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Understanding Platform Requirements for UEFI HII

UEFI Fall Plugfest – October 24-27, 2011
Presented by Brian Richardson,
Intel Corporation

Agenda

- HII: Key Concepts

- How the OEM Uses HII

- Changing OpROM Models

- Changes for the IHV

- Best Practices

- Get More Information

HII: Key Concepts

- Solve problems from legacy BIOS …
  - Different menus for BIOS setup & OpROM
  - User has problems finding the right menu
  - OEMs need a consistent user interface
- UEFI Human Interface Infrastructure (HII)
  - System firmware has a common setup browser
    - Drivers don't carry their own UI
    - Single point for pre-OS setup interface
  - Firmware & Drivers publish to a "database"

HII: Key Concepts

localization

forms & strings

HII

```
                        My First Setup Page

My subtitle text                                    This is my text help

My CPU Speed is               700 Mhz
Exit now!
Save now!
My one-of prompt #1           <Enable Checkbox>
My one-of prompt #1           <SmallBootList>
Activate this check box       [X]
Boot Order                    <ATAPI CD>
                              <IDE HDD>
                              <PXE>

Goto Dynamic Page +
Goto Fresh Dynamic Page
Pick 1                        <My one-of text #2>
Pick 2                        <My one-of text #1>
                                                        ↓
                        F9=Reset to Defaults      F10=Save
↑↓=Move Highlight                                 Esc=Exit
```

setup browser

input sources

How the OEM Uses HII

- Platform Branding
- Single setup menu
- Change input based on form factor (Keyboard, Mouse, Touch)

- Microsoft Windows 8 logo requirements for BIOS setup keys
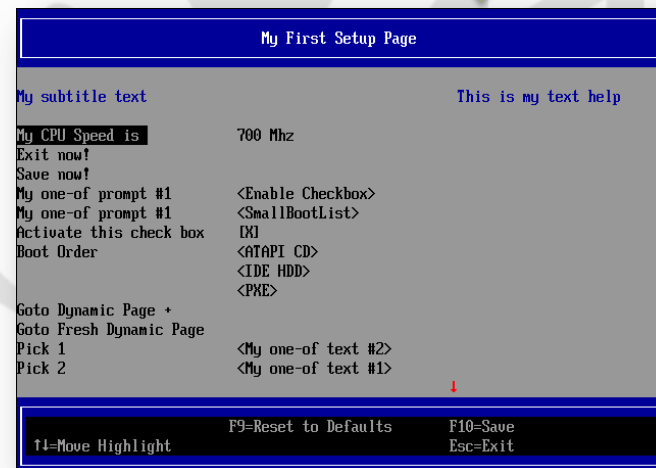
Changing OpROM Models

- The basic model for the Option ROM stays the same, except user interface (UI)
  - UI is a function of the platform, not OpROM
  - Allows IHV to focus on driver functionality
  - OEM can customize look & feel without the need for major changes by the IHV
- Built from UEFI Specifications
  - Focus on UEFI 2.1 & UEFI 2.3.1 specs

Changes for the IHV

User setup is a function of the platform, not the add-in card.

HII

Lighter payload for the OpROM. Single interface for the user.

```
                        My First Setup Page

My subtitle text                                    This is my text help

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Exit now!
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My one-of prompt #1          <Enable Checkbox>
My one-of prompt #1          <SmallBootList>
Activate this check box      [X]
Boot Order                   <ATAPI CD>
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Pick 2                       <My one-of text #1>          ↓

              F9=Reset to Defaults          F10=Save
↑↓=Move Highlight                           Esc=Exit
```

Changes for the IHV
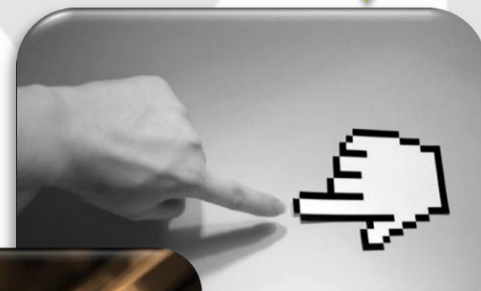
OEM can change the look and feel without altering OpROM.

The same HII data is displayed differently based on OEM setup

Changes for the IHV

Input handling is based on the platform, not the OpROM.

HII

Platform input may use keyboard, mouse, touch screen or remote methods.

Best Practices

- Understand the difference between UEFI specification requirements and OEM/IBV setup browser requirements.

- Test against multiple UEFI implementations.

- Make sure drivers are written to HII from UEFI 2.1 specification or later.

- Focus testing on UEFI Class 3 (no CSM) to eliminate any legacy dependencies.

Get More Information

- UEFI Forum Learning Center [link]

- UEFI IHV Resources @ intel.com [link]

- Review the UEFI Specification …
  - Sections 28 & 29 (HII Overview & Protocols)
  - Section 30 (HII Configuration Processing and Browser Protocol)

- Use the TianoCore *edk2-devel* mailing list for support from other UEFI developers

Thanks for attending the
UEFI Fall Plugfest 2011

For more information on
the Unified EFI Forum and
UEFI Specifications, visit
http://www.uefi.org

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But wait, there's more …

~~**Welcoming Remarks** – Aven Chuang, Insyde Software~~
~~**UEFI Forum Updates** – Dong Wei, VP of the UEFI Forum~~

~~**Best Practices for UEFI Driver Compatibility** – Stefano Righi, American Megatrends, Inc.~~
~~**Understanding Platform Requirements for UEFI HII** – Brian Richardson, Intel Corporation~~

UEFI Security Enhancements – Kevin Davis, Insyde Software
How to Protect the Pre-OS Environment with UEFI – Tony Mangefeste, Microsoft

Pre-OS Display Switching using GOP – James Huang, AMD
Debug Methodology Under UEFI – Jack Wang, Phoenix Technologies

Download presentations after the plugfest at www.uefi.org