<This page is intentionally left blank>
## Document Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2020</td>
<td>1.4-1</td>
<td>• Python 3.0 Support&lt;br&gt;• Help modification</td>
</tr>
<tr>
<td>November 2020</td>
<td>1.4-2</td>
<td>• Support added for below Oses&lt;br&gt;• Red Hat* Enterprise Linux 8.x&lt;br&gt;• SuSE* Linux* Enterprise Server 15&lt;br&gt;• Centos 8.x and&lt;br&gt;• Ubuntu 20.04 LTS&lt;br&gt;• Python3.x support added for below platforms&lt;br&gt;• Intel(R) Server Board S2600 series (Intel(R) Xeon(R) processor E5-2600 v3/v4 product family)&lt;br&gt;• Intel* Server Board (Intel* Xeon* Scalable Processor Family)&lt;br&gt;• Intel® Server Board (2nd Generation Intel® Xeon® Scalable Processor Family)&lt;br&gt;• Intel® Server Board (Intel® Xeon® Platinum 9200 Processor Family)&lt;br&gt;• Custom_deploy update with -no_user_interaction&lt;br&gt;• Update with -no_user_interaction&lt;br&gt;• Get BIOS options with -no_user_interaction&lt;br&gt;• sdptool_update script issue.&lt;br&gt;• Error_Code added for Help message</td>
</tr>
<tr>
<td>January 2021</td>
<td>1.4-3</td>
<td>• Fixed Static scan issues&lt;br&gt;• On Intel(R) Server Board S2600 series (Intel(R) Xeon(R) processor E5-2600 v3/v4 product family)&lt;br&gt;• Fixed Vmedia mount failing next time after trying to mount the image using Vmedia with -no_user_interaction switch (even though not supported)&lt;br&gt;• Fixed get SEL when &quot;-&quot; was present in the path to save the file.</td>
</tr>
</tbody>
</table>
Disclaimers

Intel technologies’ features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

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.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications.

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, 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.

Copyright © 2021 Intel Corporation. All rights reserved. Intel Corporation, 2200 Mission College Blvd., Santa Clara, CA 95052-8119, USA.
1. Introduction .......................................................................................................................... 9
   1.1 Document Scope ............................................................................................................. 9
   1.2 System Requirements .................................................................................................... 9
   1.3 Terminology ................................................................................................................. 10
   1.4 Related Documents ...................................................................................................... 10
   1.5 Intel® Support .............................................................................................................. 10
2. Get Started ............................................................................................................................ 11
   2.1 Prerequisites for Installation ....................................................................................... 11
       2.1.1 Prerequisite Packages ......................................................................................... 11
   2.2 Installation Steps .......................................................................................................... 11
   2.3 Uninstallation Steps ....................................................................................................... 12
   2.4 Update Steps ................................................................................................................ 12
   2.5 Intel® Data Center Manager ......................................................................................... 12
       2.5.1 SDPTool Configuration File ................................................................................. 13
       2.5.2 Adding a Platform for an SUP Update ................................................................. 13
       2.5.3 Adding a Platform for a Custom Update ............................................................. 14
       2.5.4 Sudoers ............................................................................................................... 14
   2.6 User Privileges ............................................................................................................. 14
   2.7 Network ports .............................................................................................................. 15
3. Feature Script ......................................................................................................................... 16
   3.1 General Rules ............................................................................................................... 16
   3.2 Update Firmware ......................................................................................................... 16
       3.2.1 SUP Folder Based ............................................................................................... 16
       3.2.2 Config File Based ............................................................................................... 17
   3.3 Custom Deploy ............................................................................................................ 17
       3.3.1 Custom Folder based .......................................................................................... 17
       3.3.2 Config File based ............................................................................................... 17
   3.4 Set Options .................................................................................................................. 18
   3.5 Deploy Options ............................................................................................................ 18
   3.6 Get Bios Options ......................................................................................................... 18
   3.7 Get INI ......................................................................................................................... 19
   3.8 KVM .............................................................................................................................. 19
   3.9 Vmedia ......................................................................................................................... 19
   3.10 IPMI ............................................................................................................................... 19
   3.11 Power ............................................................................................................................ 19
   3.12 Sensor .......................................................................................................................... 19
   3.13 SEL ............................................................................................................................... 20
   3.14 Set LAN ....................................................................................................................... 20
   3.15 Disable LAN ................................................................................................................ 20
   3.16 Set LAN IPV6 ............................................................................................................. 20
List of Tables

Table 1. Operating systems and Intel® Server Boards supported ................................................................. 9
Table 2. Terminology ....................................................................................................................................... 10
Table 3. Error codes ....................................................................................................................................... 28
Table 4. Reboot features list .......................................................................................................................... 31

Table of Figures

Figure 1: Proxy settings in a browser (ex. Mozilla* Firefox) ........................................................................... 12
Figure 2: FRU print details ............................................................................................................................... 14
Figure 3: SSH command error ......................................................................................................................... 25
Figure 4: Tar timestamp messages .................................................................................................................. 25
Figure 5: KVM launch ....................................................................................................................................... 26
Figure 6: KVM launch ....................................................................................................................................... 26
Figure 7: Soft reset issue ................................................................................................................................. 27
Figure 8: Java version ....................................................................................................................................... 27
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® SDPTool is designed to work with the following Intel® Server Board families:

- 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 Board S9200WK 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

<table>
<thead>
<tr>
<th>Intel® Server Boards</th>
<th>Operating System Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Intel® Server Board S2600WT/S2600WTR family</td>
<td>• Red Hat* Enterprise Linux 8.1, 8.2, 7.3, 7.5 and 7.6-64 Bit.</td>
</tr>
<tr>
<td>• Intel® Server Board S2600KP/S2600KPR family</td>
<td>• SuSE* Linux* Enterprise Server 15, 12 Service Pack 3-64 Bit</td>
</tr>
<tr>
<td>• Intel® Server Board S2600TP/S2600TPR family</td>
<td>• CentOS 8.2, 7.5 and 7.3.</td>
</tr>
<tr>
<td>• Intel® Server Board S2600CW/S2600CWR family</td>
<td>• Ubuntu 16.04 LTS, Ubuntu 18.04 LTS and Ubuntu 20.04 LTS</td>
</tr>
<tr>
<td>• Intel® Server Board S2600WF/S2600WFR family</td>
<td>•</td>
</tr>
<tr>
<td>• Intel® Server Board S2600ST/S2600STR family</td>
<td>•</td>
</tr>
<tr>
<td>• Intel® Server Board S2600BP/S2600BPR family</td>
<td>•</td>
</tr>
<tr>
<td>• Intel® Server Board S9200WK family</td>
<td>•</td>
</tr>
</tbody>
</table>
1.3 Terminology

Table 2. Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC</td>
<td>Baseboard Management Controller</td>
</tr>
<tr>
<td>CLI</td>
<td>Command-Line Interface</td>
</tr>
<tr>
<td>FRU</td>
<td>Field Replaceable Unit</td>
</tr>
<tr>
<td>IPMI</td>
<td>Intelligent Platform Management Interface. Operates independently of the</td>
</tr>
<tr>
<td></td>
<td>operating system (OS) and allows you to manage a system remotely, even in</td>
</tr>
<tr>
<td></td>
<td>the absence of the OS.</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>Management</td>
<td>Intel® Server System where SDPTool is installed. It will be acting as host</td>
</tr>
<tr>
<td>Server</td>
<td>server which has network connectivity to the rest of the managed servers.</td>
</tr>
<tr>
<td>Managed Server</td>
<td>Intel® Server System in a cluster or data center that will be managed by</td>
</tr>
<tr>
<td></td>
<td>Management Server.</td>
</tr>
<tr>
<td>OUT-OF-BAND</td>
<td>Out-of-band managed server refers to any system which is configured with</td>
</tr>
<tr>
<td></td>
<td>valid IPMI LAN channel and logon account to allow remote management via IPMI</td>
</tr>
<tr>
<td>SDR</td>
<td>Sensor Data Record</td>
</tr>
<tr>
<td>SEL</td>
<td>System Event Log</td>
</tr>
</tbody>
</table>

1.4 Related Documents


1.5 Intel® Support

2. Get Started

2.1 Prerequisites for Installation

The following tools must be installed prior to the installation of the Intel® SDP Tool to ensure proper functionality. The Intel® SDP Tool is a RPM based package and will fail to install if the following prerequisites are not met. These prerequisites are included with the standard distribution CD/DVD or .iso.

2.1.1 Prerequisite Packages

The following application packages are required for installing the Intel® SDP Tool:

- Python* 3.x and Python 2
- Ipmitool* 1.8.18
- Curl* 7.29.0
- Openssl* 1.0.0x above
- Wget* 1.16 above
- Python-requests
- Java* OpenJDK/Oracle* version 1.7 and above, 64bit
- Icedtea*-web
- OpenIPMI* drivers
- defusedxml python module – currently not supported on Python 2.6.9 by PIP

2.2 Installation Steps

To install the Intel® SDP Tool on the Management Server

1. Download or Copy the Intel® SDPTool Package 'SDPTool-x.y-z.tar.gz’ to the target directory.

2. Untar the tar.gz file.

   Prompt #> tar -xvzmf SDPTool-x.y-z.tar.gz

3. Go to untarred ‘SDPTool-x.y-z’ directory folder. Run sdptool_install.sh to install the package, example below :-

   Prompt #> cd <path/to/SDPTool-x.y-z>
   Prompt #> ./sdptool_install.sh

   If an older version is present, uninstall it first by using the command below:

   Prompt #> ./sdptool_uninstall.sh

   Or use the update script:

   Prompt #> ./sdptool_update.sh

4. Configure the proper proxy settings using a web browser, using the below example from Mozilla* Firefox.

   **Note:** Start the Firefox browser > setting > advance > network settings > select auto-detect proxy settings for this network (SDP Tool's install script will install pip and then install python defusedxml module). Proxy may be required for getting the packages from pip. Proxy setting may also be needed to set as environment variable, contact your system/network administrator for more details. Please check Section 5.8 for FAQ's.
2.3 Uninstallation Steps

To uninstall the package, enter the following commands:

```
Prompt #> tar -xvzf SDPTool-x.y-z.tar.gz
Prompt #> cd <path/to/sdptool-x.y-z>
Prompt #> ./sdptool_uninstall.sh
```

2.4 Update Steps

To update the package, enter the following commands

```
Prompt #> tar -xvzf SDPTool-x.y-z.tar.gz
Prompt #> cd <path/to/sdptool-x.y-z>
Prompt #> ./sdptool_update.sh
```

2.5 Intel® Data Center Manager

Intel® Data Center Manager is a management data center solution stack providing accurate real-time monitoring (thermal and power), management and platform update (BIOS, BMC, etc.) capabilities on Intel® Server Boards & Systems. For more information and a feature list of the Intel® Data Center Manager, refer to the Intel® DCM user guide that comes with the download of the tool.

To support Intel® Data Center Manager, SDPTool provides the following capabilities from an XML based configuration file.
2.5.1 SDPTool Configuration File

The SDPTool configuration file is an XML file containing the following tags with no pre-defined (default) location for the file, passed as a command argument:

- Configuration
- SUP_Folders
- Custom_Folders
- FRU_Field

The following sample configuration file passed to the Intel® SDPTool provides the locations of various SUP and Custom folders that a user can provide instead of providing them in the command line.

```
<Configuration>
  <SUP_Folders>
    <S2600BPB>/path/to/SUP_folder</S2600BPB>
  </SUP_Folders>
  <Custom_Folders>
    <FRUField>Board Product</FRUField>
    <S2600BPB>/path/to/Custom_folder</S2600BPB>
  </Custom_Folders>
</Configuration>
```

**Note:** SUP is a platform update package provided by Intel®. The SUP is usually distributed as a .zip file, unzipping the .zip will yield the SUP Folder. The SUP package contains the required scripts and images/binaries that will be run in the efi shell to perform the necessary updates of the platform.

**Note:** The Custom Folder is a user defined folder. Users are able to write their own script that will run in the efi shell. Refer to Section 4 for more details.

2.5.2 Adding a Platform for an SUP Update

To add different platforms for an SUP based update, add the following line:

```
<Configuration>
  <SUP_Folders>
    <S2600BPB>/path/to/SUP_folder</S2600BPB>
    <S2600WFP>/path/to/SUP_folder_of_wolfpass</S2600WFP>
  </SUP_Folders>
  <Custom_Folders>
    <FRUField>Board Product</FRUField>
    <S2600BPB>/path/to/Custom_folder</S2600BPB>
  </Custom_Folders>
</Configuration>
```

**Note:** S2600WFP is the “Board Product” value in the FRU field of the platform.
2.5.3 Adding a Platform for a Custom Update

To add a different platform for the custom update feature, add the following line:

```
<Configuration>
  <SUP_Folders>
    <S2600BPB>/path/to/SUP_folder</S2600BPB>
  </SUP_Folders>
  <Custom_Folders>
    <FRUField>Board Product</FRUField>
    <S2600BPB>/path/to/Custom_folder</S2600BPB>
    <S2600WFP>/path/to/SUP_folder_of_wolfpass</S2600WFP>
  </Custom_Folders>
</Configuration>
```

**Note:** S2600WFP is the “Board Product” value in the FRU field of the platform.

1. The tags are case sensitive.
2. The value for the FRU_Field can be obtained from one of the left columns of the fru print output. Corresponding values in the right column will form the next tag. In the above example, the FRU_Field is a “Board Product”, with the value being “S2600BPB”. The fru fields can be obtained by using the command in Section 3.21, with the following sample output:

![Figure 2: FRU print details](image)

2.5.4 Sudoers

Add the DCM user to the sudoers list. SDPTool will work only as the root or if the user is part of the sudoers list.

```
#> visudo
```

Add the following line in the file

```
<DCM_USERNAME>  ALL=(ALL) /usr/bin/SDPTool
```

2.6 User Privileges

The IPMI interface is used for most commands. The Intel® SDPTool requires the user to have administrative privileges, otherwise the commands will return an error with a message to check the user’s credentials and privileges.
2.7 Network ports

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

1. Ping: No TCP port is used, but ICMP packets needs to be allowed.
2. https: server port outbound ‘443’
3. http: server port outbound ‘80’
4. ipmi: server port outbound ‘623’ and ‘627’
5. kvm: server port ‘5902’ and ‘7578’
6. vmedia: server port ‘5123’

Note: The Intel® SDPTool may use a combination of these ports to complete an operation.
3. Feature Script

The Intel® SDPTool script is the main engine of Intel® SDPTool OOB features. This section explains the methods to executing Intel® SDPTool 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 ./Logfiles/<ip>/<operation>
Example: after running “SDPTool 192.168.1.10 bmcuser bmcpw powerstatistics”

There are log(s) in /usr/local/log/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 6.

For reboot features, only one operation for an IP at any given time is run. Any other operation which requires the execution of a reboot feature on the same IP will respond unexpectedly, interfering with the current operation being performed on the IP. SDPTool restricts the user from running 2 different operations that result in rebooting the same platform.

For example: SDPTool 192.168.1.10 bmcuser bmcpw getini

SDPTool 192.168.1.10 bmcuser bmcpw custom_deploy customdeployfolder/

Note: These operations should not be run at the same time, as both will reboot the system and interfere with each other's operation and will reboot the managed system.

Note: Some of the commands that reboot the platform require the platform to be in the KCS Policy of “Allow All” in order for them to work, the tool will error out if the KCS Policy is “Restricted” or “Deny All”.

Note: Refer to the list of commands that perform the reboot of the platform in Section 7. Additionally, users can find the commands that would reboot the platform by running the following prompt#: SDPTool –h. This informs the user if the command will reboot the target platform.

3.2 Update Firmware

There are 2 variants of the update firmware now available:

3.2.1 SUP Folder Based

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

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.
- -softreset: flag to soft reboot the system in case the system is in OS mode.

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.
3.2.2 Config File Based

SDPTool <ipv4> <username> <password> update -c <config file>[no_user_interaction] [-softreset]

This option provides the user the ability to provide a config file instead of the SUP folder path. The creation of the config file is covered in the section 2.5. Please refer to this section. The config file will be used to gather the correct SUP folder for the platform.

The other options are same as in section 3.2.1

3.3 Custom Deploy

The custom deploy feature is update-based, using a user-defined folder to perform the action the user desires instead of using an Intel® provided SUP. Custom deploy can be used to perform various custom updates which include, but are not limited to, firmware updates to OEM parts (SSD, NIC, HBA, etc.). Section 4 contains further information detailing the creation of a custom deployment folder and the scripts associated with the custom deploy folder.

3.3.1 Custom Folder based

SDPTool <ipv4> <username> <password> custom_deploy <folder name which containing deploy.nsh> <"argument(s) for deploy.nsh"> [no_user_interaction] [-softreset]

To deploy a user customized script, the customized script must start from the deploy.nsh script.

Note: A reboot is required for this option, clearing the EFI mailbox.

- deploy_result.log: the output from deploy.nsh can be redirected to this filename; the file will be saved to Logfiles/ip folder and content will be displayed to terminal after custom_deploy script with extra argument(s) being executed
- deploy_details.log: the details from deploy.nsh can be redirected to this filename; the file will be saved to Logfiles/ip folder after custom_deploy script with extra argument(s) being executed
- -no_user_interaction: flag to reboot the system without prompt.
- -softreset: flag to soft reboot the system in case the system is in OS mode.

Example: SDPTool 192.168.1.10 admin admin123 custom_deploy folder_with_nsh_file
Example: SDPTool 192.168.1.10 admin admin123 custom_deploy folder_with_nsh_file "argument1 argument2 argument3"

3.3.2 Config File based

SDPTool <ipv4> <username> <password> update -c <config file> [-no_user_interaction] [-softreset] --all

This option provides the user the facility to provide a config file instead of the custom_folder path. The creation of the config file is covered in the section 2.5. Please refer to this section. The config file will be used to gather the correct Custom folder for the platform.

--all

Use this option to perform a custom update. The custom_folder details are taken from the config file provided as the command argument to perform the custom update.

Note: The command used is “update” and not “custom_deploy”, unlike in Section 3.3.1. The --all option is necessary to perform the custom update, otherwise the update command will perform a SUP based platform update.
### 3.4 Set Options

SDPTool <ipv4> <username> <password> setoptions </"syscfg arguments"> [-no_user_interaction] [-softreset]

This option configures BIOS/BMC settings by executing syscfg command line arguments. Refer to the syscfg user guide for specific syscfg command line arguments.

**Note:** A reboot is required for this option, clearing the EFI mailbox.

- `-no_user_interaction`: flag to reboot the system without prompt.
- `-softreset`: flag to soft reboot the system in case the system is in OS mode.

Example: SDPTool 192.168.1.10 admin admin123 setoptions /i

### 3.5 Deploy Options

SDPTool <ipv4> <username> <password> deployoptions <restore filename> [-no_user_interaction] [-softreset]

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, clearing the EFI mailbox.

- `-no_user_interaction`: flag to reboot the system without prompt.
- `-softreset`: flag to soft reboot the system in case the system is in OS mode.

Example: SDPTool 192.168.1.10 admin admin123 deployoptions sysconfig.ini

### 3.6 Get Bios Options

SDPTool <ipv4> <username> <password> getbiosoptions </"option to retrieve"> [-no_user_interaction] [-softreset]

This option returns the value of a specific bios setting that is supported by the syscfg utility. Refer to the syscfg user guide for specific syscfg command line arguments.

**Note:** A reboot is required for this option, clearing the EFI mailbox.

- `-no_user_interaction`: flag to reboot the system without prompt.
- `-softreset`: flag to soft reboot the system in case the system is in OS mode.

Example: SDPTool 192.168.1.10 admin admin123 getbiosoptions "Quiet Boot"
3.7 Get INI

SDPTool <ipv4> <username> <password> getini [-no_user_interaction] [-softreset]

This command returns BIOS/BMC settings by using the syscfg /save .ini file method.

**Note:** A reboot is required for this option, clearing the EFI mailbox.

- -no_user_interaction: flag to reboot the system without prompt.
- -softreset: flag to soft reboot the system in case the system is in OS mode.

Example: SDPTool 192.168.1.10 admin admin123 getini

3.8 KVM

SDPTool <ipv4> <username> <password> kvm launch

This command launches kvm windows for remote control.

Example: SDPTool 192.168.1.10 admin admin123 kvm launch

3.9 Vmedia

SDPTool <ipv4> <username> <password> vmedia <IMAGE/ISO> [-no_user_interaction]

The VMedia command allows the addition of virtual media in .img/.iso format to the remote machine.

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

**Note:** Mounting of same image again on the same target system is not allowed

Example: SDPTool 192.168.1.10 admin admin123 vmedia image.img

SDPTool 192.168.1.10 admin admin123 vmedia image.iso

3.10 IPMI

SDPTool <ipv4> <username> <password> ipmi <ipmitool arguments>

The ipmi command is followed by arguments allowing the execution of ipmitool supported commands.

Example: SDPTool 192.168.1.10 admin admin123 ipmi lan print 3

3.11 Power

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

The power command returns and has the ability to set the power status of a server

Example: SDPTool 192.168.1.10 admin admin123 power status

3.12 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
3.13 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

3.14 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

3.15 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

3.16 Set LAN IPV6

*For the S2600WT/S2600WTR/S2600KP/S2600KPR/S2600TP/S2600TPR/S2600CW/S2600CWR families:*

SDPTool <ipv4/ipv6> <username> <password> setlanipv6 <channel> <ipv6> <prefix length [32|64|128]> <ipv6 gateway>

The setlanipv6 command configures the BMC LAN IP ipv6 address of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 setlanipv6 2 fe80::12 64 fe80::1

*For the 2600WT/S2600WTR/S2600KP/S2600KPR/S2600TP/S2600TPR/S2600CW/S2600CWR families*

SDPTool <ipv4/ipv6> <username> <password> setlanipv6 <channel> <ipv6> <prefix length [32|64|128]> <ipv4/6 gateway> <ipv4/6 primary dns> <ipv4/6 secondary dns>

The setlanipv6 command configures the BMC LAN IP ipv6 address of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 setlanipv6 2 fe80::12 64 192.168.1.1 0.0.0.0 0.0.0.0

3.17 Disable LAN IPV6

SDPTool <ipv4/ipv6> <username> <password> disablelanipv6 <channel>

The disablelanipv6 command disables the BMC ipv6 LAN of a particular LAN channel.

Example: SDPTool 192.168.1.10 admin admin123 disablelanipv6 2

3.18 LAN Fail Over

SDPTool <ipv4> <username> <password> failover < status | enable | disable>

The failover command returns, sets, and disables LAN fail over.
Example: SDPTool 192.168.1.10 admin admin123 failover status

3.19 Node Position

SDTool <ipv4> <username> <password> nodeposition

The nodeposition command displays node position within a chassis, and only supports a half-width SKU.

Note: Support is available for select multi-node systems.

Example: SDPTool 192.168.1.10 admin admin123 nodeposition

3.20 System Info

SDTool <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

3.21 FRU

SDTool <ipv4> <username> <password> fru {print | set <param> <value>}

The fru command displays any relevant fru information.

Example: SDPTool 192.168.1.10 admin admin123 fru print

To set fru

Example: SDPTool 192.168.1.10 admin admin123 fru set <param> <value>

3.22 Memory Info

SDTool <ipv4> <username> <password> memoryinfo

The memoryinfo command displays any relevant memory information.

Example: SDPTool 192.168.1.10 admin admin123 memoryinfo

3.23 CPU Info

SDTool <ipv4> <username> <password> cpuinfo

The cpuinfo command displays any relevant CPU information.

Example: SDPTool 192.168.1.10 admin admin123 cpuinfo

3.24 Memory Temperature

SDTool <ipv4> <username> <password> memorytemp

The memorytemp command displays the temperature of the system memory.

Example: SDPTool 192.168.1.10 admin admin123 memorytemp

3.25 Power Statistics

SDTool <ipv4> <username> <password> powerstatistic

The powerstatistic command displays system power statistics.
3.26 Set LAN DHCP
SDTool <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

3.27 Set LAN DHCP IPv6
SDTool <ipv4/ipv6> <username> <password> setlandhcpipv6 <channel>
The setlandhcpipv6 command sets the BMC LAN ipv6 to the dhcp of a particular LAN channel.
Example: SDPTool 192.168.1.10 admin admin123 setlandhcpipv6 2

3.28 Set LAN Stateless ICMPV6
SDTool <ipv4/ipv6> <username> <password> setlanicmpv6 <channel>
The setlanicmpv6 command sets the BMC LAN ipv6 to the stateless ICMP.

Note: This operation is only supported on the following Intel® product families:
- S2600WT and S2600WTR
- S2600KP and S2600KPR
- S2600TP and S2600TPR
- S2600CW and S2600CWR
- S9200WK

Example: SDPTool 192.168.1.10 admin admin123 setlanicmpv6 2

3.29 Debug Log
SDTool <ipv4> <username> <password> debuglog <filename> [-force]
The debuglog command fetches the BMC debug log file in .zip file format
Example: SDPTool 192.168.1.10 admin admin123 debuglog debug_log.zip
  - [-force]: forces the BMC transfer mode to exit when the command is executed.

3.30 Supported Updates
SDTool <ipv4> <username> <password> supportedupdates -c <config_file>
The supportedupdates command lists the type of updates available with the config file for the remote platform. The result will be one out of following values: None, SUP ONLY, Custom ONLY, Both

3.31 Unmount
SDTool <ipv4> <username> <password> unmount <IMAGE/ISO>
The unmount command allows the user to unmount or remove media that was mounted to the remote platform using the vmedia command. The image/iso is the full path to the image that was mounted.
Note: This operation is only supported on the following Intel® product families:
- S2600WF and S2600WFR
- S2600ST and S2600STR
- S2600BP and S2600BPR
- S9200WK
4. custom_deploy

Custom deploy allows the user to customize or script the actions they want to perform on the platform. The script will run on the efi shell, ensuring that the user can write scripts to perform actions based individual requirements.

When creating a custom package, the user must write a ‘.nsh’ file and name it deploy.nsh. When executing custom_deploy as described in Section 3.3, the SDPTool will look for the deploy.nsh file within a folder that the user provides as a command-line-argument.

The custom folder provided by the user is used to create an image with certain standard efi applications and remotely mount it onto the platform. The platform then executes the deploy.nsh script to perform the necessary actions and return the results/outputs to the user. While writing the deploy.nsh file, the user can also redirect the output to 2 distinct files from which the SDPTool collects logs:

- deploy_result.log
- deploy_details.log

The deploy_result.log can be used to redirect the success or failure status of a particular action. If the user uses this redirection properly, then all success/failures will be available in this log file as ‘custom_deploy_result.txt’.

The deploy_details.log can have the detailed log of every operation in the deploy.nsh and will be available as ‘custom_deploy_details.txt’.

Note: The output of the deploy.nsh file is also captured in a separate file named ‘custom_deploy_output.txt’ that will be available with the other logs in the standard location.

Note: All log files will available in the standard location that is described in Section 3.1.

In the following deploy.nsh file, actions are logged. The deploy.nsh file can be used to perform complicated operations as well and is dependent on the user’s requirement.

```
echo "Starting the user custom operation" >> deploy_details.log
ls
echo "listing files : successful" >> deploy_result.log
```

The user can write deploy.nsh scripts to perform firmware updates of various components which include, but are not limited to SDD, HBA, NIC, etc.

Note: The deploy.nsh file can be used to perform complicated operations and is dependent on the user’s individual needs.

Note: Since the custom folder is provided as an argument, it will be the only folder used in the image. If any additional binary is needed when calling from the deploy.nsh file, it should be available within the directory.
5. Troubleshooting Tips

This section lists the possible errors encountered during the use of this product with workarounds to address these errors.

5.1 SSH Command Sudo Error

To direct using the ssh command, add arg –t.

Example: ssh –t root@localhost SDPTool 192.168.1.10 admin admin123 powerstatistics

5.2 Tar Time Stamp Messages

These messages do not harm the system. To avoid seeing these messages, ensure that the date and time of the managed system is correct.
5.3 Kvm launch glibc version error (SLES 11.4-64bit)
Update the glibc with the version mentioned (GLIBC_2.15). The ldd –version command can be used to check the glibc version installed on system.

![Error@linux-dz66](Image)

**Figure 6: KVM launch**

5.4 Reboot features OOB unable to start on S2600WT/ S2600KP/ S2600TP/S2600CW family (SLES11.4-64bit)
Default openssl and wget version in SLES11.4-64bit is unable to support reboot features on the S2600WT/ S2600KP/ S2600TP/ S2600CW server families. The following steps remove and upgrade openssl and wget on a SLES11.4-64bit management host.

1. Download the openssl source code 1.0.1t: [https://www.openssl.org/source/old/1.0.1/](https://www.openssl.org/source/old/1.0.1/)
2. Remove the existing openssl:
   ```
   Prompt #> rpm -ev --nodeps openssl
   ```
3. Configure and build:
   ```
   Prompt #> tar -xvf openssl-1.0.1t.tar.gz
   Prompt #> cd openssl-1.0.1t
   Prompt #> ./config shared --prefix=/usr --openssldir=/etc/ssl --libdir=/lib
   Prompt #> make && make install
   ```
5. Remove existing wget:
   ```
   Prompt #> rpm -ev --nodeps wget
   ```
6. Configure and build:
   ```
   Prompt #> tar -xvf wget-1.15.tar.gz
   Prompt #> cd wget-1.15
   Prompt #> ./configure --prefix=/usr --sysconfdir=/etc --with-ssl=openssl
   Prompt #> make && make install
5.5 Multithread issue (RHEL 6.8-64bit)

RHEL 6.8-64bit is set to 1 thread count by default since VMViewer has limited multiple simultaneous thread support.

![Figure 8: Soft reset issue](image)

SLES 11.4-64bit will have a soft-reset issue due to the client OS prompting for a root password before shutting down the system.

Check the client system if the above error appears to ensure it is not blocked by the OS shutdown prompt.

5.6 Soft-reset issue (SLES 11.4-64bit)

![Figure 8: Soft reset issue](image)

5.7 Java version required (Java 1.7)

OpenJDK/Oracle* Java* version 1.7 onwards will be required in order to run:

- kvm
- update
- customdeploy
- setoptions
- deployoptions
- getbiosoptions
- getini

To check the java version & provider, run:

```
Prompt #> java -version
```

5.8 Proxy Settings

Proxy settings may be required to connect to the external pip repository during install time. The defusedxml module is required for using the SDPTool's functionality that use configuration files (supportedupdates and update). update only while using -c option else defusedxml module is not required.

```
Prompt #> export http_proxy="<proxy address:proxy port>"

Prompt #> export https_proxy="<proxy address:proxy port>"
```

Set both the environment variables appropriately. Re-login may be required for the proxy to take effect.
## 6. Error Codes

### Table 3. Error codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Type</th>
<th>Error Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NoError</td>
<td>Success / No failure</td>
</tr>
<tr>
<td>1</td>
<td>ENoRMM</td>
<td>RMM module absent</td>
</tr>
<tr>
<td>2</td>
<td>ENoIPMI</td>
<td>IPMI module absent</td>
</tr>
<tr>
<td>3</td>
<td>ENoFileCreate</td>
<td>Error creating a file</td>
</tr>
<tr>
<td>4</td>
<td>ENoRetrieve</td>
<td>Error in retrieving the data</td>
</tr>
<tr>
<td>5</td>
<td>ENoProdRetrieve</td>
<td>Error retrieving the Product information</td>
</tr>
<tr>
<td>6</td>
<td>ENoSoftReset</td>
<td>Error trying to soft-reset</td>
</tr>
<tr>
<td>7</td>
<td>ENoJava</td>
<td>Error Java not present</td>
</tr>
<tr>
<td>8</td>
<td>ENoPerm</td>
<td>Error not permitted/ need privileges</td>
</tr>
<tr>
<td>9</td>
<td>ENoConnect</td>
<td>Error trying to connect to the system</td>
</tr>
<tr>
<td>10</td>
<td>ENoRedirection</td>
<td>Error redirecting the image</td>
</tr>
<tr>
<td>11</td>
<td>ENotSupported</td>
<td>Error not supported currently</td>
</tr>
<tr>
<td>12</td>
<td>EUnsupportedPlatform</td>
<td>Platform not supported</td>
</tr>
<tr>
<td>13</td>
<td>EUnsupportedOperation</td>
<td>Operation not supported</td>
</tr>
<tr>
<td>14</td>
<td>ECurrNotSupported</td>
<td>Error currently not supported</td>
</tr>
<tr>
<td>15</td>
<td>EMissingFiles</td>
<td>Missing Required files</td>
</tr>
<tr>
<td>16</td>
<td>EMissingTags</td>
<td>Missing Required tag in xml</td>
</tr>
<tr>
<td>17</td>
<td>EMissingHardware</td>
<td>Missing Required Hardware</td>
</tr>
<tr>
<td>18</td>
<td>EMissingArgs</td>
<td>Missing required arguments</td>
</tr>
<tr>
<td>19</td>
<td>EMissingTools</td>
<td>Missing Required tools</td>
</tr>
<tr>
<td>20</td>
<td>EInterrupt</td>
<td>Process Interrupted</td>
</tr>
<tr>
<td>21</td>
<td>EInvalidArgs</td>
<td>Invalid Arguments</td>
</tr>
<tr>
<td>22</td>
<td>EInvalidIP</td>
<td>Invalid IP</td>
</tr>
<tr>
<td>23</td>
<td>EInvalidChannel</td>
<td>Invalid Channel</td>
</tr>
<tr>
<td></td>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>24</td>
<td>EInvalidSubnet</td>
<td>Invalid Subnet mask</td>
</tr>
<tr>
<td>25</td>
<td>EInvalidFilename</td>
<td>Invalid Filename</td>
</tr>
<tr>
<td>26</td>
<td>EInvalidFileExt</td>
<td>Invalid/unexpected file extension</td>
</tr>
<tr>
<td>27</td>
<td>EInvalidPath</td>
<td>Invalid path</td>
</tr>
<tr>
<td>28</td>
<td>EInvalidSMBIOS</td>
<td>Invalid/unsupported BIOS region</td>
</tr>
<tr>
<td>29</td>
<td>EMismatchIPGW</td>
<td>IP address and Gateway are a mismatch</td>
</tr>
<tr>
<td>30</td>
<td>EIPMICmdError</td>
<td>Error running IPMI command</td>
</tr>
<tr>
<td>31</td>
<td>EIPMICmdTimeout</td>
<td>Error IPMI command timed out</td>
</tr>
<tr>
<td>32</td>
<td>EDupVMCLI</td>
<td>VMCLI already running, Duplicate Error</td>
</tr>
<tr>
<td>33</td>
<td>EMount</td>
<td>Error mounting / unmounting the image</td>
</tr>
<tr>
<td>34</td>
<td>EDataConvr</td>
<td>Error converting data</td>
</tr>
<tr>
<td>35</td>
<td>EKVMsSessFull</td>
<td>Error launching KVM session is full</td>
</tr>
<tr>
<td>36</td>
<td>EUnknown</td>
<td>Unknown error</td>
</tr>
<tr>
<td>37</td>
<td>ESetoptionSupport</td>
<td>Error trying to set option</td>
</tr>
<tr>
<td>38</td>
<td>EOperationFail</td>
<td>Operation fails or reports error</td>
</tr>
<tr>
<td>39</td>
<td>EcurlCmd</td>
<td>Error from curl process</td>
</tr>
<tr>
<td>40</td>
<td>ESubprocess</td>
<td>Error invoking the process</td>
</tr>
<tr>
<td>41</td>
<td>ECleanupImage</td>
<td>Error cleaning up an Image</td>
</tr>
<tr>
<td>42</td>
<td>ETermDefunc</td>
<td>Error terminating a Defunct process</td>
</tr>
<tr>
<td>43</td>
<td>ETermSuspend</td>
<td>Error terminating a suspended process</td>
</tr>
<tr>
<td>44</td>
<td>EKillCmd</td>
<td>Error trying to kill a command</td>
</tr>
<tr>
<td>45</td>
<td>EStartVMCLI</td>
<td>Unable to start VMCLI</td>
</tr>
<tr>
<td>46</td>
<td>ETestapp</td>
<td>Testapp hits error</td>
</tr>
<tr>
<td>47</td>
<td>ESUPTooLarge</td>
<td>SUP package provided is too large</td>
</tr>
<tr>
<td>48</td>
<td>ESetTransMode</td>
<td>Error Setting transfer mode in BMC</td>
</tr>
<tr>
<td>Code</td>
<td>Error Code</td>
<td>Error Message</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>---------------</td>
</tr>
<tr>
<td>49</td>
<td>ESingleFile</td>
<td>Error in single File</td>
</tr>
<tr>
<td>50</td>
<td>EFileNotFound</td>
<td>File / path not found</td>
</tr>
<tr>
<td>51</td>
<td>ESystemError</td>
<td>System gives error</td>
</tr>
<tr>
<td>52</td>
<td>EAbort</td>
<td>Aborted</td>
</tr>
<tr>
<td>53</td>
<td>ESysCfg</td>
<td>Error in using SysCfg utility</td>
</tr>
</tbody>
</table>
## 7. Reboot features list

<table>
<thead>
<tr>
<th>Command</th>
<th>Reboot Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>cpuinfo</td>
<td>NO</td>
</tr>
<tr>
<td>custom_deploy</td>
<td>YES</td>
</tr>
<tr>
<td>debuglog</td>
<td>NO</td>
</tr>
<tr>
<td>deployoptions</td>
<td>YES</td>
</tr>
<tr>
<td>disablelan</td>
<td>NO</td>
</tr>
<tr>
<td>disablelanipv6</td>
<td>NO</td>
</tr>
<tr>
<td>failover</td>
<td>NO</td>
</tr>
<tr>
<td>fru</td>
<td>NO</td>
</tr>
<tr>
<td>getbiosoptions</td>
<td>YES</td>
</tr>
<tr>
<td>getini</td>
<td>YES</td>
</tr>
<tr>
<td>ipmi</td>
<td>N/A</td>
</tr>
<tr>
<td>kvm</td>
<td>NO</td>
</tr>
<tr>
<td>memoryinfo</td>
<td>NO</td>
</tr>
<tr>
<td>memorytemp</td>
<td>NO</td>
</tr>
<tr>
<td>nodeposition</td>
<td>NO</td>
</tr>
<tr>
<td>power</td>
<td>NO</td>
</tr>
<tr>
<td>powerstatistics</td>
<td>NO</td>
</tr>
<tr>
<td>sel</td>
<td>NO</td>
</tr>
<tr>
<td>sensor</td>
<td>NO</td>
</tr>
<tr>
<td>setlan</td>
<td>NO</td>
</tr>
<tr>
<td>setlandhcp</td>
<td>NO</td>
</tr>
<tr>
<td>setlandhcpipv6</td>
<td>NO</td>
</tr>
<tr>
<td>setlanicmpv6</td>
<td>NO</td>
</tr>
<tr>
<td>setlanipv6</td>
<td>NO</td>
</tr>
<tr>
<td>setoptions</td>
<td>YES</td>
</tr>
<tr>
<td>supportedupdates</td>
<td>NO</td>
</tr>
<tr>
<td>systeminfo</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>unmount</td>
<td>NO</td>
</tr>
<tr>
<td>update</td>
<td>YES</td>
</tr>
<tr>
<td>vmedia</td>
<td>NO</td>
</tr>
</tbody>
</table>