



Intel[®] Server Debug and Provisioning Tool

User Guide

A setup, usage and troubleshooting guide for Intel[®] Server Systems

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May 2021	1.4-4	<ul style="list-style-type: none">• First release of Intel® SDP Tool for Windows Platform

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1. Introduction

The Intel® Server Debug and Provisioning Tool (Intel® SDP Tool) is a single-server tool to debug and provision Intel® Server Boards and Systems through the BMC Out-of-band.

Intel® SDP Tool is designed to work with the following Intel® Server Board families:

- Intel® Server Board S2600WF/S2600WFR family
- Intel® Server Board S2600ST/S2600STR family
- Intel® Server Board S2600BP/S2600BPR family
- Intel® Server Board S9200WK family
- Intel® Server Board D50TNP family
- Intel® Server Board M50CYP family

1.1 Document Scope

The purpose of this user guide is to help system/server administrators install and use the Intel® Server Debug and Provisioning Tool (Intel® SDP Tool). This guide provides information on the features and benefits of Intel® SDP Tool, as well as software requirements, supported operating systems and platforms. This guide also explains the installation and uninstallation process.

Note: Refer to the *Intel® Server Debug and Provisioning Tool Release Notes* for known issues on platforms and during the installation.

1.2 System Requirements

Table 1. Operating systems and Intel® Server Boards supported

Intel® Server Boards	Operating System Version
<ul style="list-style-type: none"> • Intel® Server Board S2600WF/S2600WFR family • Intel® Server Board S2600ST/S2600STR family • Intel® Server Board S2600BP/S2600BPR family • Intel® Server Board S9200WK family • Intel® Server Board D50TNP family • Intel® Server Board M50CYP family 	<ul style="list-style-type: none"> • Windows 10 • Windows Server 2016 • Windows Server 2019

1.3 Terminology

Table 2. Terminology

Term	Definition
BMC	Baseboard Management Controller
CLI	Command-Line Interface
FRU	Field Replaceable Unit
Redfish	Operates over HTTPs using a REST API independently of the Operating System and allows you to manage a system remotely using basic https commands like post, get, patch, etc.
LAN	Local Area Network
Management Server	Intel® Server System where SDP Tool is installed. It will be acting as host server which has network connectivity to the rest of the managed servers.
Managed Server	Intel® Server System in a cluster or data center that will be managed by Management Server.
OUT-OF-BAND	Out-of-band managed server refers to any system which is configured with valid IPMI LAN channel and logon account to allow remote management via IPMI protocol.
SDR	Sensor Data Record
SEL	System Event Log

1.4 Intel® Support

Visit <https://www.intel.com/content/www/us/en/support.html> for current technical support information and updates.

2. Getting Started

2.1 Installation Steps

To install the Intel® SDP Tool on the Management Server

1. Download or Copy the Intel® SDP Tool Package 'SDPTool-x.y-z.msi' to the target directory.
2. Open PowerShell as Administrator and navigate to the downloaded location. Run the command below to install Intel® SDP Tool

```
Prompt #> msixec /i SDPTool-x.y-z.msi /quiet
```

3. The tool will be available at the location below. It will also be added to the "Path" Environment Variable: -
"C:\Program Files\Intel\Intel (R) SDPTool"

2.2 Uninstallation Steps

To uninstall the utility, enter the following command:

```
Prompt #> msixec /x SDPTool-x.y-z.msi /quiet
```

2.3 Network ports

The following network ports are used by the SDP Tool for connecting to the platform:

1. https: server port outbound '**443**'

Note: The Intel® SDP Tool may use a combination of these ports to complete an operation.

3. Feature Script

The Intel® SDP Tool script is the main engine of Intel® SDP Tool OOB features. This section explains the methods to executing Intel® SDP Tool features, and the objectives accomplished by executing them.

3.1 General Rules

To display the usage menu, enter `-h`.

Example: `SDPTool -h`

Each valid operation run will create logs in `C:/SDPTool/Logfiles/<ip>/<operation>`

Example: after running “`SDPTool 192.168.1.10 bmcuser bmcpw powerstatistics`”

There are log(s) in `C:/SDPTool/Logfiles/192_168_1_10/powerstatistics.log`

Any failure will generate a `*.err` log file. The specific definition of each error code is available in Section 4.

3.2 Update Firmware

```
SDPTool <ipv4> <username> <password> update <SUP folder> [-no_user_interaction]
[-no_reboot]
```

To update the BIOS/ME/BMC/SDR system firmware an SUP package must be used instead of a FSUP package. This feature makes use of flash utilities and images within the SUP package.

- `-no_user_interaction`: flag to reboot the system without prompt.
- `-no_reboot`: flag will not reboot the system immediately after an update is performed.

Example: `SDPTool 192.168.1.10 admin admin123 update SUP/S2600WT`

Note: `SUP_Folder` – Path to Update Package (SUP) is required and to be provided as argument.

3.3 Set Bios Config

```
SDPTool <ipv4> <username> <password> set_biosconfig <"var new_val"> [-no_user_interaction] [-no_reboot]
```

This option configures BIOS/BMC settings via redfish API.

Note: A reboot is required for this option.

- `-no_user_interaction`: flag to reboot the system without prompt and take any input as positive nod to go ahead.
- `-no_reboot`: flag to make sure the operating system does not reboot. In such a case the Bios and ME updates cannot reflect until rebooted manually later by the user.

Example: `SDPTool 192.168.1.10 admin admin123 set_biosconfig 'QuietBoot 1'`

3.4 Set Bios Config All

```
SDPTool <ipv4> <username> <password> set_biosconfig_all <restore filename> [-no_user_interaction] [-no_reboot]
```

This option configures BIOS/BMC settings by using the syscfg ini method. Once the .ini file is provided, the user may change many of the BIOS options and set them within one command.

Note: A reboot is required for this option.

- -no_user_interaction: flag to reboot the system without prompt and take any input as positive nod to go ahead.
- -no_reboot: flag to make sure the operating system does not reboot. In such a case the Bios and ME updates cannot reflect until rebooted manually later by the user.

Example: SDPTool 192.168.1.10 admin admin123 set_biosconfig_all sysconfig.ini

3.5 Get Bios Config

```
SDPTool <ipv4> <username> <password> get_biosconfig <"option to retrieve">
```

This option returns the value of a specific bios setting via redfish API.

Note: A reboot is not required.

Example: SDPTool 192.168.1.10 admin admin123 get_biosconfig "QuietBoot"

3.6 Get Bios Config all

```
SDPTool <ipv4> <username> <password> get_biosconfig_all
```

This command returns BIOS/BMC settings by using redfish API.

Note: A reboot is not required.

Example: SDPTool 192.168.1.10 admin admin123 get_biosconfig_all

3.7 Vmedia

```
SDPTool <ipv4> <username> <password> vmedia <smb://user:pass@host/file_name.ISO> [-no_user_interaction]
```

The VMedia command allows the addition of virtual media in .iso format only to the remote machine samba share. The samba share needs to be in place beforehand for it to work.

Add the relevant virtual media by redirecting the iso file specified.

Example: SDPTool 192.168.1.10 admin admin123 vmedia smb://user:pass@host/share_dir/image.iso

3.8 Power

```
SDPTool <ipv4> <username> <password> power <status | on | off | cycle | reset>
```

The power command is used to perform following actions: -

1. Status: Shows status as power on/off
2. On: Powers on the system
3. Off: Powers off the system
4. Cycle: Perform AC power cycle
5. Reset: Perform power reset

Example: SDPTool 192.168.1.10 admin admin123 power status

3.9 Sensor

```
SDPTool <ipv4> <username> <password> sensor
```

The sensor command displays the relevant sensor information of a server.

Example: SDPTool 192.168.1.10 admin admin123 sensor

3.10 SEL

```
SDPTool <ipv4> <username> <password> sel [-f <filename to save sel-log>] [-c] [-w] [-i]
```

This command retrieves the SEL log,

Note: -i = information, -c = critical, -w = warning #-f = specifies a filename to save the SEL log.

Example: SDPTool 192.168.1.10 admin admin123 sel -w -l -f save_log.txt

3.11 Set LAN

```
SDPTool <ipv4/ipv6> <username> <password> setlan <channel> <ipv4> <mask>  
<gateway> <primary dns> <secondary dns>
```

The setlan command configures the BMC LAN IP ipv4 address of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 setlan 2 192.168.1.12 255.255.255.0 192.168.1.1 8.8.8.8 0.0.0.0

3.12 Disable LAN

```
SDPTool <ipv4/ipv6> <username> <password> disablelan <channel>
```

The disablelan command disables a BMC LAN IP ipv4 address of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 disablelan 2

3.13 System Info

```
SDPTool <ipv4> <username> <password> systeminfo
```

The systeminfo command displays the system information related to the BMC and baseboard including the BMC version, BIOS version, RMM, etc.

Example: SDPTool 192.168.1.10 admin admin123 systeminfo

3.14 FRU

```
SDPTool <ipv4> <username> <password> fru print
```

The fru command displays any relevant fru information.

Example: SDPTool 192.168.1.10 admin admin123 fru print

3.15 Memory Info

```
SDPTool <ipv4> <username> <password> memoryinfo
```

The memoryinfo command displays any relevant memory information.

Example: SDPTool 192.168.1.10 admin admin123 memoryinfo

3.16 CPU Info

```
SDPTool <ipv4> <username> <password> cpuinfo
```

The cpuinfo command displays any relevant CPU information.

Example: SDPTool 192.168.1.10 admin admin123 cpuinfo

3.17 Memory Temperature

```
SDPTool <ipv4> <username> <password> memorytemp
```

The memorytemp command displays the temperature of the system memory.

Example: SDPTool 192.168.1.10 admin admin123 memorytemp

3.18 Power Statistics

```
SDPTool <ipv4> <username> <password> powerstatistics
```

The powerstatistic command displays system power statistics.

Example: SDPTool 192.168.1.10 admin admin123 powerstatistics

3.19 Set LAN DHCP

```
SDPTool <ipv4/ipv6> <username> <password> setlandhcp <channel>
```

The setlandhcp command sets the BMC LAN ipv4 to the dhcp of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 setlandhcp 2

3.20 Unmount

```
SDPTool <ipv4> <username> <password> unmount <smb://user:pass@host/file_name.ISO>
```

The unmount command allows the unmounting of virtual media in .iso format only from the remote machine samba share via redfish. The samba share needs to be in place beforehand for it to work.

Eject the relevant virtual media by redirecting the iso file specified.

Example: SDPTool 192.168.1.10 admin admin123 unmount smb://user:pass@host/share_dir/image.iso

3.21 Storage Info

```
SDPTool <ipv4> <username> <password> storageinfo
```

The storageinfo command displays the information related to the storage devices present on the platform providing details regarding firmware version, name, etc.

Example: SDPTool 192.168.1.10 admin admin123 storageinfo

3.22 Nic Info

```
SDPTool <ipv4> <username> <password> nicinfo
```

The nicinfo command displays the information related to the networks present on the platform providing details regarding firmware version, MAC Address, etc.

Example: SDPTool 192.168.1.10 admin admin123 nicinfo

4. Error Codes

Table 3. Error codes

Error Code	Error Type	Error Description
0	NoError	Success / No failure
1	ENoRMM	RMM module absent
2	ENoIPMI	IPMI module absent
3	ENoFileCreate	Error creating a file
4	ENoRetrieve	Error in retrieving the data
5	ENoProdRetrieve	Error retrieving the Product information
6	ENoSoftReset	Error trying to soft-reset
7	ENoJava	Error Java not present
8	ENoPerm	Error not permitted/ need privileges
9	ENoConnect	Error trying to connect to the system
10	ENoRedirection	Error redirecting the image
11	ENotSupported	Error not supported currently
12	EUnsupportedPlatform	Platform not supported
13	EUnsupportedOperation	Operation not supported
14	ECurrNotSupported	Error currently not supported
15	EMissingFiles	Missing Required files
16	EMissingTags	Missing Required tag in xml
17	EMissingHardware	Missing Required Hardware
18	EMissingArgs	Missing required arguments
19	EMissingTools	Missing Required tools
20	EInterrupt	Process Interrupted
21	EInvalidArgs	Invalid Arguments
22	EInvalidIP	Invalid IP
23	EInvalidChannel	Invalid Channel
24	EInvalidSubnet	Invalid Subnet mask

Error Code	Error Type	Error Description
25	EInvalidFilename	Invalid Filename
26	EInvalidFileExt	Invalid/unexpected file extension
27	EInvalidPath	Invalid path
28	EInvalidSMBIOS	Invalid/unsupported BIOS region
29	EMismatchIPGW	IP address and Gateway are a mismatch
30	EIPMICmdError	Error running IPMI command
31	EIPMICmdTimeout	Error IPMI command timed out
32	EDupVMCLI	VMCLI already running, Duplicate Error
33	EMount	Error mounting / unmounting the image
34	EDataConvr	Error converting data
35	EKVMSessFull	Error launching KVM session is full
36	EUnknown	Unknown error
37	ESetoptionSupport	Error trying to set option
38	EOperationFail	Operation fails or reports error
39	EcurlCmd	Error from curl process
40	ESubprocess	Error invoking the process
41	ECleanupImage	Error cleaning up an Image
42	ETermDefunc	Error terminating a Defunct process
43	ETermSuspend	Error terminating a suspended process
44	EKillCmd	Error trying to kill a command
45	EStartVMCLI	Unable to start VMCLI
46	ETestapp	Testapp hits error
47	ESUPTooLarge	SUP package provided is too large
48	ESetTransMode	Error Setting transfer mode in BMC
49	ESingleFile	Error in single File
50	EFileNotFound	File / path not found

Error Code	Error Type	Error Description
51	ESystemError	System gives error
52	EAbort	Aborted
53	ESysCfg	Error in using SysCfg utility
54	ERedfish	Redfish general error
55	ETimedOut	Timed out in trying to establish connection
56	ERedfishSession	Failure in creating redfish session
57	ERedfishResponse	Redfish http response error
58	ERedfishNoSensor	Sensor not present
59	ERedfishAuthorization	Wrong username or password or hostname given
60	ERedfishUnexpected	Unexpected http Redfish error
61	ERedfishRedirect	Redirection error
62	ERedfishAttribute	Json key not present
63	EInvalidLength	Error in FRU fields length
64	ERedfishSchema	Error in redfish schema
65	EVMRedirect	Error in virtual media redirection
66	ERecursionLimit	Limit the no. of recursive calls to five at most
67	ENoStorage	No Storage device present