

# **Intel® Converged Security and Management Engine Software**

**Installation and Configuration Guide**

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***Supporting Intel® CSME firmware version: 17***

***May 2022***

***Revision 1.1***



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## Revision History

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Revision Number	Description	Revision Date
0.6	<ul style="list-style-type: none"><li>Initial Release</li></ul>	February 2021
0.7	<ul style="list-style-type: none"><li>Update Intel Wiman installation requirement in section 2.8 and 3.1</li><li>Update the description of IMSS in section 2.5</li><li>Remove PAVP in the table in section 3.1</li><li>Skip DAL installation in Alder lake platform or later : update section 2.6 and 3.1</li><li>Add WMIPProvider INF in section 3.3 and 5.1</li><li>Add IMSS_HSA_EXTENSION in section 3.3 and section 5.2</li><li>Add SOL LMS Extension in section 3.3 and section 5.1</li><li>Update table in section 3.2</li></ul>	June 2021
0.8	<ul style="list-style-type: none"><li>Add LMS installation requirement in section 2.3 and section 5.1</li><li>Update TCS description in section 2.7, 3.2, 3.3 and 5.1</li><li>Add note for Wiman uninstallation in section 8</li></ul>	September 2021
1.0	<ul style="list-style-type: none"><li>Updated revision to 1.0 for Beta milestone</li><li>Updated copyright year to 2022</li></ul>	March 2022
1.1	<ul style="list-style-type: none"><li>Add new feature of WMI provider, description in section 2.4</li><li>Add installation method of test version of IMSS</li></ul>	May 2022



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# **1 Introduction**

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This guide describes how to install, configure and troubleshoot the Intel® Converged Security and Management Engine (Intel® CSME) software components.

For a list of software components, see *Software Components Overview*.





## 2 Software Components Overview

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This section lists the software components supplied with the firmware kit and provides a short overview of each component.

**Note:** Applications and drivers are installed based on the system's specific hardware and firmware features. For example, if none of the following technologies: Intel® Active Management Technology (Intel® AMT), Intel® Small Business Advatage (Intel® SBA), or Intel® Standard Manageability exists on the system, the Intel® Management and Security Status application and Serial Over LAN Driver should not be installed.

To view the installer options, enter the following in a Command window:  
**MEISetup.exe -?** and the help dialog should appear.

### 2.1 Intel® Management Engine Interface (Intel® MEI) Driver

This driver is the interface between the Intel® Converged Security and Management Engine (Intel® CSME) firmware and the operating system. Drivers and applications on the host that wish to interact with Intel® CSME can use the Intel® MEI host Windows\* driver.

### 2.2 Intel® Serial Over LAN (Intel® SOL) Driver

This driver enables the remote display of managed client's user interface through management console and emulates serial communication over standard network connection. This driver supports systems with one of the following technologies: Intel® AMT, Intel® Standard Manageability.

### 2.3 Intel® Local Manageability Service (Intel® LMS)

This service enables local applications running on Intel® AMT, Intel® SBA or Intel® Standard Manageability supported devices to use common SOAP and WS-Management functionality that is available to remote applications. It listens to the Intel® CSME Internet Assigned Names Authority (Intel® IANA) ports and routes all traffic to the firmware through the Intel® MEI.

It also provides Intel® CSME with various host operation abilities. For instance, it enables Intel® CSME technologies to write user notifications to the local host OS event log for the purpose of notifying end users of predefined events, such as when support personnel connect remotely to the platform for a healing session. Intel provides documentation on how ISVs can extract these events from the event log for use in their applications.



LMS will be functional only if Intel® SOL device exists and SOL LMS extension INF is installed.

## 2.4 Intel® CSME WMI Provider

The provider enables ISV and IT administrators to perform Intel® AMT discovery and configuration operations using WMI technology. The Intel® CSME WMI provider complements the existing WS-Management API by abstracting low-level Intel® MEI operations through WMI. In addition, the provider enables the user to subscribe to Intel® LMS events and receive them via WMI events.

Following are the main functionalities implemented in the Intel® CSME WMI provider:

- Discovery of Intel® CSME and Intel® AMT related attributes, such as firmware version and provisioning state.
- Local activation operation, performed as part of Remote Configuration.
- Hardware events.

The Intel® CSME WMI provider is implemented as a DLL (MeProv.dll) and operates as part of Windows\* WMI service. The provider is installed as part of the kit.

Intel® CSME WMI Provider has switched to INF installation support. Refer to section 5.1 for more detail of installing method.

After version 2213.0.2.0, Intel® CSME WMI provider will remove IMSS for consumer SKU upon first installation or boot to OS if IMSS is installed. Refer to TA#726490 for more detail.

## 2.5 Intel® Management and Security Status (IMSS) Application

This application is a Microsoft\* Windows\* application that displays information about a platform's Intel® Active Management Technology (Intel® AMT), Intel® Small Business Advantage (Intel® SBA), Intel® Standard Manageability, and Intel® Anti-Theft services. The Intel® Management and Security Status application indicates whether Intel® AMT, Intel® SBA, Intel® AT and Intel® Standard Manageability are running on the platform.

When Intel® Management and Security Status application is running on the platform, an icon is displayed in the notification area. Clicking the icon opens the application.

By default, the icon is loaded and displayed every time Windows\* starts. The icon will be gray if the Intel® Management and Security Application Local Management Service is not running or the Intel® Management Engine Interface (Intel® MEI) driver is disabled or unavailable.

**Note:** If the Intel® Management and Security Status application starts automatically as a result of the user logging on to Windows\*, the icon will be loaded to the notification area only if Intel® AMT, Intel® SBA or Intel® Standard Manageability exists on the system. If the Intel® Management and Security Status application is started





manually (via the Start menu or file manager), the icon is loaded even if none of these technologies exists.

**Note:** The information displayed in the Intel® Management and Security Status application is refreshed at pre-defined intervals. The application dynamically hides tabs that are not relevant. For example, on platforms that do not support Intel® AT, the Intel® AT tab is hidden.

## 2.6 Intel® Dynamic Application Loader (Intel® DAL)

Also known as Intel® JHI. This is a service which exposes the host interface to usage of the Intel® Dynamic Application Loader infrastructure abilities, for loading/unloading signed applications to the Trusted Execution Environment and communicating with them. It will only be installed if the platform is Intel® Dynamic Application Loader capable (ADL ME16 or before).

## 2.7 Intel® Trusted Connect Service (Intel® TCS)

Also known as Intel® Capability Licensing Services (Intel® iCLS). It is a set of applications, services and dynamic libraries used to establish a trusted connection between FW and Intel's backend. It is responsible for:

- EPID group certificates provisioning to the FW
- Trusted Computing Base Recovery: EPID rekey
- Platform Trust Technology (firmware TPM) recertification
- Delivering assets to the FW (i.e. DRM keying material, signed permits)
- License distribution for Extended Platform Service.

## 2.8 Intel® Wireless Manageability (Intel® Wiman)

This driver includes CSME-related flows which once were in Windows\* WIFI driver. This driver is capable of filtering OS request, especially System-state and device power state queries and transitions. In addition this driver will be capable of filtering WDI - IHV requests and notifications, filtering and diverting Tx and Rx data traffic to CSME, injecting CSME data traffic to WLAN Tx path.

Note that Intel® Wiman driver is only functional on Corporate sku FW image for coffee lake platform and above.



## 3 Installer List

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This section describes the installation packages for the Intel® CSME software.

### 3.1 MEI-Only Installer MSI

This installation program in SW\“MEI-Only Installer MSI” installs the Intel® MEI driver only.

### 3.2 ME\_SW\_DCH

This installation program in SW\ME\_SW\_DCH installs the Intel® CSME software components required for the platform on which you are installing, and installs only those components that match your platform’s capabilities.

Following is a complete list of the components in the installer:

- Intel® Management Engine Interface (Intel® MEI) driver
- Intel® Serial Over LAN (Intel® SOL) driver
- Intel® Local Manageability Service (Intel® LMS)
- Intel® CSME WMI provider
- Intel® Dynamic Application Loader (Intel® DAL)
- Intel® Trusted Connect Service(Intel® TCS)
- Intel® Wireless Manageability (Intel® Wiman)

**Note:** IMSS application will not be installed by this installer. For installation of IMSS please refer to section 5.2.

The following table describes the components that are installed for the different platform capabilities:

If the platform includes this capability....	These software components are installed	Comments
Intel® AMT, Intel® SBA, Intel® Standard Manageability	Intel® MEI driver, Intel® SOL driver, Intel® TCS, Intel® LMS, Intel® CSME WMI provider, Intel® Wiman	Intel® Wiman is only installed and functional on Corporate sku FW image for coffee lake platform and above.  Intel® DAL is only installed if the platform is Intel® Dynamic Application Loader



If the platform includes this capability....	These software components are installed	Comments
		capable (ADL ME16 or before)
Intel® Dynamic Application Loader	Intel® MEI driver, Intel® DAL	The Installer provides the option to install only Intel® MEI driver and Intel® DAL service by running the installer with the following flag: setup.exe -meidalonly Intel® DAL is only installed if the platform is Intel® Dynamic Application Loader capable (ADL ME16 or before)
None of the above	Intel® MEI driver, Intel® TCS	

### 3.3 Drivers

This package in SW\Drivers includes the drivers as UWD INF installer and IMSS package.

- MEI: heci.inf in SW\Drivers\MEI
- SOL: mesrl.inf in SW\Drivers\SOL (only available in corporate sku)
- TCS: iclsClient.inf in SW\Drivers\ICLS
- LMS: LMS.inf in SW\Drivers\LMS (only available in corporate sku)
- IMSS APPX: SW\Drivers\IMSS (only available in corporate sku)
- Wiman driver: SW\Drivers\WiMan (only available in corporate sku)
- Wiman extension: SW\Drivers\wiman\_wlan\_extension (only available in corporate sku)
- WMIPProvider: MEWMIProv.inf in SW\Drivers\WMIPProvider
- IMSS HSA extension: ImssHsaExtension.inf in SW\Drivers\IMSS\_HSA\_EXTENSION (only available in corporate sku)
- SOL LMS Extension: SOLLMSExtension.inf in SW\Drivers\SOL\_LMS\_Extension (only available in corporate sku)

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## **4      *System Requirements***

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To enable installation and use of the Intel® CSME software components, the following are required on the platform:

- Windows\* 10 / Windows Server\* 2019.
- Microsoft\* .NET Framework: version 4.6.2 or above, required if the Intel® Management and Security Status application is installed on the platform.
- Microsoft\* Visual C++ 2015 Redistributable: version 14.0.26905.0 or above, required if the Intel® Management and Security Status application is installed on the platform.





## 5 *Installing Intel® CSME Software Components*

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### 5.1 **How to Install**

The component INFs for MEI , SOL, LMS, CSME WMI and Wiman are located in the firmware kit in the SW\Drivers folder.

To install the drivers, right click on INF file, and click on install.

System manufacturers can take advantage of the components in the SW\Drivers folder do offline injection e.g. via DISM. More information about DISM can be found at:

<https://docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/what-is-dism>

MEI driver is required to be installed before other drivers.

Wiman Extension is required to be installed along with installation of wiman driver.

To make LMS functional , SOL LMS Extension is required to be installed along with Intel® SOL device and installation of LMS INF. LMS will be functional only if Intel® SOL device exists and SOL LMS extension INF is installed.

The following devices will be shown in the device manager if the according drivers are installed on compatible devices:

MEI: System devices \ Intel(R) Management Engine Interface #1

SOL: Ports(COM & LPT) \ Intel(R) Active Management Technology - SOL

LMS: Software components \ Intel(R) Management and Security Application Local Management

TCS: Software components \ Intel(R) iCLS Client

Wiman : Software components \ Intel(R) Wireless Manageability

WMIProvider: Software components \ Intel(R) Management Engine WMI Provider

User may use installer SetupME.exe located in the firmware kit in the SW\ME\_SW\_DCH folder to install drivers required for the platform on which you are installing, and install only those components that match your platform's capabilities.



- 1) Double-click the installer to install the software components
- 2) Follow the steps in the installation wizard to complete the installation.
- 3) When the installation is complete, click Next in the *Setup Progress* window, then click Finish in the *Setup is Complete* window.

The software installer has command line option for specific installing configuration, under command line mode execute setupME.exe -? will display the available options as follows:

-?

Displays this help dialog.

-b

Reboots the system without prompting after setup is complete, if reboot is required.

-l <LCID>

Specifies the language of the setup dialogs.

-nodrv

Does not install the driver.

-overwrite

Ignores the overwrite warning.

-p <path>

Changes default directory location for application files.

**Warning** : User who chooses to use -p flag must make sure the destination directory is a secure folder (write access by admin). Otherwise it can lead to a security issue.

-report <path>

Changes the default log path.

-s

Does not display any setup dialogs (silent install).

-ver

Displays driver versions.

-drvonly

Installs drivers only.

-meidonly

Installs Intel® Management Engine Interface and Intel® Dynamic Application Loader only.

-preinst

Installs all drivers even if hardware is not present.



-tcs  
Installs only TCS.

-nowiman  
Does not install Intel® Wireless Manageability

-wmionly  
Install and register only WMI Provider.

The installation logs can be found at <user folder>\Intel\Logs.

## 5.2 IMSS

**Note:** IMSS is for AMT system only, it is not required to be installed on NON AMT system.

User may download and install IMSS from Microsoft store, or install IMSS\_HSA\_EXTENSION INF, which will pull IMSS from the store when SOL device exists and install IMSS in the background.

IMSS APPX for pre-install is located in the firmware kit in the SW\Drivers\IMSS folder.

For WHQL version of IMSS, DISM is required to install IMSS APPX. Refer to <https://docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/preinstall-apps-using-dism> for more detail.

For the OS without Microsoft Visual C++ 2015 Redistributable 14.0.26905.0 or later (e.g. fresh OS or pre-install OS without windows update), the DependencyPackagePath is required for installing Microsoft Visual C++ 2015 Redistributable along with IMSS APPX

the example command for pre-install OS as below:

```
Dism /Image:c:\test\offline /Add-ProvisionedAppxPackage /PackagePath:<pre-install kit Folder Path>\<IMSS APPX appxbundle file> /LicensePath:<pre-install kit Folder Path>\<IMSS APPX License xml file> /DependencyPackagePath: :<pre-install kit Folder Path>\Microsoft.VCLibs_xxx_<OS sku>_xxx.appx
```

where c:\test\offline is the folder where you mounted the WIM image

<pre-install kit Folder Path> is the folder where the package is extracted to

the example DISM command for running OS as below:

```
Dism /online /Add-ProvisionedAppxPackage /PackagePath:<pre-install kit Folder Path>\<IMSS APPX appxbundle file> /LicensePath:<pre-install kit Folder Path>\<IMSS APPX License xml file> /DependencyPackagePath: :<pre-install kit Folder Path>\Microsoft.VCLibs_xxx_<OS sku>_xxx.appx /region=all
```

For test version of IMSS, follow the steps as below:

1.allow power shell script execute without signing



## PowerShell

Apply the following settings to execute PowerShell scripts.

☒ Change execution policy to allow local PowerShell scripts to run without signing. Require signing for remote scripts. [Show settings](#)

Apply

2.run install.ps1 with power shell. During execution, The following window will be pop up. Turn on developer mode, and continue with power shell by choosing [Y]Yes.

## For developers

These settings are intended for development use only.

[Learn more](#)

## Developer Mode

Install apps from any source, including loose files.

☒ On

## Device Portal

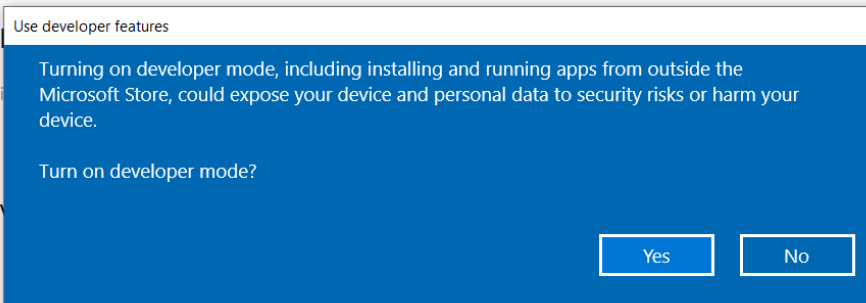
Turn on remote debugging

☐ Off

## Device discovery

Make your device discoverable

☐ Off



## 5.3 Error Codes during Installation

Error code	Error String	Description
0	ERROR_SUCCESS	Operation was successful and a reboot is not needed. Use of the -b switch will not cause a reboot in this case.





Error code	Error String	Description
1602	ERROR_INSTALL_USEREXIT	<p>One of:</p> <ul style="list-style-type: none"> <li>The user canceled the operation</li> <li>Setup was run silently but a downgrade was detected and the -overwrite switch was not used.</li> </ul>
1603	ERROR_INSTALL_FAILURE	<p>General failure code. The error could have been an unanticipated error or one of the expected errors such as:</p> <ul style="list-style-type: none"> <li>Not admin</li> <li>No device matches</li> <li>OS requirement not met</li> <li>.NET requirement not met</li> </ul>
1633	ERROR_INSTALL_PLATFORM_UNSUPPORTED	Architectures not supported
1641	ERROR_SUCCESS_REBOOT_INITIATED	<p>A system reboot has been initiated either by the user choosing to "reboot now" or the -b switch was used in silent mode and setup requires a reboot.</p> <p>Note that depending on the OS and platform speed, the calling process may never get this code due to it being terminated as part of the shutdown procedure.</p>
3010	ERROR_SUCCESS_REBOOT_REQUIRED	Successful, but a reboot is required to complete the process.

Note that the installer may return other error codes in cases where an application or other process called returns one. The error code returned will be passed through.

## 5.4 Windows\* PE

The Intel® MEI driver can be installed on Windows\* PE OS, and this is primarily used during manufacturing, when attempting to run Windows\*-based manufacturing line tools.

More information can be found at:

<http://msdn.microsoft.com/en-us/library/windows/hardware/ff544208%28v=vs.85%29.aspx>

The required coininstallers can be found at:

<http://msdn.microsoft.com/en-US/windows/hardware/br259104>



## 6 Identifying Intel® CSME Software Components

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Once the Intel® CSME software stack is installed on a system, the contents that kit can be identified via a single Software Package Version (SPV) marker. The Single Package Versioning feature provides one unique version identifier for a package (i.e. anything that is updated in the package iterates the version number). This SPV is useful for systems which need to identify and manage installations such as Software Inventory Control applications used in large IT organizations.

Each Intel® CSME Software Installer package contains a file called the 'mup.xml' which can be used to identify the SPV. The mup.xml describes the following information: Example:

```
<fullpackageidentifier>

  <registrykeys>

    <registrykey componentID="100950">

      <displayName>HKEY_LOCAL_MACHINE\SOFTWARE\ManageableUpdatePackage\Intel\ME\Display<
/displayName>

        <displayValue>Intel(R) Management Engine Firmware</displayValue>

      <name>HKEY_LOCAL_MACHINE\SOFTWARE\ManageableUpdatePackage\Intel\ME\Version</name>

        <value> YYWW.BR.BUILD.PFU</value>

      </registrykey>

    </registrykeys>

  </fullpackageidentifier>
```

The 'fullpackageidentifier' section points out where to look for the package version and what it should be in order to be the latest. The 'DisplayVersion' and {GUID} above are found Microsoft\* Windows\* registry in the locations below:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\{GUID}\DisplayVersion

Typical release version numbering is as follows, YYWW.BR.BUILD.PFU where:

- YY – Build year
- WW – Build WorkWeek
- BR – branch indication number
- BUILD – 4 digits, increments globally
- PFU – indicate PFU was modified. Increased integer.



Service name for LMS can be found in Services tab in task manager or services in Microsoft Management Console:

LMS: LMS / Intel(R) Management and Security Application Local Management Service





## 7 Configuring LMS

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LMS is able to write user notifications to the local host OS event log for the purpose of notifying end users of predefined events, such as when critical System Defense policies are applied by the Intel® CSME firmware. LMS also has additional functionalities, such as synchronizing the network configuration information between the host and the firmware. Intel provides documentation on how the ISV can extract these events from the event log for use in their application.

LMS.exe is installed along with the other software components. Note the following installation circumstances:

### 7.1 LMS Registry Configuration Parameters

User can add the following registry keys under **HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\LMS\IntelAMTUNS**:

**Note:** The following keys are not mandatory and LMS will function as required without their existence. All changes to registry keys are noted at LMS startup only. To force the changes to be noted, restart LMS.

**AllowFlashUpdate:** Allows LMS to invoke Partial FW Updates. This is a DWORD Value. Setting value to 0 will prohibit LMS from invoking Partial FW Update, while setting value to 1 allows Partial FW Update by LMS. Default behavior (i.e. no value) is Partial FW Update allowed.

**Note:** Partial Firmware Update is a feature new from Intel® ME 8 that allows update of specific sections of Intel ME, without requiring a system reset.

**Note:** Disabling Partial FW Update will eliminate the user's ability to change the user consent language and to replace the wireless adapter type without affecting Intel® AMT functionality over wireless LAN.

**PartialFWUIImagePath:** A custom path to the update partitions file, including the filename (using absolute or relative path), e.g. **C:\<path>\pfwupdateimg.bin**. Default is the LMS.exe path.

Note :The path can't point to a network shared folder. It must point to a local folder.

You can configure the following parameters in the **HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\IntelAMTUNS\ConfigData** registry key:

The following Registry keys could be added for configuring which events will be shown in Event Log. This is a DWORD Value. Setting value to 0 will prevent the event from appearing, while setting value to 1 will cause the relevant event to appear. Note that the settings only take effect when LMS is (re)started.



Registry Key	Event Log event
NETWORK_TRAFFIC_TX_CEASED	Security policy invoked. Some or all network traffic (TX) was stopped
NETWORK_CONNECTIVITY_TX_REDUCED	Security policy invoked. TX Network connectivity was reduced
NETWORK_TRAFFIC_RX_CEASED	Security policy invoked. Some or all network traffic (RX) was stopped
NETWORK_CONNECTIVITY_RX_REDUCED	Security policy invoked. RX Network connectivity was reduced
WLAN_WIRELESS_PROFILE_STATE_CHANGED	WLAN Wireless Profile sync enablement state changed WLAN interface
WLAN_SESSION_ESTABLISHED	Control preference for WLAN interface assigned to Intel(R) Converged Security and Management Engine. Intel(R) CSME will take control of WLAN interface when it is able
WLAN_SESSION_ENDED	Preference for WLAN interface assigned to operating system. Operating system will take control of WLAN interface when it is able
REMOTE_SOL_STARTED	A remote Serial Over LAN session was established
REMOTE_SOL_ENDED	Remote Serial Over LAN session finished. User control was restored
REMOTE_IDER_STARTED	A remote IDE-Redirection session was established. For platforms supporting USB-Redirection instead of IDE-Redirection, remote USB-Redirection session was established.
REMOTE_IDER_ENDED	Remote IDE-Redirection session finished. User control was restored. For platforms supporting USB-Redirection instead of IDE-Redirection, Remote USB-Redirection session finished. User control was restored

## 7.2 Intel® PROSet/Wireless Software Adapter Switching Override

The Intel® CSME firmware configuration of the Intel® PROSet/Wireless Software Adapter Switching override is disabled by default. However, on systems without Intel® LAN support (as defined by hardware configuration settings), it is enabled by default. When enabled, and when Adapter Switching is active (as notified by Intel® PROSet/Wireless Software to Intel® CSME firmware), the Intel® CSME firmware will configure the WLAN to override the Host software RF-Kill and establish its own wireless connection when wireless Intel® AMT is configured. When Adapter Switching



is inactive or if the Host WLAN driver is healthy, the Intel® CSME firmware will not configure the WLAN to override the Host software RF-Kill, nor establish its own wireless connection.

Users wishing to override the default setting in Intel® CSME firmware may add the following registry key under:

**HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\IntelAMTUNS**

The Intel® PROSet/Wireless Software Adapter Switching override feature in Intel® CSME firmware is available only on systems with Intel® AMT 11.6 or later.





## 8 Uninstalling Intel® CSME Software and Drivers

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If you are installing CSME SW using installer in ME\_SW\_DCH, uninstall the software via the Windows Control Panel:

- Double-click Intel® Management Engine Components to uninstall the Intel® CSME software components.
- The uninstall welcome window opens.
- Click **Next**. Uninstall will be performed.
- After uninstall operations are completed, click **Next** to reach the uninstall completion window.
- Restart is required for changes to take effect. Click **Finish** to end the uninstall.

If you are installing the inf drivers manually – from the WindowsDriverPackages folder, you should uninstall them manually from device manager

- Right click the device name in device manger and choose **uninstall**

If some system dlls have been removed between the installation and uninstallation of the Intel® CSME software, the uninstallation may fail. This has been noted, for example, when uninstalling Microsoft\* Visual C.

Don't manually uninstall ME SW components via device manager if you are installing CSME SW using installer.

Intel® WiMan install will add wiman and wiman\_extension. Therefore, when uninstalling manually from device manager it will uninstall only the WiMan. User then need to uninstall manually the wiman\_extension that is shown in device manager as "Generic Software Component".

There are 3 different WiMan's (WiMan-WiFi for CNL/WHL, WiManH for CML/TGL, WiManHu for ADL and above). When user use NIC that is relevant for CNL/WHL on upper platform version he will get the WiMan-WiFi as hidden device in device manager and it will be as a "zombie".



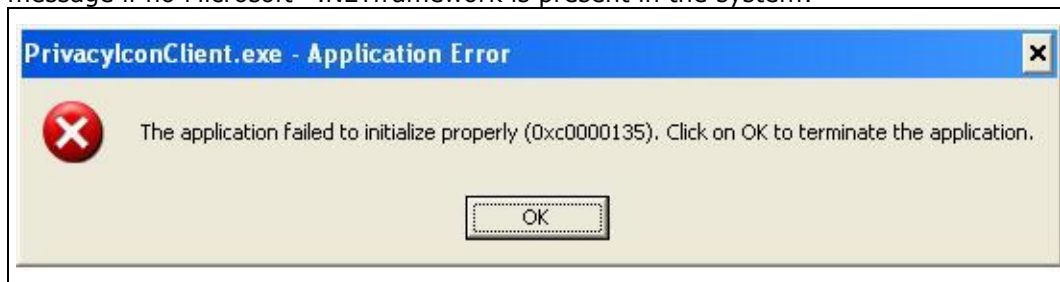
## 9 Troubleshooting Intel® Management and Security Status Application

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### 9.1 Error Message when Intel® Management and Security Status Application Loads

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

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



### 9.2 “Information Unavailable” Displayed instead of Status

The **General** tab provides basic information about the Intel® AMT, Intel® SBA, Intel® Standard Manageability, and Intel® Anti-Theft Technology status and events.

The Intel® Management and Security Status icon relies on the Local Management Service, which is installed together with the Intel® Management and Security Status application, to obtain information about the status of the resident technologies. Make sure that:

1. The Local Manageability Service (LMS) is running and starts automatically on Windows\* startup. If LMS is not installed, reinstall the software components.
2. The Intel® MEI driver is installed, enabled and functioning properly. Review the Bring-Up Guide document for more information concerning this driver.





## 9.3 Client Initiated Remote Access Connection Failure


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

1. The Local Management Service is not running. It can be started through the Services pane in the Computer Management window. If it is not installed, reinstall the software components.
2. The network cable is disconnected, or the network connection is not configured properly.

If the actions above do not resolve the problem, it is recommended to contact your Information Technology department.

## 9.4 Grayed-Out Notification Icon

Whenever either Intel® AMT, Intel® SBA or Intel® Standard Manageability is enabled, Intel® Management and Security Status icon is loaded into the notification area when Windows\* starts. It can also be started by clicking **Start> All Programs\Intel\Intel® Management and Security Status\ Intel® Management and Security Status**.

While the Intel® Management and Security Status application 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.

**Note:** The icon will also be gray if the LMS service is not running or the Intel® MEI driver is disabled or unavailable.

