



HP BUSINESS NOTEBOOK

HP TOOLS PARTITION

GUIDELINES v1.6

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1. Introduction

As computer technology has advanced, the BIOS (Basic Input/Output System) has expanded in an effort to handle new components, larger and more complex chipsets, add-in cards, and so on. This expansion of the BIOS has made it increasingly intricate.

The computer industry's answer to address BIOS limitations is the development of the Extensible Firmware Interface (EFI). EFI is a set of modular interfaces that replaces the set of traditional BIOS interfaces between the operating system and platform firmware.

EFI is based on the high-level C language and is driver-based, scalable, and easy to debug and upgrade. EFI uses a modular, platform-independent architecture that can perform boot and other BIOS functions.

Tapping into this technology, HP has implemented a preboot partition on all of its commercial notebook computers.¹ Along with replacing the traditional BIOS interface, the HP partition adds tools to the preboot system environment. The partition is viewable on the hard drive and is labeled as HP_TOOLS. On 2008 and later commercial notebook platforms with the EFI BIOS, HP created the partition as a FAT32 partition, due to EFI BIOS limitations with accessing other partition formats.

For more information about EFI, go to <http://www.hp.com/go/techcenter>

2. Supported Platforms

The HP_Tools partition feature described in this document is supported by 2008 and 2009 HP business notebooks.

3. Location of HP EFI and Preboot Applications- the HP_TOOLS Fat32 Partition

HP EFI applications and preboot applications provide extensive preboot functions to the system BIOS residing in the flash rom. These HP preboot applications are placed on a HP specific partition. On 2008 and later commercial notebook platforms with EFI BIOS, the preboot partition HP_TOOLS is created by the preinstall team as a Fat32 partition.

Warning

Do not encrypt HP_TOOLS partition using software encryption programs such as Windows BitLocker or Full Volume Encryption for HP ProtectTools. When the partition is encrypted, HP preboot applications cannot function.

Volume Name

HP_TOOLS

Note: QuickWeb is a Linux based application and Linux directory is case sensitive. (So is NTFS. Fat32 is not). When Volume name and Hewlett-Packard directory is created, please make sure that it's all capitalized.

HP_TOOLS Partition Size

The total partition size is 2 GB.

4. HP_TOOLS Partition Directories and Descriptions

The HP_TOOLS partition structure should mirror what we already have for NTFS file system. And the EFI application and preboot application installation should follow the rules for other HP software.

For those preboot deliverables that are web released, they need to be installed using Softpaq.

When a Softpaq is run, it will extract into the C:\swsetup directory just as other Softpaqs. Then the preboot software installation should search for the Fat 32 partition with the "HP_TOOLS" label and install itself under the directory:

: \HEWLETT-PACKARD\softwarename

e.g. Quicklook.efi and its digital signature should be placed under

: \HEWLETT-PACKARD\QUICKLOOK\quicklook.efi

5. EFI Power Management

There is no power management under EFI shell. There will be some thermal management.

6. How BIOS Launches EFI and Other Preboot Applications


For HP Signed Preboot Applications

The HP signed preboot applications; the executable file and the “filename.sig” signature file are stored in the same sub directory.

In current implementation, there are hot keys (noted below) defined for HP certain preboot applications.

- ⌘ is used to launch the QuickLook EFI application. This button can launch QuickLook from S5, S4. BIOS has an option to disable the QuickLook launch. If disabled, pressing the button does nothing.

- F2 is used to launch the Diagnostic EFI application during POST. F2 will not wake the system from S5 or S4. It can only be pressed during POST when the BIOS hotkeys are on display.

-  is used to launch the QuickWeb. This button can launch QuickWeb from S5 and S4. BIOS has an option to disable the QuickWeb launch. If disabled, pressing the button does nothing.

Note: These hotkeys will only launch the designated signed HP EFI and preboot applications. Please contact the Business Notebook BIOS team to define and assign a hotkey for a specific EFI application.

7. Preboot Security Requirements

Signed Preboot Applications

When a preboot application is launched, it has as much control of the system resource as the BIOS. Since these applications reside on the public hard drive partition which are easily accessible and thus hacked, it's necessary for BIOS to only launch HP signed preboot applications.

Additional F10 Policies for Preboot Environment

BIOS F10 provides several policies to control the availability of Boot from EFI File option in the Boot Manager when F9 is pressed (for details, see How EFI Launches EFI Applications)

System Configuration -> Device Configurations

UEFI Boot Mode Enable/Disable Default: Disable

This policy controls whether the BIOS allows to boot to an EFI file. For security, it's recommended to be disabled.

When UEFI Boot Mode is disabled, the "Boot from EFI File" option will not show up in the Boot Manager when F9 is pressed. In such a case, the only way to launch HP EFI applications is to use the hot key.

Customized Logo Enable/Disable Default: Disable

The EFI BIOS provides the nice feature for the user to customize the logo displaying during the boot. The logo is a bitmap file that a customer can add/change on the HP_TOOLS partition.

Since BIOS can't check the signature of the customized logo bitmap files, it may be used as an attack tool of the BIOS post process. Thus an option is needed to disable this capability for the highly sensitive security environment.

HP QuickLook Enable/Disable Default: Enable

The EFI BIOS provides the following policy to control the availability of the QuickLook application option.

HP QuickWeb Enable/Disable Default: Enable

The EFI BIOS provides the following policy to control the availability of the QuickWeb application option.

8. Additional References

For additional information, refer to the resources listed below:

HP Technology Center <http://www.hp.com/go/techcenter>

HP technical support <http://www.hp.com/support>

Intel's Extensible Firmware Interface (Home Page)
<http://www.intel.com/technology/efi/>



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