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Technical Bulletin

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Product:	VISIONPRO	Rev: 7.0, 7.1, 7.2, 8.0
Title: Visual Studio 2010, .NET 4.0 Framework, and Cognex.VisionPro.QuickBuild.exe		

PURPOSE

This bulletin describes a limitation that can occur when using VisionPro® to create a custom application that uses Microsoft® Visual Studio 2010 and targets the .NET 4.0 Framework by enabling the useLegacyV2RuntimeActivationPolicy in the application's app.config file.

This bulletin only applies to VisionPro versions 7.0, 7.1, 7.2, and 8.0, since those were the releases that supported Visual Studio 2010 and the .NET 4.0 Framework by using the useLegacyV2RuntimeActivationPolicy in the application's app.config file. This bulletin does not apply when creating VisionPro applications using Microsoft Visual Studio and targeting the .NET 2.0, 3.0, or 3.5 Frameworks.

If you launch Cognex.VisionPro.QuickBuild.exe and attempt to load a VisionPro VPP file that contains a CogJobManager application that was created from a custom application using the Microsoft Visual Studio 2010 and targeting the .NET 4.0 Framework by enabling the useLegacyV2RuntimeActivationPolicy, the file may fail to load with the error message as shown in Figure 1.

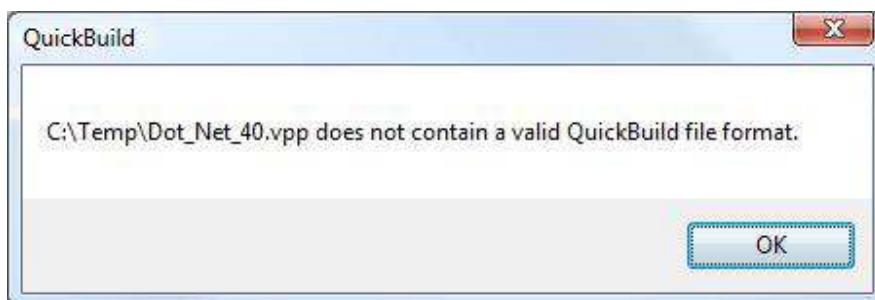


Figure 1: Error message when loading a VPP file

TECHNICAL DETAILS

The VisionPro software assemblies (versions 7.0, 7.1, 7.2, and 8.0) are built against and depend upon the .NET 2.0 Framework. All utilities and executables installed with VisionPro are .NET 2.0 based. This means that Cognex.VisionPro.QuickBuild.exe is a .NET 2.0 based application.

However, when creating a custom VisionPro application using Microsoft Visual Studio 2010 you are allowed to target and use the .NET 4.0 Framework. In order for the .NET 4.0 Framework based

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application to work with VisionPro assemblies that are built against the .NET 2.0 Framework, the application's app.config file must have an entry that enables useLegacyV2RuntimeActivationPolicy.

See the VisionPro help topic "Targeting .NET 4.0 with Visual Studio 2010" for more information on using the useLegacyV2RuntimeActivationPolicy.

The problem only occurs if you serialize your custom VisionPro application that targets the .NET 4.0 Framework into a VPP file using CogSerialize.SaveObjectToFile. There is a chance that a .NET 4.0 Framework type could get serialized into the VPP file. Even if your application is not using any .NET 4.0 types directly, the serialized VPP file may contain .NET 4.0 only types that have no .NET 2.0 equivalent.

If you then launch VisionPro.Cognex.QuickBuild.exe to open the saved VPP file, there is a chance it may fail to load as shown in Figure 1.

The file may fail to load because VisionPro.Cognex.QuickBuild.exe is a .NET 2.0 based application and cannot load the .NET 4.0 runtime libraries. If the VPP file happens to contain any .NET 4.0 specific types that are not present in the .NET 2.0 Framework, then the VPP file fails to load.

Here are some suggestions if you encounter this problem:

- Do not target the .NET 4.0 Framework in the custom VisionPro application, especially if the application does not use any .NET 4.0 specific features and classes. Instead, target the application to the .NET 2.0, 3.0, or 3.5 Framework, and it will be compatible with Cognex.VisionPro.QuickBuild.exe.
- Instead of launching Cognex.VisionPro.QuickBuild.exe as a separate process, embed the CogJobManagerEdit control into the custom VisionPro application that is targeting the .NET 4.0 Framework.
- Instead of launching Cognex.VisionPro.QuickBuild.exe as a separate process, embed the CogJobManagerEdit control into a new custom VisionPro application that targets the .NET 4.0 Framework and enables the useLegacyV2RuntimeActivationPolicy switch in the app.config file. This essentially creates a .NET 4.0 compatible version of Cognex.VisionPro.QuickBuild.exe.
- Create a file called Cognex.VisionPro.QuickBuild.exe.config as described in Figure 2. Place this file in the same directory as Cognex.VisionPro.QuickBuild.exe. This will enable Cognex.VisionPro.QuickBuild.exe to load the .NET 4.0 runtime libraries and it may allow the VPP file to load properly. However, be aware that when this file is present and you save VPP files from QuickBuild, it will always require the .NET 4.0 Framework. Also note that you may need to remove this file when working with older VPP files so that they continue to successfully load. This workaround may not work 100% of the time.

```
<?xml version="1.0"?>
<configuration>
  <startup useLegacyV2RuntimeActivationPolicy="true">
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.0"/>
  </startup>
</configuration>
```

Figure 2: Cognex.VisionPro.QuickBuild.exe.config file

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MOVING FORWARD

If you need to create an application using Microsoft Visual Studio 2010 and must target the .NET 4.0 Framework, please be aware of this limitation when attempting to load serialized VPP files into Cognex.VisionPro.QuickBuild.exe.

Future versions of VisionPro software including Cognex.VisionPro.QuickBuild.exe will be .NET 4.0 based and will thus avoid the limitation described in this bulletin.