aTCA System Manager

User's Manual

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Revision History

Revision	Release Date	Description of Change(s)
2.00	2009/03/10	Initial Release

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Preface

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Using this Manual

Audience and Scope

The aTCA System Manager Installation and Interface User's Manual is intended for hardware and software technicians with knowledge of AdvancedTCA shelf manager systems and network computer systems.

Manual Organization

This manual is organized as follows:

Preface: Presents important copyright notifications, disclaimers, trademarks, and associated information on the proper understanding and usage of this document and its associated product(s).

Chapter 1, Introduction: Introduces the aTCA System Manager, its technical specifications, operating requirements and equipment.

Chapter 2, Installation: Describes the hardware and software requirements of the aTCA System Manager and describes how to install the System Manager.

Chapter 3, Getting Started - aTCA-8505: Describes how to access the aTCA System Manager User Interface and its functions when used with an ADLINK aTCA-8505 chassis.

Chapter 4, Getting Started - aTCA-8214: Describes how to access the aTCA System Manager User Interface and its functions when used with an ADLINK aTCA-8214 chassis.

Chapter 5, Troubleshooting: Tips and solutions to possible system errors.

Getting Service: Contact information for ADLINK's worldwide offices.

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.


NOTE:

Additional information, aids, and tips that help users perform tasks.


CAUTION:

Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.


WARNING:

Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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Reference Documentation

The following list of documents may be used as reference materials to support installation, configuration and/or the operation of the ADLINK aTCA System Manager.

Vendor(s)	Title	Rev.
ADLINK Technology, Inc.	aCMM-2000 aTCA Management Module	2.00
Intel®, Hewlett-Packard®, NEC, & Dell™	Intelligent Platform Management Interface (IPMI) Specification v 1.5	1.1
PCI Industrial Computers Manufacturers Group (PICMG®)	AdvancedTCA® PICMG® 3.0 Advanced TCA® Base Specification	2.0 ECN-002
Red Hat®, Inc.	Red Hat® Linux® x86 Installation Guide	N/A
Red Hat®, Inc.	Fedora® Core 5 Installation Guide	N/A
Zend® Technologies Ltd.	User Guide: Zend Optimizer™	3.0

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Table of Contents

aTCA System Manager ..... **i**

Preface ..... **iii**

Table of Contents ..... **vii**

List of Figures ..... **xi**

1 Introduction **1**

1.1 Overview 1
1.2 Functional Block Diagram 2
1.3 Specifications 3
1.4 Features 4

2 Installation **5**

2.1 Hardware Requirements 5
2.2 Software Requirements 6
2.3 Installing Red Hat Linux 9 7
2.4 Installing Fedora Core 5 11
2.5 Installing aTCA System Manager Software 16
2.5.1 Installing to a New Copy of Linux 17
Install Tools 17
Install System Manager 25
2.5.2 Installing to an Existing Copy of Linux 26
2.6 Verifying MySQL and SNMP Packages 28
2.7 Network Security 29
2.7.1 Basic Firewall Security 30
2.7.2 Optimal Firewall Security 31

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3 Getting Started - aTCA-8505 33
3.1 System Manager Startup 33
3.2 Login 34
3.2.1 Default Sensor Settings Screen 36
3.2.2 System Manager Main Screen 37
3.3 Navigating the User Interface 38
3.3.1 Quick Links 39
3.4 ATCA Boards 41
3.4.1 Getting ATCA Board Information 42
3.4.2 ATCA Board Settings 43
3.4.3 Configuring ATCA Board Sensors 45
3.5 Shelf Managment Controller 46
3.5.1 Getting ShMC Module Information 47
3.5.2 ShMC Module Settings 48
3.5.3 Active CMM Sensor Data 49
3.6 Chassis Information 50
3.6.1 Chassis Sensor Data 50
3.6.2 Chassis Temperature Information & Settings 51
3.6.3 Fan Tray Information 53
3.6.4 Fan Tray Settings 54
3.7 Platform Event Filtering (PEF) 55
3.7.1 Setting PEF with System Manager 55
3.7.2 Setting PEF with Shelf Manager Command Line 58
3.7.3 Monitoring SNMP Trap Alerts 58

4 Getting Started - aTCA-8214 61
4.1 System Manager Startup 61
4.2 Login 62
4.2.1 Default Sensor Settings Screen 64
4.2.2 System Manager Main Screen 66
4.3 Navigating the User Interface 67
4.3.1 Quick Links 69

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4.4 ATCA Boards 71
4.4.1 Getting ATCA Board Information 72
4.4.2 ATCA Board Settings 73
4.4.3 Configuring ATCA Board Sensors 75
4.5 Shelf Managment Controller 77
4.5.1 Getting ShMC Module Information 77
4.5.2 ShMC Module Settings 79
4.6 Chassis Information 80
4.6.1 Chassis Sensor Data 81
4.6.2 Fan Tray Information 82
4.6.3 Fan Tray Settings 82
4.7 Platform Event Filtering (PEF) 83
4.7.1 Setting PEF with System Manager 83
4.7.2 Setting PEF with Shelf Manager Command Line 86
4.7.3 Monitoring SNMP Trap Alerts 86

5 Troubleshooting 89

Getting Service 91

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List of Figures

Figure 3-1: Login Screen 35
Figure 3-2: Default Sensor Settings Screen..... 36
Figure 3-3: System Manager Main Screen 37
Figure 3-4: Definitions & Color Codes Screen 40
Figure 3-5: ATCA Board Sensor Settings Screen..... 43
Figure 3-6: ATCA Board Sensor Configuration Screen 45
Figure 3-7: ShMC Module Sensor Settings Screen 48
Figure 3-8: Chassis Temp Critical Threshold Screen 52
Figure 3-9: Fan Tray Level Settings Screen 54
Figure 3-10: PEF Settings Screen 56
Figure 4-1: Login Screen 63
Figure 4-2: Default Sensor Settings Screen..... 65
Figure 4-3: System Manager Main Screen 66
Figure 4-4: Definitions & Color Codes Screen 70
Figure 4-5: ATCA Board Sensor Settings Screen..... 73
Figure 4-6: ATCA Board Sensor Configuration Screen 75
Figure 4-7: ShMC Module Sensor Settings Screen 79
Figure 4-8: Fan Tray Level Settings Screen 82
Figure 4-9: PEF Settings Screen 84
Figure 4-10: Example of aTCA-8214 with Slot 8 Alarm Alert..... 88

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1 Introduction

This chapter introduces the ADLINK aTCA System Manager, its technical specifications, features, operating requirements and associated equipment.

1.1 Overview

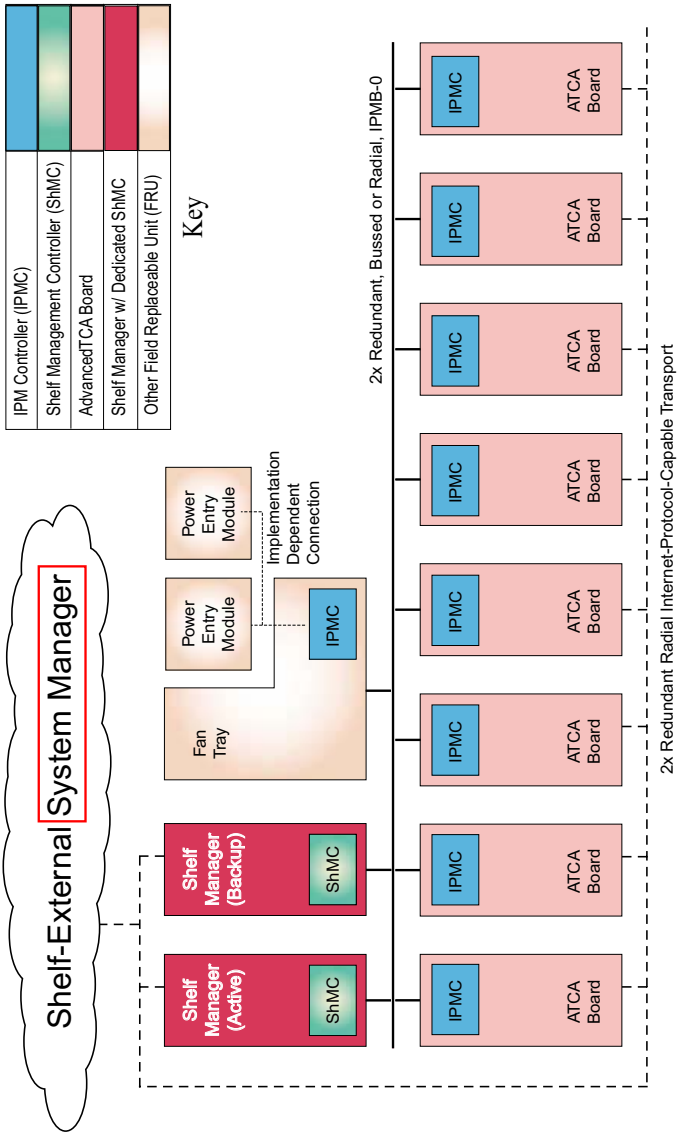
The ADLINK aTCA System Manager is an IP-based computer application which runs on a Linux web-server based on the TCP/IP protocol suite.

The System Manager is designed to monitor and manage all Chassis Management Modules (CMM) and Advanced Telecom Computing Architecture (AdvancedTCA or ATCA) board sensor data installed on an AdvancedTCA rackmount system.

The ADLINK aTCA System Manager is an IP-based system manager and is more powerful than standard shelf managers as it frees users from having to memorize cryptic commands. The ADLINK aTCA System Manager is also unique in that it offers users a simple and intuitive graphical user interface for monitoring and managing AdvancedTCA rackmount systems.

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1.2 Functional Block Diagram



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1.3 Specifications

The ADLINK aTCA System Manager is designed based on PICMG 3.0 Revision 2.0 AdvancedTCA® Base Specification (ECN-002).

The PICMG 3.0 core specification specifies board, backplane and shelf mechanics, power distribution and the connectivity required for system management of ATCA chassis.

The specification also defines standardized, abstracted interfaces to platform management subsystems including the definition of interfaces for extending platform management between boards within the main chassis, and between multiple chassis.



All communications are based on SNMPv2. The ADLINK aTCA System Manager does not support SNMPv1 or SNMPv3.

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1.4 Features

The ADLINK aTCA System Manager is a full-featured user interface that incorporates web browser based protocols to deliver an easy to learn and effective user experience.

Graphical User Interface: Unlike shelf manager systems that rely on command line interfaces and CGI applications, the ADLINK aTCA System Manager is designed so users do not have to memorize IPMB addresses, sensor numbers and arbitrary command line codes. The graphical user interface (GUI) directly resembles the AdvancedTCA chassis and all functions, alarms and system data can be called and edited directly from the GUI.

Remote User Access: Because of the TCP/IP nature of the System Manager's connectivity, any authorized terminal or client may access an AdvancedTCA chassis for user flexibility, especially in co-location applications.

One Click Access: Through the GUI, by clicking on any CMM or ATCA board, a user may access that boards' information directly through a pop-up window. A short list of available System Manager functions include:

1. Sensor Data Monitor
2. Temperature/Voltage Threshold Alerts
3. Hot Swap M Status Alert
4. Platform Event Filter (PEF) Settings
5. SDR Temperature and Voltage Threshold Settings
6. CMM Control
7. ATCA Board Control
8. Fan Tray Control

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2 Installation

This chapter introduces the hardware and software requirements of the aTCA System Manager and describes how to install the System Manager.

2.1 Hardware Requirements

The ADLINK aTCA System Manager is a powerful interface yet does not require a high performance computing platform on which to install or operate.

The following minimum specifications should be taken into consideration when installing the aTCA System Manager to a host computer.

CPU: 400 MHz Pentium II

Hard Drive (HD): 10.0 GB

Memory (RAM): 512 MB

Optical Drive: 24X CD-Rom

Chipset: Standard X86 Architecture

Gigabit Ethernet: One or more LAN port(s)

Graphics: VGA resolution of 800 x 600 (1024 x 768 optimal)

I/O: Standard Keyboard and Mouse

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2.2 Software Requirements

The following software is ***necessary*** and must be installed for the ADLINK aTCA System Manager Server/Client.

On the target server:

- Red Hat Linux 9.0 or Fedora Core 5
- GCC Compiler *(installed by default with Red Hat Linux 9 or Fedora Core 5)*

On Client PC: Microsoft Internet Explorer 5 or Mozilla Firefox 1 (or more recent version)


NOTE:

You ***MUST*** allow pop-up windows in your browser settings to fully access the System Manager UI.


NOTE:

Users wishing to install the ADLINK aTCA System Manager on other Linux distributions may do so, however, this software is only verified to properly function with Red Hat Linux 9.0 and Fedora Core 5. Installing on other Linux distributions is not supported in this documentation and the user should have advanced knowledge of the Linux fundamentals to use the aTCA System Manager with a non-supported Linux distribution.

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2.3 Installing Red Hat Linux 9

Power on the computer and insert the first installation disc into the CD or DVD drive. A boot screen appears, with a boot: prompt at the bottom.

Press < `Enter` > to install in graphical mode.

NOTE:

Red Hat Linux 9 may be installed without a CD using NFS, FTP or HTTP online server support. To view alternative installation instructions please refer to the Red Hat Linux 9 online user's manual: http://www.redhat.com/docs/manuals/linux/

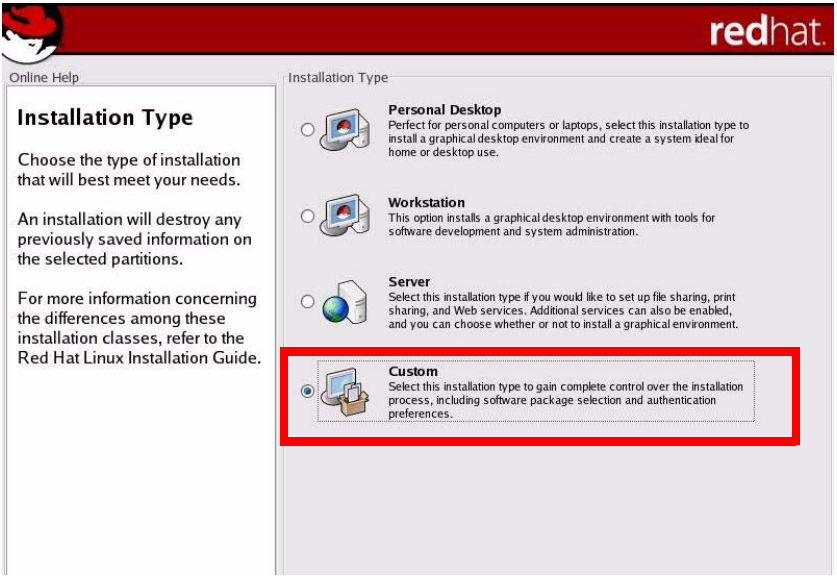


NOTE:

The install procedure for Red Hat 9 on X86 computers has many features and options for configuring and optimizing the system. This manual only overviews the key steps to installing the appropriate software environment for use with the ADLINK aTCA System Manager. Please refer to the Red Hat Linux x86 Installation Guide for detailed Linux installation instructions.

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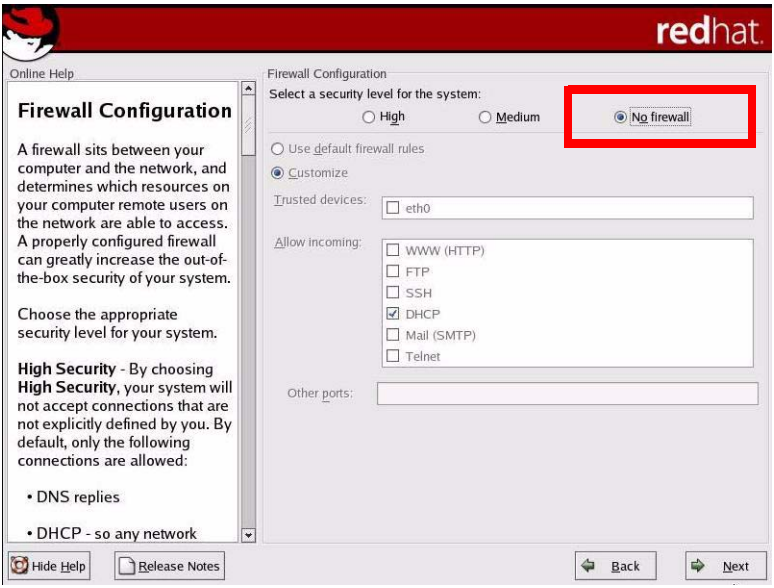
At the **Installation Type** screen, select < `Custom` >.



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At the **Firewall** screen you will be given several choices.

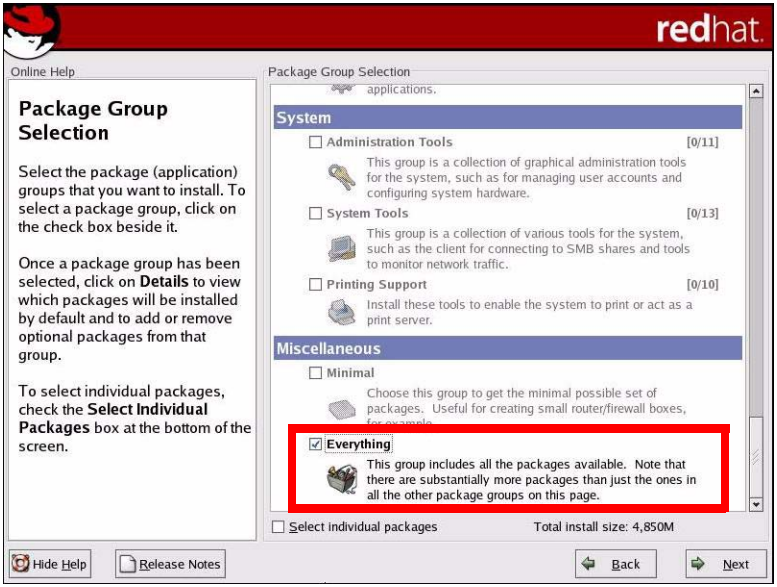
If you are not familiar with Firewall configuration choose < No Firewall >.



If you are experienced with Firewall setup and configuration, set your appropriate security level and open port(s):

```
80 tcp/udp
161 tcp/udp
162 udp
```

At the **Package Group Selection** screen, under the **Miscellaneous** option, select < `Everything` >.



The **Package Group Selection** screen completes the steps critical for installation of the ADLINK aTCA System Manager. Complete the rest of the Red Hat Linux 9 installation process and then go to **Section 2.5 Installing aTCA System Manager Software on page 16** to continue the installation procedure.

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2.4 Installing Fedora Core 5

Power on the computer and insert the first installation disc into the CD or DVD drive. A boot screen appears, with a boot: prompt at the bottom.

Press < `Enter` > to install in graphical mode.

NOTE:

Fedora Core 5 may be installed without a CD using server support. To view alternative installation instructions please refer to the Fedora Core 5 online installation guide: http://docs.fedoraproject.org/install-guide/



NOTE:

The installation procedure for Fedora Core 5 on X86 computers has many features and options specifically for configuring and optimizing the system. This manual only covers the key steps to installing Fedora Core 5 for use with the ADLINK aTCA System Manager. Please refer to the Fedora Core 5 Installation Guide for detailed Linux installation instructions.

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At the **Installation** screen, select < `Software Development` > and < `Customize Now` >.



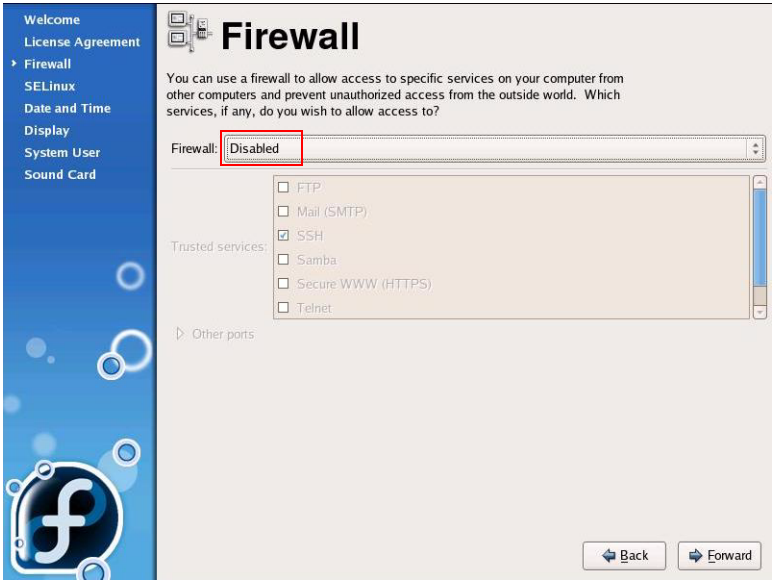
At the **Optional Packages** screen, under the **Development** option, select < `Development Tools` >.



Continue the setup process and complete installation of the remaining Fedora Core 5 components.

After installation you must re-boot the system and you will be asked to select several additional configuration settings. At the welcome screen you will be asked to review the license agreement.

At the **Firewall** screen, select < `Disabled` >.



At the **SELinux** (Security Enhanced) screen, select < `Disabled` >.



The **SELinux** screen completes the steps critical for installation of the ADLINK aTCA System Manager. Complete the rest of the Fedora Core 5 installation process and then go to **Section 2.5 Installing aTCA System Manager Software on page 16** to continue the installation procedure.

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2.5 Installing aTCA System Manager Software

Once you have installed and configured either Red Hat Linux 9 or Fedora Core 5, you may begin installation of the ADLINK aTCA System Manager Software.

The System Manager installation procedure is outlined as follows:

1. Install ADLINK aTCA System Manager package, including:
   - ▷ tools-[date].tgz
   - ▷ system_manager_vx.x.tgz
2. Reboot the target server

The detailed installation procedure is described below.

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2.5.1 Installing to a New Copy of Linux

Download the ADLINK aTCA System Manager Installation software from our company website at:
http://www.adlinktech.com/ccps/system_manager.html

The system manager software package include two compressed files. Please download **tools-[date].tgz** and **system_manager_vx.x.tgz** from from the website.

At the Linux command prompt, perform the following steps:

1. Login as root
2. Place these two compress files in the **/tmp/** directory
3. Please install **tools-[date].tgz** first
4. Then install **system_manager_Vx.xtgz**

Install Tools

At the Linux command prompt, perform the following steps:

```
#tar zxvf tools-[date].tgz
#cd tools
#./install.sh
```

All necessary tools for the system manager will be automatically installed. The total installation process may take up to 30 minutes and requires user attention.

When the system is ready to compile the net-snmp package, it will prompt you to answer several questions to complete the system configuration.

Press < Enter > or < Return > to continue at the command prompt.

The setup and configuration process should resemble the following text:

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```
checking for ipstat.ips_cantforward... no
checking for ipstat.ips_cantfrag... no
checking for ipstat.ips_delivered... no
checking for ipstat.ips_fragdropped... no
checking for ipstat.ips_fragtimeout... no
checking for ipstat.ips_fragmented... no
checking for ipstat.ips_localout... no
checking for ipstat.ips_noproto... no
checking for ipstat.ips_noroute... no
checking for ipstat.ips_odropped... no
checking for ipstat.ips_ofragments... no
checking for ipstat.ips_reassembled... no
checking for des_ks_struct.weak_key... no
checking if sysctl can read kernel information... no
checking whether TCP timers depend on `hz'... no
checking if you have run configure before...
************** Configuration Section **************

     You are about to be prompted with a series of
questions. Answer them carefully, as they determine
how the SNMP agent and related applications are to
function.

     After the configure script finishes, you can
browse the newly created config.h file for further -
less important - parameters to modify. Be careful if
you re-run configure though, since config.h will be
overwritten.

-Press return to continue-
disabling above prompt for future runs... yes
checking Default version of SNMP to use...
```

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*** Default SNMP Version:

Starting with Net-SNMP 5.0, you can choose the default version of the SNMP protocol to use when no version is given explicitly on the command line, or via an 'snmp.conf' file. In the past this was set to SNMPv1, but you can use this to switch to SNMPv3 if desired. SNMPv3 will provide a more secure management environment (and thus you're encouraged to switch to SNMPv3), but may break existing scripts that rely on the old behaviour. (Though such scripts will probably need to be changed to use the '-c' community flag anyway, as the SNMPv1 command line usage has changed as well.).

At this prompt you can select "1", "2" (for SNMPv2c), or "3" as the default version for the command tools (snmpget, ...) to use. This can always be overridden at runtime using the -v flag to the tools, or by using the "defVersion" token in your snmp.conf file.

Default version of SNMP to use (3):

setting Default version of SNMP to use to... 3

checking System Contact Information...

*** System Contact Information:

Describes who should be contacted about the host the agent is running on. This information is available in the MIB-II tree. This can also be over-ridden using the "syscontact" syntax in the agent's configuration files.

System Contact Information (root@):

setting System Contact Information to... root@

checking System Location...

*** System Location:

Describes the location of the system. This information is available in the MIB-II tree. this can

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```
also be over-ridden using the "syslocation" syntax in
the agent's configuration files.


System Location (Unknown):
setting System Location to...  Unknown
checking Location to write logfile...


*** Logfile location:
     Enter the default location for the snmpd agent to
dump information & errors to.  If not defined (enter
the keyword "none" at the prompt below) the agent will
use stdout and stderr instead.


(Note: This value can be over-ridden using command
line options.)

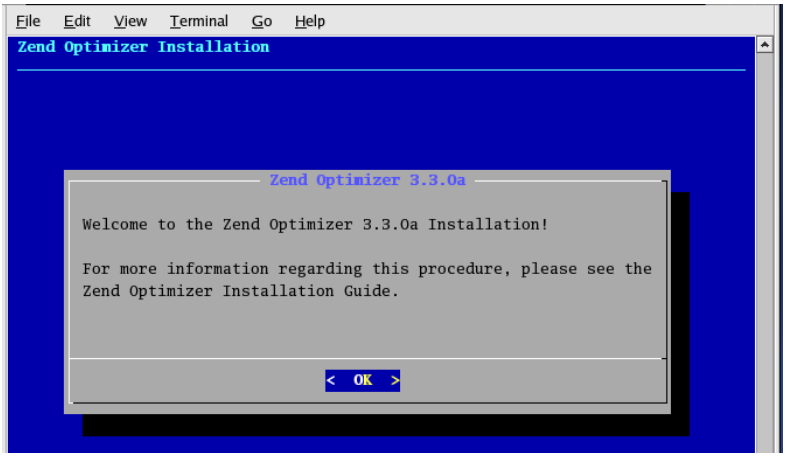

Location to write logfile (/var/log/snmpd.log):
setting Location to write logfile to...  /var/log/snmpd.log
checking Location to write persistent information...

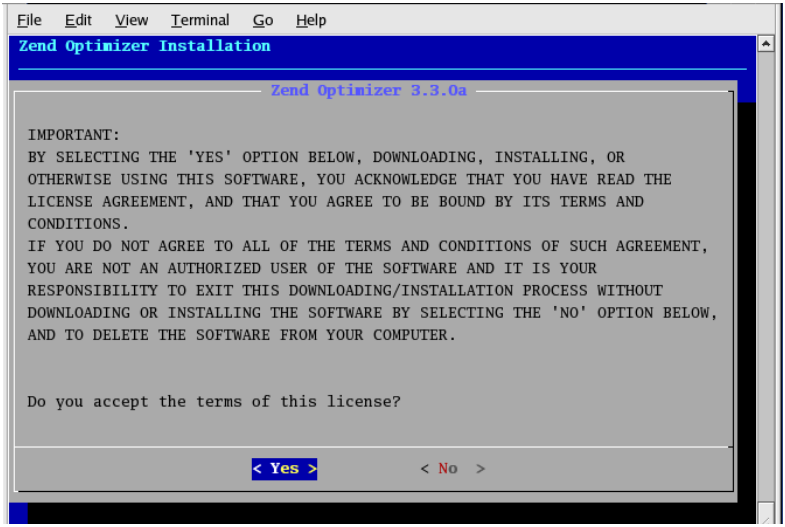

*** snmpd persistent storage location:
     Enter a directory for the SNMP library to store
persistent data in the form of a configuration file.
This default location is different than the old
default location (which was for ucd-snmp).  If you stay
with the new path, I'll ask you in a second if you wish
to copy your files over to the new location (once
only).  If you pick some other path than the default,
you'll have to copy them yourself. There is nothing
wrong with picking the old path (/var/ucd-snmp) if
you'd rather.

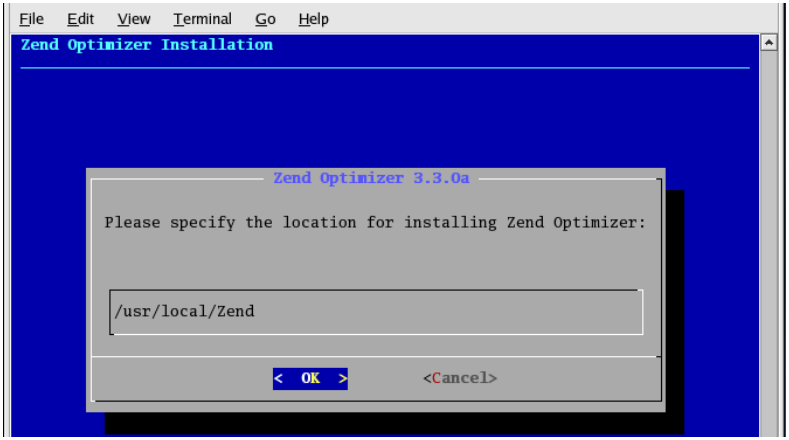

Location to write persistent information (/var/net-snmp):
```

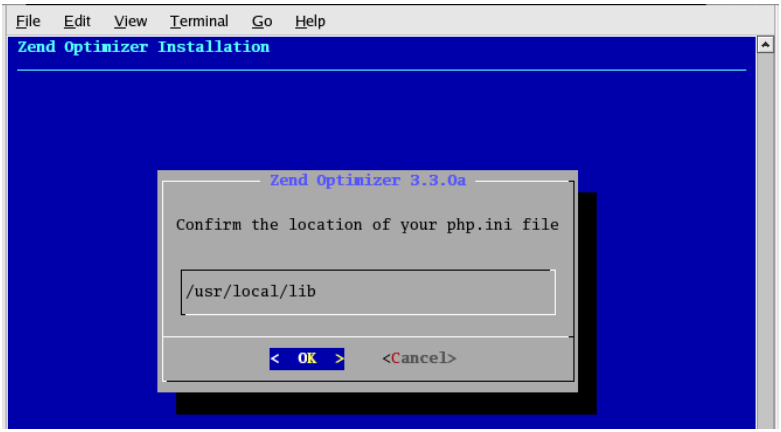
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Depending on your system hardware performance, the remaining installation may take several more minutes. Several additional software packages will automatically install on your system followed by the Zend Optimizer™ installation. Follow the on-screen instructions to complete these processes.

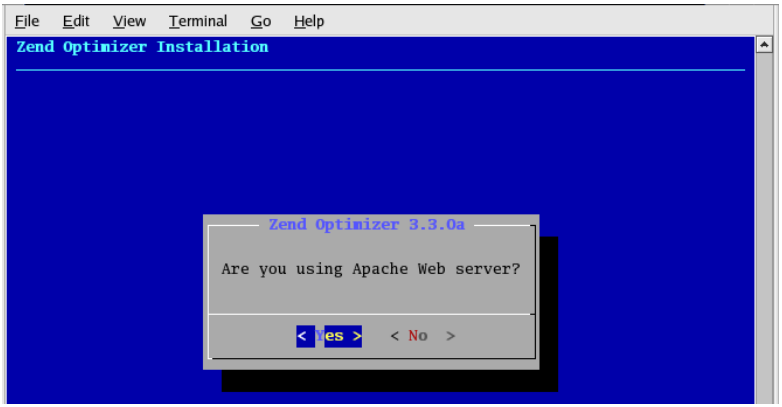


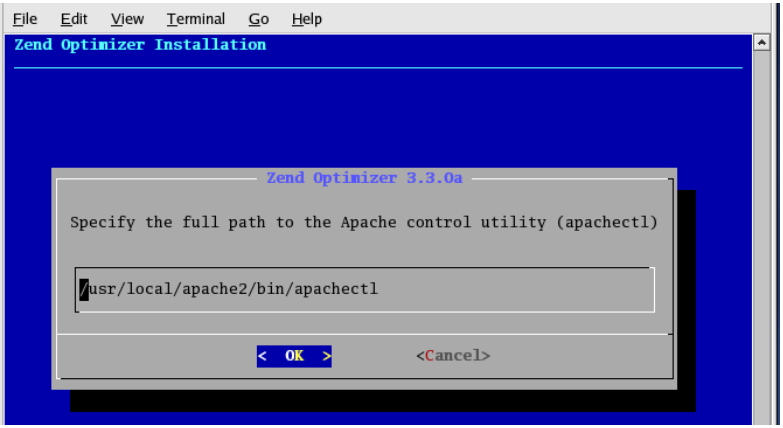


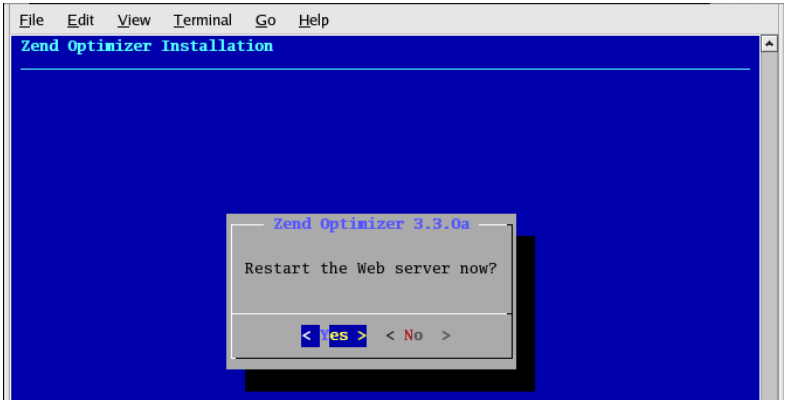


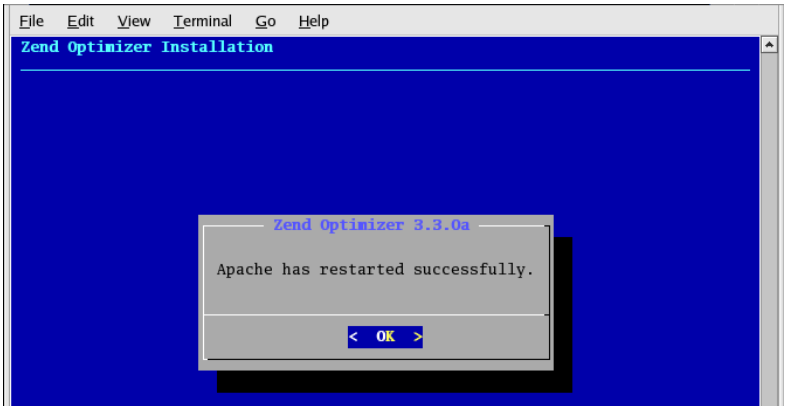


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File Edit View Terminal Go Help
Zend Optimizer Installation
Zend Optimizer 3.3.0a
Are you using Apache Web server?
< Yes >
< No >


File Edit View Terminal Go Help
Zend Optimizer Installation
Zend Optimizer 3.3.0a
Specify the full path to the Apache control utility (apachectl)
/usr/local/apache2/bin/apachectl
< OK >
<Cancel>





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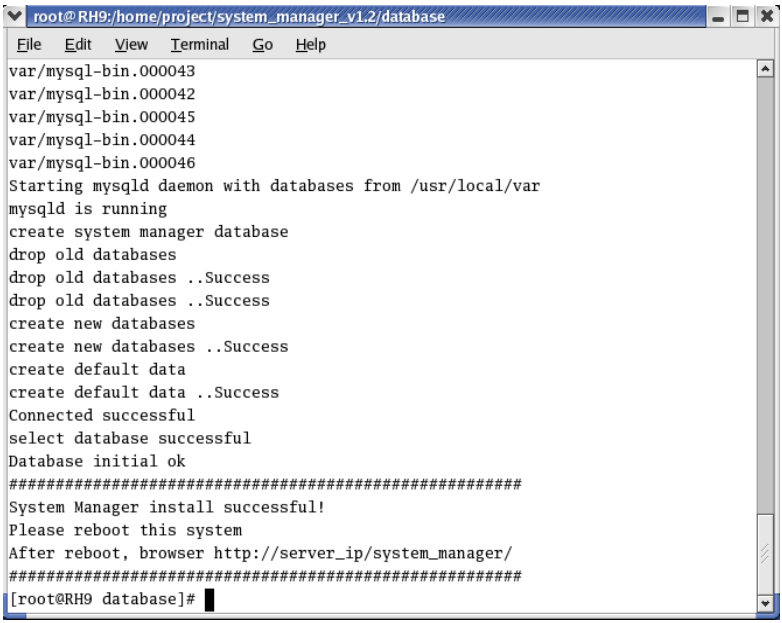
Install System Manager

After all necessary tools are installed, please install the aTCA System Manager.

At the Linux command prompt, perform the following steps:

```
#tar zxvf system_manager_vx.x.tgz
#cd /tmp/system_manager_vx.x/
#./install.sh
```

The script < install.sh > will provide 2 options: **Option 1** installs the system manager, and **Option 2** will exit. Please select **Option 1** and press **Enter**. It will auto install the aTCA System Manager and all its associated components to your Linux operating system.



After the installation is complete, you must verify your MySQL and SNMP packages; please go to **Section 2.6 Verifying MySQL and SNMP Packages on page 28** to continue.

2.5.2 Installing to an Existing Copy of Linux

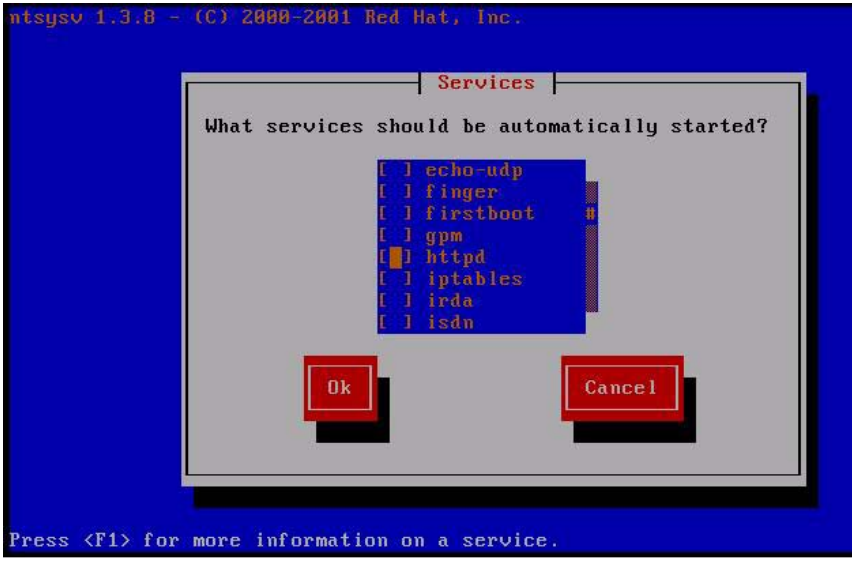
Before you can install the ADLINK aTCA System Manager to an existing copy of Red Hat 9, Fedora Core 5, be sure to configure your system by turning off the < `httpd` > and < `mysql` > services manually through the < `ntsysv` > utility.

Both the < `httpd` > and < `mysql` > services are “Automatically Started” by default and may cause installation errors for the ADLINK aTCA System Manager software packages.

At the Linux command prompt, with root access, type:

```
#ntsysv
```

At the < `#ntsysv` > utility prompt, disable the < `httpd` > and < `mysql` > services.



After you have disabled the `httpd` and `mysql` services, you may install the ADLINK aTCA System Manager software. See **Section 2.5.1 Installing to a New Copy of Linux on page 17** for details.


NOTE:

The aTCA System Manager software has only been tested and certified for use when installed to a new copy of Red Hat 9 or Fedora Core 5 or other Linux distribution on X86 based PC's. If your installation to an existing copy of Red Hat 9 or Fedora Core 5 or other Linux distribution does not function properly, please refer to Section 2.5.1 and reinstall to a new copy of Linux.

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2.6 Verifying MySQL and SNMP Packages

In order to complete installation of the aTCA System Manager and ensure proper communication with the chassis, you must first verify your MySQL settings and SNMP packages.

At the command prompt under root, type:

```
# which mysqld_safe
```

If the installation was successful and MySQL verified, the system should respond with the following message:

```
/usr/local/bin/mysqld_safe
```

Verify the SNMP packages by typing:

```
# which snmpget
```

The system should respond with the following message:

```
/usr/local/bin/snmpget
```


NOTE:

If either the MySQL or SNMP are not verified by the system, there may be an installation error. Please refer to **Section 2.5** to attempt a software re-install or refer to your Linux software installation manual.

If there are no errors, then reboot your system. At the command prompt under root, type:

```
# sync
# sync
# reboot
```

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2.7 Network Security

In order to take full advantage of the ADLINK aTCA System Manager, a proper network environment must be set up for the host computer (aTCA System Manager), the Shelf System, and the clients/terminals you wish to allow access to the System Manager.



This section illustrates the possible network security options of the ADLINK aTCA System Manager. It does not cover how to setup a network, only how the network should work for users to access the System Manager User Interface remotely. Ask your network administrator for assistance in configuring advanced networking features.

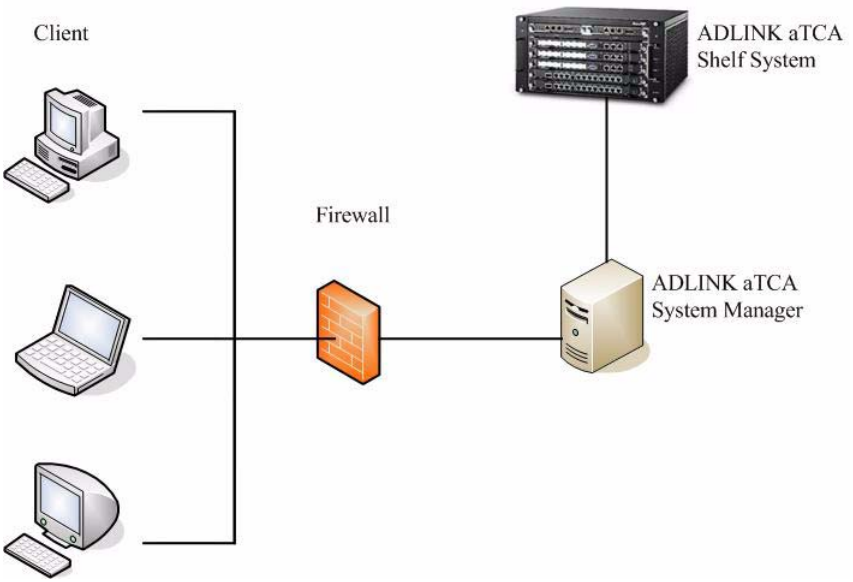
The System Manager was specifically designed to be a secure and reliable platform for monitoring and configuring aTCA shelf systems. The network administrator should carefully monitor the network at all times and configure appropriate access to the shelf system.



To ensure proper communication between the Shelf System and the System Manager, be sure to open the 161/udp, 161/tcp and 162/udp ports in the System Manager network configuration.

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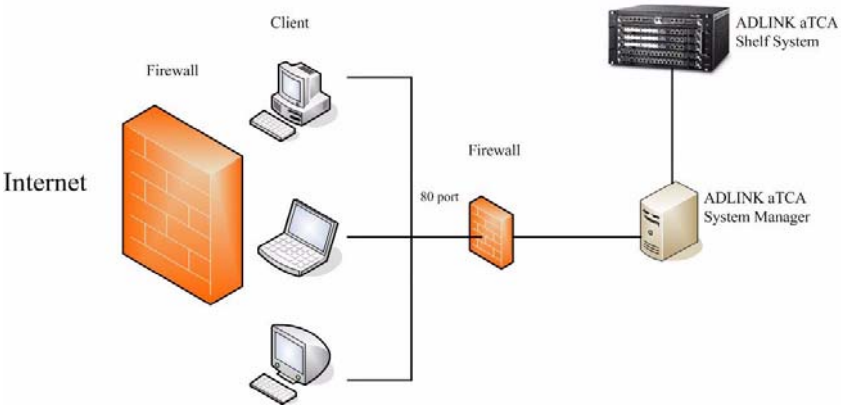
2.7.1 Basic Firewall Security



This configuration only allows communication through port 80. ADLINK recommends this basic level of firewall security as a general precaution against unwanted access to the shelf system.

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2.7.2 Optimal Firewall Security



This example represents an optimal level of firewall security by placing at least two functional firewalls between your aTCA shelf system and the public internet.

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3 Getting Started - aTCA-8505

This chapter introduces how to start up and log into the ADLINK aTCA System Manager, the graphical user interface, and its functions. This chapter describes using the ADLINK aTCA-8505 chassis as the target system.

3.1 System Manager Startup

The ADLINK aTCA System Manager is designed to automatically run on the host computer when it boots. This process includes starting the web server and the Simple Network Management Protocol Trap Catcher (snmptc) daemon.

Your client computer (or remote client/terminal PC) should have a copy of Microsoft Internet Explorer 5 or Mozilla Firefox 1 installed and a monitor that supports 1024 x 768 resolution for optimal viewing.


NOTE:

The System Manager UI is optimized for viewing with Microsoft Windows based Internet Explorer 5 and Mozilla Firefox 1, and Red Hat Linux 9.0 and Fedora Core 5 based Mozilla Firefox 1. Non-supported Linux distributions and/or browsers may cause scripting bugs and are not recommended for use.

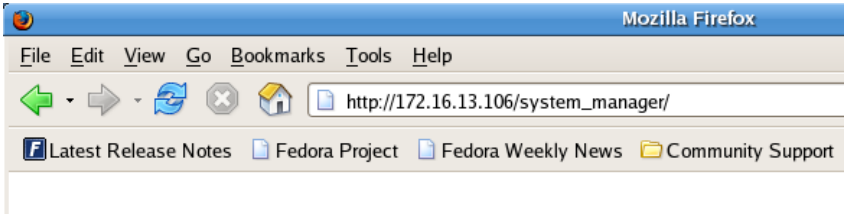
If you receive any error messages and your system does not startup normally, your snmptc daemon may not have registered the host IP. Please see **Section 3.7.3** for further instructions or **Chapter 5** for troubleshooting information.

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3.2 Login

After system startup, load your client browser to access the System Manager. You should have your host computer IP address ready. At the address bar of the browser type:

```
http://[Host_PC_IP_Address]/system_manager/
ex. http://172.16.13.106/system_manager/
```



NOTE: You must allow pop-up windows in your browser settings to fully access the System Manager UI.

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The System Manager will open a new window and run the System Manager User Interface Login Screen:

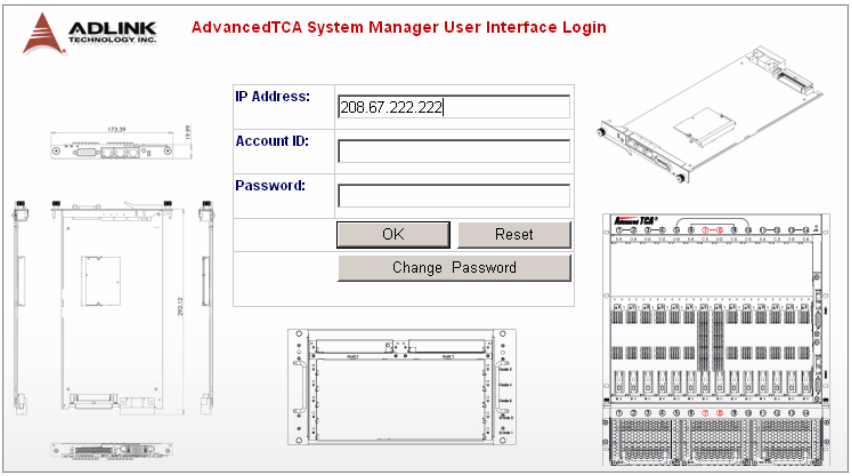


Figure 3-1: Login Screen

Login with the following default account information:

IP address: **[ATCA_CMM_IP_Address]**

Account ID: **admin**

Password: **adminq**

The system administrator may change the password settings from the user interface login screen by clicking < `Change Password` >.

After a successful login the System Manager will automatically detect your chassis type and open the **Default Sensor Settings Screen**.

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3.2.1 Default Sensor Settings Screen

The **Default Sensor Settings Screen** is the initial configuration screen for your chassis and installed ATCA boards. If you have multiple chassis set up for your System Manager, the Default Sensor Settings Screen will configure and save your settings for all chassis and installed ATCA boards according to the IP address assigned to each chassis.

The Sensor Settings screen allows users to define which sensors to monitor. For each slot, the System Manager can monitor one hot swap sensor and two temperature/voltage sensors.

For detailed instructions on configuring board sensors, refer to **Section 3.4.3**.

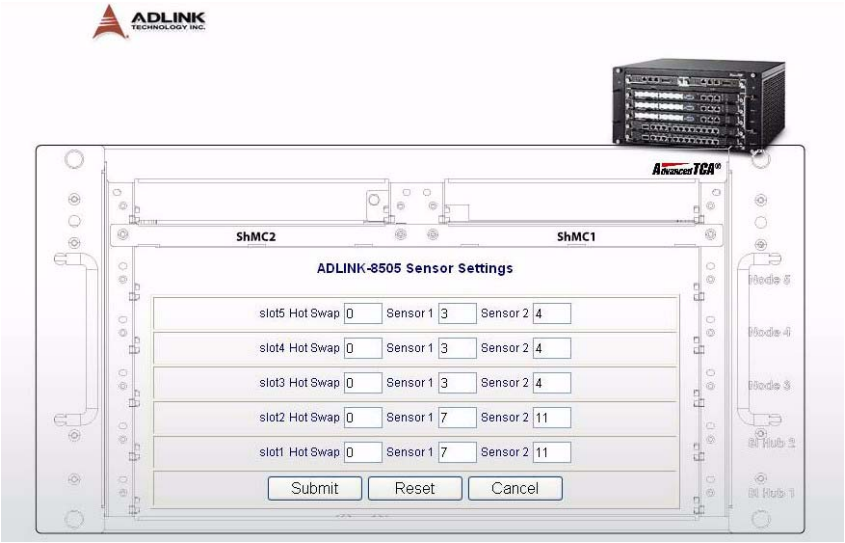


Figure 3-2: Default Sensor Settings Screen

If this is your first time running the System Manager, leave the settings unchanged and just click < `Submit` > to proceed to the System Manager main screen. Or enter your preferred settings and click < `Submit` >. Click < `Reset` > to discard changes or click < `Cancel` > to return to the login screen.

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3.2.2 System Manager Main Screen

Depending on the number and type of ATCA boards and CMMs installed in your chassis, the resulting display should resemble the following:

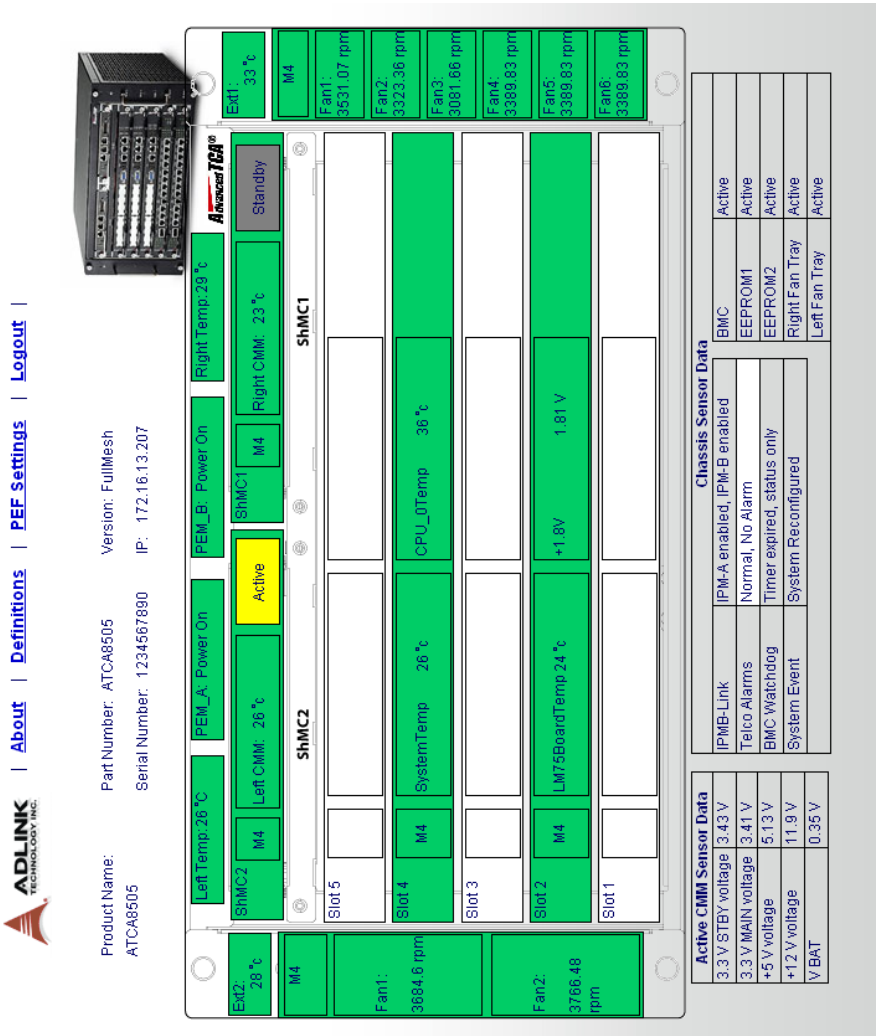


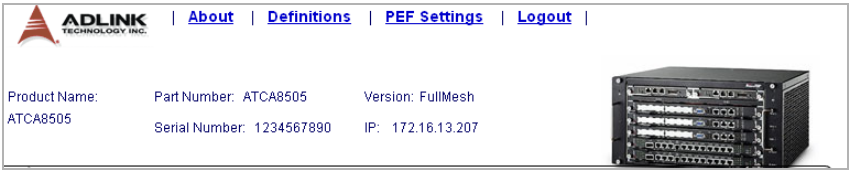
Figure 3-3: System Manager Main Screen

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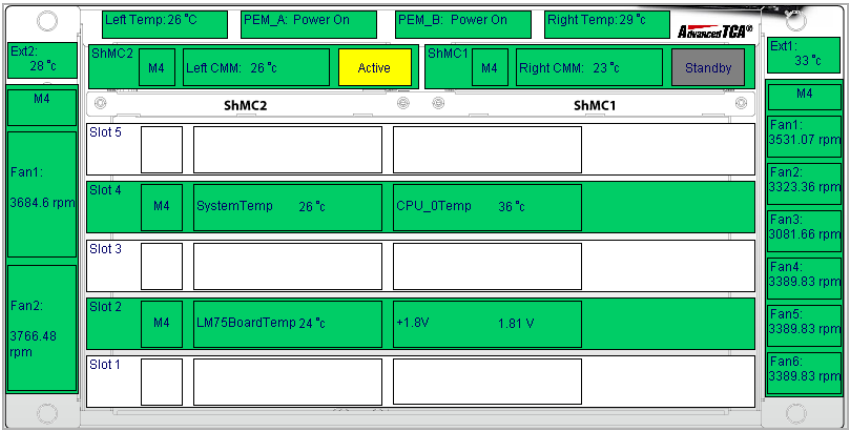
3.3 Navigating the User Interface

The ADLINK aTCA System Manager User Interface (UI) is designed to be user friendly and visually descriptive. All areas of the user interface directly resemble their location and function in relation to the actual chassis as well as monitoring and configuration data in real time. The user interface has three major sections:

Header Section: Presents quick links, chassis hardware information, including product name, part number, serial number, version, IP address, and the chassis reference image.



Body Section: Direct access for monitoring and control of all temperature settings, M status, board health and fan tray activity, CMM's and ATCA boards, see **Figure 3-4** for the Definitions & Color Codes Screen on page 40.



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Footer Section: Displays voltage data for CMM's, Telco Alarm, Watchdog information, and other important chassis sensor data.

Active CMM Sensor Data	
3.3 V STBY voltage	3.43 V
3.3 V MAIN voltage	3.41 V
+5 V voltage	5.13 V
+12 V voltage	11.9 V
V BAT	0.35 V

Chassis Sensor Data			
IPMB-Link	IPM-A enabled, IPM-B enabled	BMC	Active
Telco Alarms	Normal, No Alarm	EEPROM1	Active
BMC Watchdog	Timer expired, status only	EEPROM2	Active
System Event	System Reconfigured	Right Fan Tray	Active
		Left Fan Tray	Active

The user interface also offers "One Click Access" allowing direct access to any CMM, ATCA or Fan Tray with the single click of a mouse.

3.3.1 Quick Links



Click any of the quick links to view their associated information:

About: A brief overview of the System Manager

Definitions: Hardware and software sensor codes, alarms and settings (see **Figure 3-4 Definitions & Color Codes Screen on page 40** for details).

PEF Settings: Hardware and software configuration/settings (see **Section 3.7.1** for details).

Logout: System Logout (automatically returns users to the login screen).

CAUTION:

In order to avoid unauthorized access, remember to **Logout** when not actively configuring or monitoring the System Manager.

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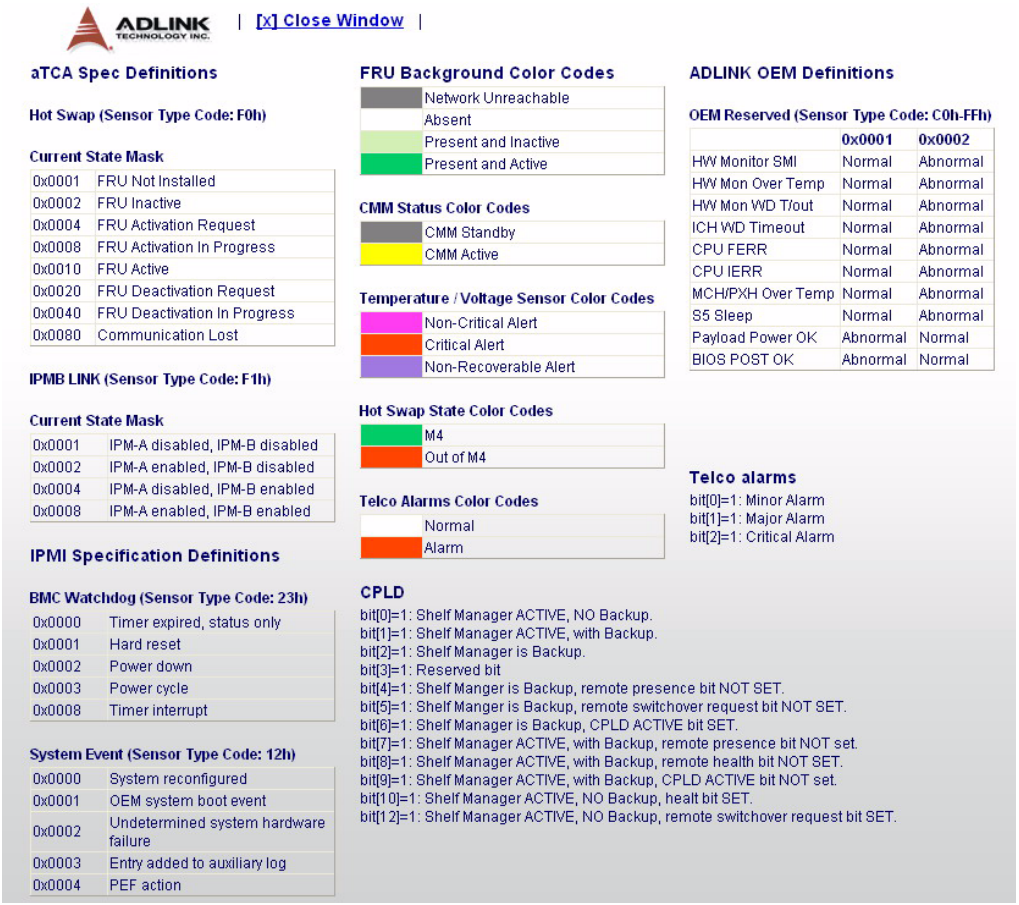


Figure 3-4: Definitions & Color Codes Screen

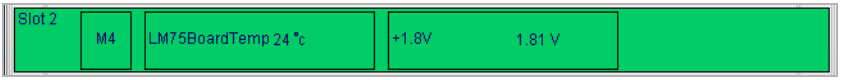
NOTE:

Please take special notice of the color codes. For example, FRU background color codes determine if a board or module is present, active, etc. These color codes allow for simple monitoring and understanding of the health and activity of your chassis.

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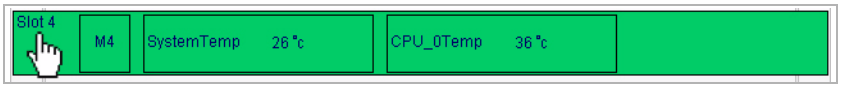
3.4 ATCA Boards

There are five slots on the user interface corresponding to the five slots on the shelf that can be mounted with an ATCA board. The UI divides the board information into four areas from left to right: Slot number, M status and two configurable board sensors. Board sensors can be configured to display system temp, CPU temp, voltage, or hotswap status.

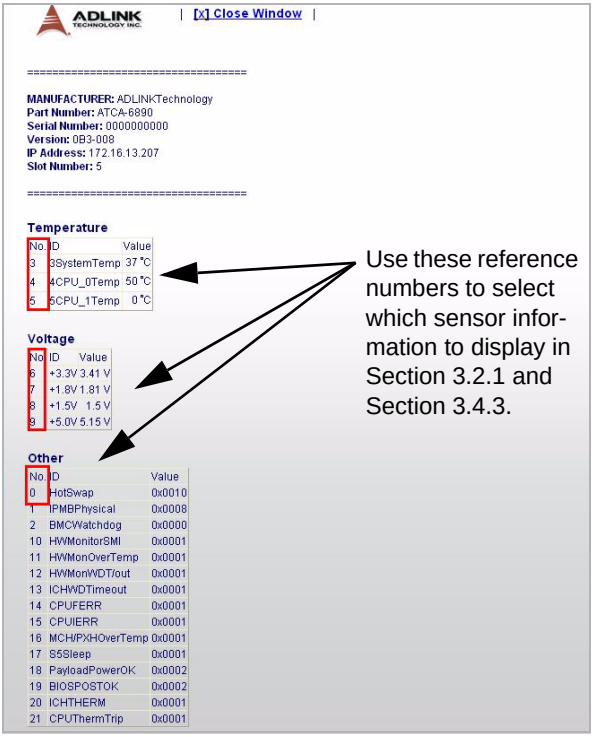


3.4.1 Getting ATCA Board Information

Move your cursor to any installed ATCA board. Click any area under the Slot number.



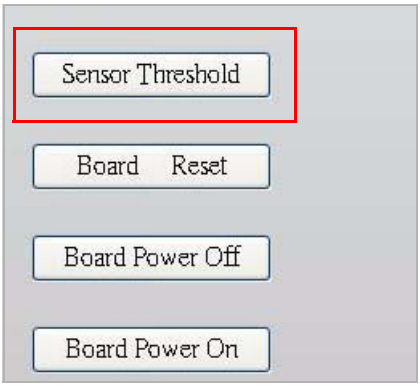
The System Manager will open a new window and display all available sensor information for the selected board.



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3.4.2 ATCA Board Settings

At the bottom of the board information window, there are four options allowing users to configure sensor threshold, reset the board, turn board power off, and turn board power on.



Clicking the < Sensor Threshold > button will open a new window for threshold settings as follows:

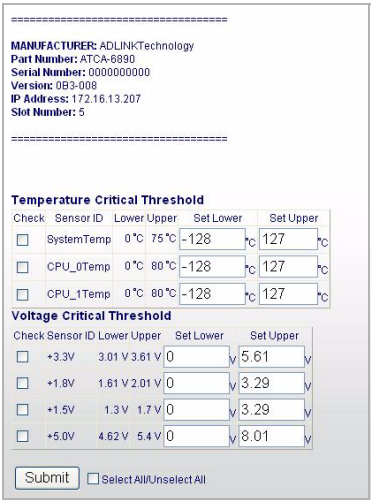


Figure 3-5: ATCA Board Sensor Settings Screen

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NOTE:

The temperature threshold values are in degrees Celsius and their range is -128°C to +127°C

NOTE:

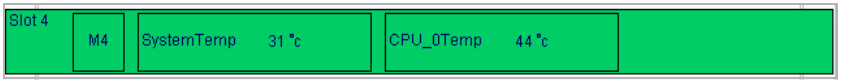
All *Sensor Threshold* settings are temporary. When you restart/reset this board, the settings will be reset to the default settings. Only hardware providers can permanently set the sensor threshold.

Clicking the < `Board Reset` > button resets the board to the default sensor settings.

Clicking the < `Board Power Off` > button on an activated ATCA board will immediately deactivate it, and the slot color will change accordingly (see to **Figure 3-4** Definitions & Color Codes Screen on page 40).



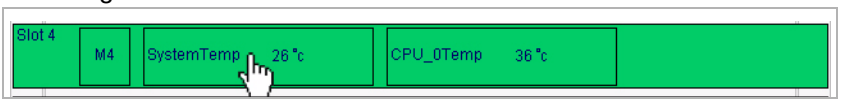
Clicking the < `Board Power On` > button on an inactive ATCA board will activate it.



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3.4.3 Configuring ATCA Board Sensors

Clicking the < System Temp > button will open the Sensor Settings screen.



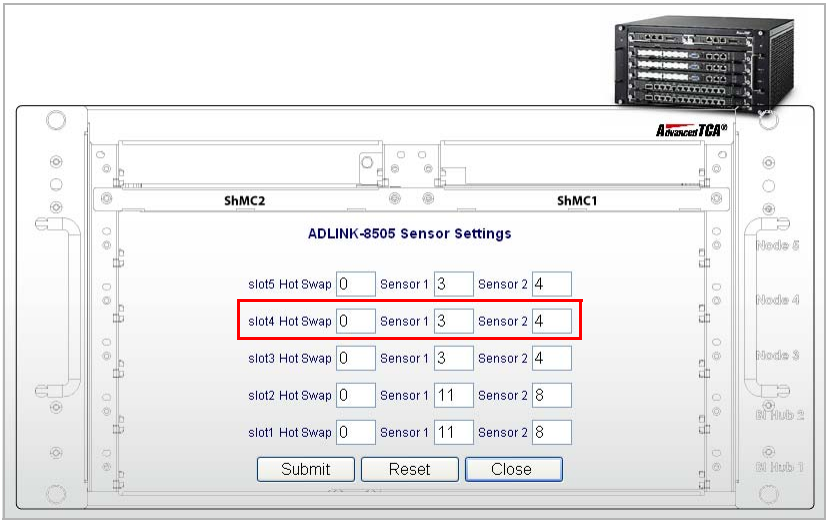


Figure 3-6: ATCA Board Sensor Configuration Screen

In order to monitor blade M status and Temperature/Voltage sensors, users must configure the appropriate sensor numbers for the blade. Each slot allows for one hot swap sensor and two temperature/voltage sensors. Please refer **Section 3.4.1** above to display the sensor numbers and configure them here.

Enter your preferred settings (or leave the settings unchanged) and click < Submit > to return to the System Manager main screen. Click < Reset > to discard changes or click < Close > to return to the main screen.

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3.5 Shelf Managment Controller

The Shelf Managment Controller (ShMC) modules on the user interface correspond to the Chassis Management Modules (CMM) installed in the chassis. They can be accessed in the same way as for ATCA boards. The UI divides the module information into four areas from left to right: Module number, M status, CPU temp sensor and board status.



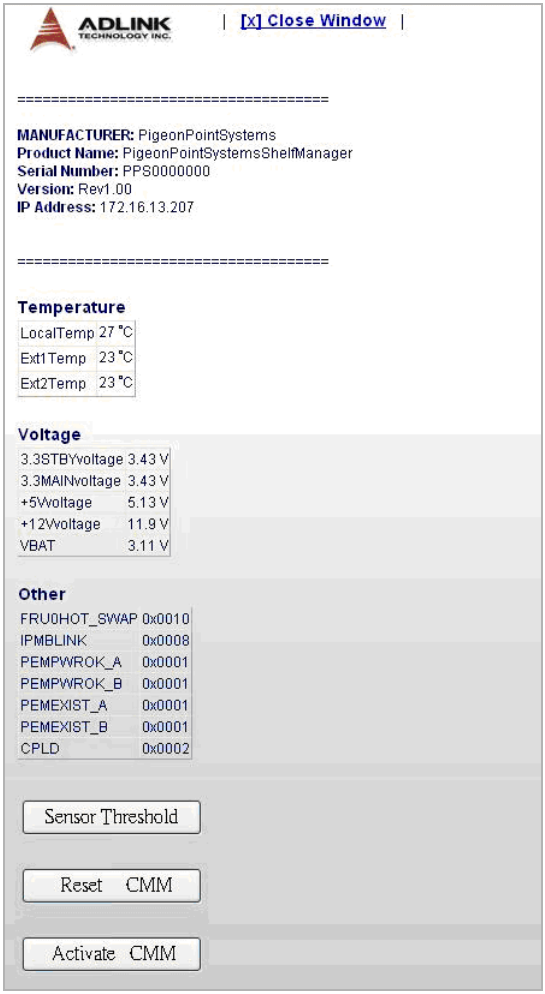
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3.5.1 Getting ShMC Module Information

Move your cursor to any installed ShMC module. Click any area under the ShMC number.



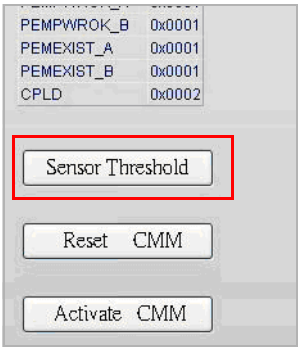
The System Manager will open a new window. It will post all sensor information of the ShMC module.



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3.5.2 ShMC Module Settings

At the bottom of the module information window, there are three options allowing users to configure sensor thresholds, reset the CMM, or activate the CMM.



Clicking the < Sensor Threshold > button will open a new window for threshold settings as follows:

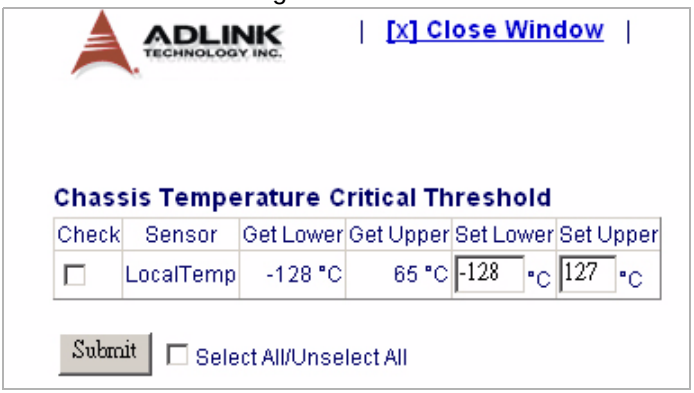


Figure 3-7: ShMC Module Sensor Settings Screen

NOTE:

The temperature threshold values are in degrees Celsius and their range is -128°C to +127°C

NOTE:

All *Sensor Threshold* settings are temporary. When you reset a CMM, the settings will also be reset. Only hardware providers can permanently set the sensor threshold.

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3.5.3 Active CMM Sensor Data

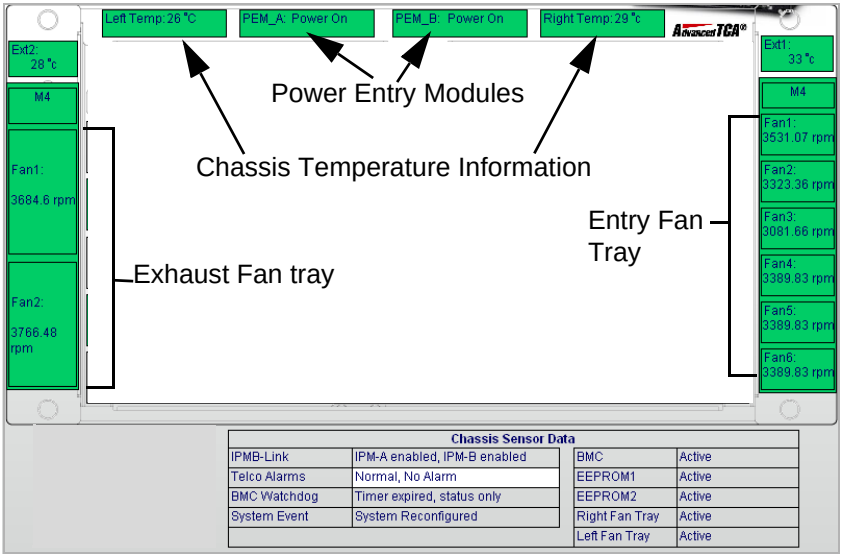
In addition to clicking on the ShMC module for detailed information, the left side footer section of the user interface also displays “Active CMM Sensor Data“. This area displays real time voltage information.

Active CMM Sensor Data	
3.3 V STBY voltage	3.43 V
3.3 V MAIN voltage	3.41 V
+5 V voltage	5.13 V
+12 V voltage	11.9 V
V BAT	0.35 V

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3.6 Chassis Information

Chassis information is displayed in the user interface for easy visual reference. Internal/external temperatures and power entry module information are displayed near the top of the chassis representation. Fan tray information and one click access to fan tray settings are on the right and left edges of the chassis representation. Other sensor data is displayed at the bottom edge.



3.6.1 Chassis Sensor Data

Chassis sensor data is displayed for easy visual reference. If there is a Telco Alarm activated, users can quickly identify it by its error color (see **Figure 3-4** for definitions and color code details).

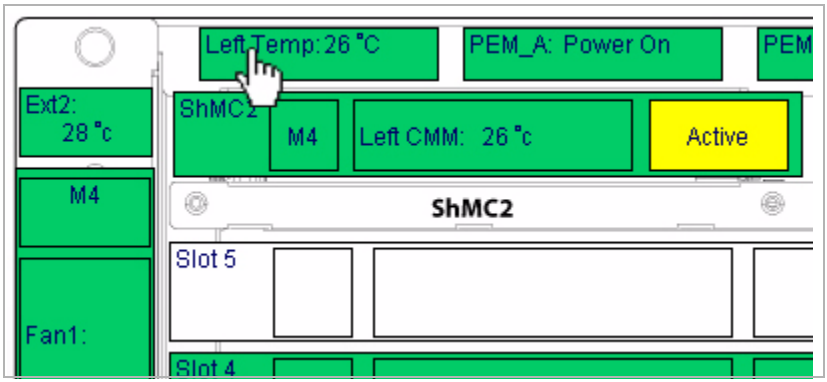
If either ShMC has a Telco Alarm activated, users can clear the alarm by logging into the shelf manager console and typing:

```
#clia alarm clear
```

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3.6.2 Chassis Temperature Information & Settings

The chassis temperature information is displayed in the UI and can be accessed in the same way as for ATCA boards and ShMC modules. The UI divides the chassis temperature information into four areas: Left Temp, Right Temp, Ext1 and Ext2.



Clicking either the Left Temp or Right Temp shaded areas will open a new window with the **Chassis Temp Critical Threshold** screen.

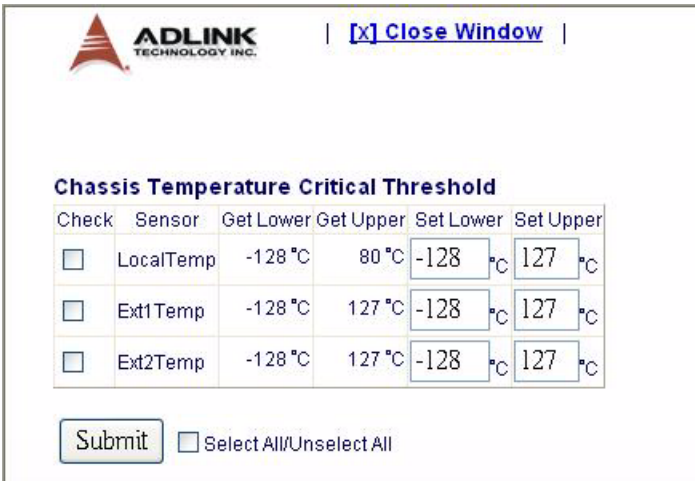


Figure 3-8: Chassis Temp Critical Threshold Screen

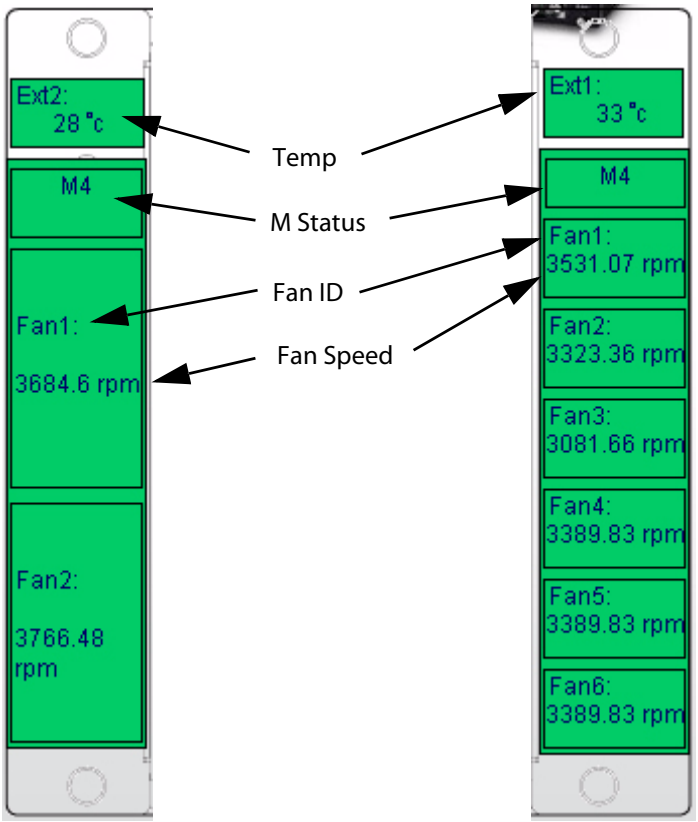
Depending on the total number of installed fan trays (Ext1 and Ext2 sensors are placed behind fan trays), the screen will reflect the active installed components to configure.

NOTE: The temperature threshold values are in degrees Celsius and their range is -128°C to +127°C

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3.6.3 Fan Tray Information

Installed fan trays are displayed in the UI and can be accessed in the same way as for ATCA boards and ShMC modules. The UI divides fan tray information into three areas from top to bottom: temperature level, M status, and fan number (with fan speed).



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3.6.4 Fan Tray Settings

Move the cursor to the desired fan tray and click to open the Fan Tray Settings window.



Figure 3-9: Fan Tray Level Settings Screen

NOTE:

The fan levels are in hexadecimal and their range is 0 to F.

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3.7 Platform Event Filtering (PEF)

The Platform Event Filtering function is a collection of IPMI interfaces that define how an IPMI Event can be compared against 'filter table' entries that, when matched, trigger a selectable action such as a system reset, power off, alert, etc. SNMP Trap alerts are also configured through PEF settings.

NOTE: PEF settings are critical to the operation of an ATCA chassis. Please refer to the IPMI Spec. 1.5 Rev. 1.1 for details.

3.7.1 Setting PEF with System Manager

The user interface allows direct access to PEF settings from the quick links bar at the top of the screen.



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Clicking the < PEF Settings > link opens a new window for configuring PEF settings.

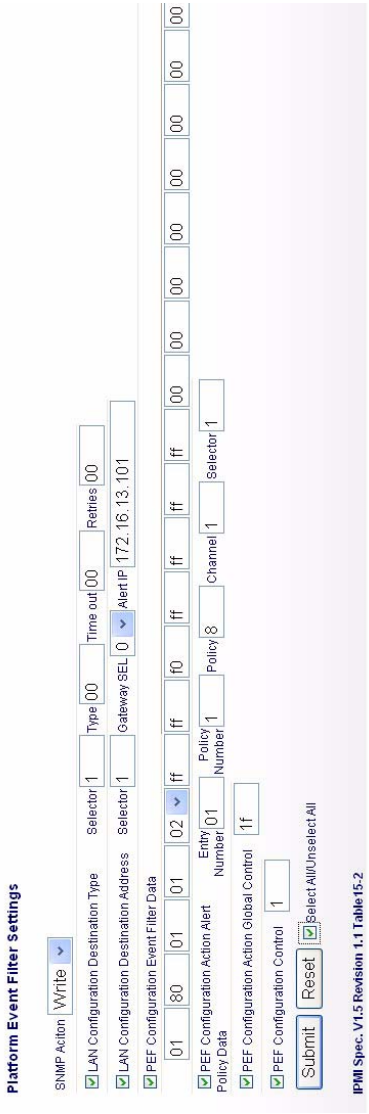


Figure 3-10: PEF Settings Screen

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Use the following settings for SNMP Trap configurations.

Non-critical Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

02	80	11	01	08	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Critical Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

03	80	11	01	10	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Non-recoverable Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

04	80	11	01	20	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Non-critical Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

05	80	11	01	08	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

Critical Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

06	80	11	01	10	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

Non-recoverable Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

07	80	11	01	20	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

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3.7.2 Setting PEF with Shelf Manager Command Line

PEF settings can also be configured through the shelf manager command line. The ADLINK factory PEF settings are stored in `/bin/adlink_pef`. If you wish to restore the ADLINK PEF default settings, login to the shelf manager console and run the script below:

```
#clear_event_filter
#destination_ip $IP(Alert IP as same as system manager IP )
#adlink_pef
```

3.7.3 Monitoring SNMP Trap Alerts

In order to monitor SNMP trap, users need to confirm the platform event trap format. The system manager recognizes *format 0* only. The shelf manager default format is *0*. To determine the current format, please enter the following command:

```
# clia getpefconfig pet_format
Pigeon Point Shelf Manager Command Line Interpreter
Platform Event Trap format: 0 (IPMI default)
#
```

If your current format is not *0*, please configure the format to *0*, otherwise the SNMP Trap Alerts function of the system manager will be disabled. To set the platform event trap format to *0*, please enter the following command:

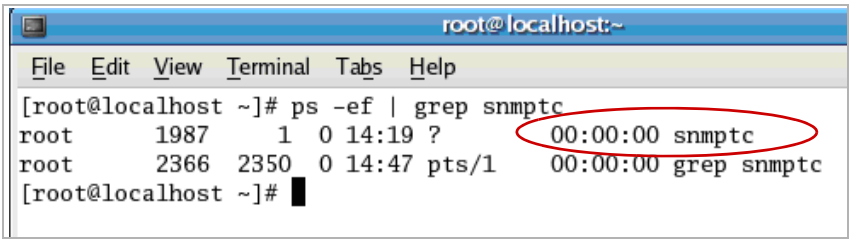
```
# clia setpefconfig pet_format 0
Pigeon Point Shelf Manager Command Line Interpreter
Platform Event Trap format set successfully
#
```

If properly configured, the System Manager will monitor and display all chassis information and board sensors. In order to do so, the System Manager must communicate properly with the snmp trap via IP.

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To check the snmptc process, login to the system manager server command line and type:

```
#ps -ef | grep snmptc
```



If the system returns < `00:00:00 snmptc` > your system is functioning normally. If not, you must check your host IP address.

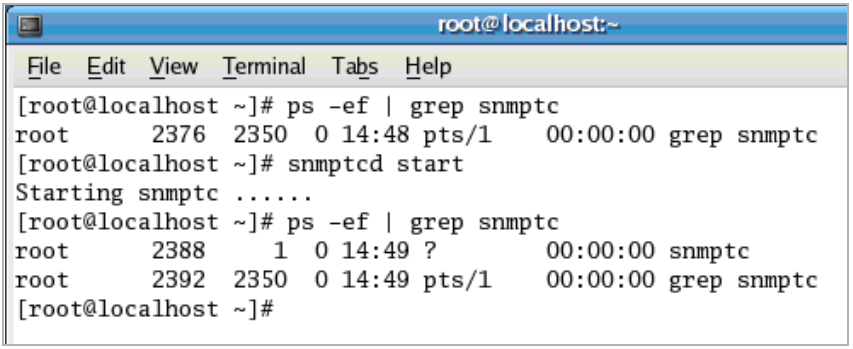
The host computer IP address acts as the access point for the graphical user interface. The snmptc cannot auto-run unless the host PC has an IP address. To confirm the host computer's IP address, from the Linux command line under root type:

```
#ifconfig
```

Please record the resulting IP address for reference.

Once you have an IP address, manually start the < `snmptcd` > at the command line by typing:

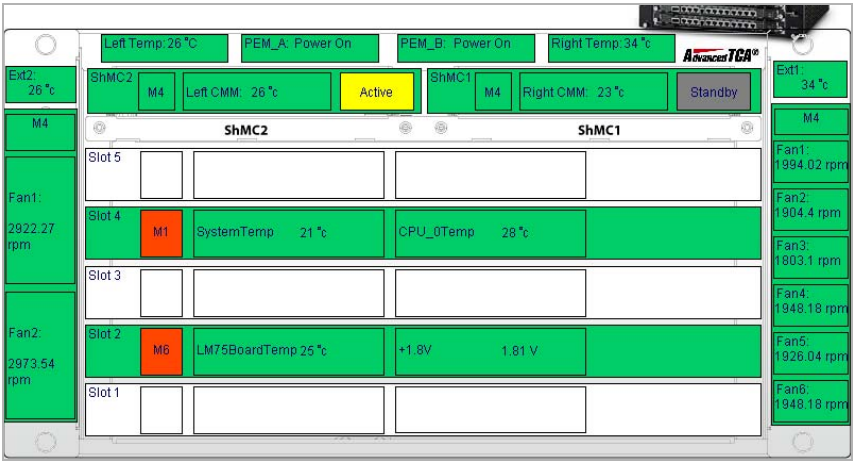
```
#snmptcd start
```



To confirm your settings type:

```
/etc/rc.local
```

Once the snmptc daemon is running properly, the System Manager can display SNMP Trap alerts for hotswap, temperature and voltage sensors. The following is an example of open handle alarms where Slot 2 and Slot 4 have surpassed their threshold setting for M status and the shelf manager has sent SNMP trap alerts to the System Manager.



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4 Getting Started - aTCA-8214

This chapter introduces how to start up and log into the ADLINK aTCA System Manager, the graphical user interface, and its functions. This chapter describes using the ADLINK aTCA-8214 chassis as the target system.

4.1 System Manager Startup

The ADLINK aTCA System Manager is designed to automatically run on the host computer when it boots. This process includes starting the web server and the Simple Network Management Protocol Trap Catcher (snmptc) daemon.

Your client computer should have a copy of Microsoft Internet Explorer 5 or Mozilla Firefox 1 installed and a monitor that supports 1024 x 768 resolution for optimal viewing.


NOTE:

The System Manager UI is optimized for viewing with Microsoft Windows based Internet Explorer 5 and Mozilla Firefox 1, and Red Hat Linux 9.0 and Fedora Core 5 based Mozilla Firefox 1. Non-supported Linux distributions and/or browsers may cause scripting bugs and are not recommended for use.

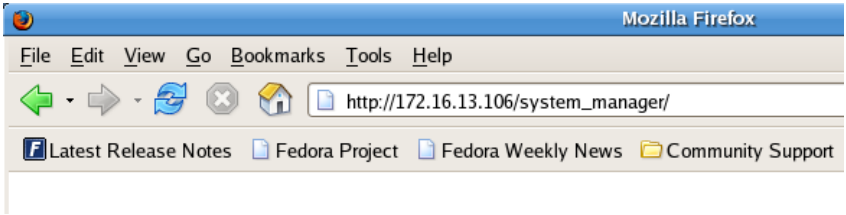
If you receive any error messages and your system does not startup normally, your snmptc daemon may not have registered the host IP. Please see **Section 4.7.3** for further instructions or **Chapter 5** for troubleshooting information.

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4.2 Login

After system startup, load your client browser to access the System Manager. You should have your host computer IP address ready. At the address bar of the browser type:

```
http://[Host_PC_IP_Address]/system_manager/
ex. http://172.16.13.106/system_manager/
```



NOTE: You must allow pop-up windows in your browser settings to fully access the System Manager UI.

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The System Manager will open a new window and run the System Manager User Interface Login Screen:

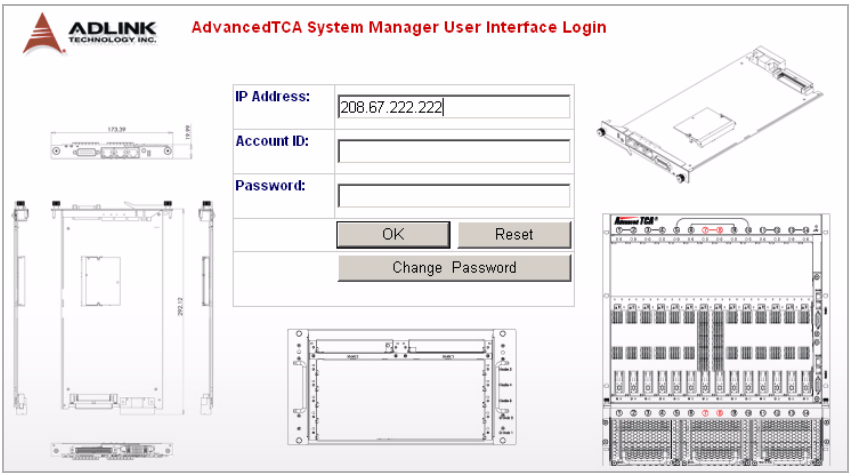


Figure 4-1: Login Screen

Login with the following default account information:

IP address: **[ATCA_CMM_IP_Address]**

Account ID: **admin**

Password: **adminq**

The system administrator may change the password settings from the user interface login screen by clicking < `Change Password` >.

After a successful login the System Manager will automatically detect your chassis type and open the **Default Sensor Settings Screen**.

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4.2.1 Default Sensor Settings Screen

The **Default Sensor Settings Screen** is the initial configuration screen for your chassis and installed ATCA boards. If you have multiple chassis set up for your System Manager, the Default Sensor Settings Screen will configure and save your settings for all chassis and installed ATCA boards.

The Sensor Settings screen allows users to define which slots to monitor. Each slot allows for one hot swap sensor

For detailed instructions on configuring board sensors, refer to **Section 4.4.3**.

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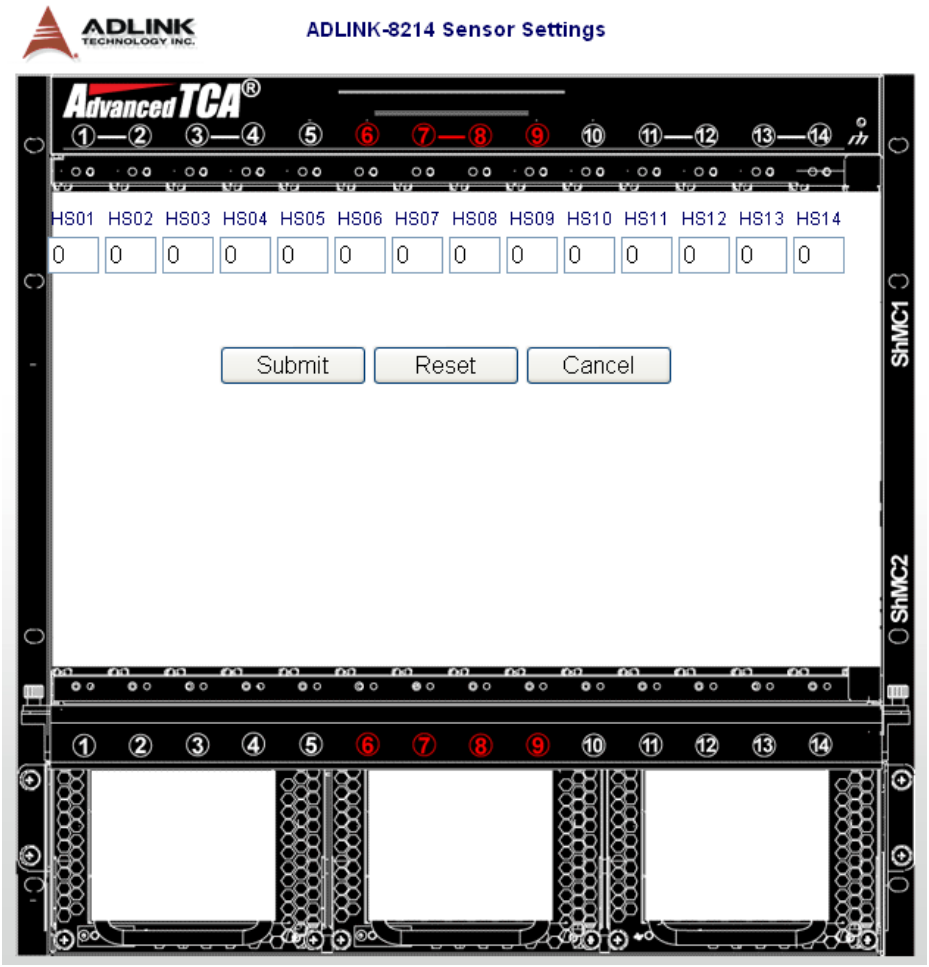


Figure 4-2: Default Sensor Settings Screen

If this is your first time running the System Manager, leave the settings unchanged and just click < Submit > to proceed to the System Manager main screen. Or enter your preferred settings and click < Submit >. Click < Reset > to discard changes or click < Cancel > to return to the login screen.

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4.2.2 System Manager Main Screen

Depending on the number and type of ATCA boards and CMMs installed in your chassis, the resulting display should resemble the following:

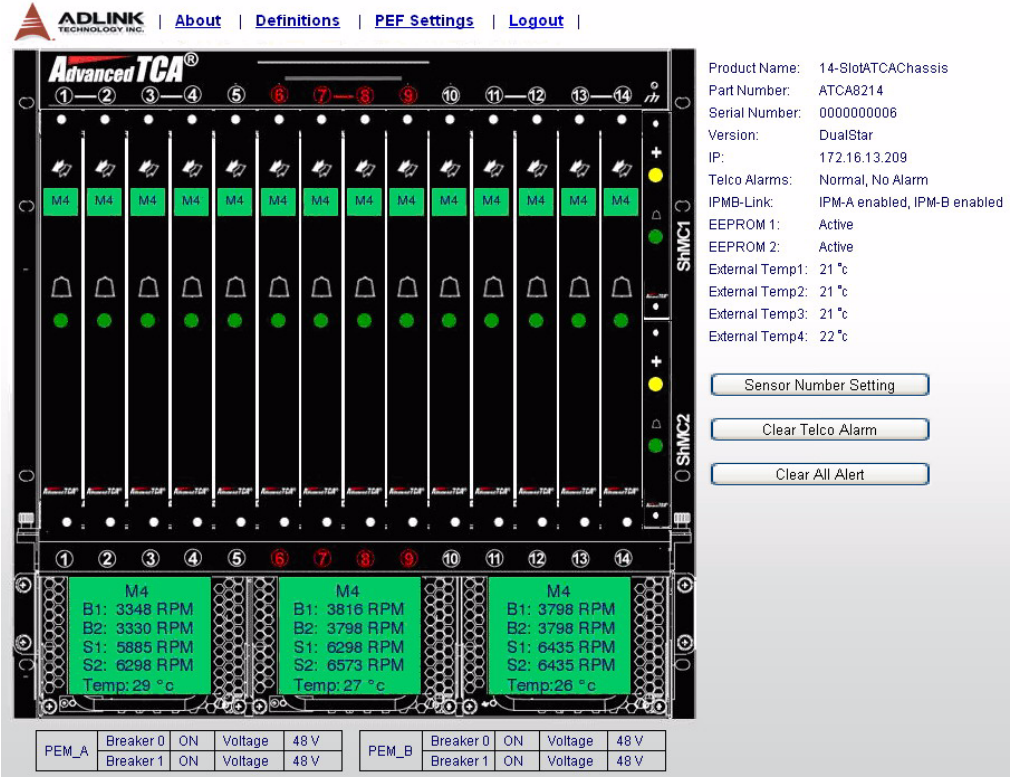


Figure 4-3: System Manager Main Screen

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4.3 Navigating the User Interface

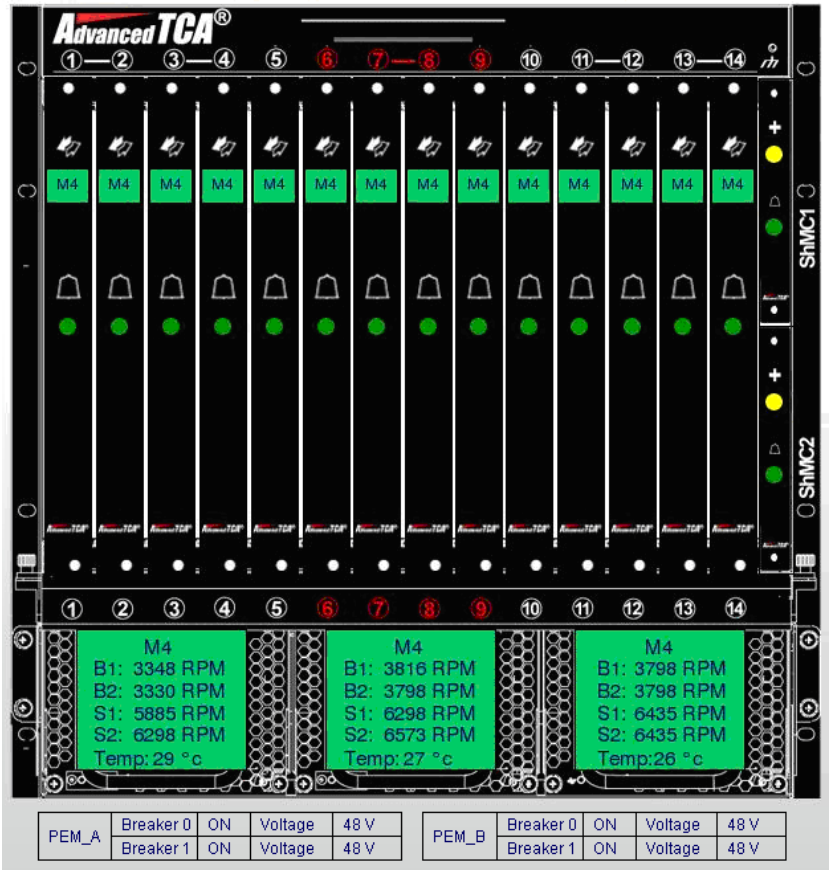
The ADLINK aTCA System Manager User Interface (UI) is designed to be user friendly and visually descriptive. All areas of the user interface directly resemble their location and function in relation to the actual chassis as well as monitoring and configuration data in real time. The user interface has three major sections:

Header Section: Presents quick links, chassis hardware information, including product name, part number, serial number, version, IP address, and the chassis reference image.



Body Section: Direct access for monitoring and control of all temperature settings, M status, board health and fan tray activity, CMM's and ATCA boards. See **Figure 4-4** for the Definitions & Color Codes Screen on page 70.

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The user interface also offers “One Click Access” allowing direct access to any CMM, ATCA or Fan Tray with the single click of a mouse.

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Side Section: Displays Telco Alarm, Backplane Temperature Sensor, and other important chassis information.



4.3.1 Quick Links



Click any of the quick links to view their associated information:

About: A brief overview of the System Manager

Definitions: Hardware and software sensor codes, alarms and settings (see **Figure 4-4 Definitions & Color Codes Screen on page 70** for details).

PEF Settings: Hardware and software configuration/settings (see **Section 4.7.1** for details).

Logout: System Logout (automatically returns users to the login screen).



In order to avoid unauthorized access, remember to **Logout** when not actively configuring or monitoring the System Manager.

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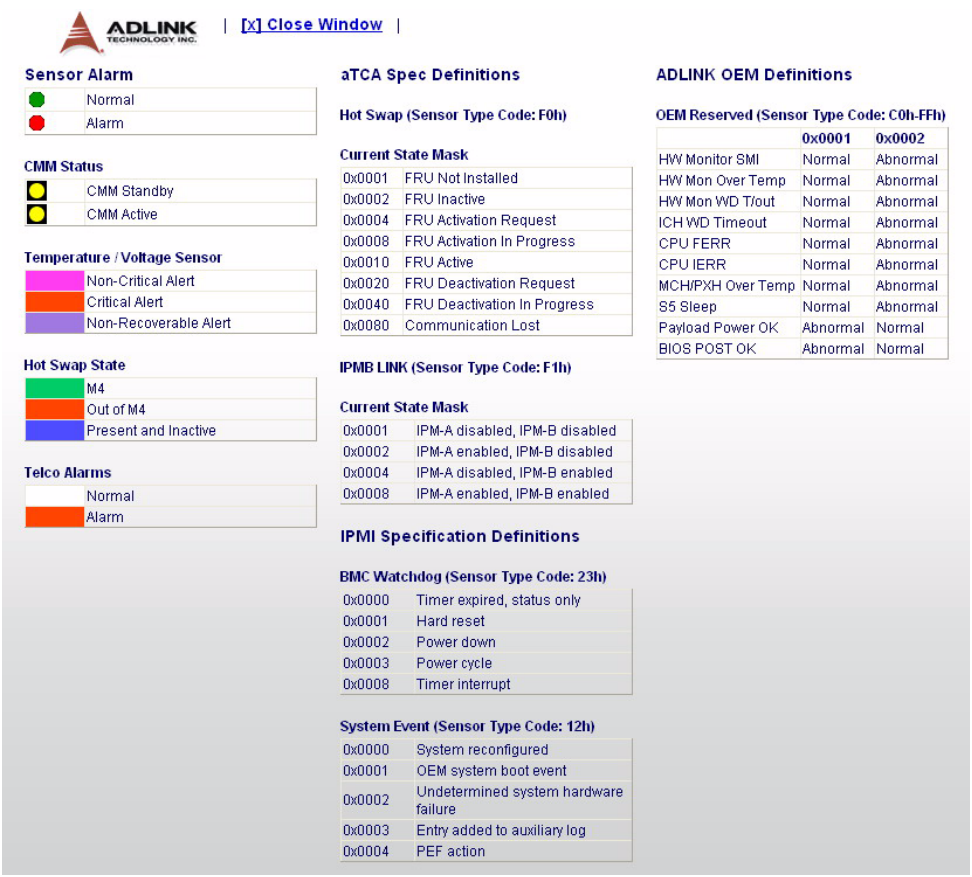


Figure 4-4: Definitions & Color Codes Screen

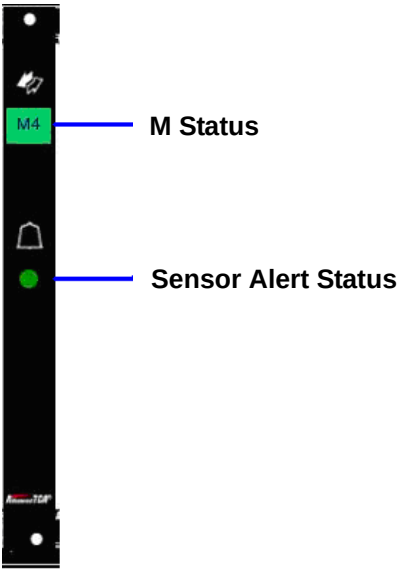
NOTE:

Please take special notice of the color codes. For example, M status color determines if a board or module is present, active, etc. These color codes allow for simple monitoring and understanding of the health and activity of your chassis.

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4.4 ATCA Boards

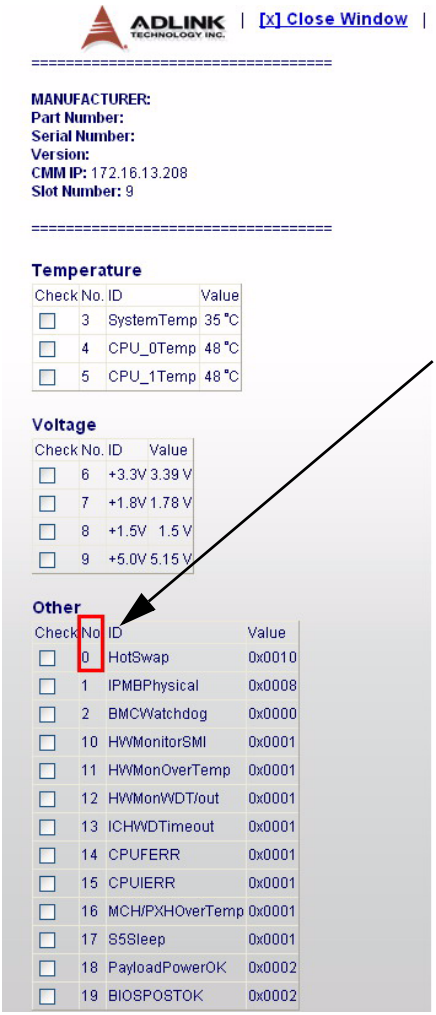
There are fourteen slots on the user interface corresponding to the fourteen slots on the shelf that can be mounted with an ATCA board. The UI divides the board information into two areas from top to bottom: M status and Sensor Alert Status.



4.4.1 Getting ATCA Board Information

Move your cursor to any installed ATCA board. Click any area under the Sensor Alert Status area.

The System Manager will open a new window and display all available sensor information for the selected board.

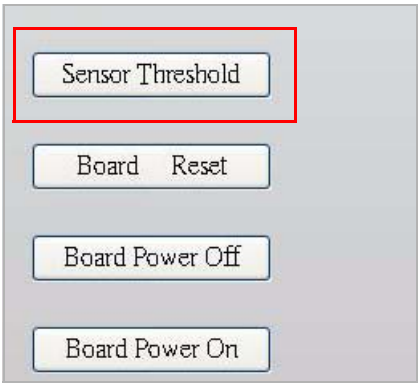


Use this reference number set the Hot Swap Sensor Number in Section 4.2.1 and Section 4.4.3.

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4.4.2 ATCA Board Settings

At the bottom of the board information window, there are four options allowing users to configure sensor threshold, reset the board, turn board power off, and turn board power on.



Clicking the < Sensor Threshold > button will open a new window for threshold settings as follows:

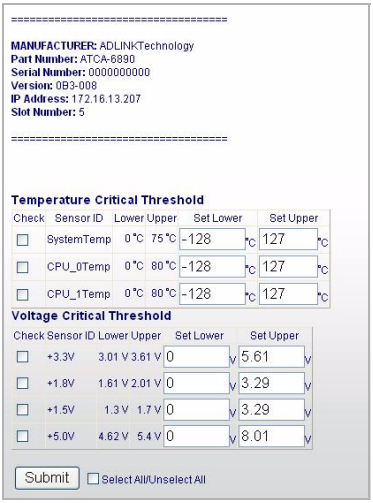


Figure 4-5: ATCA Board Sensor Settings Screen

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NOTE:

The temperature threshold values are in degrees Celsius and their range is -128°C to +127°C

NOTE:

All *Sensor Threshold* settings are temporary. When you restart/reset this board, the settings will be reset to the default settings. Only hardware providers can permanently set the sensor threshold.

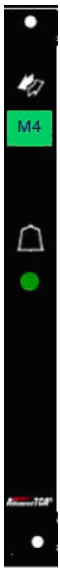
Clicking the < `Board Reset` > button resets the board.

Clicking the < `Board Power Off` > button on an activated ATCA board will immediately deactivate it, and the slot color will change accordingly (see to **Figure 4-4** Definitions & Color Codes Screen on page 70).

Clicking the < `Board Power On` > button on an inactive ATCA board will activate it.



Inactive

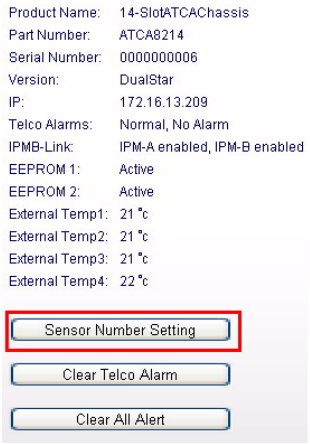


Active

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4.4.3 Configuring ATCA Board Sensors

Clicking the < `Sensor Number Setting` > button will open the Sensor Settings screen.



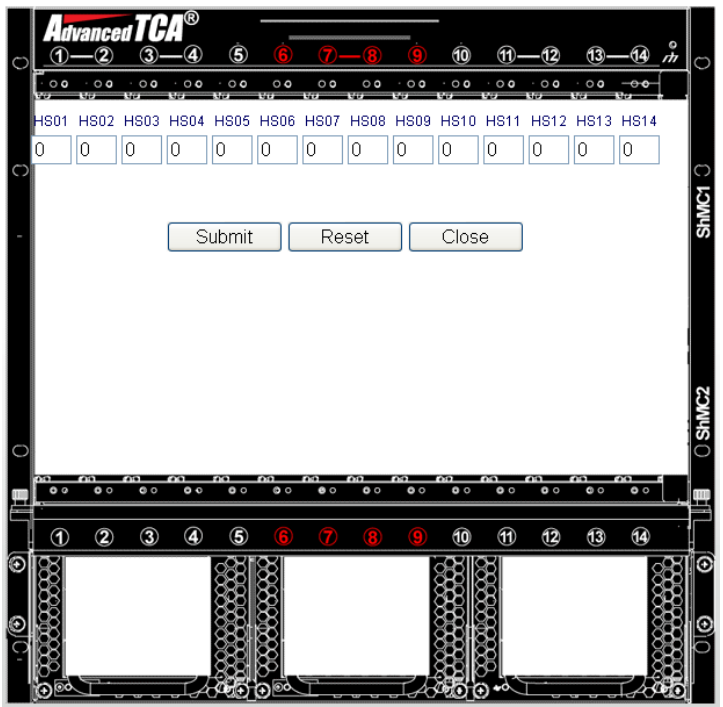


Figure 4-6: ATCA Board Sensor Configuration Screen

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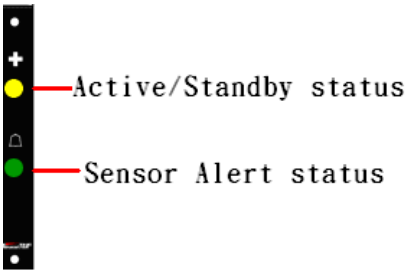
In order to monitor blade M status, users must configure the appropriate Hot Swap Sensor Number for each blade. Each slot allows for one hot swap sensor only. Please refer **Section 4.4.1** above to display the sensor numbers and configure them here.

Enter your preferred settings (or leave the settings unchanged) and click < Submit > to return to the System Manager main screen. Click < Reset > to discard changes or click < Close > to return to the main screen.

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4.5 Shelf Managment Controller

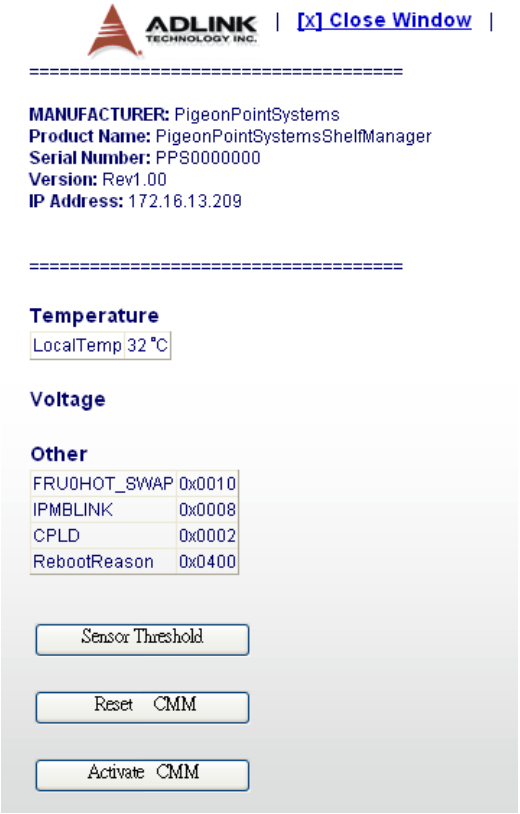
The Shelf Managment Controller (ShMC) modules on the user interface correspond to the Chassis Management Modules (CMM) installed in the chassis. They can be accessed in the same way as for ATCA boards. The UI divides the module information into two areas from top to bottom: Active/Standby status, Sensor Alert status.



4.5.1 Getting ShMC Module Information

Move your cursor to any installed ShMC module. Click any area under the Sensor Alert Status area. The System Manager will open a new window. It will post all sensor information of the ShMC module (see below).

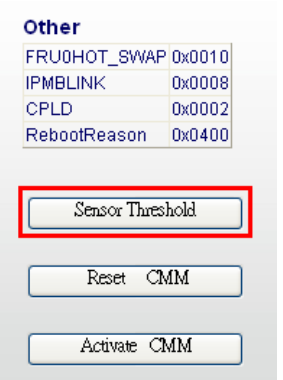
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4.5.2 ShMC Module Settings

At the bottom of the module information window, there are three options allowing users to configure sensor thresholds, reset the CMM, or activate the CMM.



Clicking the < Sensor Threshold > button will open a new window for threshold settings as follows:

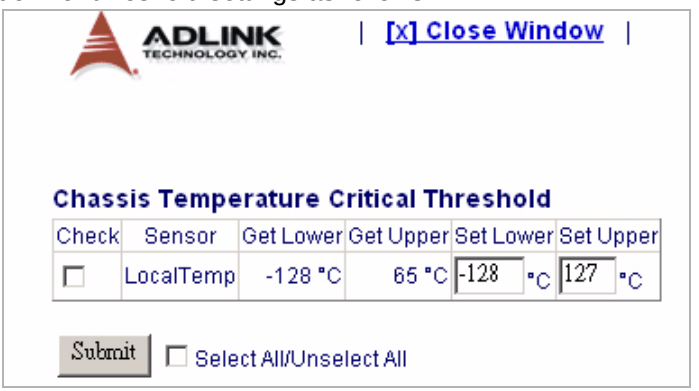


Figure 4-7: ShMC Module Sensor Settings Screen

NOTE:

The temperature threshold values are in degrees Celsius and their range is -128°C to +127°C

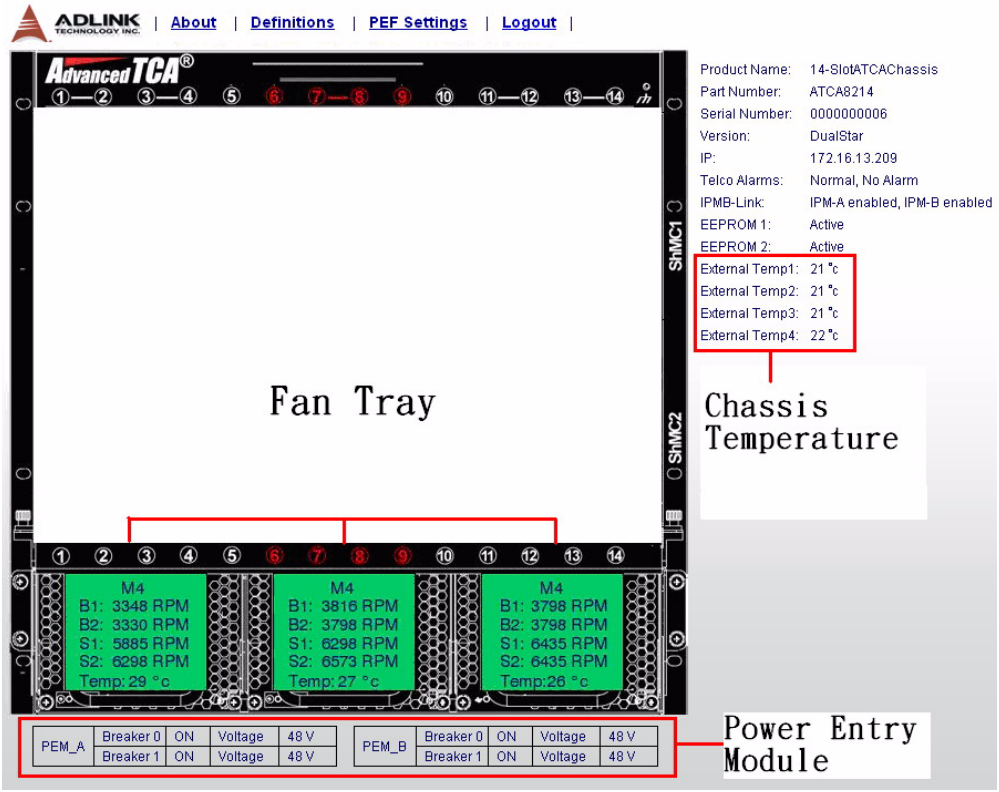
NOTE:

All *Sensor Threshold* settings are temporary. When you reset a CMM, the settings will also be reset. Only hardware providers can permanently set the sensor threshold.

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4.6 Chassis Information

Chassis information is displayed in the user interface for easy visual reference. Power entry module information is displayed below the chassis representation. Fan tray information and one click access to fan tray settings are at the bottom of the chassis representation. Other sensor data is displayed on the right side.

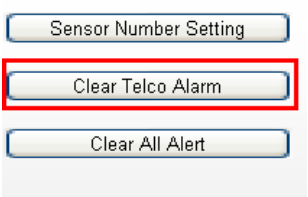


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4.6.1 Chassis Sensor Data

Chassis sensor data is displayed for easy visual reference. If there is a Telco Alarm activated, users can quickly identify it by its error color (see **Figure 4-4** for definitions and color code details).

If either ShMC has a Telco Alarm activated, users can clear the alarm by clicking the < `Clear Telco Alarm` > button on the right side of the System Manager Main Screen.



To clear mutliple alarms or alerts for all boards, click the < `Clear All Alert`> button.

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4.6.2 Fan Tray Information

Installed fan trays are displayed in the UI and can be accessed in the same way as for ATCA boards and ShMC modules. The UI divides fan tray information into three areas from top to bottom: M status, fan speed, and temperature.

4.6.3 Fan Tray Settings

Move the cursor to the desired fan tray and click to open the Fan Tray Settings window.



Figure 4-8: Fan Tray Level Settings Screen

NOTE:

The fan levels are in hexadecimal and their range is 0 to F.

4.7 Platform Event Filtering (PEF)

The Platform Event Filtering function is a collection of IPMI interfaces that define how an IPMI Event can be compared against 'filter table' entries that, when matched, trigger a selectable action such as a system reset, power off, alert, etc. SNMP Trap alerts are also configured through PEF settings.

NOTE: PEF settings are critical to the operation of an ATCA chassis. Please refer to the IPMI Spec. 1.5 Rev. 1.1 for details.

4.7.1 Setting PEF with System Manager

The user interface allows direct access to PEF settings from the quick links bar at the top of the screen.



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Clicking the < PEF Settings > link opens a new window for configuring PEF settings.

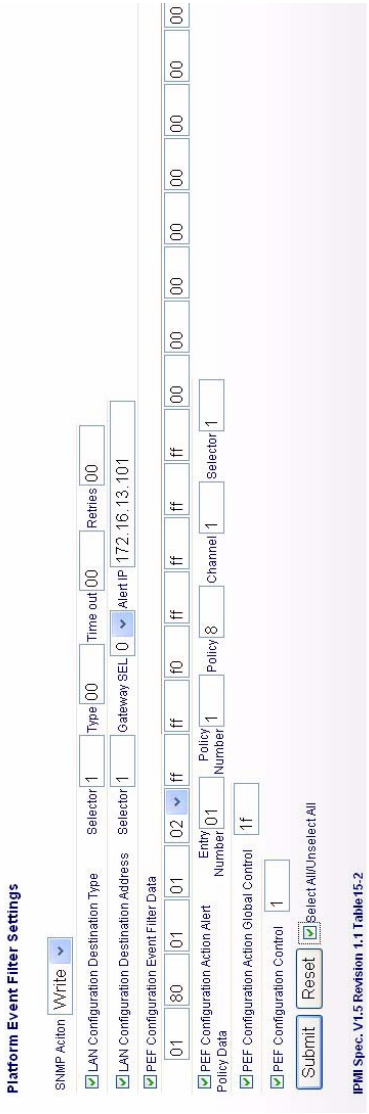


Figure 4-9: PEF Settings Screen

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Use the following settings for SNMP Trap configurations.

Non-critical Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

02	80	11	01	08	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Critical Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

03	80	11	01	10	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Non-recoverable Event Temperature Sensor Settings:

PEF Configuration Event Filter Data

04	80	11	01	20	ff	ff	01	ff	ff	ff	00	00	00	00	00	00	00

Non-critical Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

05	80	11	01	08	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

Critical Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

06	80	11	01	10	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

Non-recoverable Event Voltage Sensor Settings:

PEF Configuration Event Filter Data

07	80	11	01	20	ff	ff	02	ff	ff	ff	00	00	00	00	00	00	00

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4.7.2 Setting PEF with Shelf Manager Command Line

PEF settings can also be configured through the shelf manager command line. The ADLINK factory PEF settings are stored in `/bin/adlink_pef`. If you wish to restore the ADLINK PEF default settings, login to the shelf manager command line and run script below:

```
#clear_event_filter
#destination_ip $IP(Alert IP as same as system manager IP )
#adlink_pef
```

4.7.3 Monitoring SNMP Trap Alerts

In order to monitor SNMP trap, users need to confirm the platform event trap format. The system manager recognizes *format 0* only. The shelf manager default format is *0*. To determine the current format, please enter the following command:

```
# clia getpefconfig pet_format
Pigeon Point Shelf Manager Command Line Interpreter
Platform Event Trap format: 0 (IPMI default)
#
```

If your current format is not *0*, please configure the format to *0*, otherwise the SNMP Trap Alerts function of the system manager will be disabled. To set the platform event trap format to *0*, please enter the following command:

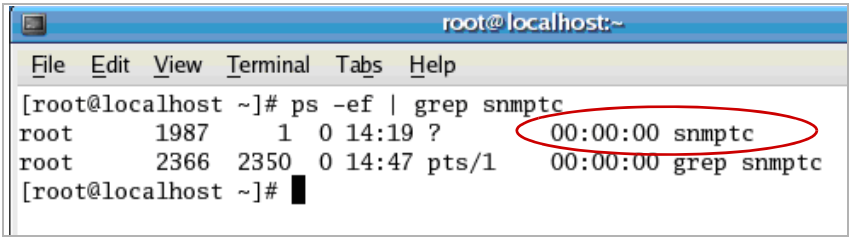
```
# clia setpefconfig pet_format 0
Pigeon Point Shelf Manager Command Line Interpreter
Platform Event Trap format set successfully
#
```

If properly configured, the System Manager will monitor and display all chassis information and board sensors. In order to do so, the System Manager must communicate properly with the snmp trap via IP.

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To check the snmptc process, login to the target server command line and type:

```
#ps -ef | grep snmptc
```



If the system returns < `00:00:00 snmptc` > your system is functioning normally. If not, you must check your host IP address.

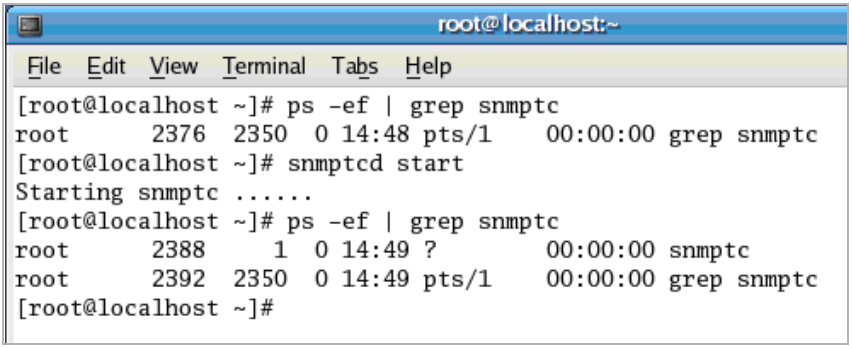
The host computer IP address acts as the access point for the graphical user interface. The snmptc cannot auto-run unless the host PC has an IP address. To confirm the host computer's IP address, from the Linux command line under root type:

```
#ifconfig
```

Please record the resulting IP address for reference.

Once you have an IP address, manually start the < `snmptcd` > at the command line by typing:

```
#snmptcd start
```



To confirm your settings type:

```
/etc/rc.local
```

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Once the snmptc daemon is running properly, the System Manager can display SNMP Trap alerts for hotswap, temperature and voltage sensors. The following is an example of open handle alarms where Slot 8 has one sensor alert and the shelf manager has sent SNMP trap alerts to the System Manager (see Figure 4-10 below). To view sensor alert details, click the < `Sensor Alert Status` > area.

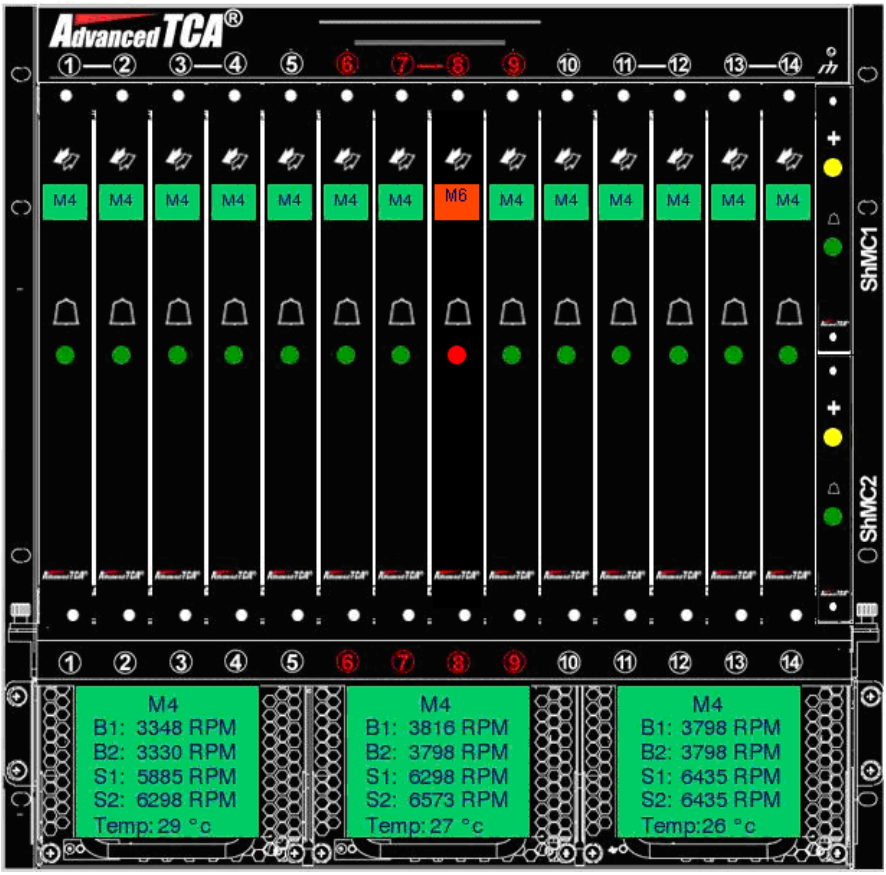


Figure 4-10: Example of aTCA-8214 with Slot 8 Alarm Alert

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5 Troubleshooting

This chapter provides tips and solutions to quickly solve possible system errors. If you are still experiencing problems, please contact the ADLINK FAE staff at: service@adlinktech.com.

System Error	Possible Cause(s)	Recommended Solution(s)
No ADLINK Chassis Found	Incorrect IP address	Check CMM IP and try again
	Network unreachable between ADLINK chassis, ADLINK aTCA System Manager and/or your client/terminal PC	Check physical network connection(s)
	Using old/outdated version of shelf manager on ADLINK chassis	Only use shelf manager version 2.5.2 or newer. Check version with <#`clia version`> command
	Shelf FRU information is empty or incorrect	Check Shelf FRU information with <#`clia fruinfo 20 1`> command. The resulting information should include part number. If no information results, contact the FAE staff.

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Contact us should you require any service or assistance.

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