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Intel® Server Firmware Update Utility

User Guide

Single build reference on how to use the command-line tool, covering all platforms that support Intel® Server Firmware Update Utility.

Rev. 1.0

November 2021

Delivering Breakthrough Data Center System Innovation – Experience What's Inside!

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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 Intel® Server Firmware Update Utility.

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Table of Contents

List of Tables

1.   Introduction

Described in this user guide are the Intel® Server Firmware Update Utility (Intel® Sysfwupdt) features, use of the utility, requirements for operating systems and installation procedures.

The Intel® Server Firmware Update utility is used for updating the system firmware. The utility is available in versions for different operating systems, for example, UEFI, Windows*, and Linux*.

This *Intel® Server Firmware Update Utility User Guide* describes features and instructions on the use of all the commands supported by the command-line tool's version 15.x.x. Different from the previous platform-specific document versions, this single build user guide covers all the Intel® server products that support Intel® Server Firmware Update utility.

The Intel® Server Firmware Update Utility is supported only on the following Intel® Server products:

- 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
- Intel® Server Board D50TNP family
- Intel® Server Board M50CYP family
- Intel® Server Board D40AMP family
- Intel® Server Board M70KLP family
- Intel® Server Board M20NTP2SB family

The Intel® Server Firmware Update Utility is not intended for and should not be used on any non-Intel server products.

1.1   Features

The Intel® Server Firmware Update Utility supports the following features:

- BIOS Update – Update PFR BIOS in the system, tool transfer the bin file to BIOS and the real update will start on next reboot by default Sensors
- BMC Update - Update Server Management (SM) firmware (FW) of the Baseboard Management Controller (BMC), and on next BMC reset the new BMC FW will be loaded.
- CPLD Update
- ITK Update
- NVRAM Update
- Recovery Update
- FRUSDR Update – update the Field Replaceable Units (FRU) in Non-Volatile RAM and Sensor Data Records of the system in BMC staging area.
- Modify specific FRU field
- Display BIOS/ME/BMC/Base Board/System/FRU / SDR / SMBIOS information
- Restore BIOS Default setting
- Clear BIOS customized settings
- Logo Update – Update BIOS with logo change in the system

1.2 Operating Systems Supported

The Intel® Server Firmware Update Utility is available in versions for different platforms, for example, UEFI, Windows*, and Linux*. Table 1 summarizes the Operating Systems and platforms that each utility revision supports.

Table 1. Operating System Supported

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 Board S9200WK family • Intel® Server Board D50TNP family • Intel® Server Board M50CYP family • Intel® Server Board D40AMP family • Intel® Server Board M70KLP family • Intel® Server Board M20NTP2SB family	• UEFI Shell • Windows* Server 2019 • Windows* Server 2016 • Windows* Server 2012 R2 • Windows* 10 • Red Hat* Enterprise Linux* 8.1, 8.2, 7.3, 7.5 and 7.6–64 Bit. • SuSE Linux* Enterprise Server 15, 12 Service Pack 3–64 Bit • Ubuntu 16.04 LTS & Ubuntu 20.04 LTS

1.3 Support Information

For more information, visit Intel's support site at http://support.intel.com/support/.

For an updated support contact list, see http://www.intel.com/support/9089.htm/.

2. Intel® Server Firmware Update Utility Installation and Removal

This section provides instructions to install and uninstall the Intel® Server Firmware Update Utility (Intel® Sysfwupdt).

2.1 Prerequisites

The installation of the Intel® Server Firmware Update Utility can only be done with the following prerequisite:

- Download the latest Server Firmware Update Package.

For the latest Server Firmware Update Package, go to https://downloadcenter.intel.com/.Sysfwupdt. It requires Windows* administrative or Linux* root permissions.

2.2 UEFI: Installation and Removal of Intel® Server Firmware Update Utility

2.2.1 Intel® Server Firmware Update Utility Installation on UEFI

This section provides instructions to install the Intel® Server Firmware Update Utility:

1. Copy the uncompressed `.zip` file into a local directory (for example, `fs0: \sysfwupdt`).
2. Go to the `UEFI` folder.
3. Run `sysfwupdt.efi` with command lines under UEFI Shell.

2.2.2 Intel® Server Firmware Update Utility Removal from UEFI

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

2.3 Windows*: Installation and Removal of Intel® Server Firmware Update Utility

2.3.1 Intel® Server Firmware Update Utility Installation on Windows*

This section provides instructions to install the Intel® Server Firmware Update Utility:

1. Copy the compressed `.zip` file into your local directory (for example, `C:\sysfwupdt`).
2. Unzip the file.
3. Install the driver. According to OS architecture, go to the `Drivers\win` folder, choose x64 and run `install.cmd` to install the IPMI, SMI, and memory map drivers.
4. Go to the `Win_x64` folder as administrator and run `sysfwupdt.exe`.

2.3.2 Intel® Server Firmware Update Utility Removal from Windows*

1. Go to the `Drivers\win\x64` folder.
2. Run `uninstall.cmd` (for uninstalling Intel® Server Firmware Update Utility).
3. Reboot the system for the changes to take effect.

2.4 Linux*: Installation and Removal of Intel® Server Firmware Update Utility

2.4.1 Prerequisites

The following prerequisites are needed to install and use the Intel® Server Firmware Update Utility:

- Boot to Red Hat* Enterprise Linux*, SUSE* Linux* Enterprise Server, or the CentOS* system.
- On Red Hat*, CentOS*, SUSE*, UEFI-aware Linux*, there might be a driver conflicting between an internal driver and the kernel. Start up the `OpenIPMI` driver and ensure the `/dev/ipmi0` device exists.

2.4.2   Intel® Server Firmware Update Utility Installation on Linux*

This section provides instructions to install the Intel® Server Firmware Update Utility.

2.4.2.1   Installation using RPM

1. Copy sysfwupdt rpm from corresponding folder to local folder.
    - For RHEL older than 8.0, copy from Linux_x64\RHEL7
    - For RHEL8.0 and above, copy from Linux_x64\RHEL\RHEL8
    - For SLES older than 15, copy from Linux_x64\SLES12
    - For SLES15 and above, copy from Linux_x64\SLES\SLES15
2. If another version has been installed previously, uninstall that version first before installing the new version.
3. Install Intel® Server Firmware Update Utility by using "rpm –ivh sysfwupdtxx.rpm". This will install the utility in "/usr/bin/sysfwupdt/".
4. Command DEB Installation:
5. dpkg –i xxxx.deb
6. On RHEL, utility can now be executed from any terminal (example: "# sysfwupdt –i").
7. On SLES, after installing the rpm close the terminal from which rpm was installed and then execute utility from a new terminal (example: "# sysfwupdt –i").

2.4.2.2   Installation using script

1. Unzip the package Sysfwupdt_Vx.x.x_AllOS.zip in a directory
2. Go to Linux_x64 directory
3. If there is another version already has been installed previously, uninstall that version first before installing the new version, run uninstall.sh.
4. Install Intel® Server Firmware Update Utility: `Run install.sh`

2.4.2.3   Execute Intel® Server Firmware Update Utility without installation

1. Linux* OS version, unzip package
2. Go to directory Linux_x64\XXX\XXX based on distro. e.g., for RHEL8, go to Linux_x64/RHEL/RHEL8/
3. Unzip sysfwupdt.zip
4. Run executable, ./sysfwupdt –h

2.4.3   Intel® Server Firmware Update Utility Removal from Linux*

This section provides instructions to uninstall the Intel® Server Firmware Update Utility.

1. To uninstall the Intel® Server Firmware Update Utility, remove the entire folder structure.
2. For RPM uninstallation.
    - To uninstall the utility use "rpm –e sysfwupdt"
    - DEB Uninstallation:
      > dpkg –r sysfwupdt
3. Uninstallation using script.
    - Run uninstall.sh form Linux_x64 directory

3.   Intel® Server Firmware Update Utility Usage

This section provides instructions to use the Intel® Server Firmware Update Utility under different operating systems.

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 (see Table 3).

The command line switches are listed in Table 2 and they are accessed with a dash "-" or a slash "/".

The basic command line format is:

```
sysfwupdt [Options][FileName][Update Option]
```

Table 2. Command Line Switches

Parameter	Description
sysfwupdt	The name of the utility. **Note**: Linux* is case-sensitive.
Options	u, i, set, fru, sdr, ccs, rd, h, ?. **Note**: Options are accessed with a dash "-" or a slash "/".
[FileName]	Name of the binary file used for the update. The file path can be specified with the file name. There is no default file name or file extension. Either the "/u" or the "/i" option must always precede the FileName.
[Update Option]	Optional update option such as "ImmReset", "UpdateNvram", "Password=xxx". Multiple strings should be concatenated with + character like "UpdateNvram+ImmReset". -kcs is only valid when doing BMC and CPLD update Update Option should be at the end of command line. **For detailed BIOS update options, refer to BIOS release**
/h or /?	Displays command line help information. When this option is used, any other options on the command line are ignored.
-i	This option displays BIOS/ME/BMC/SDR/BaseBoard information in the system. If binary files are specified with this option, this option wil display the corresponding version in binary files. This option is not valid with any other options. The syntax is: sysfwupdt -i <FileName> This option can also be used in conjunction with the **–u** option to display version information contained in the cfg file. The syntax is: sysfwupdt –i –u <xxx.cfg>
-kcs	Transfer data by kcs interface. This should be used in conjunction with -u <bmc|cpld> **Note**: this is not valid in case of –u <bios>
–recovery	This option update firmware to the recovery area as well. This should be used in conjunction with the -u.

Parameter	Description
-u	Update system BIOS/BMC/CPLD/ITK. At least one binary file name must be specified with this option. An Update Option is optional. The syntax is: sysfwupdt -u [FileName] sysfwupdt -u [FileName] <Update Option>
-d	Display FRU/SDR/SMBIOS information The syntax is: sysfwupdt -d [fru|sdr|smb]
/cfg xxx.cfg </nac>	Use custom CFG file to update FRU and SDR When updating with cfg file, SDR data is, by default, automatically configured and updated in BMC, which do not need further user interactions. You can disable the default mode and use legacy SDR update process with the **/nac** option.
-fru [xxx.fru]	Force update FRU
-sdr [xxx.sdr]	Force update SDR
-rd [biosadminpassword]	Restore the default BIOS settings. A message will be displayed stating that a system reset must be done by the user in order to take effect of the update. if administrator password is not set then null administrator password needs to be supplied as follows /rd "" **Notes**: 1. On Intel® Server Board M70KLP and Intel® Server Board M20NTP2SB, before running this command, first set BIOS admin password from setup page and run syscfg /bsnvlock "admin_password". 2. Run –rd with biosadminpassword on Intel® Server Board M70KLP and Intel® Server Board M20NTP2SB
-set	Set different FRU area as below sysfwupdt /set "area name" "FRUFIELD" "value" Where area name can be "product", "chassis" and "board" depending on the FRU area to be modified.
-ccs	Clear BIOS customized settings.

Table 3. Command Line Switch Options

Switches	Intel® Server Systems based on 1st or 2nd Gen Intel® Xeon® Scalable processor family (Non PFR)			Intel® Server Systems based on 3rd Gen Intel® Xeon® Scalable Processor Family / Intel® Server Board D40AMP			Intel® Server Board M70KLP server			Intel® Server Board M20NTP2SB (Non PFR)		
	BIOS	BMC	CPLD	BIOS	BMC	CPLD	BIOS	BMC	CPLD	BIOS	BMC	CPLD
UpdateNvram	N	N	NA	Y	Y	N	Y	Y	N	N	N	NA
ImmReset	Y	N	NA	Y	Y	Y	Y	Y	Y	Y	N	NA
UpdateNvram+ImmReset	N	N	NA	Y	Y	N	Y	Y	N	N	N	NA
/recovery	Y	Y	NA	Y	Y	Y	Y	Y	Y	N	Y	NA
/kcs	N	Y	NA	N	Y	Y	N	Y	Y	N	Y	NA

Notes:

- Y means the Image of the FileType can be updated for the Platform.
- N means the Image of the FileType can't be updated for the Platform.
- NA means the Image for the FileType is not present for that Platform
- Combination of Recovery switch and UpdateNvram is not executable for any platform with any FileType.

3.1.1　　Update system BIOS/ME/FD

The following command updates the BIOS/ME/FD from the bin files. Both single and multiple input files are supported. Following the update, the user must manually reset the machine before the update will take effect.

    sysfwupdt –u[FileName][UpdateOptions]

Note: ME/FD are valid for 1st or 2nd Gen Intel® Xeon® Scalable processor family only.

3.1.1.1　　Update system BIOS/ME/FD without reboot

Description:

This command will update active BIOS/ME/CPLD version. Host reboot is needed to apply new BIOS/ME version.

Usage:

```
sysfwupdt –u BIOSfilename/MEfilename/FDFilename
```

3.1.1.2　　Update system BIOS/ME/FD with immediate restart

Description

This command will update BIOS/ME/FD version and host will be restarted automatically. New BIOS/ME/FD version will be applied after booting up.

Usage

```
sysfwupdt –u BIOSfilename/MEfilename/FDfilename ImmReset
```

3.1.1.3　　Update recovery system BIOS

Description

This command will update active and recovery BIOS version. Host reboot is needed to apply new BIOS version.

Usage

```
sysfwupdt –u BiosFileName –recovery
```

Note: This command is not valid on 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB platform.

3.1.1.4　　To force update BIOS NVRAM region

Description

This command will force update the NVRAM region. Host reboot is needed to apply new BIOS version.

Usage

```
sysfwupdt –u BiosFileName UpdateNvram
```

Notes:

- This command is not valid on 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB platform.
- Use this command carefully, it will remove all BIOS settings.

3.1.1.5   To force update BIOS NVRAM region with immediate reboot

Description

This command will force update the NVRAM region and restart Host automatically. New version will be applied after bootup.

Usage

```
sysfwupdt -u BiosFileName UpdateNvram+ImmReset
```

Notes:

- No option can be inserted between "-u" and "[File Name]". And when using -u to update BIOS, multiple BIOS strings can be concatenated with + character.
- This is not valid for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB server platform.
- Use this command carefully, it will remove all BIOS settings.

3.1.2   Update system BMC and CPLD firmware

The following command updates the BMC and CPLD firmware from the bin files. Both single and multiple input files are supported.

```
sysfwupdt -u[FileName] [UpdateOptions]
```

Note: CPLD is valid for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M70KLP server platform.

3.1.2.1   Update system BMC and CPLD firmware

Description

This command will update active BMC version. BMC will be reset automatically for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB server platform and new version will be applied. But BMC reset will be deferred for Intel® Server Board M70KLP and Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family, and BMC reboot is needed to apply new BMC version.

Usage

```
sysfwupdt -u BMCfilename/CPLDfilename
```

3.1.2.2   Update system BMC/CPLD with immediate restart

Description

This command will update BMC/CPLD version and BMC will be restarted automatically. New version will be applied after boot up.

Usage

```
sysfwupdt -u BMC/CPLDfilename ImmReset
```

Note: CPLD command is not valid on 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB platform.

3.1.2.3   Update recovery system BMC

This command will update active and recovery BMC version. BMC will be reset automatically for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB server platform and new version will be applied. But BMC reset will be deferred for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M70KLP, and BMC reboot is needed to apply new BMC version.

This command will update active BMC version. BMC will be reset automatically for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB server platform. But BMC reset will be deferred for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M70KLP, and BMC reboot is needed to apply new BMC version.

Usage

```
sysfwupdt -u BMCFileName/CPLDFileName -recovery
```

Note: CPLD is not valid for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB.

3.1.2.4   To force update BMC NVRAM region

Description

This command will update active BMC version and update NVRAM region. BMC will be reset automatically for 1st or 2nd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M20NTP2SB server platform. But BMC reset will be deferred for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family and Intel® Server Board M70KLP, and BMC reboot is needed to apply new BMC version. This command will clear all BMC settings.

Usage

```
sysfwupdt -u BMCFileName UpdateNvram
```

Notes:

- This command is not valid on 1st or 2nd Gen Intel® Xeon® Scalable processor family server platform
- Use this command carefully, it will remove BMC settings.

3.1.2.5   To force update NVRAM region with immediate restart

Description

This command will update BMC version and clear NVRAM region. BMC will reset automatically and new version will be applied.

Usage

```
sysfwupdt -u BMCFileName UpdateNvram+ImmReset
```

Notes:

- No option is allowed to be inserted between "-u" and "[File Name]". And when using -u to update BMC, multiple BMC strings can be concatenated with + character.
- This command is not valid for 1st or 2nd Gen Intel® Xeon® Scalable processor family server platform.

3.1.3   To restore ME configuration

Description

 This command will restore ME configuration.

Usage

```
sysfwupdt -rmec
```

Note: Restore ME config is only valid for 1st or 2nd Gen Intel® Xeon® Scalable processor family platform.

3.1.4   To do ITK update

Description

This command will update active BIOS version using ITK Cap File. Host reboot is needed to apply new BIOS version.

Usage

```
sysfwupdt -u ITKfilename.cap [Password=xxx]
```

Notes:
- Password is only needed when system admin password is set.
- ITK update is only valid for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family.

3.1.4.1   To update customized BIOS logo in Intel® Server Board M20NTP2SB

```
sysfwupdt -u LogoFileName Logo
```

3.1.5   To update customized BIOS logo

Description

This command will update customized BIOS logo. Host reboot is needed to apply new BIOS version.

Usage

```
sysfwupdt -u <Logo FileName> <update option>
```

3.1.5.1   To update customized BIOS logo in Intel® Server Board M70KLP

```
sysfwupdt -u LogoFileName
```

Note: This command is valid for Intel® Server Board M20NTP2SB and Intel® Server Board M70KLP platform only.

3.1.6   Display version information

Description

The following command displays the BIOS/ME/BMC/SDR /BaseBoard information of the system.

To display FRUSDR version information contained in update package files

To display the BIOS/BMC/ITK file version

Usage

```
sysfwupdt -i
sysfwupdt -i -u xxx.cfg
sysfwupdt -i [BIOSfilename|BMCfilename|ITKfilename]
```

Notes:
- CPLD version is displayed for Intel® Server Board M70KLP server platform only.
- ITK version is valid for Intel® server systems based on 3rd Gen Intel® Xeon® Scalable processor family platform only.

3.1.7   Update FRU and SDR

This section contains the commands that are used to update the FRU and SDR in different ways. The files that are used are master.cfg , SDR_Filename_.sdr and FRU_Filename.sdr. and the options used are -cfg , -sdr and -fru.

3.1.7.1   Update FRU and SDR by cfg file

Description

The following command will load the indicated CFG file. The utility uses the entries in the configuration file to probe the hardware and to select the proper Sensor Data Records and Field Replaceable Units to be programmed. If the argument -cfg is used without a file name, then the default file 'MASTER.CFG' will be used, if it exists.

Usage

```
sysfwupdt –cfg xxx.cfg
```

With /nac option, user can disable SDR auto-config feature, which is by default enabled and switch to legacy SDR update process.

Note: This command is not valid for Intel® Server Board M20NTP2SB and Intel® Server Board M70KLP server platform.

3.1.7.2   Force update FRU and SDR

Description

The following command will force update FRU or SDR. The first time a FRU file should be programmed in manufacturing. The utility does not support first time programming of FRU areas.

Usage

```
sysfwupdt –fru xxx.fru
sysfwupdt –sdr xxx.sdr
```

3.1.7.3   Modify specified FRU field through command line.

Description

This command is to modify the FRU fields of chassis and product area without using a CFG file.

Usage

```
sysfwupdt -set "area name" "FRUFIELD" "value"
```

Where area names can be "product", "chassis" or "board" depending on the FRU area to be modified. The following are the frufield parameters:

"CT", "Chassis Type"	"PV", "Product Version"
"MN", "Manufacturer Name"	"AT", "Asset Tag"
"PN", "Product Name"	"ID", "Manufacturer ID"
"P#", "Part Number"	"MD", "Manufacturer Date & Time"
"S#", "Serial Number"	"AMx", "Additional Manufacturer Field"

3.1.7.4   Displays Given Area of FRUSDR and SMBIOS

Description

This command will display the indicated area given by argument. If the given display function fails because of an inability to parse the data present or hardware failure the utility will display an error message. For example, if the sensor data record area is empty, the utility will display an error message saying, "No Sensor Data Records found on the server".

Usage

```
sysfwupdt /d [FRU|SDR|SMB]
```

3.1.8   Restore BIOS Defaults

Description

Following Command will restore the BIOS default settings.

Usage

```
sysfwupdt –rd [biosadminpassword]
```

If BIOS admin password is not set, use null string as BIOS admin password.

```
sysfwupdt –rd ""
```

Notes:
- On Intel® Server Board M70KLP and Intel® Server Board M20NTP2SB, before running this command, first set BIOS admin password from setup page and run syscfg /bsnvlock "admin_password".
- Run –rd with biosadminpassword on Intel® Server Board M70KLP and Intel® Server Board M20NTP2SB.

3.1.9   Clear BIOS Customized Settings

Description

Following Command clears BIOS customized settings.

Usage

```
sysfwupdt –ccs
```

Note:
- This command is not valid for Intel® Server Board M70KLP and Intel® Server Board M20NTP2SB.

3.2   Configuration (CFG) File Description

The CFG file is an ASCII text file that consists of commands and data fields, which enable this utility to gather information about the target by identifying all the boards, subassemblies, and components of the product. The ***Configuration File Format EPS*** contains a full description of this file.

The FRUSDR package contains a *master.cfg* file that can be used by Intel® Server Firmware Update Utility as an input configuration file. This file provides update and modification of the FRU and SDR information only.

- The master configuration file *master.cfg,* used by the Intel® Server Firmware Update Utility, is based on the *Configuration File Specification. For more information on configuration commands supported by* sysfwupdt and the syntax, refer to the Configuration File Format EPS.

4.   Exit Error Codes

The following error codes are useful when executing the Intel® Server Firmware Update utility from a script. The error messages displayed provide more information as to the cause of the error.

Note that the ERRORLEVEL command in the configuration file overrides the error codes described in this Table 4. The ERRORLEVEL command, described in the Configuration File Format EPS, causes the utility to exit immediately and return the error code specified.

Table 4. Exit Error Codes

Value	Interpretation	Suggested Actions
0	Successful termination.	
1	Invalid invocation or unknown command-line argument.	Check whether the command-line arguments are correct. Refer to Table 3 for valid command-line arguments.
2	File was not found.	Check whether all the required update package files are present in the correct path. If not, place the files in the proper location and execute.
3	Unable to read a file	
4	A file in the update package is mismatched with the target system.	Check whether the updated package files used for update belong to the target platform. If not, provide the files compatible with the target system.
5	A file in the update package is invalid or its format is not supported by this version of the utility.	Check whether the file is corrupt or has got invalid format / file extension. If corrupts then use proper files.
6	BIOS interface failed – this error can occur while reading / writing to BIOS	Check whether the SMBIOS is populated correctly.
7	FW interface failed – this error can occur when reading or writing to the BMC, setting the update notification, or updating any of the FW components (BMC, FRU, SDR).	Check whether the BMC hardware is functioning properly. Check whether the BMC/SDR versions are displayed correctly in the BIOS setup. If not, contact the hardware vendor
8	User has no Admin or root rights.	Check whether the user that has logged in has root/administrator privilege, If not log in as administrator or root.
9	Utility is already running in another process.	Check whether another instance of the utility is already running. If running wait for the instance to finish and then start again.
10	Memory allocate failed	Memory Allocation Failed. Investigation required
11	Password mismatched	Admin password provided by user is mismatched to current system admin password
11	Failed to access IO port	Check UEFI secure boot status and ensure UEFI secure boot is disabled in BIOS F2 menu. If utility runs on Debian and SLES* 15 OS, user needs to add "iomem=relaxed" to grub boot option to enable IO memory map.

Appendix A. Glossary

Term	Definition
BCD	Binary Coded Decimal
BIOS	Basic Input Output System
BMC	Baseboard Management Controller. The primary microcontroller that controls the operation of the Intel® server management subsystem.
CFG	Configuration (file).
CHAFF2L	Copy HTTP and FTP Files To Local – program used by the One-Boot Flash Update utility to download files from http and ftp servers.
EAS	External Architecture Specification
EPS	External Product Specification
FRU	Field Replaceable Unit
FUD	Flash Update Driver
FW	Firmware
HW	Hardware
IA	Intel® Architecture
ID	Identification
IMB	Intelligent Management Bus
IPS	Internal Product Specification
IPMB	Intelligent Platform Management Bus. Name for the architecture, protocol, and implementation of a special bus that interconnects the baseboard and chassis electronics and provides a communications media for system platform management information.
IPMI	Intelligent Platform Management Interface
LCD	Local Control Display
ME	Management Engine
OEM	Original Equipment Manufacturer
Op Code	Operational Code
PIA	Platform Information Area
POST	Power On Self-Test
RMM3	Remote Management Module
RPM	Red Hat Package Manager
SDR	Sensor Data Record
SEL	System Event Log
SM	Server Management
SMS	Server Management Software
URL	Universal Resource Locator