

1 Auspex Server Management Tools (ASMT)

Introduction

This module presents the *Auspex Server Management Tools*, or *ASMT*. This is a graphical interface which allows you to perform most NetServer system administration tasks from a Web browser. ASMT is also known as the *Auspex Control Point*.



Note: ASMT requires a browser which supports *Java 1.1* technology, such as Hotjava, Netscape 4.06, Internet Explorer 4 or later versions.

ASMT is a complement to the existing system administration facilities. Any task which can be accomplished using ASMT can also be performed using the administrative commands provided (see the *Command Reference Guide* and other sections of this course for more details).

This module does not attempt to define the concepts used (such as *Subnet Mask* or *Virtual Partition*).

It is also assumed that the user is familiar with the use of a mouse and an Internet Browser, as well as with the related terminology (“right-click”, “drag” and so forth). Only terms specific to ASMT are defined in this module.

Module Overview

Auspex Server Management Tools

Graphical Interface to perform most system administration tasks

Complements command-line utilities

Requires Hotjava, NetScape 4.06 or Internet Explorer 4 or greater for *Java 1.1* support

Objectives

Recognize the modules which comprise ASMT

Be able to use each module correctly

Module Overview and Objectives

Objectives

After completing this module, you should be able to do the following:

- ▲ list the modules which make up ASMT
- ▲ start up ASMT on your system and navigate to the desired tool
- ▲ use the Status Tool for an overview of the system state
- ▲ use the Network Configuration Tool to set up the Network Interfaces (NICs) on your system
- ▲ use the Performance Tool to monitor different areas of system performance
- ▲ use the Volume Manager to set up and partition RAID arrays, and create and manage virtual partitions and file systems
- ▲ use the Event Policy Manager to define system alerts

ASMT Presentation

ASMT is a framework for tools which manage and monitor various aspects of the Auspex NetServer. It integrates a suite of management tools into a single graphical environment, managed by a familiar Internet Browser. These tools are geared towards NetServer-specific components. It is complementary to, and not a replacement for, existing command-line utilities which are native to the operating environment or provided by Auspex.

ASMT is based on the *Java* language (version 1.1) and Object-Oriented technology. The user selects a NetServer component (such as a network interface) and applies an appropriate tool (such as the performance monitor) to it. Rather than rely on external programs to perform the actual work, Auspex has developed a Java interface to its proprietary *Functional Multiprocessing (FMP¹)* kernel, allowing ASMT to communicate directly with other elements in the system as required.

1. See Auspex Technical Report 10 for details of FMP.

ASMT Presentation

GUI-based suite of NetServer management tools

Complement to existing command-line utilities

Can manage one or more NetServers
simultaneously

Starting ASMT

`http://yourserver:8081/`

User Authentication

Navigating within ASMT

Tool Selection

Navigation Tree

Work Panel

ASMT Presentation

Starting ASMT

To start ASMT, you should use your browser to connect to port **8081** of your NetServer. To do this, specify a URL (*Universal Resource Locator*) similar to the following:

```
http://yourserver:8081/
```

You should replace *yourserver* by the hostname of your NetServer.



Note: The port number is required as a browser will, by default, connect to port **80**, whereas the ASMT server listens for connections on port **8081**.

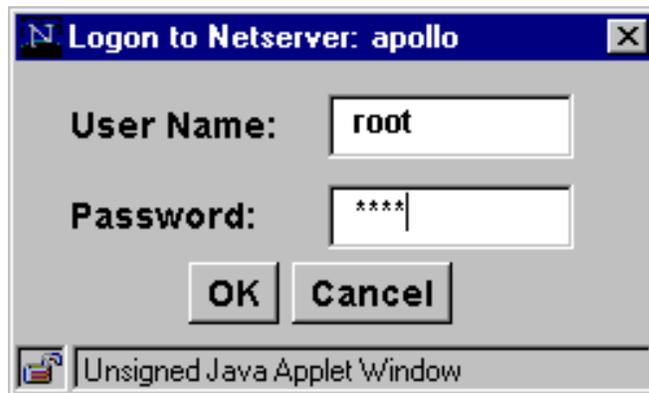
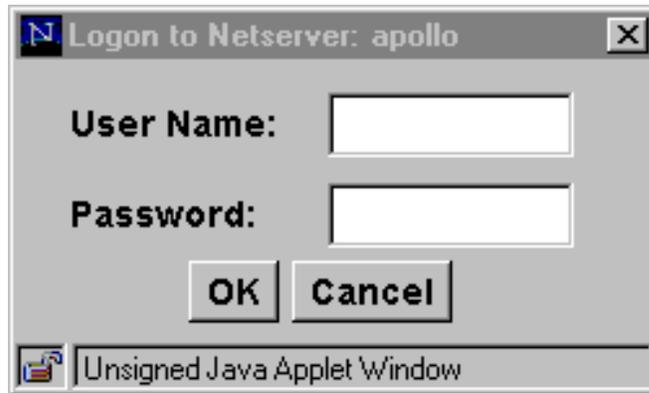
In the event that your browser is unable to make a connection to the NetServer, an error message will be displayed. You should check the following points:

- ▲ Is the NetServer itself running?
- ▲ Is the network working normally?
- ▲ Is the ASMT process running on the NetServer? You can check this by running the command `ps -aef | grep jre` from the command line. (*jre* is the *Java Runtime Environment*, required by ASMT.)
- ▲ Check the following files for error messages from ASMT:
 - /tmp/system.out.8081
 - /tmp/system.err.8081
- ▲ Check your browser's Java Console for other error messages.

If you are still unable to connect to ASMT, please contact Auspex Technical Support for assistance.

User Authentication

A dialog box will prompt you to enter a user name and password. This must be a user name known on the NetServer, and have root (superuser) privileges.



ASMT Login Dialog

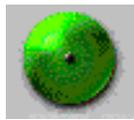
Navigating within ASMT

When you connect to ASMT, a window entitled *Auspex Control Point* is displayed. This window is divided into the following areas:

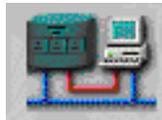
- ▲ At the top, a tool selection area. This presents an icon for each of the tools within ASMT.
- ▲ On the left, a navigation tree. You can open and close branches of the tree to select the system component that you wish to configure.
- ▲ The rest of the screen is the work panel. This presents a tabbed dialog corresponding to the tool selected.

Tool Selection

The Tool Selection area at the top of the page is in the form of an icon bar:



Status Tool



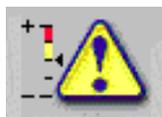
Network Configuration Tool



Performance Tool



Volume Manager

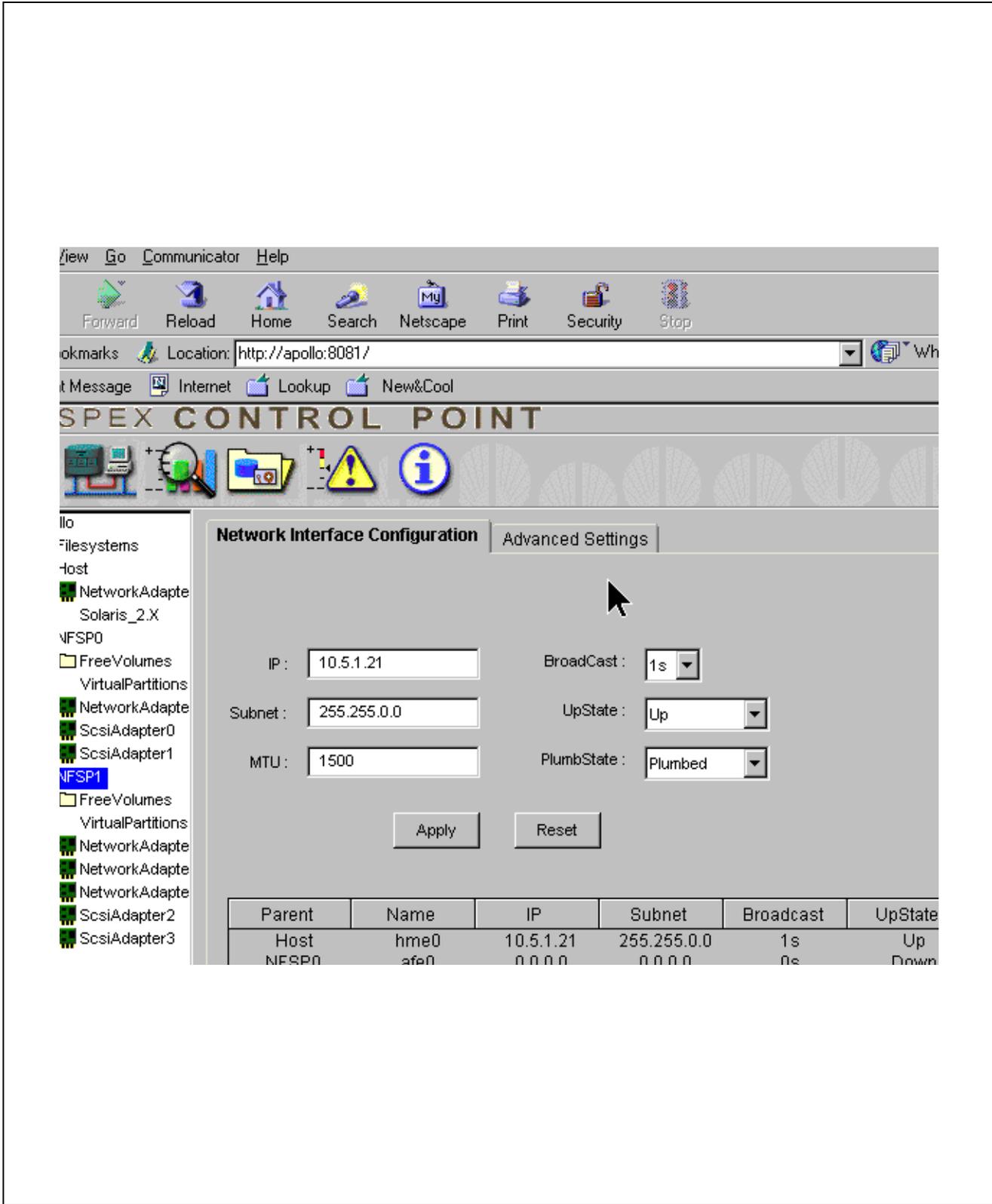


Event Policy Manager



Online Help

Clicking on an icon will activate the corresponding tool.



Auspex Server Management Tools

Navigation Tree

The Navigation Tree allows you to select the system component which you wish to configure. If an item in the tree is preceded by a **+** icon, you can click on it to expand a branch of the tree. A **-** icon will then appear in its place; clicking on this will collapse the branch.

At the top level is the entire system, represented by its hostname. You can right-click in the navigation window to select the host you wish to configure.



Note: Several NetServers may be administered from a single browser. Make sure that you select the correct server before changing the configuration.

When fully expanded, this will show entries for File Systems, the Host unit and each NFSP (ECHaP) unit in the system. Each of these in turn can be expanded to show disks, RAID arrays, file systems and network adaptors; the exact display will depend on your system configuration.

Work Panel

The Work Panel, or Action Area, is in the form of a tabbed dialog; that is, there is a set of tabs at the top of the panel. Clicking on a tab will take you to the corresponding part of the tool dialog.

The content of the work panel varies according to the tool selected. The following sections discuss these tools.

Many of the screens in the work panel area include tables. You can click on the label at the top of a column to sort the list based on that column. Clicking again on the label of currently sorted column will reverse the order of the sort (ascending or descending). You can also click and drag the right edge of a label to change the width of the column.

Another common feature are the **Apply** and **Reset** buttons. Clicking on **Apply** will put your entries into effect. Clicking on **Reset** will restore the values as they were when you started the tool.

Status Tool

The Status Tool is the default tool executed when you start ASMT. It provides status information corresponding to the (sub-)system selected in the Navigation Tree. It also provides persistent configuration information equivalent to the `ax_config` command. ASMT does not allow you to change any of the information presented by the Status Tool.

The Status Tool is divided into four pages, selectable by the tabs at the top of the work panel. These are:

- ▲ Status Summary
- ▲ Configuration
- ▲ System Log
- ▲ Network Statistics

Status Summary

This screen presents basic information about the NetServer. This screen is updated once each minute and includes the following elements:

- ▲ current date and time
- ▲ host name, host ID and domain name
- ▲ how long the system has been running (“Uptime”)
- ▲ number of users and CPU load
- ▲ system error log summary

Configuration

This screen displays the components present in the NetServer. Each component is listed with its model number, serial number, revision, location and description.

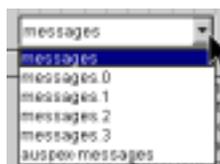
Selecting elements in the navigation tree will restrict the main display to only the selected elements.

Status Summary Configuration **System Log** Network Statistics

View Log:

Date	Time	Messages
Nov 15	18:09:10	arkansas automount[326] msount on /home/kini is not read-only, and will not be replica
Nov 15	18:09:25	arkansas automount[326] msount on /etc/svcs/replicid is not read-only, and will not be r
Nov 15	18:09:25	arkansas automount[326] msount on /usr/local is not read-only, and will not be replicated.
Nov 15	18:09:26	arkansas automount[326] msount on /usr/local/src is not read-only, and will not be
Nov 15	22:50:51	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 15	22:50:51	arkansas last message repeated 1 time
Nov 15	22:51:04	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 15	22:58:26	arkansas last message repeated 1 time
Nov 15	23:01:46	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 15	23:08:02	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 15	23:07:06	arkansas last message repeated 1 time
Nov 15	23:12:26	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 15	23:17:46	arkansas unix: WARNING: /tmp: File system full, swap space limit exceeded
Nov 16	08:32:22	arkansas automount[326] msount on /home/leop is not read-only, and will not be replica

arkansas automount[326] msount on /home/kini is not read-only, and will not be replicated.



Status Summary Configuration System Log **Network Statistics**

Name	MBU	NetDest	IPNet	IPkts	Items	Opkts	Qerrs	Colls	Queue
hme0	1500	arkansas	arkansas	203710	0	177930	0	0	
afe0	1500	default	0.0.0.0	0	0	0	0	0	
afe1	1500	default	0.0.0.0	0	0	0	0	0	
afe2	1500	default	0.0.0.0	0	0	0	0	0	
afe3	1500	default	0.0.0.0	0	0	0	0	0	
afe4	1500	default	0.0.0.0	0	0	0	0	0	
afe5	1500	default	0.0.0.0	0	0	0	0	0	
afe6	1500	default	0.0.0.0	0	0	0	0	0	
afe7	1500	default	0.0.0.0	0	0	0	0	0	
afe10	none	none	none	0	0	0	0	0	
afe11	none	none	none	0	0	0	0	0	
afe8	none	none	none	0	0	0	0	0	
afe9	none	none	none	0	0	0	0	0	

Status Tool System Log and Network Statistics

System Log

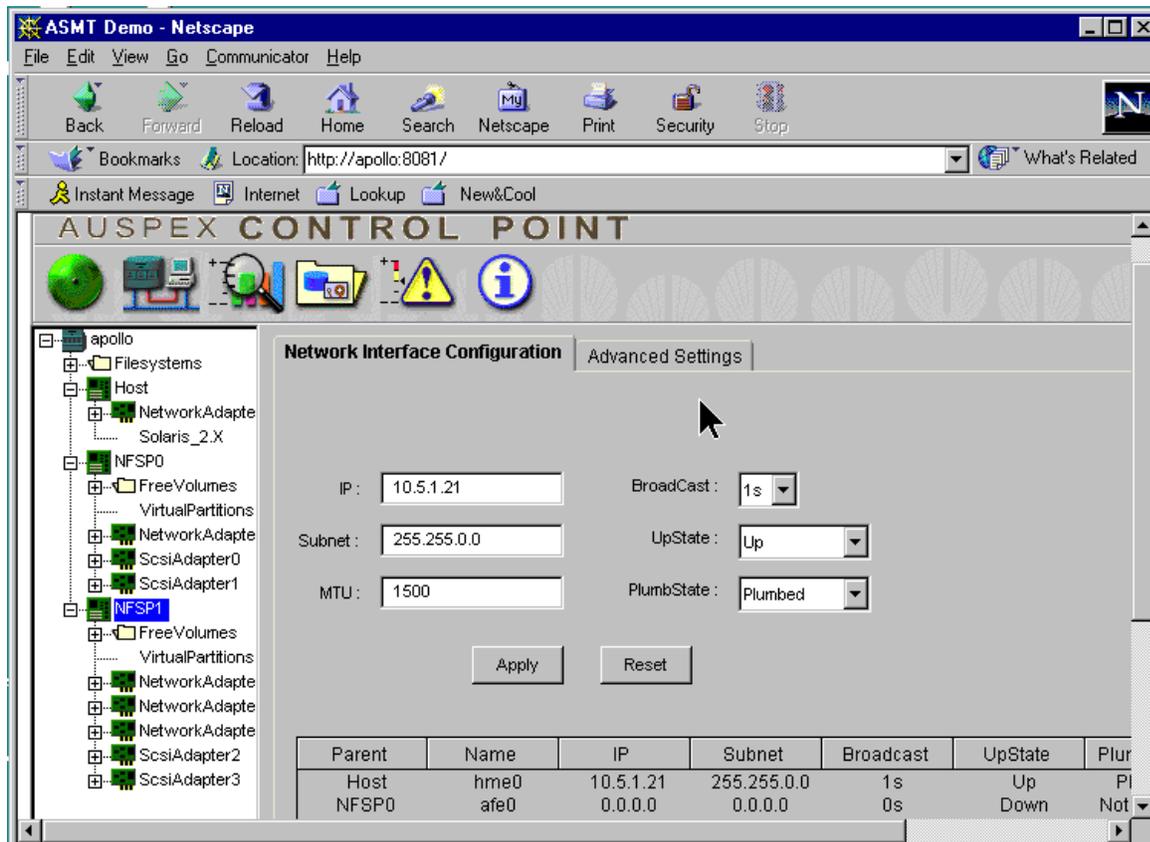
This screen displays messages from the system logs. A selection box allows you to choose between **messages** (the system standard message file) and **auspex-messages** (an Auspex-specific message file). Archived versions of these files (for example, **messages.0** or **messages.1**) may also be available.

Right-clicking in the message windows displays a dialog box which allows you to search the message text.

Network Statistics

This screen presents the basic interface configurations (name, MTU and IP address) and some statistics: the number of packet in and out, the number of errors on input and output, the number of collisions reported and the size of the queue for this interface.

For more detailed information, you should use the Network Configuration Tool and the Performance Tool.



Network Configuration Tool

Network Configuration Tool

The Network Configuration Tool allows you to configure the Network Interfaces (NICs) connected to the NetServer. It is divided into two pages, both presented in the same format.

- ▲ At the bottom of the page is a scrollable list of the NICs present in the NetServer, together with their current settings.

You can limit the interfaces which are displayed by selecting the interfaces of interest in the navigation tree.

- ▲ Above the list of NICs are several fields (text boxes or selection lists) which allow you to set the desired configuration.

Parameters which do not apply to the interface chosen will be dimmed, and you will not be able to modify them.

To change the settings of an interface, you should follow these steps:

1. Select the interface you wish to configure from the list at the bottom of the page. The current settings for this field are automatically displayed in the fields above.
2. Set or select (as appropriate) the values which you wish to apply to this interface.
3. Click on the **Apply** button.



Note: Should you decide not to apply the changes you have entered, click on the **Reset** button to discard your entries.

You can select one or other of the two pages using the tabs at the top of the work panel:

- ▲ Network Interface Configuration
- ▲ Advanced Settings

The parameters on these pages can also be set using Unix' `ifconfig` command.

Network Interface Configuration Advanced Settings

IP: Broadcast:
 Subnet: UpState:
 MTU: PlumbState:

Parent	Name	IP	Subnet	Broadcast	UpState	PlumbState	MTU
Host	hme0	10.5.1.21	255.255.0.0	1s	Up	Plumbed	1500
NFSP0	afe0	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0
NFSP0	afe1	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0
NFSP0	afe2	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0
NFSP0	afe3	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0
NFSP1	afe4	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0
NFSP1	afe5	0.0.0.0	0.0.0.0	0s	Down	Not Plumbed	0

Network Interface Configuration Advanced Settings

Mode: Speed:
 Duplex:

Parent	Name	IP	Mode	Duplex	Speed
Host	hme0	10.5.1.21	Manual	Half	10
NFSP0	afe0	0.0.0.0	Manual	Half	10
NFSP0	afe1	0.0.0.0	Manual	Half	10
NFSP0	afe2	0.0.0.0	Manual	Half	10
NFSP0	afe3	0.0.0.0	Manual	Half	10
NFSP1	afe4	0.0.0.0	Manual	Half	10
NFSP1	afe5	0.0.0.0	Manual	Half	10
NFSP1	afe6	0.0.0.0	Manual	Half	10
NFSP1	afe7	0.0.0.0	Manual	Half	10

Network Configuration Tool Network Interface Configuration and Advanced Settings

Network Interface Configuration

This page allows you to set the following parameters:

- ▲ IP Address
- ▲ Subnet mask
- ▲ MTU (Maximum Transmission Unit)
- ▲ Broadcast Address format – zero (0.0.0.0) or one (255.255.255.255)
- ▲ UpState – Up or Down
- ▲ PlumbState (an interface must be plumbed to make it visible to the Unix kernel)

Advanced Settings

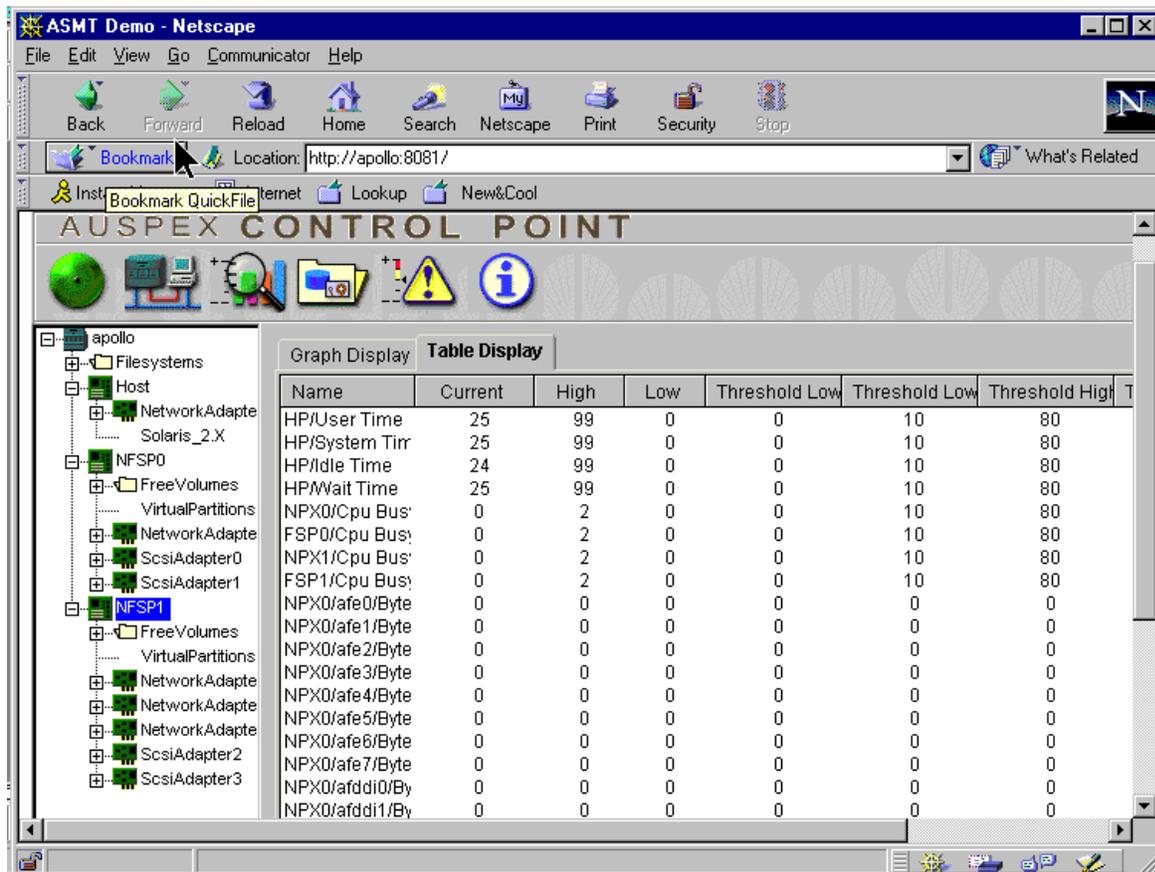
This page is not applicable to FDDI interfaces. It allows you to set the following parameters:

- ▲ Mode – Automatic or Manual
- ▲ Duplex – Half or Full
- ▲ Speed – 10 or 100 Mbps

You must ensure that the parameters chosen for the NetServer interfaces are also applied to the remote port to which the interface is connected.



Note: For improved network reliability, Auspex recommends that interfaces be configured manually rather than left to auto-negotiate.



Performance Tool

Performance Tool

The performance tool allows you to monitor the system status in more detail than the status screen. This information may be presented in either a tabular or a graphical form.

Table Display

The table display tab shows a list of system metrics, including the utilization of each processor (Host, NP or FSP) in the system, the number of bytes transferred for each Network Interface, and the number of operations for each disk drive.

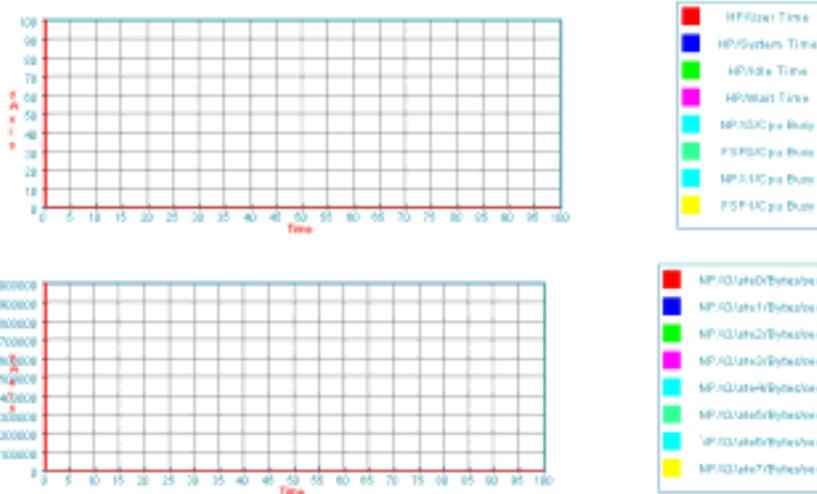
For each metric, the current, highest and lowest values seen are displayed, together with any thresholds which may have been set (see the section entitled “Event Policy Manager”).

You can limit the list of interfaces displayed by selecting NetServer components in the navigation window.

Graph Display

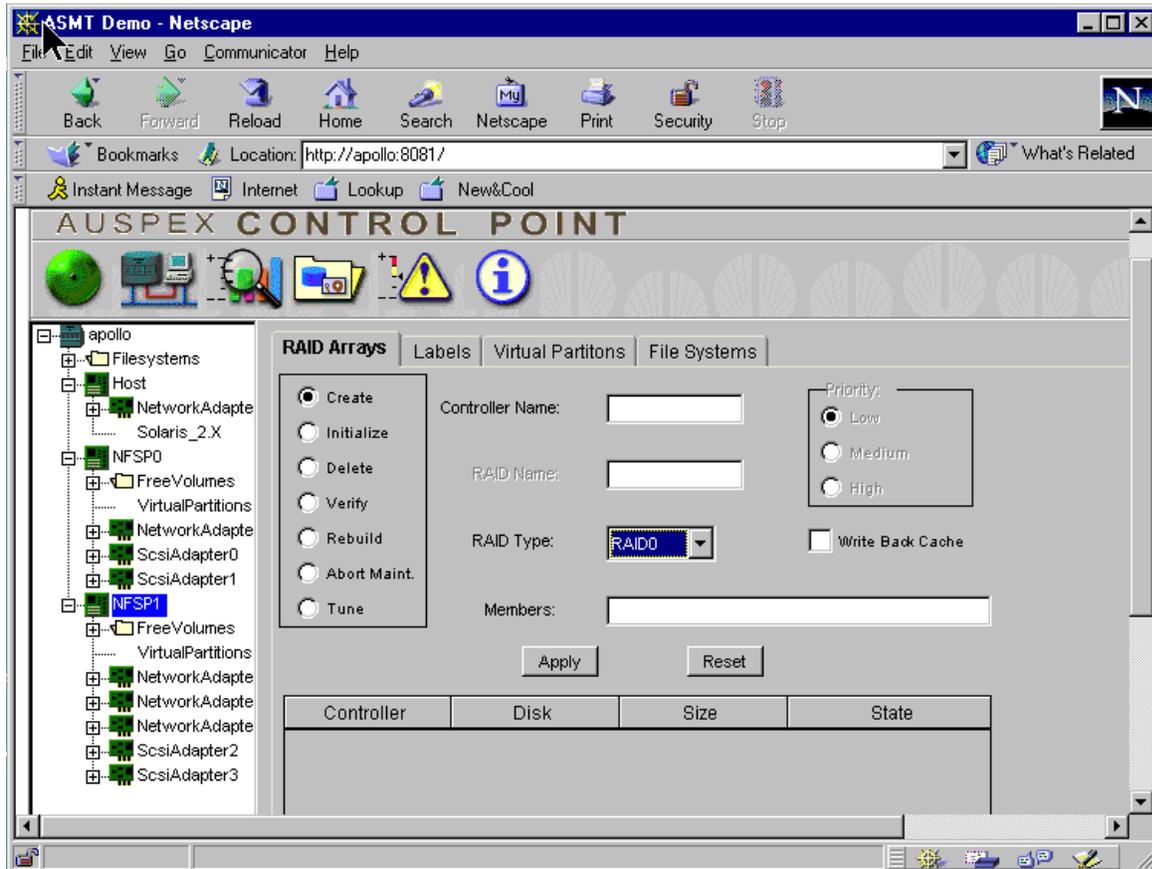
The graph display tab shows graphs of certain system metrics over time. Right-clicking to the right of the graph displays a dialog which allows you to adjust the display parameters (such as line or bar graph).

Graphs are created in real time, sampled every five seconds. The time axis is in seconds.



Name	Current	High	Low	Threshold Low	Threshold Low	Threshold High	Threshold High
HPUser Time	25	99	0	0	10	80	100
HPSystem Tim	25	99	0	0	10	80	100
HPIdle Time	24	99	0	0	10	80	100
HPWait Time	25	99	0	0	10	80	100
MPX0Cpu Bus	0	2	0	0	10	80	100
FSP0Cpu Bus	0	2	0	0	10	80	100
MPX1Cpu Bus	0	2	0	0	10	80	100
FSP1Cpu Bus	0	2	0	0	10	80	100
MPX0late0Byte	0	0	0	0	0	0	0
MPX0late1Byte	0	0	0	0	0	0	0
MPX0late2Byte	0	0	0	0	0	0	0
MPX0late3Byte	0	0	0	0	0	0	0
MPX0late4Byte	0	0	0	0	0	0	0
MPX0late5Byte	0	0	0	0	0	0	0
MPX0late6Byte	0	0	0	0	0	0	0
MPX0late7Byte	0	0	0	0	0	0	0
MPX0latd0By	0	0	0	0	0	0	0
MPX0latd1By	0	0	0	0	0	0	0
MPX0latd2By	0	0	0	0	0	0	0
MPX0latd3By	0	0	0	0	0	0	0
FSP0Lfs total	0	0	0	0	10	2000	2500
FSP0DiskDisp	0	0	0	0	0	200	200
FSP0DiskI/O	0	0	0	0	0	200	200

Performance Tool Performance Graph and Table



Volume Manager

Volume Manager

The volume manager provides tabs to set up the following:

- ▲ RAID Arrays
- ▲ RAID Array Labels (partitioning)
- ▲ Virtual Partitions
- ▲ File Systems

These tasks can also be accomplished using Auspex' `ax_storage` command.

RAID Arrays

You can use the **RAID Arrays** tab to create and maintain RAID arrays on the NetServer.

A radio-button dialog allows you to select the operation desired:

- ▲ Create

This option allows you to define a new RAID array.

- ▲ Initialize

This option allows you to initialize a RAID array. This step is optional, and only applies to RAID 5 arrays. If an array is not explicitly initialized, the system will initialize it automatically during use.

- ▲ Delete

This option allows you to delete an existing RAID array.

- ▲ Verify

This option allows you to check a RAID array for errors.

- ▲ Rebuild

This option allows you to rebuild the checksum information for a RAID array which is operating in degraded mode.

RAID Arrays | Labels | Virtual Partitons | File Systems

Create
 Initialize
 Delete
 Verify
 Rebuild
 Abort Maint.
 Tune

Controller Name:
 RAID Name:
 RAID Type:
 Members:

Priority: Low
 Medium
 High

Write Back Cache

Controller	Disk	Size	State

RAID Arrays | **Labels** | Virtual Partitons | File Systems

Create Modify

RAID Name:

Size in MB	Size in MB	Size in MB	Size in MB
Slice 0: <input type="text"/>	Slice 4: <input type="text"/>	Slice 8: <input type="text"/>	Slice 12: <input type="text"/>
Slice 1: <input type="text"/>	Slice 5: <input type="text"/>	Slice 9: <input type="text"/>	Slice 13: <input type="text"/>
Slice 2: <input type="text"/>	Slice 6: <input type="text"/>	Slice 10: <input type="text"/>	Slice 14: <input type="text"/>
Slice 3: <input type="text"/>	Slice 7: <input type="text"/>	Slice 11: <input type="text"/>	Slice 15: <input type="text"/>

Name	Slice0(MB)	Slice1(MB)	Slice2(MB)	Slice3(MB)	Slice4(MB)

Volume Manager RAID Arrays and Labels

▲ Abort Maintenance

This option allows you to cancel a verification or rebuild which is running.

▲ Tune

This option allows you to select write-through or write-back caching.

You should select the required option, then fill in the desired parameters:

▲ Mylex Controller name (for example, `fsp0m1`)

▲ RAID Name (for example, `fsp0m1rd3`)

▲ RAID Type:

0 Striping

1 Mirroring

5 Raid with parity shared across all disks

7 Single disk

▲ Members (which disks are in the array)

▲ Rebuild priority: Low, Medium or High

▲ Whether to use the write-back or write-through cache

Click on the **Apply** button to make your changes, or on **Reset** to discard them.

Labels

Before a RAID array can be used, it must be labelled, or partitioned. The **Label** tab allows you to define up to 15 partitions (also known as slices). The slices are numbered from 0 to 15; slice 2 always refers to the entire array and cannot be altered.

The defined arrays, together with their current partitioning, are listed in the table at the bottom on the screen. To see the complete partitioning information, you will have to scroll this table horizontally. You can select an array from this list to display its partitioning in the text boxes above.

RAID Arrays | Labels | **Virtual Partitons** | File Systems

Virtual Partition ▾

Create VP
 Delete VP
 Attach Mbr.
 Detach Mbr.
 Restore Mbr.

Name:

Type: Stripe Size: (K)

Size:

Members:

Name	Type

RAID Arrays | Labels | Virtual Partitons | **File Systems**

Initialize
 Verify
 Map
 Unmap
 Mount
 Unmount
 Share
 Unshare
 Grow

Block Size: (Bytes)

Cylinders/Group:

Fragment Size: (Bytes)

Bytes/Node:

% Free Space:

Raw Device: Optimization:

Name	Type	Fsck Device	Mount Option	FsckPass	Automoun

Volume Manager Virtual Partitions and File Systems (Initialization)

To partition an array, select the array and enter the size of the slices which you wish to create, then click on the **Apply** button.



Note: An error will be reported if you attempt to redefine a slice which is already in use.

A disk drive may not be partitioned directly, but you can define a RAID array of type 7 containing only that disk, and then partition that array.

Virtual Partitions

The **Virtual Partitions** tab displays a list of the currently defined virtual partitions in the system, and allows you to perform the following operations:

▲ Create

This option allows you to define a new virtual partition

▲ Delete

This option allows you to remove a previously defined partition

▲ Attach/Detach Member

These options allow you to add or remove members from a mirrored virtual partition. A mirror may not have more than two members.

▲ Restore Member

This option allows you to initiate the restoration of a member of a mirrored partition which is damaged or dirty

▲ Kill Restore

This option allows you to interrupt a restoration which is under way.

You should select the operation and supply the required parameters:

▲ partition name (for example, `fsp0vp11`)

▲ partition type (concat, stripe, mirror)

▲ stripe size, if applicable

▲ members of this partition

RAID Arrays Labels Virtual Partitons **File Systems**

Initialize
 Verify
 Mount
 Unmount
 Share
 Unshare
 Expand

Verify :
 Name:
 Starting Block:
 Answer Mode: Yes

Mount:
 Mount Point:

Share:
 Share Name:

Name	Type	Fsck Device	Mount Option	FsckPass	Automoun
/exp1	LFS		rw,dev=4040	1882224240	0
/exp2	LFS		rw,dev=4040	1869837350	0

RAID Arrays Labels Virtual Partitons **File Systems**

Initialize
 Verify
 Mount
 Unmount
 Share
 Unshare
 Expand

Filesystem Name:

Virtual Partition To Be Expanded :

Expand using :

Name	VP To Expand	Size	Free Slices	Size
/exp1	fsp0vp15	199	fsp0m0rd0s10	1000
/exp2	fsp0vp14	200	fsp0m0rd0s11	1000
			fsp0m0rd0s12	1000
			fsp0m0rd0s13	1000
			fsp0m0rd0s2	17365
			fsp0m0rd0s3	1000
			fsp0m0rd0s4	1000
			fsp0m0rd0s9	1000

File Systems Verify, (Un)mount, (Un)share and Expand

File Systems

The **File Systems** tab displays a list of defined file systems, and allows you to perform the following operations:

▲ Initialize

This option formats a previously defined partition or disk for use as a file system.

▲ Verify

This option performs consistency checks on the specified file system.

▲ (Un)mount

This option mounts a previously created file system within the file hierarchy of the NetServer, or unmounts it.

▲ (Un)Share

Make a file system via the network, or cancel sharing

▲ Expand

Increase the size of a file system by adding extra storage space.

When you select the desired operation, the work area will change to prompt for the appropriate parameters:

▲ Name

This is the name of the virtual partition to initialize (for example, `fsp0vp11`).

▲ Mount Point

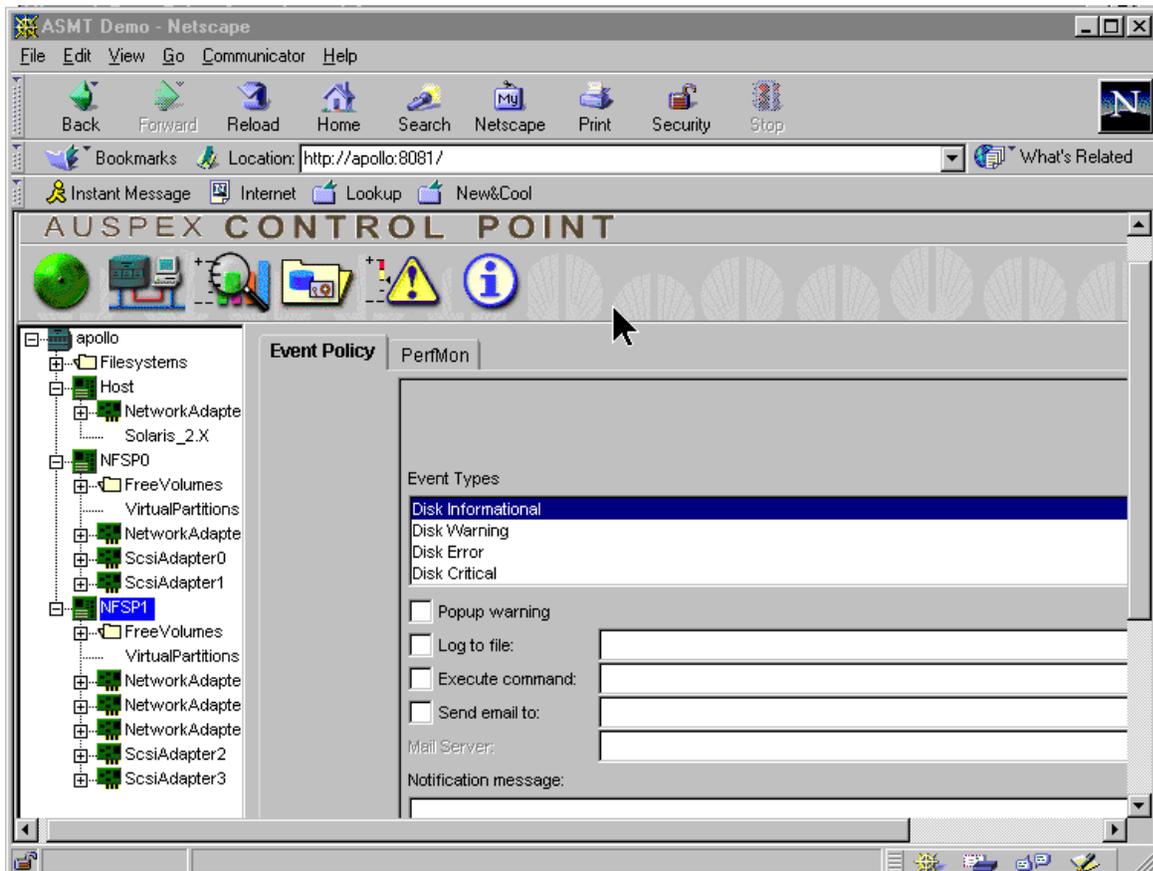
The location within the file hierarchy where the file system is to be mounted.

▲ Share Name

The name by which the file system is to be made available across the network.

▲ Expand Using

The slice to be added to the partition



Event Policy Manager

Event Policy Manager

The **Event Policy Manager** allows you to define events for which you wish to receive notification from the system. Examples would be processor usage or network error rate over a certain value.

The Event Policy Manager has two sections:

▲ Event Policy

This tab allows you to specify the specific action to be taken for each event type.

▲ Perfmon

This tab allows you to specify the conditions under which each event will occur.

Event Policy

At the top of the window is the Event Types list box which specifies the events for which you can define actions. Each event type is a combination of two elements. The first is one of the following system components:

▲ Disk

▲ CPU

▲ Network

and the second, the severity of the event:

▲ Critical

▲ Error

▲ Warning

▲ Informational

You cannot create additional event types.

Below this box is a list of the four possible actions. An event may be associated with any combination of actions. The actions are:

▲ Popup warning

A message is displayed in a popup window of the Control Point applet.

▲ Log to file

A message is written to the file specified. Only the name of the file should be given; it will be created in the `/var/log/asmt` directory.

▲ Execute command

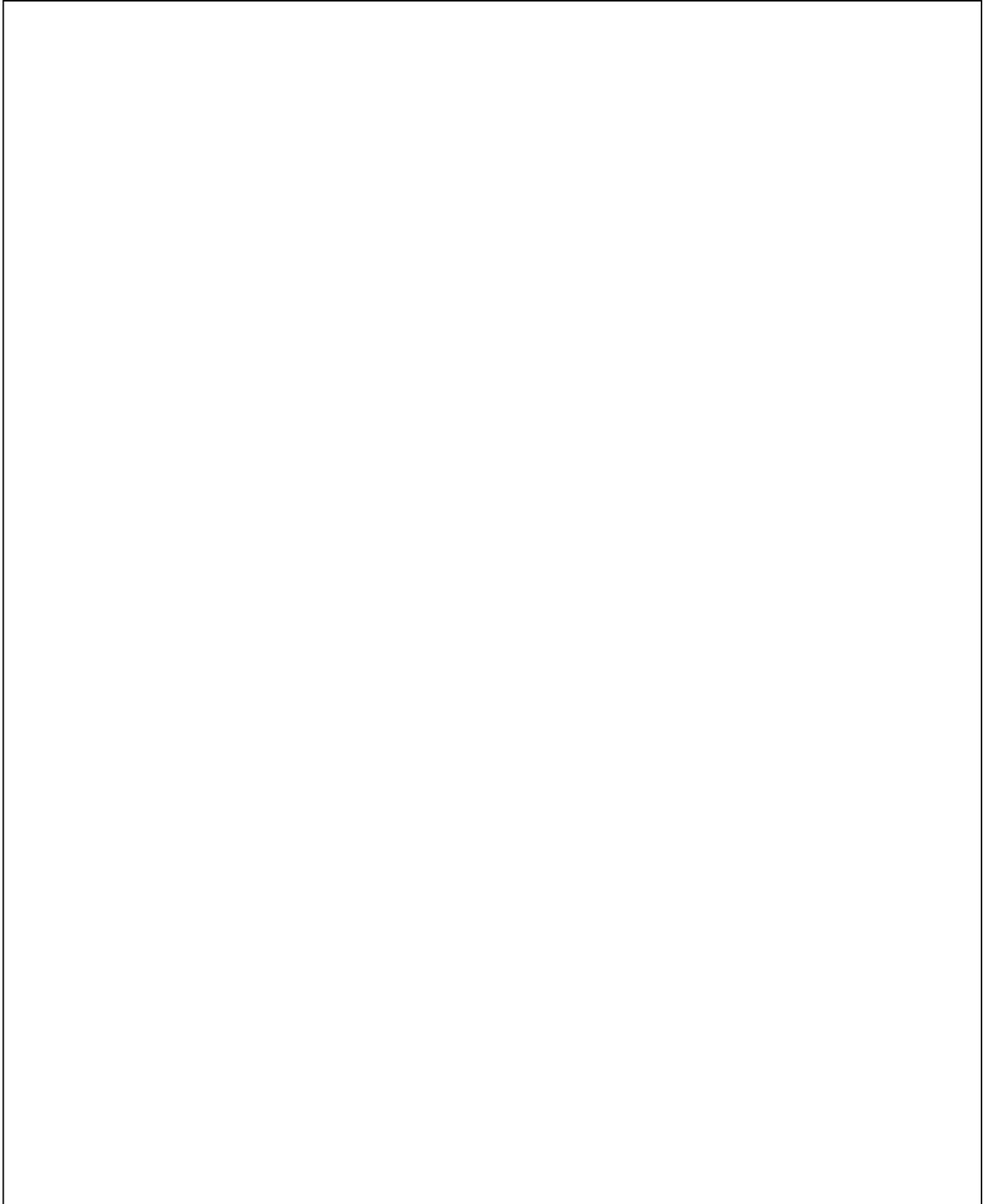
The command specified will be run.

▲ Send email

A message is sent to the email address(es) specified. To give multiple addresses, separate them with commas. If you wish to use a mail server other than your site default, enter its name in the **Mail Server** field. Your message should be entered in the **Notification Message** field.

At the bottom of the screen are buttons which allow you to save all entries or just the current entry, restore the factory standard settings or your saved entries, and to clear the current entry.

You could, for example, set up informational events to log a message to a file, warnings to also popup an alert, and error or critical events to send email.



Slidetitle

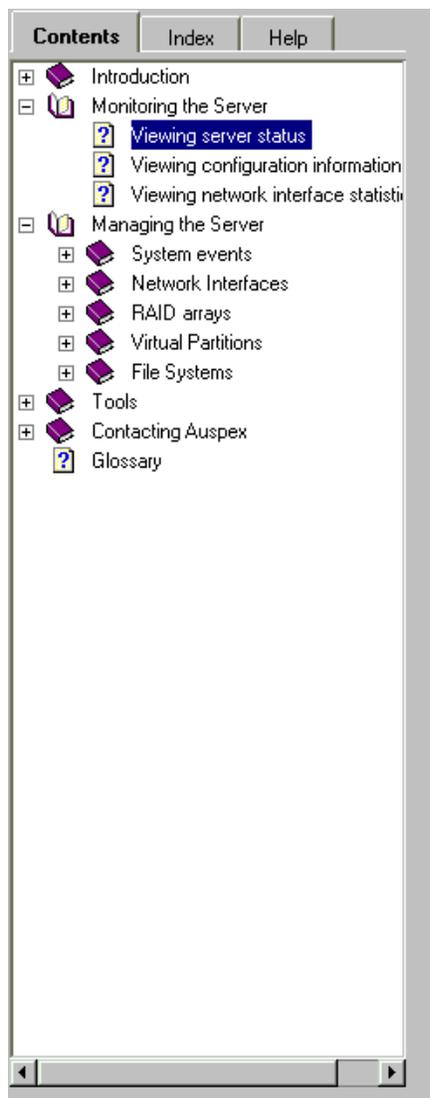
Perfmon

Having defined the actions to be taken for each event type, the **Perfmon** tab allows you to specify under what circumstances each event will be triggered.

This tab displays a table listing the system metrics (see the “Performance Tool” section). For each metric, two sets of low and high thresholds may be defined, with an event type to be triggered if the value goes outside of the defined range. To change the threshold values, double-click on the value to be altered.

The following table shows a few examples of possible thresholds. Note the use of high or low thresholds, depending on the nature of the metric.

Metric	Low	High	Effect
CPU Busy	0%	50%	Trigger an event if CPU Busy exceeds 50%
CPU Busy	0%	80%	Trigger an event if CPU Busy exceeds 80%
Free Space	30%	100%	Trigger an event if Free Space is less than 30%
Free Space	10%	100%	Trigger an event if Free Space is less than 30%



Status Tool

To view server status

1. Click the Status tool icon  .
2. Select a server in the Server Tree panel on the left side of the Control Point window.
3. Click the **Status Summary** tab in the Status tool.

The Status Summary screen displays status information about the selected server.

See also

- [» Status Summary tab](#)
- [» Viewing configuration information](#)
- [» Viewing network interface statistics](#)

Online Help

Online Help

Contextual help information is available at any time by clicking on the help icon. The information displayed describes

- ▲ the individual fields proposed
- ▲ the different commands available
- ▲ the procedures appropriate to the screen

Student notes

Lab

1. Start up your Web browser and connect to the ASMT (your instructor will tell you the hostname and authentication information to use). Identify the various elements of the display:
 - tool icons
 - navigation tree
 - work panel
2. Select each of the tools in turn, using the icons. Within each tool, look at each of the tabbed dialogs in turn, and also click on the online help icon to see the information displayed. Please do not change anything at this point.
3. Using the navigation tree, select system components and confirm that you can jump directly to their configuration dialog.

For the following exercises, please cancel any changes you make (using the Reset button), unless your instructor tells you otherwise!

4. Using the System Status tool, answer the following questions:
 - How long has this system been running?
 - How many disk drives are present in the system?
 - How many network interfaces are present in the system?
 - What types are the network interfaces (FDDI, 100BaseT)?
 - What is the serial number of the host processor?
 - Have any error or warning messages been issued?
5. Using the Network Configuration Tool, select a network interface and practice changing the parameters. If there is a network interface available which is not currently in use, then feel free to apply your changes, to see them in the table.

Use the navigation tree to limit the interfaces which are displayed.

- Why does Auspex recommend setting speed and duplex manually rather than allowing the interfaces to auto-negotiate?

Student notes

6. Using the performance tools, create graphs of CPU and network utilization. Compare bar and line graphs.
 - Compare the user, system, idle and wait times for the Host CPU.
7. Using the volume manager, examine the RAID arrays defined on the system. Choose an array, and answer the following questions:
 - What controller is it on?
 - What are its name, type, priority and total size?
 - What type of caching is used?
 - Which disks make up the array?
 - What size are the slices (partitions) of the array?

Practice changing some of these values (but please don't apply them!)

8. Still using the volume manager, examine the File Systems defined on the system. Choose one which is associated with a virtual partition, and answer the following questions:
 - What are its name and type?
 - Where is mounted?
 - How much free space is available?

Identify the virtual partition, and answer the following questions:

- What are its name, type and size?
 - What are its members?
9. Using the Event Policy Manager, practice defining actions for events and associating them with specific conditions on the NetServer.

Define a popup message to appear when CPU usage reaches 20%. Using any means at your disposal, raise the load on the CPU and confirm that the message does indeed appear.

Empty rectangular box for student notes.

Student notes