How to Get Started with Windows 10 IoT Licensing

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We have written several books and many articles about Windows Embedded/IoT over the past few decades. We have discussed the build process, unique features, and the concepts to support the product over its life cycle. The only thing we have never covered is Windows licensing. For the most part, we have left this discussion to Microsoft and the distributors to provide the details. Microsoft has done a lot of work on the Dev Center (Windowsondevices.com) website to provide all the steps a developer needs to get going in developing an image. It has been brought to our attention several times that the only thing not clear on the website is how to actual license Windows 10 IoT Core or Windows 10 IoT Enterprise (aka Windows 10 Enterprise LTSC). This paper will look at the whole process of licensing.

Warning: The information in this article will change as Microsoft adjusts its business model over time. Please check with your Microsoft distributor for the latest information.

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1 Finding a Distributor and Signing the CLA

The warning brings us to the first big topic on "where to find a distributor". Within Microsoft, there are two sales groups. One group covers OEMs that make general-purpose Windows PCs and Servers. For example, Dell, HP, Lenovo, Samsung, Sony, etc. The other group covers OEMs that build Embedded/IoT devices. It's this latter group that oversees direct sales and distribution for the Windows 10 IoT.

Buried deep in the Dev Center website is a document that lists all the available Windows Embedded/IoT Distributor Information for all distributors around the world:

https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE37tp1

This important document is updated from time to time with the latest contact information. If you are not purchasing millions of licenses, then you will be going through a distributor for Windows Licenses. There are different types of distributors on the list. Some distributors sell services, some are electronic distributors, and some are PC manufacturers that can only provide licenses on the devices they sell. For example, Dell can sell Windows 10 Enterprise licenses only for Dell hardware. When you are ready to get licensing information, you should look up the distributor that is in your region or the distributor that best fits with your company's use of Windows 10. The licensing steps are simple:

1. Contact a distributor and ask about the licensing process.
2. If your company has not already signed the Microsoft Client License Agreement (CLA), then someone in your company with the appropriate authority will have to sign the CLA. Take care who signs the CLA, as they will be the contact for Microsoft and the subjects that follow.

Signing a Microsoft CLA to license products from Microsoft is only the first step. Ordering software, getting the latest updates, using the right tools, license runtime key requests, and license stickers are also part of the OEM process. The following sections discuss these next steps.

2   Microsoft OEM Website Access

Once you have the CLA and the CLA number, there are two websites that you want to sign up on in order to gain access: Microsoft OEM Digital Operation Center and the Device Partner Center.

Note: The person(s) whose name is on the CLA will be allowed to access these websites. If there are any technical issues, please send an e-mail to MSOEMOps@microsoft.com.

2.1   *Microsoft OEM Digital Operation Center (www.microsoftoem.com)*

This site allows you to download OEM Pre-installation Kits (OPKs) for software such as Windows 10 Enterprise LTSC, Windows 10 IoT Core Build files, etc. You can ask the distributor to provide the DVD ISOs for the OPKs, but having access to this website can be helpful.

Note: This website requires a little extra work to get set up. If there are any technical issues, please send an e-mail to MSOEMOps@microsoft.com.

You will need Internet Explorer Browser and a Windows Live ID.

Note: Other browsers are not supported.

Here are the basic steps to get set up on the Microsoft OEM Digital Operation Center and log in:

1. Send an e-mail with the CLA number to MSOEMOps@microsoft.com. Ask for your internal account manager who can get you set up for the site.
2. Once Microsoft has verified the information and grants access to the site, you will receive two welcome e-mails. The first e-mail provides welcome information and the second e-mail provides a PIN to access the site. The PIN will be tied to your login Windows Live ID.
3. Open Internet Explorer.
4. The next step is to open IE in private mode. Hit CTRL+Shift+P, this will open a new IE session with the word InPrivate in the address bar.
5. Be sure to TURN OFF POP-UP BLOCKERS.
6. Enter the following address in the address bar and hit enter: microsoftoem.com. If a certificate error appears, just continue with the website. You will be presented with the following page:
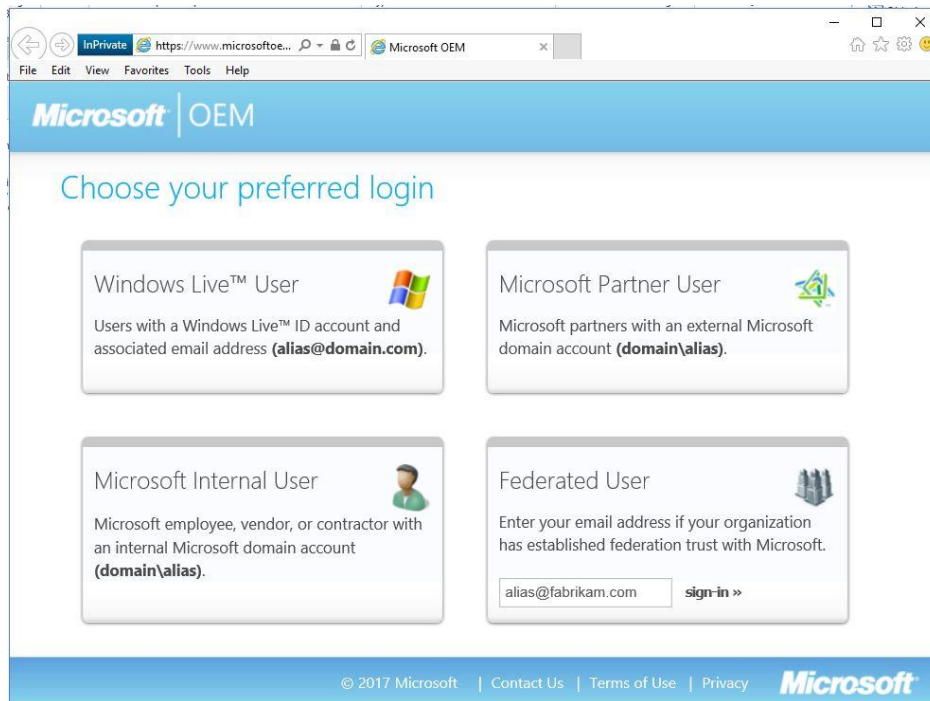
7. Select Windows Live User and enter your Windows Live ID and then the password. You will then be asked for the PIN from the e-mail.
8. As the login process starts, you may be asked to install Silverlight. Since the site runs on Silverlight, you will need to run the Silverlight installer and log in again.

Once you have successfully logged in, the welcome screen appears. From here, you can order software or perform basic administration of your account.

Note: The menu items may be different based on the agreement signed.

Here are the steps to download OPKs:

Note: There are several Internet Explorer setup steps that have to be performed to get the download to operate successfully. If there are any technical issues, please send an e-mail to MSOEMOps@microsoft.com.

1. Select Orders from the menu and then select "Embedded OEM Software Order Center".
2. Click on "Search Kits" in the menu on the left.

3. A search can be performed on Kit Number or Kit Description. You must select a Kit Type. Here are the common search kit descriptions to use:

- Win 10 IoT, Win10 IoT, or LTSC (for Windows 10 IoT Enterprise LTSC)
- Windows 10 IoT Core
- Win Embedded 8 Industry
- Windows Embedded Standard 7
- Win Embedded POSReady 7
- Server (for all Windows server versions available)

4. A list will appear in the search results. Select the Kit and click the Add button.

5. You must fill out the Download Location information and click the "Proceed To Download" button.
6. A new browser window will appear asking to select the items to download and the location. Click the "Take Electronic Delivery" button.

7. Install the transfer utility if asked. The transfer utility will start and the software will download to the folder you selected.
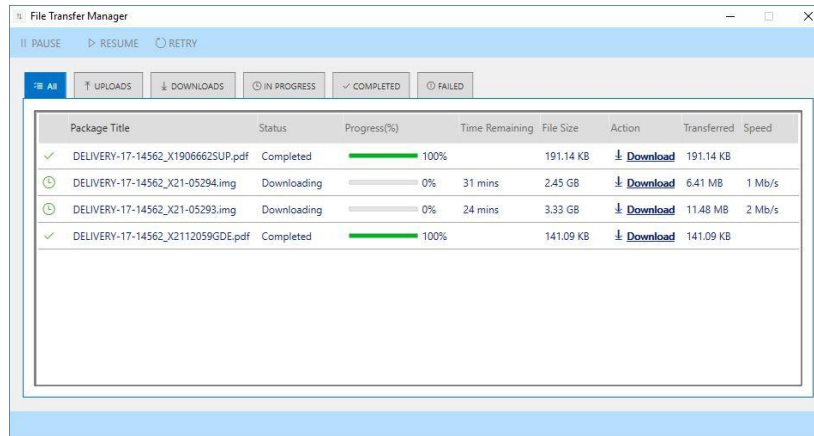
2.2 Device Partner Center (devicepartner.microsoft.com)

Device Partner Center is the new replacement for the old MyOEM website that was retired in 2017. The new site contains OEM news and marketing information.

A Microsoft Live account is needed to access the site. You can register in the top left corner of the webpage. You will need to provide your company's CLA number.

3 Operating System Development Tools

There are tools to help with integrating the Windows operating system into your device.

3.1 Windows 10 IoT Core

Windows IoT Core images are built with PowerShell command-line tools. There are several free tools to download to get started:

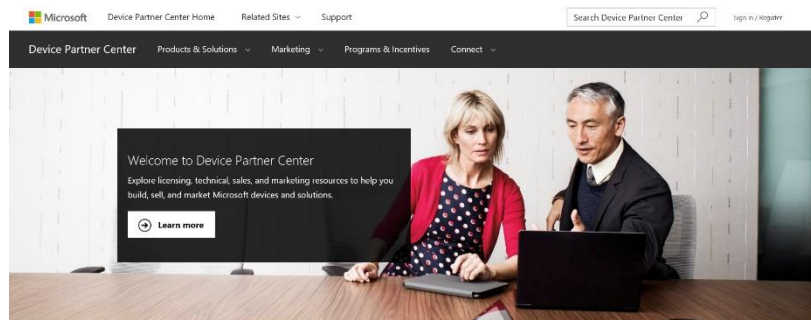- Windows Application and Deployment Kit (ADK). The ADK is a free download: https://developer.microsoft.com/en-us/windows/hardware/windows-assessment-deployment-kit
- Windows 10 IoT Core ADK Add-Ons (ADK Add-on Kit) (https://github.com/ms-iot/iot-adk-addonkit/)
- Windows IoT Core build files (MSDN and https://www.microsoft.com/en-us/software-download/windows10iotcore)
- BSP for your platform

The Windows 10 IoT Core Manufacturing Guide is a good place to get started with image development.

3.2   Windows 10 Enterprise LTSC

Over the years, special Windows Embedded editions came as toolkits. The toolkits had special OS development tools to build custom images. Starting with Windows Embedded 8.1 Industry, the image development tools are the same as the desktop, which uses System Image Manager (SIM) from the Windows Application and Deployment Kit (ADK). The ADK is a free download: https://developer.microsoft.com/en-us/windows/hardware/windows-assessment-deployment-kit. SIM can be used with the following Windows operating systems:

- Windows 10
- Windows 10 IoT Enterprise (aka Windows 10 Enterprise LTSB)
- Windows® 8.1
- Windows® 8
- Windows® 7
- Windows Server® 2012 R2
- Windows Server® 2012
- Windows Server® 2008 R2
- Windows Server® 2008
- Windows® Embedded 8.1 Industry
- Windows® Embedded 8 Industry
- Windows® Embedded POSReady 7

For more information on using SIM, please see the book *Starter Guide for Windows® 10 IoT Enterprise*, which covers the details of SIM.

4   Windows IoT Core Services

Runtime keys and license stickers are not needed for Windows IoT Core. Windows IoT Core is free so long as the devices are never connected to the internet. If you are connecting to Microsoft Azure then you will have to sign up for Windows 10 IoT Core Services. The services help to keep the device updated in the field via Azure. For more information, contact your distributor or visit the Windows 10 IoT Core Services site.

Windows IoT Core does need a code signing certificate to build a retail image for production. We covered the details of this certificate in the article "Windows® 10 IoT Core Retail Build with Code Signing Certificate".

5   Royalty and Production Runtime License Keys for Windows 10 Enterprise LTSC

Windows 10 Enterprise requires a royalty payment for each unit shipped, a sticker to be placed on each unit and a product runtime license key in the image. For Windows 10 Enterprise, there are three different royalty payment levels:

Level	Target CPU
High End	Intel i7, Xeon or AMD FX7500/FX9590
Value	Intel Celeron, i3, i5, AMD A10, A8
Entry	Intel Atom or AMD E1, E2, A4, A6

As the Windows 10 Enterprise LTSC image is being developed, it is important to get the production runtime license key to include with the image. The runtime key is a 5x5 alphanumeric key that is assigned to your company by Microsoft. This key is also known as the EPKEA activation key. For embedded OEMs, you only need one runtime key for all the images that you will build. The key that you receive is assigned to your company.

Note: The operating system OPKs will come with a paper with default keys. These default keys can be used during development, but a production key is required for manufacturing.

To obtain the runtime key, contact your distributor, and they will send your request to Microsoft. Alternatively, you can request the OEM Embedded Activation Product Key Request form from Microsoft at OAsignh@microsoft.com. An e-mail with the product key will be sent back to the person at your company that signed the CLA.

Once you have the key, the developer can put the key into the image. If using System Image Manager to create the custom image, the key can be placed in the Microsoft-Windows-Setup component Pass 1 UserData->ProductKey->Key of the main answer file.
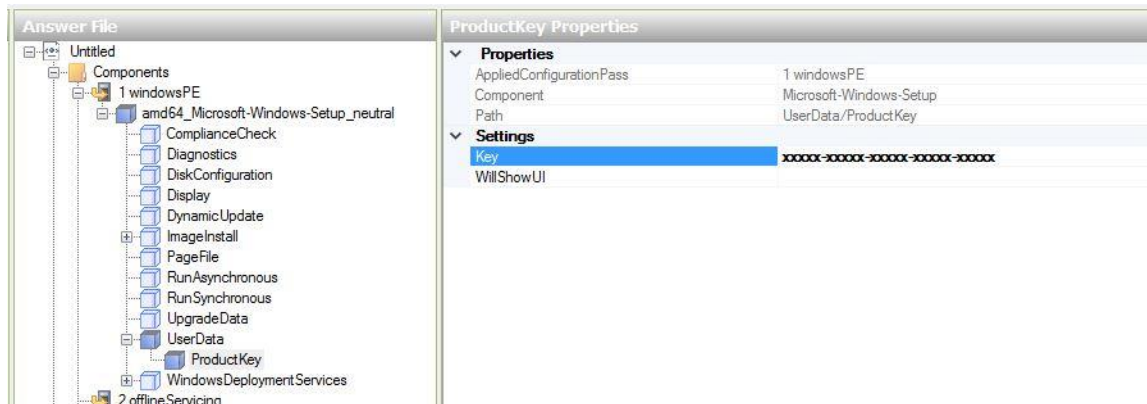
For a Sysprep unattended file used to create a master image for production, the key can be placed in the Microsoft-Windows-Shell-Setup component Pass 4 ProductKey.
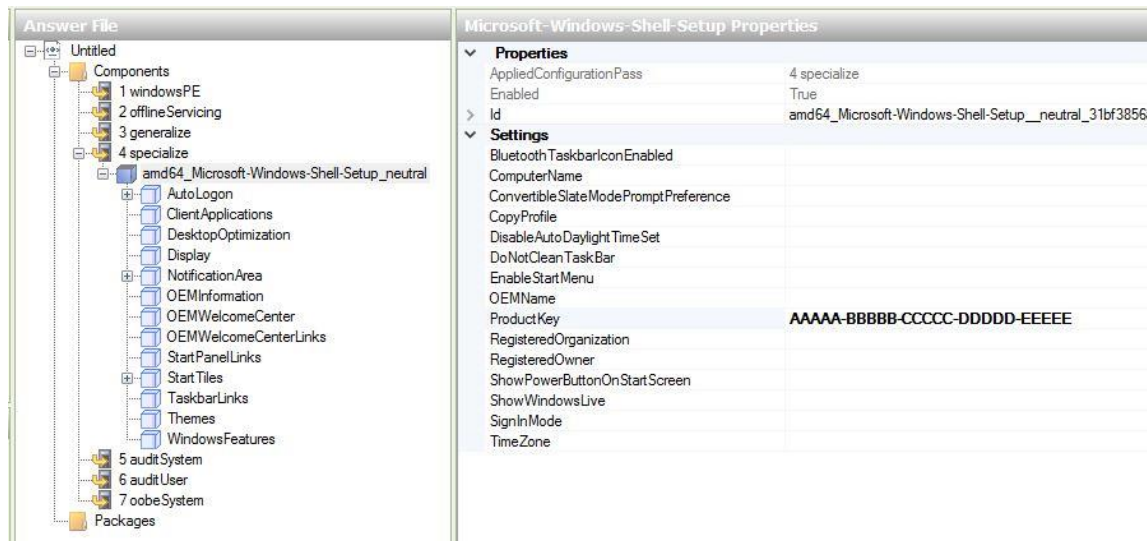

It is important to know that the answer files get installed with the image in a couple of places. The file at this point is no longer needed so they can use a script or sync command in the Sysprep unattended file to remove the XML files so no one can get the key.

6 License Stickers for Windows 10 Enterprise LTSC

When you are ready to ship a product, license stickers must be placed on each unit that ships with a Windows 10 Enterprise LTSC Operating System. To orders stickers, please contact your Microsoft distributor.

Each sticker has a unique serial number key. THIS UNIQUE SERIAL KEY IS NOT THE Product RUNTIME KEY TO BE USED IN THE IMAGE. The unique serial number key should be entered into a spreadsheet or database along with the serial number of the unit and where it was shipped. This information can be used for audit purposes. Here is an example sticker:
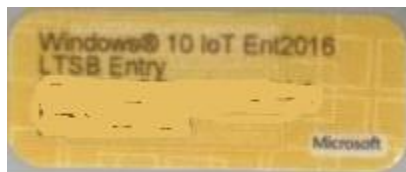
7 Product End-of-Life Dates

Pay attention to any news from the Device Partner Center, the distributor, or from Microsoft about product End-of-Life dates. No orders for stickers can be placed after the End-of-Life date.

For more information on Microsoft's product life cycles, please visit the following website: https://support.microsoft.com/en-us/lifecycle/selectindex or contact your distributor for more information.

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