSX (10.205....	Default schedule
Summit1iTx (10.205....	Default schedule
Summit48 (10.205.1....	Default schedule
Summit48i (10.205.1....	Default schedule
Summit48i (10.205.1....	Default schedule
Summit48i-red1 (10....	Default schedule

Devices for Scheduling:

Device Group	Device	Current Schedule

Set Schedule

○ No Schedule

● Repeat Every Day

○ Repeat Every Week

At: Hours(0-23) 12 Minutes(0-59) 03 Days of Week Sunday

Configuration information saved at:

\<TFTP_Root_Directory>\<Configs>\<Year>\<Month>\<Day>\<Device_Address> <time>.txt

To schedule the upload of device configurations, do the following:

1. Select the appropriate tab to display the Device Schedule window.
2. Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.
3. From the **Available Devices** list, select the devices for which you want to schedule the upload of configuration information, then click the **Add->** button.

   If you want to create the same schedule for all the devices in the device group, click the **Add All->** button.

   The devices you select will be moved to the **Devices for Scheduling** list.

   To remove devices from the **Devices to Scheduling** list, select the devices and click the **<-Remove** button. This moves the selected devices back to the **Available Devices** list. Click **<-Remove All** to move all the devices in the **Devices for Scheduling** list back to the **Available Devices** list.

4 Specify the schedule you want:

No Schedule will remove any schedule associated with the selected device(s).

Repeat Every Day indicates that the upload should be done every day at the specified time. When you select this option, you will be able to specify the time of day (the hour and minutes) at which the upload should be done.

Repeat Every Week indicates that the upload should be done every week at the specified day and time. When you select this option, you will be able to specify the time of day (the hour and minutes), and the day of the week at which the upload should be done.

5 Click **Apply** to have the upload schedule set for these devices.

Click the **Reset** button to return the schedule to its state when you initiated this window.

Global Schedules

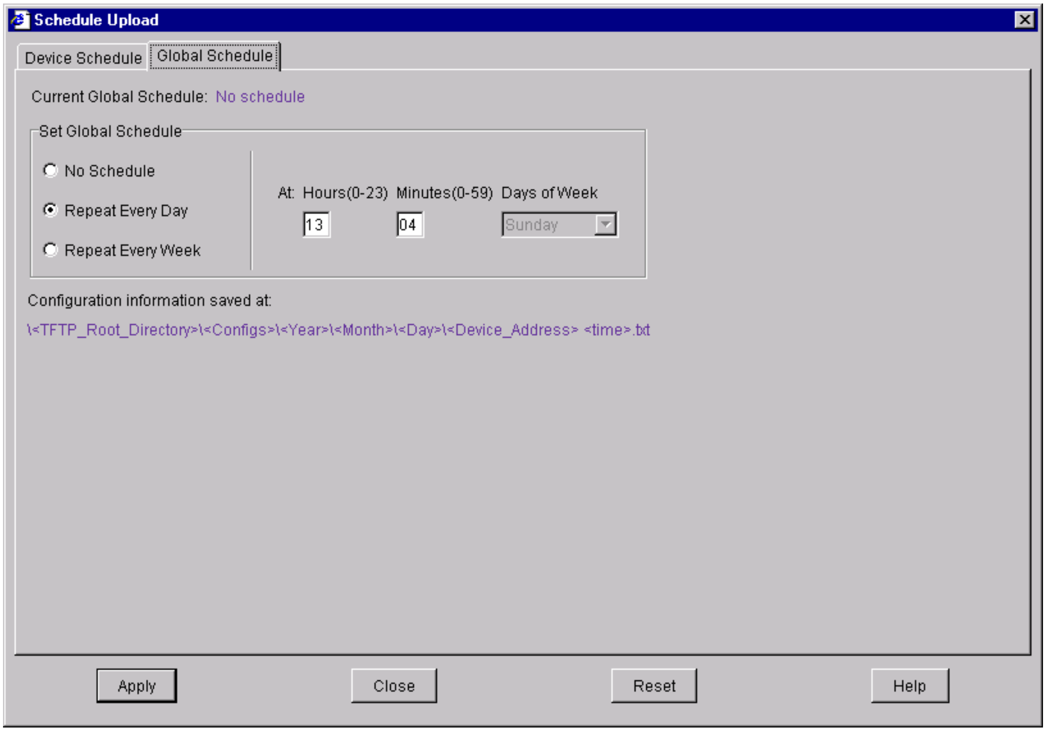
When you use the Inventory Manager to add devices to the EPICenter database, the devices use the global schedule for configuration uploads. If you have a device or series of devices that require a configuration upload schedule that differs from the global schedule, see “Device Schedules” on page 190 for information on how to create an individual configuration schedule. You can modify global configuration uploads for all devices that use the global schedule by clicking the **Archive** button at the top of the window.

The Schedule Upload window appears, as shown in Figure 57.

To schedule the global upload of device configurations, do the following:

1 Select the appropriate tab to display the Global Schedule window, as shown in Figure 58.

Figure 58: Global Schedule Upload window



Schedule Upload

Device Schedule | Global Schedule

Current Global Schedule: No schedule

Set Global Schedule

○ No Schedule

● Repeat Every Day

○ Repeat Every Week

At: Hours(0-23) 13 Minutes(0-59) 04 Days of Week Sunday

Configuration information saved at:

\<TFTP_Root_Directory>\<Configs>\<Year>\<Month>\<Day>\<Device_Address> <time>.txt

2 Specify the global schedule you want:

No Schedule will remove any schedule associated with the device(s) that use the global schedule.

Repeat Every Day indicates that the upload should be done every day at the specified time for devices that use the global schedule. When you select this option, you will be able to specify the time of day (the hour and minutes) at which the upload should be done on.

Repeat Every Week indicates that the upload should be done every week at the specified day and time for devices that use the global schedule. When you select this option, you will be able to specify the time of day (the hour and minutes), and the day of the week at which the upload should be done.

3 Click **Apply** to set the global upload schedule for the devices that do not have a set configuration schedule.

Click the **Reset** button to return the schedule to its state when you initiated this window.

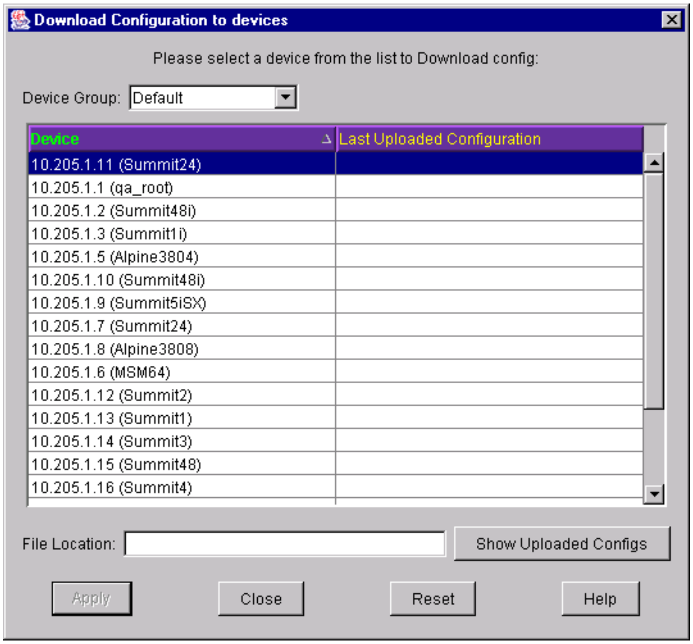
Downloading Configuration Information to a Device

Downloading a configuration does a complete configuration download, resetting the current switch configuration and replacing it entirely with the new downloaded configuration. The switch will be rebooted automatically after the download has completed. Configuration downloads are supported on Extreme Networks devices and Cisco devices running IOS 12.0 and above.

To download saved configuration information to a device, click the **Download** button at the top of the window.

The **Download Config to a device** window appears, as shown in Figure 59.

Figure 59: Download configuration window



Download Configuration to devices

Please select a device from the list to Download config:

Device Group: Default

Device	Last Uploaded Configuration
10.205.1.11 (Summit24)	
10.205.1.1 (qa_root)	
10.205.1.2 (Summit48i)	
10.205.1.3 (Summit1i)	
10.205.1.5 (Alpine3804)	
10.205.1.10 (Summit48i)	
10.205.1.9 (Summit5iSX)	
10.205.1.7 (Summit24)	
10.205.1.8 (Alpine3808)	
10.205.1.6 (MSM64)	
10.205.1.12 (Summit2)	
10.205.1.13 (Summit1)	
10.205.1.14 (Summit3)	
10.205.1.15 (Summit48)	
10.205.1.16 (Summit4)	

File Location:

To download a configuration to a device, do the following:

1. Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.
2. Select the device from the device list presented. You can only download to one device at a time.

   If configuration information has been uploaded from the device, the file where it was saved is listed in the **Last Uploaded Config** column.
3. In the **File Location** field, type the location and name of the file you want to download, or click the **Show Uploaded Configs** button and select the file to be downloaded.

   The Browse pop-up displays the list of uploaded files for the selected device.

   Click **Reset** to clear all of the selections and to restore the download configuration window to its initial state.
4. To start the download, click the **Download** button.

NOTE

When the download completes, the switch will be rebooted. The EPICenter software does not save the configuration on the device after the reboot. You can use the Telnet applet to open a telnet session on the affected devices and execute a save configuration command.

Downloading an Incremental Configuration to Devices

You can create or designate a set of configuration information to be used as a baseline configuration for devices running ExtremeWare 6.0 or later. Using an incremental download to execute a baseline configuration provides a known, “standard” configuration that you can use to ensure that devices are configured into a known state. For example, if you want to set a group of devices to the same basic configuration, you can first set individual IP addresses on each device, and then use the incremental configuration download feature to set all other configuration settings on all devices to a common state.

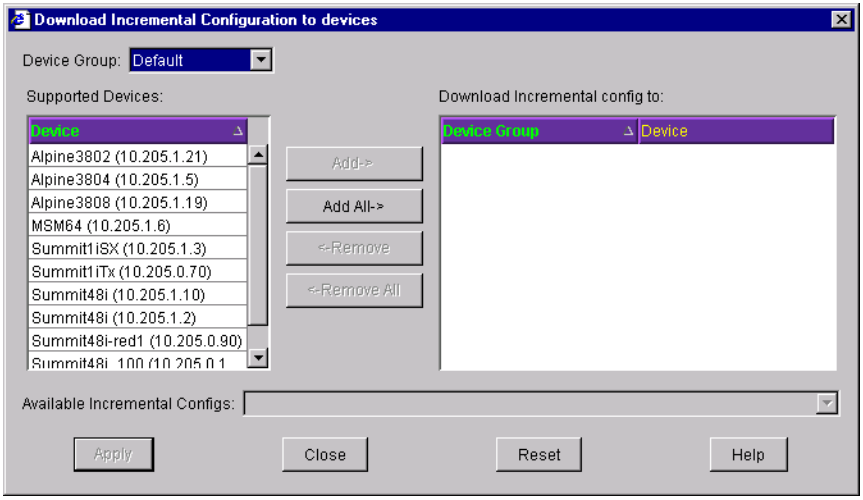
An incremental configuration download executes only the commands specified in the incremental download file. It does not reset the switch configuration or replace any other configuration settings that may exist in the device. No reboot is necessary. The EPICenter incremental download does not save the configuration; you must do so.

Incremental downloads are supported on Extreme Networks devices running ExtremeWare 6.0 or later and on Cisco devices running IOS 12.0 or later.

To download an incremental configuration to a device, click the **Increment** button at the top of the window.

The **Download Incremental Config To Devices** window appears, as shown in Figure 60.

Figure 60: Download incremental configuration window



Download Incremental Configuration to devices

Device Group: Default

Supported Devices:

Device
Alpine3802 (10.205.1.21)
Alpine3804 (10.205.1.5)
Alpine3808 (10.205.1.19)
MSM64 (10.205.1.6)
Summit1iSX (10.205.1.3)
Summit1iTx (10.205.0.70)
Summit48i (10.205.1.10)
Summit48i (10.205.1.2)
Summit48i-red1 (10.205.0.90)
Summit48i_100 (10.205.0.1

Download Incremental config to:

Device Group	Device

Available Incremental Configs:

From this window, do the following:

1. Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.
2. From the **Supported Devices** list, select the devices for which you want to download the baseline configuration, then click the **Add->** button.

   If you want to download the baseline configuration to all the devices in the device group, click the **Add All->** button.

   The devices you select will be moved to the **Download Incremental Config to:** list.

   To remove devices from the **Download Incremental Config to:** list, select the devices and click the **<-Remove** button. This moves the selected devices back to the **Supported Devices** list. Click **<-Remove All** to move all the devices in the **Download Incremental Config to:** list back to the **Supported Devices** list.
3. Select the baseline configuration you want to download from the pull-down list in the **Available Incremental Configs** field.
4. Click **Apply** to start the baseline download to the selected device.

NOTE

The EPICenter software does not save the configuration on the device after the download. You can use the Telnet applet to open a telnet session on the affected devices and execute a save configuration command.

NOTE

The Configuration Manager will display an error if you attempt an incremental download on a switch running a version of ExtremeWare prior to 6.0.

Creating an Incremental Configuration File

The purpose of an incremental configuration is to provide a set of known, standard configuration settings you can download to a device to restore it or initialize it to a known software state.

To create an incremental configuration, you can start with a configuration file you have uploaded, or one of the standard configuration. You can edit it, if needed, to reflect the basic configuration settings you want to use as your baseline configuration, and to remove settings you don’t want changed.

Incremental configuration files must be stored in the `<`*`tftp_root`*`>\baselines` directory, where `<`*`tftp_root`*`>` is the location of your TFTP server. By default, `<`*`tftp_root`*`>` is `<`*`EPICenter_install_dir`*`>\user\tftp`.

`<`*`EPICenter_install_dir`*`>` is the EPICenter installation directory, by default `epc4_0`. Thus, if you installed the EPICenter server under Windows NT using the default installation path, your incremental configurations must be in `epc4_0\user\tftp\baselines`, unless you have reconfigured your TFTP root directory.

You can name an incremental configuration file any way you want.

NOTE

If you have reconfigured your TFTP root directory (see “Configuring the TFTP Server” on page 211), the baselines subdirectory will be found directly below (as a child of) your TFTP server root directory.

Upgrading Software Images

The ExtremeWare software image contains the executable code that runs on the switch and on certain Extreme modules that include software. An image comes pre-installed from the factory on every switch and on certain modules. You can upgrade this image by downloading a new version through the Configuration Manager. You can download the image into either the primary or secondary image, and specify whether the switch should be rebooted to use the new image.

The BootROM software initializes certain important switch variables during the switch boot process.

CAUTION

If a BootROM upgrade does not complete successfully, it could prevent the switch from booting.

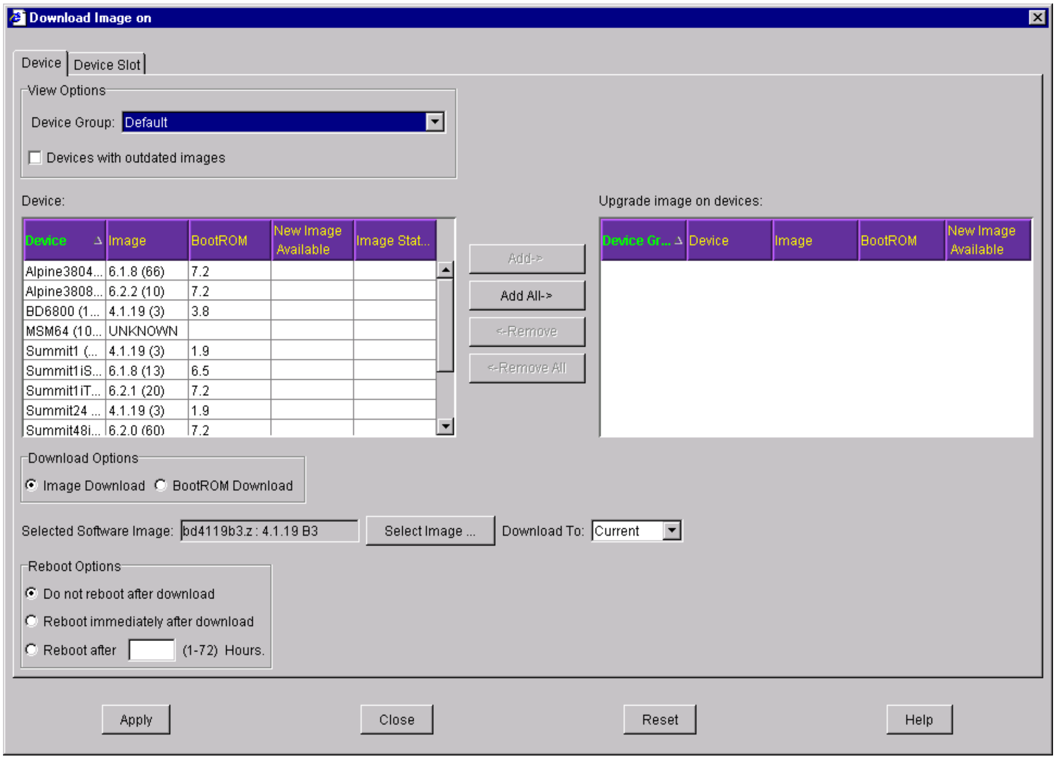
When you perform a software image upgrade, EPICenter automatically creates a backup of your existing switch configuration. Switch configuration files are saved as text files in the `<tftp_root>\configs` directory, where `<tftp_root>` is the location of your TFTP server. By default, `<tftp_root>` is `<EPICenter_install_dir>\user\tftp`. The name of the configuration file contains the switch IP address and a timestamp, and the file is saved in folders according to the day, month, and year of the upgrade.

Upgrading Images on Devices

To download a new ExtremeWare software or BootROM image to an Extreme device, click the **Upgrade** button at the top of the window and select the Device tab.

The **Download Image on Device** window appears, as shown in Figure 61.

Figure 61: Download Image on Device window



Device Group: Default

□ Devices with outdated images

Device:

Device	Image	BootROM	New Image Available	Image Stat...
Alpine3804...	6.1.8 (66)	7.2		
Alpine3808...	6.2.2 (10)	7.2		
BD6800 (1...	4.1.19 (3)	3.8		
MSM64 (10...	UNKNOWN			
Summit1 (...	4.1.19 (3)	1.9		
Summit1iS...	6.1.8 (13)	6.5		
Summit1iT...	6.2.1 (20)	7.2		
Summit24 ...	4.1.19 (3)	1.9		
Summit48i...	6.2.0 (60)	7.2		

Upgrade image on devices:

Device Gr...	Device	Image	BootROM	New Image Available

Download Options

● Image Download ○ BootROM Download

Selected Software Image: bd4119b3.z : 4.1.19 B3

Download To: Current

Reboot Options

● Do not reboot after download

○ Reboot immediately after download

○ Reboot after (1-72) Hours.

To download a new software image to one or more Extreme Devices, do the following:

1 Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.

The devices that belong to this group are displayed in the **Device** list.

Click the **Devices with Outdated Images** checkbox to show only devices with images that differ from the image you specified in the **Versions** window.

The entries in the **Image**, **New Image Available**, and **Image Status** columns let you determine which switches have outdated software images.

— The **Image** shows the image currently running in the device.

— The **BootROM** column shows the version of the BootROM running on the device.

— The **New Image Available** information comes from the information you provide in the **Versions** window for devices of this type (see “Specifying the Current

Software Versions”on page 207). If you have not specified a software version in the Versions window, this will be blank.

- **Image Status** shows the status of the image compared to the version shown in the New Image Available column. A green check ✓ indicates that the version running in the device and the New Image Available version are the same. A red X ✗ indicates that the image running in the device differs from the New Image Available version. The status is also shown as a red X if the New Image Available column is blank.

2. From the **Device** list, select the devices you want to upgrade, then click the **Add->** button.

   If you want to upgrade the images on all the displayed devices, click the **Add All->** button.

   The devices you select will be moved to the **Upgrade Image on Devices** list.

   To remove devices from the **Upgrade Image on Devices** list, select the devices and click the **<-Remove** button. This moves the selected devices back to the **Device** list. Click **<-Remove All** to move all the devices in the **Upgrade Image on Devices** list back to the **Device** list.

3. In the **Download Options** box select the type of upgrade you want to perform:

   - Click the **Image Download** button to specify a software image upgrade.
   - Click the **BootROM Download** button to specify a BootROM upgrade.

4. For a software image upgrade do the following:

   a To select the software image you want to download, click the **Image Download** button in the **Download Options** box. This displays the **Selected Software Image** field.

   Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

   For more information about selecting software images, see “Selecting Software Images” on page 206.

NOTE

There are different images for Summit devices and the “i” Series devices. If you try to download an incompatible image, you will receive an error message.

Standard images as shipped by Extreme Networks are provided in the directory `<`*`EPICenter_install_dir`*`>\user\tftp\images` directory (by default `epc4_0\user\tftp\images`) in the Windows operating environment, or `/opt/epc4_0/user/tftp/images` on a Solaris system.

You can check the Extreme Networks web site for the availability of newer software releases.

b Select the download target in the **Download To** field: Current, Primary, or Secondary.

5 For a BootROM upgrade, click the **BootROM Download** button in the **Download Options** box. This displays the **Selected BootROM Image** field.

Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

For more information about selecting BootROM images, see “Selecting Software Images” on page 206.

Standard BootROM images are provided in the directory `<`*`EPICenter_install_dir`*`>\user\tftp\bootrom` directory (by default `epc4_0\user\tftp\bootrom`) in the Windows operating environment, or `/opt/epc4_0/user/tftp/bootrom` on a Solaris system.

6 Indicate whether the devices should be rebooted:

— Click **Do not reboot after download** to indicate the devices should not be rebooted.

— Click **Reboot immediately after download** to indicate the devices should be rebooted immediately after the download.

— Click **Reboot after** to indicate the devices should be rebooted at a later time, and enter the number of hours (up to 72) to wait before doing the reboot.

7 Click **Apply** to start the software download to the selected devices.

Click Reset to return the window to its initial state (removing all devices from the **Upgrade Image on Devices** list, removing all image selections, and so on).

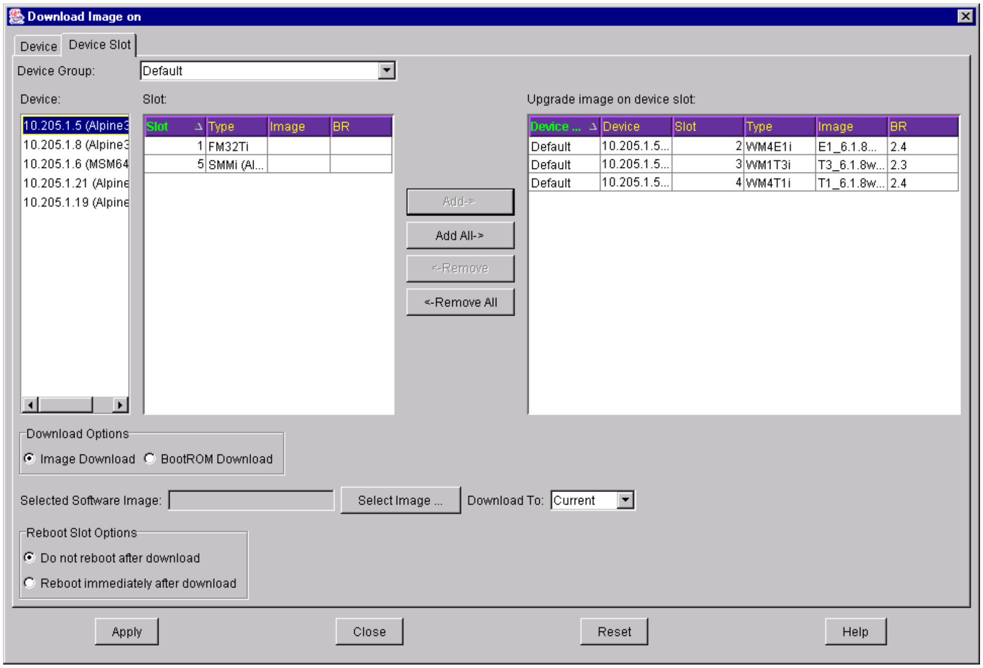
8 When the upgrade process has completed, click **Close** to close the **Download Image on Device** window.

Upgrading Slot Images on Modular Devices

To download a new ExtremeWare software or BootROM image to an Extreme module, click the **Upgrade** button at the top of the window and select the Device Slot tab.

The **Download Image on Device Slot** window appears, as shown in Figure 62.

Figure 62: Download Image on Device Slot window



Device Group: Default

Device:

- 10.205.1.5 (Alpine3
- 10.205.1.8 (Alpine3
- 10.205.1.6 (MSM64
- 10.205.1.21 (Alpine
- 10.205.1.19 (Alpine

Slot:

Slot	Type	Image	BR
1	FM32Ti		
5	SMMi (Al...		

Upgrade image on device slot:

Device ...	Device	Slot	Type	Image	BR
Default	10.205.1.5...	2	WM4E1i	E1_6.1.8...	2.4
Default	10.205.1.5...	3	WM1T3i	T3_6.1.8w...	2.3
Default	10.205.1.5...	4	WM4T1i	T1_6.1.8w...	2.4

Download Options

● Image Download ○ BootROM Download

Selected Software Image:

Download To: Current

Reboot Slot Options

● Do not reboot after download

○ Reboot immediately after download

To download a new software image to one or more slots in Extreme modular devices, do the following:

1 Select a device group or **All Devices** from the drop-down menu in the **Device Group** field.

Regardless of the number of devices that are members of a device group, only Extreme modular devices are displayed in the **Device** list.

The **Slot** list displays information about the slots in the selected modular device.

— **Slot** shows the number of the slot in the device.

— **Type** shows the type of module that is installed in the slot. If a module is not installed in the slot, the **Type** field shows the word Empty.

— **Image** shows the ExtremeWare software version that is currently installed in the module, if applicable.

— **BR** shows the BootROM image that is currently installed in the module, if applicable.

NOTE

*If the **Image** and **BR** columns are empty, the module does not contain a special ExtremeWare software version or BootROM image and does not support a software download.*

2 To upgrade modules, select a device from the **Device** list. A list of the modules installed in the device is displayed in the **Slot** list. From the **Slot** list, select the module you want to upgrade then click the **Add->** button.

If you want to upgrade the images on all of the displayed modules that support software, click the **Add All->** button.

NOTE

If you try to download an ExtremeWare software image or BootROM image on a module that does not support those images, you will receive an error message.

The modules you select will be moved to the **Upgrade Image on device slot** list.

To remove modules from the **Upgrade Image on device slot** list, select the module and click the **<-Remove** button. This moves the selected modules back to the **Slot** list. Click **<-Remove All** to move all of the modules in the **Upgrade Image on device slot** list back to the **Slot** list.

3 In the **Download Options** box, select the type of upgrade you want to perform:

— Click the **Image Download** button to specify a software image upgrade.

— Click the **BootROM Download** button to specify a BootROM upgrade.

4 For a software image upgrade, do the following:

a To select the software image you want to download, click the **Image Download** button in the **Download Options** box. This displays the **Selected Software Image** field.

Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

For more information about selecting software images, see “Selecting Software Images” on page 206.

NOTE

Some Alpine modules and BlackDiamond modules require a special ExtremeWare software image that only runs on that particular module. If you try to download an incompatible image, you will receive an error message.

Standard images as shipped by Extreme Networks are provided in the directory `<`*`EPICenter_install_dir`*`>\user\tftp\slotImages` directory (by default `epc4_0\user\tftp\slotImages)` in the Windows operating environment, or `/opt/epc4_0/user/tftp/slotimages` on a Solaris system.

You can check the Extreme Networks web site for the availability of newer software releases.

b Select the download target in the **Download To** field: Current, Primary, or Secondary.

5 For a BootROM upgrade, click the **BootROM Download** button in the **Download Options** box. This displays the **Selected BootROM Image** field.

Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

For more information about selecting BootROM images, see “Selecting Software Images” on page 206.

NOTE

Some Alpine modules and BlackDiamond modules require a special BootROM image that only runs on that particular module. If you try to download an incompatible image, you will receive an error message.

Standard BootROM images are provided in the directory `<`*`EPICenter_install_dir`*`>\user\tftp\slotBootRom` directory (by default `epc4_0\user\tftp\slotBootRom`) in the Windows operating environment, or `/opt/epc4_0/user/tftp/slotbootrom` on a Solaris system.

6 Indicate whether the slots should be rebooted:

— Click **Do not reboot after download** to indicate the slots should not be rebooted.

— Click **Reboot immediately after download** to indicate the slots should be rebooted immediately after the download.

7 Click **Apply** to start the software download to the selected modules.

Click **Reset** to return the window to its initial state (removing all modules from the **Upgrade Image on device slot** list, removing all image selections, and so on).

8 When the upgrade process has completed, click **Close** to close the **Download Image on device slot** window.

Selecting Software Images

EPICenter makes it easy for you to select and download ExtremeWare software images or BootROM images to devices or device slots in modular devices.

To select ExtremeWare software images:

1 From the **Download Image on** window, select the appropriate tab to display the Device or Device Slot options.

2 Select the devices or device slots you want to update.

3 In the **Download Options** box, click the **Image Download** button.

4 Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

The **Select Software Image** window displays the following information in a tabular format:

- The **Name** column lists the name of the ExtremeWare software build.
- The **Version** column lists the version of the ExtremeWare software.
- The **Description** columns lists additional information about the software. For example, if the software is available for *"i"* series devices only, you may see a notation in the Description column.

If you select a software image and click the **Close** button to exit the **Select Software Image** window, the software image is displayed in the **Selected Software Image** field.

To select BootROM images:

1 From the **Download Image on** window, select the appropriate tab to display the Device or Device Slot options.

2 Select the devices or device slots you want to update.

3 In the **Download Options** box, click the **BootROM Download** button.

4 Click the **Select Image...** button to display the **Select Software Image** window. Select the software image you want to download from the **Select Software Image** window and click **OK**.

The **Select Software Image** window displays the following information in a tabular format:

- The **Name** column lists the name of the BootROM image.
- The **Version** column lists the version of the BootROM image.
- The **Description** columns lists additional information about the software. For example, if the software is available for Summit series devices only, you may see a notation in the Description column.

If you select a BootROM image and click the **Close** button to exit the **Select Software Image** window, the BootROM image is displayed in the **Selected BootROM Image** field.

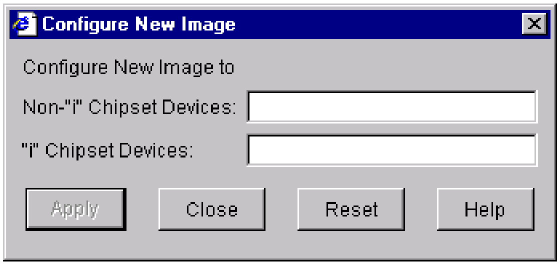
Specifying the Current Software Versions

The **Versions** window lets you specify the current version of the ExtremeWare software for pre-"i" Series devices (Summits/Black Diamonds) and "i" Series devices.

This information is used by the EPICenter software to determine whether an individual device is running the version you have specified as the "current version." This is the version that appears in the **New Image Available** column in the **Download Image on Device** window.

Click the **Versions** button at the top of the window to display the **Configure New Image** window, as shown in Figure 63.

Figure 63: Configure New Image window



Enter the version information into the appropriate field. The version information is the version, release, and build number (in parentheses) associated with a specific ExtremeWare software release. For example, for a Summit device this could be a version such as 4.1.20 (3). For the “*i*” chipset devices, it should be 6.1.7 (9) or later. For more information about current ExtremeWare versions, go to the Extreme Networks technical support page at http://www.extremenetworks.com/support/techsupport.asp.

NOTE

You must specify the version exactly in its correct form, including periods, spaces, and parentheses. For example, version 6.1.7 b9 must be specified as “6.1.7 (9)”, with a space between the 7 and the “(“. The version names are always in the form #.#.#_(#) where # is a numeric, and _ indicates a space.

Performing a Live Software Update

The **Live Update Software Images** window displays a list of available software and allows you to connect directly to Extreme Networks to download the most current ExtremeWare software images and BootROM images to your local EPICenter server. After you download the new images, you can use the images to upgrade your managed devices and modules. Before you can download the software images, you must have a current support contract as well as a user name and password to obtain access to the Extreme Networks server.

Downloading the software or BootROM images from Extreme Networks does not automatically upgrade the devices with the new images. Depending on the software image you downloaded, the image is placed in one of the following directories:

- Device images—`<EPICenter_install_dir>\user\tftp\images` (by default `epc4_0\user\tftp\images` in the Windows operating environment) or `/opt/epc4_0/user/tftp/images` on a Solaris system
- Device BootROM images—`<EPICenter_install_dir>\user\tftp\bootrom` (by default `epc4_0\user\tftp\bootrom` in the Windows operating environment) or `/opt/epc4_0/user/tftp/bootrom` on a Solaris system
- Slot images—`<EPICenter_install_dir>\user\tftp\slotImages` (by default `epc4_0\user\tftp\slotImages` in the Windows operating environment) or `/opt/epc4_0/user/tftp/slotimages` on a Solaris system

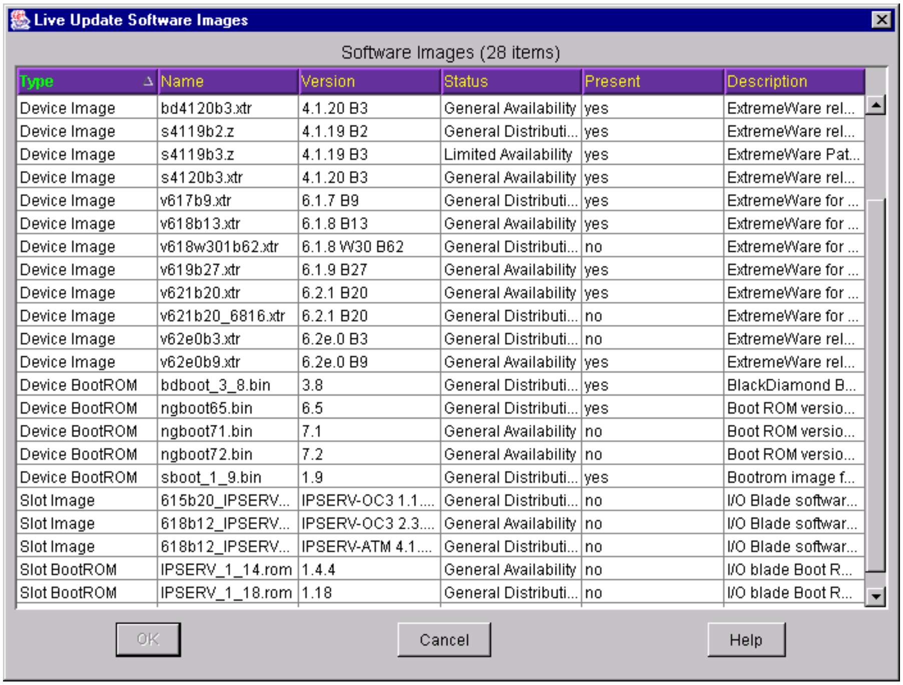
- Slot BootROM images—`<EPICenter_install_dir>\user\tftp\slotBootRom` (by default `epc4_0\user\tftp\slotBootRom` in the Windows operating environment) or `/opt/epc4_0/user/tftp/slotbootrom` on a Solaris system.

Obtaining New Software Images

To obtain a current software image, do the following:

1 Click the **Update** button at the top of the window to display the **Live Update Software Images** window, as shown in Figure 64.

Figure 64: Live Update Software Images window



Live Update Software Images

Software Images (28 items)

Type	Name	Version	Status	Present	Description
Device Image	bd4120b3.xtr	4.1.20 B3	General Availability	yes	ExtremeWare rel...
Device Image	s4119b2.z	4.1.19 B2	General Distributi...	yes	ExtremeWare rel...
Device Image	s4119b3.z	4.1.19 B3	Limited Availability	yes	ExtremeWare Pat...
Device Image	s4120b3.xtr	4.1.20 B3	General Availability	yes	ExtremeWare rel...
Device Image	v617b9.xtr	6.1.7 B9	General Distributi...	yes	ExtremeWare for ...
Device Image	v618b13.xtr	6.1.8 B13	General Availability	yes	ExtremeWare for ...
Device Image	v618w301b62.xtr	6.1.8 W30 B62	General Distributi...	no	ExtremeWare for ...
Device Image	v619b27.xtr	6.1.9 B27	General Availability	yes	ExtremeWare for ...
Device Image	v621b20.xtr	6.2.1 B20	General Availability	yes	ExtremeWare for ...
Device Image	v621b20_6816.xtr	6.2.1 B20	General Distributi...	no	ExtremeWare for ...
Device Image	v62e0b3.xtr	6.2e.0 B3	General Distributi...	no	ExtremeWare rel...
Device Image	v62e0b9.xtr	6.2e.0 B9	General Availability	yes	ExtremeWare rel...
Device BootROM	bdboot_3_8.bin	3.8	General Distributi...	yes	BlackDiamond B...
Device BootROM	ngboot65.bin	6.5	General Distributi...	yes	Boot ROM versio...
Device BootROM	ngboot71.bin	7.1	General Availability	no	Boot ROM versio...
Device BootROM	ngboot72.bin	7.2	General Availability	no	Boot ROM versio...
Device BootROM	sboot_1_9.bin	1.9	General Distributi...	yes	Bootrom image f...
Slot Image	615b20_IPSERV...	IPSERV-OC3 1.1....	General Distributi...	no	I/O Blade softwar...
Slot Image	618b12_IPSERV...	IPSERV-OC3 2.3....	General Availability	no	I/O Blade softwar...
Slot Image	618b12_IPSERV...	IPSERV-ATM 4.1....	General Distributi...	no	I/O Blade softwar...
Slot BootROM	IPSERV_1_14.rom	1.4.4	General Availability	no	I/O blade Boot R...
Slot BootROM	IPSERV_1_18.rom	1.18	General Distributi...	no	I/O blade Boot R...

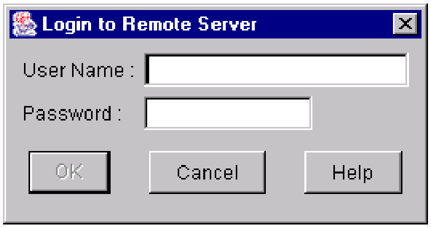
- The **Type** column lists whether the image is a version of ExtremeWare software or a version of BootROM software.
- The **Name** column lists the name of the software build.
- The **Version** column lists the version number of the software.
- The **Status** column lists whether the software is a general availability software release.

- The **Present** column lets you know if current versions of software are available on your local system in the following directories (where `<tftp_root>` is the location of your TFTP server): `<tftp_root>/images`, `<tftp_root> bootrom`, `<tftp_root>SlotImages`, or `<tftp_root>/slotBootRom`, or if the software is only available remotely, directly from Extreme Networks. If you see **yes**, the software is available from EPICenter, and you have the most current release of software. If you see **no**, the software is available from Extreme Networks, and you do not have the most current release of software.
- The **Description** column provides a description of the software. For example, if the software is intended for a Summit device, you will see an explanation that tells you the software is for the Summit product line. Use the description information to determine the type of device or module the software is intended for.

2 Select the device or slot image you want to update. You can select more than one image.

3 Click **OK** to display the **Login to Remote Server** window, as shown in Figure 65.

Figure 65: Login to Remote Server window



4 Enter your support user name in the **User Name** field and password in the **Password** field to access the Extreme Networks server.

NOTE

You must have a current support contract as well as a user name and password to obtain access to the Extreme Networks server

5 Click **OK** to log into the Extreme Networks server.

A **Messages From Server** dialog box appears and displays the status of your request. Click **OK** to close the dialog box.

6 Click **Cancel** to close the window.

Configuring the TFTP Server

If you already have a TFTP server installed on the system where the EPICenter server is running, you may choose to use that TFTP server instead of the one provided with EPICenter. This is the server that actually does the downloading and uploading from the devices.

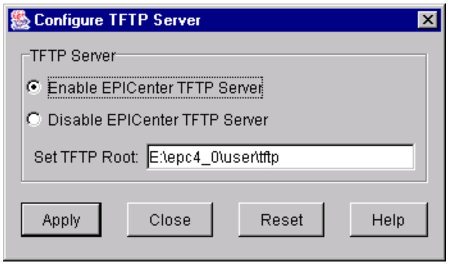
NOTE

In EPICenter 4.0, the Configuration Manager can cause multiple devices to contact the TFTP server at once to perform upload or download operations. Some third party TFTP servers can have problems accepting multiple TFTP requests. If you are running a third party TFTP server and this happens, disable the TFTP server and use the EPICenter TFTP server.

The **Server** function lets you enable or disable the embedded TFTP server, and specify an alternate path for the location of the server.

Click the **TFTP** button at the top of the window to display the **Configure TFTP Server** window, as shown in Figure 66.

Figure 66: Configure TFTP Server window



Configure TFTP Server

TFTP Server

● Enable EPICenter TFTP Server

○ Disable EPICenter TFTP Server

Set TFTP Root: E:\epc4_0\user\tftp

By default, the embedded TFTP server is enabled.

- Click the **Disable EPICenter TFTP Server** button to disable the server.
- Click the **Enable EPICenter TFTP Server** button to enable the server.

NOTE

You cannot disable the server unless you provide a path to an alternate TFTP server.

- To change the location of the TFTP server root, change the path in the **Set TFTP Root** field.

  By default, the TFTP server is installed in `<epicenter_install_dir>\user\tftp` where `<epicenter_install_dir>` is the directory where the EPICenter server is install. By default, the TFTP server is found in `epc4_0\user\tftp` in the Windows operating environment, or `/opt/epc4_0/user/tftp` on a Solaris system.

EPICenter will create six subdirectories (`baselines`, `bootrom`, `configs`, `images`, `slotImages`, and `slotBootRom`) as children of the directory you specify as the TFTP server root.

NOTE

If you plan to use this TFTP server with other software, such as the ExtremeWare CLI or for any other purpose, be aware of possible differences in the expected locations of the TFTP server and other components such as ExtremeWare software images or configuration files. See the EPICenter Release Note and Quick Start Guide *for information on any known issues.*

Finding Devices

You can search for a device in the EPICenter database by name, by IP address, or by type of device. This may be useful if you have a large number of devices in your inventory.

To search for a device, follow these steps:

1 Click **Find** at the top of the Configuration Manager page.

2 Enter your search criteria:

You can search for devices by name or by IP address. You can limit the search to a specific device group, or to a specific type of Extreme device. Search criteria can include:

— A device name. Click the **Device Name** button, and enter a complete or partial name in the **Search:** field.

— An IP address. Click the IP Address button and enter a complete or partial IP address in the **Search:** field. You can use the wild card characters * or ? in your search criteria.

***** acts as a wildcard for an entire octet (0-255)

? is a wildcard for a single digit (0-9)

— A device group. Select the device group from the drop-down menu in the device group field. If you do not specify a name or IP address in the Search field, all devices in the device group you select will be found.

— A device type. Select the device type from the drop-down menu in the type field. If you do not specify a name or IP address in the Search field, all devices of the type you select will be found.

3 Click **Find** to search for devices that meet the criteria you have specified. All devices found are listed in the center panel. Information includes the device group in which the device can be found, its name, IP address, and the type of device.

4 Double-click on a device in the results table to highlight the device in the Component Tree, or select a device in the results table and click **OK**, to display the configuration information for that device. If you click **OK**, the search window will close.

5 Click **New Search** to clear all search criteria.

6 Click **Cancel** to close the search window.

Displaying Properties

You can view the properties of a device group, device, slot, or port in the EPICenter database. This section describes how to view properties through the ExtremeView applet.

Device Group Properties

You can view summary information for all device groups, or view information about individual device groups.

To view summary information for all device groups, right-click on the **Device Groups** component and select **Properties** from the pop-up menu.

The Device Groups Properties window appears, showing the All Device Groups display. This displays a list of the current device groups and their descriptions. For more details about this display, see Chapter 4.

You can also view properties for a specific device group. To view properties for a specific device group, right-click on a device group and select **Properties** from the pop-up menu.

The Device Group Properties window appears, showing information about the selected group. This includes the group description, the number of devices in the group, and a list of the devices. For more details about this display, see Chapter 4.

Device Properties

To view properties for a device, right-click on a device in the Component Tree and select **Properties** from the pop-up menu that appears.

The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab

The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab

The **VLAN** tab lists the VLANs configured on the device.

The STP Tab

The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see Chapter 4.

7 Using the Interactive Telnet Application

This chapter describes how to use the Interactive Telnet application for:

- Configuring Extreme devices using Telnet and the ExtremeWare Command Line Interface (CLI)
- Configuring third-party devices using interactive Telnet

Overview of the Interactive Telnet Applet

Users with Administrator or Manager access can view and modify configuration information for Extreme switches (Summit, Alpine, and Black Diamond switches) and third-party devices managed by EPICenter using Telnet and the ExtremeWare Command Line Interface (CLI). You can also use the interactive Telnet capability to view and modify configuration information for third-party devices being managed by EPICenter.

The Telnet application provides two usage modes:

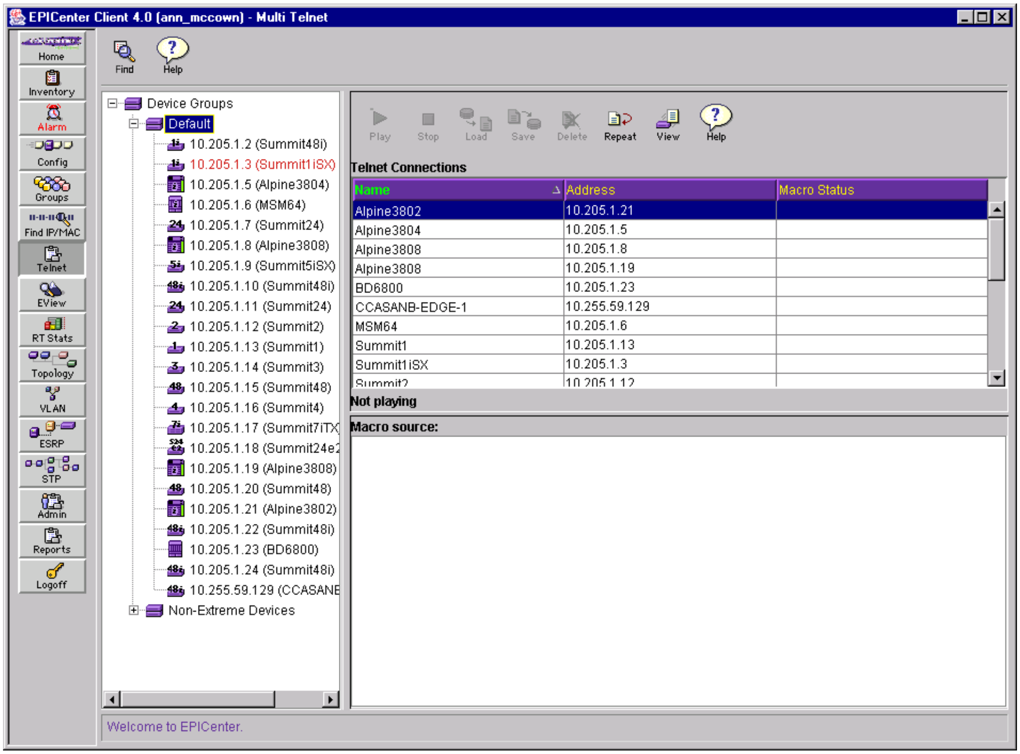
- A Macro View, where you can set up CLI command macros, and run them on multiple switches in a single operation. You set a macro to run repeatedly, and can save them in the EPICenter database for future use.
- An individual session mode, where you can open a session on an individual device, and execute commands just as you would from a standard Telnet interface.

Using Telnet with Extreme Switches

The Telnet applet allows the scripting and playback of groups of CLI commands (macros) to a selection of Extreme switches. You can also use this applet to run an interactive Telnet session on an individual switch, including third-party switches.

Select **Telnet** from the Navigation Toolbar to display the Telnet module. The Telnet Macro view for all of the devices known to EPICenter is displayed, as shown in Figure 67.

Figure 67: The Telnet applet, macro interface



Device Groups
Default
10.205.1.2 (Summit48i)
10.205.1.3 (Summit1iSX)
10.205.1.5 (Alpine3804)
10.205.1.6 (MSM64)
10.205.1.7 (Summit24)
10.205.1.8 (Alpine3808)
10.205.1.9 (Summit5iSX)
10.205.1.10 (Summit48i)
10.205.1.11 (Summit24)
10.205.1.12 (Summit2)
10.205.1.13 (Summit1)
10.205.1.14 (Summit3)
10.205.1.15 (Summit48)
10.205.1.16 (Summit4)
10.205.1.17 (Summit7iTX
10.205.1.18 (Summit24e2
10.205.1.19 (Alpine3808)
10.205.1.20 (Summit48)
10.205.1.21 (Alpine3802)
10.205.1.22 (Summit48i)
10.205.1.23 (BD6800)
10.205.1.24 (Summit48i)
10.255.59.129 (CCASANE
Non-Extreme Devices

Telnet Connections

Name	Address	Macro Status
Alpine3802	10.205.1.21	
Alpine3804	10.205.1.5	
Alpine3808	10.205.1.8	
Alpine3808	10.205.1.19	
BD6800	10.205.1.23	
CCASANB-EDGE-1	10.255.59.129	
MSM64	10.205.1.6	
Summit1	10.205.1.13	
Summit1iSX	10.205.1.3	
Summit2	10.205.1.12	

Not playing

Macro source:

Welcome to EPICenter.

The **Telnet Connections** list displays the switches in all of the device groups, and shows the status of any macros that have run or are being run on the switch. If macros are not supported on an individual switch (true of third party switches and a few Extreme switches) the Macro Status will be "Macros not supported."

NOTE

If a switch is not supported by the EPICenter interactive Telnet feature, it will not appear in the Telnet Connections list, or in the Component Tree in this applet.

When a Telnet session is currently open on a switch, the switch name is highlighted in bold in the list of switches in the Component Tree.

NOTE

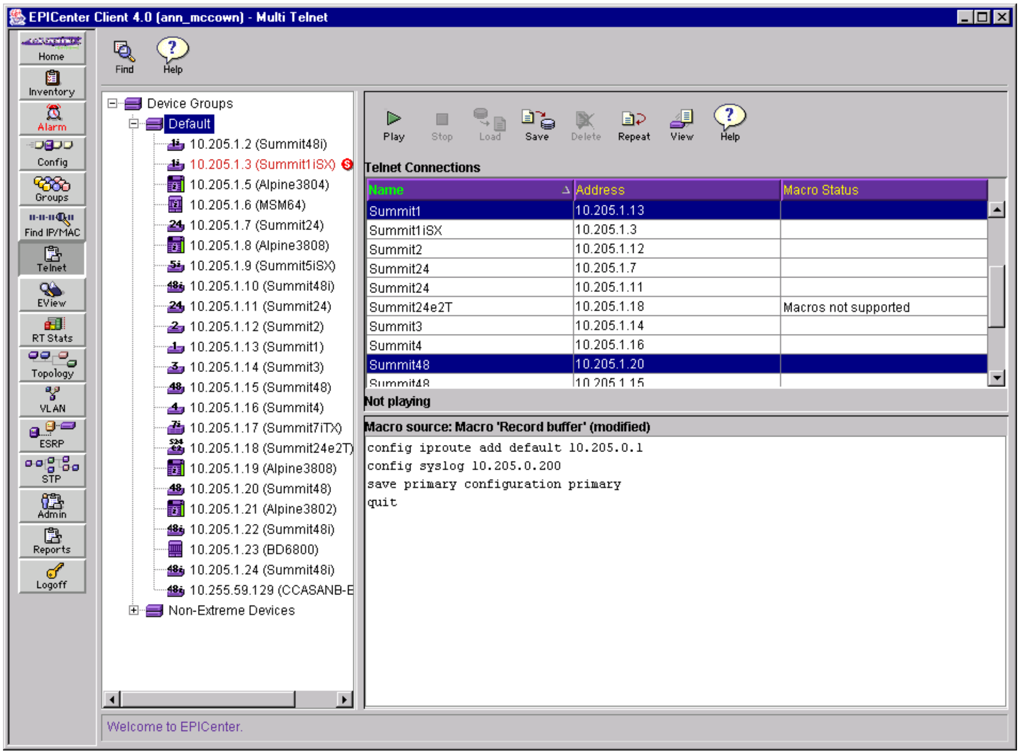
If a switch displayed in the Component Tree has an “S” in a red circle along with the name, that means that the switch is not responding to SNMP requests. However, the switch may still respond to HTTP or Telnet requests.

Running ExtremeWare Command Macros

The lower half of the Macro view page contains the macro command buffer. You can enter a series of ExtremeWare commands into this buffer, which will form a script that can be played to the set of switches you select in the **Telnet Connections** list.

Figure 68 shows a command script entered into the buffer.

Figure 68: The Telnet record and play buffer



Device Groups
- Default
  - 10.205.1.2 (Summit48i)
  - 10.205.1.3 (Summit1iSX)
  - 10.205.1.5 (Alpine3804)
  - 10.205.1.6 (MSM64)
  - 10.205.1.7 (Summit24)
  - 10.205.1.8 (Alpine3808)
  - 10.205.1.9 (Summit5iSX)
  - 10.205.1.10 (Summit48i)
  - 10.205.1.11 (Summit24)
  - 10.205.1.12 (Summit2)
  - 10.205.1.13 (Summit1)
  - 10.205.1.14 (Summit3)
  - 10.205.1.15 (Summit48)
  - 10.205.1.16 (Summit4)
  - 10.205.1.17 (Summit7iTX)
  - 10.205.1.18 (Summit24e2T)
  - 10.205.1.19 (Alpine3808)
  - 10.205.1.20 (Summit48)
  - 10.205.1.21 (Alpine3802)
  - 10.205.1.22 (Summit48i)
  - 10.205.1.23 (BD6800)
  - 10.205.1.24 (Summit48i)
  - 10.255.59.129 (CCASANB-E
- Non-Extreme Devices

Telnet Connections

Name	Address	Macro Status
Summit1	10.205.1.13	
Summit1iSX	10.205.1.3	
Summit2	10.205.1.12	
Summit24	10.205.1.7	
Summit24	10.205.1.11	
Summit24e2T	10.205.1.18	Macros not supported
Summit3	10.205.1.14	
Summit4	10.205.1.16	
Summit48	10.205.1.20	
Summit48	10.205.1.15	

Not playing

Macro source: Macro 'Record buffer' (modified)

```
config iproute add default 10.205.0.1
config syslog 10.205.0.200
save primary configuration primary
quit
```

To create a macro for playback to a set of Extreme switches, follow these steps:

1 In the **Telnet Connections** list, select the set of switches where you want your command macro to run. The switches need not have a Telnet session already open—the macro play function will open a connection and log into the switch.

2 Enter a series of ExtremeWare commands into the macro buffer.

There are three ways to enter commands into the macro buffer:

— Type the commands directly into the buffer.

— Cut or copy commands from another location, either elsewhere in the buffer or from an external document, and paste them into the buffer.

Click the right mouse button anywhere in the macro buffer to display a pop-up edit menu which provides copy and paste functions. You can copy text from within the macro buffer using the copy function from the pop-up menu. From an external document, cut or copy text into the clipboard, then use the paste function from the pop-up edit menu.

— Load a saved macro (see "Saving a Macro in the EPICenter Database" on page 222).

The source of the commands in the macro buffer is indicated by the **Macro Source:** field at the top of the macro buffer panel.

3 To set the macro so that it plays back repeatedly at a specified interval, click the **Repeat** button to display the Macro Repeat pop-up window.

- **a** Check the **Repeating** check-box.
- **b** Enter an interval (in seconds) in the **Repeat Delay (sec)** field.
- **c** Click **OK**.

4 Click **Play** to initiate playback of the macro on the selected switches. This opens a connection to the switch, logs in using the switch login and password as specified in the Inventory Manager, and runs the macro.

If the macro is a repeating macro, it will repeat sequentially on all selected switches until you click **Stop**.

You can execute just a portion of a macro by highlighting just the portion of the macro that you want to execute. Only the selected portion will execute when you initiate the playback. This will not affect saving the macro—the entire macro will be saved even if only a portion is highlighted.

The **Macro Status** column in the **Telnet Connections** table indicates the status of the macro as execution progresses on the selected switches. The states are:

— **Pending**—The macro is intended to run on this switch, but has not yet started.

— **Playing**—The macro is currently running.

— **Stopped**—The macro was stopped before it completed.

— **Complete**—The macro has completed running.

— **Macros Not Supported**—Macros cannot be run on this device (may appear if you select a non-Extreme device or the Summit Px1 or Summit 24e2T/X devices).

— **Failed**—A failure occurred when the macro was run. This is frequently due to an inability to connect to the switch.

CAUTION

Macro play will be automatically stopped if you exit the Telnet applet (by selecting another applet or logging out) while a macro is running.

There are two ways to view the results of the last macro execution on a particular switch:

- You can select the switch in the Telnet Connections list, and click the **View** button at the top of the screen. The View window displays the command output. Click **OK** to close the window.

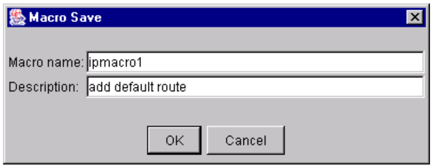
  Or

- You can view the Telnet log file, found in the user subdirectory in the EPICenter root install directory. Log files are created for each switch that runs the macro, and the files are saved according to the switch IP address. The log files display the command output.

Saving a Macro in the EPICenter Database

To save a macro you have defined, click the **Save** button. This displays the **Macro Save** pop-up window (see Figure 69).

Figure 69: Saving a macro to the database



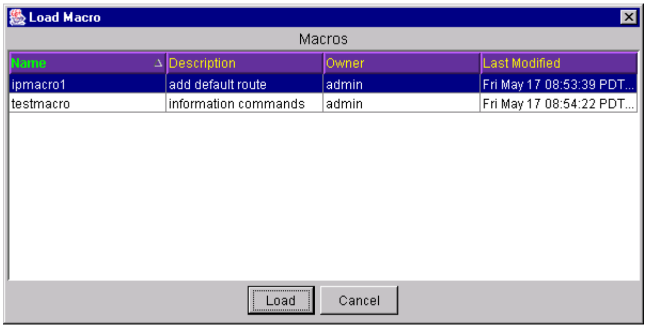
Macro name: ipmacro1
Description: add default route

Enter a name for the macro, an optional description, and click **OK**.

All current contents of the macro buffer will be saved in the database under the name you specify. Selecting a portion of the macro (to playback only part of the macro) does not affect the save function.

To load a saved macro, click the **Load** button. This displays the **Load Macro** pop-up window (see Figure 70).

Figure 70: Loading a macro from the database



Name	Description	Owner	Last Modified
ipmacro1	add default route	admin	Fri May 17 08:53:39 PDT...
testmacro	information commands	admin	Fri May 17 08:54:22 PDT...

The pop-up window displays the names and descriptions of all saved macros, as well as the owner (EPICenter user) who created the macro, and the time at which it was last saved.

Select the macro you want to load and click **Load**. You can select only one macro to load at a time.

The contents of the saved macro will replace any previous contents in the macro buffer.

You can delete a saved macro by clicking the **Delete** button. A pop-up window similar to the Load Macro window appears. Select one or more macros to delete, then click **Delete**.

You will be asked to confirm the deletion.

Examples of ExtremeWare Command Macros

EPICenter supports the use some interactive ExtremeWare commands, such as create, configure, and save, as well as commands that may require you to press the space bar to continue or [Q] to quit. For interactive commands used in a command macro, you need to supply the response to the command in a separate line. The following examples illustrate usage of these commands.

- To create a user account with the name “joesmith” and a password of “2joe3,” enter the following commands:

  ```
  create account user joesmith
  2joe3
  2joe3
  ```

NOTE

If you type a command that requires a password, you need to enter the password twice. In a command macro, unlike an interactive Telnet session, the first “password” sets the password, and the second “password” confirms the password.

- To use the `save` command to save a configuration to the switch, enter the following commands:

```
save
yes
```

- To delete a user-defined STPD domain (stpd2) from the switch, enter the following commands:

```
delete stpd2
yes
```

- To reboot the switch, enter the following commands:

```
reboot
yes
```

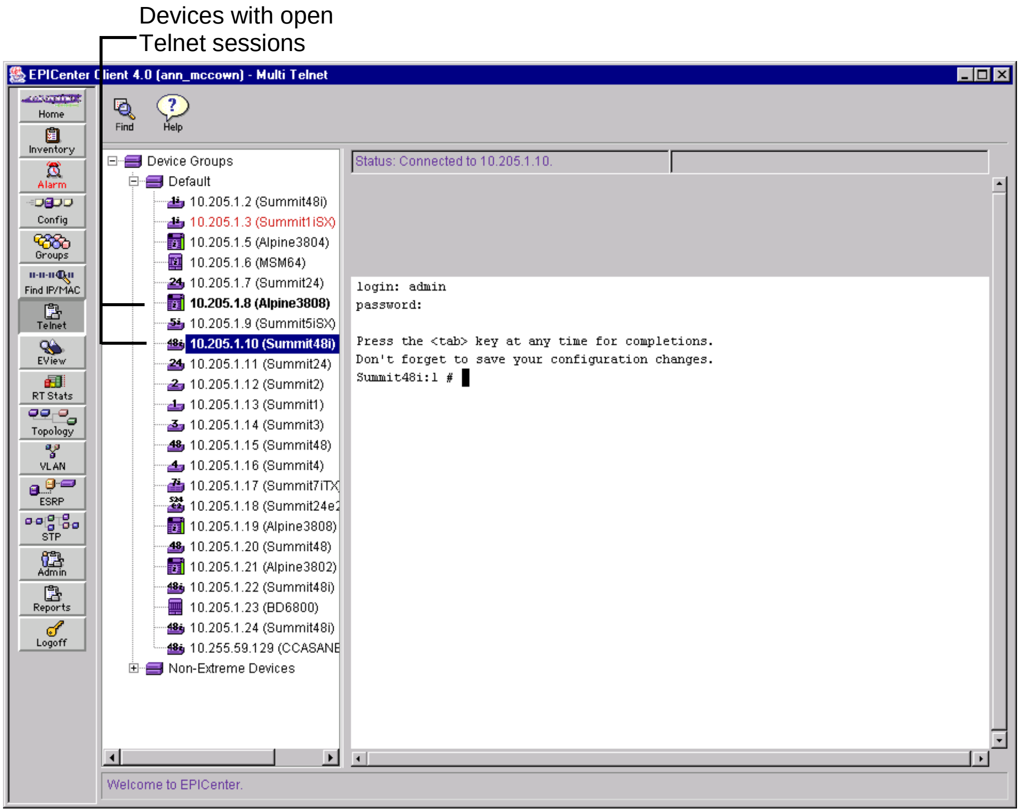
Running a Telnet Session on an Individual Switch

You can open a Telnet session on an individual switch by selecting the switch from the Telnet switch list in the Component Tree. This opens a Telnet session to the selected switch, and then waits for command input, just as with any other Telnet session.

EPICenter allows only five Telnet sessions to be open concurrently. Therefore, if you select more than five switches, EPICenter will open five connections, then close the oldest (the first connection) in order to open a connection on the sixth switch, and so on. Open telnet sessions are indicated by displaying the switch name in bold in the Component Tree.

Any open Telnet sessions will be closed when you leave the Telnet applet to view a different EPICenter applet.

Figure 71: A newly-opened Telnet session



Devices with open Telnet sessions

Status: Connected to 10.205.1.10.

```
login: admin
password:

Press the <tab> key at any time for completions.
Don't forget to save your configuration changes.
Summit48i:1 #
```

Welcome to EPICenter.

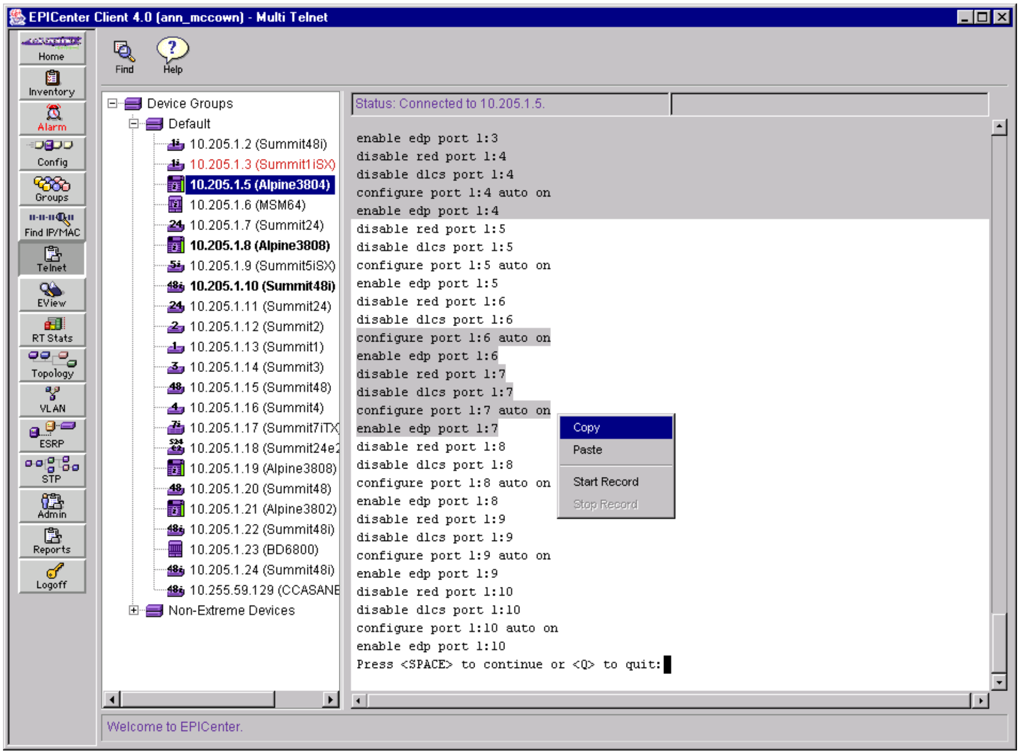
The Telnet session window is a two-tone window—the bottom of the window is white, the top is grey. The last 25 lines of Telnet commands and responses always appear in the white portion of the window. As output grows, the older lines scroll up into the grey portion of the screen. This makes it easy to tell whether you are viewing the most recent Telnet output.

The Telnet session window will display the commands and results from macros that are run on the switch. You can also type in commands individually.

Copy/Paste from an Interactive Telnet Session

A copy and paste function is available within an interactive Telnet session. Copy and paste let you copy from one interactive Telnet session into another interactive session or into the macro buffer. You can also paste commands from an external document into an interactive Telnet session. The copy and paste commands reside on a pop-up menu that you can display using the right mouse button (see Figure 72).

Figure 72: An open Telnet session showing the pop-up edit menu



Status: Connected to 10.205.1.5.

```
enable edp port 1:3
disable red port 1:4
disable dlcs port 1:4
configure port 1:4 auto on
enable edp port 1:4
disable red port 1:5
disable dlcs port 1:5
configure port 1:5 auto on
enable edp port 1:5
disable red port 1:6
disable dlcs port 1:6
configure port 1:6 auto on
enable edp port 1:6
disable red port 1:7
disable dlcs port 1:7
configure port 1:7 auto on
enable edp port 1:7
disable red port 1:8
disable dlcs port 1:8
configure port 1:8 auto on
enable edp port 1:8
disable red port 1:9
disable dlcs port 1:9
configure port 1:9 auto on
enable edp port 1:9
disable red port 1:10
disable dlcs port 1:10
configure port 1:10 auto on
enable edp port 1:10
Press <SPACE> to continue or <Q> to quit:
```

Welcome to EPICenter.

- To copy from an interactive session, highlight the lines you want to copy, click the right mouse button and select **Copy** from the pop-up menu.
- To paste into an interactive Telnet session or into the macro buffer, place the cursor where you want the lines inserted, click the right mouse button and select **Paste** from the pop-up menu.

NOTE

You cannot use the browser cut and paste functions for this purpose.

Macro Recording and Playback from an Interactive Telnet Session

The record function creates a macro by echoing commands that you type in an interactive Telnet session, into the Macro Record/Play Buffer. The record function is controlled by commands from a pop-up menu displayed by using the right mouse button (see Figure 72).

- To start recording a macro, click the right mouse button and select **Start Record** from the pop-up menu

  Everything you type after this is copied into the macro Record/Play Buffer until you select **Stop Record** from the pop-up menu
- To stop recording a macro, click the right mouse button and select **Stop Record** from the pop-up menu

  The commands that are part of the macro are automatically entered into the macro command buffer
- To play the macro on one or more switches, select the **Device Groups** component or the name of a device group in the Component tree, and play back the macro in the main Telnet page as discussed in the section “Running ExtremeWare Command Macros” on page 219

Using Interactive Telnet with Third-Party Devices

You can open an interactive Telnet session on a third-party device and execute commands interactively. Select the switch from the Telnet device list in the Component Tree. This opens a Telnet session to the selected switch, and waits for input as appropriate to the device’s telnet interface. Unlike Telnet to an Extreme Networks switch, it does not log you in to the device. You must log in as required for the device.

You can enter and execute commands using the device’s command line interface. The commands and any resulting output will be displayed in the session window just as if you were running a Telnet session on any other client.

The Telnet session window is a two-tone window—the bottom of the window is white, the top is grey. The last 25 lines of Telnet commands and responses always appear in the white portion of the window. As output grows, the older lines scroll up into the grey portion of the screen. This makes it easy to tell whether you are viewing the most recent Telnet output.

To close the Telnet session, type the appropriate exit command on the command line. The session will be closed automatically when you exit the Telnet applet.

Viewing Device Information from Pop-up Menus

You can select a device group or a device in the Component Tree, then right-click to display a pop-up menu that contains the Properties command. The Properties command displays the attributes for a specific device group or device. The device pop-up menu also contains the Alarms, Browse, EView, Statistics, and VLANs commands. All of these commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with the appropriate device displayed.

Properties

The Properties function lets you view the attributes for a device group or a device.

To view the Properties display for all device groups:

- Right-click on the Device Groups component, then select **Properties** from the pop-up menu that appears

The Device Groups Properties window appears and displays the number of device groups and the names of the device groups that are known to EPICenter.

To view the Properties display for a selected device group:

- Right-click on the device group, then select **Properties** from the pop-up menu that appears

The Device Group Properties window appears and displays the attributes for the selected device group.

To view the Properties display for a selected device:

- Right-click on the device, then select **Properties** from the pop-up menu that appears

The Device Properties window appears and displays the attributes for the selected device.

See “Displaying Properties” on page 231 for details on using this feature.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new web browser window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10 for details on using this feature.

Statistics

The Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

See Chapter 13 for details on using this feature.

Finding Devices

You can search for a device in the EPICenter database by name, by IP address, or by type of device. This may be useful if you have a large number of devices in your inventory.

To search for a device, follow these steps:

1. Click **Find** at the top of the Telnet applet page.
2. Enter your search criteria:

   You can search for devices by name or by IP address. You can limit the search to a specific domain, or to a specific type of Extreme device. Search criteria can include:

- — A device name. Click the **Device Name** button, and enter a complete or partial name in the **Search:** field.
- — An IP address. Click the IP Address button and enter a complete or partial IP address in the **Search:** field. You can use the wild card characters * or ? in your search criteria.

  ***** acts as a wildcard for an entire octet (0-255)

  ? is a wildcard for a single digit (0-9)
- — A device group. Select the device group from the drop-down menu in the device group field. If you do not specify a name or IP address in the Search field, all devices in the device group you select will be found.
- — A device type. Select the device type from the drop-down menu in the type field. If you do not specify a name or IP address in the Search field, all devices of the type you select will be found.

3 Click **Find** to search for devices that meet the criteria you have specified. All devices found are listed in the center panel. Information includes the domain in which the device can be found, its name, IP address, and the type of device.

4 Double-click on a device in the results table to highlight the device in the Component Tree, or select a device in the results table and click **OK**, to initiate a telnet session on the device (see “Running a Telnet Session on an Individual Switch” on page 224). If you click **OK**, the search window will close.

5 Click **New Search** to clear all search criteria.

6 Click **Cancel** to close the search window.

Displaying Properties

You can view the properties of a device group or a device in the EPICenter database. This section describes how to view the device group properties and the device properties.

Device Group Properties

You can view summary information for all device groups, or view information about individual device groups.

To view summary information for all device groups, right-click on the **Device Groups** component and select **Properties** from the pop-up menu.

The Device Groups Properties window appears, showing the All Device Groups display. This displays a list of the current device groups and their descriptions. For more details about this display, see Chapter 4.

You can also view properties for a specific device group. To view properties for a specific device group, right-click on a device group and select **Properties** from the pop-up menu.

The Device Group Properties window appears, showing information about the selected group. This includes the group description, the number of devices in the group, and a list of the devices. For more details about this display, see Chapter 4.

Device Properties

To view properties for a device, right-click on a device in the Component Tree and select **Properties** from the pop-up menu that appears.

The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab

The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab

The **VLAN** tab lists the VLANs configured on the device.

The STP Tab

The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see Chapter 4.

8 The Grouping Manager

This chapter describes how to use the Grouping Manager to do the following:

- Create new groups
- Create new user or host resources
- Add resources or groups to a parent group
- Define relationships between resources
- Add attributes to a resource or a group
- Search for resources
- Import users and hosts from Windows NT Domain Controller, NIS, an LDAP directory, or a file

Overview of the Grouping Manager

The Grouping Manager allows you to collect network “resources” (devices, ports, users, hosts, and VLANs) into groups that can be manipulated or managed as a single entity.

A **group** is a hierarchical collection of resources that have been grouped together for some common purpose. A group can contain individual resources as well as other (subordinate) groups. Groups (except for Device Groups) are not exclusive—a resource can be a member (child) of more than one group.

Resources are individual elements in your network, such as a device, port, host (end station), user, or VLAN. Device, port, and VLAN resources are defined externally to the

Grouping Manager, through the EPICenter discovery capability and the Inventory and VLAN applets. User and Host resources are defined within the Grouping module, either by importing the information from an external source (such as an LDAP directory, NT Domain Controller, NIS server, or a file) or by creating the resources within the grouping module. A group can also be considered a “resource” when it is used as an entity in the same way as an individual resource would be used—such as in a Policy definition within the EPICenter Policy Manager, an optional, separately-licensed product.

With the exception of Device Groups and Port Groups, the group and resource definitions you create through the Grouping applet are primarily useful within the Policy Manager. For more information on how groups are used within that application, see the *EPICenter Policy Manager Software User Guide*.

You can define groups and add resources to them to create an organizational structure that facilitates managing your network. The EPICenter software provides several predefined groups:

- Device Groups
- Hosts
- Import Sources
- Port Groups
- Users

You can define your own groups at the same hierarchical level as the predefined groups, or as subordinate groups (children) of an existing group. You can assign resources to your own user-defined groups and to the predefined groups, with the exception of Device Groups and Import Sources.

Three of the predefined groups—Hosts, Port Groups, and Users—initially have no members. Although these groups are provided to help you organize your host, user, and port resources, they can contain children of any resource type. You can create new groups as members of these groups, or add resources of any type directly to them.

- Port Groups may be used by the Real Time Statistics applet and the IP/MAC Address Finder applet. However, these applets do not support hierarchical groups—if you have subordinate groups within a port group, the subordinate layers are all collapsed into a single layer. Resources of types other than ports are ignored by these applets.

  Port Groups, along with all the other types of groups and resources, may also be used by the optional Policy Manager module.

- The Hosts and Users groups (either the predefined groups or subordinate groups) may be used by the optional Policy Manager. This is also true of all user-defined groups. No other EPICenter applets currently support groups of these types.

  In a group that contains resources of different types, the Policy Manager will ignore those resources that are not relevant to the purpose for which the group has been selected.

The other two predefined groups, the Device Groups group and the Import Sources group, are restricted in the way they can be used.

Device Groups. The “Device Groups” group contains the device groups and devices known to the EPICenter inventory database. Device groups are created within the EPICenter Inventory Manager applet, and devices are added or discovered, and are assigned to device groups, within that applet. All port resources are also defined in association with the devices known to the Inventory Manager.

- You cannot add resources to or remove resources from the Device Groups group through the Grouping Manager.
- You can add resources that are children of Device Groups group—device groups, devices, and ports—as members (children) of other groups.

Import Sources. The Import Sources group is used to contain resources imported from an external source, such as a file, NT Domain Controller, or LDAP directory. When you perform an import operation, the Grouping Manager creates a new group under the Import Sources group, and puts all the imported resources under that group.

- You cannot add groups or individual resources as children of the Import Sources group except by using the Import function.
- You cannot remove any of the members (including sub-groups) of an imported group. The imported group can only be deleted in its entirety, using the Destroy function.
- You can add resources that are children of an Import Sources group as members (children) of other groups.

Resource Attributes

Attributes are name and value pairs that you can use for a variety of purposes. You can associate attributes with both groups and individual resources, including resources that are members of the Device Groups and Import Sources groups.

Some predefined resources, such as devices and imported resources, may also have predefined attributes. For example, device resources have their IP address as an attribute. Imported resources may bring with them sets of attributes determined by the content and configuration of the import source. Certain attributes, such as IP/subnet address and DLCS ID, are used by the optional Policy Manager applet to help it map between high-level named resources such as Users, and the information required to generate a QoS policy (IP address and port information).

You can also define attributes of your own, and then use them as search criteria when you want to find sets of resources with common attributes.

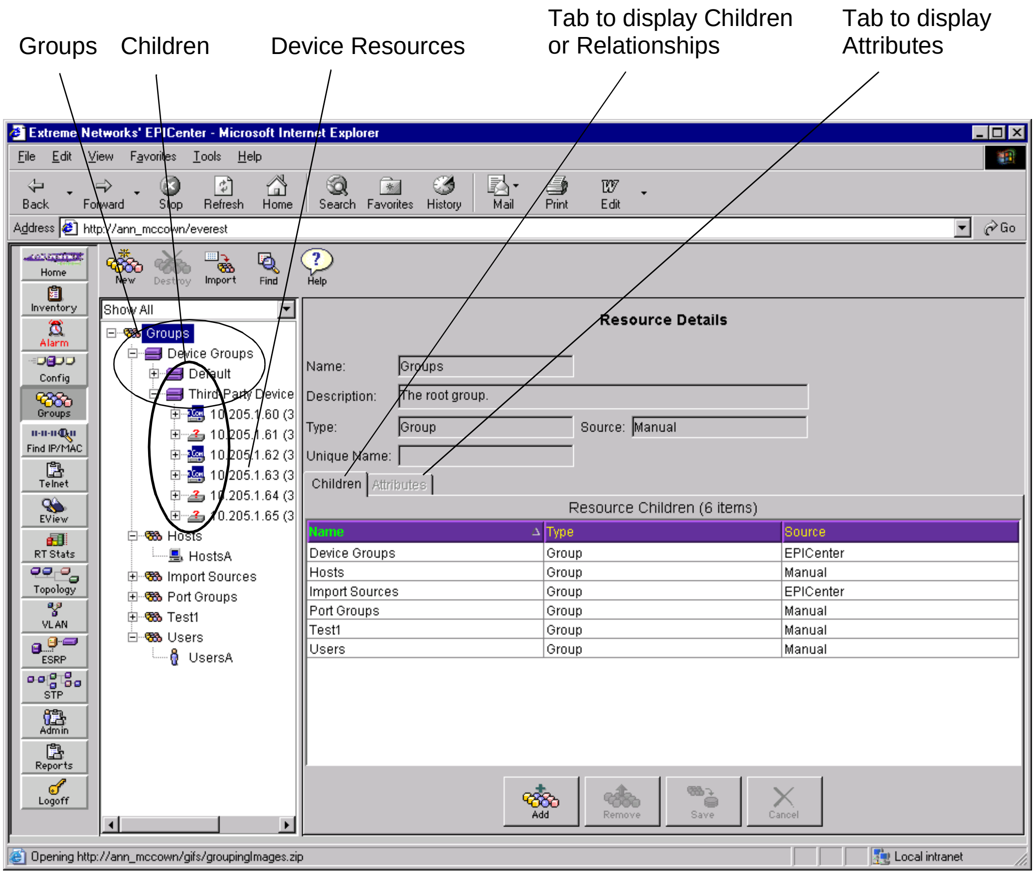
Relationships between Resources

The Grouping Manager also supports “relationships” between User, Host, and Port resources. These relationships are used by the optional Policy Manager applet, and help the Policy Manager generate specific QoS rules that it derives from high-level policy specifications that are given in terms of named objects such as users or hosts. See the *EPICenter Policy Manager Software User Guide* for details.

Displaying EPICenter Groups and Resources

When you click the **Groups** button in the Navigation toolbar, the main Grouping Manager window is displayed, showing Resource Details for the root-level group. Figure 73 shows the Grouping Manager window with a number of the groups expanded to show their children.

Figure 73: Resource Details view



Resource Details

Name: Groups

Description: The root group.

Type: Group Source: Manual

Unique Name:

Resource Children (6 items)

Name	Type	Source
Device Groups	Group	EPICenter
Hosts	Group	Manual
Import Sources	Group	EPICenter
Port Groups	Group	Manual
Test1	Group	Manual
Users	Group	Manual

The Component Tree on the left shows the currently-defined resources. Initially, this shows only the root-level group named “Groups.” Click on the plus sign to the left of a resource to display the children of that resource.

Children can be individual resources (devices, hosts, users, or ports) or groups. The icons indicate the type of resource:

▦ indicates a general-purpose group.

▤ indicates a device group.

🖥 indicates a host resource.

indicates a user resource.

indicates a VLAN resource.

Devices, slots, and ports are indicated by icons that vary based on the specific device model and port type. The icons are the same as are used in the Component Tree of the Inventory module and other EPICenter modules. Although slots appear in the Component Tree, they are not true resources, and cannot be children of groups within the Grouping Manager.

VLANs may appear as children in the Component Tree. However, unlike devices and Device Groups, VLANs will appear in this list only after they have been specifically added as children of a group. VLANs known to EPICenter but not used as children of a group will not appear in this list.

Resource Details

The **Resource Details** display in the main panel shows the following information for the group (or resource) that is selected in the Component Tree on the left:

- **Name**—The name of the Resource.

  For ports, the name of the port is the Device name followed by the port number. For example, S1 3 is the name of port 3 on the device named S1.

- **Description**—A description of the resource (optional for user-defined resources).

  — For Device Groups, this is the description entered for the group in the Inventory Manager.

  — For devices, this is the device description (`sysDescr` variable) if present in the agent.

  — For ports, this is the interface description (`ifDescr` variable) if present in the agent.

  — For VLANs, this contains the protocol and tag information.

- **Type**—The type of resource (Group, Device, Host, Port, User, VLAN).

  Note that if you select a slot under a chassis device in the tree, the Resource Details window displays it as a “Slot” resource. However, a slot is not a true resource in that it cannot be added as a child of a group— its ports can be used as resources, but the slot as an entity cannot.

- **Source**—The origin of the resource. The source determines what actions are allowed relative to the resource, this can be one of the following:

  - **EPICenter** indicates that the resource was defined by the EPICenter software: either by the Grouping Manager in the case of the predefined groups, or by another EPICenter applet in the case of device group, device, port, or VLAN resources. You cannot modify these resources or their children (if they are groups) through the Grouping Applet.
  - **Manual** indicates that this is a user-defined resource, created within the grouping applet using the **New** button. These resources can be deleted from the Grouping Manager using the Destroy function. The exception is the three predefined groups, Hosts, Users, and Port Groups, which are considered Manual resources but cannot be destroyed. If the user-defined resource is a group, you can add and remove children as desired.
  - Imported resources are assigned a source name as part of the Import process. See “Importing Resources” on page 263 for more information.

  User-defined (Manual) resources can be deleted using the Destroy function. System-defined (EPICenter) and imported resources cannot be deleted, although they *can* be removed as children of other groups to which you have added them. See “Deleting Resources” on page 245 for more information on deleting resources, and “Removing A Child Resource from a Group” on page 250 for more information on removing resources from groups.

- **Unique Name**—A name that uniquely defines this resource within the Source scope. For user-defined resources (Source is Manual) this will always be blank.
  - For pre-defined resources, the Unique Name is the same as the Resource Name.
  - For device resources, the Unique Name is the device IP address.
  - For port resources, the Unique Name is the IP address of the device followed by the port number. For ports on a chassis device, the port number combines the slot number and the port number.
  - For resources imported from a file or LDAP directory, the Unique Name is specified in the input process, and may be different from the Resource Name.

Below these fields there are two tabbed pages whose contents depends on the type of resource being displayed.

- For Groups, you can view a list of **Children** of the group. This lists the resources (individual resources or subordinate groups) associated with the selected group. For each child, the list includes the resource name, its type, and its source.
- For User, Port and Host resources, you can view a list of **Relationships** for the resource. This displays a list of other resources related to the selected resource.

- For all types, you can view a list of the **Attributes** associated with the resource. The exception is the top level (root) node, “Groups,” which has no attributes.

Resource Filtering

The field at the top of the Component Tree provides a drop-down menu from which you can select a filter to apply to the Component Tree display. This filter controls the types of resources that are displayed as subcomponents of the groups in the tree. This feature is useful when you have a large number of resources of various types, and lets you limit the display to resources of a specific type in which you are interested.

Groups are always displayed. The following filter choices determine the types of individual resources that will be displayed within the groups:

- **All** allows resource children of all types to be displayed.
- **Devices** shows only the Device resources within the groups.
- **Hosts** shows only Host resources within the groups.
- **Ports** shows only Device and Port resources within the groups.
- **Users** shows only User resources within the groups.
- **VLANs** shows only VLAN resources within the groups.

Grouping Manager Functions

The buttons in the navigation bar at the top of the page provide the following functions:

- **New** lets you create a new Group, User, or Host resource.
- **Destroy** lets you delete a user-defined resource. This completely eliminates the resource from the EPICenter database, as well as removing it from all groups of which it was a member. This is not the same as removing a resource from an individual group. You cannot destroy system-defined resources or individual imported resources. You can only destroy imported resources by destroying the entire Import Source group.
- **Import** lets you import resources from an external source such as an NT Domain Controller, LDAP database, or a specially-formatted text file.
- **Find** lets you find a resource based on a set of search criteria that can include a resource name, description, type, source, or attribute value.
- **Help** displays on-line help for the Grouping Manager and the Resource Details display.

These functions are described in detail in the following sections.

Creating a New Resource

You can create new groups and add new User and Host resources through the New Resource function. You can also associate attributes with the resource during this process.

This function creates a new resource. To add an existing resource to an existing group, see "Adding a Resource as a Child of a Group" on page 246.

NOTE

You cannot add resources of any type to the Device Groups or Import Sources groups, or any subgroups within those groups.

To add a new resource, do the following:

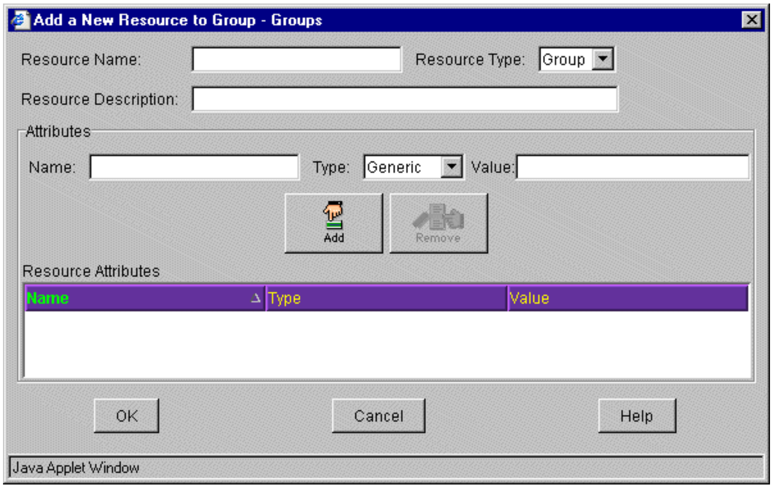
1. In the Component Tree, select the Group to which you want the resource added. To add a new group at the highest level, select the root "Groups" node. The new resource will be added as a child of the group you select.

   If you plan to add User or Host resources, it is suggested that you add these initially to the User or Host groups, or to another group you have created, rather than to the root-level group. Once you've created a resource, you can add it as a child of other groups. For example, a User resource "Fred" can be a member of both the group "Marketing" and the group "Chicago."

2. Click the **New** button at the top of the Grouping Manager window.

   The **Add a New Resource to Group** window, as shown in Figure 74, is displayed.

Figure 74: Adding a new resource



Add a New Resource to Group - Groups

Resource Type: Group

Type: Generic

3 Enter identifying information in the fields at the top of the dialog:

- **Resource Name**—A name for the resource. The name can include any characters except a colon.
- **Resource Type**—Select a type (Group, User, or Host) from the drop-down menu.

  If you are creating this resource as a member of the Hosts group, the type defaults to Host. If you are creating it as a member of the Users group, the type defaults to User. Otherwise, the type is set to Group by default.
- **Resource Description**—an optional description of the resource

4 Define any attributes that you want to associate with this resource. Attributes are name-value pairs that can be used as search criteria, and are used by the EPICenter Policy Manager. For a more detailed explanation of attributes, see “Adding and Removing Attributes” on page 255.

a Enter the name of the attribute in the Name field.

b Select an attribute type from the drop-down list in the Type field:

Generic—Any attribute not specified as one of the other two types. The value is a string. You can use this attribute to classify your resources in any way you want, for search purposes.

IP/Subnet—This attribute specifies an IP address and subnet mask. For Host or User resources, this attribute may be used by the Policy Manager.

DLCS ID—This attribute specifies a DLCS ID (user ID or host ID) that can be detected by DLCS in the switch. DLCS ID attributes are most commonly created when a resource is imported from an external source such as an NT Domain Controller or NIS that contains user and host information.

For Host and User resources, this attribute may be used by the EPICenter Policy Manager. If DLCS is enabled on the switches in your network, attribute and relationship information (mappings between users, hosts, and IP addresses) for host and user resources with DLCS IDs, will be maintained automatically.

c Enter a value for the attribute:

For a Generic attribute, enter a string.

For an IP/Subnet attribute, fill in the fields provided, and edit the subnet mask specification as appropriate.

For a DLCS ID, enter a string. In order to be recognized correctly by the DLCS in Extreme switches, this should be the user name (login name) or host name as known within the network.

d To add this attribute to the list of attributes associated with this resource, click the **Add Attribute to Resource** button .

e To remove an attribute from the list of attributes, select the attribute in the list and click the **Remove Attribute from Resource** button .

5 When you have finished entering attributes, click the **OK** button to save your new resource definition.

To close this dialog without saving the resource definition, click the **Cancel** button.

Deleting Resources

The **Destroy** button in the Grouping Manager toolbar lets you delete user-defined resources from the EPICenter database. The destroy function removes the resource from the database entirely, removing it from all groups where it exists as a child.

NOTE

You can only destroy resources whose source is “Manual” (except for the predefined groups) and the root groups of imported resources. You cannot destroy the predefined *groups, system-defined resources (devices, device groups, or ports) whose source is EPICenter, or individual imported resources (where the source is a file, LDAP database etc.). If you select a resource you cannot delete, the Destroy button will not be available.*

To delete a user-defined resource do the following:

1 Select the resource in the Component Tree.

2 Click the **Destroy** button on the toolbar.

A confirmation dialog will be displayed. Click OK to confirm that you want to delete this resource.

If you delete a group, any orphaned children of the group (resources that are not members of any other group) are also deleted.

If you delete a Host or User, all relationships to other resources are also deleted.

To remove a resource as a child of a group, use the Remove function, see "Removing A Child Resource from a Group" on page 250. This just removes the parent-child relationship with the group, but does not delete the resource from the database.

Adding a Resource as a Child of a Group

A group's children are individual resources or subordinate groups that will be manipulated or managed together. A resource is placed into a group as it is created—either the root-level group, or the group that was selected when it was created. However, because a resource can be a member of multiple groups, you may wish to add an existing resource to an additional group, or move it to a different group. To add a resource to a group, you select the resource from a list of the resources that are currently defined in the EPICenter database.

You can add individual resources as children of a group, or you can add groups as children. You cannot add an ancestor group as a child of one of its subordinate groups.

When you add a *group* as a child of another group, all members of the sub-group (its children) are considered members of the higher level (ancestor) group. As membership in the sub-group changes, so does the membership in the higher level (ancestor) group. This can have important effects when a group is used by another EPICenter module. For example, suppose you create group "A" that contains two groups of hosts "HostsA" and "HostsB", and then use group A in defining access list policies through the Policy Manager. The Policy Manager will generate access list rules for traffic related to all the hosts in groups HostsA and HostsB. If you subsequently change the membership of HostsB, and auto-configuration of policies is enabled in the Policy Manager, the QoS rules that define the access lists will automatically be recomputed and reconfigured. (See the *EPICenter Policy Manager Software User Guide* for more information on this optional module).

Adding resources to a group as individuals is a more static relationship—resources remain as children until they are explicitly removed from the group (or deleted from the EPICenter database).

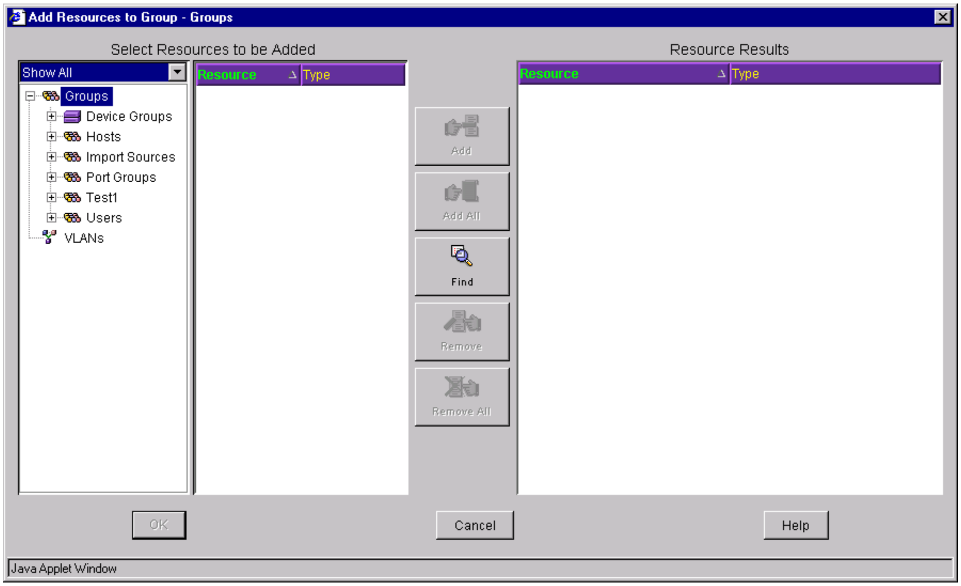
To add a resource or group of resources to a higher-level group, do the following:

1 In the Component Tree, select the group to which you want to add the resource, so that the group's information is displayed in the Resource Details view.

2 Click the tab labeled **Children** to display the list of children belonging to this group.

3 Click the **Add** button at the bottom of the list of Children to display the **Add Resources to Group** pop-up dialog, as shown in Figure 75.

Figure 75: Adding Resources to a Group



This window has two parts:

- A display of the resources in the EPICenter database that are available to be added to the group.
- A list of the resources you have selected to add.

4 Select a resource from one of the lists in the **Select Resources to be Added** panel at the left hand side of the dialog window. You can make your selection from either side of the panel.

The **Select Resources to be Added** panel is split into two parts:

- The Component Tree in the left half of the panel displays the groups that contain resources of interest. It may include devices if you have filtering set to display port resources.

  The drop-down menu field at the top of the Component Tree lets you select a filter to apply to the resource display. This filter controls the types of resources that are displayed as subcomponents of the groups in the tree.

  Groups are always displayed. The following filter choices determine the types of individual resources that will be displayed within the groups:

  Show All allows resource children of all types to be displayed.

  Show Devices shows only Device resources within the groups.

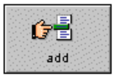
  Show Hosts shows only Host resources within the groups.

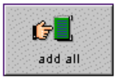
  Show Ports shows only Device and Port resources within the groups.

  Show Users shows only User resources within the groups.

  Show VLANs shows only VLAN resources within the groups.
- The resource list in the right half of the panel displays the resources available within the group you have selected in the Component Tree.

5 Select one or more resources from the list of individual resources, or select a resource group or device from the left-hand list.

6 Click the **Add** button  to add your selections to the Resource Results list. You can select a group in the Component Tree or one or more groups or individual resources from the resource list.

Click the **Add All** button  to add all the individual resources in the right-hand list to the Resource Results list.

NOTE

*There is an important difference between adding individual resources as children of a group, and adding a group as a child of another group. Adding a group to the results list does **not** have the same effect as selecting the group in the Component Tree, and then adding its children using the **Add All** button.*

When you add a group as a child of another group, all members of the subgroup (its children) are considered members of the higher level (ancestor) group. As membership in a subgroup changes, so does the membership in the higher level (ancestor) group. Resources added individually, on the other hand, remain as children until they are explicitly removed from the group (or deleted from the EPICenter database).

To search for a resource using the Query function, click the **Find** button. You can add the results of your query directly into your Resource Results list by selecting the resources you want to add and clicking the **Add** button at the bottom of the Query window. See “Searching for a Resource” on page 258 for more information on the Find function.

7 You can remove resources from the Resource Results list if you change your mind about your selections.

Select one or more resources in the Resource Results list, and click the **Remove** button to remove the selected resources, and return them to the Resources to be Added list.

Click the **Remove All** button to clear the Resource Results list.

8 Click **OK** to add the resources in the Resource Results list to the list of children for this resource, or **Cancel** to cancel the Add function.

9 To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

If you attempt to begin a different operation or leave the Grouping Manager applet without saving, the Grouping Manager will prompt you to save your changes. However, you can add and remove children and attributes to the group you have selected in multiple operations before you save.

Click the **Cancel** button at the bottom of the window to cancel the changes you have made to this group.

Removing A Child Resource from a Group

If you have added a resource as a child of a group, you can remove the resource from that group using the Remove function. This removes the parent-child relationship between the resource and the group. This does not remove the resource from the EPICenter database, unless it is a user-defined resource and this is the only instance of the resource. (Removing all instances of a resource is the equivalent of destroying the resource.)

To remove a resource from a group, do the following:

1. Select the parent group in the Component Tree to display the group in the Resource Details window.
2. Select the **Children** tab to display the resources that are children of the group.
3. Select the resource you want to remove.
4. Click the **Remove** button at the bottom of the window.
5. To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

   If you attempt to begin a different operation or leave the Grouping Manager applet without saving, the Grouping Manager will prompt you to save your changes. However, you can add and remove children and attributes to the group you have selected in multiple operations before you save.

   Click the **Cancel** button at the bottom of the window to cancel the changes you have made to this group.

Note that you can also remove resources by locating them using the Find function, and removing them using the search results list. See “Searching for a Resource” on page 258 for more information on the Find function.

Removing a resource from *all* groups of which it is a member is the equivalent of destroying the resource.

Adding Relationships to a Resource

Individual resources cannot have children. However, certain types of resources (Hosts, Users, or Ports) can have relationships. Devices cannot have either relationships or children.

For example, a Host may have a relationship with a User, which indicates that the User is associated with the IP address of that Host. A Host may also have a relationship with a port, indicating that the host communicates over that port.

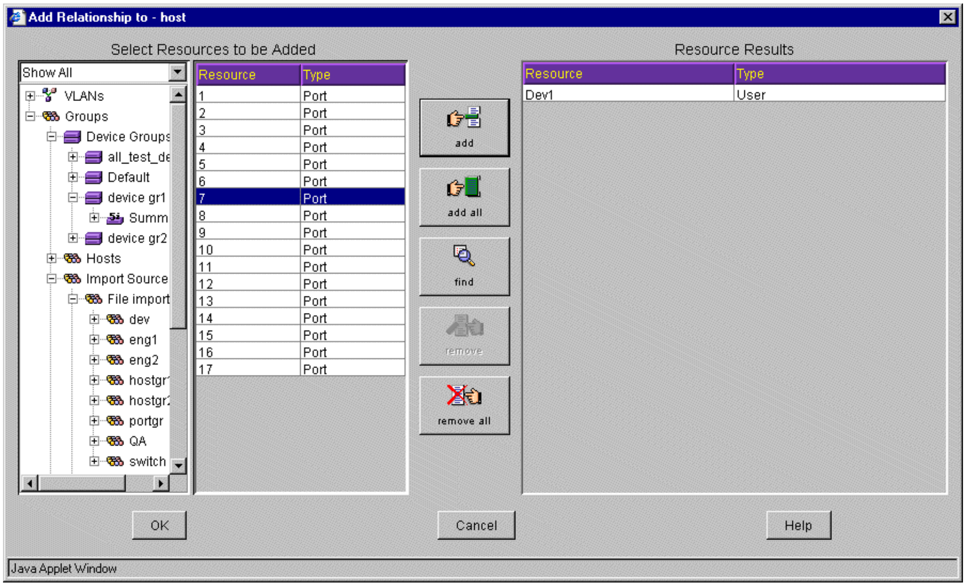
These relationships may be used by the Policy Manager applet to create low-level QoS policy rules based on named higher-level objects such as users and hosts. Relationships can be created between the following:

- Hosts and Users
- Hosts and Ports
- Users and Ports

These relationships are always reciprocal: when you create a relationship between two resources, it is added simultaneously to both resources.

1 In the Component Tree, select the resource to which you want to add a relationship, so that it is displayed in the Resource Details view.
2 Click the tab labeled **Relationships** to display the list of children belonging to this group.
3 Click the **Add** button at the bottom of the list of Children to display the **Add Relationship to Group** pop-up dialog, as shown in Figure 76.

Figure 76: Adding Relationships to a Resource



Resource	Type
1	Port
2	Port
3	Port
4	Port
5	Port
6	Port
7	Port
8	Port
9	Port
10	Port
11	Port
12	Port
13	Port
14	Port
15	Port
16	Port
17	Port

Resource	Type
Dev1	User

This window has two parts:

- A display of the resources in the EPICenter database that are eligible to be used in a relationship.
- A list of the relationships you've selected to add to the resource.

4 Select a resource from one of the lists in the **Select Resources to be Added** panel at the left hand side of the dialog window. You can make your selection from either side of the panel.

The **Select Resources to be Added** panel is split into two parts:

- The Component Tree in the left half of the panel displays the groups that contain resources of interest.

  The drop-down menu field at the top of the Component Tree lets you select a filter to apply to the resource display. You can filter the resources that will be presented as children of the groups in the tree.

  Show All allows resource children of all types to be displayed.

  Show Devices shows only Device resources. (However, devices cannot be used in relationships, so nothing is displayed if you select this filter.)

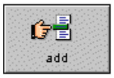
  Show Hosts shows only Host resources.

Show Ports shows only Device and Port resources.

Show Users shows only User resources.

Show VLANs shows only VLAN resources. (However, VLAN resources cannot be used in relationships, so nothing is displayed if you select this filter.)

— The resource list in the right half of the panel displays the resources available within the group you have selected in the Component Tree. It will display only the types of resources that are eligible to have relationships (host, users, and ports).

5 Select one or more resources in the list, and click the **Add** button  to add your selections to the Resource Results list. You can select a group in the Component Tree or one or more groups or individual resources from the resource list.

Click the **Add All** button to add all the individual resources in the right-hand list to the Resource Results list.

To search for a resource using the Search function, click the **Find** button. You can add the results of your query directly into your Resource Results list by selecting the resources you want to add and clicking the Add button at the bottom of the Search window. See “Searching for a Resource” on page 258 for more information on the Find function.

6 You can remove resources from the Resource Results list if you change your mind about your selections.

Select one or more resources in the Resource Results list, and click the **Remove** button to remove the selected resources, and return them to the Resources to be Added list.

Click the **Remove All** button to clear the Resource Results list.

7 Click **OK** to add the resources in the Resource Results list to the list of relationships for this resource.

8 To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

If you attempt to begin a different operation or leave the Grouping Manager applet without saving, the Grouping Manager will prompt you to save your changes. However, you can add and remove relationships and attributes in multiple operations on the resource you have selected before you save.

Click the **Cancel** button at the bottom of the window to cancel the changes you have made to this group.

Removing Relationships from a Resource

To remove a relationship between two resources (Hosts, Users, or Ports) do the following:

1 In the Component Tree, select one of the resources that is involved in the relationship, so that the resource is displayed in the Resource Details window.

2 Select the **Relationship** tab to display the relationships for the resource.

3 Select the relationship you want to remove.

4 Click the **Remove** button at the bottom of the window. The relationship will be removed both from the resource you are viewing, and from the other resource involved in the relationship.

For example, if Host resource “HostB” has a relationship with user resource “Watson” the relationship will appear in the relationship list of both resources. If you display the relationships for resource HostB, and remove the relationship with user Watson, the relationship will be removed from the relationship lists of both HostB and Watson.

5 To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

If you attempt to begin a different operation or leave the Grouping Manager applet without saving, the Grouping Manager will prompt you to save your changes. However, you can add and remove relationships and attributes in multiple operations on the resource you’ve selected before you save.

Click the **Cancel** button at the bottom of the window to cancel the changes you’ve made to this group.

Removing a relationship does not affect the group memberships of either resource.

NOTE

If you destroy a resource, any relationships with that resource will automatically be removed from the other resources involved.

Adding and Removing Attributes

Any resource (individual resources or groups) can have attributes. Attributes are simply name-value pairs that can be used for a number of purposes.

There are three types of attributes:

- **Generic**—A user-defined attribute not specified as one of the other two types. The value is a string. You can use this attribute to classify your resources in any way you want, for search purposes.
- **IP/Subnet**—An IP address and subnet mask. This attribute may be used by the Policy Manager to map a User or Host resource to an IP address.
- **DLCS ID—**This attribute specifies a DLCS ID (user ID or host ID) that can be detected by DLCS in the switch. DLCS ID attributes are most commonly created when a resource is imported from an external source such as an NT Domain Controller or NIS that contains user and host information.

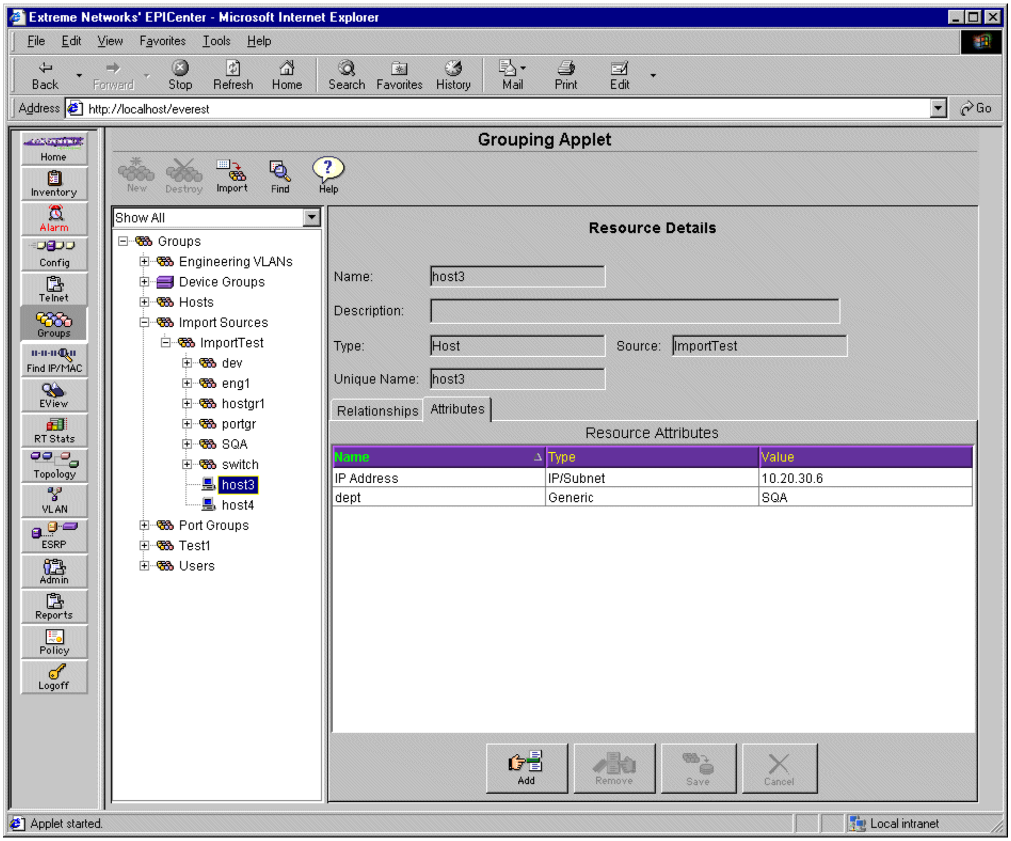
  For Host and User resources, this attribute may be used by the EPICenter Policy Manager. If DLCS is enabled on the switches in your network, attribute and relationship information (mappings between users, hosts, and IP addresses) for host and user resources with DLCS IDs, will be maintained automatically.

To view the attributes associated with a resource, do the following:

1 Select the resource in the Component Tree, so that it is displayed in the Resource Details view.

2 Click the **Attributes** tab. This will display the attributes (if any) associated with the resource, as shown in Figure 77.

Figure 77: Resource attribute display



Name: host3

Description:

Type: Host   Source: ImportTest

Unique Name: host3

Resource Attributes

Name	Type	Value
IP Address	IP/Subnet	10.20.30.6
dept	Generic	SQA

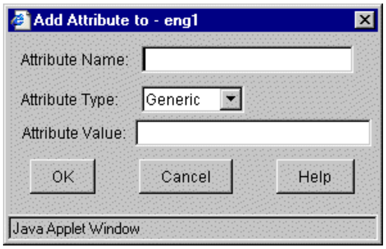
To add an attribute to the displayed resource, do the following:

1. Make sure the **Attributes** page is displayed. If it is not, the **Add** button will not be present.

2. Click the **Add** button add.

   The Add Attributes pop-up dialog appears, as shown in Figure 78.

Figure 78: Adding attributes to a resource



Add Attribute to - eng1

Attribute Name:

Attribute Type: Generic

Attribute Value:

3 Enter the name of the attribute in the **Attribute Name** field.

4 Select an attribute type from the drop-down list in the **Attribute Type** field:

Generic—Any user-defined attribute other than an IP Address or DLCS ID.

IP/Subnet—An IP address and subnet mask.

DLCS ID—A User ID or Host ID as it will be detected by DLCS in the switch.

5 Enter a value for the attribute:

For a Generic attribute, enter a string.

For an IP/Subnet attribute, fill in the fields provided, and edit the subnet mask specification as appropriate.

For a DLCS ID, enter a string. In order to be recognized correctly by DLCS in Extreme switches, this should be the user name (login name) or host name as known within the network.

6 CLick **OK** to enter the attribute into the attribute list.

7 To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

If you attempt to begin a different operation or leave the Grouping Manager applet without saving, the Grouping Manager will prompt you to save your changes. However, you can add and remove relationships and attributes in multiple operations on the resource you've selected before you save.

Click the **Cancel** button at the bottom of the window to cancel the changes you've made to this group.

To remove an attribute from the list of attributes, do the following:

1 Select one or more attributes you want to remove.

2 Click the **Remove** button .

3 To save your changes to the EPICenter database, click the **Save** button at the bottom of the Grouping Manager window.

   Click the **Cancel** button at the bottom of the window to cancel the changes you have made to this group.

Searching for a Resource

If you have a large number of resources defined in your EPICenter database, it may be cumbersome to find a specific resource in the Component Tree. In addition, you may want to be able to quickly identify all the resources that share a certain attribute. The Grouping Manager’s Search function lets you find resources using any of the resource information fields as well as attributes as search criteria.

A search can be initiated either from the main toolbar, or by using the **Find** button in the Add Resource or Add Relationship pop-up windows. Setting up and executing the search is the same regardless of where you initiate the search; however, the actions you can take with the results differ depending on where you started from.

The Search Results provide you with the name of the resources that match your criteria, and the paths (group hierarchy) to where the resources reside within your search scope.

- If you initiate the Search from the main toolbar, you can select one or more resource in the result list, and remove them from their parent groups. See “Searching from the Main Toolbar” on page 262 for more information. You can double-click a resource in the results list to see where it is located in the Component Tree.
- If you initiate the search from an Add Relationship or Add Resource window, you can select one or more resources in the result list and add them to the Resource Results list in the Add Resource or Add Relationship window. See “Searching from the Add Resources or Add Relationship Window” on page 262 for more information.

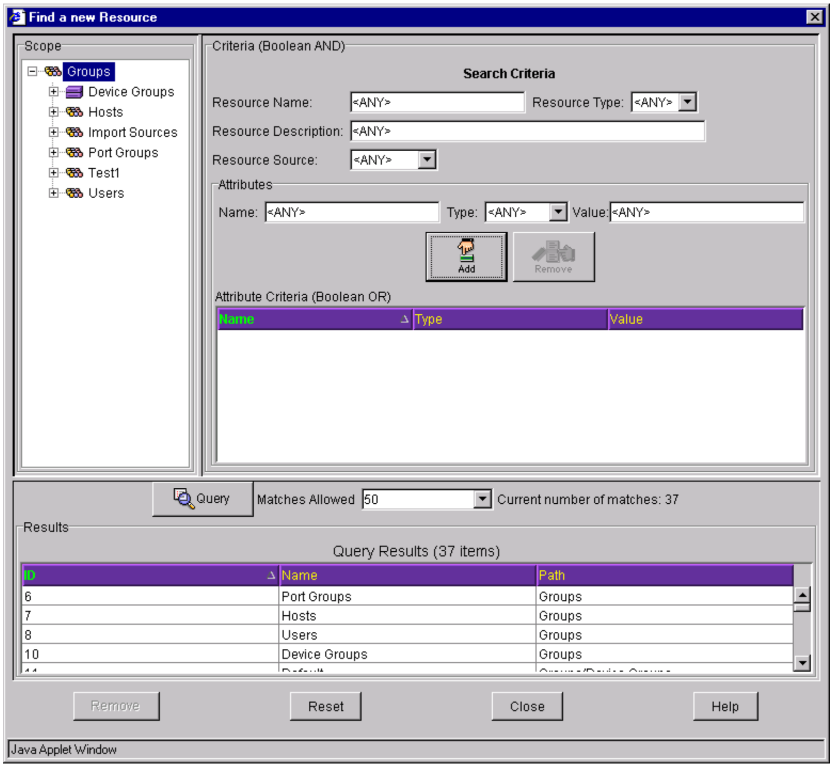
Setting up a Resource Search

To search for resources that match criteria you specify, do the following:

1 Click the **Find** button in the toolbar at the top of the main Grouping Manager window, or click the **Find** button in the Add Relationship or Add Resource pop-up windows.

The Search Criteria window is displayed, as shown in Figure 79.

Figure 79: Searching for a resource



Resource Name: <ANY>
Resource Type: <ANY>
Resource Description: <ANY>
Resource Source: <ANY>

Name: <ANY> Type: <ANY> Value: <ANY>

Name	Type	Value

Matches Allowed 50 Current number of matches: 37

Query Results (37 items)

ID	Name	Path
6	Port Groups	Groups
7	Hosts	Groups
8	Users	Groups
10	Device Groups	Groups

The top half of the window is used to specify your search criteria. The Component Tree is used to define a scope for the search.

The bottom half of the window contains the results of the search. You can limit the number of results you want to receive in the case of a search that could yield a large number of matches.

2 Enter your search criteria using the fields in the top part of the window. A resource will match the query if it meets *all* the criteria specified in this section:

— <ANY> specifies a wildcard match, meaning that any and all values for this item will produce a match. There are also two other ways to indicate a wildcard match:

- The asterisk character * used by itself.
- A blank field.

— For Resource Name, Resource Description, and Resource Source, enter a string to specify the value you want to match. You can specify a partial match using the wildcard characters * and ?.

- An * indicates a wildcard match of unspecified length. Specifying a Resource Name as “A*n” will find all Resources whose names start with “A” and end with “n.” This would include Ann, Alan, Allen, Allison, and so on. Using the * by itself is the same as specifying <ANY>.
- A ? indicates a single character wildcard. Specifying a Resource Name as “A?n” will find all Resources whose name start with “A”, and with “n” and having exactly one character in between. This would include Ann and Ayn, but not Alan, Allen or Allison.

— For Resource Type, select a specific type from the drop-down menu, or use <ANY> to match on all types.

NOTE

The values you enter into the search criteria fields are combined using a Boolean AND. This means a resource must match all the criteria you specify in these fields in order be included in the search results.

3 Enter any attribute specifications you want to use as search criteria. The process is similar to that used to add attributes to a resource. A resource will match the query if it matches any of the attributes specified in this section:

a Enter an attribute name or a partial name using the * and ? wildcard characters.

b Select an attribute type from the drop-down list in the Type field, or select <ANY> to match all attribute types.

c Enter a value you want to match, or a partial match using the * and ? wildcard characters.

d Click the **Add** button, Add, to add the attribute specification to the Attribute Criteria list.

e To remove an attribute search criteria you have added to the Attribute Criteria list, select the attribute and click the **Remove** button

.

NOTE

Attributes used as search criteria are combined using a Boolean OR. This means that a resource that matches all the criteria specified in search criteria fields (in the top part of the window) and that matches any one (or more) of the attribute criteria, will be included in the search results.

4 Specify a Scope for the search from the Component Tree at the left side of Search Criteria area. The scope will limit the search to the group you select, and its subordinate groups. By default the scope is set to the root-level group "Groups," which means all groups will be searched.

5 To reset all the criteria to their defaults (<ANY>) and to clear the Attribute Criteria list, click the **Reset** button at the bottom of the window.

6 At the top of the Results portion of the window, select from the drop-down menu a limit for the number of matches you want to see. All indicates you want to see all matches. You can limit the results to 1, 10, 50, or 100 matches. The actual number of matches found will be displayed next to this field.

7 Click the **Query** button to initiate the search. The results will be displayed in the bottom portion of the window. The list will become a scrolling list if the number of results requires it.

For each match, the results will display the following:

— **Resource ID**: a unique internal number provided by the EPICenter software. This may be useful to distinguish between resources if you happen to have created several resources with the same name.

— **Resource Name**: the name of the resource

— **Path**: the path through the Group hierarchy to the location of the resource.

Note that an individual resource (i.e. the same Name and ID) may appear multiple times in this list if it is a child of multiple groups.

Once the list is complete, you can select resources in the Results list and take actions, depending on how you initiated the Find function. The buttons at the bottom of the window are slightly different depending on where you initiated the Find. See the following sections, "Searching from the Main Toolbar," and "Searching from the Add Resources or Add Relationship Window" on page 262, for details on how you can use the results of the search.

Searching from the Main Toolbar

When you initiate a search from the Main Toolbar, you can use the results to determine where a resource is used—i.e. to find out what groups it belongs to. Since a resource can be a child of multiple groups, this lets you identify all the parents of a particular resource. In particular, before you delete a resource from the EPICenter database, you may want to make sure that you know all the places it is being used to avoid problems when you remove it. Once you find a resource using the Find function from the main toolbar, you can remove instances of the resource directly from the Find window.

Setting up a search is the same regardless of where you initiate the Find function. This is describe in the section "Setting up a Resource Search" on page 258.

To remove resources you have identified with the Search function, do the following:

1 Select and highlight the resource or resources you want to remove.

You can double-click on the resource and its location is highlighted in the Component Tree.

2 Click the **Remove** button to remove those resources from the locations specified in the Results entries you've selected.

The results list may present multiple entries for a given resource, if the resource is a child of multiple groups. You can remove a resource from specific groups on an individual basis without removing it from the EPICenter database.

The Remove function is subject to the same restrictions as removing resource children through the Resource Details window. If the resource is a system or imported resource (its source is EPICenter, a file, LDAP database etc.) you cannot remove the resource from it's "home" group—the group in which it was initially created. If the function is a user-defined resource (source is "Manual"), removing it from all groups will delete it from the EPICenter database.

When you are finished, click the **OK** button to close the window.

Searching from the Add Resources or Add Relationship Window

When you initiate a search from the Add Resources or Add Relationship window, you can identify resources with a common set of attributes, which can simplify the process of finding the attributes you want to include in a group. Once you find a set of resource using the Find function from the Add Resources or Add Relationship windows, you can add those resources directly from the Find window to the Resource Results list of the "Add..." window.

Setting up a search is the same regardless of where you initiate the Find function. This is describe in the section "Setting up a Resource Search" on page 258.

NOTE

When you do a search from the Add Resources or Add Relationship windows, the results will include only those resources that are relevant to the Add function you are performing.

To add resources you have identified with the Search function to the Resource Results list of the Add Resources or Add Relationship windows, do the following:

1. Select and highlight the resource or resources you want to add.
2. Click the **Add** button to add those resources to the Resource Results list.

   The selected resources are added to the list, and the Search window is closed.

   To close the Search window without adding any resources, click the **Cancel** button.

Importing Resources

The Import feature allows you to import user and host resource definitions, and groups containing those resources, from a source external to the EPICenter system. You can import from an NT Domain server, an NIS server, or an LDAP directory. You can also import host and user resource definitions from a tab-delimited text file.

- Importing from a text file requires a tab-delimited file in a very specific format.
- Importing from an LDAP directory requires an import specification file that defines how to map entries in the LDAP directory to resources and their attributes.
- Importing default domain information from an NT Domain server or an NIS server does not require any special preparation.

NOTE

If you import information from an LDAP server or NT Domain Controller, that information will become visible to all EPICenter users. If this is a security concern, you may want to consider exporting information from the NT Domain Controller or LDAP directory to a *file, and using that to create an import file that contains only the information that you want to be visible through EPICenter Grouping Manager.*

Imported resources are placed under a group created in the Import Sources group (one of the pre-defined EPICenter groups). The name you specify in the Source Name field of the Import dialog will be used as the group name.

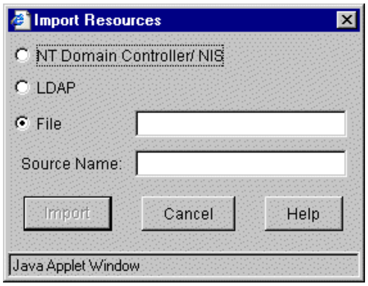
You can perform the same import operation (importing from the same source) multiple times. Once an import is complete, subsequent imports from the same source will act as an update:

- Existing resources will be left intact (including any attributes you may have added).
- New resources will be added.
- Resources that have been removed from the source will be deleted from the EPICenter database.
- Changes is group memberships and changes in relationships will be enacted.

To import resources from an external source, do the following:

1 Click the **Import** button in the toolbar at the top of the main Grouping Manager window. The Import Resources window is displayed (see Figure 80).

Figure 80: Importing resources



2 Select the type of source from which you want to import information.

— Select **NT Domain Controller/NIS** to import information from the default Windows NT Domain Controller or NIS server. This will import information about users, hosts (stations), and user groups. See “Importing from an NT Domain Controller or NIS Server” on page 272 for more detailed information.

— Select **LDAP** to import information from an LDAP directory.

See “Importing from an LDAP Directory” on page 266 for information on modifying the file containing the LDAP import mapping specification.

— Select **File** to import information from a tab-delimited text file.

See “Importing from a File” on page 268 for information on creating the import text file.

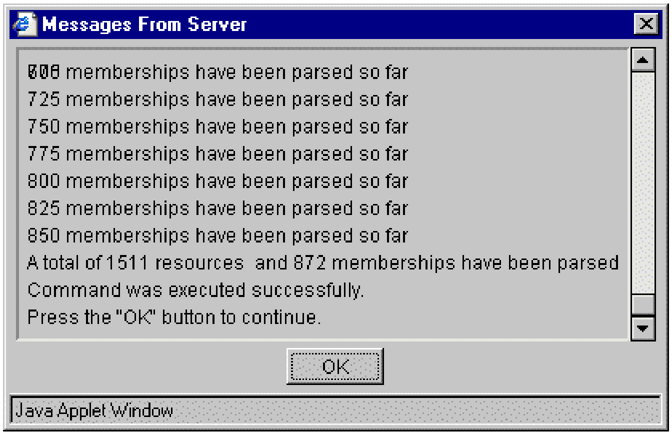
— In the **Source Name** field, enter a name that will identify the source of the imported resources. This name is used for two purposes:

- It is used to create a group under which all the resources imported in this operation are placed. The group is created under the Import Sources group.
- It appears in the Source field of the Resource Details view, or in the Source column when the resource is displayed as a child of group, for all resources imported from this source. It can be used as a search criteria in the Find function.

3 Click **Import** to begin the import process. The import button will not be enabled until you enter a source name.

Progress during the import will be displayed in a pop-up window, as shown in Figure 81.

Figure 81: Monitoring the progress of an Import function



```
700 memberships have been parsed so far
725 memberships have been parsed so far
750 memberships have been parsed so far
775 memberships have been parsed so far
800 memberships have been parsed so far
825 memberships have been parsed so far
850 memberships have been parsed so far
A total of 1511 resources  and 872 memberships have been parsed
Command was executed successfully.
Press the "OK" button to continue.
```

4 When the process has completed, click **OK**.

If you are importing from a large source, the import process can take several minutes.

The new group and resources will be available under the Import Sources group in the Component Tree.

If errors occur in the import process, it is possible that no data will be imported. This can result in an empty import group in the Import Sources tree. Once you fix the problems, you can rerun the import.

Importing from an LDAP Directory

The EPICenter Grouping Manager supports importing groups, users, and hosts from a LDAP directory. The import process uses a TCL script to extract the requested data from the LDAP directory, and create a text file that specifies how the resources should be added to the EPICenter database. This file is in the same format as the import file discussed in "Importing from a File" on page 268.

The import process uses an import specification file that defines the following:

- The information you want to extract from the directory.
- How to map that data to groups, resources, and attributes in the EPICenter Grouping module.

The specification file must be named `LDAPConfig.txt`, and must reside in the EPICenter `user/import` directory.

You can use the `LDAPConfig.txt` file provided in the EPICenter `user/import` directory as a template.

You should only need to modify three lines in this file:

`host:` the name of the host where the directory resides.

`user:` the username, if required, to allow access to the directory.

`password:` the password, if required, to allow access to the directory.

NOTE

The information below is provided as an aid to importing data from LDAP directories with schemas that differ from the template provided. However, Extreme Networks cannot provide support for modifications to the template file other than the three changes mentioned above.

If your LDAP directory is organized differently, you can modify the `LDAPConfig.txt` file to meet your individual needs. This requires that you understand the organizational structure of the directory from which you want to import data.

The `LDAPConfig.txt` file must include the following entries:

`base:` specifies the LDAP naming context. Leave this blank to use the default LDAP naming context. This is required.

`attributes:` specifies the attributes that you want to import into the EPICenter database from entries in the LDAP directory. By default, all imported attributes are considered type Generic.You can specify an EPICenter attribute type (Generic, IP/subnet, or DLCS ID) by enclosing both the attribute name and the EPICenter attribute type in curly brackets, as shown: `{uid {DLCS ID}}`. This is required.

`uniqueID:` specifies the attribute that should be used in the EPICenter database as the ID for this resource. This is required.

`scope:` the scope of the search (base, sub, one). This is required.

`groupBy:` the attribute that should be used to create EPICenter sub-groups within the imported group structure. This is optional.

`memberNameAttribute:` the attribute that should be used to define the child entry in a group.

`resourceName:` the attribute that should be used as the displayed name of the resource within the EPICenter Grouping Manager. This is required.

`filterList:` defines the search criteria. Because of the limits on the amount of data that a search will return in one operation, you may need to split your search into multiple operations, as is done in the example file. This is required.

`objectClassMapping:` this maps an LDAP entry to a Grouping Manager resource type based on the object class of the entry. You will need multiple entries of this type. The name-value pair contains the EPICenter resource type on the left, and either the LDAP object class specification or an EPICenter resource type of the right.

For example, the following line specifies that entries whose object class is “organizationalPerson” should be imported as user resources.

```
objectClassMapping: user=organizationalPerson person Top
```

The following line specifies that user resources can be group members.

```
objectClassMapping: groupmember=user
```

At least one mapping specification is required. You can comment out resource types that you don’t need to use in the sample file, or leave them. They will be ignored if not defined.

Importing from a File

To import data from a text file, you define the resources you want to import in a tab-delimited text file. The elements on each line are separated by tabs.

The Import File Format

The simplest way to create this file is to enter it in a spreadsheet program such as Microsoft Excel, and then export it as tab-delimited text.

The elements on each line are separated by tabs.

Format Definitions.

The first three lines are required. They define the format of the data that follows. The first three lines are:

```
#SYNTAX VERSION:1.0
Resource_UniqueName <tab> Resource_Type <tab> Resource_Name [<tab> attribute ...]
<tab> <tab> <tab> (<attribute_type>) [<tab> (<attribute_type>) ...]
```

The **first line** simply defines the version of the import syntax:

```
#SYNTAX VERSION:1.0
```

Enter this exactly as specified.

The **second line** defines the mapping of the data in the file to EPICenter resources:

```
Resource_UniqueName <tab> Resource_Type <tab> Resource_Name [<tab> attribute ...]
```

- The first three items are required,
  - — `Resource_UniqueName` specifies that the first field maps to the unique ID.
  - — `Resource_Type` specifies that the second field defines the resource type (user, host, group, device, or port).
  - — `ResourceName` specifies that the third field maps to the resource name. This is the name that will appear as the name of the resource in the Grouping Manager.
- The remaining items on the line define the attributes that can be included for each resource. The names you specify here will be used as the attribute names in the Grouping Manager.

The **third line** defines the type of each attribute (Generic, IP/subnet, or DLCS ID).

```
<tab> <tab> <tab> (<attribute_type>) [<tab> (<attribute_type>) ...]
```

Each type specifier must be enclosed by parenthesis, and separated from the preceding type specifier by a tab. Three tabs must precede the first type specifier.

- The items in this line define the type of each attribute defined in line two. You must include a type specification for every attribute included in line two.
- The first three items in line two do not require a type (as they are predefined). You skip these by including the three tabs before the first type specifier.

Resource Definitions.

The remaining lines in the first section define the resources to be imported. Each resource must include the uniqueID, the resource type, and a name. Attribute values are optional, and will be assigned in the order presented on the line (separated by tabs). These lines are formatted as follows:

```
uniqueID1 <tab> <resource_type> <tab> resource_name1 <tab> {attribute <tab> ... }
uniqueID2 <tab> <resource_type> <tab> resource_name2 <tab> {attribute <tab> ... }
    ...
uniqueIDn <tab> <resource_type> <tab> resource_nameN <tab> {attribute <tab> ... }
```

- `uniqueID` will be used as the resource's unique name. It can be the same or different from the resource name. For a device, the uniqueID must be the device IP address. For a port it is the IP address of the device followed by the port number.
- `resource_type` can be `user`, `host`, `group`, `device`, or `port`.
- `resource_name` is the name that will be displayed as the name of the resource.
- `attribute` defines the value of the attribute that corresponds to this position in the list.

The combination of `uniqueID` and `resource_type` must be unique within this section. Duplicate definitions generate a warning.

For example, assume the following format definition at the beginning of the import file:

```
Resource_UniqueName Resource_Type Resource_Name  Location Department  RoomNo
```

To create a user resource named Judy Jones, with three attributes:

— Location, whose value is Denver

— Department, whose value is Sales

— RoomNo whose value is 3050

Enter a resource definition as follows:

```
judy  user    Judy Jones   Denver  Sales   3050
```

You cannot use the Import function to create new device or port resources. You *can* import attributes for device and port resources, and define relationships for them. The device and port resources must already exist in the EPICenter database, and the names you specify must match their names in the database.

See "Resource Details" on page 240 for more information on the components of a resource.

Group and Relationship Definitions.

The second part of the file defines the relationships between the resources—both group membership and relationships between the resources themselves (see "Adding Relationships to a Resource" on page 250 for more information about relationships).

The `#GROUPS#` specification is required, even if you do not define any groups.

```
#GROUPS#
```

Each line in this section has the following form:

```
<resource_type>:<resource_uniqueID><tab><resource_type>:<resource_uniqueID>
<resource_type>:<resource_uniqueID><tab><resource_type>:<resource_uniqueID>
```

- `resource_type` can be `user`, `host`, `group`, `device`, or `port`. A group that exists in the EPICenter database (and is not defined in the import file) can be specified as a child of an imported group, but the reverse is not supported.
- `resource_uniqueID` is the unique ID defined in the first part of the file (or known to exist already in the EPICenter database).

For creating group membership relationships, the first type:ID pair defines the parent, the second one defines the child. Thus, the first pair must always be a group. The second pair can be a group or an individual resource.

For defining peer-to-peer relationships, (user-host, user-port, and host-port relationships) either member of the relationship can be specified first.

Example

The following is an example of an import file.

```
#SYNTAX VERSION:1.0
```

```
Resource_UniqueNameResource_TypeResource_Name IP Address DLCS  OSType    Dept
                                       (IP/Subnet)(DLCS ID)(Generic)(Generic)
wendy              user         Wendy Lee                                NMS
heidi              user         Heidi Smith                              NMS
pam                user         Pam Johnson                              SQA
eric               user         Eric Wilson                              SQA
mary               user         Mary Baker                               NMS

win2k              host         win2k      10.20.30.2    wlee  windows   NMS
host1              host         host1      10.20.30.4          HPUX      NMS
host2              host         host2      10.20.30.5          Solaris   NMS
host3              host         host3      10.20.30.6          windows   SQA
host4              host         host4      10.20.30.7          Solaris   SQA

ugr1               group        SQA
ugr2               group        dev
hgr1               group        hostgr1
dgr1               group        eng1
switch             group        switch
portgr             group        portgr

#GROUPS#
group:ugr1         user:wendy
group:ugr1         user:heidi
group:ugr1         user:mary

group:ugr2         user:pam
group:ugr2         user:eric

group:hgr1         host:win2k
group:hgr1         host:host1
group:hgr1         host:host2

group:dgr1         host:host3
group:dgr1         host:host4

## Host to User Relation
user:wendy         host:win2k
user:heidi         host:host1
user:mary          host:host2
host:host3         user:pam
host:host4         user:eric
```

Importing from an NT Domain Controller or NIS Server

Importing from an NT Domain Controller or NIS server is straightforward. The import is always done from the Domain Controller or NIS server that is serving the domain for the system running the EPICenter server. The type of system you are running will determine where the EPICenter server looks for the information.

In order to import information from an NT Domain Controller, the EPICenter server must be running with the appropriate user permissions in order to extract the information from the Domain Controller.

NOTE

If you import information from an NT Domain Controller, that information will become visible to all EPICenter user. If this is a security concern, you may want to consider exporting information from the NT Domain Controller to a file, and using that to create an import file that contains only the information that you want to be visible through EPICenter Grouping Manager.

The import process imports the following information:

- For users: username, fullname, description.
- For hosts: hostname, description, Primary IP address.
- For groups (users only): name, description, usernames of members.

The import process creates a file, `import.txt`, in the `user/import` subdirectory.

9 Using the IP/MAC Address Finder

This chapter describes how to use the IP/MAC Address Finder applet for:

- Creating search requests for locating specific MAC or IP addresses on the network, and determining the devices and ports where they are located.
- Creating search requests to identify MAC and IP addresses on specific devices and ports.

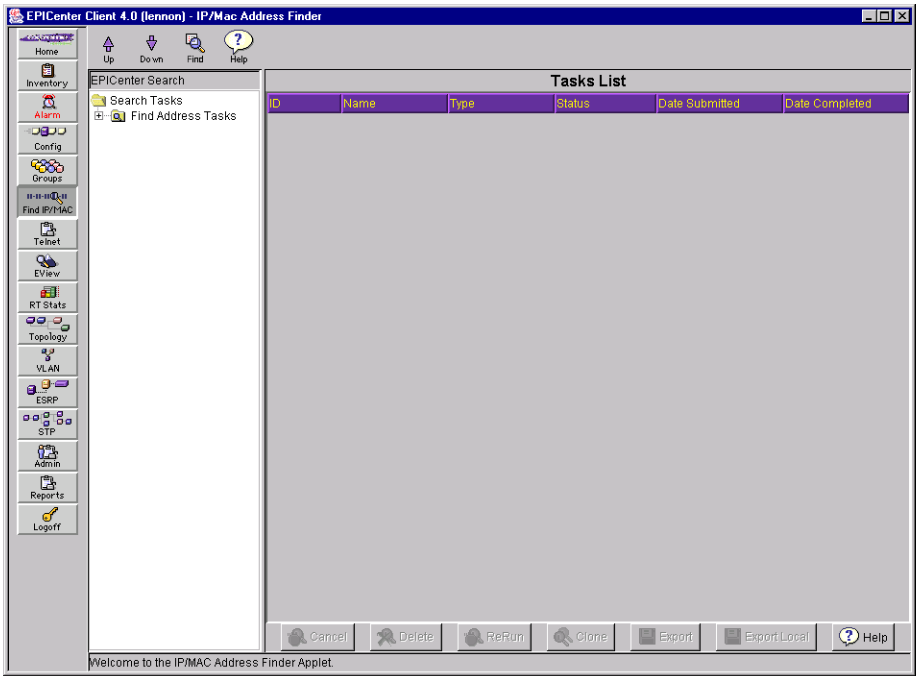
Overview of the IP/MAC Finder Applet

Using the IP/MAC Address Finder applet you can specify a set of Media Access Control (MAC) or Internet Protocol (IP) network addresses, and a set of network devices to query for those addresses. The applet returns a list of the devices and ports associated with those addresses. You can also specify a set of devices and ports, and search for all MAC and IP addresses known to those devices and ports.

The Search Tool lets you configure and start a search task, view the status of the task, and view the task results. The task specification and results are kept in the task list until you delete them, or until you log out of the EPICenter client.

When you click the **Find IP/MAC** button in the Navigation Toolbar, the main IP/MAC Address Finder page is displayed as shown in Figure 82. Initially there are no search requests displayed.

Figure 82: IP/MAC Address Finder main page



Welcome to the IP/MAC Address Finder Applet.

ExtremeWare Software Requirements

The IP/MAC AddressFinder applet requires certain versions of ExtremeWare to be running on your Extreme Networks switch in order to retrieve data from an IP address or MAC address search task.

Table 6 lists versions of ExtremeWare and whether or not they are currently supported by the IP/MAC address applet.

Table 6: ExtremeWare Requirements for Using the IP/MAC Address Applet

ExtremeWare Version	Requirements
2.x through 6.1.4	Fully supported using the dot1dTpFdbTable.
6.1.5	Not supported.

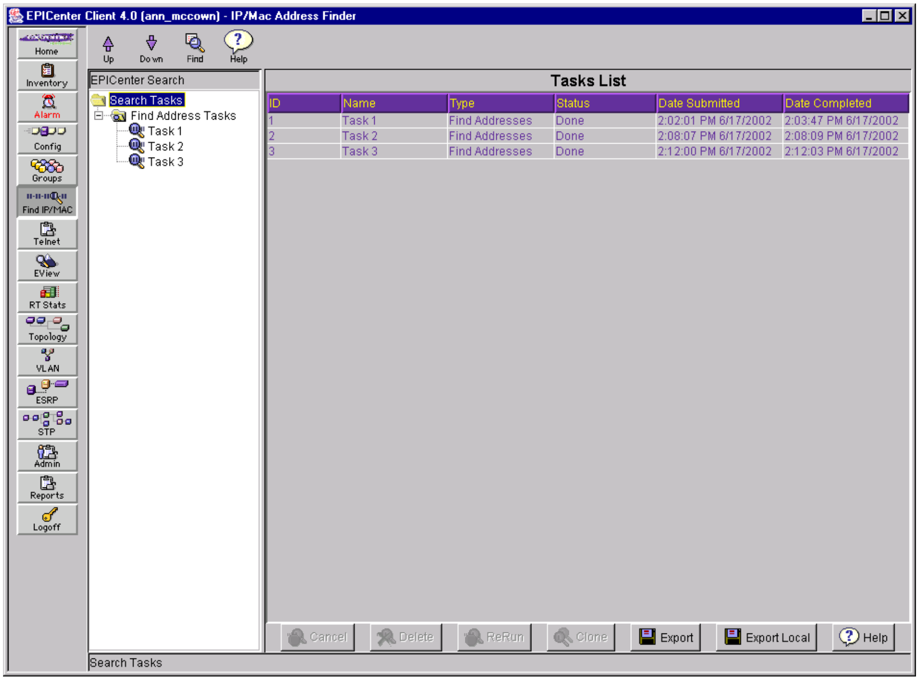
Table 6: ExtremeWare Requirements for Using the IP/MAC Address Applet (continued)

ExtremeWare Version	Requirements
6.1.6 through 6.1.9	Supported using the using the dot1dTpFdbTable. Use the `enable snmp dot1dTpFdbTable` command to enable the dot1dTpFdbTable on the switch.
6.2 and above	Fully supported using a private MIB.

Tasks List Summary Window

As search tasks are initiated, they are placed in the Find Address Tasks List in the Component Tree. Selecting the Find Address Tasks folder in the Component Tree displays a summary of the status of the tasks in the Task List (see Figure 83).

Figure 83: Tasks List summary



Tasks List

ID	Name	Type	Status	Date Submitted	Date Completed
1	Task 1	Find Addresses	Done	2:02:01 PM 6/17/2002	2:03:47 PM 6/17/2002
2	Task 2	Find Addresses	Done	2:08:07 PM 6/17/2002	2:08:09 PM 6/17/2002
3	Task 3	Find Addresses	Done	2:12:00 PM 6/17/2002	2:12:03 PM 6/17/2002

The Tasks List shows you basic information about the tasks you set up

- **ID** is automatically assigned by the EPICenter server
- **Name** is the name you gave the task when you created it. Giving a task a unique name is important to distinguish it from other tasks in the Tasks List
- **Type** is the type of search this will perform. In EPICenter release 4.0, this is always **Find Addresses**
- **Status** shows the status of the request
- **Date Submitted** shows the date and time the task was submitted
- **Date Completed** shows the date and time the task was finished

From the **Tasks List** you can perform the following functions:

- Select a Pending task and click **Cancel** to cancel the task before it has completed
- Select a task and click **Delete** to delete an individual task. This deletes the task specification as well as the task results. Once a task has completed, it cannot be rerun unless it is the most recent task completed
- Select a task and click **ReRun** to execute the task again
- Select a task and click **Clone** to bring up the **Find Addresses** window with the specifications of the selected task already displayed
- Select a task and click **Export** to export the task details to a text file. See “Exporting Task Results to a Text File” on page 282 for more information.
- Select a task and click **Export Local** to export the task details locally to a text file on your client system. You can only use this feature if you are running the stand-alone client on your local system. If you are using the browser-based client, this button will be greyed out. See “Exporting Task Results to a Text File” on page 282 for more information.

NOTE

The specified tasks and their search results persist as long as you are running the EPICenter client, even if you leave the IP/MAC Address Finder applet and go to another EPICenter applet. However, when you exit the EPICenter client, all the task specifications and search results are deleted.

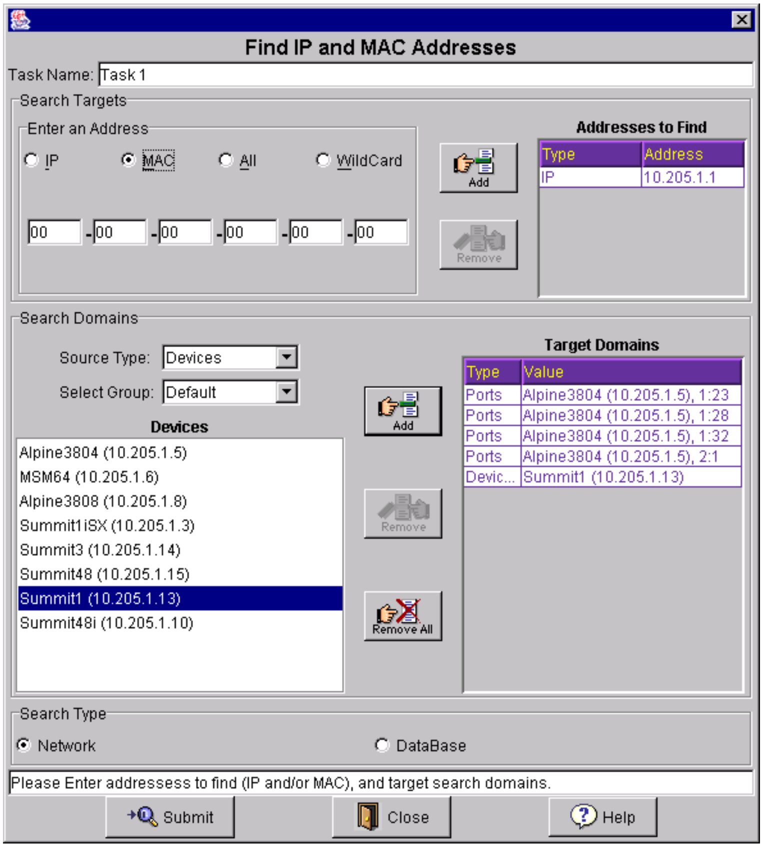
Creating a Search Task

To create a search task, click the **Find** button in the tool bar at the top of the IP/MAC Address Finder page. This displays the Find IP and MAC Addresses window (Figure 84).

NOTE

If you have already submitted a task, the most recent task with its specifications is displayed in the Find Addresses window.

Figure 84: Find IP and MAC Addresses window



Find IP and MAC Addresses

Task Name: Task 1

Search Targets

Enter an Address

○ IP ● MAC ○ All ○ WildCard

00 - 00 - 00 - 00 - 00 - 00

Addresses to Find

Type	Address
IP	10.205.1.1

Search Domains

Source Type: Devices

Select Group: Default

Devices

- Alpine3804 (10.205.1.5)
- MSM64 (10.205.1.6)
- Alpine3808 (10.205.1.8)
- Summit1iSX (10.205.1.3)
- Summit3 (10.205.1.14)
- Summit48 (10.205.1.15)
- Summit1 (10.205.1.13)
- Summit48i (10.205.1.10)

Target Domains

Type	Value
Ports	Alpine3804 (10.205.1.5), 1:23
Ports	Alpine3804 (10.205.1.5), 1:28
Ports	Alpine3804 (10.205.1.5), 1:32
Ports	Alpine3804 (10.205.1.5), 2:1
Devic...	Summit1 (10.205.1.13)

Search Type

● Network ○ DataBase

Please Enter addressess to find (IP and/or MAC), and target search domains.

To create a search task:

1 Enter the task name in the **Task Name** field. This name helps you identify the task in the Find Address Tasks List. Names of the form Task1, Task2 and so on are provided by default.

2 Define the search targets: in the **Enter an Address** group box, select either **IP** or **MAC** to determine the format of the address to search for, and enter the address into the fields provided. Click the **Add Address** button to add the address to the **Addresses to Find** list.

— To find all addresses in the given search domain, click **All** in the **Enter an Address** group box, then click the **Add Address** button to add All to the to **Addresses to Find** list

Note that **All** is added to the search list in addition to any individually-specified addresses. The **All** specification does overlap with the other target addresses. However, this allows the user to remove the **All** specification without losing the other addresses in the search list.

— Click the **WildCard** button to search for a MAC address defined only by the first three hexadecimal tuples.

The first three hexadecimal tuples in a MAC address are assigned to vendors, such as Extreme Networks, and they are vendor specific. The wildcard feature allows you to find all MAC addresses coming from a particular vendor.

— Click the **Remove Address** button to remove an address from the list

3 Define the search domain. The **Target Domains** list specifies the scope of the devices to be included in the search. Devices not included in this domain will not be searched.

You can define the search space in several ways:

— **Devices** lets you select individual devices to include in the search

— **Device Groups** lets you search all the devices in a specified device group

— **Ports** lets you select individual ports to include in the search

— **PortGroups** lets you search all the devices in a specified port group

You can create a target domain that includes a combination of these specifications.

NOTE

The IP/MAC Finder applet does not support hierarchical port groups. If you have created port groups in the Grouping Manager that include subgroups as members, the subgroups will not appear in the Target Domains list. Instead, any ports that are *members of subgroups will be displayed directly under the top-level port group, as if they are members of the top-level group.*

4 If you select Devices or Ports as the Source Type, you must also select a Device Group from the **Select Group** field to define the list of devices that will appear in the Devices list. If you select Domains or PortGroups, this field well be inactive.

5 Select the Device, Port, Device Group, or Port Group that you want to search and click the **Add** button to move it into the Target Domains list.

To remove a member of the Target Domains list, select the item in the list and click **Remove**. To clear the Target Domains list, click **Remove All**.

6 Define the search type. From the **Search Type** field, select **Network** to perform a search from the network or **DataBase** to perform a search from the EPICenter database using the collected edge port information.

If you perform a network search, EPICenter reports unreachable devices. If you perform an EPICenter database search, EPICenter does not report unreachable devices.

7 When you have completed your search specification, click the **Submit** button at the bottom of the window to initiate the search.

The IP/MAC Finder applet searches the IP Address Translation Table (the `ipNetToMediaTable`) in each device agent for IP addresses, and the Forwarding Database (FDB) for MAC addresses.

NOTE

The IP/MAC Finder applet will not identify a device’s own IP address when you search for IP addresses on that device. In other words, the applet will not find IP address 10.2.3.4 on the switch whose address is 10.2.3.4. It can only find addresses that are in the agent’s IP Address Translation table, and a device’s own address is not included in the table. The applet will find the address on the other switches that have connectivity to the switch with the target IP address, however.

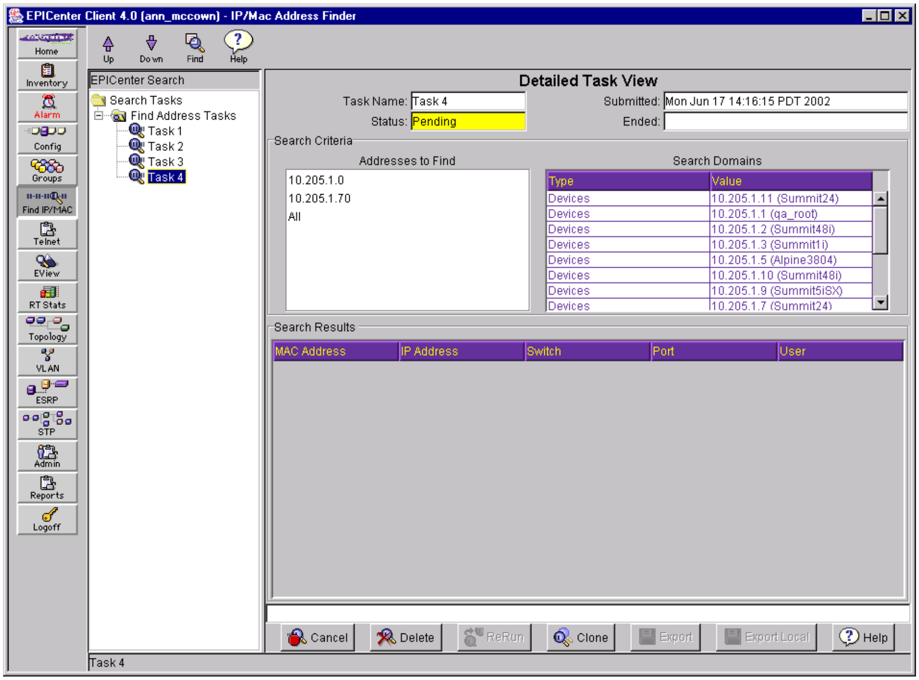
NOTE

Each search task can return a maximum of 2,000 MAC address entries. If a search returns more than 2,000 entries, a warning message is displayed in the status window. If you see a warning message, add additional search constraints to reduce the number of returned MAC addresses to less than 2,000.

Detailed Task View

When you initiate a search, the task is placed in the Find Address Tasks list in the Component Tree. The main panel displays the Detailed Task View for the current search task (see Figure 85).

Figure 85: Search in progress



EPICenter Client 4.0 (ann_mccown) - IP/Mac Address Finder

EPICenter Search

- Search Tasks
- Find Address Tasks
  - Task 1
  - Task 2
  - Task 3
  - Task 4

Detailed Task View

Task Name: Task 4

Status: Pending

Submitted: Mon Jun 17 14:16:15 PDT 2002

Ended:

Search Criteria

Addresses to Find

10.205.1.0
10.205.1.70
All

Search Domains

Type	Value
Devices	10.205.1.11 (Summit24)
Devices	10.205.1.1 (qa_root)
Devices	10.205.1.2 (Summit48i)
Devices	10.205.1.3 (Summit1i)
Devices	10.205.1.5 (Alpine3804)
Devices	10.205.1.10 (Summit48i)
Devices	10.205.1.9 (Summit5iSX)
Devices	10.205.1.7 (Summit24)

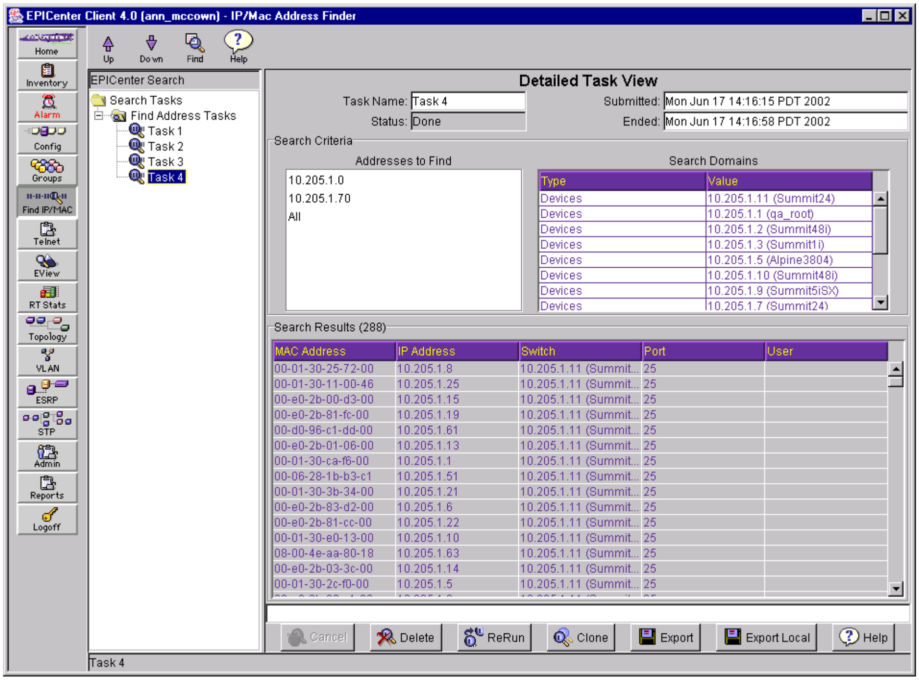
Search Results

MAC Address	IP Address	Switch	Port	User

Task 4

While the task is in progress, the window shows the status as **Pending**. When the search is complete, the **Detailed Task View** shows the results for the search (Figure 86).

Figure 86: Address search results in the Detailed Task view



Detailed Task View

Task Name: Task 4

Status: Done

Submitted: Mon Jun 17 14:16:15 PDT 2002

Ended: Mon Jun 17 14:16:58 PDT 2002

Search Criteria

Addresses to Find

10.205.1.0
10.205.1.70
All

Search Domains

Type	Value
Devices	10.205.1.11 (Summit24)
Devices	10.205.1.1 (qa_root)
Devices	10.205.1.2 (Summit48i)
Devices	10.205.1.3 (Summit1i)
Devices	10.205.1.5 (Alpine3804)
Devices	10.205.1.10 (Summit48i)
Devices	10.205.1.9 (Summit5iSX)
Devices	10.205.1.7 (Summit24)

Search Results (288)

MAC Address	IP Address	Switch	Port	User
00-01-30-25-72-00	10.205.1.8	10.205.1.11 (Summit...	25	
00-01-30-11-00-46	10.205.1.25	10.205.1.11 (Summit...	25	
00-e0-2b-00-d3-00	10.205.1.15	10.205.1.11 (Summit...	25	
00-e0-2b-81-fc-00	10.205.1.19	10.205.1.11 (Summit...	25	
00-d0-96-c1-dd-00	10.205.1.61	10.205.1.11 (Summit...	25	
00-e0-2b-01-06-00	10.205.1.13	10.205.1.11 (Summit...	25	
00-01-30-ca-f6-00	10.205.1.1	10.205.1.11 (Summit...	25	
00-06-28-1b-b3-c1	10.205.1.51	10.205.1.11 (Summit...	25	
00-01-30-3b-34-00	10.205.1.21	10.205.1.11 (Summit...	25	
00-e0-2b-83-d2-00	10.205.1.6	10.205.1.11 (Summit...	25	
00-e0-2b-81-cc-00	10.205.1.22	10.205.1.11 (Summit...	25	
00-01-30-e0-13-00	10.205.1.10	10.205.1.11 (Summit...	25	
08-00-4e-aa-80-18	10.205.1.63	10.205.1.11 (Summit...	25	
00-e0-2b-03-3c-00	10.205.1.14	10.205.1.11 (Summit...	25	
00-01-30-2c-f0-00	10.205.1.5	10.205.1.11 (Summit...	25	

The Detailed Task View shows the following information about your search.

- **Task Name** is the name you gave the task when you created it. Giving a task a unique name is important to distinguish it from other tasks in the Tasks List
- **Status** shows the status of the request
- **Submitted** shows the date and time the task was submitted
- **Completed** shows the data and time the task was finished

The Search Criteria areas shows:

- The list of IP or MAC addresses that were the object of the search
- The Search Domains where the search took place. The Search Domains lists shows the name and type (Device or Group) of the components of the domain specification

The Search Results list shows the results of the search. For every address successfully located, this list shows:

- Both the MAC address and the corresponding IP address.
- The switch and port to which the address is connected.
- The User (name) currently logged in at that address.

Once the search is complete, the search results will stay in the Tasks List until you explicitly delete them using the Delete Function from the Tasks List Summary View, or until you exit the EPICenter client.

From the Task Detail window you can do the following:

- Click **Delete** to delete this task. This deletes the task specification as well as the task results.
- Click **ReRun** to execute the task again.
- Click **Clone** to bring up the **Find Addresses** window with the specifications of the selected task already displayed.
- Click **Export** to export task search results to a text file on the server machine. See "Exporting Task Results to a Text File" on page 282 for more information.
- Click **Export Local** to export task search results locally to a text file on your client system. You can only use this feature if you are running the stand-alone client on your local system. If you are using the browser-based client, this button will be greyed out. See "Exporting Task Results to a Text File" on page 282 for more information.

Exporting Task Results to a Text File

You can export a task's detail results or search results to a text file. You can do this from the Tasks List.

To export the detail or search results to a file, do the following:

1 From the Detailed Task View, click the **Export** button if you are running the browser-based client. Click the **Export Local** button if you are running the stand-alone client and you want to save the file locally.

If you select **Export**, the Export pop-up dialog is displayed.

If you select **Export Local**, the Save dialog is displayed.

2 Enter a file name and subdirectory name in the fields provided.

If you select **Export**:

— Detail and search result files for a task are saved in the EPICenter `user/AddressFinderResults` directory, which is a subdirectory of the EPICenter installation directory. You can optionally specify a subdirectory within the AddressFinderResults directory by entering the subdirectory name into the **Directory** field.

— By default, a search result exported file will be given a name created from the current date, time, and task name. For example, the results for task "Task 2" run on April 25, 2001 at 3:52 pm will be saved in a file named `2001_4_25_1552_Task 2.txt`. You can change the file name by replacing the name in the `File Name` field.

If you select **Export Local**:

— Detail and search result files for a task are saved by default in the `WINNT\Profiles\user` directory on Windows systems or your local home directory on Solaris systems. You can also choose to save the file in a different location in the Save dialog.

3 Click the **Apply** button to save the results.

Click **Reset** to clear all the fields.

Click **Close** to close the dialog without saving the file.

10 Using ExtremeView

This chapter describes how to use ExtremeView for:

- Viewing Extreme and third-party device status.
- Viewing and setting Extreme device configuration information using the ExtremeWare Vista graphical user interface.
- Viewing Extreme device statistics using the ExtremeWare Vista graphical user interface.

Overview of the ExtremeView Application

The ExtremeView applet displays information about the status of Extreme switches (Summit, Alpine, and Black Diamond switches) and third-party devices managed by EPICenter. Any EPICenter user can view status information about these network devices. Users with Administrator or Manager access can view and modify configuration information for those switches through the ExtremeWare Vista graphical user interface.

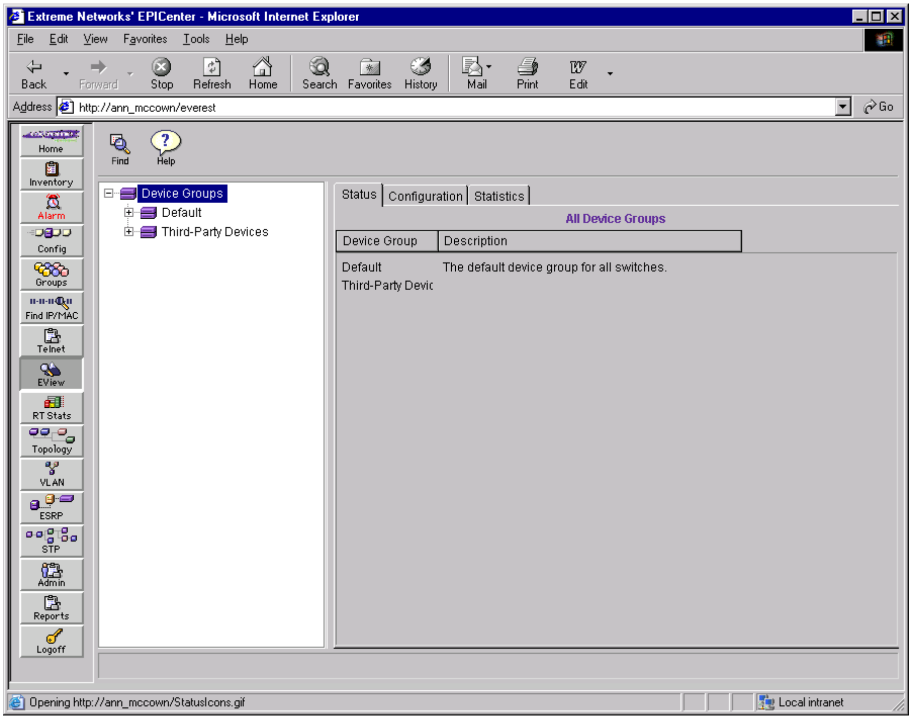
ExtremeWare Vista is device management software running in a Summit, Alpine, or Black Diamond switch. It allows you to access the switch over a TCP/IP network using a standard Web browser, and provides a set of pages for configuring and monitoring the Summit or Black Diamond switch.

NOTE

You must have a user account on the Extreme switch to run ExtremeWare Vista on the switch. A user account on a switch is separate from an EPICenter user account.

When you click the **EView** button in the Navigation Toolbar, the main ExtremeView page appears as shown in Figure 87.

Figure 87: The ExtremeView applet, main page



Address: http://ann_mccown/everest

All Device Groups

Device Group	Description
Default	The default device group for all switches.
Third-Party Devic	

Opening http://ann_mccown/StatusIcons.gif

Use the tabs in the Component status/detail panel as follows:

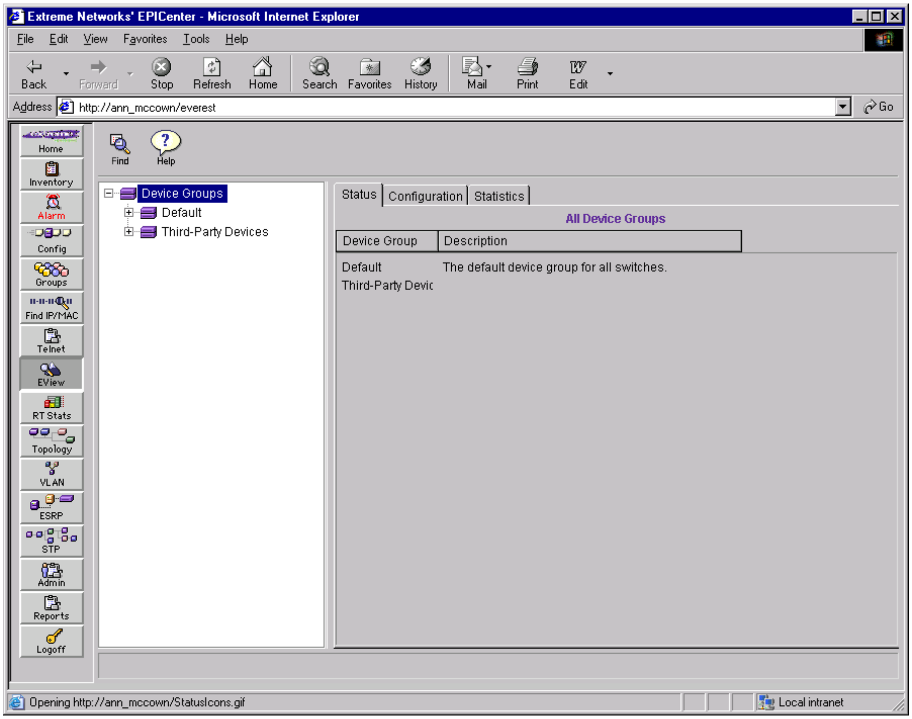
- **Status** displays status information for the devices known to EPICenter. You can view summary status for the devices within a device group. You can view status and configuration information for individual devices, slots, and ports through a front panel view accompanied by a table of configuration and status information. Select a device subnode under a Device Group name node to view configuration information for the device.

- **Configuration** displays configuration information for Extreme Networks switches based on the configuration categories in ExtremeWare Vista. You can view summary configuration information for all devices in a device group known to EPICenter, as well as detailed configuration information for individual Extreme Networks switches, organized by ExtremeWare Vista configuration categories. Individual third-party devices cannot be accessed through this feature.
- **Statistics** displays monitoring results for Extreme Networks switches, also based on ExtremeWare Vista statistics monitoring categories. You can view summary statistics that include active and inactive port counters for all Extreme Networks devices—in a specific device group—known to EPICenter, or statistics for individual Extreme Networks switches. Individual third-party devices cannot be accessed through this feature.

Viewing Device Status Information

Select the **Status** tab in the ExtremeView applet to display the Status window. The Status window displays a summary of all of the device groups known to EPICenter, as shown in Figure 88.

Figure 88: The ExtremeView applet, Status window



Extreme Networks' EPICenter - Microsoft Internet Explorer

Address http://ann_mccown/everest

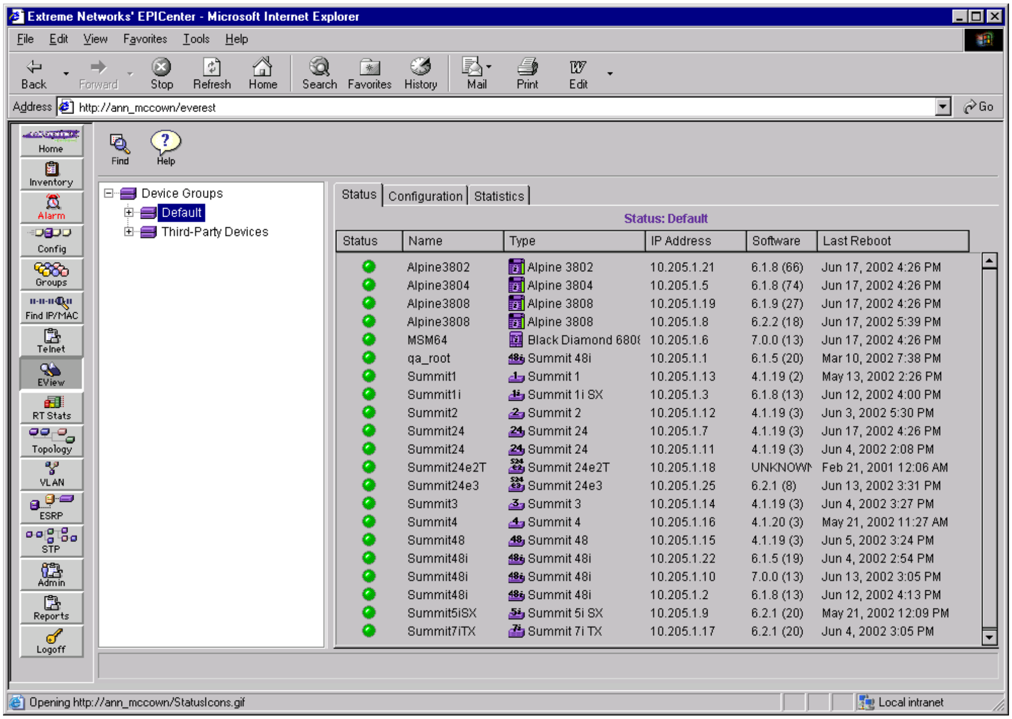
All Device Groups

Device Group	Description
Default	The default device group for all switches.
Third-Party Devic	

Opening http://ann_mccown/StatusIcons.gif

To show summary status for the devices in a Device Group, select a Device Group name from the Component Tree on the left (see Figure 89).

Figure 89: The ExtremeView applet, device group status



http://ann_mccown/everest

Status: Default

Status	Name	Type	IP Address	Software	Last Reboot
🟢	Alpine3802	Alpine 3802	10.205.1.21	6.1.8 (66)	Jun 17, 2002 4:26 PM
🟢	Alpine3804	Alpine 3804	10.205.1.5	6.1.8 (74)	Jun 17, 2002 4:26 PM
🟢	Alpine3808	Alpine 3808	10.205.1.19	6.1.9 (27)	Jun 17, 2002 4:26 PM
🟢	Alpine3808	Alpine 3808	10.205.1.8	6.2.2 (18)	Jun 17, 2002 5:39 PM
🟢	MSM64	Black Diamond 680(	10.205.1.6	7.0.0 (13)	Jun 17, 2002 4:26 PM
🟢	qa_root	Summit 48i	10.205.1.1	6.1.5 (20)	Mar 10, 2002 7:38 PM
🟢	Summit1	Summit 1	10.205.1.13	4.1.19 (2)	May 13, 2002 2:26 PM
🟢	Summit1i	Summit 1i SX	10.205.1.3	6.1.8 (13)	Jun 12, 2002 4:00 PM
🟢	Summit2	Summit 2	10.205.1.12	4.1.19 (3)	Jun 3, 2002 5:30 PM
🟢	Summit24	Summit 24	10.205.1.7	4.1.19 (3)	Jun 17, 2002 4:26 PM
🟢	Summit24	Summit 24	10.205.1.11	4.1.19 (3)	Jun 4, 2002 2:08 PM
🟢	Summit24e2T	Summit 24e2T	10.205.1.18	UNKNOWN	Feb 21, 2001 12:06 AM
🟢	Summit24e3	Summit 24e3	10.205.1.25	6.2.1 (8)	Jun 13, 2002 3:31 PM
🟢	Summit3	Summit 3	10.205.1.14	4.1.19 (3)	Jun 4, 2002 3:27 PM
🟢	Summit4	Summit 4	10.205.1.16	4.1.20 (3)	May 21, 2002 11:27 AM
🟢	Summit48	Summit 48	10.205.1.15	4.1.19 (3)	Jun 5, 2002 3:24 PM
🟢	Summit48i	Summit 48i	10.205.1.22	6.1.5 (19)	Jun 4, 2002 2:54 PM
🟢	Summit48i	Summit 48i	10.205.1.10	7.0.0 (13)	Jun 13, 2002 3:05 PM
🟢	Summit48i	Summit 48i	10.205.1.2	6.1.8 (13)	Jun 12, 2002 4:13 PM
🟢	Summit5iSX	Summit 5i SX	10.205.1.9	6.2.1 (20)	May 21, 2002 12:09 PM
🟢	Summit7iTX	Summit 7i TX	10.205.1.17	6.2.1 (20)	Jun 4, 2002 3:05 PM

Opening http://ann_mccown/StatusIcons.gif

The following status information is displayed:

- The status “lights” show the status of the device as detected by EPICenter.

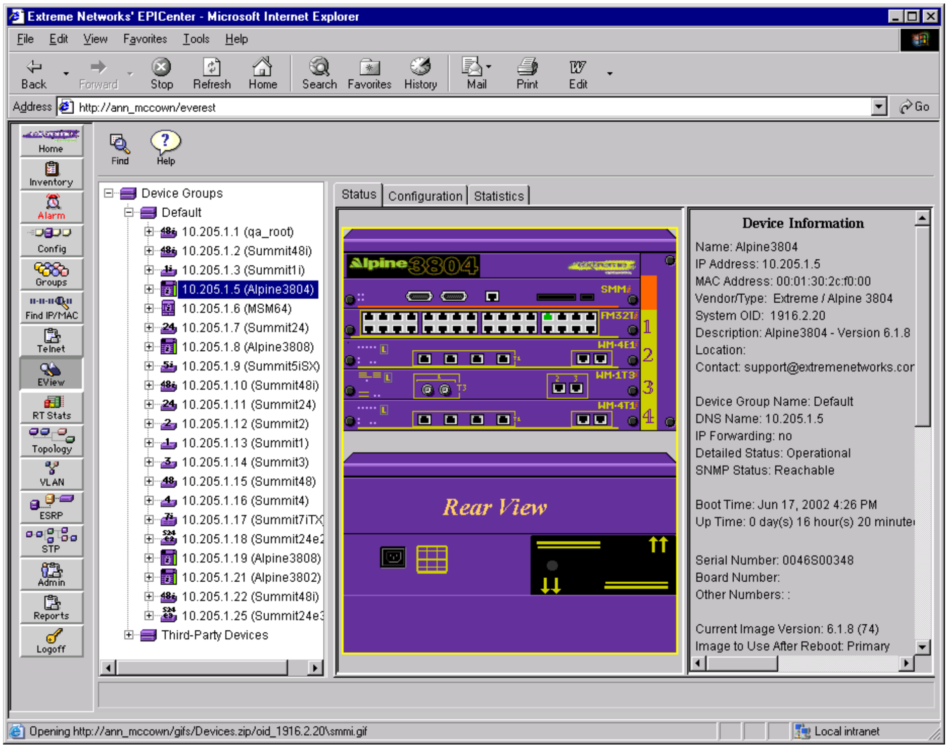
Table 7: ExtremeView Device Status Indicators

Status Light	Device Status
🟢 Green	Device is up and OK
🟡 Yellow	Device is responding, but reports an error condition such as a fan or power supply failure, or excessive temperature
🔴 Red	Device is not responding to EPICenter status queries. This may mean that the switch is down, that it is unreachable on the network, or that the SNMP community strings have changed and EPICenter can no longer contact the switch.

- The name, type of switch, IP address, the ExtremeWare software version, and the last reboot time are retrieved from the device by EPICenter.

Select a device in the Component Tree on the left to display detailed configuration and status information, as shown in Figure 90. This display shows additional information that EPICenter has gathered from the switch agent.

Figure 90: The ExtremeView applet, switch status



Device Information

Name: Alpine3804
IP Address: 10.205.1.5
MAC Address: 00:01:30:2c:f0:00
Vendor/Type: Extreme / Alpine 3804
System OID: 1916.2.20
Description: Alpine3804 - Version 6.1.8
Location:
Contact: support@extremenetworks.cor

Device Group Name: Default
DNS Name: 10.205.1.5
IP Forwarding: no
Detailed Status: Operational
SNMP Status: Reachable

Boot Time: Jun 17, 2002 4:26 PM
Up Time: 0 day(s) 16 hour(s) 20 minute

Serial Number: 0046S00348
Board Number:
Other Numbers: :

Current Image Version: 6.1.8 (74)
Image to Use After Reboot: Primary

Opening http://ann_mccown/gifs/Devices.zip/oid_1916.2.20\smmi.gif

This view shows an active graphical display of the switch front panel, as well as a panel of status information.

You can view the status of individual modules (slots), ports, and power supplies (where shown), as shown in Figure 91, in two ways:

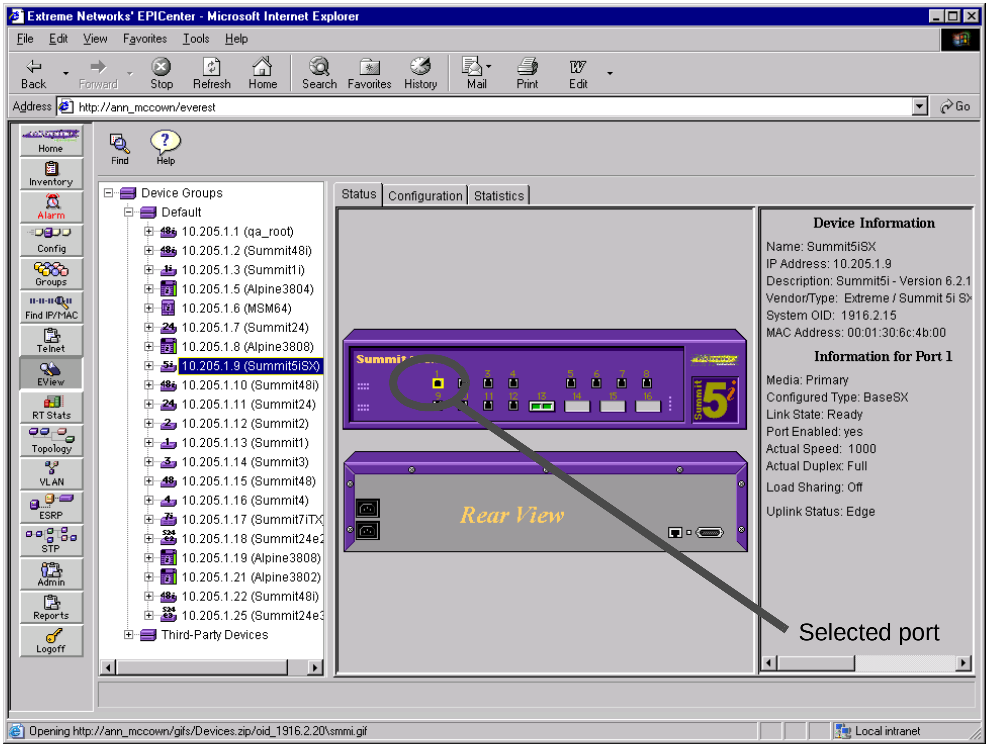
- Select the slot, port, or power supply by clicking the cursor on the item in the switch image.

- Display the list of slots or ports in the Component Tree, and select the element about which you want status information.

NOTE

The Component Tree does not display the empty slots in a device.

Figure 91: The ExtremeView applet, port status



Address: http://ann_mccown/everest

Device Groups
- Default
  - 10.205.1.1 (qa_root)
  - 10.205.1.2 (Summit48i)
  - 10.205.1.3 (Summit1i)
  - 10.205.1.5 (Alpine3804)
  - 10.205.1.6 (MSM64)
  - 10.205.1.7 (Summit24)
  - 10.205.1.8 (Alpine3808)
  - 10.205.1.9 (Summit5iSX)
  - 10.205.1.10 (Summit48i)
  - 10.205.1.11 (Summit24)
  - 10.205.1.12 (Summit2)
  - 10.205.1.13 (Summit1)
  - 10.205.1.14 (Summit3)
  - 10.205.1.15 (Summit48)
  - 10.205.1.16 (Summit4)
  - 10.205.1.17 (Summit7iTX
  - 10.205.1.18 (Summit24e2
  - 10.205.1.19 (Alpine3808)
  - 10.205.1.21 (Alpine3802)
  - 10.205.1.22 (Summit48i)
  - 10.205.1.25 (Summit24e3
- Third-Party Devices

Device Information

Name: Summit5iSX
IP Address: 10.205.1.9
Description: Summit5i - Version 6.2.1
Vendor/Type: Extreme / Summit 5i SX
System OID: 1916.2.15
MAC Address: 00:01:30:6c:4b:00

Information for Port 1

Media: Primary
Configured Type: BaseSX
Link State: Ready
Port Enabled: yes
Actual Speed: 1000
Actual Duplex: Full
Load Sharing: Off
Uplink Status: Edge

Opening http://ann_mccown/gifs/Devices.zip/oid_1916.2.20\smmi.gif

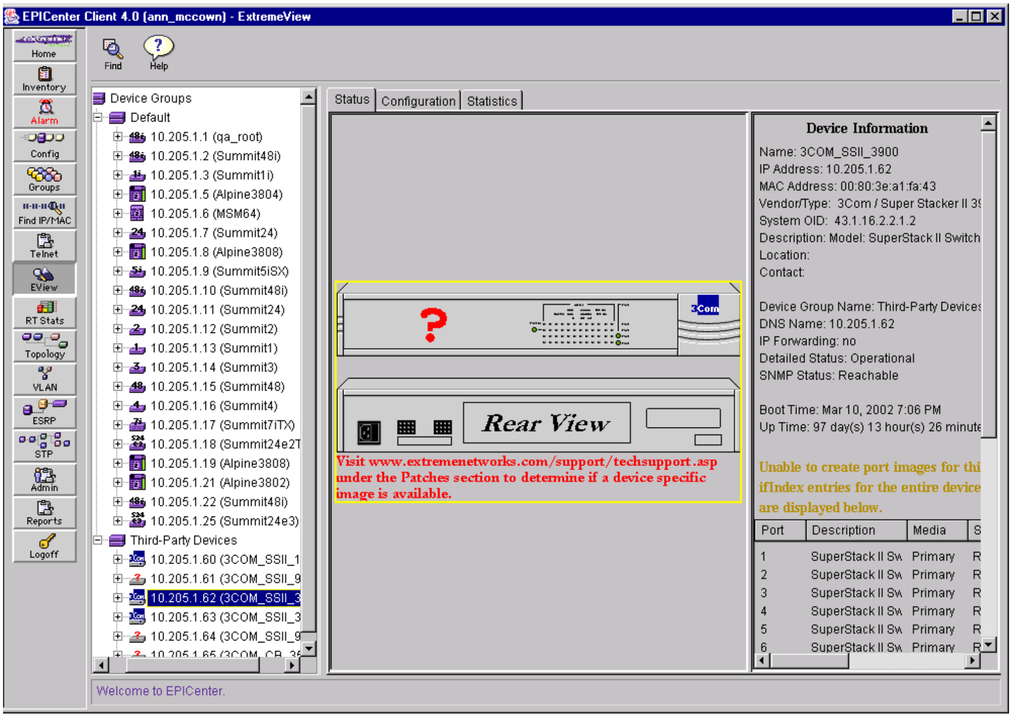
The right-hand panel displays status information about the selected port

There are a few Extreme devices, such as the Summit24e2T, Summit24e2X, and Summit Px1 switches, on which the ports are not selectable through ExtremeView. In these cases, the ifIndex entries for the device are displayed in the Device Information panel on the right.

Third-party Device Status

If the device you select is a third-party device, and EPICenter does not have an image for the specific model, it displays a generic device image (a vendor-specific image if possible, but without model-specific details). If there is no configuration file for the device, and it is being managed by the EPICenter, the ifIndex entries for the entire device are displayed in the Device Information panel on the right. Figure 92 shows a third-party device with an unknown configuration.

Figure 92: A third-party device with unknown configuration



Device Groups
- Default
  - 10.205.1.1 (qa_root)
  - 10.205.1.2 (Summit48i)
  - 10.205.1.3 (Summit1i)
  - 10.205.1.5 (Alpine3804)
  - 10.205.1.6 (MSM64)
  - 10.205.1.7 (Summit24)
  - 10.205.1.8 (Alpine3808)
  - 10.205.1.9 (Summit5iSX)
  - 10.205.1.10 (Summit48i)
  - 10.205.1.11 (Summit24)
  - 10.205.1.12 (Summit2)
  - 10.205.1.13 (Summit1)
  - 10.205.1.14 (Summit3)
  - 10.205.1.15 (Summit48)
  - 10.205.1.16 (Summit4)
  - 10.205.1.17 (Summit7iTX)
  - 10.205.1.18 (Summit24e2T
  - 10.205.1.19 (Alpine3808)
  - 10.205.1.21 (Alpine3802)
  - 10.205.1.22 (Summit48i)
  - 10.205.1.25 (Summit24e3)
- Third-Party Devices
  - 10.205.1.60 (3COM_SSII_1
  - 10.205.1.61 (3COM_SSII_9
  - 10.205.1.62 (3COM_SSII_3
  - 10.205.1.63 (3COM_SSII_3
  - 10.205.1.64 (3COM_SSII_9
  - 10.205.1.65 (3COM_CB_3

Visit www.extremenetworks.com/support/techsupport.asp under the Patches section to determine if a device specific image is available.

Device Information

Name: 3COM_SSII_3900
IP Address: 10.205.1.62
MAC Address: 00:80:3e:a1:fa:43
Vendor/Type: 3Com / Super Stacker II 39
System OID: 43.1.16.2.2.1.2
Description: Model: SuperStack II Switch
Location:
Contact:

Device Group Name: Third-Party Devices
DNS Name: 10.205.1.62
IP Forwarding: no
Detailed Status: Operational
SNMP Status: Reachable

Boot Time: Mar 10, 2002 7:06 PM
Up Time: 97 day(s) 13 hour(s) 26 minute

Unable to create port images for thi ifIndex entries for the entire device are displayed below.

Port	Description	Media	S
1	SuperStack II Sw	Primary	R
2	SuperStack II Sw	Primary	R
3	SuperStack II Sw	Primary	R
4	SuperStack II Sw	Primary	R
5	SuperStack II Sw	Primary	R
6	SuperStack II Sw	Primary	R

Welcome to EPICenter.

The port type is ethernet-csmacd(6) by default. However, some devices may support other port types. For example, some 3Com devices support a layer 3 module which is of type other(1).

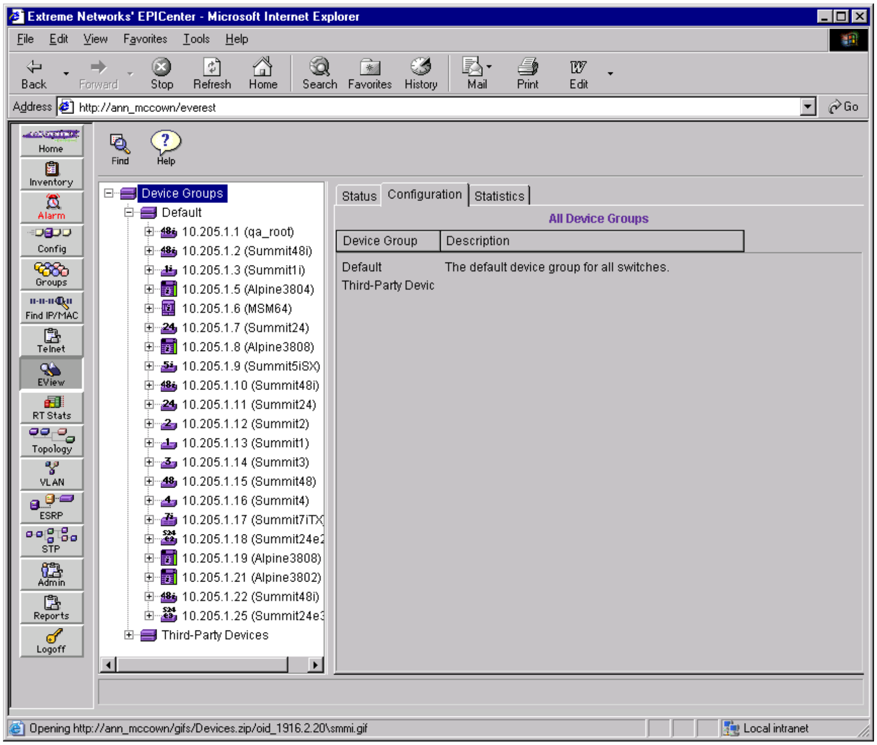
As Extreme Networks continues to develop additional device images, they will be made available on Extreme Networks’ support web site at:

www.extremenetworks.com/support/Patches.asp under the Patches section. You can also contact your Extreme Networks sales representative or reseller if you would like help from Extreme’s Professional Services organization for creating images or configuration files for specific devices.

Viewing Switch Configuration Information

Select the **Configuration** tab in the ExtremeView applet to display the Configuration window. The Configuration window displays a summary of all of the device groups known to EPICenter, as shown in Figure 93.

Figure 93: The ExtremeView applet, Configuration window


Extreme Networks' EPICenter - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address http://ann_mccown/everest
Go
Home
Inventory
Alarm
Config
Groups
Find IP/MAC
Telnet
EView
RT Stats
Topology
VLAN
ESRP
STP
Admin
Reports
Logoff
Find
Help
Status
Configuration
Statistics

Device Groups
- Default
  - 10.205.1.1 (qa_root)
  - 10.205.1.2 (Summit48i)
  - 10.205.1.3 (Summit1i)
  - 10.205.1.5 (Alpine3804)
  - 10.205.1.6 (MSM64)
  - 10.205.1.7 (Summit24)
  - 10.205.1.8 (Alpine3808)
  - 10.205.1.9 (Summit5iSX)
  - 10.205.1.10 (Summit48i)
  - 10.205.1.11 (Summit24)
  - 10.205.1.12 (Summit2)
  - 10.205.1.13 (Summit1)
  - 10.205.1.14 (Summit3)
  - 10.205.1.15 (Summit48)
  - 10.205.1.16 (Summit4)
  - 10.205.1.17 (Summit7iTX
  - 10.205.1.18 (Summit24e2
  - 10.205.1.19 (Alpine3808)
  - 10.205.1.21 (Alpine3802)
  - 10.205.1.22 (Summit48i)
  - 10.205.1.25 (Summit24e3
- Third-Party Devices

All Device Groups

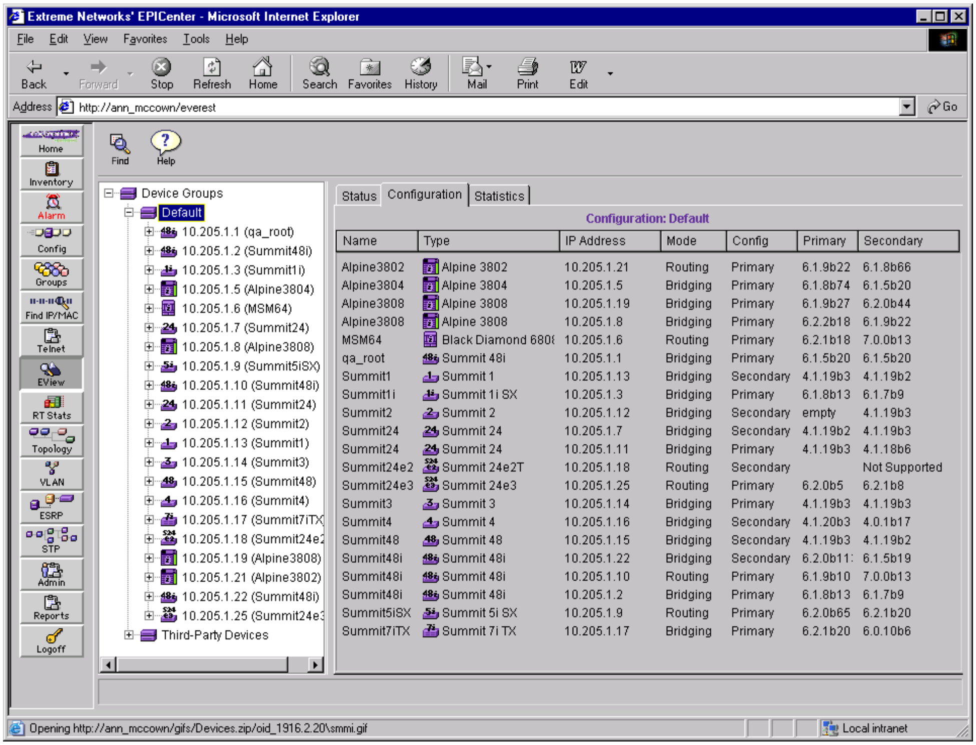
Device Group	Description
Default	The default device group for all switches.
Third-Party Devic	

Opening http://ann_mccown/gifs/Devices.zip/oid_1916.2.20\smmi.gif

Local intranet

To show a configuration summary for the Extreme Networks switches in a device group, select a device group name from the Component Tree on the left (see Figure 94).

Figure 94: The ExtremeView applet, Configuration summary


Extreme Networks' EPICenter - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go
Home
Inventory
Alarm
Config
Groups
Find IP/MAC
Telnet
EView
RT Stats
Topology
VLAN
ESRP
STP
Admin
Reports
Logoff
Find
Help
Status
Configuration
Statistics
Local intranet

http://ann_mccown/everest

- Device Groups
  - Default
    - 10.205.1.1 (qa_root)
    - 10.205.1.2 (Summit48i)
    - 10.205.1.3 (Summit1i)
    - 10.205.1.5 (Alpine3804)
    - 10.205.1.6 (MSM64)
    - 10.205.1.7 (Summit24)
    - 10.205.1.8 (Alpine3808)
    - 10.205.1.9 (Summit5iSX)
    - 10.205.1.10 (Summit48i)
    - 10.205.1.11 (Summit24)
    - 10.205.1.12 (Summit2)
    - 10.205.1.13 (Summit1)
    - 10.205.1.14 (Summit3)
    - 10.205.1.15 (Summit48)
    - 10.205.1.16 (Summit4)
    - 10.205.1.17 (Summit7iTX
    - 10.205.1.18 (Summit24e2
    - 10.205.1.19 (Alpine3808)
    - 10.205.1.21 (Alpine3802)
    - 10.205.1.22 (Summit48i)
    - 10.205.1.25 (Summit24e3
  - Third-Party Devices

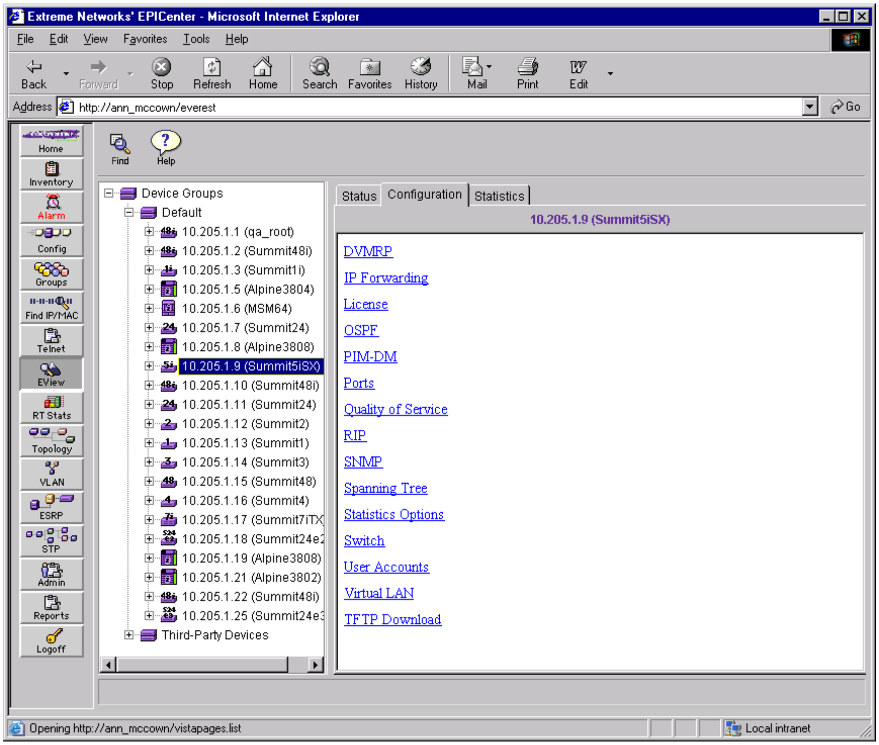
Configuration: Default

Name	Type	IP Address	Mode	Config	Primary	Secondary
Alpine3802	Alpine 3802	10.205.1.21	Routing	Primary	6.1.9b22	6.1.8b66
Alpine3804	Alpine 3804	10.205.1.5	Bridging	Primary	6.1.8b74	6.1.5b20
Alpine3808	Alpine 3808	10.205.1.19	Bridging	Primary	6.1.9b27	6.2.0b44
Alpine3808	Alpine 3808	10.205.1.8	Bridging	Primary	6.2.2b18	6.1.9b22
MSM64	Black Diamond 680(	10.205.1.6	Routing	Primary	6.2.1b18	7.0.0b13
qa_root	Summit 48i	10.205.1.1	Bridging	Primary	6.1.5b20	6.1.5b20
Summit1	Summit 1	10.205.1.13	Bridging	Secondary	4.1.19b3	4.1.19b2
Summit1i	Summit 1i SX	10.205.1.3	Bridging	Primary	6.1.8b13	6.1.7b9
Summit2	Summit 2	10.205.1.12	Bridging	Secondary	empty	4.1.19b3
Summit24	Summit 24	10.205.1.7	Bridging	Secondary	4.1.19b2	4.1.19b3
Summit24	Summit 24	10.205.1.11	Bridging	Primary	4.1.19b3	4.1.18b6
Summit24e2	Summit 24e2T	10.205.1.18	Routing	Secondary		Not Supported
Summit24e3	Summit 24e3	10.205.1.25	Routing	Primary	6.2.0b5	6.2.1b8
Summit3	Summit 3	10.205.1.14	Bridging	Primary	4.1.19b3	4.1.19b3
Summit4	Summit 4	10.205.1.16	Bridging	Secondary	4.1.20b3	4.0.1b17
Summit48	Summit 48	10.205.1.15	Bridging	Secondary	4.1.19b3	4.1.19b2
Summit48i	Summit 48i	10.205.1.22	Bridging	Secondary	6.2.0b11:	6.1.5b19
Summit48i	Summit 48i	10.205.1.10	Routing	Primary	6.1.9b10	7.0.0b13
Summit48i	Summit 48i	10.205.1.2	Bridging	Primary	6.1.8b13	6.1.7b9
Summit5iSX	Summit 5i SX	10.205.1.9	Routing	Primary	6.2.0b65	6.2.1b20
Summit7iTX	Summit 7i TX	10.205.1.17	Bridging	Primary	6.2.1b20	6.0.10b6

Opening http://ann_mccown/gifs/Devices.zip/oid_1916.2.20\smmi.gif

The sub-components under the device group name in the Component Tree are the devices that are members of the device group. Select a device, slot, or port from the Component Tree on the left to display the categories of configuration information that are available through this applet for the selected device, as shown in Figure 95.

Figure 95: The ExtremeView applet, ExtremeWare Vista summary



Extreme Networks' EPICenter - Microsoft Internet Explorer

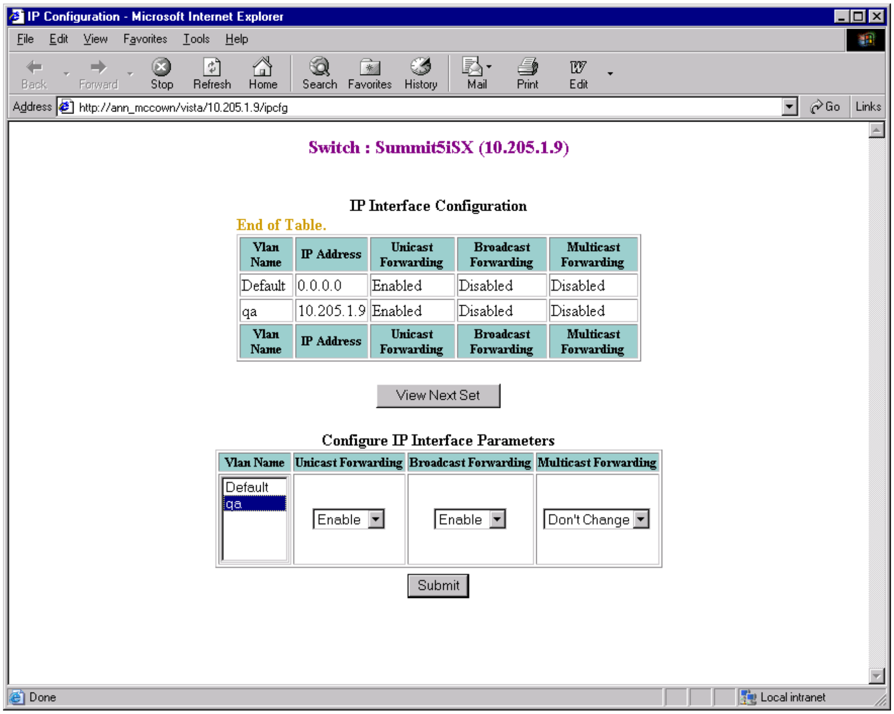
Address http://ann_mccown/everest

Opening http://ann_mccown/vistapages.list

The categories in the Configuration window correspond to pages from the ExtremeWare Vista application running on the switch. Select one of the categories to view the configuration settings for that switch in the category you have chosen.

As shown in Figure 96, this displays the current switch configuration, and provides an interface through which you can change the configuration.

Figure 96: The ExtremeView applet, Configuration details



IP Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address http://ann_mccown/vista/10.205.1.9/ipcfg
Go Links

Switch : Summit5iSX (10.205.1.9)

IP Interface Configuration

End of Table.

Vlan Name	IP Address	Unicast Forwarding	Broadcast Forwarding	Multicast Forwarding
Default	0.0.0.0	Enabled	Disabled	Disabled
qa	10.205.1.9	Enabled	Disabled	Disabled
Vlan Name	IP Address	Unicast Forwarding	Broadcast Forwarding	Multicast Forwarding

Configure IP Interface Parameters

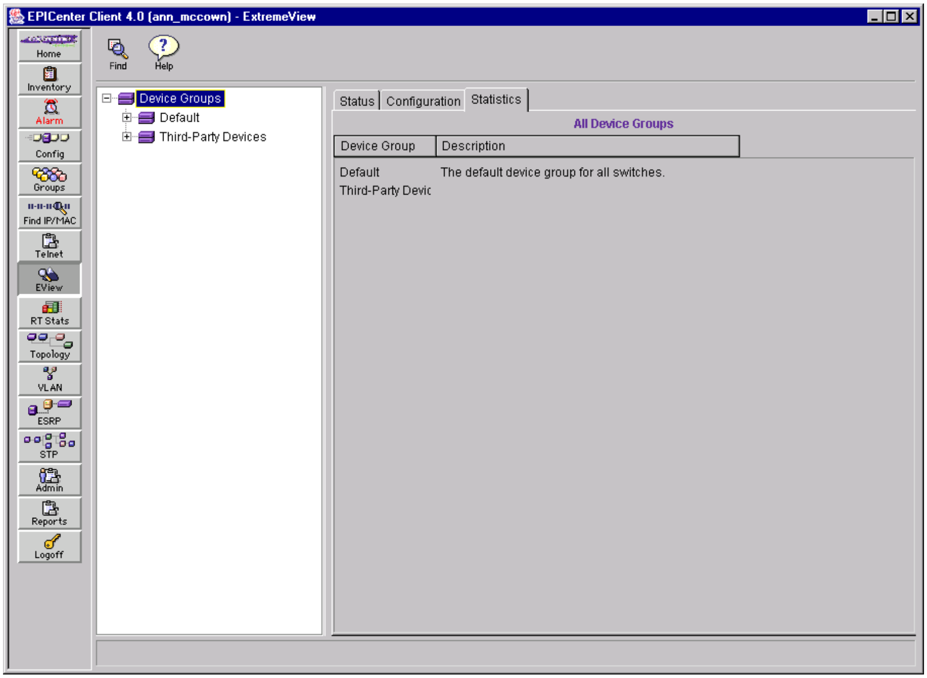
Vlan Name	Unicast Forwarding	Broadcast Forwarding	Multicast Forwarding
Default qa	Enable	Enable	Don't Change

Enter your changes directly into the editable fields in the configuration display. When you have made the necessary configuration changes, click **Submit** to send these to the switch for implementation.

Viewing Switch Statistics

Select the **Statistics** tab in the ExtremeView applet to display the Statistics window. The Statistics window displays a summary of all of the device groups known to EPICenter, as shown in Figure 97.

Figure 97: The ExtremeView applet, Statistics window

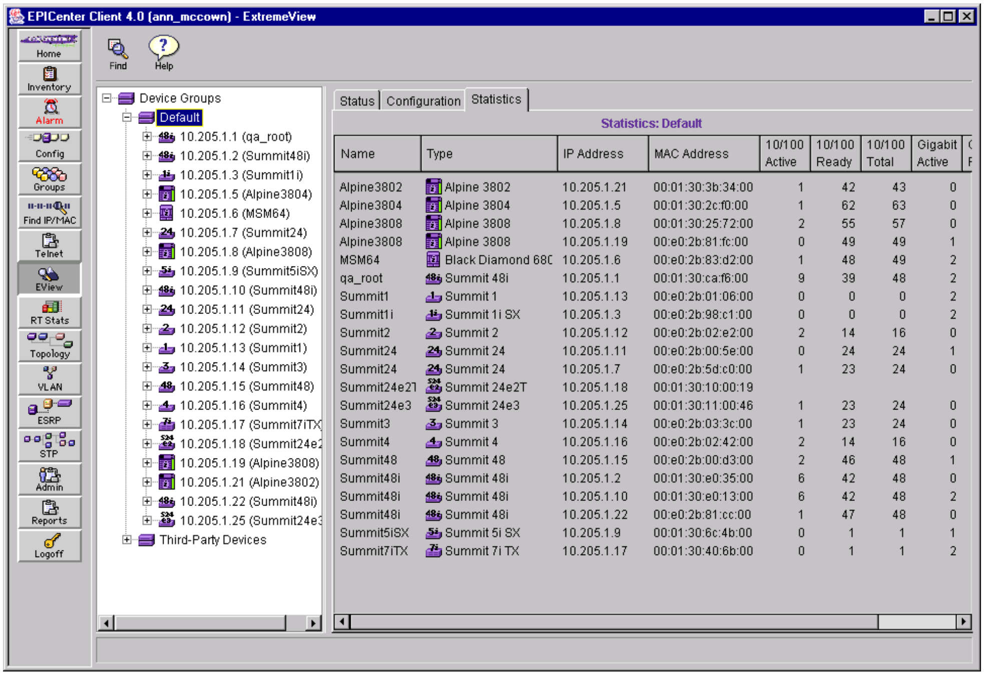


All Device Groups

Device Group	Description
Default	The default device group for all switches.
Third-Party Devic	

To show summary statistics for Extreme switches in a device group, select a device group name from the Component Tree on the left (see Figure 98).

Figure 98: The ExtremeView applet, device group statistics

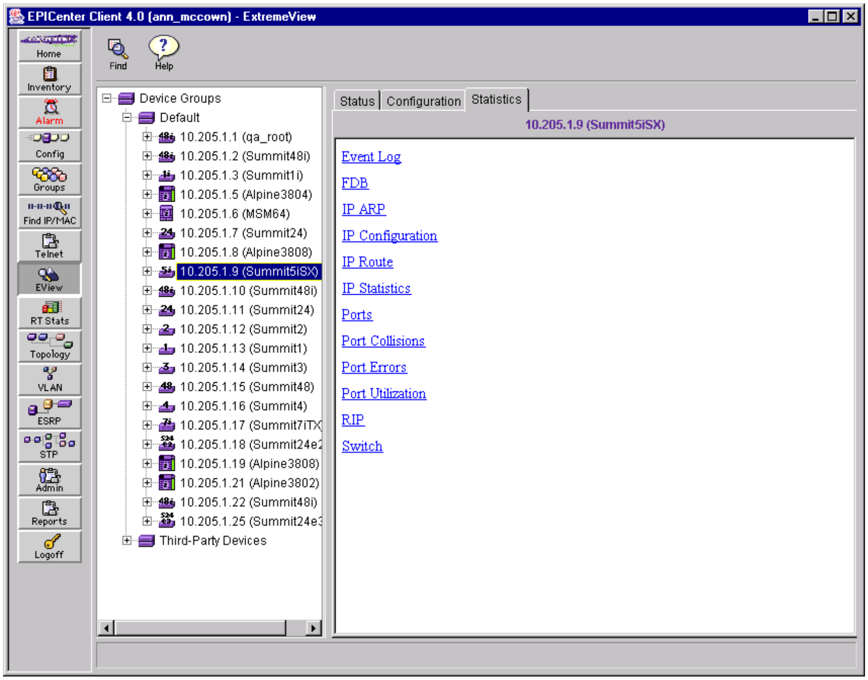


Statistics: Default

Name	Type	IP Address	MAC Address	10/100 Active	10/100 Ready	10/100 Total	Gigabit Active
Alpine3802	Alpine 3802	10.205.1.21	00:01:30:3b:34:00	1	42	43	0
Alpine3804	Alpine 3804	10.205.1.5	00:01:30:2c:f0:00	1	62	63	0
Alpine3808	Alpine 3808	10.205.1.8	00:01:30:25:72:00	2	55	57	0
Alpine3808	Alpine 3808	10.205.1.19	00:e0:2b:81:fc:00	0	49	49	1
MSM64	Black Diamond 68C	10.205.1.6	00:e0:2b:83:d2:00	1	48	49	2
qa_root	Summit 48i	10.205.1.1	00:01:30:ca:f6:00	9	39	48	2
Summit1	Summit 1	10.205.1.13	00:e0:2b:01:06:00	0	0	0	2
Summit1i	Summit 1i SX	10.205.1.3	00:e0:2b:98:c1:00	0	0	0	2
Summit2	Summit 2	10.205.1.12	00:e0:2b:02:e2:00	2	14	16	0
Summit24	Summit 24	10.205.1.11	00:e0:2b:00:5e:00	0	24	24	1
Summit24	Summit 24	10.205.1.7	00:e0:2b:5d:c0:00	1	23	24	0
Summit24e2T	Summit 24e2T	10.205.1.18	00:01:30:10:00:19				
Summit24e3	Summit 24e3	10.205.1.25	00:01:30:11:00:46	1	23	24	0
Summit3	Summit 3	10.205.1.14	00:e0:2b:03:3c:00	1	23	24	0
Summit4	Summit 4	10.205.1.16	00:e0:2b:02:42:00	2	14	16	0
Summit48	Summit 48	10.205.1.15	00:e0:2b:00:d3:00	2	46	48	1
Summit48i	Summit 48i	10.205.1.2	00:01:30:e0:35:00	6	42	48	0
Summit48i	Summit 48i	10.205.1.10	00:01:30:e0:13:00	6	42	48	2
Summit48i	Summit 48i	10.205.1.22	00:e0:2b:81:cc:00	1	47	48	0
Summit5iSX	Summit 5i SX	10.205.1.9	00:01:30:6c:4b:00	0	1	1	1
Summit7iTX	Summit 7i TX	10.205.1.17	00:01:30:40:6b:00	0	1	1	2

The sub-components under the device group name in the Component Tree are the devices that are members of the device group. Select a device from the Component Tree on the left to display the categories of statistical information that are available through this applet for the selected device, as shown in Figure 99.

Figure 99: The ExtremeView applet, ExtremeWare Vista statistics



- Device Groups
  - Default
    - 10.205.1.1 (qa_root)
    - 10.205.1.2 (Summit48i)
    - 10.205.1.3 (Summit1i)
    - 10.205.1.5 (Alpine3804)
    - 10.205.1.6 (MSM64)
    - 10.205.1.7 (Summit24)
    - 10.205.1.8 (Alpine3808)
    - 10.205.1.9 (Summit5iSX)
    - 10.205.1.10 (Summit48i)
    - 10.205.1.11 (Summit24)
    - 10.205.1.12 (Summit2)
    - 10.205.1.13 (Summit1)
    - 10.205.1.14 (Summit3)
    - 10.205.1.15 (Summit48)
    - 10.205.1.16 (Summit4)
    - 10.205.1.17 (Summit7iTX
    - 10.205.1.18 (Summit24e2
    - 10.205.1.19 (Alpine3808)
    - 10.205.1.21 (Alpine3802)
    - 10.205.1.22 (Summit48i)
    - 10.205.1.25 (Summit24e3
  - Third-Party Devices

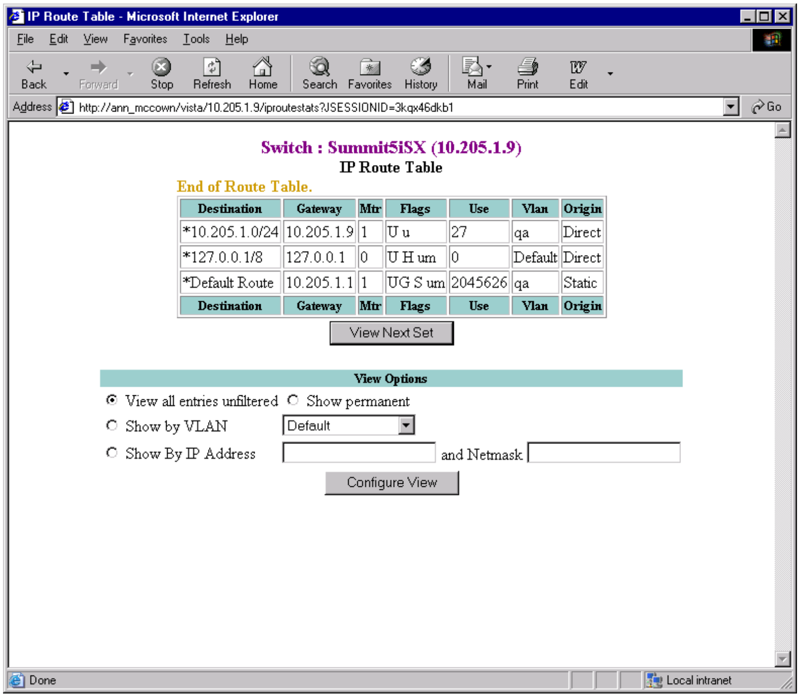
10.205.1.9 (Summit5iSX)

Event Log
FDB
IP ARP
IP Configuration
IP Route
IP Statistics
Ports
Port Collisions
Port Errors
Port Utilization
RIP
Switch

The categories in the Statistics window correspond to pages of information from the ExtremeWare Vista application running on the switch. Select one of these categories to to view the configuration settings for that switch in the category you have chosen.

This displays the selected set of statistics for the selected switch. For some types of statistics, you may be able to view the data in different ways through the use of view options or filters, such as the options shown in Figure 100.

Figure 100: The ExtremeView applet, Statistics details


IP Route Table - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go
View Next Set
Configure View
Done
Local intranet

http://ann_mccown/vista/10.205.1.9/iproutestats?JSESSIONID=3kqx46dkb1

Switch : Summit5iSX (10.205.1.9)

IP Route Table

End of Route Table.

Destination	Gateway	Mtr	Flags	Use	Vlan	Origin
*10.205.1.0/24	10.205.1.9	1	U u	27	qa	Direct
*127.0.0.1/8	127.0.0.1	0	U H um	0	Default	Direct
*Default Route	10.205.1.1	1	UG S um	2045626	qa	Static
Destination	Gateway	Mtr	Flags	Use	Vlan	Origin

View Options

● View all entries unfiltered ○ Show permanent

○ Show by VLAN Default

○ Show By IP Address and Netmask

Finding Devices

You can search for a device in the EPICenter database by name, by IP address, or by type of device. This may be useful if you have a large number of devices in your inventory.

To search for a device, follow these steps:

1 Click **Find** at the top of the ExtremeView applet page.

2 Enter your search criteria:

You can search for devices by name or by IP address. You can limit the search to a specific domain, or to a specific type of Extreme device. Search criteria can include:

— A device name. Click the **Device Name** button, and enter a complete or partial name in the **Search:** field.

- An IP address. Click the IP Address button and enter a complete or partial IP address in the **Search:** field. You can use the wild card characters * or ? in your search criteria.

  ***** acts as a wildcard for an entire octet (0-255)

  ? is a wildcard for a single digit (0-9)

- A domain. Select the domain from the drop-down menu in the domain field. If you do not specify a name or IP address in the Search field, all devices in the domain you select will be found.
- A device type. Select the device type from the drop-down menu in the type field. If you do not specify a name or IP address in the Search field, all devices of the type you select will be found.

3. Click **Find** to search for devices that meet the criteria you have specified. All devices found are listed in the center panel. Information includes the domain in which the device can be found, its name, IP address, and the type of device.
4. Double-click on a device in the results table to highlight the device in the Component Tree, or select a device in the results table and click **OK,** to display the associated front panel view and status information for that device (see “Viewing Device Status Information” on page 287). If you click **OK**, the search window will close.
5. Click **New Search** to clear all search criteria.
6. Click **Cancel** to close the search window.

Viewing Device Information from Pop-up Menus

You can select a device group, a device, a slot, or a port in the Component Tree, then right-click to display a pop-up menu that contains the Properties command. The Properties command displays the attributes for a specific device group, device, slot, or port. The device pop-up menu also contains the Alarms, Browse, Statistics, Telnet, and VLANs commands. All of these commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with the appropriate device displayed.

Properties

The Properties function lets you view the attributes for a selected device group, device, slot, or port.

Device Group

To view the Properties display for all device groups:

- Right-click on the Device Groups component, then select **Properties** from the pop-up menu that appears

The Device Groups Properties window appears and displays the number of device groups and the names of the device groups that are known to EPICenter.

To view the Properties display for a selected device group:

- Right-click on the device group, then select **Properties** from the pop-up menu that appears

The Device Group Properties window appears and displays the attributes for the selected device group.

See “Device Group Properties” on page 304” for details on using this feature.

Device

To view the Properties display for a selected device:

- Right-click on the device, then select **Properties** from the pop-up menu that appears

The Device Properties window appears and displays the attributes for the selected device.

See “Device Properties” on page 305 for details on using this feature.

Slot

To view the Properties display for a selected slot:

- Right-click on the slot, then select **Properties** from the pop-up menu that appears

The Slot Properties window appears and displays the attributes for the selected slot.

See “Slot Properties” on page 306 for details on using this feature.

Port

To view the Properties display for a selected port:

- Right-click on the slot, then select **Properties** from the pop-up menu that appears

The Port Properties window appears and displays the attributes for the selected port.

See “Port Properties” on page 309 for details on using this feature.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new web browser window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

Statistics

The Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7 for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

See Chapter 13 for details on using this feature.

Displaying Properties

You can view the properties of a device group, device, slot, or port in the EPICenter database. This section describes how to view properties through the ExtremeView applet.

Device Group Properties

You can view summary information for all device groups, or view information about individual device groups.

To view summary information for all device groups, right-click on the **Device Groups** component and select **Properties** from the pop-up menu.

The Device Groups Properties window appears, showing the All Device Groups display. This displays a list of the current device groups and their descriptions. For more details about this display, see Chapter 4.

You can also view properties for a specific device group. To view properties for a specific device group, right-click on a device group and select **Properties** from the pop-up menu.

The Device Group Properties window appears, showing information about the selected group. This includes the group description, the number of devices in the group, and a list of the devices. For more details about this display, see Chapter 4.

Device Properties

To view properties for a device, right-click on a device in the Component Tree and select **Properties** from the pop-up menu that appears.

The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab

The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab

The **VLAN** tab lists the VLANs configured on the device.

The STP Tab

The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see Chapter 4.

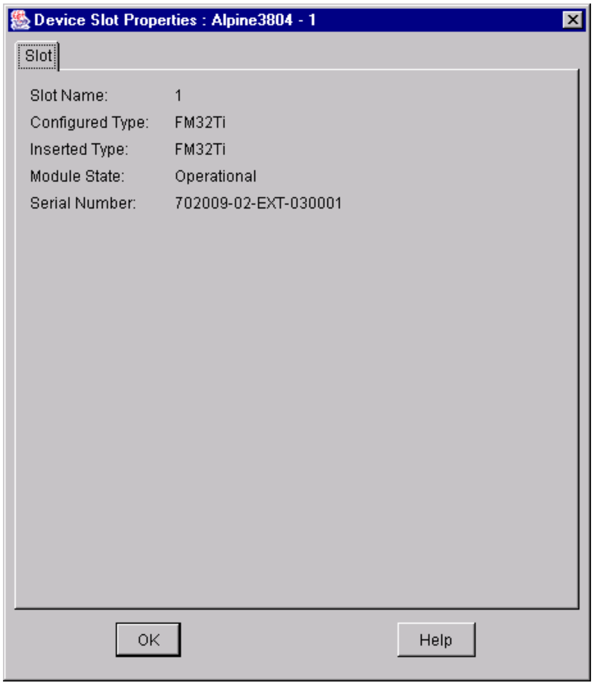
Slot Properties

To view slot properties, do the following:

1. From the Component Tree, click on the **plus** sign of a modular device to display the slots for that particular device.
2. Right-click on a slot and select **Properties** from the pop-up menu that appears. The Device Slot Properties window appears. The information displayed in this window depends on whether the module requires additional software to be installed.

   For modules that do not require a special version of ExtremeWare to be installed, the Device Slot Properties window appears, as shown in Figure 101.

Figure 101: Device Slot Properties window for modules that do not require additional software



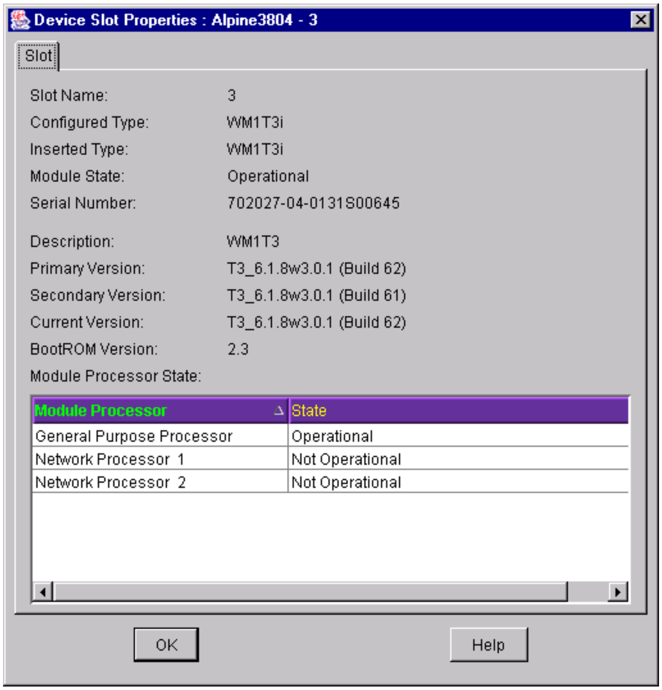
Slot Name: 1
Configured Type: FM32Ti
Inserted Type: FM32Ti
Module State: Operational
Serial Number: 702009-02-EXT-030001

For these modules, the Device Slot Properties window displays the following information:

- **Slot Name**—The number, or letter, of the slot where the module is installed
- **Configured Type**—The type of module that is configured for the slot
- **Inserted Type**—The type of module that is inserted into the slot
- **Module State**—The operational state of the module
- **Serial Number**—The serial number of the module

For modules that require a special version of ExtremeWare to be installed, the Device Slot Properties window appears, as shown in Figure 102.

Figure 102: Device Slot Properties window for modules that require additional software



Device Slot Properties : Alpine3804 - 3

Slot

Slot Name:	3
Configured Type:	WM1T3i
Inserted Type:	WM1T3i
Module State:	Operational
Serial Number:	702027-04-0131S00645
Description:	WM1T3
Primary Version:	T3_6.1.8w3.0.1 (Build 62)
Secondary Version:	T3_6.1.8w3.0.1 (Build 61)
Current Version:	T3_6.1.8w3.0.1 (Build 62)
BootROM Version:	2.3
Module Processor State:	

Module Processor	State
General Purpose Processor	Operational
Network Processor 1	Not Operational
Network Processor 2	Not Operational

For these modules, the Device Slot Properties window displays the following information:

- **Slot Name**—The number, or letter, of the slot where the module is installed
- **Configured Type**—The type of module that is configured for the slot
- **Inserted Type**—The type of module that is inserted into the slot
- **Module State**—The operational state of the module
- **Serial Number**—The serial number of the module
- **Description**—A description of the module that is inserted into the slot
- **Primary Version**—The primary ExtremeWare software image running on the module
- **Secondary Version**—The secondary ExtremeWare software image running on the module

- **Current Version**—The current ExtremeWare software image running on the module
- **BootROM Version**—The current BootROM image running on the module
- **Module Processor State**—The operational state of the General Processor and the Network Processor(s) in the module.

NOTE

The Component Tree does not display the empty slots in a device.

Port Properties

To view port properties, do the following:

1 From the Component Tree, click on the **plus** sign of a device.

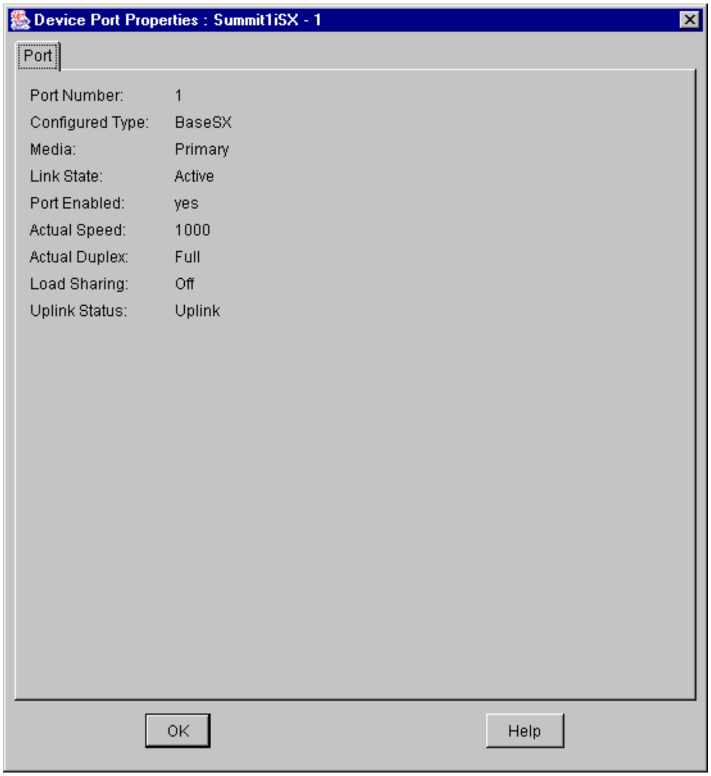
For a non-modular device, this displays the ports for that particular device.

For a modular device, this displays the slots for that particular device. Click on the **plus** sign of a slot to display the ports for that particular device.

2 Right-click on a port and select **Properties** from the pop-up menu that appears.

The Device Port Properties window appears, as shown in Figure 103.

Figure 103: Device Port Properties window



Port Number: 1
Configured Type: BaseSX
Media: Primary
Link State: Active
Port Enabled: yes
Actual Speed: 1000
Actual Duplex: Full
Load Sharing: Off
Uplink Status: Uplink

The Device Port Properties window displays the following information:

- **Port Number**—The number of the port
- **Configured Type**—The type of port
- **Media**—The media for a redundant port (Primary or Redundant)
- **Port Enabled**—Whether the port is enabled (yes) or not enabled (no)
- **Actual Speed**—The speed of the port
- **Actual Duplex**—The duplex setting of the port (Half, Full, or None)
- **Load Sharing**—The load sharing state of the port (On or Off)
- **Uplink Status**—The uplink status of the port (Uplink or Edge port)

11 Real-Time Statistics

This chapter describes how to use the Real-Time Statistics applet for:

- Viewing percentage utilization or total errors data for multiple ports in an Extreme Networks switch, a switch slot, or a port group.
- Viewing historical utilization, total errors, or individual errors data for a specific port on an Extreme Networks switch.

Overview of Real-Time Statistics

The Real-Time Statistics feature of the EPICenter software enables you to view a graphical presentation of utilization and error statistics for Extreme Networks switches in real time. The data is taken from Management Information Base (MIB) objects in the etherHistory table of the Remote Monitoring (RMON) MIB. The Real-Time Statistics function is supported only for Extreme Networks switches.

NOTE

You must have RMON enabled on the switch in order to collect real-time statistics for the switch.

You can view data for multiple ports on a device, device slot, or within a port group, and optionally limit the display to the "top N" ports (where N is a number you can configure). If you choose to view multiple ports, the display shows data for the most recent sampling interval for the selected set of ports. The display is updated every sampling interval.

You can also view historical statistics for a single port. If you choose to view a single port, the display shows the value of the selected variable(s) over time, based on the number of datapoints the MIB maintains in the etherHistory table.

You can choose from a variety of styles of charts and graphs as well as a tabular display.

You can view the following types of data:

- **Percent Utilization** for each port in the set (device, port group, or single port).

  Percent utilization reports the value of the **etherHistoryUtilization** MIB object. The MIB defines this variable as follows:

Table 8: Definition of RMON Utilization Variable Used in Port Utilization Displays

etherHistoryUtilization	The best estimate of the mean physical layer network utilization on this interface during this sampling interval, graphed in percents.

- **Total Errors** for each port in the set (device, port group, or single port).

  Total Errors is the sum of the six error variables shown in Table 9.

- **Individual Errors** for a single port.

  An individual errors display shows the six variables shown in Table 9.

Table 9: Definition of RMON etherHistory Error Variables for Port Error Displays

etherHistoryCRCAlignErrors	The number of packets received during this sampling interval that had a length between 64 and 1518 octets, inclusive (excluding framing bits but including Frame Check Sequence (FCS) octets), but that had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).
etherHistoryUndersizePkts	The number of packets received during this sampling interval that were less than 64 octets long (excluding framing bits but including FCS octets) and were otherwise well formed.

Table 9: Definition of RMON etherHistory Error Variables for Port Error Displays

etherHistoryOversizePkts	The number of packets received during this sampling interval that were longer than 1518 octets (excluding framing bits but including FCS octets) but were otherwise well formed.
etherHistoryFragments	The total number of packets received during this sampling interval that were less than 64 octets in length (excluding framing bits but including FCS octets) had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).
etherHistoryJabbers	The number of packets received during this sampling interval that were longer than 1518 octets (excluding framing bits but including FCS octets), and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).
etherHistoryCollisions	The best estimate of the total number of collisions on this Ethernet segment during this sampling interval.

You can choose to have the component tree show the device name only, the device name followed by the IP address in parentheses, or the device IP address followed by the device name in parentheses. See Chapter 16, “Real-Time Statistics” for more details about how to display the device in the component tree.

Displaying Multi-port Statistics

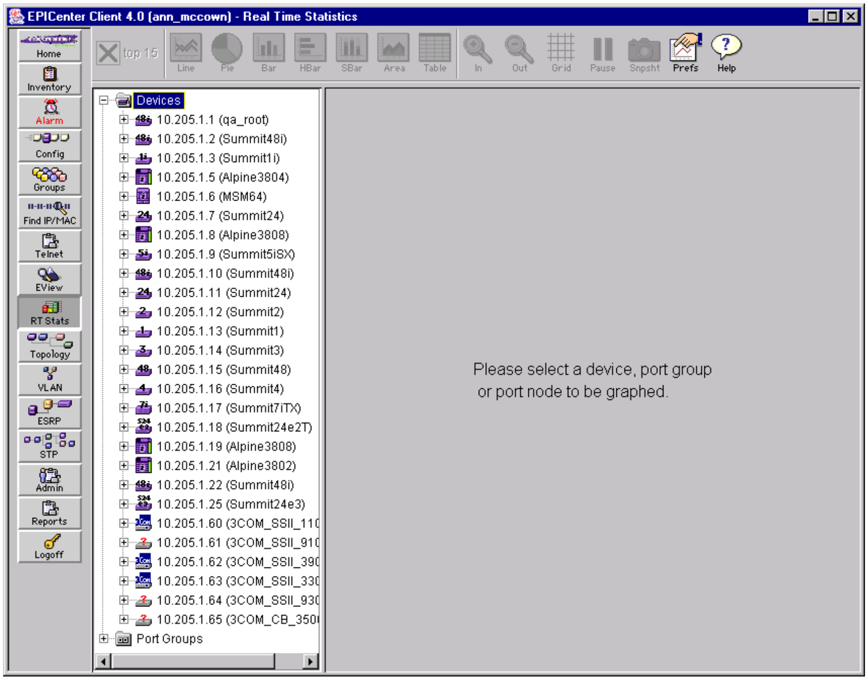
When you click the **RT Stats** button in the Navigation Toolbar, the main Real-Time Statistics page is displayed, as shown in Figure 104. Initially, no data is displayed—you see a message asking you to select a device, device slot, or port group to be displayed.

The Component Tree displays the devices and port groups for which you can display statistics. An “S” in a red circle next to a device name indicates that the device is not responding to SNMP requests. A port group with a red-circled “S” indicates that the port group is empty.

NOTE

The Real-Time Statistics applet does not support hierarchical port groups. If you have created port groups in the Grouping Manager that include subgroups as members, the subgroups will not appear in the Component Tree of the Real-Time statistics applet. Instead, any ports that are members of subgroups will be displayed directly under the top-level port group, as if they are members of the top-level group.

Figure 104: Real-Time Statistics main page



EPICenter Client 4.0 (ann_mccown) - Real Time Statistics

Devices
- 10.205.1.1 (qa_root)
- 10.205.1.2 (Summit48i)
- 10.205.1.3 (Summit1i)
- 10.205.1.5 (Alpine3804)
- 10.205.1.6 (MSM64)
- 10.205.1.7 (Summit24)
- 10.205.1.8 (Alpine3808)
- 10.205.1.9 (Summit5iSX)
- 10.205.1.10 (Summit48i)
- 10.205.1.11 (Summit24)
- 10.205.1.12 (Summit2)
- 10.205.1.13 (Summit1)
- 10.205.1.14 (Summit3)
- 10.205.1.15 (Summit48)
- 10.205.1.16 (Summit4)
- 10.205.1.17 (Summit7iTX)
- 10.205.1.18 (Summit24e2T)
- 10.205.1.19 (Alpine3808)
- 10.205.1.21 (Alpine3802)
- 10.205.1.22 (Summit48i)
- 10.205.1.25 (Summit24e3)
- 10.205.1.60 (3COM_SSII_110
- 10.205.1.61 (3COM_SSII_910
- 10.205.1.62 (3COM_SSII_390
- 10.205.1.63 (3COM_SSII_330
- 10.205.1.64 (3COM_SSII_930
- 10.205.1.65 (3COM_CB_350

Port Groups

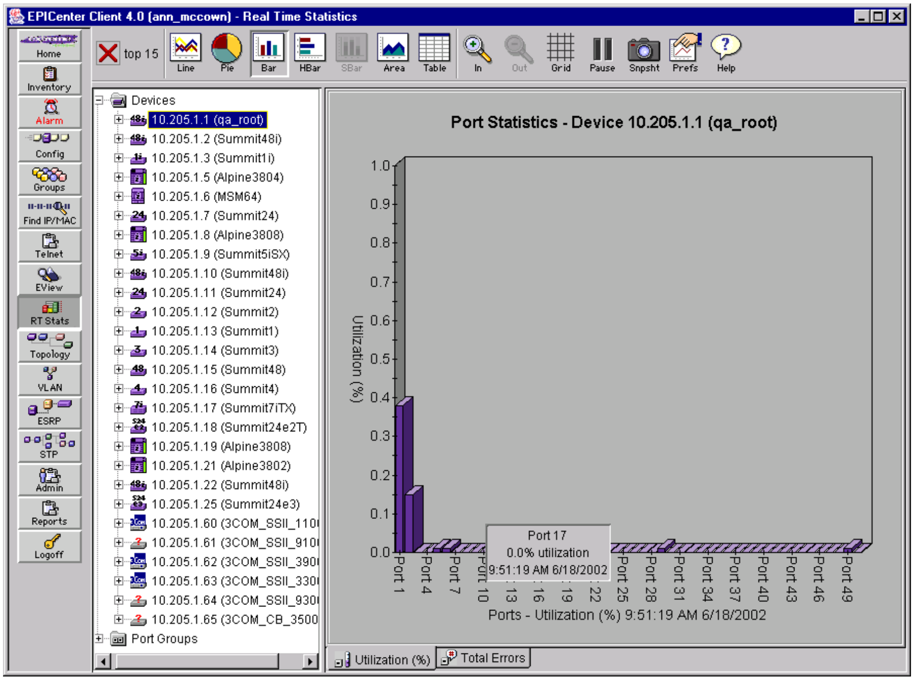
Please select a device, port group or port node to be graphed.

For an individual port, you can display individual errors in addition to utilization and total errors.

- Select a network device to display data for some or all ports on the device.
- Select a port group to display data for all ports in the port group.

You will first see a message saying “Please wait, loading statistics data.” If the EPICenter server is successful in accessing the data, utilization data is displayed as shown in Figure 105.

Figure 105: Bar chart showing port statistics for a group of ports



EPICenter Client 4.0 (ann_mccown) - Real Time Statistics

Devices
10.205.1.1 (qa_root)
10.205.1.2 (Summit48i)
10.205.1.3 (Summit1i)
10.205.1.5 (Alpine3804)
10.205.1.6 (MSM64)
10.205.1.7 (Summit24)
10.205.1.8 (Alpine3808)
10.205.1.9 (Summit5iSX)
10.205.1.10 (Summit48i)
10.205.1.11 (Summit24)
10.205.1.12 (Summit2)
10.205.1.13 (Summit1)
10.205.1.14 (Summit3)
10.205.1.15 (Summit48)
10.205.1.16 (Summit4)
10.205.1.17 (Summit7iTX)
10.205.1.18 (Summit24e2T)
10.205.1.19 (Alpine3808)
10.205.1.21 (Alpine3802)
10.205.1.22 (Summit48i)
10.205.1.25 (Summit24e3)
10.205.1.60 (3COM_SSII_110
10.205.1.61 (3COM_SSII_910
10.205.1.62 (3COM_SSII_390
10.205.1.63 (3COM_SSII_330
10.205.1.64 (3COM_SSII_930
10.205.1.65 (3COM_CB_3500
Port Groups

Port Statistics - Device 10.205.1.1 (qa_root)

Port 17
0.0% utilization
9:51:19 AM 6/18/2002

If you place the cursor near a bar in the chart, a pop-up window shows the port number and device, actual data value, and the time stamp on the data sample.

You can use the mouse to change the depth and rotation of a 3-dimensional chart:

- Hold down the [Shift] key, press the left mouse button, and drag the cursor left or right to rotate the graph.
- Hold down the [Ctrl] key, press the left mouse button, and drag the cursor up or down to set the depth of the 3-dimensional view.

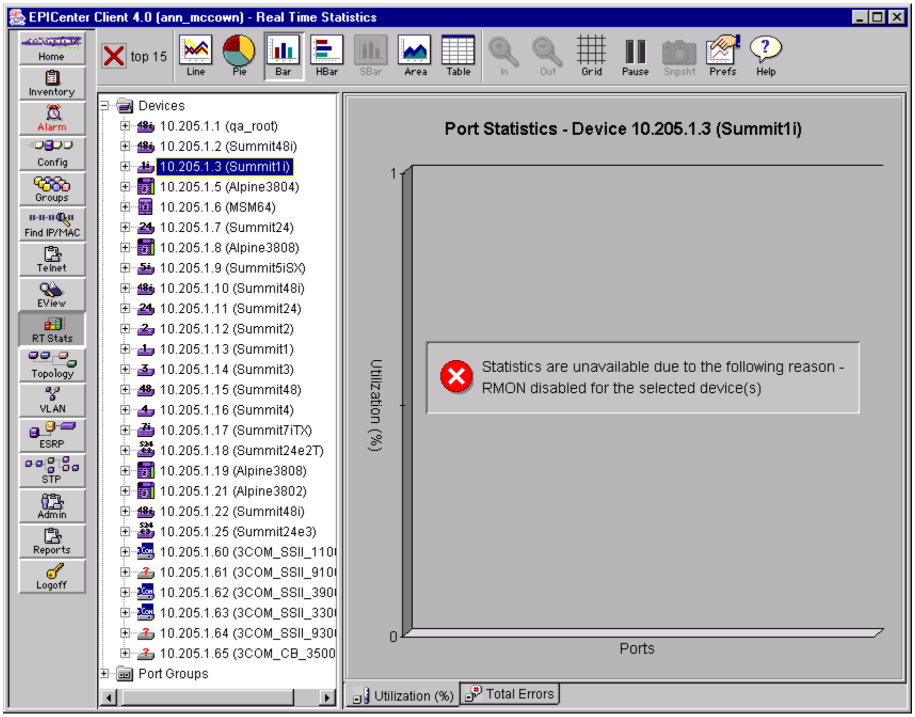
For any of the bar graphs, move the cursor and then wait to see the change take effect, which may take a few seconds.

There are cases where you may not see data for every port you expect in a multi-port display:

- You have selected the “top N” feature (top 15 by default), so only the “N” ports with the highest utilization or the highest total number of errors are displayed.
- RMON is disabled for some ports on the switch. If the switch as a whole can be reached and is reporting data, then individual ports that do not report data will be ignored. No error message appears in this case.

If the EPICenter server is *not* successful in loading data from the device, it displays a message similar to that shown in Figure 106.

Figure 106: Warning displayed when the EPICenter server cannot retrieve data



Statistics are unavailable due to the following reason - RMON disabled for the selected device(s)

There are several reasons why the EPICenter server may not be able to display *any* device data:

- The EPICenter server cannot communicate with the device (indicated by an “S” in a red circle next to the device name).

- The device does not have RMON enabled, or RMON was just recently enabled and no data samples exist yet.

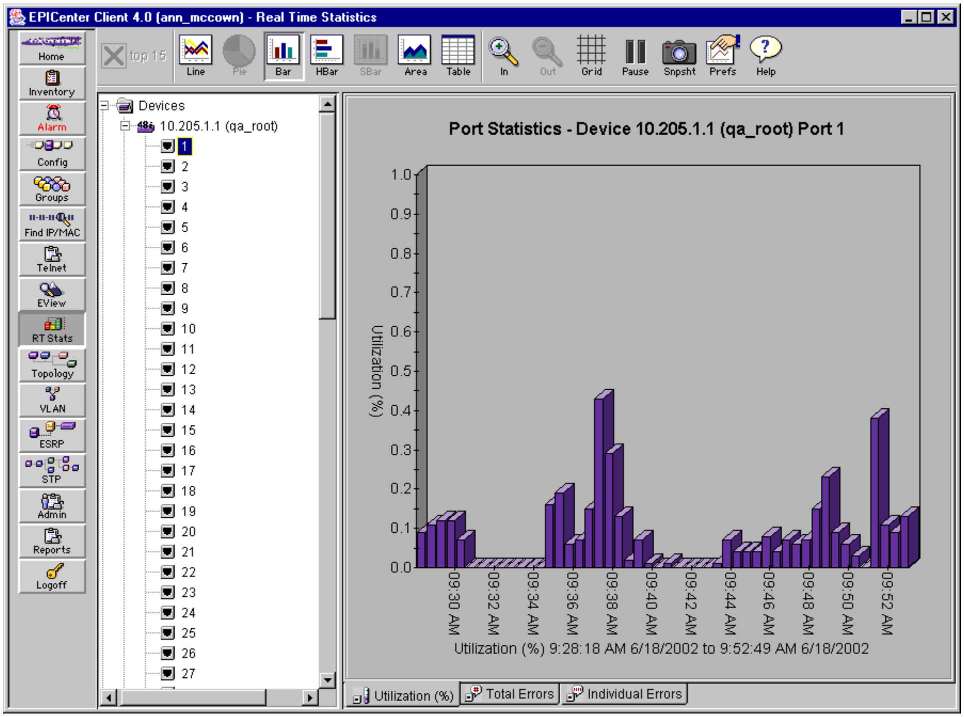
Displaying Statistics For a Single Port

In addition to displaying data for a set of ports, you can display historical data for an individual port. You can select a port in one of two ways:

- Double-click on the data point for an individual port in the device or port group statistics display (bar, data point, or pie slice in the respective chart, or row in a tabular display).
- Click on a device, device slot, or port group in the left-side Component Tree to list the ports it contains, then select a port.

A set of utilization statistics for the selected port is displayed, as shown in Figure 107.

Figure 107: Utilization data over time for an individual port on a device



The number of data points displayed, and the sampling interval are user-configurable parameters, within the limitations of the device configuration. The defaults are:

- A 30-second sampling interval
- 50 data points displayed

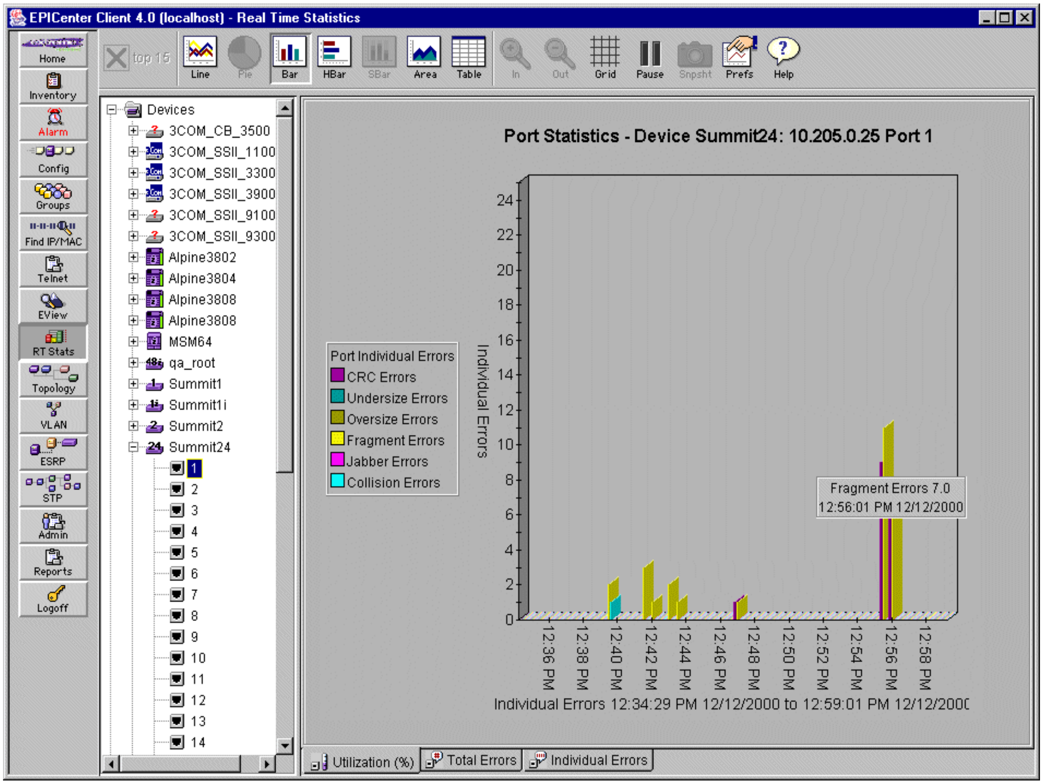
NOTE

For BlackDiamond switches, only 25 data points are displayed because that is the maximum number of values the switch stores as historical data.

For an individual port, you can display individual errors in addition to utilization and total errors.

- Select the tab at the bottom of the page to generate one of these displays. Figure 108 is an example.

Figure 108: Individual errors in a single-port chart



Changing the Display Mode

The icons at the top of the page let you select the format of the statistical display, and control several other aspects of the display.

✗ top 15

✓ top 15

Select this to determine whether the display for a device or port group will include all ports, or only the top N ports (where N is initially fifteen). Click the icon to toggle between the red X, which indicates the top N limitation is not in effect, and a green check, which indicates that the top N ports are being displayed. The top N ports are displayed in order from highest (largest percent utilization or largest total errors) to lowest. The number of ports (N) is a user-configurable setting. This option is available only for multi-port displays.

Line Select this to display the data as a line graph. This chart type is especially useful when displaying individual errors for a single port.

Pie Select this to display the data as a pie chart. This chart type is available only when you are displaying statistics for multiple ports on a device, device slot, or in a port group. The maximum number of slices in the pie is a user-configurable setting. It is initially set to display 10 slices.

Bar Select this to display the data as a bar chart. A 3D bar chart is the default for all chart displays. The 3D setting is also a user-configurable option.

HBar Select this to display the data as a horizontal bar chart. This chart type by default displays in 3D. The 3D setting is also a user-configurable option.

SBar Select this to display the data as a stacked bar chart. This chart type is only available when you are displaying individual errors for a single port.

Area Select this to display the data as an area chart. This chart type by default displays in 3D. The 3D setting is also a user-configurable option.

Table Select this to display the data as a table.

In Select this to zoom in on (magnify) the size of the display. You can select this repeatedly to zoom up to three times the screen size.

Out Select this to zoom out (shrink) the size of the display. You can select this repeatedly until the chart is the desired size.

Grid

Select this to display grid lines on the background of the chart.

Pause

Determines whether the graph data is updated automatically at every sampling interval. Click on the icon to toggle between continuous updates, and suspended updates.

Snpsht

Select this to take a “snapshot” of the graph or table view of the current real-time statistics data.

Prefs

Select this to bring up the graph preferences pop-up window. You can change a variety of settings, such as graph and data colors, the sampling interval, or the number of ports in a top N display.

Setting Graph Preferences

To change the graph settings used in this applet, click the **Set Graph Preferences** icon in the toolbar.

The Graph Preferences window is displayed, as shown in Figure 109.

Use the tabs across the top of the window to select the type of setting you want to change. Each tab displays a page with a group of related settings. When you have changed any setting you want on a given page:

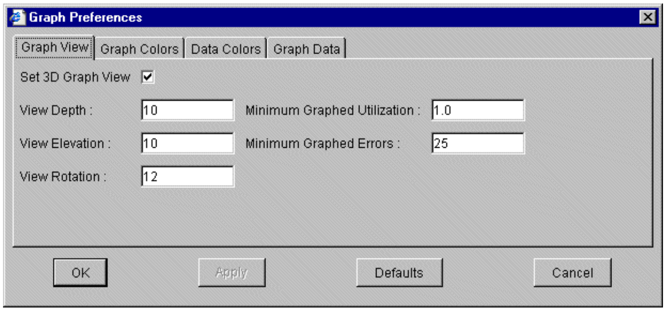
- Click **Apply** to put the changes into effect, but keep the Graph Preferences window open so you can make changes on another page.
- Click **OK** to put the changes into effect and close the Graph Preferences window.

NOTE

The Graph preferences settings are not persistent—if you log out and close your EPICenter Client or browser, the settings will return to the defaults.

Graph View (Figure 109) lets you change from 3D to 2D displays, and change the values for the 3D depth, elevation and rotation.

Figure 109: Setting 3D graph preferences



Set 3D Graph View ☑

View Depth : 10
Minimum Graphed Utilization : 1.0

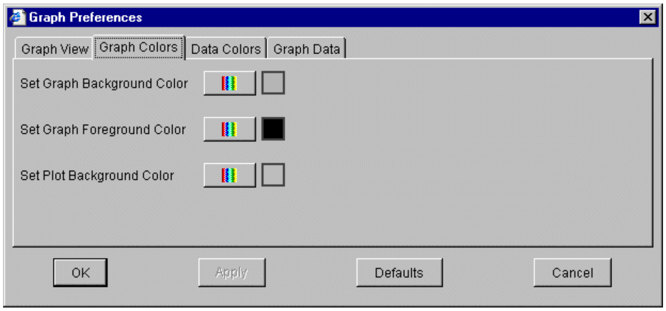
View Elevation : 10
Minimum Graphed Errors : 25

View Rotation : 12

- To change to a 2D graph view, click the **Set 3D Graph View** box to remove the check mark.
- **View Depth** controls the depth of a bar. The default is 10, maximum is 1000.
- **View Elevation** controls the elevation (rise) from the front of the bar to the back, in degrees. The default is 10°, range is ±45°.
- **View Rotation** controls the angle of rotation of the bar, in degrees. The default is 12°, range is ±45°.
- **Minimum Graphed Utilization** specifies the minimum scale for the Y axis for utilization graphs. The default is 1.0 (1%), meaning that the Y axis will not show less than 1% as the top value of the Y axis.
- **Minimum Graphed Errors** specifies the minimum scale for the Y axis for error graphs. The default is 25, meaning that the Y axis will not show less than 25 errors as the top value of the Y axis.

Graph Colors (Figure 110) lets you set the colors for the graph background and text (data and axis labels).

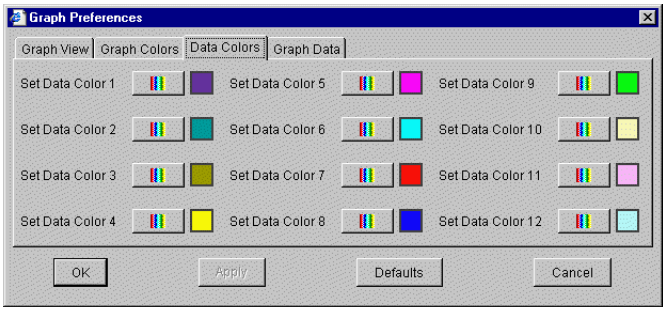
Figure 110: Setting graph color preferences



- To change a color, click on a button with the color bar icon. This displays a color selection window where you can select the color you want. You can select a color using color swatches, or by specifying HSB or RGB values.
- **Set Graph Background Color** sets the color of the background surrounding the graph.
- **Set Graph Foreground Color** sets the color of the text and bar outlines.
- **Set Plot Background Color** sets the color of the background behind the graph data.

Data Colors (Figure 111) lets you set the colors used for the various data sets in your graph.

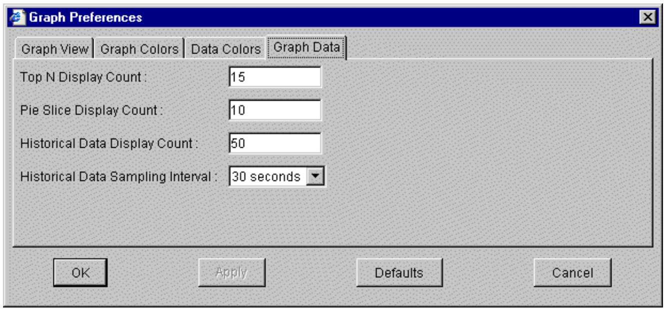
Figure 111: Setting data color preferences



- To change a color, click on a button with the color bar icon. This displays a color selection window where you can select the color you want. You can select a color using color swatches, or by specifying HSB or RGB values.
- **Data Color 1** is the color used for Utilization and Total Error graphs.
- Data colors 1 through 6 are used for the different errors in a individual errors chart.
- Data colors in order starting from 1 are used in a pie chart, for as many slices as you've specified. (If you specify more than 12 slices, the colors will repeat, with slice 13 using the same color as slice 1).

Graph Data (Figure 112) lets you set several miscellaneous graph parameters.

Figure 112: Setting other graph preferences



Top N Display Count : 15

Pie Slice Display Count : 10

Historical Data Display Count : 50

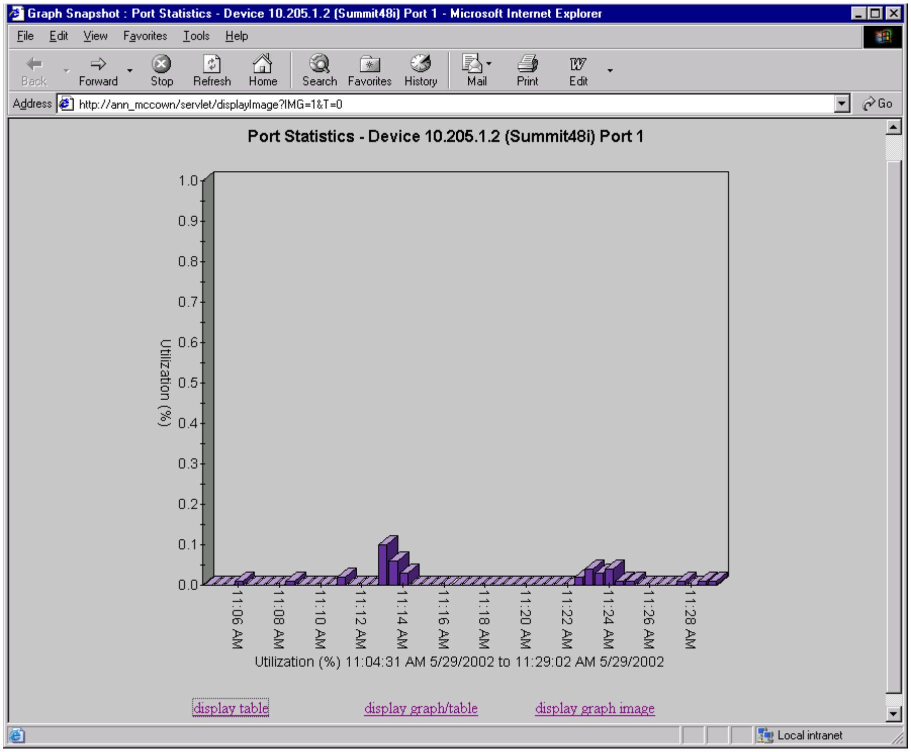
Historical Data Sampling Interval : 30 seconds

- **Top N Display Count** specifies the number of ports to include in a Top N display. The default is 15, maximum is 100.
- **Pie Slice Display Count** specifies the number of slices to display in a pie chart. The default is 10, maximum is 50.
- **Historical Data Display Count** specifies the number of historical data points to display in a graph for an individual port. The default is 50, the maximum value you can set is 100. However, the actual maximum number of data points you can get is determined by the SNMP agent running in the device from which you are getting data.
- **Historical Data Sampling Interval** is the sampling interval to use when displaying historical data. Select a choice from the pull-down list. The choices in the list are determined by the configuration of the device from which you are getting data.

Taking Graph Snapshots

The Real-Time Statistics Snapshot feature lets you take a static image of a graph or table view of the current real-time statistics data. The snapshot generates a persistent HTML page that is displayed in a separate window (see Figure 113).

Figure 113: Snapshot of Real-Time Statistics graph display


Graph Snapshot : Port Statistics - Device 10.205.1.2 (Summit48i) Port 1 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address http://ann_mccown/servlet/displayImage?IMG=1&T=0
Go
Port Statistics - Device 10.205.1.2 (Summit48i) Port 1
Utilization (%)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
11:06 AM
11:08 AM
11:10 AM
11:12 AM
11:14 AM
11:16 AM
11:18 AM
11:20 AM
11:22 AM
11:24 AM
11:26 AM
11:28 AM
Utilization (%) 11:04:31 AM 5/29/2002 to 11:29:02 AM 5/29/2002
display table
display graph/table
display graph image
Local intranet

To take a snapshot, click the camera icon located in the toolbar at the top of the RT Statistics applet window. The snapshot image will be displayed in a new window in the same form (graph or table) as it was in the RT Statistics applet. Graph images reflect the current display size and graph type (pie, bar, etc.).

From the window, the snapshot image can be saved as a file, printed, or sent by e-mail, just as with any other HTML page.

When a graph image is displayed in the window, you can click a link below the initial display to change the way the data is displayed:

- **display table** reformats the data as a table
- **display graph/table** displays both the graph and table formats on the same HTML page
- **display graph image** displays the data as a graph, in the style in which it was displayed when the snapshot was taken.

NOTE

Once you select "display graph image" you can no longer change the display format to a table or to a dual display. However, you can use the browser "Back" button to go to the previously displayed page.

When you snapshot a table, you cannot change to a graph from within the snapshot image window.

The HTML page persists in a snapshot image cache until the EPICenter server is restarted, or until the image cache becomes full. When the image cache reaches its limit, older snapshot images will be deleted as needed to make room for new snapshot images.

Viewing Device Information from Pop-up Menus

You can select a device, a slot, or a port in the Component Tree, then right-click to display a pop-up menu that contains the Properties command. The Properties command displays the attributes for a specific device group, device, slot, or port. The device pop-up menu also contains the Alarms, Browse, EView, Telnet, and VLANs commands. All of these commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with the appropriate device displayed.

Properties

The Properties function lets you view the attributes for a selected device, slot, or port.

Device

To view the Properties display for a selected device:

- Right-click on the device, then select **Properties** from the pop-up menu that appears

The Device Properties window appears and displays the attributes for the selected device.

See “Device Properties” on page 330 for details on using this feature.

Slot

To view the Properties display for a selected slot:

- Right-click on the slot, then select **Properties** from the pop-up menu that appears

The Slot Properties window appears and displays the attributes for the selected slot.

See “Slot Properties” on page 330 for details on using this feature.

Port

To view the Properties display for a selected port:

- Right-click on the slot, then select **Properties** from the pop-up menu that appears

The Port Properties window appears and displays the attributes for the selected port.

See “Port Properties” on page 331 for details on using this feature.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5, “The EPICenter Alarm System” for details on using this feature.

Browse

The Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new web browser window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10, “Using ExtremeView” for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7, “Using the Interactive Telnet Application” for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

See Chapter 13, “Using the VLAN Manager” for details on using this feature.

Displaying Properties

You can view the properties of a device group, device, slot, or port in the EPICenter database. This section describes how to view properties through the ExtremeView applet.

Device Group Properties

You can view summary information for all device groups, or view information about individual device groups.

To view summary information for all device groups, right-click on the **Device Groups** component and select **Properties** from the pop-up menu.

The Device Groups Properties window appears, showing the All Device Groups display. This displays a list of the current device groups and their descriptions. For more details about this display, see Chapter 4 “Using the Inventory Manager.”

You can also view properties for a specific device group. To view properties for a specific device group, right-click on a device group and select **Properties** from the pop-up menu.

The Device Group Properties window appears, showing information about the selected group. This includes the group description, the number of devices in the group, and a list of the devices. For more details about this display, see Chapter 4 “Using the Inventory Manager.”

Device Properties

To view properties for a device, right-click on a device in the Component Tree and select **Properties** from the pop-up menu that appears.

The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab

The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab

The **VLAN** tab lists the VLANs configured on the device.

The STP Tab

The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see Chapter 4 “Using the Inventory Manager.”

Slot Properties

You can view summary information about a specific slot in a modular device. To view properties for a slot, click on the **plus** sign of a modular device to display the slots for that particular device. Right-click on a slot and select **Properties** from the pop-up menu that appears.

The Device Slot Properties window displays information about the slot such as the number or letter of the slot, the type of module that is inserted into the slot, and the serial number of the module. If you have a module that requires a special version of ExtremeWare to be installed, the window also displays information such as the primary, secondary, and current software images running on the module as well as the current BootROM image running on the module. The main section of the window presents the same information you can view in the ExtremeView applet for the slot.

For more details about this display, see Chapter 10 “Using ExtremeView.”

Port Properties

You can view summary information about a specific port in a device.

To view properties for a port in a modular device, click on the **plus** sign of a device to display the slots for that particular device. Click on the **plus** sign of a slot to display the ports for that particular device. Right-click on a device and select **Properties** from the pop-up menu that appears.

To view properties for a port in a non-modular device, click on the **plus** sign of a device to display the ports for that particular device. Right-click on a device and select **Properties** from the pop-up menu that appears.

The Device Port Properties window displays information about the port such as the number of the port, whether the port is enabled or disabled, and the load sharing state of the port. The main section of the window presents the same information you can view in the ExtremeView applet for the port.

For more details about this display, see Chapter 10 “Using ExtremeView.”

12 Network Topology Views

This chapter describes how to use the EPICenter Topology View applet for:

- Viewing EPICenter Topology maps
- Creating new topology views
- Adding, moving and deleting map elements (nodes and links)
- Setting display properties for individual maps or a complete topology view
- Modifying the layout of a topology map
- Displaying the alarm browser, telnet window, real-time statistics, a front panel view, VLAN Manager, ExtremeWare Vista, or the Properties dialog for a specific node on the map

Overview of EPICenter Topology Views

EPICenter's Topology applet allows you to view your network (EPICenter-managed devices and the links between devices) as a set of maps. These maps can be organized into sets of submaps that allow you to represent your network as a hierarchical system of campuses, buildings, floors, closets, or whatever logical groupings you want. You can also create additional topology views (sets of maps) so you can create several different representations of your network for different purposes.

For views with the Auto Populate View option enabled, the Topology applet automatically adds device nodes as they are added to EPICenter's device inventory. It also adds any links that exist between the device nodes, and organizes them into submaps as appropriate. You can customize the resulting maps by moving elements, adding new elements, such as links, “decorative” (non-managed) nodes, and text, and customizing the device nodes themselves. The Default view, which appears when you first access the Topology applet, is auto-populated with the devices currently in EPICenter’s inventory.

NOTE

Links can only be discovered and auto-populated between Extreme Networks devices that have the Extreme Discovery Protocol (EDP) enabled. Links cannot be discovered on non-Extreme Networks devices, on Extreme Networks devices with EDP disabled, or on devices running the following versions of ExtremeWare: versions prior to 4.1.19b2, version 5.x, or version 6.0.x. Links can be discovered on devices with EDP enabled running ExtremeWare 4.1.19 b2, 4.1.20, or 4.1.21, or ExtremeWare 6.1 or later. EDP is enabled by default on these Extreme Networks devices.

In addition, from a managed device node on the map, you can invoke other EPICenter functions such as the alarm browser, Telnet, real-time statistics, a front panel view, the VLAN Manager, or ExtremeWare Vista for the selected device, or view device properties from a Properties window.

Maps are initially created in a layout based on information in EPICenter’s device inventory about the devices and their connectivity. You can customize the layouts into hierarchical views using cut and paste, or by deleting devices from a map and then adding them to a different map. You can also add and remove “decorative” nodes (nodes that aren’t discovered or managed by EPICenter) and links.

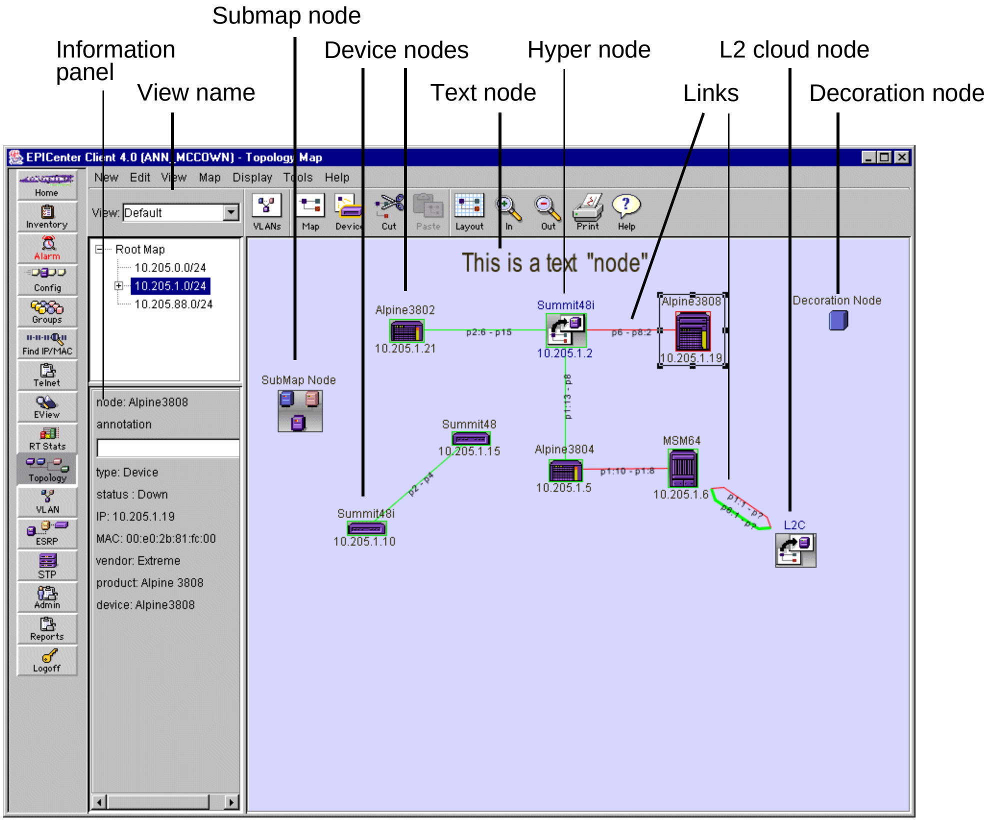
Displaying a Network Topology View

Click the **Topology** button in the EPICenter Navigation Toolbar to display the main Topology View page, as shown in Figure 114.

NOTE

If you have not yet performed a Discovery (i.e. there are no devices in EPICenter’s Inventory database) the map will be blank.

Figure 114: The Topology View



node: Alpine3808
annotation
type: Device
status : Down
IP: 10.205.1.19
MAC: 00:e0:2b:81:fc:00
vendor: Extreme
product: Alpine 3808
device: Alpine3808

A ***View*** is a unique, named hierarchy of maps, consisting of a root map and optional submaps, depending on the topology of the network. The current View name is displayed in the pull down field at the left of the icon bar.

A ***Map*** is a collection of nodes and links.

The top portion of the left-hand panel displays the ***Map Hierarchy Tree***. This starts at the root map and shows the hierarchy of submaps in the current topology view. The current map name is highlighted.

The bottom portion of the left-hand panel is the ***Map Element Description*** panel, that displays information about the currently selected map element if one (and only one) is selected. Otherwise, the panel is empty.

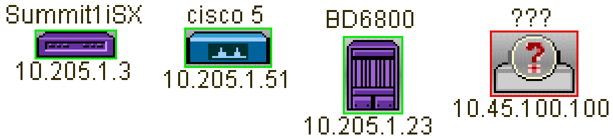
The main panel displays the ***currently selected map*** in the current topology view. Only one view and map can be displayed at a time.

Map Elements

The following elements can appear on a map:

Device Nodes. Device nodes represent the managed devices found in EPICenter's Inventory data base.

Figure 115: Example of device nodes, including an unknown device type



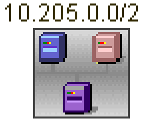
A device node shows the following information:

- The name of the device as it is kept in the Inventory database (this can be hidden using View or Map properties).
- An optional, user-supplied annotation for the node.
- A small icon representing the specific device or device product line, if the device is of a known type, or an "unknown" device icon (a circle with a question mark) as shown in Figure 115. (This can be hidden using View or Map properties.)
- The device's IP address.
- The device status, indicated by the color of the icon border.
  - — A green border indicates that the device is up.
  - — A red border indicates that the device is down.

Each managed device known to EPICenter can only appear once in each topological view.

Submap Nodes. A submap node represents a child map of the current map.

Figure 116: Example of a submap node



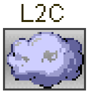
The submap node icon shows the following information:

- The name of the node (submap), which can be edited. By default, it is given the subnet address/subnet mask as the name.
- A submap icon, as shown in Figure 116.

A submap node does not provide any additional status information.

L2 Cloud Nodes. An L2 cloud map node provides connectivity between devices when the details of the connectivity cannot be determined. For example, if there is a hub between two devices, the Topology applet will place an L2 cloud between the devices. L2 clouds are created automatically as needed.

Figure 117: Example of an L2 cloud node



The L2 cloud node icon shows the following information:

- The name of the node (cloud), which can be edited. By default, it is named L2C.
- A cloud icon, as shown in Figure 117. (This can be hidden using View or Map properties.)

An L2 cloud node does not provide any status information.

NOTE

You cannot add L2 cloud nodes; they are placed automatically by EPICenter as required by device connectivity. You can remove them, but they may be replaced automatically by EPICenter if still needed.

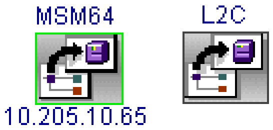
There may be situations where EPICenter creates an L2 cloud that is not really necessary. For example:

- An L2 cloud may be created as devices are added to the map, but when the final topology is known, the L2 cloud is no longer necessary.
- When one end of a link is moved, EPICenter will represent this as two links —one link that is down (the old endpoint port) and a new link that is up (the new endpoint). It will also determine that these two links share the same endpoint, so there must be a hub between these ports and the device at the other end. Thus, EPICenter will create an L2 cloud to represent the hub.

In either of these cases, you can use the Discover Links command to remove unnecessary links and L2 clouds. See "Discovering Links Between Devices" on page 354 for more information on the Discover Links function.

Hyper Nodes. A hyper node represents a link termination when the actual terminating node (device or cloud) is present on another map. Thus, a hyper node will show the same information as the node it represents (except for the optional node annotation):

Figure 118: Example of hyper node icons representing a device and an L2 cloud



A hyper node icon shows the following information:

- The name of the device or cloud node that this hyper node represents (this can be hidden using View or Map properties).
- An optional, user-supplied annotation for a device hyper node. This is a different annotation than will appear in the device node that this hyper node represents.
- A hyper node icon, as shown in Figure 118.
- The device IP address, for a device hyper node.
- The device status, for a device hyper node, as indicated by the color of the icon border:
  - — A green border indicates that the device is up
  - — A red border indicates that the device is down

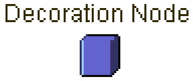
An L2 cloud hyper node does not show any status information.

NOTE

You cannot add, cut, or delete hyper nodes; they are placed and removed automatically by EPICenter as required by device connectivity.

Decorative Nodes. A decorative map node can be created by the user to represent any other type of node that is not discovered or managed by EPICenter, such as a server or workstation.

Figure 119: Example of a decorative node



A decorative node shows the following information:

- The name or description of the node, which can be edited
- A decorative node icon, as shown in Figure 119. (This can be hidden using View or Map properties.)

Text Nodes. A text map node is a single-line text field that can be placed anywhere in a network map. It can be used to create a title for the map, additional annotations for other map elements, comments, and so on.

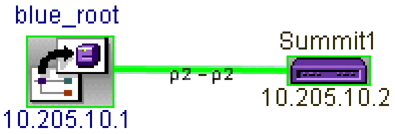
Links. A link represents connectivity between nodes in the map. Links can be automatically detected on Extreme Networks devices with EDP enabled.

NOTE

For third-party devices or Extreme Networks devices with EDP disabled or not supported, you can manually add links to the map to represent connectivity between devices. However, these links will always have unknown status, will not display endpoint or utilization information, and will not be updated when the map topology changes. The behavior of links described in the following paragraphs does not apply to manually-added links.

When a discovered link connects two devices on the same map, the link will be annotated with the port number, or slot and port number for each of the endpoints, as shown in Figure 120.

Figure 120: Example of a gigabit link showing endpoint connectivity and Up status



When one of the endpoints is within another submap, the annotation will include the device name or IP address of the device that contains the endpoint within the submap. Whether the IP address or device name is used depends on the setting of the Device Tree UI property in the Administration applet—the one that appears first is used.

When the endpoint of a discovered link is not known (the link terminates in a L2 cloud) the unknown port is indicated with a question mark.

NOTE

If there are mode than 400 nodes on a map, link annotations are not displayed.

If there are multiple links running between two devices, each link is shown individually as long as there are 25 links or less. If more than 25 links connect two devices, they are represented as a *composite link*. For a composite link, the link annotation provides the total number of links in the composite and the number of links in each applicable status category (up, down, partially up, or unknown).

A link also shows the following information:

The width of the link line indicates the link type:

- A thick line indicates a gigabit link
- A thin line indicates a 10/100 link
- A very thick line indicates a composite link.

The color of the link line indicates the link status:

- A green line indicates that the link is up
- A red line indicates that the link is down
- A yellow line may be displayed for composite or load-shared links:
  - — For a composite link, yellow indicates that some of the links in the composite are up, and some are down or unknown.

— For links that are members of a load shared group, yellow indicates that one or more load-shared links are down. All links in the group will be displayed as yellow if one or more of the links in the group is down.

- A grey line indicates that the link status is unknown.

A broken line (when viewing VLANs) indicates that the selected VLAN does not exist or may be misconfigured at one of the endpoints.

If RMON statistics are enabled for the map, then link utilization (as a percentage of link capacity) will be displayed for each port on a link between devices that have RMON enabled in the device. The utilization is updated at the nominal RMON rate as set in the switch—typically every 30 seconds. The default is that RMON statistics are not enabled for a map. To enable the display of RMON statistics, see "Setting Map Properties" on page 369.

NOTE

If RMON statistics are not enabled in the switch, then no statistics will be displayed, even if you enable the display of RMON statistics for the map.

Manipulating Map Elements

Map elements (nodes and links) can be resized, cut to a clipboard, pasted, deleted and added. There are a number of ways to invoke these actions:

- Select a command from one of the menus in the Topology View menubar
- Select a command from a pop-menu enabled with a right-cursor click on the map background
- Select a command icon from the Topology View toolbar
- Use one of the Topology applet keyboard short cuts, or (under Windows NT or Windows 2000) through the regular Windows mouse and cursor actions and keyboard shortcuts

For example, you can resize an individual node by selecting the node and doing one of the following:

- Use the cursor to grab one of the resize handles that appear when the node is selected, and drag the handle to resize the node
- Select the Inflate Nodes or Deflate Nodes command from the Map Menu

- Use the keyboard shortcuts ([Alt]+I or [Alt]+D) for those commands (see the sections “Inflating the Map Nodes” and “Deflating the Map Nodes” on page 365).

Map Element Description Panel

When you select a map node or link with the cursor, the panel below the Map Hierarchy Tree displays information about the node or link.

Map Nodes

For map nodes the information panel displays the following:

- **Name**: The node name—can be edited for submap nodes, L2 cloud nodes, decoration and text nodes. Cannot be edited for device nodes and device hyper nodes.
- **Annotation**: an optional identifier for device nodes and device hyper nodes
- **Type**: The type of node (Device, Submap Node, L2 Cloud, Decoration Node, Text Node, or Hyper Node)
- **Status**: The node status (Up, Down, or None)
- **IP**: IP address for a Device node, n/a for any other node type
- **MAC**: MAC address for a Device node, n/a for any other node type
- **Vendor**: Device vendor name for a Device node, n/a for any other node type
- **Product**: Product name for a Device node, n/a for any other node type
- **Device**: Device name obtained from the sysName variable for a Device node, n/a for any other node type
- **VLANs/Ports list**: If the Display VLANs option is enabled, displays the VLANs configured on the device. Appears for Device Nodes and Device Hyper Nodes only.

Link Nodes

For individual links, the information panel displays the following information:

- **Status:** The status of the link—up, down, partially up (for load-shared links only) or unknown. Partially up indicates that one or more of the links in the load shared group is down. In this case, all other links in the load-shared group are considered partially up.
- **Type**: The link type (speed) —10/100, 1000, or unknown

- **Load shared**: Whether the link is load shared (yes or no)

In addition, for each link endpoint, the following information is displayed:

- **Node**: The name of the node that contains the endpoint
- **Device**: The name of the device represented by the endpoint node
- **Port**: The device port or slot and port to which the link connects, if known
- **Utilization**: The utilization percentage, if RMON is enabled on the device and if RMON statistics are enabled for this map. The default is that RMON statistics are not enabled for a map. This is updated regularly, typically every 30 seconds
- **Total errors**: The total errors, if RMON is enabled on the device and if RMON statistics are enabled for this map. This is updated regularly, typically every 30 seconds
- **VLANs/Ports list**: Displays the VLANs configured on that port.

Composite Link Nodes

For composite links, the information panel displays the following information:

- **Status:** The overall status of the composite link— up, down, partially up, or unknown. Partially up indicates that some links in the composite are up, some are down.
- **Link count**: The number of individual links in the composite link.
- **Links Status**: The number of links up, partially up, down and unknown.

In addition, for each link endpoint, the following information is displayed:

- **Endpoint 1** and **Endpoint 2**: The name of each endpoint node
- **Endpoint 1 device** and **Endpoint 2 device**: The device type or each endpoint node
- A table showing the endpoint ports (or slot and port) for each individual link in the composite link, along with the link status and whether the link is load shared. You may need to move the right side boundary of the panel to see the last two columns.

Manipulating Topology Views and Maps

You can create new topology views or move elements around on existing maps in a number of ways. The Topology View applet provides a number of ways to invoke the various commands and functions:

- A series of pull-down menus. All commands and functions can be accessed from these menus
- A set of icons that represent a commonly-used subset of the functions available
- A pop-up menu you can invoke by clicking the right mouse button on any unoccupied area of the map background
- A pop-up menu you can invoke by right-clicking on a Device map node
- Keyboard shortcuts for some functions

The various methods you can use to perform a command are described under each command or function.

Creating a New View or a New Map

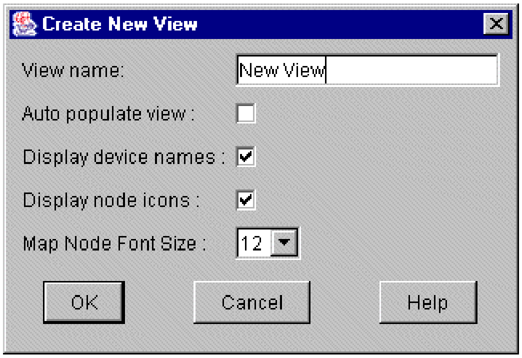
The Default map contains all the network devices known to EPICenter, arranged based on EPICenter's internal algorithms (see the discussion on page 346 in the section "Displaying a Network Topology View"). However, it is often convenient to create views based on other criteria, such as physical location, departmental organization, and so on. The Topology applet lets you create additional views that organize your network elements in any way you wish.

Creating a New View

You can create a new view (and its Root Map) by selecting **New View** from the **New** menu.

A Create New View dialog box opens, as shown in Figure 121.

Figure 121: Creating a new View



View name: New View

Auto populate view : □

Display device names : ☑

Display node icons : ☑

Map Node Font Size : 12

- Enter a name for the view.
- Select the **Auto populate view** option to add the devices currently in the EPICenter inventory database to the new View. Submaps, L2 clouds and hyper nodes will be created as needed. In addition, as new devices are added to EPICenter, they will also be added to the view. If you do a Discovery after you have created a view with the auto populate option enabled, all new discovered devices will be added to the view.See "Node Placement Criteria in an Auto Populate View" on page 346 for detailed information.
- Uncheck the **Display device names** checkbox to hide device names on the maps. The default is to display the names.
- Uncheck the **Display node icons** checkbox to use plain boxes to indicate map nodes instead of icons representing specific device types. The default is to use device icons.
- Set the **Map Node Font Size** to change the size of the font used for map node labels (names, annotations, IP addresses and so on). The default is a 12 point font.

If your map will contain a large number of nodes, you may need to eliminate the device names and node icons from the display, and reduce the font size in order to fit all the map elements onto a map with adequate spacing.

When you click **OK**, a new root map is displayed. If the **Auto populate view** option is not selected, a new blank root map is displayed. If **Auto populate view** is selected, nodes, submaps and other map elements are created based on the current EPICenter inventory. The new view name appears in the **View** field at the left of the icon bar.

Each newly-created map inherits the current view's properties for display node names, display node icons, and map node font size.

Displaying a View

You can display the Default view or any other views you have created by selecting the View name from the pull down list in the **View** field.

Renaming a View

You can rename the view by clicking in the **View** field and typing over the view name. Click away from the View field to commit the change.

Node Placement Criteria in an Auto Populate View

When you do a Discovery or add a device in the Inventory applet, the newly added devices are placed into the default topology view (named “Default”). If you have created other maps with the Auto Populate View feature enabled, those views are also populated with the newly added devices. Device connectivity and the map hierarchy is determined by the information learned from the EPICenter database.

For views with the Auto Populate View option enabled, EPICenter places devices on the Root Map or into submaps based on the following criteria:

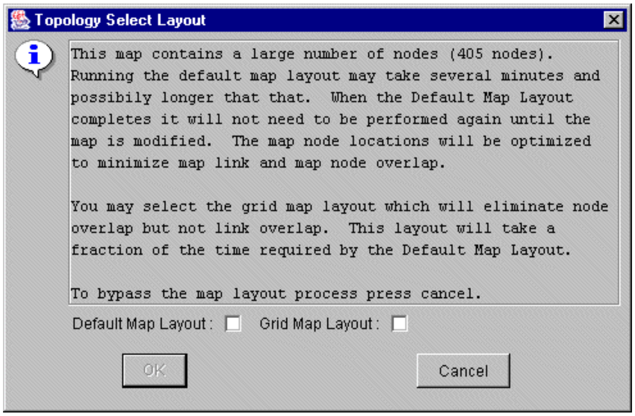
- Devices with IP Forwarding enabled are always placed on the Root Map
- Devices without IP Forwarding enabled are placed in submaps based on the subnet mask associated with the IP interface used by EPICenter to manage the device. In the Default view, submaps are named based on the subnet IP address plus the subnet mask: for example, 10.205.0.0/16, 10.205.0.0/24, and so on.

Both Extreme and third-party devices are placed using these rules. For Extreme devices, you can find the subnet mask and IP Forwarding status by looking at the device in the VLAN applet. For third-party devices, you must query the device itself if you want to determine these settings.

Within a map, the Topology Manager attempts to optimize the layout to minimize node and link overlap. If there are more than 400 links in a single map, the Topology Manager does not put labels (annotations) on the links. It displays a warning telling you that link labels will not appear.

If there are more than 400 nodes to be placed in a single map, the Topology Manager displays a warning that computing the default layout may take a significant amount of time (see Figure 122). You can then choose to have the nodes laid out in a simple row/column grid.

Figure 122: Map layout warning for placement of more than 400 nodes



This map contains a large number of nodes (405 nodes). Running the default map layout may take several minutes and possibily longer that that. When the Default Map Layout completes it will not need to be performed again until the map is modified. The map node locations will be optimized to minimize map link and map node overlap.

You may select the grid map layout which will eliminate node overlap but not link overlap. This layout will take a fraction of the time required by the Default Map Layout.

To bypass the map layout process press cancel.

Default Map Layout : □ Grid Map Layout : □

If you want to proceed with the default (optimized) layout, check the Default Map Layout checkbox. Even though the default layout may take a long time, it only needs to be done once, and produces a more optimal layout. To specify a grid layout (which may result in overlapping links) check the Grid Map Layout checkbox. To bypass the layout process, check cancel.

Figure 124 shows an example of a the default layout for a 405 node map. Figure 124 shows the same nodes in a grid layout.

Figure 123: Example of a default layout for a 410 node map

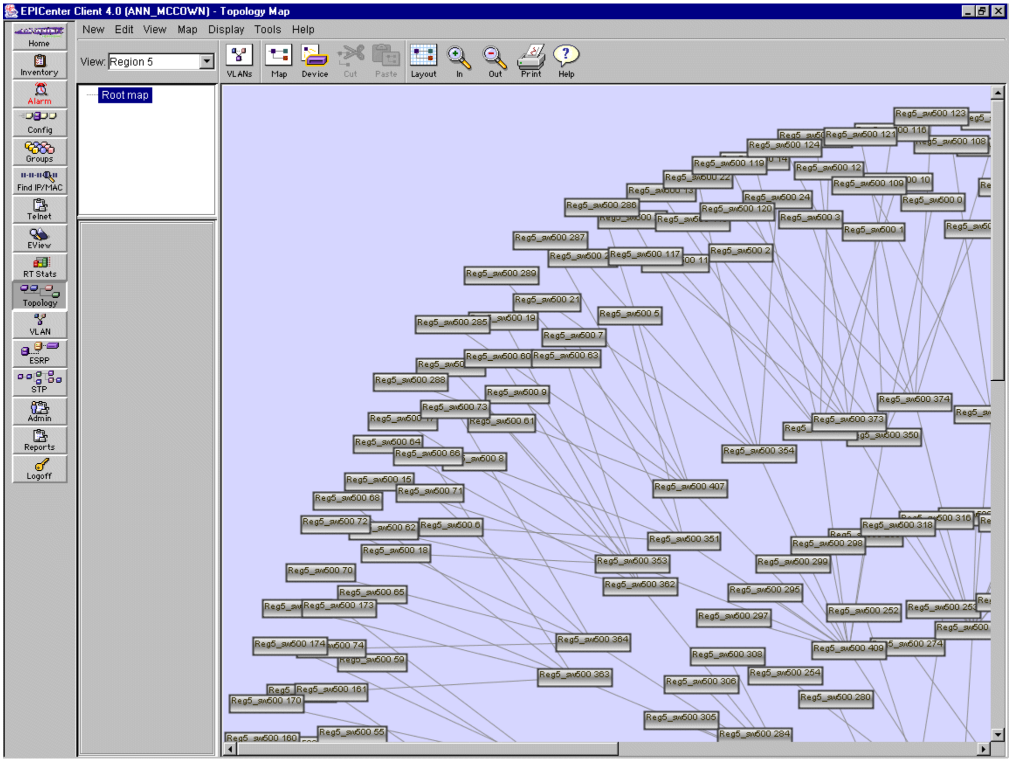
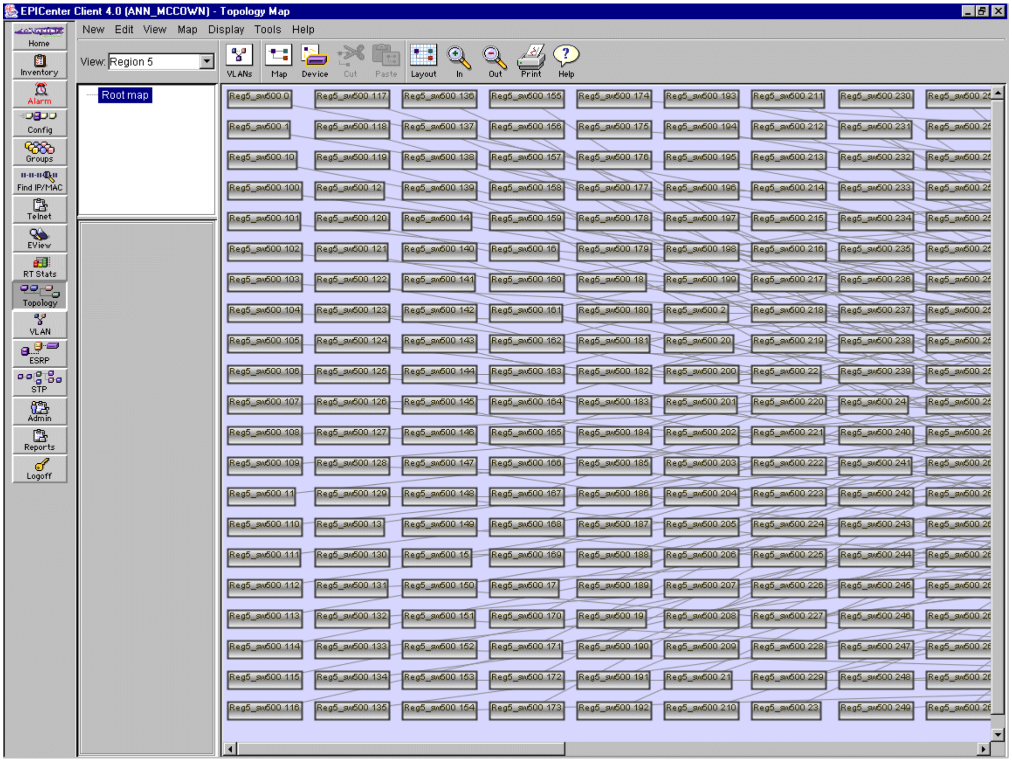


Figure 124: Example of a grid layout



Reg5_sw500 0	Reg5_sw500 117	Reg5_sw500 136	Reg5_sw500 155	Reg5_sw500 174	Reg5_sw500 193	Reg5_sw500 211	Reg5_sw500 230	Reg5_sw500 25
Reg5_sw500 1	Reg5_sw500 118	Reg5_sw500 137	Reg5_sw500 156	Reg5_sw500 175	Reg5_sw500 194	Reg5_sw500 212	Reg5_sw500 231	Reg5_sw500 25
Reg5_sw500 10	Reg5_sw500 119	Reg5_sw500 138	Reg5_sw500 157	Reg5_sw500 176	Reg5_sw500 195	Reg5_sw500 213	Reg5_sw500 232	Reg5_sw500 25
Reg5_sw500 100	Reg5_sw500 12	Reg5_sw500 139	Reg5_sw500 158	Reg5_sw500 177	Reg5_sw500 196	Reg5_sw500 214	Reg5_sw500 233	Reg5_sw500 25
Reg5_sw500 101	Reg5_sw500 120	Reg5_sw500 14	Reg5_sw500 159	Reg5_sw500 178	Reg5_sw500 197	Reg5_sw500 215	Reg5_sw500 234	Reg5_sw500 25
Reg5_sw500 102	Reg5_sw500 121	Reg5_sw500 140	Reg5_sw500 16	Reg5_sw500 179	Reg5_sw500 198	Reg5_sw500 216	Reg5_sw500 235	Reg5_sw500 25
Reg5_sw500 103	Reg5_sw500 122	Reg5_sw500 141	Reg5_sw500 160	Reg5_sw500 18	Reg5_sw500 199	Reg5_sw500 217	Reg5_sw500 236	Reg5_sw500 25
Reg5_sw500 104	Reg5_sw500 123	Reg5_sw500 142	Reg5_sw500 161	Reg5_sw500 180	Reg5_sw500 2	Reg5_sw500 218	Reg5_sw500 237	Reg5_sw500 25
Reg5_sw500 105	Reg5_sw500 124	Reg5_sw500 143	Reg5_sw500 162	Reg5_sw500 181	Reg5_sw500 20	Reg5_sw500 219	Reg5_sw500 238	Reg5_sw500 25
Reg5_sw500 106	Reg5_sw500 125	Reg5_sw500 144	Reg5_sw500 163	Reg5_sw500 182	Reg5_sw500 200	Reg5_sw500 22	Reg5_sw500 239	Reg5_sw500 25
Reg5_sw500 107	Reg5_sw500 126	Reg5_sw500 145	Reg5_sw500 164	Reg5_sw500 183	Reg5_sw500 201	Reg5_sw500 220	Reg5_sw500 24	Reg5_sw500 25
Reg5_sw500 108	Reg5_sw500 127	Reg5_sw500 146	Reg5_sw500 165	Reg5_sw500 184	Reg5_sw500 202	Reg5_sw500 221	Reg5_sw500 240	Reg5_sw500 26
Reg5_sw500 109	Reg5_sw500 128	Reg5_sw500 147	Reg5_sw500 166	Reg5_sw500 185	Reg5_sw500 203	Reg5_sw500 222	Reg5_sw500 241	Reg5_sw500 26
Reg5_sw500 11	Reg5_sw500 129	Reg5_sw500 148	Reg5_sw500 167	Reg5_sw500 186	Reg5_sw500 204	Reg5_sw500 223	Reg5_sw500 242	Reg5_sw500 26
Reg5_sw500 110	Reg5_sw500 13	Reg5_sw500 149	Reg5_sw500 168	Reg5_sw500 187	Reg5_sw500 205	Reg5_sw500 224	Reg5_sw500 243	Reg5_sw500 26
Reg5_sw500 111	Reg5_sw500 130	Reg5_sw500 15	Reg5_sw500 169	Reg5_sw500 188	Reg5_sw500 206	Reg5_sw500 225	Reg5_sw500 244	Reg5_sw500 26
Reg5_sw500 112	Reg5_sw500 131	Reg5_sw500 150	Reg5_sw500 17	Reg5_sw500 189	Reg5_sw500 207	Reg5_sw500 226	Reg5_sw500 245	Reg5_sw500 26
Reg5_sw500 113	Reg5_sw500 132	Reg5_sw500 151	Reg5_sw500 170	Reg5_sw500 19	Reg5_sw500 208	Reg5_sw500 227	Reg5_sw500 246	Reg5_sw500 26
Reg5_sw500 114	Reg5_sw500 133	Reg5_sw500 152	Reg5_sw500 171	Reg5_sw500 190	Reg5_sw500 209	Reg5_sw500 228	Reg5_sw500 247	Reg5_sw500 26
Reg5_sw500 115	Reg5_sw500 134	Reg5_sw500 153	Reg5_sw500 172	Reg5_sw500 191	Reg5_sw500 21	Reg5_sw500 229	Reg5_sw500 248	Reg5_sw500 26
Reg5_sw500 116	Reg5_sw500 135	Reg5_sw500 154	Reg5_sw500 173	Reg5_sw500 192	Reg5_sw500 210	Reg5_sw500 23	Reg5_sw500 249	Reg5_sw500 26

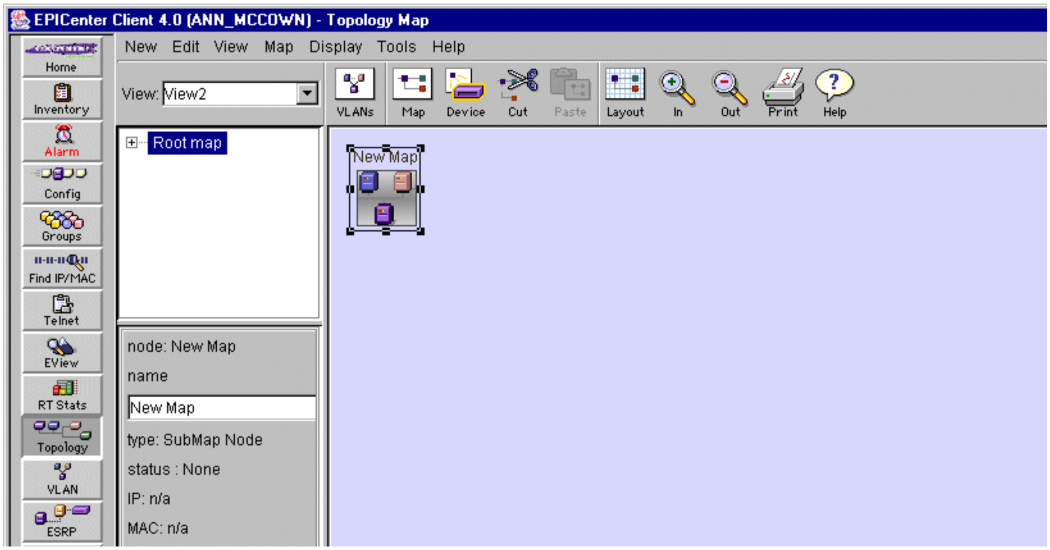
Creating a New Submap

You can create a new map by doing one of the following:

- Select **New Map** from the **New** menu
- Click the **"**Create new map" icon on the icon bar:

A new submap node appears on the map, and a New Map entry appears in the map hierarchy tree, as shown in Figure 125.

Figure 125: Adding a new map



View: View2

node: New Map

name

New Map

type: SubMap Node

status : None

IP: n/a

MAC: n/a

To give the submap a different name, select the submap node, and change the name in the name field in the Information panel. The change will take effect when you click away from the submap node.

You can also change the name of any map (including the Root Map) by clicking slowly twice on the name in the Map Tree Hierarchy. This puts you into an edit mode where you can change the name.

When editing the map name in either location, you can cancel the edit with the [Esc] key, as long as you have not yet committed it.

You can commit the change with the [Enter] key, or by clicking in a different panel from the one where you are editing.

Adding Elements to the Map

You can add a variety of elements to your map: device nodes, submap nodes, links, decorative nodes, and text “nodes”.

Adding a Device Node

You can add device nodes to your map by doing one of the following:

- Select **New Device Map Node** from the **New** menu
- Right-click on the map background to display the pop-up menu, then select **New Device Map Node**
- Click the **“**Create new device map” node icon on the icon bar:

A pop-up window appears with a list of all devices currently known to EPICenter, that are not already used somewhere in this view. A count of devices in the list is displayed at the top of the window. If all devices known to EPICenter are already placed in this view, a message window informs you of that fact.

To add a device node to the map, select the device and click **OK**.The device node will appear on the map, identified by the information from EPICenter’s inventory database.

If the device has known links to other devices already on the map, or on other submaps within the same view, those links will also be placed on the map. An L2 cloud node or a hyper node, may also be placed on the map, if required for connectivity between the devices.

If all devices known to EPICenter are already placed in this view (on any of the maps in the view) the pop-up window will inform you of that fact.

L2 Cloud Nodes and Hyper Nodes. You cannot add L2 cloud nodes and you cannot add or remove hyper nodes to or from your map; they are added automatically if the connectivity between device nodes requires it.

Adding a Decorative Node

You can add a decorative node to your map by doing one of the following:

- Select **New Decorative Map Node** from the **New** menu
- Right-click on the map background to display the pop-up menu, then select **New Decorative Map Node**

A decorative map node is a node that can be used to represent any component of your network that is not recognized or managed by EPICenter.

You can change the node name by selecting the node, and editing the contents of the name field in the Information panel. The change will take effect when you click away from the submap node.

Adding a Text Node

You can add a text node to your map by doing one of the following:

- Select **New Text Map Node** from the **New** menu
- Right click on the map background to display the pop-up menu, then select **New Text Map Node**

A text map node can be used to annotate your map, such as to create a title for the map.

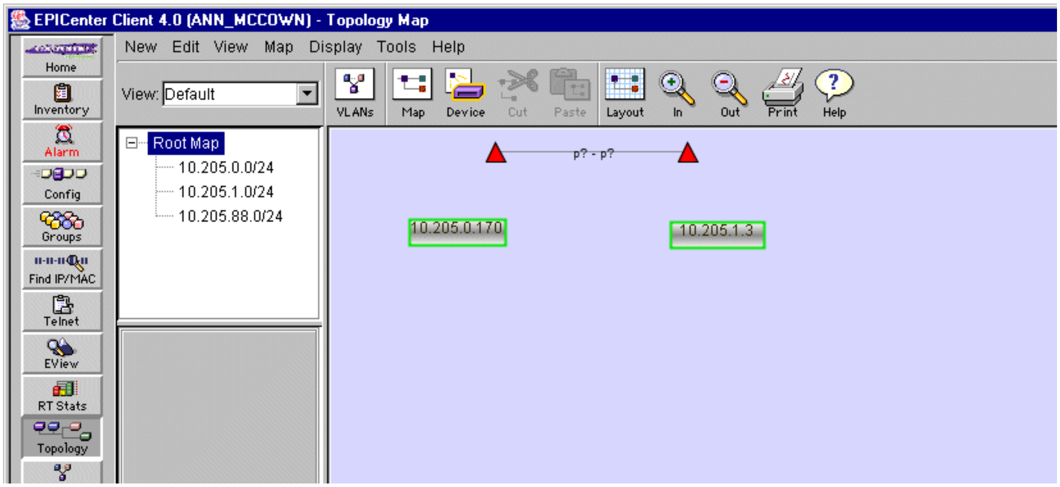
Adding a Map Link

There may be situations where you want to represent a link between devices when a "real" link cannot be detected by EPICenter. This may be the case if EDP is disabled on a device, if the device is a non-Extreme Networks device, or if EDP is not supported by the version of ExtremeWare running on the device. In these cases you can add a link between nodes on your map by doing the following:

- Select **New Map Link** from the **New** menu

A link is added to your map, as shown in Figure 126.

Figure 126: Adding a link to your map



View: Default

Root Map
- 10.205.0.0/24
- 10.205.1.0/24
- 10.205.88.0/24

To attach the link between two map nodes:

1 Select one of the red triangles, then wait until a move cursor appears

2 Drag and drop one end of the link onto one of the node you want to connect

3 Do the same with the other end of the link

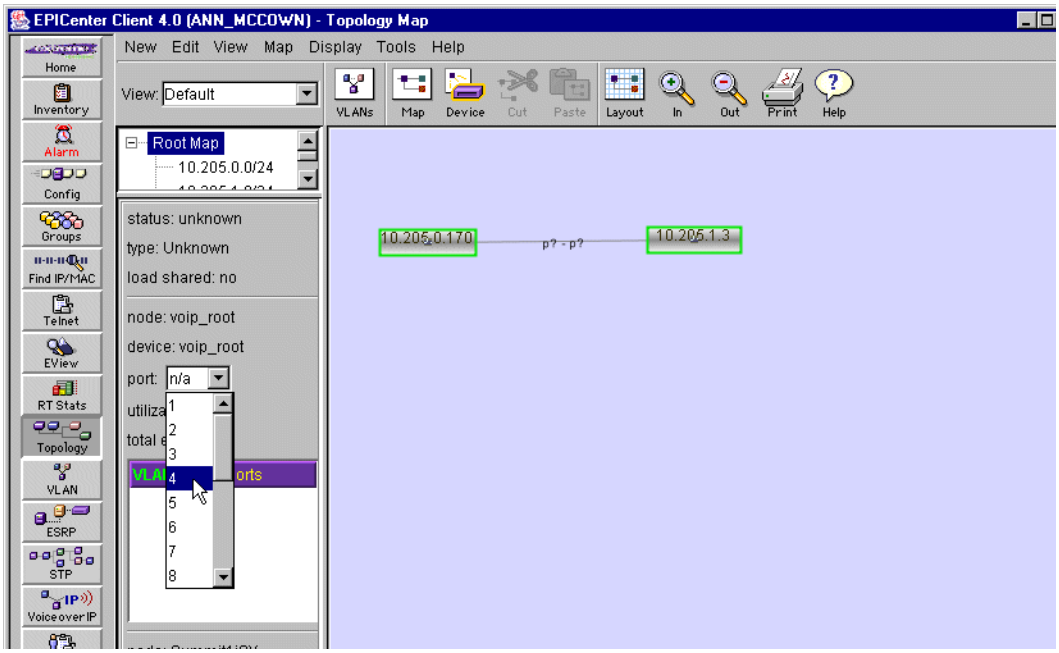
After the link is connected, you can specify endpoint for the link. To specify the end points:

1 Select the link

2 In the Information panel, select the port for the endpoint from the list in the **Port** field for first device

3 Select the port for the other endpoint from the list in the **Port** field for second device, as shown in Figure 127

Figure 127: Specifying ports for a new link connection



View: Default

status: unknown

type: Unknown

load shared: no

node: voip_root

device: voip_root

port: n/a

utiliza

total e

There are a number of restrictions that apply to the behavior of manually-created links:

- These links appear only on the map where they were created—they will not exist between the same devices in any other view.
- These links are NOT update when the status or end-point of the real link it represents is changed. If, due to such a change, the real link is discovered by EPICenter (for example, the endpoint is moved to a device where EDP is enabled) a new link is created on the map in addition to the manually-created link.
- If the device to which a manually-created link attaches is cut from the map, the link must be manually recreated when the device is pasted back.

Discovering Links Between Devices

EPICenter will eventually discover new links between devices or rediscover links you have deleted from the map if they are real existing links that are up. However, if you want to have EPICenter discover new links immediately, instead of waiting for the next polling cycle, you can use the Discover Links command.

You can also use Discover Links to remove links that no longer exist. Since EPICenter cannot distinguish between a link that no longer exists and a link that is down, when a link is moved, EPICenter will continue to show the obsolete link as a down link. The Discover Links command will remove these.

To have EPICenter rediscover all existing links between devices, do the following:

- Select **Discover Links** from the **New** menu

EPICenter will add or update the links that exist between the devices on your map, and will remove any links whose connectivity or status it cannot determine. It will also eliminate any L2 clouds that are no longer needed.

NOTE

If there is a existing link that is down when you do a Discover Links, EPICenter will remove that link, since it cannot discover links from which it cannot get status. However, if you have auto-populate turned on for the map, the real link will be added back to the map once the link comes back up.

Editing the Map

You can edit your topology views in a number of ways, including changing the names of the views and maps, and cutting, pasting, or deleting map elements.

Renaming a Topology View

You can change the name of a view (including the Default view) by doing one of the following:

- Select **Rename View** from the **Edit** menu
- Click once on the view name in the view name field

Either of these actions puts you into an edit mode where you can directly change or replace the contents of the field.

Deleting a View

To delete the entire current view, select **Delete View** from the **Edit** menu. You will be asked to confirm that you want to delete the entire view. This function deletes the currently displayed view, including all of its maps.

Once the view is deleted, the next remaining view is displayed, if there are any other views.

NOTE

You can use this command to delete the Default view. However, if you do this, it will be difficult to recreate the view and its submaps.

Renaming a Map

You can change the name of the current map by doing one of the following:

- Select **Rename Map** from the **Edit** menu
- Click twice on the Map name in the Map Hierarchy Tree

Either of these actions puts you into an edit mode where you can change or replace the name in the Map Hierarchy Tree.

You can also change the name of the map in the Map Properties window, as discussed in “Setting Map Properties” on page 369.

Deleting a Submap

To delete a submap, you must first display the submap you want to delete, and delete all the elements on the map. You can then delete the submap by selecting **Delete Map** from the **Edit** menu. You can also delete a submap by clicking the submap node on its parent map.

You will be asked to confirm that you want to delete the map.

NOTE

A submap must be empty before you can delete it.

You cannot use the **Delete Map** command to delete the Root Map.

To delete the Root map you must delete the entire View with the **Delete View** command.

Cutting Map Nodes

You can cut selected device, decorative, or text nodes from the map in order to paste them in another location.

- You can cut a submap node as long as it is empty
- You cannot cut a hyper node. A hyper node will be removed automatically as appropriate, if all nodes on the current map that have links to that node, are removed
- L2 cloud nodes can be cut, but cannot be pasted.

To cut one or more nodes, do the following:

1 Select the nodes you want to cut. You can select multiple nodes by dragging the cursor to rubber-band the selection, or by using Shift-click (hold down the shift key while clicking the cursor on the nodes you want to select).

2 Cut the nodes by doing one of the following:

— Select **Cut Map Nodes** from the **Edit** menu

— Click the “Cut nodes from map” icon on the icon bar ✂

— Right-click on the map background to display the pop-up menu, then select **Cut Map Nodes**

— Enter [Alt]+X from the keyboard

NOTE

You are NOT asked to confirm this action: if you cut a node by mistake, you will just need to paste it back again to the map.

To remove nodes from the map without provision for pasting them, use the **Delete Map Nodes** command.

Pasting Nodes onto a Map

Once you have cut one or more nodes, you can paste them onto another map by doing one of the following:

- Select **Paste Map Nodes** from the **Edit** menu
- Click the “Paste” icon on the icon bar
- Right-click on the map background to display the pop-up menu, then select **New Device Map Node**
- Enter [Alt]+V from the keyboard

These commands will only be available if there are cut nodes currently on the clipboard.

If nodes are pasted partially or completely on top of one another, you can use the **Layout Map** command (see “Map Layout” on page 361) to rearrange them.

NOTE

Cutting and pasting nodes does NOT preserve manually-created links between the nodes. Links that are automatically discovered may be recreated after the nodes are pasted, but links that were created manually must be recreated manually.

NOTE

If an L2 cloud node was among those you selected to cut, it may not necessarily be pasted back with the other nodes. Another L2 cloud is created only if EPICenter determines that it is necessary for representing device connectivity.

Deleting Nodes from the Map

You can delete selected device, decorative, or text nodes from the map, as opposed to cutting them for later pasting.

- You can delete a submap node as long as it is empty
- You cannot delete hyper nodes. A hyper node is deleted automatically when the actual node it represents is deleted
- L2 cloud nodes are deleted when they are no longer needed. You can also delete them manually

To delete one or more nodes, do the following:

1. Select the nodes you want to delete. You can select multiple nodes by using Shift-click (hold down the shift key and click the cursor on the node you want to select).
2. Delete the nodes by doing one of the following:
   - Select **Delete Map Nodes** from the **Edit** menu
   - Right-click on the map background to display the pop-up menu, then select **Delete Map Nodes**

CAUTION

You will NOT be asked to confirm that you want to delete the nodes. If you delete nodes accidently, you will need to add them again to the map.

Deleting Links from the Map

You can remove one or more links from the map using the **Delete Map Links** command.

To delete one or more links, do the following:

1. Select the links you want to delete. You can select multiple links by using Shift-click (hold down the shift key and click the cursor on the link you want to select).
2. Delete the links by doing one of the following:
   - Select **Delete Map Links** from the **Edit** menu
   - Right-click on the map background to display the pop-up menu, then select **Delete Map Links**

CAUTION

Active links that were created automatically by EPICenter will be recreated automatically on the next polling cycle as long as the endpoints they linked are still present on the map. The only links that can be permanently deleted are manually-created links or links that cease to exist.

CAUTION

Links that have been deleted cannot be pasted. Manual links must be recreated manually.

Selecting All Nodes in a Map

You can select all the nodes in a map by doing one of the following:

- Select **Select All Map Nodes** from the **Edit** menu
- Enter [Alt]+A from the keyboard

NOTE

To move a multiple-node selection as a group, hold down the shift key while dragging to preserve the multiple-node selection.

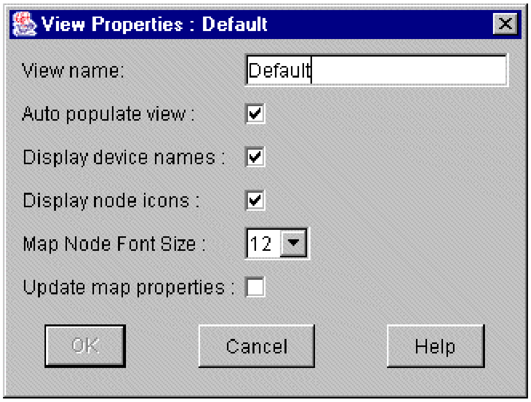
Setting View Properties

You can change the properties you set when you created a new view (or change the properties of the Default view) using the **View Properties...** function. To display the View Properties window, do one of the following:

- Select **View Properties...** from the **View** menu
- Right-click on the map background to display the pop-up menu, then select **View Properties...**

The View Properties window appears, as shown in Figure 128.

Figure 128: Setting View properties for the current view



View Properties : Default

View name: Default

Auto populate view : ☑

Display device names : ☑

Display node icons : ☑

Map Node Font Size : 12

Update map properties : □

To change the properties for the current view, do the following:

- Select the **Auto populate view** option to add the devices currently in the EPICenter inventory database to the View. Submaps, L2 clouds and hyper nodes will be created as needed. In addition, as new devices are added to EPICenter, they will also be added to the view. If you do a Discovery after you have created a view with the auto populate option enabled, all new discovered devices will be added to the view.See "Node Placement Criteria in an Auto Populate View" on page 346 for detailed information.
- Uncheck the **Display device names** checkbox to hide device names on the maps. Check the checkbox to show the device names.
- Uncheck the **Display node icons** checkbox to use plain boxes to indicate map nodes instead of icons representing specific device types. Check the checkbox to display node icons.
- Set the **Map Node Font Size** to change the size of the font used for map node labels (names, annotations, IP addresses and so on). The default is a 12 point font.
- Check the **Update map properties** checkbox to cause these settings to override any individual map settings for all current maps in this view. If you do not check this, exisitng maps will retain the current values of their map properties.

NOTE

Once you change these settings, any new (future) maps you create within this view will inherit the changed view property settings, regardless of the setting for the Update Map Properties property.

Map Viewing Functions

EPICenter's Topology applet provides a number of ways to view and manipulate the layout of a topology map.

The size and layout of map nodes is saved at every map operation (except for the map zoom level).

Map Layout

You can drag map nodes around on the map yourself, or you can have EPICenter lay out the map nodes for you. To have EPICenter do the map layout, do one of the following:

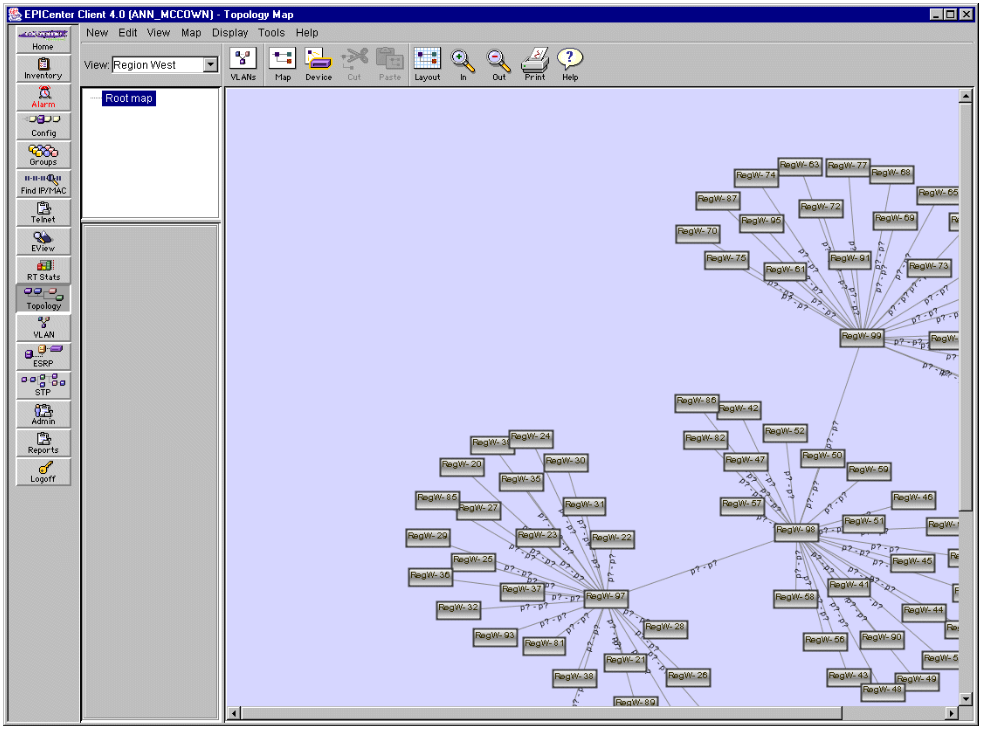
- Select **Layout Map** from the **Map** menu
- Click the "Layout" icon on the icon bar
- Click with the right mouse button on the map background to display the pop-up menu, then select **Layout Map**
- Enter [Alt]+L from the keyboard

This calculates a default map layout, optimizing for node and link placement to minimize overlap. If necessary, the Topology Manager may create a layout that is larger than the visible window area. In this case, scroll bars allow you to view different parts of the map.

If there are a large number of nodes, the Topology Manager gives you the option of using a grid layout instead of the default layout. See "Node Placement Criteria in an Auto Populate View" on page 346 for more information on how layouts are determined.

Figure 129 shows the visible portion of the default layout produced for a map with approximately 100 nodes.

Figure 129: Default map layout optimized to minimize node and link overlap.



View: Region West

You can use the **Expand Map** and **Compress Map** commands to increase or decrease the space between nodes in the map. You can also move map nodes by selecting them and dragging them to the location where you want them placed.

Laying Out a Map in Window

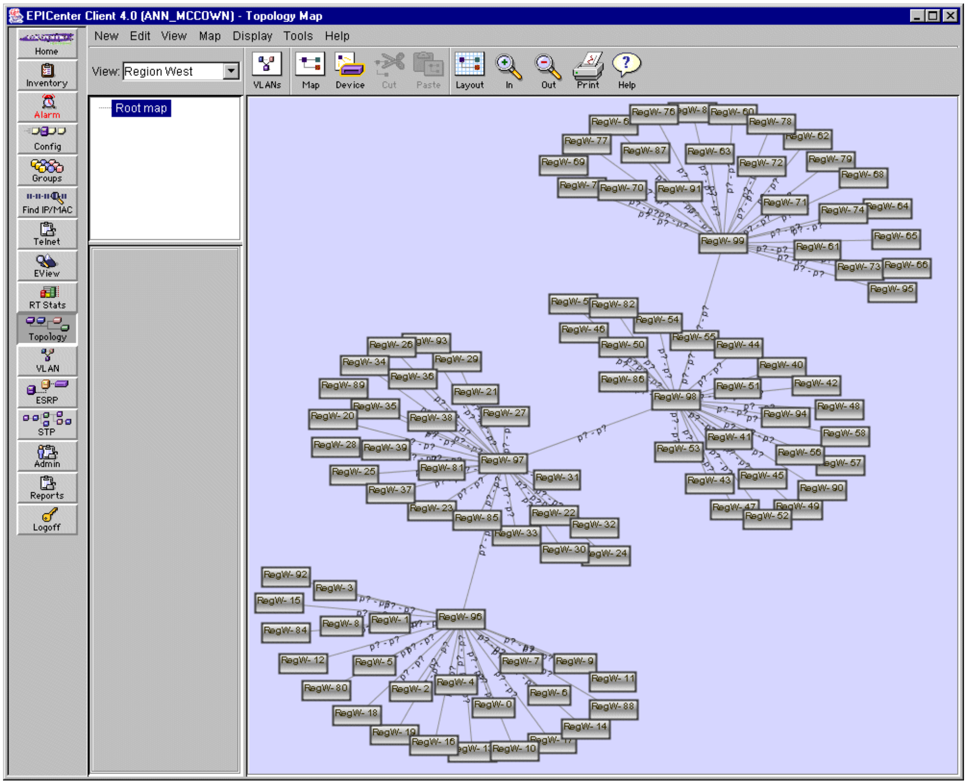
If the default map layout creates a map that is larger than the visible area of the Topology Manager window, you can have the Topology Manager attempt to optimize the map layout within the visible area of the window. To have EPICenter optimize the map layout within the current window, do one of the following:

- Select **Layout Map In Window** from the **Map** menu
- Click with the right mouse button on the map background to display the pop-up menu, then select **Layout Map in Window**

- Enter [Alt]+M from the keyboard

Figure 130 shows the same nodes as shown in Figure 129, but laid out to fit within the visible area of the window.

Figure 130: Map layout produced by Layout Map in Window command



Fitting a Map in the Window

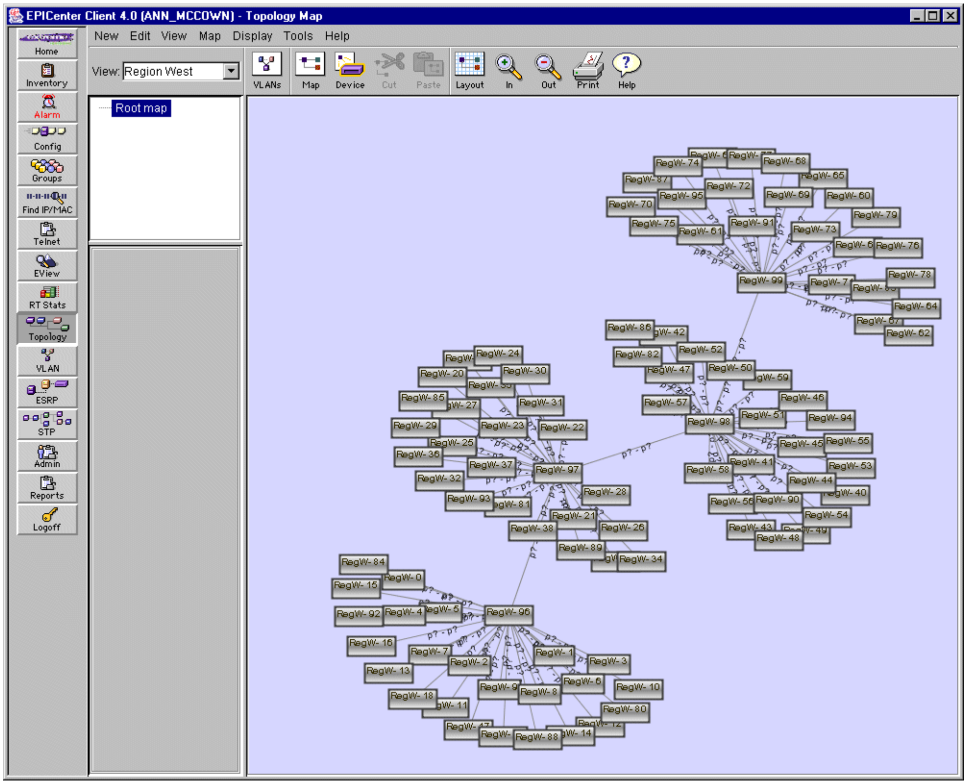
If the default map layout is larger than the visible area of the Topology Manager window, you can have the Topology Manager shrink the map to fit into the visible area of the window. To have EPICenter shrink the map layout to fit within the current window, do one of the following:

- Select **Fit Map In Window** from the **Map** menu

- Click with the right mouse button on the map background to display the pop-up menu, then select **Fit Map in Window**
- Enter [Alt]+W from the keyboard

This function does not attempt to optimize the layout for node or link overlap. To attempt to optimize the layout, use the **Layout Map in Window** command. Figure 131 shows the effects of using the Fit Map in Window command on the map layout shown in Figure 129.

Figure 131: Map layout produced by Layout Map in Window command



EPICenter Client 4.0 (ANN_MCCOWN) - Topology Map

View: Region West

Expanding the Map

The Expand Map function increases the length of the links between map nodes without changing the size of the nodes. To expand the current map, do one of the following:

- Select **Expand Map** from the **Map** menu
- Enter [Alt]+E from the keyboard

Because this command affects map links, nodes that do not have links are not moved.

Compressing the Map

The Compress Map function decreases the length of the links between map nodes without changing the size of the nodes. To compress the current map, do one of the following:

- Select **Compress Map** from the **Map** menu
- Enter [Alt]+S from the keyboard

Because this command affects map links, nodes that do not have links are not moved.

Inflating the Map Nodes

The Inflate Nodes function increases the size of some or all of the nodes on the current map, without changing the spacing between the nodes.

By default (if you do not select any specific nodes) the command will inflate all nodes on the current map. If you select one or more nodes, the command will inflate just the nodes you've selected. You can select multiple nodes by using Shift-click (hold down the shift key and click the cursor on the node you want to select).

To inflate the selected nodes, do one of the following:

- Select **Inflate Nodes** from the **Map** menu
- Enter [Alt]+I from the keyboard

Deflating the Map Nodes

The Deflate Nodes function decreases the size of some or all of the nodes on the current map, without changing the spacing between the nodes.

By default (if you do not select any specific nodes) the command will deflate all nodes on the current map. If you select one or more nodes, the command will deflate just the nodes you've selected. You can select multiple nodes by using Shift-click (hold down the shift key and click the cursor on the node you want to select).

To deflate the selected nodes, do one of the following:

- Select **Deflate Nodes** from the **Map** menu
- Enter [Alt]+D from the keyboard

Zooming In

The **Zoom In** function expands the entire map, both the size of the nodes as well as the spacing between them. To zoom in the current map, do one of the following:

- Select **Zoom Map In** from the **Map** menu
- Click the **In** icon on the icon bar
- Enter [Alt] and the [Plus] from the numeric keypad on the keyboard

Unlike the other map manipulation commands, the zoom level is not saved with the map.

Zooming Out

The Zoom Out function shrinks the entire map, both the size of the nodes as well as the spacing between them. To Zoom Out the current map, do one of the following:

- Select **Zoom Map Out** from the **Map** menu
- Click the **Out** icon on the icon bar
- Enter [Alt] and the [Minus] from the numeric keypad on the keyboard

Unlike the other map manipulation commands, the zoom level is not saved with the map.

Unzooming the Map

The Unzoom Map function restores the map to the size it was prior to any Zoom In or Zoom Out actions. To "unzoom" the map, do one of the following:

- Select **Unzoom Map** from the **Map** menu
- Enter [Alt]+R from the keyboard

Undoing Your Map Edits

You can undo your last ten map layout and sizing actions one by one using the **Undo Map Edit** function. Each **Undo Map Edit** action undoes your previous editing action. To undo the most recent edit, do one of the following:

- Select **Undo Map Edit** from the **Map** menu
- Enter [Alt]+U from the keyboard

This command does *not* undo delete, cut or paste of map elements. It stores only the last ten map layout and sizing actions.

Printing a Map

You can print the current map using the Print Map function. To print a map, display the map you want to print and then do one of the following:

- Select **Print Map** from the **Map** menu
- Click the **Print** icon on the icon bar
- Enter [Alt]+P from the keyboard

Printing a large map can be very memory-intensive, and can take a significant amount of time.

NOTE

Landscape mode and plotters are not supported.

Finding a Map Node

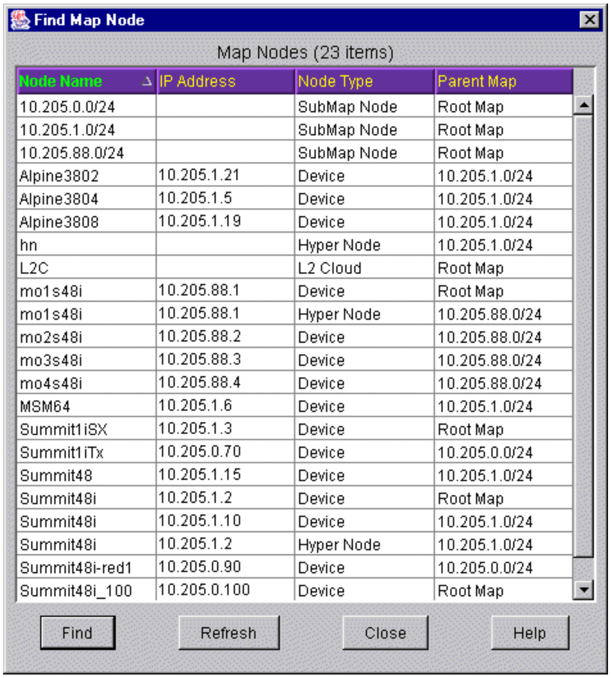
If your map has a large number of nodes, it may be difficult to quickly find a specific node you're interested in seeing. The Find Map Node function lets you select a node from the list of all nodes in the current view, and will then find and "select" that node.

To find a node, do one of the following:

- Select **Find Map Node...** from the **Map** menu
- Right-click on the map background to display the pop-up menu, then select **Find Map Node...**
- Enter [Alt]-F from the keyboard

You are presented with a list of all the nodes in the current view (see Figure 132). The list includes the name of the node, the IP address, the node type, and the map where it can be found. The total number of nodes in the list is displayed at the top of the window.

Figure 132: Finding a node in the current view



Map Nodes (23 items)

Node Name	IP Address	Node Type	Parent Map
10.205.0.0/24		SubMap Node	Root Map
10.205.1.0/24		SubMap Node	Root Map
10.205.88.0/24		SubMap Node	Root Map
Alpine3802	10.205.1.21	Device	10.205.1.0/24
Alpine3804	10.205.1.5	Device	10.205.1.0/24
Alpine3808	10.205.1.19	Device	10.205.1.0/24
hn		Hyper Node	10.205.1.0/24
L2C		L2 Cloud	Root Map
mo1s48i	10.205.88.1	Device	Root Map
mo1s48i	10.205.88.1	Hyper Node	10.205.88.0/24
mo2s48i	10.205.88.2	Device	10.205.88.0/24
mo3s48i	10.205.88.3	Device	10.205.88.0/24
mo4s48i	10.205.88.4	Device	10.205.88.0/24
MSM64	10.205.1.6	Device	10.205.1.0/24
Summit1iSX	10.205.1.3	Device	Root Map
Summit1iTx	10.205.0.70	Device	10.205.0.0/24
Summit48	10.205.1.15	Device	10.205.1.0/24
Summit48i	10.205.1.2	Device	Root Map
Summit48i	10.205.1.10	Device	10.205.1.0/24
Summit48i	10.205.1.2	Hyper Node	10.205.1.0/24
Summit48i-red1	10.205.0.90	Device	10.205.0.0/24
Summit48i_100	10.205.0.100	Device	Root Map

- To find a node, select the node and click the **Find** button.

This will display the appropriate submap, if necessary, and highlight the node you have selected.

The **Find Map Node** window will continue to be displayed until you dismiss it with the **Close** button. You can move around among different maps and views while the **Find Map Node** window is displayed.

If you change views while the **Find Map Node** window is displayed, the list of devices will no longer be correct. To update the list to reflect the current view, click the **Refresh** button.

Setting Map Properties

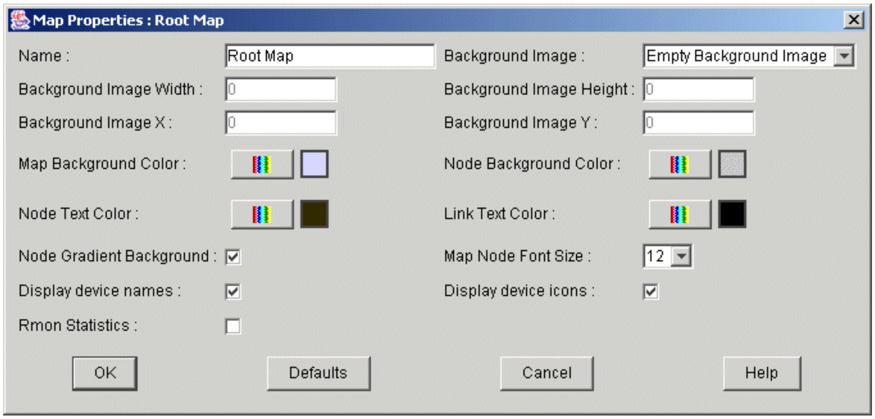
There are a number of properties you can set for the current map, such as the background color or image, node background color and style, node and link text color, and whether RMON statistics should be enabled for the devices on this map.

To display the Map Properties window, do one of the following:

- Select **Map Properties...** from the **Map** menu
- Right-click on the map background to display the pop-up menu, then select **Map Properties...**

The Topology Map Properties window will appear, as shown in Figure 133.

Figure 133: Setting Map Properties for the current map



Map Properties : Root Map

Name :	Root Map	Background Image :	Empty Background Image
Background Image Width :	0	Background Image Height :	0
Background Image X :	0	Background Image Y :	0
Map Background Color :		Node Background Color :	
Node Text Color :		Link Text Color :	
Node Gradient Background :	☑	Map Node Font Size :	12
Display device names :	☑	Display device icons :	☑
Rmon Statistics :	□		

In this window you can do the following:

- To change the name of the map, modify the name in the **Name** field
- To select a background image for the map, select the image you want from the drop-down list in the Background Image field
- To change the height and width (in pixels) for the background image, enter the number of pixels in the **Background Image Width** or **Background Image Height** field
- To select the coordinates (in pixels) where the upper left hand corner of the background image should be placed, enter the number of pixels in the **Background Image X** or **Background Image Y** field

- To change the map background color, click the color bar icon labeled **Map Background Color**. This displays a color selection window where you can select the color you want. You can select a color using color swatches, or by specifying HSB or RGB values. The current color is displayed in the small box to the right of the color bar icon.
- To change the node background color for non-transparent map nodes, click the color bar icon labeled **Node Background Color**. This displays a color selection window where you can select the color you want. You can select a color using color swatches, or by specifying HSB or RGB values. The current color is displayed in the small box to the right of the color bar icon.

NOTE

Device nodes that display the node icon use a transparent background color. Thus, the node background color setting is ignored for these nodes. The background color affects only submap nodes, device hyper nodes, and device nodes that do not display a device icon.

- To set the color used to label nodes, click the color bar icon labeled **Node Text Color**. This displays a color selection window where you can select a color by using color swatches, or by specifying HSB or RGB values. The current color is displayed in the small box to the right of the color bar icon.
- To set the color of the text used to label links, click the color bar icon labeled **Link Text Color**. This displays a color selection window where you can select a color using color swatches, or by specifying HSB or RGB values. The current color is displayed in the small box to the right of the color bar icon. The default is black.
- To use a gradient node background color (the color is shaded from light to dark to light), click the checkbox labeled **Node Gradient Background**. To turn the gradient off, so that the node background will be a uniform solid color, click in the checkbox to remove the check mark. The default is to use a gradient background.
- Set the **Map Node Font Size** to change the size of the font used for map node labels (names, annotations, IP addresses and so on). The default is a 12 point font.
- Uncheck the **Display device names** checkbox to hide device names on the maps. Check the checkbox to show the device names. The default is to display device names.
- Uncheck the **Display node icons** checkbox to use plain boxes to indicate map nodes instead of icons representing specific device types. Check the checkbox to display node icons. The default is to display device icons.

- To select whether RMON statistics should be enabled for this map, click the checkbox labeled **Rmon Statistics**. When RMON statistics are on for a map, the percent utilization will be displayed for links.

  RMON statistics can be enabled separately for each map in the view. The default is to have RMON statistics disabled for the map.

  NOTE

  It is possible to disable RMON statistics for the Topology applet as a whole, so that the Rmon Statistics checkbox will not have any effect. This is done setting RMON properties on the Server Properties page of the Administration applet.

Adding Map Background Images

You can add images of your own to use as background images for topology maps by placing them in the `BackgroundImages` directory in the EPICenter server installation.

Both **`.gif`** and **`.jpg`** image types are supported.

Background images are kept in the directory

```
<epicenter_install_dir>\extreme\gifs\topology.BackgroundImages
```

where *<epicenter_install_dir>* is the root directory of your EPICenter server installation (by default `epc4_0` in the Windows operating environment, or `/opt/epc4_0` on a Solaris system).

Displaying VLAN Information

The Topology applet can provide information on the VLANs configured on the switches in a map. VLAN information is not displayed by default.

You can view VLAN information in several ways within the Topology View applet:

- **By VLAN**, which highlights all devices and links on the current map with ports in a selected VLAN.
- **By device**, which displays a list of VLANs configured on the selected device node.

VLAN information for links is always displayed in the Map Element Description Panel whenever a link is selected, regardless of the VLAN Display mode.

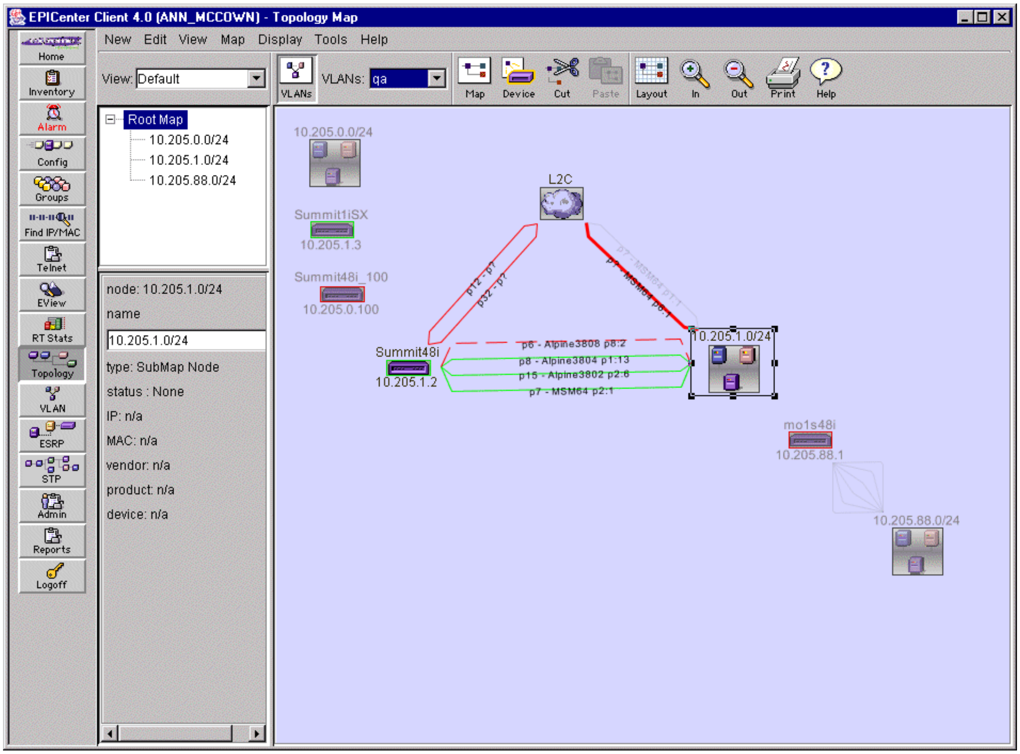
To enable the VLAN information display for devices on a map, do one of the following:

- Click the VLANs icon in the Topology applet Toolbar.
- Select **Display** from the menu bar, and then select **VLAN information**. This is a toggle menu item; select it once to display VLAN information, select it again to remove the VLAN information display.

When you enable the VLAN information display, a drop down field appears in the applet Toolbar that lists all the VLANs configured for devices on the map.

- *To view VLAN information by VLAN on the current map*, select the VLAN from the drop-down list. The links and devices that are involved in the VLAN are highlighted on the map, devices and links not in the VLAN are dimmed. Figure 134 shows the VLAN display for a single node on the map.

Figure 134: Displaying VLAN information



EPICenter Client 4.0 (ANN_MCCOWN) - Topology Map

View: Default

VLANs: qa

node: 10.205.1.0/24

name

10.205.1.0/24

type: SubMap Node

status : None

IP: n/a

MAC: n/a

vendor: n/a

product: n/a

device: n/a

If a link is displayed as a broken line, this means that a VLAN with the selected name does not exist on one of the ports in that link. This typically indicates a misconfiguration. However, it is possible that a compatible VLAN with a different name exists on the other port, and no misconfiguration exists. For example, you could have an untagged VLAN *vlan1* on one port, and untagged VLAN *vlan2* on the other port. Thus when you select either *vlan1* or *vlan2* the link is displayed as a broken line, but traffic will flow successfully between the two VLANs.

- *To view the VLANs configured on a device*, select the device node on the map. The Map Element Description panel on the left-hand side of the window displays information about the VLANs configured on a selected device node. For more detailed information about the VLANs on a device, you can right-click on the device and select **Device VLANs** from the pop-up menu that appears. See “Device VLANs” on page 375 for more information.

NOTE

If you a large number of VLANs configured on the device, it could take a while to display the VLANs. Do not deselect the node while this is in progress.

- *To view VLANs configured on a link*, select the link. VLAN configuration information for the devices on both sides of the link is displayed in the Map Element Description panel. (Note that this information is always displayed for links, even if you do not have the VLAN Display option selected.)

Device Information Views

You can view a variety of information about the devices represented by the nodes on the map. By selecting a function from the Tools menu, or from the Device pop-up menu, you can invoke displays of information kept by EPICenter for the selected device.

Device Alarms

The Device Alarms function runs the EPICenter Alarm System applet and displays the Alarm Browser function to show the alarms for the selected device.

To view the Device Alarms display for a selected node, select the node and do one of the following:

- Select **Device Alarms** from the **Tools** menu

- Right-click on the Device map node, then select **Device Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the device associated with the selected Device map node.

See Chapter 5, for details on using this feature.

Device Browse

The Device Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected node, select the node and do one of the following:

- Select **Device Browse** from the **Tools** menu
- Right-click on the Device map node, then select **Device Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new window.

Refer to the *ExtremeWare Software User Guide* for more information on using ExtremeWare Vista.

Device Statistics

The Device Statistics function runs the EPICenter Real-Time Statistics applet, and displays port statistics for the selected device.

To view the Device Statistics display for a selected node, select the node and do one of the following:

- Select **Device Statistics** from the **Tools** menu
- Right-click on the Device map node, then select **Device Statistics** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window, and displays port statistics for the device associated with the selected Device map node.

See Chapter 11, for details on using this feature.

Device Telnet

The Device Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device, select the appropriate device node and do one of the following:

- Select **Device Telnet** from the **Tools** menu
- Right-click on the Device map node, then select **Device Telnet** from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7, for details on using this feature.

Device View

The Device View function runs the EPICenter ExtremeView applet, and displays the device front-panel image and device information for the selected device.

To view the Device View for a selected node, select the node and do one of the following:

- Select **Device View** from the **Tools** menu
- Right-click on the Device map node, then select **Device View** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the device associated with the selected Device map node.

See Chapter 10, for details on using this feature.

Device VLANs

The Device VLANs function runs the VLAN Manager applet, and displays the VLAN configurations for the selected device.

To view VLAN configuration information for a selected device, select the appropriate device node and do one of the following:

- Select **Device VLANs** from the **Tools** menu

- Right-click on the Device map node, then select **Device VLANs** from the pop-up menu that appears

This starts the VLAN Manager in a new browser window, showing information for the selected device.

See Chapter 13, for details on using this feature.

Device Properties

The Device Properties function opens the Device Properties window and displays the properties of the selected device.

To display properties for a selected device, select the appropriate device node and do one of the following:

- Select **Device Properties** from the **Tools** menu
- Right-click on the Device map node, then select **Device Properties** from the pop-up menu that appears

This opens a properties window for the selected device.

For information about the Device Properties window, see Chapter 4.

13 Using the VLAN Manager

This chapter describes how to use the VLAN Manager for:

- Viewing enterprise-wide, tagged and untagged VLAN information for Extreme (Summit and BlackDiamond) switches managed by the EPICenter software
- Adding new tagged or untagged VLANs to Extreme devices, adding ports to those VLANs, and modifying IP addresses
- Deleting VLANs
- Modifying VLANs
- Adding and deleting protocol filters

Overview of Virtual LANs

A Virtual LAN is a group of location- and topology-independent devices that communicate as if they were on the same physical local area network (LAN). Extreme Networks switches have a VLAN feature that enables you to construct broadcast domains without being restricted by physical connections.

The VLAN Manager creates and manages VLAN for Extreme Networks devices only. It does not handle other third-party devices, even though third-party devices can be managed through the Inventory Manager.

If you run the EPICenter client with Administrator or Manager access, you can:

- Create and delete VLANs

- Add or remove ports from existing VLANs
- Modify a VLAN’s IP address
- Enable/disable IP Forwarding
- Create and modify the protocol filters used to filter VLAN traffic

Extreme Networks switches can support a maximum of 3000 VLANs. VLANs on Extreme Networks switches can be created according to the following criteria:

- Physical port
- 802.1Q tag
- Protocol sensitivity using Ethernet, LLC SAP, or LLC/SNAP Ethernet protocol filters
- A combination of these criteria

In the EPICenter system, a VLAN is defined uniquely by the following:

- Name
- 802.1Q tag (if defined)
- Protocol filters applied to the VLAN

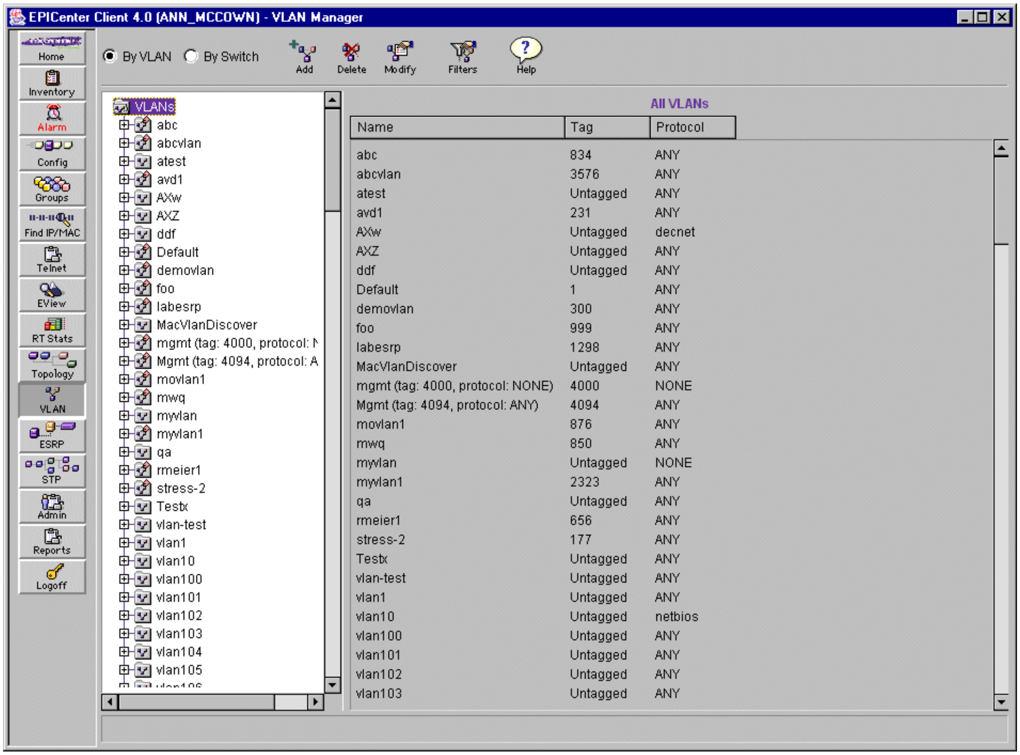
As a result, multiple switches are shown as members of the same VLAN whenever all the above are the same.

For a more detailed explanation of VLANs, see the *ExtremeWare Software User Guide*.

Displaying a VLAN

When you click the VLAN icon in the EPICenter Navigation Toolbar, the VLAN Manager window is displayed, as shown in Figure 135.

Figure 135: VLAN Manager top-level view By VLAN, showing devices organized by VLAN



● By VLAN ○ By Switch

VLANs
- abc
- abcvlan
- atest
- avd1
- AXw
- AXZ
- ddf
- Default
- demovlan
- foo
- labesrp
- MacVlanDiscover
- mgmt (tag: 4000, protocol: N
- Mgmt (tag: 4094, protocol: A
- movlan1
- mwq
- myvlan
- myvlan1
- qa
- rmeier1
- stress-2
- Testx
- vlan-test
- vlan1
- vlan10
- vlan100
- vlan101
- vlan102
- vlan103
- vlan104
- vlan105
- vlan106

All VLANs

Name	Tag	Protocol
abc	834	ANY
abcvlan	3576	ANY
atest	Untagged	ANY
avd1	231	ANY
AXw	Untagged	decnet
AXZ	Untagged	ANY
ddf	Untagged	ANY
Default	1	ANY
demovlan	300	ANY
foo	999	ANY
labesrp	1298	ANY
MacVlanDiscover	Untagged	ANY
mgmt (tag: 4000, protocol: NONE)	4000	NONE
Mgmt (tag: 4094, protocol: ANY)	4094	ANY
movlan1	876	ANY
mwq	850	ANY
myvlan	Untagged	NONE
myvlan1	2323	ANY
qa	Untagged	ANY
rmeier1	656	ANY
stress-2	177	ANY
Testx	Untagged	ANY
vlan-test	Untagged	ANY
vlan1	Untagged	ANY
vlan10	Untagged	netbios
vlan100	Untagged	ANY
vlan101	Untagged	ANY
vlan102	Untagged	ANY
vlan103	Untagged	ANY

The VLANs currently known to the EPICenter database are displayed in the Component Tree on the left. The panel on the right shows summary information about each VLAN.

NOTE

You must add switches to the EPICenter database through Discovery or by using the Add function in the Inventory Manager. Until you add a switch to the database, you cannot use EPICenter create any VLANs on that switch.

Information about VLAN configurations is obtained when a switch is added to the database.

The VLAN Manager can display information either by VLAN (showing all the switches with ports that are members of a specific VLAN) or by switch (showing the VLANs that have members on a specific switch).

- Select the **By VLAN** button to display VLANs at the first level of the Component Tree. Listed under each VLAN is every switch that has the VLAN defined on it (see Figure 135).

  When the top level of the tree (the **VLANs** node) is selected, the right hand panel displays a list of all VLANs configured on the Extreme Networks switches included to the EPICenter database. The **All VLANs** display includes:

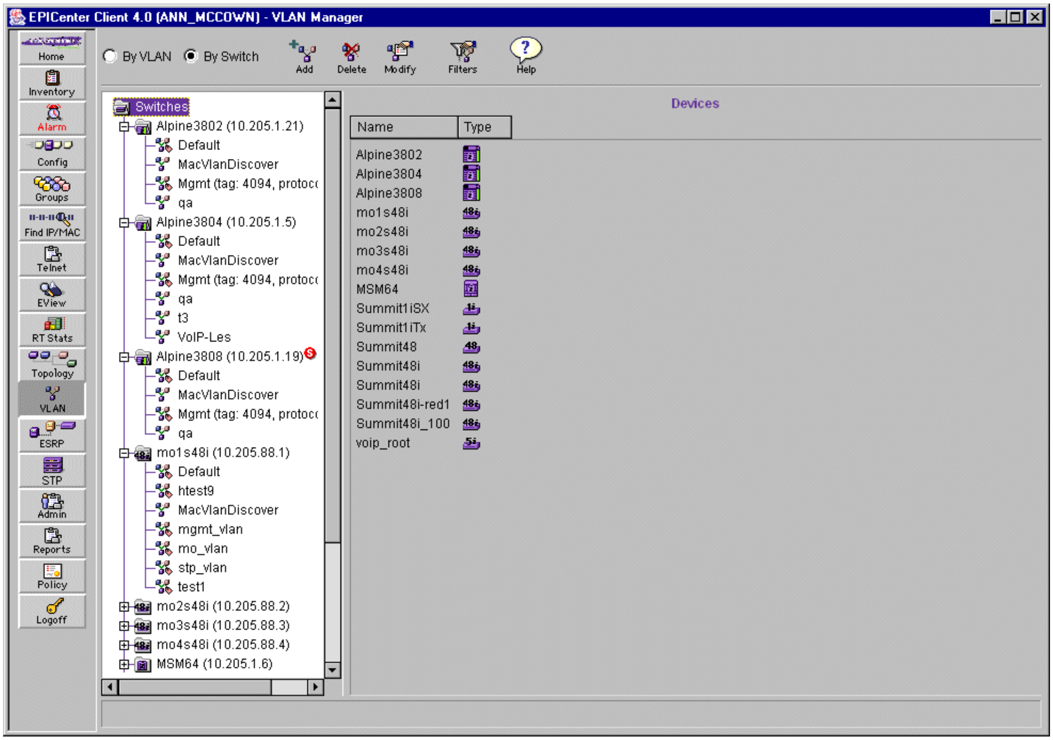
  - **Name**—The VLAN name
  - **Tag**—The VLAN tag value (if any) or "Untagged"
  - **Protocol**—The protocol filter configured for the VLAN

  Select an individual VLAN to view a summary of the configuration of the switches and ports that are members of that VLAN.

- Select the **By Switch** button to display switches at the first level of the Component Tree. Listed under each switch is every VLAN that is defined on the switch, as shown in Figure 136.

  When the top level of the tree (the **Switches** node) is selected, the right hand panel displays a list of the Extreme Networks switches known to the EPICenter database on which VLANs are configured.

Figure 136: VLAN Manager view By Switch, showing VLANs organized by device



○ By VLAN ● By Switch

```
Switches
 Alpine3802 (10.205.1.21)
   Default
   MacVlanDiscover
   Mgmt (tag: 4094, protoc
   qa
 Alpine3804 (10.205.1.5)
   Default
   MacVlanDiscover
   Mgmt (tag: 4094, protoc
   qa
   t3
   VoIP-Les
 Alpine3808 (10.205.1.19)
   Default
   MacVlanDiscover
   Mgmt (tag: 4094, protoc
   qa
 mo1s48i (10.205.88.1)
   Default
   htest9
   MacVlanDiscover
   mgmt_vlan
   mo_vlan
   stp_vlan
   test1
 mo2s48i (10.205.88.2)
 mo3s48i (10.205.88.3)
 mo4s48i (10.205.88.4)
 MSM64 (10.205.1.6)
```

Name	Type
Alpine3802	
Alpine3804	
Alpine3808	
mo1s48i	
mo2s48i	
mo3s48i	
mo4s48i	
MSM64	
Summit1iSX	
Summit1iTx	
Summit48	
Summit48i	
Summit48i	
Summit48i-red1	
Summit48i_100	
voip_root	

The **Devices** view includes

- **Name**—The switch name
- **Type**—An icon representing the switch type.

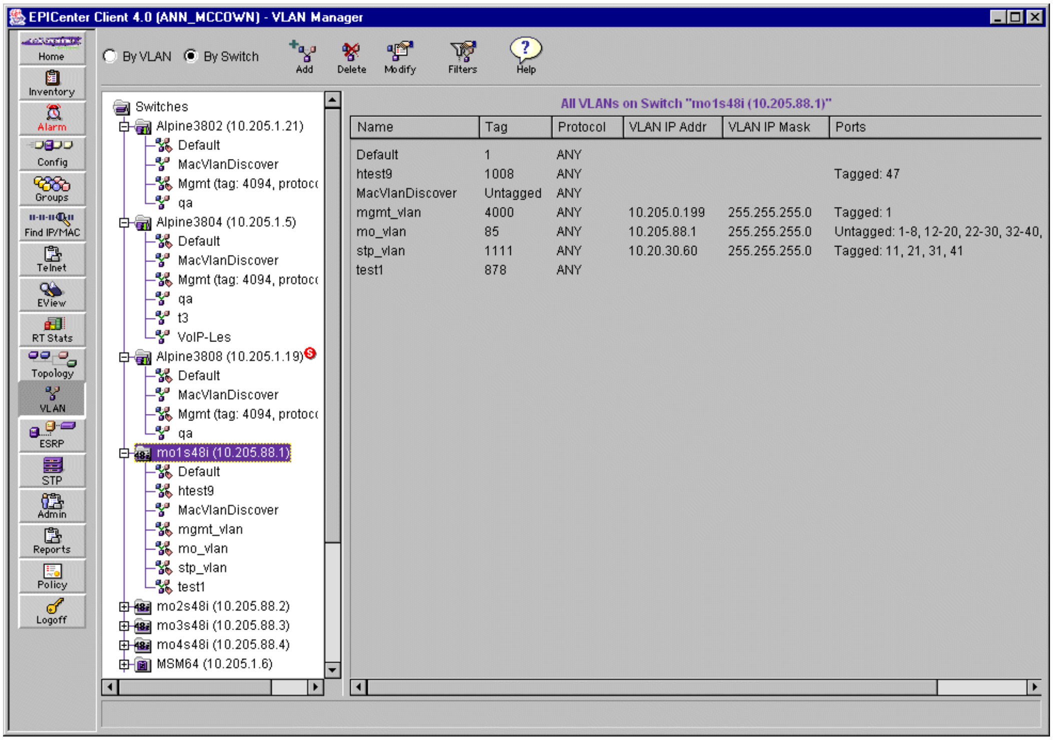
Select an individual switch to list the VLANs that are configured on that switch.

Viewing VLANs on a Switch

To view all VLANs configured on an individual switch, select the switch in the Component Tree of the **By Switch** view.

Figure 137 shows an example of the **All VLANs on Switch** view.

Figure 137: VLAN topology shown by switch



Switches
- Alpine3802 (10.205.1.21)
  - Default
  - MacVlanDiscover
  - Mgmt (tag: 4094, protoc
  - qa
- Alpine3804 (10.205.1.5)
  - Default
  - MacVlanDiscover
  - Mgmt (tag: 4094, protoc
  - qa
  - t3
  - VoIP-Les
- Alpine3808 (10.205.1.19)
  - Default
  - MacVlanDiscover
  - Mgmt (tag: 4094, protoc
  - qa
- mo1s48i (10.205.88.1)
  - Default
  - htest9
  - MacVlanDiscover
  - mgmt_vlan
  - mo_vlan
  - stp_vlan
  - test1
- mo2s48i (10.205.88.2)
- mo3s48i (10.205.88.3)
- mo4s48i (10.205.88.4)
- MSM64 (10.205.1.6)

All VLANs on Switch "mo1s48i (10.205.88.1)"

Name	Tag	Protocol	VLAN IP Addr	VLAN IP Mask	Ports
Default	1	ANY			
htest9	1008	ANY			Tagged: 47
MacVlanDiscover	Untagged	ANY			
mgmt_vlan	4000	ANY	10.205.0.199	255.255.255.0	Tagged: 1
mo_vlan	85	ANY	10.205.88.1	255.255.255.0	Untagged: 1-8, 12-20, 22-30, 32-40,
stp_vlan	1111	ANY	10.20.30.60	255.255.255.0	Tagged: 11, 21, 31, 41
test1	878	ANY			

The following information is displayed for each VLAN on the selected switch:

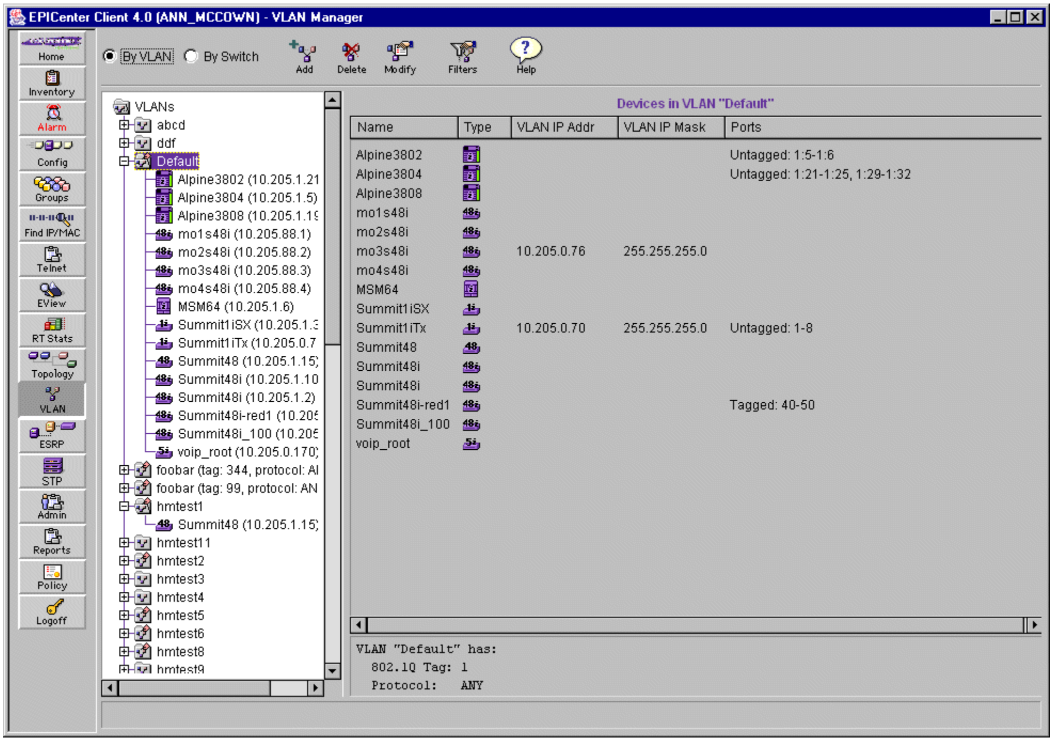
- **Name**—VLAN name
- **Tag**—VLAN tag
- **Protocol**—Protocol filter for the VLAN
- **VLAN IP Addr**—VLAN IP address
- **VLAN IP Mask**—VLAN IP Mask
- **Ports**—Ports on this switch in the VLAN

Viewing Switches in a VLAN

To view all devices configured with a specific VLAN, select the VLAN in the Component Tree of the **By VLAN** view.

Figure 138 shows an example of the **Devices in VLAN** view.

Figure 138: VLANs present on the selected switch



```
VLANs
⊞ abcd
⊞ ddf
⊟ Default
    Alpine3802 (10.205.1.21
    Alpine3804 (10.205.1.5)
    Alpine3808 (10.205.1.1¢
    mo1s48i (10.205.88.1)
    mo2s48i (10.205.88.2)
    mo3s48i (10.205.88.3)
    mo4s48i (10.205.88.4)
    MSM64 (10.205.1.6)
    Summit1iSX (10.205.1.3
    Summit1iTx (10.205.0.7
    Summit48 (10.205.1.15)
    Summit48i (10.205.1.10
    Summit48i (10.205.1.2)
    Summit48i-red1 (10.205
    Summit48i_100 (10.205
    voip_root (10.205.0.170)
⊞ foobar (tag: 344, protocol: Al
⊞ foobar (tag: 99, protocol: AN
⊟ hmtest1
    Summit48 (10.205.1.15)
⊞ hmtest11
⊞ hmtest2
⊞ hmtest3
⊞ hmtest4
⊞ hmtest5
⊞ hmtest6
⊞ hmtest8
⊞ hmtest9
```

Devices in VLAN "Default"

Name	Type	VLAN IP Addr	VLAN IP Mask	Ports
Alpine3802	▣			Untagged: 1:5-1:6
Alpine3804	▣			Untagged: 1:21-1:25, 1:29-1:32
Alpine3808	▣			
mo1s48i	48i			
mo2s48i	48i			
mo3s48i	48i	10.205.0.76	255.255.255.0	
mo4s48i	48i			
MSM64	▣			
Summit1iSX	1i			
Summit1iTx	1i	10.205.0.70	255.255.255.0	Untagged: 1-8
Summit48	48			
Summit48i	48i			
Summit48i	48i			
Summit48i-red1	48i			Tagged: 40-50
Summit48i_100	48i			
voip_root	5i			

```
VLAN "Default" has:
  802.1Q Tag: 1
  Protocol:   ANY
```

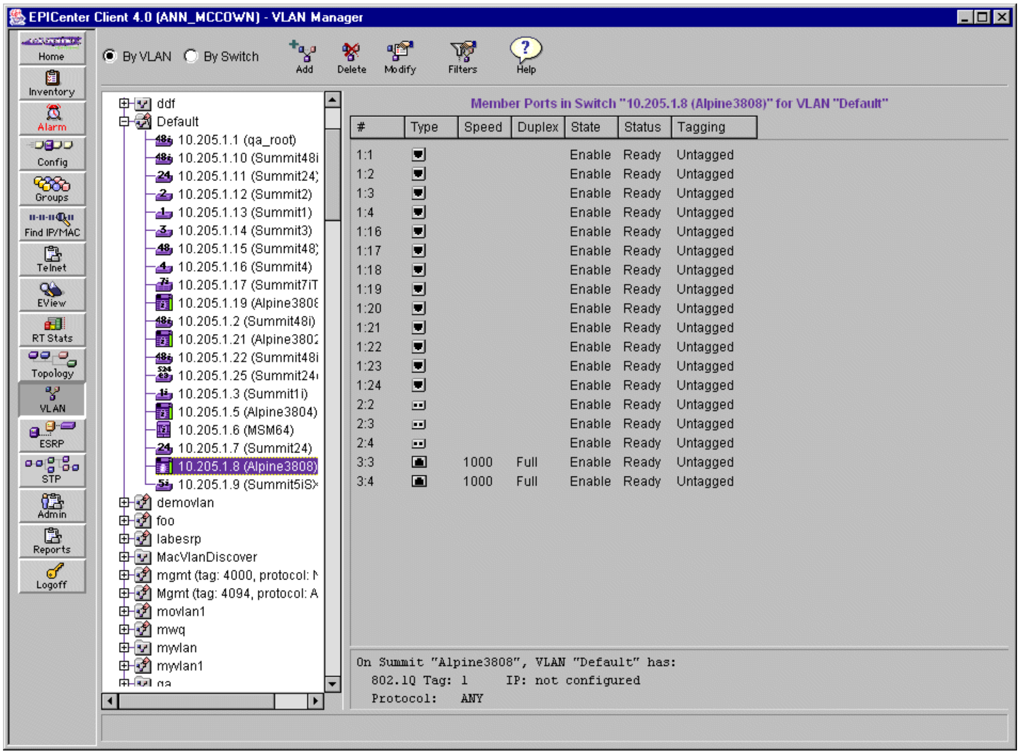
Put info here about what is shown for each switch in the selected VLAN:

- **Name**—Device name
- **Type**—An icon representing the device Type
- **VLAN IP Addr**—IP address of the VLAN
- **VLAN IP Mask**—IP Mask for the VLAN
- **Ports**—Ports on this switch in the VLAN

Viewing VLAN Member Ports

You can display details about the component ports of a VLAN by selecting a VLAN and switch in the tree on the left. You can do this from either the **By VLAN** or **By Switch** view. Once you have selected a VLAN and switch (or switch and VLAN) the panel on the right displays detailed information about the ports in the selected VLAN and switch, as shown in Figure 139.

Figure 139: VLAN member ports on a selected switch



Member Ports in Switch "10.205.1.8 (Alpine3808)" for VLAN "Default"

#	Type	Speed	Duplex	State	Status	Tagging
1:1	■			Enable	Ready	Untagged
1:2	■			Enable	Ready	Untagged
1:3	■			Enable	Ready	Untagged
1:4	■			Enable	Ready	Untagged
1:16	■			Enable	Ready	Untagged
1:17	■			Enable	Ready	Untagged
1:18	■			Enable	Ready	Untagged
1:19	■			Enable	Ready	Untagged
1:20	■			Enable	Ready	Untagged
1:21	■			Enable	Ready	Untagged
1:22	■			Enable	Ready	Untagged
1:23	■			Enable	Ready	Untagged
1:24	■			Enable	Ready	Untagged
2:2	▫			Enable	Ready	Untagged
2:3	▫			Enable	Ready	Untagged
2:4	▫			Enable	Ready	Untagged
3:3	▣	1000	Full	Enable	Ready	Untagged
3:4	▣	1000	Full	Enable	Ready	Untagged

```
On Summit "Alpine3808", VLAN "Default" has:
  802.1Q Tag: 1      IP: not configured
  Protocol:    ANY
```

The port details include the following information about each port:

- **Port**—The port number
- **Type**—The port type, shown as an icon. Different icons are used to represent the port types:

  10/100Mbps (■)

  100Base-FX (FX ■)

100Base-T/TX ( )

1000BASE-X ( )

Tagged ports are shown with a small orange tag ( )

Load-shared ports are indicated with a small green S ( )

- **Speed**—The port speed
- **Duplex**—The Duplex setting (Full or Half)
- **State**—The port state (Enabled or Disabled)
- **Status**—The port status (Ready or Active)
- **Tagging**—Whether the port is tagged or untagged

Viewing Device Information from Pop-up Menus

From a device entry in the Component Tree (in either the **By Switch** or **By VLAN** view) you can select a VLAN or a device and right-click to display a pop-up menu. The contents of the pop-up menu depend on the component you have selected:

- In the **By VLAN** view, select a VLAN and right-click to access the Modify VLAN Membership command.
- In the **By VLAN** view, select a device and right-click to display a menu containing the Modify VLAN Membership, Alarms, Browse, Statistics, Telnet, EView, and Properties commands.
- In the **By Switch** view, select a device and right-click to display a menu containing the Alarms, Browse, Statistics, Telnet, EView, and Properties commands.
- In the **By Switch** view, select a VLAN and right-click to access the Modify VLAN Membership command.

The Modify VLAN Membership command lets you modify the VLAN membership of the VLAN selected in the Component Tree. You cannot modify IP Forwarding behavior or search for device connections.The Properties command displays the attributes for a specific device group, device, slot, or port. The Alarms, Browse, Statistics, Telnet, and EView commands perform the same functions as the applets in the Navigation Toolbar to the left of the page, but with information displayed for the selected device.

Modify VLAN Membership

The Modify VLAN Membership command lets you modify the VLAN membership of the VLAN selected in the Component Tree. You cannot modify IP Forwarding behavior or search for device connections. See "Modifying a VLAN from the Component Tree Menu" on page 397 for details on using this command.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Device Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

Statistics

The Device Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7 for details on using this feature.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10 for details on using this feature.

Properties

The Properties function lets you view the attributes for a selected device. The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab. The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab. The **VLAN** tab lists the VLANs configured on the device.

The STP Tab. The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see“Device Properties” on page 124 in Chapter 4.

Adding a VLAN

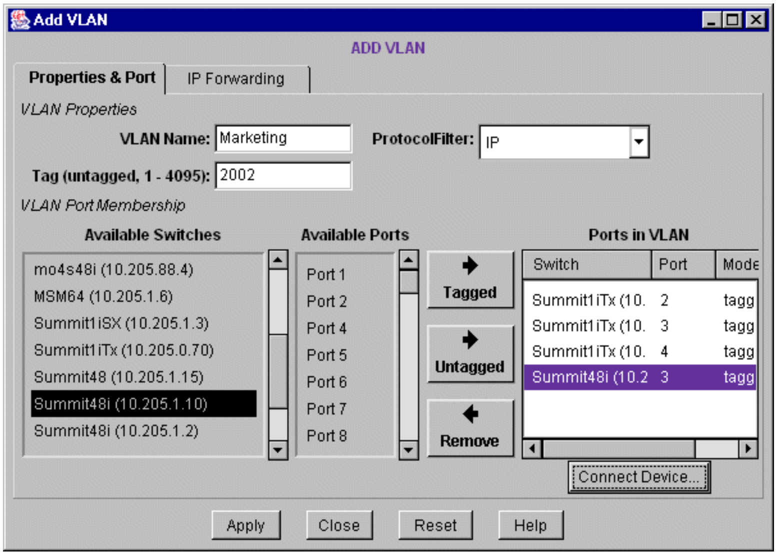
Users with Administrator or Manager access can create VLANs on the Extreme Networks switches managed by the EPICenter software. If you have Monitor access only, you can not use this function.

To add a new VLAN, do the following:

1 Click the **Add** button in the VLAN Manager Toolbar.

The Add VLAN dialog box, Properties & Ports page is displayed, as shown in Figure 140.

Figure 140: Add VLAN dialog, Properties and Ports page



Add VLAN

ADD VLAN

Properties & Port | IP Forwarding

VLAN Properties

VLAN Name: Marketing

ProtocolFilter: IP

Tag (untagged, 1 - 4095): 2002

VLAN Port Membership

Available Switches

- mo4s48i (10.205.88.4)
- MSM64 (10.205.1.6)
- Summit1iSX (10.205.1.3)
- Summit1iTx (10.205.0.70)
- Summit48 (10.205.1.15)
- Summit48i (10.205.1.10)
- Summit48i (10.205.1.2)

Available Ports

- Port 1
- Port 2
- Port 4
- Port 5
- Port 6
- Port 7
- Port 8

Ports in VLAN

Switch	Port	Mode
Summit1iTx (10.	2	tagg
Summit1iTx (10.	3	tagg
Summit1iTx (10.	4	tagg
Summit48i (10.2	3	tagg

2 Enter a descriptive name for the VLAN. The name must begin with a letter followed by up to 31 characters. See the *ExtremeWare Software User Guide* for details on VLAN naming.

3 Select an entry from the pull-down **Protocol Filter** list. This selection determines what protocol (if any) is used to determine membership in this VLAN. If you do not want to specify a protocol, select **ANY**. This means the filtering rules will match all unfiltered protocols.

4 If the VLAN is to be tagged, enter a 802.1Q tag value in the **Tag** field. The tag value can be a number between 2 and 4095. By entering a tag number, you enable tagging for this VLAN. Enter the text “untagged” or 0 (zero) to indicate that the VLAN is to be untagged.

5 To add a port to the VLAN, first select the switch from the **Available Switches** list. This displays a list of ports on the switch that are available to be included in the VLAN.

NOTE

*The **Available Ports** list does not include ports configured as slave load sharing ports.*

6 Select one or more ports from the **Available Ports** list.

7 Click **Tagged** to add the port as a tagged port. Click **Untagged** to add the port as an untagged port.

If this is an untagged VLAN, you are not able to add a tagged port.

If you add a port untagged, EPICenter must remove it from any other VLAN that includes the port as an untagged member and that uses the same protocol as the VLAN to which you are adding the port. EPICenter will warn you and let you confirm that this is what you want.

You can add a switch to a VLAN as a unit—just select the switch without selecting any ports, and click **Tagged** or **Untagged** to add the switch to the VLAN.

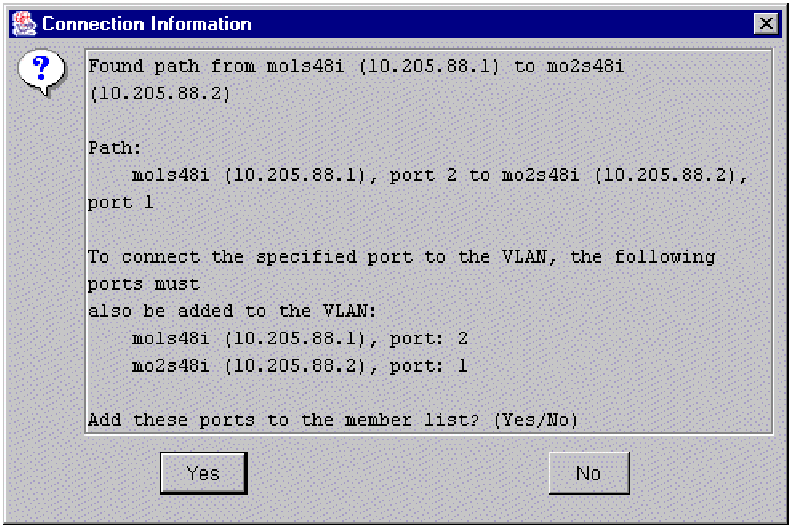
8 To remove a port from the VLAN, select the port from the Ports in VLAN list, and then click **Remove**.

9 After you add a device and port to the VLAN, you can use the **Connect Device** button to determine whether that port can connect to the other members of the VLAN.

- Select the device you want to check.
- Click the **Connect Device** button.

If EPICenter can find a path from the device and port to another member of the VLAN, it opens a Connection Information window that displays information about the path, as shown in Figure 141.

Figure 141: Connection Information window



```
Found path from mo1s48i (10.205.88.1) to mo2s48i
(10.205.88.2)

Path:
    mo1s48i (10.205.88.1), port 2 to mo2s48i (10.205.88.2),
port 1

To connect the specified port to the VLAN, the following
ports must
also be added to the VLAN:
    mo1s48i (10.205.88.1), port: 2
    mo2s48i (10.205.88.2), port: 1

Add these ports to the member list? (Yes/No)
```

If additional ports or devices and ports must be added to create a path, EPICenter lists the ports needed, and offers to add them to the VLAN.

- Click **Yes** to add the ports.
- Click **No** to close the Connection Information window without adding the ports.

If EPICenter cannot find a path, it displays an error window.

10 When you have finished adding ports to the VLAN, click **Apply** to implement the changes.

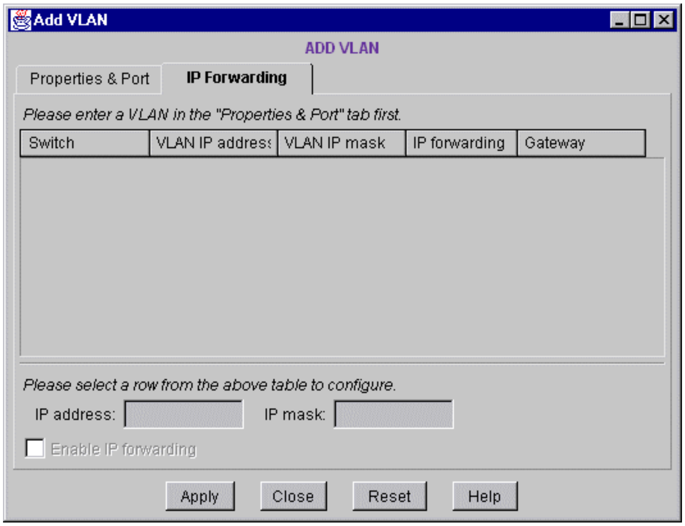
The VLAN is created on the switches whose ports are members of the new VLAN.

Once you have added a VLAN, you can specify an IP address and mask for the VLAN on each switch, and also enable or disable IP Forwarding.

1 Select the **IP Forwarding** tab at the top of the Add VLAN window.

The IP Forwarding page is displayed, as shown in Figure 142.

Figure 142: Add VLAN dialog, IP Forwarding page



Please enter a VLAN in the "Properties & Port" tab first.

Switch	VLAN IP addres	VLAN IP mask	IP forwarding	Gateway

Please select a row from the above table to configure.

IP address: IP mask:

☐ Enable IP forwarding

2 Select a switch from the table of switches.

3 Enter an IP address and IP mask. Click the Enable IP Forwarding check box to enable IP forwarding for this VLAN on the switch.

4 Click **Apply** to implement the changes.

5 Click **Close** to exit the window.

Deleting a VLAN

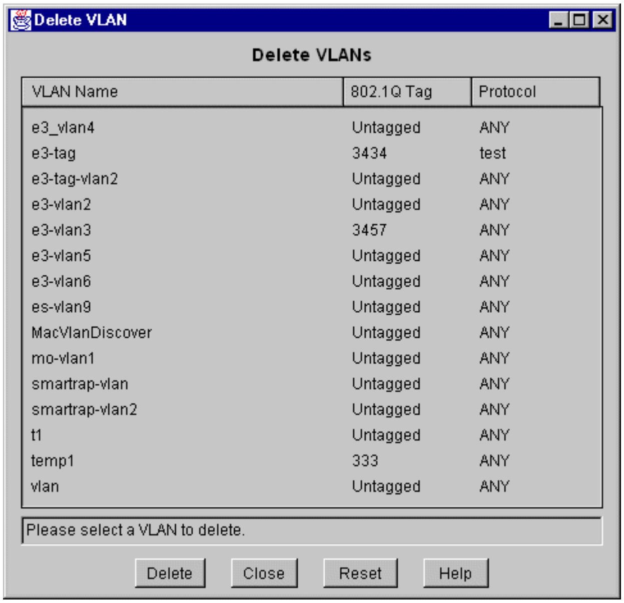
Users with Administrator or Manager access can delete VLANs from Extreme Networks switches managed by the EPICenter software. If you have only Monitor access, you cannot use this function.

To delete a VLAN, follow these steps:

1 Click the **Delete** button in the VLAN Manager Toolbar.

The Delete VLAN dialog is displayed, as shown in Figure 143.

Figure 143: The Delete VLAN page



Delete VLANs

VLAN Name	802.1Q Tag	Protocol
e3_vlan4	Untagged	ANY
e3-tag	3434	test
e3-tag-vlan2	Untagged	ANY
e3-vlan2	Untagged	ANY
e3-vlan3	3457	ANY
e3-vlan5	Untagged	ANY
e3-vlan6	Untagged	ANY
es-vlan9	Untagged	ANY
MacVlanDiscover	Untagged	ANY
mo-vlan1	Untagged	ANY
smartrap-vlan	Untagged	ANY
smartrap-vlan2	Untagged	ANY
t1	Untagged	ANY
temp1	333	ANY
vlan	Untagged	ANY

Please select a VLAN to delete.

2 Select the VLAN you want to delete.

3 Click **Delete**.

The VLAN is deleted from all the switches on which it exists.

4 Click **Close** to exit the window.

Modifying a VLAN

Users with Administrator or Manager access can modify the properties of a VLAN, and add and remove ports from the VLAN. If you have only Monitor access, you can not use this function.

You can start the Modify VLAN process in two ways:

- Click the Modify icon in the VLAN Manager toolbar.

  Using this method you can modify both the VLAN membership (devices and ports) and properties (tag and protocol filter) and modify the IP Forwarding behavior. You can also search for device connections between devices in the VLAN.

If you select a VLAN before you click the Modify button, the Modify VLAN window will contain information on the VLAN you selected. If you do not select a VLAN beforehand, you can select one from within the Modify VLAN window.

See “Modifying a VLAN from the Toolbar” on page 394 for details.

- Select a VLAN in the Component Tree, right-click to display the pop-up menu, and select Modify VLAN Membership.

  Using this method you can modify only the VLAN membership of the VLAN selected in the Component Tree. You cannot modify IP Forwarding behavior or search for device connections. See “Modifying a VLAN from the Component Tree Menu” on page 397 for details.

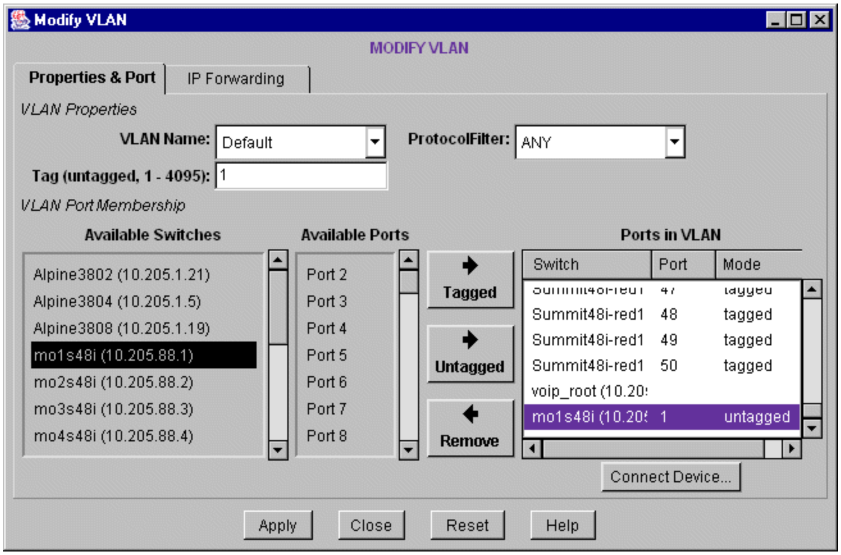
Modifying a VLAN from the Toolbar

To start the Modify VLAN process from the Toolbar, follow these steps:

1 Click the **Modify** button in the VLAN Manager Toolbar.

The Modify VLAN dialog, Properties & Ports page is displayed, as shown in Figure 144.

Figure 144: The Modify VLAN dialog, Properties and Ports page



Modify VLAN

MODIFY VLAN

Properties & Port | IP Forwarding

VLAN Properties

VLAN Name: Default

ProtocolFilter: ANY

Tag (untagged, 1 - 4095): 1

VLAN Port Membership

Available Switches:

- Alpine3802 (10.205.1.21)
- Alpine3804 (10.205.1.5)
- Alpine3808 (10.205.1.19)
- mo1s48i (10.205.88.1)
- mo2s48i (10.205.88.2)
- mo3s48i (10.205.88.3)
- mo4s48i (10.205.88.4)

Available Ports:

- Port 2
- Port 3
- Port 4
- Port 5
- Port 6
- Port 7
- Port 8

Ports in VLAN

Switch	Port	Mode
Summit48i-red1	47	tagged
Summit48i-red1	48	tagged
Summit48i-red1	49	tagged
Summit48i-red1	50	tagged
voip_root (10.20!		
mo1s48i (10.20!	1	untagged

2 Select a VLAN from the drop-down list in the **VLAN Name** field.

The current values for the VLAN are displayed.

NOTE

*The **Ports in VLAN** list does not display SummitLink ports, because you cannot modify them.*

3 To change the Protocol Filter selection, select a different entry from the pull-down **Protocol Filter** list.

4 To change the VLAN tag, type a new value into the **Tag** field.

To disable tagging for the VLAN, type "untagged" or 0 (zero) into the **Tag** field.

5 To remove a port from the VLAN, select the port in the **Ports in VLAN** list, and click **Remove**.

6 To add a port to the VLAN, first select the switch from the **Available Switches** list. This displays a list of ports on the switch that are available to be included in the VLAN.

NOTE

*The **Available Ports** list does not include ports configured as slave load sharing ports.*

7 Select one or more ports from the **Available Ports** list.

8 Click **Tagged** to add the ports as a tagged ports. Click **Untagged** to add the ports as an untagged ports.

If this is an untagged VLAN, you cannot add a tagged port. The tagged button will be greyed out in this case.

If you add a port untagged, EPICenter must remove it from any other VLAN that includes the port as an untagged member and that uses the same protocol as the VLAN to which you are adding the port. EPICenter will warn you and let you confirm that this is what you want.

You can add a switch to a VLAN as a unit—just select the switch without selecting any ports, and click **Tagged** or **Untagged** to add the switch to the VLAN.

9 After you add a device and port to the VLAN, you can use the **Connect Device** button to determine whether that port can connect to the other members of the VLAN.

- Select the device you want to check.
- Click the **Connect Device** button.

If EPICenter can find a path from the device and port to another member of the VLAN, it opens a Connection Information window that displays information about the path, as shown in Figure 141.

If additional ports or devices and ports must be added to create a path, EPICenter lists the ports needed, and offers to add them to the VLAN.

- Click **Yes** to add the ports.
- Click **No** to close the Connection Information window without adding the ports.

If EPICenter cannot find a path, it displays an error window.

10 When you have finished adding and removing ports, click **Apply** to implement the changes.

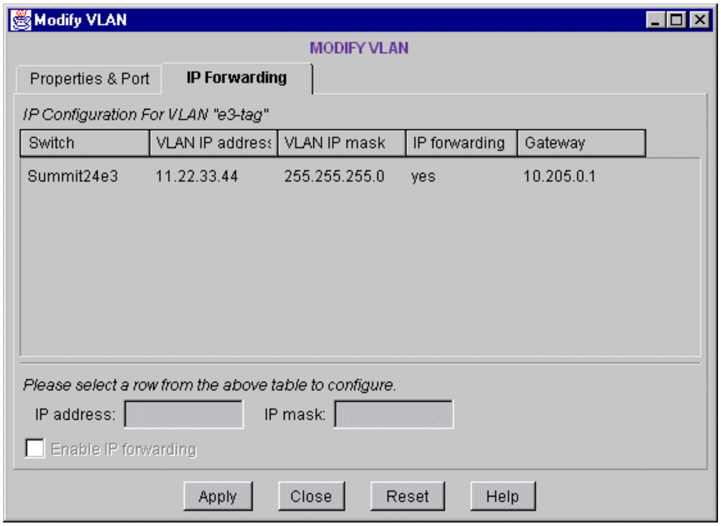
If all ports of a switch are removed from the VLAN, the VLAN is deleted from that switch.

If a port on a new switch is added to the VLAN, then the VLAN is created on that switch.

11 To modify the IP address and mask for a VLAN on a switch, and to enable or disable IP Forwarding, select the **IP Forwarding** tab at the top of the Add VLAN window.

The IP Forwarding page is displayed, as shown in Figure 142.

Figure 145: The Modify VLAN dialog, IP Forwarding page



IP Configuration For VLAN "e3-tag"

Switch	VLAN IP addres	VLAN IP mask	IP forwarding	Gateway
Summit24e3	11.22.33.44	255.255.255.0	yes	10.205.0.1

Please select a row from the above table to configure.

IP address: 　IP mask:

☐ Enable IP forwarding

12 Select a switch from the table of switches.

13 Change the IP address and IP mask as appropriate. Click the Enable IP forwarding check box to enable or disable IP forwarding for this VLAN on the switch.

14 Click **Apply** to implement the changes.

15 Click **Close** to exit the window.

Modifying a VLAN from the Component Tree Menu

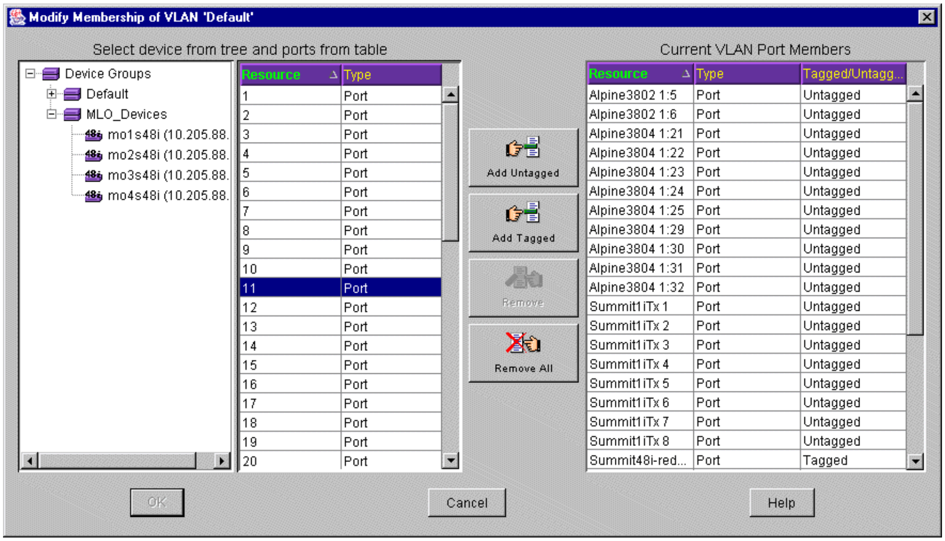
To start the Modify VLAN process for a VLAN in the Component Tree, follow these steps:

1 Select a VLAN in the Component Tree.

2 Right-click to display the pop-up menu, and select **Modify VLAN Membership**.

The Modify Membership of VLAN dialog opens, as shown in Figure 146.

Figure 146: Modify Membership of VLAN window


Modify Membership of VLAN 'Default'
Select device from tree and ports from table
Current VLAN Port Members
Add Untagged
Add Tagged
Remove
Remove All
OK
Cancel
Help

- Device Groups
  - Default
  - MLO_Devices
    - mo1s48i (10.205.88.
    - mo2s48i (10.205.88.
    - mo3s48i (10.205.88.
    - mo4s48i (10.205.88.

Resource	Type
1	Port
2	Port
3	Port
4	Port
5	Port
6	Port
7	Port
8	Port
9	Port
10	Port
11	Port
12	Port
13	Port
14	Port
15	Port
16	Port
17	Port
18	Port
19	Port
20	Port

Resource	Type	Tagged/Untagg...
Alpine3802 1:5	Port	Untagged
Alpine3802 1:6	Port	Untagged
Alpine3804 1:21	Port	Untagged
Alpine3804 1:22	Port	Untagged
Alpine3804 1:23	Port	Untagged
Alpine3804 1:24	Port	Untagged
Alpine3804 1:25	Port	Untagged
Alpine3804 1:29	Port	Untagged
Alpine3804 1:30	Port	Untagged
Alpine3804 1:31	Port	Untagged
Alpine3804 1:32	Port	Untagged
Summit1iTx 1	Port	Untagged
Summit1iTx 2	Port	Untagged
Summit1iTx 3	Port	Untagged
Summit1iTx 4	Port	Untagged
Summit1iTx 5	Port	Untagged
Summit1iTx 6	Port	Untagged
Summit1iTx 7	Port	Untagged
Summit1iTx 8	Port	Untagged
Summit48i-red...	Port	Tagged

3 To add a port to the VLAN, first select the switch in the Component Tree on the left. The Resource Table displays a list of ports on the selected switch that are available to be included in the VLAN.

NOTE

The list of port resources does not include ports configured as slave load sharing ports.

4 Select one or more ports from the port resources list.

5 Click **Add Tagged** to add the port as a tagged port. Click **Add Untagged** to add the port as an untagged port.

If this is an untagged VLAN, you cannot add a tagged port. The tagged button will be greyed out in this case.

NOTE

If you add a port untagged, EPICenter automatically removes it from any other VLAN that includes the port as an untagged member and that uses the same protocol as the VLAN to which you are adding the port.

You can add a switch to a VLAN as a unit—just select the switch without selecting any ports, and click **Add Tagged** or **Add Untagged** to add the switch to the VLAN.

6 To remove ports from the VLAN, select one or more ports in the **Current VLAN Port Members** list, and click **Remove**.

7 To remove all ports from the VLAN, click **Remove All**.

8 When you are finished making changes, click **OK**. To cancel all changes, click **Cancel**.

Adding and Deleting Protocol Filters

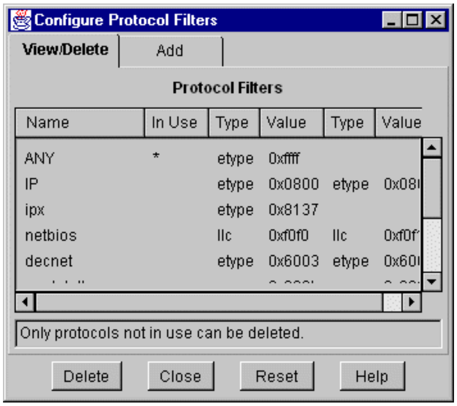
Users with Administrator or Manager access can view, add, and delete protocol filter definitions. If you have Monitor access, you can view filter definitions, but not add or delete them.

To view, delete, or add protocol filter definitions, do the following:

1 Click **Protocol Filters** in the VLAN Manager.

The View / Delete page of the Protocol Panel dialog box is displayed, as shown in Figure 147.

Figure 147: Protocol Panel dialog box, View/Delete page



Protocol Filters

Name	In Use	Type	Value	Type	Value
ANY	*	etype	0xffff		
IP		etype	0x0800	etype	0x08
ipx		etype	0x8137		
netbios		llc	0xf0f0	llc	0xf0f
decnet		etype	0x6003	etype	0x60

Only protocols not in use can be deleted.

This page shows all the protocol filters configured within the EPICenter database. Any filters that are in use by a VLAN are indicated with an asterisk (*) in the In Use column.

2 To delete a protocol filter, select a filter in the list, and click **Delete**.

This deletes the protocol filter from all Extreme Networks switches managed by the EPICenter software, as well as from the EPICenter database.

NOTE

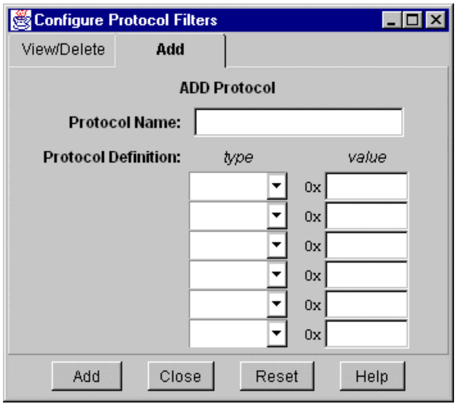
If a filter is in use by a VLAN, you cannot delete it.

3 Click **Close** to exit the window.

To add a protocol filter, follow these steps:

1 Click the **Add** tab at the top of the Protocol Panel dialog box to display the Add Protocol page, as shown in Figure 148.

Figure 148: Protocol Panel dialog box, Add Protocol page



2 Enter a descriptive name for the Protocol. The name must begin with a letter followed by up to 31 characters. See the *ExtremeWare Software User Guide* for details on naming.

3 Select a protocol type from the pull-down list in the **type** column.

4 Type a corresponding four-digit hexadecimal filter value in the **value** field.

5 Repeat steps 3 and 4 to enter up to six type-value pairs.

6 When you have finished entering the definition, click **Add** to add the new protocol filter to the EPICenter database.

NOTE

The protocol filter is now available to be used on any switch, but is not created on any switches at this time. The protocol filter is created on a switch only when you create or modify a VLAN to use the new protocol filter on that switch. The database acts as a collective store for network data without needing to replicate it on every switch.

7 Click **Close** to exit the window.

14 The Spanning Tree Monitor

This chapter describes how to use the EPICenter Spanning Tree Monitor module for:

- Viewing the configuration and status of STP domains
- Viewing the status and configuration of VLANs associated with an STP domain
- Viewing the status and configuration of devices and ports associated with an STP domain

NOTE

In order for the EPICenter server to acquire information about a device's STPD configuration, that device must be running ExtremeWare 6.2.2 or later. Prior to version 6.2.2, the ExtremeWare SNMP agent did not provide Spanning Tree information.

Overview of the Spanning Tree Monitor

The EPICenter Spanning Tree Monitor module displays information about STP domains at the domain, VLAN, device, and port levels.

STP is a bridge-based mechanism for providing fault tolerance on networks. In the Extreme Networks implementation of STP, a switch can be partitioned into multiple virtual bridges. Each virtual bridge can run an independent Spanning Tree instance, called a *Spanning Tree Domain* (STPD). Each STP domain has its own root bridge and active path. After an STPD is created, one or more VLANs can be assigned to it, depending on the mode of the ports.

The default switch configuration includes a single STP domain called *s0*. The default VLAN is a member of STPD s0.

STP ports can run in one of three modes:

- 802.1D mode. which conforms to the IEEE 802.1D standard.
- Extreme Multiple Instance Spanning Tree Protocol (EMISTP) mode, an Extreme implementation of STP that allows a port to belong to multiple STP domains. This is the default on Extreme switches.
- Enhanced Per-VLAN Spanning Tree Protocol (PVST+) mode, an STP implementation widely deployed on many vendors' switches, that is interoperable with 802.1Q spanning tree.

A physical port can belong to multiple STPDs through membership in multiple VLANs, if the port is in EMISTP mode. In addition, a single VLAN can span multiple STPDs.

STP configuration must be done through the EPICenter Telnet applet or through the ExtremeWare command line interface. The STP monitor displays summary and detailed STP configuration information about the devices being managed by the EPICenter server. It allows you to view STP configuration information network-wide rather than only device by device as is the case through the ExtremeWare CLI.

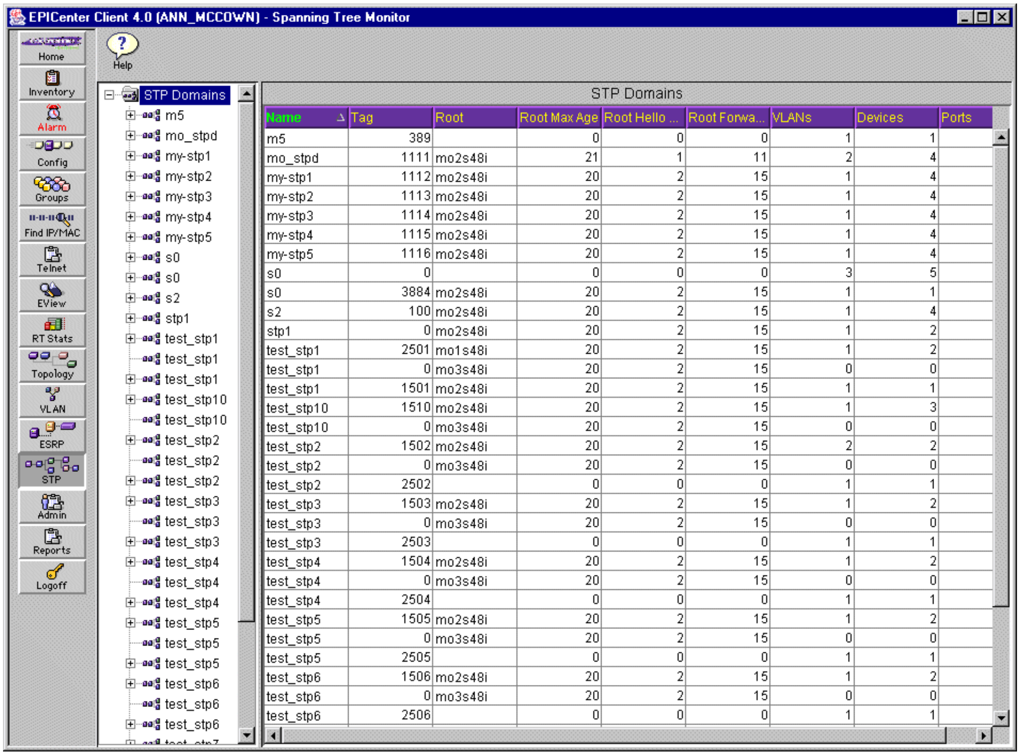
The EPICenter server receives STP topology information through traps from the SNMP agent in the switch, and through polling. Not all STP-related changes generate traps—for example, updating the root port and path cost for the previous root when the root changes. The EPICenter server relies on device polling to detect these types of changes. However, device polling by default is only done every 90 minutes, so if you want STP status updated more frequently, you may want to group your STP devices into their own device group and change the polling interval to a more appropriate interval.

For more details on STP, see the *ExtremeWare Software User Guide*.

Displaying STP Domain Information

Click the **STP** button in the EPICenter Navigation Toolbar to run the Spanning Tree Monitor module. The STP Domains window appears, as shown in Figure 149.

Figure 149: STP Domains view



STP Domains

Name	Tag	Root	Root Max Age	Root Hello ...	Root Forwa...	VLANs	Devices	Ports
m5	389		0	0	0	1	1	
mo_stpd	1111	mo2s48i	21	1	11	2	4	
my-stp1	1112	mo2s48i	20	2	15	1	4	
my-stp2	1113	mo2s48i	20	2	15	1	4	
my-stp3	1114	mo2s48i	20	2	15	1	4	
my-stp4	1115	mo2s48i	20	2	15	1	4	
my-stp5	1116	mo2s48i	20	2	15	1	4	
s0	0		0	0	0	3	5	
s0	3884	mo2s48i	20	2	15	1	1	
s2	100	mo2s48i	20	2	15	1	4	
stp1	0	mo2s48i	20	2	15	1	2	
test_stp1	2501	mo1s48i	20	2	15	1	2	
test_stp1	0	mo3s48i	20	2	15	0	0	
test_stp1	1501	mo2s48i	20	2	15	1	1	
test_stp10	1510	mo2s48i	20	2	15	1	3	
test_stp10	0	mo3s48i	20	2	15	0	0	
test_stp2	1502	mo2s48i	20	2	15	2	2	
test_stp2	0	mo3s48i	20	2	15	0	0	
test_stp2	2502		0	0	0	1	1	
test_stp3	1503	mo2s48i	20	2	15	1	2	
test_stp3	0	mo3s48i	20	2	15	0	0	
test_stp3	2503		0	0	0	1	1	
test_stp4	1504	mo2s48i	20	2	15	1	2	
test_stp4	0	mo3s48i	20	2	15	0	0	
test_stp4	2504		0	0	0	1	1	
test_stp5	1505	mo2s48i	20	2	15	1	2	
test_stp5	0	mo3s48i	20	2	15	0	0	
test_stp5	2505		0	0	0	1	1	
test_stp6	1506	mo2s48i	20	2	15	1	2	
test_stp6	0	mo3s48i	20	2	15	0	0	
test_stp6	2506		0	0	0	1	1	

This view, displayed when the root node of the Component Tree is selected, shows information about the STP domains configured on the devices managed by the EPICenter server that are running ExtremeWare 6.2.2 or later.

Under the root node the Component Tree displays all the STP domains identified by the EPICenter server. The VLANs included in the domain are listed as subcomponents of the domain. The VLANs in turn show the devices with ports that are members of the VLAN within the domain.

NOTE

Devices running earlier versions of ExtremeWare may also have Spanning Tree domains configured and enabled, but the EPICenter server is unable to obtain information about these domains.

The information presented for each STP domain includes:

- **Name**: The name of the STP domain.
- **Tag**: The 802.1Q tag of one of the wholly-contained VLANs in the domain.
- **Root**: The device name, IP address, or MAC address of the device configured as the designated root of this STP domain. If STP is disabled for this domain, this field is blank.
- **Root Max Age**: The maximum allowable age for STP information learned by the root for this domain. If this age is reached, the current information is discarded and the Spanning Tree is recalculated. Value is in seconds.
- **Root Hello Time**: The interval between transmission of Configuration BPDUs by the root for this domain. Value is in seconds.
- **Root Forward Delay**: The forward delay time being used by the root for this domain. The forward delay is the time that a bridge remains in the learning and listening states, not forwarding data. Value is in seconds.
- **VLANs**: The number of VLANs participating in this domain.
- **Devices**: The number of devices participating in this domain.
- **Ports**: The total number of ports participating in this domain, if the domain is enabled.

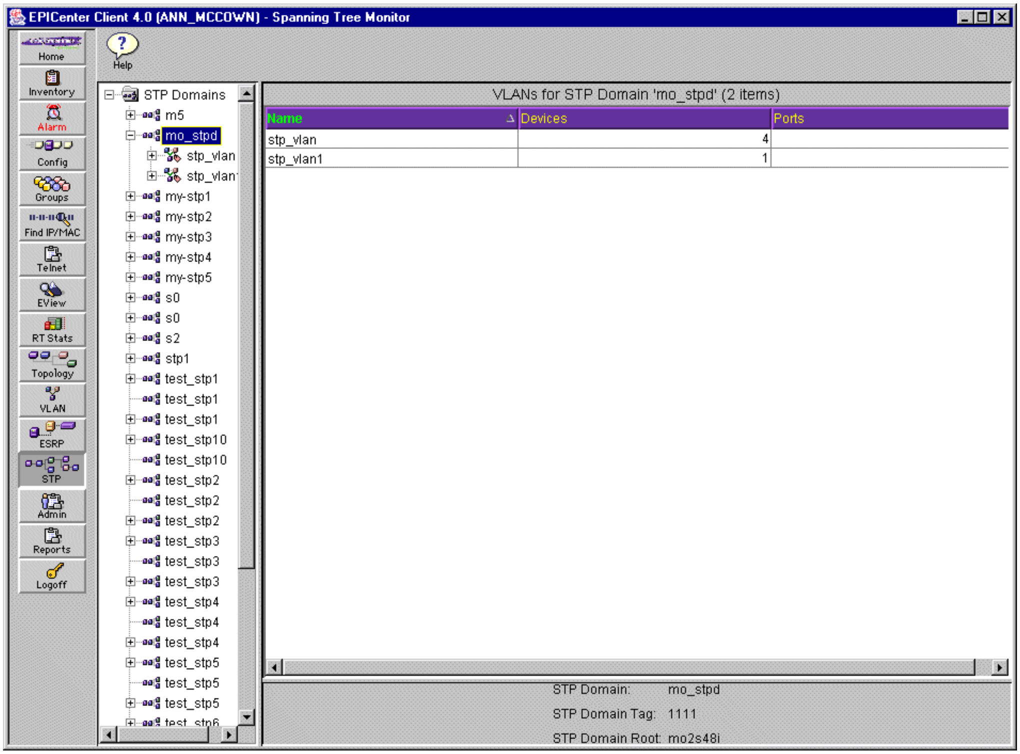
NOTE

If an untagged STP domain spans multiple switches and is configured with different tags on different switches, it may appear as separate STP domains in EPICenter's STP Monitor.

Displaying STP VLAN Configurations

Select a specific STP domain in the Component Tree to view summary information about the VLANs in the selected domain. When you select an STP domain, the STP VLAN view appears, as shown in Figure 150.

Figure 150: STP VLANs view



VLANs for STP Domain 'mo_stpd' (2 items)

Name	Devices	Ports
stp_vlan	4	
stp_vlan1	1	

STP Domain: mo_stpd

STP Domain Tag: 1111

STP Domain Root: mo2s48i

This view shows information about the VLANs in the selected domain.

The information presented for each VLAN in the domain includes:

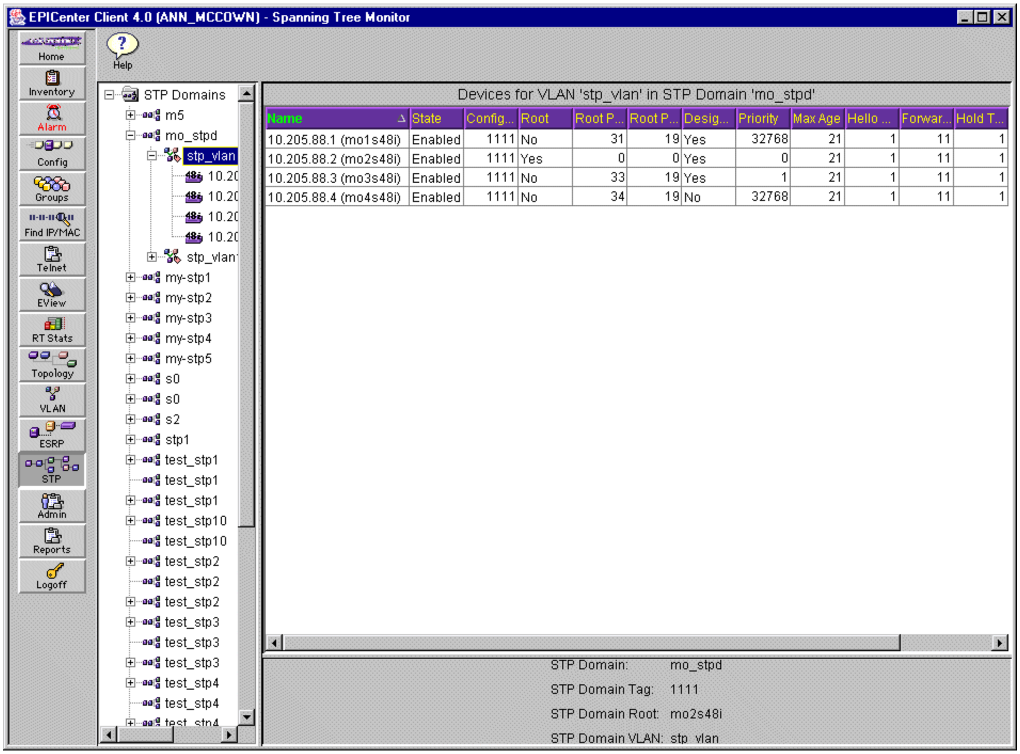
- **Name**: The name of the VLAN.
- **Devices**: The number of devices participating in this VLAN for this domain.
- **Ports**: The number of ports participating in this VLAN in this domain, if the domain is enabled. This will be zero if the STP domain is disabled on the bridge.

The panel at the bottom of this view shows summary information about the STP domain in which these VLANs are included.

Displaying STP Device Configurations

Select a specific STP VLAN in the Component Tree to view summary information about the devices in the selected VLAN that participate in the STP domain. When you select a VLAN, the STP Devices view appears, as shown in Figure 151.

Figure 151: STP Devices view



Devices for VLAN 'stp_vlan' in STP Domain 'mo_stpd'

Name	State	Config...	Root	Root P...	Root P...	Desig...	Priority	Max Age	Hello ...	Forwar...	Hold T...
10.205.88.1 (mo1s48i)	Enabled	1111	No	31	19	Yes	32768	21	1	11	1
10.205.88.2 (mo2s48i)	Enabled	1111	Yes	0	0	Yes	0	21	1	11	1
10.205.88.3 (mo3s48i)	Enabled	1111	No	33	19	Yes	1	21	1	11	1
10.205.88.4 (mo4s48i)	Enabled	1111	No	34	19	No	32768	21	1	11	1

STP Domain: mo_stpd
STP Domain Tag: 1111
STP Domain Root: mo2s48i
STP Domain VLAN: stp_vlan

This view shows information about the devices participating in the selected VLAN within this domain.

The information presented for each device includes:

- **Name**: The name of the device.

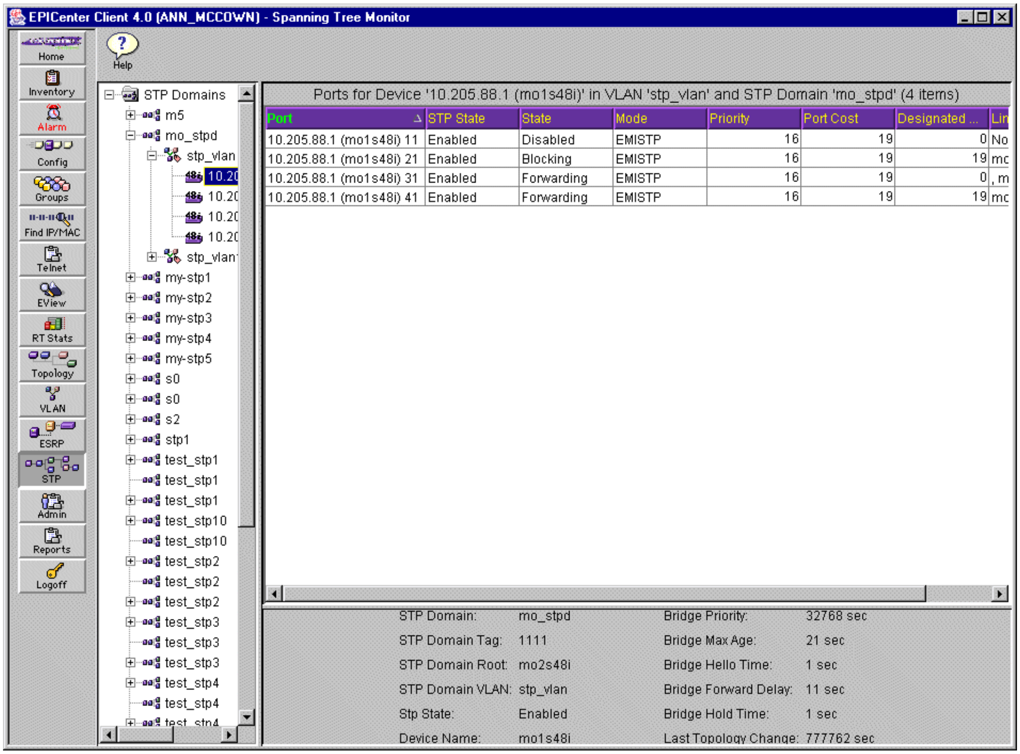
- **State**: The state of STP on this domain (enabled or disabled). If disabled, most of the remaining fields are zero.
- **Configured Tag**: The 802.1Q tag of one of the VLANs in the domain, as configured by the user.
- **Root**: Indicates whether this device is currently the STP root bridge for this domain (Yes or No).
- **Root Port**: The port with the best path to the root bridge. It this device is the root bridge, this will be zero.
- **Root Path Cost**: The cost of the path from this bridge to the root bridge. If this device is the root bridge, the cost will be zero.
- **Designated Bridge**: Indicates whether this device is a designated bridge (transmits configuration BPDUs to other bridges on any of its ports).
- **Priority**: The bridge priority of this bridge for this STP domain.
- **Max Age**: The maximum allowable age for STP information as determined by the root for this domain. If this age is reached, the current information is discarded and the Spanning Tree is recalculated. Value is in seconds.
- **Hello Time**: The interval between transmission of Configuration BPDUs by the root for this domain. Value is in seconds.
- **Forward Delay**: The actual forward delay time as determined by the root for this STP domain. Value is in seconds.
- **Hold Time**: The time during which no more than two configuration BPDUs can be transmitted by this node. Value is in seconds.
- **Last Topology Change**: The time, in seconds, since the last topology change was detected by this bridge for this STP domain.
- **Ports**: The number of ports on this bridge participating in this VLAN in this domain, if the domain is enabled. This will be zero if the STP domain is disabled on the bridge.

The panel at the bottom of this view shows summary information about the STP domain and VLAN with which these devices are associated.

Displaying STP Port Information

Select a device in the Component Tree to view information about the ports on the device that are members of the selected VLAN and STP domain. When you select a device, the STP Ports view appears, as shown in Figure 152.

Figure 152: STP Ports view



Ports for Device '10.205.88.1 (mo1s48i)' in VLAN 'stp_vlan' and STP Domain 'mo_stpd' (4 items)

Port	STP State	State	Mode	Priority	Port Cost	Designated ...	Lin
10.205.88.1 (mo1s48i) 11	Enabled	Disabled	EMISTP	16	19	0	No
10.205.88.1 (mo1s48i) 21	Enabled	Blocking	EMISTP	16	19	19	mc
10.205.88.1 (mo1s48i) 31	Enabled	Forwarding	EMISTP	16	19	0	, m
10.205.88.1 (mo1s48i) 41	Enabled	Forwarding	EMISTP	16	19	19	mc

STP Domain:	mo_stpd	Bridge Priority:	32768 sec
STP Domain Tag:	1111	Bridge Max Age:	21 sec
STP Domain Root:	mo2s48i	Bridge Hello Time:	1 sec
STP Domain VLAN:	stp_vlan	Bridge Forward Delay:	11 sec
Stp State:	Enabled	Bridge Hold Time:	1 sec
Device Name:	mo1s48i	Last Topology Change:	777762 sec

This view shows information about ports on the selected device that are participating in an enabled STP domain. The information presented for each port includes:

- **Port**: The device and port number.
- **STP State**: Whether STP is enabled or disabled on this port.
- **State**: The state of the port: Disabled, Blocking, Listening, Learning, or Forwarding
- **Mode**: The port mode (802.1D, PVST or EMISTP).
- **Priority**: The port priority of this port in this STP domain.

- **Port Cost**: This port's contribution to the cost of the path from this port to the root bridge for this STP domain.
- **Designated Cost**: The total cost of the path from this port (the Designated Port) to the root bridge for this STP domain.
- **Link**: The switch and port at the other side of the link.

The panel at the bottom of this view shows summary information about the STP domain, VLAN and device with which these ports are associated.

NOTE

If the domain is disabled, the port table will be empty.

Viewing STP Domain Properties from Pop-Up Menus

You can right-click on a STP Domain entry or a VLAN entry in the Component Tree to display the Properties command.

- To view properties for an STP Domain, right-click on an STP Domain name, then click **Properties**.
- To view properties for a VLAN, right-click on a VLAN name, then click **Properties**.
- To view properties for a device, right-click to display a menu containing Alarms, Browse, Eview, Statistics, Telnet, VLANs, and Properties commands.

STP Properties

The STP Properties window displays the following information:

- **Name**: The name of the STP domain.
- **Tag**: The 802.1Q tag of one of the wholly-contained VLANs in the domain.
- **Root**: The device name, IP address, or MAC address of the device configured as the designated root of this STP domain. If STP is disabled for this domain, this field is blank.

- **Root Max Age**: The maximum allowable age for STP information learned by the root for this domain. If this age is reached, the current information is discarded and the Spanning Tree is recalculated. Value is in seconds.
- **Root Hello Time**: The interval between transmission of Configuration BPDUs by the root for this domain. Value is in seconds.
- **Root Forward Delay**: The forward delay time being used by the root for this domain. The forward delay is the time that a bridge remains in the learning and listening states, not forwarding data. Value is in seconds.
- **Number of VLANs**: The number of VLANs participating in this domain.
- **Number of Devices**: The number of devices participating in this domain.
- **Number of Ports**: The total number of ports participating in this domain, if the domain is enabled.

Click **OK** to close the window.

VLAN Properties

The VLAN Properties window displays the following information:

- **Name**: The VLAN name
- **Tag**: The VLAN tag value (if any) or “Untagged”
- **Protocol**: The protocol filter configured for the VLAN

Click **OK** to close the window.

The Device Pop-Up Menu

When you right-click on a device in the Component Tree, the pop-up menu contains Alarms, Browse, Eview, Statistics, Telnet, VLANs, and Properties commands.

Alarms

The Alarms function runs the EPICenter Alarm System and displays the Alarm Browser function to show the alarms for the selected device.

To view the Alarms display for a selected device:

- Right-click on the device, then select **Alarms** from the pop-up menu that appears

This starts the Alarm System applet in a new window. The Alarm System displays the Alarm Log Browser and displays the alarms for the selected device.

See Chapter 5 for details on using this feature.

Browse

The Device Browse function runs the ExtremeWare Vista switch management interface for the selected device.

To run ExtremeWare Vista for a selected device:

- Right-click on the device, then select **Browse** from the pop-up menu that appears

This starts the ExtremeWare Vista login page in a new window.

Refer to the *ExtremeWare Software User Guide* for details on using ExtremeWare Vista.

EView

The EView function runs the EPICenter ExtremeView applet and displays the device front-panel image and device information for the selected device.

To view the EView for a selected device:

- Right-click on the device, then select **EView** from the pop-up menu that appears

This starts the ExtremeView applet in a new window and displays the front-panel image and information for the selected device.

See Chapter 10 for details on using this feature.

Statistics

The Device Statistics function runs the EPICenter Real-Time Statistics applet and displays port statistics for the selected device.

To view the Device Statistics display for a selected device:

- Right-click on the device, then select **Device** from the pop-up menu that appears

This starts the Real-Time Statistics applet in a new window and displays port statistics for the selected device.

See Chapter 11 for details on using this feature.

Telnet

The Telnet function opens an EPICenter telnet window that is connected to the selected device.

To open a telnet session for a selected device:

- Right-click on the device, then select Telnet from the pop-up menu that appears

This starts a telnet session for the device in a new window.

See Chapter 7 for details on using this feature.

VLANs

The VLANs function runs the EPICenter VLANs applet and displays the VLANs currently known to the EPICenter database.

To view the VLANs for a selected device:

- Right-click on the device, then select **VLANs** from the pop-up menu that appears

This starts the VLAN applet in a new window and displays the VLANs currently know to the EPICenter database.

See Chapter 13 for details on using this feature.

Properties

The Properties function lets you view the attributes for a selected device. The Device Properties window has three tabs at the top of the window:

- Device
- VLAN
- STP

Each tab displays the name of the device and a status “light” which shows the status of the device as detected by EPICenter.

The Device Tab. The **Device** tab displays information about the device such as its IP address, MAC address, and boot time. The main section of the window presents the same information you can view in the Inventory Manager for the device. If the device is an Extreme device, the ExtremeWare software running in the switch provides comprehensive status information.

The VLAN Tab. The **VLAN** tab lists the VLANs configured on the device.

The STP Tab. The **STP** tab lists the Spanning Tree domains (STPDs) configured on the device. There may be more than one entry per STPD if the domain includes multiple VLANs.

For more details about the Device Properties window, see“Device Properties” on page 124 in Chapter 4.

15 The ESRP Manager

This chapter describes how to use the EPICenter ESRP Manager applet for:

- Viewing the status of ESRP-enabled VLANs and the ESRP-enabled switches in those VLANs

Overview of the ESRP Manager

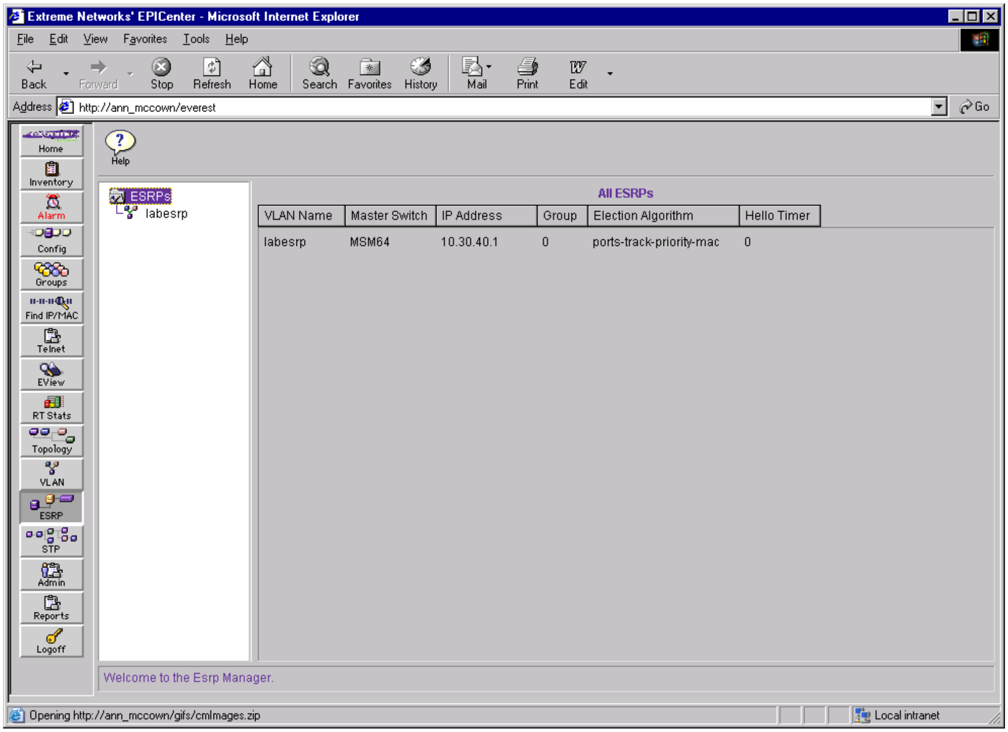
The Extreme Standby Router Protocol (ESRP) is a feature of ExtremeWare that allows multiple switches to provide redundant layer 3 routing services, as well as layer 2 redundancy, to users. The ESRP Manager displays the status of ESRP-enabled VLANs and the ESRP-enabled switches in those VLANs. You can view a summary status for all the ESRP-enabled VLANs being monitored by EPICenter. You can also view detailed information for an individual ESRP-enabled VLAN and the switches in those VLANs.

NOTE

This chapter does not discuss ESRP functionality in any detail. For more information about ESRP, see the ExtremeWare Software User Guide*, versions 6.0 or later.*

To start the ESRP Manager applet, click the **ESRP** button in the EPICenter Navigation Toolbar. The ESRP Manager applet appears, initially displaying a summary status of the ESRP-enabled VLANs known to EPICenter, as shown in Figure 153.

Figure 153: ESRP Manager showing summary ESRP-enabled VLAN status


Extreme Networks' EPICenter - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address http://ann_mccown/everest
Go
Home
Inventory
Alarm
Config
Groups
Find IP/MAC
Telnet
EView
RT Stats
Topology
VLAN
ESRP
STP
Admin
Reports
Logoff
Help
ESRPs
labesrp
Local intranet

All ESRPs

VLAN Name	Master Switch	IP Address	Group	Election Algorithm	Hello Timer
labesrp	MSM64	10.30.40.1	0	ports-track-priority-mac	0

Welcome to the Esrp Manager.

Opening http://ann_mccown/gifs/cmlmages.zip

This display shows a summary of the ESRP configuration for each ESRP-enabled VLAN.

The information displayed is as follows:

- **VLAN Name**—The name of the ESRP-enabled VLAN.
- **Master Switch**—The name, if known, or MAC address of the switch currently designated as the Master switch. If this switch is being managed by EPICenter (is included in EPICenter's Inventory database) the name will appear. If the switch is not known to EPICenter, the MAC address will appear.
- **IP Address**—The IP address of the ESRP-enabled VLAN. If the master switch is not known to EPICenter, this will be "N/A."
- **Group**—The ESRP group to which this ESRP-enabled VLAN belongs in a broadcast domain that contains multiple instances of ESRP (multiple ESRP groups). The names of the ESRP-enabled VLANs participating in the same group must be identical.

- **Election Algorithm**—The ESRP election algorithm in use for this VLAN. The election algorithm determines the order of precedence of the election factors used to determine the ESRP Master. The election factors are:
  - — Ports: the number of active ports (the switch with the highest number takes priority)
  - — Track: whether the switch is using ESRP tracking (a switch using tracking has priority)
  - — Priority: a user-defined priority number between 0 and 254 (a higher number has higher priority)
  - — MAC: the switch MAC address (a higher-number address has priority)

  The election algorithm can be one of the following:
  - — `ports_track_priority_mac` (the default): This algorithm considers active ports first, then tracking, then priority, then the MAC address to determine the ESRP Master. This is the only algorithm supported for ExtremeWare releases prior to version 6.0
  - — `track_ports_priority_mac`
  - — `priority_ports_track_mac`
  - — `priority_track_ports_mac`
  - — `priority_mac_only`: only considers priority and the MAC address

  See the *ExtremeWare Software User Guide*, version 6.1 or later, for details.

  NOTE

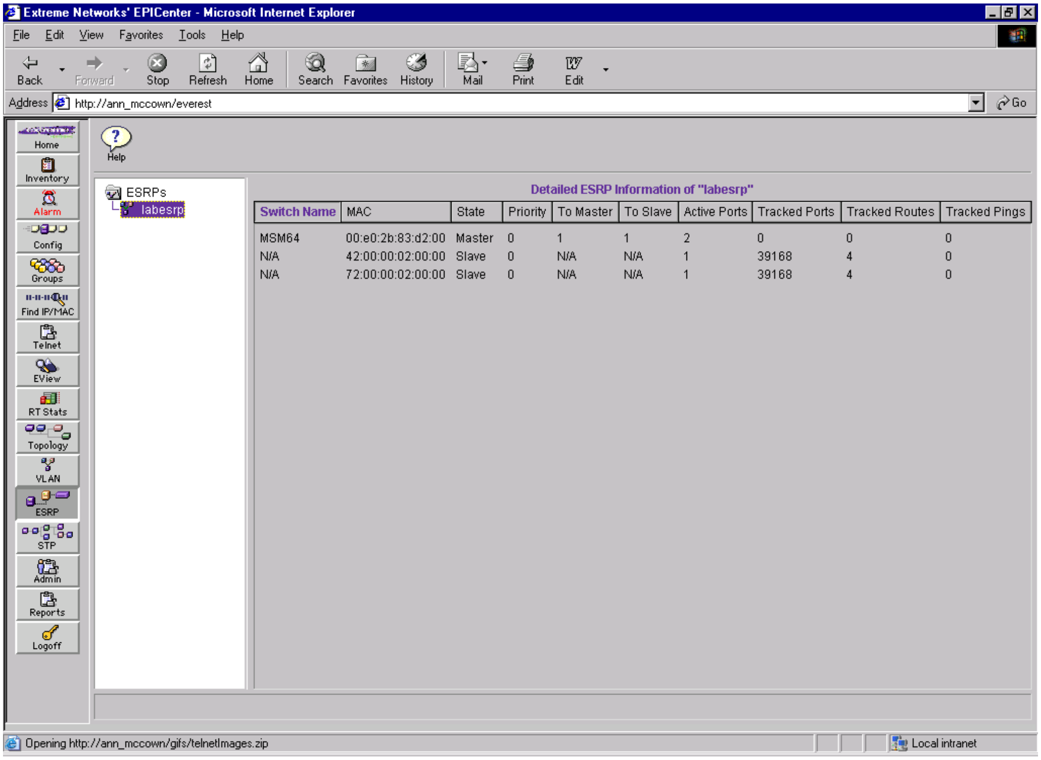
  The ESRP election algorithm must be identical on all switches in an ESRP group. If it is not, serious problems may arise.

- **Hello Timer**—This is the interval, in seconds, for exchanging keep-alive packets between the ESRP switches for this ESRP-enabled VLAN. Also known as the ESRP timer. The default is 2 seconds.

Viewing ESRP Detail Information

You can display detailed ESRP information for the switches in an individual ESRP-enabled VLAN by clicking on the VLAN name in the Component Tree in the left-hand panel of the window. This displays a status window similar to the one shown in Figure 154.

Figure 154: ESRP detail for an individual ESRP-enabled VLAN



Detailed ESRP Information of "labesrp"

Switch Name	MAC	State	Priority	To Master	To Slave	Active Ports	Tracked Ports	Tracked Routes	Tracked Pings
MSM64	00:e0:2b:83:d2:00	Master	0	1	1	2	0	0	0
N/A	42:00:00:02:00:00	Slave	0	N/A	N/A	1	39168	4	0
N/A	72:00:00:02:00:00	Slave	0	N/A	N/A	1	39168	4	0

ESRP trap events will also be recorded in the EPICenter Event Log, which you can view using the EPICenter Event Log Report (see Chapter 17). ESRP state change traps will be recorded in the EPICenter Alarm Log (see Chapter 5).

NOTE

ESRP Traps are not implemented in ExtremeWare versions 4.x or 5.x. Thus, for switches running those versions of ExtremeWare, state changes and other ESRP updates will only be reflected after the next device polling interval.

Note that an ESRP-enabled VLAN can be monitored by EPICenter as long as at least one of its ESRP-enabled switches is managed by EPICenter (i.e. is included in

EPICenter's device database). If there are other ESRP-enabled switches in that VLAN, their ESRP status will also be displayed in the ESRP Manager, even if they are not being managed by EPICenter.

The Detailed ESRP Information view displays the following information:

- **Switch Name**—The name of the switch, if known. (If the switch is not being managed by EPICenter, this field will contain "N/A.")
- **MAC**—The MAC address of this switch.
- **State**—The current state of the switch—Master or Slave.
- **Priority**—A user-defined value, between 0 and 254, which can be used by the ESRP election algorithm in determining which switch is the Master switch. The default is 0.
- **To Master**—The number of times this switch has transitioned to become a Master.
- **To Slave—**The number of times this switch has transitioned to become a Slave.

NOTE

The number of Master and Slave transitions cannot be obtained from versions of ExtremeWare prior to version 6.1.6. For switches running earlier versions of ExtremeWare, the display defaults to "N/A."

NOTE

If some of the ESRP-enabled switches in an ESRP-enabled VLAN are not managed by EPICenter, the ***ToMaster*** *and* ***ToSlave*** *values for those switches will not be updated until the next device polling interval.*

- **Active Ports**—The number of active ports in this ESRP-enable VLAN.
- **Tracked Ports**—The number of tracked ports that are currently active.
- **Tracked Routes**—The number of tracked IP routes that are currently active.
- **Tracked Pings**—The number of tracked ping responders that are responding successfully.

NOTE

The number of Tracked Pings cannot be obtained from versions of ExtremeWare prior to version 6.1.6. For switches running earlier versions of ExtremeWare, the display defaults to zero.

16 Administering EPICenter

This chapter describes how to use the Administration applet for the following:

- Changing your own user password, for users without Administration access
- Adding and deleting EPICenter users
- Setting and modifying user permissions for both the EPICenter and ExtremeWare software
- Configuring the EPICenter server as a RADIUS client or a RADIUS server for user authentication
- Enabling or disabling EPICenter Syslog receiver functionality
- Modifying EPICenter server properties to change settings such as polling rates, time-outs, port assignments and other similar settings
- Configuring EPICenter for a distributed server configuration

Overview of User Administration

In order to log in to the EPICenter server and use its management features, you must have a user name and password. An EPICenter administrator can create and modify EPICenter user accounts, passwords, and account permissions through the Administration applet. Individual users, regardless of their access permissions, can change their own password using the Administration applet.

The EPICenter server and its Remote Authentication Dial In User Service (RADIUS) server can be used for user authentication, both for EPICenter server access and

Extreme Networks switch access. The Administration applet provides an interface for configuring the RADIUS server.

Finally, the Administration applet provides an interface that allows an EPICenter administrator to modify a number of properties that affect the performance and configuration of the EPICenter server. These properties are stored in the EPICenter database along with other EPICenter data.

Controlling EPICenter Access

The EPICenter server provides three levels of access to EPICenter functions:

- Monitor — users who can view status information and statistics.
- Manager — users who can modify device parameters as well as view status information and statistics.
- Administrator — users who can create, modify and delete user accounts as well as perform all the functions of a user with Manager access.

The EPICenter server provides two default users:

- “admin” with Administrator access
- “user” with Monitor access

The two default users do not initially have passwords. All other user names must be added and enabled by an Administrator user.

Regardless of your access level, you can run the Administration applet and change your own password. Users with Administrator access can add and delete users and assign user access levels.

NOTE

The EPICenter user accounts are separate from the Extreme switch user accounts. You can configure both through the EPICenter software, or you can have switch access independently of the EPICenter software.

ExtremeWare Software Access

Through the EPICenter software, two levels of access to Extreme switches can be enabled:

- User — users who can view device status information and statistics, but cannot modify any parameters.
- Administrator — users who can modify device parameters as well as view status information and statistics.

These permissions enable access to Extreme Networks switches through Telnet or ExtremeWare Vista. The use of the RADIUS server avoids the need to maintain user names, passwords, and access permissions in each switch, and instead centralizes the configuration in one location in the EPICenter server.

The EPICenter RADIUS Server

The EPICenter software incorporates a basic RADIUS server for user authentication. RADIUS provides a standard way for the EPICenter software and Extreme Networks switches to handle user authentication, permitting the unification of the Extreme Networks CLI, ExtremeWare Vista, and EPICenter user authentication. The EPICenter server can be configured to act either as a RADIUS server or a RADIUS client. RADIUS authentication is disabled by default.

ExtremeWare versions 4.1 and later support the RADIUS server for authentication and can act as RADIUS clients.

Setting EPICenter Server Properties

The server properties interface allows an EPICenter administrator to modify a number of parameters that affect server performance and function. These include communication parameters such as polling intervals, time-outs, port usage, number of retries, setting Scalability mode, and a number of other parameters.

Starting the EPICenter Client for the First Time

The two default users, admin and user, do not initially have passwords.

It is strongly recommended that you log in the first time with the user name admin, and immediately change the admin password. You can then add other users with Manager, Monitor, or Administrator access.

To run the EPICenter client interface for the first time:

1 Launch the EPICenter client.

The EPICenter Login page appears.

2 Select or enter the host name or IP address and port of the EPICenter server.

3 Type the user name `admin` in the User field.

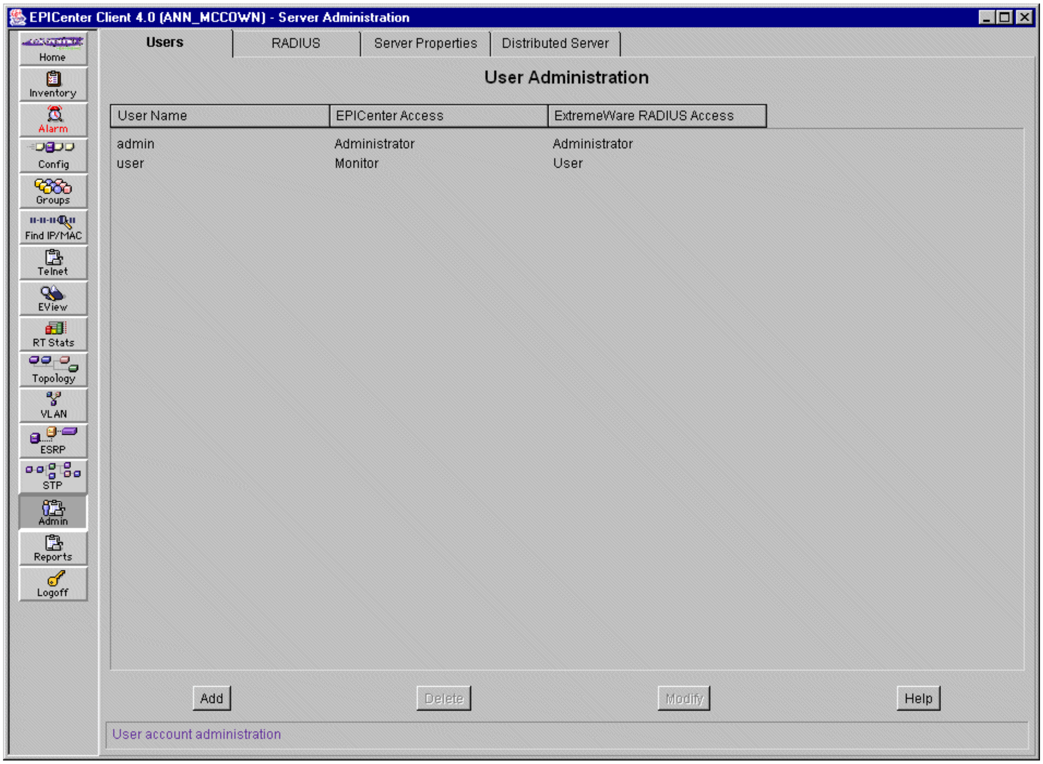
4 Leave the Password field empty.

5 Click **Login**. The Network Summary Report page appears.

6 Click **Admin** in the Navigation Toolbar to access the Administration functions of the EPICenter server.

The User Administration page appears, as shown in Figure 155. The only users are "admin" and "user."

Figure 155: User Administration window



User Administration

User Name	EPICenter Access	ExtremeWare RADIUS Access
admin	Administrator	Administrator
user	Monitor	User

User account administration

Changing the Admin Password

To change the Admin password:

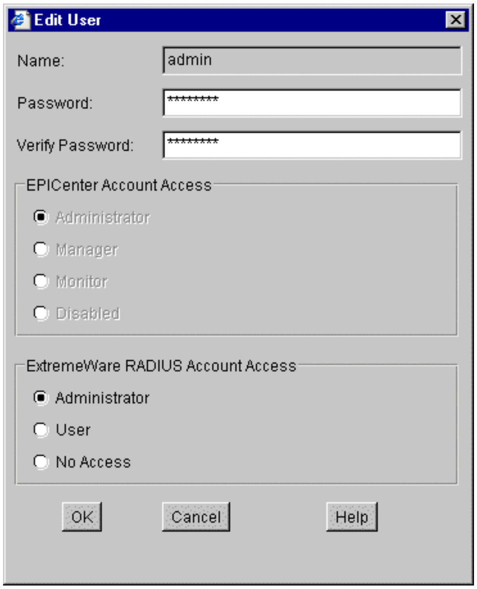
1 Click the tab at the top of the page to display the User Administration page, if necessary.

2 Select the user **admin** in the User list.

3 Click **Modify**.

The Edit User window appears, as shown in Figure 156.

Figure 156: Edit User window



Name: admin

Password: *********

Verify Password: *********

EPICenter Account Access

● Administrator

○ Manager

○ Monitor

○ Disabled

ExtremeWare RADIUS Account Access

● Administrator

○ User

○ No Access

4 Type a new password in the **Password** field.

5 Type the password again in the **Verify Password** field.

6 Click **OK**.

The new admin password is stored in the EPICenter database. You cannot change the EPICenter access level for this user.

You can, however, change the ExtremeWare account access. The default for the EPICenter user “Admin” is Administrator. See the information under “Adding or Modifying User Accounts” for details on the ExtremeWare account access levels.

Adding or Modifying User Accounts

To add users to the EPICenter database, or to modify EPICenter user account access, follow these steps:

1 Login to the ExtremeWare EPICenter as a user with Administrator access.

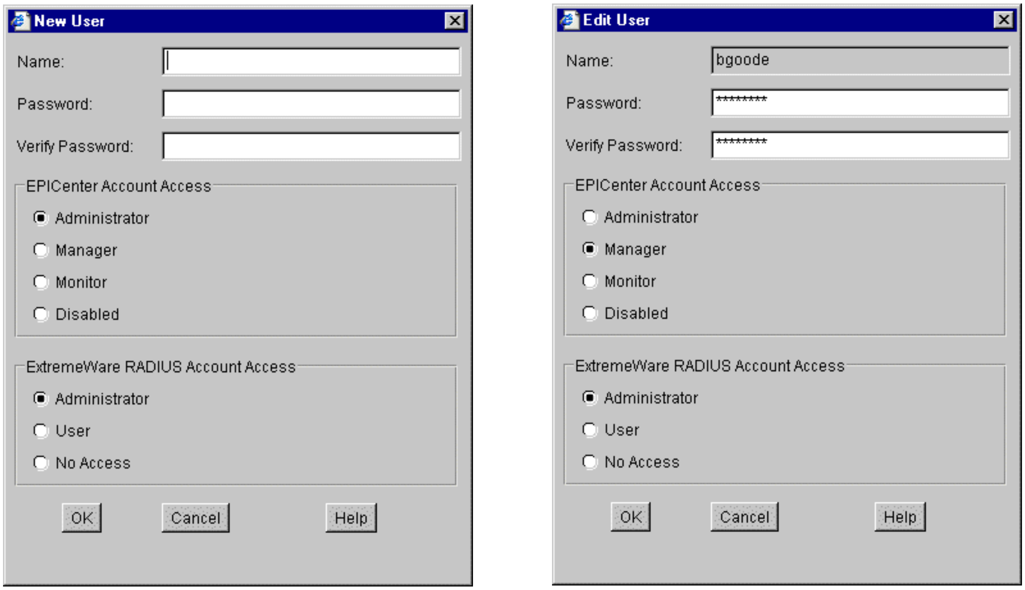
2 Click **Admin** in the Navigation Toolbar.

3 Click the User Administration tab at the top of the page to display the User Administration page, if necessary.

4 To add a user, click **Add**. To change a user’s access or password, select the user name and click **Modify**.

The New User window (or Edit User window) appears (Figure 157).

Figure 157: New User and Edit User windows



New User

Name:

Password:

Verify Password:

EPICenter Account Access

● Administrator
○ Manager
○ Monitor
○ Disabled

ExtremeWare RADIUS Account Access

● Administrator
○ User
○ No Access

OK Cancel Help

Edit User

Name: bgoode

Password: *********

Verify Password: *********

EPICenter Account Access

○ Administrator
● Manager
○ Monitor
○ Disabled

ExtremeWare RADIUS Account Access

● Administrator
○ User
○ No Access

OK Cancel Help

5 For a new user, type a user name into the **Name** field.

6 Type a new password into the **Password** field.

7 Type the password again into the **Verify Password** field.

8 Select the appropriate EPICenter Account Access level:

- **Administrator** access allows the user to add, edit and delete user accounts, as well as view status information and statistics and modify device parameters.
- **Manager** access allows the user to view status information and statistics and modify device parameters.
- **Monitor** access allows the user to view status information and statistics.
- **Disabled** provides no access privileges (the user will not be able to log in to the EPICenter), but keeps the user account information in the EPICenter database.

9 Select the appropriate ExtremeWare Account Access level:

- **Administrator** access allows the user to modify device parameters as well as view status information and statistics.
- **User** access allows the user to view device status information and statistics, but cannot modify any parameters.
- **No Access** provides no access privileges, but keeps the user account information in the EPICenter database.

10 Click **OK**.

The new user information is stored in the EPICenter database.

NOTE

A change to a user account does not take effect until the next time the user logs in.

Deleting Users

To delete a user, follow these steps:

1 Log in to the ExtremeWare EPICenter as a user with Administrator access.

2 At the About ExtremeWare EPICenter window, click **Admin** in the Navigation Toolbar.

The User Administration page appears.

3 Click the User Administration tab at the top of the page to display the User Administration page, if necessary.

4 Select the user name you want to delete and click **Delete**.

NOTE

*You cannot delete the user name **admin**.*

A confirmation window appears.

5 Click **Yes**.

This removes all information about this user account from the EPICenter database.

NOTE

*To remove all access privileges for a user **without** removing the user account from the EPICenter database, use the Modify User function and change the Account Access to Disabled.*

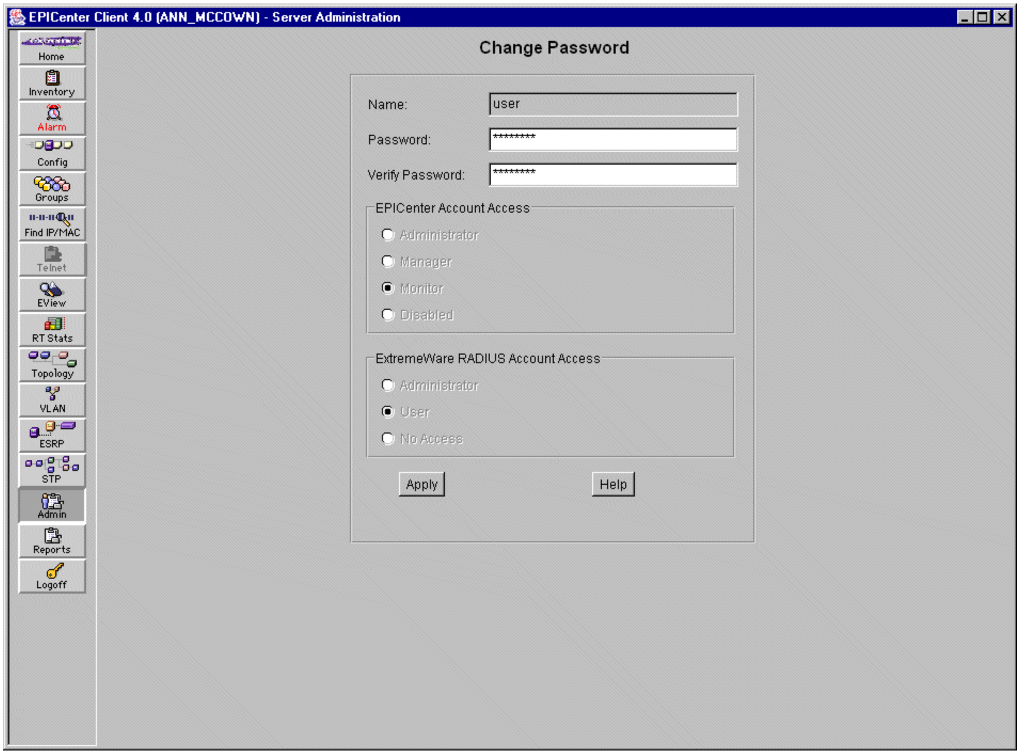
Changing Your Own User Password

If you are a user with Manager or Monitor access, you can change your own password at any time after you have logged in to the ExtremeWare EPICenter. To do so, follow these steps:

1 Click **Admin** in the Navigation Toolbar.

The Change Password window appears, as shown in Figure 158.

Figure 158: Change Password window



Change Password

Name: user

Password: ********

Verify Password: ********

EPICenter Account Access

○ Administrator
○ Manager
● Monitor
○ Disabled

ExtremeWare RADIUS Account Access

○ Administrator
● User
○ No Access

The window shows your user name, and your EPICenter and RADIUS Account Access levels, but you cannot change them.

2 Type your new password in the **Password** field.

3 Type the password again in the **Verify Password** field.

4 Click **Apply**.

Your new password is stored in the EPICenter database.

NOTE

The change does not take effect until the next time you log in.

RADIUS Administration

If you have Administrator access, you can enable EPICenter as a RADIUS server or RADIUS client, and change its port or the RADIUS secret. By default RADIUS authentication is disabled.

Enabling the RADIUS server means that Extreme switches can act as RADIUS clients, authenticating users against the RADIUS server's database of users, as administered through the EPICenter. Thus, even if a user accesses the switch directly through Telnet or a browser, the RADIUS server will provide the authentication service.

Disabling the RADIUS server means that it will not be available for authenticating users. In this case, each Extreme switch must maintain its own list of users and access permissions, and users will need to remember a (possibly different) login and password for every switch.

If you have enabled the EPICenter RADIUS server, authentication activity is logged to the file `radius_log.txt`, found in the EPICenter root install directory.

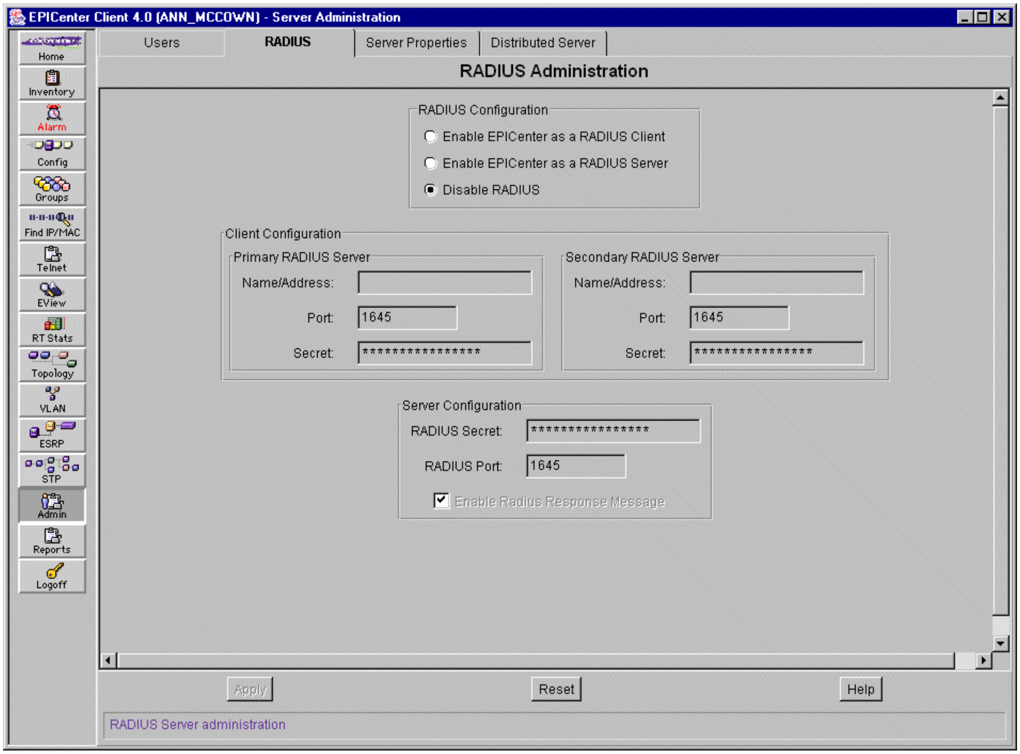
- To change the EPICenter server RADIUS configuration, click the **RADIUS** tab at the top of the page.

  The RADIUS Administration page appears, as shown in Figure 159.

RADIUS Server Configuration

To configure EPICenter as a RADIUS server, follow these steps:

Figure 159: Radius Administration page



RADIUS Administration

RADIUS Configuration

○ Enable EPICenter as a RADIUS Client

○ Enable EPICenter as a RADIUS Server

● Disable RADIUS

Client Configuration

Primary RADIUS Server

Name/Address:

Port: 1645

Secret: ****************

Secondary RADIUS Server

Name/Address:

Port: 1645

Secret: ****************

Server Configuration

RADIUS Secret: ****************

RADIUS Port: 1645

☑ Enable Radius Response Message

RADIUS Server administration

1 Click the **Enable EPICenter as a RADIUS Server** button in the **RADIUS Configuration** panel at the top of the page.

This enables the fields in the **Server Configuration** panel.

2 Enter the RADIUS server’s shared secret in the **RADIUS Secret** field.

This string is basically a shared key by which the RADIUS server and its clients recognize each other, and which they use for secure transmission of user passwords.

NOTE

If you change the secret in the RADIUS server, you must also change it in any of the RADIUS clients (Extreme switches) that use the RADIUS server for user authentication.

3 The default port used for the RADIUS server is 1645. To change the server port, enter the port number in the **RADIUS Port** field.

NOTE

If you change the RADIUS server port, you must make sure that the ports used in any RADIUS clients (Extreme switches that use this RADIUS server for user authentication) match the port you enter for the server.

4 To disable RADIUS response messages, uncheck the **Enable RADIUS Response Messages** checkbox. This prevents the RADIUS server from sending a response message when authentication fails. Check the box to enable these messages. This is enabled by default.

5 Click **Apply** to have the configuration changes take effect.

RADIUS Client Configuration

To enable EPICenter as a RADIUS client, do the following:

1 Click the **Enable EPICenter as a RADIUS Client** button at the top of the page.

This enables the fields in the **Client Configuration** panel.

2 Fill in the fields (server name or IP address, port, and shared secret) for the primary and secondary RADIUS servers as appropriate.

It is recommended, but not required, that both a primary and a secondary RADIUS server be available for authentication.

3 Click **Apply** to have the configuration changes take effect.

Disabling RADIUS for EPICenter

To disable the use of RADIUS authentication, do the following:

1 Click the **Disable RADIUS** button at the top of the page.

2 Click **Apply** to have the configuration changes take effect.

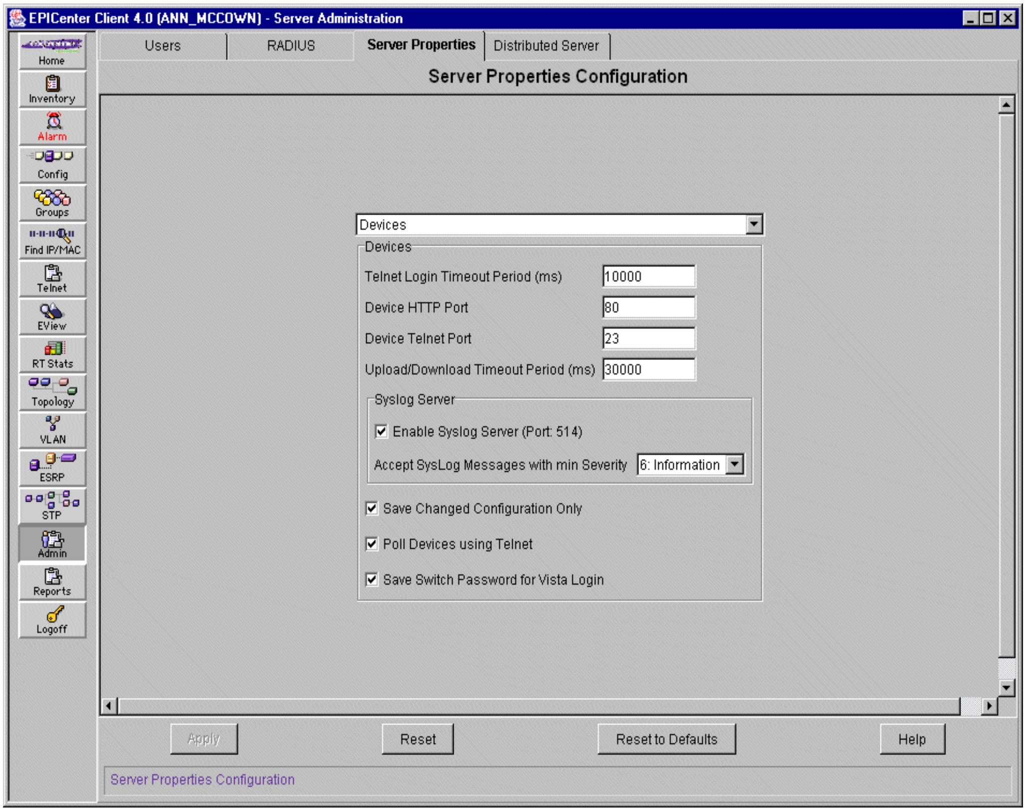
Server Properties Administration

If you have Administrator access, you can modify the values of a number of properties that affect the function and performance of the EPICenter server.

1 Click the **Server Properties** tab at the top of the page.

The Server Properties Configuration page appears, as shown in Figure 160.

Figure 160: Server Properties Configuration page, initial properties list



Devices

Devices

Telnet Login Timeout Period (ms) 10000

Device HTTP Port 80

Device Telnet Port 23

Upload/Download Timeout Period (ms) 30000

Syslog Server

☑ Enable Syslog Server (Port: 514)

Accept SysLog Messages with min Severity 6: Information

☑ Save Changed Configuration Only

☑ Poll Devices using Telnet

☑ Save Switch Password for Vista Login

2 Select a set of properties from the drop-down menu field at the top of the central panel. You can select among five sets of properties:

— Devices

— Scalability

- SNMP
- Topology
- Other

The Server Properties Configuration page displays the properties in that set.

3 Type a new value into the field for the property you want to change, or click a check-box to turn on or off an option. The specific properties and their meanings are discussed in the following sections.

4 Click the **Apply** button to cause your changes to take effect.

You can undo your changes in one of two ways:

- Click the **Reset** button to restore the values that the displayed properties held when you first entered this page.
- Click the **Reset to Defaults** button to restore the values to the EPICenter server default values (the values in effect immediately after installation).

5 For some changes, you will need to restart the EPICenter server for the changes to take effect. A pop-up dialog will inform you that this is necessary.

Click **OK** to dismiss the dialog box, and then shut down and restart the EPICenter server.

See Chapter 3 for information on how to shut down and restart the EPICenter server.

Devices Properties

When you select Devices from the drop-down menu field at the top of the properties panel, you can set the following properties:

- **Telnet Login Timeout Period**: The length of time, in milliseconds, after which a CLI/Telnet login request to a switch should time out. The default is 10000 milliseconds (10 seconds), the range is 1 to 30 seconds (1000 to 30000 ms).
- **Device HTTP Port**: The port that the EPICenter server will use to communicate with an Extreme switch's web server to run ExtremeWare Vista. Default is port 80.
- **Device Telnet Port**: The port that the EPICenter server will use to telnet to a switch. Default is port 23.
- **Upload/Download Timeout Period (ms)**: The length of time, in milliseconds, after which a configuration upload or download operation should time out. If some devices have a large number of VLANs, the timeout may need to be increased to allow an upload or download operation to complete successfully without timing out.

- Syslog Server settings:

  — **Enable Syslog Server (Port: 514)** (checkbox): A check specifies that the EPICenter server can function as a Syslog receiver to receive Syslog messages. Port 514 is the port used for remote syslog communication from a switch. Uncheck the checkbox to disable syslog server functionality. The default is enabled.

NOTE

For Solaris, you must stop the Solaris Syslog server before you can enable EPICenter's syslog server. To stop the server in Solaris, enter the command `/etc/init.d/syslog stop`. *In EPICenter, you can restart the Syslog server by disabling and then re-enabling it.*

On the device side, remote logging must be enabled, and the switch must be configured to log to the EPICenter server. The default on Extreme switches is for logging to be disabled. You must use the EPICenter Telnet applet or the ExtremeWare CLI to configure your switches. To enable remote logging, enter the command:

```
enable syslog
```

To configure the EPICenter server as a Syslog server, enter the command:

```
config syslog <EPICenter IP address> <facility>
```

You must enter the IP address of the EPICenter server, and a facility level, which can be `local0` through `local7`. See the *ExtremeWare Software User Guide* or the *ExtremeWare Software Command Reference Guide* for more information on these commands.

You can also include a severity in the `config syslog` command, which will filter log messages before they are sent to the EPICenter Syslog server. The EPICenter Syslog server will in turn filter the incoming messages based on the severity you set using the **Accept SysLog messages with Min Severity** setting described previously.

To configure remote logging on multiple devices, you can run these commands as a macro in the EPICenter Telnet module.

— **Accept SysLog messages with Min Severity**: The minimum severity level of messages to be logged in a switch Syslog file. All messages with Severity equal to or higher than the setting you select will be logged. For example, if you select **2:Critical**, then messages of severity 2 (Critical), 1 (Alert), and 0 (Emergency) will be logged. The default is **6: Information**.

- **Save Changed Configurations Only** (checkbox): A check specifies that device configurations should be uploaded by the Configuration Manager Archive feature only when the device configuration has changed (the default). Uncheck the checkbox to specify that switch configurations should always be uploaded at the scheduled archive time.
- **Poll Devices Using Telnet** (checkbox): A check enables regular CLI/Telnet polling of ExtremeWare 4.1 devices (the default). Uncheck the checkbox to disable CLI/Telnet polling. This disables ESRP polling as well as EDP polling.
- **Save Switch Password for Vista Login** (checkbox): A check specifies that the ExtremeView module should save the switch password in the EPICenter database for use when logging into a switch using ExtremeWare Vista. If you disable (uncheck) this property, you will be required to login to each switch in order to view Configuration and Statistics information in the ExtremeView applet. The default is enabled (passwords will be saved).

Scalability Properties

Select Scalability from the drop-down menu field at the top of the properties panel to set the EPICenter server into Scalable mode (or reset it into regular mode) and to modify the number of concurrent operations the EPICenter server can run.

Manipulating the thread pool size, default thread allocation size, number of SNMP sessions, and the number of traps and syslog messages EPICenter processes per minute lets you configure the EPICenter server to provide better performance based on the amount of server resources (number and speed of processors, amount of memory) available. Changing these values should not normally be necessary unless you are managing a very large number of devices (more than 1000 devices).

If you are managing more than 1000 devices, it is recommended that you run the EPICenter server on a system with a 1 GHz or faster processor, and at least 1 GHz of physical memory. For such a configuration, you may also be able to improve the performance of the EPICenter server by changing the parameters below.

NOTE

Changing the scalability properties on a system without suitable hardware could actually decrease the performance of the EPICenter server.

To see the effects of the current scalability settings, run the Server State Summary Report in the Reports applet.

- **Thread Pool Size**: This specifies the maximum number of threads available. Increasing this number may improve overall performance. For managing more than 1000 devices, it is recommended that you increase this to 50. The default is 20.
- **Thread Default Alloc Size**: This specifies the default number of threads allocated for a process request. Increasing this size may allow processes to complete more quickly. For managing more than 1000 devices, it is recommended that you increase this to 25. The default is 10.
- **Maximum Number of SNMP Sessions**: Specifies the maximum number of concurrent SNMP sessions the server will run. Increasing this number may improve throughput from device polling. For managing more than 1000 devices, it is recommended that you increase this to 25. The default is 10.
- **Traps per Device in 1/2 Minute:** This specifies the maximum number of traps that can be receivedfrom an individual device in 28 seconds. If more than this number of traps are received within a 28 second interval, the excess traps are dropped.
- **Total Traps Accepted per Minute:** This specifies the maximum total number of traps that EPICenter can receive from all managed devices in 55 seconds. If more than this number of traps are received within a 55 second interval, the excess traps are dropped. When managing more than 1000 devices, increase this to 500. The default is 275, the maximum you can set is 500.
- **Syslog Messages per Device in 1/2 Minute:** This specifies the maximum number of syslog messages that can be received from an individual device in 28 seconds. If more than this number of traps are received within a 28 second interval, the excess messages are ignored.
- **Total Syslog Messages Accepted per Minute:** This specifies the maximum number of syslog messages that EPICenter can receive in one minute from all managed devices. If more than this number of messages are received within a one-minute interval, the excess messages are ignored. When managing more than 1000 devices, you should increase this to 500. The default is 275, the maximum you can set is 500.

NOTE

You should not change the values for traps and syslog messages accepted unless the EPICenter server reports dropping lots of traps. Run the Server State Summary Report in the Reports applet to view the current performance metrics.

SNMP Properties

When you select SNMP from the drop-down menu field at the top of the properties panel, you can set the following properties:

- **Poll Interval**: The interval, in milliseconds, between SNMP polls of a switch to fetch basic device status information. The default is 300000 msecs (five minutes). The range is 5000 to 3600000 msecs (five seconds to one hour).You can disable all SNMP polling by setting this property to zero.

NOTE

This Poll Interval is not the same as the Device Polling Interval you can set through the Inventory Manager. The Device Polling Interval controls the frequency of polling for detailed device information such as software version, bootrom version, and so on. The polling interval set in the Administration applet controls only the basic SNMP status information necessary to ensure SNMP reachability, and is typically performed relatively frequently.

- **Timeout Period**: The length of time to wait for an SNMP poll request to complete, in milliseconds, before timing out. The default is 2000 msecs (two seconds). The range is one to 10 seconds (1000-10000 msecs).

  This setting determines the time-out interval only for the first unsuccessful SNMP request; once a request times out, subsequent requests will time out more slowly, based on an exponential time-out back-off algorithm, until it reaches the maximum number of retries.
- **Number of Retries**: The number of SNMP requests that should be attempted before giving up, for a request that has timed out.
- **EPICenter Trap Receiver Port**: The port on which EPICenter expects to receive traps. Default is port 10550.
- **Enable Edge Port Polling** (checkbox): A check in this box indicates that edge port polling is enabled. Edge port polling is a background process the polls all ports identified as edge ports for a variety of information including FDB information, IP and MAC addresses, prot status and port names. Edge ports are identified automatically and are distinguished from uplink ports based on the number of MAC addresses detected on the port (a port with five or fewer MAC addresses is considered an edge port). The default is enabled.
- **Edge Port Poll Interval (hours)**: The minimum interval (in hours) between polls of an individual edge port. The longer the interval, the less performance overhead the EPICenter server will endure due to edge port polling, but the longer port information will go without being refreshed. The default is 12 hours. If you set an interval that is shorter than the time it takes to poll all the edge ports, then the actual interval may be longer than the interval you specify here.

Topology Properties

Select Topology from the drop-down menu field at the top of the properties panel to set properties that affect the collection and display of RMON statistics in the Topology applet.

- **Enable Topology RMON Statistics Data Collection** (checkbox): A check in this box enables the collection of RMON statistics in the Topology applet. The default is enabled, which means that RMON statistics will be collected for all devices that have RMON enabled in the device. To disable the collection of RMON Statistics, uncheck the checkbox. If this option is disabled, then no RMON statistics will be displayed on any maps, regardless of the setting of the Display RMON Statistics
- **Display RMON Statistics in new Maps by Default** (checkbox): The display of RMON statistics on a map can be enabled or disabled for individual maps through a checkbox option in the Topology Map Properties window for each map. This server property specifies the *default state* of the RMON statistics display checkbox (labeled **RMON Statistics**) in the Topology Map Properties window.

  A check in this box specifies that by default the RMON Statistics option in the Map Properties window will be enabled. Thus, by default, RMON statistics will be displayed for all maps unless they are specifically disabled for an individual map. To disable the RMON statistics display for an individual map, you can uncheck the RMON Statistics option in the Map Properties window for that map.

  This option is *disabled* by default, meaning that the corresponding option in the Map Properties will be disabled by default.

  NOTE

  If Topology RMON statistics data collection is disabled, then this display option will have no effect.

Other Properties

When you select **Other** from the drop-down menu field at the top of the properties panel, you can set the following properties:

- **DNS Lookup Timeout Period**: The time-out period, in milliseconds, when performing DNS lookup operations for hosts found through DLCS or when importing (in the Grouping applet) from an NT Domain Controller. The default is 1000 milliseconds (one second).
- **Session Timeout Period**: The non-activity time-out period, in milliseconds, after which the user is required to re-login to the EPICenter server. The default is 600,000

milliseconds (ten minutes). You can disable the time-out by setting the property to -1.

- **ServiceWatch URL**: The URL for accessing ServiceWatch, to allow it to be launched from the EPICenter navigation toolbar, and to run in the main EPICenter applet window.

  For example, if ServiceWatch is running on a system named “tampico” at port 2000, you would enter `http://tampico:2000` as the ServiceWatch URL. You must then restart the EPICenter server to activate the ServiceWatch integration.

- **IP QoS Rule Precedence**: The starting value that the EPICenter server will use for setting precedence in the Policy Manager applet. This is an integer between 1 and 25,000. The default value is 10,000.

  Setting this value lets you ensure that policies created by EPICenter will have higher precedence than policies created through the ExtremeWare CLI. It is also useful in distinguishing between policies created through the CLI and those created through the EPICenter Policy Manager applet.

- **Client Port**: The TCP port number that a client will use to connect to the EPICenter server. The default is 0, meaning that the server will use any available port. You can use this setting to specify a fixed port number that the EPICenter server will use. For example, if the EPICenter server is behind a firewall, you may need to provide a fixed port number to allow clients to connect thought the firewall.

- **Update Type Library on Server**: This function updates the EPICenter type library, which is a repository of images and other information about Extreme Networks devices.

- **Device Tree UI**: A setting that specifies how devices are identified in the Component Tree and in selected other locations. You can choose to have the component tree show the device name only, the device name followed by the IP address in parentheses, of the device IP address followed by the device name in parentheses. The default is device name followed by the device IP address.

Distributed Server Administration

If you have Administrator access, a Distributed Server license, and you have multiple EPICenter servers installed on your network, you can configure these servers to operate in a distributed server mode.

Distributed Server mode allows multiple EPICenter servers, each managing their own sets of devices, to be designated as a server group, and to communicate status between the servers in the group. One server acts as a Server Group Manager, and the other servers act as server group members.

Each server in the server group is updated at regular intervals with a list of other servers, and with network summary and status information from the other servers in the group. In distributed server mode, the EPICenter home page contains a status information from the other servers in the group in addition to the standard Network Summary report.

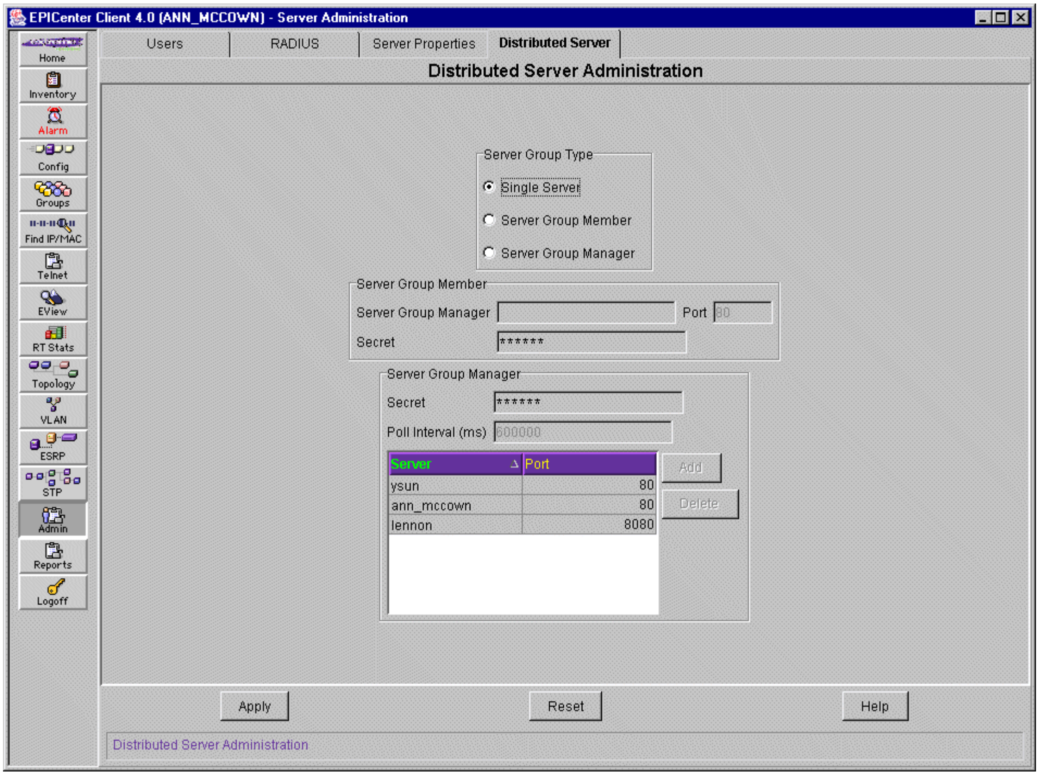
NOTE

The Distributed Server functionality is a separately-licensed feature of the EPICenter software. If you do not have a Distributed Server license, only Single Server mode is enabled. You will not be able to select either of the Server Group settings.

1 Click the **Distributed Server** tab at the top of the page.

The Distributed Server Administration page appears, as shown in Figure 161.

Figure 161: Distributed Server Administration page



Server Group Type

● Single Server
○ Server Group Member
○ Server Group Manager

Server Group Member

Server Group Manager:
Port: 80
Secret: ******

Server Group Manager

Secret: ******
Poll Interval (ms): 600000

Server	Port
ysun	80
ann_mccown	80
lennon	8080

Initially, the EPICenter server is configured as a single server. In single server mode, the server does not communicate with any other EPICenter servers. If you have a Distributed Server license, you can change its configuration to act as a server group member or as the server group master.

Configuring a Server Group Member

To configure your EPICenter server as a server group member:

1 Click the **Server Member** button in the **Server Group Type** panel at the top of the page.

This enables the fields in the **Server Group Member** panel.

2 Enter the host name or IP address of the server that acts as the group manager in the Server Group Manager field.

3 Enter the port number to be used to communicate with the Server Group Manager. This port should match the HTTP port configured for the EPICenter server acting as the server group manager. The default is port 80.

4 Enter the shared secret in the **Secret** field.

This string is a shared key by which the cooperating EPICenter servers recognize each other, and which they use for secure transmission of server data. The default shared secret is the string `secret`.

NOTE

If you change the secret for one EPICenter server, you must also change it for all of the other servers in the group.

5 Click **Apply** to have the configuration changes take effect.

Configuring a Server Group Manager

To function as the EPICenter Server Group Manager, the server must have a host name that is configured through DNS.

To enable this EPICenter server as a server Group Manager, do the following:

1 Click the **Server Manager** button in the **Server Group Type** panel at the top of the page.

This enables the fields in the **Server Group Manager** panel.

2 Enter the shared secret in the **Secret** field.

This string is a shared key by which the cooperating EPICenter servers recognize each other, and which they use for secure transmission of server data. The default shared secret is the string `secret`.

NOTE

If you change the secret in one EPICenter server, you must also change it in all of the other servers in the group.

3 Enter the polling interval in milliseconds. This determines the frequency with which the Server Manager communicates information to the other server members of the EPICenter server group. The default is 600,000 milliseconds (ten minutes)

4 Add the other members of the server group to the server list:

   a Click **Add** to open the **Add Server** dialog box.

   b Enter the host name or IP address of the member server in the server field. A server member does not need to have a DNS-translatable host name.

   c Enter the port used to communicate with the server member. This must match the HTTP port configured for the member server

   d Click **OK** to add this server to the list, or **Cancel** to cancel the operation.

   Servers added to this list must be configured as server group members with this server as the Server Group Manager.

5 To delete a member server from the list, select the server and click **Delete**.

6 Click **Apply** to have the configuration changes take effect.

17 Dynamic Reports

This chapter describes how to use the EPICenter Reports capability for:

- Viewing predefined Network Summary Reports from the Home EPICenter page
- Viewing predefined EPICenter status reports from the Dynamic Reports
- Creating new reports by writing Tcl scripts

Overview of EPICenter Reports

The EPICenter software provides several sets of HTML-based reports that provide information about the devices managed by the EPICenter server. There are two types of these reports:

- A Network Summary Report, available on the main EPICenter “Home” page, displayed when you first log in through the EPICenter client.
- EPICenter Dynamic Reports, available separately from the main EPICenter client, or as an applet accessed from the client.

The Network Summary Report provides summary statistics about the status of the devices being managed by the EPICenter server. This report can also be accessed from the Dynamic Reports Main page.

EPICenter Dynamic Reports are a separate feature from the main EPICenter user interface. If you use a browser-based client, the reports can be accessed directly from the initial EPICenter Start-up page without logging in to the Java client interface. The Reports module can also be accessed from the EPICenter Navigation toolbar.

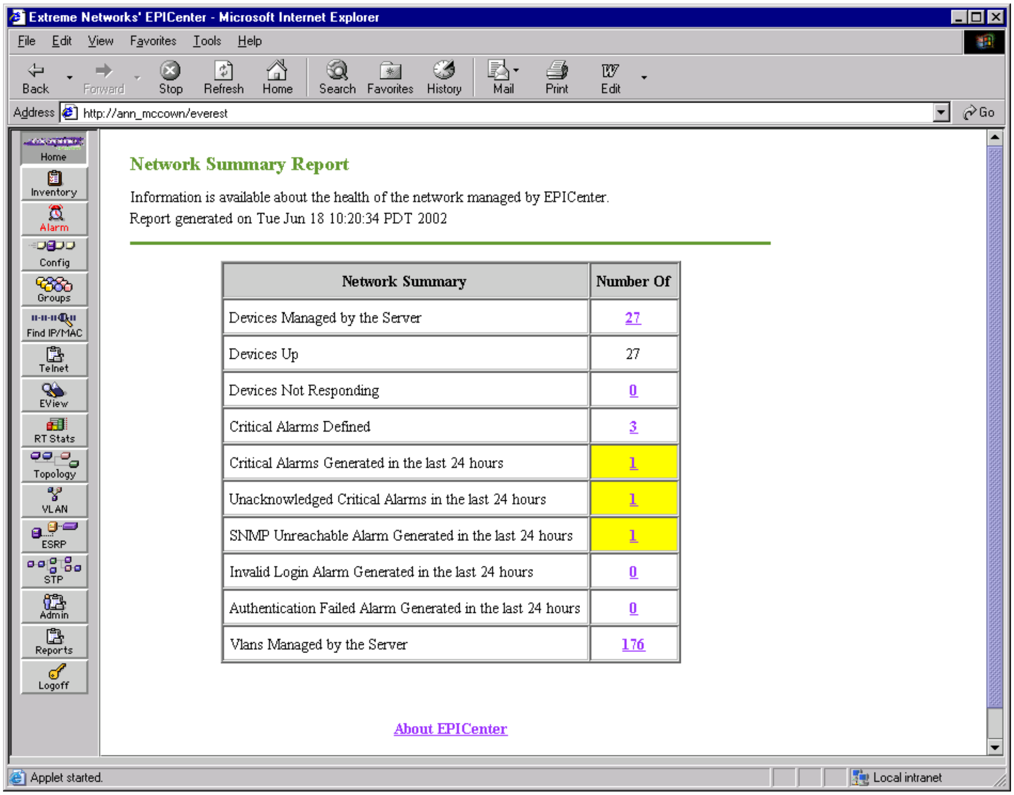
The EPICenter dynamic reports are HTML pages that do not require Java capability, and thus can be accessed from browsers that do not have the ability to run the full EPICenter user interface. This means reports can be loaded quickly, even over a dial-up connection, and it also provides the ability to print the reports.

EPICenter's HTML reports are always displayed in a browser window, even if you are running the stand-alone client. See"Browser Requirements for Reports" on page 36 in Chapter 2 for supported browsers.

Network Summary Report

The Network Summary Report provides an at-a-glance summary of the status of the devices the EPICenter server is monitoring. The main report page, as shown in Figure 162, appears when you first log into the EPICenter client, and when you click the **Home** button at the top of the Navigation Toolbar.

Figure 162: Network Summary Report page



Network Summary Report

Information is available about the health of the network managed by EPICenter.
Report generated on Tue Jun 18 10:20:34 PDT 2002

Network Summary	Number Of
Devices Managed by the Server	27
Devices Up	27
Devices Not Responding	0
Critical Alarms Defined	3
Critical Alarms Generated in the last 24 hours	1
Unacknowledged Critical Alarms in the last 24 hours	1
SNMP Unreachable Alarm Generated in the last 24 hours	1
Invalid Login Alarm Generated in the last 24 hours	0
Authentication Failed Alarm Generated in the last 24 hours	0
Vlans Managed by the Server	176

About EPICenter

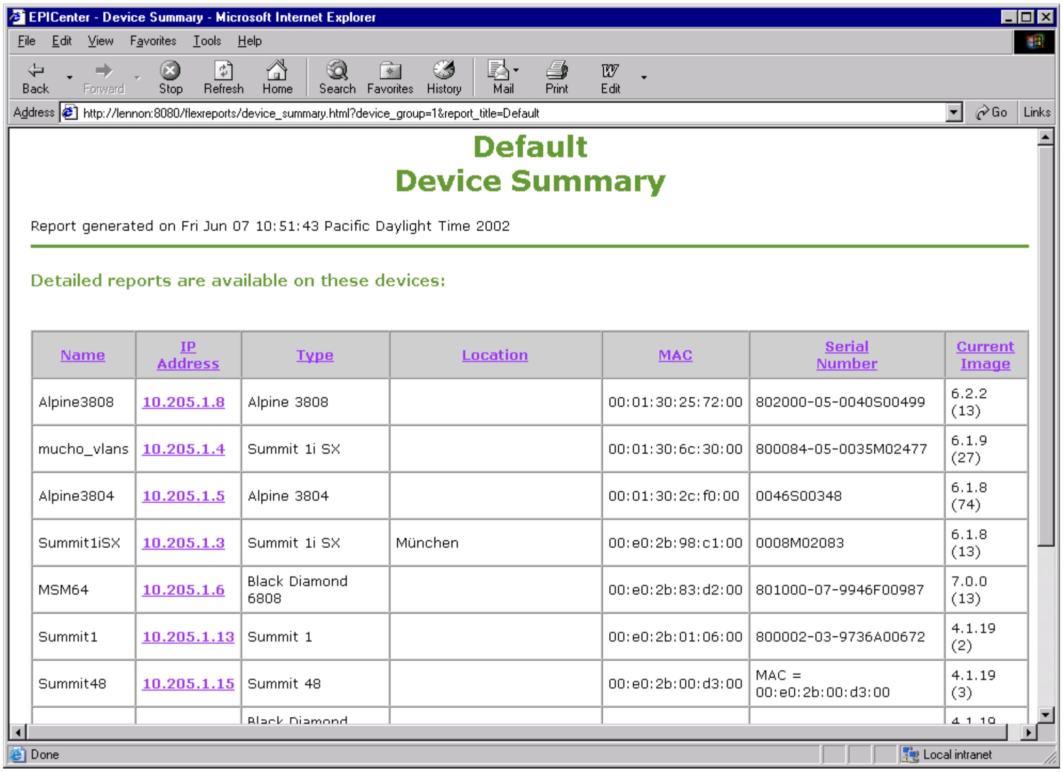
If there are statistics that indicate problems (such as devices not responding, or alarms generated within the last twenty-four hours) the cell containing that statistic is displayed in yellow.

To view a detail report for a particular summary statistic, click the number in the right-hand column of the summary display.

For example, you can click the value in the right-hand column of the **Devices Managed by the Server** row to display a **Device Reports** summary listing, showing the device groups currently configured in the EPICenter server.

From the Device Reports summary you can click one of the Device Group names to display a Device Summary report similar to that shown in Figure 163.

Figure 163: Network Summary Detail report


EPICenter - Device Summary - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address
Go Links
Done
Local intranet

http://lennon:8080/flexreports/device_summary.html?device_group=1&report_title=Default

Default
Device Summary

Report generated on Fri Jun 07 10:51:43 Pacific Daylight Time 2002

Detailed reports are available on these devices:

Name	IP Address	Type	Location	MAC	Serial Number	Current Image
Alpine3808	10.205.1.8	Alpine 3808		00:01:30:25:72:00	802000-05-0040S00499	6.2.2 (13)
mucho_vlans	10.205.1.4	Summit 1i SX		00:01:30:6c:30:00	800084-05-0035M02477	6.1.9 (27)
Alpine3804	10.205.1.5	Alpine 3804		00:01:30:2c:f0:00	0046S00348	6.1.8 (74)
Summit1iSX	10.205.1.3	Summit 1i SX	München	00:e0:2b:98:c1:00	0008M02083	6.1.8 (13)
MSM64	10.205.1.6	Black Diamond 6808		00:e0:2b:83:d2:00	801000-07-9946F00987	7.0.0 (13)
Summit1	10.205.1.13	Summit 1		00:e0:2b:01:06:00	800002-03-9736A00672	4.1.19 (2)
Summit48	10.205.1.15	Summit 48		00:e0:2b:00:d3:00	MAC = 00:e0:2b:00:d3:00	4.1.19 (3)
		Black Diamond				4.1.19

The only statistic in the Network Summary Report that does not provide its own detail report is the **Devices Up** statistic.

This report illustrates a number of features that are common to all the Summary Detail reports. In these reports, you can do the following:

- Click a column heading to sort on the contents of that column. For example, to sort by IP address, click on the Device IP Address link at the top of the first column.
- Click a link at the bottom of the report page to view additional report information.

  Most of the Network Summary Reports provide additional detailed reports.
- To return to the main Network Summary Report, you must return to the client application. If you are in the client application and you want to return to the main

Network Summary Report, click the **Home** button at the top of the Navigation Toolbar.

The following sections describe the reports available from the Network Summary Report.

Devices Managed by the Server

This report provides a summary status of all the device groups and devices known to the EPICenter server, organized by device group or device type. This is also known as the **Device Inventory Report**, and can be accessed from the **Device Inventory** link on the main Reports pages, or from the **To Device Inventory Reports** link on the **Devices Not Responding** report. See “Device Inventory Report” on page 462.

When you click the number in the right-hand column, a **Device Reports** summary is displayed. From the Device Reports summary, you can display device group or device status.

Device Group Summary

The Devices by Group table displays the following information:

- **Device Group**—Name of the device group
- **Description**—Description (optional) associated with the device group
- **Quantity**—Number of devices that belong to this device group

Select a Device Group or **All Devices** to display the Device Summary report for the devices in the group.

The **Device Summary** report displays the following information about each device:

- **Group**—EPICenter Device Group to which it belongs (this is displayed only if you select All Devices)
- **Name**—Name of the device from the `sysName` variable
- **IP Address**—IP address of the device

  Click the IP address to display a table with detailed configuration and status information. This is the same information you can view in the Inventory applet.
- **Type**—Type of device
- **Location**—Device location from the `sysDescr` variable
- **MAC**—MAC address of the device

- **Serial Number**—Device serial number
- **Current Image**—Software version currently running on the device, if known

Click the heading of a column to sort on the contents of that column.

Click the link **Back to Device Reports** to return to the Device Reports summary to select a different Device Group.

Device Summary

The Devices by Type table displays the following information:

- **Device Type**—Type of device
- **Quantity**—Number of devices known to EPICenter

Select a device or **All Devices** to display the Device Summary report.

The **Device Summary** report displays the following information about each device:

- **Group**—EPICenter Device Group to which it belongs
- **Name**—Name of the device from the `sysName` variable
- **IP Address**—IP address of the device

  Click the IP address to display a table with detailed configuration and status information. This is the same information you can view in the Inventory applet.
- **Type**—Type of device (this is displayed only if you select All Devices)
- **Location**—Device location from the `sysDescr` variable
- **MAC**—MAC address of the device
- **Serial Number**—Device serial number
- **Current Image**—Software version currently running on the device, if known

Click the heading of a column to sort on the contents of that column.

Click the link **Back to Device Reports** to return to the Device Reports summary to select a different Device Group.

Devices Not Responding

This report provides a summary status of the devices known to the EPICenter server that are currently not responding. It shows the following information for each device:

- **Device IP Address**—IP address of the device
- **Device Name**—Name of the device from the `sysName` variable
- **Device Description**—Device description from the `sysDescr` variable
- **Device Location**—Device location from the `sysLocation` variable
- **Device Status**—A red or yellow status "light"

  Red indicates the device is not responding to the EPICenter polls.

  Yellow indicates the device is responding but is reporting a fan or power supply error.

Click the heading of a column to sort on the contents of that column.

Click the **To Device Inventory Reports** link at the bottom of the page to view Device Inventory Reports. See "Device Inventory Report" on page 462 for more information.

Click the **To Device Status Reports** link at the bottom of the page to view Device Status Reports. See "Device Status Report" on page 465 for more information.

Critical Alarms Defined

This report provides a summary of alarms defined as having a severity level of Critical or Major. It shows the following information for each alarm:

- **Alarm Name**—Name of the alarm
- **Category**—Alarm category of which this alarm is a member
- **Enabled**—Whether the alarm is currently enabled or disabled
- **Severity**—Severity level of the alarm (Critical or Major)

Click the heading of a column to sort on the contents of that column.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

Critical Alarms for Last 24 Hours

A summary of critical alarms that have occurred in the last 24 hours. It shows the following information.

- **Alarm Name**—Name of the alarm

- **Category**—Category that the alarm is classified under
- **Source IP**—IP address of the device that generated the alarm
- **Time (*Local Time Zone*)**—Time the alarm occurred (based on the local time zone of the EPICenter server)
- **Event Number**—Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Severity**—Severity level of the alarm

Click the heading of a column to sort on the contents of that column.

You can view the complete Alarm Log report, showing all EPICenter alarms, from the Reports module. See "Alarm Log Report" on page 470.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

Unacknowledged Critical Alarms

A summary of critical alarms that have occurred in the last 24 hours that have not been acknowledged. It shows the following information.

- **Alarm Name**—Name of the alarm
- **Category**—Category that the alarm is classified under
- **Source**—IP address of the device that generated the alarm
- **Device Name**—Name of the device from the `sysName` variable
- **Time (*Local Time Zone*)**—Time the alarm occurred (based on the local time zone of the EPICenter server)
- **Event Number**—Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Severity**—Severity level of the alarm

Click the heading of a column to sort on the contents of that column.

You can view the complete Alarm Log report, showing all EPICenter alarms, from the Reports module. See "Alarm Log Report" on page 470.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

SNMP Unreachable Alarms

A summary of SNMP Unreachable alarms that have occurred in the last 24 hours. It shows the following information.

- **Alarm Name**—Name of the alarm
- **Category**—Category that the alarm is classified under
- **Source**—IP address of the device that generated the alarm
- **Device Name**—Name of the device from the `sysName` variable
- **Time (*Local Time Zone*)**—Time the alarm occurred (based on the local time zone of the EPICenter server)
- **Event Number**—The event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Severity**—Severity level of the alarm

Click the heading of a column to sort on the contents of that column.

You can view the complete Alarm Log report, showing all EPICenter alarms, from the Reports module. See "Alarm Log Report" on page 470.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

Invalid Login Alarms

A summary of Invalid Login alarms that have occurred in the last 24 hours. It shows the following information.

- **Alarm Name**—Name of the alarm
- **Category**—Category that the alarm is classified under
- **Source**—IP address of the device that generated the alarm
- **Device Name**—Name of the device from the `sysName` variable
- **Time (*Local Time Zone*)**—Time the alarm occurred (based on the local time zone of the EPICenter server)
- **Event Number**—Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Severity**—Severity level of the alarm

Click the heading of a column to sort on the contents of that column.

You can view the complete Alarm Log report, showing all EPICenter alarms, from the Reports module. See “Alarm Log Report” on page 470.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

Authentication Failure Alarms

A summary of Authentication Failure alarms that have occurred in the last 24 hours. It shows the following information.

- **Alarm Name**—Name of the alarm
- **Category**—Category that the alarm is classified under
- **Source**—IP address of the device that generated the alarm
- **Device Name**—Name of the device from the `sysName` variable
- **Time (*Local Time Zone*)**—Time the alarm occurred (based on the local time zone of the EPICenter server when the alarm is received)
- **Event Number**—Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Severity**—Severity level of the alarm

Click the heading of a column to sort on the contents of that column.

You can view the complete Alarm Log report, showing all EPICenter alarms, from the Reports module. See “Alarm Log Report” on page 470.

See Chapter 5 for more information on alarm definitions, categories, and other alarm topics.

VLANs Report

Summary information on all VLANs being managed by the EPICenter server. This report is the same as the VLAN Summary Report you can access from the Reports module. See “VLAN Summary Report” on page 466 for a description of this report.

Dynamic Reports

A number of predefined reports present information from the EPICenter software database. The predefined reports include:

- Network Summary Report (described in the previous section)
- Server State Summary Report
- Device Inventory Report
- Slot Inventory Report
- Device Status Report
- VLAN Summary Report
- Interface Report
- Resources to Attribute Map
- User to Host Mapping
- Alarm Log Report
- Event Log Report
- System Log Report
- Configuration Management Log Report

The content for the first four reports (Device Inventory, Slot Inventory, Device Status, and VLAN Summary) are generated by Tcl scripts. The remaining five reports (Device Interface, Alarm Log, Event Log, System Log, and Configuration Management Log) are generated by Java-based code.

The Java-based reports can be sorted, filtered, and paginated, but they cannot be customized. The Tcl-based reports can be customized, and can serve as models for new reports. You can create your own reports by writing Tcl scripts that generate HTML code. See “Creating New Reports” on page 474 for details.

You can access the EPICenter software Dynamic Reporting capability in one of two ways:

- By clicking the **Reports** button in the EPICenter software Navigation Toolbar
- By launching your Web browser and logging in directly from the EPICenter Start-up page

To log in directly from the EPICenter software Start-up page, follow these steps:

1 Launch your Web browser.

2 Enter the following URL:

   http://*<host>*:*<port>*/

   In the URL, replace *<host>* with the name of the system where the EPICenter server is running. Replace *<port>* with the TCP port number that you assigned to the EPICenter Web Server during installation.

   NOTE

   If you used the default web server port, 80, you do not need to include the port number.

   The EPICenter Start-up page appears.

3 Click **View Reports** in the left-hand panel of the Start-up page.

   The EPICenter Login page appears.

4 Enter your user name and password, and click **Login**. Use the same user name and password as you use to log in to the EPICenter system.

   The Dynamic Reports module is displayed. The main page includes a brief description of the predefined reports that are available.

Viewing Predefined EPICenter Reports

To view a predefined report, click the **Reports** button in the Navigation Toolbar, or a number in the right-hand column of the display summary.

To go to the main EPICenter user interface from the Network Summary Report page, click the “**About EPICenter**” link at the bottom of the list. This displays the **About EPICenter** page.

To exit from EPICenter, click the **Logoff** button in the Navigation Toolbar. This returns you to the EPICenter Start-up page.

Report Filtering

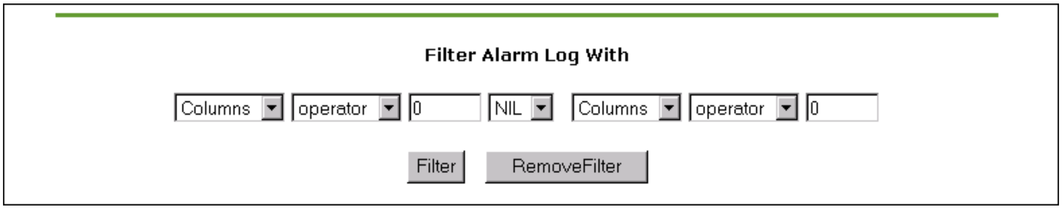
Five of the reports provide a filtering capability that lets you select the information that should appear in the report. This filtering capability lets you construct a two-part conditional statement based on the values of relevant variables in the EPICenter database.

The following reports provide filtering:

- Interface Report
- Alarm Log
- Event Log
- Sys Log
- Config Mgmt Log

These reports provide a set of fields at the bottom of the report similar to the ones shown in Figure 164.

Figure 164: Report filter specification



To create a filter, follow these steps:

1 In the first field, select the variable to use in the filter. The variables from which you can choose are based on the column headings in the report, and depend on the type of report you are viewing.

2 In the second field, select a comparison operator. You can choose from the following comparison operators:

— > (greater than)

— < (less than)

— <= (greater than or equal)

— >= (less than or equal)

— != (not equal)

— = (equal)

— starts with

— ends with

— contains

If the variable values are strings, then the comparisons are taken to indicate alphabetic order, where greater than indicates later in later in the alphabet (for example, the letter B is greater than A).

3 In the third field, select the value you want to compare the variable against. If the variable takes a string as its value, enter a string. If the variable is numeric, enter an integer.

NOTE

You can use the browser Copy and Paste functions to copy a specific value from the current report into the comparison field.

4 In the fourth field, you can indicate whether the second condition should be used. To use a second condition to your filter, choose one of the logical operators **And** or **Or**. Specify **And** to include a row in the report only if both conditions are true. Select **Or** to include the row if either one (or both) of the conditions are true.

If you do not want to include a second condition, select **NIL** to indicate that the second clause should be ignored.

5 Click **Filter** to generate the report based on the filter you have specified.

Click **Remove Filter** to remove the filter definition and generate an unfiltered report.

Server State Summary Report

The Server State Summary Report displays statistics about configured servers, SNMP activity, thread and SNMP session pools, database activity, the ports used by the EPICenter server, and EPICenter licenses. The report provides the following information.

The first table in the report shows the status of the servers known to EPICenter and whether they are enabled or disabled, and running or stopped:

- **TFTP Server**
- **Syslog Server**
- **Radius Server**

The second table in the report provides the number of operations that have occurred in the last minute, the last hour, and the last day (24 hours) for the following operations:

- **SNMP Queries**—Number of SNMP queries performed by the EPICenter server
- **Database Commits**—Number of database commits performed by the EPICenter server
- **Client Requests**—Number of data requests to the EPICenter server performed by all connected clients
- **Trap Requests**—Number of trap PDUs received by the EPICenter server
- **Syslog Messages**—Number of syslog message received by the EPICenter server

The third table in the report shows scalability statistics for the thread pool and the SNMP session pool:

Thread Pool Statistics

- **Pool Size**—Thread pool size for the threads that are used to perform server operations (for example, reading data from a device or configuring the devices)
- **Default Allocation Size**—Number of threads used to perform a single operation (for example, running a Telent macro across a number of devices)
- **Currently In Use**—Number of threads currently in use
- **Maximum In Use at Once**—Maximum number of threads that are in use at one time
- **Total # of Requests**—Total number of times a thread is requested to perform an operation in the server
- **Total # of Wait For Thread**—Total number of times the server has to wait for a thread to become available
- **Percentage Wait per Request**—Percentage of total wait versus total request for threads

SNMP Session Pool Statistics

- **Pool Size**—Maximum number of allowed SNMP access sessions to the devices
- **Default Allocation Size**—Not applicable
- **Currently In Use**—Number of SNMP access sessions currently in use
- **Maximum In Use at Once**—Not applicable
- **Total # of Requests**—Total number of times an SNMP object is requested to perform an operation in the server
- **Total # of Wait For Thread**—Total number of times the server has to wait for an SNMP object to become available

- **Percentage Wait per Request**—Percentage of total wait versus total number of requests for SNMP objects

The fourth table in the report shows the ports currently in use by the EPICenter server.

- **Web Server**—Port currently used by the EPICenter web server.
- **Trap Receiver**—Port currently used by the EPICenter server to receive traps
- **Radius Server**—Port currently used by the RADIUS server
- **Telnet**—Port currently used for Telnet
- **Database**—Port currently used for EPICenter database communication
- **Web Server Admin**—Port currently used EPICenter web server administration

The Web Server, Trap Receiver, Radius and Telnet ports can be changed through the Administration applet, if you have administrator-level access to EPICenter. See Chapter 16 for more information.

If you are running under Windows NT or Windows 2000, you can use the Port Configuration Utility, accessible from the Programs menu, to change the database port. See Appendix B for details on the utility.

The fifth table in the report shows the status of licenses (licensed or not licensed) that are supported by the EPICenter server:

- **EPICenter Server**—License for the EPICenter server
- **Unlimited Nodes**—License to have unlimited nodes
- **Distributed Server**—License for the Distributed Server
- **Policy**—License for the EPICenter Policy Manager
- **Voice Over IP**—License for Voice Over IP (If you have a license for Voice Over IP, you will see this row in the table.)

There are no further detailed reports available from this report.

Device Inventory Report

To view a Device Inventory Report, click the **Device Inventory** link in the left-hand panel.

The Device Inventory Report displays basic status and identification information for the device groups and devices known to EPICenter. The initial display presents summaries at the Device Group and the device level.

Device Group Summary

The Devices by Group table displays the following information:

- **Device Group**—Name of the device group
- **Description—**Description of the group as kept in the EPICenter device inventory
- **Quantity**—Number of devices in the group

Select a Device Group or **All Devices** to display the Device Summary report for the devices in the group.

The Device Summary report displays the following information about each device:

- **Group**—EPICenter Device group to which it belongs (this is displayed only if you select All Devices)
- **Name**—Name of the device from the `sysName` variable
- **IP Address**—IP address of the device

  Click the IP address to display a table with detailed configuration and status information. This is the same information you can view in the Inventory applet.
- **Type**—Type of device
- **Location**—Device location from the `sysDescr` variable
- **MAC**—MAC address of the device
- **Serial Number**—Device serial number
- **Current Image**—Software version currently running on the device, if known

Click the heading of a column to sort on the contents of that column.

Device Summary

The Devices by Type table displays the following information:

- **Device Type**—Type of device
- **Quantity**—Number of devices known to EPICenter

Select a device or **All Devices** to display the Device Summary report.

The Device Summary report displays the following information about each device:

- **Group**—EPICenter Device Group to which it belongs
- **Name**—Name of the device from the `sysName` variable
- **IP Address**—IP address of the device

  Click the IP address to display a table with detailed configuration and status information. This is the same information you can view in the Inventory applet.
- **Type**—Type of device (this is displayed only if you select All Devices)
- **Location**—Device location from the `sysDescr` variable
- **MAC**—MAC address of the device
- **Serial Number**—Device serial number
- **Current Image**—Software version currently running on the device, if known

Click the heading of a column to sort on the contents of that column.

Slot Inventory Report

To view a Slot Inventory Report, click the **Slot Inventory** link in the left-hand panel.

The Slot Inventory Report displays basic status and identification information for the slots and module cards known to EPICenter. The initial display presents a summary of module card types and empty slots. This includes the following information:

- **Card Types**—Type of module cards and empty slots known to EPICenter
- **Quantity**—Number of modules of a certain type, all module cards, and the number of empty slots known to EPICenter

Card Summary Report

Select a Card Type or **All Cards** to display the Card Summary report for the modules known to EPICenter.

The Card Summary report displays the following information about each module:

- **Device Group**—Name of the device group
- **Device Name**—Name of the device from the `sysName` variable
- **Device Address**—IP address of the device

- **Device Location**—Device location from the `sysDescr` variable
- **Card Type**—Type of module card (this is displayed only if you select All Cards)
- **Slot Name**—Number or letter of the slot where the module card is installed
- **Card Serial Number**—Module card serial number

Click the heading of a column to sort on the contents of that column.

Empty Slots Report

Select **Empty Slots** to display the Empty Slots summary report for the empty slots known to EPICenter.

The Empty Slots summary report displays the following information about the empty slots:

- **Device Group**—Name of the device group
- **Device Name**—Name of the device from the `sysName` variable
- **Device Address**—IP address of the device
- **Device Location**—Device location from the `sysDescr` variable
- **Empty Slots**—Number or letter of the empty slot(s) on the device

Click the heading of a column to sort on the contents of that column.

Device Status Report

To view a Device Status Report, click the **Device Status** link in the left-hand panel. This displays the device status and failure log for all devices known to EPICenter.

The initial display presents a summary at the Device Group level. This includes the following information:

- **Group**—Name of the device group
- **Description**—Description of the group as kept in the EPICenter device inventory
- **Alarms Generated**—Total alarms for all devices in the device group
- **Devices Up**—Number of devices in the group that are up
- **Devices Not Responding**—Number of devices in the group that are not responding

Select a Device Group to display the Device Status Report for the devices in the group.

The Device Status report displays the following information:

- **Device Group**—Name of the device group
- **Device Name**—Name of the device from the `sysName` variable
- **IP**—IP address of the device
- **Status**—A green, yellow, or red status "light"

  Green indicates the device is up and OK.

  Yellow indicates the device is responding but is reporting fan, temperature, or power supply errors.

  Red indicates that the device is unreachable.
- **Last Failure (*Local Time Zone*)**—Time at which the most recent device failure occurred (based on the local time zone of the EPICenter server)
- **Down Period (d:h:m:s)**—Length of time the device was unreachable, reported in *days:hours:minutes:seconds*
- **Boot Time (*Local Time Zone*)**—Time when the device was last booted (based on the local time zone of the EPICenter server)
- **Alarms in last 24 hours**—Number of alarms in the last 24 hours from this device

  If the number of alarms is greater than zero, you can click on the number to display a summary of the alarms that have occurred for this device.

Click the heading of a column to sort on the contents of that column.

VLAN Summary Report

To view a VLAN Summary Report, click the **VLAN Summary** link in the left-hand panel. This displays a report of the VLANs known to EPICenter. The information reported includes:

- **VLAN Name**—Name of the VLAN
- **Tag**—802.1Q tag, if any
- **Protocol**—Protocol used to filter packets for this VLAN
- **Device List**—IP addresses of devices with QoS profiles configured for this VLAN

Select a VLAN to display the VLAN Details report for a VLAN.

The VLAN Details report displays the following information:

- **Device Name**—Name of the device that the VLAN is a member of
- **IP Address**—IP address of the device that the VLAN is a member of
- **VLAN IP**—IP address assigned to the VLAN
- **Tagged Ports**—List of 802.1Q tagged ports
- **Untagged Ports**—List of untagged ports
- **# Tagged Ports**—Number of tagged ports
- **# Untagged Ports**—Number of untagged ports
- **#10/100 Ports**—Number of 10/100 ports
- **# Gig Ports**—Number of Gigabit ports
- **# Active Ports**—Number of active ports
- **# Failed Ports**—Number of failed ports

See Chapter 13 for more information on VLANs.

Interface Report

To view a device interface report, click the **Interface Report** link in the left-hand panel. This displays a report on the status of every port known to EPICenter. The information reported for each interface includes:

- **IP Address**—IP address of the interface
- **Port**—Port number of the interface
- **Port Name**—Port name of the interface
- **AdminStatus**—Interface administrative status (enabled/disabled)
- **OperStatus**—Operational status of the interface (ready/active)
- **Configured Speed/Type**—Nominal (configured) speed of the interface
- **Actual Speed/Type**—Actual speed of the interface
- **Edge/Uplink**—Edge or uplink port interface

Since the EPICenter server may be aware of many hundreds of ports, the interface information is displayed in groups of 25 ports per page. You can navigate among the pages using any of the following methods:

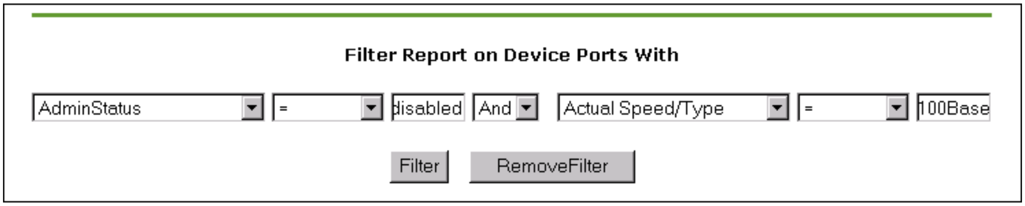
- Clicking the **Previous** and **Next** links
- Selecting a page number from the at the top of the report

- Clicking the **First** or **Last** links to display the first or last page in the report

The list of ports is sorted initially by IP address. Click the heading of a column to sort the report based on the contents of that column. For example, to sort by operational status, click on the **OperStatus** heading.

You can filter the ports that are displayed by constructing a conditional filter using the fields at the bottom of the page. This lets you construct a two-clause filter statement in the form shown in Figure 165.

Figure 165: Device Ports filter specification



Filter Report on Device Ports With

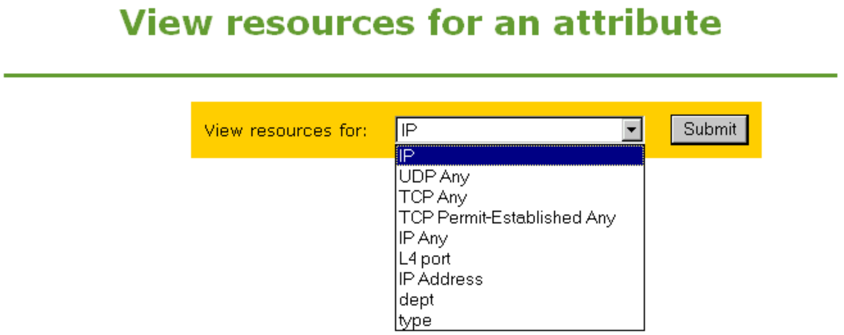
AdminStatus = disabled And Actual Speed/Type = 100Base

You can filter on any of the variables shown in the report.

Resource to Attribute Mapping Report

The Resource to Attribute Mapping Report displays a list of all the resources that include the specified attribute. Click the **Resource to Attribute Mapping** link in the left-hand panel to display the attribute selection field. Then select an attribute from the pull-down list, as shown in Figure 166.

Figure 166: Attribute specification for Resource to Attribute Mapping report



View resources for an attribute

View resources for: IP

The pull-down list shows a set of system-defined attributes used by the Policy Manager, along with any attributes you have added to resources through the Grouping Manager.

The system-defined attributes (IP, UDP Any, TCP Any, TCP Permit-Established Any, IP Any, L4 Port, and IP Address) have static definitions and are used internally by the EPICenter Policy Manager.

User-defined attributes are created within the Grouping Manager, either by adding them to a resource through the user interface, or by importing them.

For the attribute you select in the pull-down menu, the report displays the following information:

- **Resource Type**—Type of the resource (such as device, user, host, or group)
- **Resource Name**—Name of the resource that includes the selected attribute
- **Attribute Value**—Value of the attribute associated with the resource

User to Host Mapping Report

The User to Host Mapping Report displays a list of any user and host mappings that are currently defined, along with the primary IP address of the host. User-host mappings can be created in the Grouping Manager, and can also be created automatically if the Dynamic Link Context System (DLCS) is enabled on your Extreme devices. Click the **User to Host Mapping** link in the left-hand panel to display the attribute selection field.

The report displays the following information:

- **User Name**: User name
- **Host Name**: Name of the host mapped to the user
- **Host IP Address**: Primary IP address of the host

Alarm Log Report

To view an Alarm Log Report, click the **Alarm Log** link in the left-hand panel. This displays a report of all the entries in the EPICenter Alarm Log. The information reported includes:

- **Time**—Time the alarm occurred (local time of the EPICenter server)
- **Name**—Name of the alarm
- **Severity**—Severity level of the alarm
- **Source**—IP address of the device that generated the alarm
- **Category**—Category that the alarm is classified under
- **Ack'ed** (acknowledged)—Whether the alarm has been acknowledged (1 is acknowledged, 2 is not acknowledged)
- **Event #**—Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Message**—Message associated with the alarm

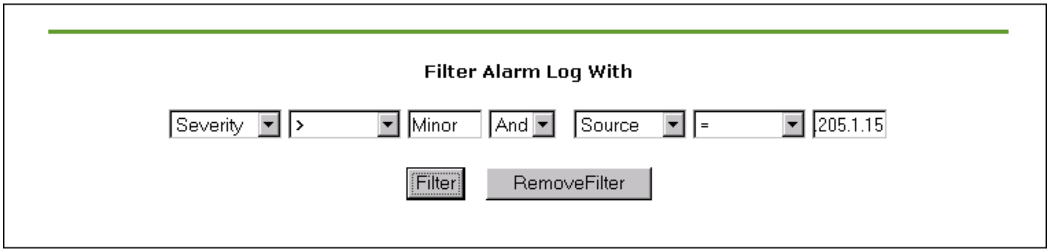
The alarm information is displayed in groups of 25 alarm events per page. You can navigate among the pages using any of the following methods:

- Clicking the **Previous** and **Next** links.
- Selecting a page number from the at the top of the report.
- Clicking on the **First** or **Last** links to display the first or last page in the report.

The report is sorted initially by the Time that the alarm occurred. Click the heading of a column to sort on the contents of that column.

You can filter the alarms that are displayed by constructing a conditional filter using the fields at the bottom of the page. This lets you construct a two-clause filter statement in the form shown in Figure 167.

Figure 167: Alarm Log filter specification



Filter Alarm Log With

Severity | > | Minor | And | Source | = | 205.1.15

You can filter on any of the variables shown in the report.

For more details on the meaning of these variable, see Chapter 5.

Event Log Report

To view an Event Log Report, click the **Event Log** link in the left-hand panel. This displays a report of all the entries in the EPICenter Event Log. The information reported includes:

- **Event #**—Event ID of the event (assigned by the EPICenter server when the event is received)
- **Count**—Number of consecutive events (if the same trap occurs at the same time and is received multiple times, only one event is created and the count displays the number of traps)
- **Time**—Time the event occurred (local time of the EPICenter server)
- **Source**—IP address of the device that generated the event
- **Type**—Event type (for example, SNMP Trap)
- **Varbinds**—Variable data transmitted with a trap

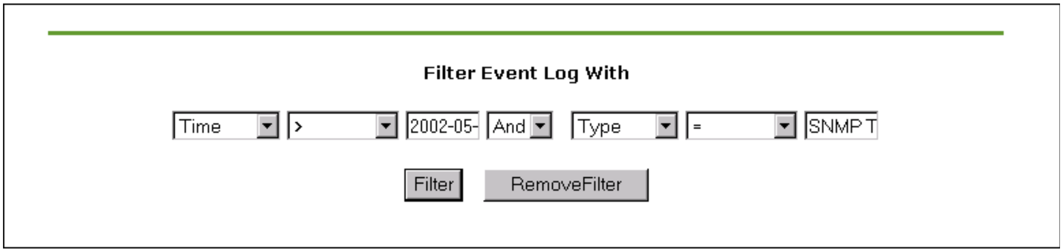
The event information is displayed in groups of 25 events per page. You can navigate among the pages using any of the following methods:

- Clicking the **Previous** and **Next** links
- Selecting a page number from the at the top of the report
- Clicking the **First** or **Last** links to display the first or last page in the report

Click the heading of a column to sort on the contents of that column.

You can filter the events that are displayed by constructing a conditional filter using the fields at the bottom of the page, as shown in Figure 168. This lets you construct a two-clause filter statement.

Figure 168: Event Log filter specification



Filter Event Log With

Time > 2002-05- And Type = SNMP T

You can filter on any of the variables shown in the report.

You can use the browser Copy and Paste functions to copy a specific value from the current report into the comparison field. This is particularly useful if you want to filter on a specific Varbinds value.

System Log Report

To view a System Log Report, click the **Sys Log** link in the left-hand panel. This creates a report of all of the entries in the System Log. The information displayed includes the following:

- **Event #**—Event ID of the syslog entry (assigned by the EPICenter server when the syslog is received)
- **Time**—Time the syslog is received by EPICenter (local time of the EPICenter server)
- **Source**—IP address of the device that generated the syslog entry
- **Facility**—Syslog facility field
- **Severity**—Syslog severity field
- **Message**—Syslog message

The event information is displayed in groups of 25 events per page. You can navigate among the pages using any of the following methods:

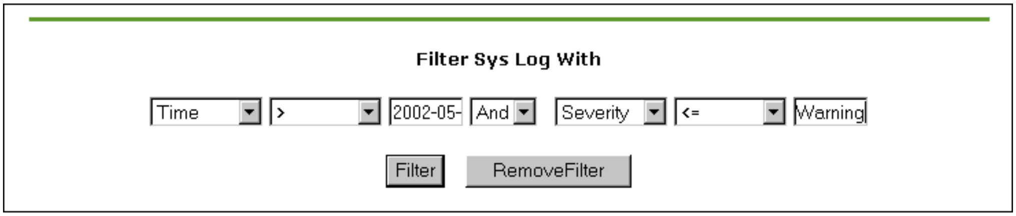
- Clicking the **Previous** and **Next** links
- Selecting a page number from the at the top of the report

- Clicking the **First** or **Last** links to display the first or last page in the report

Click the heading of a column to sort on the contents of that column.

You can filter the events that are displayed by constructing a conditional filter using the fields at the bottom of the page, as shown in . This lets you construct a two-clause filter statement.

Figure 169: System Log filter specification



Filter Sys Log With

Time ▼ > ▼ 2002-05- And ▼ Severity ▼ <= ▼ Warning

Configuration Management Log Report

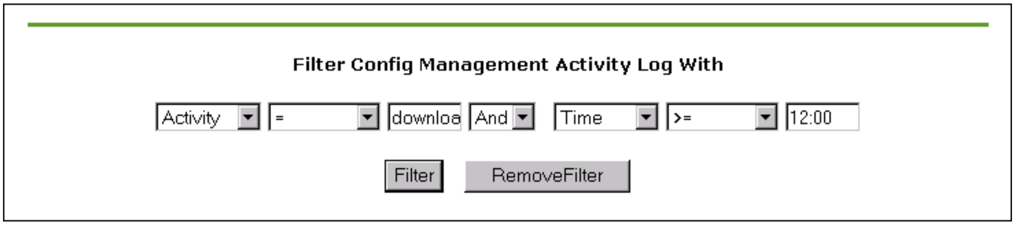
To view a Configuration Management Log Report, click the **Config Mgmt Log** link in the left-hand panel. This creates a report of all the entries in the Configuration Management Log. The information displayed includes the following:

- **Time**—Time when the activity occurred (local time of the EPICenter server) .
- **Device**—IP Address of the device.
- **Activity**—Activity that occurred, such as uploading a configuration file, updating a software image, and so on. The actual entries will be abbreviated in form similar to "Get Cfg From Device" or "Put Cfg To Device."
- **Status**—Status of the activity (Success or Failed).
- **File**—Name of the file involved in the upload or download.
- **Descr**—Description of the problem for a failed activity.

Click the heading of a column to sort on the contents of that column.

You can filter the management activity events that are displayed by constructing a conditional filter using the fields at the bottom of the page, as shown in Figure 170. This lets you construct a two-clause filter statement.

Figure 170: Configuration Management Log filter specification



Filter Config Management Activity Log With

Activity | = | downloa | And | Time | >= | 12:00

You can filter on any of the variables in the report.

Printing EPICenter Reports

Unlike the other EPICenter applets, you can print EPICenter reports using your browser's print function. To print a report, place the cursor in the pane where the port is displayed, and use the browser's Print button, or the Print command from the File menu, to initiate the print.

Creating New Reports

The EPICenter software allows you to customize the existing EPICenter dynamic reports, and to define new reports. Because the reports use HTML and Tcl, you can incorporate the new or modified reports into the running EPICenter server without requiring a restart. In addition, the EPICenter software includes features that aid in debugging user changes.

All the files needed to create or modify reports can be found in the directory <*epicenter_install_dir*>/user/reports, where <*epicenter_install_dir*> is the directory where the EPICenter software resides (by default epc4_0 in the Windows operating environment, or /opt/epc4_0 on a Solaris system). There are two subdirectories under the reports directory:

- The html directory contains the HTML files displayed by the EPICenter server. The HTML files in the reports directory have the following functions:

  - index.html sets up the various frames for the browser display. It references menu.html to define the menu on the left-hand side, and body.html for the content in the main panel of the window.
  - menu.html defines the menu items for the predefined reports, and includes links to the html files that generate the reports. This is a generated file. You can use this file in a customized report, but it is not user-modifiable.
  - body.html defines the content that appears in the main panel of the window when the Reports feature is requested, either from the EPICenter software Start-up window, or from the icon on the Navigation Toolbar. Modify this file if you want to change or add to the list of Reports and their descriptions.
  - color1.html defines the color of the bar at the top of the main content window. This is a generated file. You can use this file in a customized report, but it is not user-modifiable.
  - epistylesheet.css contains the style definitions used in the menu and main body frames.
  - reportstylesheet.css contains the style definitions used in the reports themselves. To change the look of all reports, you can modify this stylesheet.
  - The remaining files, such as device_summary.html, and vlan_summary.html, define a number of the actual reports available from the Reports module.

    Note that some of the reports (the Interface Report and the four Log reports) are not user-modifiable, and are not included in the HTML directory.
- The tcl directory contains the following:
  - The Tcl methods available for creating new reports
  - The source code for the existing reports

The information presented in the remainder of this chapter assumes you have a reasonably thorough understanding of both HTML and Tcl scripting.

Creating or Modifying a Report

You can modify an EPICenter report HTML file in any HTML editor, such as Microsoft FrontPage.

You can modify the existing HTML files to change the look and feel of the report, your icons, etc. The vlan_summary.html file is a good example.

```
<html>

<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<title>EPICenter - Vlan Reports</title>
<LINK REL=STYLESHEET HREF="reportstylesheet.css" TYPE="text/css">
</head>

<BODY bgcolor="#ffffff" marginwidth="20" marginheight="0" leftmargin="20"
topmargin="0">

<TABLE border="0" cellspacing="0" cellpadding="0" height="120px">
<TR valign="bottom"><TD>
<H2>Vlan Reports</H2>
</TD></TR>

<TR valign="top"><TD>
Information is available about the following vlans in EPICenter:<br>
Report generated on <extr>clock format [clock seconds]</extr></TD></TR>

<TR valign="bottom"><TD><P><img src="images/green.gif" width=650px
height=3px></P>
</TD></TR>
</TABLE>

<BR>

<!-- xxxxxxxxxxxxxxxxxxxxxxxxxx -->


<p><font size="3"><extr>ShowVlanSummaryList</extr></font></p>

<p><font size="3"></font>&nbsp;</p>

<p><font size="3"></font>&nbsp;</p>
</body>
</html>
```

The `vlan_summary.html` file is just like a standard HTML file with one exception: it has a new pair of tags, `<extr> ... </extr>` which are specific to the EPICenter report server. The EPICenter report server treats everything defined between these tags as Tcl code. The report server executes this code dynamically when it generates the report (upon a user request through the browser).

You can use any standard Tcl constructs between these tags, and you can also use methods defined in the “extr” package (`extr.tcl`). `extr.tcl` defines a set of methods to obtain information from the EPICenter software database. Appendix C defines a number of database views that contain information that may be useful in creating reports.

In addition, you can define new methods in any Tcl file in the `<`*`epicenter_install_dir`*`>/user/reports/tcl` directory, and use those methods inside the HTML file within the `<extr>` and `</extr>` tags.

A number of reports have been defined for use as examples. Look at the various HTML files to understand how `<extr>` tags are used within HTML files.

Look at the methods defined in the file `user/reports/tcl/examples.tcl` for details on using these methods to generate the data that will become a part of the generated report. Some utility methods have been provided in `commands.tcl` to help parse the result that comes back from the EPICenter software API.

In general, the Tcl methods defined here will generate well-formatted HTML. Everything between the `<extr>` and `</extr>` tags is replaced by HTML code generated by the embedded Tcl code. Using this method, you can generate lots of new reports quickly, and without disrupting the EPICenter software server.

Adding a User-Defined Report to the Reports Menu

To add a new user-defined report to the report menu, simply place the HTML file into the `<`*`epicenter_install_dir`*`>/user/reports/html/userdefined` directory. The EPICenter server automatically creates a link on the Reports menu for files in the userdefined directory. It will use the report file names as the report names. They will appear below the heading **User Defined Reports** at the bottom of the left-hand panel of the Reports page.

The file names must conform to two restrictions:

- They must use `.html` as the extension. `.htm` is not supported.
- The file name may not contain spaces.

If you want to create a set of hierarchical reports, you can create a subdirectory under the userdefined directory to contain subordinate HTML files that should not have a direct link from the Reports menu.

NOTE

If you put files into the `userdefined` *directory that were originally in the* <*epicenter_install_dir*>`/user/reports/html` *directory, be sure you also copy the report stylesheet (*`reportstylesheet.css)` *into the* `userdefined` *directory.*

Debugging

The EPICenter software provides a mechanism that you can use to debug any Tcl procedures you write.

Debugging is done in the Tcl shell that is shipped with the EPICenter software. You do not need to view your reports through a browser to debug them.

To debug Tcl code you have created or modified, follow these steps:

1. Run **`<epicenter_install_dir>/tcl/bin/tclsh83d.exe`** to invoke the Tcl shell.
2. Change to the `<epicenter_install_dir>/user/reports/tcl` directory.
3. Execute the command **`source extrdebug.tcl`** within the Tcl shell.

   This sets up the Tcl packages required, and also establish a connection with the database using the EPICenter software external API.
4. Now, run the command **`extr::ExecuteExtrCommand`** which parses your Tcl code and displays the resulting HTML file.

   `ExecuteExtrCommand` takes the following arguments:

   — The name of the HTML file that will generate the report.

   — A string containing the parameter that should that should be available to the HTML file. The values for the parameters can be obtained in the various Tcl methods using `extr::GetSessionParam`

You must ensure that the appropriate environment variables are set to allow access to Tcl. These should be set as follows:

For Windows NT, set variables as follows:

```
TCL-LIBRARY=<epicenter_install_dir>/tcl/lib/tcl8.3
PATH=$PATH:<epicenter_install_dir>/tcl/bin
```

For Solaris, set the `LD_LIBRARY_PATH` variable as follows:

```
LD_LIBRARY_PATH=<epicenter_install_dir>/tcl/lib/tcl8.3
```

Useful Methods for Debugging

The `GetfromDB`, `ExecuteExtrCommand` and `GetSessionParam` methods are defined as follows:

```
########################################################################
# extr::GetFromDB
#        Used to make any SQL query to the database through the
#        Epicenter server. The result is a SQL result table,
#        formatted within HTML tags.
#
# Arguments
#        A string representing an SQL query.
#   An optional callback function that is executed for each row of data
# Returns
#        The result table of an SQL query embedded in HTML tags.
#
########################################################################

########################################################################
# extr::ExecuteExtrCommand
#        This is the public method typically used during debugging.
#        When a user wants to run an HTML file through the reporting
#        engine, to generate dynamic html, s/he calls this method.
#        Users will need to use this method only during debugging.
#
# Arguments
#        filePath    This is the fully specified path of where to
#                    find the HTML file that has embedded <extr> tags.
#        params      A string containing params and their values that
#                    should be available to the procedures in the HTML files.
#                    The parameters are specified as in HTML. i.e. the param
#                    is a string of type "param1=value1&param2=value2"
#
# Returns
#        The result of executing the command. Typically this is parsed HTML.
#
########################################################################

########################################################################
# extr::getSessionParam
#        Used in reports to get the value of a specific parameter
#        that was passed into the reporting system.
#        This method, along with GetFromDB form the two most
#        commonly used routines by users of the reporting system.
#        The params passed into ExecuteExtrCommand are available
#        through this method.
#
# Arguments
#        param    A param name. This should be one of the params
#                 that was passed into ExecuteExtrCommand.
# Returns
#        The value of the parameter. Returns "" if param was not defined.
#
######################################################################
```

A Troubleshooting

This appendix describes how to:

- Resolve problems you may encounter that are related to the EPICenter server
- Resolve problems you may encounter while using the EPICenter client application

Troubleshooting Aids

If you are having problems with EPICenter, there are several things you can do to help prevent or diagnose problems.

Using the Stand-alone Client Application

To enable debugging and log the output to a file in the stand-alone client application, you can run the EPICenter client in debug mode.

In Windows NT/2000, enter one of the following commands at the prompt in a command window or in the **Run** field.

If you have both server and client installed on the same system:

```
c:\epc4_0\runclient.exe DEBUG DEBUG > <logfile>
```

If you have the client only installed:

```
c:\epc4_0_client\runclient.exe DEBUG DEBUG > <logfile>
```

In Solaris, enter the one of the following commands at a command prompt.

If you have both server and client installed on the same system:

```
/opt/epc4_0/runclient DEBUG DEBUG >& <logfile>
```

If you have the client only installed:

```
/opt/epc4_0_client/runclient DEBUG DEBUG >& <logfile>
```

<*logfile*> is the name of the log file to be created. If you installed the client on a different drive and directory, make the appropriate substitutions. Optionally, piping output to "tee," if you have it available, allows you to see the logs on the console as well as logging the data into the file.

Be sure to use different log file names if you are running multiple clients on the same machine.

Using the Browser-based Client (Windows Only)

NOTE

After a problem occurs, prior to pointing the browser to the EPICenter server, it is recommended that you clear all browser cache information, including disk cache, and close and re-open the browser.

If you are using the browser-based client, please try to duplicate the problem with the Java Console enabled in Internet Explorer. Look at the Java Console window and copy/paste (using [Ctrl]+C and [Ctrl]+V on Windows NT/2000) the contents into a text file. If a problem occurs, Extreme Networks customer support may require the Java Console output.

In addition, you can run the client in a debug mode in the browser:

1. Start the client with the URL http://<host>:<port>/everest/debug.
2. After you enter your login information, but before the main EPICenter page is displayed, a page with debug settings is displayed.
3. Select **Info** for "Client Debug Level"
4. Click **Submit Query**.

This enables more detailed information to be logged.

Enable the Java Console

To facilitate problem diagnosis, you can attempt to duplicate the problem with the Java Console enabled. To enable the Java Console, do the following:

1. From the Windows **Start** menu, select **Programs**, then **Java Plug-in Control Panel** and launch the Control Panel.
2. On the **Basic** page, click the **Show Java Console** check box.
3. Click **Apply.**

The next time you launch the EPICenter client, the Java Console will start automatically.

NOTE

Running with the Java Console displayed may affect the performance of the EPICenter client.

There is limited space for Java Console messages; once the console log file is filled, no more messages will be recorded. If you are trying to duplicate a problem, clear the Java Console log file periodically by clicking the **Clear** button at the bottom of the window.

You can close the Java Console by clicking the **Close** button at the bottom of the window. However, once it is closed, it can only be restarted by closing and restarting the browser.

EPICenter Client

Problem: Client is unable to connect to the EPICenter server.

Verify that the EPICenter Server process is running.

Verify that the server is running on the specified port. You can try to connect to the server’s HTTP port using a browser. If the server is running and you are using the correct port, the EPICenter main page will be displayed.

If you are running the client on the same system as the EPICenter server, you can also use the Port Configuration utility to determine the port on which the EPICenter server is running.

To run the Port Configuration utility, go to the Windows **Start** menu, and select **Programs**, then **EPICenter 4.0**, then **Port Configuration**.

For more information on the Port Configuration utility, see Appendix B.

Problem: Colors in client interface are incorrect (Windows NT or Windows 2000).

The Color Palette must be set for 65536 colors (or True Color). If your display is set for only 256 colors, the colors in the left-hand panel (the Navigation Toolbar) and the EPICenter applets themselves may be incorrect.

To change the color palette, double-click the **Display** icon in the **Control Panel**, select the **Settings** tab, and use the drop-down list in the **Color Palette** field to select the appropriate setting.

Problem: After running for a while, the display disappears in some applets (Windows, browser only).

Under some conditions in the browser client, the Java Plug-in can run out of memory. If you are running with the Java Console enabled, you may see “Out of Memory” errors recorded in the console log file. To alleviate this problem, you can grant the plug-in more memory through the Java Plug-in Control Panel.

1 From the Windows **Start** menu, run the **Java Plug-in Control Panel**.

   The Plug-in Control Panel should appear with the **Basic** page displayed.

2 In the Java RunTime Parameters field, enter the following without any embedded spaces:

   `-Xmx`*`nnn`*`m`

   nnn is the maximum number of megabytes of virtual memory available to the plug-in.

   For example, entering **`-Xmx128m`** allows the plug-in to use up to 128 MBytes of virtual memory, and should prevent out-of-memory problem.

Problem: Browser does not bring up the Login page.

Verify the version of the browser you are using. See the system requirements in Chapter 1 or see the *EPICenter Release Note and Quick Start Guide* shipped with the software.

Problem: Browser client software loads and allows login, but data is missing or other problems arise.

Clear your browser’s cache, exit the browser, and restart it. This frequently clears up miscellaneous start-up problems in the client.

In Internet Explorer, clear cache by selecting **Internet Options** under the **Tools** Menu, then clicking **Delete Files** under the Temporary Internet Files section of the **General** tab.

Problem: Cannot cut, paste or print from the browser-based client, or save to the local file system.

As of EPICenter 4.0 the browser-based client no longer supports cut/paste/print or save from the browser-based client. These functions are supported only in the stand-alone client application.

EPICenter Database

Problem: DBBACKUP utility will not run if LD_LIBRARY_PATH variable is not set correctly

In order for DBBACKUP to run, the LD_LIBRARY_PATH environment variable must include the path `<install_dir>/database` (by default, `/opt/epc_30/database`). There are some needed `.so` files in that directory. (10051)

Problem: Database server will not restart after incorrect shut down

If the EPICenter server is shut down incorrectly, the database may be left in an invalid state. In this case, an “Assertion failed” error may occur when attempting to restart the server.

To recover the database in Windows NT or Windows 2000, do the following:

1 Open a DOS command window.

The following commands assume you have accepted the default installation location, `c:\epc4_0`. If you have installed EPICenter in a different location, substitute the correct installation directory in the commands below.

2 Go to the EPICenter install directory:

```
cd c:\epc4_0
```

3 Add the EPICenter database directory to your path:

```
set path=c:\epc4_0\database;%path%
```

4 Execute the following command:

```
database\dbeng7.exe -f basecamp.db
```

5 Watch the output from this command. If the database program indicates it cannot recover the database, delete the database log:

```
del basecamp.log
```

and try executing the previous command again:

```
database\dbeng7.exe -f basecamp.db
```

6 If the database is successfully recovered, restart the server.

If the database cannot be recovered, you will need to restore the database from a backup. See Appendix E for instructions on restoring the database from a backup.

To recover the database in Solaris, do the following:

1 Open a shell window (csh is used for the following example).

The following commands assume you have accepted the default installation location, `opt/epc4_0`. If you have installed EPICenter in a different location, substitute the correct installation directory in the commands below.

2 Go to the EPICenter install directory:

```
cd /opt/epc4_0
```

3 Make sure the `LD_LIBRARY_PATH` environment variable is set to the EPICenter directory installation directory:

```
setenv LD_LIBRARY_PATH /opt/epc4_0/database
```

4 Execute the following command:

```
database/dbeng7.exe -f basecamp.db
```

5 Watch the output from this command. If the database program indicates it cannot recover the database, delete the database log:

```
rm basecamp.log
```

and try executing the previous command again:

```
database/dbeng7.exe -f basecamp.db
```

6 If the database is successfully recovered, restart the server.

If the database cannot be recovered, you will need to restore the database from a backup. See Appendix E for instructions on restoring the database from a backup.

EPICenter Server Issues

Problem: Cannot talk to a specific switch.

Verify that the switch is running ExtremeWare software version 2.0 or later.

Ping the switch's IP address to verify availability of a route. Use the **`ping`** command from a MS DOS or Solaris command shell.

Verify that the read and write community strings used in the EPICenter match those configured on the switch.

Problem: ExtremeWare CLI or ExtremeWare Vista changes are not reflected in EPICenter.

Verify that the switch is running ExtremeWare software version 2.0 or later.

From the Inventory Manager, click **Sync** to update the information from the switch. This refreshes the switch specific data, validates the SmartTrap rules, and ensures that the EPICenter server is added as a trap receiver (Extreme switches only).

If the problem persists, verify that the EPICenter workstation has been added in the list of trap destinations on the given switch:

1. Telnet to the switch.
2. Log in to the switch.
3. Type **`show management`** to verify that the system running the EPICenter is a trap receiver.

An Extreme switch can support a maximum of 6 trap destinations in ExtremeWare 2.0, and up to 16 trap destinations with ExtremeWare 4.1 or greater. If EPICenter is not specified as a trap destination, then no SmartTraps are sent, and the data is not refreshed. If you need to remove a trap receiver, use the command:

```
config snmp delete trapreceiver <ipaddress>
```

For details, see the *ExtremeWare Software User Guide*.

Problem: Need to change polling interval, SNMP request time-out, or number of SNMP request retries.

You can change the default values for the SNMP polling interval, the SNMP request time-out, or the number of SNMP request retries, through the Administration applet, Server Properties page. You must stop and restart the EPICenter server to have your changes take effect.

See Chapter 16 for information on the EPICenter Administration applet. See Chapter 3 for instructions on stopping and starting the EPICenter server.

Problem: Need to change the Telnet or HTTP port numbers used to communicate with managed devices.

You can change the port numbers for all managed switches through the Administration applet, Server Properties page. You must stop and restart the EPICenter server to have your changes take effect.

See Chapter 16 for information on the EPICenter Administration applet. See Chapter 3 for instructions on stopping and starting the EPICenter server.

Problem: Telnet polling messages can fill up a device's syslog file.

For switches running older versions of ExtremeWare (prior to 6.0), the EPICenter server uses telnet polling to get EDP topology and ESRP information. However, each telnet login and logout message is logged to the switch's log file, and will eventually fill up the log.

You can disable EDP and ESRP logging through the EPICenter Administration applet, Server Properties page. This will also avoid the syslog messages.

See Chapter 16 for information on the EPICenter Administration applet. See Chapter 3 for instructions on stopping and starting the EPICenter server.

Problem: Traps may be dropped during a trap "storm."

The EPICenter server limits its processing of traps in order to be able to reliably handle trap storms from a single or multiple devices. EPICenter limits its trap processing to 20 traps every 28 seconds from an individual device, and a total of 275 traps every 55 seconds system-wide. Any traps that occur beyond these limits will be discarded, but will be noted in the `log.txt` file.

Exceeding the first limit (>20 traps in 28 seconds) is rare, and should be considered abnormal behavior in the managed device. If you are managing a large number of devices, you may reach the total (275) limit in normal circumstances. If you are managing more than 1000 devices, it is recommended that you increase the total number of traps to 500.

The trap processing limits can be changed through server properties in the Administration applet. See Chapter 16 for more information on setting EPICenter server properties.

Problem: Under Solaris, an error occurs when attempting to enable the EPICenter Syslog server function.

By default, Solaris runs its own Syslog server. This causes an error “Syslog Server unable to start: Address already in use” when you attempt to enable the EPICenter syslog server. You must first stop the Solaris syslog server in order to have EPICenter act as a Syslog receiver. To stop the Solaris Syslog server, use the command:

```
/etc/init.d/syslog stop
```

VLAN Manager

Problem: Multiple VLANs have the same name.

A VLAN is defined by the name, its tag value, and its protocol filter definition. EPICenter allows multiple VLANs of the same name if one of the defining characteristics of one VLAN is different from the other.

Problem: Multiple protocols have the same name.

EPICenter allows multiple protocols of the same name if one of the defining characteristics of one protocol is different from the other.

Problem: Created a new protocol in VLAN Manager, but the protocol does not appear on any switch.

When a new protocol is created, it is stored in the EPICenter database. EPICenter only creates the protocol on a switch when the new protocol is used by a VLAN on that switch.

Problem: Can only access one of the IP addresses on a VLAN configured with a secondary IP address.

EPICenter does not currently support secondary IP addressing for a VLAN.

Problem: Configuration fails when attempting to configure a VLAN with a modified protocol definition.

EPICenter does not have a mechanism to modify protocols. When a VLAN is configured through EPICenter to use a protocol that does not exist on the switch, the protocol is first created on the switch. However, if a protocol with the same name but a different definition already exists on the switch, the operation will fail.

Problem: An untagged port has disappeared from its VLAN.

Check to see if the port has been added as an untagged port to a different VLAN. In EPICenter, adding an untagged port to a VLAN automatically removes the port from its previous VLAN if the port was untagged, and the new and old VLANs used the same protocol. You should receive a warning message when this happens, which lets you proceed with the auto-deletion or cancel the operation. This is different behavior from the ExtremeWare CLI, where you must first delete the port from the old VLAN before you can add it to the new VLAN.

Alarm System

Problem: Device is in a fault state that should generate a trap or syslog message, and an alarm is defined to detect it, but the alarm does not appear in the EPICenter Alarm Log.

There are several possible reasons this can occur. Check the following:

- Make sure that the alarm is enabled.
- Check that the device is in your alarm scope.
- Check that SNMP traps are enabled on the device.
- For a non-Extreme Networks device, make sure you have set EPICenter as a trap receiver on the device (see Chapter 8).
- For an RMON alarm, make sure you have RMON enabled on the device.

- For Syslog messages, make sure that you have the EPICenter Syslog server enabled, and that remote logging is enabled on the device with EPICenter set as a Syslog receiver.
- The number of traps being received by the EPICenter server may exceed the number of traps it can handle in a given time period, resulting in some traps being dropped (see the item on dropping traps on page 488). You can change the limits for the number of traps the server should accept (per minute and per 1/2 minute) in the Administration applet. See Chapter 16 for more information on setting EPICenter server properties.

Problem: The “Email to:” and “Short email to:” fields are greyed-out in the Actions tab of the New Alarm Definition dialog.

You need to specify an e-mail server in order to send e-mail. Click the **Settings...** button next to the **Email to** field to set up your mail server.

Problem: An RMON rule is defined to monitor a counter variable, and to cause an alarm when the counter exceeds a certain value. The counter has exceeded the threshold value but no alarm has occurred.

There are several things to check:

- Make sure the RMON rule and the alarm definition are set up correctly
- If the value of the counter was already above the threshold value when you set up the RMON rule, and you have the Sample Type set to Absolute, no alarm will ever be generated. This because the value must fall below the Falling Threshold value before the before another Rising Threshold trap will be sent, and this will never occur. You should consider using the Delta Sample Type instead.

Problem: When creating an RMON rule in the RMON Rule Configuration window, the MIB variable I want to use is missing from the list of variables displayed when I click “Lookup...”

The MIB Variable list displays only the MIBs shipped with the EPICenter software. In addition, within those MIBs the variable list will not display variables that are indexed by an index other than (or in addition to) ifIndex. You can still use variables that do not appear in the Lookup... list, but you must type the complete OID into the MIB Variable field, in numeric notation. If the variable is a table variable, you will need to append the specific index and apply the variable to each target device, one at a time.

Problem: A program specified as an action for an alarm (in the Run Program field) does not get executed. It includes output to the desktop among its functions.

If you are running the EPICenter server as a service, you must specifically tell it to allow output to the desktop. To do this you must stop and restart the EPICenter server, as follows:

1. In the Services properties window, select **EPICenter 4.0 Server** and click **Stop**. (To find the Services window, from the Start menu select Settings, then Control Panel, the double-click the Services icon).
2. When the **EPICenter 4.0 Server** service has be stopped, select it again and click **Startup...**. This displays a pop-up window where you can specify start-up options.
3. In the lower part of the window, in the **Log On As:** area, click the box labeled **Allow Service to Interact with Desktop**. Then click **OK**.

After the EPICenter server restarts, the program you have specified as an alarm action should execute correctly.

To specify a batch file that does output to the desktop, you must specify the ".bat" file within a DOS "cmd" command, as follows:

```
cmd /c start <file.bat>
```

where <*file.bat*> is the batch file you want to run.

Problem: Email alarm actions generate too much text for a text pager.

You can use the "Short email to:" option to send an abbreviated message appropriate for a text pager or cell phone. The short email provides only very basic alarm information. See Chapter 5 for more details on using the email options as an alarm action.

Problem: Alarm action that executes a script does not run to completion.

Check to determine if a command in the script has failed. If one command in the script fails, the rest of the script will not be executed. This is expected behavior.

If you want to execute multiple script commands regardless of individual command failure, you must catch the exception thrown in each command. For example, a script action:

```
catch {do Command1}
catch {do Command2}
```

will execute Command2 even if command1 fails. For detailed information on how to use the Tcl script, consult the Tcl man pages or Help file at http://www.tcl.tk.

ESRP Manager

Problem: None of the member VLANs of an ESRP group are appearing in the ESRP Manager applet.

Make sure that all members of the ESRP group use the same election algorithm. If there is an election algorithm mismatch between any of the ESRP-enabled switches in any of the ESRP-enabled VLANs in the ESRP group, this causes a misconfiguration scenario, and ESRP will not function. As a result, none of the members of the ESRP group will appear in the ESRP Manager applet.

Problem: Some of the switches in an ESRP-enabled VLAN are missing from the ESRP Manager applet.

Make sure that the Hello Timer (ESRP Timer) is set to the same interval for all ESRP-enabled switches. If there is a timer mismatch, ESRP will not function correctly, and the ESRP Manager applet will not be able to detect ESRP switch neighbors that are not being managed by the EPICenter software.

Problem: Devices running ExtremeWare 4.x are not being polled for ESRP information.

The EPICenter server uses Telnet polling to add and update ESRP information for devices running ExtremeWare 4.x. If you have the “Poll devices using Telnet” option disabled in the Administration applet, no ESRP information will be obtained for these devices. You can enable telnet polling through the Server Properties page in the Administration applet. See Chapter 16 for more information.

Inventory Manager

Problem: Discovery returns an error if more than 10,000 IP addresses are specified for a discovery operation.

Discovering more than 10,000 IP addresses can consume too much memory in the EPICenter server. As a result, the server does not allow more than 10,000 IP addresses to be discovered at once. If you need to discover more than 10,000 devices, you must split your discovery into multiple operations.

Problem: Multiple switches have the same name.

This is because the sysName of those switches is the same. Typically, Extreme Networks switches are shipped with the sysName set to the type of the switch "Summit48," "Summit1i," "Alpine3808," and so on, depending on the type of switch.

You can change the way names are displayed through a sever property in the Administration applet. You can display devices in the Component Tree by name or by IP address and name. See Chapter 16 for more information on setting EPICenter server properties.

Problem: Discovery does not display the MAC address for some devices in discovery results list. In addition, may not add the device to inventory (primarily happens with workstations).

If the MAC address is not found in the first instance of ifPhysAddress, it is not displayed in the discovery results table. However, when the device is selected to be added to the EPICenter inventory, the Inventory applet searches all the ifPhysAddress entries for the device, and will use the MAC address found in this manner. If no MAC address is found in any ifPhysAddress entry, the device will not be added to the EPICenter database.

Problem: Attempted to add a switch in the Inventory Manager after rebooting the switch, and received an "SNMP not responding" error.

If a switch has recently been powered on, it may take some time (a number of minutes) before the device is completely initialized. This will be especially true of chassis devices with many blades, or devices with a large number of VLANs configured on the device. It the device has not completed its initialization, the Inventory Add process may return an error. You can simply wait until the device has finished initializing and try the Add function again.

ExtremeView

Problem: For a device selected under Status, the Device Information panel shows incorrect information, and the device image is not displayed correctly.

This can be caused by a device IP address that is in conflict with another device on the network (a duplicate IP address). Remove the problem device from the EPICenter inventory, and add it in again with the correct IP address.

Problem: While looking at a device in ExtremeView, the device view was suddenly replaced by the top-level ExtremeView page.

This will happen if another EPICenter user removes the device from the database while you are viewing it. If you are running with the Java Console enabled you may see an error message indicating the device has been removed (as long as your console log has not been filled up).

Problem: When device information is not displayed completely (for example, only a generic image is displayed) no messages explaining the problem seems to appear.

These types of messages for ExtremeView are displayed as error messages in the Java Console error log. These messages are really informational errors, but must be displayed as errors in order to appear under the normal Java Console settings. To see these messages, you must be running the Java Console (see “Enable the Java Console” on page 483). Also, there must still be room left in the console log, as it stops displaying messages when it fills up.

Problem: After initiating a switch reboot from the switch configuration page in ExtremeView, the browser times out with an error (browser client only).

You can initiate a switch reboot from the Switch configuration page in the ExtremeView applet However, because the switch is rebooting, it does not respond to the browser’s forms submission, and the browser will time out and report an error (Error: 504) instead of refreshing the configuration page. Once the switch has successfully finished rebooting, you can select it again in the Component Tree and the page will refresh correctly.

Grouping Manager

Problem: Cannot import users from NT Domain Controller

The EPICenter Server must be running with permissions that enable it to get user information from a Domain Controller. To verify and change permissions for the Web Server, do the following:

1 From the **Start** menu, highlight **Settings**, pull right, and click on the **Control Panel**. This displays the Control Panel folder.

2 Double-click on **Services** to display the Services Properties window.

3 In the Services properties window, select **EPICenter 4.0 Server** and click **Stop**. (To find the Services window, from the Start menu select Settings, then Control Panel, the double-click the Services icon).

4 When the **EPICenter 4.0 Server** service has be stopped, select it again and click **Startup...**. This displays a pop-up window where you can specify start-up options.

5 In the lower part of the window, in the **Log On As:** area, enter the account name and password for a user who has the appropriate permissions to access the Domain Controller.

6 Click **OK** to restart the Web Server service to have the new user logon take effect.

Printing

Problem: When printing a topology map from the browser client, or a printing report, the browser can appear to freeze.

Printing a report or a topology map can cause the browser utilization to become very high (approaching 100%) and can spool a very large amount of memory. There is no current solution other than to wait, and the process will eventually finish.

Topology

Problem: In Map Properties, changed the node background color, but only some of the node backgrounds changed.

The background color affects submap nodes, device hyper nodes and device or decorative nodes that do not display the device icon (either because the icon display is turned off or the nodes have been reduced in size to where the icon cannot be displayed). For device nodes and decorative nodes with the device icon displayed, the background color is transparent, and the background color setting is ignored.

Problem: A link has been moved, but the old link still appears as a down or unknown link. In addition, if just one end of the link has been moved, an L2 cloud node is added between the two endpoint devices.

When a previously “up” link disappears, the EPICenter server cannot tell if whether it is down or has been physically moved, so it changes its status to down (or unknown). EPICenter will detect the new link and add it as an up link, but it will not remove the old link. If only one end of the link is moved, EPICenter detects two links (one up and one down) that share the same endpoint on one side of the link. It interprets this to mean that there is a hub between the two endpoint devices, and represents this as an L2 cloud.

To remove non-existent links and extraneous L2 clouds, you can use the Discover Links command in the Topology applet. This command will remove all down links and extraneous L2 clouds. Note that this command will also remove existing links that are down, but EPICenter will rediscover and add back those links when they come back up.

Problem: The Discover Links command removed legitimate links that were down.

The EPICenter server cannot discover a link if the link is down. Therefore, when it rediscovers links it will only discover up links (or partially up links in the case of composite links). However, down links will automatically reappear when they come up again. You can also use the Discover Links command again after the down links have come back up.

STP Monitor

Problem: There are multiple STP nodes with the same name.

The EPICenter server identifies an STP domain by its name and tag. If you see multiple STP domains in EPICenter, you may have a misconfiguration where the same STP domains are configured with different tags on different switches.

Reports

Problem: After viewing reports, added a user-defined report, but it doesn’t appear in the list of reports on the main reports page.

The Reports page updates the list of reports when the page is loaded. To update the list, Refresh the page.

B EPICenter Utilities

This appendix describes several utilities and scripts shipped with the EPICenter software:

- The DevCLI utility, that can be used to add, modify, delete, and sync devices and device groups; and can be used to modify device configuration information from the EPICenter database using the `devcli` command
- The Inventory Export scripts, that can be used to extract information from the EPICenter inventory and output it to the console or to a file
- The SNMPCLI utility, that can be used to inspect the contents of device MIBs
- The Port Configuration utility, a Windows-only utility that you can use to change the ports used by the EPICenter server
- The AlarmMgr utility, used to display alarm information from the EPICenter database. Results can be output to a file.
- The FindAddr utility, used to find IP or MAC addresses within a set of devices or ports (specified individually or as device or port groups). Results can be output to a file.
- The TransferMgr utility, used to upload or download device configurations, or to download new software versions.
- The VlanMgr utility, used to create, reset, and delete VLANs.
- The ImportResources utility, used to import resources into the Grouping Manager from an external source such as an LDAP or NT Domain Controller directory.

The DevCLI Utility

The DevCLI utility allows you to add, modify, and remove devices and device groups from an EPICenter database using a command line statement, rather than through the EPICenter client user interface. You can add devices and device groups individually or in groups, and you can specify arguments such as community strings and login and passwords for both the EPICenter server and the devices. You can modify device and device group settings as well as device configurations. You can specify a list of devices in a file and have them added in a single operation.

The DevCLI is useful for updating the EPICenter inventory database quickly when large numbers of devices or device groups are added, modified or removed, or if changes occur frequently. It can also be useful when you want to duplicate the device inventory and device group configurations across multiple installations of the EPICenter server.

Using the DevCLI Commands

The utility is located in the root EPICenter install directory, by default `\epc4_0` or `/opt/epc4_0` (in a UNIX environment).

The DevCLI utility supports the following four commands:

- **`devcli add`** *`<options>`* to add a device or device group.

  To add device 10.205.0.99 to the EPICenter database on the local host, using the default device user name and password, enter the following command at the prompt:

  ```
  devcli add -u admin -a 10.205.0.99
  ```

  To add a device group to the EPICenter database with the name “Device Group 1,” enter the following command at the prompt :

  ```
  devcli add -u admin -g “Device Group 1”
  ```

- **`devcli mod`** *`<options>`* to modify a device or device group.

  To modify the password on device 10.205.1.51 to use an empty string, enter the command :

  ```
  devcli mod -u admin -a 10.205.1.51 -d ““
  ```

NOTE

If you are running the DevCLI on a Windows platform, enter forward slashes to separate empty double quotes to ensure the command executes correctly. For example, to use the previous command in a Windows environment, enter the command: `devcli mod -u admin -a 10.205.1.51 -d \"\"`

To modify the name of a device group from “Device Group 1” to “New Device Group,” enter the following command at the prompt:

```
devcli mod -u admin -g “Device Group 1” -m “New Device Group”
```

- **devcli del** *<options>* to remove a device or device group.

  To remove device 10.205.0.99 from the EPICenter database, enter the command:

  ```
  devcli del -u admin -a 10.205.0.99
  ```

  To remove a device group named “New Device Group” from the EPICenter database, enter the command :

  ```
  devcli del -u admin -g “New Device Group”
  ```

- **devcli sync** *<options>* to manually update device configurations.

  To manually update the device configurations for device 10.205.0.99, enter the command:

  ```
  devcli sync -u admin -a 10.205.0.99
  ```

  To manually update the configurations for the default device group, enter the command:

  ```
  devcli sync -u admin -g Default
  ```

NOTE

You can type either `sync` *or* `syn` *when you use the* `devcli sync` *command.*

These commands support a set of options for specifying device information such as passwords and community strings, device group information such as device group names and member devices, as well as information about the EPICenter server, such as host name or IP address, port, and user name and password. You can also specify multiple IP addresses in a file to have them added or removed as a group, as long as they all use the same user name, password, and community strings.

Table 10 specifies the options you can use with these commands:

Table 10: DevCli command options

Option	Value	Default
-a	Device IP address. This option can be specified more than once.	None
-c	Cisco enable password.	“”
-d	Device password.	“”
-e	Device group description.	None
-f	Input file name for IP addresses. This specifies an ascii file that contains a list of IP addresses, one per line. No other information can be included in this file. This option can be specified more than once.	None
-g	Device group to which devices should be added. Case sensitive. The device group must already exist.	Default
-h	Input file name for device groups. This specifies an ascii file that contains a list of device group descriptions, one per line. A device group description may be included by enclosing both the device group name and the device group in double quotes. The quotes sever to delimit the two values. This option can be specified more than once.	None
-i	Device poll interval, in minutes	0
-l	(Letter l) User name to use for device login	admin
-m	New device group name. Use this command when you are modifying a device group	None
-n	EPICenter server port number	80
-p	EPICenter user password	“”
-r	Read community string (only needed for adding devices; not needed for deleting them).	public
-s	EPICenter server hostname or IP address	localhost
-u	EPICenter user name	

Table 10: DevCli command options (continued)

Option	Value	Default
-w	Write community string (only needed for adding devices; not needed for deleting them).	“private”

Options such as the user login names and passwords and community strings, apply to all devices specified in the command. You can specify multiple devices in one command as long as they use the same options. If you have devices with different access parameters, you must add or delete them in separate commands. The exception is when removing devices or device groups, you do not need to specify community strings, so you can remove multiple devices in a single command even it their community strings are different.

Most options default to the values equivalent to those used by default on Extreme Networks devices or in the EPICenter software.

You can specify only one EPICenter server (database) in a command. If you want to add the same devices to multiple EPICenter databases, you must use a separate command for each server. The command by default adds or removes devices from the EPICenter database running on the local host at port 80.

DevCLI Examples

The following examples illustrate the usage of these commands.

- To add a device with IP address 10.205.0.99 to the EPICenter database running on server `snoopy` on port 81, with EPICenter login “master” and password “king,” enter the following command:

  ```
  devcli add -u admin -a 10.205.0.99 -s snoopy -n 81 -u master -p king
  ```

- To add two devices (10.205.0.98 and 10.205.0.99) to the EPICenter database on the local host, with read community string “read” and write community string “write,” enter the following command:

  ```
  devcli add -u admin -a 10.205.0.98 -a 10.205.0.99 -r read -w write
  ```

- To add multiple device groups specified in the file “devGroupList.txt” to the EPICenter database, enter the following command:

  ```
  devcli add -u admin -h devGroupList.txt
  ```

  The file `devGroupList.txt` must be a plain ASCII text file containing one device group name and one description (if applicable) per line, such as:

```
"Device Group 2"    "Marketing"
Building B
dg4
```

If a line has multiple words delimited by white space and the words are not enclosed in double quotes, the whole line is interpreted as a device group name without a device group description. If the device group name consists of multiple words delimited by white space, and you want to specify a device group description, you must use double quotes to enclose both the device group name and the device group description.

- To modify the membership of a device group named “Engineering Device Group” to remove any existing devices from the device group and add four new devices (10.205.0.91, 10.205.0.92, 10.205.0.93, and 10.205.0.94) to the device group, enter the following command:

  ```
  devcli mod -u admin -g "Engineering Device Group" -a 10.205.0.91
  -a 10.205.0.92 -a 10.205.0.93 -a 10.205.0.94
  ```

- To delete a set of devices specified in the file “devList.txt” with device login “admin2” and password “purple,” enter the following command:

  ```
  devcli del -u admin -f devList.txt -l admin2 -d purple
  ```

  The file `devList.txt` must be a plain ASCII text file containing only IP addresses and only one IP address per line, such as:

  ```
  10.205.0.95
  10.205.0.96
  10.205.0.97
  ```

  If more than one IP address is specified per line, only the first IP address is used.

- To delete two device groups (“Building A” and “Building C”) from the EPICenter database, enter the following command:

  ```
  devcli del -u admin -g "Building A" -g "Building C"
  ```

- To manually update the configurations of two devices (10.205.0.91 and 10.205.0.93), enter the command:

  ```
  devcli sync -u admin -a 10.205.0.91 -a 10.205.0.93
  ```

Inventory Export Scripts

There are three scripts you can run to export information about the devices or occupied slots known to the EPICenter inventory. The scripts let you export information on devices known to a single EPICenter installation, on slots known to a single EPICenter installation, or on devices known to multiple EPICenter servers. The information will be output in comma-separated (CSV) format suitable for importing into a spreadsheet.

- For a device report, the information reported includes the device name and type, IP address, location, serial and board numbers. If you use the Distributed server version of this report, the name of the EPICenter server that manages the device will also be included.
- For a slot report, it includes the device name and IP Address, slot number, slot name and slot type, and the serial number of the blade in the slot.

Using the Inventory Export Scripts

The three scripts are located in the EPICenter `user\scripts\bin` directory under the EPICenter install directory (by default `\epc4_0` under Windows, or `/opt/epc4_0` under Solaris). You must have the `user\scripts\bin` directory as your current directory in order to run these scripts.

There are three inventory export scripts you can use:

- **`inv.bat`** *`<options>`* (Windows), or **`inv.sh`** *`<options>`* (Solaris) exports device information from the EPICenter database.

  To export device information to file `devinfo.csv` under Windows, enter the command:

  ```
  cd epc4_0\user\scripts\bin
  inv.bat -o devinfo.csv
  ```

  Under Solaris, enter the command:

  ```
  cd epc4_0/user/scripts/bin
  inv.sh -o devinfo.csv
  ```

- **`slots.bat`** *`<options>`* (Windows), or **`slots.sh`** *`<options>`* (Solaris) exports slot information from the EPICenter database.

  To run the command as user “user1,” and export slot information to file `slotinfo.csv` under Windows, enter the command:

  ```
  cd epc4_0\user\scripts\bin
  slots.bat -u user1 -o slotinfo.csv
  ```

  Under Solaris, enter the command:

  ```
  cd epc4_0/user/scripts/bin
  slots.sh -u user1 -o slotinfo.csv
  ```

- **msinv.bat** *<options>* (Windows), or **msinv.sh** *<options>* (Solaris) exports device information from the databases of multiple EPICenter servers. You must provide a list of EPICenter servers in a file.

  To export device information from the databases of EPICenter servers listed in file servers.txt (in the `scripts\config` directory) to file `alldevinfo.csv`, without prompting for a password under Windows, enter the command:

  ```
  cd epc4_0\user\scripts\bin
  msinv.bat -d -o alldevinfo.csv -s ..\config\servers.txt
  ```

  Under Solaris, enter the command:

  ```
  cd epc4_0/user/scripts/bin
  msinv.sh -d -o alldevinfo.csv -s ../config/servers.txt
  ```

  The server file defaults to the file `servers.txt` in the `user\scripts\config` directory. You can edit this file to include the names or IP addresses of the servers where the EPICenter server and databases are running. You can also provide your own file. The format of the file entries are:

  ```
  <servername or IP>:<port>
  ```

  For example:

  ```
  iceberg:80
  10.2.3.4:81
  ```

Table 11 specifies the options you can use with these commands:

Table 11: Inventory script command options

Option	Value	Default
-d	None If present, the command will use the default EPICenter password (“”) and will not prompt for a password.	If -p option not present, prompts for password
-n	EPICenter server port number	80
-o	Name of file to receive output. If you don’t specify a path, the file will be placed in the current directory (user\scripts\bin).	output written to console (stdout)
-p	EPICenter user password	“”
-u	EPICenter user name	admin

Table 11: Inventory script command options (continued)

Option	Value	Default
-s	For the **msinv.bat** and **msinv.sh** commands only: Name (and path) of file containing EPICenter server list	<*epc_install_dir*>\user\scripts\config\servers.txt under Windows, <*epc_install_dir*>/user/scripts/config/servrs.txt under Solaris

NOTE

The inv.bat, inv.sh, slot.bat, and slot.sh scripts retrieve information only from an EPICenter server that runs on the same machine as the scripts.

Inventory Export Examples

The following examples illustrate the usage of these commands.

- To export slot information to the file `slotinventory.csv` from the EPICenter database whose login is “admin123” and password is “sesame” under Windows, enter the following command:

  ```
  slots.bat -u admin123 -p sesame -o slotinventory.csv
  ```

  Under Solaris, enter the following command:

  ```
  slots.sh -u admin123 -p sesame -o slotinventory.csv
  ```

  This will not prompt for a password, and will output the results to the specified file.

- To export device information to the console, after prompting for a password under Windows, enter the following command:

  ```
  inv.bat
  ```

  Under Solaris, enter the following command:

  ```
  inv.sh
  ```

  This command will login with the default user name (admin), will prompt for the password, and will output the results to the console.

- To export device information to the console, using the default login and default password under Windows, enter the following command:

  ```
  inv.bat -d -o output.csv
  ```

  Under Solaris, enter the following command:

  ```
  inv.sh -d -o output.csv
  ```

This command will login using the default user name (admin) and the default password, and will output the results to the file `output.csv` in the user\scripts\bin directory.

- To export device information from the EPICenter databases on the multiple servers under Windows, edit the `servers.txt` file in the `user\scripts\config` directory, then enter the following command:

  ```
  msinv.bat -d -o devices.csv -s serverlist2.txt
  ```

  Under Solaris, edit the `servers.txt` file in the `user/scripts/config` directory, then enter the following command:

  ```
  msinv.sh -d -o devices.csv -s serverlist2.txt
  ```

  This command logs in to each of the EPICenter servers specified in the file `serverlist2.txt`, using the default login and password, and output the device information from these servers to the file `devices.csv`. The devices.scv file is created in the user\scripts\bin directory.

The SNMPCLI Utility

The SNMPCLI utility provides three basic SNMP query capabilities, that can be used to access the values of MIB objects kept by the SNMP agents of the devices you are managing. Accessing these variable may be helpful in diagnosing problems with a device or its configuration, if its behavior as seen through the EPICenter software is not as expected.

Use of this utility assumes you are familiar with SNMP MIBs, and can determine the OID the variable you want to retrieve, as well as the meaning of the results that are returned.

Using the SNMPCLI Utility

The three scripts are located in the EPICenter `user\scripts\bin` directory under the EPICenter install directory (by default `\epc4_0` under Windows, or `/opt/epc4_0` under Solaris). You must have the `user\scripts\bin` directory as your current directory in order to run these scripts.

The SNMPCLI utility supports the following three commands:

- **`snmpcli snmpget`** *`<options>`* returns the value of a specified OID.

For example, to get the value of the object (the variable `extremePrimaryPowerOperational` in the Extreme Networks MIB) whose OID is `.1.3.6.1.4.1.1916.1.1.1.10.0` on the device at 10.205.0.99, enter the following command:

```
snmpcli snmpget -a 10.205.0.99 -o .1.3.6.1.4.1.1916.1.1.1.10.0
```

- **`snmpcli snmpnext`** *<options>* returns the value of the next OID (subsequent to the OID you specify) in the MIB tree.

  For example, you can use this command to get the value of the object whose OID is `.1.3.6.1.4.1.1916.1.1.1.10.0` on the device at 10.205.0.99, by entering the following command:

  ```
  snmpcli snmpnext -a 10.205.0.99 -o .1.3.6.1.4.1.1916.1.1.1.10
  ```

- **`snmpcli snmpwalk`** *<options>* returns the value of the entries in a table.

  For example, to get the value of the entries in the `extremeFanStatusTable,` which is OID `.1.3.6.1.4.1.1916.1.1.1.9` on the device at 10.205.0.99, enter the following command:

  ```
  snmpcli snmpget -a 10.205.0.99 -o .1.3.6.1.4.1.1916.1.1.1.9
  ```

Table 12 specifies the options you can use with these commands:

Table 12: SnmpCli command options

Option	Value	Default
-a	Device IP address. This option can be specified more than once. This option is required.	None
-o	Object Identifier (OID) of the MIB object whose value you want to retrieve, or that is the starting point for the values you want. This option is required.	None
-r	Read community string	public
-t	Timeout value for SNMP request, in milliseconds.	500 ms

SNMPCLI Examples

The following examples illustrate the usage of these commands.

- To retrieve the values of the `extremePrimaryPowerOperational` and `extremeRedundantPowerStatus` variables for the Extreme Networks device with IP address 10.205.0 99, with read community string “purple” and a timeout of 1000 ms, enter the following command:

```
SnmpCli snmpget -a 10.205.0.99 -r purple -t 1000 -o
.1.3.6.1.4.1.1916.1.1.1.10.0 -o .1.3.6.1.4.1.1916.1.1.1.11.0
```

This returns the following:

```
IP Address: 10.205.0.99
Read community string: purple
Timeout(ms): 1000
OUTPUT:
OID: .1.3.6.1.4.1.1916.1.1.1.10.0 ;  VALUE: 1
OID: .1.3.6.1.4.1.1916.1.1.1.11.0 ;  VALUE: 1
```

- To retrieve the values from the `extremeFanStatusTable` variables for the Extreme Networks device with IP address 10.205.0.99, with the default read community string (public) and a default timeout, enter the following command:

```
SnmpCli snmpwalk -a 10.205.0.99 -o .1.3.6.1.4.1.1916.1.1.1.9
```

This returns the following:

```
IP Address: 10.205.0.99
Read community string: public
Timeout(ms): 500
OUTPUT:
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.1.1 ;  VALUE: 1
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.1.2 ;  VALUE: 2
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.1.3 ;  VALUE: 3
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.2.1 ;  VALUE: 2
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.2.2 ;  VALUE: 2
OID: .1.3.6.1.4.1.1916.1.1.1.9.1.2.3 ;  VALUE: 2
```

Port Configuration Utility

The Port Configuration utility is a stand-alone utility that runs on the Windows NT 4.0 or Windows 2000 platform.

The EPICenter Port Configuration utility provides a way for an EPICenter administrator to change some of EPICenter’s logical TCP/IP port numbers, in the event that there are conflicts between these port numbers and those used by other software products running on the same system. Because these port conflicts may prevent EPICenter from running, the port configuration capability needs to be accessible outside of EPICenter.

The Port Configuration application runs on the same system as the EPICenter Database Server and Web Server.

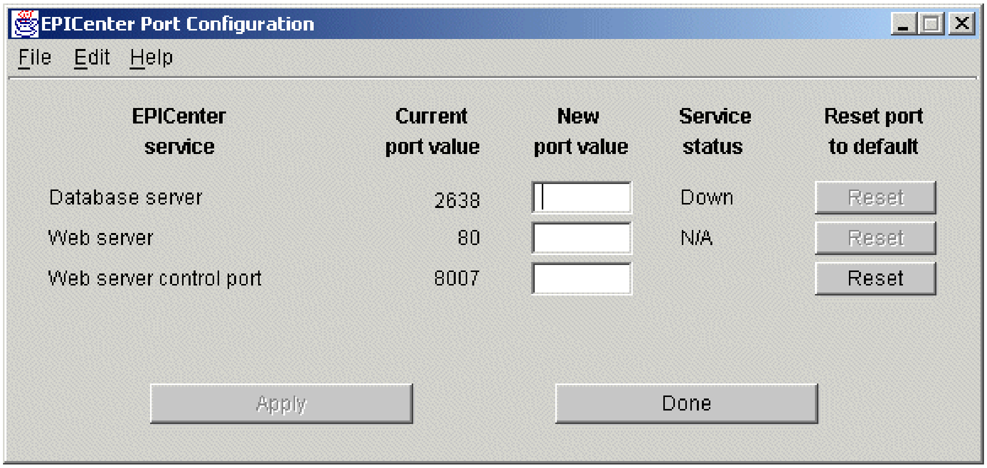
You can run the utility from the **Programs** menu. You do not need to shut down the EPICenter services (Web Server or database) in order to change the port configurations. However, the new configurations will not take effect until you restart the affected server(s).

To run the Port Configuration utility, do the following:

1 Run the program from the Windows **Start** menu:
Select **Programs**, then **EPICenter 4.0**, then **Port Configuration**.

The EPICenter Port Configuration window appears, as shown in Figure 171.

Figure 171: EPICenter Port Configuration Utility



EPICenter service	Current port value	New port value	Service status	Reset port to default
Database server	2638		Down	Reset
Web server	80		N/A	Reset
Web server control port	8007			Reset

2 Type in new port values for the ports you want to change.

You can use the standard Windows Cut, Copy, and Paste functions from the Edit menu, or use the keyboard shortcuts ([Ctrl]+X, [Ctrl]+C, and [Ctrl]+V) to move values among the fields.

The **Apply** button is enabled when there is text in some edit field.

3 Click **Apply** to record the settings you have entered.

Click the **Reset** button for a specific port to reset that port to its default value. The **Reset** button for a field is enabled when the corresponding values in the “Current port value” field is something other than the default.

Click **Done** when you have finished making and applying changes. Any new text in the edit fields, that has not been applied, is discarded.

The utility checks to see if it can open the requested new port number(s). If the new port number is in use, the utility reports this fact and asks if you want to keep the new value anyway.

4 To have the new port settings take effect, restart the server(s) whose ports you have changed.

Changes do not take effect until the corresponding service is stopped and restarted.

However, after applying the new values, the entries under “Current port value” are updated. This information can be misleading if you have not yet restarted the corresponding services. In particular, if you dismiss and re-run the Port Configuration utility before you restart the affected services, the “Current port value” fields will reflect the changed values which are not yet in effect.

If the servers are running as system services, you can restart your system, or stop and restart the servers using the Services utility from the Windows Control Panel.

If the EPICenter servers are not running as NT system services, you must manually stop and restart the servers.

The AlarmMgr Utility

The Alarm Manager utility (AlarmMgr) enables you to access EPICenter alarm information and output the results to a command window or to a file. This command provides a command-line version of part of the functionality available in the EPICenter Alarm Manager applet.

Using the AlarmMgr Command

The AlarmMgr utility is located in the EPICenter `bin` directory, `<`*`EPICenter_install_dir`*`>/bin`. By default this is `epc4_0\bin` in Windows, or `/opt/epc4_0/bin` in a UNIX environment.

This command includes options for specifying EPICenter server access information and alarm filtering parameters.

The syntax of the command is as follows:

```
AlarmMgr -user <EPICenter username> <options>
```

The EPICenter user name is required. All other parameters are optional.

The basic command displays information about the last 300 alarms in the EPICenter database. By using filtering options, you can display information about selected alarms. You can specify a time period of interest as well as characteristics of the alarms you want to include.

You can select alarms based on criteria such as the alarm name, severity, category, source (the IP address or IP address and port that generated the alarm) and whether the alarm has been acknowledged. You can combine many of these criteria so that only alarms that meet all your criteria will be included in the results. For example, you may want to display only critical alarms from a specific device, or all alarms in a specific category that are not acknowledged.

Table 13 specifies the options you can use with this command:

Table 13: AlarmMgr command options

Option	**Value**		**Default**
-user <*username*>	EPICenter user name. This option is required.		None
-password <*password*>	EPICenter user password. If the password is blank, do not include this argument.		No password
-host <*hostname* | *IP address*>	EPICenter server hostname or IP address		localhost
-port <*port*>	EPICenter server port number		80
-h <*N*>	Display alarms that occurred within the last N hours	These options are mutually exclusive and may not be combined	Last 300 alarms
-d <*N*>	Display alarms that occurred N days ago		
-y	Display alarms that occurred yesterday		

Table 13: AlarmMgr command options

Option	Value		Default
-c <*category*>	Display alarms that occur for a specific category. Category specification is case insensitive. Must be quoted if category name includes spaces or other delimiters.	When these options are combined, an alarm must meet all criteria to be included in the results. Each of these options may be specified only once.	All categories
-s <*severity*>	Display alarms that occur for a specific severity. Severity specification is case insensitive.		All severity levels
-dip <*IP address*>	Display alarms that occur for a specific device as specified by IP address.		All devices
-p <*port*>	Display alarms that occur for a specific port on the device specified with the -dip option.		All ports
-an <*alarm name*>	Display alarms that occur for a specific alarm. Alarm name specification is case insensitive. Must be quoted if alarm name includes spaces or other delimiters.		All alarms
-a	Display all acknowledged alarms.		All alarms
-u	Display all unacknowledged alarms.		
-f <*file specification*>	Name of file to receive output. If you do not specify a path, the file is placed in the current directory. If the file already exists, it is overwritten.		Command window (stdout).
-help	Displays syntax for this command		None

- You can specify only one EPICenter server (database) in a command. If you want to display alarms from multiple EPICenter databases, you must use a separate command for each server.
- The options for specifying the relevant time period (`-h`, `-d`, and `-y`) are mutually exclusive and cannot be combined.
- You can specify filter options such as an alarm name or device (IP address) only once per command. If you want to display information for a several values of a filter

option, such as several alarm names, devices, severity levels, etc., you must execute an AlarmMgr command for each value of the filter option. For example, to display alarms for two different devices, you must execute two AlarmMgr commands.

- If you specify multiple filter options, they are combined in the manner of a logical AND. This means that an alarm entry must meet all the specified criteria to be included in the command results.
- The options for specifying the relevant time period are mutually exclusive and cannot be combined.
- You should not combine the `-a` and `-u` options (for acknowledged and unacknowledged alarms). This combination indicates you want to display alarms that are both acknowledged and unacknowledged. However, there are no alarms that meet this criteria since an alarm cannot be both. To display both alarms that are acknowledged and alarms that are unacknowledged, do not specify either option.

AlarmMgr Output

The output from the AlarmMgr command is displayed as tab-delimited ascii text, one line per alarm. Each line contains the following information:

- **ID**: Event ID of the alarm (assigned by the EPICenter server when the alarm is received)
- **Name**: Name of the alarm
- **Category**: Category that the alarm is classified under
- **Severity**: Severity level of the alarm
- **Source**: IP address of the device that generated the alarm
- **Time**: time the alarm occurred, reported as Greenwich Mean Time
- **Message**: Message associated with the alarm
- **Acked**: Whether the alarm has been acknowledged (true or false)

AlarmMgr Examples

The following examples illustrate the usage of these commands.

- To display the last 300 alarm log entries in the EPICenter database running on the local server, as user admin with the default password, enter the following command:

  ```
  AlarmMgr -user admin
  ```

- To display the last 300 alarm log entries in the EPICenter database running on server `snoopy` on port 81, with EPICenter login "master" and password "king," enter the following command:

  ```
  AlarmMgr -host snoopy -port 81 -user master -password king
  ```

- To display all alarm log entries for the alarm named FanFailed in the local EPICenter database that occurred yesterday and are unacknowledged, enter the following command:

  ```
  AlarmMgr -user admin -y -u -an "Fan Failed"
  ```

- To find all alarm log entries that were generated from port 12 on device 10.2.3.4, and place the results in the file *device1.txt* enter the following command:

  ```
  AlarmMgr -user admin -dip 10.2.3.4 -p 12 -f device1.txt
  ```

The FindAddr Utility

Using the Find Address command (FindAddr) you can specify a Media Access Control (MAC) or Internet Protocol (IP) network address, and a set of network devices (or ports on a device) to query for those addresses. The command returns a list of the devices and ports associated with those addresses, and output the results to the command window or to a file.

This command provides a command-line version of the functionality available in the EPICenter IP/MAC Address Finder applet.

Using the FindAddr Command

The FindAddr utility is located in the EPICenter `bin` directory, `<`*`EPICenter_install_dir`*`>/bin`. By default this is `epc4_0\bin` in Windows, or `/opt/epc4_0/bin` in a UNIX environment.

This command includes options for specifying EPICenter server access information, the address to be located, and a search domain (an individual device and ports, or a device or port group).

The syntax of the command is as follows:

```
FindAddr -user <EPICenter username> <address options> <search domain
options> <other options>
```

The EPICenter user name is required. You must also include at least one search address specification, and a search domain specification.

The FindAddr command returns a list of MAC and IP addresses and the devices and ports associated with those addresses.

Table 14 specifies the options you can use with this command:

Table 14: FindAddr command options

<table>
<tr><th>Option</th><th colspan="2">Value</th><th>Default</th></tr>
<tr><td>-user &lt;*username*&gt;</td><td colspan="2">EPICenter user name. This option is required.</td><td>None</td></tr>
<tr><td>-password <*password*&gt;</td><td colspan="2">EPICenter user password. If the password is blank, do not include this argument.</td><td>No password</td></tr>
<tr><td>-host &lt;*hostname* | *IP address*&gt;</td><td colspan="2">EPICenter server hostname or IP address.</td><td>localhost</td></tr>
<tr><td>-port &lt;*port*&gt;</td><td colspan="2">EPICenter server port number.
Do not specify this after the -dip option or it will be taken as a search domain specification.</td><td>80</td></tr>
<tr><td>-f &lt;*file specification*&gt;</td><td colspan="2">Name of file to receive output. If you do not specify a path, the file is placed in the current directory. If the file already exists, it is overwritten.</td><td>Command window (stdout)</td></tr>
<tr><td>-help</td><td colspan="2">Displays syntax for this command.</td><td>None</td></tr>
<tr><td colspan="4">Search address options:</td></tr>
<tr><td>-all</td><td>Display all addresses located in the search domain.</td><td rowspan="3">At least one of these options is required.
The -mac and -ip options may be combined.</td><td rowspan="3">None</td></tr>
<tr><td>-mac &lt;*mac_address*&gt;</td><td>Locate the specified MAC address. The address must be specified as six two-digit hexadecimal values separated by colons (xx:xx:xx:xx:xx:xx). You can specify a wildcard address by specifying asterisks instead of the last three values (for example, 21:14:18:*:*:*).
This option may be repeated.</td></tr>
<tr><td>-ip &lt;*IP address*&gt;</td><td>Locate the specified IP address.
This option may be repeated.</td></tr>
</table>

Table 14: FindAddr command options

Option	Value		Default
Search domain options:			
-dg <*device group*>	Defines the search domain to include the specified device group.	At least one of -dip, -dg, or -pg must be provided. These options may be repeated and combined.	None
-pg <*port group*>	Defines the search domain to include the specified port group.		
-dip <*IP address*>	Defines the search domain to include the device specified by the IP address.		
-port <*port*>	Defines the search domain to include one or more ports on the device specified by the -dip option. Multiple ports can be specified separated by commas. Slot and port are specified as slot:port. For example, 1:2,2:3 **Important:** If used, this option must immediately follow the -dip option to which it applies.		All ports on the device

- You can specify only one EPICenter server (database) in a command. If you want to search devices from the inventory databases of multiple EPICenter servers, you must use a separate command for each server.
- You can specify multiple IP and MAC addresses as search items by repeating the `-ip` or `-mac` options.
  - — For MAC addresses, you can specify a wildcard for the last three values in the address (such as 10:11:12:*:*:*).
  - — Wildcards are not supported for IP addresses. To search for multiple IP addresses, you can use the `-all` option, or include multiple `-ip` options.
  - — You can specify both an IP address and a MAC address as search addresses in one command.
- You can specify each search domain option multiple times.
  - — Wildcards are not supported for device IP addresses. To include multiple devices in the search domain, you can specify a device group that contains the devices, or specify multiple -dip options.
  - — To restrict the search domain to one or more ports on a device, *specify the* `-port` *option immediately after the* `-dip` *option*. If you place it anywhere else in the command, it will be taken as the server port specification.

— You can specify individual devices, device groups, and port groups in a single command.

FindAddr Output

The output from the FindAddr command is displayed as tab-delimited text, one line per address. Each line contains the following information:

- Both the MAC address and the corresponding IP address.
- The switch and port to which the address is connected.
- The user (name) currently logged in at that address, if applicable.

The output also tells you the total number of addresses found, and lists any switches in the search domain that were unreachable.

FindAddr Examples

The following examples illustrate the usage of these commands.

- To display all addresses that can be accessed through devices in the Default device group, from the local EPICenter database (with default user, password and port), enter the following command:

  ```
  FindAddr -user admin -all -dg Default
  ```

- To display all addresses that can be accessed through device 10.20.30.40, ports 5,6,7,8, in the EPICenter database running on server `snoopy` on port 81, with EPICenter login “master” and password “king,” enter the following command:

  ```
  FindAddr -host snoopy -port 81 -user master -password king -dip
  10.20.30.40 -port 5,6,7,8 -all
  ```

  Note that the second -port option immediately follows the -dip option. It must be placed in this position to specify ports as the search domain.

- To search for MAC addresses beginning with 00-01-03, and write the results to the file “info.txt,” with the Default device group as the search domain, enter the following command:

  ```
  FindAddr -user admin -mac 00:01:03:*:*:* -dg Default -f info.txt
  ```

  If the file does not already exist, it will be created, by default in the EPICenter `bin` directory.

The TransferMgr Utility

The Transfer Manager utility (TransferMgr) allows you to upload configuration information from a device to a file, and to download configuration information and ExtremeWare software images to Extreme devices.

This command provides a command-line version of some of the functionality available in the EPICenter Configuration Manager applet.

Using the TransferMgr Command

The TransferMgr utility is located in the EPICenter `bin` directory, `<`*`EPICenter_install_dir`*`>/bin`. By default this is `epc4_0\bin` in Windows, or `/opt/epc4_0/bin` in a UNIX environment.

This command includes options for specifying EPICenter server access information, the transfer function to be performed (upload, download, incremental download, or ExtremeWare image download), the device on which to perform the operation on, and the file location on the server.

The syntax of the command is as follows:

```
TransferMgr -user <EPICenter username> -upload -dip <device address>
<upload location options>
```

```
TransferMgr -user <EPICenter username> -download <filename>
-dip <device address>
```

```
TransferMgr -user <EPICenter username> -incremental <filename>
-dip <device address>
```

```
TransferMgr -user <EPICenter username> -software <filename>
-dip <device address> {primary | secondary}
```

The EPICenter user name, one of the four transfer options, and a device IP address are required. Other options are optional.

Table 15 specifies the options you can use with this command:

Table 15: TransferMgr command options

Option	Value	Default
-user <*username*>	EPICenter user name. This option is required.	None
-password <*password*>	EPICenter user password. If the password is blank, do not include this argument.	No password
-host <*hostname* | *IP address*>	EPICenter server hostname or IP address	localhost
-port <*port*>	EPICenter server port number	80
-help	Displays syntax for this command	None
Upload configuration:		
-upload	Upload configuration from the device specified with the -dip option.	None
-dip <*IP address*>	IP address of device from which configuration should be uploaded. This option is required, and may be repeated.	None
-ft <*string*>	Text string to be appended to device IP address to create a file name (in the format xx_xx_xx_xx.string).	<*ipaddress*>.txt (xx_xx_xx_xx.txt)
-fl <*directory*>	Directory or path below the configs directory where the upload file should be placed. <*tftp_root*> is the location of your TFTP server. By default, <*tftp_root*> is <*EPICenter_install_dir*>*\user\tftp*.	<*tftp_root*>\configs
-a	Place upload file into the archive directory (<*tftp_root*>*\configs*\<*year*>\<*month*>\<*day*> \ <*ipaddress*>_<*time*>.txt This option may not be combined with the -fl and -ft options.	<*tftp_root*>\configs\<*ipaddress*>.txt

Table 15: TransferMgr command options

Option	Value	Default
Download configuration:		
-download <*filename* | *path and filename*>	Download configuration from the specified file to the device specified with the -dip option. The specified file must be located in or below the <*tftp_root*>\configs directory. By default, <*tftp_root*> is <*EPICenter_install_dir*>*\user\tftp*.	None
-dip <*IP address*>	IP address of device to which configuration should be downloaded. This option is required. It may *not* be repeated.	None
Download Incremental configuration:		
-incremental <*filename*>	Download an incremental configuration from the specified file to the device specified with the -dip option. The specified file must be located in the <*tftp_root*>\baselines directory. By default, <*tftp_root*> is <*EPICenter_install_dir*>*\user\tftp*.	None
-dip <*IP address*>	IP address of device to which configuration should be downloaded. This option is required. It may *not* be repeated.	None
Download ExtremeWare software image:		
-software <*filename* | *path and filename*>	Download a software image from the specified file to the device specified with the -dip option. The specified file must be located in the <*tftp_root*>\images directory. By default, <*tftp_root*> is <*EPICenter_install_dir*>*\user\tftp*. **Important:** Make sure the software version is compatible with the switch to which you are downloading.	None
-dip <*IP address*>	IP address of device to which the image should be downloaded. This option is required. It may *not* be repeated.	None
-primary	Download to the primary image location.	Current location
-secondary	Download to the secondary image location.	

- You can specify only one EPICenter server (database) in a command. If you want to upload or download to or from devices managed by multiple EPICenter servers, you must use a separate command for each server.
- Configuration and image files are all stored in subdirectories of the EPICenter TFTP root directory, which is by default `<`*`EPICenter_install_dir`*`>\user\tftp`. You can change the location of the TFTP root directory by using the **Server** function of the EPICenter Configuration Manager applet.
- Standard ExtremeWare software images as shipped by Extreme Networks are provided in the directory `<`*`EPICenter_install_dir`*`>\user\tftp\images` directory (by default `epc4_0\user\tftp\images` in the Windows operating environment, or `/opt/epc4_0/user/tftp/images` on a Solaris system).

NOTE

Make sure the software version you download is compatible with the switch. If you download an incompatible version, the switch may not function properly.

- For uploading, you can specify multiple devices in one command. For the download options (`-download`, `-incremental`, and `-software`) you can specify only one device per command. If you want to download to multiple devices, you must execute multiple TransferMgr commands.

TransferMgr Examples

The following examples illustrate the usage of these commands.

- To upload configuration information from device 10.20.30.40, enter the following command:

  ```
  TransferMgr -user admin -upload -dip 10.20.30.40
  ```

  This will place the device configuration information in the file `10_20_30_40.txt` in the `configs` directory under the TFTP root directory (by default `epc4_0/user/tftp/configs`).
- To upload and archive configuration information from device 10.20.30.40 managed by the EPICenter server running on host `snoopy` on port 81, with EPICenter login “master” and password “king,” enter the following command:

  ```
  TransferMgr -host snoopy -port 81 -user master -password king -upload -a
  -dip 10.20.30.40
  ```

  Assuming the default location for the TFTP root directory, and assuming that this command was executed on July 24, 2001 at 10:02 AM, this will place the device configuration information in the file `epc4_0\user\tftp\configs\2001\07\24\10_20_30_40_1002.txt`.

- To download version 6.1.8 b11 of the ExtremeWare to an *i*-series device, enter the following command:

  ```
  TransferMgr -user admin -software v618b11.xtr -dip 10.20.30.40
  ```

The VlanMgr Utility

The VLAN Manager utility (VlanMgr) allows you to create and delete VLANs. These commands configure the VLANs on the specified switches as well as adding the VLAN information to the EPICenter database.

Using the VlanMgr Command

The VlanMgr utility is located in the EPICenter `bin` directory, `<`*`EPICenter_install_dir`*`>/bin`. By default this is `epc4_0\bin` in Windows, or `/opt/epc4_0/bin` in a UNIX environment.

This command includes options for specifying EPICenter server access information, the operation to be performed (create, modify or delete), the name of the VLAN, and the devices in the VLAN with their configuration options.

The syntax of the command is as follows:

```
VlanMgr -user <EPICenter username> -create <VLAN name> -dip
<IP address> <other options> {-dip <IP address> <other options>} ...
```

```
VlanMgr -user <EPICenter username> -modify <VLAN name> -dip
<IP address> <other options> {-dip <IP address> <other options>} ...
```

```
VlanMgr -user <EPICenter username> -delete <VLAN name>
```

The EPICenter user name and one of the main options (`-create`, `-modify`, or `-delete`) are required. The `-dip` option is required for a create or modify command. Other options are optional.

Table 16 specifies the options you can use with this command:

Table 16: VlanMgr command options

Option	**Value**		**Default**
-user <*username*>	EPICenter user name. This option is required.		None
-password <*password*>	EPICenter user password. If the password is blank, do not include this argument.		No password
-host <*hostname* | *IP address*>	EPICenter server hostname or IP address		localhost
-port <*port*>	EPICenter server port number		80
-help	Displays syntax for this command		None
Create a new VLAN:			
-create <*VLAN name*>	Create a new VLAN of the specified name.		None
-dip <*IP address*>	IP address of device to add to VLAN. This option may be repeated.		None
-port <*ports*>	Ports to be added to VLAN as untagged ports on the device specified by the preceding -dip option.	These options must immediately follow the -dip option to which they apply. Each option may be specified once per -dip option.	No untagged ports
-tagport <*ports*>	Ports to be added to the VLAN as tagged ports on the device specified by the preceding -dip option.		No tagged ports
-ipf	Enable IP forwarding for this VLAN on the specified device.		IP forwarding disabled
-ip <*IP address*>/<*subnet mask*>	Set an IP address and submask for this VLAN on the specified device. Format is xx.xx.xx.xx/nn		No ip address
-tag <*number*>	Set a tag value for the VLAN.		Untagged
-protocol <*protocol name*>	Set protocol filter.		ANY

Table 16: VlanMgr command options

Option	Value		Default
Modify VLAN configuration:			
-modify <*VLAN name*>	Reset the configuration of the specified VLAN to the options specified in this command.		None
-dip <*IP address*>	IP address of device to be included in the VLAN. This option may be repeated.		None
-port <*ports*>	Ports to be included in the VLAN as untagged ports on the device specified by the preceding -dip option. If this option is not included, any untagged ports configured on this device will be removed from the VLAN.	These options must immediately follow the -dip option to which they apply. Each option may be specified once per -dip option.	No untagged ports
-tagport <*ports*>	Ports to be included in the VLAN as tagged ports on the device specified by the preceding -dip option. If this option is not included, any tagged ports configured on this device will be removed from the VLAN.		No tagged ports
-ipf	Enable IP forwarding for this VLAN on the specified device. If this option is not included, IP forwarding will be disabled on this device.		IP forwarding disabled
-ip <*IP address*>/<*subnet mask*>	Set an IP address and submask for this VLAN on the specified device. Format is xx.xx.xx.xx/nn. If this option is not included, the VLAN will be reconfigured without a VLAN IP address.		No IP address
-tag <*number*>	Set a tag value for the VLAN. This can be a value between 2 and 4095. If this option is not included, the VLAN will be reset to an untagged VLAN.		Untagged
-protocol <*protocol name*>	Set protocol filter. If this option is not included, the protocol will be reset to ANY.		ANY

Table 16: VlanMgr command options

Option	Value	Default
Delete VLAN:		
-delete <*VLAN name*>	Delete the specified VLAN from all switches on which it is configured.	None

- You can specify only one EPICenter server (database) in a command. If you want to create, modify or delete VLANs for devices managed by multiple EPICenter servers, you must use a separate command for each server.
- To create a VLAN on multiple switches, use multiple `-dip` options in a single command.
- The `-modify` option effectively recreates a VLAN with only the options specified in the command. Any options not specified are reset to their defaults, and only devices specified with a `-dip` option in the modify command will be included in the VLAN.

WARNING!

Only the devices that are explicitly included in a VlanMgr modify command will be included in the modified VLAN. Any devices in the original VLAN that are not specified in the modify command will be removed from the VLAN as a result of the modify command. Any options that are not explicitly specified will be reset to their defaults.

For example, suppose you have untagged VLAN *Test1* that includes ports 2, 3,and 4 on device 10.20.30.40. To add ports 1 and 2 on device 10.20.30.50 to the VLAN, you can use the `-modify` command, but the command must specify both `-dip 10.20.30.50 -port 1,2` and `-dip 10.20.30.40 -port 2,3,4`. If you do not include device 10.20.30.40 in the command, that device and its ports will be removed from the VLAN.

VlanMgr Output

The VlanMgr command displays output indicating the progress of the command as it configures the VLAN.

VlanMgr Examples

The following examples illustrate the usage of these commands.

- To create untagged VLAN test1 consisting of untagged ports 2-5, on the switch with IP address 10.20.30.01, and add it to the EPICenter database running the local server with the default administrator name and password, enter the following command:

  ```
  VlanMgr -user admin -create test1 -dip 10.20.30.01 -port 2,3,4,5
  ```

  This VLAN will be created with no 802.1Q tag, protocol ANY, no IP address assigned, and IP forwarding disabled.

- To create a tagged VLAN test2 with tag 53, protocol IP, on two switches with tagged ports, IP forwarding enabled, and an IP address for the VLAN on each switch, enter the following command:

  ```
  VlanMgr -user admin -create test2 -dip 10.201.20.35 -tagport 10,11 -ipf
  -ip 10.201.20.100/24 -dip 10.201.20.36 -tagport 11,12,13,14,15 -ipf -ip
  10.201.20.102/24 -tag 53 -protocol ip
  ```

  This creates the VLAN on switch 10.205.0.35 with member ports 10 and 11, VLAN IP address 10.201.20.100 and VLAN mask 255.255.255.0, and on switch 10.205.0.36 with member ports 11, 12, 13, 14 and 15, VLAN IP address 10.201.20.102 and mask 255.255.255.0.

- To add port 12 on switch 10.201.20.35 to VLAN test2, leaving the configuration otherwise unchanged, enter the following command:

  ```
  VlanMgr -user admin -modify test2 -dip 10.201.20.35 -tagport 10,11,12
  -ipf -ip 10.201.20.100/24 -dip 10.201.20.36 -tagport 11,12,13,14,15 -ipf
  -ip 10.201.20.102/24 -tag 53 -protocol ip
  ```

  Note that this includes all the specifications of the original create command, with the addition of port 12 to the first -tagport option. This is necessary to preserve the VLAN configuration.

  Specifying only the changes you want to make will not have the desired results. The command `VlanMgr -user admin -modify test2 -dip 10.201.20.35 -tagport 12` will result in an error because no VLAN tag is specified, and it is illegal to add a tagged port to an untagged VLAN.

  The command `VlanMgr -user admin -modify test2 -dip 10.201.20.35 -tagport 12 -tag 53` (adding just the tag specification) will successfully add port 9 to the VLAN as a tagged port, but will remove all the other ports on that switch, change the protocol to ANY, disable IP forwarding, and will remove switch 10.205.0.36 from the VLAN.

- To remove ports 14 and 15 on switch 10.201.20.36 from VLAN test2, enter the following command:

```
VlanMgr -user admin -modify test2 -dip 10.201.20.35 -tagport 10,11 -ipf
-ip 10.201.20.100/24 -dip 10.201.20.36 -tagport 11,12,13 -ipf -ip
10.201.20.102/24 -tag 53 -protocol ip
```

- To remove switch 10.201.20.36 from VLAN test2, enter the following command:

  ```
  VlanMgr -user admin -modify test2 -dip 10.201.20.35 -tagport 10,11 -ipf
  -ip 10.201.20.100/24 -tag 53 -protocol ip
  ```

  This command recreates the VLAN only on switch 10.201.20.35.

The ImportResources Utility

The ImportResources utility allows you to import user and host resource definitions, and groups containing those resources, from a source external to the EPICenter system. You can import from an NT Domain server, an NIS server, or an LDAP directory. You can also import host and user resource definitions from a tab-delimited text file.

This utility performs the same function as the Import feature in the Grouping Manager. See “Importing Resources” in Chapter 8 for details on this feature.

Using the ImportResources Command

The ImportResources utility is located in the EPICenter `bin` directory, `<`*`EPICenter_install_dir`*`>/bin`. By default this is `epc4_0\bin` in Windows, or `/opt/epc4_0/bin` in a UNIX environment.

This command includes options for specifying EPICenter server access information, the operation to be performed (create, modify or delete), the name of the VLAN, and the devices in the VLAN with their configuration options.

Importing from a File. To import data from a text file, you define the resources you want to import in a tab-delimited text file. See “Importing from a File” in Chapter 8 for details.

Importing from an LDAP Directory. Importing from an LDAP directory uses an import specification file that defines the following:

- The information you want to extract from the directory.
- How to map that data to groups, resources, and attributes in the EPICenter Grouping module.

The specification file must be named `LDAPConfig.txt`, and must reside in the EPICenter `user/import` directory. See “Importing from an LDAP Directory” in Chapter 8 for details.

Importing from an NT Domain Controller or NIS Server. Importing from an NT Domain Controller or NIS server is always done from the Domain Controller or NIS server that is serving the domain for the system running the EPICenter server. The type of system you are running will determine where the EPICenter server looks for the information. See “Importing from an NT Domain Controller or NIS Server” in Chapter 8 for details.

The syntax of the ImportResources command is as follows:

```
ImportResources -user <EPICenter username> -s <source name>
[-f <file name>| -ldap | -domain ]
```

The EPICenter user name and one of the import type options (`-f`, `-ldap`, or `-domain`) are required.

Table 17 specifies the options you can use with this command:

Table 17: ImportResources command options

Option	Value	Default
-user <*username*>	EPICenter user name. This option is required.	None
-password <*password*>	EPICenter user password. If the password is blank, do not include this argument.	No password
-host <*hostname* | *IP address*>	EPICenter server hostname or IP address	localhost
-port <*port*>	EPICenter server port number	80
-help	Displays syntax for this command	None
-s <*Source name*>	A name that will identify the source of the imported resources. This name is used to create a group under which all the resources imported in this operation are placed.	None
-f <*file name*>	The name of a tab-delimited text file that contains the data to be imported. See “Importing from a File” in Chapter 8 for details.	None

Table 17: ImportResources command options

Option	Value	Default
-ldap	Specifies that the information to be imported is from an LDAP directory. Requires a specification file named LDAPConfig.txt, that resides in the EPICenter user/import directory. See “Importing from an LDAP Directory” in Chapter 8 for details.	None
-domain	Specifies that the information to be imported is from an NT Domain Controller server or a Solaris NIS server. See “Importing from an NT Domain Controller or NIS Server” in Chapter 8 for details.	None

ImportResources Examples

The following examples illustrate the usage of these commands.

- To import resources from a tab-delimited file named `importdata.txt` into a source group named *ImportedUsers* in the EPICenter database running the local server with the default administrator name and password, enter the following command:

  ```
  ImportResources -user admin -s ImportedUsers -f importdata.txt
  ```

- To import resources from an LDAP directory from a LDAP server into a source group named *CorpUsers* in the EPICenter database running on host `snoopy` on port 81, with EPICenter login “master” and password “king,” enter the following command:

  ```
  ImportResources -host snoopy -port 81 -user master -password king
  -s CorpUsers -ldap
  ```

  This requires a configuration file named `LDAPConfig.txt` to be present in the EPICenter `user/import` directory.

- To import resources from an NT Domain server into a source group named *NewUsers* in the EPICenter database running the local server with the default administrator name and password, enter the following command:

  ```
  ImportResources -user admin -s NewUsers -domain
  ```

  This imports user data from the NT domain controller that is serving the domain where the EPICenter server resides.

C EPICenter Database Views

This appendix describes the most useful views in the EPICenter database for the purpose of creating Tcl scripts for use in Reports or as Alarm actions.

The variables in these views can be accessed using the methods defined in the file `extr.tcl` found in the `<epicenter_install_dir>/user/reports/tcl` directory, where `<epicenter_install_dir>` is the directory where the EPICenter software resides. They can also be used by external applications.

Device Report View

Table 18: EPICenter Database Device Report View

Extreme_Device_Report
Extreme_Device_Report is a database view that has one row for each device that is being managed by the EPICenter server. Some of the columns in the view contain Extreme specific information.   If a device is not an Extreme device, the Extreme specific columns contain empty values, such as an empty string.

Column Name	**Column Type**	**Description**
device_id	integer	A database unique id identifying a device. (This column can be used as the primary key.)
enterprise_oid	integer	The enterprise id, e.g. 1916 for extreme networks.

Column Name	Column Type	Description
system_oid	string	The partial system oid, e.g. “1916.2.7” for Summit 24.
device_group_name	string	The EPICenter device group name of the device group in which this device belongs to.
device_type_name	string	The type of the device, e.g. “BlackDiamond 6808”
ip	string	The IP address of the device, e.g. “10.205.0.1”.
mac	string	The MAC address of the device, e.g. “00:e0:2b:00:5e:00”.
sysName	string	The sysName of the device.
sysDescription	string	The sysDescription of the device.
sysLocation	string	The sysLocation of the device.
sysContact	string	The sysContact of the device.
read_write_community	string	The read/write SNMP community string.
read_only_community	string	The read-only SNMP community string.
clilogin	string	The CLI/Telnet login name of the device.
clipassword	string	The CLI/Telnet password for the above login.
status	string	The status of the device: “operational”, “marginal”, or “not responding”.
boot_time	string	The boot time of the device in GMT, e.g. “2000-11-13 21:05:28”.
hardware_id	string	The vendor specific hardware id of the device (not all device have a hardware id).
reserved	string	Reserved field, only used by a Cisco device to store Cisco specific information.
ip_forwarding	string	“true” if the device is a router, “false” otherwise.
current_software	string	The software version of the device.
The following columns are Extreme specific:		
primary_image	string	The primary software image version on the device, e.g. “4.1.9 (2)”.

Column Name	Column Type	Description
secondary_image	string	The secondary software image version on the device, e.g. “6.1.5b20”.
boot_rom	string	The version of the device’s boot rom, e.g. “7.2”.
image_after_reboot	string	The image to use after a switch reboot: “primary”, “secondary”, “neither”, or “unknown”.
board_number	string	The hardware board number.
other_numbers	string	Other hardware board numbers.
serial_numbers	string	The serial number of the device.
fan_status	string	The status of all fans on the device, e.g. “fan 1 OK; fan 2 OK; fan 3 OK”.
selected_configuration	string	The currently selected configuration on the device: “primary” or “secondary”.
power_status	string	The status of the primary power supply of the device: “fan/temperature alarm”, “not present”, “OK”, “failed”, or “unknown”.
rps_status	string	The status of the redundant power supply of the device: “fan/temperature alarm”, “not present”, “OK”, “failed”, or “unknown”.
voltage	string	The voltage of the power supplied to the device: “110 AC”, “220 AC”, “48 DC”, or “unknown”.
temperature	integer	The current operating temperature of the device in centigrade, e.g. 48.
default_gateway	string	The default gateway of the device, e.g. “10.205.0.1”.

Interface Report View

Table 19: EPICenter Database Interface Report View

Extreme_Interface_Report
Extreme_Interface_Report is a database view that has one row for each interface that is being managed by the EPICenter server. Some of the columns in the view contain Extreme specific information. For interface that is not on an Extreme device, the Extreme specific columns are empty, such as an empty string.

Column Name	**Column Type**	**Description**
device_id	integer	A database unique id identifying a device. (This column and the ifIndex column below can be used as the primary key.)
ifIndex	integer	The ifIndex of the interface. (This column and the device_id column above can be used as the primary key.)
ifType	integer	The ifType of the interface.
ifPhysicalAddress	string	The ifPhysicalAddress (MAC address) of the interface.
ifDescription	string	The ifDescription of the interface.
port_name	string	The ifAlias of the interface.
configured_media	string	The configured media information of the interface, e.g. “100BaseTX, full duplex”.
actual_media	string	The actual media information of the interface, e.g. “10BaseTX, half duplex”.
auto_negotiation	string	The status of auto negotiation of the interface: “true” or “false”.
admin_status	string	The admin status of the interface: “enabled” or “disabled”.
operation_status	string	The operational status of the interface: “active”, “ready”, or “failed”.
The following columns are Extreme specific:		

Column Name	Column Type	Description
IP_Address	string	The IP address of the device, to which this interface belongs to, e.g. “10.205.0.31”.
port_number	string	The Extreme specific representation for the interface, e.g. “1:3” or “12”.
redundant_media	string	Specify which media is active, for interfaces without any redundant media, the value is always “primary”. For interfaces with redundant media, the value can be either “primary or redundant”.
algorithm	string	When the interface is in load-sharing mode, specify the port sharing algorithm: “none”, “port based”, “address based”, “round robin”, or “unknown”.
member_port_number	string	When the interface is in port sharing mode, specify all members of the port sharing group, e.g. “1:1, 2:1, 2:2, 2:3”.
unsignedIPInt	integer	The IP address number of the device, to which the interface belongs. This is the same IP address as in the IP_Address column, except that the address is represented using a unsigned 32-bit integer: e.g. the IP Address “10.205.0.1” is represented as 181207041.
edge	string	Whether the port is classified as an “Edge” or “Uplink” port.

Database Event Log View

Table 20: EPICenter Database Event Log View

Event_Log_View
Event_Log_View is a database view that shows the EPICenter alarm event log, but making the data from each column into a human readable format.

Column Name	Column Type	Description
event_log_id	integer	An unique id for the event log entry. (This column can be used as the primary key.)
event_timeticks	integer	The time when the event happened. This time is shown as milliseconds since 1970-01-01 00:00:00 GMT.
event_time	string	The time when the event happened. This is the same time as the event_timeticks column except that the time is shown as a string. E.g. “2000-10-21 14:20:21 GMT”
event_source	string	The IP (and the ifIndex, if appropriate) of the source, from which the event is generated. E.g. “10.205.0.31”, “10.205.0.31, port 2:1”, or “10.205.0.2, ifIndex 10”.
event_type	string	The type of the event, e.g. “SNMP Trap: Cold Start”
event_ip	string	The IP address of the source, from which the event is generated. E.g. “10.205.0.31”
event_generic	integer	For SNMP trap based event, this is the generic field of the trap.
event_specific	integer	For SNMP trap based event, this is the specific field of the trap.
event_enterprise	string	For SNMP trap based event, this is the enterprise field of the trap.
event_varbinds	string	For SNMP trap based event, this is the varbinds of the trap.
unsignedIPInt	integer	The IP address number of the device, from which the event originates. This is the same IP address as in the event_ip column, except that the address is represented using a unsigned 32-bit integer: e.g. the IP Address “10.205.0.1” is represented as 181207041.
event_count	integer	The number of consecutive traps of the same type and source received for this event.

Database Alarm Log View

Table 21: EPICenter Database Alarm Log View

Alarm_Log_View
Alarm_Log_View is a database view that shows the EPICenter alarm log, but making the data from each column into a human readable format.

Column Name	**Column Type**	**Description**
alarm_time	integer	The time when the event happened. This time is shown as milliseconds since 1970-01-01 00:00:00 GMT. This time is unique for all alarm logs. (This column can be used as the primary key.)
alarm_name	string	The name of the alarm definition, to which this alarm instance belongs.
alarm_category	string	The alarm category as defined in the alarm definition.
source	string	The IP (and the ifIndex, if appropriate) of the source, from which the event that triggered the alarm is generated. E.g. “10.205.0.31”, “10.205.0.31, port 2:1”, or “10.205.0.2, ifIndex 10”.
severity	string	The severity of the alarm as defined in the alarm definition.
msg	string	The alarm message as defined in the alarm definition.
acked	byte	A byte value in hexadecimal representation specifying whether the alarm is ack’ed or not, 00 – not ack’ed; 01 – ack’ed.
event_log_id	integer	The event log id of the event that triggers the alarm.
unsignedIPInt	integer	The IP address number of the device, from which the event that triggers the alarm originates. This is the same IP address as in the event_ip column, except that the address is represented using a unsigned 32-bit integer: e.g. the IP Address “10.205.0.1” is represented as 181207041.

D Event Types for Alarms

This appendix describes the events that can be detected through the EPICenter Alarm System:

- SNMP traps
- RMON Rising and Falling traps
- EPICenter events

Unless stated otherwise, events defined below are applicable to all MIB-2 devices managed by the EPICenter server.

SNMP Trap Events

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
Authentication Failed	This trap indicates that a SNMP request with an invalid community string is issued to the device.	All
BGP Backward Transition	The BGPBackwardTransition Event is generated when the BGP FSM moves from a higher numbered state to a lower numbered state.	6.1.9 or later
BGP Established	The BGP Established event is generated when the BGP FSM enters the ESTABLISHED state.	6.1.9 or later

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
BGP Prefix Max Exceeded	Extreme Networks proprietary trap. This trap indicates that the number of prefixes received over this peer session has reached the maximum configured limit.	6.2.2 or later
BGP Prefix Reached Threshold	Extreme Networks proprietary trap. This trap indicates that the number of prefixes received over this peer session has reached the threshold limit.	6.2.2 or later
Cold Start	This trap indicates that the device is rebooted by power recycling. Extreme switches always send out this trap after a reboot.	All
CPU Utilization Falling Threshold	Extreme Networks proprietary trap. CPU Utilization Falling Trap is generated when the extremeCpuAggregateUtilization falls below 80% of the extremeCpuUtilRisingThreshold.	6.2 or later
CPU Utilization Rising Threshold	Extreme Networks proprietary trap. CPU Utilizations Rising trap is generated when the value of extremeCpuAggregateUtilization touches/crosses extremeCpuUtilRisingThreshold.	6.2 or later
Dsx1 Line Status Change	Extreme Networks proprietary trap. Indicates that the DS1 line status change for the specified interface has been detected.	6.1.8b66
Dsx1 Loss of Master Clock	Extreme Networks proprietary trap. Indicates that the wanDsx1LossOfMasterClock event for the specified interface has been detected.	6.1.8b66
Dsx1 No Loss of Master Clock	Extreme Networks proprietary trap. Indicates that the wanDsx1NoLossOfMasterClock event for the specified interface has been detected.	6.1.8b66
Dsx3 Line Status Change	Extreme Networks proprietary trap. Indicates that the T3 line status change for the specified interface has been detected.	6.1.8b66
Dsx3 Loss of Master Clock	Extreme Networks proprietary trap. Indicates that the wanDsx3LossOfMasterClock event for the specified interface has been detected.	6.1.8b66
Dsx3 No Loss of Master Clock	Extreme Networks proprietary trap. Indicates that the wanDsx3NoLossOfMasterClock event for the specified interface has been detected.	6.1.8b66
EDP Neighbor Added	Extreme Networks proprietary trap. A new neighbor has been discovered through the Extreme Discovery Protocol (EDP).	6.1 or later

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
EDP Neighbor Removed	Extreme Networks proprietary trap. No EDP updates have been received from this neighbor within the configured timeout period, and this neighbor entry has been aged out by the device.	6.1 or later
EGPNbrLoss	An EGP neighbor for which the device is an EGP peer is down and the peer relationship no longer exists. An Extreme Networks switch never sends out this trap.	None
ESRP State Change	Extreme Networks proprietary trap. This trap indicates that the ESRP state (master or slave) of a VLAN has changed on the device.	6.0 or later
Fan Failed	Extreme Networks proprietary trap. This trap indicates one or more of the cooling fans inside the device has failed. A fan OK trap will be sent once the fan has attained normal operation. This trap is sent repetitively every 30 seconds until all the fans are back to normal condition.	All
Fan OK	Extreme Networks proprietary trap. This trap indicates that a fan has transitioned out of a failure state and is now operating correctly.	All
Health Check Failed	Extreme Networks proprietary trap. The CPU HealthCheck has failed	6.1.5 or later
Invalid Login	Extreme Networks proprietary trap. This trap indicates that a user attempted to login to console or by telnet but was refused access due to incorrect user name or password. The trap is issued after three consecutive failure of log in.	All
Link Down	This trap indicates that a port becomes inactive from previous active state.	All
Link Up	This trap indicates that a port becomes active from previous inactive state.	All
OSPF Interface Authentication Failure	An ospfIfAuthFailure trap signifies that a packet has been received on a non-virtual interface from a router whose authentication key or authentication type conflicts with this router’s authentication key or authentication type.	6.1.9 or later

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
OSPF Interface Config Error	An ospfIfConfigError trap signifies that a packet has been received on a non-virtual interface from a router whose configuration parameters conflict with this router's configuration parameters. Note that the event optionMismatch should cause a trap only if it prevents an adjacency from forming.	6.1.9 or later
OSPF Interface Receive Bad Packet	An ospfIfRxBadPacket trap signifies that an OSPF packet has been received on a non-virtual interface that cannot be parsed.	6.1.9 or later
OSPF Interface State Change	An ospfIfStateChange trap signifies that there has been a change in the state of a non-virtual OSPF interface. This trap should be generated when the interface state regresses (e.g., goes from Dr to Down) or progresses to a terminal state (i.e., Point-to-Point, DR Other, Dr, or Backup).	6.1.9 or later
OSPF LSDB Approaching Overflow	An ospfLsdbApproachingOverflow trap signifies that the number of LSAs in the router's link-state database has exceeded ninety percent of ospfExtLsdbLimit.	6.1.9 or later
OSPF LSDB Overflow	An ospfLsdbOverflow trap signifies that the number of LSAs in the router's link-state database has exceeded ospfExtLsdbLimit.	6.1.9 or later
OSPF Max_Age LSA	An ospfMaxAgeLsa trap signifies that one of the LSA in the router's link-state database has aged to MaxAge.	6.1.9 or later
OSPF Neighbor State Change	An ospfNbrStateChange trap signifies that there has been a change in the state of a non- virtual OSPF neighbor. This trap should be generated when the neighbor state regresses (e.g., goes from Attempt or Full to 1-Way or Down) or progresses to a terminal state (e.g., 2-Way or Full). When an neighbor transitions from or to Full on non-broadcast multi-access and broadcast networks, the trap should be generated by the designated router. A designated router transitioned to Down will be noted by ospfIfStateChange.	6.1.9 or later

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
OSPF Originate LSA	An ospfOriginateLsa trap signifies that a new LSA has been originated by this router. This trap should not be invoked for simple refreshes of LSAs (which happens every 30 minutes), but instead will only be invoked when an LSA is (re)originated due to a topology change. Additionally, this trap does not include LSAs that are being flushed because they have reached MaxAge.	6.1.9 or later
OSPF TX_Retransmit	An ospfTxRetransmit trap signifies than an OSPF packet has been retransmitted on a non- virtual interface. All packets that may be retransmitted are associated with an LSDB entry. The LS type, LS ID, and Router ID are used to identify the LSDB entry.	6.1.9 or later
OSPF Virtual Interface Authentication Failure	An ospfVirtIfAuthFailure trap signifies that a packet has been received on a virtual interface from a router whose authentication key or authentication type conflicts with this router's authentication key or authentication type.	6.1.9 or later
OSPF Virtual Interface Config Error	An ospfVirtIfConfigError trap signifies that a packet has been received on a virtual interface from a router whose configuration parameters conflict with this router's configuration parameters. Note that the event optionMismatch should cause a trap only if it prevents an adjacency from forming.	6.1.9 or later
OSPF Virtual Interface Receive Bad Packet	An ospfVirtIfRxBadPacket trap signifies that an OSPF packet has been received on a virtual interface that cannot be parsed.	6.1.9 or later
OSPF Virtual Interface State Change	An ospfVirtIfStateChange trap signifies that there has been a change in the state of an OSPF virtual interface. This trap should be generated when the interface state regresses (e.g., goes from Point-to-Point to Down) or progresses to a terminal state (i.e., Point-to-Point).	6.1.9 or later
OSPF Virtual Interface TX Retransmit	An ospfVirtIfTxRetransmit trap signifies than an OSPF packet has been retransmitted on a virtual interface. All packets that may be retransmitted are associated with an LSDB entry. The LS type, LS ID, and Router ID are used to identify the LSDB entry.	6.1.9 or later

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
OSPF Virtual Neighbor State Change	An ospfVirtNbrStateChange trap signifies that there has been a change in the state of an OSPF virtual neighbor. This trap should be generated when the neighbor state regresses (e.g., goes from Attempt or Full to 1-Way or Down) or progresses to a terminal state (e.g., Full).	6.1.9 or later
Overheat	Extreme Networks proprietary trap. This trap indicates that the on board temperature sensor has reported an overheat condition. This indicates the temperature has reached the Overheat threshold. The switch will continue to function until it reaches its shutdown threshold. The system will then shutdown until the unit has sufficiently cooled such that operation may begin again. A cold start trap will be issued when the unit has come back on line. This trap is sent repetitively every 30 seconds until the temperature goes back to normal.	All
Ping Probe Failed	Generated when a probe failure is detected when the corresponding pingCtlTrapGeneration object is set to probeFailure(0) subject to the value of pingCtlTrapProbeFailureFilter. The object pingCtlTrapProbeFailureFilter can be used to specify the number of successive probe failures that are required before this notification can be generated.	6.1.9 or later
Ping Test Completed	Generated at the completion of a ping test when the corresponding pingCtlTrapGeneration object is set to testCompletion(4).	6.1.9 or later
Ping Test Failed	Generated when a ping test is determined to have failed when the corresponding pingCtlTrapGeneration object is set to testFailure(1). In this instance pingCtlTrapTestFailureFilter should specify the number of probes in a test required to have failed in order to consider the test as failed.	6.1.9 or later
Power Supply Failed	Extreme Networks proprietary trap. This trap indicates that one or more sources of power have failed. Presumably a redundant power-supply has taken over. This trap is sent repetitively every 30 seconds until all the power supplies are back to normal condition.	All

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
Power Supply OK	Extreme Networks proprietary trap. This trap indicates that one or more previously bad sources of power have come back to life without causing the device to restart.	All
Redundant Power Supply Failed	Extreme Networks proprietary trap. This trap indicates that the attached redundant power supply device is indicating an alarm condition. This trap is sent repetitively every 30 seconds until the redundant power supply is back to normal condition.	All
Redundant Power Supply OK	Extreme Networks proprietary trap. This trap indicates that the attached redundant power supply device is no longer indicating an alarm condition.	All
SLB Unit Added	Extreme Networks proprietary trap. This trap indicates that the server load balancer has activated a group of virtual servers that it normally would not activate. This may be due to the failure of another server load balancer.	6.1 or later
SLB Unit Removed	Extreme Networks proprietary trap. This trap indicates that the server load balancer has deactivated a group of virtual servers that it normally has active. This indicates that something is wrong in the server load balancer; for example, its ping check may be failing.	6.1 or later
STP New Root	Extreme Networks proprietary trap. This trap indicates that the sending agent has become the new root of the Spanning Tree; the trap is sent by a bridge soon after its election as the new root, e.g., upon expiration of the Topology Change Timer immediately subsequent to its election.	6.2.2 or later
STP Topology Change	Extreme Networks proprietary trap. A topologyChange trap is sent by a bridge when any of its configured ports transitions from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state. The trap is not sent if a newRoot trap is sent for the same transition.	6.2.2 or later
Slot Change	Extreme Networks proprietary trap. This trap indicates that the value of the extremeSlotModuleState for the specified extremeSlotNumber has changed.	All

Table 22: SNMP Trap Events

Event	Definition	ExtremeWare Version
Smarttrap	Extreme Networks proprietary trap. This trap indicates that the value of one of the object identifiers (or the value of an object below that in the MIB tree) defined in the extremeSmartTrapRulesTable has changed, and hence a new entry has been created in the extremeSmartTrapInstanceTable. Such a trap is sent at most once every thirty seconds if one or more entry was created in the last thirty seconds.	All
Warm Start	Trap indicates that the device has been rebooted without power recycling. An Extreme Networks switch never sends out this trap.	None

RMON Rising Trap Events

This trap indicates that the value of the MIB variable being monitored has risen to or above the rising threshold value. RMON rules need to be configured on a device for it to send out this trap. See “Threshold Configuration” in Chapter 5 for more information.

RMON Falling Trap Events

This trap indicates that the value of the MIB variable being monitored has fallen to or below the falling threshold value. RMON rules need to be configured on a device for it to send out this trap. See “Threshold Configuration” in Chapter 5 for more information.

EPICenter Events

An EPICenter event is generated by the EPICenter server based on the results of its periodic polling. In some cases, an EPICenter event may result from the same condition that could generate an SNMP or other trap. An EPICenter event has the advantage that it guarantees that the condition will be detected (by polling) even if the corresponding trap is missed.

Table 23: EPICenter Events, Detected Through Polling

Event	Definition
Configuration Upload Failed	The EPICenter server generates this event when it fails to upload configuration information from a device. This event occurs ONLY when the upload is attempted from EPICenter, not if it was attempted from Telnet, ExtremeWare Vista or any other method.
Configuration Upload OK	The EPICenter server generates this event when it successfully uploads configuration from a device. This event occurs ONLY when the upload is done from EPICenter, not from Telnet, ExtremeWare Vista or any other method.
Device Policy Configuration	The EPICenter server generates this event when it encounters a problem configuring policies on a device using ACL and QoS.
Device Reboot	The EPICenter server generates this event for a device when it detects a device reboot (cold start or warm start). Unlike the cold start or warm start SNMP trap, EPICenter generates this event by polling the device.
Device Warning from EPICenter	For Extreme Networks devices only. The EPICenter server generates this event in one of two situations: • If the server detects and infinite loop while walking the device’s SNMP MIB (may occur with ExtremeWare 4.1.19b2) • If the device has a bad serial number reported through SNMP (may occur with ExtremeWare 6.2.1 on the BlackDiamond 6816).
Fan Failed	For Extreme Networks devices only. The EPICenter server generates this event for an Extreme device when it detects, via polling, a transition from fan OK to fan failed condition on the device. Unlike the SNMP Fan Failed trap event, this event is generated only once, based on a state transition. As an alternative, you can detect a Fan Failed condition by using the SNMP Fan Failed trap, which will be generated every 30 seconds until the condition is corrected.

Table 23: EPICenter Events, Detected Through Polling

Event	Definition
Overheat	For Extreme Networks devices only. The EPICenter server generates this event for an Extreme device when it detects a transition from normal temperature to overheat condition on the device. Unlike the SNMP overheat trap event, this event is based on a state transition, and will be generated only once. As an alternative, you can detect an Overheat condition by using the SNMP Overheat trap, which will be generated every 30 seconds until the condition is corrected.
Power Supply Failed	For Extreme Networks devices only. The EPICenter server generates this event if the device reports a power supply failure.
SNMP Unreachable	The EPICenter server generates this event when it fails to communicate with a device following a previously successful communication. In other words, this event is generated when the state of communication with the device transitions from reachable to unreachable.
SNMP Reachable	The EPICenter server generates this event when the state of communication with the device transitions from unreachable to reachable.
Syslog Flood	The EPICenter server generates this event if the server receives syslog messages at a rate that exceeds the user-defined limit set in the Administration applet via the Scalability Properties. See “Server Properties Administration” on page 435 in Chapter 16 for more information.

E EPICenter Backup

This appendix describes the following:

- The EPICenter Alarm Log and Event Log backup files
- The DBVALID command-line database validation utility
- The DBBACKUP command-line database backup utility

EPICenter Log Backups

Both the EPICenter Event Log and Alarm Log files are kept in tables in the EPICenter database. These tables can contain approximately 50,000 entries.

The EPICenter server checks once every 24 hours to determine is either of these logs has reached its maximum size. When one reaches its maximum, EPICenter moves the oldest 10% of the entries to a backup file, and clears those entries from the table.

The backup files are created in the directory `<`*`install_dir`*`>/user`, where `<`*`install_dir`*`>` is the root directory of the EPICenter install, by default `epc4_0`.

- The Alarm Log is backed up to the file `Alarm_Log.txt`
- The Event Log is backed up to the file `Event_Log.txt`

Each primary backup file is in turn backed up to a secondary file when it reaches its maximum size of approximately 30MB.

- `Alarm_Log.txt` is backed up to the file `Alarm_Log.sav`
- `Event_Log.txt` is backed up to the file `Event_Log.sav`

The primary file is then emptied.

When the primary file becomes full for the second time, the secondary backup file will be overwritten with the new contents of the primary backup file.

If you want to maintain a complete set of log file backups over time, you should save the `*_Log.txt` and `*_Log.sav` files periodically.

Database Utilities

Sybase database validation and backup utilities are shipped with the EPICenter software.

The Validation utility validates all indexes and keys on some or all of the tables in the database. The Validation utility scans the entire table and looks up each record in every index and key defined on the table. This utility can be used in combination with regular backups to give you confidence in the security of the data in your database.

The Backup utility makes a backup copy of all data in the database, except for user names and passwords, which are kept in separate files. Backing up your database regularly will ensure that you will not need to re-enter or recreate all the switch, VLAN, Topology, and Alarm information in the event that the database is corrupted or destroyed.

Both database utilities are found in the `<install_dir>\database` directory. `<install_dir>` is the directory where you installed the EPICenter software. Substitute the name of the actual directory for `<install_dir>` when you run these commands.

NOTE

In the Solaris environment, you must ensure that the EPICenter database path is set in the LD_LIBRARY_PATH environment variable. This should be set to `<install_dir>/database` *where* `<install_dir>` *is the root directory of the EPICenter install, for example* `opt/epc4_0`.

The Validation Utility

The Validation utility validates all indexes and keys on some or all of the tables in the database. Access the Validation utility from the MS DOS or Solaris command line using the **dbvalid** command. This convention also allows incorporation into batch or command files.

Using the DBVALID Command-line Utility

To validate the EPICenter database running under Windows NT, use the command:

```
<install_dir>\database\dbvalid -c
"uid=dba;pwd=sql;dbf=<install_dir>\basecamp.db"
```

Under Solaris, use the command:

```
<install_dir>/database/dbvalid -c
"uid=dba;pwd=sql;dbf=<install_dir>/basecamp.db"
```

This example assumes a database user ID of **dba**, with password **sql**. These are the defaults used when the database server is installed through the EPICenter installation process. If you have changed your database user ID and password, substitute your actual user ID and password in the command.

`<install_dir>` is the directory where the EPICenter software is installed. Substitute the actual directory name in the command.

This operation should report no errors. If there are errors, the system should be stopped and a backup database copied into place. See “Installing a Backup Database” on page 556. If there are no backups, the EPICenter software must be re-installed.

Syntax: `dbvalid [switches]`

Table 24: dbvalid Command Switches

Switch	Description
-c “keyword=value; ...”	Supply database connection parameters

Database Connection Parameters

These are the parameters for the **`-c`** command-line switch. If the connection parameters are not specified, connection parameters from the SQLCONNECT environment variable are used, if set.

Table 25: Database Connection Parameters for dbvalid Utility

`uid=`***<user name>***	The user name used to login to the database. Default is **dba**. The user ID must have DBA authority.
`pwd=`*<password>*	The password used to login to the database. Default is **sql**.
`dbf=<`*database_file>*	The name of the file that stores the data. This is the file to be validated.

The connection parameters are separated by semicolons, and the entire set must be quoted. For example, under Windows NT, the following validates the EPICenter, connecting as user ID **dba** with password **sql**:

```
<install_dir>\database\dbvalid -c
"uid=dba;pwd=sql;dbf=<install_dir>\basecamp.db"
```

The Backup Utility

The Backup utility makes a backup copy of all data in the database, except for user names and passwords. Access the Backup utility from the MS DOS or Solaris command line using the **`dbbackup`** command. This convention also allows incorporation into batch or command files.

The DBBACKUP Command-line Utility

To back up the EPICenter database running under Windows NT, use the command:

```
<install_dir>\database\dbbackup -c
"uid=dba;pwd=sql;dbf=<install_dir>\basecamp.db" <backup_dir>
```

Under Solaris, use the command:

```
<install_dir>/database/dbbackup -c
"uid=dba;pwd=sql;dbf=<install_dir>/basecamp.db" <backup_dir>
```

This example assumes a database user ID of **dba**, with password **sql**. These are the defaults used when the database server is installed through the EPICenter installation process. If you have changed your database user ID and password, substitute your actual user ID and password in the command.

<*install_dir*> is the directory where the EPICenter software is installed. Substitute the actual directory name in the command.

<*backup_dir*> is the directory where the backup copy of the database should be stored. Substitute an actual directory name in the command.

This command generates a backup of the database in the specified backup directory. The backup consists of two files, `basecamp.db` and `basecamp.log`. All database files are backed up. These files should be saved so they can be used to replace the original files in the event of a problem.

Syntax: `dbbackup [switches] directory`

Table 26: dbbackup Command Switches

Switch	Description
-c "keyword=value; ..."	Supply database connection parameters
-y	Replace files without confirmation

Database Connection Parameters

These are the parameters for the **-c** command-line switch. If the connection parameters are not specified, connection parameters from the SQLCONNECT environment variable are used, if set.

Table 27: Database Connection Parameters for dbbackup Utility

uid=***<user name>***	The user name used to login to the database. Default is **dba**. The user ID must have DBA authority.
pwd=*<password>*	The password used to login to the database. Default is **sql**.

Table 27: Database Connection Parameters for dbbackup Utility

`uid=`***<user name>***	The user name used to login to the database. Default is **dba**. The user ID must have DBA authority.
`dbf=<`*database_file*`>`	The name of the file that stores the data. This is the file to be backed up.

The connection parameters are separated by semicolons, and the entire set must be quoted. For example, under Windows NT, the following backs up the EPICenter database `basecamp.db`, connecting as user ID **dba** with password **sql**:

```
<install_dir>\database\dbbackup -c
“uid=dba;pwd=sql;dbf=<install_dir>\basecamp.db” c:\tmp
```

Installing a Backup Database

The backup database is named `basecamp.db`, and is kept in the directory you specified when you ran the **`dbbackup`** command (`c:\tmp` in the example).

To replace a damaged database with the backup copy, follow these steps:

1. Shut down the EPICenter software following the instructions for your operating system in the *EPICenter Software Installation and User Guide*.
2. Move or delete the old copy of `basecamp.db` found in the EPICenter installation directory.
3. Copy the backup copy of `basecamp.db` to the EPICenter installation directory.
4. Restart the EPICenter software following the instructions in the *EPICenter Software Installation and User Guide* for your operating system environment.

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