

# **Advanced Server Management Software**

*Quick Start Guide for Windows-based  
Intel® Server Platform SRMK2*

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# Contents

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<b>Chapter 1 Introduction</b>	<b>5</b>
About Advanced Server Management software .....	6
For more information .....	7
<b>Chapter 2 Setting up the software</b>	<b>9</b>
Installation prerequisites .....	10
Windows NT* server requirements .....	10
Windows* 2000 server requirements .....	11
Computer requirements .....	11
Installing Advanced Server Management software on Windows .....	12
Connecting to your Intel® Server Platform SRMK2 .....	13
Using Windows security .....	14
Uninstalling Advanced Server Management software .....	15
<b>Chapter 3 Configuring system health</b>	<b>17</b>
Sensors, events, and alerts .....	18
Setting event thresholds .....	19
Setting event alerts .....	20
Installing Alert Catcher software .....	22
Viewing CPU and memory utilization .....	23
Configuring predictive failure events .....	24
Configuring the Watch Dog Timer .....	26
<b>Chapter 4 Configuring system information and settings</b>	<b>29</b>
Viewing the virtual LCD .....	30
Virtual LCD icons .....	30
Viewing the System Event Log .....	31
Viewing inventory information .....	32
Using server control .....	33
Configuring BIOS settings .....	34
<b>Index</b>	<b>35</b>



# 1

## Introduction

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Learn about the features of Advanced Server Management software and where to go for more information.

# About Advanced Server Management software

Advanced Server Management software is an HTML-based set of tools you can use to configure settings and view information on an Intel® Server Platform SRMK2. You can install Advanced Server Management on Windows NT\* or Windows\* 2000 operating systems.

The Advanced Server Management tools include:

- System health control
- Alert configuration
- BIOS configuration
- Server control
- Predictive failure settings
- Watch dog timer

## **System health control**

System health tools let you:

- Monitor the server's temperature, voltage, fans, and disk status.
- Monitor and view the server's CPU and memory utilization.
- View the System Event Log, which shows a list of recent events.
- View the virtual LCD, which shows the system's status.

## **Alert configuration**

Alert configuration settings enable you to specify a destination for SNMP traps. It also enables you to configure the pager settings for alert notifications.

## **BIOS configuration**

BIOS configuration tools let you:

- Set the BIOS communication settings for use with console redirection.
- Set the BIOS password.
- Upgrade the BIOS

### Server control

Server control settings enable you to remotely reboot and shut down the server.

### Predictive failure settings

Predictive failure settings enable you to monitor certain kinds of repetitive server failures.

### Watch Dog Timer

The Watch Dog Timer is an automatic reboot feature that kicks in when the server isn't responding.

## For more information

This document explains how to install Advanced Server Management software and describes its features.

For more information about the software, see the online help. To access, click the **Help** link in the navigation pane. You can also visit Intel's support Web site at <http://support.intel.com/support/motherboards/server>.

For more information about the Intel Server Platform SRMK2, see these documents:

- *Intel Server Platform SRMK2 Technical Product Specification*
- *Intel Server Platform SRMK2 Product Guide*

These documents are located on Intel's support Web site at <http://support.intel.com/support/motherboards/server>



# 2

## Setting up the software

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This chapter explains how to set up Advanced Server Management software on an Intel® Server Platform SRMK2, how to connect to that server, and how to uninstall Advanced Server Management software.

## Installation prerequisites

This guide assumes that your Intel Server Platform SRMK2 is running one of the following operating systems:

- Windows NT 4.0 Server Enterprise Edition with Service Pack 6A
- Windows 2000 (Server, Advanced Server, or Professional)

You will also need Internet Explorer 5.0 or higher.

## Windows NT server requirements

If your SRMK2 is running Windows NT 4.0 Server Enterprise Edition with Service Pack 6A, ensure that it's configured with the following before installing Advanced Server Management software:

- All required hardware and a network connection.
- Windows NT 4.0 Server Enterprise Edition, with Service Pack 6A, and with the 82559 network driver. The network driver is available from Intel's support Web site at <http://support.intel.com/support/motherboard/server>.

Service Pack 6A is available at:

<http://www.microsoft.com/ntserver/nts/downloads/recommended/SP6/allSP6.asp>

- SNMP service. This is an add-in service available on the Windows NT 4.0 Server Enterprise Edition CD, disk 1. You may also find it at the Microsoft Download Center:

<http://www.microsoft.com/downloads/search.asp?>

- The Option Pack 4.0 download is available at:  
<http://www.microsoft.com/NTServer/nts/downloads/recommended/NT4OptPk/default.asp>

- Internet Information Service (IIS) 3.0 with ASP support. This is available on the Windows NT Option Pack CD.

If you previously installed IIS version 2.0, upgrade to IIS 3.0.

- WMI (Windows Management Instrumentation). The WMI Core Software is available at Microsoft's MSDN site at:  
<http://msdn.microsoft.com/downloads>

These URLs are provided for your convenience, and are subject to change without notice.

## Windows 2000 server requirements

If your SRMK2 is running a version of Windows 2000, ensure that it's configured with the following before installing Advanced Management software:

Windows 2000 Server:

- SNMP service. This is an add-in service available on the Windows 2000 CD. (For information about installing SNMP, see the Windows 2000 online help.) You may also find it at the Microsoft Download Center:  
<http://www.microsoft.com/downloads/search.asp?>
- Internet Information Service (IIS). This is an add-in service available on the Windows 2000 CD.

Windows 2000 Advanced Server:

- SNMP service. This is an add-in service available on the Windows 2000 Advanced Server CD. (For information about installing SNMP, see the Windows 2000 online help.)

## Computer requirements

After you install Advanced Server Management software on your SRMK2, you can connect to the server using a Web browser on a networked computer.

The computer must be running Windows 98, Windows NT 4.0 Workstation, or Windows 2000. The browser must be Internet Explorer 5.5 or higher, or Netscape Navigator\* 4.7.

To use SNMP traps, you must install an SNMP trap receiver on the computer that will receive the traps.

# Installing Advanced Server Management software on Windows

Before you install Advanced Server Management software:

- Download the latest Windows version of Advanced Server Management from Intel's support Web page at: <http://support.intel.com/support/motherboards/server>
- Make sure your SRMK2 meets the prerequisites listed in the "Installation prerequisites" section earlier in this chapter.
- If this is a reinstall, make sure the previous version of Advanced Server Management software has been uninstalled.

The next installation steps apply to SRMK2s running either Windows NT or Windows 2000.

## To install Advanced Server Management software

- 1 Download the Windows Advanced Server Management program file and place it on the SRMK2's hard drive.
- 2 Unzip the Advanced Server Management file.
- 3 Double-click **SETUP.EXE**.
- 4 Follow the steps on-screen to install the software.
- 5 After the installation is complete, reboot the server.

# Connecting to your SRMK2

Once Advanced Server Management software is installed on your SRMK2, you can connect to it via a networked computer. The computer must be running Internet Explorer 5.5 or higher, or Netscape Navigator 4.7.

## To connect to the server

- 1 At a computer, open Internet Explorer or Netscape Navigator.
- 2 In the Address field, type the server's IP address or the path to the server, followed by **/intelasm/**. For example:

`http://<server_name>/intelasm/`

Or

If you're using Advanced Server Management software on the server (not over the network), type **http://localhost/intelasm/**

- 3 Press **Enter**.
- 4 Enter your username and password. (This is an existing user account created on the SRMK2, such as *Administrator*. For more information, see the "Using Windows security" section.) The Advanced Server Management home page should appear.

The screenshot displays the Advanced Server Management (ASM) web interface. On the left is a navigation menu with the Intel logo and links for Home, System Health Control (Temperature, Voltage, Fan, CPU & Memory Utilization, Event Log, Inventory), Alert Configuration, BIOS Configuration, Server Control, Predictive Failure, Watch Dog Timer, Alert Catcher (Install), Help, and Version. The main content area shows a server image with a 'Fan 5 Crossed lower critical' alert. Below the server are four traffic light indicators for Temperature, Voltage, Disk, and Fan. An 'Alert Messages' section lists five alerts: Fan 5, Fan 3, Fan 2, Fan 8, and Fan 7, all with 'Crossed lower critical' status.

## Using Windows security

Advanced Server Management uses built-in Internet Information Server (IIS) Authentication Security. By default, it configures IIS to use both *Integrated Windows Authentication* and *Basic Authentication*.

- **Integrated Windows Authentication** uses an interchange of encrypted packets that hide the password sent to the computer, making it very secure. This method is used if a user is logged on to a computer using a valid domain user account.
- **Basic Authentication** is the standard user authentication method for HTTP. The user must enter a valid username and password that matches a user account on the SRMK2 (for example, a username of *Administrator* and the administrator password). This method is not a secure authentication scheme. The username and password are encoded using a process called uuencoding.

With both methods enabled, IIS will first try Integrated Windows Authentication. If that fails, Basic Authentication is used.

You may disable the Windows security, but doing so is not recommended. Without security, anyone who knows the IP address of the SRMK2 can change Advanced Server Management settings and execute functions like shutting down the server.

### To disable security

- 1 Run **IIS**.
- 2 Right-click the **intelasm** folder.
- 3 Click **Properties | Directory Security**.
- 4 Click **Anonymous Access and Authorization Control Edit**.
- 5 Select the **Anonymous Access** option.
- 6 Click **Edit**. Specify the local user for running an anonymous connection. In order to upgrade the BIOS, this must be set to an account with administrator privileges.

For more information about security, see the IIS online help.

# Uninstalling Advanced Server Management software

You can uninstall Advanced Server Management software in one of two ways—by using the Setup program or Add/Remove Programs in the Control Panel.

## To uninstall using the Setup program

- 1 Double-click **SETUP.EXE**.
- 2 In the Advanced Server Management Setup window, click **Uninstall ASM Components**, then click **OK**.
- 3 Follow the steps in the Setup wizard to uninstall Advanced Server Management software.
- 4 After the uninstall process is complete, reboot the server.

## To uninstall using Add/Remove Programs

- 1 Open **Control Panel** and double-click **Add/Remove Programs**.
- 2 Click **ASM Full Uninstall**, then click **OK**.
- 3 After the uninstall process is complete, reboot the server.



# 3

## Configuring system health

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This chapter describes the Advanced Server Management software features that monitor the health of the Intel® Server Platform SRMK2.

## Sensors, events, and alerts

The Intel Server Platform SRMK2 has sensors that monitor its status and physical environment. The temperature sensor monitors the server's temperature, the voltage sensors monitor the server's motherboard and processor voltages, and the fan sensors monitor the fans' RPMs. Advanced Server Management software also monitors how much free space remains on the disks.

If one of these areas has a problem, the server perceives it as an "event." There are two kinds of events, critical and non-critical:

- A **critical event** happens when the temperature, voltage, fan speed, or disk space is above or below the critical thresholds.
- A **non-critical event** happens when the temperature, voltage, fan speed, or disk space is above or below the non-critical thresholds.

You can use Advanced Server Management software to read this information, set the non-critical event thresholds, and set what kind of event alert the server sends for each event.

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**The critical event thresholds are predefined and can't be changed.**

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### To view monitored information

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click the category you want to view: **Temperature, Voltage, Disk, or Fan.**
- 3 For Voltage, Disk, or Fan, specify which sensor to view by clicking it.

For more information, see the following topics in the online help: *Temperature Sensor Settings, Voltage Sensor Settings, Disk Sensor Settings, Fan Sensor Settings.*

## Setting event thresholds

Critical event thresholds can't be changed. However, you can set non-critical event thresholds.

### To set non-critical event thresholds

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Temperature, Voltage, Disk, or Fan**.
- 3 For Voltage, Disk, or Fan, select a sensor to configure by clicking it.
- 4 Set the upper and/or lower thresholds, or click **Default** to restore the default setting.
- 5 Click **Apply Thresholds**.

The screenshot displays the Intel Advanced Server Management web interface. On the left is a navigation menu with links for Home, System Health Control (Temperature, Voltage, Disk, Fan, CPU & Memory Utilization, Event Log, Inventory), Alert Configuration, BIOS Configuration, Server Control, Predictive Failure, Watch Dog Timer, Alert Catcher (Install), Help, and Version. The main content area is titled 'Advanced Server Management' and shows a server rack with a 'Fan 5 Crossed lower critical' alert. Below this, the 'Fan' section is active, showing 'Fan Sensors ( Fan 1 - J7 )'. Under 'Alert Actions', there is a 'Select Sensor' list with radio buttons for Fan 1 - J7 (selected), Fan 2 - J6, Fan 3 - J3, Fan 4 - J2, Fan 5 - J8, Fan 6 - J8, Fan 7 - J6, Fan 8 - J12, and Fan 9 - J4. To the right of the list, the 'Fan 1 - J7' sensor details are shown: Sensor Name: Fan 1 - J7, Current Status: (blank), and Current Value: (blank). Below these are input fields for 'Lower Non Critical:' and 'Lower Critical:', and two buttons: 'Default Thresholds' and 'Apply Thresholds'. A 'Thresholds:' warning message states: 'These values are critical to the health of the server. Please apply the changes only if you are absolutely sure. Incorrect thresholds can cause serious damage to the server.'

## Setting event alerts

You can configure which alert(s) the SRMK2 sends for each event. You set as many as five different alert options for a specific event:

- **Beep**—The server beeps.
- **Output message to LCD**—The server displays a message and icon on the virtual LCD that appears at the top of the Advanced Server Management home page.

- **Broadcast alert message**—The server sends a message to all networked computers on the subnet.

This option only works if the Alert Catcher software is installed on the receiving computers. For more information, see “Installing Alert Catcher software” later in this chapter.

- **SNMP**—The server sends an SNMP trap. You set the trap destination from the Alert Configuration page.

To use SNMP traps, you must install the SNMP service and trap receiver on computers that will receive the traps, then load the MIB file into the trap receiver. (See chapter 2 for information about installing SNMP.)

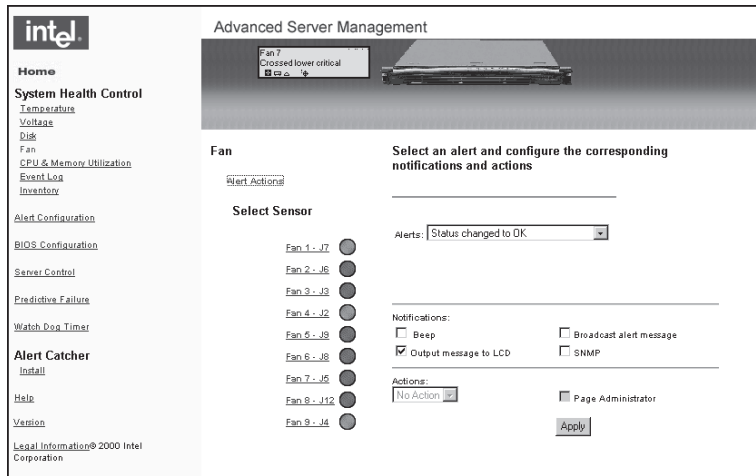
- **Page**—The server pages a predefined pager number. You set the pager number and string on the Alert Configuration or BIOS Configuration page.

A modem on the COM1 or COM2 serial port is required for paging. Configure the modem from the BIOS Configuration page.

### To set event alerts

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Temperature, Voltage, Disk, or Fan**.
- 3 Click **Alert Actions**.
- 4 Select the alert options you want.
- 5 Click **Apply**.

For more information, see the online help.



## Configuring destinations for SNMP traps

If you've set up the receiving computers to use an SNMP trap receiver, access the Alert Configuration page to specify a destination for SNMP traps.

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Alert Configuration**.
- 3 Click the **SNMP Configuration** link. For Destination, type the IP address or IP host name of the SNMP trap destination computer.

## Installing Alert Catcher software

The Alert Catcher software is required for a networked computer to receive alerts from the SRMK2.

This software enables a computer to receive the broadcast/LAN alerts that are sent out in response to an Advanced Server Management software-generated event.

The Alert Catcher software works on any computer running Windows 98 SE, Windows NT 4.0 Workstation or Server, or Windows 2000.

### To install Alert Catcher software

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Alert Catcher**, then click **Windows Install**.
- 3 Follow the steps in the Alert Catcher Installation wizard.

# Viewing CPU and memory utilization

Advanced Server Management software shows CPU utilization as a percentage and memory utilization in KB used.

## To view CPU and memory utilization

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **CPU & Memory Utilization**.

CPU utilization indicates how much of the CPU capacity is being used. Memory utilization indicates how much of the memory is being used. This is broken down by process in the Processes table.

For more information, see the *CPU and Memory Utilization* topic in the online help.

The screenshot displays the Intel Advanced Server Management interface. On the left is a navigation pane with links for Home, System Health Control (Temperature, Voltage, Risk, Fan, CPU & Memory Utilization, Event Log, Inventory), Alert Configuration, BIOS Configuration, Server Control, Predictive Failure, Watch Dog Timer, Alert Catcher (Install), Help, and Version. The main content area shows a server image with a 'Fan 3 Crossed lower critical' warning. Below this are two bar charts: 'CPU Utilization' at 3% and 'Memory Utilization' at 104520 KB. To the right is a 'Processes' table.

Image Name	PID	Mem Usage	Handles	Threads
Idle	0	16384	0	2
System	8	20480	158	42
SMSS	180	28872	33	6
csrss	208	1187940	438	10
WINLOGON	204	1876968	361	15
services	252	4837376	654	33
LSASS	264	2076672	291	20
svchost	460	2498660	305	9
SPoolSV	484	1556480	120	12
mdmto	512	3510272	185	25
[!]svchost	648	8761344	458	21
HPDVListener.exe	660	212962	110	4
LANActSrv	684	974848	48	2
LCDManager	712	3660632	103	5

## Configuring predictive failure events

The predictive failure feature enables you to monitor certain kinds of repetitive failures. You can configure the predictive failure thresholds and notification options for:

- **Temperature events**—The server sends an alert if a specified number of temperature events occur within a specified amount of time.
- **Voltage events**—The server sends an alert if a specified number of voltage events occurs within a specified amount of time.
- **CPU utilization**—The server sends an alert if the CPU utilization exceeds a specified threshold for a specified amount of time.
- **Memory utilization**—The server sends an alert if the memory utilization exceeds a specified threshold for a specified amount of time.
- **Single-bit errors**—The server sends an alert if one single-bit memory error occurs within a specified amount of time.

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**Changes do not take effect immediately.**

Changes to predictive failure settings usually take effect after about five minutes.

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### To configure predictive failure events

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Predictive Failure**.
- 3 Select the predictive failure event you want to configure.
- 4 Set the threshold(s) and notification options.
- 5 Click **Apply**.

For more information, see the *Predictive Failure* topic in the online help.

# Configuring the Watch Dog Timer

The SRMK2 has an automatic reboot feature that uses a timer to count down from a user-defined number to zero. If it reaches zero, the server is rebooted.

Under normal circumstances, the timer never reaches zero because the Watch Dog Timer service periodically resets it, and the countdown begins again.

However, if there is a problem with the server, the Watch Dog Timer service can't reset the timer. In that case, the timer counts down to zero, and the server is rebooted. For example, if the operating system hangs, the Watch Dog Timer service can't reset the timer; the timer reaches zero, and the server is rebooted.

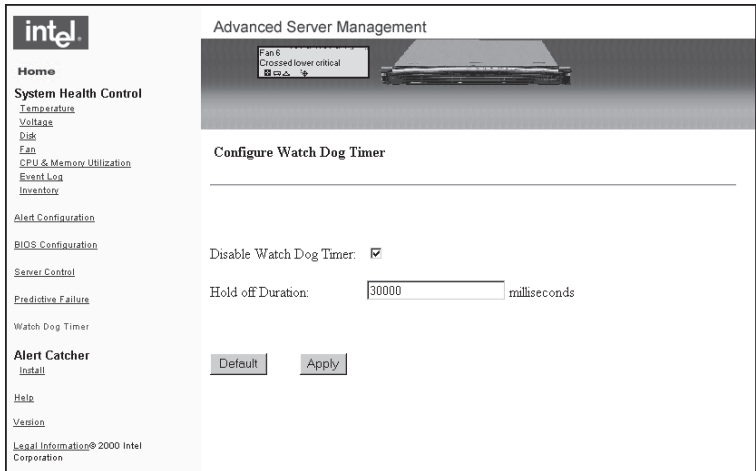
You can configure two Watch Dog Timer settings:

- **Hold Off Duration**—Determines how long the countdown lasts (in milliseconds). Sets the maximum length of time the counter will wait before resetting the server. For example, setting Hold Off Duration to 30000 milliseconds tells the counter to wait 30 seconds before resetting the server.
- **Enable or Disable**—If the Watch Dog Timer is disabled, the server is never automatically rebooted, even if there is a problem such as the operating system hanging.

The Watch Dog Timer is disabled by default. If you want to use the Watch Dog Timer, you must first enable it.

### To configure the Watch Dog Timer settings

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Watch Dog Timer**.
- 3 Enable the Watch Dog Timer option.
- 4 Set the Hold Off Duration in milliseconds.
- 5 Click **Apply**.





# 4

## Configuring system information and settings

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This chapter describes the Advanced Server Management software features that provide information about the Intel® Server Platform SRMK2. Also described are the remote reboot and shutdown features and BIOS configuration options.

## Viewing the virtual LCD

The virtual LCD appears at the top of the Advanced Server Management home page and displays messages and icons showing the status of the Intel Server Platform SRMK2.

To see the virtual LCD, connect to the Advanced Server Management home page.

### Virtual LCD icons

-  The server is completely booted.
-  The hard disk drive is running and available.
-  The hard disk drive is being accessed.
-  The network is up and functioning normally.
-  Information is being sent across the network.
-  Temperature alert. The server's temperature is outside the normal range.
-  Voltage alert. One of the server's voltage sensors has detected power outside the normal voltage range.
-  Fan alert. One of the server's fan sensors has detected the fan falling below the set RPM threshold.
-  Event defined by an Original Equipment Manufacturer (OEM).

# Viewing the System Event Log

The System Event Log shows a list of recent events that have occurred on the SRMK2.

## To view the System Event Log

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Event Log**.

If the System Event Log fills up, you can view the log archive by clicking **Archive**. This button only appears if there are archived events.

For more information, see the *Event Log* topic in the online help.

The screenshot shows the Intel Advanced Server Management web interface. On the left is a navigation pane with the Intel logo and various system management links. The main area is titled 'Advanced Server Management' and features a 'System Event Log' table. A notification for 'Fan 2 Crossed lower critical' is shown at the top of the main area.

Event Type	Date	Time	Event Description
16	8/24/2000	8:40:06 AM	Lower Critical: Fan 6 - J9
16	8/24/2000	8:39:55 AM	Lower Critical: Fan 3 - J3
16	8/24/2000	8:39:45 AM	Lower Critical: Fan 2 - J6
16	8/24/2000	8:39:35 AM	Lower Critical: Fan 8 - J12
16	8/24/2000	8:39:26 AM	Lower Critical: Fan 7 - J5
16	8/24/2000	8:39:17 AM	Lower Critical: Fan 6 - J8
8	1/1/1990	12:00:11 AM	CMOS Battery Failure
16	8/23/2000	3:31:11 PM	Lower Non-Critical: Fan 1 - J7
16	8/23/2000	1:33:14 PM	Upper Non-Critical: CPU 2 temperature
16	8/23/2000	1:29:59 PM	Upper Non-Critical: Baseboard temperature
16	8/23/2000	1:29:33 PM	Upper Non-Critical: CPU 2 temperature
16	8/23/2000	1:28:07 PM	Upper Non-Critical: CPU 2 temperature
16	8/23/2000	1:25:52 PM	Upper Non-Critical: CPU 2 temperature
129	8/23/2000	12:28:42 PM	Lower Non-Critical: C:
16	8/23/2000	12:17:53 PM	Upper Non-Critical: CPU 2 temperature
129	8/23/2000	12:17:42 PM	Lower Non-Critical: C:

# Viewing inventory information

The Inventory page shows information about the server’s baseboard, processor, BIOS, and operating system.

## To view the Inventory information

- 1    Connect to the Advanced Server Management home page.
- 2    In the navigation pane, click **Inventory**.
- 3    Click the link for the information you want.

For more information, see the *Inventory* topic in the online help.

The screenshot shows the 'Advanced Server Management' web interface. On the left is a navigation menu with links for Home, System Health Control (Temperature, Voltage, Dsp, Fans, CPU & Memory Utilization, Event Log, Inventory), Alert Configuration, BIOS Configuration, Sensor Control, Predictive Failure, Watch Dog Timer, Alert Catcher (Install), Help, and Version. The main content area features the Intel logo and a server image with a warning for 'Fan 3 Crossed lower critical'. Below this is the 'Inventory' section with links for Baseboard Information, Processor Information, BIOS Information, and OS Information. A table displays hardware details:

Manufacturer	Type	Family	Version	Status Information	Current Clock Speed	Maximum Clock Speed	Voltage	Socket Designation
Intel Corporation	Central Processor	Pentium III Processor	Pentium (R) III	65	666	666	144	J4K2

# Using server control

Advanced Server Management software enables you to remotely reboot and shut down the SRMK2.

## To reboot the server

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Server Control**, then click **Reboot Server**.
- 3 Click **Apply**.

For more information, see the *Rebooting the Server* topic in the online help.

## To shut down the server

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **Server Control**, then click **Shutdown Server**.
- 3 Click **Apply**.

For more information, see the *Shutting Down the Server* topic in the online help.

# Configuring BIOS settings

From the BIOS Configuration page, you can:

- **Change BIOS communication settings**—Configure the server’s console redirect settings for serial port redirection, the pager number, and string.
- **Change BIOS password**—Set or change the server’s BIOS password.
- **Upgrade the BIOS**—Update the BIOS file.

## To set BIOS communication settings

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **BIOS Configuration**.
- 3 In the BIOS Configuration page, click **BIOS Communication Settings**.
- 4 Set the necessary options.

For more information, see the *BIOS Configuration* topic in the online help.

## To set the BIOS password

- 1 Connect to the Advanced Server Management home page.
- 2 In the navigation pane, click **BIOS Configuration**.
- 3 In the BIOS Configuration page, click **BIOS Password**.
- 4 Set the server’s BIOS password.

For more information, see the *BIOS Configuration* topic in the online help.

# I

# Index

---

## A

- Advanced Server Management software 6
  - installing 12
  - uninstalling 15
- Alert Catcher software
  - installing 22
- alert configuration 6
- alerts. *See* event alerts

## B

- BIOS
  - configuring settings 34
  - setting password 34
- BIOS configuration 6

## C

- computer requirements 11
- configuring
  - BIOS settings 34
  - predictive failure events 24
  - SNMP trap destination 21
  - Watch Dog Timer 26
- CPU and memory utilization
  - viewing 23

## E

- event alert types
  - beep 20
  - broadcast alert message 20
  - output message to LCD 20
  - page 20
  - SNMP 20
- event alerts
  - setting 20
- event thresholds
  - setting 19

- events
  - critical 18
  - non-critical 18

## I

- installing
  - Advanced Server Management software 12
  - Alert Catcher software 22
  - prerequisites 10
- Intel Server Platform SRMK2. *See* SRMK2
- inventory information
  - viewing 32

## M

- monitored information
  - viewing 18

## P

- predictive failure events
  - configuring 24
  - CPU and memory utilization 24
  - memory utilization 24
  - single-bit errors 24
  - temperature 24
  - voltage 24
- predictive failure settings 7

## R

- remotely rebooting server 33
- remotely shutting down server 33

## S

- security 14
  - disabling 14
- sensors 18
- server
  - connecting to 13
  - security 14

- server control 7
  - rebooting server 33
  - shutting down server 33
- server requirements
  - Windows 2000 11
  - Windows NT 10
- setting
  - BIOS password 34
  - event alerts 20
  - event thresholds 19
- SNMP traps
  - configuring destination 21
- SRMK2
  - connecting to 13
  - remotely rebooting 33
  - remotely shutting down 33
  - security 14
- supporting documentation 7
- System Event Log
  - viewing 31
- system health tools 6

## U

- uninstalling
  - Advanced Server Management software 15

## V

- viewing
  - CPU and memory utilization 23
  - inventory information 32
  - monitored information 18
  - System Event Log 31
  - virtual LCD 30
- virtual LCD
  - meaning of icons 30
  - viewing 30

## W

- Watch Dog Timer 7
  - configuring 26
- Windows 2000
  - server requirements 11
- Windows NT
  - server requirements 10
- Windows security 14
  - disabling 14

