

Intel® CSME Legacy Detection Tool

User Guide

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Introduction

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1 Introduction

This document will guide you through multiple processes to detect the security vulnerability described in Intel-SA00086 on platforms running Intel® Management Engine firmware versions 6.x through 10.x.

For more information, refer to the relevant Intel Security Advisory list at <https://www.intel.com/content/www/us/en/support/articles/000031784/technologies.html>.

Note: This tool is for use only on platforms running Intel® Management Engine firmware versions 6.x through 10.x. If your platform is running a later version of firmware, use the tool at <https://downloadcenter.intel.com/download/28632>.

If you are a user of a single Windows* PC and you wish to determine its status:

We have provided the **Intel Legacy Detection GUI** application (*CSME-Detection-Tool-Legacy-GUI.exe*) for local analysis of a single or standalone Windows* system.

If you want to determine the status for multiple Windows* machines:

We have provided the **Intel Legacy Detection Tool Console** application (*CSME-Detection-Tool-Legacy-console.exe*). This tool can perform detection and write its findings to the local Windows* Registry, and (optionally) to an XML and/or .txt file, for subsequent collection and analysis.

If you are a user of a Linux* system and you wish to determine its status:

We have provided the **Intel Legacy Detection Console** application (*intel_csme_detection_tool_legacy*) for analysis of Linux* systems.

Note: The Detection Tool does not support MacOS.



2 Using the Intel CSME Legacy Detection Tool

What is the Intel Legacy Detection Tool?

The Intel Legacy Detection Tool can be used by local users or an IT administrator to determine whether a system running Intel® Management Engine firmware versions 6.x through 10.x is vulnerable to the exploit documented in *Intel Security Advisory Intel-SA-000086*.

The Detection Tool is offered in two versions for Windows* and in a single version for Linux*.

- For Windows* there is an interactive GUI tool that retrieves the device's hardware and software details and provides an indication of risk assessment. This version is recommended for evaluating a local Windows* system.
- The second version, for Linux* and Windows*, is a console executable that can perform the risk assessment and optionally save the detection information to the Windows* registry (Windows* only), to an XML file, and/or to a text file. This version is more convenient for IT administrators who need to perform bulk detection operations across multiple machines.

2.1 Obtaining the Intel CSME Legacy Detection Tool

The Intel CSME Legacy Detection Tool download package is available at <https://downloadcenter.intel.com/download/29057/>.

2.2 System Requirements

Windows*:

- Microsoft* Windows* 7, 8, 8.1, 10 (including 10 S), or 2012 R2 for servers (x64) (Windows*10 IOT Core is not supported)
- .Net version 4.5 or later
- Intel® Management Engine Interface (Intel® MEI) driver
- Administration privileges

Linux*:

- Ubuntu* LTS 16.04 (for client), Redhat 7.2 (for Server)
- Python* 2.6.6
- Local operating system administrative access



2.3 Installing the Tool – Linux*

Unzip the package into a directory.

Ensure that Execute permission is set on the **intel_csme_detection_tool_legacy** file.

2.4 Running the Linux* Console Tool

From the installation directory, if Python 2.x is installed, execute the command:
sudo ./intel_csme_detection_tool_legacy

Note: If Python 3.x (and not Python 2.x) is installed, execute the command:
sudo python3 intel_csme_detection_tool_legacy

Note: The Linux* tool accepts no command line options.

2.5 Installing the Tool – Windows*

Unzip the downloaded package into a directory.

The console tool can be found in the **DiscoveryTool** subdirectory. The GUI tool can be found in the **DiscoveryTool.GUI** directory.



2.6 Running the GUI Tool

CSME-Detection-Tool-Legacy-GUI.exe is designed to run on a single system. The tool outputs the detection information to the screen.

Following is an example of the program's output when run on a vulnerable system:

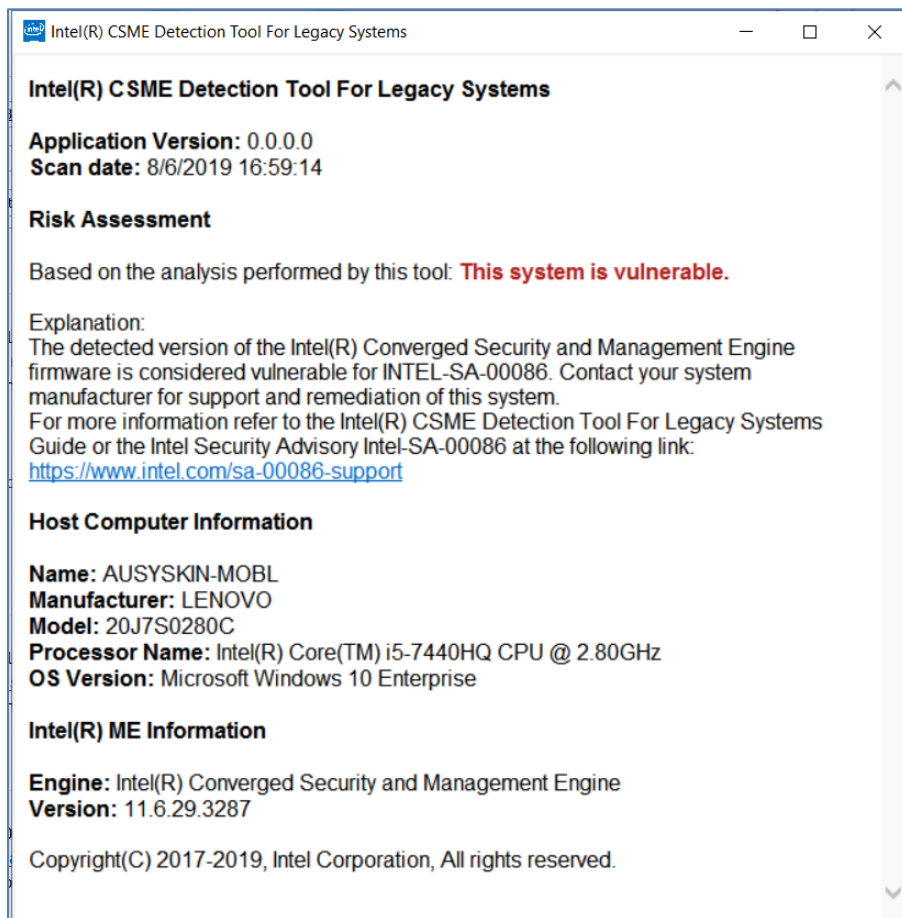


Figure 1: Program Screen Output Example for Vulnerable System



Note: On SPS platforms the recovery version is displayed in the **ME Information** section.

Following is an example of the program's output when run on a system that is not vulnerable:

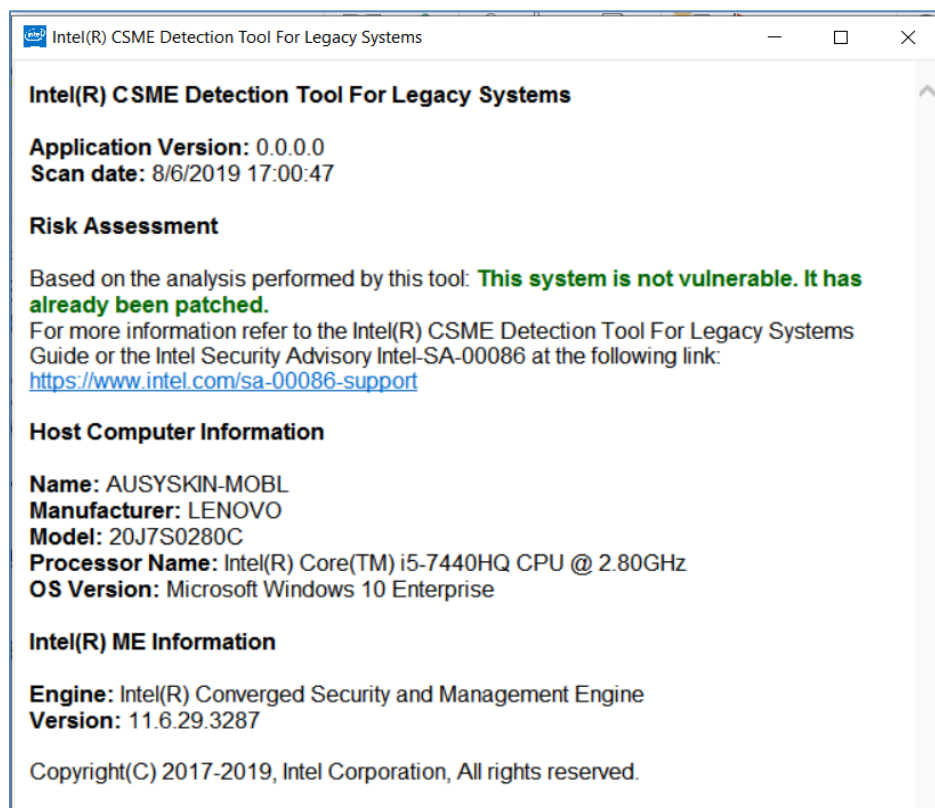


Figure 2: Output Example for System that is Not Vulnerable

2.7 Running the Windows* Console Tool

Execute **CSME-Detection-Tool-Legacy-console.exe** from a command prompt.

Syntax: **CSME-Detection-Tool-Legacy-console.exe** [[option...]]

The following table shows the program's available options:

Command Line Option	Functionality
-n, --noregistry	Prevents writing results to the registry
-c, --noconsole	Prevents results from being displayed on the console
-p <filepath>, --filepath <filepath>	Path to the directory in which to store the output file. If no path is specified, the file will be written to the directory from which the tool is run.
-h, --help, -?	Displays these command line switches and their functions



Figure 3: Windows* Console Tool Options

Following is an example of the **CSME-Detection-Tool-Legacy-console** output:

```
Intel(R) CSME Detection Tool For Legacy Systems
Application Version: 1.0.11.0
Computer Name: BSCHREI-MOBL
Scan date: 8/7/2019 3:22:34 PM

*** Host Computer Information ***
Manufacturer: Hewlett-Packard
Model: HP EliteBook 840 G1
Processor Name: Intel(R) Core(TM) i5-4300U CPU @ 1.90GHz
OS Version: Microsoft Windows 10 Enterprise

*** Intel(R) ME Information ***
Engine: Intel(R) Management Engine
Version: 9.5.15.1730

*** Risk Assessment ***
Based on the analysis performed by this tool: This system is vulnerable.
Explanation:
The detected version of the Intel(R) Management Engine firmware is considered vulnerable for INTEL-SA-00086.
Contact your system manufacturer for support and remediation of this system.

For more information refer to the Intel(R) CSME Detection Tool For Legacy Systems Guide or the Intel security advisory I
ntel-SA-00086 at the following link: http://www.intel.com/sa-00086-support
Copyright(C) 2017-2019, Intel Corporation, All rights reserved.
Saving results in: C:\Users\bschrei\Desktop\temp can be deleted\legacy\discoverytool\CSME-Detection-Tool-Legacy-BSCHREI-
MOBL-2019-08-07-15-22-34.xml
```

Figure 4: Intel-Legacy Console Output Example

The following table describes the logic that is used to determine a risk assessment:

Message	Meaning
Vulnerable	The detected version of the Management Engine firmware is considered vulnerable for INTEL-SA-00086.
Not Vulnerable	The system meets the "Not Vulnerable" criteria described in <i>Identifying impacted systems using the INTEL-SA-00086 Detection Tool</i>
May Be Vulnerable	Tool could not communicate with the Intel® MEI/TXEI Driver. Platform vulnerability cannot be ascertained.
Unknown	<ul style="list-style-type: none">•The tool did not receive a valid response when requesting hardware inventory data from your computer. Contact the system manufacturer for assistance in determining the vulnerability of this system.•This message may be received on a server platform without a PMX Driver installed. This driver may be not available on all versions of Windows* OS. If the driver is not present, the recommended workaround is to run spsInfo or spsManuf application provided with SPS Firmware release. Both applications will install the PMX Driver.
Not Supported	Firmware versions of Intel® ME 3.x thru 5.x, Intel® TXE 1.x thru 2.x and Intel® Server Platform Services 1.x thru 2.x are no longer supported, thus were not assessed for the vulnerabilities/CVEs listed in these security advisories There is no new release planned for these versions.
Not applicable	This tool is applicable for Intel(R) Management Engine versions 6.x-10.x only. Please use the detection tool located at https://downloadcenter.intel.com/download/28632 for this platform.

Figure 5: Risk Assessment Logic



3 Results

The amount of data returned by the Intel-Legacy Detection command depends on whether the Intel manageability driver stack is loaded onto the system. If the Intel® Management Engine Interface (Intel® MEI) driver is present, a more verbose set of data is displayed. Some of the fields may not be supported by the manufacturer.

3.1 Registry Location

The values from the results table can be found in the following registry key:

HKLM\SOFTWARE\Intel\CSME Detection Tool Legacy.

Under this location, **System Status/System Risk** contains the vulnerability status and **System Status/System Risk Value** contains the application's return code.

3.2 XML

If you choose to write results to an XML file, that file will be stored in the directory from which you executed **Intel-legacy-console.exe** or in the path specified by the command line options. The results include information such as hardware inventory and OS. The filename will have the format

CSME-Detection-Tool-Legacy -<ComputerName>-<date>-<Time>.xml.

3.3 Console Return Codes

Number	Status	Meaning
0	NOTVULNERABLE STATUS_OK	Platform is not vulnerable
10	HECI_NOT_INSTALLED	Intel® ME driver is not installed on the platform. Unable to determine platform vulnerability.
11	HECI_ERROR	Error communicating with the Intel® ME driver. Unable to determine platform vulnerability.
100	DISCOVERY_VULNERABLE	Platform is vulnerable.
101	DISCOVERY_NOT_VULNERABLE_PATCHED	Platform is not vulnerable, it has been patched
102	NOT_SUPPORTED	Platform is no longer supported
103	NOT_APPLICABLE	Wrong tool for this platform
200	DISCOVERY_UNKNOWN	Unable to determine platform vulnerability



Figure 6: Console Return Codes

3.4 Console Output Values

Value	Location	Description
Application Version	Hardware inventory	Version of the scanning tool used
Scan Date		Date and time of the scan
Computer Name		Name of the computer scanned
Computer Manufacturer		Computer's manufacturer
Computer Model		Computer's model
Processor		Computer's processor model
Engine	Intel® ME Firmware information	ME, CSME, TXE or SPS
ME Version		A string value with the full Intel® ME firmware version number in the following format: Major.Minor.Hotfix.Build
SVN		Firmware Security Version Number
*** Risk Assessment ***	Risk Assessment	Refer to Figure 5: Risk Assessment Logic

Figure 7: Console Output Values



4 Using the Intel SA-00125 Detection Tool to Identify Impacted Systems

Impacted systems are defined as those that have an affected Intel® Management Engine (ME) firmware version. The affected versions are listed in the following table:

	Vulnerable	Not Vulnerable
ME Version	ME Version 10.x.x.x < 10.0.56.3002* ME Version 9.5.x.x < 9.5.61.3012* ME Version 9.0.x.x < 9.1.42.3002* ME Version 8.x.x.x < 8.1.72.3002* ME versions 6 & 7* *ME 6-10 only Corporate SKUs are vulnerable (E.g., 10.0.54.0 is vulnerable)	ME Version 10.x.x.x >= 10.0.56.3002* ME Version 9.5.x.x >= 9.5.61.3012* ME Version 9.0.x.x >= 9.1.42.3002* ME Version 8.x.x.x >= 8.1.72.3002* (E.g., 10.0.58.0 is not vulnerable)

Figure 8: Criteria for Determining Whether a System is Vulnerable



5 *Troubleshooting Signature Validation Issues*

The Detection tool, as a tool that runs with administrative privileges, makes every effort to validate its own authenticity before running.

In the event that the tool cannot validate itself, you should ensure that the latest Root Certificate update for Windows* has been installed. For more information please refer to <https://support.microsoft.com/en-us/help/931125/how-to-get-a-root-certificateupdate-for-windows>