Driver Servicing: Understanding the Extension INF Workflow

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Introduction and Agenda

Welcome

In this session we will learn about the Driver Servicing aspects for Extension INFs. It is assumed you have a basic understanding of Hardware Dev Center Dashboard and what Extension INFs are and their usage.

Agenda:

• Extension Servicing Scenario Workflow
• The ExtensionID
• Managing Extension INF submissions
• Publishing Extension INFs
• Common Questions
Extension Servicing Scenario Workflow

You are an OEM who has been given your first IHV Extension INF for a new platform

V1.0 Extension package
- Generate new ExtensionID
- Add 4 part HWID targeting
- Adjust driver customizations

Submit to DevCenter

Publish to Windows Update
- Set publishing to Automatic (CU and DU)
- Set 4 part targeting and/or CHID

V2.0 Servicing that Extension
- Reuse previous ExtensionID
- Adjust 4 part HWID targeting
- Adjust driver customizations

Submit to DevCenter

Publish to Windows Update
- Set publishing to Automatic (CU and DU)
- Set 4 part targeting and/or CHID
The ExtensionID

What is it and what is it used for?

- The ExtensionID is just a GUID used for versioning and driver lineage identification
- **Guidance:** Create one ExtensionID per HW Device Part.
  - This ExtensionID remains unchanged for the life of this part.
  - Each OEM system using this part shares the same ExtensionID, except when...
    - ODM’s managing OEM systems logged on as ODM – Create their own ExtensionID
    - ODM’s managing OEM systems logged on as OEM – Use OEM ExtensionID
  - You are responsible for keeping track of your ExtensionID usage and mapping.

Generating and Registering an ExtensionID

- Use "Create GUID" in Visual Studio
- ExtensionIDs are [Automatically registered with Hardware Dev Center](https://www.microsoft.com) at submission time
- Your ExtensionIDs cannot be used by other companies

The ExtensionID used in this submission is already in use by another organization. Please resubmit with a new ExtensionID. Refer to this link for help.
Managing Extension submissions

Separate Extension INF submissions *(driver developer)*

- Use the HLK test results from the Base driver
- Replace the Base drivers with your Extension INF, package this up and submit

Shared Shipping label submissions *(aka DUA/Derived)*

- Generate a new ExtensionID for the *initial* version of an Extension INF
- Reuse this ExtensionID for all subsequent servicing updates
- Always add your 4-part HWID targeting to Extension INF when possible
- Adjust your driver customizations
Publishing Extension INFs

**Prerequisite:** Sign up for [Driver Flighting](#) to enable Driver promotion option

**Publishing workflow**
- Check both Automatic Driver promotion boxes
- Hardware Dev Center blocks “Optional only” publishing
- Extension INFs cannot be installed via Device Manager

**Extensions must always be specifically targeted**
- Set [Shipping Label publishing targets](#) to 4-part HWID and/or CHID
- CHID targeting *is required* when publishing to a 2-part HWID
Extension INF Applicability and Ranking

Applicability  (WU builds the list)

- For Extension INFs, list is determined by HWID and CHID
- Set your targeting applicability in Shipping Labels to 4-part HWID and/or CHID
- ExtensionID is not used

Ranking  (the list is ranked)

- Ranking is how Windows PnP and WU makes a decision after Applicability
- Extension INFs are only ranked by Date then Version (DriverVer directive)
- Feature Score or Identifier Score is not considered
- CHID is not used for ranking

More info: How Windows Ranks Drivers
Common Questions

Q: Do we need to publish an updated Extension INF every time a BASE driver package is updated and published?

• **No, you do not, and you must not be required to.** The BASE driver must always be backward compatible with existing extensions.

• **Driver Developers:** You do not need to create another Extension INF submission every time you submit an updated BASE driver.

Should every unique hardware configuration have its own Extension INF?

• **Yes.** Always use 4-part targeting in the INF and during Publishing whenever possible. Targeting for 2-part HWID must use CHID.

Should the ExtensionID be changed when servicing it or the Base driver or using a new OS image?

• **No.** The **ExtensionID** remains the same for the life of the part.

Can two systems share the same Extension INF if the customizations are the same?

• **Yes.** If Product A and Product B will use the same settings or you want to customize settings across a broader set of devices, then one Extension INF is sufficient. You would add both 4 part HW IDs to the Extension INF.
Key Takeaways

- ExtensionID usage
- Extension INF workflow differences
- Applicability and Ranking differences

Resources

- **Prerequisite:** [Driver Flighting](#) signup and corresponding [WinHEC Online video](#)
- [Hardware Dev Center Dashboard](#)
- [Windows Hardware Certification Blog](#)
- [Publishing to Windows Update](#)
- [Getting started with Windows Universal Drivers](#)
- [Extension INF](#)
- [Component INF](#)
- DriverVer [INF Section](#)
- [How Windows Ranks Drivers](#)