System Management Software
User's Manual

ASUS System Web-based Management

Disclaimer/Copyrights

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. (“ASUS”).

ASUS PROVIDES THIS MANUAL “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification of alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners’ benefit, without intent to infringe.

The product name and revision number are both printed on the product itself. Manual revisions are released for each product design represented by the digit before and after the period of the manual revision number. Manual updates are represented by the third digit in the manual revision number.

For previous or updated manuals, BIOS, drivers, or product release information, contact ASUS at http://www.asus.com.tw or through any of the means indicated on the following page.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Copyright © 2001 ASUSTeK COMPUTER INC. All Rights Reserved.

Product Name:	**ASMS**
Manual Revision:	**1.00 E791**
Release Date:	**July 2001**

ASUS Contact Information

ASUSTeK COMPUTER INC. (Asia-Pacific)

Marketing

Address: 150 Li-Te Road, Peitou, Taipei, Taiwan 112
Telephone: +886-2-2894-3447
Fax: +886-2-2894-3449
Email: info@asus.com.tw

Technical Support

Tel (English): +886-2-2890-7123
Tel (Chinese): +886-2-2890-7113
Fax: +886-2-2893-7775
Email: tsd@asus.com.tw
Newsgroup: news2.asus.com.tw
WWW: www.asus.com.tw
FTP: ftp.asus.com.tw/pub/ASUS

ASUS COMPUTER INTERNATIONAL (America)

Marketing

Address: 6737 Mowry Avenue, Mowry Business Center, Building 2
Newark, CA 94560, USA
Fax: +1-510-608-4555
Email: info-usa@asus.com.tw

Technical Support

Fax: +1-510-608-4555
BBS: +1-510-739-3774
Email: tsd@asus.com
WWW: www.asus.com
FTP: ftp.asus.com.tw/pub/ASUS

ASUS COMPUTER GmbH (Europe)

Marketing

Address: Harkortstr. 25, 40880 Ratingen, BRD, Germany
Fax: +49-2102-442066
Email: sales@asuscom.de (for marketing requests only)

Technical Support

Hotline: MB/Others: +49-2102-9599-0
Notebook: +49-2102-9599-10
Fax: +49-2102-9599-11
Support (Email): www.asuscom.de/de/support (for online support)
WWW: www.asuscom.de
FTP: ftp.asuscom.de/pub/ASUSCOM

Contents

Chapter Descriptions 7

ASMA Introduction 8

Installing ASMA Software for Windows 9

Install ASMA for Windows 2000 (CD Item 1) 10

Installing SNMP (for ASMA) 11

Configuring SNMP (for ASMA) 12

ASMA for WinNT Performance Monitor Extensions 14

ASMA for Windows NT Event Viewer 16

ASUS System Web-based Management (Windows) 17

- Overview of ASWM for Windows 17
- Requirements 17
- Features 18

Install ASWM for Windows 2000 (CD Item 2) 19

Uninstalling ASWM (or other software) 21

Accessing ASWM for Windows 22

Using ASUS System Web-based Management 23

(1) The System Summary Information Screen 23

- ASWM Web Display 24
- Exception situation 24
- Properties 24
- System Information 24

(2) System Summary Front View 25

(3) System Summary Rear View 25

(4) System Summary Top View 26

(5) Detailed Heath Information 27

- Health: MB Fans 27
- Health: MB Temperatures 27
- Health: MB Voltages 28
- Health: Power Supply 28
- Health: Backplane 29
- Remapping the Backplane 30
- Health: Drives 31
- Health: Memory 31
- Health: CPU Utilization 31

Contents

(6) Inventory Items 32
OS Information 32
FRU Information 32
PCI Devices 32
Network Cards 32
Event Log Viewer 32
System Warning 33
System Real Time Chart 34
VNC Client 35
ASMA Configuration - General 36
ASMA Configuration - Alert Mail 37
ASWM Configuration - General 38
IP Access Restrictions 38
Overview of ASMA for Linux 39
Installation and Configuration 40
Configuration Files 43
Function Description 45
Utility and MIB File 45
System/ASMA Log 45
Using SCSI RAID 46
ASMA for Linux FAQ 47
Overview of ASWM for Linux 49
Requirements 50
Operation System: 50
Prerequisite Software: 50
Features 51
System summary 51
Installing ASWM for Linux 52
I. Configuration of Apache HTTP Server for ASWM 52
II. Configuration of ASMA Agent Info. for ASWM 53
III. Configuration of IP Access Information for ASWM 54
IV. Startup ASWM 55
Operations 55
Uninstalling ASWM for Linux 56

Contents

Using ASUS System Web-based Management 57
(1) The System Summary Information Screen 57
(2) System Summary Front View 59
(3) System Summary Rear View 59
(4) System Summary Top View 60
(5) Detailed Heath Information 61
Remapping the Backplane 64
(6) Inventory Items 66
System Warning 67
System Real Time Chart 68
VNC Client 69
ASMA Configuration - General 71
ASMA Configuration - Alert Mail 73
ASWM Configuration - General 74
IP Access Restrictions 74
ASWM for Linux FAQ 75
Install ASMA for Netware 4.x/5.x/6.x (CD Item 3) 79
Install and configure SNMP service on Netware 4.x/5.x/6.x 80
Uninstalling ASMA for NetWare 81
Appendix 84
Temperature Conversion Chart 84

About this Manual

This User's Manual is intended for advanced system administrators with hardware and software knowledge of server systems.

Chapter Descriptions

This User's Manual contains the following parts:

Chapter 1: ASMA for Windows

This chapter describes installation procedures and information for proper setup of the ASUS System Monitoring Agent software in **Microsoft Windows 2000**.

Chapter 2: ASWM for Windows

This chapter describes installation procedures and information for proper setup of the ASUS System Web-based Management (ASWM) software in **Microsoft Windows 2000**.

Chapter 3: ASMA for Linux

This chapter describes installation procedures and usage information for the ASUS System Monitoring Agent software in **Linux**.

Chapter 4: ASWM for Linux

This chapter describes installation procedures and usage information for the ASUS System Web-based Management software in **Linux**.

Chapter 5: ASMA for Netware

This chapter describes installation procedures and information for proper setup of the ASUS System Monitoring Agent in **Novell Netware**. **Note: ASWM is not supported in Netware.**

ASMA Introduction

ASUS System Monitoring Agent is an SNMP agent. This software module enables computers to be managed by Network Management Stations (NMSs) through the Internet. ASUS System Monitoring Agent can report computer fan RPMs, voltage levels, system temperatures, CPU temperatures, and chassis intrusion to the NMS. ASUS System Monitoring Agent can enable or disable Automatic Server Restart (ASR) function remotely from an NMS through the Internet. ASR is a function that can reboot the computer system automatically when a computer system hangs. ASUS System Monitoring Agent also support Remote Reboot function. Users can reboot the computer system from an NMS through the Internet.

ASUS System Monitoring Agent provides extensions to the Windows NT Performance Monitor utility that allow you to monitor the computer fan speeds, voltage levels, system temperatures, and CPU temperatures on either the local or remote computers without using an NMS. All you needed is the Windows NT Performance Monitor.

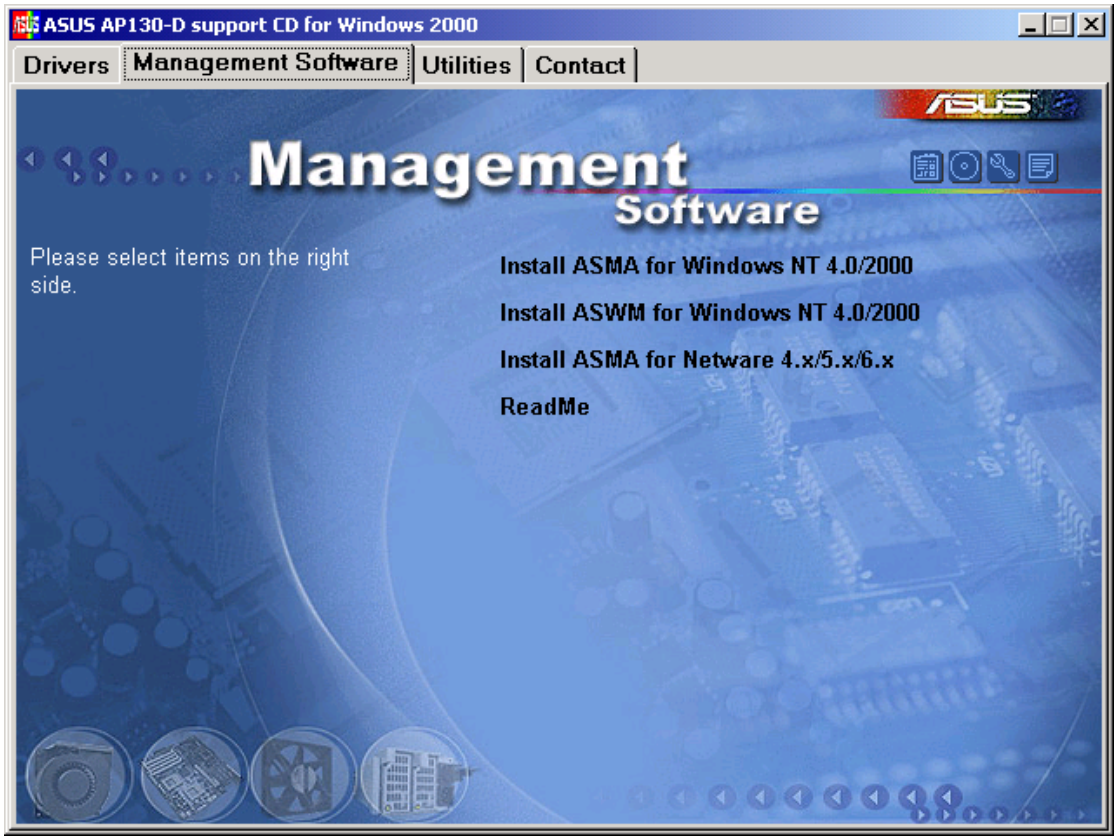
If you have installed a Web Administration for Microsoft Windows NT Server (software module from Windows NT Resource Kit) and ASUS System Monitoring Agent on the same server, then authorized users can monitor computer fan speeds, voltage levels, system temperatures, and CPU temperatures from any Web browser.

ASUS System Monitoring Agent can record the history of ASUS System Monitoring Agent status. The status includes the time during which alert events (fan/voltage/temperature) occur and what type alert events (fatal/warning/normal) occur. The status also logs the time ASR/Remote Reboot/Chassis Intrusion is enabled or disabled. These status events are all logged in the Windows NT Application event log file. Users can view these event log easily from Windows NT event viewer. These status events are displayed in different colors (for example, red for critical events, yellow for warning events, and blue for normal indication events). Through different colors, one quick look at the screen will cover the entire scope of every computer status across the enterprise. Users can also view another computer's ASUS System Monitoring Agent's event log remotely by logging into that server’s Windows NT event viewer.

Installing ASMA Software for Windows

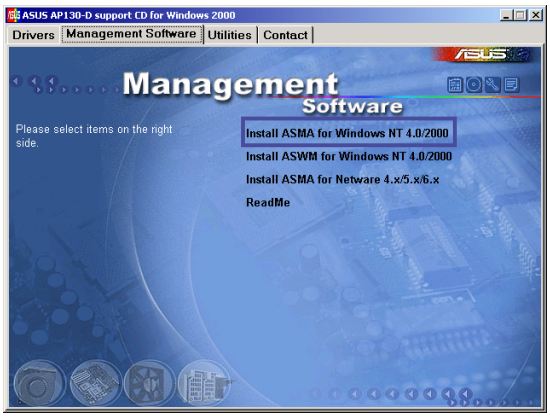
This chapter will show you the installation procedures and information needed to complete the software setup.

When you insert the support CD in Windows, the following autorun menu will show. If your autorun is disabled, run **bin\ASSETUP.EXE** in the root of the CD.



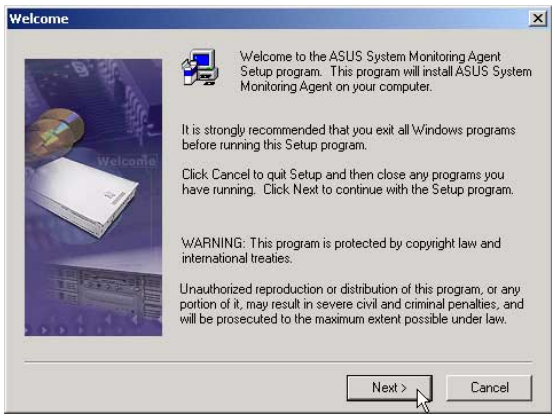
Install ASMA for Windows 2000 (CD Item 1)

Installs ASUS system monitoring agent for Windows 2000/NT4.

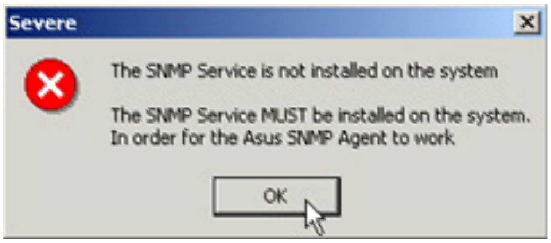


NOTE: You must first install SNMP service before installing ASMA

Before you install ASUS System Monitoring Agent, you should make sure that SNMP Service is already installed because the ASUS System Monitoring Agent need Windows SNMP service to work correctly. This software also supports Windows NT4.0 (Workstation and Server).



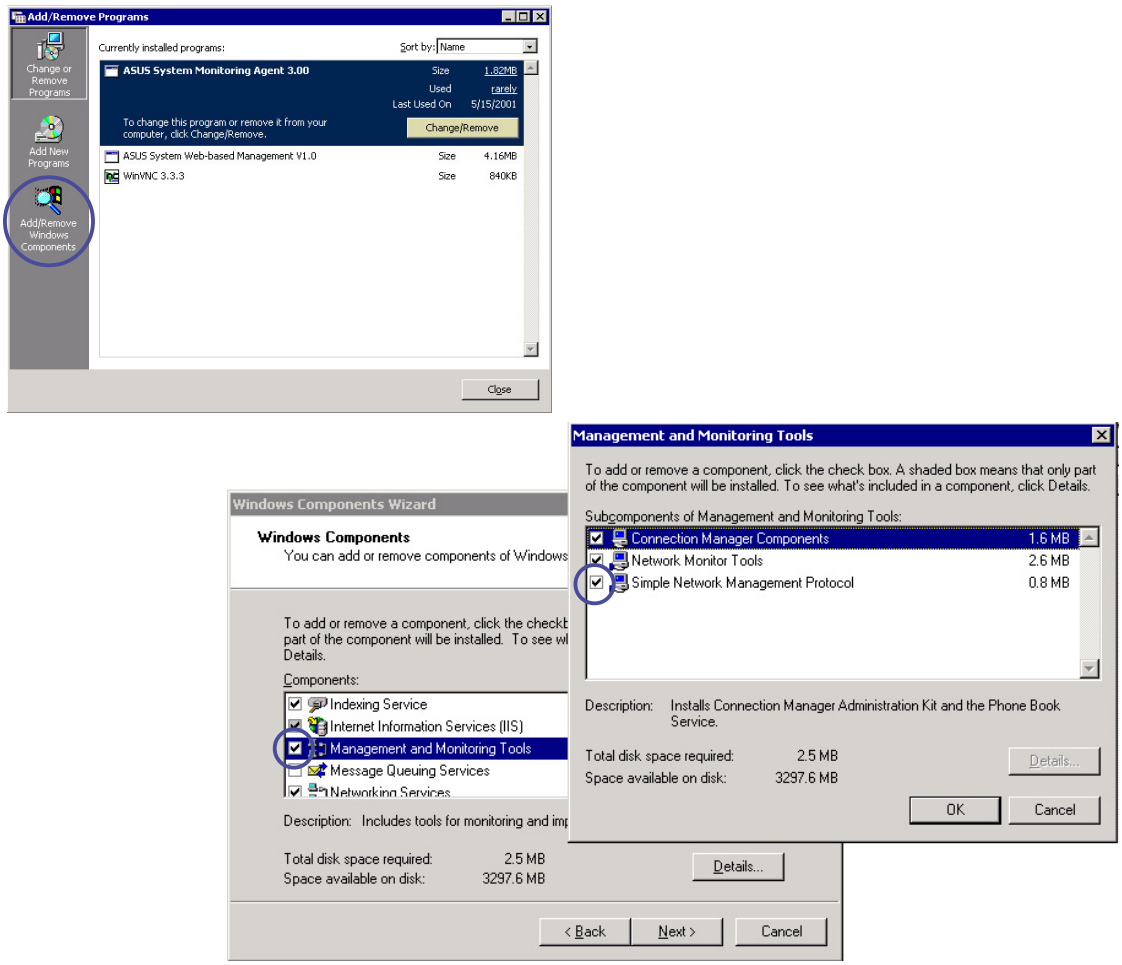
Click **Install ASMA for Windows 2000** on the autorun menu. Click **Next** after reading the "Welcome" screen.



If SNMP service is not installed on your system, installation will stop and you will get this warning message. Clicking **OK** will exit the installation wizard.

Installing SNMP (for ASMA)

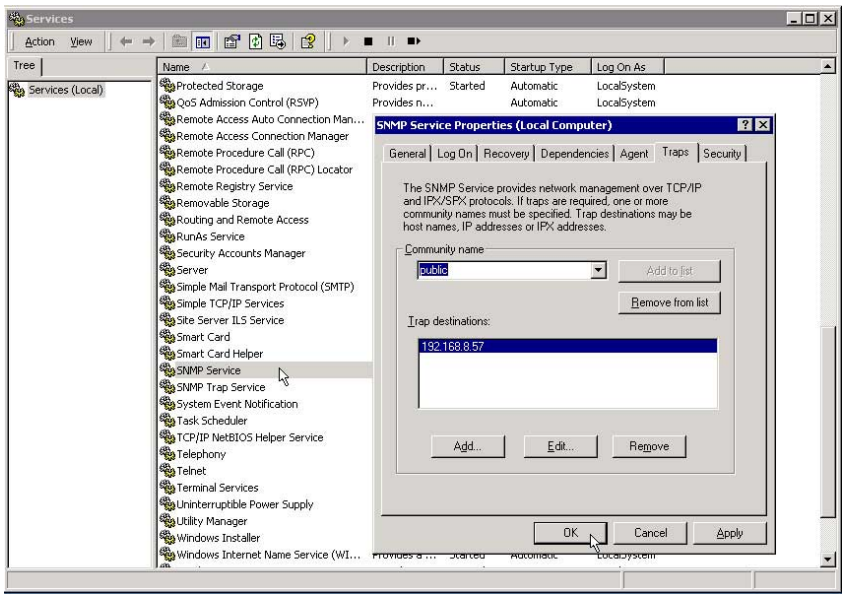
If you did not install SNMP, you will have to do it now. Find “Add/ Remove Programs” in the Control Panel and select Management and Monitoring Tools which will include Simple Network Management Protocol (SNMP).

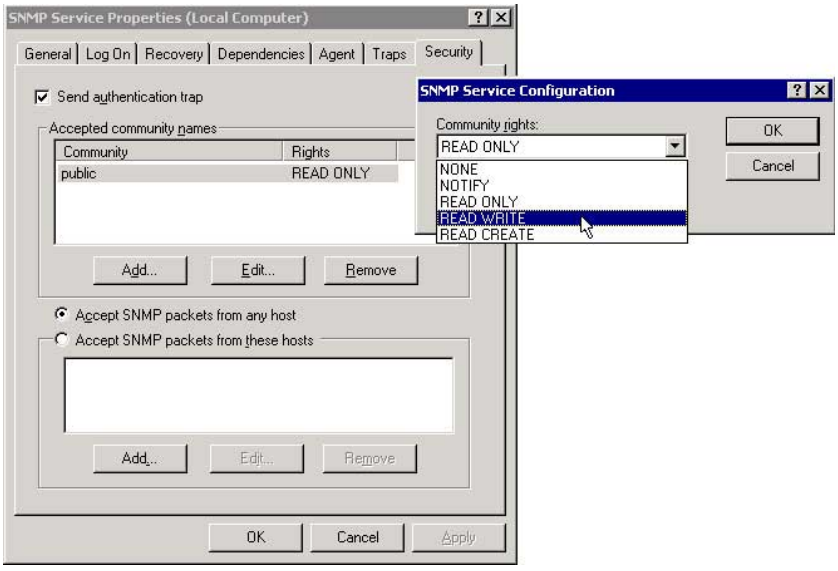


Install ASMA for Windows 2000 (Cont')

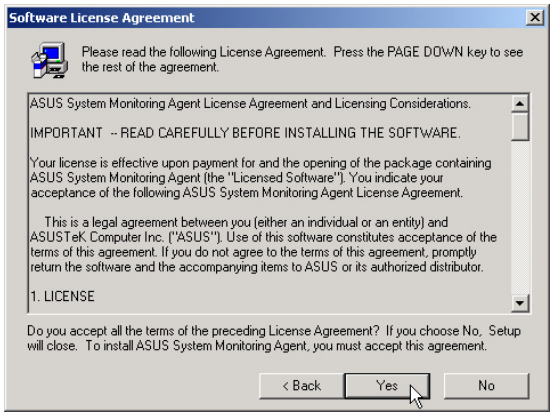
Configuring SNMP (for ASMA)

1. Double click the **SNMP Service** in "Start | Administrative Tools | Services"
2. Click the **Traps** tab
3. Enter a "Community name" such as **Public**
4. Set a "Trap destination" IP address to the console you want the messages sent to.
5. Click the Security tab.
6. Change the "Public" community "rights" to **READ WRITE**

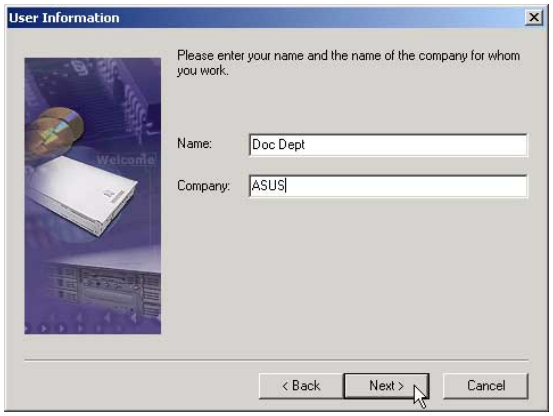




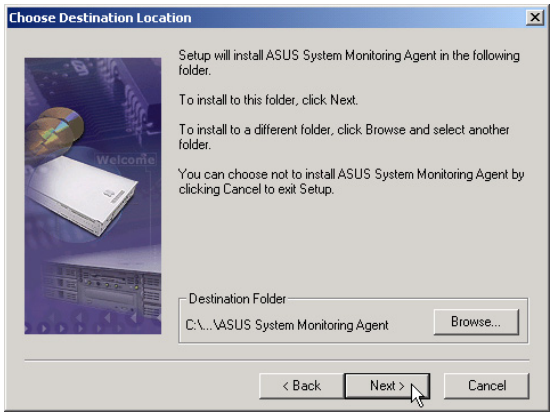
ASMA for Windows



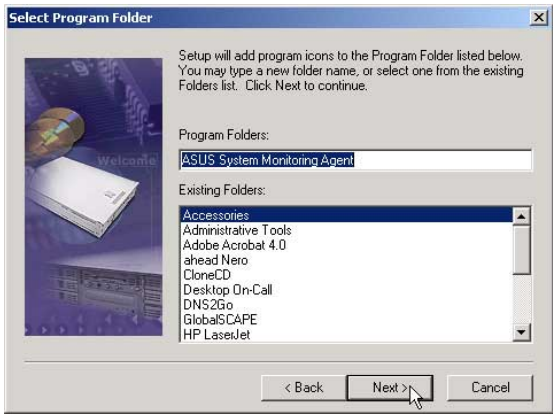
Click **Yes** after reading the "License Agreement"



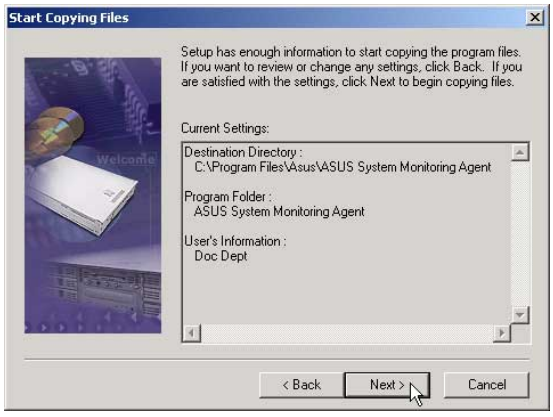
Enter a user name and company name, then click **Next** to continue.



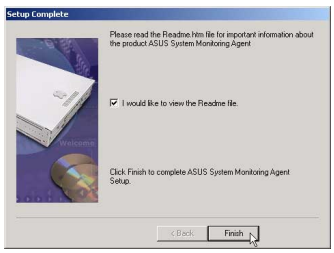
Browse to another folder or click **Next** to use the default folder.



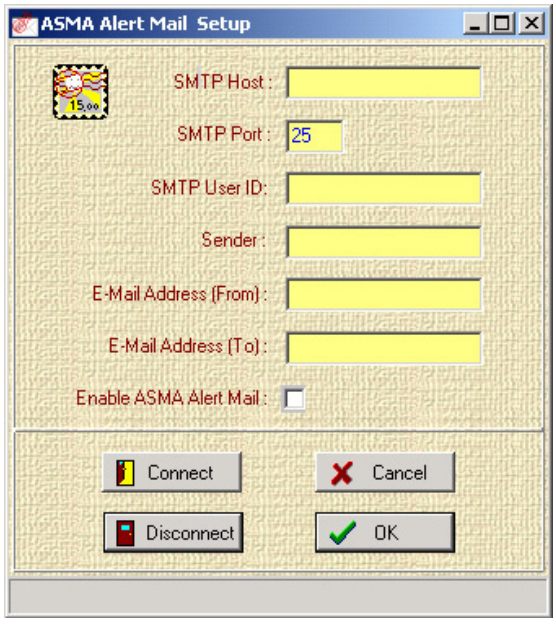
Specify a program folder for the icons or click **Next** to use the default.



Verify the information and click **Next** to continue.



Once setup is complete, you can select to view the readme and click **Finish**.



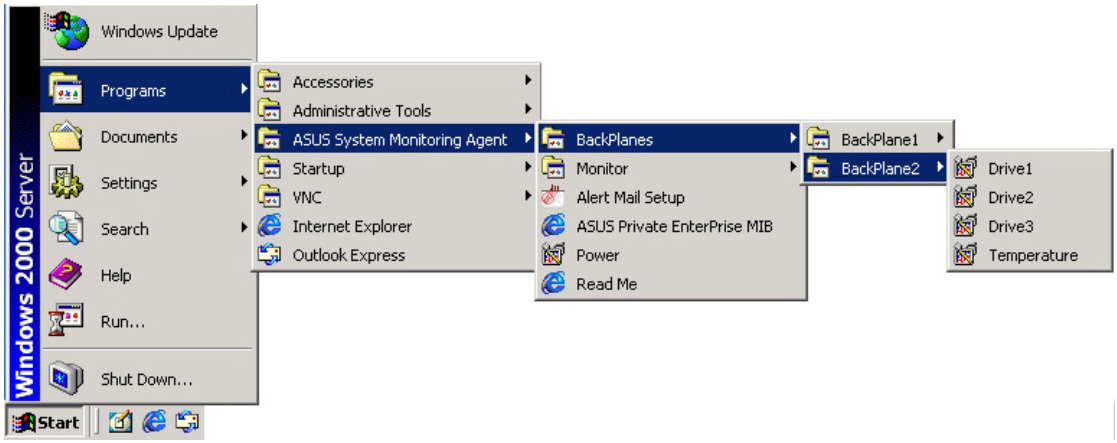
Enter your SMTP information and select "Enable ASMA Alert Mail". You can also enter/edit this information later.

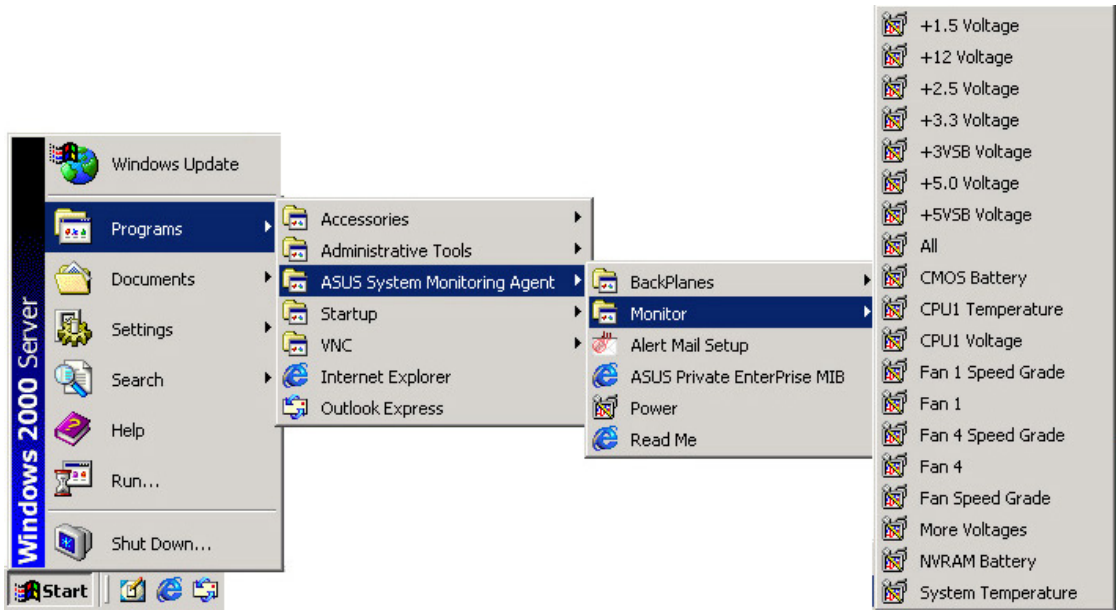
ASMA for WinNT Performance Monitor Extensions

There are two ways that a user can monitor system temperature, voltage level and fan speed from NT Performance Monitor.

Method 1:

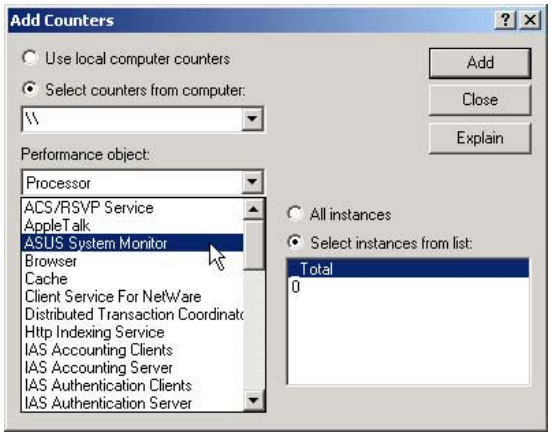
From the Windows NT desktop, choose Start | Programs | ASUS System Monitor Agent | Monitor. Click the icons from the Monitor that you can monitor the status of the system's temperature, voltages and fan speed.

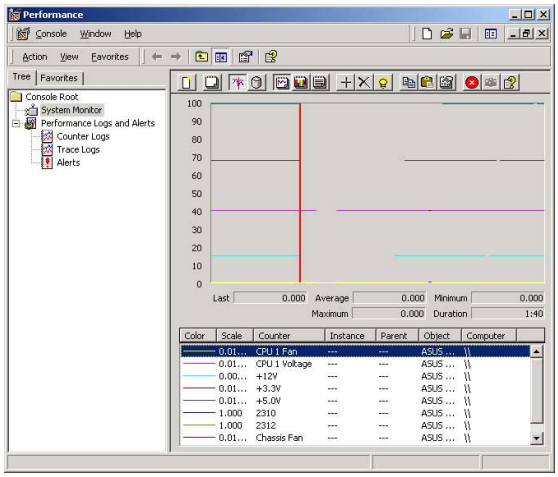




Method 2:

1. From the Windows NT desktop, choose Start | Programs | Administrative Tools (Common) | Performance Monitor.
2. From the Performance Monitor choose Edit | Add to Chart to display the Add to Chart dialog box. Your computer's name should appear in the Computer field. To monitor a different computer, click the ... button to the right of the field, which displays a dialog box.
3. Select the computer you want to monitor from the list and click OK.
4. From the Object list, choose ASUS System Monitor. This displays a list of ASUS System Monitor performance counters in the Counter list box.
5. To see a description of a counter, click the counter in the Counter list box, and click the Explain button. This displays a Counter Definition panel that describes the counter.
6. In the Counter list box, click a performance counter you want to monitor, and click the Add button. Repeat this step for all counters you want to monitor.
7. When you are finished adding counters to the chart, close the Add to Chart dialog box. You can now observe the color-codes graphs of the counters you have chosen as they illustrate current. Using Method 2 a user can monitor another computer that is installed with the ASUS System Monitoring Agent remotely from the network.



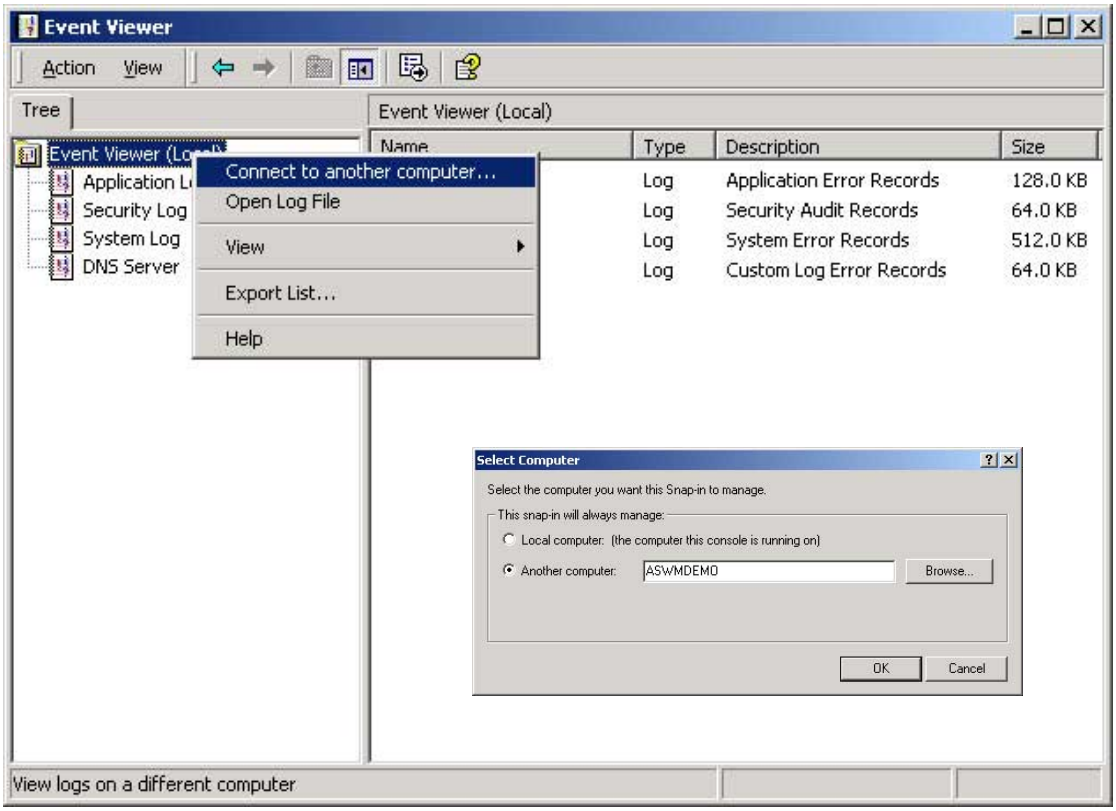


ASMA for Windows NT Event Viewer

There is one method that a user can view ASUS System Monitoring Agent event log from Windows NT

1. From the Windows NT desktop, choose Start | Programs | Administrative Tools (common) | Event Viewer and click it.
2. From the Event Viewer choose Log | Select Computer to display Select Computer dialog box. To view a different computer, select the computer you want to view from the list and click OK.
3. From the Event Viewer choose Log | Application to view the ASUS System Monitoring Agent's events from ASMA at the Source field.

By skipping step 2 a user can view local machine ASUS System Monitoring Agent's events log. For all steps a user can view another machine events log that is installed with the ASUS System Monitoring Agent remotely from the network.



ASUS System Web-based Management (Windows)

Overview of ASWM for Windows

ASWM is a web-base tool installed in server site to offer managed ability from HTTP protocol. That is, you can manage server just from any machine by web browser.

Here are a few of the advantages you can acquire from ASWM.

- The installation and configuration are easy. Only password and install directory need the choice of user.
- ASWM is web-base tool. Only web browsers is a requirement in client site.
- Get the REAL server system image from remote site through browser. (What you see is What you get)
- View up to date data from server side without refresh the page of browser. And there are icons to indicate the situation of server. It's easy to locate what problem occurred in server.
- Friendly and straightforward user interface to enhance the ability to focus the problems of server quickly and easily.

Requirements

Agent (Server) Side

- Operating System:
  Windows NT 4.0 (except NT4 workstation)+SP5+Option pack or Windows 2000 (professional or server).
- Install ASUS System Web-based Management (ASWM)
- Install ASUS System Management Agent (ASMA) 3.0 or above.

NOTE: If using Windows 2000 professional, only one local web site can be active so ASWM will disable any other local web site.

Client (User) Side

- Only web browser is required
- Microsoft Internet Explorer 4.0 or above.
- Netscape 4.0 or above, but not Netscape 6.

ASUS System Web-based Management

Features

- Real Time Chart

System summary - Health devices

- MB Fans
- MB Temperatures
- MB Voltages
- Backplane
- Drives
- Memory
- CPU

Inventory information

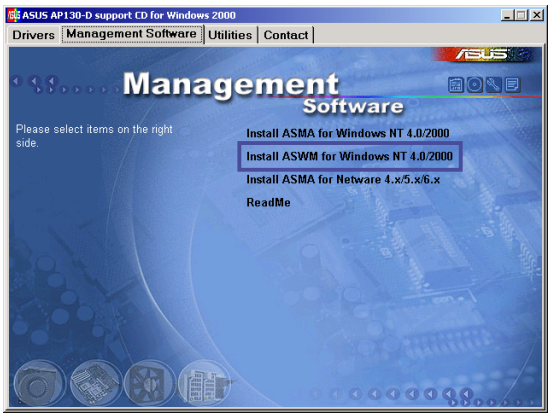
- OS Information
- FRU Information
- PCI devices (Not supported in Windows NT)
- Network cards
- Event log viewer
- VNC client

Configuration

- ASMA Configuration
- ASWM Configuration

Install ASWM for Windows 2000 (CD Item 2)

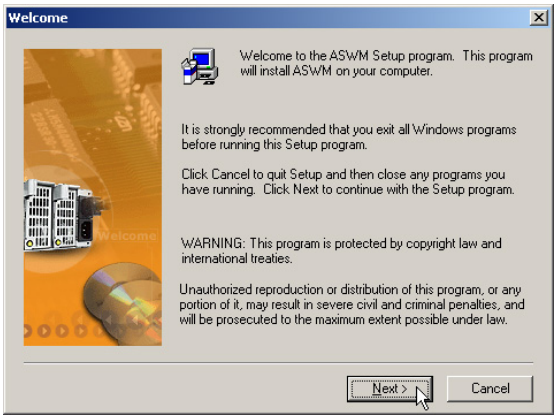
Installs ASUS System Web-based Management for Windows 2000. You cannot reinstall ASWM if it has already been installed. If you are installing a new version, you should uninstall the current version. Because files are shared out, it is highly recommended that you install ASWM on an NTFS partition for better security.



NOTE: You must first install ASMA before installing ASWM.

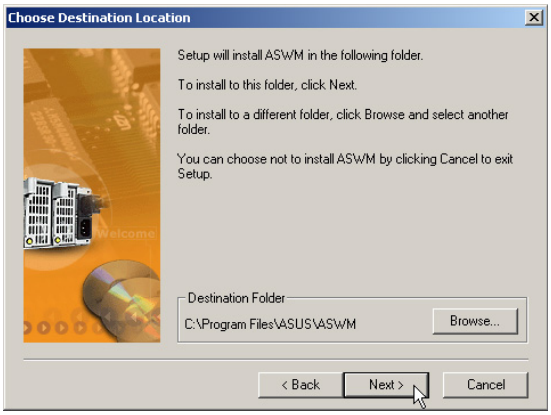
After you install ASMA successfully, you will be asked to install ASWM if it is not detected on your system.

If your motherboard does not have the proper information written to the FRU, you will not be able to continue with ASWM installation. That is why it is necessary to buy the ASUS 1U or 2U server together with this software package.

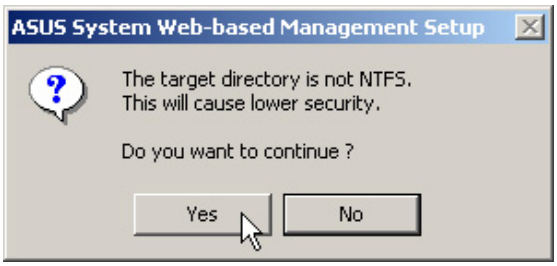


Click **Next** after reading the "Welcome" message.

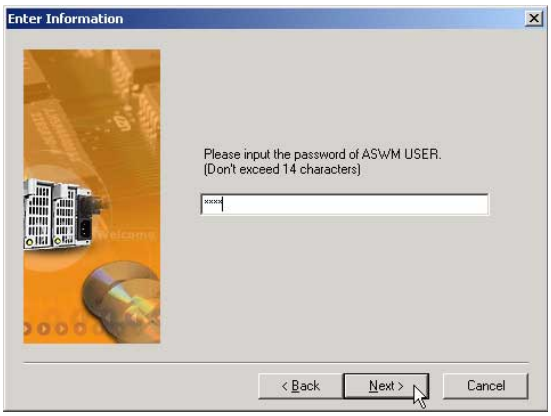
Install ASWM for Windows 2000 (Cont')



Browse to a new destination folder or click **Next** to use the default.



This message lets you know that NTFS is recommended, but you may still continue.

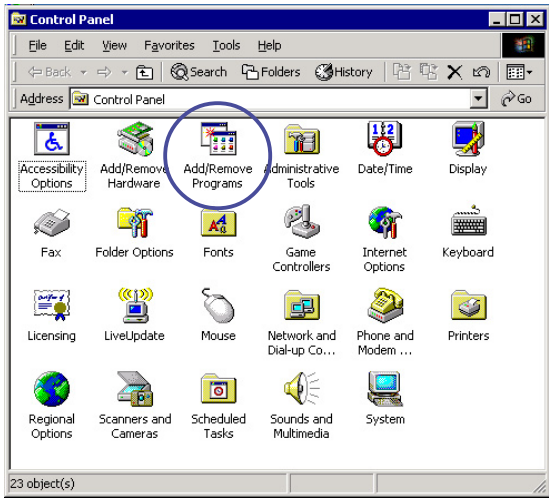


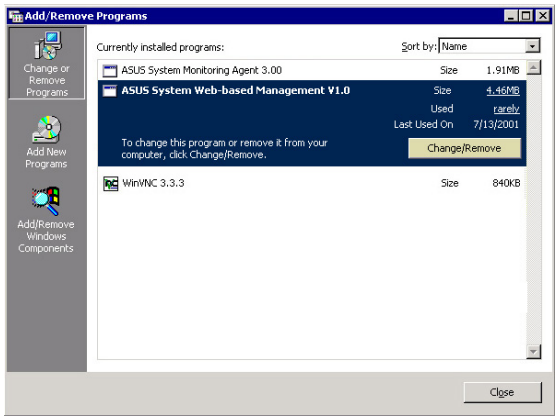
Enter a password for accessing ASWM and click **Next**. Remember this password, you will need it to access ASWM using a Web browser. A default user "ASWM USER" will be automatically created.

After setup is complete, select whether you want to allow all IP addresses to access ASWM. If you deselect it, ASWM can only be accessed from the host (server where you installed ASMA/ASWM). Click **Finish** to exit the installation wizard.

Uninstalling ASWM (or other software)

1. Double-click **Add/Remove Program** in “Start | Settings | Control Panel”.
2. Select “ASWM Server Web-based Management”, and click **Change/Remove** to uninstall ASWM.





Accessing ASWM for Windows

After you install the ASWM on the server, you can monitor the server using a web browser (Microsoft Internet Explorer recommended).

Locally (on the server):

Open your browser and type in:

http://xxx:2623 or **http://127.0.0.1:2623**

Use your server name in place of “xxx” or use “127.0.0.1” as this is the universal address for the local computer. “2623” is the default port for the ASWM software. From here you can see the “TCPIP Address” in the middle of the screen for remote access.

Remote (any computer with Internet access):

Open your browser and type in: **http://xxx.xxx.xxx.xxx:2623**

“xxx” being your server IP address and “2623” being the default port for the ASWM software.

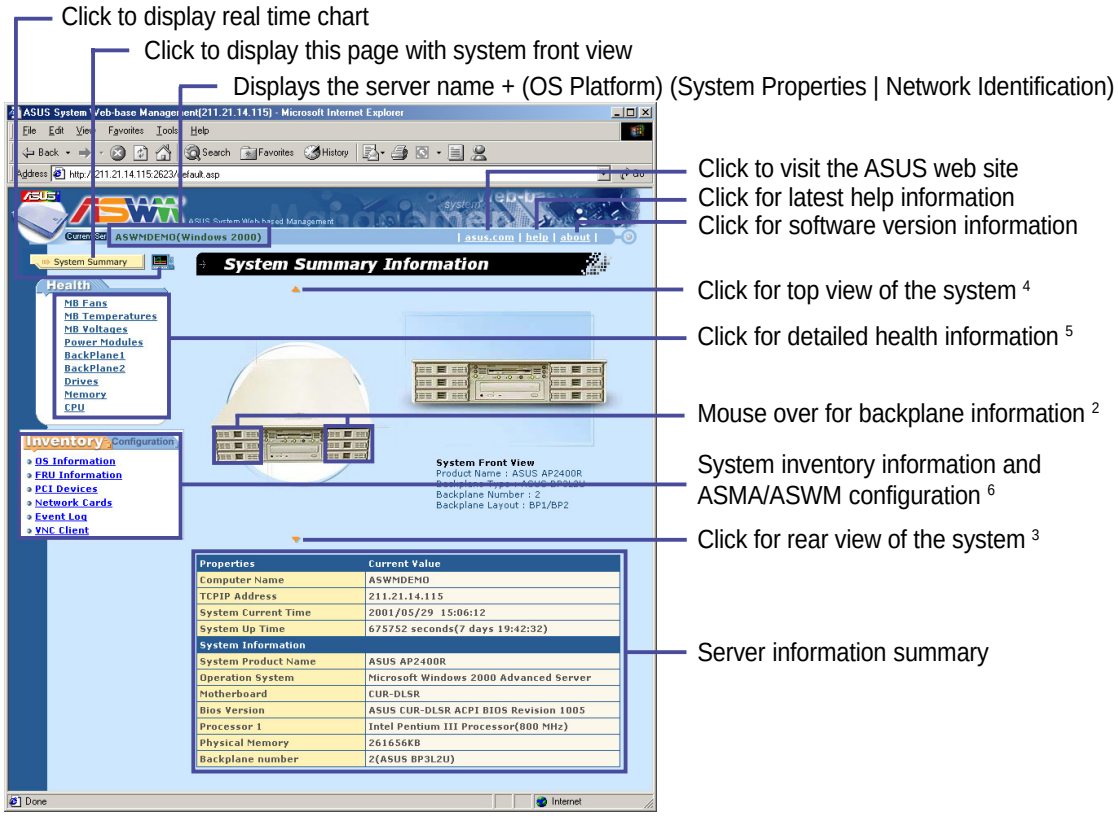
When you see the login window, enter the user name **ASWM USER** and your password entered during the ASWM installation.

NOTE: Name and password are case sensitive. If you forget the password, you must reinstall the ASWM software.

Using ASUS System Web-based Management

This chapter will introduce the ASWM software and explain how to use the ASWM to monitor your ASUS server system.

The ASWM software accepts both Microsoft and Netscape browsers. This section will show examples using Explorer and the Linux section later in this manual will show examples of using Navigator/Communicator.



(1) The System Summary Information Screen

The system image overview is the unique characteristic of ASWM. The major features are as follows:

- Physical pictures, positions, layouts, and monitored information can be remotely viewed without physically inspecting the system.
- System data is automatically updated so that you can get system information as they occur.
- Specific details about each system component is shown simply by moving the cursor over the image.
- If a system error occurs, icons will flash on the component that has the problem so that problem location can be made visually without having to inspect the physical system (only with Microsoft Internet Explorer).

ASWM Web Display

Each page of the ASWM will be different depending on the model of the ASUS server that you connect to. Microsoft Internet Explorer is recommended to utilize all the features in the ASWM. Netscape Navigator will have the following limitations:

- In the system summary page, no outlines (red rectangles) will be shown to indicate the current selection of the system image.
- Arrows cannot be dragged to set threshold values.

Exception situation

This pertains to “The connection to server have failed” when automatic update is enable. ASWM will connect to the server once every update interval. If the connection cannot be made, you will see a message in the status bar: "Communicate with server failed and automatic update stop! Refresh to get updated data." When connection has been restored, you must manually refresh your web browser to reconnect with the ASWM server.

Properties

Computer Name: The name of the server you are connecting to.

TCP IP Address: The IP address of the server you are connecting to.

System Current Time: The clock time of the server (not GMT Time).

System Up Time: The operation time from system bootup of the server.

System Information

System Product Name: The model name or product name of the server.

Operating System: The operating system of the server.

Motherboard: The motherboard model name of the server.

BIOS Version: The BIOS model and version number of the server.

Processor 1: CPU 1 model, type, and speed of the server.

Processor 2: CPU 2 (if available) model, type, and speed.

Physical Memory: The amount of total system memory in KB.

Backplane Number: Indicates the number and model of any available backplanes on the server you are connecting to.

(2) System Summary Front View

The backplane can detect the presence of hard disk drives (not the hot swap tray) and display pictures with an empty bay. Because it's hard to show no hard drives while in the hot swap tray, the pictures will also show the trays removed even if you did not remove them.

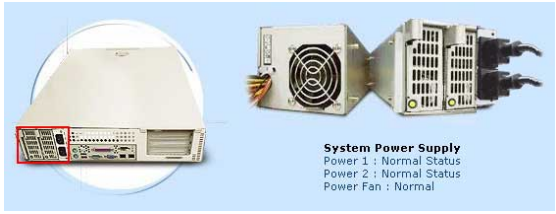
The Backplane will show the model number, number of disks (1, 2, 3), and temperature (˚C). The default safe upper temperature for the hard disk bays is 50˚C. When the temperature exceeds the set threshold, a warnings will be given by yellow text and critical events by red text, both with flashing icons.

NOTE: The temperature unit (˚C) cannot be changed. To convert to (˚F), please see the appendix at the end of this manual.

(3) System Summary Rear View

The rear view has two hot spots; the connectors and power supply

This is only motherboard port information and will not change.



The power supply information will show:

Power 1 / Power 2: (if available) with Normal Status, Warning, Critical Status

Power Fan will show: Normal, Warning, Critical

If the power cord is unplugged, a red "x" will appear over the power cord, if the power supply fails, red "x" will appear over power supply and power cord because either or both may have a problem.

Yellow text are warnings. **Red** text are critical items.

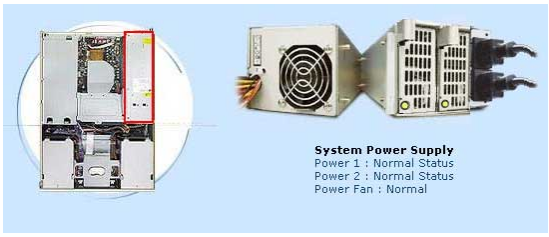
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

(4) System Summary Top View

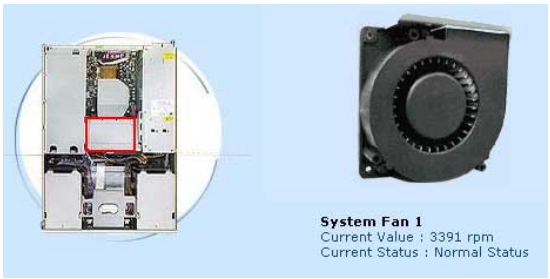
The top view has five hot spots; the blower, motherboard, left backplane, right backplane, and power supply

(see front view for explanation)

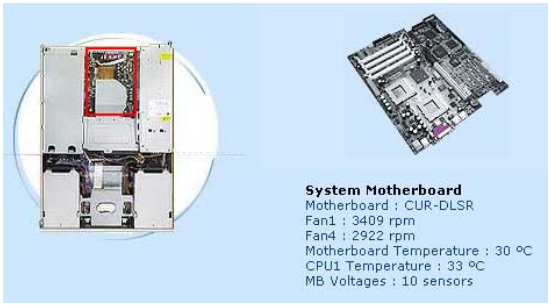
(see front view for explanation)



(see front view for explanation)



The system fan will show the RPM and status. The normal RPM range is preset by the factory. The Status will show: Normal, Warning, Critical.



The motherboard will show model name, Fan1 RPM, Fan2 RPM, motherboard temperature, CPU1 temperature, CPU2 temperature (if installed), and number of motherboard voltage sensors.

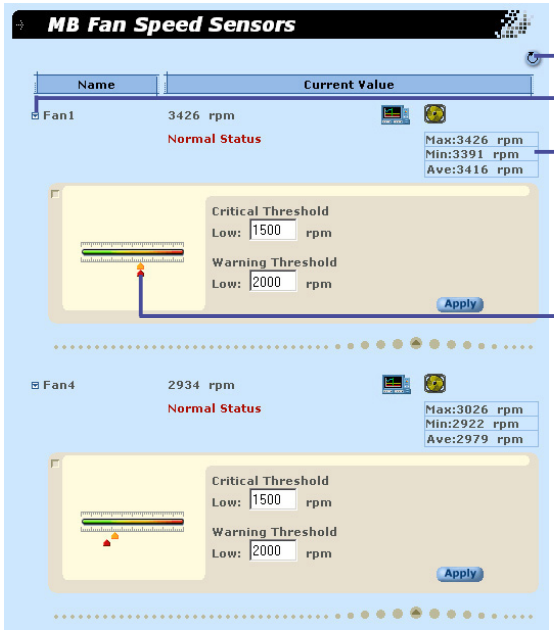
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

(5) Detailed Heath Information

Click on a link in the Health window to show detailed health information and threshold settings.

Health: MB Fans

The page will display the fan devices status of motherboard. The data contains name, current value, sketch map of current value, event status, statistic data and threshold value setting.



Click to reset statistics

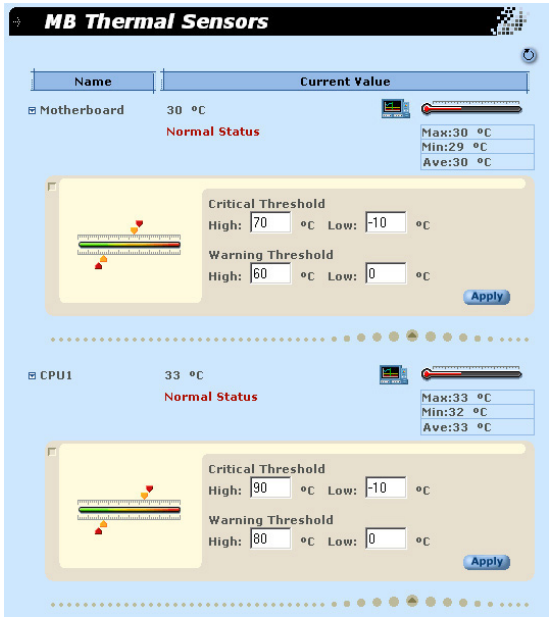
Click to show threshold settings

Statistics during this session is shown here

Fan1 is the PCI cage fan. The threshold ranges are:
Critical: 0 to 1500 (red slider)
Warning: 1500 to 2000 (orange slider)

Click and drag to move threshold levels

Fan4 is the CPU blower. The threshold ranges are:
Critical: 0 to 1500 (red slider)
Warning: 1500 to 2000 (orange slider)



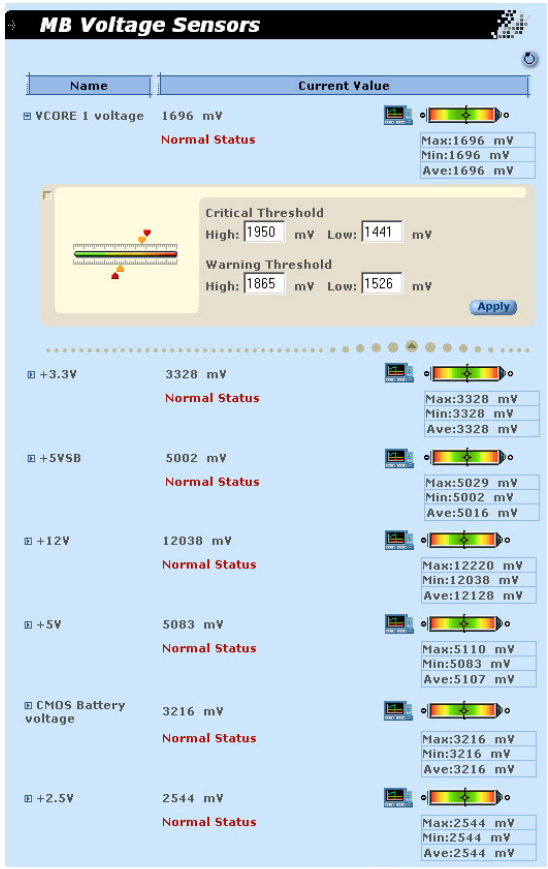
Health: MB Temperatures

This page shows data on CPU and motherboard thermal sensors.

Motherboard thermal sensor. The threshold ranges are:
Critical: Upper: 70 to 150 Lower: -50 to -10
(high : top red, low : bottom red)
Warning: Upper: 60 to 70 Lower: -10 to 0
(high : top orange, low : bottom orange)

CPU thermal sensor. The threshold ranges are:
Critical: Upper: 90 to 150 Lower: -50 to -10
(high : top red, low : bottom red)
Warning: Upper: 80 to 90 Lower: -10 to 0
(high : top orange, low : bottom orange)

Click on a link in the Health window to show detailed health information and threshold settings.



Health: MB Voltages

The page shows data supplied by the many motherboard's voltage sensors.

Health: Power Supply

The page consist of three parts. The outline of the power modules, the status of each power module, and the status of the power fans.

1. Outline of the power module:

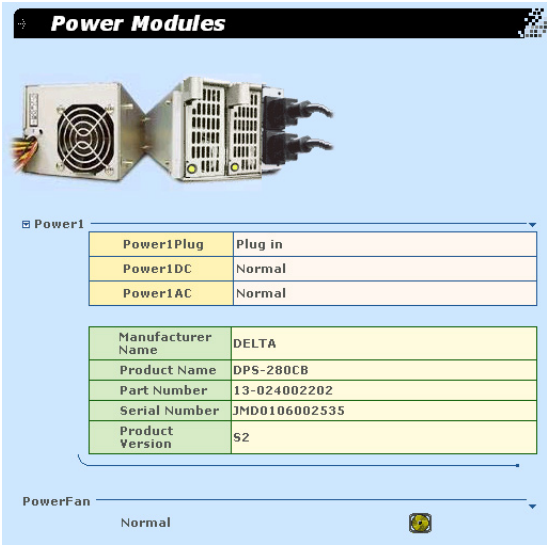
The outline is the status representation of the power supply module including the power cord status (whether it is plugged in or not). The image will change if the power status has changed.

2. Power Module Status

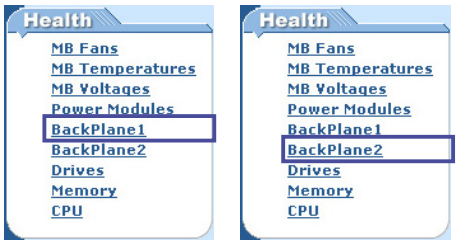
Reports the status and values of each power monitor. A warning will be made if power cord or power module fails or is unplugged. Note: If the power cord fails (disconnected or damaged) only the power cord will be noted as disconnected, but if a power module fails, there may be two or more warnings because any one of the dependent items may have failed.

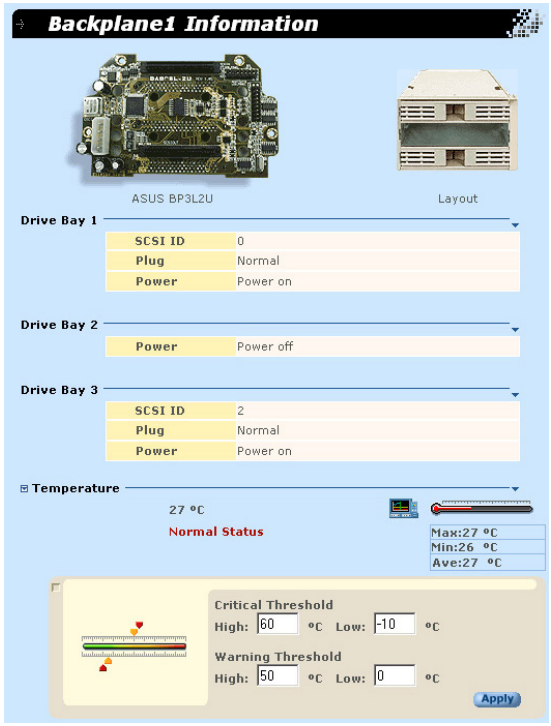
3. Power Fan Status

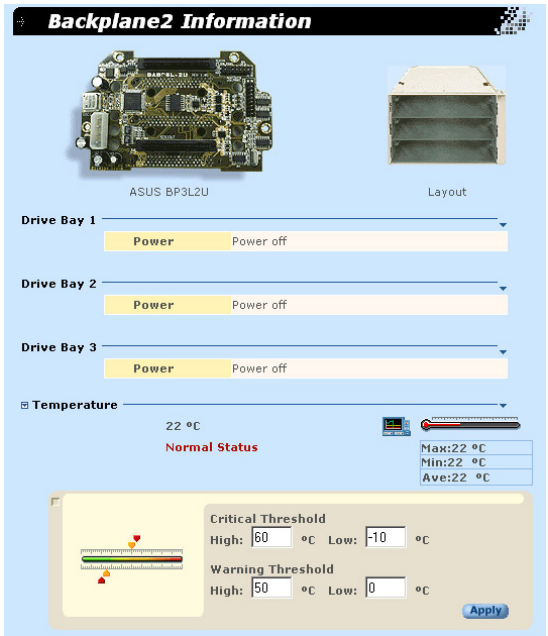
Reports the status of the power fan in the power modules. If the power fan fails, the system will shutdown and a record will be made in the system event log.



NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.







Click on a link in the Health window to show detailed health information and threshold settings.

Health: Backplane

ASWM will report the values supplied by the backplane monitors. You can investigate each monitor to see specific information pertaining to the individual backplane. Each backplane's page consists of 4 parts, the surface of the backplane board, the layout of the backplane, the situation of each drive bay, and the backplane temperature.

1. Surface of the Backplane board

This section located on the top left corner will show the outline of backplane board based on the server's model.

2. Layout of the Backplane

This section located on the top right corner will reflect the layout of the backplane in real time. For example, the picture will change if someone remove a hard drive or insert a hard drive.

3. Drive Bay Situation

The table in the middle of the page reflects the situation of each drive bay in real time. If there are any problems on the backplane, it will show WARNING/CRITICAL icons on the relative positions.

4. Backplane Temperature

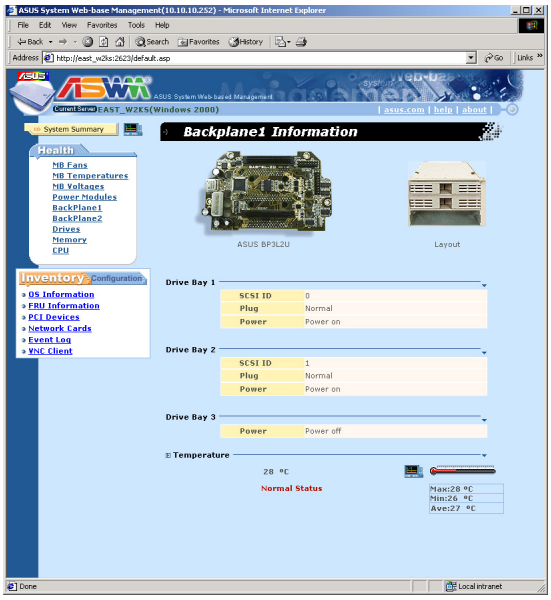
This section will show you the current temperatures, calculated maximum/minimum/average temperatures, status information, and customized threshold settings. You can drag the arrows or edit the text fields to change these settings.

NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

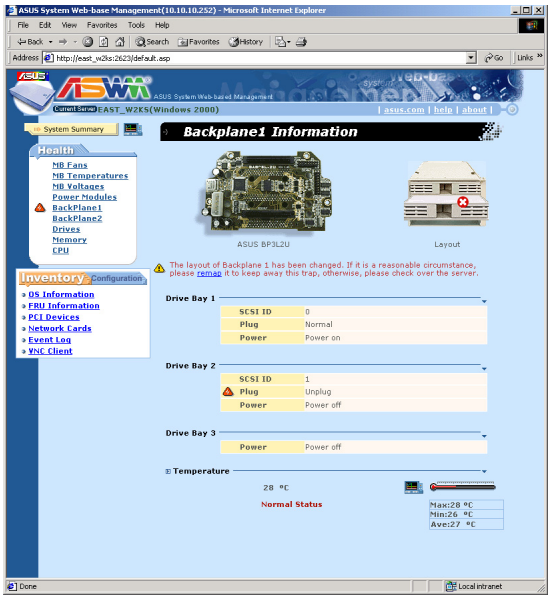
Remapping the Backplane

Here is an example of remapping the backplane.

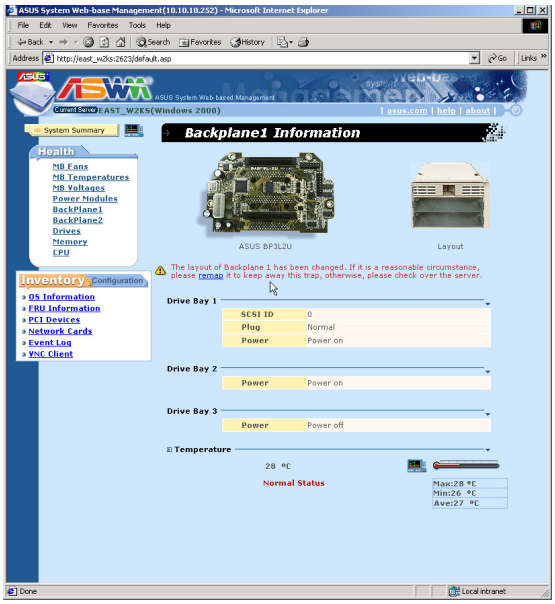
Two drives were originally detected when ASMA was installed.



One disk has been intentionally removed.



Click “remap” to remove the second drive from the backplane.

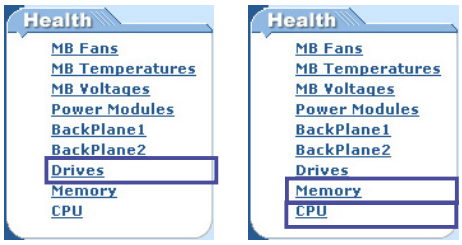


A warning is given under the backplane:

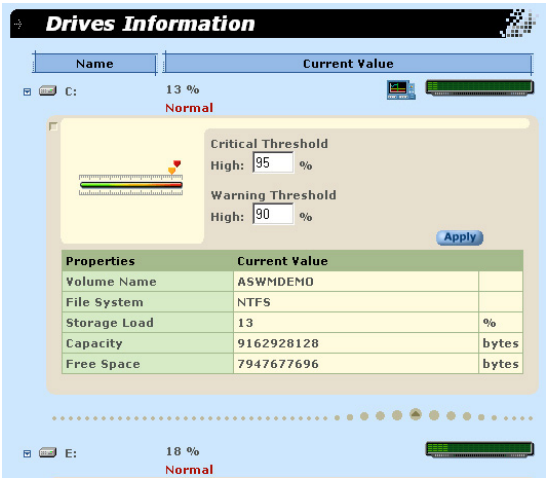
“The layout of Backplane 1 has been changed. If it is a reasonable circumstance, please **remap** it to keep away this trap, otherwise, please check over the server.”

This message means that if the drive change was unintentional, you should visually check the server for problems.

If the change was intentional, click “remap” to update the ASMA data.

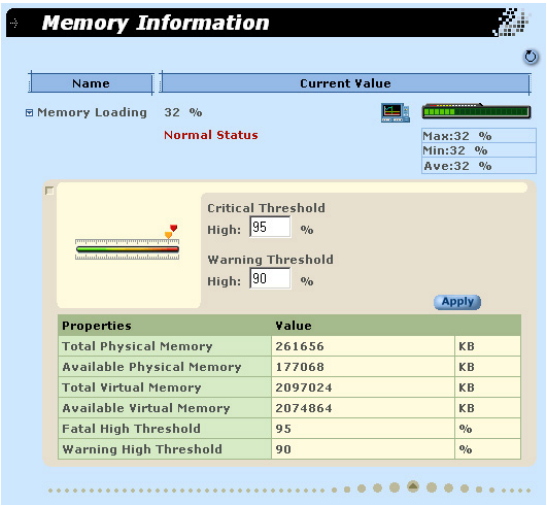


Click on a link in the Health window to show detailed health information and threshold settings.



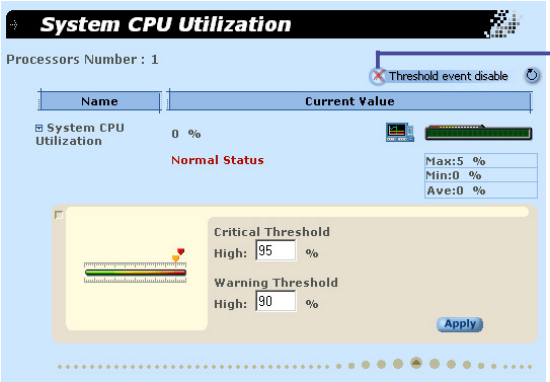
Health: Drives

The page will show local hard drives, floppy drives, and CD-ROM drives on the server. It will also show volume names, file systems, storage loading, capacities, free space, status information, and customized threshold settings of hard drives. You can drag the arrows or edit the numeric fields to change threshold value settings.



Health: Memory

This page contains the health information of the system's physical and virtual memory usage. The fatal and warning threshold values can be set here. Furthermore, physical memory and virtual memory information are also shown.



Because CPU utilization have many peaks, warnings may not be necessary so warning events are disabled by default. You can click here to enable warning events.

Health: CPU Utilization

The page contains the healthy information of system CPU utilization. That is not by individual CPU.

(6) Inventory Items

OS Information

The page provides the information of operation system, including name, version, build number and service pack.

FRU Information

The page will enumerate several FRU information based on the layout of the server's hardware. You can click the tab on the top to browse individual FRU information.

PCI Devices

The page will enumerate PCI devices on the right side. You can click the link to browse the information of the device on the left side. The information consists of 3 columns. The first column is General, it'll show device type, manufacturer and device location. The second one is Driver, it'll show driver name, provider, build date, version, and status information of the device driver. The last one is Resource, it'll show the system resource that the device occupied.

Network Cards

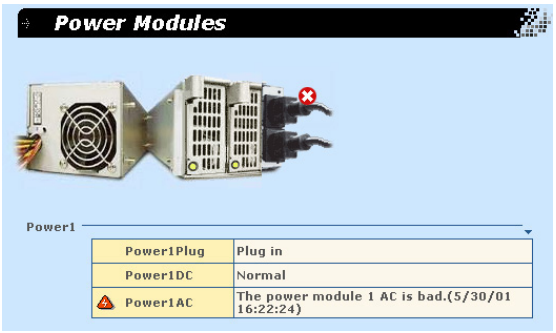
The page will show something about network cards in the server. If ASWM detects no network cards, it will only show one tab on the page to notify you that there's no cards in the server, otherwise it will show one more tabs to present information of each network card. The information within each network card include product name, manufacturer, MAC address, location information, driver's version, driver's build date, IP address, subnet mask, gateway, and Wins server. If the network card use DHCP to connect to the network, it'll also show DHCP server.

Event Log Viewer

The page will show system event logs. It consists of four tabs representing separate event logs for ASMA/ASWM, applications, security, and system. You can click the tab to view different event log types.

System Warning

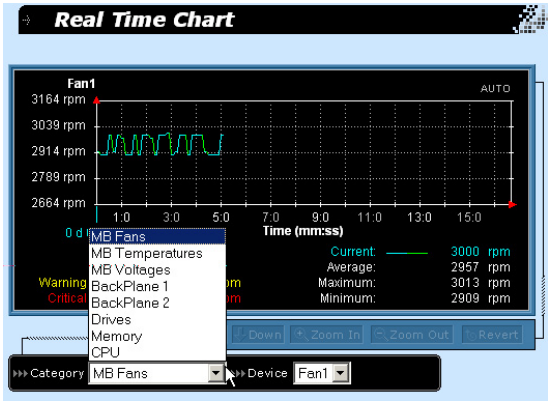
When warning events occur, yellow triangles will flash. When critical events occur red triangles will flash and the problem item marked with an “x”. When possible, a description is written in the monitor.



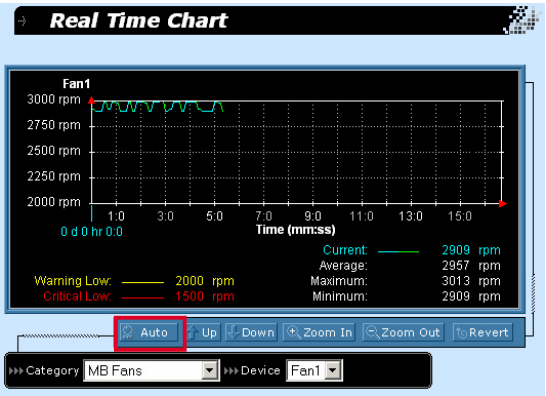
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

System Real Time Chart

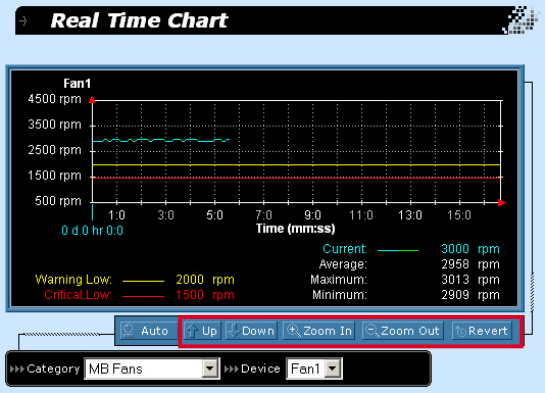
Every value that you see in the ASWM corresponds to data while you are in the Real Time Chart view. So you cannot see historical values. You can let the Real Time Chart run over a few days to discover the highs and lows of a particular monitor.



You can choose to chart fans, temperatures, voltages, backplane, drives, memory, and CPU. After choosing a category, choose the specific device. (You cannot chart multiple devices or multiple categories.)



If the “Manual” button is avialable, click on it to show chart navigation buttons: Up, Down, Zoom In, Zoom Out, Revert.



Up: scroll up on the chart

Down: scroll down on the chart

Zoom In: zoom in on the chart
(If you zoom in and data is no longer in view, wait a few seconds and the chart will automatically scroll to the data.)

Zoom Out: zoom out on the chart

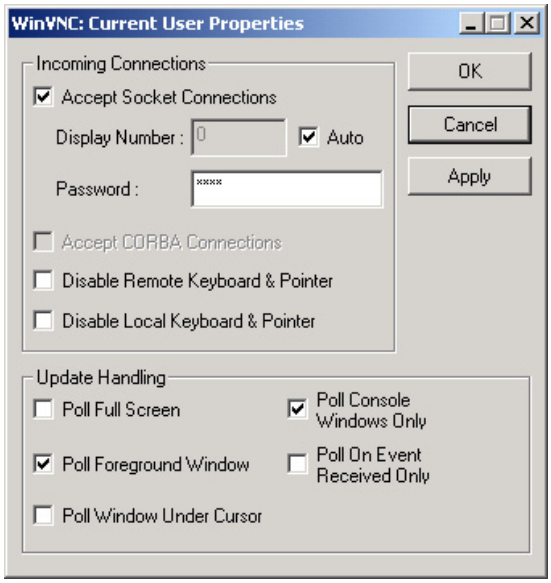
Revert: reverts to default zoom (not the same as auto)

VNC Client

The VNC client (installed with ASWM) allows you to remote control the server through any web browser just like “IBM Desktop on Call”. This allows true remote control to allow login/logout and shutdown/restart capabilities.

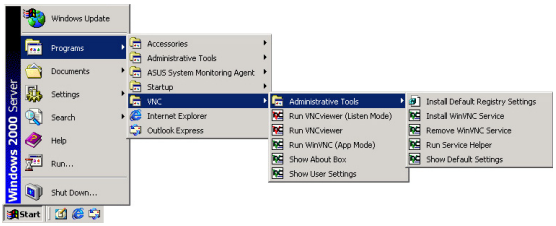
Click the link to open the VNC Client in your web browser. A password will be required by the VNC. You can modify the password setting on server side but make sure it is a secure password. The installation program will set the default password to "**aswm**".

NOTE: The password for VNC is case-sensitive.

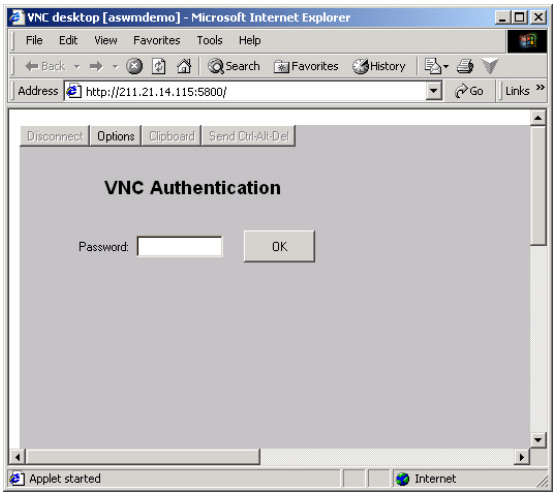


VNC Configuration (on server)

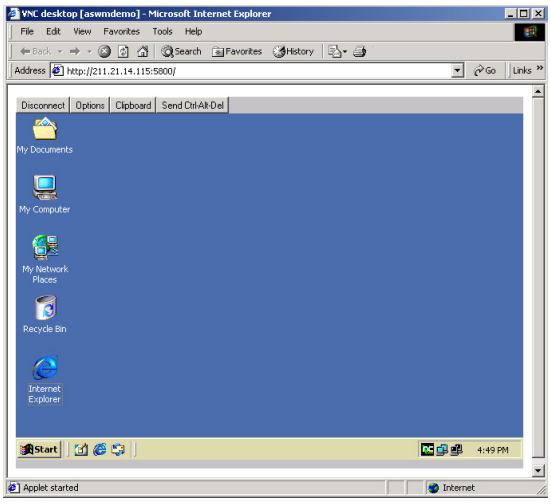
IMPORTANT: Change the VNC password as soon as possible to protect your system from unwanted access.



VNC Links in Start Menu (server)



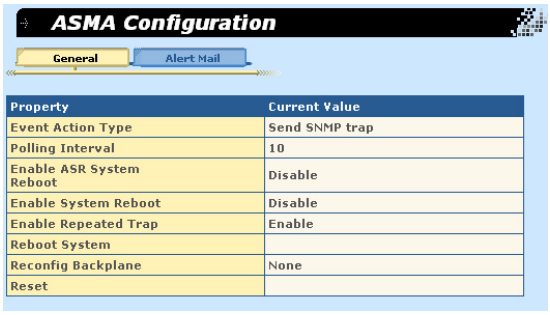
Login Screen

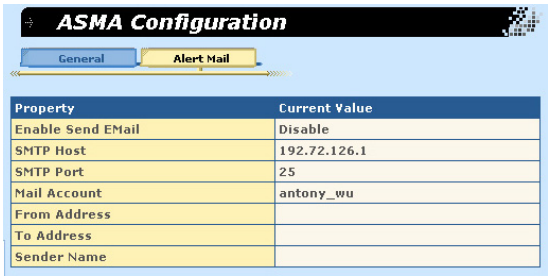


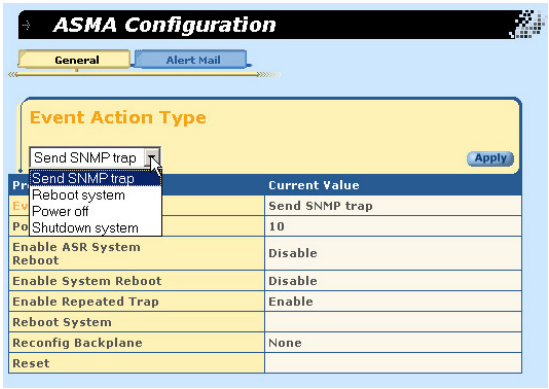
Remote Control Session

ASMA Configuration - General

ASWM allows you to configure ASMA settings. You can set the event action and device polling intervals on the General tab or set mail settings on the Alert Mail tab if you want ASWM to send an Email if something should go wrong. This page consists of two divisions; General settings and Alert Mail settings.







Event Action Type

If an overheat event occurs, ASWM will trigger the action you assigned here. You can request ASWM to send an SNMP trap, reboot system, power off, or shutdown system if something should go wrong.

Polling Interval

You can assign an interval value here to instruct how often ASWM polls hardware devices.

Enable ASR System Reboot

ASR reboots the system when the motherboard detects a system hang. You can enable/disable here.

Enable System Reboot

You can enable/disable general system reboot here.

Enable Repeated Trap

You can enable/disable multiple warnings (until problem corrected) for the same problem.

Reboot System

Reboot system immediately.

Reconfig Backplane

If you intentionally remove or insert hard drives in the hot swap bays, you should remap the backplane layout to stop repeated traps from being sent.

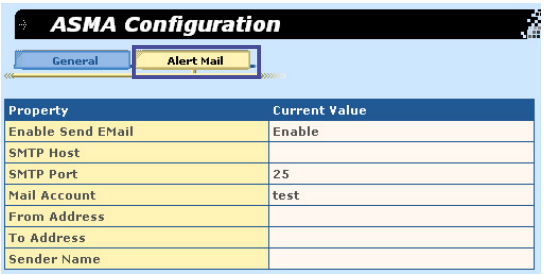
Reset

Resets all device threshold values and ASMA settings to its default value.

ASMA Configuration - Alert Mail

This page allows you to configure Alert Mail properties for ASWM.

All ASMA events are logged in the Windows event log but if you want to also email events to a specific location, you can setup this function here.



Enable Send EMail

Enable/Disable: To email ASMA events.

SMTP Host

Name/IP: SMTP host name used to send emails.

SMTP Port

xx: SMTP port used to send emails.

Mail Account

Name: The email account on the email server.

From Address

Any Text: Specify where the email is sent from.

To Address

Email Address: Specify the email address of the recipient.

Sender Name

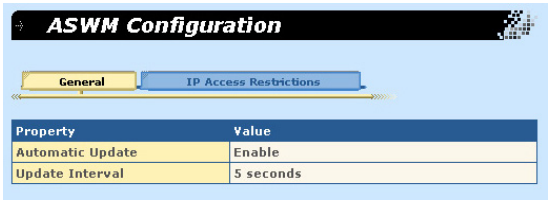
Any Text: Specify who is sending the emails.

ASWM Configuration - General

This page allows you to configure General and IP Access properties for ASWM.

Automatic update

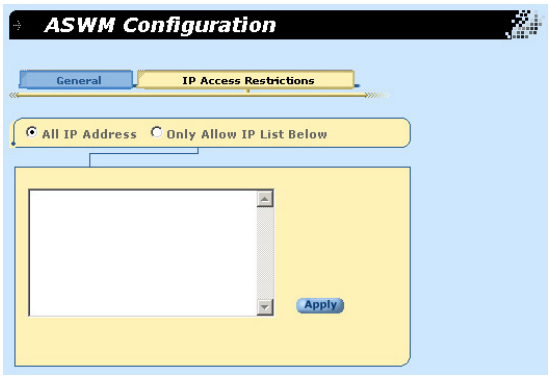
Enable means you always can view the updated data without refreshing the web page. If you disable the item, you have to refresh page manually to view updated data.

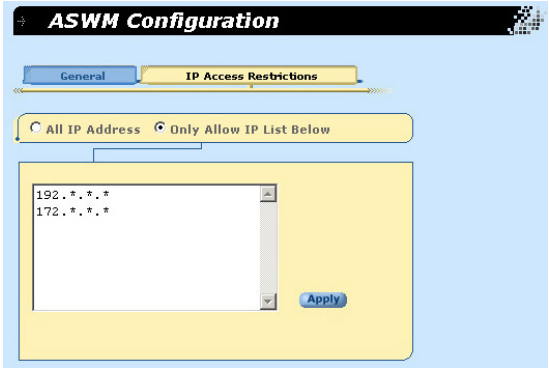


Update Interval

The time interval for ASWM to update the data. The value must be 5 seconds or more.

NOTE: The "General" settings are saved in a cookie for your browser. If you do not enable receiving cookies, you can only use the default values shown here.





IP Access Restrictions

All IP Enable

If you want to allow access from anywhere, select this item to allow all IP address to connect to ASWM.

Only Allow IP List Below

If you want to restrict access to ASWM, you can define address or address ranges which can connect.

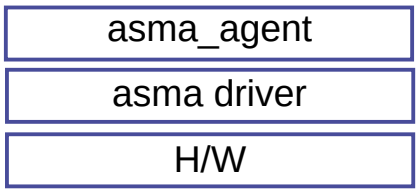
Enter one IP address on each line. The IP address must be the format "n.n.n.n". "n" must be 0 to 255.

The asterisk (*) can be used in place of all valid #s. 192.168.0.* would mean 192.168.0.0 to 192.168.0.255

ASMA (ASUS System Monitor Agent) for LINUX

Overview of ASMA for Linux

Software Block Diagram:



The above diagram shows that the ASMA driver is the basis for the asma package. To enable ASUS SNMP agent, you need to start asma_agent by issuing the **asma_agent start** command.

Once the ASMA package has been correctly installed and started, you can use any SNMP console like HP's OpenView with ASUS' MIB file to get or set ASUS MIB variables.

Installation and Configuration

Installation

Type: **rpm -ivh asma-3.0-18.i386.rpm**

```
[root@test3 release]#
[root@test3 release]# rpm -ivh asma-3.0-18.i386.rpm

Notice!!! After RPM installation, please execute asma_post_install to customize
your enviroment, and see detail information in /usr/share/doc/asma-3.0/README

asma                        ##################################################
```

Uninstallation

Type: **rpm -e asma-3.0-18**

```
[root@test3 release]# rpm -e asma-3.0-18
error: removing these packages would break dependencies:
        asma >= 3.0 is needed by aswm-1.0-1
[root@test3 release]#
[root@test3 release]# rpm -e --nodeps asma-3.0-18
Shutting down asus_agent:
[root@test3 release]#
```

Because ASWM sits on top of ASMA, you cannot remove ASMA directly. Type: **rpm -e --nodeps asma-3.0-18** inorder to bypass the dependency check to remove ASMA while leaving ASWM.

Configuration

To configure ASMA, type: **asma_post_install**

Press [Enter] on a question to use the default setting in asma_post_install.

I. INSTALLATION PATH

```
[root@test3 release]# asma_post_install

*************************************************************************
            Welcome to setup ASMA (ASUS System Monitoring Agent)!

          Notice!!! Type enter to choose default value in [...].
*************************************************************************


I. INSTALLATION PATH:
1) Input the installation path of ASMA binary files [/usr/bin]?
2) Input the installation path of ASMA configuration files [/etc/asus]?
3) Input ASMA chassis intrusion sensor type: 0)None, 1)Photo Sensor, 2)Micro Swi
tch [0]?
4) Input the path of "snmpd" for UCD-SNMP daemon [/usr/sbin]?
5) Input the path of "snmptrap" for UCD-SNMP binary utility [/usr/bin]?
6) Input the path of "snmpd.conf" for UCD-SNMP configuration file [/etc/snmp]?
```

This screen will ask for paths to install the ASMA software, configuration files. You will also be asked for the path to the UCD-SNMP tools that you have installed inorder to use the system's SNMP funtion correctly.

II. SNMP INFORMATION

```
II. SNMP INFORMATION:
7) Input host IP (or domain name) for sent SNMP traps [127.0.0.1]?
8) Input SNMP community string [asma]?
9) Input SNMP console location [subnet/mask] (ex.192.168.0.0/16) where SNMP cons
ole can access (Get/Get Next/Set) your agent infomation [0.0.0.0/0]?
10) Input SNMP access privilege type: 0)None, 1)Read, 2)Write, 3)Read/Write [3]?
11) Input EMail address of destination for sent SNMP traps [root@localhost]?
12) Input sender EMail account of this managered workstation for sender name of
above mail [root]?
```

This screen shows setting up the system's SNMP configuration using asma_post_install. After asma_post_install, if you want to change these settings by yourself, you can manually edit **/etc/snmp/snmpd.conf** (see example on next page). Once "/etc/snmp/snmpd.conf" has been changed, you need to kill "/user/sbin/snmpd" process and restart it to make it effective.

Example for “/etc/snmp/snmpd.conf”:

```
##############################################################################
# Access Control
##############################################################################
# First, map community name into a security name
#         sec.name    source                community
com2sec   mynetwork   192.168.0.0/16        public

####
# Second, map security names into group names:

#                sec.model   sec.name
group MyRWGroup  v1          mynetwork

####
# Third, make a view

#         incl/excl   subtree                mask
view all  included    .1                     80

####
# Finally, grant groups access with read/write permissions:

#               context  sec.model  sec.level  prefix  read  write  notif
access MyRWGroup         v1         noauth     prefix  all   all    all
```

III. MISC

```
III. MISC:
13) Do you want to start ASUS snmp agent now [y(default)/n]?


*************************************************************************
             Install successfully and restart daemon now!
*************************************************************************
Shutting down snmpd:                                       [  OK  ]
Starting snmpd:                                            [  OK  ]
Starting asus_agent(Waiting...): Using /lib/modules/2.2.16-22smp/misc/asma.o

[root@test3 release]#
[root@test3 release]#
```

This screen asks if you want to start ASUS SNMP agent now. Answer **y** for “yes” or **n** for “no”.

Configuration Files

The following example assumes {ASMA configuration path} is **/etc/asus** (default setting)

a. **/etc/asus/install_path.conf**: setting for install path setting. There are two configuration types: one is ASMA (extension agent software) binary/configuration path; the other is snmpd daemon (system daemon) binary/configuration path.

b. **/etc/asus/asma.conf**: setting for snmp upper/lower threshold value and ASR/Chassis Intrusion enable setting value. If this file does not exist, it will be created automatically based on the system situation when issuing the **asma_agent start** command. For example:

* PollFreq=8; (Sent SNMP Trap to Console Freq.)

  Min—>Max

  —WL—L—Normal—WH—H—-

(WL=Warning Low Limit, L=Low Limit, WH=Warning High Limit, H=High Limit)

* TemperatureHighLimit=70;
* TemperatureLowLimit=-10;
* TemperatureWarningHighLimit=60;
* TemperatureWarningLowLimit=0;
* ASREnable=0; ASR (Automatic Server Restart) can reboot the system automatically when the system hangs. You need to enable this item first, and then issue **asma_agent start** to make effective)
* ChassisEnable=0; (Enable chassis intrusion alarm can be sent to the system log or to an SNMP Console like HP OpenView)
* RebootSystemEnable=0; (Enable Reboot System Function)

c. **/etc/asus/asma_misc.conf**: if this file doesn't exist, it will be created automatically based on the system situation when issuing the **asma_agent start** command.

* LM78ChassisIntrusionExist=0;

  Motherboard hardware configuration for chassis intrusion type.

  0 (none)
  1 (photo sensor)
  2 (micro switch - default)

  The user needs to know which type of motherboard is used.

* ASRTimeOut=5; [ASR (Automatically System Restart) time out value, unit by min.]

* SNMPSetTimeOut=180; [SNMP Set time out value in agent side (in contract, SNMP console software can set SNMP time out value in server side), unit by 333msec]

d. **/etc/asus/snmp_trap.conf**:

* TrapHostIP=127.0.0.1; (SNMP Console IP to Get/Log SNMP agent information)

* CommunityString=asma; (SNMP community string used in snmp protocol to restrict access control)

e. **/etc/asus/shm_id.txt**: (Share Memory ID used by asma_agent)

f. **/etc/tmp**: (temporary directory to place asma utility)

g. **asma_post_install** will copy shell script (S16asma_agent, K16asma_agent in /etc/rc.d/rc0.d, /etc/rc.d/rc2.d, /etc/rc.d/rc3.d, /etc/rc.d/rc4.d/, /etc/rc.d/rc5.d and /etc/rc.d/rc6.d). If you don't want those files, please move them to another file prefix with a dot symbol like .S16asma_agent.

NOTE: If you change any value in the above files, please issue "asma_agent restart" command to make it effective.

Function Description

a. SNMP function

   1. **Get/Get Next**: allows the SNMP console to get the attribute values of the managed system such as fan speed, working voltage, and system temperature.
   2. **Set**: sets the attribute values of the managed system from the SNMP console.
   3. **Trap**: managed computer system can inform the SNMP console of some event (when the interested attributes, such as fan, voltage, temperature, over or under thresholds) asynchronously.

b. **ASR function**: Automatic Server Restart is a function that can reboot the computer system automatically when the computer system hangs.

c. **Chassis Intrusion**: Chassis intrusion warns when the server chassis is opened and logs the event. This provides some security over the computer hardware.

d. **System Log (in /var/log/messages)**: SNMP agent will also produce error/warning messages in /var/log/messages for super user system maintenance.

Utility and MIB File

   a. **asma_agent {start | stop}**: Start/Stop ASMA SNMP extension agent.

   c. **asma_driver {start | stop}**: Start/Stop ASMA driver.

   d. **asus.mib**: ASUS mib file ; and it locate in /etc/asus

System/ASMA Log

ASMA will keep the whole asma warning/error messages to /var/log/messages and /etc/asus/aswm.log.

Using SCSI RAID

If your system has a SCSI RAID card, you will need to type the appropriate commands to load the driver into the system.

Drivers

Boot Driver

insmod /etc/asus/tmp/${kernel_version}/rd124f.o

Single Processor Driver

insmod rd124f (or insmod /etc/asus/tmp/${kernel_version}/rd124f_mod.o)

SMP Driver

insmod rd124f (or insmod /etc/asus/tmp/${kernel_version}/rd124f_mod_smp.o)

Enterprise Driver

insmod /etc/asus/tmp/${kernel_version}/rd124f_mod_ent.o

Application

Run **raidman** to manage your SCSI RAID card.

ASMA for Linux FAQ

Q. Why does ucd-snmpd complain about security mode while it is starting?

A. You need to check snmpd.conf for the following lines,

(a)

```
#     groupName      securityModel securityName
group notConfigGroup any           notConfigUser
```

—> “securityModel” field needs to be “v1” (or “v2”/...) instead of “any”

(b)

```
#      group          context sec.model sec.level  prefix read       write notif
access notConfigGroup         any       noauth     0      systemview none  none
```

—> “sec.Model” needs to be “v1” (or “v2”/...) instead of “any”

—> “prefix” field needs to be “prefix” instead of “0”

Q. Why can’t SNMP console get ASUS SNMP agent data?

A. You need to check whether the following programs or drivers are started.

(a) asma driver: check by lsmod command

(b) asus_agent daemon: check by ps command

(c) snmpd daemon: starts by the **snmpd** command and can be checked by the **ps** command; if your “/etc/snmp/snmpd.conf” is wrong, snmpd will complain about that and may no start.

NOTE: The ASR function is based on the asus_agent daemon; so, don’t kill the asus_agent process while the ASREnable=1 on /etc/asus/asma.conf (/etc/asus is the default configuration path). If the asus_agent does not exist while the ASREnable=1 on /etc/asus/asma.conf, the ASR function will work abnormally, and then the system will reboot randomly.

Overview of ASWM for Linux

Thank you for choosing ASUS hardware products. We believe that you will be very satisfied with ASUS hardware products due to its stability and quality. Now, ASUS tries its best to serve you further by offering you ASUS Web-based Management (ASWM) system with ASUS Management Agent (ASMA). Both of these software products will help you ease your daily system management tasks when you choose the LINUX operating system as your primary platform.

If you do not yet know what ASMA is, here is a brief description. ASMA is developed by ASUSTeK Computer Inc. (ASUS) and is packaged with enhanced LINUX kernel drivers to monitor ASUS hardware for component failures. Including applications which are also packaged within ASMA, you can monitor voltages, temperatures, FAN rotation speeds, and other hardware conditions. Meanwhile, ASMA can also issue SNMP traps and even send audits through the email right to your personal computer. ASMA interacts with administrators through the SNMP. Currently, ASMA is based on the well-known SNMP utilities which were developed by Carnegie Mellon and University of California at Davis (visit "http://net-snmp.sourceforge.net/" for more information.)

However, utilizing ASMA may not be an easy job for many system administrators. Most system administrators have to purchase a third-party software and learn how to use them (such as HP® OpenView™). Also not that in order to use third-party management software, you have to first acquire all the ASUS MIB extensions. But now you do not have to worry about this any more because ASUS provides ASWM. ASWM is a Web-based interface for system administrators to customize their own ASMA environments. With simple web browser operations, everyone can easily manage ASMA with a few mouse clicks and keystrokes.

ASWM was compiled using highly compatible web pages (which are supported by most popular web browsers). ASWM itself utilizes the world-accepted Apache HTTP Server. ASWM also provides safe and flexible security control. All these are natively done by the strongest Linux and Apache security features.

ASWM can also be easy customized. ASUS has prepared a very simple "post install" shell script to help system administrators customize a minimum working ASWM environment. Experienced administrators are welcomed to adjust anything and adopt these changes into the configuration files after you read “/usr/share/doc/aswm-1.0/README”.

Requirements

Agent Site: Need to install ASWM

Operation System:

* GNU/Linux with Kernel V2.2 or above.

Prerequisite Software:

* ASUS System Management Agent (ASMA) V3.0 Build 16 or above.
* UCD/Net SNMP packages V4.1 or above.
* Apache HTTP Server V1.3 or above.

Client Site: Only web browser is required

* GUI Systems such as Microsoft® Windows™ or X Window System
* Microsoft® Internet Explorer™ 4.0 or above.
* Netscape® Navigator/Communicator V4.0 or above (both for Microsoft® Windows™ or X Window System).

Features

System summary

Health devices

* M/B Fans
* M/B Temperatures
* M/B Voltages
* Power Modules (selected ASUS hardware configurations only)
* Backplane(s)
* Drives
* Memory
* CPU utilization

Inventory information

* FRU Information
* PCI Devices
* Network Cards
* Message Logs
* VNC client

Configuration

* ASMA Configuration
* ASWM Configuration

Installing ASWM for Linux

* Install the ASWM RPM distribution file as usual.

  # rpm -Uvh aswm-1.0-1.i386.rpm

```
[root@rh70-2u /root]# rpm -Uvh aswm-1.0-1.i386.rpm

Notice: Administrator of ASWM must run ''aswm_post_install''
        IMMEDIATELY to continue the post installation of ASWM system.
        Unfinished post installation will cause ASWM's function failure
        and access via web browsing by unauthorized persons.
        Read /usr/share/doc/aswm-1.0/README for more information.

aswm                        ##########################################################
[root@rh70-2u /root]#
```

* After RPM installed, you should execute the shell script:

  /usr/bin/aswm_post_install

  immediately and this will bring you a very simple conversation and it guides you how to set up some important values and parameters which ASWM will use.

* The following contents describe how the post installation is going.

I. Configuration of Apache HTTP Server for ASWM

1. Input the full DNS name (host.domain) of this ASWM host.

Because ASWM utilizes Apache HTTP Server to process web pages, ASWM needs to know the correct server name of the host. It is often the full DNS name such as www.asus.com.tw for example. If your ASWM host does not have a DNS name registered, IP address are also permitted to use. Do not use hostname or samba hostname (via NetBIOS) because if web browsers come from outside your domain, then they will not be able to access this host.

```
aswm                        ##########################################################
[root@rh70-2u /root]# aswm_post_install

*******************************************************************************
           Welcome to setup ASUS Web-based Management (ASWM) System!

 NOTE: In the following, you will be asked some questions. Empty answers
       will give you default response which is surronded by brackets [].
*******************************************************************************


I. Configuration of Apache HTTP Server for ASWM
1) Input the full DNS name (host.domain) of this ASWM host
   (or IP address if no DNS name associated with) [10.10.10.253]? _
```

2. Input the password for the login id 'aswm' to access ASWM.

ASWM uses Apache HTTP Server's password protection mechanism. Here you should set up the password for the default login ID 'aswm'. All web browsers connected to ASWM host will be asked the ID and password. ID is always 'aswm' and the password would be entered initially here. Please note that Apache maintains its own password file rather than the shadow password and user information file which used by the operating system itself.

```
2) Input the password for the login id 'aswm' to access ASWM.
   Since no default password is given, you must type it:
```

II. Configuration of ASMA Agent Info. for ASWM

3. Input ASMA Agent's SNMP Community name?

Since ASMA is based on SNMP, ASWM also need to know the community name of ASMA installed. The default string is 'asma'. Change it if you have your own customized ASMA host. You could refer to the answer to the Question 8 ("Input SNMP community string") in ASMA's post installation procedures.

```
II. Configuration of ASMA Agent Information for ASWM
3) Input ASMA Agent's SNMP Community name.
   (Refer to the Question 8 in ASMA's post installation) [asma]?
```

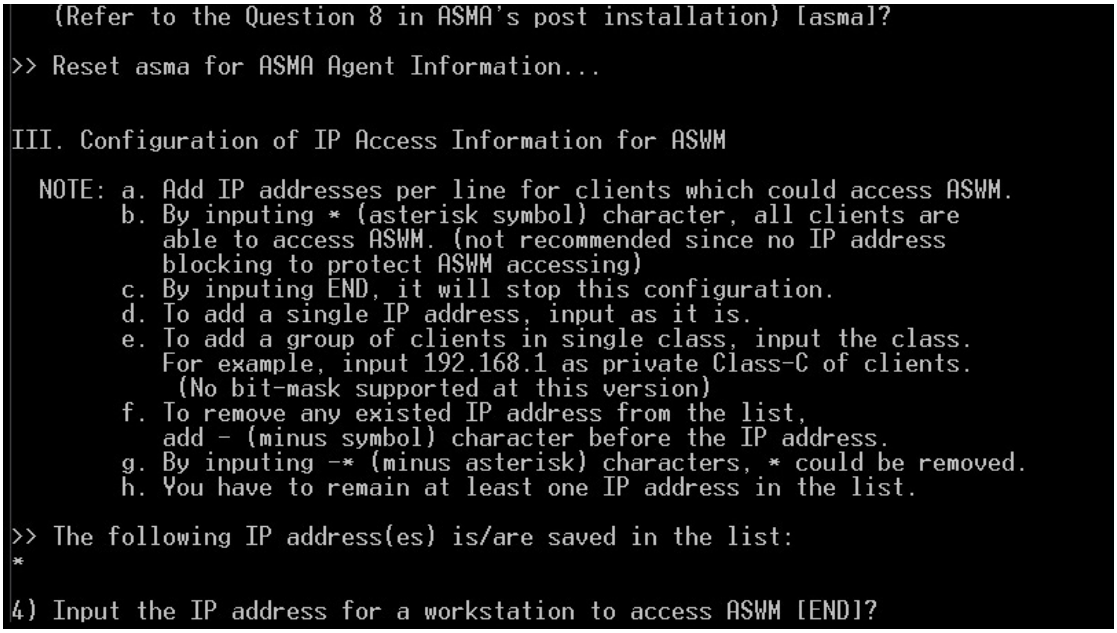
III. Configuration of IP Access Information for ASWM

4. Input the IP address for a workstation to access ASWM?

ASWM will dynamically check the web client's IP address and see if it is allowed to access ASWM. Here you could specify which IP addresses are permitted to view ASWM pages. The explanation of this question has revealed the input rules.

a. Add IP addresses per line for clients which could access ASWM.
b. By inputting * (asterisk symbol) character, all clients are able to access ASWM. (not recommended since no IP address blocking to protect ASWM accessing)
c. By inputting END, it will stop this configuration.
d. To add a single IP address, input as it is.
e. To add a group of clients in single class, input the class. For example, input 192.168.1 as private Class-C of clients. (No bit-mask supported at this version)
f. To remove any existed IP address from the list, add - (minus symbol) character before the IP address.
g. By inputting -* (minus asterisk) characters, * could be removed.
h. You have to remain at least one IP address in the list.

Please also read the file description about “/var/www/aswm/conf/aswmclients.conf” in the document file /usr/share/doc/aswm-1.0/README.

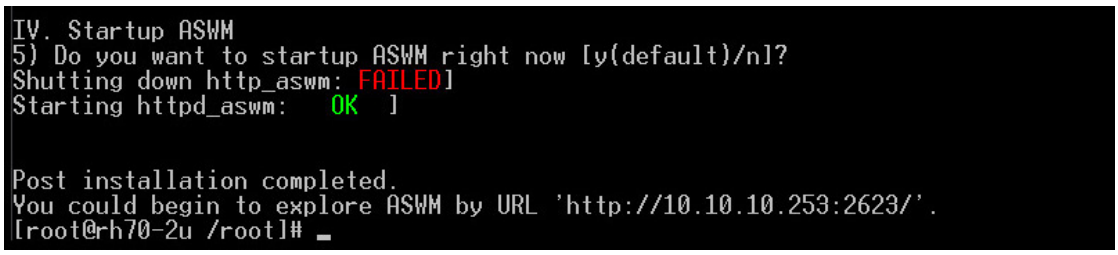


IV. Startup ASWM

5. Do you want to startup ASWM right now?

Answer "Yes" if you want to start up ASWM daemon now or "No" to start it upon your next system bootup.

NOTE: The ASWM service is dependent on the ASMA service. Make sure that you have installed ASMA before ASWM



Operations

After you installed the ASWM on the agent side and start the service, you can begin to manage the server using your web browser.

* Open a new web browser window and connect ASWM's by URL: **http://xxx.xxx.xxx.xxx:2623/**
* The login dialog will soon show up. Input the login ID **aswm** (or the ID that you have set) and the password you set in the post installation
* Wait about 2 or 3 seconds and the ASWM web pages will appear in your browser.
* If you want to manage the server locally (at the server itself), you can just input the URL **http://127.0.0.1:2623/**

Uninstalling ASWM for Linux

* First, make sure there are no resource lock to /var/www/aswm directory (since it has to be removed after uninstallation. Second, login system as root identity and execute the following rpm command to uninstall ASWM. i.e.,

  # rpm -e aswm-1.0-1

* If you want to uninstall ASWM manually. You have to remove the following files from your host:

  /var/www/aswm/*
  /etc/rc.d/rc3.d/S86httpd_aswm
  /etc/rc.d/rc5.d/S86httpd_aswm
  /etc/rc.d/rc0.d/K14httpd_aswm
  /etc/rc.d/init.d/httpd_aswm
  /usr/share/doc/aswm-1.0/*
  /usr/bin/aswm_post_install

Before you are doing manually removal, stop Apache daemon first by:

kill -TERM `cat /var/run/httpd_aswm.pid

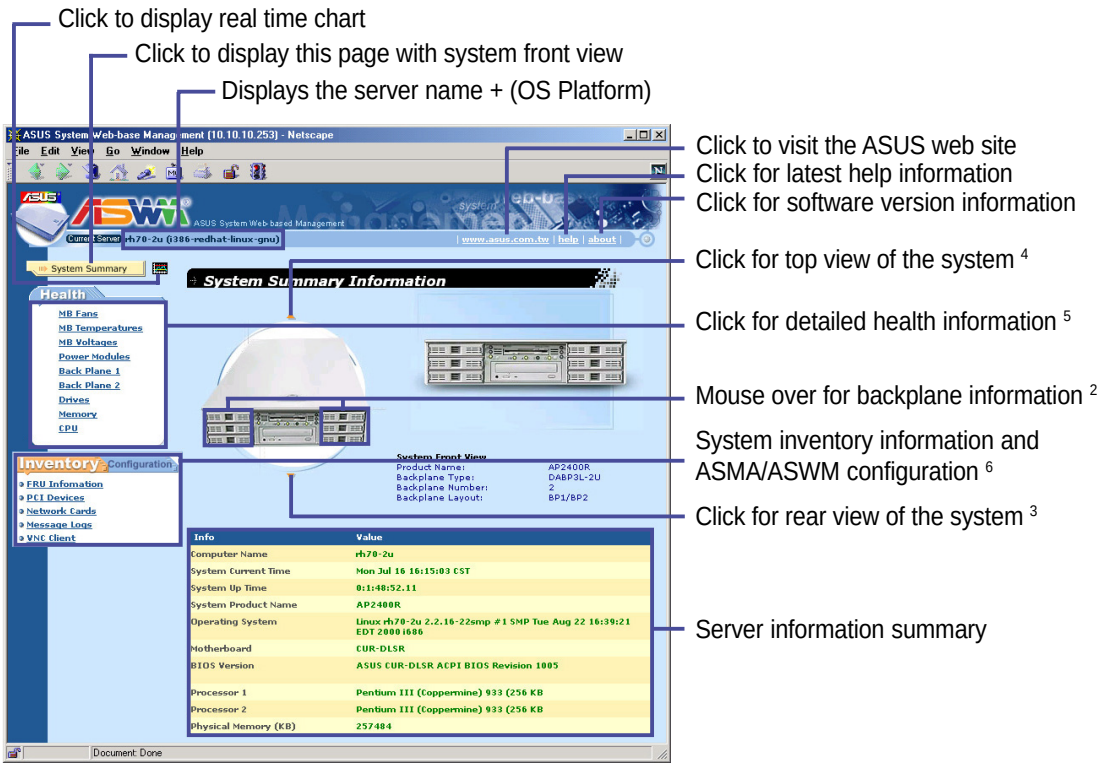
or

#/etc/init.d/httpd_aswm stop

Using ASUS System Web-based Management

This chapter will introduce the ASWM software and explain how to use the ASWM to monitor your ASUS server system.

The ASWM software accepts both Microsoft and Netscape browsers. This section will show examples using Navigator/Communicator and the Windows section earlier in this manual shows examples of using Explorer.



(1) The System Summary Information Screen

The system image overview is the unique characteristic of ASWM. The major features are as follows:

- Physical pictures, positions, layouts, and monitored information can be remotely viewed without physically inspecting the system.
- System data is automatically updated so that you can get system information as they occur.
- Specific details about each system component is shown simply by moving the cursor over the image.
- If a system error occurs, icons will flash on the component that has the problem so that problem location can be made visually without having to inspect the physical system.

Properties

Computer Name: The name of the server you are connecting to.

System Current Time: The clock time of the server (not GMT Time).

System Up Time: The operation time from system bootup of the server.

System Product Name: The model name or product name of the server.

Operating System: The operating system of the server.

Motherboard: The motherboard model name of the server.

BIOS Version: The BIOS model and version number of the server.

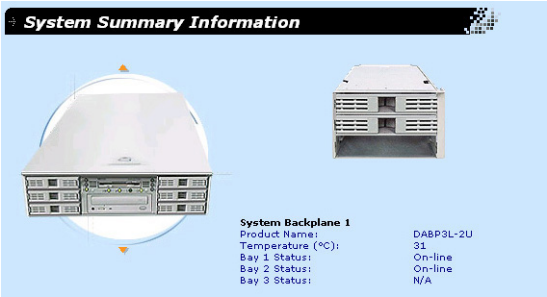
Processor 1: CPU 1 model, type, and speed of the server.

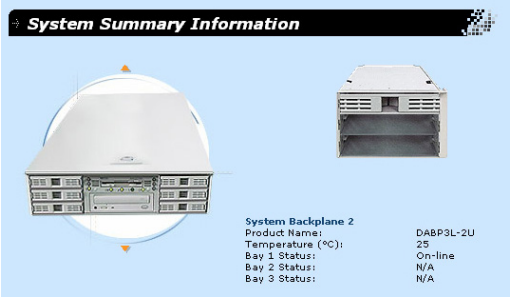
Processor 2: CPU 2 (if available) model, type, and speed.

Physical Memory: The amount of total system memory in KB.

(2) System Summary Front View

The backplane can detect the presence of hard disk drives (not the hot swap tray) and display pictures with an empty bay. Because it's hard to show no hard drives while in the hot swap tray, the pictures will also show the trays removed even if you did not remove them.

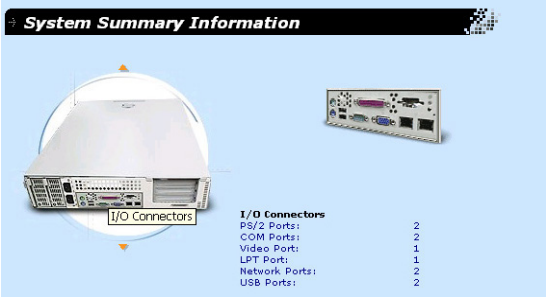




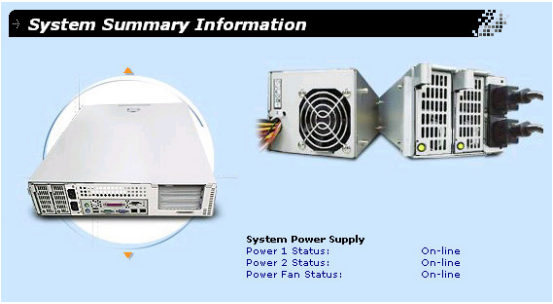
The Backplane will show the model name, temperature (˚C), and the default drive bay's status. The default safe upper temperature for the drive disk bays is 60˚C. When the temperature exceeds the set threshold, a warning will be given by flashing icons. NOTE: The temperature unit (˚C) cannot be changed. To convert to (˚F), please see the appendix at the end of this manual.

(3) System Summary Rear View

The rear view has two hot spots; the connectors and power supply



This is only motherboard port information and will not change.

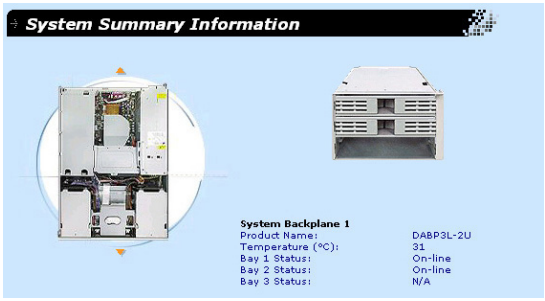


The power supply information will show:
Power 1 / Power 2: (if available) with
Not Available, Offline, Online
If the power cord is unplugged, a red "x" will appear over the power cord, if the power supply fails, red "x" will appear over power supply and power cord because either or both may have a problem.

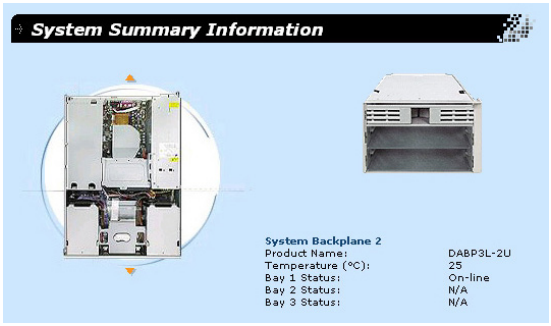
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

(4) System Summary Top View

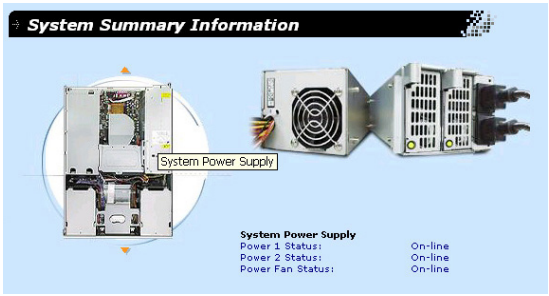
The top view has five hot spots; the blower, motherboard, left backplane, right backplane, and power supply



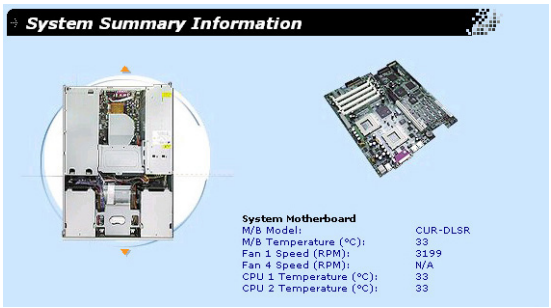
(see front view for explanation)



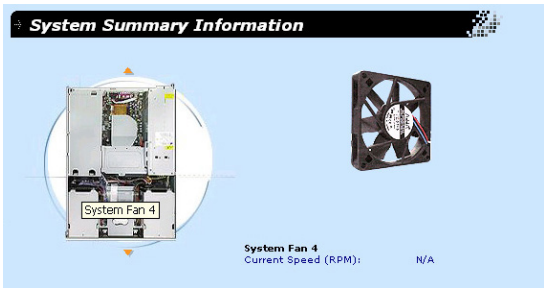
(see front view for explanation)



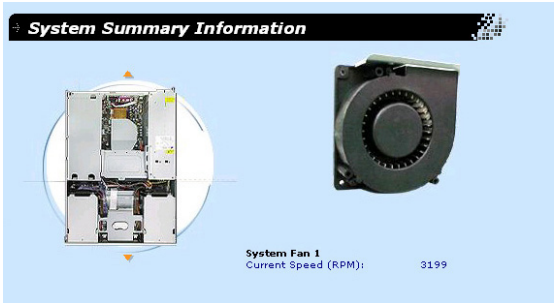
(see front view for explanation)



The motherboard will show model name, Fan1 RPM, Fan2 RPM, motherboard temperature, CPU1 temperature, and CPU2 temperature (if installed)



The system fan will show the RPM and status. The normal RPM range is preset by the factory.



Fan4 is the CPU blower. The threshold ranges are:
Critical: 0 to 1500
Warning: 1500 to 2000

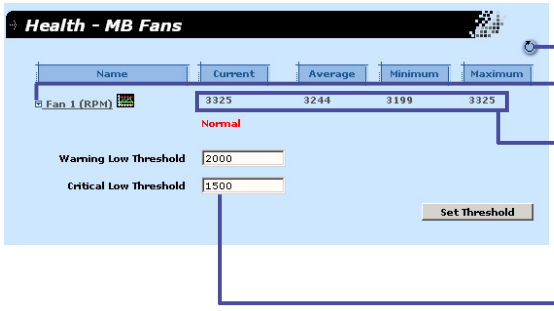
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

(5) Detailed Heath Information

Click on a link in the Health window to show detailed health information and threshold settings.

Health: MB Fans

The page will display the fan devices status of motherboard. The data contains name, current value, event status, statistic data and threshold value setting.



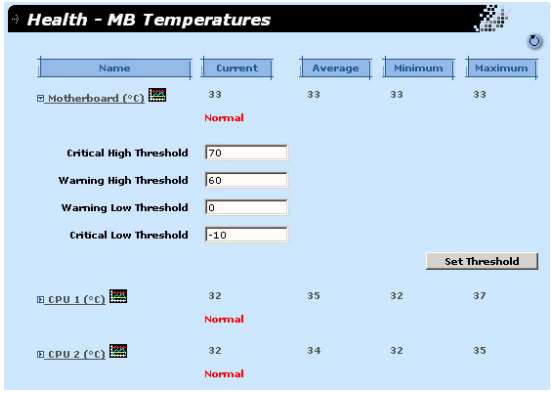
Click to reset statistics

Click to show threshold settings

Statistics during this session is shown here

Fan1 is the PCI cage fan. The threshold ranges are:
Critical: 0 to 1500
Warning: 1500 to 2000

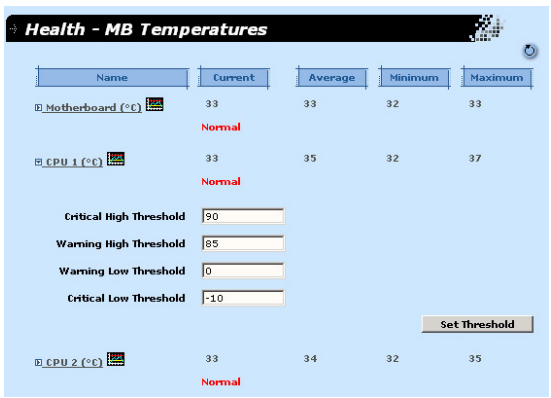
Enter threshold values here



Health: MB Temperatures

This page shows data on CPU and motherboard thermal sensors. Click on the small arrow in front of the device name to expand.

Motherboard thermal sensor. The threshold ranges are:
Critical: Upper: 70 to 150 Lower: -50 to -10
Warning: Upper: 60 to 70 Lower: -10 to 0



CPU thermal sensor. The threshold ranges are:
Critical: Upper: 90 to 150 Lower: -50 to -10
Warning: Upper: 85 to 90 Lower: -10 to 0

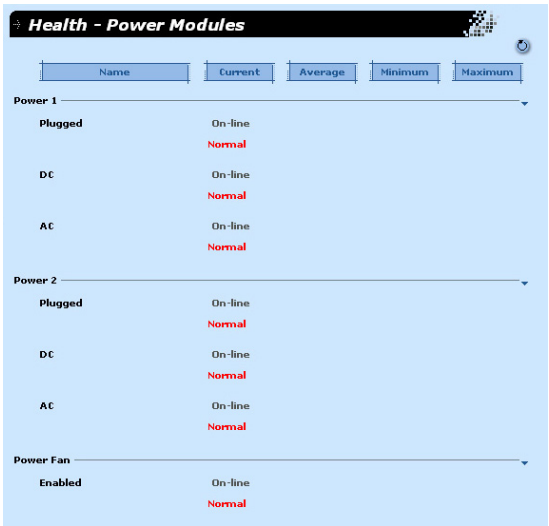
Click on a link in the Health window to show detailed health information and threshold settings.

Health: MB Voltages

The page shows data supplied by the many motherboard's voltage sensors.

Health: Power Supply

The page consist of two parts: The status of each power module and the status of the power fans.



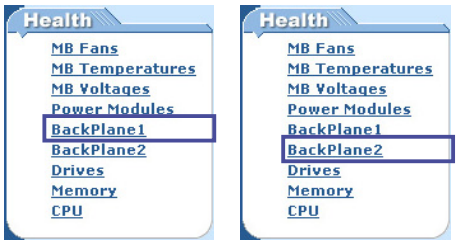
Power Module Status

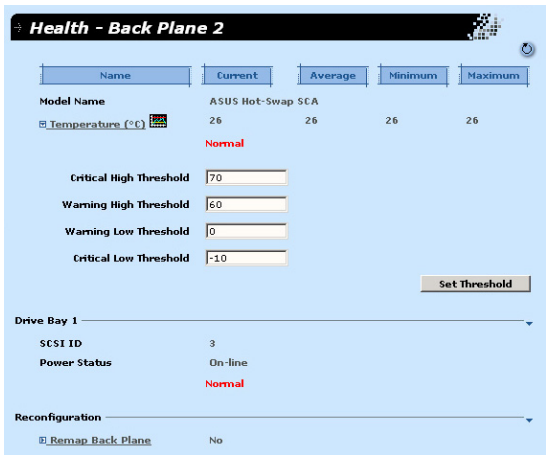
Reports the status and values of each power monitor. A warning will be made if power cord or power module fails or is unplugged.

Power Fan Status

Reports the status of the power fan in the power modules. If the power fan fails, the system will shutdown and a record will be made in the system event log.

NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.





Remap Back Plane

If you intentionally remove or insert hard drives in the hot swap bays, you should remap the backplane layout to stop repeated traps from being sent.

Click on a link in the Health window to show detailed health information and threshold settings.

Health: Backplane

ASWM will report the values supplied by the backplane monitors. You can investigate each monitor to see specific information pertaining to the individual backplane. Each backplane's page consists of 2 parts, the situation of each drive bay, and the backplane name and temperature.

Drive Bay Situation

The table in the middle of the page reflects the situation of each drive bay in real time. If there are any problems on the backplane, it will show WARNING / CRITICAL messages on the relative positions.

Backplane Temperature

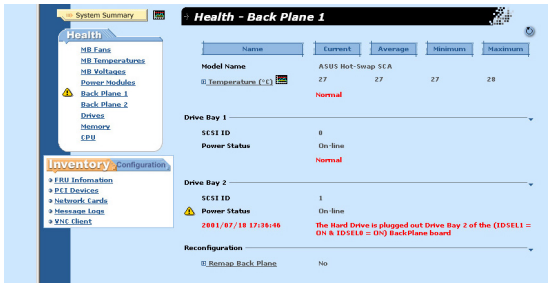
This section will show you the current temperatures, calculated maximum/minimum/average temperatures, status information, and customized threshold settings. You can edit the text fields to change these settings.

NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

Remapping the Backplane

Here is an example of remapping the backplane.

Two drives were originally detected when ASMA was installed.



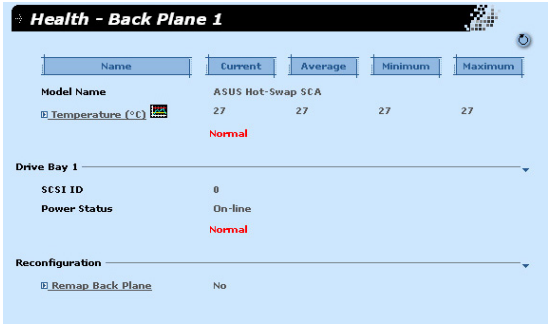
One disk has been intentionally removed.

A warning is given under the backplane:

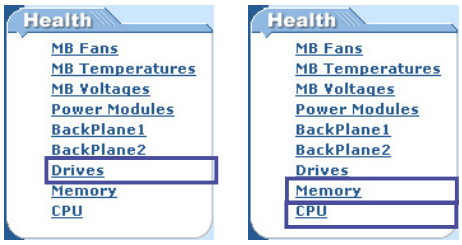
“The Hard Drive is plugged out Drive Bay 2 of the (IDSEL1=ON & IDSEL0=ON) BackPlane board”

This message means that if the drive change was unintentional, you should visually check the server for problems.

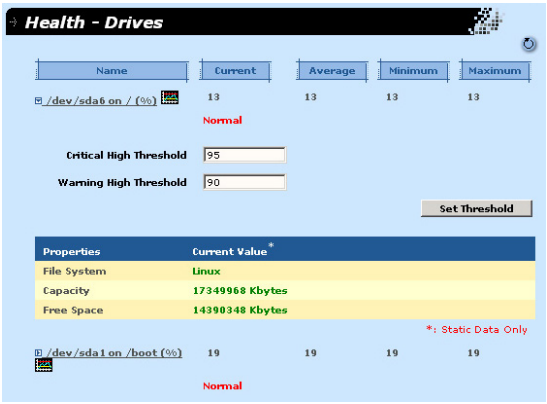
If the change was intentional, click “Remap Back Plane” and select “Yes” to update the ASMA data.



Drive Bay 2 will then be removed from the “Health - Back Plane”

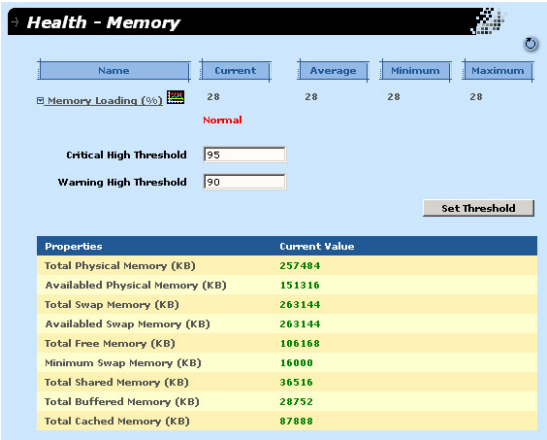


Click on a link in the Health window to show detailed health information and threshold settings.



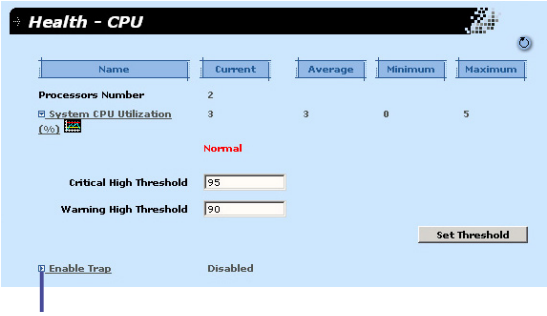
Health: Drives

The page will show mounted file systems. It will also show file systems, storage loading, capacities, free space, and customized threshold settings of the file systems. You can edit the numeric fields to change threshold value settings.



Health: Memory

This page contains the health information of the system's physical and virtual memory usage. The fatal and warning threshold values can be set here. Furthermore, physical memory and virtual memory information are also shown.



Because CPU utilization have many peaks, warnings may not be necessary so warning events are disabled by default. You can click here to enable warning events.

Health: CPU Utilization

The page contains the healthy information of system CPU utilization. That is not by individual CPU.

(6) Inventory Items

FRU Information

The page will enumerate several FRU information based on the layout of the server's hardware. You can click the tab on the top to browse individual FRU information.

PCI Devices

The page will enumerate PCI devices on the right side. You can click the link to browse the information of the device on the left side. The information consists of 3 columns. The first column is General, it'll show device type, manufacturer and device location. The second one is Driver, it'll show driver name, provider, build date, version, and status information of the device driver. The last one is Resource, it'll show the system resource that the device occupied.

Network Cards

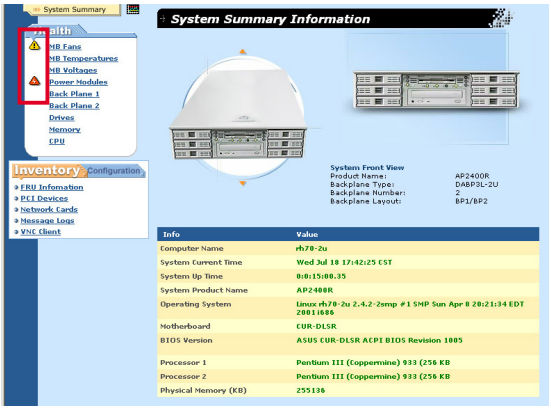
The page will show something about network cards in the server. If ASWM detects no network cards, it will only show one tab on the page to notify you that there's no cards in the server, otherwise it will show one more tabs to present information of each network card. The information within each network card include product name, manufacturer, MAC address, location information, driver's version, driver's build date, IP address, subnet mask, and gateway.

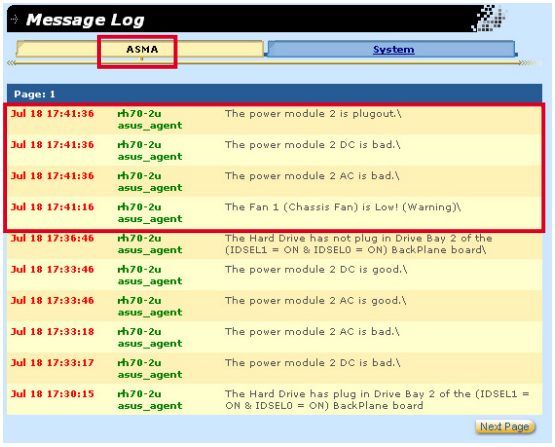
Message Logs

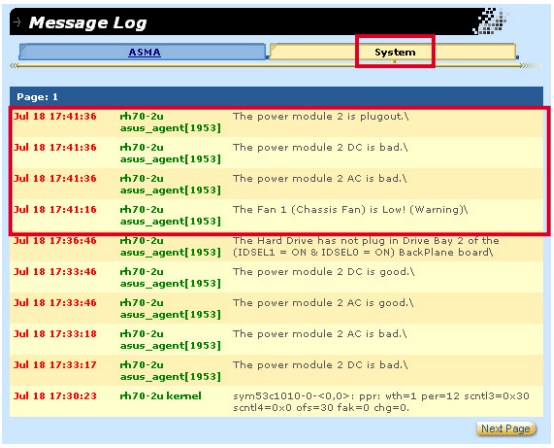
The page will show the system message logs. It consists of two tabs representing separate the message logs for ASMA and system. You can click the tab to view the different message log types.

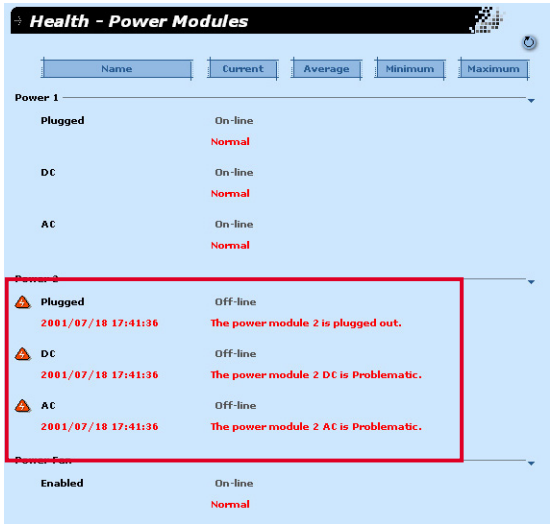
System Warning

When warning events occur, yellow triangles will flash. When critical events occur red triangles will flash and the problem item marked with an “x”. When possible, a description is written in the monitor.





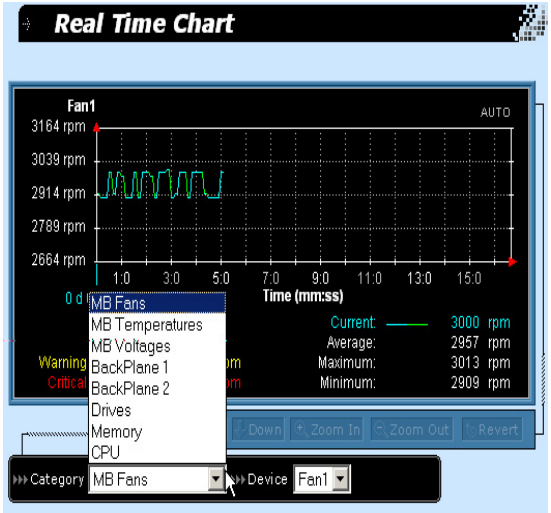




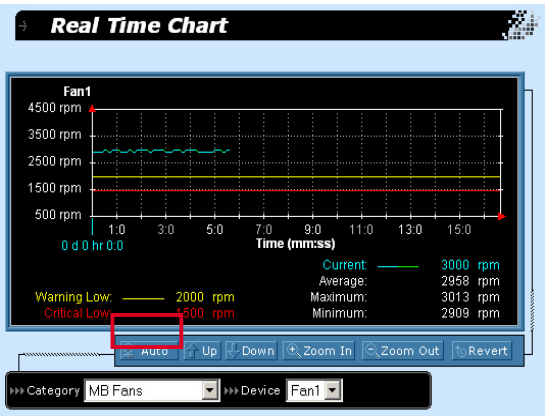
NOTE: The values shown in this section are for reference purposes only and may not reflect the values shown by your system. The pictures shown will vary depending on server model and configuration.

System Real Time Chart

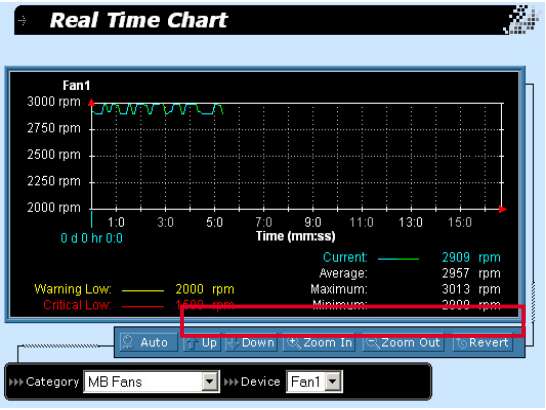
Every value that you see in the ASWM corresponds to data while you are in the Real Time Chart view. So you cannot see historical values. You can let the Real Time Chart run over a few days to discover the highs and lows of a particular monitor.



You can choose to chart fans, temperatures, voltages, backplane, drives, memory, and CPU. After choosing a category, choose the specific device. (You cannot chart multiple devices or multiple categories.)



If the “Manual” button is available, click on it to show chart navigation buttons: Up, Down, Zoom In, Zoom Out, Revert.



Up: scroll up on the chart

Down: scroll down on the chart

Zoom In: zoom in on the chart
(If you zoom in and data is no longer in view, wait a few seconds and the chart will automatically scroll to the data.)

Zoom Out: zoom out on the chart

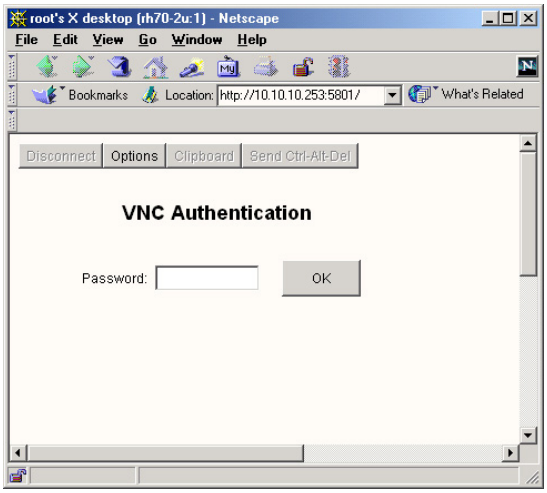
Revert: reverts to default zoom (not the same as auto)

VNC Client

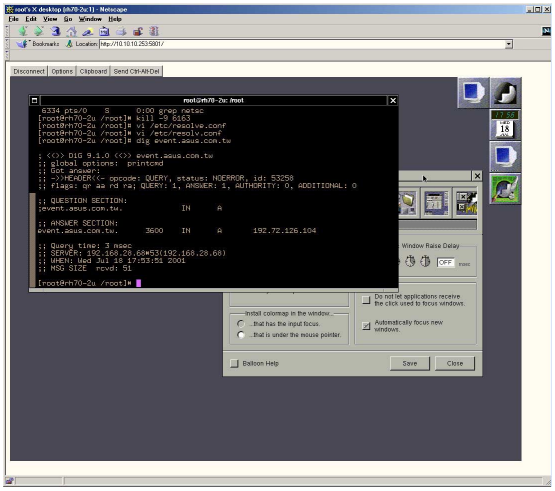
The VNC client allows you to remote control the server through any web browser just like “IBM Desktop on Call”. This allows true remote control to allow login/logout and shutdown/restart capabilities.

Click the link to open the VNC Client in your web browser. A password will be required by the VNC. You can modify the password setting on server side but make sure it is a secure password.

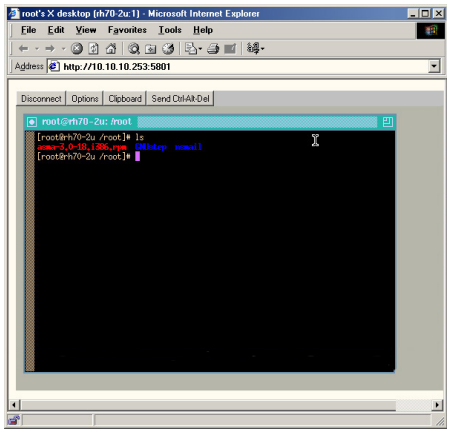
NOTE: The password for VNC is case-sensitive.



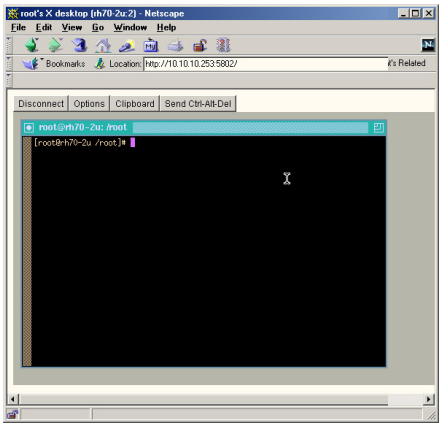
Login Screen



Remote Control Session



VNC Session 1



VNC Session 2

Linux servers can provide multiple VNC sessions so multiple users can work on separate screens.

VNC Client:

Click this link to start a VNC session in your Internet browser. A password will be required by VNC. You can modify the password using the **vncpasswd** utility. It is highly recommended that you change the password as soon as possible to prevent unwanted users.

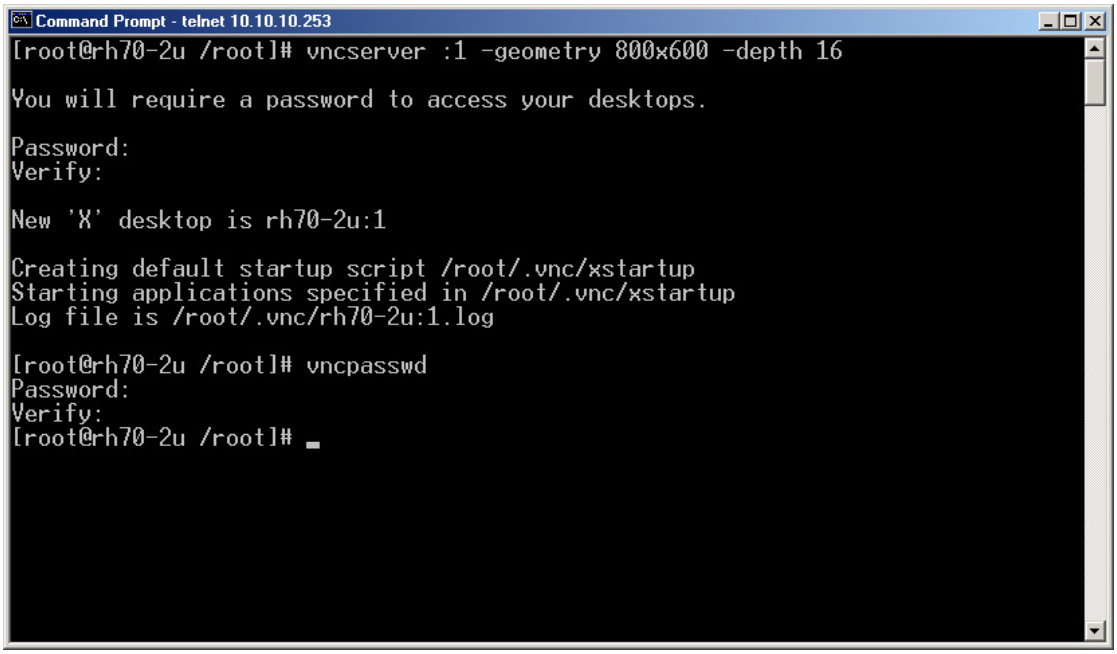
In Linux systems, you can open numerous “vncservers” as you like. Each one has its own VNC display number. In fact, there are "virtual" X displays. Try to use **ps** to find out how many Xvnc daemons are started and which display numbers are assigned to them.

Set Password

When you start the “vncserver” for the first time, you will be asked to enter a password.

Change Password

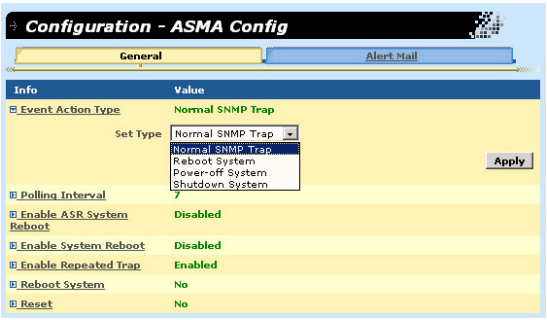
Type **vncpasswd** to change the VNC password.



IMPORTANT: Change the VNC password as soon as possible to protect your system from unwanted access.

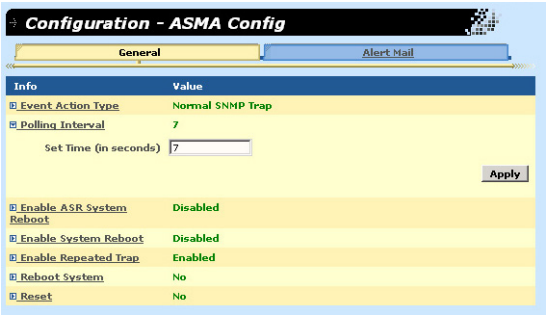
ASMA Configuration - General

ASWM allows you to configure ASMA settings. You can set the event action and device polling intervals on the General tab or set mail settings on the Alert Mail tab if you want ASWM to send an Email if something should go wrong. This page consists of two divisions; General settings and Alert Mail settings.



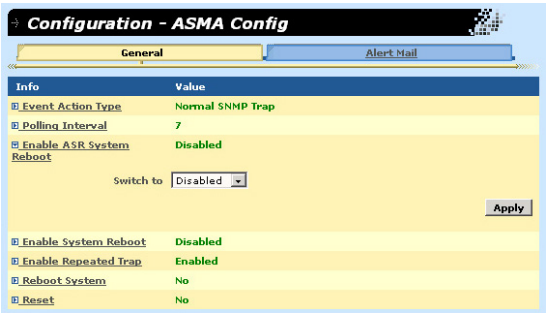
Event Action Type

If an overheat event occurs, ASWM will trigger the action you assigned here. You can request ASWM to send an SNMP trap, reboot system, power off, or shutdown system if something should go wrong.



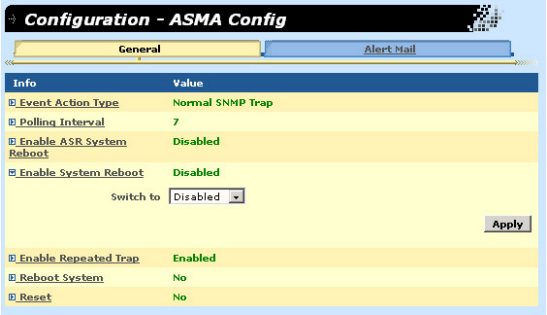
Polling Interval

You can assign an interval value here to instruct how often ASWM polls hardware devices.



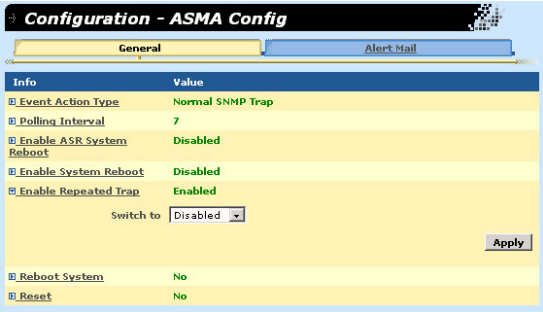
Enable ASR System Reboot

ASR reboots the system when the motherboard detects a system hang. You can enable/disable here.



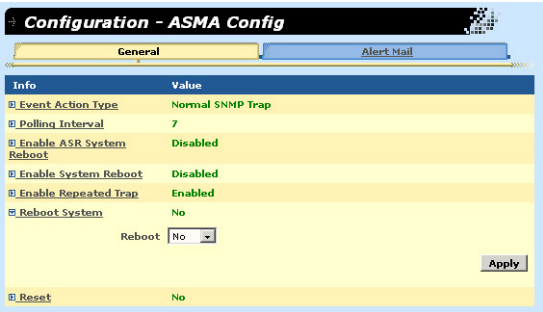
Enable System Reboot

You can enable/disable general system reboot here.



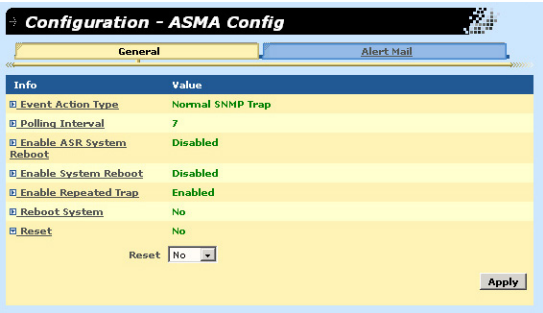
Enable Repeated Trap

You can enable/disable multiple warnings (until problem corrected) for the same problem.



Reboot System

Reboot system immediately.



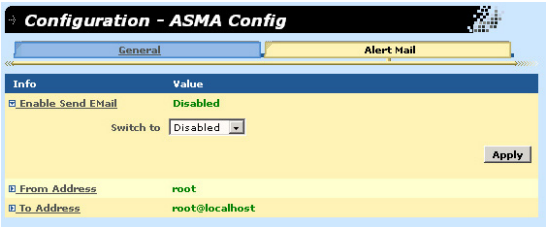
Reset

Resets all device threshold values and ASMA settings to its default value.

ASMA Configuration - Alert Mail

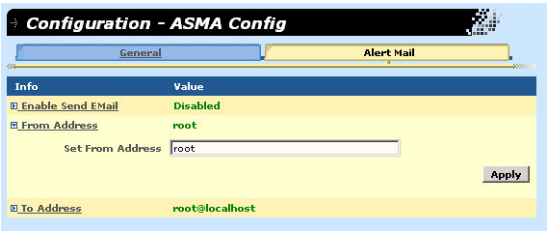
This page allows you to configure Alert Mail properties for ASWM.

All ASMA events are logged in the Windows event log but if you want to also email events to a specific location, you can setup this function here.



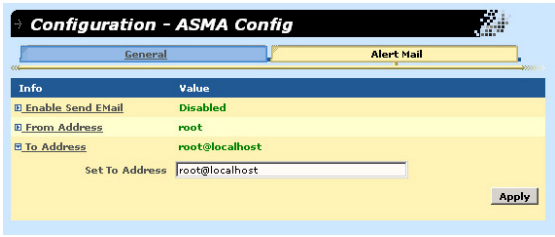
Enable Send Email

Enable/Disable: To email ASMA events.



From Address

Any Text: Specify where the email is sent from.



To Address

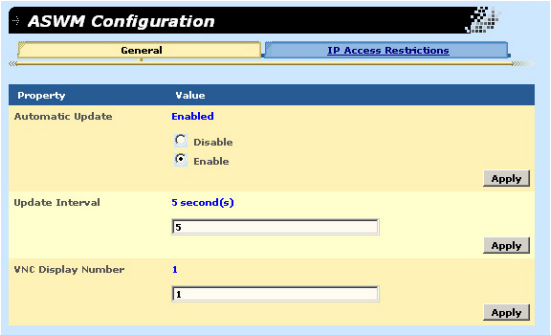
Email Address: Specify the email address of the recipient.

ASWM Configuration - General

This page allows you to configure General and IP Access properties for ASWM.

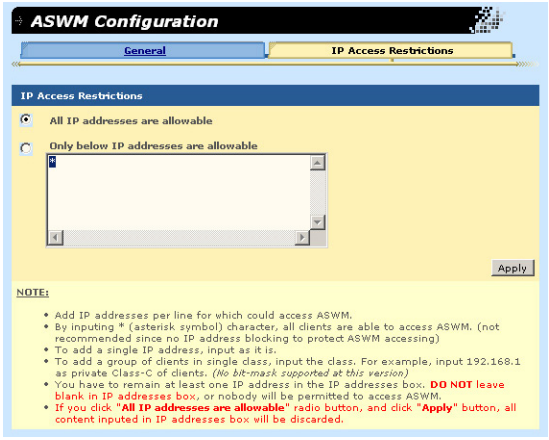
Automatic update

Enable means you always can view the updated data. (See the FAQ at the end of this chapter for more explanation.)



Update Interval

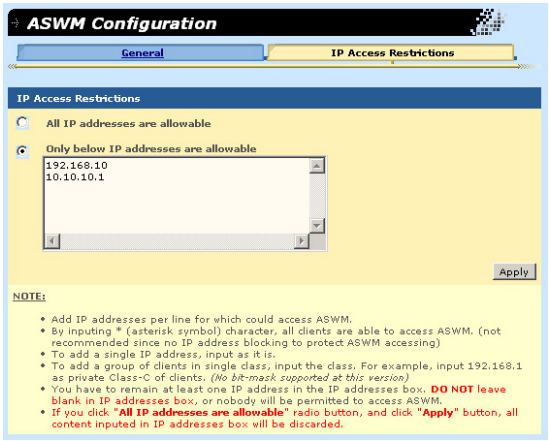
The time interval for ASWM to update the data. The value must be 5 seconds or more.



IP Access Restrictions

All IP Enable

If you want to allow access from anywhere, select this item to allow all IP address to connect to ASWM.



Only Allow IP List Below

If you want to restrict access to ASWM, you can define address or address ranges which can connect.

Enter one IP address on each line. The IP address must be the format "n.n.n.n". “n” must be 0 to 255.

Enter only “n.n.n” or “n.n” for groups of IPs, “*” cannot be used on Linux servers. 192.168.0 would mean 192.168.0.0 to 192.168.0.255

ASWM for Linux FAQ

Q. How do I know that ASWM is installed on a host?

A. There are many ways to check this.

First, you can use rpm: **# rpm -qa | grep aswm**

rpm will report a package named aswm-1.0-1 (version and release numbers will vary) if ASWM is installed.

Second, you can check if the directory **/var/www/aswm** exists along with the file **/etc/rc.d/init.d/httpd_aswm**.

Q. What will happen if I did not do a "post installation"?

A. Without post installation, all parameters for ASWM are set to default values including the “aswm” login password. ASWM will assume:

a. The IP address binding on interface “eth0” will be chosen for Apache as ServerName and hence this IP address has to be able to connect outside the ASWM host.

b. ASMA for Linux is installed on the same host.

c. * (asterisk) will be added into “aswmclients.conf”

As a result, all IP addresses will be able to access ASWM.

d. Default login password to ASWM will be “aswm”.

NOTE: Default values are unsafe and may not function properly. It is highly recommended that you to do post installation immediately.

Q. How can I check whether ASWM has started? And how do I start it manually if it has not started?

A. You can use the “ps” command to check. For example:

 # ps ax | grep http

And if you see some process entry such as

XXXXX ? S X:XX /usr/sbin/httpd -f /var/www/aswm/conf/httpd.conf

where X could be any digit. Then at least the Apache HTTP Server has started.

If ASWM has not started, just login as the root user and execute:

 # /etc/rc.d/init.d/httpd_aswm start

then recheck by using the “ps” command again.

Q. I opened “http://xxx.xxx.xxx.xxx:2623/” (x being the server’s IP address) but the browser does not show anything. Why?

A. Usually this is possibly caused by a failure of the ASMA host. ASWM will connect to the ASMA host and inquire some initiative values by SNMP. Check the ASMA host and see if UCD SNMP daemon has started and that ASMA has been properly installed and started. Also make certain that ASMA's SNMP extension is correctly hooked on the SNMP daemon. You can check SNMP functions by using UCD SNMP utilities such as “snmpwalk” or “snmpget”.

Q. When I use Netscape Communicator/Navigator to browse ASWM pages and resize its window size, there are errors on the page or blanks. Why does this happen?

A. Netscape Communicator/Navigator does not handle resize window correctly, this is a well-known disadvantage for those frame-enabled web pages. Unfortunately, ASWM's web pages extensively uses frames. To solve this problem, just press [**Alt**]+[**R**] in Linux to reload the page.

Q. The browser showed a message “Browser lost connection to ASWM server. Close and reopen a new browser and connect ASWM server after the problem is fixed.” Is anything wrong here?

A. While automatic update feature is enabled, ASWM pages will routinely detect the network status. If network problems occurs that stops your Internet connection, the links on the left side will no longer respond. An alert message will remind you that the browser has detected some unusual network situations and it has actively stopped all automatic update actions.

At this moment, you need to resolve your network problem and click refresh in your browser to rebuild the connection with the ASWM server.

A better method would be to close the browser and reopen the browser. Because it is not clear how long the browser has lost connection with the ASWM server. It is possible that all session data have timeout and lost on the Apache HTTP Server. If this worst case happened, reloading pages will only provide no data or old data.

Q. I saw ASWM supports VNC Server. How do I customize my VNC Server?

A. ASWM supports connection to a VNC Server which is installed on the ASMA host. You have to do a full installation of the VNC Server because ASWM display is provided through Java. Also, do not forget to startup Xvnc daemon on the ASMA host. Please note that ASWM connects to the VNC Server on your ASMA host, **it does not connect through your ASWM host.**

In "ASWM Configuration", you can set your desired VNC display number if the default display “1” is not applied to your primary vncserver terminal. You can also startup as many sessions as you want and then switch to different sessions through the ASWM configuration.

Q. The manual emphasizes that ASWM uses web pages based on the Apache HTTP Server. Is there anything I should know about the ASWM's configuration file for httpd?

A. ASWM are web pages which perform ASMA functions. However, these web pages are written in PHP scripts and extensively dependent on the SNMP functions in the Apache's PHP module. Since SNMP features are not initially included in PHP module libphp4.so, we compiled an updated version of PHP module and packaged it within our ASWM product. However, we will not try to overwrite your PHP module. Instead, we just initiated another instance of httpd daemon and it only loads our specific module.

If users compiled Apache HTTP Server by themselves, there will be a very critical issue. When users build up an Apache HTTP Server in a static-binding way, the PHP module will fail to load while ASWM is trying to start. In this case, users have to rebuild their Apache HTTP Server if their static-binding PHP modules do not have SNMP extensions.

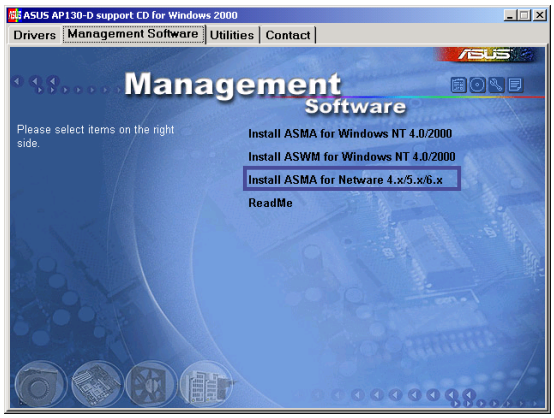
After rebuilding a static-binding Apache HTTP Server with PHP/SNMP extensions, users also have to manually modify the configuration file of httpd for ASWM. It is located at “/var/www/aswm/conf/httpd.conf”. Detailed modifications can only be done by experienced users. In the future release of ASWM, a more smooth distribution process will be considered to solve such issues.

Q. I was told that ASWM also has a sibling version for Microsoft Windows NT/2000 system. It seems that they have very different appearances than the Linux version. Do both versions have the same features?

A. ASWM for Microsoft Windows NT/2000 is more appealing compared to the Linux version because it has good graphics display on Microsoft Internet Explorer. ASWM's NT/2000 version has more dynamic HTML compared to the Linux version. For the Linux version, compatibility with earlier Netscape Communicator/Navigator is the most important consideration, hence very few dynamic HTML can be utilized. You may feel that the Linux version of ASWM is tailored. In fact, almost all features are implemented on both versions and users of Linux version do not need to worry about losing any important features compared with the Windows NT/2000 version.

Install ASMA for Netware 4.x/5.x/6.x (CD Item 3)

NOTE: ASMA for Netware does not support ASWM. On some server models, ASMA is not supported on Netware 5.x.



Before you install ASUS System Monitoring Agent For NetWare, you should make sure that SNMP NLM is already installed properly in the Netware system, because the ASUS System Monitoring Agent For NetWare needs NWSNMP (Netware SNMP) to work correctly. This Software can run on Netware 3.12, Netware 4.x, 5.x, 6.x. For Netware 3.12, a patch file LIB312A.EXE must be installed. For details, please visit the Novell Website: **http://support.novell.com/misc/patlst.htm**

Install and configure SNMP service on Netware 4.x/5.x/6.x

Installing:

- When Netware Server installed successfully, then NWSNMP is installed too.
- NWSNMP loads automatically when Netware server starts. Default NWSNMP service is SNMP Get function (monitoring only).
- User can Configure NWSNMP option to own SNMP Set and SNMP Trap functions.

Configuring SNMP Set:

- User can add/modify the LOAD SNMP line in the AUTOEXEC.NCF.

  For example, To allow any community name to be used for read/ write access, use the following command:

  "LOAD SNMP ControlCommunity="

- Detail info please reference the Novell Netware documents.

Configuring SNMP Trap:

- To receive Traps sent by NWSNMP, make sure your remote client address is listed in the IP or IPX section of the SYS:\ETC\TRAPTARG.CFG file. Edit the file with any ASCII text editor and follow the instructions given in the file comments.

Install ASMA for Netware 4.x / 5.x / 6.x (Cont')

To Install ASMA for Netware, you must specify the install path to \\Network Computer Name\SYS\SYSTEM. For example, you can specify a mapped drive (such as N) to \\Network Computer Name\SYS, and specify the install path to N:\SYSTEM (Where N is your mapped drive).

When you install ASMA, you should follow the procedures listed below.

At "Choose Destination Location" dialog box.

1. Click **Browser** to choose a destination.
2. Click **Network** to map a Network computer.
3. For Windows NT4.0/2000:
   a. Choose a mapped drive (such as N: or another),
   b. At "Choose Directories", Click **Netware or compatible Network**.
   c. Select the Network computer that you want to map (Note: You must map to **\\Network Computer Name\SYS**)
   d. Type your login name and password to access the Network Computer, click **OK**.
   e. Click **OK**, return to "choose folder" dialog box.

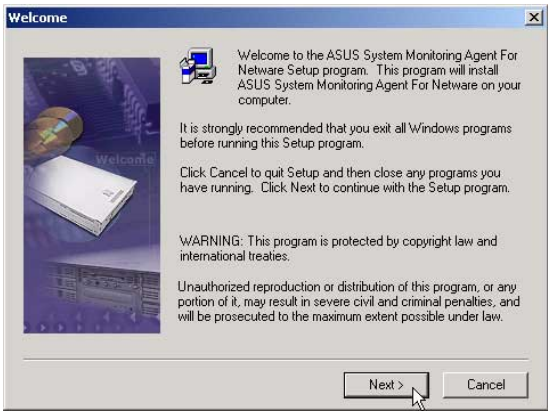
If your installation path does not contain netware system files, a warning will be given. Clicking **Yes** allows you to specify another path, clicking **No** will ignore this problems and continue the installation wizard.

Uninstalling ASMA for NetWare

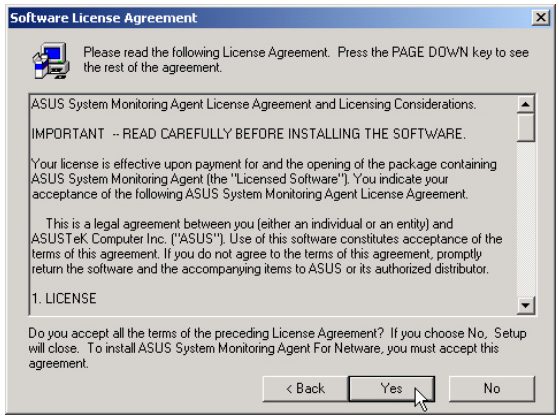
You can uninstall ASUS System Monitoring Agent For NetWare by deleting the following files in "Netware SYS:SYSTEM":

ASUSSMB.NLM	ASUSLM78.NLM	ASUSASR.NLM
ASUSBP.NLM	ASUSMIB.NLM	ASUSRAID.NLM
ASUSMIB.INI	ASUSCONF.INI	ASUSSNMP.NCF
ASUSMIB.MIB	READASMA.TXT	

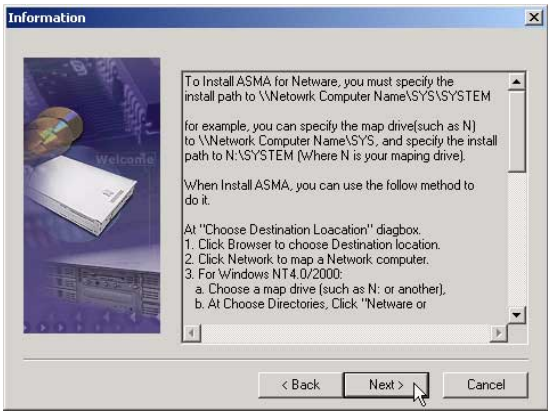
Install ASMA for Netware 4.x / 5.x / 6.x - Installation Screens



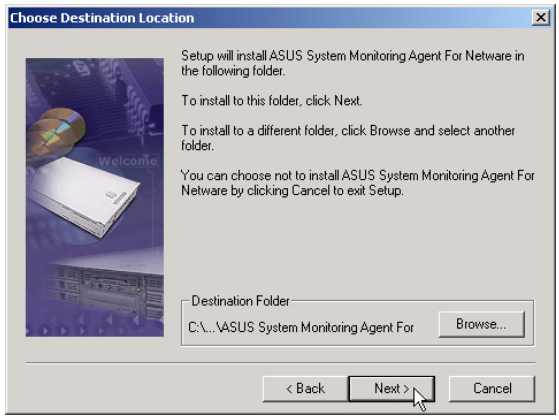
Click **Install ASMA for Windows 2000** on the autorun menu. Click **Next** after reading the "Welcome" message.



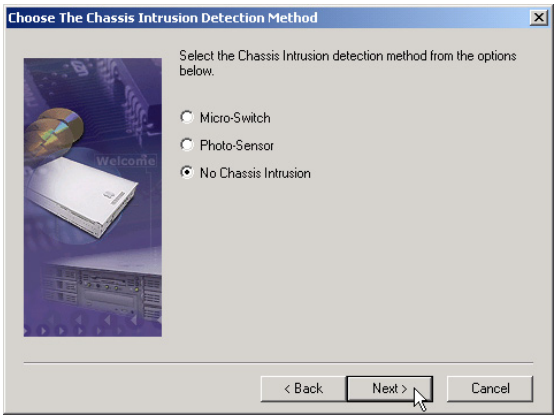
Click **Yes** after reading the "License Agreement".



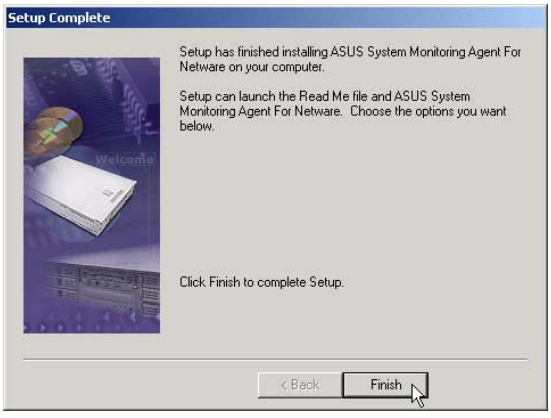
Click **Next** after reading the "Information".



Click **Next** after to confirm installation directory. NOTE: The above path is incorrect. You must install to a drive letter that is mapped to Novell Netware's \SYS\SYSTEM directory.



Choose the type of chassis intrusion censor used in your server.



When setup is complete, click **Finish** to exit the installation wizard.

Appendix

Temperature Conversion Chart

Celsius	Fahrenheit
00 C	32.0 F
01 C	33.8 F
02 C	35.6 F
03 C	37.4 F
04 C	39.2 F
05 C	41.0 F
06 C	42.8 F
07 C	44.6 F
08 C	46.4 F
09 C	48.2 F
10 C	50.0 F
11 C	51.8 F
12 C	53.6 F
13 C	55.4 F
14 C	57.2 F
15 C	59.0 F
16 C	60.8 F
17 C	62.6 F
18 C	64.4 F
19 C	66.2 F
20 C	68.0 F
21 C	69.8 F
22 C	71.6 F
23 C	73.4 F
24 C	75.2 F
25 C	77.0 F
26 C	78.8 F
27 C	80.6 F
28 C	82.4 F
29 C	84.2 F
30 C	86.0 F

The equation for converting Fahrenheit to Celsius is:
[(Deg. F) - 32] x (5/9) = Deg. C