

# Microsoft Windows XP Embedded Setup Guide

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## 1.1 Software Requirements

- Development machine with Windows XP Professional Operating System
- Target machine with at least 5 GB hard disk
- Microsoft Windows XP Embedded tools Service Pack 2 (needs Service Pack 1 to be installed first). An evaluation version is available online at <http://www.microsoft.com/downloads/details.aspx?familyid=dacd1722-256b-48c5-91c1-af6062340efc&displaylang=en>
- Microsoft Windows XP SP2 Feature Pack 2007. Eval version is available at <http://www.microsoft.com/downloads/details.aspx?FamilyID=9bdf1dea-a37e-4d25-83df-aabb78914f&displaylang=en>
- Componentized version (sld files with repository) of USB Client driver

## 1.2 Detailed setup procedure to build XP Embedded image with USBC driver

1. Install the Windows XP Embedded SP2 and Feature Pack 2007 tools on the development machine
2. The Target should have a bootable drive – preferably XP, this is required to run the command **tap.exe** in the next step.  
OR  
Refer to the following Microsoft link to run the command - <http://msdn.microsoft.com/en-us/library/aa460355.aspx>

### Target Hardware profile

3. To know the target hardware profile, user needs to run a utility called **tap.exe** (available in C:\Program Files\Windows Embedded\utilities assuming C drive as the XP Embedded tools installation drive)
4. Run **tap.exe**, this creates a file called **Devices.pmq** in the same folder
5. Run **Component Designer**. From the **File** menu, choose **Import**. The **Choose File for Import** dialog box appears. Browse and choose **Devices.pmq** file and then click **Open**

6. Enter a log file name if you want and click **Start** to import the **Devices.pmq** file into **Component Designer**. It usually takes several minutes for the entries in the **Devices.pmq** file to be matched with the device drivers available in the database
7. When finished, click **Close**. The **Devices.sld** file appears in the left pane of **Component Designer**. From the **File** menu, Click **Save** to save the sld file.
8. Close **Component Designer**. Import this sld file into the **Component Database Manager** (explained next)

## Import sld files into Component Database Manager

9. Run **Component Database Manager** from Start->Microsoft Windows Embedded Studio.
10. Click on the **Import** button (from default active **Database** tab). Browse through the USBC components, and select the sld file. For e.g., select pbo-core.sld file from Chipset/sld/. Note that '**Copy repository files to repository root**' message should be checked.
11. Click **Import** and the copying of repository files to the database proceeds. After completion, '*Import Succeeded*' and '*Changes to the database have been committed*' messages appear. Click **Close**
12. Repeat the steps (10 and 11) for all the available sld files individually (Chipset/sld/pbo-usb.sld and USBC/sld/netusb.sld), including the Devices.sld obtained from import of Devices.pmq file
13. A successful import of all the repository files and the components indicates that the components are available for **Target designer** through **Component Database Manager**.

## Build the target image using Target designer

14. Run **Target Designer** from Start->Microsoft Windows Embedded Studio.
15. From **File** menu, click **New**. Enter a name for Configuration Name and click **OK**
16. In the left-most pane, all components available in the database is listed. Note that it should also have **devices** component listed. Right-click on the **devices** component and click **Add** which adds the target hardware profile to the image
17. Now to add the components in the sld file to image, search for all sld-specific components in the database using the **Search** box in left-most pane in **Target Designer**. For example, to add **Intel(R) SCH Family PCI Express Root Port 1 -8110** component from the pbo-core.sld file, enter the string '*Intel(R) SCH Family PCI Express Root Port 1 -8110*' in Search box, hit Search. The searched item is highlighted. Right-click on the highlighted item

(in this case 'Intel(R) SCH Family PCI Express Root Port 1 -8110') and click **Add**.

Following are the components available for the USBC SLD files.

For pbo-core.sld,

- Intel(R) SCH Family PCI Express Root Port 1 -8110
- Intel(R) SCH Family PCI Express Root Port 1 -8111
- Intel(R) SCH Family PCI Express Root Port 1 -8112
- Intel(R) SCH Family PCI Express Root Port 1 -8113
- Intel(R) SCH LPC Interface Controller - 8119

For pbo-usb.sld file,

- Intel(R) SCH Family USB Universal Host Controller – 8114
- Intel(R) SCH Family USB Universal Host Controller – 8115
- Intel(R) SCH Family USB Universal Host Controller – 8116
- Intel(R) SCH Family USB2 Universal Host Controller – 8117

For netusbc.sld file,

- Intel(R) USB Client Ethernet Device

So, in the search box, search for all these components, adding the searched item one-by-one.

18. Also, search for '*Device Manager*' component and add it to the image. This component is required to verify the successful installation of USBC driver once XP Embedded boots up.
19. From the **Configuration** menu, click **Check Dependencies**. It takes a while to complete the dependency check and add all dependent files to the image configuration. After the dependency check is completed, click **Close**
20. Resolve any errors. Errors if any, are listed in the **Tasks** tab in the bottom pane. So, right-click on the each of the errors (if the errors are more than one), click **Action** Select the appropriate component and click **Add**
21. Note that the **Tasks** are stricken once the action (of adding dependency components) is undertaken
22. In the middle pane of target designer, where the list of added components to the image configuration is displayed, find a component named 'User Account' Double click on it and it shows **Settings**. Clicking on the settings will open **User Account Properties** on the right-most pane. In **Account Properties**, enter a username and password in the respective boxes, and check **Administrator** radio button for **User Type**. This will create a windows login screen that would prompt for a User name and password upon Windows XP Embedded logon.
23. Repeat steps (19 to 21) (Check dependency and resolve errors) until all errors are resolved
24. Click on **Configuration**, click **Build target image**
25. Set the Build type to Release (automatically selected by default)

26. Set the Destination folder where the built images should go. (Default is C:\Windows Embedded Images\ where C is the XP Embedded installation drive)

27. Click **Build**. If check dependency is not done prior to build, a Message is displayed as follows

It appears that you have not run a dependency check since the last time you changed this file.  
Would you like to run a check right now?  
(highly recommended)

Click **Yes**.

The actual build process takes sometime, after the build completes, click **Close**. Save the configuration by clicking **Save** from the File menu. Close the target designer by clicking **Exit** from the **File** menu.

28. Copy the built XP Embedded image (default from C:\Windows Embedded Images) to the target hard drive primary partition. The XP Embedded image contains following files:  
ntldr, weruntime.ini, nt detect.com, boot.ini  
and folders:  
Program Files, Windows, Documents and Settings

## Booting XP Embedded target

29. When XP embedded is booted for the first time, **First Boot Agent (FBA)** runs which instantiates all the components before coming up with the Windows XP Embedded Login Screen