



Application Note #4432

Redistributing the GalilTools Library in Microsoft Windows

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Introduction

GalilTools is a set of diagnostic, configuration, and development tools available for use with Galil motion controllers and PLCs.¹ Bundled with all versions of GalilTools is a communication library that allows communication with Galil hardware from user-developed software. The library consists of a C++ communication dll (Galil1.dll) and a Component Object Model (COM) layer on the library (GalilClass0.dll) that extends the library’s compatibility to all COM-aware platforms. This application note will describe how to build a redistributable installer to bundle the essential components for an end-customer deployment, while omitting the unnecessary parts (GUI, documentation, superfluous files, etc).

GalilTools software is installed with the Nullsoft Scriptable Install System (NSIS). NSIS is a powerful, script-driven installation system for Microsoft Windows operating systems. It is totally free and is feature rich, rivaling for-purchase solutions such as InstallShield. This application note will describe how to build an NSIS installer for redistributable GalilTools library applications. NSIS is available from Sourceforge.²

Overview

To ensure compatibility of the deployment with the developer’s system, the script described here is run on a system which already has GalilTools installed. The script will pull out the required components from a GalilTools installation to pack the bare-bones installer. The script installs the following:

1. The Microsoft Visual C Runtime redistributable (vcredist) for the appropriate architecture (x86 or x64)
2. The GalilTools C++ library (Galil1.dll)
3. The GalilTools COM library (GalilClass0.dll, Galil.tlb)

¹ <http://www.galilmc.com/products/galiltools.php>

² http://nsis.sourceforge.net/Main_Page

4. The appropriate, digitally signed PCI driver (x86 or x64) for PCI based motion controllers.
5. Icons and registry entries (allowing Control Panel uninstall of the library)
6. An uninstaller executable

```

C:\PROGRAM FILES\GALIL\GALILTOOLS
|
|  gear.ico
|  uninstall.exe
|
+---bin
|
|  Galil1.dll
|  GalilClass0.dll
|  vcredist_x86.exe
|
+---drivers
|
|  dpinst.exe
|  galilpci.cat
|  galilpci.inf
|  galilpci.sys
|  WdfCoInstaller01009.dll
|
\---lib
|
|  Galil.tlb

```

Code 1 Typical Installation Tree

Galil1.dll is installed into the bin directory of the GalilTools tree. To allow C++ applications to access this library, the PATH environment variable is modified in the installer to include the bin directory.

For applications using the COM component (VB, C#, LabVIEW, etc) the installer registers the COM component by automatically calling regsvr32.exe.

To support PCI applications, the PCI drivers are copied to the deployment machine and installed with dpinst.exe.

The developer can modify or embellish the script to add installation of their own modules, or can call the executable as-is after compiling with the /S switch to run the library installer silently in the background.

The GalilTools GUI installation is mutually exclusive from the Library-Only installer. This means that running the Library-Only installer will uninstall GalilTools. Conversely, installing the GalilTools GUI will uninstall the Library-Only installation. This mutual exclusivity helps to determine deployment installs apart from development, and removes the possibility of COM CLSID conflicts.

Step by step creation of a GalilTools Library installer

Download and install GalilTools

<http://www.galilmc.com/support/downloads/software/galiltools/windows/>

The file will be of the form *GalilTools-ver-b-Win-arch.exe* and *ver* should correspond to the GalilTools version for which the developer's application was developed.

Download and install NSIS and supporting library

<http://nsis.sourceforge.net/Download>

Once installed, download EnvVarUpdate.nsh and place it in the NSIS include directory (e.g. c:\Program Files\NSIS\Include\)

Version archived for this appnote, works with NSIS v2.46:

<http://www.galilmc.com/support/appnotes/software/note4432.zip>

Sourceforge link:

<http://nsis.sourceforge.net/mediawiki/images/a/ad/EnvVarUpdate.7z>

(IZArc is an excellent, free archive utility which can decompress 7z <http://www.izarc.org/>)

Download GalilLibRedist.nsi

Script is contained within this archive:

<http://www.galilmc.com/support/appnotes/software/note4432.zip>

Right-click GalilLibRedist.nsi and choose “Compile NSI Script”

The executable will be created.

See the script comments for command-line details on how to compile an x64 version and for other notes.