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Intel® Server Information Retrieval Utility

User Guide

A reference document describing the use of the Intel® Server Information Retrieval Utility revision 16.x.x

Rev. 1.6.2

March 2023

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Document Revision History

Date	Revision	Changes
November 2021	1.0	Initial release. First version of the single build user guide for all platforms that support the Intel® Server Information Retrieval Utility.
January 2022	1.1	Made minor edits throughout the document to improve clarity and style.
February 2022	1.2	Added KCS policy control modes section.
July 2022	1.3	Added installation step for public key during the utility installation.
August 2022	1.4	Added RHEL 9 & 8.6 to the table about supported operating systems.
November 2022	1.5	Added UBUNTU 22.04, Win 2022 and removed RHEL 7 from the supported operating systems
November 2022	1.6 – NDA	Added support for Intel® Server M50FCP Family and Intel® Server D50DNP Family – NDA
December 2022	1.6.1	Added support for Intel® Server M50FCP Family and Intel® Server D50DNP Family – Public
March 2023	1.**6.2**	**Updated the Products su**pported U**pdated the OS** Supported

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1.   Introduction

The Intel® Server Information Retrieval Utility is used for collecting system information. The utility is available in versions for different supported operating systems, including: UEFI*, Windows*, and Linux* (See Table 1).

This *User Guide* describes supported features and provides instructions on the use of all supported command line options supported by revision 16.x.x of the utility. Different from previous platform-specific document versions for this utility, this user guide combines support for all Intel server products that support the Intel® Server Information Retrieval Utility into this one document.

Revision 16.x.x of the Intel® Server Information Retrieval Utility is only supported on the following Intel server products:

- Intel® Server Board S2600WT/S2600WTR*
- Intel® Server Board S2600KP/S2600KPR*
- Intel® Server Board S2600TP/S2600TPR*
- Intel® Server Board S2600CW/S2600CWR*
- Intel® Server Board S2600WF/S2600WFR
- Intel® Server Board S2600ST/S2600STR
- Intel® Server Board S2600BP/S2600BPR

- Intel® Server System S9200WK Family*
- Intel® Server System D50TNP Family
- Intel® Server System M50CYP Family
- Intel® Server System D40AMP Family*
- Intel® Server System M70KLP Family
- Intel® Server Board M20NTP2SB
- Intel® Server System M50FCP Family
- Intel® Server System D50DNP Family

Disclaimer: The Intel® Server Information Retrieval Utility is not intended for and should not be used on any non-Intel server products.

* These products have been discontinued, and any issues arising from using these tools on discontinued products requiring code changes to resolve will be unlikely to be addressed. Please see Intel's new server-supporting tools and interfaces for the latest supported options to interact with Intel® Server products

1.1   Server Information Collected

The Intel® Server Information Retrieval Utility collects the following system information which is recorded to various log files:

Note: System information recorded, and log files created may vary between different operating systems. See Chapter 2.

- Platform firmware inventory
- System Sensor Information
- Sensor data records (SDR)
- Baseboard FRU Information
- BMC SEL (hexadecimal and human-readable)
- BMC SEL (in hexadecimal form)
- System BMC boot order
- BMC user settings
- BMC LAN channel settings
- BMC SOL channel settings
- BMC power restore policy settings
- BMC channel settings
- SMBIOS type 1, type 2, type 3

- Processor Information
- SATA Port Information
- IDESCSI Port Information
- Hard drive information
- Operating system information
- Device manager information (such as drivers)
- List of software installed
- Operating system event log
- PCI bus device information
- RAID settings and RAID log
- BIOS settings (per the BIOS setup)
- Power telemetry (if available)

- Memory Information

Note: A BMC System Event Log (SEL) is not available for the following Intel server products: Intel® Server M70KLP Family and Intel® Server M20NTP2SB Family.

1.2   Operating Systems Supported

The Intel® Server Information Retrieval Utility revision 16.x.x is available with versions to support different operating systems. Table 1 summarizes the operating systems and Intel server products supported by this revision.

Table 1. Supported Operating Systems

Platforms	Operating Systems/Preboot Environment Supported
- Intel® Server Board S2600WT/S2600WTR Family* - Intel® Server Board S2600KP/S2600KPR Family* - Intel® Server Board S2600TP/S2600TPR Family* - Intel® Server Board S2600CW/S2600CWR Family* - Intel® Server Board S2600WF/S2600WFR Family - Intel® Server Board S2600ST/S2600STR Family - Intel® Server Board S2600BP/S2600BPR Family - Intel® Server System S9200WK* Family - Intel® Server System M70KLP Family - Intel® Server System D50TNP Family - Intel® Server System M50CYP Family - Intel® Server System D40AMP* Family - Intel® Server Board M20NTP2SB - Intel® Server System M50FCP Family - Intel® Server System D50DNP Family * These products have been discontinued, and any issues arising from using these tools on discontinued products requiring code changes to resolve will be unlikely to be addressed. Please see Intel's new server-supporting tools and interfaces for the latest supported options to interact with Intel® Server products	- UEFI shell - Windows Server* 2019 and 2022 - Windows* 10 - Red Hat Enterprise Linux* (RHEL*) 8.x and 9.x-64 bit - SUSE Linux Enterprise Server* (SLES*) 15, 12 service pack 3-64 bit - Ubuntu* 20.04 and 22.04 - Note: Users who want to use Utilities on Older versions of OS will have to use the previous versions of the Utility which has the OS Support.

1.3   KCS Policy Control Modes – Messages in the Integrated Baseboard Management Controller (Integrated BMC) Web Console

The keyboard controller style (KCS) policy control modes allow an authenticated BMC administrative user to control the level of protection from IPMI commands executed over the KCS channels. Within this generation of BMC firmware, three different KCS policy control modes are supported: Allow all, Restricted, and Deny All.

1.3.1   Allow All/Provisioning

This configuration setting is intended for normal IPMI-compliant communications between the host operating system and the BMC. This mode should be used when provisioning the BMC configuration for deployment.

In this mode, update, display, configuration changes, and help commands are executable.

1.3.2   Restricted/Provisioned Host Passlist

This configuration setting disables the IPMI KCS command interfaces between the host operating system and the BMC. This is a configuration that is non-compliant with IPMI. The restricted mode impacts the operation of the Intel® Server Management software running on the host operating system.

This mode only applies to the IPMI commands over the KCS interfaces and does not apply to commands directed to the authenticated network interfaces of the BMC.

In this mode, only display and help commands are executable.

When the KCS policy control mode is set to Restricted, one of the following two messages will be displayed if a command is issued over the KCS interface that is not supported in this control mode:

- `KCS Policy Control Mode is set to "RESTRICTED". This function depends on an unrestricted KCS environment to operate. To run utility, please change "KCS Policy Control Mode" using BMC web console or other authenticated session.`

- `KCS Policy Control Mode is set to "Provisioned Host Whitelist". This function depends on an unrestricted KCS environment to operate. To run utility, please change "KCS Policy Control Mode" using BMC web console or other authenticated session.`

1.3.3   Deny All/Provisioned Host Disabled

This configuration setting enables the BMC firmware to use of an access control list that allows applications executing on the host operating system to have access to a limited set of IPMI commands using the KCS interfaces. This is a configuration that is non-compliant with IPMI. The Deny All mode may impact the operation of the Intel® Server Management software running on the host operating system.

This mode only applies to the IPMI commands over the KCS interfaces and does not apply to commands directed to the authenticated network interfaces of the BMC.

In this mode no commands are executable.

When the KCS policy control mode is set to Deny All, one of the following two messages will be displayed if a command is issued over the KCS interface that is not supported in this control mode:

- `KCS Policy Control Mode is set to "DENY ALL". This function depends on an unrestricted KCS environment to operate. To run utility, please change "KCS Policy Control Mode" using BMC web console or other authenticated session.`

- `KCS Policy Control Mode is set to "Provisioned Host Disabled". This function depends on an unrestricted KCS environment to operate. To run utility, please change "KCS Policy Control Mode" using BMC web console or other authenticated session.`

2.   Utility Installation and Removal Procedures

This chapter provides instructions for the installation and removal of the Intel® Server Information Retrieval Utility for all supported operating environments.

2.1   Utility Installation Prerequisites

The installation of this utility can only be performed with the following prerequisites:

- Download the latest Server Information Retrieval Utility Package from the following Intel web site: https://downloadcenter.intel.com/ . Search for "*Intel Server Information Retrieval Utility*"
- Read the provided Release Notes for the latest utility information
- Utility installation requires Windows* administrative or Linux* root permissions.

2.2   Utility Installation and Removal for UEFI

2.2.1   Utility Installation on UEFI

This section provides instructions to install the Intel® Server Information Retrieval Utility on UEFI:

1. Download the latest Intel® Server Firmware Update Utility package
2. Boot the system to the embedded UEFI operating environment
3. Utility installation requires Linux* root permissions
4. Create a local directory. (Example: > fs0: \sysinfo)
5. Copy the utility .zip file to the defined directory
6. Unzip the utility .zip file
7. Go to the UEFI folder
8. To run the utility type *sysinfo.efi*

The utility collects the system information and records it to three different log files which are saved to the **LogFiles** directory. The data collected within each log file is defined as follows:

- o **sysinfo_log.txt**: Platform Firmware Inventory; Sensors; Sensor Data Records; Base Board FRU; BMC SEL (hexadecimal and human-readable); System BMC Boot Order; BMC User Settings; BMC LAN Channel Settings; BMC SOL Channel Settings; BMC Power Restore Policy Settings; BMC channel settings; SMBIOS Type 1, SMBIOS Type 2, and SMBIOS Type 3; Processor; Memory; and Operating System Information
- o **RAID_NVRAMlog.txt**: RAID settings and RAID log
- o **PCI_Log.txt**: PCI Bus information

2.2.2   Utility Removal from UEFI

1. Boot the server system to the embedded UEFI operating environment
2. Locate and delete the files and directories from the local directory created in Step 4 of section 2.2.1.

2.3   Utility Installation and Removal for Windows*

This section provides instructions for the installation and removal of the Intel® Server Information Retrieval Utility using a Microsoft Windows* based operating environment.

2.3.1   Prerequisites for Windows*

The following prerequisites are needed to install and use the Intel® Server Information Retrieval Utility:

- All RAID drivers for the corresponding Intel® Server Board must be installed. Otherwise, the utility does not display RAID information.

2.3.2   Utility Installation on Windows*

1. Download the latest Intel Server Information Retrieval Utility package
2. Bootup the server to Windows with WMI enabled
3. Utility installation requires Windows* administrative permissions
4. Create a local directory. For example: `C:\sysinfo`
5. Copy the compressed utility .zip file into the defined directory
6. Unzip the compressed utility .zip file
7. Go to the `Win_x64\Drivers` folder and run `install.bat` to install the SMI driver.
8. Go to the `Win_x64\Binaries` folder as an administrator and run `sysinfo.exe`.

The utility collects the system information and writes it into five different log files which are saved to the *LogFiles* folder under the current directory. The data collected within each log file is defined as follows:

- **sysinfo_log.txt**: Platform Firmware Inventory; Sensors; Sensor Data Records; BMC SEL (in human readable form); BMC SEL (in hex form); Base Board FRU; System BMC Boot Order; BMC User Settings; BMC LAN Channel Settings; BMC SOL Channel Settings; BMC Power Restore Policy Settings; BMC channel settings; SMBIOS Type 1, SMBIOS Type 2, and SMBIOS Type 3; Memory; Processor; SATA; IDESCSI; HARD Drive; Operating System Information; Device Manager Information (such as drivers); List of Software Installed; and BIOS Settings (per the BIOS setup)
- **RAID_NVRAMlog.txt:** RAID settings and RAID log
- **OS_Eventlog.txt**: Operating System Event Log
- **SATA_log.txt**: SATA information
- **PCI_log.txt**: PCI Bus information

2.3.3   Utility Removal from Windows*

1. Locate the directory created in Step 4 of section 2.3.2, then go to the `Win_x64\Drivers\` directory.
2. To uninstall the utility run `uninstall.bat`

2.4 Utility Installation and Removal for Linux*

This section provides instructions for the installation and removal of the Intel® Server Information Retrieval Utility using a Linux* based operating environment.

2.4.1 Prerequisites in Linux*

The following prerequisites are needed to install and use the Intel® Server Information Retrieval Utility:

- Utility installation requires Linux* root permissions
- For the utility to read RAID information from the system, all RAID drivers for the server must be installed.
- On Red Hat*, CentOS*, SUSE*, UEFI-aware Linux*, there might be a driver conflicting between an internal driver and the kernel. Start the `OpenIPMI` driver and ensure the `/dev/ipmi0` device exists.
- On Red Hat*, CentOS*, SUSE*, UEFI-aware Linux*, make sure that the **public key** is installed. If the public key is not installed, then unzip the package `Sysinfo_Vx.x.x_AllOS.zip`, go to the `Linux_x64` directory, and execute the following command:
  - o `rpm --import pubKey.asc`

2.4.2 Utility Installation on Linux*

This section provides instructions to install the Intel® Server Information Retrieval Utility:

1. Download the latest Intel® Server Firmware Update Utility package
2. Boot the system to Red Hat Enterprise Linux* (RHEL), SUSE Linux Enterprise Server* (SLES*), or CentOS*
3. Copy the `Sysinfo_VX.X.X_AllOS.zip` file into a local directory (for example, `/root/sysinfo/`).
4. Unzip the utility .zip file
5. Go to the `Linux_X64` folder and use `chmod 755` to change the executable and script.

Note: If another version has already been installed, uninstall the previously installed version by running `./uninstall.sh` before installing the new version.

6. To install the Intel® Server Information Retrieval Utility components, run the `./install.sh` command at the shell prompt.
7. Close the terminal from which `install.sh` was executed and run the Intel® Server Information Retrieval Utility from a new terminal.

The utility collects system information and writes it into four different log files which are saved to the *LogFiles* folder under the current directory. The data collected within each log file is defined as follows:

- o **sysinfo_log.txt**: Platform Firmware Inventory; Sensor information; Sensor Data Records; Base Board FRU; BMC SEL (hexadecimal and human-readable); System BMC Boot Order; BMC User Settings; BMC LAN Channel Settings;
  BMC SOL Channel Settings; BMC Power Restore Policy Settings; BMC channel settings; SMBIOS Type 1, SMBIOS Type 2, and SMBIOS Type 3; Processor; Memory; Operating System Information; Device drivers installed; List of Software installed; and BIOS Settings (per the BIOS setup)
- o **RAID_NVRAMlog**.txt: RAID settings and RAID log
- o **PCI_Log.txt**: PCI Bus info
- o **OS_Eventlog.txt**: Operating System events

2.4.3   Utility Removal from Linux*

This section provides instructions to uninstall the Intel® Server Information Retrieval Utility from a Linux operating environment

1. Boot the system to Linux
2. Locate the directory created in Step 3 in section 2.4.2, then go to the Linux_x64 directory
3. Run the **./uninstall.sh** command file
4. Delete the Linux* folder.

3.   Utility Usage

This chapter provides examples of supported command line options for each supported operating system.

3.1   Usage on UEFI

Command Syntax

> **`sysinfo.efi [-Option]`**

Command Usage

- To view the command-line help page:

  > **`sysinfo.efi –h`**

  Or:

  > **`sysinfo.efi /?`**

- To get system information and write data to log files:

  > **`sysinfo.efi`**

  System information is recorded to two log files (`sysinfo_log.txt`, `PCI_log.txt`) which are saved to the ***LogFiles*** directory.

- To get system information and write data to log files in a non-interactive way:

  > **`sysinfo.efi –ni`**

  System information is recorded to two log files (`sysinfo_log.txt`, `PCI_log.txt`) which are saved to the ***LogFiles*** directory.

- To get system information, including configured RAID information, and record data to log files:

  > **`sysinfo.efi –raid`**

  System information is written to three log files (sysinfo_log.txt, RAID_NVRAMlog.txt, PCI_log.txt) which are saved to the ***LogFiles*** directory

3.2   Usage on Windows*

Command Syntax:

> **`sysinfo.exe [-Option]`**

Command Usage:

- To view the command-line help page:

  > **`sysinfo.exe –h`**

  Or:

  > **`sysinfo.exe -?`**

- To get system information and record data to log files:

  > **`sysinfo.exe`**

  System information is recorded to two log files (`sysinfo_log.txt` and `OS_Eventlog.txt`) which are saved to the ***LogFiles*** directory.

- To get system information and record data to log files in a non-interactive way:

  > **`sysinfo.exe –ni`**

  System information is recorded to two log files (`sysinfo_log.txt` and `OS_Eventlog.txt`) which are saved to the ***LogFiles*** directory.

- To get SATA and PCI bus information and record data to log files

  > **`sysinfo.exe -sata –pci`**

  Information is recorded to two log files (`SATA_log.txt` and `PCI_log.txt`) which are saved to the ***LogFiles*** directory.

Notes:
- The Intel® Server Information Retrieval Utility cannot retrieve hard drive information with drives installed onto a backplane.
- To collect PCI/SATA information, the Intel® Server Information Retrieval Utility uses a memrwd.sys driver which is not WHQL certified.

3.3   Usage on Linux*

Command Syntax:

> `./sysinfo [-Option]`

Command Usage:

- To view the command-line help page:

  > `./sysinfo -h`

  Or:

  > `./sysinfo "-?"`

- To get system information and record data to log files:

  > `./sysinfo`

  System information is recorded to three log files (`sysinfo_log.txt`, `PCI_log.txt`, and `OS_Eventlog.txt`) which are saved to the ***LogFiles*** directory.

- To get system information and record data to log files in a non-interactive way:

  > `./sysinfo -ni`

  System information is recorded to three log files (`sysinfo_log.txt`, `PCI_log.txt`, and `OS_Eventlog.txt`) which are saved to the ***LogFiles*** directory.

- To get system information, including configured RAID information, and record data to log files:

  > `./sysinfo -raid`

  System information is recorded to four log files (`sysinfo_log.txt`, `RAID_NVRAMlog.txt`, `PCI_log.txt`, and `OS_Eventlog.txt`) which are saved to the ***LogFiles*** directory.

- To get system information and record data to log files to a specified output folder:

  > `./sysinfo [Directory name]`

  System information is recorded to three log files (`sysinfo_log.txt`, `PCI_log.txt`, and `OS_Eventlog.txt`) which are saved to the specified directory path and directory name.

Appendix A. Glossary

Term	Definition
BIOS	Basic Input/Output System.
BMC	Baseboard management controller. The primary microcontroller that controls the operation of the Intel® Server Management subsystem.
FRU	Field-replaceable unit.
IPMI	Intelligent Platform Management Interface.
KCS	Keyboard controller style.
LAN	Local area network.
PCI	Peripheral Component Interconnect.
RPM	Red Hat* Package Manager.
SATA	Serial ATA. A computer bus technology for connecting hard drives and other devices.
SDR	Sensor data record.
SEL	System event log.
SLES*	SUSE Linux Enterprise Server*.
SMI	Server management interrupt. SMI is the highest priority non-maskable interrupt.
SOL	Serial-over-LAN.
WHQL*	Windows Hardware Quality Labs*.
WMI	Windows Management Instrumentation*.