

Using a USB "FlashStick" as a file transfer device for EFI files on Itanium2 servers

From time to time it may be necessary to somehow transfer .EFI files (or any other files that need to be manipulated or accessed within an EFI environment) from your PC to an Itanium2 server EFI partition. While there are multiple potential ways to do this, (e.g. ftp from the OS to the EFI partition, use the EFI FTP utilities, burn a CDRom, etc.) one quick and easy way is to simply copy or load the files from the PC to a USB 'flash stick' and then plug this flash stick into one of the core USB ports on the Itanium2 server. Then boot to EFI and change to the USB file system and access the files directly - or copy the files to the OS EFI partition as necessary.

Please note that, in most cases, any generic "USB Flash Stick" SHOULD normally work as documented below. However, it is not unusual to occasionally encounter a problem with SOME USB Flash Stick devices (perhaps due to changes in internal FW, chip, or timing parameters, etc.) that may affect the compatibility of the Flash Stick at EFI. Some common symptoms of USB Flash Stick compatibility issues would be:

- Significant boot time delay
- Slow data transfer to/from the USB flash device
- Device shows up as a "blk" device at shell but there is no "fs" device even after executing "map -r"

How to reference the USB Flash Stick within EFI:

Example 1:

How to use a USB flash stick to directly access an EFI rx1600 System Firmware update utility ("update_SFW.efi" in this example):

NOTES:

- the USB flash stick was not listed in scan for devices or EFI boot screen
- exit to shell and look for USB entry in device map as shown below
- User inputs in *Bold/Italic/Violet* text.
- Console Output items of note in **Bold/Red** text.

Example:

[Booting system to EFI and entering EFI Shell from EFI Boot Manager]

.
. .
.

EFI version 1.10 [14.62]

EFI64 Running on Intel(R) Itanium Processor Family

EFI 1.10 IPF server rx1600 2.10 [Tue Sep 30 14:14:27 2003] - HP

0 0 0x0002B9 0x0000000000000013 EFI POST code

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Broadcom NetXtreme Gigabit Ethernet EFI driver v7.0.3

Loading 'SysROM:Floating-Point Software Assistance Handler'...

-- 'SysROM:Floating-Point Software Assistance Handler' returned Success

0 0 0x0002B9 0x00000000000000014 EFI POST code
1 0 0x00020B 0x00000000000000006 EFI Launching Boot Manager
0 0 0x000318 0x00000000000000030 EFI security system initialized
0 0 0x0002B9 0x00000000000000015 EFI POST code
0 0 0x0015B2 0x0000000047894990 boot time event
Scsi(Pun0,Lun0) HP 36.4GST336607LC HPC3 (320 MBytes/sec)
Scsi(Pun1,Lun0) HP 36.4GST336607LC HPC3 (320 MBytes/sec)
Broadcom NetXtreme Gigabit Ethernet (BCM5701) is detected (PCI)
Scsi(Pun1,Lun0) HP C1537A HP02 (10 MBytes/sec)
.
.
.

EFI Boot Manager ver 1.10 [14.62] Firmware ver 2.11 [4445]

Loading device drivers

Loading.: Auxiliary Floating Point Driver
Starting: Auxiliary Floating Point Driver
Start of Auxiliary Floating Point Driver failed: Already started

.
.
.

EFI Boot Manager ver 1.10 [14.62]

```
-----\
|                Boot Menu                |
| HP-UX Primary Boot: 0/1/1/0.1.0        |
| Windows Server 2003, Enterprise        |
| EFI Shell [Built-in]                  |
| Red Hat Enterprise Linux AS            |
| DVD Boot                               |
|-----|
| Boot Configuration                     |
| System Configuration                   |
| Security Configuration                 |
|-----|
|                System Overview          |
| hp server rx1600                       |
| Serial #: USE4351191                   |
|                                         |
| System Firmware: 2.11 [4445]           |
| BMC Version: 3.48                      |
| MP Version: E.03.13                    |
| Installed Memory: 4096 MB              |
|                                         |
| CPU Logical                             |
| Module CPUs Speed Status               |
| 0 1 1 GHz Active                       |
| 1 1 1 GHz Active                       |
|-----|
```

Use <^|v> to scroll <ENTER> to Select <ESC> or <X/x> for Previous Menu

Loading.: EFI Shell [Built-in]

EFI Shell version 1.10 [14.62]

Device mapping table

```
fs0 : Acpi(HWP0002,0)/Pci(1|0)/Usb(0, 0)/HD(Part1,SigC3072E18)
fs1 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)/HD(Part1,SigABB0B1A0-E51A-01
C3-507B-9E5F8078F531)
fs2 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)/HD(Part1,Sig6DDC98F0-8A36-11
D8-8002-D6217B60E588)
fs3 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)/HD(Part3,Sig6DDC9954-8A36-11
D8-8004-D6217B60E588)
blk0 : Acpi(HWP0002,0)/Pci(1|0)/Usb(0, 0)
blk1 : Acpi(HWP0002,0)/Pci(1|0)/Usb(0, 0)/HD(Part1,SigC3072E18)
blk2 : Acpi(HWP0002,0)/Pci(2|0)/Ata(Primary,Master)
blk3 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)
blk4 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)/HD(Part1,SigABB0B1A0-E51A-01
C3-507B-9E5F8078F531)
blk5 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)/HD(Part2,SigABF24E80-E51A-01
C3-F1B3-12714F758821)
blk6 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)/HD(Part3,Sig6EF1EF20-E51C-01
C3-A1F4-04622FD5EC6D)
blk7 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)
blk8 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)/HD(Part1,Sig6DDC98F0-8A36-11
D8-8002-D6217B60E588)
blk9 : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)/HD(Part2,Sig6DDC992C-8A36-11
D8-8003-D6217B60E588)
blkA : Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun1,Lun0)/HD(Part3,Sig6DDC9954-8A36-11
D8-8004-D6217B60E588)
startup.nsh> echo -off

setting hpux path(\EFI\HPUX)...
type 'fs[x]:' where x is your bootdisk (0, 1, 2...)
type 'hpux' to start hpux bootloader
Shell> fs0:
```

```

fs0:\> ls
Directory of: fs0:\

02/16/05  03:09p           11,900,416  update_SFW.efi
          1 File(s)  11,900,416 bytes
          0 Dir(s)

```

```

fs0:\> update_SFW

```

```

*****
****
****                      FWEUPDATE                      ****
****      EFI Firmware Update Utility for IPF Systems      ****
****      (c) Copyright Hewlett-Packard Company, 2001-2004  ****
****                      All rights reserved.              ****
****
****                      Version 0.47                      ****
****
*****

```

```

Executing Embedded options: -nmf
System Product ID = rx1600
N = User non-interactive mode enabled.
M = Bypass the Downrev Checking.
F = Flash embedded images or specified file
Using Embedded Image(s) :System FW, BMC FW, MP FW
System Image supports Product ID = rx1600
System Image Integrity Verified.
BMC Image Integrity Verified.
MP Image Integrity Verified.

```

```

Current Time: 04/18/05  12:40p

```

FW Component	Sys Rev	New Rev	Status
SFW.....	02.11	02.11	Identical
BMC.....	03.48	03.48	Identical
MP.....	E0313	E0313	Identical

```

>>> With default options identical images will not be reflashed.

```

```

FWEUPDATE FINISHED:
Firmware version(s) are identical, no update(s) performed.

```

[Note: In this example, the FW update did not proceed because the existing System Firmware Revision on the server was already properly updated!]

```

fs0:\>

```

Example 2:

How to use a USB flash stick to copy files ("update_SFW.efi" in this example) to an OS EFI partition:

NOTES:

- Boot to EFI shell first.
- in this example fs0: is the USB device, fs1: is the EFI directory for a Windows64 bit OS installed on the Itanium2 server.

```

fs0:\> help cp
Copies one or more files/directories to another location.

```

CP [-r][-q] src [src...] [dst]

-r - Recursive copy
-q - Quiet copying (replace existing files without prompt)
src - Source file/directory name (wildcards are permitted)
dst - Destination file/directory name (wildcards are not permitted)

Note:

1. If dst is not specified, current directory is assumed to be the dst.
2. 'CP -r src1 src2 dst' is copy all files and subdirectories in 'src1' and 'src2' to the 'dst', 'src1' and 'src2' themselves are not copied.
3. Copies a directory to itself is not allowed (eg: cp -r test* test).
4. If error occurs, CP will exit immediately and the remaining files or directories will not be copied.
5. To remove directories please refer to RM.
6. When 'cp' is executed within a script file, it always performs quiet copying regardless of whether '-q' is specified.

Examples:

- * To display the contents of current directory first of all:

```
fs0:\> ls
Directory of: fs0:\

06/18/01  01:02p <DIR>          512  efi
06/18/01  01:02p <DIR>          512  test1
06/18/01  01:02p <DIR>          512  test2
06/13/01  10:00a                28,739  IsaBus.efi
06/13/01  10:00a                32,838  IsaSerial.efi
06/18/01  08:04p                   29  temp.txt
06/18/01  08:05p <DIR>          512  test
          3 File(s)          61,606 bytes
          4 Dir(s)
```

- * To copy a file in the same directory as different file name:

```
fs0:\> cp temp.txt readme.txt
copying fs0:\temp.txt -> fs0:\readme.txt
- [ok]
```

- * To copy multiple files to another directory:

```
fs0:\> cp temp.txt isaBus.efi \test
copying fs0:\temp.txt -> fs0:\test\temp.txt
- [ok]
copying fs0:\isaBus.efi -> fs0:\test\IsaBus.efi
- [ok]
```

- * To copy multiple directories recursively to another directory:

```
fs0:\> cp -r test1 test2 efi \test
copying fs0:\test1\test1.txt -> fs0:\test\test1.txt
- [ok]
copying fs0:\test2\test2.txt -> fs0:\test\test2.txt
- [ok]
making dir fs0:\test\boot
copying fs0:\efi\boot\nshell.efi -> fs0:\test\boot\nshell.efi
- [ok]
```

- * To see the results of above operations:

```
fs0:\> ls \test
Directory of: fs0:\test

06/18/01  01:01p <DIR>          512  .
06/18/01  01:01p <DIR>           0  ..
01/28/01  08:21p                30  test1.txt
01/28/01  08:21p                30  test2.txt
01/28/01  08:21p <DIR>          512  boot
01/28/01  08:23p                   29  temp.txt
01/28/01  08:23p                28,739  IsaBus.efi
          4 File(s)          28,828 bytes
          3 Dir(s)
```

```
fs0:\> ls
Directory of: fs0:\

    02/16/05  03:09p                11,900,416  update_SFW.efi
            1 File(s)  11,900,416 bytes
            0 Dir(s)
```

```
fs0:\> fs1:
```

```
fs1:\> ls
Directory of: fs1:\

    01/27/04  09:53p <DIR>                8,192  EFI
    01/27/04  09:53p <DIR>                8,192  MSUtil
            0 File(s)                0 bytes
            2 Dir(s)
```

```
fs1:\> cd efi
```

```
fs1:\EFI> ls
Directory of: fs1:\EFI

    01/27/04  09:53p <DIR>                8,192  .
    01/27/04  09:53p <DIR>                0      ..
    01/27/04  09:53p <DIR>                8,192  Microsoft
            0 File(s)                0 bytes
            3 Dir(s)
```

```
fs1:\EFI> cp fs0:\*.efi
copying fs0:\update_SFW.efi -> fs1:\EFI\update_SFW.efi
- [ok]
```

```
fs1:\EFI> ls
Directory of: fs1:\EFI

    01/27/04  09:53p <DIR>                8,192  .
    01/27/04  09:53p <DIR>                0      ..
    01/27/04  09:53p <DIR>                8,192  Microsoft
    02/16/05  03:09p                11,900,416  update_SFW.efi
            1 File(s)  11,900,416 bytes
            3 Dir(s)
```