# Intel® Active System Console

## User Guide

*June 2011*

# Legal Statements

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS FOR THE PURPOSE OF SUPPORTING INTEL DEVELOPED SERVER BOARDS AND SYSTEMS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Intel is a trademark of Intel Corporation in the U.S. and other countries.

Microsoft, Windows, Windows Server, Active Directory, and Vista are trademarks, or registered trademarks of Microsoft® Corporation in the United States and/or other countries.

**\*** Other names and brands may be claimed as the property of others.

Copyright **©** 2008 – 2011 Intel Corporation.  All rights reserved.

# Revision History

| Description | Revision Date |
|---|---|
| Initial release of document accompanying IASC v4.4. | March 2011 |
| Update TCP ports information | June 2011 |

§

# Contents

# 1 Introduction

The Intel® Active System Console is a simple, lightweight web application console that gives you a dashboard view of the Server hardware on which it is running. It helps you proactively monitor the health of your Server, allows remote configuration of Server, tracking of assets, alerting of any issues and generation of asset reports.

The Intel® Active System Console is a product offering from the Intel® System Management Software - a suite of software products designed to reduce the cost and time of managing servers and keep businesses running 24/7.

IASC is included with almost all Intel® Server Products at no additional charge giving your customer "peace of mind" that servers are healthy.

IASC offers the following:

- **Proactive alerting** allows the server administrator to plan routine maintenance activities and avoid unplanned downtime

- **Asset Inventory** tells you what components are installed in the server without having to shut down and open the system

- **Remote debug** isolates problems quickly saving hours and even days in the time it takes to debug and fix the issue.

## 1.1 Target Audience

The purpose of this document is to help system/server administrators install and use the Intel® Active System Console. It provides you detailed information on the features and benefits of Intel® Active System Console and how to use them. It describes the software requirements, supported operating systems, and the supported platforms. It also explains the installation and un-installation process.

## 1.2 Overview

The Intel® Active System Console helps you in proactive monitoring of the health of your Server, allows remote configuration of Server, tracking of assets, alerting of any issues and generation of asset reports. It gives you an overall view of the server hardware. This comprises information on hardware components of the system - overall health of the server and component health, sensors, System Event Log (SOL), storage (Logical Drives, Hard Drives), processors, memory, Field Replaceable Unit(FRU)s as well as BMC configuration.

**Get Peace of Mind**

It improves security, reduces costs, and helps businesses move from reactive to proactive system management. The software enables secure remote management and monitoring of servers, clients, and applications from virtually any location—in a way that IT generalists can understand without attending weeks of training. It's all about IT made easy:

**Simple**

- Makes it easy to set up and maintain a reliable and secure IT infrastructure

- Streamlines tasks throughout server life cycle with remote management

- Manages IT functions with a single suite of tools

**Secure**

- Keeps IT informed with automated daily health reports and alerts

- Improves reliability and stability with application and patch deployment

**Smart**

- Designed specifically for small to midsize business

- Reduces travel time and costs

- Provides a proactive solution to server management with reports and alerts

IASC displays the hardware sensors, Field Replaceable Unit (FRU) data, and System Event Log (SEL) for any system.

To launch the Intel® Active System Console, go to **Start> Programs**> **Intel® Server Management Software >Intel® Active System Console**.

You can also launch IASC from any client using the URL https://<ipadddressofserver>:9393/asc

# 1.3 Features and Benefits

This section discusses the features and benefits of Intel® System Management Software suite of Products in general and the IASC in particular.

**Intel® System Management Software**

The following table lists the comparative features and benefits of Intel® System Management Software suite of Products.:

| Features | Intel® Active System Console | Intel® Multi-Server Manager | Intel Management packs for the Microsoft* System Center | Intel® SNMP-SA | Intel® Command Line Interface (CLI) |
|---|---|---|---|---|---|
| Server Environment | 1-10 servers | 1-100 servers | 10-50 servers<br><br>(Use Operations Manager for Enterprise) | Enterprise | Any |
| User Interface | Web Based | Web Based | Windows Management Application | Integrates into enterprise tools such as<br><br>HP* OpenView | Command Line |
| Operating System Support | Windows, Linux | Windows, Linux | Windows, Linux | Windows, Linux | Windows, Linux |
| Single, easy to use console | X | X | X | | |
| Hardware Predictive Failure Analysis | X | X | X | X | X |
| Sensor readings | X | X | X | X | X |
| Hardware Event Log | X | X | X | | X |
| Hardware and Software Inventory | X (Hardware and Operating System) | X (Hardware and Operating System) | X | | |
| OS and Application Monitoring | | | X | | |
| Software Patch Deployment | | | X | | |
| Application Deployment | | | X | | |
| Alerting | X (Email and BMC SNMP) | X (Email or BMC SNMP) | X (Email, SNMP, SMS) | X (SNMP) | |
| Reporting | X | X | X (80 powerful software and hardware reports) | | |

| Features | Intel® Active System Console | Intel® Multi-Server Manager | Intel Management packs for the Microsoft* System Center | Intel® SNMP-SA | Intel® Command Line Interface (CLI) |
|---|---|---|---|---|---|
| BMC Configuration | X | X | X | | X |
| Power Management | X | X | X | | |
| Performance Views | | | X | | |
| Remote Management | X | X | X | X | X |
| Multi Server Management | | X | X | | |
| Remote Power On/Of/Reboot | | X | X | | X |
| Serial Over LAN (Console Redirection) | | | X | | X |
| OEM Customization | X | X | X | | |

**Intel® Active System Console**

The Intel® Active System Console has the following features:

- Viewing System Health in the Dashboard

- Viewing Other  System Information as follows:

  o   Viewing System Summary

  o   Viewing Processor Summary Readings

  o   Viewing Memory Device Readings

  o   Viewing Temperature and Fan Readings (Cooling Sensors)

  o   Viewing Voltage Sensors Readings

  o   Viewing Chassis Information

  o   Viewing Storage Readings

  o   Viewing Miscellaneous Readings

  o   Viewing System Events

- Generating Reports

- Checking for software updates

# 1.4 System Requirements

This section details the software requirements, supported operating systems and the supported platforms for the Intel® Active System Console.

## 1.4.1 Supported Operating Systems

Intel® Multi-Server Manager Server and Agent

- Microsoft Windows* Server 2003 Standard/Enterprise Edition – SP2 - x86 & EM64T

- Microsoft Windows* Server 2003 R2 Standard/Enterprise - x86 & EM64T

- Microsoft Windows* XP Professional – SP3 - x86

- Microsoft Windows* XP Professional – SP2 – EM64T

- Microsoft Windows* Vista Enterprise/Ultimate - x86 & EM64T

- Microsoft Windows* Server 2008 Standard/Enterprise/Datacenter/Storage x86/x64

- Microsoft Windows* Server 2003 SBS

- Microsoft Windows* 7 Ultimate – x86/x64

- Red Hat* Linux* Enterprise 5 x86/x64

- SuSE* Linux ES 10 SP2 x86/x64

- SuSE* Linux ES 11 x86/x64

## 1.4.2 Browser Requirements

The application has been tested to run on Microsoft* Internet Explorer 7.x or later and Mozilla Firefox* 3.6 or later versions. It is best viewed in screen resolution from 1024 X 768 to 1440 X 900.

## 1.4.3 Supported Platforms

- Intel® Server Board S1200BT (LC)

- Intel® Server Board S3420GP (LC, LX, RX)

- Intel® Server Board S5520UR

- Intel® Server Board S5520URT

- Intel® Server Board S5500BC

- Intel® Server Board S5520HC

- Intel® Server Board S5520HCT

- Intel® Server Board S5500HCV

**Intel® Active System Console - User Guide**

- Intel® Server Board S5500WB

- Intel® Workstation Board S5520SC

- Intel® Server Board S5000PAL

- Intel® Server Board S5000PSL

- Intel® Server Board S5000VSA

- Intel® Server Board S5000XVN

- Intel® Server Board S5000XSL

- Intel® Server Board S5000SAL

- Intel® Server Board S5400RA

- Intel® Server Board S5400SF

- Intel® Server Board S3210SH

- Intel® Server Board X38ML

For the latest and up-to-date list of supported operating systems, system requirements and platforms supported refer to the release notes available with the product.

# 1.5 Supported Languages

English only.

# 1.6 Additional Information

This section lists additional IASC related information that will help you use it appropriately.

## 1.6.1 Third Party Source Code/Binaries

Link to third party source code/binaries:
http://support.intel.com/support/motherboards/server/sysmgmt/sb/CS-031025.htm

## 1.6.2 Support Information

If you encounter an issue with your server platform or management software, please follow these steps to obtain support on your product.

1. Get connected to our support web page for 24x7 support when you need it to get the latest and most complete technical support information on all Intel® Enterprise Server, Storage Platforms and Management Software. Information available at the support site includes:

- Latest BIOS, firmware, drivers and utilities available through Intel's download center.

- Product documentation and flash demos, installation and quick start guides

- Full product specifications, technical advisories and errata

- Compatibility documentation for memory, hardware add-in cards, chassis support matrix, and operating systems

- Server and chassis accessory parts list for ordering upgrades or spare parts

- A searchable knowledgebase to search for product information throughout the support site

2. Utilize the community forums or chat with a live person.

3. You can also contact an Intel support representative using one of the following support phone numbers. Charges may apply. Intel customer support suggests running the Intel® System Information Tool (depending on the operating system being used) for Microsoft Windows*, Linux* or EFI* to extract relevant data that pertains to the issue being encountered and provide the information when asked by a support agent.

Intel now offers Channel Program members round-the-clock 24x7 technical phone support on Intel® server boards, server chassis, server RAID controller cards, and Intel® Server Management.

**Warranty Information**

Connect to Intel's website to obtain warranty information.

*NOTE: Requires Login to the Reseller Site to obtain the 24x7 Number.*

## 1.6.3  Related Documentation

The following table lists the related documentation:

| Document/ Information | Source |
|---|---|
| Intel® Active system Console Release Notes | Available at the root of the CD |
| Intel® Intelligent Power Node Manager – White Paper | documents\User Guide\ENU |
| Intel® System Management Software Installation Guide | documents\Installation\ENU |

# 1.7 Terminology

The following table lists the terminology used in this document and the description:

| Term | Description |
|---|---|
| BMC | Baseboard Management Controller |
| CIM | DMTFs Common Information Model - CIM provides a common definition of management information for systems, networks, applications and services, and allows for vendor extensions |
| GUI | Graphical User Interface |
| Intel® SMS | Intel® System Management Software |
| IPMI | Intelligent Platform Management Interface. Operates independent of the operating system (OS) and allows you to manage a system remotely even in the absence of the OS |
| RMCP | Remote Management Control Protocol – Protocol used by IPMI for communicating over LAN |
| SEL | System Event Log |
| SMBIOS | System Management BIOS (SMBIOS) is specification to lay out data structures (and access methods) in a BIOS which allows a user or application to store and retrieve information specifically about the Server |
| SNMP | Simple Network Management Protocol |
| SOL | Serial Over LAN |
| Upgrade | Enhanced versions of Intel® SMS with new platform support or new features are uploaded to Intel Website. Users installing Intel® SMS from a CD can upgrade to a new version using multiple ways. Intel recommends all users to upgrade to a new versions |

§

# 2      Getting Started

This section provides information on how to install and use the Intel® Active System Console.

## 2.1 Installing Intel® Active System Console

**For Linux\***

To install the software, run with root privilege.

- If you downloaded the tar file, run the following command to unzip the package

  ```
  tar  -xvf  [ASC package name]
  ```

- If you are using CD to install, then browse to …

  Then run the following commands.

  ```
  *cd ASC
  *./install
  ```

  The script auto-detects OS and Version (RHEL/SLES)

**For Microsoft Windows\***

Place CD into CDROM and it will Autorun
Or
manually click default.hta

- Click on the "Click to Install" button for Intel® Active System Console Install. This will take you to the prerequisite Page, choose "Install Software" if enabled. Then, once the prerequisite software is installed click the "Continue Installation" button.

*Notes:*

- *While installing, user will be asked to change the default password of "admin".*

  *We recommend you set a strong password for "admin" (for example, use a combination of letters, numbers, or keyboard characters not defined as letters or numerals such as ~ ! @ # $ % ^ & \* ( ) _ + - = { } | \ : " ; ' < > ? , . /)*

- *The IASC installed in the server also serves as an MSM agent monitoring this server.*

## 2.2 TCP Information

The following TCP ports are used by Intel® Active System Console.

| Port # | Description | Firewall Exception Required |
|--------|-------------|----------------------------|
| 7777 | Use for discovery and management by Intel® Multi Server Manager (MSM). | Yes ** |
| 9393 | Use for web server hosting | Yes *** |
| 4369 | Use for socket based IPC on the software backend. | No |
| 9191 | Use for lighttpd web service. | No |
| 521 | Use for lighttpd web service / PHP CGI. | No |

**Notes:**

** 7777 is required to add on the firewall approval list only when used to manage IASC with Intel® Multi-Server Manager.

*** 9393 is required to add on the firewall approval list if accessing IASC remotely over the network with a supported web browser.

Refer to **Chapter 5** for more security features.

# 2.3 Uninstalling Intel® Active System Console

To uninstall, run the following:

**Linux\* -**
```
cd /usr/local/asc/bin/
```

```
"sh uninstall"
```

**Windows\*** - You can uninstall ASC from Windows either

- from Add/Remove Program options

- from Start Menu->All Programs->Intel->Uninstall Intel® Active System Console

You will be asked to reboot the server to complete installation. You can either reboot immediately or postpone it. All files and registry entries will be completely removed only on reboot.

*Note: The database will also be removed on uninstallation. If you want the database for any further storage make sure you copy the database SMS.db to appropriate location before uninstall.*

- */usr/local/asc/bin/SMS.db (in Linux\*)*

- *C:\Program Files\Intel\ASC\SMS.db (in Windows\* 32 bit)*

- *C:\Program Files (x86)\Intel\ASC\SMS.db (in Windows\* 64 bit)*

§

# 3 Navigating Intel® Active System Console

This section details how you can navigate the Intel® Active System Console to use its features.

By default, the Intel® Active System Console opens in the **System>Dashboard** view displaying overall server health as shown in Figure 1.
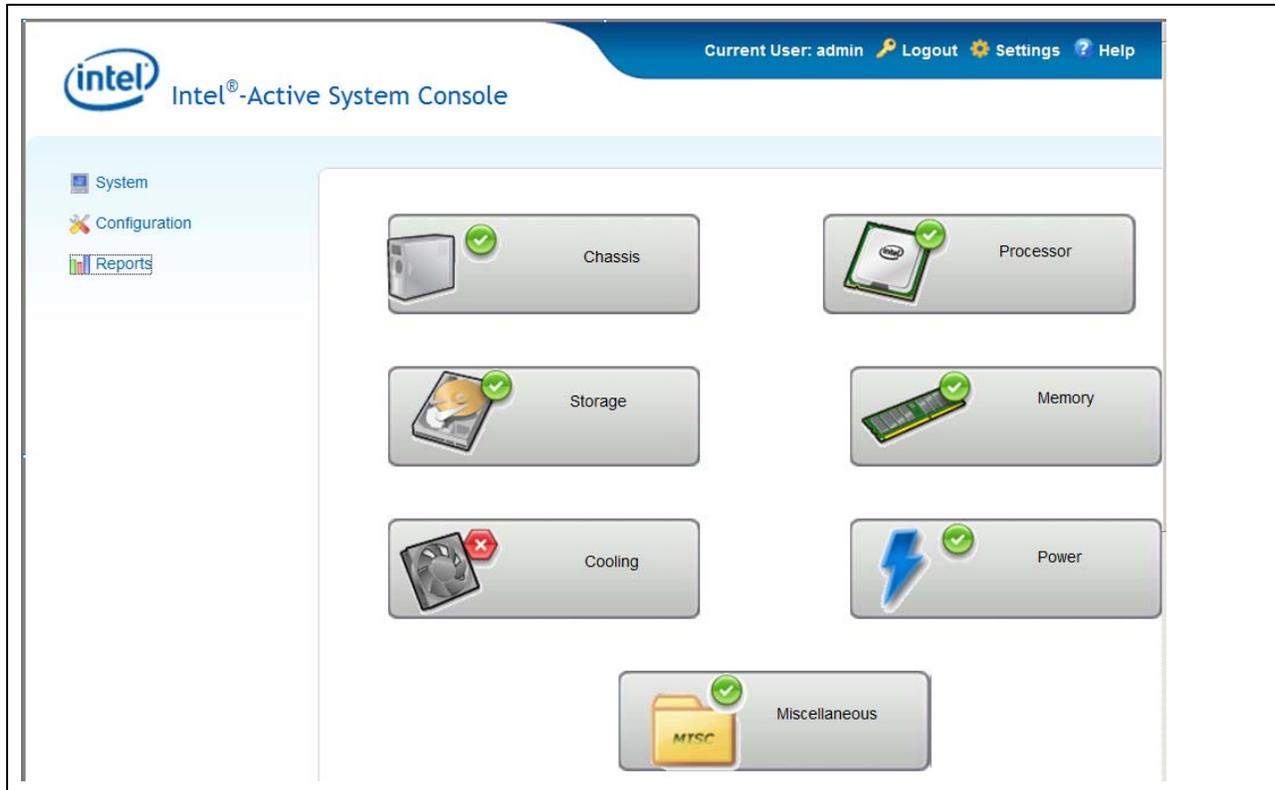


**Figure 1. Intel ® Active System Console Login page (By default, IASC opens in Dashboard page)**

The left side Navigation menu comprises buttons that have submenu items.

For a quick overview of the tasks performed by these buttons and their sub menu items see following Table:

| Menu Button | Submenu | Task |
|---|---|---|
| **System** | | |
| | Dashboard | Displays aggregate of the system health in the Dashboard (chassis, storage, cooling, processor, memory, and power) |
| | Summary | Displays a table of all hardware sensors and the threshold settings |
| | Processor | Displays processor details and speed information |
| | Memory | Displays memory size and type information |
| | Cooling | Displays all System/Processor fans. It shows the current health status of the fan and the current reading of the fan in RPM. |
| | Voltage | Allows you to navigate and clear the SEL |
| | Chassis | Displays the state of the chassis intrusion sensor and enables identifying the system by turning on/off the Chassis ID LED |
| | Storage | Displays information about the hard disk drives, logical disk drives, and media or DVD drives |
| | Miscellaneous | Lists out all the Sensors which are not categorized under any of the main sensors. These include some BIOS and other discrete sensors |
| | Events | Lists all the server event logs. |
| **Configuration** | | |
| **BMC** | Baseboard Management Controller. Has the following submenu buttons: Manages the interface between system management software and platform hardware. | |
| | Users | Helps you add/delete/edit a BMC User |
| | Network | Lists all the Network present on the motherboard |
| | Serial Over Lan | SOL. Settings help change the Baud rate of the system |
| | SNMP Alerts | Help send SNMP based alerts to the target server ( fan failure, memory error, etc. |
| | BIOS | BIOS settings |
| | Node Manager | Intel® Dynamic Power Node Manager. An advanced feature that helps set power policies resulting in saving system power |
| **Basic Email** | | Simple mail configuration that sends all server alerts to mail server. |

**Intel® Active System Console - User Guide**

| | |
|---|---|
| **Advanced Email** | Helps configure user specific Email alerts. Feature-rich customized user settings available. |
| **Reports** | |
| **Generation** | Helps generate reports on many categories. For example, Asset Information, All System Events, Critical Events, Sensor Values ,and BMC Settings. The file can be exported either in XML, HTML, or CSV format |

# 3.1 System Information

This section lists the Hardware choices available shown in Figure 1.

The Hardware choices and their functions are listed in the following Table:

| Hardware choice | Function |
|---|---|
| **System** - Displays system health information. | |
| Dashboard | Default IASC view. Displays chassis, Processor, Storage, Memory, Cooling, Power, and other Miscellaneous information in a convenient dashboard view. |
| Summary | Displays a table of all hardware sensors and the threshold settings |
| Processor | Displays processor details and speed information |
| Memory | Displays memory size and type information |
| Cooling | Displays all System/Processor fans. It shows the current health status of the fan and the current reading of the fan in RPM. |
| Voltage | Allows you to navigate and clear the SEL |
| Chassis | Displays the state of the chassis intrusion sensor and enables identifying the system by turning on/off the Chassis ID LED |
| Storage | Displays information about the hard disk drives, logical disk drives, and media or DVD drives |
| Miscellaneous | Lists out all the Sensors which are not categorized under any of the main sensors. These include some BIOS and other discrete sensors |
| Events | Lists all the server event logs. |

## 3.1.1 Viewing System Health

The **System** page as shown in Figure 1 displays the health of the system and its components. The UI gets refreshed every 10 minutes.

## 3.1.2 Viewing System Summary

To view information on the board, BIOS, and Firmware, in the **System** page, click the **Summary** button to display System Summary, FRU data, and Power Supply as shown in Figure 2.

| System Summary | |
|---|---|
| **Property** | **Value** |
| System Name | linux-4aa2 |
| Asset Tag | S3420GPC |
| BIOS Version | S3420GP.86B.01.00.0040 |
| System GUID | 843DC422565D11DE8B20001517980FFC |
| Manufacturer | Intel Corporation |
| Platform ID | S3420GPC |
| SDR Version | SDR Package 0.17 |
| BMC Version | 1.19 |
| Serial Number | 4444 |
| Operating System Name | SUSE Linux Enterprise Server 11 (i586) |
| Operating System / Kernel Version | #1 SMP 2009-02-28 04:40:21 +0100 |
| Operating System Build | 2.6.27.19-5-pae |

| FRU Data | | | | | | |
|---|---|---|---|---|---|---|
| **Device Name** | **Model Number** | **ID** | **Manufacturer** | **Part Number** | **Serial** | **Version** |
| Baseboard | S3420GP | 0 | Intel Corporation | 3333 | 4444 | ................. |

| Power Supply | | | |
|---|---|---|---|
| **Health** | **Name** | **Current Reading (Watts)** | **Upper Critical (Watts)** |

**Figure 2. System Summary page**

- Asset Tag: Name given to a server for easy server asset tracking such as hardware and software configuration information during server deployment.

- BIOS and Firmware version details. Current values obtained from server.

- System GUID value. Global Unique Identifier for each system on the network.

- IPMI version. Details of Intelligent Platform Management Interface version.

- SDR (Sensor Data Recorded) Package version, serial number of the server, and HSC version.

For systems that do not have compatible power supply, this page will not have instances. If the platform does not support power gauge sensors or PMBUS power supplies, then the current reading will be 0s (for example, H800t).

## 3.1.3 Viewing Processor Summary Readings

To view the processor summary readings, click **System** -> **Processor** to display processor summary, processor configuration, and discrete sensor readings shown as follows:



**Figure 3 – Processor Summary Readings**

As all thresholds are not supported for all sensors, unsupported thresholds are marked with a hyphen. Health of the sensors is also shown to indicate those that are critical and that are not.

## 3.1.4 Viewing Memory Device Readings

To view the processor memory device readings, click **System** -> **Memory** to display memory device details and discrete sensor readings shown as follows:



**Figure 4 – Memory Device Readings**

Displays the health of each of the populated memory module. It lists the entire memory bank supported in the Server. If a memory module is populated in the memory slot, it will

list the corresponding size, speed, and type of module. If the slot is not populated, then it will list as not populated.

## 3.1.5 Viewing Temperature and Fan Readings (Cooling Sensors)

To view the temperature and fan readings, click **System** -> **Cooling** to display the Cooling Sensors page shown as follows:

| Temperature | | | |
|---|---|---|---|
| | Health | Name | Current Reading(Deg Celsius) |
| + | ✓ | P1 Therm Margin | -71 |
| + | ?? | P1 Therm Ctrl % | 0 |
| + | ✓ | Baseboard Temp | 30 |
| + | ?? | P1 Mem Margin | 0 |

| Fan | | | |
|---|---|---|---|
| | Health | Name | Current Reading(RPM) |
| + | ✓ | System Fan 2 | 1,620 |
| + | ✓ | System Fan 3 | 1,566 |

| Discrete Sensor | | |
|---|---|---|
| Health | Name | Current Reading |
| ✓ | CPU Therm Trip | STATE_DEASSERTED |

**Figure 5 - Cooling Sensors**

Displays all System/Processor fans. It shows the current health status of the fan and the current reading of the fan in RPM. Click on any of the System/Processor fan to view the upper and lower threshold details.

## 3.1.6 Viewing Voltage Sensors Readings

To view the temperature and fan readings, click **System** -> **Voltage** to display the Voltage Sensors page shown as follows:

| Voltage | | | |
|---|---|---|---|
| | Health | Name | Current Reading(Volts) |
| + | ✓ | BB +1.05V PCH | 1.04 |
| − | ✓ | BB +1.1V P1 Vccp | 0.85 |

| Lower Critical | Lower Warning | Upper Warning | Upper Critical |
|---|---|---|---|
| 0.683200 | 0.707600 | 1.500600 | 1.543300 |

| | Health | Name | Current Reading(Volts) |
|---|---|---|---|
| + | ✓ | BB +1.5V P1 DDR3 | 1.49 |
| + | ✓ | BB +3.3V | 3.31 |
| + | ✓ | BB +3.3V STBY | 3.21 |
| + | ✓ | BB +5.0V | 4.95 |

| Discrete Sensor | | |
|---|---|---|
| Health | Name | Current Reading |

**Figure 6. Voltage Sensors**

Lists all the current reading of the voltage sensors present on the base board. The details of each voltage sensor list the upper/lower critical and warning values.


## 3.1.7 Viewing Chassis Information

To view the temperature and fan readings, click **System** -> **Chassis** to display the Chassis Sensors page as shown in following figure. The user can also identify the server by turning the LED on or off. To do this, click the chassis icon in this screen.

*Notes*:

- For systems that do not support the chassis sensor, **The system LED is currently Not Supported status** displays.
- For some platforms, the status of LED is not supported, but the user will still be able to turn the LED on and off as shown in Figure 7. To do this, click the chassis icon in this screen.
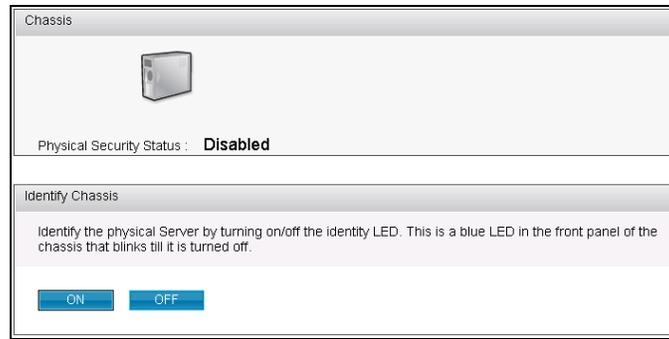
**Figure 7 – Chassis Information page/ Identify Chassis On/Off Dialog**

Displays physical security status of the chassis. Also helps identify chassis (physical Server) by turning the blue LED in the front pane of the chassis on/off (LED blinks till it is turned off).

# 3.1.8 Viewing Storage Readings

To view the temperature and fan readings, click **System** -> **Storage** to display the Storage Sensors page as shown in following figure.



**Figure 8 – Storage Device, Logical Drives, Drive Sensor Information page**

- **Storage Device**. The Storage page lists out all the Storage drives present in the server. The drive name along with the Model Number, device name serial number and the total capacity of the Hard disk.

- **Logical Drive**. The Logical drive shows all the Logical drives that have been mounted currently. It shows the total used space and the free space for each of the logical drive.

- **Drive Sensor**. The Drive sensor displays two types of sensors basically the Drive Status and the Drive Presence sensors. It gives the name of the drive slot, the corresponding health of the Hard drive presence or absence.

  *A warning alert gets generated in the Events page if the Hard disk space crosses the threshold of 75% and a Critical alert is generated if it crosses the 905 margin.*

**Intel® Active System Console - User Guide**

## 3.1.9 Viewing Miscellaneous Readings

This section lists out all the Sensors which are not categorized under any of the main pages. These include some BIOS and other discrete sensors. It lists the name of the Bus Sensors and shows the corresponding health along with the values.



**Figure 9. Miscellaneous Information page (Bus Sensors, BIOS and other discrete sensors)**

## 3.1.10 Viewing System Events

This page lists all the server events as follows:



**Figure 10 – System Events Information page**

The description, severity, status of events (open or closed) and time stamp for each of the events is listed.

The top row heading shows a list of filters and actions that can be taken on the table. There are filters for State, Severity and Module Type. If a particular value in filter is selected, only events belonging to that filter value appears in the table.

- **Severity filter**. Use for viewing only critical/warning/informational events. The column headings follow the filters and actions. The entire table can be sorted based on each column.

  To sort the table based on a column click on column heading. First click on the column sorts it in ascending (lexicographic) order. Any further clicks, the order toggles between ascending and descending.

- **Open Status**. If in open state, check for event description. If critical event, take immediate corrective action.

**Actions**

Two sets of actions can be performed on events.

- **Delete Events**. All the events listed in the table can be deleted from database. Here again, two options are available:

  Delete all events from Database. Here the events are deleted from ASC database. This include all open and closed Server Events as well as Application Events.

  Delete all events from Baseboard Management Controller (BMC). Here the Server Events are deleted from BMC SEL store.

  *Notes*:

  You cannot selectively delete events from either database or BMC. Either all events or none are deleted.

  If you delete from database, it cannot be recovered. So, backup event logs by exporting Reports.

- **Close Selected**. Update the status of events to closed. Based on the type of events two results are observed. If the event is regular events, close will just update the status to closed. If any active events are appearing in bottom scroll log, that will be gone. If the event contributes to Server health, displayed as "Open *" in the Status column, closing the event causes the IASC to ignore the event and recompute the health of the component. This may cause the health of the Server from being critical to go to healthy state in IASC (if the event that closed is the only one causing the critical state).

  For instance "memory …."

- **Export tab**. Use for exporting log files in XML, CSV, or HTML format.
- **Clearing events**. For clearing any of the events, select the event in check box and

click **Delete selected**.

There are two options

- o To delete the events from BMC SEL memory
- o To delete the events from database as well.

**Note:** *If you delete from database, it cannot be recovered. So, backup event logs by exporting Reports.*

§

# 4 Configuring Server Hardware and Reports Generation

This section explains configuring the server hardware using IASC. It details the options available in the Configuration feature of the Intel® Active System Console. Click **Configuration** button to access the menu with the configuration options on Baseboard Management Controller as follows:

*Note*: *Only users with ADMIN privilege can configure a Server using ASC.*



**Figure 11 — Configuration Menu**

## 4.1 Configuring BMC

This section explains configuring the BMC. It details the options available in the BMC Configuration feature of the Intel® Active System Console. The BMC Configuration window has the choices listed in Figure 11.

### 4.1.1 Configuring BMC Users

The BMC User Configuration section helps you add/delete/edit a BMC User. While doing so, you can set the privilege level as Administrator, Operator, or User.

Baseboard Management Controller supports authentication and authorization for remote access(out-of-band access). Users have to configure a BMC Username and password to access BMC in out-of-band fashion

You can also enable or disable the User.

In the left navigation pane, click the **Configuration>BMC>Users** button to view the BMC User window as shown in Figure 12.
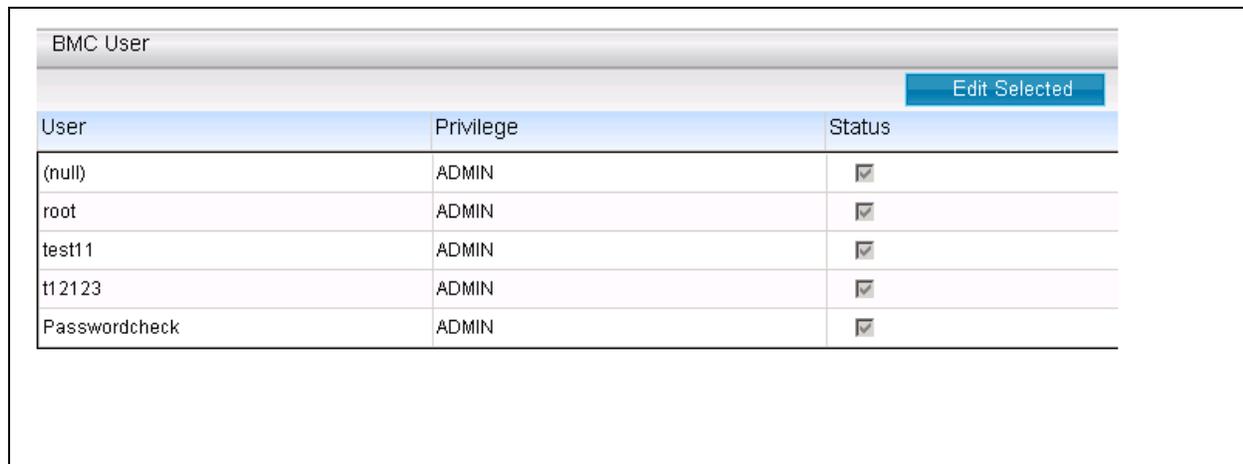


**Figure 12. Intel ® Active System Console BMC User Configuration window**

You can enable or disable the User by clicking **Edit Selected** to display the following dialog:
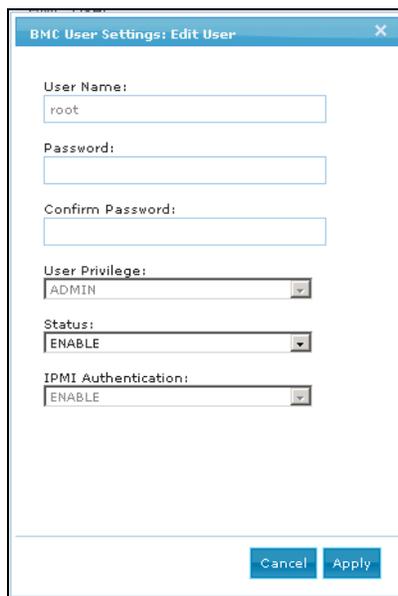


**Figure 13. Configuring BMC User Settings: Edit User dialog**

## 4.1.2 Configuring Network

Click Configuration>BMC>Network.

| Network | Enable | IP Address | Gateway |
|---------|--------|------------|---------|
| ▶ 1 | ☑ | 10.223.132.53 | 10.223.132.62 |
| ▶ 3 | ☑ | 0.0.0.0 | 0.0.0.0 |

**Figure 14. Configuring BMC Network Window**

This page lists all the networks present on the motherboard. This indicates the LAN channels over which a baseboard controller (BMC) can be reached out-of-band.

To enable, check the enable box.

- To edit the settings, select the network channel and then choose either static or DHCP IP address.

- If you are choosing the option "IP address from a DHCP server" then you must have a DHCP Server present in your network environment for the server to obtain an IP address automatically.

  o User Privilege can be either set to Admin, User, or Operator.

  o Admin user privilege configuration is needed for read, execute, and write privileges.

  *Note*: *These are not Operating System IP Addresses.*

## 4.1.3 Configuring Serial Over Lan (SOL) Settings

Base-board controller supports re-direction of Server boot sequence video console over LAN channel. Users can see the entire screen output of boot sequence and control it using keyboard simulating actual Server control. This console is lost once the operating system boots up. This feature is known as Serial-over-LAN.

Using ASC you can enable/disable or edit Serial-Over-LAN settings in base-board controller.

To change SOL settings, select LAN channel -> select baud rate -> select privilege level -> click **Update**.

You can enable authentication in which case only users with valid username and password can do SOL console redirection.

You can enable encryption in which case the entire SOL traffic will be encrypted and protected from network snooping.

Click **Configuration>BMC>Serial Over Lan** to display the **Serial Over Lan** window as shown in following figure:



**Figure 15. Configuring SOL Settings Window**

## 4.1.4  Configuring SNMP Alerts

SNMP Alerts help send SNMP -based alerts to the target server. Alerts include fan failure, memory error, and so on.

If you want base-board controller to send alerts about any change in Server hardware in the form of SNMP Traps to any SNMP Manager you can set it up using Active System Console.

SNMP Alerts help send SNMP Traps to the target server. Alerts include fan failure, memory error, and so on. Click **Configuration>BMC>SNMP Alerts** to display the SNMP Alerts settings window as shown in following figure:
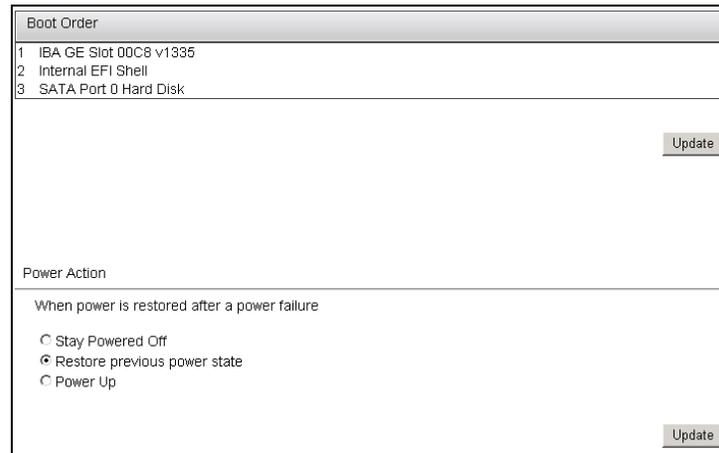


**Figure 16. Configuring SNMP Alerts Settings Window**

To set an alert, enter the IP address of target SNMP Manager or trap receiver-> select the alert type from the list of alerts -> click **Apply**.

## 4.1.5  Configuring BIOS

Click **Configuration>BMC>BIOS** to display the SNMP Alerts settings window as shown in following figure:



**Figure 17. Configuring BIOS Window**

**Set Boot Order.** Helps select system boot order - Hard Disk, DVD, Network, and so on - for the next reboot cycle. Select desired boot order -> click **Update**.

**Power Action.** Helps set power action in case of power breakdown. You have the option to choose one of the following:

- Stay powered off. Server remains in a powered off state even if the power is restored back.

- Restore to Original State. Server will either get powered up or it will remain in an Off state depending on previous power state during the power breakdown.

- Power Up. Server powers up when the power is restored back.

## 4.1.6  Configuring Intel® Dynamic Power Node Manager (Node Manager)

The Intel® Dynamic Power Node Manager (Node Manager) is an advanced system power savings feature to help user set power policies. Click **Configuration>BMC> Node Manager** to display the Node Manager Settings window as shown in following figure:

**Figure 18. Configuring Intel® Dynamic Power Node Manager (Node Manager) Window**

Power policy can be set for a specified power range only. Additionally, it can be applied for all/selected days. Refer to the *Intel® Dynamic Power Node Manager White Paper* for more details.

To create/edit a power policy setting, follow these steps:

1. Find and note current power reading of the server.

2. Find the average power consumed by the server during the day.

3. Select **Add** to add a new power policy or select one policy and click **Edit**.

4. In the profile window, enter a power limit value which is 25% higher than the average power consumption of the server. For example, if power consumption on an average is 140W and the peak power consumption is 210W then, enter a value for power limit as 170/180 Watts. NOTE: This is only an example and the power limit will vary depending on the server configuration. Refer the *Intel® Dynamic Power Node Manager White Paper* for limitations.

5. After entering power value, enter start and end time for power policy.

6. Select the recurrence days for the power policy. Either all days (daily) or specific a day (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday) can be selected.

7. Check the Alerts box if you also need alerts for the Intel® Dynamic Node Manager power policies.

8. After completing steps 1-7, click **Apply** to apply the settings.

   The Node Manager main page has an option for enabling/disabling the Node Manager policies. The user can enable all the policies or choose selected policies.

   If there are two policies overlapping a specific time, then the policy in which the power limit is low is the power policy that will be effective for that time period.

9. To delete a Node Manager Policy, select the policy using the check box and click **Delete policy**.

## 4.1.7 Configuring Basic Email: Use Default Email Profile

Email Alerting helps you receive Server Health Alert messages. For this, you must first configure your mail settings either through Basic Email settings or through Advanced Email settings.

Click **Configuration>Basic Email** to display the Email Alerts Settings window as shown in following figure:
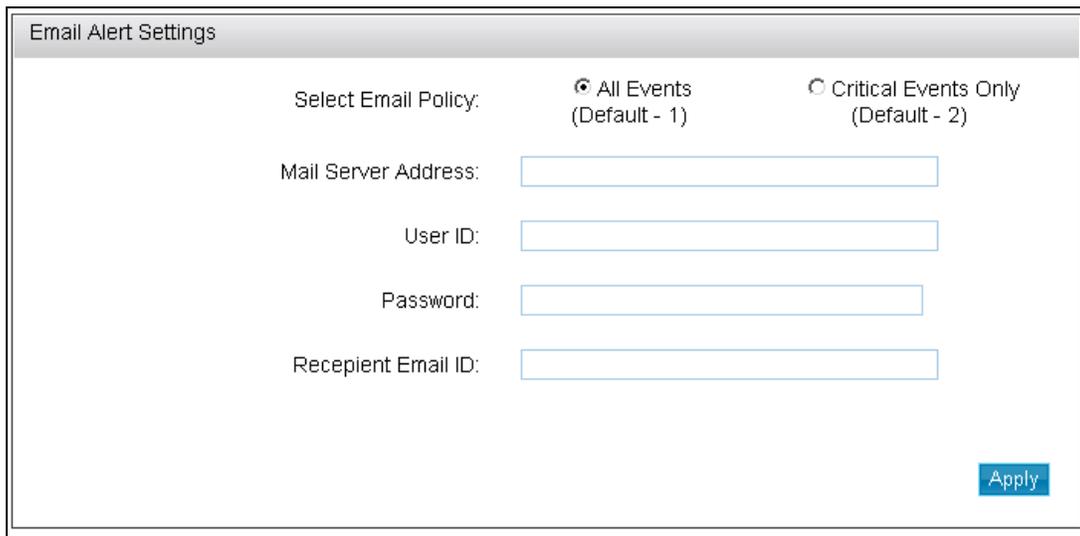


**Figure 19. Basic Email Alerts Settings Window**

Email Alerting helps you receive Server Health Alert messages. For this, you must first configure your mail settings either through Basic Email page or through Advanced Email.

For configuring Basic Email settings, you must have a mail server in your network environment. If not present, you must setup a mail server to use this feature.

- Select Default -1 profile to receive all Hardware alerts that include critical, warning, and informational.

    OR

- Select Default-2 profile to get only the critical Hardware events alert.

Enter the mail server IP address, its hostname and then enter the **To** Email address to which the alert has to be sent. Click **Apply** to set the basic Email alert setting.

# 4.1.8 Configuring Advanced Email: Create and Apply Email Profiles

Click **Configuration>Advanced Email** to display the advanced **Email Alerts Settings** window as shown in following figure:



**Figure 20. Advanced Email Alerts Settings Window**

Advanced Email Settings is rich in customized user settings. To create an advanced Email, do the following:

1. Enter the following:

   - Profile name

   - Mail server IP address. If a mail server is not present, then you need to set one up to use this feature.

   - From address of the Email

   - One/multiple "To" address/s

   - Subject line. For example, Chassis Intrusion Detected

   - Specific comments

2. Next, in the Alerts pane

   - Click **Select** all to select all the alerts (Select **Clear All** to deselect all as needed)

   OR

   - Select only specific alerts based on your need.

3. Next, click **Apply** to apply the settings.

To create another advanced Email, create a separate profile in step1 and then follow the same procedure.

# 4.2 Generating Reports

This option helps you generate reports on categories such as Asset Information, All System Events, Critical Events, Sensor Values, and BMC Settings. Click **Reports>Generation** to display the **Report Generation** window as shown in following figure:



**Figure 21. Generating Reports Window**

The file can be exported either in HTML, XML, or CSV format.

# 4.3 User Settings

A User setting icon is provided on the main IASC page on the top corner right hand side.

Clicking on the setting icon will open the user setting page. Here, new users can be added or existing user privilege can be edited or users can be deleted.



**Figure 22. User Settings Window**

*Note*: It is advised to give minimum number of administrator/root privileged users.

# 4.4 Viewing Software Updates

The Active System Console periodically checks for new software updates for Active System Console, BIOS or firmware from Intel site. If there are any new updates applicable to the platform or operating system installed or any new product announcements, it shows up on the **Software Updates** link. The Software Updates page displays severity and description of the software update applicable and also a download link for downloading the package.

Click on Help drop-down menu and select **Check for Updates**, to view the page as follows:
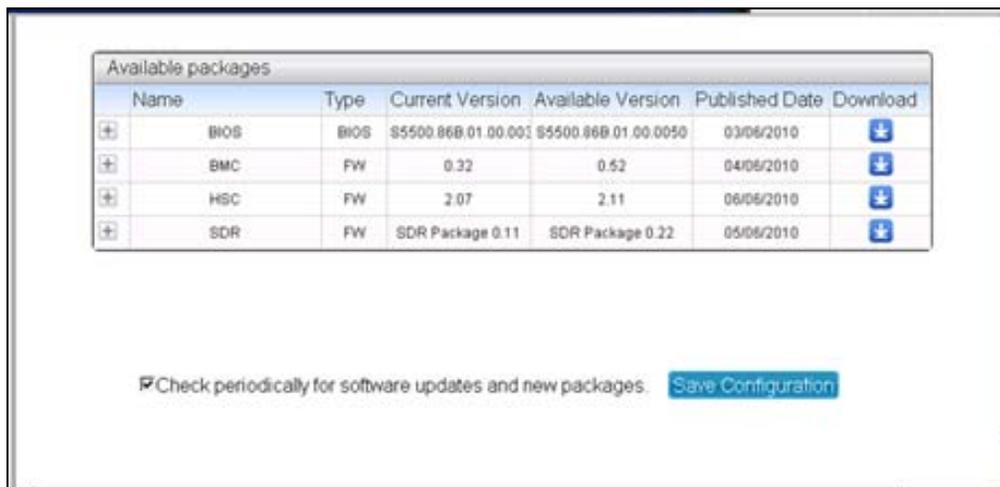


**Figure 23. Software Updates (system) window**

You can initiate a download after deciding to install the package upgrade. The file thus downloaded can be installed per specific instructions given for a package.

The Check for Updates will work only if the Server is connected to a public network or if the OS can contact the public www.intel.com site without any configuration change. The Active System Console will not do any proxy settings by itself; it has to be configured by the user. If the agent is not able to contact Intel website, the update process does not show the new updates to the user.

You can choose to disable periodic Software Updates check by deselecting the check box for "Check periodically for software updates and new packages".

Once the option is selected, click on **Save Configuration** button to enable the selection.

§

# 5 Security Features

The Intel® Active System Console offers multiple security features as protection against unauthorized access to the application.

- It supports role-based multiple user authentication as follows:
    - ADMIN. Users with administrator privileges.
      Default Administrator user is admin. Only admin can create new users and assign privileges. Any user can, however, change password.
    - USER. Users with read-only privileges. Configuration changes using the application not permitted.
- IASC supports SSL based data encryption to securely communicate between client and application
- Secure Socket Layer allows two communicating devices to encrypt data using a public certificate and private key.
- The certificate used in IASC is a self-signed one to reduce the cost of deployment. All modern browsers will detect self-signed certificate and give a warning that the "certificate is invalid" since the authority that signed the certificate is not a publicly acknowledged authority. However, Users can override the warning and accept the certificate. You should do this only if you are sure that the certificate is originated from the application itself (by making sure you first launch the application from a trusted network and add the certificate to the trusted list).

  Once a certificate is accepted, the warning goes away as long as you launch the application from the same client.

  Customers having a valid certificate from a public CA can use that certificate instead of auto-generated one.

**Replacing Certificate in a Windows\* Installation**

To replace certificate in a Windows\* installation, do the following:

1. After installation, shut down the web-server for Certificate replacement.
   - Run services.msc from Run command in Windows. This will launch Services window.
   - Search for LightTPDService and stop the service.
2. Go to application installation directory (C:\Program Files\Intel\ASC\ in default case) and go inside conf folder.
3. Replace lighttp.crt with your valid certificate. If the name is different rename it to lighttp.crt.
4. Replace the private key file, lighttp.pem with your private key file.
5. Set all the permissions of the key file to only Administrator. No other users should be able to read or write this file.
6. Set the permissions of the lighttp.pem to read-write for Administrator and read-only for other users.
7. If you do not want to change the file names of your certificate/key file pair, make appropriate changes in the lighttpd-inc.conf in the same folder.
8. Restart the web-service LightTPDService from the Service window.

**Intel® Active System Console - User Guide**

### Replacing Certificate in Linux* Installation

To replace certificate in a Linux installation, do the following:

1. After installation, shut down the web-server for Certificate replacement.
   /etc/init.d/lighttpd stop.
2. Go to the folder /etc/lighttpd/ and replace lighttp.crt with your valid certificate.
   If the name is different rename it to lighttp.crt.
3. Replace the private key file, lighttp.pem with your private key file.
4. Set the permissions of the files as below:
   -rw-r--r--   1 root root  1326 Mar 28 12:11 lighttp.crt
   -rw-------   1 root root  3005 Mar 28 12:11 lighttp.pem

   Only root is allowed to read the private key file and write the public certificate
   file
5. If you do not want to change the file names of your certificate/key file pair,
   make appropriate changes in the lighttpd.conf in the same folder.
6. Restart the web-server
   /etc/init.d/lighttpd start


- IASC uses a custom http TCP port (9393) so it does not conflict with site's access control
  lists or firewall rules
  For proper access to the application, appropriate changes should be done in firewall
  rules to exclude this port from blocking.
  Customers can modify the port if they want by editing the /etc/lighttpd/lighttpd.conf (in
  Windows, %ProgramFiles%\Intel\ASC\conf\lighttpd-inc.conf) and restarting the web-
  service.

- IASC uses TCP port 7777 for the communication between IASC and Intel® Multi-Server
  Manager (MSM). The port can be blocked by customer firewall if you don't have MSM.

- IASC may use TCP port 9191, 4369, 521 for internal only, those ports all can be blocked
  by firewall for security purpose.


### Traceability and Security Audit

- IASC keeps track of who all logged-in and logged out and from which client. Any
  unauthorized attempts to login are also kept track of. This is recorded in the form of
  events in the Event Table.

Administrators of the tool should periodically do an audit on the events table to find out if
there is any misuse of the application or any unauthorized attempts to access the tool.

# 5.1 Security Recommendations

No security feature is fool proof unless you follow certain standard security procedures and controls.

- **Security controls**. Implement, update and monitor industry security products for servers, such as but not limited to: anti-virus, anti-spyware, host based firewall, intrusion prevention, and so on.

- **Remote access.** The platform should be managed by those familiar with securing remote access functions as well as managing systems that are exposed to the Internet.

- When assigning passwords for the ASC and BMC user accounts, make them strong enough to minimize your risk that someone could guess the passwords and thus use the ASC to change the server configuration or interrupt its power/temperature controls. ASC warns the user if the password is weak, so follow the warning and guide-lines.

- **Network controls.** If the management console is being established to allow internet based access it is recommended to be placed within a network enclave that is consistent with many companies' internal policy of maintaining a "DMZ" or zone of networks that is more closely monitored than internal networks

- **Firewall**. Enable firewall software/services on Server where you install ASC or to the network, and only enable exceptions to allow access to the web server on each server. Where possible, limit which remote clients (e.g. using IP address ranges) can connect to the web server.

- To prevent successful Cross-Site Scripting and Forgery attack (XSS/CSRF) the users should follow certain security guidelines:

    - Make sure you access the application only from trusted clients.
    - Do not leave the application logged-in for a prolonged time and close the browser as soon as you finish the usage.
    - Do not visit any suspicious site or click on any public links in any other tabs in the browser while you are accessing the application.
    - Change the passwords frequently to prevent unauthorized access by any internal user and to reduce social engineering attacks.
    - Delete and create new application user accounts to reduce the risk of unauthorized access from internal users or ex-users.

§

# 6 Troubleshooting Guidelines

If you face any issues or doubts while using IASC, you can refer to the Help available in each page of IASC.

If the issue persists, read the following sections for troubleshooting tips and known issues.

**Troubleshooting tips**

1. If, even after giving correct username and password, you are not able to login

   OR

2. You logged in and while using the IASC, it does not respond.

   The issue could be that any of the previous requests is taking too much time to respond to or the Base-board Management Controller interface has become unresponsive. The best way to resolve is to restart the essential services of IASC.
   For this do the following steps:

   In Windows*,

   - go to Start menu, and click on Run (Windows 2003, XP)

   - go to Start menu, and click on *"Search programs and files"* box

   - type *services.msc* in the box and press <Enter> key. The Services window will come up.

   - Search for IASCServiceManager service and stop the service

   - Search for "Appcore" service and stop the service.

   - Start "Appcore" service and IASCServiceManager one after another.

   In Linux*,

   - Open a terminal window and run the following commands

   - /etc/init.d/lighttpd stop

   - /etc/init.d/ascpolicy stop

   - /etc/init.d/Appcore stop

   - /etc/init.d/Appcore start

   - /etc/init.d/ascpolicy start

   - /etc/init.d/lighttpd start.

   This will solve most of the unresponsive situations. You can launch the browser and login to the tool again.

3. If you are not able to access IASC installed in a Server from a remote location but able to ping the Server or connect remotely to Server, then it could be a firewall issue. Troubleshoot this by disabling firewall temporarily and try connecting to the IASC URL remotely again. If it works, then try adding following ports to the exception list of firewalls to the Server.

   Active System Console uses few ports (9393, 9191, 7777) which should be excluded from firewall if you have to reach the tool from other systems or from outside the private network.

4. If at any time, any of the following essential services of IASC are down, IASC will not work. If you are facing some issues in accessing the product, you should check if the following services are running.

   In Windows*,

       IASCServiceManager

       Appcore

   In Linux*,

       run the following commands and verify

       /etc/init.d/lighttpd status

       /etc/init.d/ascpolicy status

       /etc/init.d/Appcore status

**Known Issues**

- IASC supports both Internet Explorer* (versions 7 and 8) and Mozilla Firefox*  Web browsers.

- IASC supports secure transport over the network using SSL/TLS. SSL/TLS uses a self-signed certificate because of which the browsers will throw a "Not a trusted Connection" warning. Accept and add the certificate to the trusted certificate list to proceed. (Click either on *Add exception* or *Accept certificate.*)

- When installing in Red Hat Linux*, sometimes the installer may throw a dependency error for libxslt.so. For resolving this, user has to install libxslt.*.rpm

- When Installing in SUSE* 10 sp3 64 bit, user may get "ascpolicy could not load a transcoding service" error. For resolving this, user has to install 'glibc-locale-32bit' package.

- Before installing IASC v4.x, uninstall previous version of IASC.
  IASC v4.x cannot coexist with previous version of IASC.

- License page cannot be closed by clicking **Close** button in some Linux* systems. Follow these steps to resolve it:

**Intel® Active System Console - User Guide**

- Launch Mozilla Firefox* browser and type "about:config" in the url window

- Search for "dom.allow_scripts_to_close_windows ", double click it and set it to "true"

- Parts of IASC4.2 pages, such as memory, processor, are not available on system that install on GPT style partition.

- Due to BIOS incompatibility reasons, parts of IASC 4.x pages, such as processor, may be blank on SR1680MV.

- The "wait" icon and critical events scrolling at the Active System Console will not work if the browser does not allow animations. Enable animations in browser for proper usage. For example, in IE, go to Tools-> Internet Options->Advanced->Security and check the "Play animations" option.

§