

# **Kaby Lake Platform Intel® Active Management Technology (Intel® AMT) 11.6**

**Application Notes / Briefs**

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***October 2016***

***Revision 1.0***

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## Revision History

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Revision Number	Description	Revision Date
0.5	Initial Version: Carry over from Intel® AMT 10.0 WebUI guide.	April 2016
0.7	Updated AMT WebUI screenshot	June 2016
1.0	Updated the revision number	October 2016

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# 1 *Introduction*

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Intel® Active Management Technology (Intel® AMT) is a hardware-based solution that uses out-of-band communication for management access to client systems independent of the system state. In situations where a system would normally be inaccessible, such as a crashed hard drive or a locked operating system, Intel® AMT will be able to access a client system to allow performing of basic management tasks.

Intel® AMT is designed with a complete set of management functions to meet the deployment needs of administrators. All configuration operations are conducted using a combination of the BIOS-based Intel® AMT Configuration screen (in the Intel® Management Engine BIOS Extension screen) and the Intel® AMT firmware, communicating over the network interface.

## 1.1 **Scope of Document**

This document explains how to configure client systems and access the Intel® AMT web pages from any other system on the network, using local network provisioning model. Features supported by Remote Configuration model are available with software provided by vendors who support Intel® AMT.

Readers should have a basic understanding of networking and computer technology terms, such as TCP/IP, DHCP, DNS, Subnet Mask, Default Gateway and Domain Name.

Explanation of these terms is beyond the scope of this document.

Before the Web UI can be used to access the Intel® AMT web pages, the following should be performed on the client system (Intel® AMT system).

1. Create a flash image using the component images (BIOS, Intel® ME and GbE images).
2. Program the flash image into the SPI flash device.
3. Enter BIOS Setup in order to enable and configure Intel® AMT.
4. Load an operating system on the client system (Optional for WebUI access).





5. Install the drivers required for Intel® AMT (Optional for WebUI access).

**NOTE:**

- For more details on the above steps, refer document – '**FW Bring up Guide.pdf**', which can be downloaded (along with the Intel ME FW/SW/Tools kit) from VIP: <https://platformsw.intel.com/>
- Kerberos\* users will not be shown in the Web UI, as the Web UI Guide document is only for local network configuration.
- Web UI user settings override the settings made by ISV software (using WSMAN) that might not be displayed in the Web UI.
- Intel AMT must be in Configured state to enable WebUI access. For an Intel® AMT system remotely configured or configured by Host Based Configuration (HBC) method, the WebUI can be disabled. If it is disabled, the WEB UI will not be accessible. For more information on disabling the WEBUI refer Setup and Configuration document.

## 1.2 Basic Functions

A supported web browser can be used to perform basic management tasks. The web server built into each Intel® AMT system allows to:

- View the system status.
- View the hardware installed in the system.
- View, start/stop, and clear the event log.
- Remotely power the computer on, off, reset, and boot into specified boot option
- View and manage Intel® AMT power policies
- View and manage Intel® AMT network parameters, include DHCP, IP, Subnet mask, gateway address, and DNS address.
- View and manage Intel® AMT System Name settings.
- View and manage Intel® AMT user accounts.
- View and manage wireless profiles when wireless card is installed.



## 1.3 Terminology

Term	Description
BIOS	Basic Input Output System
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
FQDN	Fully Qualified Domain Name
FW	Firmware
GbE	Gigabit Ethernet
HW	Hardware
ICC	Intermittent Connection Computing
IDE	Integrated Drive Electronics
Intel® AMT	Intel® Active Management Technology
Intel® ME	Intel® Management Engine
Intel® MEBx	Intel® Management Engine BIOS Extension
Intel® SBT	Intel® Small Business Technology
IP	Internet Protocol
ISV	Independent Software Vendor
LAN	Local Area Network
OS	Operating system
SOAP	Simple Object Access Protocol
SPI	Serial Peripheral Interface
SW	Software
TCP	Transfer Control Protocol
UI	User Interface
WoL	Wake on LAN



## 2 System Requirements

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### 2.1 Client System

The client system is the system that is managed by Intel® AMT. The client system should:

1. Have a flash image programmed into the SPI flash devices.
2. Intel® AMT is provisioned either via local or remote based provision.
3. Load operating system on the client system. (Optional for WebUI usage).
4. Install required drivers on the client system. (Optional for WebUI usage).

**Note:** For more details on the client system requirements mentioned above and to have a client system meet the requirements, refer document – '**FW Bring up guide.pdf**'.

WebUI is not available for Intel® SBT SKUs.

### 2.2 Management Console System

The management console system is the system used to access and manage Intel® AMT client systems. Each Intel® AMT client system has a built-in web server that the management console system can access using one of the following web browsers:

- Microsoft Internet Explorer\* 7 or newer
- Mozilla\* Firefox\* 3.6 or newer

**NOTE:**



- The browsers must be updated with the latest security patches and fixes.
- Some Intel® AMT web pages use JavaScript\*, hence the browser used should be configured with JavaScript enabled.
- Intel® AMT web will not work under Windows\* 8 Store Apps. Use browser in classic mode under Windows\* 8 to access WebUI.
- To display Intel® AMT error pages, Friendly HTTP error messages needs to be disabled.
- In Microsoft Internet Explorer\*, this setting is located in the Advanced tab under the Internet Options menu.

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## 3 Accessing WEBUI

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### 3.1 Logging into Client System

The client system can be accessed from the local host and any other system on the network that has a supported web browser after Intel® AMT is provisioned (as listed in the **System requirements** section). If using secured connection (TLS) use https protocol via port 16993, in non TLS connection use http protocol via port 16992.

1. On the management console system, open a web browser and in the **Address** box, enter one of the following:
  - If the network can resolve the client computer name to an IP address, then:  
[http://host\\_name:16992](http://host_name:16992) (example: <http://client1:16992>)  
For TLS connection:  
[https://host\\_name:16993](https://host_name:16993) (example: <https://client1:16993>)
  - If a static IP address has been set for the client system or the client system receives IP address from DHCP server, then:  
[http://ip\\_address:16992](http://ip_address:16992) (example: <http://192.168.0.15:16992>)  
For TLS connection:  
[https://ip\\_address:16993](https://ip_address:16993) (example: <https://192.168.0.15:16993>)
2. Local host connectivity to the Intel® AMT WebUI is a new capability starting with Intel® AMT version 6.1. On the Intel® AMT system (local host), open a web browser and in the **Address** box, enter one of the following:
  - Access via the local host system:  
<http://localhost:16992> or <http://127.0.0.1:16992>
  - Access via the client computer name:  
[http://host\\_name:16992](http://host_name:16992) (example: <http://vpro-pc:16992>)  
Access via the IP address for the local client system:  
[http://ip\\_address:16992](http://ip_address:16992) (example: <http://192.168.0.15:16992>)



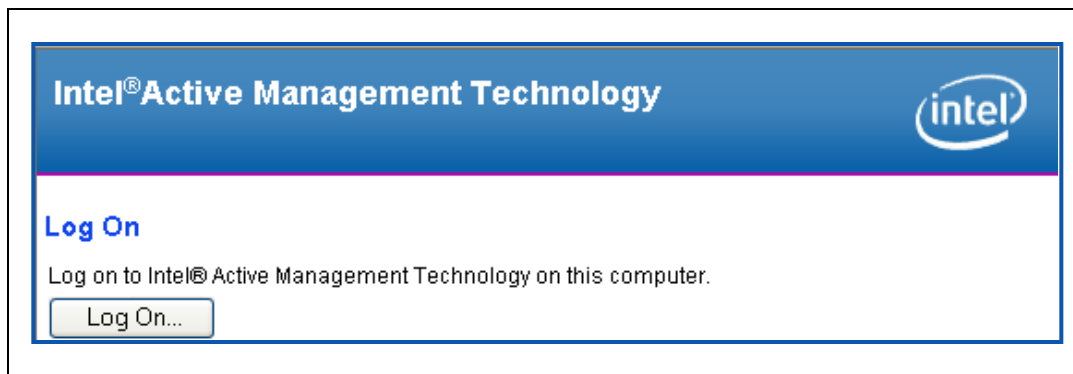
**NOTE:**

- When the Intel® AMT device is configured in DHCP mode, then the host operating system of the Intel® AMT device should also be configured in DHCP mode.
- When the Intel® AMT device is configured in Static mode, then the IP address of the host operating system must be different from the IP address of the Intel® AMT device.
- The host OS of the Intel® AMT device can be configured to static IP/DHCP mode as follows:
- For Windows\* XP:
  - Click on **Start** on the Windows\* toolbar. Open **Control Panel** then open **Network Connections**.
  - Double-click on **Local Area Connection**. Click on **Properties**.
  - Select **Internet Protocol (TCP/IP)**. Click on **Properties**.
  - If the console has to be configured in static IP mode, then select **Use the following IP address**, and enter values for **IP address** and **Subnet mask**.
- For Windows\* Vista or Windows\* 7
  - Click on **Start** on the Windows\* toolbar. Open **Control Panel** then open **View Network Status and Tasks** under Network and Internet.
  - Click **Change adaptor settings**
  - Double-click on **Local Area Connection**.
  - Select **Internet Protocol (TCP/IP)**. Click on **Properties**.
- If the console has to be configured in static IP mode, then select Use the following IP address, and enter values for IP address and Subnet mask.
- For Windows\* 8
  - Click on **Control Panel** tile on Windows\* 8 Desktop UI or move the cursor to right-top side of the screen and click on **Search→ Apps →Control Panel→ View Network Status and Tasks** under Network and Internet.
  - Click **Change adaptor settings**
  - Double-click on **Local Area Connection**.
  - Select **Internet Protocol (TCP/IP)**. Click on **Properties**.



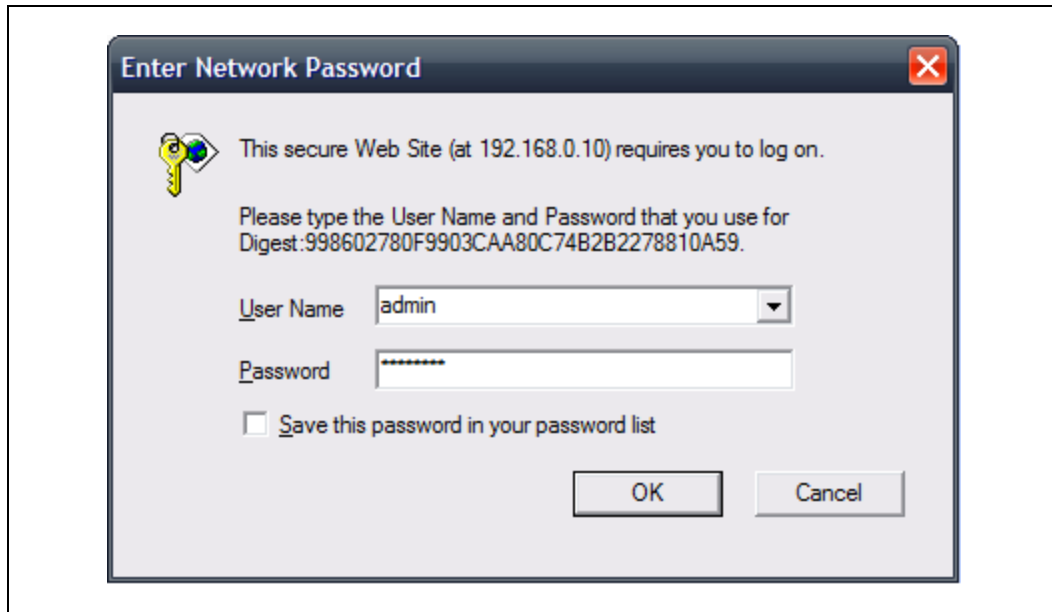
- If the console has to be configured in static IP mode, then select Use the following IP address, and enter values for IP address and Subnet mask.
  - If the console has to be configured in DHCP mode, then select Obtain an IP address automatically. When connecting the Intel® AMT system to a Local Area Network (LAN) with multiple Intel® AMT systems on the LAN (all configured in static IP mode), ensure that each of the systems has a unique static IP address. In turn, the host IP address of an Intel® AMT system should be different from the Intel® AMT static IP address. When connecting the Intel® AMT system to a Local Area Network (LAN) with multiple Intel® AMT systems on the LAN (all configured in DHCP mode), ensure that each of the systems has a unique LAN MAC address.
  - Note: For Windows\* 8.1 – due to changes in the way permissions are handled, Internet Explorer 10 needs to be run in Administrator mode in order to access local WebUI.
3. The browser displays the following web page. Click on the **Log On...** button.

**Figure 1. Login Screen**



4. After the Log On... button is clicked, the following login dialog titled "Enter Network Password" is displayed by the browser.

Figure 2. Login Dialog



For first login scenario, log in by entering 'admin' (case sensitive) in the **User name** box, and in the **Password** box enter the same password that was previously setup in the Intel® ME BIOS Extension settings. And press on **OK**.

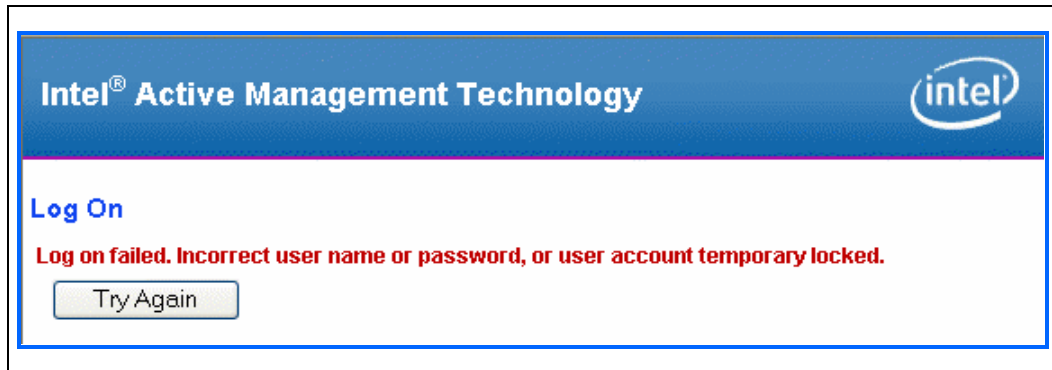
After first login, log in "User Name" and "Password" could be changed.

5. If the login has been successful, then the **System Status** page ([Figure 4. System Status](#)) will be displayed. If the login has not been successful, then the following page will be displayed.





**Figure 3. Unsuccessful Login**



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## 4 Navigating WEB UI

The **System Status** page is the default page that shows up after successfully logging in using the user name and password.

**Figure 4. System Status**

System Information

Platform

Computer model	Kabylake Client platform	
Manufacturer	Intel Corporation	
Version	0.1	
Serial number	System Serial Number	
System ID	88888888-8887-8888-8888-878888888888	

Baseboard

Manufacturer	Intel Corp.	
Product name	KBL S DDR4 UDIMM CRB	
Version	1	
Serial number	1	
Asset tag	Base Board Asset Tag	
Replaceable?	No	

BIOS

Vendor	Intel Corporation	
Version	KBLSE2R1.R00.X036.B00.1604150850	
Release date	04/15/2016	
Supported functions	PCI	Upgradeable
	Shadowing is allowed	Boot from CD
	Selectable boot	EDD spec
	Print Screen service	8042 keyboard services
	Serial services	Printer services

The navigation bar, on the left of the web page, provides links that allow navigating to the individual Intel® AMT pages.



Figure 5. Navigation Bar

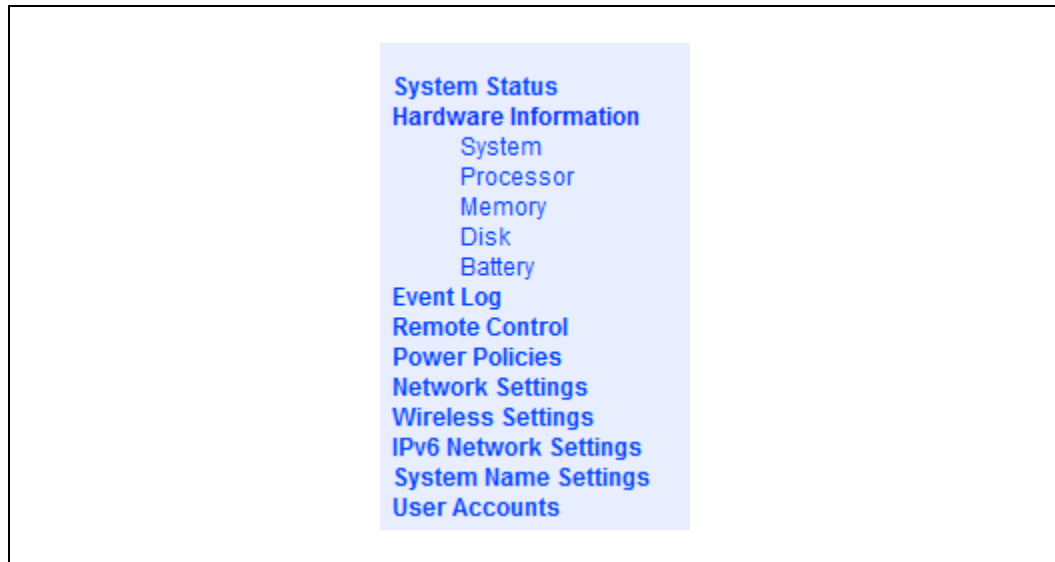
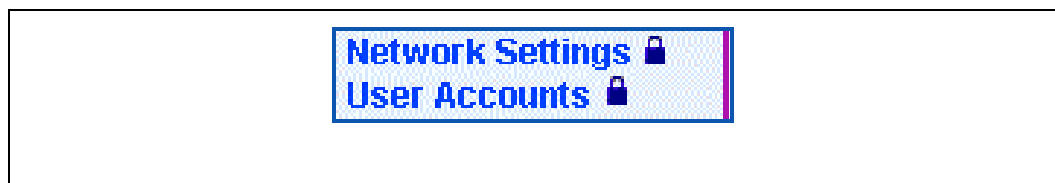



Figure 6. Padlock on Links.



**NOTE:**

- When using an account with limited user rights, the browser displays a padlock for links that cannot be accessed. If a web page is accessed without sufficient access permissions, the browser will display a login dialog.
- The navigation bar shows this icon after links that the current account cannot access: 

The **System Status** page shows the current status of the client system (Intel® AMT system). This page displays the **Power** state, **IP address** and other basic system information. The Intel® AMT device **Host Name** appears in the top banner section of the web page under **Computer**. This is set in the Intel® ME BIOS Extensions settings.



## 5 *Hardware Information Pages*

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The **Hardware Information** pages display information on the current hardware installed in the client system. The pages are divided into the categories listed in the navigation bar. Clicking a Hardware sub item in the navigation bar shows the page for that item.

Intel® AMT gets this information from the client system BIOS. Hardware changes made to a client can be displayed after a client system reboot.

**NOTE:**

- The Hardware Information item in the navigation bar does not link to a page. The links under it link to each hardware asset page.
- Media devices may not be able to update on every boot.

### 5.1 *System Information Page*

The **System Information** page displays client system information on the –

1. **Platform:** The Platform table shows system-wide hardware information, including Computer model, Manufacturer, Version, Serial number, and System ID.
2. **Baseboard:** The Baseboard table section shows Manufacturer, Product name, Version, Serial number, Asset tag and a "Replaceable?" item with Yes or No.
3. **BIOS:** The BIOS table section shows Vendor, Version, Release date and Supported functions. The Supported functions item shows a list of all supported functions.



Figure 7. System Information

### System Information

#### Platform

Computer model	2012 Client Platform
Manufacturer	Intel Corporation
Version	To be filled by O.E.M.
Serial number	To be filled by O.E.M.
System ID	88888888-8887-8888-8888-878888888888

#### Baseboard

Manufacturer	Intel Corporation
Product name	Emerald Lake
Version	To be filled by O.E.M.
Serial number	To be filled by O.E.M.
Asset tag	To be filled by O.E.M.
Replaceable?	Yes

#### BIOS

Vendor	American Megatrends Inc.	
Version	ACRVMBY1.86C.0035.B00.1103131018	
Release date	03/13/2011	
Supported functions	PCI	Upgradeable
	Shadowing is allowed	Boot from CD
	Selectable boot	EDD spec
	5.25"/1.2MB floppy services	3.5"/720KB floppy services
	3.5"/2.88MB floppy services	Print Screen service
	8042 keyboard services	Serial services
	Printer services	



## 5.2 Processor Information Page

The **Processor Information** page shows information about each processor in the system.

Figure 8. Processor Information

Processor Information	
Processor 1	
Manufacturer	Intel(R) Corporation
Family	Intel® Core™ i7 Processor
Socket	U3E1
Version	Intel(R) Core(TM) i7-2720QM CPU @ 2.20GHz
ID	132774
Maximum socket speed	4000 MHz
Speed	2200 MHz
Status	Enabled
Upgrade method	Other
Populated?	Yes

**Note:** Intel® AMT will round the Maximum Socket Speed and Current Speed to the nearest 100 MHz. This is to prevent minor inconsistencies between the value read by Intel® AMT and the value read by the BIOS.

## 5.3 Memory Information Page

The **Memory Information** page displays a Module # heading for each memory module installed in a socket and gives details on that particular memory module, like: Manufacturer, Serial number, Size, Speed, Form factor, Type, Type detail, Asset tag and Part number. Also, for sockets with uninstalled memory, the Module # heading and '**Not Installed**' is displayed.



Figure 9. Memory Information

<b>Module 1</b>	
Manufacturer	Samsung
Serial number	67442224
Size	4096 MB
Speed	1600 MHz
Form factor	SODIMM
Type	DDR3
Type detail	Synchronous
Asset tag	9876543210
Part number	M471B5273DH0-CK0

<b>Module 2</b>	
Manufacturer	Samsung
Serial number	67442205
Size	4096 MB
Speed	1600 MHz
Form factor	SODIMM
Type	DDR3
Type detail	Synchronous
Asset tag	9876543210
Part number	M471B5273DH0-CK0

## 5.4 Disk Information Page

The **Disk Information** page displays the Model, Serial Number and Size of each installed disk on the client system.

Figure 10. Disk Information

<b>Disk Information</b>	
<b>Disk 1</b>	
Model	HTS721080G9SA00
Serial number	MPDDN7Y4HG240L
Size	76319 MB

<b>Disk 2</b>	
Model	LITE-ON DVDRW LH-20A1S
Serial number	
Size	0 MB



## 5.5 Battery Information Page

The **Battery Information** page displays the device name, manufacturer, manufacture date, serial number, type, location Design Capacity and Design voltage. This page will not display the amount of charge left on the battery

Figure 11. Battery Information

Battery Information	
Battery 1	
Device name	MOLICEL
Manufacturer	E-One Moli Energy
Manufacture date	10/31/2006
Serial number	FSPK50074
Type	Lithium-ion
Location	Real 1
Design capacity	Unknown
Design voltage	Unknown
Battery 2	
Device name	MOLICEL
Manufacturer	E-One Moli Energy
Manufacture date	10/31/2006
Serial number	FSPK50074
Type	Lithium-ion
Location	Real 2
Design capacity	Unknown
Design voltage	Unknown

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## 6 Event Log Page

The **Event Log** page displays the event log. The events happening on the client system are logged in to the Event Log.

**Start Logging/Stop Logging button:** This button starts or stops logging of the events on the client side. The text on this button changes according to the available action.

**Clear Log button:** This button clears the log entries, and reloads the page with an empty event log followed by the Options table.

**Figure 12. Event Log**

Event Log			
Event	Time	Source	Description
1	7/9/2010 7:37 pm	BIOS	Entering BIOS setup.
2	7/9/2010 7:37 pm	Disk or disk bay	Starting hard-disk initialization and test.
3	7/9/2010 7:37 pm	System board	keyboard test.
4	7/9/2010 7:37 pm	BIOS	USB resource configuration.
5	7/9/2010 7:37 pm	Add-in card	Starting ROM initialization.
6	7/9/2010 7:37 pm	System board	Video initialization.
7	7/9/2010 7:37 pm	BIOS	Performing PCI configuration.
8	7/9/2010 7:37 pm	BIOS	Performing PCI configuration.
9	7/9/2010 7:37 pm	BIOS	Performing PCI configuration.
10	7/9/2010 6:45 pm	Disk or disk bay	Starting hard-disk initialization and test.
11	7/9/2010 6:45 pm	System board	keyboard test.
12	7/9/2010 6:45 pm	BIOS	USB resource configuration.
13	7/9/2010 6:45 pm	Add-in card	Starting ROM initialization.
14	7/9/2010 6:45 pm	System board	Video initialization.
15	7/9/2010 6:45 pm	BIOS	Performing PCI configuration.
16	7/9/2010 6:45 pm	BIOS	Performing PCI configuration.
17	7/9/2010 6:45 pm	BIOS	Performing PCI configuration.
Options			
<div> <div>Stop Logging</div> <div>Clear Log</div> </div>			

§

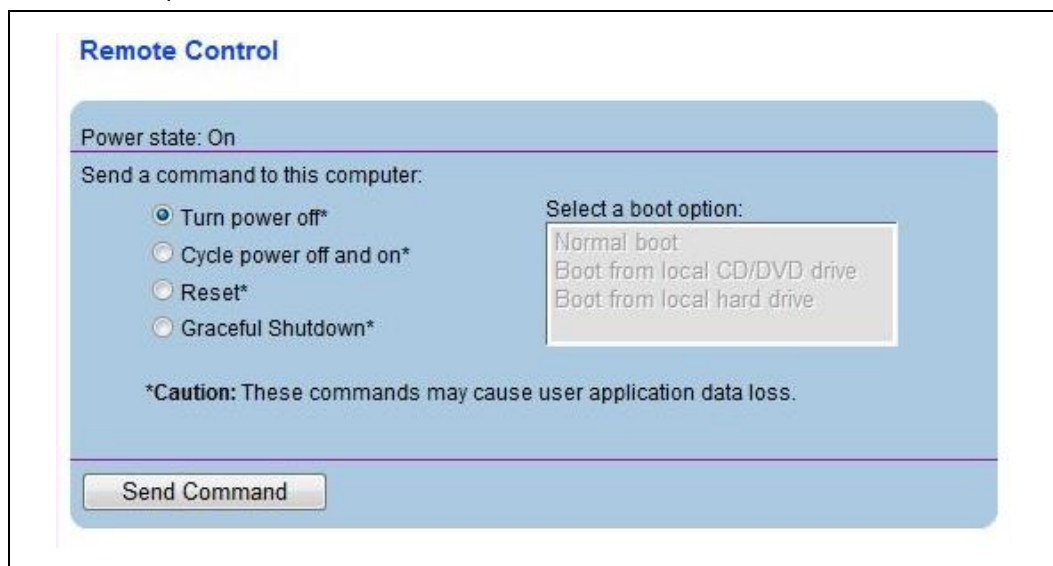
## 7 Remote Control Page

The **Remote Control** page allows the client system to be turned off, to cycle power the system off and on and to reset the client system. A boot option, like: Normal boot, boot from local CD/DVD drive, boot in safe mode or boot from local hard drive, can be selected through which the client system can be booted. When the OS supports it, it's also possible to perform graceful shutdown when in S0 (a matching option will be displayed).

**Note:** Java script must be enabled in order for the Remote control functions to work.

**Figure 13. Remote Control**

Intel® AMT System in S0/M0 State:



**Remote Control**

Power state: On

Send a command to this computer:

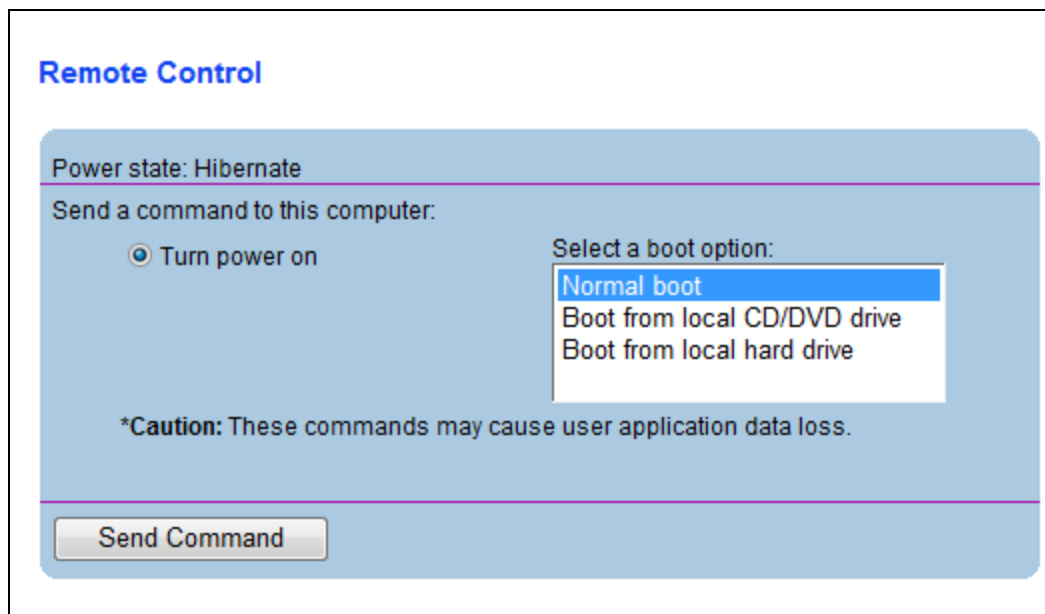
- ☒ Turn power off\*
- ☐ Cycle power off and on\*
- ☐ Reset\*
- ☐ Graceful Shutdown\*

Select a boot option:

- Normal boot
- Boot from local CD/DVD drive
- Boot from local hard drive

\*Caution: These commands may cause user application data loss.

Send Command

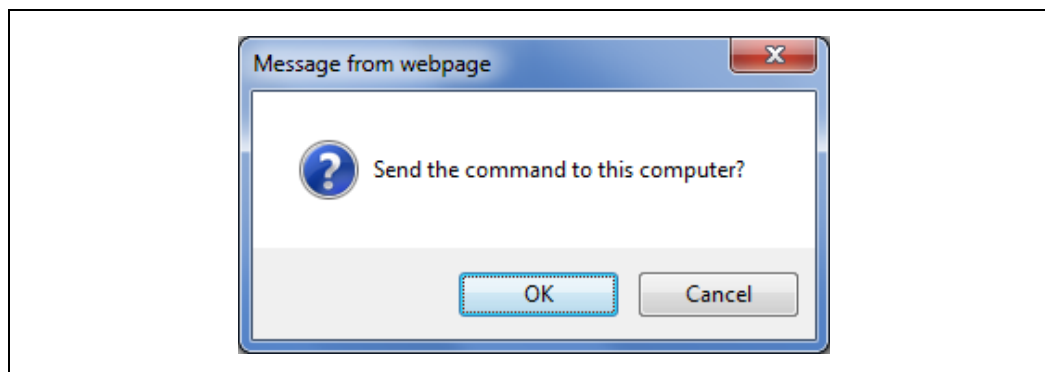
**Figure 14. Intel® AMT System in S4/M3 State**

In addition the above commands in the figures, there is also a **Turn Power on** command, which allows turning the system on when the system is in the off state.

The only valid command for a system in an S4 or S5 state is **Turn Power on**.

**Note:** The “\*Caution: These commands may cause data loss.” - These commands go directly to the system hardware and do not allow the operating system to shutdown gracefully. However, if the “Graceful Shutdown” option is displayed, it can be used to shut down the OS gracefully.

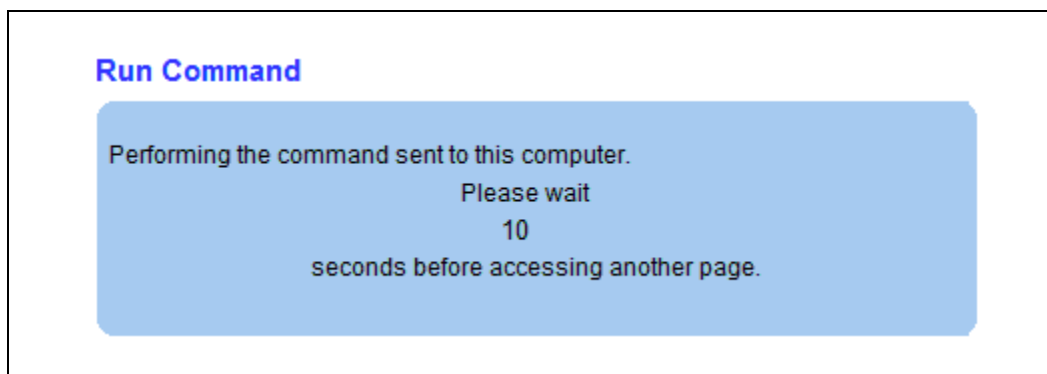
Before sending the boot command to the client system, the browser prompts with the below message to confirm the action.

**Figure 15. Confirmation Before Sending Command**

When the **OK** button is clicked, the boot command is sent to the client system.

After the command is sent, if the command requires time before the **System Status** page is updated, the Web server displays the following, indicating the time the operation will take. When the countdown is finished, the **System Status** page is loaded.

**Figure 16. Timer Page for Remote Boot**



**NOTE:**

- The available boot options depend on the client system capabilities.
- The remote control interface (all above mentioned remote control commands) is dynamic. Depending on the power state of the host of the Intel® AMT system (Power ON, Power OFF, Standby, Hibernate, etc.), the applicable remote control commands will be displayed in the WebUI Remote Control page. Example: In Power OFF state, only Turn on command will be displayed.
- Also depending on the remote command selected, the appropriate boot options will be displayed. Example: When the Turn power off command is selected, the boot options will be blocked or grayed out, without being able to select any of them.
- During SOL / USBR session the remote control exposed the reset option only. Remote control operations are not available through local interface.



## 8 Power Policies Page

The **Power Policies Settings** page allows the configuration of the power settings of the management engine on the Intel® AMT system (client system). This will allow the user to determine in which power states the management engine is turned off.

**Figure 17. Power Policies Page**

Power Policy page for mobile platforms

**Power Policies**

Select a power policy for the managed device:

☒ Mobile: ON in S0

☐ Mobile: ON in S0, ME Wake in S3, S4-5 (AC only)

Submit

Power Policy page for desktop platforms

**Power Policies**

Select a power policy for the managed device:

☒ Desktop: ON in S0

☐ Desktop: ON in S0, ME Wake in S3, S4-5

Submit

This page will only display power policies that are supported. Power policies that are not supported will not be displayed and cannot be selected.

### Power options



The following table shows the various power states on the power policies page.

**Table 1. Power States**

Power State	Text Description
S0	System is powered On
S3	System is in Standby mode
S4	System is in Hibernate mode
S5	System is powered Off but still has an AC connection

### Firmware States

The following table describes the various states the management engine.

**Table 2. Intel® ME States**

Intel® ME State	Text Description
M0	Intel® ME operational in S0 state
M3	Intel® ME operational in Sx state
M-Off	Intel® ME is turned off
MEWoL	Intel® ME will go to an M-Off state after it has remained idle for a set time when system is in Sx. After any command is sent, ME will go to an M-3 state and be ready to accept future commands.

The page shown in Figure 16 determines when the Management engine is powered on. For example if “Mobile: ON in S0” is selected, the Intel ME will be powered **OFF** (M-off) when the system is in any Sx state, with or without an AC power source attached.

- For Intel® ME Wakes in S3 (standby), S4 (hibernate) and S5 (powered off) the Intel® ME will follow the MEWOL rules.

**Intel® ME WOL (Intel® ME Wake on LAN)** - When the Intel® ME has been idle while system is in Sx state for a specified time the Intel® ME will be powered off (M-Off). The Intel® ME will turn back on (M3) when there is any network activity to the Intel® ME such as a ping or an Intel ME command. The length of idle time before the Intel® ME turns off can be configured through the Intel® MEBX or via a WS-MAN command from the management console. The parameter is labeled “**Idle timeout**”.

Refer FW Bring Up Guide (included with each FW kit) for more information on the tools and parameters.

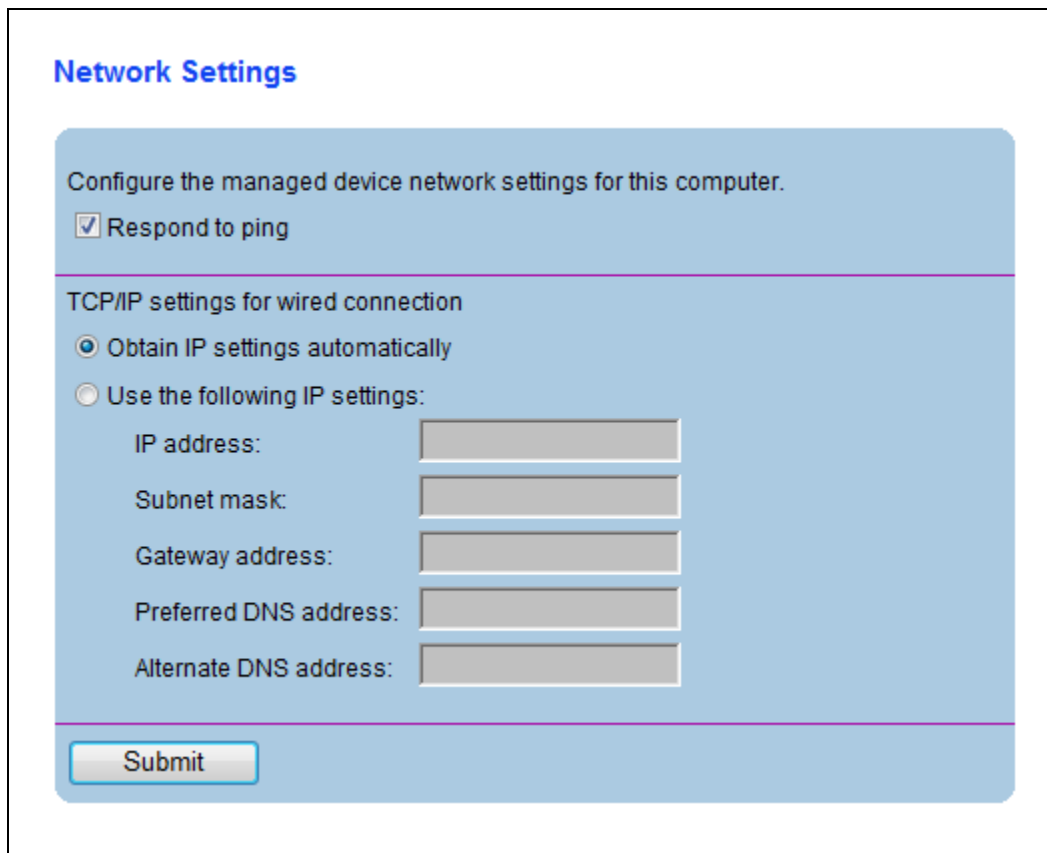


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## 9 Network Settings Page

The Network Settings page allows the configuration of the IP settings for an Intel® AMT system (client system). This IP setting is only for the wired network.

**Figure 18. Network Settings**



**Network Settings**

Configure the managed device network settings for this computer.

☒ Respond to ping

---

TCP/IP settings for wired connection

☒ Obtain IP settings automatically

☐ Use the following IP settings:

IP address:

Subnet mask:

Gateway address:

Preferred DNS address:

Alternate DNS address:

**Respond to ping:** Configures Intel® AMT to respond to an IP ping. If this is unchecked, then Intel® AMT system will not respond to ping.

### **TCP/IP settings for wired connection options**





**Obtain IP settings automatically:** If this option is selected, Intel® AMT will get an IP address from a network DHCP server. This option requires that the client's operating system is configured to use DHCP, and the network has both a DHCP server to provide the IP address, and a DNS server that can resolve the IP address provided to the client Computer host name. This IP setting is only for the wired network.

**Use the following IP settings:** Selecting this option overrides DHCP usage. Intel® AMT will use the IP settings (IP address and Subnet mask) specified here. By default, these fields show the current settings (set using the Intel® ME BIOS Extension screen). This IP setting is only for the wired network.

**Preferred and Alternate DNS addresses:** Specify the address of the DNS server that will resolve the client system Computer host name.

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## 10 Wireless Settings Page

The wireless settings page allows you to modify and add new wireless profiles. The order of the profiles will determine which profile is used first. The Intel® AMT System will attempt to connect to the wireless profile that appears at the top of the list first.

**Figure 19. Wireless Settings Page**

### Wireless Settings

Band mode capabilities    A B G N  
Radio state    On

---

Wireless Management:

☐ Disabled  
☐ Enabled in S0  
☒ Enabled in S0, Sx/AC

---

Submit

### Profiles

Connect to wireless networks in the order listed below.  
Profile name / Network name (SSID):  

AMT / AmtWlanLinksys

Move Up  
Move Down

---

New...    Change...    Remove

### Wireless Settings



- Band Mode Capabilities – Displays the type of wireless settings that are currently supported
- Radio State – Displays the status of the wireless radio
- Wireless Management – Displays the status of the wireless management capability
- Disabled – Disable wireless management. Note wired management may still be available
- Enable in S0 – Enable wireless management while system is in S0 or powered ON state
- Enable in S0, Sx/AC – Enable wireless management while system is in S0 or in any Sx sleep state while connected to AC power
  - Profiles Section
  - Profile Name – The unique name given for each configured wireless network settings. The following error will be displayed for duplicate profile names.

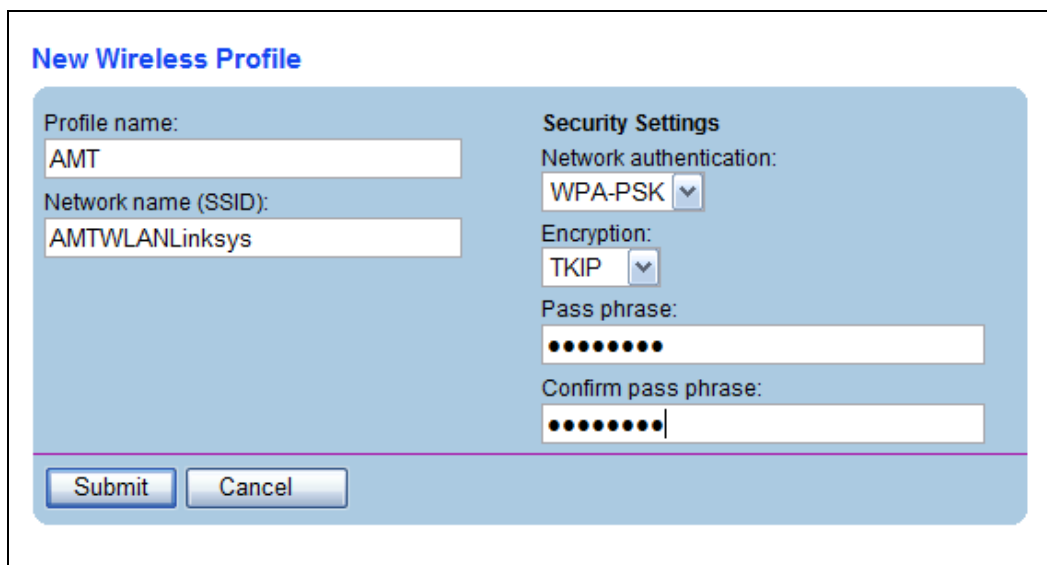
Failed to submit changes: Profile name exists.

- Network name (SSID) – The name of the network as it appears on the network.
- Move Up button– Move the selected profile up on the list of wireless profiles
- Move Down button – Move the selected profile down on the list of wireless profiles
- New... button – Create a new wireless profile.
- Change... button – Modify the parameters of the selected profile.
- Remove button – Remove the selected profile from the list of wireless profiles

## 10.1 Create New Wireless Profile

To create a new Wireless profile, simply click the “New” button. This will bring the user to a new screen where information about the wireless network can be entered. The default Profile name will be blank. User can change it and save it as a customer named profile. Because Intel® AMT does not support static mode in wireless, wireless profile can NOT be added when Intel® AMT is in Static mode. A wireless network is not required to be present, but a wireless device must be properly configured before wireless profiles can be added.

**Figure 20. New Wireless Profile**



There are two parameters for the security settings authentication and encryption:

The following options are available for authentication:

- WPA-PSK (Wi-Fi Protected Access Pre-Shared Key)
- RSN-PSK (Robust Security Network Pre-Shared Key)

The following options are available for encryption:

- TKIP (Temporal Key Integrity Protocol)
- CCMP (Counter CBC-MAC Protocol)

Choose the correct settings for the wireless network. The following network settings are supported through the WEB UI.



1. WPA-PSK with TKIP
2. WPA-PSK with CCMP
3. RSN-PSK (also referred as WPA2-PSK) with TKIP
4. RSN-PSK (also referred as WPA2-PSK) with CCMP

**Note:** 802.1x authentication options are supported, but not available through the web UI. Contact ISV for 802.1x support options.

After filling in the appropriate fields, clicking on the "Submit" button will add the profile to the bottom of the list and a success message will be displayed.

**Figure 21. Wireless Profile Added**

**Profiles**

Connect to wireless networks in the order listed below.

Profile name / Network name (SSID):

AMT / AMTWLANLinksys

Move Up

Move Down

New... Change... Remove

If incorrect values are entered, an error message will be displayed on the wireless settings page. The previous values will be lost and need to be re-entered.

**Note:** The number of wireless profiles is limited to 16. The following error will be displayed when trying to add more than 16 profiles. **Failed to submit changes: Profile list is full.**

Figure 22. Wireless Profile Error

### Wireless Settings

**Failed to submit changes: Profile list is full.**

Band mode capabilities      A B G N

Radio state                      On

Wireless Management:

☐ Disabled

☒ Enabled in S0

☐ Enabled in S0, Sx/AC

Submit

### Profiles

Connect to wireless networks in the order listed below.

Profile name / Network name (SSID):

AMT / AMTWLANLinksys

Lab / AMTLab

PAE / Scott

Office / Floor5

B1 / B1Lab

Move Up

Move Down

New...

Change...

Remove

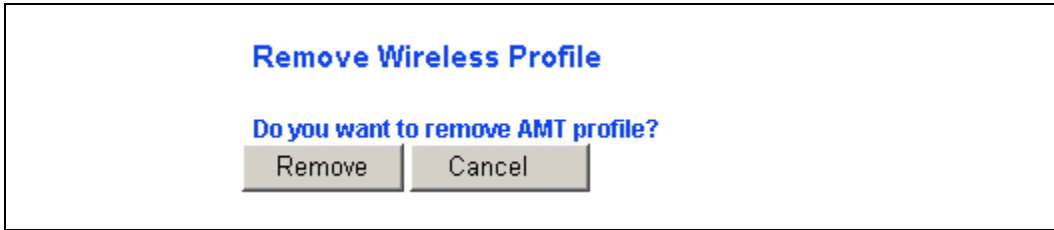
## 10.2 Delete Wireless Profile

To delete a wireless profile select the profile to remove and press the remove button. The Web User Interface will prompt the user to verify the profile to be removed before deleting the profile.

The Intel® AMT should be disconnected from chosen profile once it's about to be deleted. Otherwise error message is expected.



Figure 23. Remove Wireless Profile

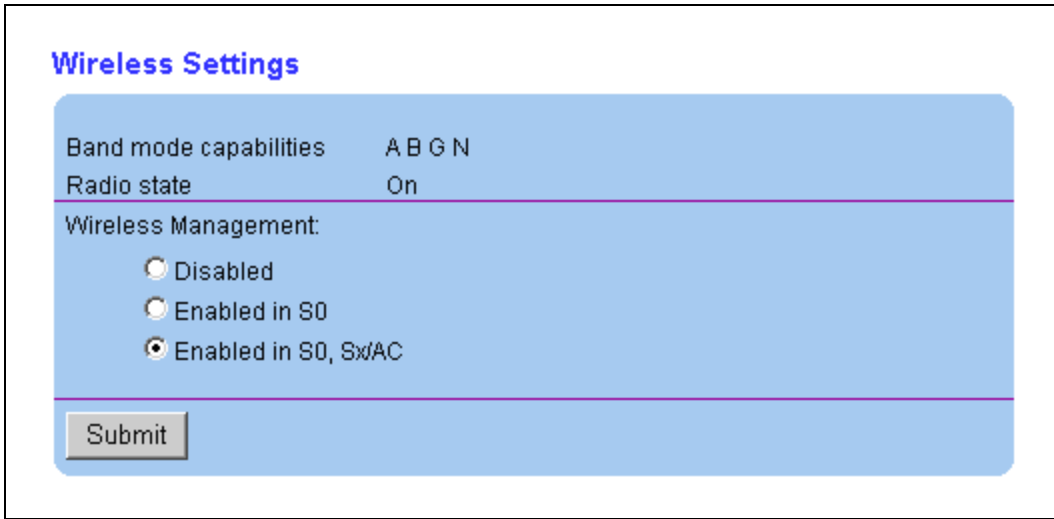


If the cancel button is pressed, the profile and all the values will remain unchanged.

### 10.3 Wireless Settings

The wireless management capabilities can be turned off through the WEB UI without losing the wireless profiles already entered. When wireless management is disabled, the management console will not be able to communicate with the Intel® AMT system through a wireless connection. However with wireless management disabled, it is still possible for an Intel® AMT system to be managed through a wired connection.

Figure 24. Wireless Management Settings

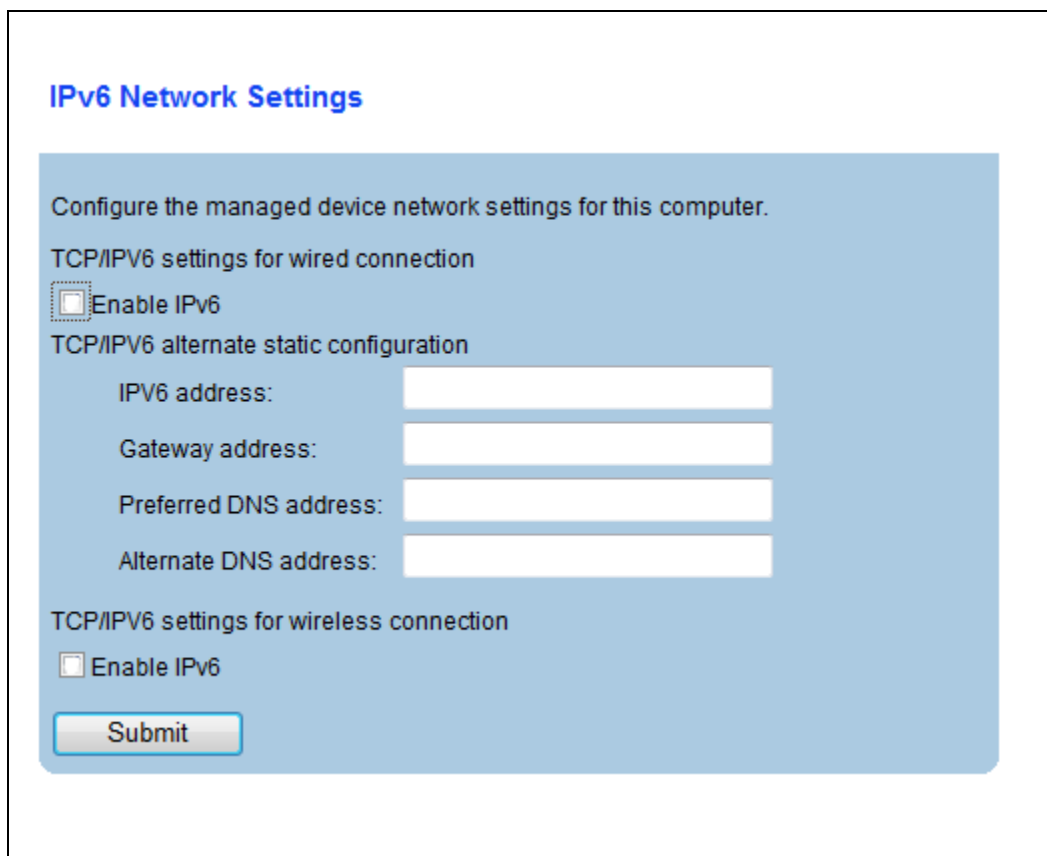


After the submit button is pressed the page will refresh wireless settings status.

# 11 IPv6 Network Settings

Starting with Intel® AMT 6.0, IPv6 network stack is supported. The IPv6 Network Settings page allows the configuration of the IPv6 Network settings for an Intel® AMT system (client system).

**Figure 25. IPv6 Network Settings**



After the submit button is pressed the page will refresh IPv6 Network settings and System Status will be updated.

## **TCP/IPv6 setting for wired connection option**





**Enable IPv6:** Option to disable or enable IPv6 for wired connection. If this is unchecked, then Intel® AMT system will not configure IPv6 addresses on the wired network interfaces. The *System Status* page ([Figure 4. System Status](#)) will reflect *IPv6 address* as "Disabled".

#### **TCP/IPv6 alternate static configuration options**

**IPv6 address:** Intel® AMT will support manual configuration of a static IPv6 address. This address is configured as an alternative address and may be used in parallel to auto-configured IPv6 addresses. This IP setting is only for the wired network.

**Gateway address:** Intel® AMT will use the Gateway setting specified here. This setting is only for the wired network.

**Preferred and Alternate DNS addresses:** Specify the address of the DNS server that will resolve the client system Computer host name. This setting is only for the wired network.

#### **TCP/IPv6 setting for wireless connection option**

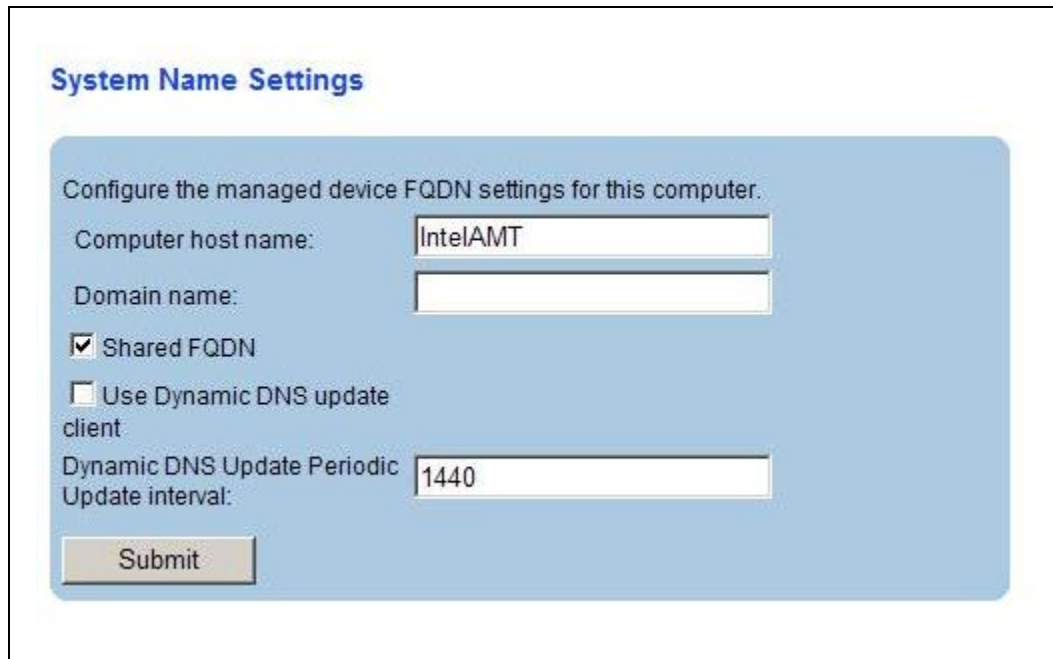
**Enable IPv6:** Option to disable or enable IPv6 for wireless connection. If this is unchecked, then Intel® AMT system will not configure IPv6 addresses on the wireless network interface. The *System Status* page ([Figure 4. System Status](#)) will reflect *IPv6 address* as "Disabled".

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## 12 System Name Settings

The **System Name Settings** page allows viewing or modifying the Intel® AMT system name.

**Figure 26. System Name Settings**



**Computer host name:** This is the name that is used to browse to the client system, and is set in the Intel® ME BIOS extension screen.

**Domain Name:** The domain name of the network that this client will belong to (optional.)

**Shared FQDN:** Intel® AMT will share FQDN with the host name and domain name.

Shared FQDN Option	Description
Checked (Enabled)	The FQDN is shared with the Host
Unchecked (Disabled)	The FQDN dedicated to ME

**Use Dynamic DNS update client:** If the *Use Dynamic DNS update client* is enabled, then Intel® ME Dynamic DNS update client will register the Intel® ME IP addresses in



the DNS server in all system states. (Depends on different ME Network configuration, the registration results may be varied)

If the *Use Dynamic DNS update client* is disabled, then Intel® AMT will only support updating DNS by using DHCP option 81 (as it has for Pre- Intel® AMT 6 versions). The domain name is shared with the Host.

**Note:** There is no support for secure DDNS update.

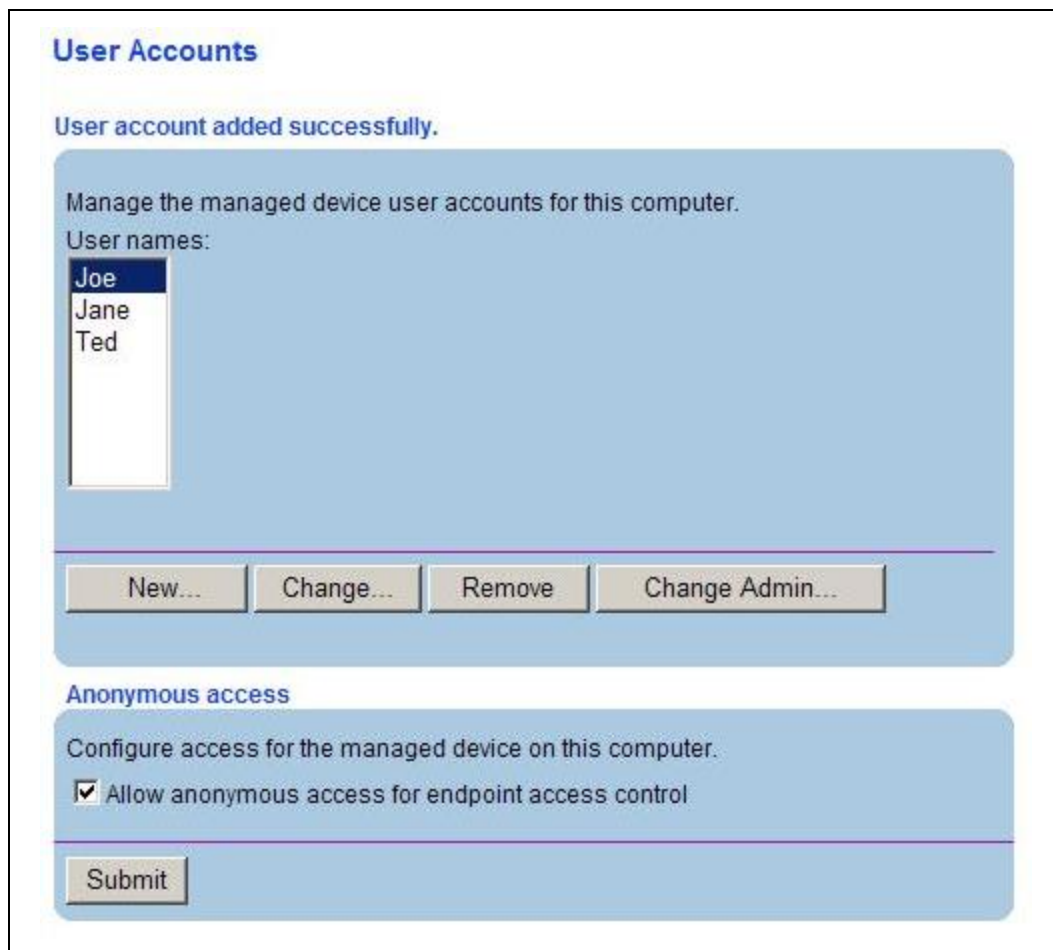
Use Dynamic DNS Update Client Option	Description
Checked (Enabled)	The Dynamic DNS Update Client in Intel® AMT is enabled.
Unchecked (Disabled)	The Dynamic DNS Update Client in Intel® AMT is disabled.

## 13 User Accounts Page

The **User Accounts** page allows creating, modifying and deleting user accounts.

User accounts with limited access rights can be set up using this page. A particular user account can also be given limited access, and such a user will see a padlock icon on the links to the pages that the account cannot access.

**Figure 27. User Accounts**



The screenshot shows the 'User Accounts' page. At the top, it says 'User account added successfully.' Below this, there is a section titled 'Manage the managed device user accounts for this computer.' Underneath, it says 'User names:' followed by a list box containing 'Joe', 'Jane', and 'Ted'. Below the list box are four buttons: 'New...', 'Change...', 'Remove', and 'Change Admin...'. Below these buttons is a section titled 'Anonymous access' with the text 'Configure access for the managed device on this computer.' There is a checkbox labeled 'Allow anonymous access for endpoint access control' which is checked. At the bottom of this section is a 'Submit' button.

**User names:** Lists the user accounts that have been created by the administrator.

**New... button:** Loads the **New User Account** page and allows the administrator to create a new account.



**Change... button:** Loads the **Change User Account** page, showing the settings for the selected account.

**Remove button:** Loads the **Remove User Account** page, which prompts to remove the selected account.

**Change Admin... button:** Loads the **Change Administrator Account** page. This page allows the Administrator's password to be changed.

**Submit button:** Submits changes for Anonymous access check boxes.

**NOTE:**

- As this document addresses using the local network provisioning model, Kerberos\* users will not be shown in the Web UI.
- Web UI user settings override settings made by ISV software that might not be displayed in the Web UI.

## 13.1 New/Change User Account Page

The **New/Change User Account** page allows the administrator to add a new account or change an existing account name or permissions.

**Figure 28. New User Account**

The screenshot shows a web form titled "New User Account" with a light blue background. On the left side, there are three input fields: "User name:", "Password:\*" (with an asterisk indicating a requirement), and "Confirm password:". On the right side, under the heading "Permissions", there are two radio button options: "Administrator: Grant access to all pages." and "Grant access to:". The second option is selected. Below the radio buttons, there are three checked checkboxes: "Hardware Information", "Event Log", and "Remote Control". At the bottom of the form, there is a note: "\*Minimum 8 characters with upper and lowercase, 0-9, and one of !@#&\*()". At the very bottom, there are two buttons: "Submit" and "Cancel".



The **Permissions** show the various pages a particular user account can access. A particular user account can be either given:

1. Administrator rights – By selecting **Administrator: Grant access to all pages**, where all pages are accessible.
2. Access to restricted pages – By selecting **Grant access to** and checking the boxes for which access is to be given.

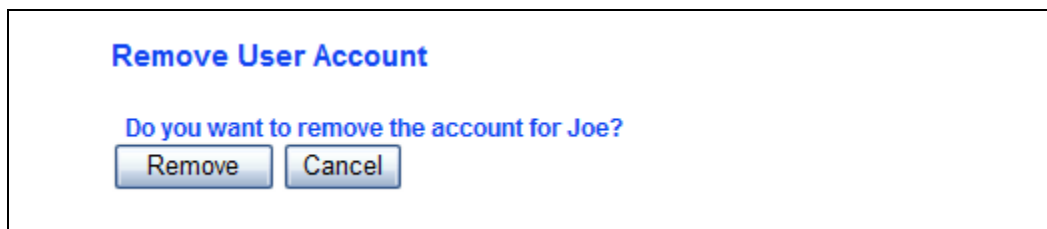
**NOTE:**

- The **User name** specified should not have any white space characters in between. If the **User name** contains white space characters, then the new user account will not be created and the following message will be displayed:  
**Failed to submit changes: Invalid name.**
- If the password specified is not a strong password, then the new user account will not be created, and the following message will be displayed: **Failed to submit changes: Invalid password.**
- If the username list is full (11 user accounts created), and a new user account is created (12<sup>th</sup> user account), then the following error message is displayed:  
**Failed to submit changes: Account list is full.**
- Other than the administrator, users may have access only to the Hardware Information page, Event Log page, and Remote Control page.

## 13.2 Remove User Account Page

The **Remove User Account** page allows the administrator to remove an account, and the browser will show the following prompt before an account is removed.

Figure 29. Remove User Account





Clicking on **Remove** removes the account and loads the **User Accounts** page with the User Account removed. Clicking on **Cancel** loads the **User Accounts** page without any changes.

### 13.3 Change Administrator Account Page

The **Change Administrator Account** page (click on **Change Admin...** on the **User Accounts** page) allows the administrator to change the name and password for the administrator account.

Figure 30. Change Administrator Account

**Change Administrator Account**

Change the Intel® AMT administrator account for this computer.

User name:

Password:\*

Confirm password:

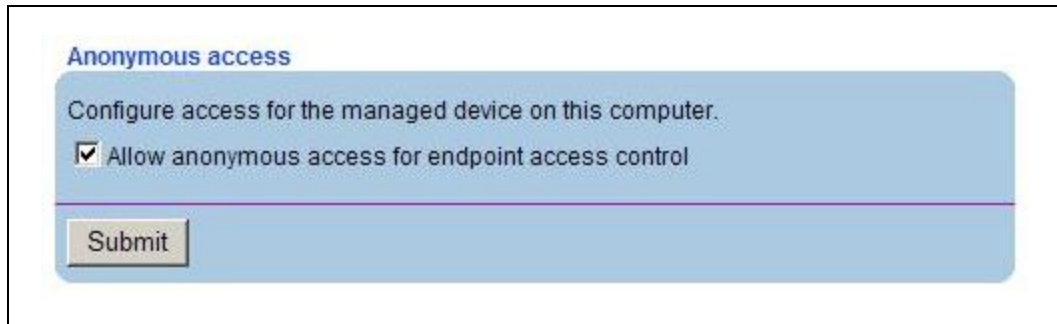
\*Minimum 8 characters with upper and lowercase, 0-9, and one of !@#\$%^&\*()

Clicking on **Submit** will change the administrator account and load the **User Account** page. Clicking on **Cancel** will load the **User Account** page without any changes.

### 13.4 Configure Endpoint Access Control Anonymous Access

**Allow anonymous access for endpoint access control** – This option allows user notification service to get posture without providing a username and password. If the box is not checked a username and password must be supplied to get posture.

Figure 31. Anonymous Access



Anonymous access

Configure access for the managed device on this computer.

☒ Allow anonymous access for endpoint access control

Submit

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# 14 Troubleshooting

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## **I can ping the client system, but cannot connect using a web browser**

1. Use a valid user name and password.
2. Ensure WSMAN service is enabled
3. Connect to the correct http interface (http, not https) and to the correct port (16992).
4. Ensure that the firewall is properly configured to receive calls to 16992/3 ports from remote.
5. The web browser should be properly configured to use or to not use Kerberos aka Integrated Windows\* Authentication. If toggle was made, restart browser.
6. Once https protocol is used a FQDN of Intel® AMT must be used, to gain access to WebUI.
7. If the Intel® AMT system is configured to use static IP settings, make sure the Intel® AMT IP address is different from the client OS IP address and also different from the management console's IP address.

## **After the client OS loads, I cannot connect to the client system**

If the correct LAN driver has been installed and the client system has been configured to DHCP mode, try to manually renew the DHCP lease directly from the client system.

## **The client system is not reachable over the network**

If the client system OS is functional, make sure that the DHCP/Static IP settings of Intel® AMT and the OS driver are compatible. For example, if the host OS is configured to static IP mode and the Intel® AMT device is configured to DHCP mode, then the Intel® AMT device will not be accessible over the network.

If the client system OS is functional, try accessing the Intel® AMT WebUI locally. Local host connectivity to the Intel® AMT WebUI is a new capability starting with Intel® AMT version 6.1.

- Access on the local host system:

<http://localhost:16992>



### **Local host connectivity to the Intel® AMT WebUI does not work**

Make sure Intel® MEI driver and LMS are installed and operated correctly on the Operating System of the local system.

- Intel® AMT web will not work under Windows\* 8 Store Apps. Use browser in classic mode under Windows\* 8 to access WebUI.

### **Login fails after a successful login**

If the link is followed by a padlock icon, the user account being used does not have rights to access this page. Log in using an account with sufficient rights.

**Note:** If "IPSyncEnabled" is set to true in AMT\_EthernetPortSettings via WSMAN commands, it is possible for Intel® AMT and the host to share the same static IP. Also in this mode the static settings in Network Settings of WebUI are not available.

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