Intel® System Information Retrieval Utility

User Guide – For Intel® Server System M70KLP only

Reference for using the Intel® System Information Retrieval Utility (Sysinfo)

Rev 1.01

May 2021

Delivering Breakthrough Datacenter System Innovation – Experience What's Inside!

<Blank page>

Document Revision History

Date	Revision	Changes
March 2021	1.00	First version for Server System M70KLP platform
May 2021	1.01	Addressed review comments

Disclaimers

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Learn more at Intel.com, or from the OEM or retailer.

You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

Copies of documents which have an order number and are referenced in this document may be obtained by calling 1-800-548-4725 or by visiting www.intel.com/design/literature.htm.

Intel and the Intel logo are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

Table of Contents

List of Tables

1. Introduction

1.1 Purpose of the Document

This document describes the functionality of the Intel® System Information Retrieval Utility, also referred to as “sysinfo”.

1.2 Platforms and Operating System Support

This utility is designed exclusively for use with Intel® Server System M70KLP. Using this revision of the utility on any other Intel® Server Product is not supported. For details, refer to Release Notes in each release package.

There are two ways to identify the M70KLP version of the utility:

- Check the utility zip pkg name string
  The M70KLP Utility zip pkg string contains ‘**klp**’ keyword.
  Ex:
  Sysinfo_V14_2**klp**_Buildx_AllOS.zip

- Check the utility header after launching the tool
  The M70KLP utility header contains the ‘**klp**’ keyword. Check the header string after launching the tool.
  Ex:

```
[root@localhost yliu152]# sysinfo -h

        System Information Retrieval Utility Version 14.2klp Build 2
        Copyright (c) 2020 Intel Corporation
        Usage:

        Command Line Interface
        *. To view the command-line help page:
                ./sysinfo /h or -?

        *. sysinfo logs system information in the directory "LogFiles"
           (sysinfo_log.txt, PCI_log.txt, OS_Eventlog.txt).
                ./sysinfo


        *. For Non Interactive Command Line Interface
                ./sysinfo -ni
```

Figure 1. M70KLP Utility Header

1.3 Intended Audience

This document is intended for:

- Users of the utility who desire a more detailed understanding of its operation.
- Manufacturing personnel using the utility in a factory environment.

1.4 Order of Precedence

For Intel® Server System M70KLP usage, in case of conflict between different documents, the current document shall take precedence over the other documents.

1.5 Document Overview

This document is organized as follows:

Section 1: Introduction
Describes the purpose of the document.

Section 2: Product Overview
Provides an overview of the architectural components that comprise the system configuration save/restore utility.

Section 3: Functional Specification
Describes the operation, how to use the utility, and a description of the input files.

Section 4: Installation and Un-installation
Describes the procedure to install and uninstall the syscfg utility in Linux* and Windows*.

2. Product Overview

The System Information Retrieval Utility is a command-line utility that provides the ability to collect system information on which this utility operates, as fully described in the IPMI and BMC specifications.
The System Information Retrieval Utility requires Windows* administrative or Linux* root permissions.

This version of the System Configuration Utility is designed for use only with the Intel® Server System M70KLP product family. When using the System Configuration Utility for other Intel® server product families, check the product utility guide for the applicable version.

2.1 System Information Collected

The System Information Retrieval Utility collects the following system information and writes into log files:

- Platform Firmware Inventory
- Sensors
- Sensor Data Records (SDR)
- Baseboard FRU
- System 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
- Memory
- Processor
- Hard Drive
- 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)

Note: Types of system information in each log file could vary among different System Configuration Utility versions.

3. Functional Specification

The executable for the System Firmware Update utility is named **sysinfo.exe** for Windows*, **sysinfo** for Linux*, and **sysinfo.efi** for UEFI shell.

3.1 Command-Line Interface

This utility parses the command-line arguments and sets internal flags to control operation. Any invalid parameters will result in a "usage" message being displayed and the program exiting with an error code. The command line switches are listed in Table 1 and they are accessed with a dash "-" or a slash "/".
The basic command line format is:

```
sysinfo [Options]
```

Table 1: Command-Line Switches

Parameter	Description
sysinfo	The name of the utility. Linux* is case-sensitive. Without any option followed, System Information Retrieval Utility logs system information in five log files in the LogFiles folder under the current directory. These three log files are: sysinfo_log.txt, PCI_log.txt (with -pci in Windows*), and OS_Eventlog.txt (Not available in UEFI).
-ni	System Information Retrieval Utility logs system information in a non-interactive way
-h or -?	Displays command line help information. When this option is used, any other options on the command line are ignored. When using /? In Linux* enclose within double quotes ("/?")
-raid	With this option, additional log file `RAID_NVRAMlog.txt` will be generated
-sata –pci	With these two options, SATA and PCI bus information will be logged in two log files: SATA_log.txt and PCI_log.txt. "-sata" and "-pci" must be used together
[Directory name]	System Information Retrieval Utility logs system information into three log files to the specified output folder

Notes

- The System Information Retrieval Utility does not log HDD information with the backplane installed.
- To collect `PCI/SATA` info, `sysinfo` uses the `memrwd.sys` driver. This driver is not WHQL certified.
- To display sensor information, install Intel IMB driver (if only the IPMI driver from Microsoft* is installed on the system).
  1. To install Intel IMB driver:
     Run `install-imbdriver.bat` on console. The `install-imbdriver.bat` is available in `Binaries\` folder.
  2. To uninstall Intel IMB driver:
     Run `uninstall-imbdriver.bat` on console. The `uninstall-imbdriver.bat` is available in `Binaries\` folder.

4. Installation and Un-installation

4.1 Windows* Installation

Refer to the supported operation system listed in Release Notes.

4.1.1 Prerequisites

The following prerequisites are needed to install and use the System Information Retrieval Utility:

- Boot to the Windows* system with WMI enabled.
- All RAID drivers for the corresponding Intel® Server Board must be installed. Otherwise, the utility does not display RAID information.
- The system needs to be rebooted after installing the memrw driver (run memrwdinstall.bat)

4.1.2 System Information Retrieval Utility Installation

This section provides instructions to install the System Information Retrieval Utility:

1. Copy the compressed `.zip` file into your local directory (for example, `C:\sysinfo`).
2. Unzip the file.
3. Install the driver.
   According to OS architecture, go to the Win_x64\Drivers folder or the Win_x86\Drivers folder and run `install.bat` to install the IPMI, SMI, and memory map drivers.
4. Depending on the operating system, go to the Win_x86\Binaries folder or the Win_x64\Binaries folder as administrator and run sysinfo.exe.

   The utility collects system information and writes it into five different log files in a LogFiles folder under the current directory.
   The following lists the system information each log file contains:
   - `sysinfo_log.txt`: Platform Firmware Inventory; Sensors; Sensor Data Records; Base Board FRU; System 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

4.1.3 System Information Retrieval Utility Un-Installation

1. Go to the Win_x86\Drivers folder or the Win_x64\Drivers folder.
2. Run uninstall.bat (for uninstalling System Information Retrieval Utility).

4.2 Linux* Installation

Refer to the supported operation system listed in Release Notes.

4.2.1 Prerequisites

The following prerequisites are needed to install and use the System Information Retrieval Utility:

- Boot to Red Hat* Enterprise Linux*, SUSE* Linux* Enterprise Server, or the CentOS system.
- All RAID drivers for the corresponding platform must be installed. Otherwise, the utility does not display RAID information.
- On Red Hat*, CentOS, SUSE, UEFI-aware Linux*, there might be a driver conflict between an internal driver and the kernel. Start up the `OpenIPMI` driver and ensure the `/dev/ipmi0` device exists.

4.2.2 System Information Retrieval Utility Installation

This section provides instructions to install the System Information Retrieval Utility:

1. Copy the uncompressed `.zip` file into a local directory (for example, `/root/sysinfo/`).
2. Go to the Linux_X64 folder and use `chmod 755` to change the executable and script.
3. If another version has already been installed, uninstall the previously installed version by running `./uninstall.sh` before installing the new version.
4. To install the System Information Retrieval Utility components, run `./install.sh` command on the shell prompt.
5. Close the terminal from which `install.sh` was executed and run System Information Retrieval Utility from a new terminal.

   The utility collects system information and writes it into four different log files in the `LogFiles` folder under the current directory.
   The following lists the system information each log file contains:
   - `sysinfo_log.txt`: Platform Firmware Inventory; Sensor information; Sensor Data Records; Base Board FRU; System 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)
   - `RAID_NVRAMlog.txt`: RAID settings and RAID log
   - `PCI_Log.txt`: PCI Bus info
   - `OS_Eventlog.txt`: Operating System events

4.2.3 System Information Retrieval Utility Uninstallation

This section provides instructions to uninstall the System Information Retrieval Utility.

1. Run the `./uninstall.sh` in the `Linux_X64/RHEL` folder or the `Linux_X64/SUSE` folder or `Linux_X64/UBUNTU` folder (depending on Linux* distribution).
2. Remove the Linux* folder.

4.3 UEFI Installation

Refer to the supported operation system listed in Release Notes.

4.3.1 System Information Retrieval Utility Installation

This section provides instructions to install the System Information Retrieval Utility:

1. Copy the uncompressed `.zip` file into a local directory (for example, `fs0: \sysinfo`).
2. Go to the `UEFI` folder.
3. Run `sysinfo.efi`.
   The utility collects system information and writes it into three different log files in the `LogFiles` folder under the current directory.

The following lists the system information each log file contains:

- `sysinfo_log.txt`: Platform Firmware Inventory; Sensors; Sensor Data Records; Base Board FRU; System 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
- `RAID_NVRAMlog.txt`: RAID settings and RAID log
- `PCI_Log.txt`: PCI Bus information

4.3.2 System Information Retrieval Utility Uninstallation

Remove the folder where `sysinfo.efi` is located.

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
LAN	Local area network
PCI	Peripheral Component Interconnect
RPM	Red Hat* Package Manager
SATA	Serial ATA. A computer bus technology for connecting hard disks and other devices.
SDR	Sensor data record
SEL	System event log
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