AFU User Guide

Purpose

This document provides information to use the AFU (AMI Firmware Update) tools to update the system BIOS.

Application Scope

Whitley/CedarIsland & EagleStream & AMD platform Server.

Overview and Supported Operating System

AFU is a package of utilities used to update the system BIOS on various operating systems.

AFU is supported by the following operating systems:

- Microsoft® Windows® 7
- Microsoft® Windows® 8
- Microsoft® Windows® 8.1
- Microsoft® Windows® Server 2016
- Microsoft® Windows® Server 2019
- Microsoft® Windows® Server 2022
- Microsoft® Windows® 10
- Microsoft® Windows® 11
- Microsoft® Windows® PE
- EFI Shell Environment
- Linux(*1)
  - Ubuntu (22.04)
  - Red Hat
  - Fedora (29)
  - openSUSE
  - Debian (9.6)
  - CentOS (7.3)

Note:

1. Linux notes: On the Linux Xen environment, AFULNX must be executed in host desktop (Domain 0) of the virtual machine.
2. The version of Linux distribution listed which version that AMI testing.
3. Due to System IO access, Linux version requires root authority.
4. DOS version is stopped supporting in AFU 5.08 or later version.

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5. Due to System IO access, Windows version requires administrator privileges and executes with "Run as Administrator" option.
6. AFUWIN still can be run while using unsupported Microsoft Windows versions.

Usage

To run, extract all of the files from the folder with the name corresponding to the desired operating system.
The following parts detail the AFU Tools' Usage EFI Shell, Linux and Windows operating system, AFUDOS is no longer supported since Purley platform due to DOS limitation on 16MB BIOS Images.

AfuEfix64

AfuEfix64.efi is used in UEFI Shell.

1. Start the System, and boot to UEFI Shell. When the screen shows prompt "Press <DEL> to SETUP or <F11> to Boot Menu or <F12> to PXE Boot" (Different products may be slightly different). Press the DEL key to enter the Setup interface, select Add UEFI Shell To Boot Menu to Enabled under the Boot menu, then press F10 to save and restart
2. When the screen shows prompt "Press <DEL> to SETUP or <F11> to Boot Menu or <F12> to PXE Boot" (Different products may be slightly different) at the bottom. Then press the F11 key to Boot Menu， select the "UEFI: Built-in EFI Shell" and press Enter. The Boot Menu example is shown in Figure 1.



Figure 1

3. Move to AfuEfi64 directory, as shown in Figure 2.

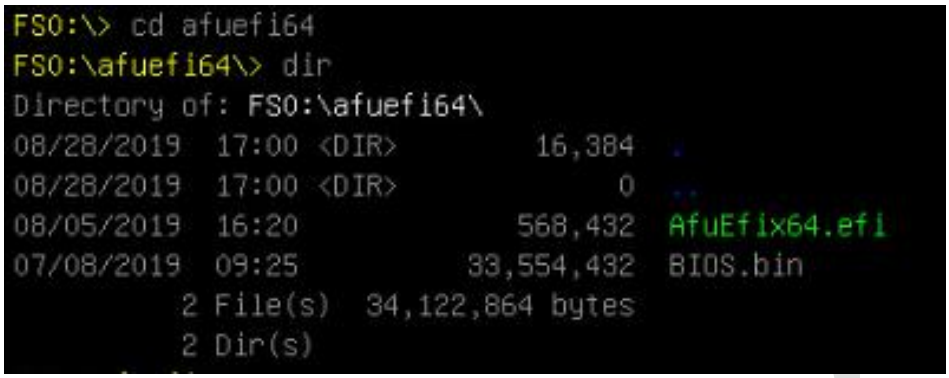


Figure 2

The optional parameters are same to update BIOS with different AFU Tools. So if no ME update, execute the command shown below to update the BIOS part. The flashing process is shown in Figure 3. (EagleStream platform does not need /l，eg. AfuEfix64.efi BIOS.bin /b /p /n /x /k)

Command: AfuEfix64.efi BIOS.bin /b /p /n /x /k /l

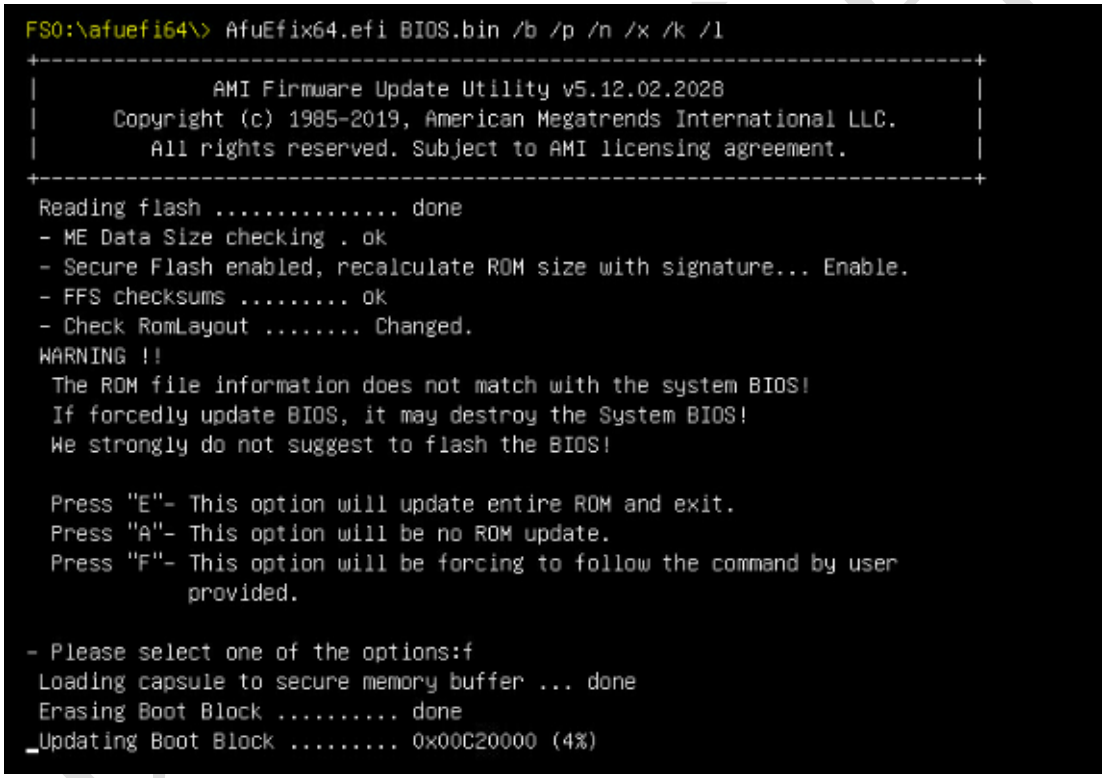


Figure 3

Power off is suggested after the update completed, then restart the system.

AFU 5.09.02.1370 or later added a warning message for informing users to decide whether continue or not when ROM information is different at the beginning. Press "E"- This option will update entire ROM and exit. Press "A"- This option will be no ROM update. Press "F"- This option will be forcing to follow the command by user provided.

4. If ME Changed, execute the command shown below to update the BIOS and ME parts. The flashing process is shown in Figure 4. If containing PHY card, the PHY FW refresh must AC power off before it can take effect. (EagleStream platform does not need /l， eg. AfuEfix64.efi BIOS.bin /b /p /n /x /k /me)

   Command: AfuEfix64.efi BIOS.bin /b /p /n /x /k /l /me

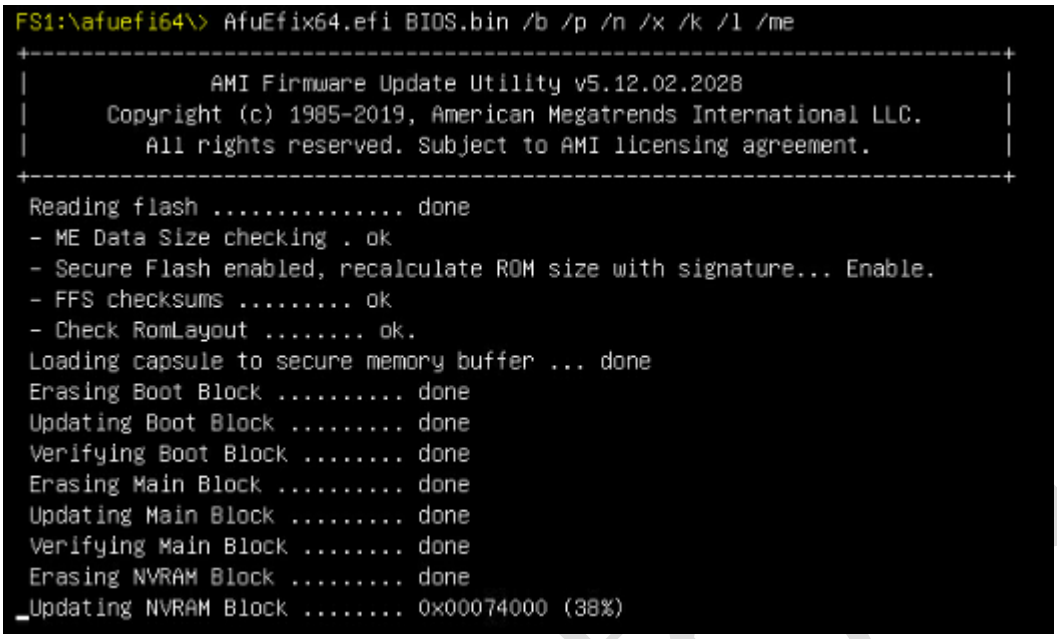


Figure 4

Options:

- /b Program Boot Block
- /p Program main bios image
- /n Program NVRAM
- /x Do not check ROM ID
- /k Program all non-critical blocks
- /l Program all ROM Holes
- /me Program ME Entire Firmware Block.

afulnx_64

1. Copy AfuLnx64 package to Linux system.
2. Move to the AfuLnx64 directory, as shown in Figure 5. BIOS.bin is the image file to be updated.

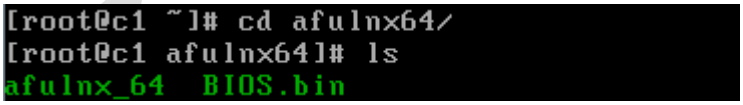


Figure 5

3. If no ME update, execute the command shown below to update the BIOS part. The flashing process is shown in figure 6. (EagleStream platform does not need /l， eg. ./afulnx_64 BIOS.bin /b /p /n /x /k)

   Command: ./afulnx_64 BIOS.bin /b /p /n /x /k /l



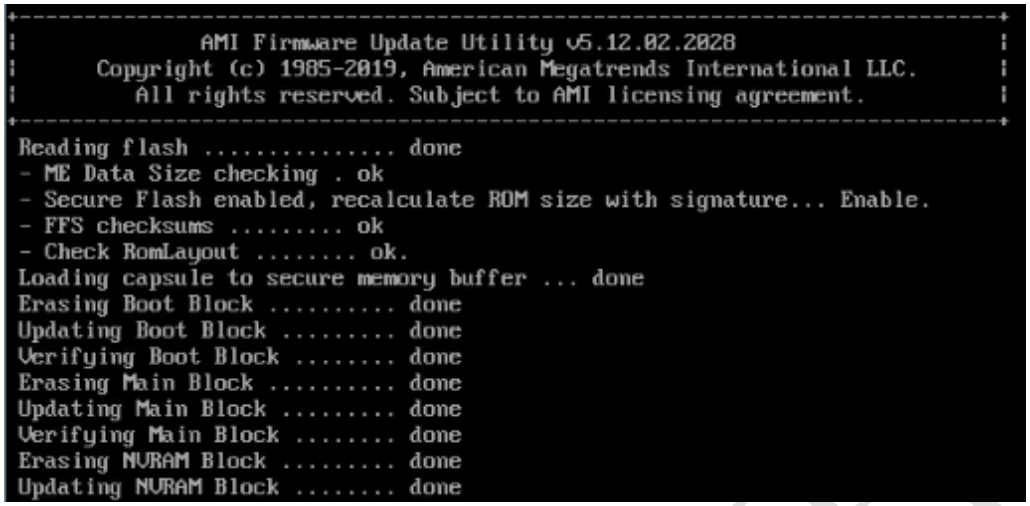


Figure 6

Power off is suggested after the update completed, then restart the system.

4. If ME Changed, execute the command shown below to update the BIOS and ME parts. The flashing process is shown in Figure 7. If containing PHY card, the PHY FW refresh must AC power off before it can take effect. (EagleStream platform does not need /l，eg. ./afulnx_64 BIOS.bin /b /p /n /x /k /me)

   Command: ./afulnx_64 BIOS.bin /b /p /n /x /k /l /me

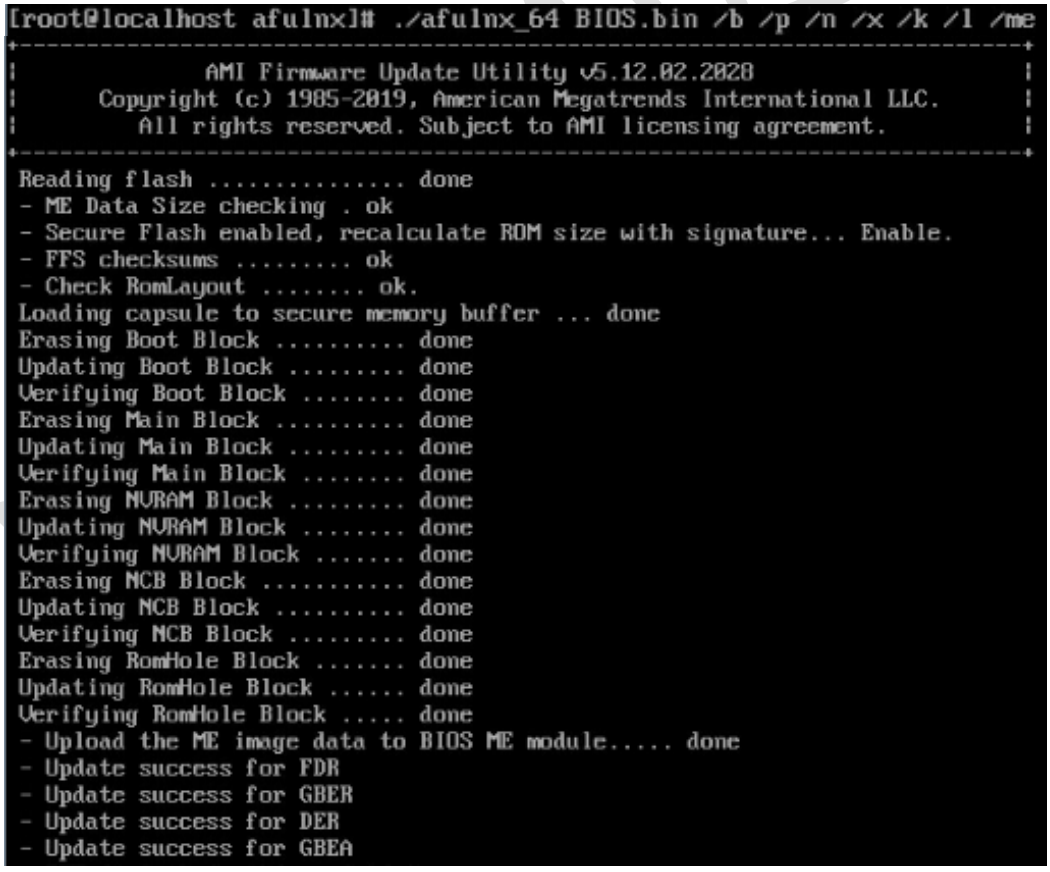


Figure 7

AFUWINx64

1. Copy AfuWin64 package to Windows 64bit operating system, and take Windows 2016 R2 for example.
2. Open a command prompt and change directory to AfuWin64, as shown in Figure 8.

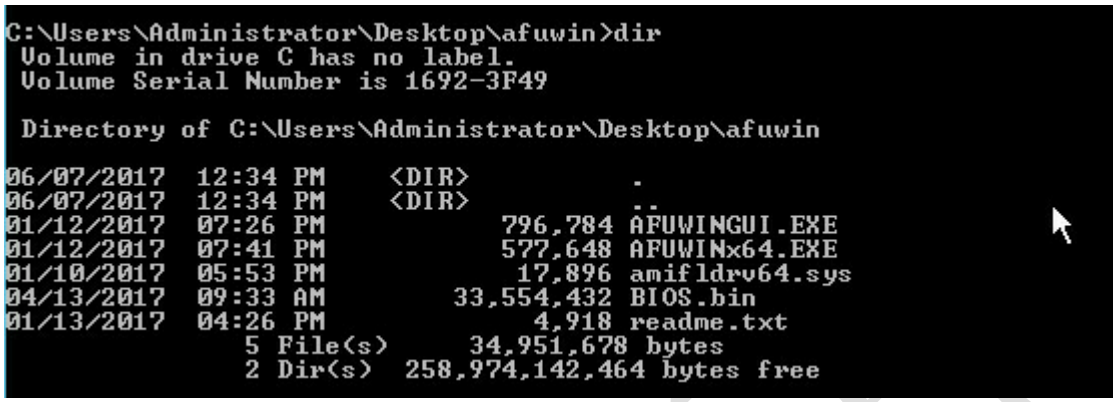


Figure 8

3. If no ME update, execute the command shown below to update the BIOS part. (EagleStream platform does not need /l， eg. AFUWINx64.EXE BIOS.bin /b /p /n /x /k)
   Command: AFUWINx64.EXE BIOS.bin /b /p /n /x /k /l
   Power off is suggested after the update completed, then restart the system.
4. If ME Changed, execute the command shown below to update the BIOS and ME parts. The upgrade process is similar to process in Dos and Linux, so no figure is provided here. If containing PHY card, the PHY FW refresh must AC power off before it can take effect. (EagleStream platform does not need /l， eg. AFUWINx64.EXE BIOS.bin /b /p /n /x /k /me)
   Command: AFUWINx64.EXE BIOS.bin /b /p /n /x /k /l /me

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