Installation and User Guide
for
Intel® One-Boot Flash Update Utility

Version 2.0

Contents

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1. Introduction

The One-Boot Flash Update (OFU) Utility updates the System BIOS and firmware (BMC, FRU, and SDR) on a server while the operating system is running. On systems that contain the National Semiconductor[†] PC87431x, this utility updates only the System BIOS. On systems that have an Intel® Management Module (IMM) installed, the BMC, FRU and SDR firmware are updated in addition to the BIOS.

This utility runs on the following operating systems:

- Red Hat[†] Enterprise Linux[†] 3.0 AS Update 3 (32-bit)
- Red Hat Enterprise Linux 3.0 ES Update 3 (32-bit)
- Microsoft[†] Windows[†] 2000 Advanced Server with SP 4 (32-bit)
- Microsoft Windows 2003 Server Enterprise Edition SP 1 (32-bit)

The utility is launched from a command prompt in all of the above operating systems.

The FRU update takes effect immediately when the utility executes. The System BIOS, BMC, and SDRs are programmed into their respective secondary flash areas, and the utility sets an internal flag in the BIOS and BMC to indicate that the update occurred. After a system reset, the newer version of the System BIOS, BMC, and SDRs are validated and activated.

This utility can be executed remotely via a secure network connection using a Telnet Client and Terminal Services in Windows or using a Telnet Client and Remote Shell under Linux.

Getting the Latest Information and Support

One-Boot Flash Update Utility is frequently enhanced and updated to support new features and platforms. For the most recent information, see the utility release note file ReleaseNotes.txt

If you have questions or need help using this utility, contact your service representative.

2. Installing and Removing the OFU Utility

This section describes the procedures for installing and removing the One-Boot Flash Update utility. Separate procedures are given for Window and Linux operating systems.

Windows Installation

You can install the One-Boot Flash Update Utility on Windows in two ways:

- Using the Intel® Server Manager (ISM) setup program
- Installing the utility from a command prompt

After you have completed installation, the One-Boot Flash Update utility will be located in the following folder, assuming you used the default installation path:

> *C:\Program Files\Intel\ServerManager\bin\flashupdt*

Installing the OFU Using the ISM Setup Program on Windows

To install the OFU Utility, follow the instructions in *Getting Started with Intel® Server Manager 8 (ISM 8)*. The document is available as the PDF file ism_getting_started_guide.pdf on the ISM 8 CD in the directory \ism\help\english\docs.

Installing the OFU from a Command Prompt on Windows

To install the utility from a command prompt on a Windows system, perform the following steps:

1. Copy all files and subdirectories from the \ism\Software\windows\32-bit\ofu\ directory on the ISM CD into a folder on the hard drive, such as c:\temp\ofu\. If you are installing onto a SE8500HW4 server, copy the files from \ism\Software\windows\32-bit**ofuharwich**\ instead.

2. Open a Command Prompt window and execute the following command, substituting the path to the directory where you copied the files in the previous step:

   ```
   install.cmd c:\temp\ofu
   ```

This command installs the imbdrv.sys driver. On SE8500HW4 systems, the flashud.sys driver is also installed.

Removing the OFU from Windows Systems

If you installed the OFU software using the ISM Setup program, follow the steps below to remove the OFU software and any other ISM software you installed. You can't remove only the OFU software; all of ISM is removed by using the following procedure:

1. From the Windows Start menu, choose Control Panel.
2. In the Control Panel, choose Add or Remove Programs.
3. Select Intel Server Manager, and click Change/Remove.

If you installed the OFU software using the Windows Command Prompt, follow the steps below to remove the OFU software:

1. Open a Command Prompt window and change the working directory to the OFU installation directory:

   ```
   cd C:\Program Files\Intel\ServerManager\bin\flashupdt
   ```

2. To remove imbdrv.sys, execute the following command:

   ```
   win2kuninstall.exe *IMBDRV
   ```

3. On SE8500HW4 servers only, to remove the BIOS update driver, execute the following command:

   ```
   win2kuninstall.exe *INT0800
   ```

4. Delete all files in the directory.
5. Reboot the server.

Linux Installation

For Linux operating systems, the One-Boot Flash Update utility has several dependencies: IPMI driver or daemon, firmware update driver, w3c-libwww libraries, and kernel source code. Table 1 on page 8 lists the OFU package and the other packages on which OFU depends. The SE8500HW4 does not use the same packages as other platforms. In some cases, the differences between the package names are very slight, so pay particular attention to the highlighted differences. All RPM files are included with the OFU utility on the ISM 8 CD unless otherwise noted.

Table 1. OFU Package and Dependencies for Linux Installation

Description	Other Platforms Red Hat Linux	SE8500HW4 Red Hat Linux
OFU	flashupdt-1.**8.10**-1.i386.rpm	flashupdt-1.**8.60**-1.i386.rpm
IPMI driver or daemon	mgmtutils-8.10.0.i386.rpm smbase-8.10.0.i386.rpm	ldipmi-8.50.0.i386.rpm
Firmware update driver	afu-1.33-1.i386.rpm	fw_ud-1.8.60-1.i386.rpm
w3c-libwww	w3c-libwww-5.4.0-5.i386.rpm Included on the Red Hat installation CDs	w3c-libwww-5.4.0-5.i386.rpm Included on the Red Hat installation CDs
Kernel source code	Included on the Red Hat installation CDs	Included on the Red Hat installation CDs

The utility can be installed on Linux in two ways:

- Using the ISM setup program
- Installing the utility from a command prompt

After you have completed installation, the One-Boot Flash Update utility will be located in /usr/local/flashupdt. On SE8500HW4 platforms, the IPMI daemon (ldipmidaemon) is available in the /usr/Intel/IPMI/bin directory, and the daemon startup script (ldipmid) in the /etc/xinet.d directory. On other platforms, the IPMI driver (ldipmi), is available in the /usr/LANDesk/IPMI/bin directory, and the driver startup script (ldipmi) in the /etc/init.d directory.

Preparing for Installation on Linux

1. The One-Boot Flash Update utility uses the w3c libraries and requires that they be installed prior to installing the utility. For the HW8500HW4 platform, the w3c libraries are distributed with the OFU utility. For other platforms, the w3c libraries are distributed as part of the Red Hat installation CDs (CD #2 for Red Hat EL 3.0), and might not be included in the default installation configuration. Table 1, above, gives the file name of the w3c library package. To determine if the package is installed in the system, enter the following command:

   ```
   rpm –qa | grep w3c-libwww
   ```

   The command lists all RPM installed packages that have a name that begins with "w3c-libwww". Note that there are two other RPM packages that begin with w3c-libwww (*w3c-libwww-devel, and w3c-libwww-apps*). The RPM package that the One-Boot Flash Update utility requires is simply called "w3c-libwww".

2. If the w3c-libwww RPM package is not already installed, install the package using the following commands, where <directory> is the directory that contains the RPM file (Table 1, above, lists the file name and where to find the file):

   ```
   cd <directory>
   rpm –i <RPM file name>
   ```

3. To be able to support any version of the Linux kernel, the One-Boot Flash Update utility uses drivers that are dynamically built and installed. To build the drivers, the kernel source code must be present on the server. Verify that the kernel source code distributed on the operating system CDs is present on the system, and if not, install it according to the operating system documentation. The kernel source code can be installed by selecting the **Kernel development** package from the **Development** package group during the **Package Group Selection** phase of the installation wizard.

Installing the OFU Using the ISM Setup Program on Linux

To install the OFU Utility using the ISM setup program, follow the instructions in *Getting Started with Intel® Server Manager 8 (ISM 8)*. The document is available as the PDF file ism_getting_started_guide.pdf on the ISM 8 CD in the directory /ism/help/english/docs/.

Installing the OFU from a Command Prompt on Linux

To install the utility from a command prompt on a Windows system, perform the following steps:

1. Copy all files and subdirectories from the /ism/Software/linux/32-bit/ofu/ directory on the ISM CD into a folder on the hard drive, such as /ofu. If you are installing onto a SE8500HW4 server, copy the files from /ism/Software/linux/32-bit/**ofuharwich**/ instead.
2. Run the utility install script from the temporary directory by entering the following commands at the command-line prompt:
   ```
   cd /ofu
   ./installme
   ```
3. Follow the instructions on your screen.

Removing the OFU from Linux Systems

To remove the OFU utility from a Linux system, do the following:
1. Log in as root.
2. Execute the following command:

   ```
   rpm –e flashupdt
   ```

3. For SE8500HW4 platforms only, execute the following command:

   ```
   rpm –e ldipmi
   ```

   For all other platforms, execute the following commands:

   ```
   rpm –e mgmtutils
   rpm –e smbase
   ```

✏ **NOTE**

The IPMI packages mgmtutils *and* smbase *are also used and required by ISM SNMP Subagent. If the ISM SNMP Subagent is installed on the server, do NOT remove these packages.*

4. On SW8500HW4 systems, execute the following command:

```
rpm -e fw_ud
```

On all other systems, execute the following command:

```
rpm -e afu
```

3. Running the OFU Utility

One-Boot Flash Update Utility requires Windows administrative or Linux root permissions.

✏ **NOTE**

In order to run this utility, you must first set the working directory to the directory where the utility is installed. This is required because the utility depends on certain files that are expected to be located in the working directory.

Syntax:

```
flashupdt [-i] [-u < URL or path >] [-c] [-h|?]
```

Description:

Updates the System BIOS and/or firmware on the local server with the System BIOS and/or firmware specified in the configuration file.

Options:

[–i]	Displays the version information for the currently running System BIOS, BMC, and SDR. If the –i option is specified with the –u option, the utility displays the version information of the update package files. On systems containing the National Semiconductor PC87431x, this option displays only System BIOS ID and firmware version.
[–u]	Performs the System BIOS and firmware update. The *<URL or path>* parameter specifies the location where the files required for the update, including the configuration file, are located. The value of *<URL or path>* can be a local file system path, an FTP server, or an HTTP server. See examples below: –u Specifies the current local directory. –u http://<IP address or URL>/<path> Specifies an HTTP server. –u ftp://<login:password>@<server name or IP address>/<path> Specifies an FTP server. If –u is used in conjunction with –i, no update is performed. Only the package information is displayed.
[–c]	Cancels all pending update operations of the BMC and SDR that were performed using the utility. The utility resets the internal flags in the BMC and SDR to cancel the update operation, whether there is one or not. System BIOS and FRU updates can not be cancelled with this option (FRU updates take effect immediately).
[–h|?]	Displays command line help information.

Updating the Server from a Remote Client

This utility can be executed remotely via a secure network connection using a Telnet Client and Terminal Services in Windows or using a Telnet Client and Remote Shell under Linux. See your operating system documentation for further information on remotely logging in and executing commands.

Once you have logged in remotely, you can use the syntax described above. This process can be scripted to allow remote updates of multiple servers.

4. Glossary

The following terms and abbreviations are used in this document:

Term	Description
AFU	AMI Firmware Update Utility
BMC	Baseboard Management Controller
Firmware	In this document, firmware refers to BMC, FRU, and SDR (defined in this table)
FRU	Field Replaceable Units
IMM	Intel Management Module
IPMI	Intelligent Platform Management Interface
ISM	Intel Server Manager
SDR	Sensor Data Records
SEL	System Event Log