

FWA9300 Series
Network Appliance

User's Manual

Version: 1.0

History

Revision	Date	Description	Remark
0.1	Oct.13.2008	Initial	No IPMI & IIO
1.0	Nov.26.2008	Addition IPMI manual	

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Foreword

To prevent damage to the system board, please handle it with care and follow the measures below, which are generally sufficient to protect your equipment from static electricity discharge:

When handling the board, use a grounded wrist strap designed for static discharge elimination grounded to a metal object before removing the board from the antistatic bag. Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

When handling processor chips or memory modules, avoid touching their pins or gold edge fingers. Return the Network Appliance system board and peripherals back into the antistatic bag when not in use or not installed in the chassis.

Some circuitry on the system board can continue to operate even though the power is switched off. Under no circumstances should the Lithium battery cell used to power the real-time clock be allowed to be shorted. The battery cell may heat up under these conditions and present a burn hazard.

WARNING!

1. "CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.
REPLACE ONLY WITH SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS"
2. This guide is for technically qualified personnel who have experience installing and configuring system boards. Disconnect the system board power supply from its power source before you connect/disconnect cables or install/remove any system board components. Failure to do this can result in personnel injury or equipment damage.
3. Avoid short-circuiting the lithium battery; this can cause it to superheat and cause burns if touched.
4. Do not operate the processor without a thermal solution. Damage to the processor can occur in seconds.
5. Do not block air vents at least minimum 1/2-inch clearance required.

Chapter 1 Introduction

The FWA9300 series was specifically designed for the network security & management market.

Network Security Applications:

- Firewall
- Virtual Private Network
- Proxy Server
- Caching Server

Network Management Applications:

- Load balancing
- Quality of Service
- Remote Access Service

The FWA network appliance product line covers the spectrum from offering platforms designed for :

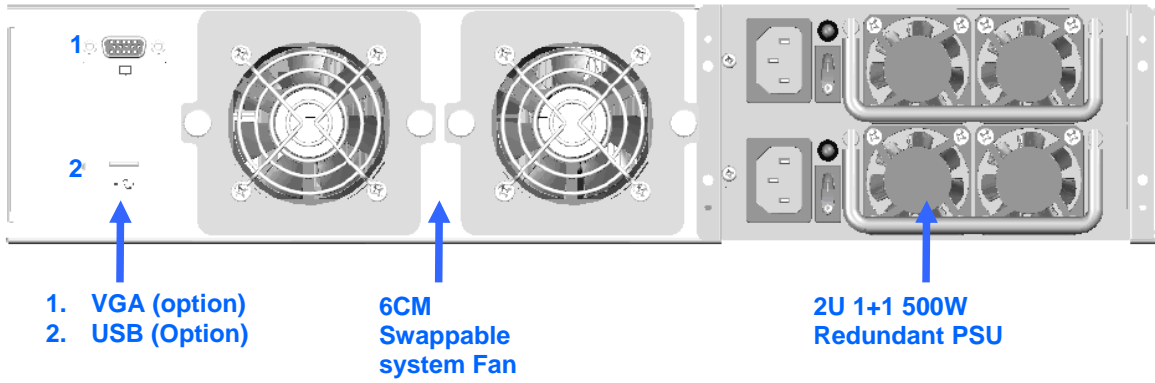
- SOHO
- SMB
- Enterprise

Each product is designed to address the distinctive requirements of its respective market segment from cost effective entry-level solutions to high throughput and performance-bound systems for the Enterprise level.

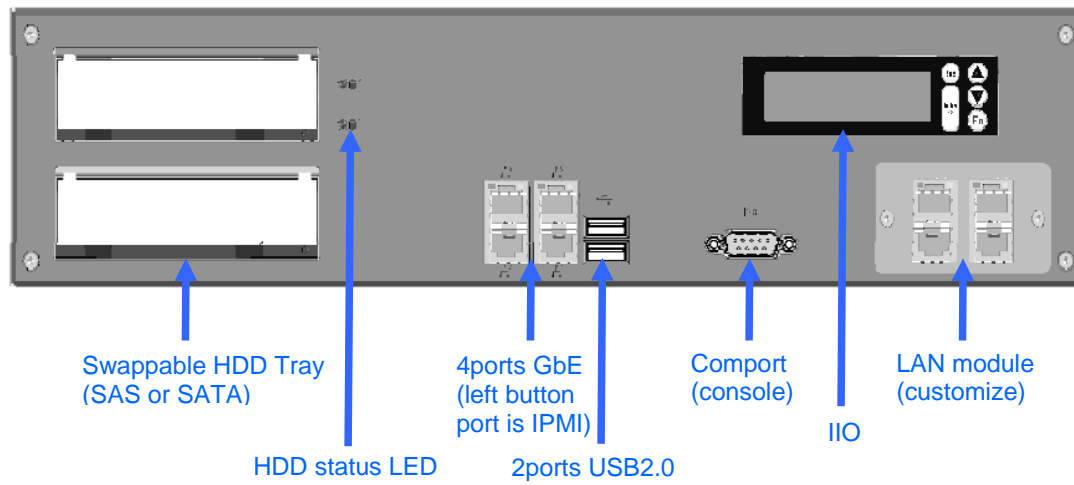
Chapter 2 System Specification

Product Name	FWA9300
Form Factor	19" 2U rack mount
CPU Socket	LGA771 socket X 2
CPU Type	Quad-Core Intel® Xeon® processor 5000Δ series Dual-Core Intel® Xeon® processor 5000Δ series
CPU FSB	1066 / 1333 MHz FSB
Chipset	Intel® San Clemente(5100) MCH + ICH9R
BIOS	AMI BIOS---MS SLP 2.0,
Memory	6x 240-pin DDR2 sockets, supporting REG/ECC DDR2 533 / 667 up to 48GB memory
LAN	Onboard dual port Intel® 82575 gigabit LAN Onboard dual port Intel® 82571 gigabit LAN
VGA+IPMI	AST2050 supports 2D Graphics and IPMI 2.0
USB	4 ports USB2.0
Serial ATA	4 ports SATAII, support raid 0,1,5,10
Swappable HDD Tray	2 swappable trays, support SATA & SAS
LPC I/O	2 com-ports, Winbond W83627DHG supports COM1 (RS232) for Console with D-Sub9 connector
Edge Connectors	Front Panel: RJ45 connector for LAN1~4 Dual USB stack connector x1 for USB 0, 1 Rear Panel: DB-15 Connector for VGA x1 (option) USB connector x1 (option)
On Board Headers / Connectors	Standard SATA (7-pin shrouded vertical) connector x 4 4-pin PWM FAN pin-header x 6 for CPU & system fans by fan board 2x 8 pins pin-header x1 for VGA—Rear Panel 4x2 pins pin-header x1 for USB 2, 3----Rear Panel 5x2 pins box-header x1 for COM2----IIO LCM module 2 x 5 pins pin-header for PS/2 Keyboard & Mouse ATX Power Connector (ATX20P+ EPS8P) One LPC debug port for 7-seg 80 port dongle
Golden Finger	PCIe x16 x1 for Expansion Riser Card , PCIe x16 can support 4 devices (customize backplane)
Watchdog Timer	Yes (256 segments, 0, 1, 2...255 sec/min)
RoHS Compliant	Yes
Board Size	W:155mm * L:425mm

Rear Panel Features

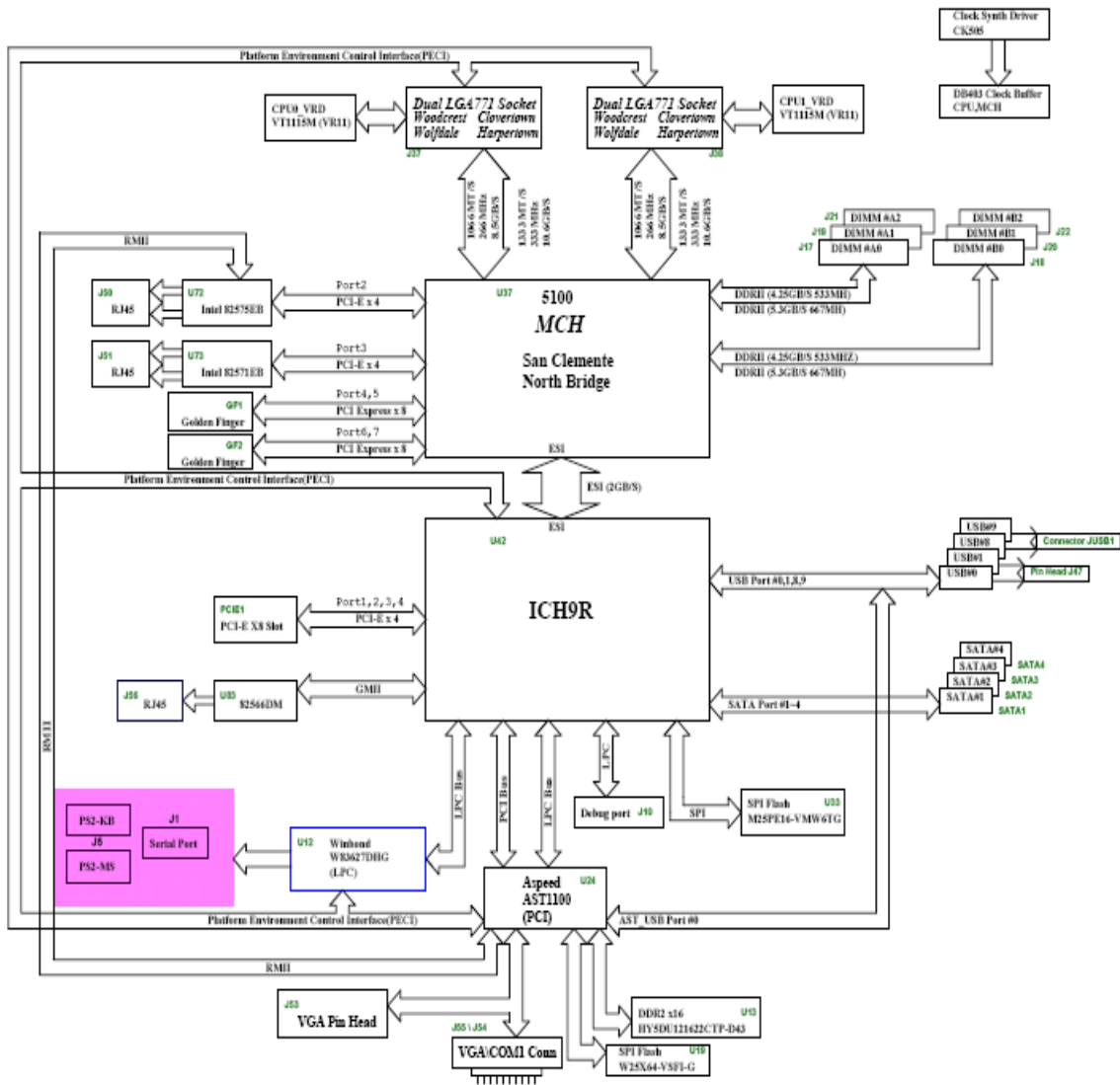


Front Panel Features



Chapter 4 System Architecture

The following block diagram illustrates a basic design reference of FWA9300, a highly integrated system solution.

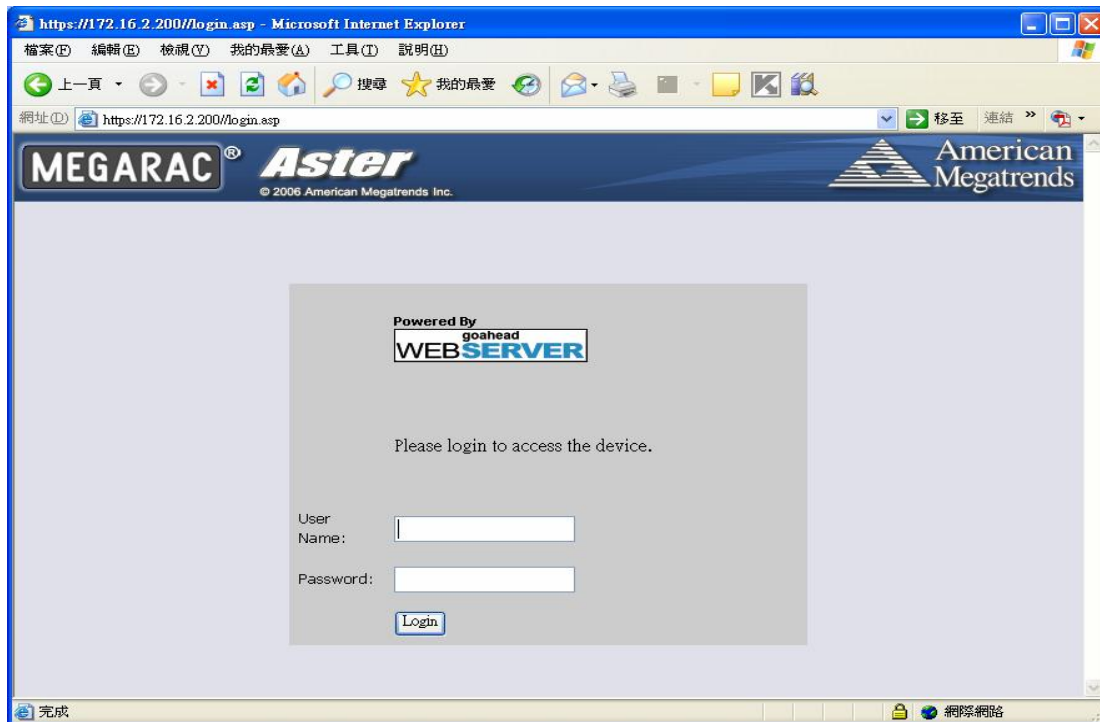


Limited Warranty

The buyer agrees that if this product proves to be defective, American Megatrends is only obligated to repair or replace this product at American Megatrends' discretion according to the terms and conditions of the warranty registration card that accompanies this product. American Megatrends shall not be liable in tort or contract for any loss or damage, direct, incidental or consequential resulting from the use of this product. Please see the *Warranty Registration Card* shipped with this product for full warranty details.

Using Your ASTER

ASTER GUI Overview



The ASTER has a user-friendly Graphics User Interface (GUI) called the *ASTER GUI*. It is designed to be easy to use. It has a low learning curve because it uses a standard Internet browser. You can expect to be up and running in less than five minutes.

This chapter allows you to become familiar with the *ASTER GUI*'s various functions. Each function is described in detail.

Default User Name and Password

When you first try to access your ASTER, you will be prompted to enter a user name and password. The default user name and password are as follows:

Field	Default
User Name	root
Password	superuser

Note: The default user name and password are in lower-case characters.

Note: When you log in using the root user name and password, you have full administrative powers. It is advised that once you log in, you change the root password.

ASTER GUI Explained

After you successfully log into your ASTER, you are greeted with the *ASTER GUI*.

The screenshot shows the ASTER GUI interface within a Microsoft Internet Explorer browser window. The browser's address bar displays the URL: `https://172.16.2.200/Layouts/Layout0/umain.htm?application=ASTER`. The page header features the MEGARAC logo, the Aster logo, and the American Megatrends logo. Below the header is a navigation menu with the following items: General Information, Server Health, Configuration, Remote Control, and Maint.

The main content area is titled "General Information" and contains the text: "Here you can view system and session information." Below this, there is a "System Information" section. The "System Information" section contains the following text: "Below is a summary of System Information", "Device Available: Yes", "Firmware Revision: 1.0", "Aux Firmware Revision: 936", and "Build Time: Sep 6 2006 17:31:41".

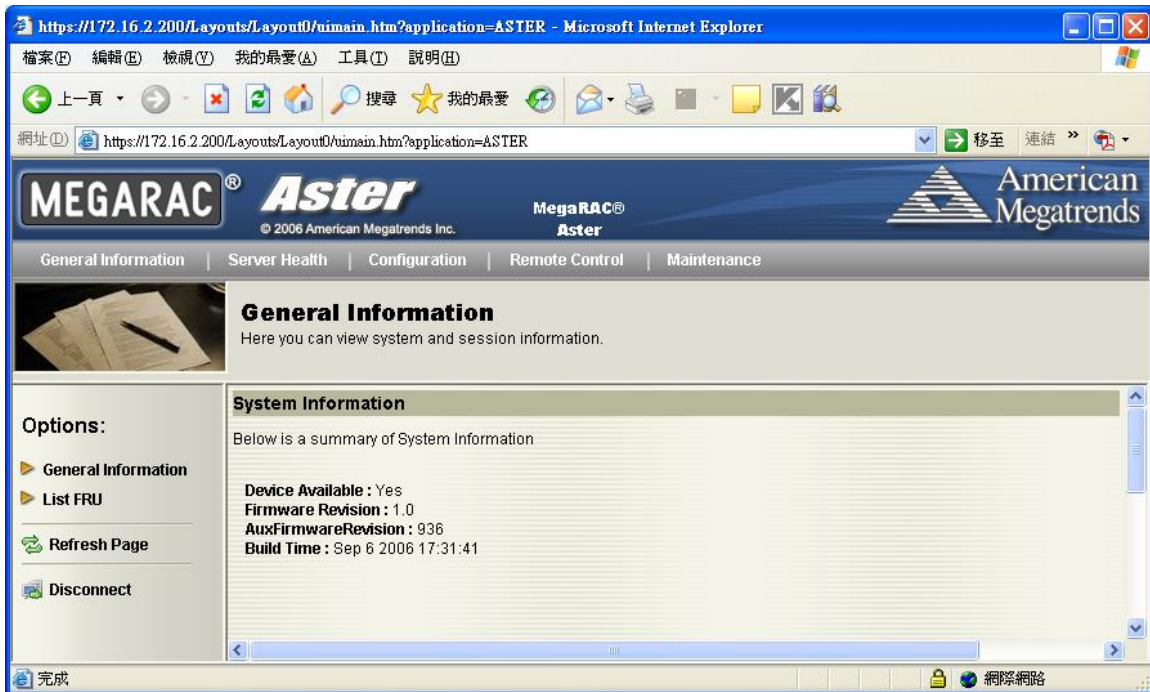
The left sidebar contains a "Function List" with the following items: "General Information", "List FRU", "Refresh Page", and "Disconnect".

Callouts in the image identify the following components:

- Menu Bar:** The navigation menu at the top of the page.
- Function Title:** The title of the current section, "System Information".
- Section Information:** The main content area of the "System Information" section.
- Function List:** The list of functions in the left sidebar.

General Information

1. General Information: It shows the firmware of ASTER information.

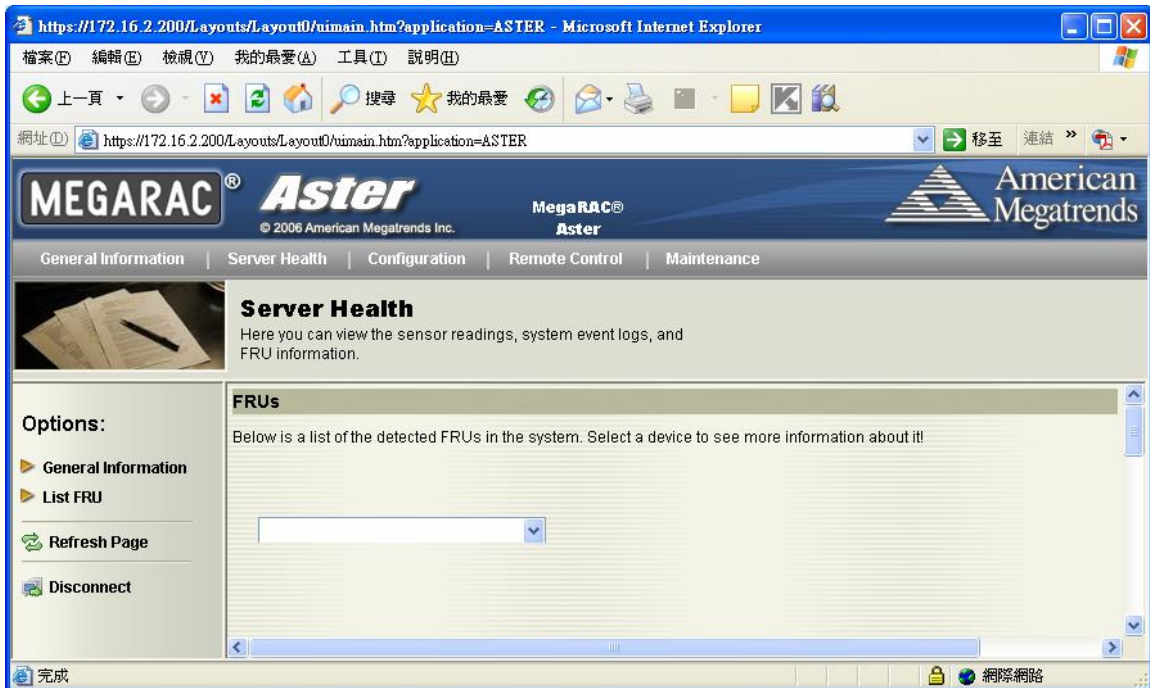


The screenshot shows a Microsoft Internet Explorer browser window displaying the Aster General Information page. The address bar shows the URL: `https://172.16.2.200/Layouts/Layout0/umain.htm?application=ASTER`. The page header includes the MEGARAC logo, the Aster logo, and the American Megatrends logo. The navigation menu includes: General Information, Server Health, Configuration, Remote Control, and Maintenance. The main content area is titled "General Information" and contains the following text: "Here you can view system and session information." Below this, there is a "System Information" section with the text: "Below is a summary of System Information". The system information is displayed in a table:

Device Available	: Yes
Firmware Revision	: 1.0
AuxFirmwareRevision	: 936
Build Time	: Sep 6 2006 17:31:41

The left sidebar contains "Options:" with the following items: General Information, List FRU, Refresh Page, and Disconnect.

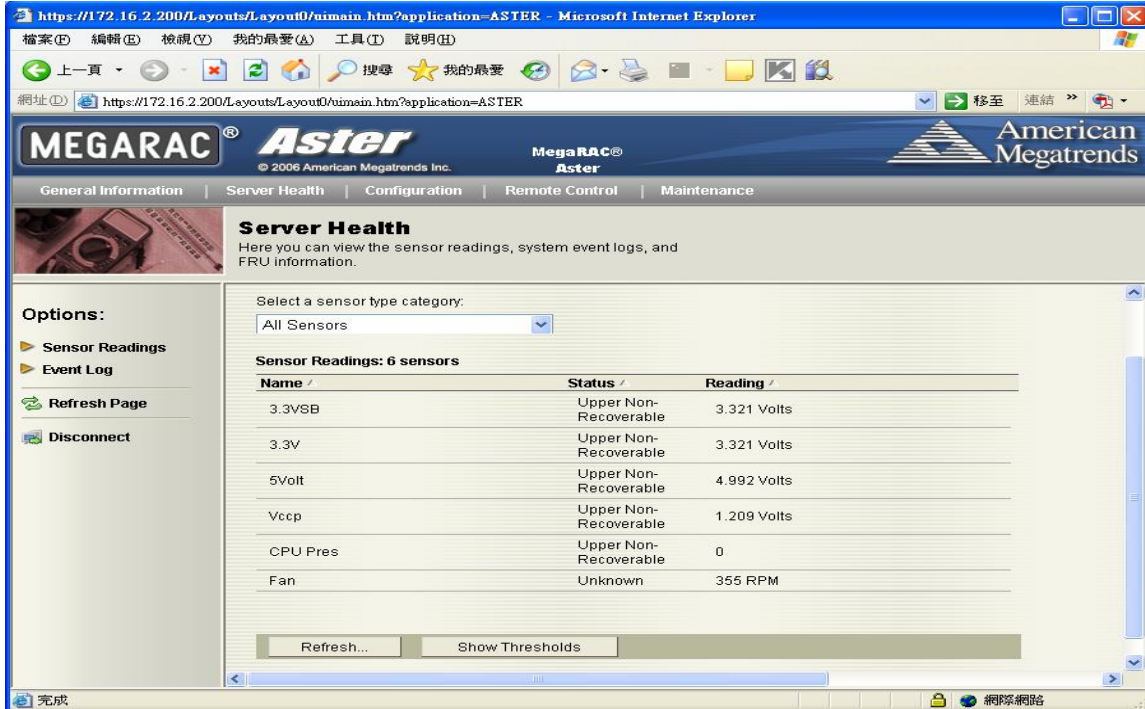
2. List FRU: It goes through the I2C bus to detect the FRU data of motherboard BMC.



The screenshot shows a Microsoft Internet Explorer browser window displaying the Aster Server Health page. The address bar shows the URL: `https://172.16.2.200/Layouts/Layout0/umain.htm?application=ASTER`. The page header includes the MEGARAC logo, the Aster logo, and the American Megatrends logo. The navigation menu includes: General Information, Server Health, Configuration, Remote Control, and Maintenance. The main content area is titled "Server Health" and contains the text: "Here you can view the sensor readings, system event logs, and FRU information." Below this, there is a "FRUs" section with the text: "Below is a list of the detected FRUs in the system. Select a device to see more information about it!". A dropdown menu is visible below the text, but it is currently empty. The left sidebar contains "Options:" with the following items: General Information, List FRU, Refresh Page, and Disconnect.

Server Health

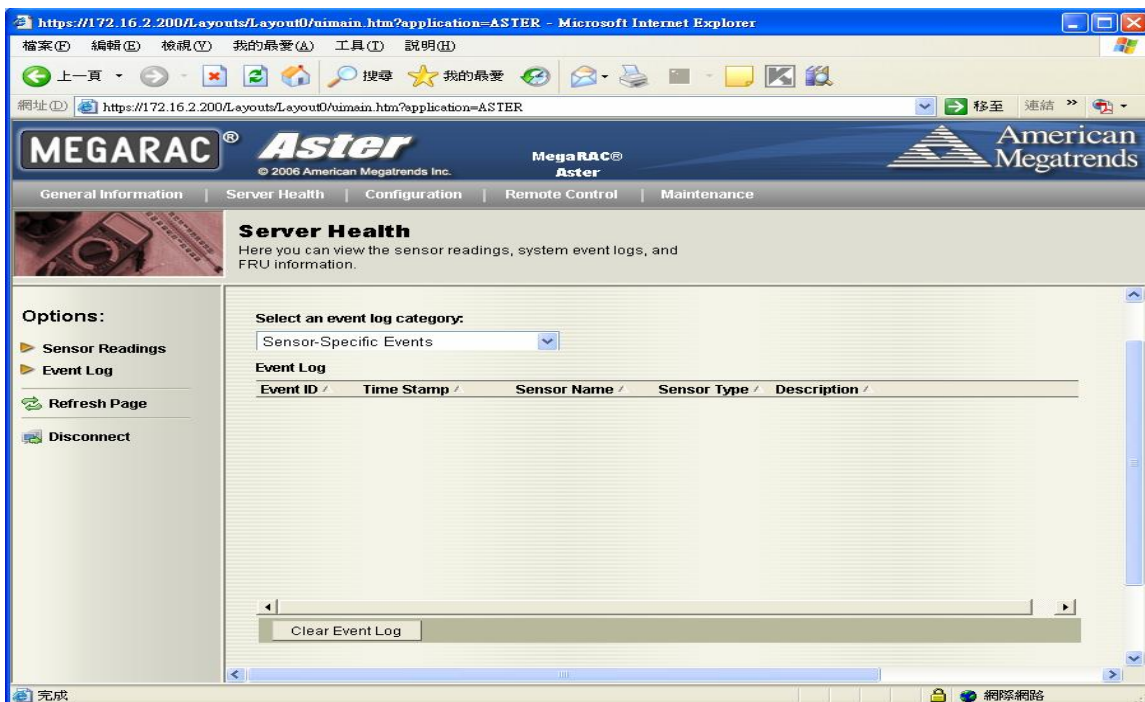
1. **Sensor Readings:** It reads the sensor information of system. You can click the "Refresh" to re-read the sensor state. And you can click "Show Thresholds" to show the thresholds of every sensors.



The screenshot shows the Aster Server Health interface in a Microsoft Internet Explorer browser. The page title is "Server Health" and it includes a navigation menu with options like "General Information", "Server Health", "Configuration", "Remote Control", and "Maintenance". The main content area displays a table of sensor readings for 6 sensors. The table has columns for Name, Status, and Reading. Below the table are buttons for "Refresh..." and "Show Thresholds".

Name	Status	Reading
3.3VSB	Upper Non-Recoverable	3.321 Volts
3.3V	Upper Non-Recoverable	3.321 Volts
5Volt	Upper Non-Recoverable	4.992 Volts
Vccp	Upper Non-Recoverable	1.209 Volts
CPU Pres	Upper Non-Recoverable	0
Fan	Unknown	355 RPM

2. **Event Log:** It records the event when sensor has abnormal state.



The screenshot shows the Aster Server Health interface in a Microsoft Internet Explorer browser, specifically the "Event Log" section. The page title is "Server Health" and it includes a navigation menu. The main content area displays a table of event log entries. The table has columns for Event ID, Time Stamp, Sensor Name, Sensor Type, and Description. Below the table is a "Clear Event Log" button.

Event ID	Time Stamp	Sensor Name	Sensor Type	Description
----------	------------	-------------	-------------	-------------

Configuration

MEGARAC[®] Aster
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American Megatrends

General Information | Server Health | Configuration | Remote Control | Maintenance

Configurations

Here you can select the language for the application.

Options:

- Configure
 - Network
 - Users
 - Alerts
 - Mouse mode
 - LDAP
- SSL Certificate

Refresh Page
Disconnect

Configurations

Select an available language from the list below.

Network	Setup the network parameters
Users	Add/Delete/Modify user accounts
Alerts	Setup the Alert Destinations
Mouse mode	Configure the mouse mode for console redirection
LDAP	Setup the LDAP server parameters
SSL Certificate	Upload SSL Certificate

1. Network: Show the ASTER IP address information. You can set DHCP or STATIC IP then click "Save".

MEGARAC[®] Aster
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General Information | Server Health | Configuration | Remote Control | Maintenance

Configuration

This pages allows you to access various configuration settings.

Options:

- Configure
 - Network
 - Users
 - Alerts
 - Mouse mode
 - LDAP
- SSL Certificate

Refresh Page
Disconnect

Configurations

You can view and modify the network settings on this page. Select whether to obtain an IP address automatically or manually configure one.

MAC Address: 00:11:22:33:44:55

Obtain an IP address automatically (use DHCP)

Use the following IP address

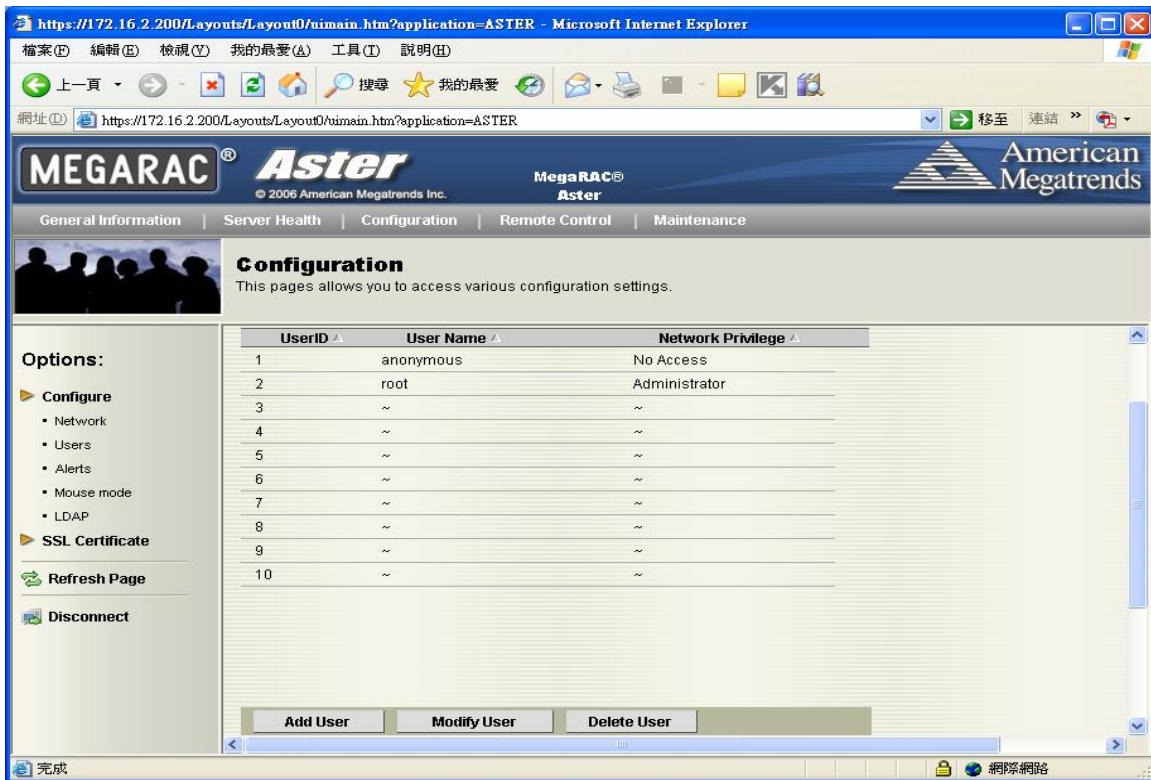
IP Address: 172.16.2.200

Subnet Mask: 255.255.254.0

Default Gateway: 172.16.2.1

Save

2.Users: You can control user who can login ASTER and accessing privileges.

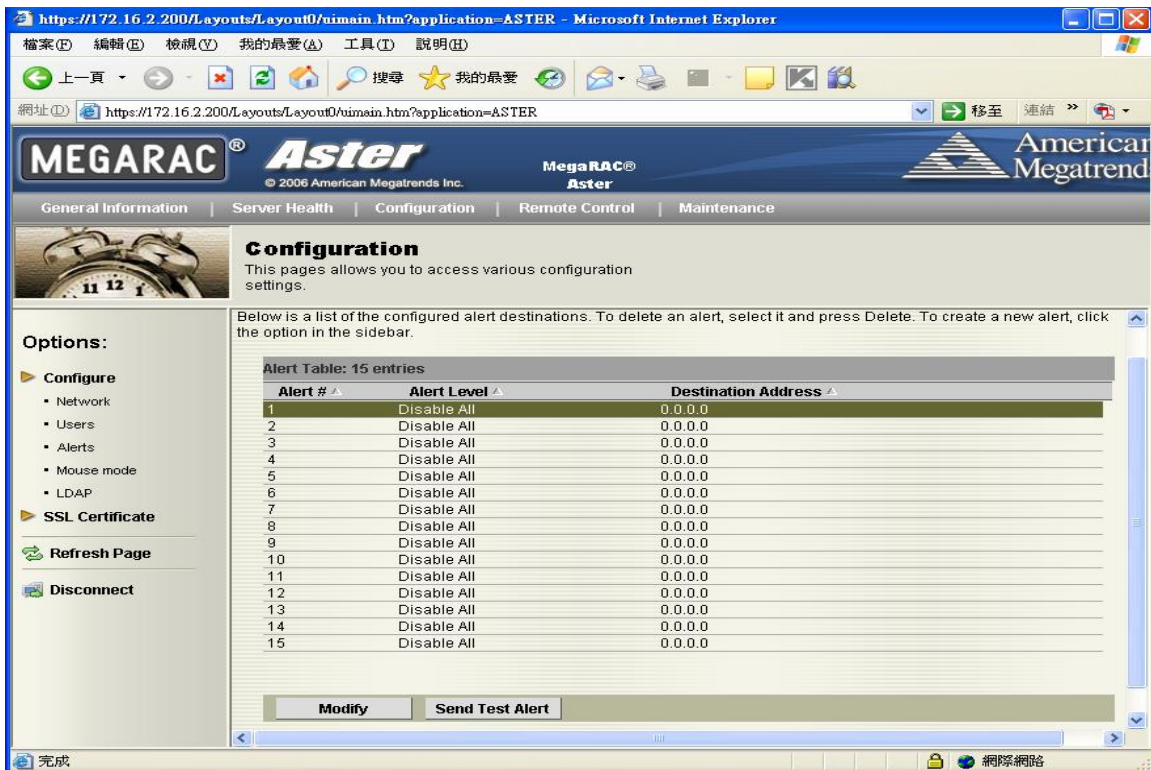


The screenshot shows the Aster Configuration page in a Microsoft Internet Explorer browser. The page title is "MEGARAC® Aster" and the URL is "https://172.16.2.200/Layouts/Layout0/ainmain.htm?application=ASTER". The page has a navigation menu with "General Information", "Server Health", "Configuration", "Remote Control", and "Maintenance". The "Configuration" section is active, and the "Users" option is selected in the sidebar. The main content area displays a table of users with columns for "UserID", "User Name", and "Network Privilege".

UserID	User Name	Network Privilege
1	anonymous	No Access
2	root	Administrator
3	~	~
4	~	~
5	~	~
6	~	~
7	~	~
8	~	~
9	~	~
10	~	~

At the bottom of the table, there are three buttons: "Add User", "Modify User", and "Delete User".

3. Alerts: Set the IP address who wants to get the alert message when system is abnormal.



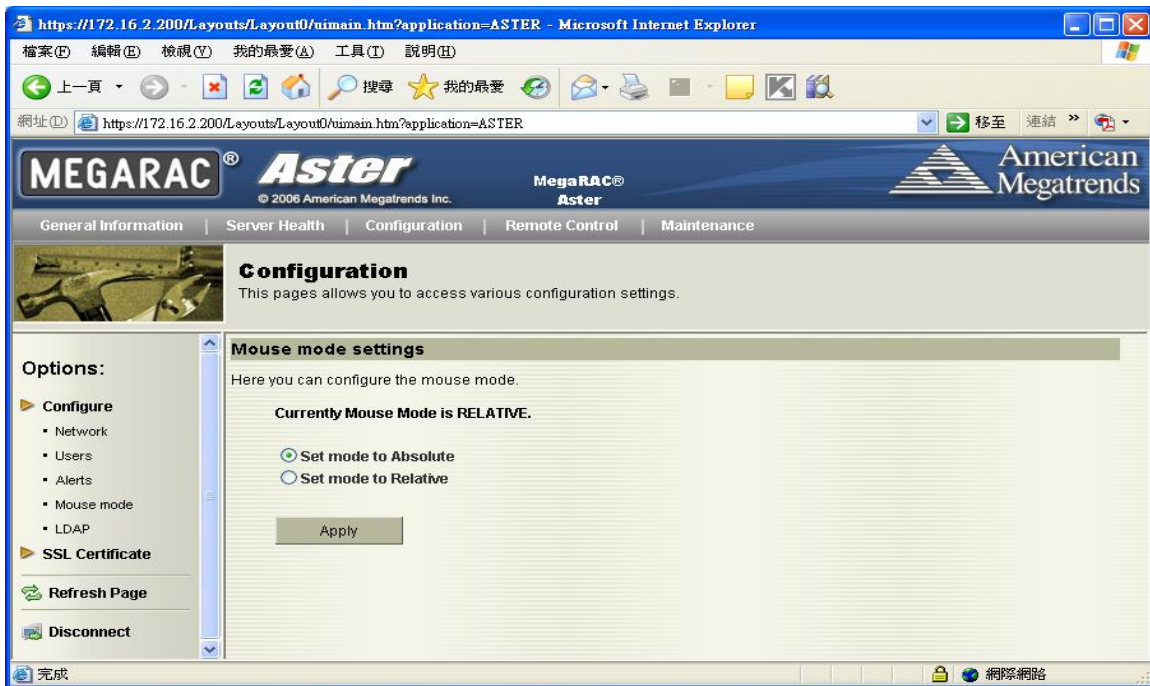
The screenshot shows the Aster Configuration page in a Microsoft Internet Explorer browser. The page title is "MEGARAC® Aster" and the URL is "https://172.16.2.200/Layouts/Layout0/ainmain.htm?application=ASTER". The page has a navigation menu with "General Information", "Server Health", "Configuration", "Remote Control", and "Maintenance". The "Configuration" section is active, and the "Alerts" option is selected in the sidebar. The main content area displays a table of alert destinations with columns for "Alert #", "Alert Level", and "Destination Address".

Below is a list of the configured alert destinations. To delete an alert, select it and press Delete. To create a new alert, click the option in the sidebar.

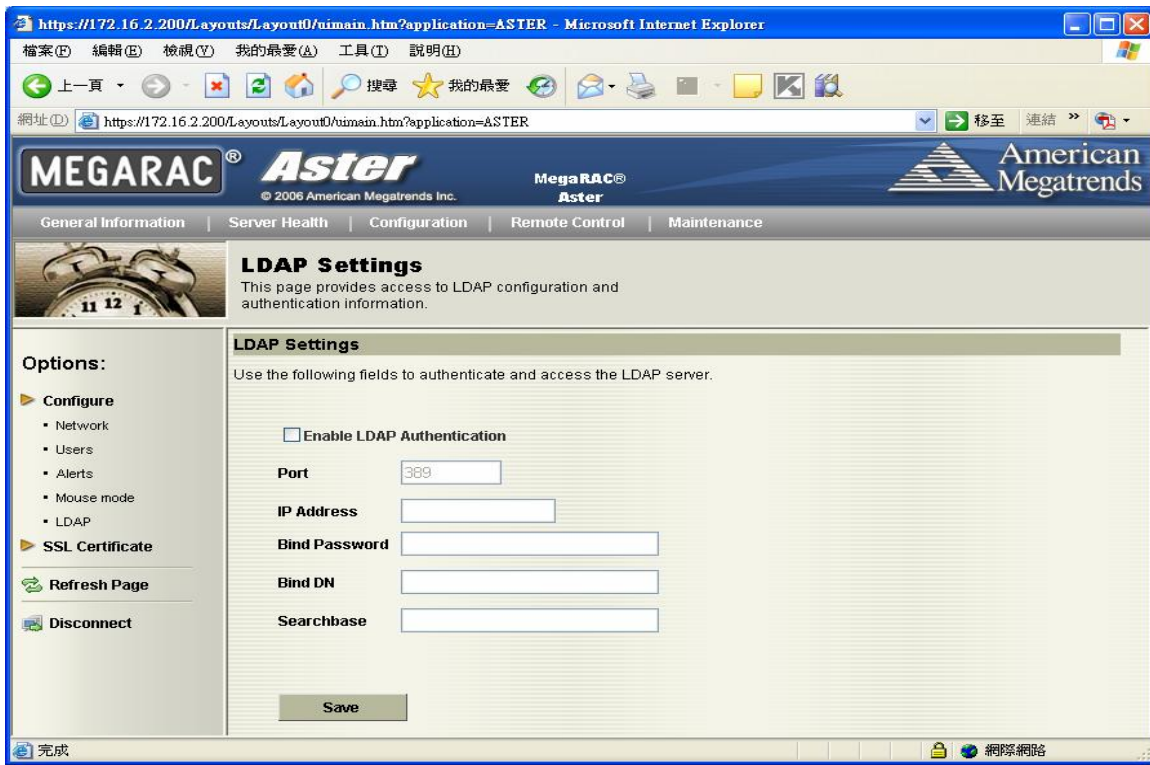
Alert #	Alert Level	Destination Address
1	Disable All	0.0.0.0
2	Disable All	0.0.0.0
3	Disable All	0.0.0.0
4	Disable All	0.0.0.0
5	Disable All	0.0.0.0
6	Disable All	0.0.0.0
7	Disable All	0.0.0.0
8	Disable All	0.0.0.0
9	Disable All	0.0.0.0
10	Disable All	0.0.0.0
11	Disable All	0.0.0.0
12	Disable All	0.0.0.0
13	Disable All	0.0.0.0
14	Disable All	0.0.0.0
15	Disable All	0.0.0.0

At the bottom of the table, there are two buttons: "Modify" and "Send Test Alert".

4. Mouse mode: There are two types for control mouse.

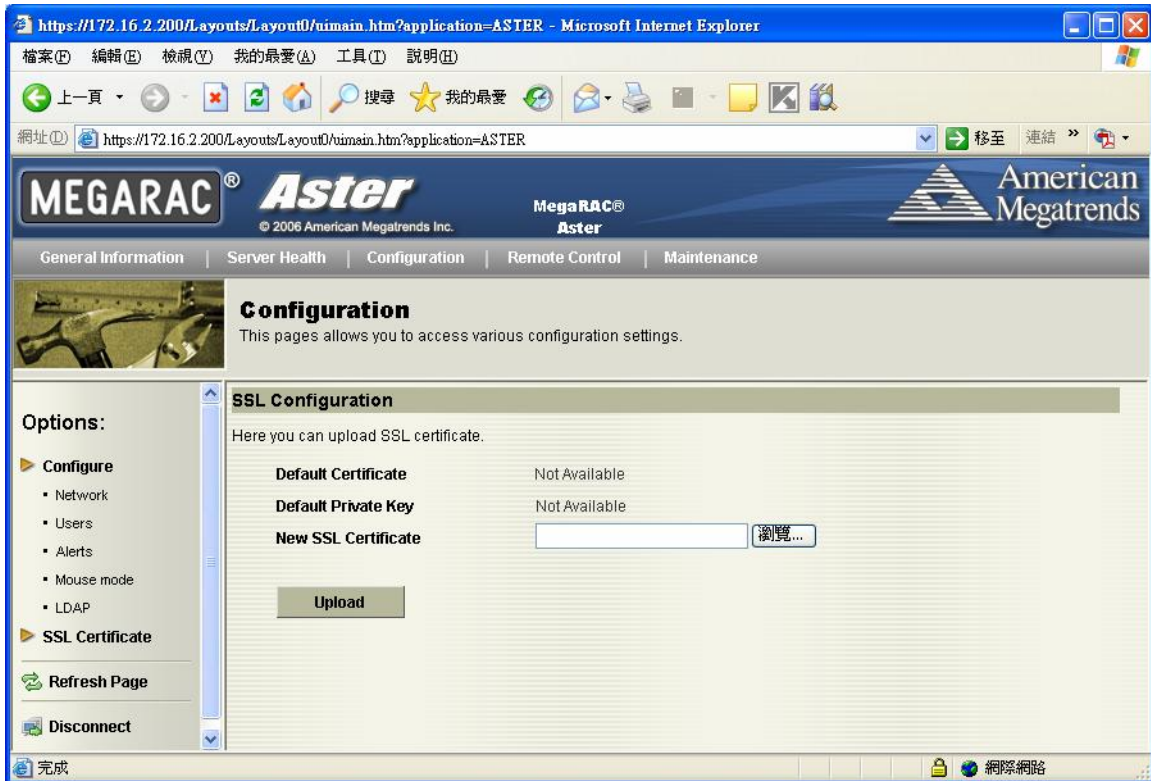


5. LDAP: It can download user list of LDAP server then create ASTER user account from this list directly.



SSL Certificate

You can load your SSL file for encryption.



Remote Control



This menu item allows you to start a Remote Console session with the host system.

Redirection

The most powerful feature of your ASTER is the ability to redirect the host system's console. To redirect the host system's console is the ability to manage your host system as if it were physically in front of you, but not.

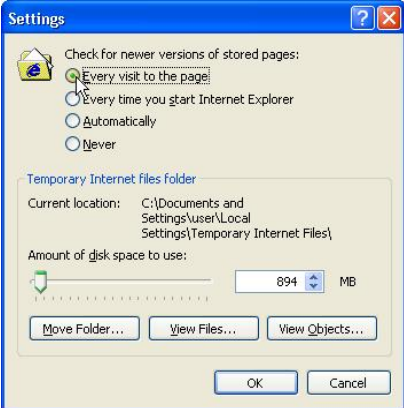
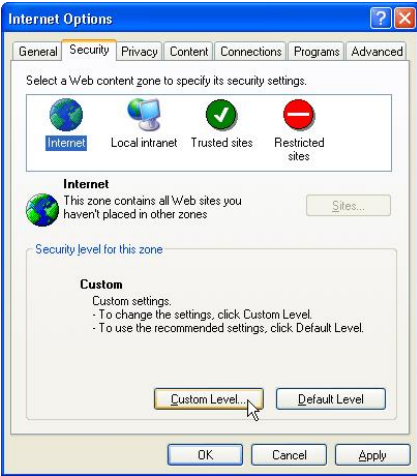
Setting up Internet Explorer

You must first setup your Internet browser before you can redirect the host system's console.

Step	Description
1	<p>Open <i>Internet Options</i>. To get there, open your Internet Explorer browser, left click <i>Tools</i> and then <i>Internet Options</i>.</p>  <p>The screenshot shows the Microsoft Internet Explorer browser window. The 'Tools' menu is open, and 'Internet Options...' is highlighted by the mouse cursor. Other menu items visible include 'Mail and News', 'Synchronize...', and 'Windows Update'.</p>
2	<p>The <i>Internet Options</i> window opens. Left click the <i>Settings</i> button.</p>  <p>The screenshot shows the 'Internet Options' dialog box. The 'General' tab is selected. The 'Settings...' button under the 'Temporary Internet files' section is highlighted by the mouse cursor. Other sections include 'Home page' and 'History'.</p>



Redirection,

Setting up Internet Explorer,

Step	Description
3	<p>The <i>Settings</i> window opens. Left click the <i>Every visit to the page</i> button or <i>Automatically</i> button. Left click the <i>OK</i> button to apply the change and to go back to the <i>Internet Options</i> window.</p>  <p>Note: Other settings can cause old data to be displayed when performing operations on the ASTER.</p>
4	<p>Next, you must setup Internet Explorer to allow the downloading of Signed ActiveX controls and also allow it to run Signed ActiveX controls. To do this, left click the <i>Security</i> tab and then the <i>Custom Level</i> button.</p>  <p>Note: In Microsoft Windows 2003 server operating systems, the default security setting is <i>High</i>, and this disables many items (besides the Active X ones mentioned in this document) that are necessary to even access the ASTER GUI. The security settings for a Microsoft Windows 2003 server operating system remote client must be on <i>Medium</i> or <i>Low</i>.</p>

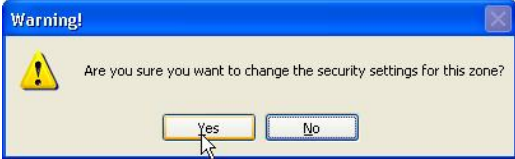

Redirection,

Setting up Internet Explorer,

Step	Description
5	<p>The <i>Security Settings</i> window opens. Left click the <i>Enable</i> button under the <i>Download signed ActiveX controls</i> section.</p>  <p>The screenshot shows the 'Security Settings' dialog box. Under the 'ActiveX controls and plug-ins' section, the 'Download signed ActiveX controls' option is selected. The 'Enable' radio button is highlighted with a blue selection box. Other options include 'Disable' and 'Prompt'. Below the settings, there is a 'Reset custom settings' section with a 'Reset to: Medium' dropdown and a 'Reset' button. At the bottom are 'OK' and 'Cancel' buttons.</p>
6	<p>Scroll down and left click the <i>Enable</i> button under the <i>Run ActiveX controls and plug-ins</i> section. Left click the <i>OK</i> button.</p>  <p>The screenshot shows the 'Security Settings' dialog box. Under the 'Run ActiveX controls and plug-ins' section, the 'Enable' radio button is highlighted with a blue selection box. Other options include 'Administrator approved', 'Disable', and 'Prompt'. Below this section are 'Script ActiveX controls marked safe for scripting' and 'Downloads' sections. At the bottom are 'Reset custom settings' and 'Reset to: Medium' options, and 'OK' and 'Cancel' buttons.</p>

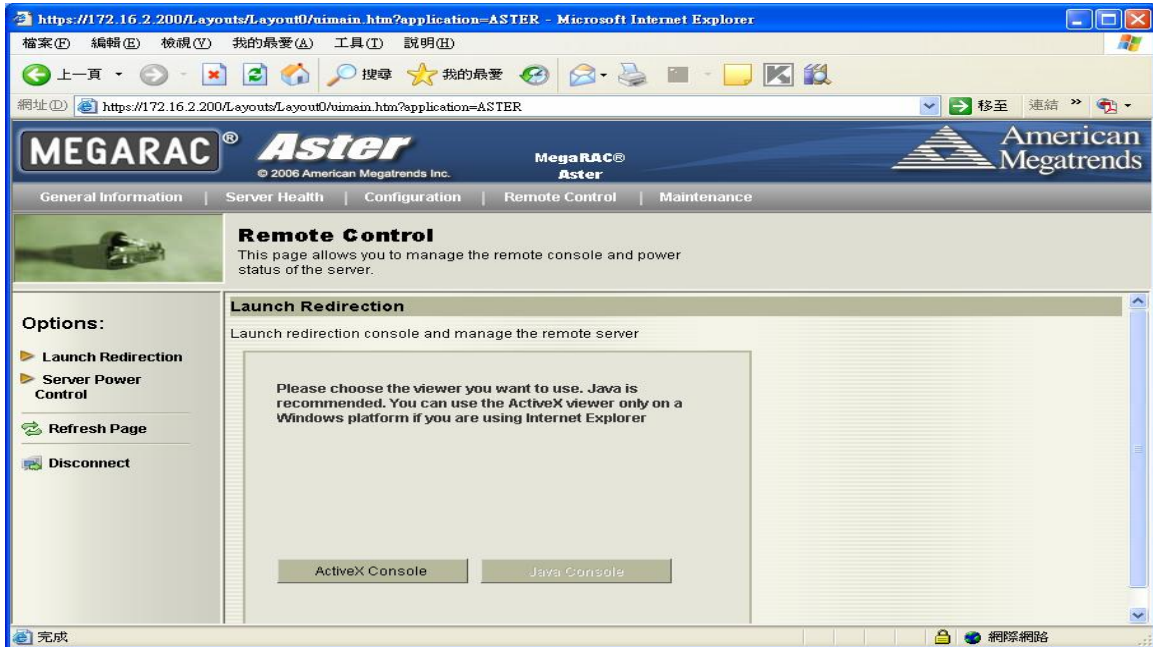
Redirection,

Setting up Internet Explorer,

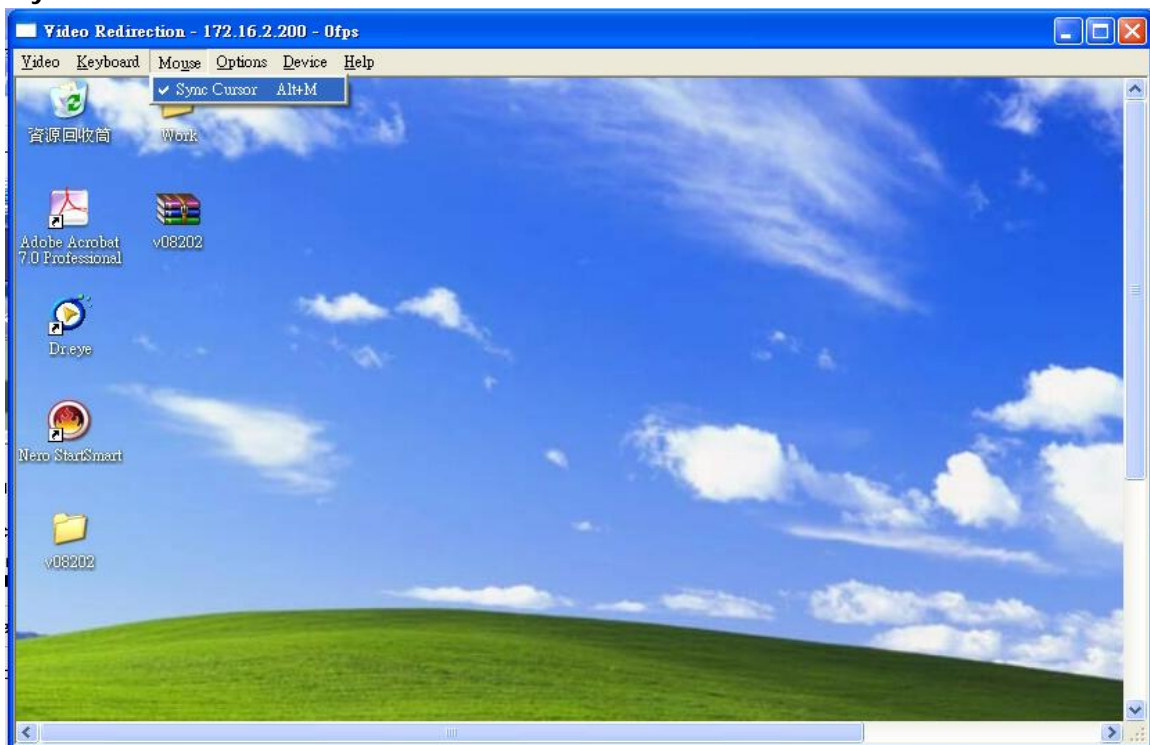
Step	Description
7	<p>You are prompted with a <i>Warning</i> window. Left click the <i>Yes</i> button to accept the changes to the Internet zone and to go back to the <i>Internet Options</i> window.</p>  <p>The image shows a Windows warning dialog box titled "Warning!". It contains a yellow warning triangle icon and the text "Are you sure you want to change the security settings for this zone?". At the bottom, there are two buttons: "Yes" and "No". A mouse cursor is pointing at the "Yes" button.</p>
8	<p>Left click the <i>Apply</i> button and then the <i>OK</i> button to make the changes.</p>  <p>The image shows the "Internet Options" dialog box with the "General" tab selected. The "Home page" section has an address field containing "http://www.*****.com". The "Temporary Internet files" section has buttons for "Delete Cookies...", "Delete Files...", and "Settings...". The "History" section has a "Days to keep pages in history" dropdown set to "1" and a "Clear History" button. At the bottom, there are buttons for "Colors...", "Fonts...", "Languages...", "Accessibility...", "OK", "Cancel", and "Apply". A mouse cursor is pointing at the "Apply" button.</p> <p>Note: You must restart Internet Explorer before the changes take effect.</p> <p>Note: <i>Remote Console</i> cannot run with any other security settings in Internet Explorer.</p>

Redirection,

1. **Launch Redirection:** It can do the console redirection by ActiveX mode and Java mode. ActiveX mode is for user of windows OS. Java mode is for user of Linux OS.

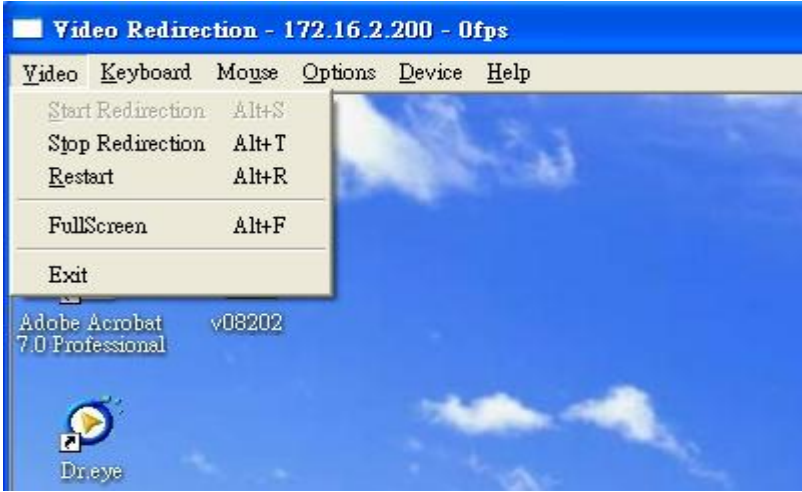


- Click "Active console", it shows the console redirection screen. And click "Mouse" item to Sync Cursor.




Redirection,

Console Redirection Window

Dropdown Menu Item	Description
<p>Console Redirection</p>	 <p>This dropdown menu contains the following dropdown menu items:</p>
<i>Start Redirection</i>	This menu item can be used to begin <i>Console Redirection</i> .
<i>Stop Redirection</i>	This menu item can be used to halt <i>Console Redirection</i> .
<i>Restart</i>	This menu item can be used to stop <i>Console Redirection</i> and then start <i>Console Redirection</i> again.
<i>Full Screen</i>	This menu item can be used to view the <i>Console Redirection</i> In <i>Full Screen</i> mode. Note: Set your client system's screen resolution to 1024 x768 so that you can view the host system in true full screen.
<i>Exit</i>	Exit console redirection.

Redirection,



Console Redirection Window,

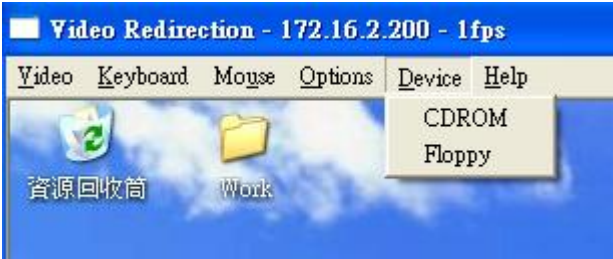

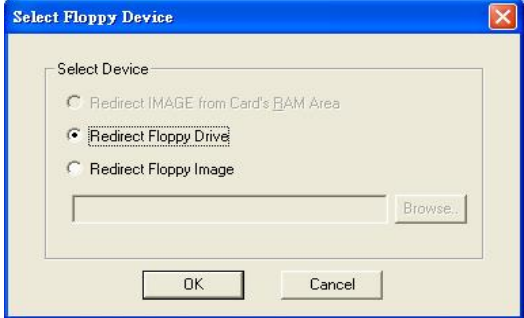

Dropdown Menu Item	Description
Keyboard	 <p style="text-align: center;">This dropdown menu contains the following dropdown menu items:</p>
<i>Hold Right CTRL Key</i>	This menu item can be used to act as the right-side <CTRL> key when in <i>Console Redirection</i> .
<i>Hold Right ALT Key</i>	This menu item can be used to act as the right-side <ALT> key when in <i>Console Redirection</i> .
<i>Hold Left CTRL Key</i>	This menu item can be used to act as the left-side <CTRL> key when in <i>Console Redirection</i> .
<i>Hold Left ALT Key</i>	This menu item can be used to act as the left-side <ALT> key when in <i>Console Redirection</i> .
<i>Left Windows Key</i>	This menu item can be used to access the left-side <WINDOWS> key during a Console Redirection session. The following actions can be performed: <ul style="list-style-type: none"> 3. <i>Hold Down</i> 4. <i>Press and Release</i>
<i>Right Windows Key</i>	This menu item can be used to access the right-side <WINDOWS> key during a Console Redirection session. The following actions can be performed: <ul style="list-style-type: none"> 5. <i>Hold Down</i> 6. <i>Press and Release</i>
<i>ALT+CTRL+DEL</i>	This menu item can be used to act as if you depressed the <CTRL>, <ALT> and keys down simultaneously on the host system that you are redirecting.
<i>Full Keyboard</i>	The client keyboard is full control to host keyboard including function key.

Cont'd

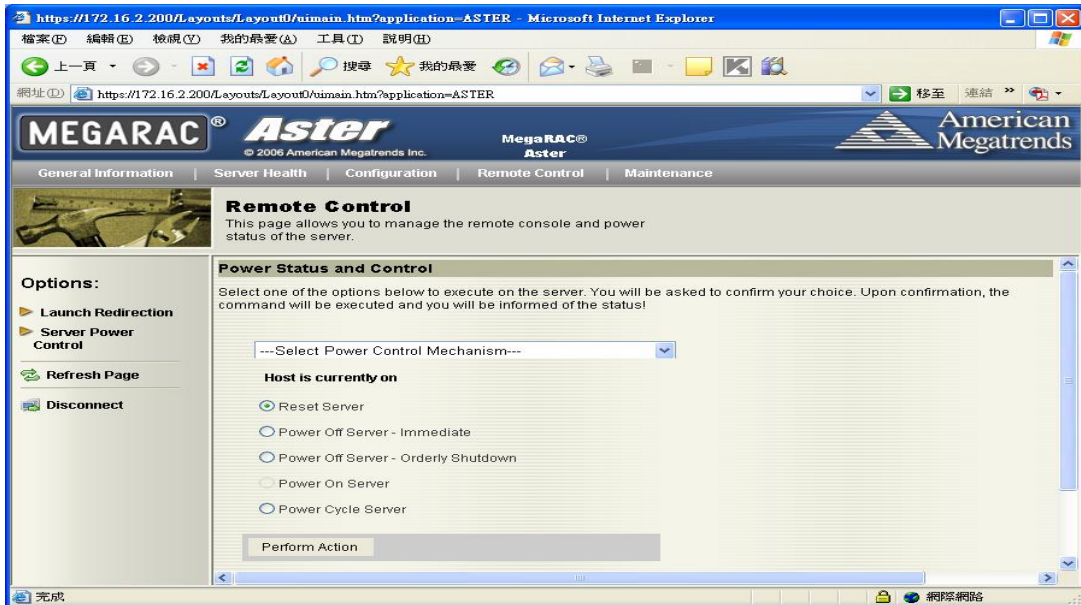
Redirection,

Console Redirection Window,

Dropdown Menu Item	Description
Mouse	<p data-bbox="711 390 1175 415">Sync Cursor for remote control mouse.</p> 
Video Engine Configuration	<p data-bbox="565 737 1227 793">It can be regulated the video performance for network bandwidth.</p>  <p data-bbox="574 1115 1239 1801">Video Engine Configuration</p> <ul style="list-style-type: none">Hide Hardware Cursor <input checked="" type="checkbox"/>Transmit Video Changes Only <input checked="" type="checkbox"/>Dual Compression <input checked="" type="checkbox"/> <p>DCT Quantization Quality (1-30): 16 Best Quality</p> <p>DCT Quantization Table Select (0-7): 7 Best Quality</p> <p>Sharp Block DCT Quantization Quality (1-30): 16 Best Quality</p> <p>Sharp Block DCT Quantization Table Select (0-7): 7 Best Quality</p> <p>OK Cancel</p>

Dropdown Menu Item	Description
Device	<p data-bbox="456 254 857 281">Virtual device for remote control.</p>  <p data-bbox="456 569 1279 625">CDROM redirection: This menu item can be used to start or stop the redirection of the CD-ROM drive.</p>  <p data-bbox="456 961 1279 1018">Floppy redirection: This menu item can be used to start or stop the redirection of the floppy drive.</p> 
Help	<p data-bbox="456 1451 1385 1507">This dropdown menu item contains the <i>About Remote Console Application Control</i> menu item that allows you to view copyright information.</p> 

2. **Server Power Control:** This menu item allows you to power on, power off, power cycle, and reset the host system. You can through IPMB bus or power control feature connector to do command.



Maintenance

This menu item allows you to update your ASTER's firmware.

