

User Manual

IPMI-1000

IPMI-1000 Module, AST2300
Chipset

ADVANTECH

Enabling an Intelligent Planet

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Initial Inspection

Before you begin installing your motherboard, please make sure that the following materials have been shipped:

- | | | |
|--------------------|-----|--------------------|
| ■ IPMI-1000 module | X 1 | |
| ■ Startup manual | X 1 | P/N: 20061IPM100 |
| ■ Screws | X 2 | P/N: 19350304A0 |
| ■ Warranty Card | X 1 | P/N: 2190000902 |
| ■ VGA cable | X 1 | P/N: 1700020950-01 |

If any of these items are missing or damaged, contact your distributor or sales representative immediately. We have carefully inspected the IPMI-1000 mechanically and electrically before shipment. It should be free of marks and scratches and in perfect working order upon receipt. As you unpack the IPMI-1000, check it for signs of shipping damage. (For example, damaged box, scratches, dents, etc.) If it is damaged or it fails to meet the specifications, notify our service department or your local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection, we will make arrangements to repair or replace the unit.

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Chapter 1

Hardware
Configuration

1.1 Introduction

IPMI-1000 is a proprietary form-factor module which is designed with Aspeed AST2300 for remote management purposes. Also, IPMI-1000 is fully compliant with IPMI 2.0 specification.

1.2 Specifications

- Chipset AST2300
- Compliant with IPMI 2.0
- VGA output
- KVM over IP

1.3 Connectors

There are four connectors on the module and one of them is used to connect with SBC. The below table lists the functions of these connectors.

Table 1.1: Connectors

Label	Function
BMC1	IPMI connector
VGA1	VGA1 connector
MRCROSD1	Local media device
IPMB	Reserved

1.4 Board Layout: Connector Locations

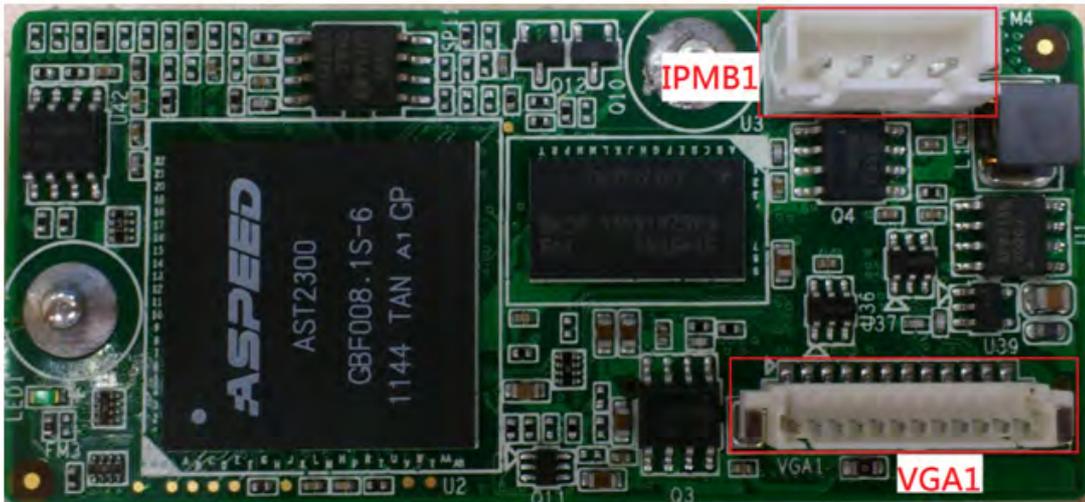


Figure 1.1 IPMI-1000 Top Side Board Layout

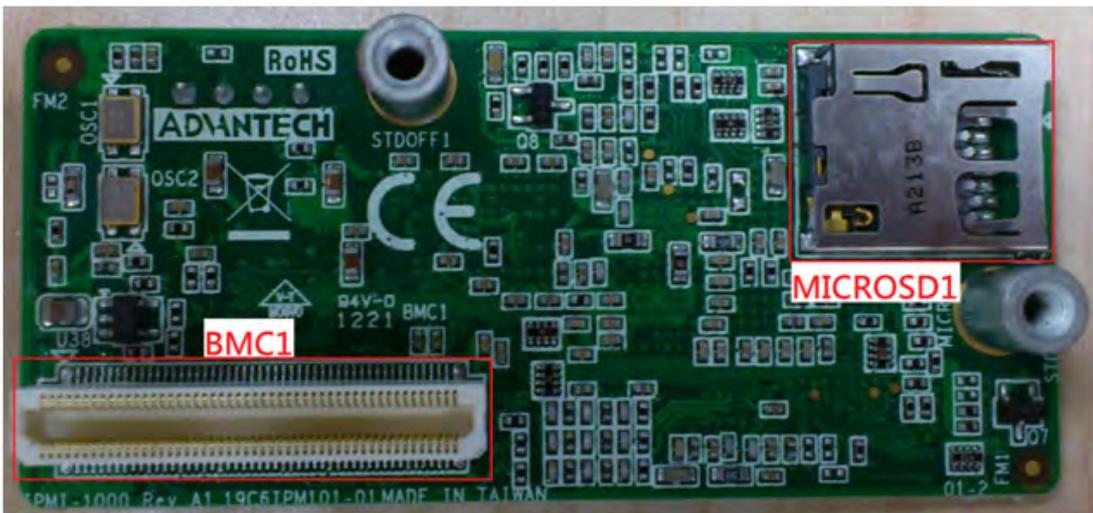


Figure 1.2 IPMI-1000 Bottom Side Board Layout

Chapter 2

Setup

2.1 Introduction

Please follow the H/W, BIOS & LAN setting shown below to properly setup the IPMI-1000.

2.2 H/W setting

1. The IPMI-1000 module should be carefully placed on BMC1 (2 x 50 connector), Once BMC is active, an LED indicator will be blinking.

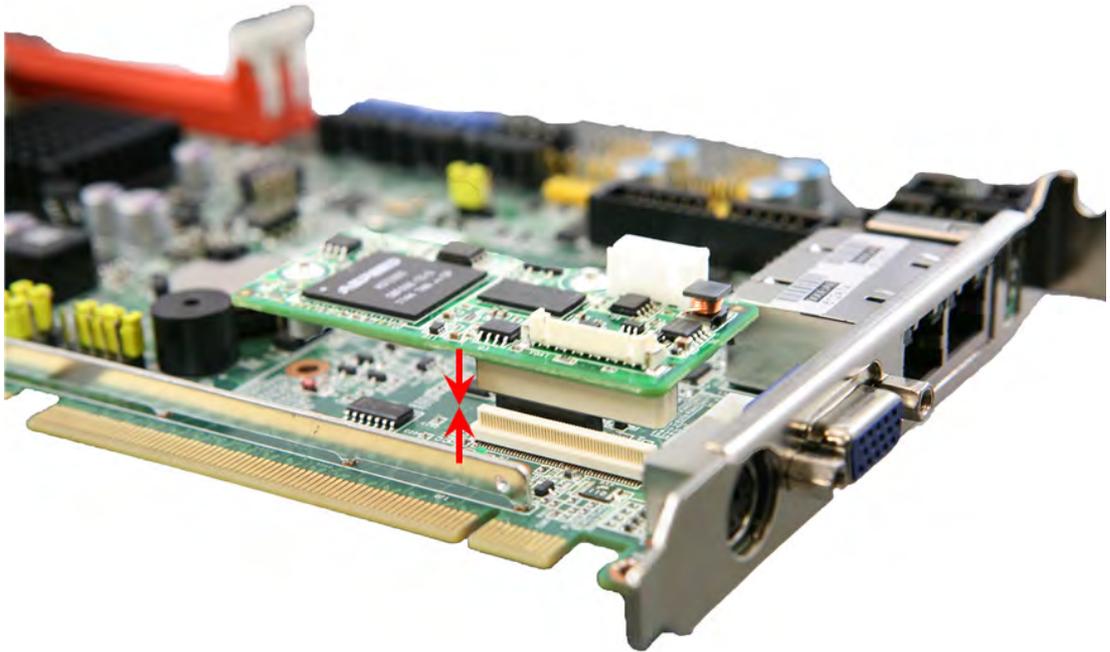


Figure 2.1 Assembling Module

2. Align the screw holes, and securely fasten with the screws.

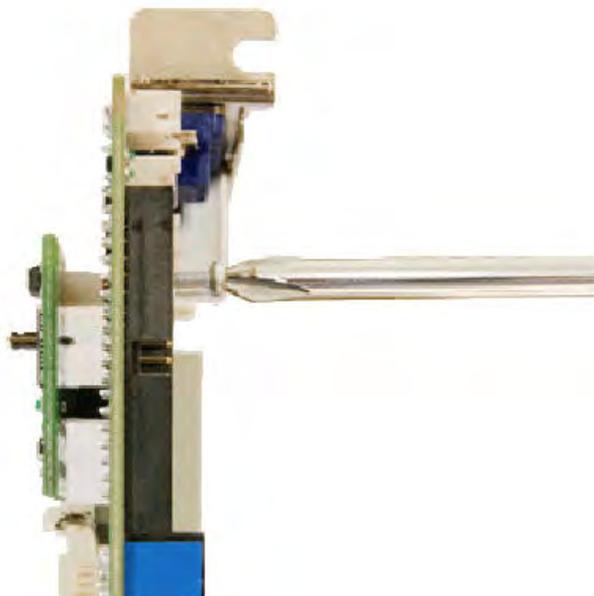


Figure 2.2 Fastening the Screws

2.3 BIOS Settings

Once IPMI-1000 module has been connected to SBC, the BIOS will show a "Server Mgmt" section automatically. Server Mgmt is used to modify the settings of IPMI-1000.

2.3.1 BMC Support

Default is [Enable]; Set [Disable] if you don't need the BMC function.

2.3.2 Wait For BMC

Default is [Enable]; Set [Disable] to boot up without waiting for IPMI-1000 ready.

2.3.3 Wait For BMC Counter

Default is [6 Times]; BMC counter sets waiting time for BMC self test complete, the time per counter is 5 seconds.

2.3.4 BMC Self Test Log

This page erases/clears the settings of the BMC self test log.

2.3.5 System Event Log

Default is [Disable]; Set [Enable] for System Event log during boot.

2.3.6 BMC Network Configuration

Default setting is below:

There are three types of Address source.

- Unspecified: Use default IP setting
- Static: Use custom assigned IP setting such as IP address & Subnet mask
- Dynamic: Use IP address dynamically assigned from your server board

2.4 LAN Settings

Please connect your host computer to the MB/SBC LAN which supports the IPMI interface (please refer to MB/SBC specifications for details); the host LAN configuration is required to be on the same segment as the IPMI-1000.

Example:

- IPMI-1000
IP: 192.168.0.1
Subnet mask: 255.255.255.0
- Host computer
IP: 192.168.0.50
Subnet mask: 255.255.255.0

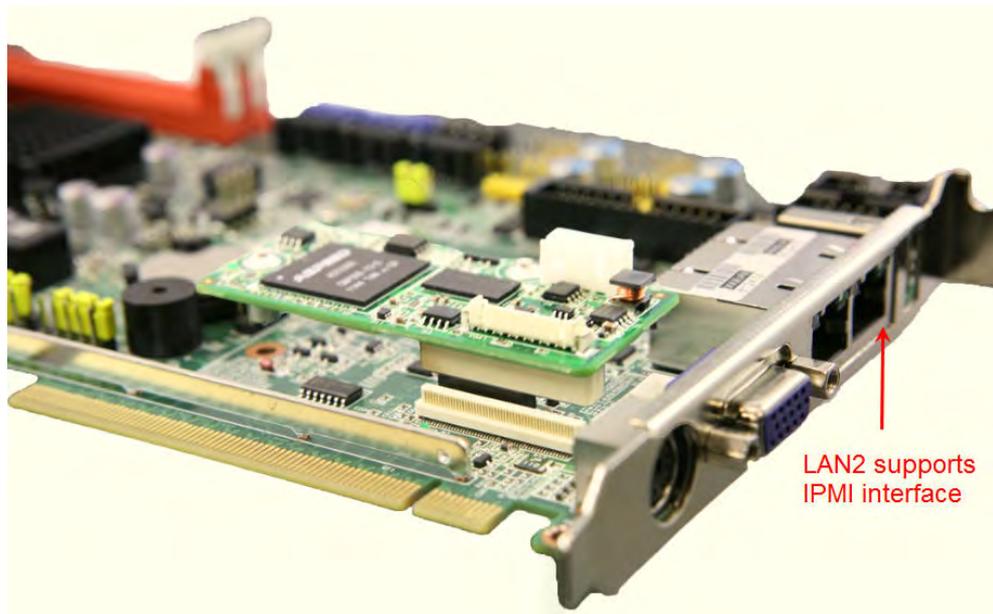


Figure 2.3 Example of PCE-5126WG2

Chapter 3

Graphic User Interface
(GUI)

3.1 Login Page

To Login to the Graphics User Interface (GUI) of the IPMI-1000, open an Internet browser and connect to the IP address for the IPMI-1000. The login page will show as on the following screen.

Default user name and password

Username: admin

Password: admin

Note! - Before starting, Java must be installed to use the remote control.



- Compliant with Windows Internet Explorer only.



Figure 3.1 Login Page

3.2 Dashboard

The Dashboard page gives overall information about the status of a device. To open the Dashboard page, click Dashboard from the main menu. A sample screen shot of the Dashboard page is shown below.

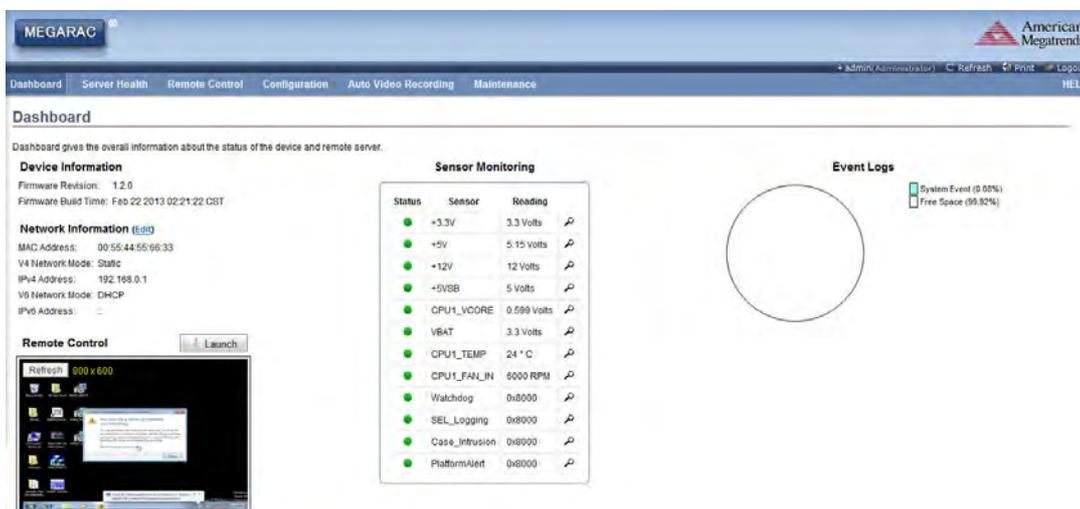


Figure 3.2 Dashboard

3.2.1 Device Information

The Device Information displays the following information.

- Firmware Revision
- Firmware Build Time

3.2.2 Network Information

The Network Information of the device is shown here.

3.2.3 Remote Control

- To redirect the host remotely, launch Java Console from this section.
- Click Launch to launch the console redirection and to manage the remote server.
- The console preview of the remote server using java application can be viewed under this section. Click on Refresh button to reload the console preview.

3.2.4 Sensor Monitoring

Lists all the available sensors on the device with the following information:

Status: The status column displays the state of the device. There are three states.

- : Denotes normal state
- ⚠ : Denotes Warning State
- ⊗ : Denotes Critical State

3.3 Server Health

The Server Health consists of Sensor Readings, Event Log and System and Audit Log.

3.3.1 Sensor Readings

This page displays all the sensor information.

- **Sensor Type:** Select the type of sensor and list sensors with the Sensor Name, Status and Current Reading will be displayed.
- **Live Widget:** Click On or Off makes the widget appear or disappear. Gives a dynamic representation of the reading of sensor.

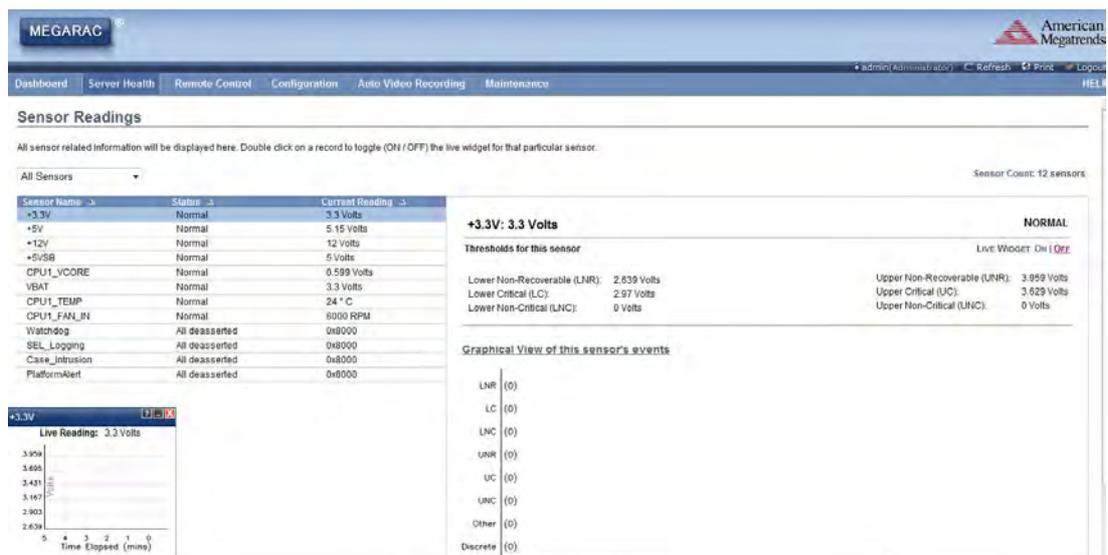


Figure 3.3 Server Health - Sensor Readings Page

3.3.2 Event Log

This page displays a log of all events logs that have occurred from the different device sensors. Using filter options to view the specific events.

- BMC Timezone: displaying the BMC UTC Offset timestamp value of the events
- Client Timezone: displaying the events of Client UTC Offset timestamp.
- Clear All Event Logs: To delete all existing records.

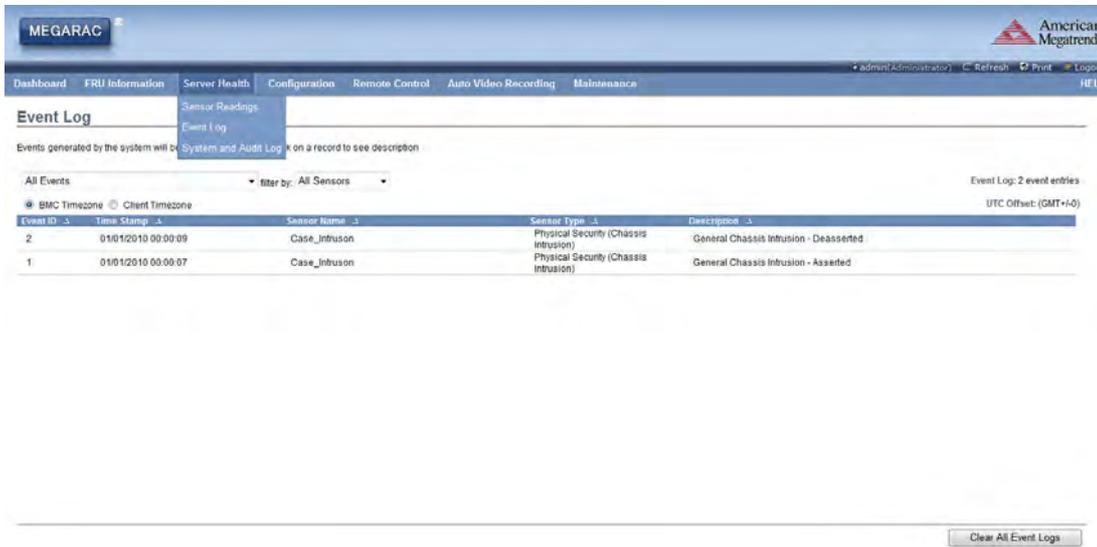


Figure 3.4 Server Health - Event Log Page

3.3.3 System & Audit Log

Displays all system and audit events.

- System Log: To view all system events.
- Audit Log: To view all audit events.

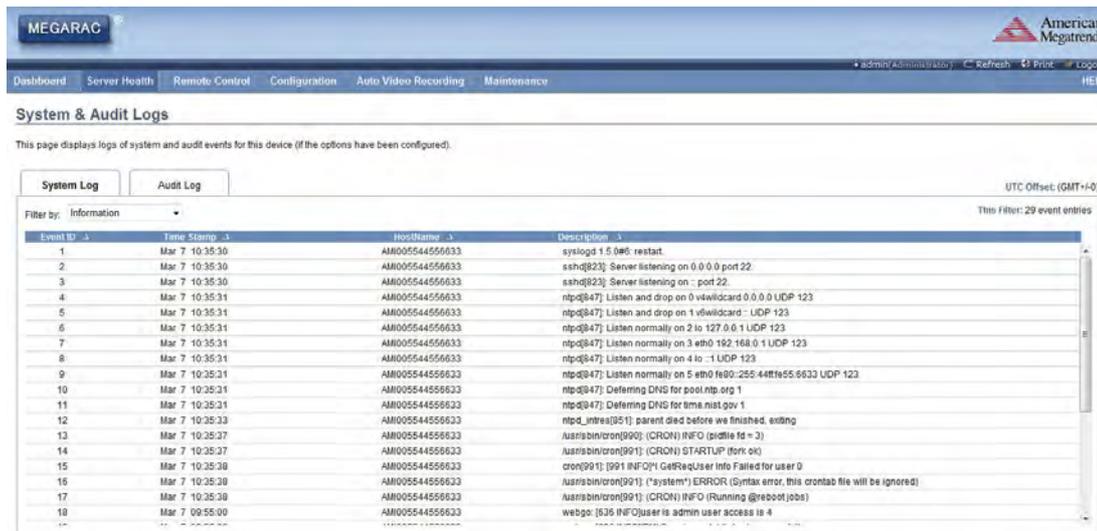


Figure 3.5 Server Health - System & Audit Page

3.4 Configuration

Allows you to access various configuration settings.

3.4.1 Active Directory

Active directory is a directory structure used on Microsoft Windows-based computers and servers to store information and data about networks and domains. Its functions include the ability to provide information on objects, helping to organize these objects for easy retrieval and access, allowing access by end users and administrators and allowing administrator to set up security for the directory.

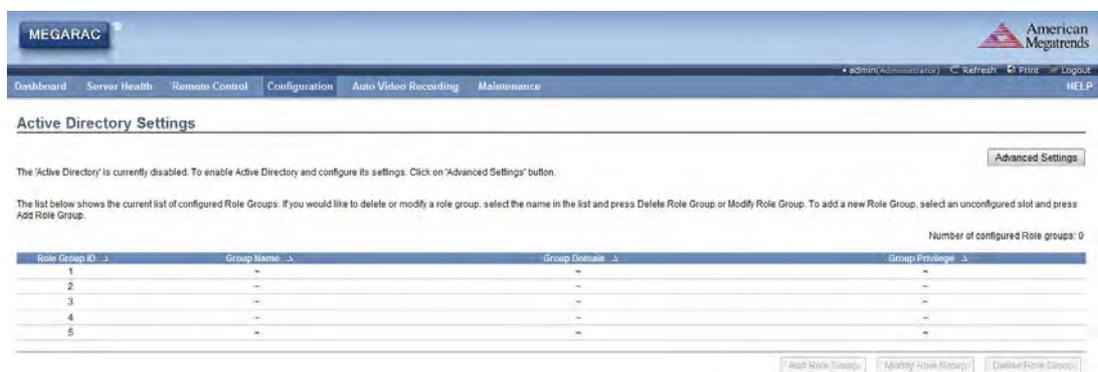
- **Advanced Settings:** Options are Enable Active Directory Authentication, User Domain Name, Time Out, and up to three Domain Controller Server Addresses.
- **Active Directory Authentication:** Enable by clicking “Enable” checkbox.
- **User Domain name:** Specify the Domain Name for the user.
- **Time Out:** Specify the time to wait for Active Directory queries.

Note! *Default Time out 120 seconds; Range from 15 to 300 seconds.*



- **Domain Controller Server Addresses:** Configure IP addresses in these areas.

Note! *At least one Domain Controller Server Address must be configured.*



MEGARAC American Megatrends

Dashboard Server Health Remote Control Configuration Auto Video Recording Maintenance

admin/administrator Refresh Print Logout HELP

Active Directory Settings

The 'Active Directory' is currently disabled. To enable Active Directory and configure its settings, click on 'Advanced Settings' button.

The list below shows the current list of configured Role Groups. If you would like to delete or modify a role group, select the name in the list and press Delete Role Group or Modify Role Group. To add a new Role Group, select an unconfigured slot and press Add Role Group.

Number of configured Role groups: 0

Role Group ID	Group Name	Group Domain	Group Privilege
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-

Add Role Group Modify Role Group Delete Role Group

Figure 3.6 Configuration - Active Directory Page

3.4.2 DNS

The Domain Name System (DNS) is a distributed hierarchical naming system for computers, services, or any resource connected to the internet or a private network. It associates the information with domain names assigned to each of the participants. Also, it translates domain names meaningful to humans into the numerical (binary) identifiers associated with networking equipment for the purpose of locating and addressing these devices worldwide.

- **Host Configuration:**
 - Host Setting: Choose either Automatic or Manual.
 - Host Name: If host setting is “Manual” then specify the hostname.
- **Register BMC:** Register BMC either through Direct Dynamic DNS or DHCP Client FQDN.
- **Domain Name Configuration:**
 - Domain Setting: Lists the option for domain interface as “Manual”, “v4” or “v6” for multiLAN channels.
 - Domain Name: Choose “Manual”, then specify the domain name of device.
- **IPv4 Domain Name Server Configuration**
 - DNS Server Settings: Choose either “Manual” or “available LAN interface”.
 - Preferred DNS Server: Configure the DNS server v4 address.
 - Alternate DNS Server: Configure the DNS server v4 address.
- **IPv6 Domain Name Server Configuration**
 - DNS Server Settings: Choose either “Manual” or “available LAN interface”.
 - Preferred DNS Server: Configure the DNS server v6 address.
 - Alternate DNS Server: Configure the DNS server v6 address.

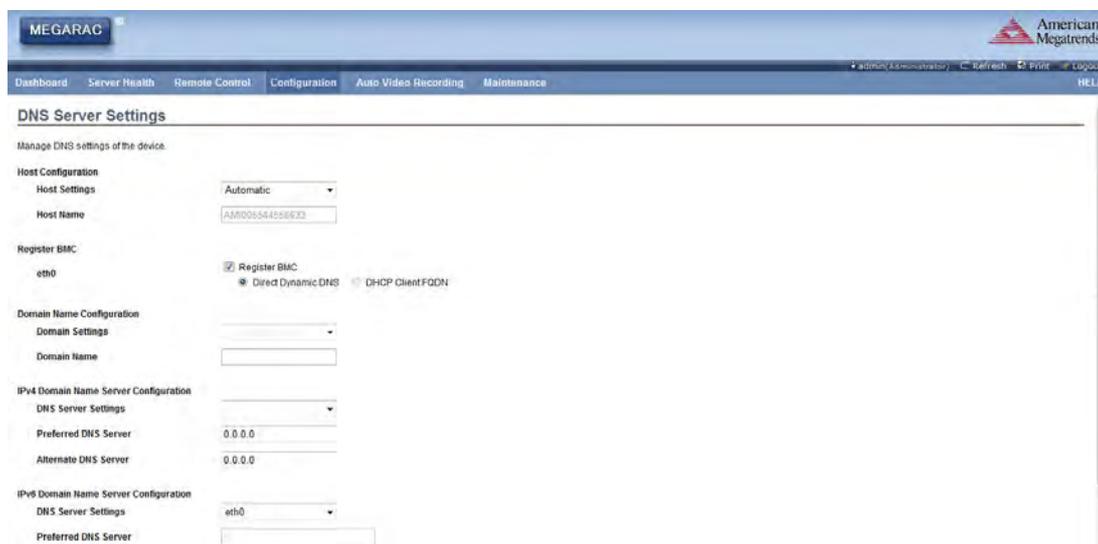


Figure 3.7 Configuration - DNS Page

3.4.3 LDAP

The Lightweight Directory Access Protocol (LDAP) is an application protocol for querying and modifying data of directory services implemented in Internet Protocol (IP) networks.

Advanced LDAP Settings: To configure the settings:

- LDAP Authentication: Enable by clicking “Enable” checkbox
- IP Address: Enter the IP address
- Port: Specify the LDAP port

Note! *Default Port is 389.*



Figure 3.8 Configuration - LDAP Page

3.4.4 Local Media

Displays the list of available images in the local media on BMC. You are allowed to replace or add new images from here. To configure the image, you need to enable Local Media support under Configuration -> Virtual Media.

- Note!**
- *Only administrator can change local media.*
 - *Each image type supports one image upload.*
 - *Maximum upload size is 8 MB.*



Figure 3.9 Configuration - Local Media Page

3.4.5 Mouse Mode

Configure mouse mode based on different OS.

- Absolute Mode:
The absolute position of the local mouse is sent to the server. (Recommended when server OS is Windows)
- Relative Mode:
Relative mode sends the calculated relative mouse position displacement to the server. (Recommended when server OS is Linux)



Figure 3.10 Configuration - Mouse Mode Page

3.4.6 NCSI

Displays the configuration settings of the Network Controller Sideband Interface (NCSI).

- NCSI Interface:
Lists the interface name in list box.
- Channel Number:
Lists the channel number of the selected interface.
- Package ID:
Lists the package id of the selected interface.



Figure 3.11 Configuration - NCSI Page

3.4.7 Network

Used to configure the network settings for the available LAN channels.

- LAN Interface:
Lists the LAN interfaces.
- LAN Settings:
Enable or disable the LAN Settings.
- MAC Address:
Read only field for MAC address of the device.
- IPv4 Configuration:
 - Obtain an IP address automatically:
Dynamically configure IPv4 using DHCP.
 - IPv4 Address, Subnet Mask and Default Gateway:
Specify static IPv4 address, Subnet Mask and Default Gateway to be configured to the device.
- IPv6 Configuration:
 - IPv6 Setting:
Enable IPv6 setting.
 - Obtain an IPv6 address automatically:
Dynamically configure IPv6 address using DHCP.
 - IPv6 Address:
Specify a static IPv6 address to be configured to the device.
 - Subnet Prefix length:
Specify the subnet prefix length for the IPv6 settings.
 - Default Gateway:
Specify IPv6 default gateway for the IPv6 settings.
- VLAN Configuration:
 - VLAN Settings:
Enable/disable the VLAN support for selected interface.
 - VLAN ID:
Identification for VLAN configuration. (Ranges from 1 to 4095)
 - VLAN Priority:
Priority for VLAN configuration. (Ranges from 1 to 7; 7 is highest priority)

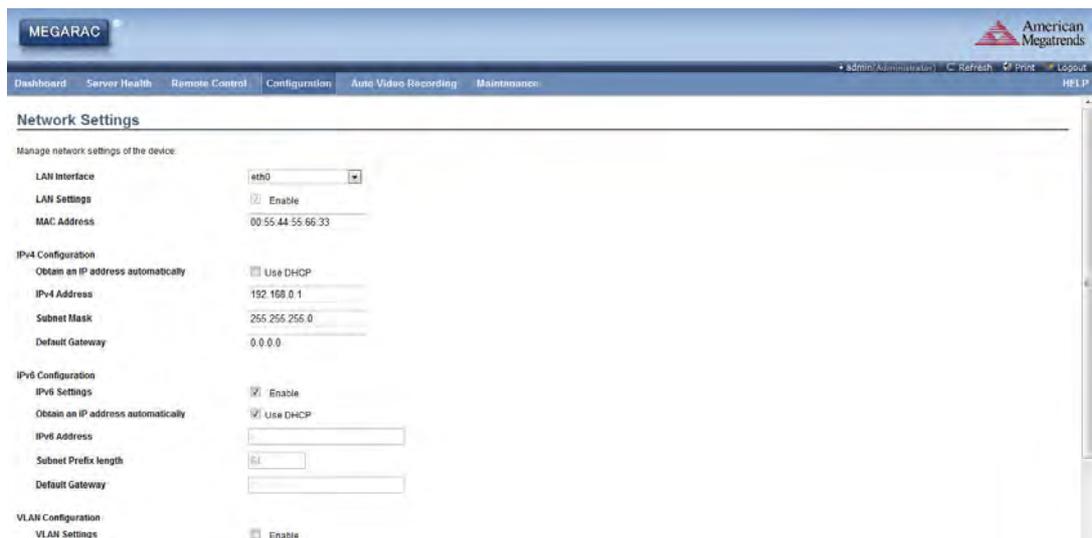


Figure 3.12 Configuration - Network Page

3.4.8 NTP

The Network Time Protocol (NTP) is a protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks.

- **Date:**
Specify the current date.
- **Time:**
Specify the current time.
- **UTC Timezone:**
Display the local time zone offset.
- **NTP Server:**
Specify the NTP Server
- **Automatically synchronize:**
Synchronize Date and Time automatically with the NTP Server.

Figure 3.13 Configuration - NTP page

3.4.9 PAM Order

Used to configure the Pluggable Authentication Module (PAM) ordering for user authentication in to the BMC.

Figure 3.14 Configuration - PAM Order Page

3.4.10 PEF

Platform Event Filtering (PEF) provides a mechanism for configuring the BMC to take selected actions on event messages that it receives or has internally generated. These actions include operations such as system power-off, system reset, as well as triggering the generation of an alert.

- Event Filter:
 - PEF ID:
Displays the ID for the newly configured PEF entry (read-only).
 - Filter Configuration:
Check box to enable the PEF settings.
 - Event Filter Action:
Check box to enable PEF Alert action. This is a mandatory field.
 - Event Severity:
Choose Event severity from the list.
 - Sensor Name:
Choose a particular sensor from the sensor list.
 - Add:
Add a new event filter entry and return to Event filter list.
 - Modify:
Modify the existing entries.
 - Cancel:
Cancel the modification and return to Event filter list.
- Alert Policy:
 - Policy entry #:
Displays Policy entry number for the newly configured entry (read-only).
 - Policy Number:
Displays the Policy number of the configuration.
 - Policy Configuration:
Enable or disable the policy settings.
 - Policy Set:
Choose Policy set values from the list.
- LAN Destination:
 - LAN Destination:
Displays Destination number for the newly configured entry (read-only).
 - Destination Type:
Destination type can be either an SNMP Trap or an Email alert. For Email alerts, the 3 fields “destination email address”, “subject” and “body of the message” needs to be entered. The SMTP server information also has to be added under Configuration->SMTP. For SNMP Trap, only the destination IP address has to be filled.
 - Destination Address:
If Destination type is SNMP Trap, then enter the IP address of the system that will receive the alert. If Destination type is Email Alert, then give the email address that will receive the email.
 - Subject & Message:
These fields must be configured if email alert is chosen as destination type. An email will be sent to the configured email address if a severity event occurs; it will contain a subject in the subject field and the message field content of the event will be in the email body.

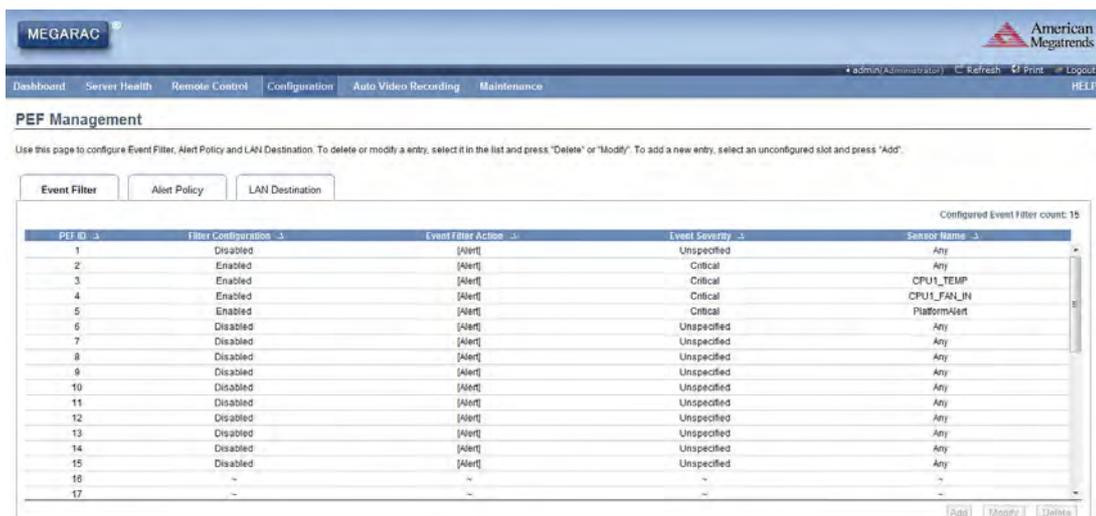


Figure 3.15 Configuration - PEF Page

3.4.11 RADIUS

RADIUS is a modular, high performance and feature-rich RADIUS suite including server, clients, development libraries and numerous additional RADIUS related utilities.

- **RADIUS Authentication:**
Option to enable RADIUS authentication.
- **Port:**
The RADIUS Port number.

Note! Default Port is 1812.



- **Time Out:**
The Time out value in seconds.

Note! Default is 3 seconds and ranges from 3 to 300.



- **Server Address:**
The IP address of RADIUS server.
- **Secret:**
The Authentication Secret for RADIUS server.

Note! This field will not allow more than 31 characters.



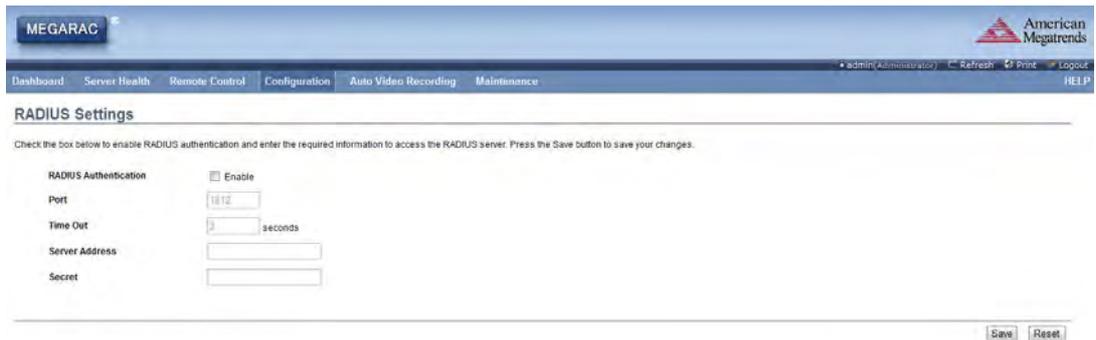


Figure 3.16 Configuration - RADIUS Page

3.4.12 Remote Session

This section is to configure virtual media configuration settings for the next redirection session.

- **KVM Encryption:**
Enable/Disable encryption on KVM data for the next redirection session.
- **Media Encryption:**
Enable/Disable encryption on Media data for the next redirection session.
- **Virtual Media Attach Mode:**
Two types of VM attach mode are available



Figure 3.17 Configuration - Remote Session Page

3.4.13 Services

This page displays the basic information about services running in the BMC. Only Administrator can modify the service.



Figure 3.18 Configuration - Services Page

3.4.14 SMTP

Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (e-mail) transmission across Internet Protocol (IP) networks.

- LAN Channel Number:
Displays the list of LAN channels available
- Sender Address:
The 'Sender Address' valid on the SMTP Server.
- Machine Name:
The 'Machine Name' of the SMTP Server.

Note! The maximum strings are 15 alpha-numeric characters.



- Primary SMTP Server:
Lists the Primary SMTP Server configuration.
- Server Address:
The 'IP address' of the SMTP Server. It is a mandatory field.

Figure 3.19 Configuration - SMTP Page

3.4.15 System and Audit Log

System and Audit log page displays a list of system and audit events that have been logged on this device.

Figure 3.20 Configuration - System and Audit Log Page

3.4.16 Users

The User Management page allows you to view the current list of user slots for the server. You can add a new user and modify or delete the existing users.

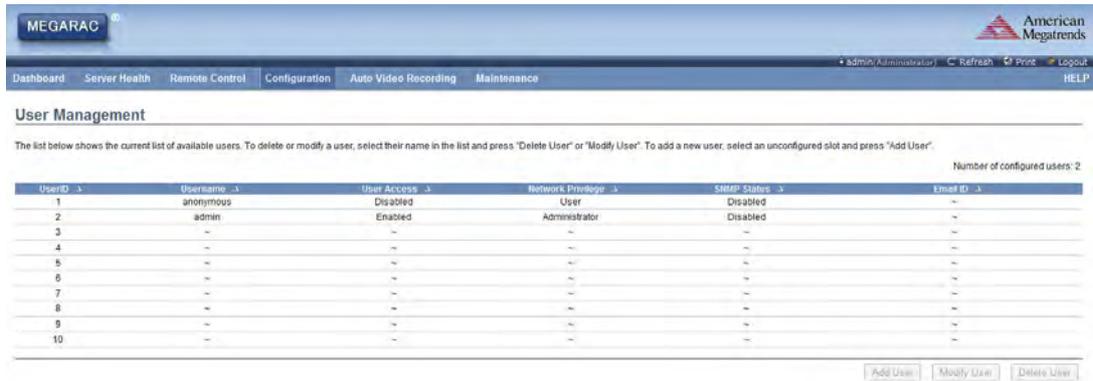


Figure 3.21 Configuration - Users Page

3.4.17 Virtual Media

This section is to configure Virtual Media device settings. If you change the configuration of the virtual media in this page, it shows the appropriate device in the JViewer Vmedia dialog.

- Floppy devices:
The number of floppy devices that support Virtual Media redirection.
- CD/DVD devices:
The number of CD/DVD devices that support Virtual Media redirection.
- Hard disk devices:
The number of hard disk devices that support Virtual Media redirection.
- Local Media Support:
Enable or disable the local media support for Virtual Media redirection.



Figure 3.22 Configuration - Virtual Media Page

3.5 Remote Control

The Remote Control consists of Console Redirection and Server Power Control.

■ **Console Redirection:**

The remote console application, which is started using the GUI, allows you to control your server's operating system remotely, using the screen, mouse, and keyboard.



Figure 3.23 Remote Control - Console Redirection Page

■ **Server Power Control:**

- **Reset Server:**
This option will reboot the system without powering off (warm boot).
- **Power Off Server - Immediate:**
This option will immediately power off the server.
- **Power Off Server - Orderly Shutdown:**
This option will initiate operating system shutdown prior to the shutdown.
- **Power On Server:**
This option will power on the server.
- **Power Cycle Server:**
This option will first power off, and then reboot the system (cold boot).
- **Perform Action:**
Click this option to perform the selected operation.

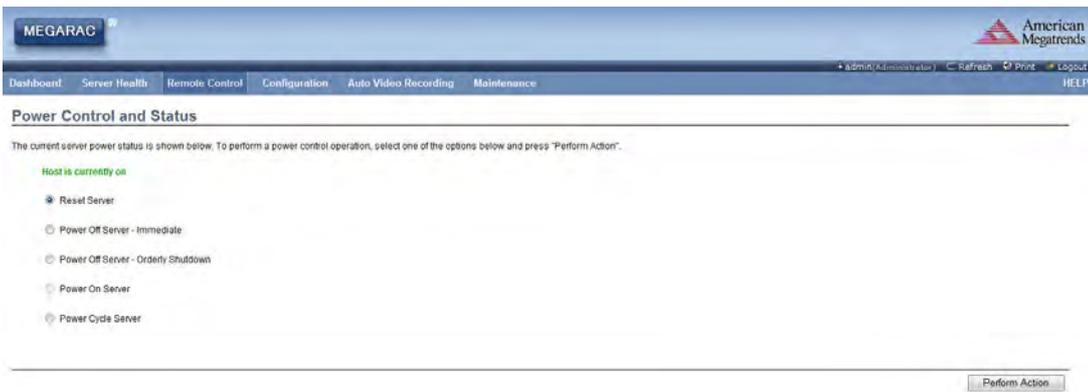


Figure 3.24 Remote Control - Server Power Control Page

3.6 Auto Video Recording

The Auto Video Recording consists of Triggers Configuration and Recorded Video.

- **Triggers Configuration:**
Used to configure the triggers for various events, which can be used by the KVM server to perform auto video recording feature.

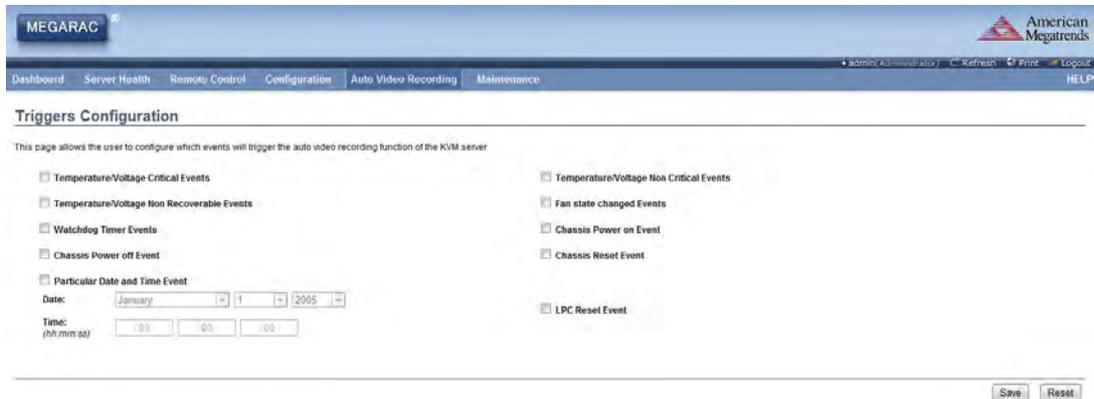


Figure 3.25 Auto Video Recording - Triggers Configuration Page

- **Recorded Video:**
Displays the list of available recorded video files on the BMC.

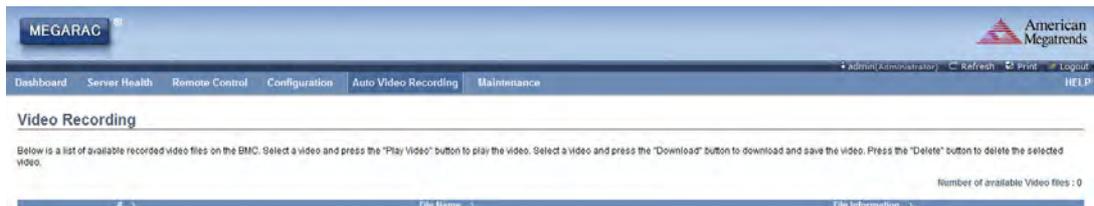


Figure 3.26 Auto Video Recording - Recorded Video Page

Note! *A maximum of only 2 video files can be recorded and available for access, with each recording limited to 5.5MB or 20 seconds whichever occurs first.*



Further event occurrences will be ignored and no recording will happen, until at least one video file is deleted.

3.7 Maintenance

Maintenance consists of Firmware Update, Restore Factory Defaults and System Administrator.

- **Firmware Update:**
This wizard takes you through the process of upgrading firmware. A reset will automatically follow if the upgrade is completed or cancelled.

Note! *After entering update mode widgets, other web pages and services will not work. All open widgets will be closed automatically. If upgrade process is cancelled in the middle of the wizard, the device will be reset.*



Figure 3.27 Maintenance - Firmware Update Page

- **Restore Factory Defaults:**
Used to restore the factory defaults of the device firmware.



Figure 3.28 Maintenance - Restore Factory Defaults Page

- **System Administrator:**
Used to configure the System Administrator settings.

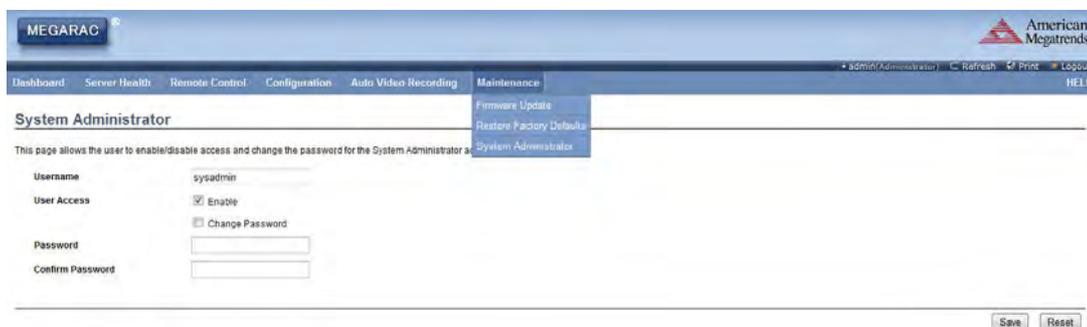


Figure 3.29 Maintenance - System Administrator Page

3.8 Log Out

To log out of the GUI, click the logout link on the top right corner of the screen.

Appendix **A**

Port Usage

A.1 Port Usage

Port #	Owner Module	Usage
80	Web server (webgo)	Listening for network connections on HTTP://
443	Web server (webgo)	Listening for secured network connections on HTTPS://
22	Secure Shell (sshd)	Secure SMASH-Lite session
23	Telnet	Telnet session
5120	CD media server	To accept regular CD media redirection connections
5124	CD media server	To accept secure (SSL based) CD media redirection connections
5123	Floppy media server	To accept regular FD media redirection connections
5127	Floppy media server	To accept secure (SSL based) FD media redirection connections
5122	HD media server	To accept regular HD media redirection connections
5126	HD media server	To accept secure (SSL based) HD media redirection connections
7578	KVM server (adviser)	To accept regular KVM redirection connections
7582	KVM server (adviser)	To accept secure (SSL based) KVM redirection connections
623	IPMI	LAN interface
1900	uPnP discovery	Used for uPnP based BMC discovery
50000	uPnP discovery	Used for uPnP based BMC discovery
555	WSMAN	Event daemon's listening port
5988	SFCB (WSMAN)	WSMAN related
427	SLPD	Service Locator

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