



SyAM Software* Server Monitor Local/Central* on a Linux Operating System

Intel® Server Board SE7520AF2 with
Internal Storage Focusing on IPMI Out of
Band Management



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Hardware Components

Quantity	Item	Manufacturer	Model
1	Server Board	Intel	Intel® Server Board SE7520AF2
1	Server Chassis.	Intel	Intel Server Chassis SC5300
4GB or more per system	Memory Modules	Any supported	Please refer to the Tested Memory Support List at http://www.intel.com/support/motherboards/server/se7520af2/sb/cs-013297.htm
2 per system	Intel® Xeon® Processors	Intel	Please refer to the Supported Processor List at http://www.intel.com/support/motherboards/server/se7520af2/sb/cs-013299.htm
1 per system	36GB or larger Hard Disk Drive	Any supported	Please refer to the Tested Hardware and Operating System List at http://www.intel.com/support/motherboards/server/se7520af2/sb/cs-013295.htm

Table 1 - Intel® Server Board SE7520AF2 Configuration Hardware

Software Used in the Installation

Dist. By	Description	File Name
Red Hat	Red Hat* Enterprise Server 4, ES3 (Update 4) (2.6.9-5.ELsmp / 2.4.21-27.ELsmp)	
Red Hat	Red Hat* Workstation 4, WS3 (Update 4) (2.6.9-5.ELsmp / 2.4.21-9.ELsmp)	
Novell	SUSE* Enterprise Server 9 (2.6.5-7.97-default)	
Fedora	Fedora* Core 3 (2.6.9-1.667)	
SyAM Software	V3.10 and above Server Monitor Local or Agent	
SyAM Software	V3.10 and above Server Monitor Central	

Table 2 - Software Bill of Materials

Introduction

This Intel® Enabled Server Acceleration Alliance (Intel® ESAA) recipe explains how to install and configure SyAM Software* Server Monitor Local or Agent (Local installs a web browser and a monitoring agent while installing Agent provides only a monitoring agent) on the Intel® Server Board SE7520AF2 with internal storage. It also explains how to install and configure SyAM Software* Server Monitor Central on a separate system so you will be able to perform IPMI out-of-band management to the Intel® Server Board SE7520AF2. "Server Monitor Central" is referred to as "Central Manager" in the remainder of this recipe.

Configuration and Operating System Compatibility

SyAM Software* Central, Local or Agent can be installed on any Intel® 64 platform running one of the supported operating systems listed in figure 1:

<i>Operating System</i>	<i>Server Monitor Central</i>
Red Hat Enterprise Server 4, ES3 (Update 4) (2.6.9-5.ELsmp / 2.4.21-27.ELsmp)	■
Red Hat Workstation 4, WS3 (Update 4) (2.6.9-5.ELsmp / 2.4.21-9.ELsmp)	■
Red Hat Desktop 9 (2.4.20-8smp)	■
SUSE Enterprise Server 9 (2.6.5-7.97-default)	■
SUSE Professional 9.2 (2.6.8-24-default)	■
Novell Linux Desktop 9 (2.6.5-7.111-default)	■
Fedora Core 3 (2.6.9-1.667)	■

Figure 1 – Operating System Compatibility of SyAM Software* Server Monitor and Central Manager

Linux x64 Operating System Requirements

For a Red Hat*/Fedora* Core x64 Linux distribution, load the "Compatibility Arch Support" (Multilib Support Packages). To verify that Compatibility Arch Support is loaded, locate it under "system settings" > "add/remove applications" and scroll to the bottom of the list. If not present, install it.

System Requirements

- 200-MB disk space

- 512-MB memory
- A valid operating TCP/IP network adapter
- A x86/x64 computer running a compatible operating system
- A password set for the *Root* account on the system

Browser Requirements

- Microsoft Internet Explorer* 6+ (Service Pack 1)
- Mozilla* Firefox* (V1.0.x or above)

Installation and Configuration

Pre-Install Considerations

This chapter provides step-by-step instructions for installing and configuring SyAM Software* Server Monitor on the Intel® Server Board SE7520AF2 and on a separate system, installing and configuring SyAM Software* Central Management* software on Linux operating system platforms. Please remove any other hardware monitoring utilities installed because they may conflict with retrieving environmental data from the hardware. The following is required:

- SyAM Software* Server Monitor Local or Agent must be installed on the Intel® Server Board SE7520AF2.
- The SyAM Software* Central Manager software must be installed on a separate system. Multiple systems can be managed by browsing to this system.
- The Central Manager system must have a static IP address because other managed systems will send data to this system.
- Both systems must have the "Compatibility Arch Support" loaded (Multilib Support Packages).

Installation Instructions – Linux

Download the required product versions

(<http://syamsoftware.com/intel/downloads/downloads.php>) or copy it from the SyAM Software* CD to the system.

- 1)** Extract the files to a directory on the system.
- 2)** In a terminal session go to the directory where the software was extracted to.
- 3)** Change the permission of the install file from read-only to read and execute (ex: `chmod +x ./install`).
- 4)** Enter "`./install`", then follow the on-screen instructions.
- 5)** Choose the language of the user interface.

- 6) Choose the destination folder (this cannot contain any spaces in the name).
- 7) Do not change the RMI port default value of 1099 unless the port number is being used by another application. (Only applies to Central Manager installation)
- 8) To enable security through 128-bit data encryption from the SyAM Software* server Web server to the browser, choose the SSL option. The default is "No".
- 9) After the installation has finished, the SyAM Software* services will start and dynamically discover and configure your system's monitoring environment.

Firewall Security

The following ports must be opened if a firewall is enabled on a Linux system:

- 3894: Used for Agent Management service
- 3895: Used for Central Management service
- 3930: Used for Web server service
- 5800: Used for remote console access from Central Manager
- 5900: Used for remote console access from Central Manager

Central Manager* Configuration

After installing SyAM Software* Server Monitor on the Intel® Server Board SE7520AF2 system you will need to add the system to the Central Manager.

- Browse to the system you installed Central Manager on and log in using the administrators user and password
- Select 'Add Managed Systems' from the drop down menu
- Enter the IP address of the Intel® Server Board SE7520AF2 and click the Apply button

Add Managed Systems

Add Systems to be Managed

You may add systems up to the maximums permitted by your license. Select License Management for details on licensing.

IP Address Range: From: To:

Enter the information to be used for grouping the managed systems within the tree.

Location:

Function:

Status

- Refresh the screen by clicking on the Refresh button, The Intel® Server Board SE7520AF2 should now appear in the list of managed systems.

IPMI over LAN

Server Monitor* can provide access to IPMI over LAN power management and event log capabilities when the system is in an operating system-present or operating system-absent state by following these steps:

- 1) The Baseboard Management Controller's (BMC) IP address and password using the vendor-provided utilities must be configured before the IPMI over LAN feature can be utilized. Select the IPMI enabled system from the list of managed systems on the Central Manager* screen and click on the "Remote Management" icon.



In the **Remote Management** screen (see the following figure), select the *IPMI over LAN* tab.



Figure 2 – The Remote Management screen

- 2) Enter the user name, password and IP address of the BMC for the managed system in their respective fields.
- 3) Click the "Apply" button to save this data.

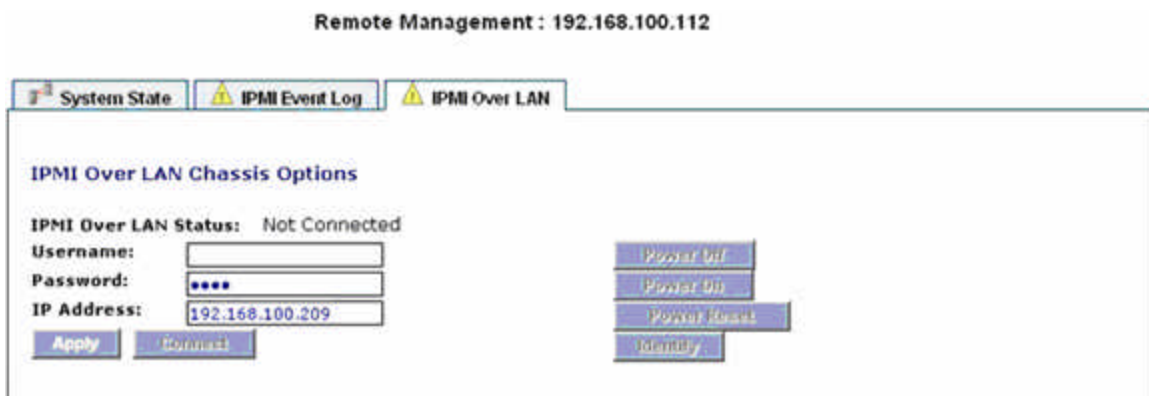


Figure 3 – IPMI over LAN Tab: Enter Details for Accessing the BMC

- 4) Once the user name, password and IP address are entered, click the “Connect” button to access the managed system’s BMC over the LAN.

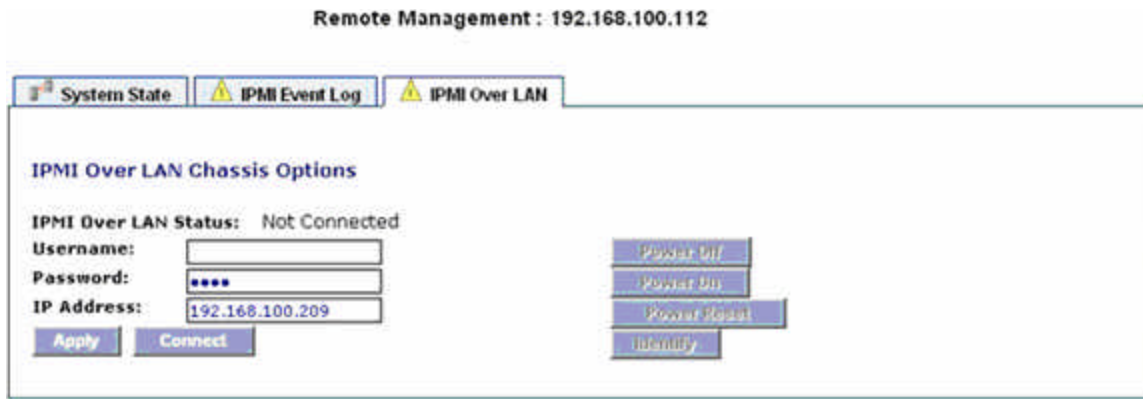


Figure 4 – IPMI over LAN Tab: Details Applied

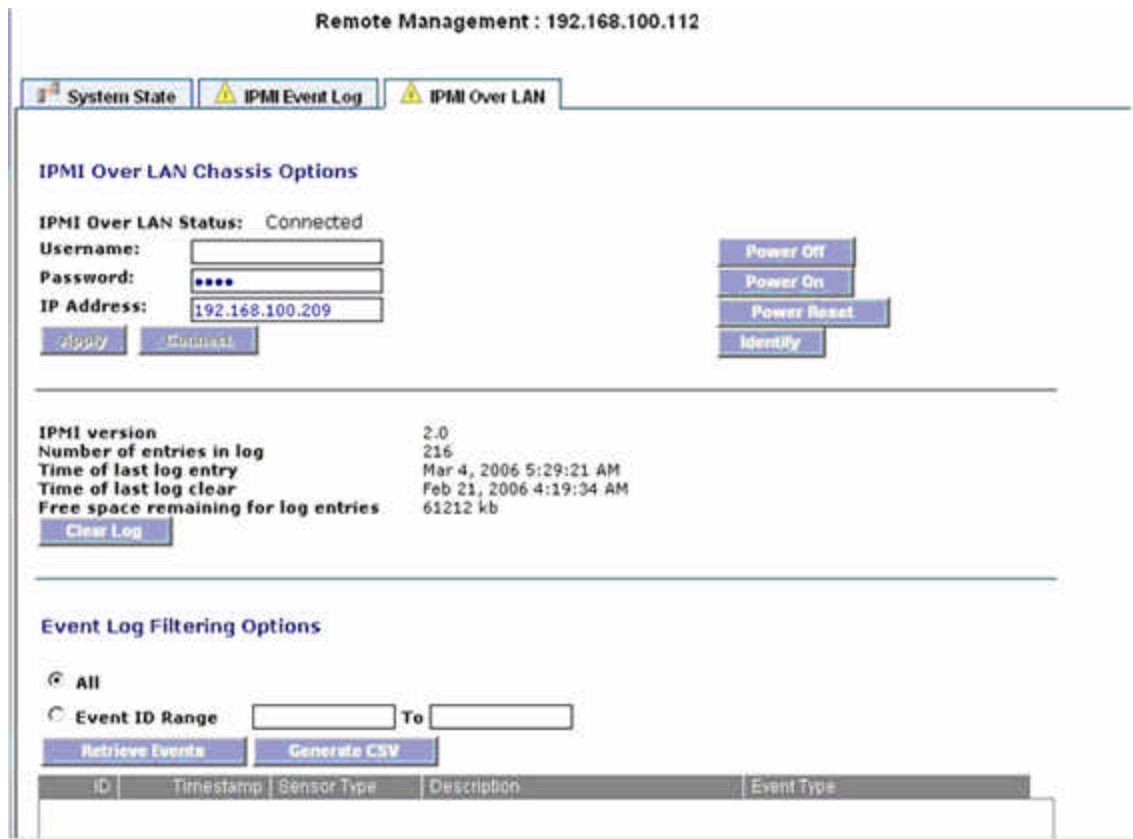


Figure 5 – IPMI over LAN Tab: Connected Status

Once connected, the *IPMI over LAN* tab shows the status as “Connected”, depicted in figure 5, and the following options may be performed:

- **Power Off:** Performs a forced power off instead of a graceful shutdown. The operating system may or may not receive notification and shut down. This varies depending on hardware platform.

- **Power On:** This will perform a forced power on.
- **Power Reset:** This will perform a power reset instead of a graceful reset. The operating system may or may not receive notification and shut down. This varies depending on hardware platform.
- **Identify:** This will light the identification LED of the system. This feature is not supported in all hardware platforms.
- **Event Log:** The IPMI event log is accessed in exactly the same manner described above. Click the Retrieve Events button to see all or enter a range of events to view or Click the Generate CSV to extract all or a range of events from the log. (Extracting to CSV does not remove the events from the log)

IPMI Event Log

Server Monitor* can monitor managed physical events occurring on IPMI-enabled servers. These events are recorded in the IPMI event log, which is accessible through Central Manager*. Each event is numbered and dated. This information, as well as a description of the event type, sensor type affected, and event alert type are recorded in the IPMI event log.

In addition, the IPMI event log lists the version of the log, the number of entries in the log, the last time an entry was added, the last time the log was cleared, and the amount of free space remaining for the log. The log can be reviewed/filtered by listing all events, or by filtering by an event range. The results can be displayed on the screen or exported to a file in a `.CSV` format without clearing the log.

The IPMI event log allows administrators to retrieve and view all events that occur and are reported by a specific server. To access the IPMI event log, the system must be IPMI-enabled and running a valid version of Server Monitor*. Fields included in this screen are:

- IPMI version
- Number of entries in the log
- Last time an entry was made in the log
- Time of last log clear
- Free space

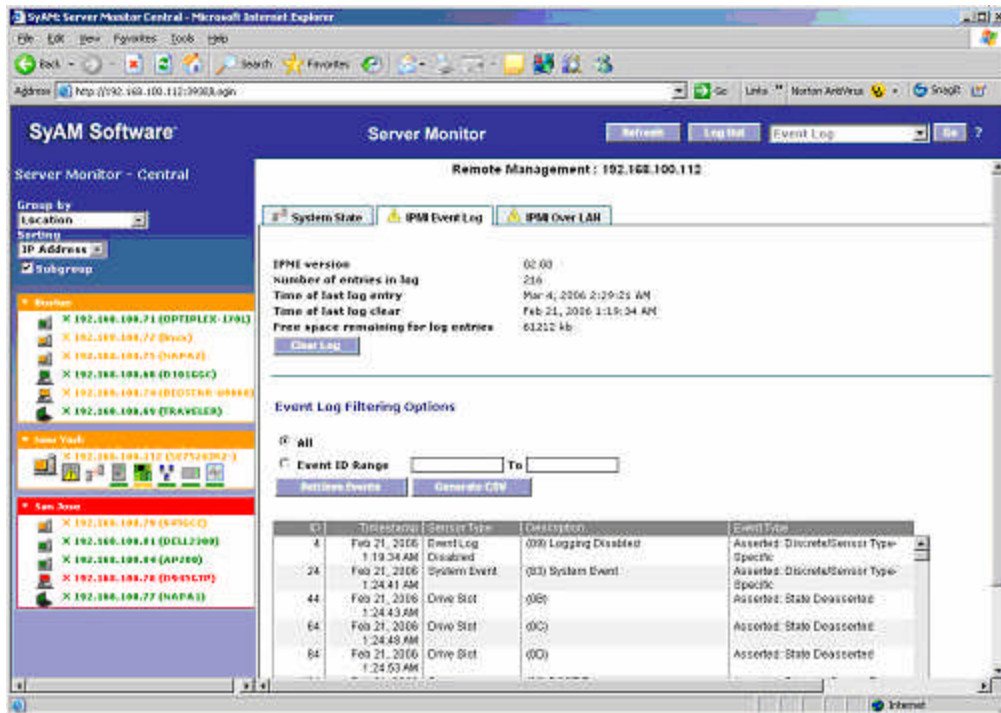


Figure 6 – IPMI Event Log

The IPMI event log provides administrators with the option to clear or purge the log by clicking the “Clear Log” button.

Note: This action cannot be undone.

IPMI Event Retrieval

The IPMI event log provides administrators with the option of retrieving and viewing some or all events recorded from the server, and sorting them by type.

To retrieve the events from the IPMI event log stored on the BMC, click the “All” radio button

To retrieve a subset of events:

- 1) Enter a beginning and ending event ID. The beginning event ID value must be either “0” (to retrieve from the beginning of the log), or an actual event ID number. An error message is generated if a non-“0” event ID cannot be found.
- 2) Click the “Retrieve” button. The results will be displayed in the detail window at the bottom of the screen.

Event Log Filtering Options

All
 Event ID Range To

ID	Timestamp	Sensor Type	Description	Event Type
24	Dec 31, 2004 6:38:06 AM	Session Audit	(0A) Session Audit	Asserted: Discrete/Sensor Type-Specific
44	Dec 31, 2004 6:38:14 AM	Session Audit	(0A) Session Audit	Asserted: Discrete/Sensor Type-Specific
64	Dec 31, 2004 6:39:06 AM	Session Audit	(0A) Session Audit	Asserted: Discrete/Sensor Type-Specific
84	Dec 31, 2004 6:44:42 AM	System Event	(83) System Event	Asserted: Discrete/Sensor Type-Specific

Last updated via Retrieve Events: Fri Jan 07 09:57:03 EST 2005

Figure 7 – IPMI Event Log Retrieval

The ID values assigned to events are generated by the IPMI controller and are dependent on how the system's firmware is configured. As a result, the event ID may differ based on server platform.

Generate CSV

This button retrieves the events and saves them to a CSV file.



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