

Microsoft Windows XP Embedded

# Building a Run-Time Image

These are the major steps involved in creating a run-time image:

1. [Analyze the Target Device](#)
2. [Create a Basic Configuration](#)
3. [Add a Component to the Configuration](#)
4. [Check Component Dependencies](#)
5. [Build the Run-Time Image](#)
6. [Prepare the Target Device for Image Deployment](#)
7. [Deploy the Run-Time Image](#)
8. [Test and Debug the Run-Time Image](#)

## See Also

[Tutorial: Building a Run-Time Image](#)

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# Analyze the Target Device

Use the Target Analyzer probes to create a comprehensive list of all hardware devices installed on the device. You can choose from either of the Target Analyzer probes, Ta.exe or Tap.exe. Ta.exe is a real-mode 16-bit application that can be run using Microsoft MS-DOS. Tap.exe is a protected Microsoft Win32-based application that runs on Microsoft Windows XP or Microsoft Windows 2000 Service Pack (SP) 2 OS that supports Plug and Play. Tap.exe produces a more complete and refined hardware list than Ta.exe.

The following list shows the hardware requirements for the Microsoft Windows Preinstallation Environment that is included on the Windows XP Embedded CD 1.

- A computer that can boot from an El Torito CD.
- A Pentium, preferably Pentium II or later, CPU.
- 128 MB RAM. It is possible that 64 MB will work but it may cause a low memory error if networking is initialized.
- A display adapter that supports VESA mode video.

After you have booted the device, run either [Target Analyzer](#) probe program, based on your needs. The Target Analyzer probe creates a file that contains the Plug and Play identifiers for each device installed on the target device. The default name for the .pmq file is Devices.pmq. Copy the device list to your

development system.

## See Also

[Create a Basic Configuration](#)

[Building a Run-Time Image](#)

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# Create a Basic Configuration

You create a configuration using one of the following two methods:

- Using the Target Designer import function.
- Using Target Designer to manually create a configuration.

## To import the device list

1. To create a configuration based on the device list, run Target Designer.

The device list is imported as a configuration into the configuration editor.

2. From the **File** menu, choose **Import**.
3. In the **Choose File for Import** dialog box, type the name of the device list, or browse to search for the file.
4. Choose **Import**.

## See Also

[Add a Component to the Configuration](#)

[Analyze the Target Device](#)

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## Add a Component to the Configuration

There are four ways to add a component to a configuration in Target Designer:

- From the **Configuration** menu, choose **Add Component**.
- Drag the component from the component browser, and then drop it into the configuration editor.
- Right-click the component, and then choose **Add**.
- Choose the component in the component browser, and then choose **Add** on the toolbar.

### See Also

[Check Component Dependencies](#)

[Create a Basic Configuration](#)

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## Check Component Dependencies

A dependency is a functional relationship between two or more components. Before building your configuration into a run-time image, you should run a dependency check to ensure that all the component dependencies have been resolved.

To check your dependencies, choose the **Configuration** menu in Target Designer, and then choose **Check Dependencies**.

If the dependency check encounters components with unresolved dependencies, a task describing the requirement is automatically added to the Tasks list for each unresolved dependency.

You can locate a resolution by opening a task. The database shows only the component or components that can resolve the task. You simply select the check box for a component, and then choose **OK**.

For example, the following task may appear in the Tasks list:

COM Base [Version 1.0, R1] is dependent upon at least one of component 'RPCSS [Version 1.0, R4]'

For this example, you would open the task. The task becomes a filter that searches the database for all

components that contain the name RPCSS [Version 1.0, R4]. The **Resolve Dependency** dialog box then displays only the components containing RPCSS in the name.

Continue resolving tasks, closing each task as it is resolved. When all tasks have been resolved, run the dependency check again, because a new component added as a resolution may have other dependencies. Ensure that all dependencies are resolved.

### See Also

[Build the Run-Time Image](#)

[Add a Component to the Configuration](#)

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## Build the Run-Time Image

The build process uses the information in a configuration to construct a complete run-time image.

### To build the run-time image

1. From the **Configuration** menu in Target Designer, choose **Build Target Image**.
2. In the **Build type** box, select **Release**.

**Note** Select **Release** even during development and when you are debugging an application. Select **Debug** if you are performing a low-level OS debug, such as debugging a device driver.

3. In the **Destination** box, type the full path where you want to store the new run-time image.
4. In the **Log file** box, type the full path and file name for the log file.
5. Choose **Build**.

If the target directory is not empty, Target Designer prompts you to confirm the deletion of the directory.

### See Also

[Prepare the Target Device for Image Deployment](#)

[Check Component Dependencies](#)

## [Building a Run-Time Image](#)

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# Prepare the Target Device for Image Deployment

After you have built your run-time image, you need to prepare your device for image deployment.

The BootPrep tool prepares your device for booting a Windows embedded system. The device must have an active partition that has been formatted and made bootable with a FAT16, FAT 16, or FAT32. The BootPrep tool replaces the partition boot sector code that would typically boot into MS-DOS by loading Io.sys and Msdos.sys with the code that loads the Windows NT loader, called NTLDR.

**Note** NTFS file systems are not supported by this utility. If you wish to use NTFS file system, you must create your initial file system using one of the FAT file systems and then use the Convert tool provided with Windows XP to convert your file system to the NTFS file system.

### See Also

[Deploy the Run-Time Image](#)

[Build the Run-Time Image](#)

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# Deploy the Run-Time Image

After you have prepared your device for deployment, you are ready to deploy the run-time image from your development system to your device.

You can transfer the image using traditional methods such as disk, or bootable CD-ROM. You can also swap a storage device such as a hard disk drive or persistent storage module, such as ROM or flash memory or disk. You can also transfer the image electronically over a communications line.

You can use the deployment tools to transfer, install, and configure the run-time image to your device.

### See Also

[Test and Debug the Run-Time Image](#)

[Prepare the Target Device for Image Deployment](#)

[Building a Run-Time Image](#)

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## Test and Debug the Run-Time Image

After deploying the run-time image to your device, you should perform final testing and debugging. If you need to replace, add, or remove one or more components, you must use the configuration that you used to build the run-time image.

### See Also

[Deploy the Run-Time Image](#)

[Building a Run-Time Image](#)

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