

Intel® Management and Security Status Application

User's Guide

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Intel® Active Management Technology requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt/

The original equipment manufacturer must provide TPM functionality, which requires a TPM-supported BIOS. TPM functionality must be initialized and may not be available in all countries.

No computer system can provide absolute security under all conditions. Intel® Anti-Theft Technology for data protection requires the computer system to have an Intel® AT-enabled chipset, BIOS, and SATA hard disk drive properly connected to the chipset. Intel AT protects the data on the SATA hard drive disk only after that drive is set up for encryption and does not protect any data after it leaves the hard disk drive. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks. Certain functionality may not be available in all countries.

Systems using Client Initiated Remote Access (CIRA) require wired LAN connectivity and may not be available in public hot spots or “click to accept” locations. For more information on CIRA visit http://www.intel.com/products/centrino2/vpro/index/htm

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Contents

1 Introduction 7

2 System Requirements 9

3 Installing the LMS/SOL or Intel® TPM Drivers 11

3.1 Installing Microsoft* .NET Framework 3.5 11

3.2 Installing the LMS/SOL or Intel® TPM Driver 12

4 Using the Intel® Management and Security Status Application and Icon 15

4.1.1 General Tab 15

4.1.2 Intel® AMT Tab 17

4.1.3 Intel® TPM Tab 21

4.1.4 Intel® AT tab 22

4.2 Exiting the Application 23

5 Advanced Configuration 25

5.1 General Tab Logo 25

5.2 Load on Start Up 25

5.3 'Click here for more details' Link 25

6 Troubleshooting Intel® Management and Security Status 27

6.1 Error Message Appears Upon Application Load 27

6.2 Application Takes a Long Time to Load 27

6.3 'Information Unavailable' is Displayed Instead of Technology Status 28

6.4 Client Initiated Remote Access Connection failure 28



Revision History

Version	Modification
June 05	Initial version received from PAE - legal disclaimer modification
June 12	Revision History table addition
June 15	.NET framework installation (section 3.1) addition, with first differences between 4.x and 5.x
June 16	Added Troubleshooting section with the loading time and the error message descriptions
June 22	Review integration
June 26	Added version numbering, and general corrections
version 0.9	Corrected text, formatting and troubleshooting section.
version 0.95	Added information about the time between polls and the refresh of data in the application
version 0.96	Fixed chapter 3.1 (installing the framework)
version 0.97	Marked the differences between 4.0 and 4.x, and added CILA section.
Version 0.98	Added the 'Advanced Configuration' chapter with the OEM configurable fields. Clarified the note on section 3, and fixed the version written in the CILA section.
Version 0.99	Fixed some content. Added the Danbury tab.
Version 1.01	Completed the updated text of the Danbury tab. Some minor fixes.
Version 1.02	Fixed the legal disclaimer to include an Intel® AT paragraph.
Version 1.03	Improved the Intel® AT section.
Version 1.04	Corrected the note in the "General tab logo" section.
Version 1.05	Added documentation about Windows 7 support.

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1 Introduction

This guide describes how to install and use the Intel® Management and Security Status Application, an application that displays information about a platform's Intel® Active Management Technology (Intel® AMT), Intel® Trusted Platform Module (Intel® TPM) and Intel® Anti-Theft Technology (Intel® AT) services.

The Intel® Management and Security Status icon indicates whether Intel® AMT, Intel® TPM and Intel® AT are running on the platform. The icon is located in the notification area. By default, the notification icon is displayed every time Windows* starts.

Note: The Intel® Management and Security Status icon will be loaded to the notification area only if Intel® AMT, Intel® TPM or Intel® AT is enabled in the platform.

Note: The information displayed in the Intel® Management and Security Status is not shown in real time. The data is refreshed at different intervals.

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2 System Requirements

To enable installation and use of the Intel® Management and Security Status Application, the following are required on the platform:

- Intel® AMT versions 4.x or 5.x.
- Windows* XP, Windows Vista* or Windows* 7 (32/64 bit versions)
- Microsoft* .NET Framework 2.0 or 3.5
- The Intel® MEI driver. Instructions on installing Intel® MEI can be found in the Bring Up Guide document.
- The LMS/SOL or Intel® TPM drivers. The Intel® Management and Security Status Application is bundled with these drivers. Installing either of these drivers also installs the application.

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3 Installing the LMS/SOL or Intel® TPM Drivers

The Intel® Management and Security Status Application is automatically installed and invoked when either the LMS/SOL driver or the Intel® TPM driver is installed. This section describes how to install these drivers.

The installation process consists of two steps: Installing the Microsoft* .NET framework (a requirement for running the software); and installing the status application from either the LMS/SOL or Intel® TPM folder. The order of the steps is imperative (always install the framework before the Intel® AMT applications).

Note: Intel® AMT versions 4.0 install the appropriate Microsoft* .NET Framework automatically as part of the software package installation, whereas versions 4.1 and greater do not. For Intel® AMT versions 4.0, skip to Section 3.2.

3.1 Installing Microsoft* .NET Framework 3.5

1. Download Microsoft* .NET Framework 3.5 (**dotnetfx35.exe**) from Microsoft's* website. One link to the installer application is http://download.microsoft.com/download/6/0/f/60fc5854-3cb8-4892-b6db-bd4f42510f28/dotnetfx35.exe.

   Installing the version available in that location ensures that you are using the latest version required by the software package.

   The installation process may take several minutes.

   Double-click the downloaded application.

2. The installer extracts the contents and displays the **Supplemental License Terms** screen.

3. Read the license content and select the **accept** option to proceed with the installation.

4. When the installer finishes, press the **Finish** button.

3.2 Installing the LMS/SOL or Intel® TPM Driver

1. Double-click **LMS_SOL\setup.exe** or **TPM\setup.exe** to install the LMS/SOL driver or Intel® TPM driver, respectively. The Welcome window opens.

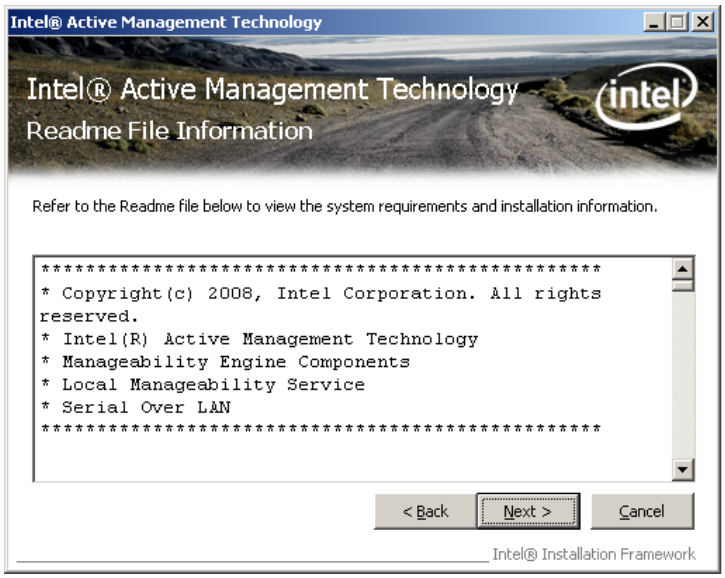


2. Click **Next**. The License window opens.



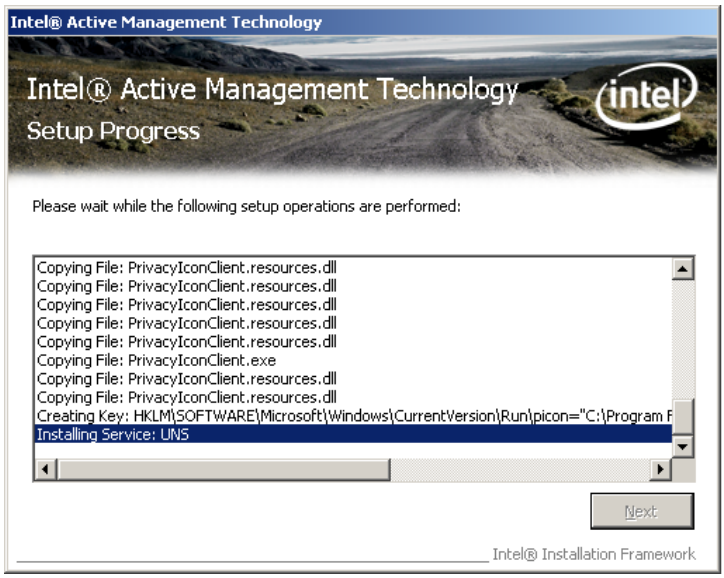
3. Read the license conditions and click **Yes** to accept them.

   A Readme file displays system requirements and other information about the application.



4. Read the information in the Readme file and click **Next**. The installation begins, displaying its progress in the window.

   Note: In Intel® AMT versions 4.0 the installation process also installs Microsoft* Windows .NET framework 2.0. This stage (not present in Intel® AMT versions 4.1 or later) may take a few minutes.



5. When the installation is complete, click **Next** in the Setup Progress window, and click **Finish** in the **Setup is Complete** window.

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4 Using the Intel® Management and Security Status Application and Icon

Whenever either Intel® AMT, Intel® TPM or Intel® AT is enabled, Intel® Management and Security Status icon is loaded into the notification area when Windows* start. It can also be started using the shortcut located in **'All Programs\ Intel® Management and Security Status'** in the Windows* start menu.

While the Intel® Management and Security Status is running, the Intel® Management and Security Status icon is visible in the notification area. This icon will appear blue if any one of the aforementioned technologies is enabled on the computer. In any other case, the icon will appear gray.

To view the Intel® Management and Security Status Application:

- Double-click the Intel® Management and Security Status icon, or
- Right-click the icon and choose **Open**, or
- Use the shortcut located in **'All Programs\ Intel® Management and Security Status'** in the Windows* start menu.

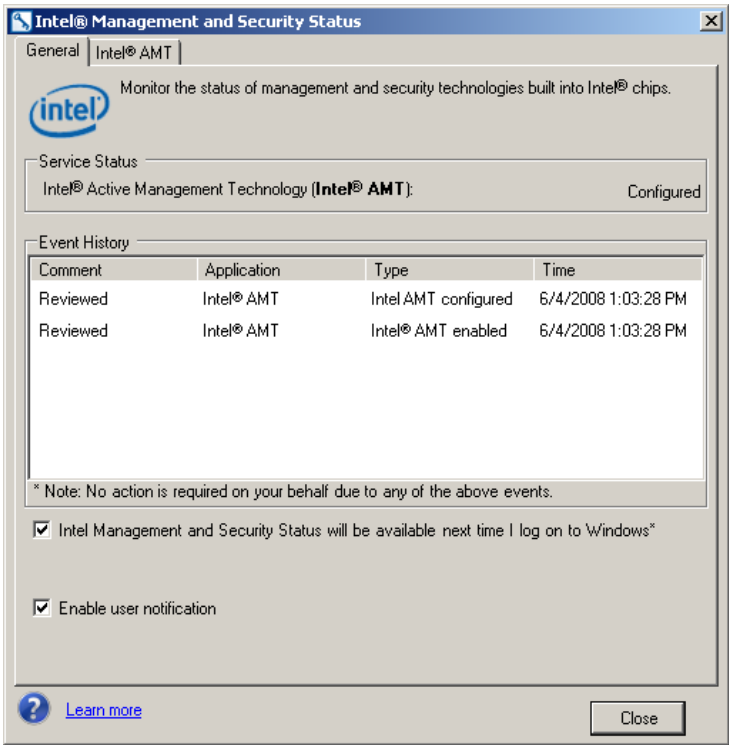
To close the Intel® Management and Security Status icon and application:

Right-click the icon and choose **Exit**.

The following sections describe the information available in the application's tabs. More information about the application is available by clicking either the **Learn more** button or link.

4.1.1 General Tab

The **General** tab provides basic information about the Intel® AMT, Intel® TPM and Intel® AT status and events.



Events and some of their details are displayed in the **Event History** box. These can be sorted by clicking on the relevant column header.

The status of Intel® AMT, Intel® TPM and Intel® AT is displayed in the **Service Status** group box. The status may be one of the following:

- Intel® AMT: Configured / Unconfigured / Not detected / Information unavailable.
- Intel® TPM: Operational / Not detected.
- Intel® AT: Enabled / Disabled

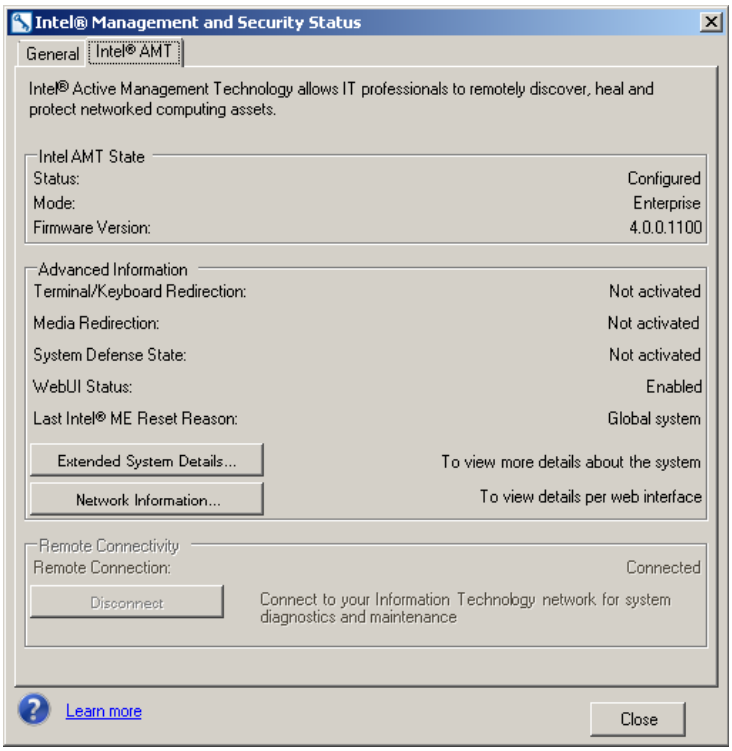
Intel Management and Security Status will be available next time I log on to Windows: Checking this box causes the Intel® Management and Security Status Application to be invoked, and the icon to be displayed, whenever you log on to Windows*.

Note: The application never loads automatically with Windows* log on if all the technologies it displays (Intel® AMT, Intel® TPM or Intel® AT) are disabled in the system.

Enable user notification: Allow the Intel® Management and Security Status icon to display notifications in the notification area when one of the technologies is enabled or disabled.

4.1.2 Intel® AMT Tab

Click the **Intel® AMT** tab to display Intel® AMT information.



4.1.2.1 Intel® AMT State

The following information is provided:

- **Status**

  The operational status of Intel® AMT.
  Possible values: Configured / Unconfigured / Not detected / Information unavailable.

- **Mode**

  The operational mode of Intel® AMT.
  Possible values: Enterprise / Small business / Awaiting configuration / Disabled / Not detected.

- **Firmware Version**

  The Intel® AMT firmware version.

4.1.2.2 Advanced Information

The following information is provided:

- **Terminal/Keyboard Redirection**

  Indicates whether there are any open terminal/keyboard redirection sessions.
  Possible values: SOL activated / Not activated.

- **Media Redirection**

  Indicates whether there are any open IDE redirection sessions.
  Possible values: IDER activated / Not activated.

- **System Defense State**

  Indicates whether System Defense is currently active.
  Possible values: Activated / Not activated.

- **WebUI Status**

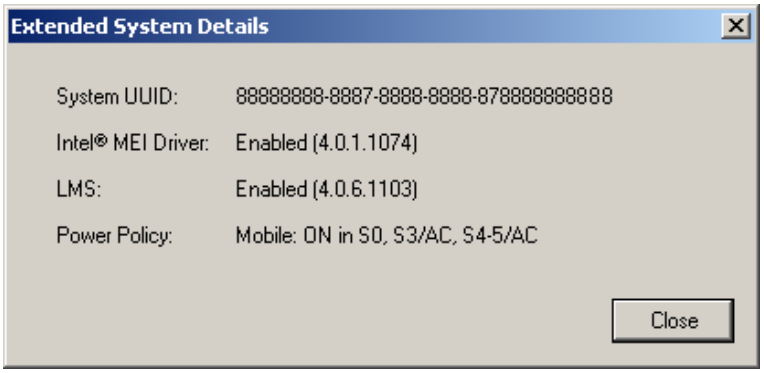
  Indicates whether a remote user can view or change Intel® AMT information via the Web UI.
  Possible values: Enabled on TLS / Enabled / Disabled.

- **Last Intel® ME Reset Reason**

  Displays the reason that the Intel® AMT was last reset.
  Possible values: Global System / FW reset / Power Up / Unknown cause / Information unavailable

- **Extended System Details button**

  Click the **Extended System Details** button to show additional Intel® AMT information:



- **System UUID**

  The current System Unique Universal Identification. Standard System UUID presentation, such as, 03000200-0400-05AA-0006-000700080009

- **Intel® MEI Driver**

  The version of the Intel® Manageability Engine Interface driver.
  States are: Enabled(x.x.x.x) / Disabled(x.x.x.x) / Uninstalled

- **LMS Driver**

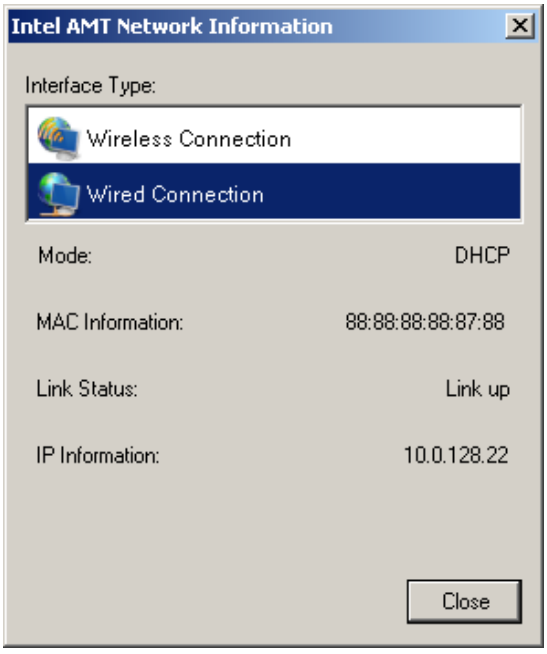
  The version of the LMS service.
  States are: Enabled(x.x.x.x) / Disabled(x.x.x.x) / Uninstalled

- **Power Policy**

  The power policy which is currently in effect.
  States are: ON in S0, or any other power policy supported by the system.

Click **Close** to return to the **Intel® AMT** tab.

Click the **Network Information** button to display network details regarding Intel® AMT wireless and wired connectivity.



Under **Interface Type**, click either **Wireless Connection** or **Wired Connection** to display information on the following items for the selected interface (only wired information is available in Intel® AMT 5.0 or 5.1):



- **Mode**

  Possible values: Static / DHCP

- **MAC Information**

  XX:XX:XX:XX:XX:XX – e.g. 88:88:88:0A:88:87

- **Link Status**

  Whether the link is currently active.
  Possible values: Link down / Link up

- **IP Information**

  X.X.X.X – e.g. 10.102.0.1

- **Configured for Wireless**

  Possible values: Wireless disabled / Wireless enabled

4.1.2.3 Remote Connectivity / Request Assistance

The Remote Connectivity section provides CIRA (Client Initiated Remote Access) capabilities, which allow a user to connect the Intel® AMT system to the company's Information Technology network from an external internet connection.

Click the **Connect / Request Support** button to connect to your Information Technology network for system diagnostics and maintenance. The current connection status is displayed in the Remote Connectivity section.

Starting from Intel® AMT 5.1, CILA (Client Initiated Local Access) feature was added to this section. This feature allows a user connected to the internal corporate network to send a support request to the IT administrator.

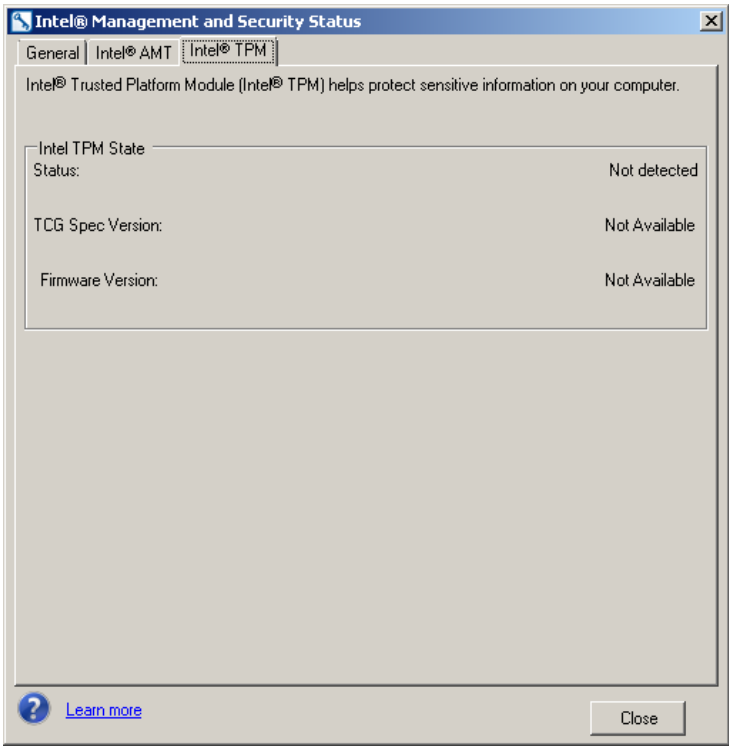
Note: The information displayed in the Intel® Management and Security Status, including in the remote connectivity section, is not shown in real time. The data is refreshed every 10 seconds.

Note: When the user is connected as Guest account (in Windows*) the Remote Connectivity section will be grayed out. This was designed to prevent users outside of the organization from influencing the organization network.

4.1.3 Intel® TPM Tab

Note: The Intel® TPM tab is visible only if Intel® TPM is supported by the platform.

Click the **Intel® TPM** tab to view Intel® TPM information.



In the **Intel TPM State** section, the following information is displayed:

- **Status –** The operational status of the Intel® TPM, comprising up to 3 parameters**.**

  The displayed status is one of the following combinations:

  - Operational - Active ; Owned ; Enabled
  - Operational - Active ; Unowned ; Enabled
  - Operational - Active ; Owned ; Disabled
  - Operational - Active ; Unowned ; Disabled
  - Operational - Inactive ; Owned ; Enabled
  - Operational - Inactive ; Unowned ; Enabled
  - Operational - Inactive ; Owned ; Disabled
  - Operational - Inactive ; Unowned ; Disabled

- Failed - Flash corrupted
- Failed - HW failure
- Failed - ME reset
- Failed - Unknown
- Not detected

- **TCG Spec Version**

  The Trusted Computing Group version with which this Intel® TPM is compliant.

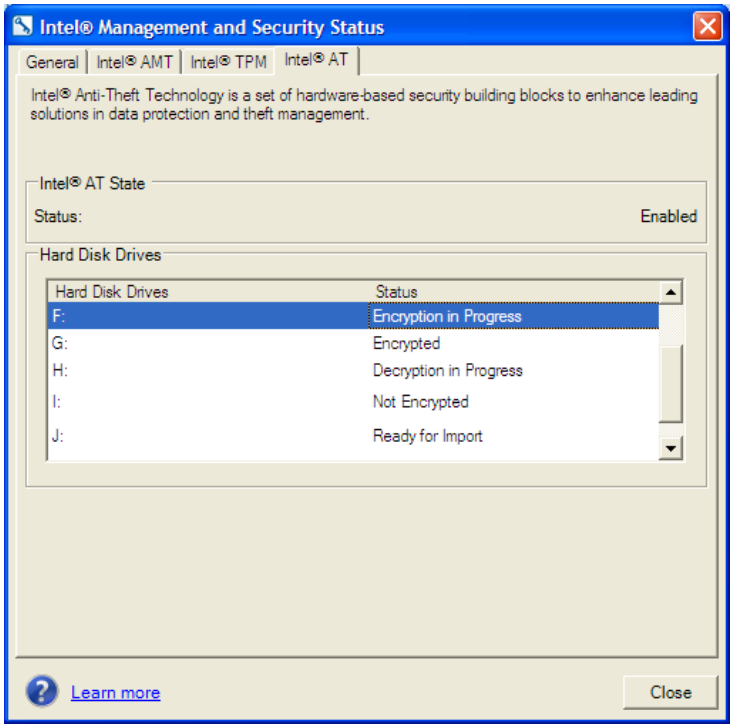
- **Firmware Version**

  The firmware version of the Intel® TPM.

4.1.4 Intel® AT tab

Note: The Intel® AT tab is visible only if Intel® AT is supported by the platform.

Click the **Intel® AT** tab to view Intel® Anti-Theft Technology information.



In the **Intel® AT State** section, the following information is displayed:

- **Status**

  The operational status of Intel® AT.
  Possible values: Enabled / Disabled.

- **Hard Disk Drives Status**

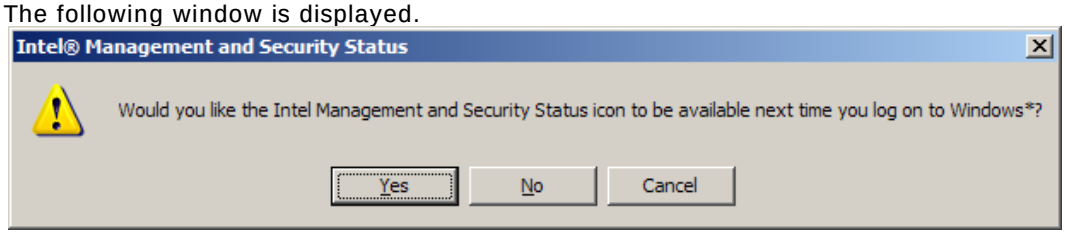
  The status of each Hard Disk, according to the encrypted mode of each.
  Possible values: Not Encrypted / Encryption in Progress / Migration in Progress / Ready for Import / Encrypted.

Note: The status of the Hard Disks on the Intel® AT tab is disabled (*and empty*) while Intel® AT is not enabled in the BIOS.

4.2 Exiting the Application

To exit the application, right click on the Intel® Management and Security Status Application icon in the notification area and select **Exit**.

The following window is displayed.



Click **Yes** to automatically start the Intel® Management and Security Status application when you next log on.

Note: The application never loads with Windows* log on if all the technologies it displays (Intel® AMT, Intel® TPM or Intel® AT) are disabled in the system.

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5 Advanced Configuration

5.1 General Tab Logo

The logo displayed in the general tab can be substituted in order to match the visual identity of the computer supplier. For example, a particular manufacturer may prefer to display the company's logo.

To change the logo, add a bitmap file called **oemlogo.bmp** to the Intel® Management and Security Status folder (located at **Program Files\Common Files\Intel\Privacy Icon**). The default logo will appear if the bitmap file is invalid or absent.

Note: The bitmap dimensions must be 62 (width) by 48 (height), as the logo is not resized to match the logo size in the general tab.

5.2 Load on Start Up

By default, Intel® Management and Security Status loads on windows startup. A user can uncheck the **Intel Management and Security Status will be available next time I log on to Windows** check box to prevent it from happening, or a system setting can be changed to override the user selection and never load the application on startup.

To disable application load on startup for all users, add a value named **disableonstartup** with data **1** to the **HKLM\SOFTWARE\Intel\PIcon\Setting** key in the registry.

To return to the default behavior, change the data of the same value to **0**, or delete the value.

Note: The application will still be available from the Start Menu, regardless of the value in this registry key.

Note: This setting in the registry overrides the user selection in the main tab check box.

5.3 'Click here for more details' Link

By default, clicking the '**Click here for more details**' inside the **Learn More** dialog will direct the user to the official Intel Corporation website.

The link pointed *to* by the '**Click here for more details**' text inside the **Learn more** dialog can be modified, to point to a page of the manufacturer's choice.



To perform this change, add a value named **HelpURL** with the URL of your choice (e.g. *http://www.intel.com/*) to the **HKLM\SOFTWARE\Intel\PIcon\Setting** key in the registry.

To return to the default behavior, simply delete the value.

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6 Troubleshooting Intel® Management and Security Status

6.1 Error Message Appears Upon Application Load

.NET applications fail when executed in an environment that has no .NET framework installed. Microsoft does not provide a safeguard mechanism in such conditions.

The Intel® Management and Security Status will display the following error message if no .NET framework is present in the system:



To prevent this, install a suitable Microsoft* .NET framework – see Chapter 3 for more details.

6.2 Application Takes a Long Time to Load

In Intel® AMT 4.0, if the machine is connected to a network, but without internet access, the status application may take up to 2 minutes to load while the system retrieves the Digital Signature Certificate information (it will not prevent other software from loading or stop the operating system from being operational).

To avoid this situation, please follow one of the options below:

1. Internet Access – Provide Access to the revocation list at VeriSign site by granting an open Internet connection with firewall permissions to access the VeriSign query (located at **http://CSC3-2004-crl.verisign.com/CSC3-2004.crl**).

2. Changing Internet explorer settings – This will disable the certificate revocation checking for the entire system: Navigate to **IE -> Tools -> Internet Options-> Advanced** and uncheck the **Check for publisher's certificate revocation** box.

Note: Modifying this Internet Explorer option will disable the certificate revocation checking for the entire system.

3. Unsigned application – use the unsigned version of the executable, available in the kit under the **unsigned_IMSS** folder (just replace one file by the other).

4. .Net framework 3.5 - Install the .Net framework 3.5 and create a file named **PrivacyIconClient.exe.config** alongside the **PrivacyIconClient.exe** with the following content:

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <runtime>
   <generatePublisherEvidence enabled="false"/>
  </runtime>
</configuration>
```

5. Manual download of the revocation list – Manually download the Certificate Revocation List from VeriSign at http://crl.verisign.com and install it on the system. The CRL is valid for 10-15 days, so this step must be repeated in a frequent base.

6.3 'Information Unavailable' is Displayed Instead of Technology Status

The Intel® Management and Security Status icon relies on the User Notification Service, which is installed together with the Intel® Management and Security Status, to obtain information concerning the status of the resident technologies. Please make sure that:

1. The User Notification Service is running and started automatically on Windows* startup. If it is not installed, please reinstall the drivers according to section 3.

2. The Intel® MEI driver is installed, enabled and functioning properly. Please review the Bring Up Guide document for more information concerning this driver.

6.4 Client Initiated Remote Access Connection failure

Failure to connect to the Information Technology network can be caused by the following:

1. The User Notification Service is not running. It can be started through the Services pane in the Computer Management window. If it is not installed, please reinstall the drivers according to section 3.

2. The network cable is disconnected, or the network connection is not configured properly.

If the actions above don't resolve the problem, it is recommended to contact your Information Technology department.