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Detecting and installing .NET

WiX includes a number of MSI properties and bundle variables to detect .NET Framework, .NET Core, and .NET in the WixToolset.Netfx.wixext WiX extension. There is also a custom action to generate native images on .NET Framework. To use them, add a package reference to WixToolset.Netfx.wixext in your .wixproj or use `wix extension` and `wix build -ext` at the command line.

.NET Framework

WixToolset.Netfx.wixext includes support for "traditional" .NET Framework (as compared to .NET Core and just-call-me-.NET v5 and later).



INFO

Documentation is provided here for WixToolset.Netfx.wixext functionality for currently-supported versions of .NET Framework. Functionality for older versions is available but not documented.

Native-image generation

The `NativeImage` element marks a file to have the WixToolset.Netfx.wixext custom actions invoke the .NET Framework NGen tool during installation.

```
<Wix
  xmlns="http://wixtoolset.org/schemas/v4/wxs"
  xmlns:netfx="http://wixtoolset.org/schemas/v4/wxs/netfx">

  <Fragment>
    <Component>
      <File Source="Important.exe">
        <netfx:NativeImage
          Id="ImportantNgen"
          Platform="64bit" />
        </File>
      </Component>
    </Fragment>
  </Wix>
```

WIX_IS_NETFRAMEWORK_451_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.5.1 or later is installed.
WIX_IS_NETFRAMEWORK_452_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.5.2 or later is installed.
WIX_IS_NETFRAMEWORK_46_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.6 or later is installed.
WIX_IS_NETFRAMEWORK_461_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.6.1 or later is installed.
WIX_IS_NETFRAMEWORK_462_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.6.2 or later is installed.
WIX_IS_NETFRAMEWORK_472_OR_LATER_INSTALLED	Set to 1 if .NET Framework 4.7.2 or later is installed.

Property	Description
<code>WIX_IS_NETFRAMEWORK_48_OR_LATER_INSTALLED</code>	Set to 1 if .NET Framework 4.8 or later is installed.
<code>WIX_IS_NETFRAMEWORK_481_OR_LATER_INSTALLED</code>	Set to 1 if .NET Framework 4.8.1 or later is installed.

For example:

```
<PropertyRef Id="WIX_IS_NETFRAMEWORK_48_OR_LATER_INSTALLED" />

<Launch
  Message="This application requires .NET Framework 4.8 or later."
  Condition="Installed OR WIX_IS_NETFRAMEWORK_48_OR_LATER_INSTALLED"
/>
```

The following property is applicable to all versions of the .NET Framework:

Property	Description
<code>NETFRAMEWORKINSTALLROOTDIR</code>	Set to the root installation directory for all versions of the .NET Framework (%windir%\Microsoft.NET\Framework\).

These properties are available for the .NET Framework 3.5 product family:

Property	Description
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Property	Description
NETFRAMEWORK35	Set to #1 if the .NET Framework 3.5 is installed (not set otherwise).
NETFRAMEWORK35_SP_LEVEL	Indicates the service pack level for the .NET Framework 3.5.
NETFRAMEWORK35INSTALLROOTDIR	Set to the installation directory for the .NET Framework 3.5 (%windir%\Microsoft.NET\Framework\v3.5).
NETFRAMEWORK35INSTALLROOTDIR64	Set to the installation directory for the 64-bit .NET Framework 3.5 (%windir%\Microsoft.NET\Framework64\v3.5).
NETFRAMEWORK35_ZH_CN_LANGPACK	Set to #1 if the .NET Framework 3.5 Chinese (Simplified) language pack is installed (not set otherwise).
NETFRAMEWORK35_ZH_TW_LANGPACK	Set to #1 if the .NET Framework 3.5 Chinese (Traditional) language pack is installed (not set otherwise).
NETFRAMEWORK35_CS_CZ_LANGPACK	Set to #1 if the .NET Framework 3.5 Czech language pack is installed (not set otherwise).
NETFRAMEWORK35_DA_DK_LANGPACK	Set to #1 if the .NET Framework 3.5 Danish language pack is installed (not set otherwise).
NETFRAMEWORK35_NL_NL_LANGPACK	Set to #1 if the .NET Framework 3.5 Dutch language pack is installed (not set otherwise).
NETFRAMEWORK35_FI_FI_LANGPACK	Set to #1 if the .NET Framework 3.5 Finnish language pack is installed (not set

Property	Description
	otherwise).
NETFRAMEWORK35_FR_FR_LANGPACK	Set to #1 if the .NET Framework 3.5 French language pack is installed (not set otherwise).
NETFRAMEWORK35_DE_DE_LANGPACK	Set to #1 if the .NET Framework 3.5 German language pack is installed (not set otherwise).
NETFRAMEWORK35_EL_GR_LANGPACK	Set to #1 if the .NET Framework 3.5 Greek language pack is installed (not set otherwise).
NETFRAMEWORK35_HU_HU_LANGPACK	Set to #1 if the .NET Framework 3.5 Hungarian language pack is installed (not set otherwise).
NETFRAMEWORK35_IT_IT_LANGPACK	Set to #1 if the .NET Framework 3.5 Italian language pack is installed (not set otherwise).
NETFRAMEWORK35_JA_JP_LANGPACK	Set to #1 if the .NET Framework 3.5 Japanese language pack is installed (not set otherwise).
NETFRAMEWORK35_KO_KR_LANGPACK	Set to #1 if the .NET Framework 3.5 Korean language pack is installed (not set otherwise).
NETFRAMEWORK35_NB_NO_LANGPACK	Set to #1 if the .NET Framework 3.5 Norwegian language pack is installed (not set otherwise).
NETFRAMEWORK35_PL_PL_LANGPACK	Set to #1 if the .NET Framework 3.5 Polish language pack is installed (not set otherwise).

Property	Description
<code>NETFRAMEWORK35_PT_BR_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Portuguese (Brazil) language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_PT_PT_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Portuguese (Portugal) language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_RU_RU_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Russian language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_ES_ES_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Spanish language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_SV_SE_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Swedish language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_TR_TR_LANGPACK</code>	Set to #1 if the .NET Framework 3.5 Turkish language pack is installed (not set otherwise).
<code>NETFRAMEWORK35_CLIENT</code>	Set to #1 if the .NET Framework 3.5 client profile is installed (not set otherwise).
<code>NETFRAMEWORK35_CLIENT_SP_LEVEL</code>	Indicates the service pack level for the .NET Framework 3.5 client profile.

Because .NET Framework v4.5 and later are in-place updates, the following properties apply to all currently-supported versions of .NET Framework v4.x. For more information, see [.NET Framework deployment guide for developers](#).

Property	Description
NETFRAMEWORK4X	Set to Release number of the .NET Framework 4.X if installed (not set otherwise).
NETFRAMEWORK4X_AR_SA_LANGPACK	Set to Release number of the .NET Framework 4.X Arabic language pack if installed (not set otherwise).
NETFRAMEWORK4X_ZH_CN_LANGPACK	Set to Release number of the .NET Framework 4.X Chinese (Simplified) language pack if installed (not set otherwise).
NETFRAMEWORK4X_ZH_TW_LANGPACK	Set to Release number of the .NET Framework 4.X Chinese (Traditional) language pack if installed (not set otherwise).
NETFRAMEWORK4X_CS_CZ_LANGPACK	Set to Release number of the .NET Framework 4.X Czech language pack if installed (not set otherwise).
NETFRAMEWORK4X_DA_DK_LANGPACK	Set to Release number of the .NET Framework 4.X Danish language pack if installed (not set otherwise).
NETFRAMEWORK4X_NL_NL_LANGPACK	Set to Release number of the .NET Framework 4.X Dutch language pack if installed (not set otherwise).
NETFRAMEWORK4X_FI_FI_LANGPACK	Set to Release number of the .NET Framework 4.X Finnish language pack if installed (not set otherwise).

Property	Description
NETFRAMEWORK4X_FR_FR_LANGPACK	Set to Release number of the .NET Framework 4.X French language pack if installed (not set otherwise).
NETFRAMEWORK4X_DE_DE_LANGPACK	Set to Release number of the .NET Framework 4.X German language pack if installed (not set otherwise).
NETFRAMEWORK4X_EL_GR_LANGPACK	Set to Release number of the .NET Framework 4.X Greek language pack if installed (not set otherwise).
NETFRAMEWORK4X_HE_IL_LANGPACK	Set to Release number of the .NET Framework 4.X Hebrew language pack if installed (not set otherwise).
NETFRAMEWORK4X_HU_HU_LANGPACK	Set to Release number of the .NET Framework 4.X Hungarian language pack if installed (not set otherwise).
NETFRAMEWORK4X_IT_IT_LANGPACK	Set to Release number of the .NET Framework 4.X Italian language pack if installed (not set otherwise).
NETFRAMEWORK4X_JA_JP_LANGPACK	Set to Release number of the .NET Framework 4.X Japanese language pack if installed (not set otherwise).
NETFRAMEWORK4X_KO_KR_LANGPACK	Set to Release number of the .NET Framework 4.X Korean language pack if installed (not set otherwise).

Property	Description
NETFRAMEWORK4X_NB_NO_LANGPACK	Set to Release number of the .NET Framework 4.X Norwegian language pack if installed (not set otherwise).
NETFRAMEWORK4X_PL_PL_LANGPACK	Set to Release number of the .NET Framework 4.X Polish language pack if installed (not set otherwise).
NETFRAMEWORK4X_PT_BR_LANGPACK	Set to Release number of the .NET Framework 4.X Portuguese (Brazil) language pack if installed (not set otherwise).
NETFRAMEWORK4X_PT_PT_LANGPACK	Set to Release number of the .NET Framework 4.X Portuguese (Portugal) language pack if installed (not set otherwise).
NETFRAMEWORK4X_RU_RU_LANGPACK	Set to Release number of the .NET Framework 4.X Russian language pack if installed (not set otherwise).
NETFRAMEWORK4X_ES_ES_LANGPACK	Set to Release number of the .NET Framework 4.X Spanish language pack if installed (not set otherwise).
NETFRAMEWORK4X_SV_SE_LANGPACK	Set to Release number of the .NET Framework 4.X Swedish language pack if installed (not set otherwise).
NETFRAMEWORK4X_TR_TR_LANGPACK	Set to Release number of the .NET Framework 4.X Turkish language pack if installed (not set otherwise).

.NET Framework detection variables for bundles

Variable	Description
<code>NETFRAMEWORK35_SP_LEVEL</code>	Indicates the service pack level for the .NET Framework 3.5.
<code>WixNetFramework4xInstalledRelease</code>	Set to Release number of the .NET Framework 4.x if installed (not set otherwise).

For example:

```
<util:RegistrySearchRef Id="WixNetFramework4xInstalledRelease" />
```

Package groups to install .NET in bundles

PackageGroup Id	Description
<code>NetFx462Web</code>	.NET Framework v4.6.2 Web redistributable installer
<code>NetFx462WebAsPrereq</code>	.NET Framework v4.6.2 Web redistributable installer, as a managed-code bootstrapper application prerequisite
<code>NetFx462Redist</code>	.NET Framework v4.6.2 standalone redistributable installer
<code>NetFx462RedistAsPrereq</code>	.NET Framework v4.6.2 standalone redistributable installer, as a managed-code bootstrapper

PackageGroup Id	Description
	application prerequisite
NetFx472Web	.NET Framework v4.7.2 Web redistributable installer
NetFx472WebAsPrereq	.NET Framework v4.7.2 Web redistributable installer, as a managed-code bootstrapper application prerequisite
NetFx472Redist	.NET Framework v4.7.2 standalone redistributable installer
NetFx472RedistAsPrereq	.NET Framework v4.7.2 standalone redistributable installer, as a managed-code bootstrapper application prerequisite
NetFx48Web	.NET Framework v4.8 Web redistributable installer
NetFx48WebAsPrereq	.NET Framework v4.8 Web redistributable installer, as a managed-code bootstrapper application prerequisite
NetFx48Redist	.NET Framework v4.8 standalone redistributable installer
NetFx48RedistAsPrereq	.NET Framework v4.8 standalone redistributable installer, as a managed-code bootstrapper application prerequisite
NetFx481Web	.NET Framework v4.8.1 Web redistributable installer
NetFx481WebAsPrereq	.NET Framework v4.8.1 Web redistributable installer, as a managed-code bootstrapper application

PackageGroup Id	Description
	prerequisite
NetFx481Redist	.NET Framework v4.8.1 standalone redistributable installer
NetFx481RedistAsPrereq	.NET Framework v4.8.1 standalone redistributable installer, as a managed-code bootstrapper application prerequisite

For example:

```
<Chain>
  <!-- Our BA needs .NET 4.8, so make sure to include that as a prereq! -->
  <PackageGroupRef Id="NetFx48RedistAsPrereq" />
</Chain>
```

.NET and .NET Core

This section documents support in WixToolset.Netfx.wixext for non-Framework .NET -- .NET Core and .NET (v5 and later).

Detecting .NET in MSI packages

WixToolset.Netfx.wixext supports these elements to detect .NET in packages:

Element	Description
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Element	Description
<code>DotNetCompatibilityCheck</code>	Sets a property to a value indicating whether an appropriate version of the .NET runtime is already installed on the machine.
<code>DotNetCompatibilityCheckRef</code>	References a <code>DotNetCompatibilityCheck</code> defined elsewhere.

For example:

```
<netfx:DotNetCompatibilityCheck  
  Property="DOTNETRUNTIMECHECK"  
  RollForward="major"  
  RuntimeType="desktop"  
  Version="6.0.0"  
>
```

Detecting .NET in bundles


WixToolset.Netfx.wixext supports these elements to detect .NET in bundles:

Element	Description
<code>DotNetCoreSdkFeatureBandSearch</code>	Sets a variable to the latest installed version of the specified .NET SDK by feature band .
<code>DotNetCoreSdkFeatureBandSearchRef</code>	References a <code>DotNetCoreSdkFeatureBandSearch</code> defined elsewhere.

Element	Description
<code>DotNetCoreSdkSearch</code>	Sets a variable to the latest installed version of the specified .NET SDK.
<code>DotNetCoreSdkSearchRef</code>	References a <code>DotNetCoreSdkSearch</code> defined elsewhere.
<code>DotNetCoreSearch</code>	Sets a variable to the latest installed version of the specified .NET runtime type.
<code>DotNetCoreSearchRef</code>	References a <code>DotNetCoreSearch</code> defined elsewhere.

For example:

```
<netfx:DotNetCoreSearch
  RuntimeType="aspnet"
  Platform="x64"
  MajorVersion="6"
  Variable="AspNetCoreRuntimeVersion"
/>
<netfx:DotNetCoreSdkSearch
  MajorVersion="6"
  Variable="NetCoreSdkVersion"
/>
<netfx:DotNetCoreSdkFeatureBandSearch
  Version="6.0.100"
  Variable="NetCoreSdkSixOneHundredVersion"
/>
```

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