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Legal Information

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1

Using FlexNet Publisher with Windows Versions

The following chapter provides information for using FlexNet Publisher on Windows versions. This chapter contains information relevant to both trusted storage-based licensing and license file-based licensing and includes the following sections:

- Prepping Components before signing.
- Using the FLEXnet Licensing Service
- Running the License Server as a Service
- Using LMTOOLS
- Using the Manual Response Generator
- Using the Windows Registry to Store the License Search Path
- Complying with Windows Logo Programs for Software

Prepping Components

This information is specific to trusted storage–based licensing only. The preptool utility in the Licensing toolkit works on unsigned binaries only. If you are planning to use the preptool on the application components, make sure you run the preptool first, and then sign the application components. If you run the preptool on a binary after it has been signed, the binary may not operate properly under Vista. The preptool is used with trusted storage-based licensing only.

Any file that is prepped using preptool should also be signed by software publishers (for example, demo_libFNP.dll and demo.exe, where "demo" is the vendor name).

Using the FLEXnet Licensing Service

The FLEXnet Licensing Service is used with trusted storage–based licensing only. On Windows Vista, the user installing the FLEXnet Publisher Licensing Service must have elevated privileges. The recommended way to deal with functions that require elevated privileges is to use them in a separate component (an executable or installer, for example) and call that component only when required. We recommend that you install the service as part of the FlexEnabled application installation process.

Macrovision provides the DLL, FNP_Act_Installer.dll library that installs the FLEXnet Licensing Service (which is embedded inside the DLL) and performs other setup that is required at the same time as the service install.

This DLL can be used to install the FLEXnet Licensing Service in two ways:

- From a command-line executable. Macrovision provides an example command-line installer which uses FNP_Act_Installer.dll to install the FLEXnet Licensing Service. Under Windows Vista, this command line installer must be run with elevated privileges. This can be achieved by using the 'run-as' option or by signing the executable with an Authenticode certificate.
- From an installer application, such as InstallShield. InstallShield will automatically run in elevated privilege mode. The following are recommendations for installing the service using an MSI-based installer:
  - Have the MSI use the **fnpActSvcInstallForMSI** and **fnpActSvcUninstallForMSI** functions in MSI DLL custom actions to install the service. For more information about these functions, see the document titled *C/C++ Function Reference*. Both actions should be scheduled for deferred execution in the Execute sequence, somewhere after the Install-validate action. To ensure that the install action runs only during the initial installation, give it the condition Not Installed. To ensure that the uninstalling action runs only during a complete uninstallation, give it a condition such as `REMOVE="ALL"`.
  - Set the required execution level to Administrator in the MSI.
  - Ensure that the MSI is packaged as an executable. Vista does not allow an MSI to call out to a DLL (in this case `FNP_Act_Installer.dll`) that executes code requiring Administrative privileges.
  - Ensure that the installer executable is signed with the Publisher's certificate. Vista requires that executables be signed if they call out to DLLs that execute administrative-privilege code. Note that current versions of InstallShield have settings in the Release Wizard to allow you to sign the generated installer executable.

There is an installation example that uses InstallShield packaged in the FlexNet Publisher. This is available in the *platform*`\examples\serviceinstall\` directory. This directory also contains a README file explaining how to use the example. It is recommended that you use the InstallShield 2008 project example because it has additional support for Vista.

Running the FLEXnet Licensing Service

The FLEXnet Licensing Service will run under the “LocalSystem” account. This account is both necessary and sufficient to run the service.

Running the License Server as a Service

The license server executable `lmadmin` (or `lmgrd`) is used with trusted-storage-based and license-file-based licensing to serve licenses from a license server. Either executable can be configured to run as a service under the `LocalSystem` account. This account is both necessary and sufficient for running the service.

Using the Manual Response Generator

The Manual Response Generator is used with trusted storage-based licensing only. To use the Manual Response Generator, you may need to download and install `msxml4.dll` from Microsoft. This DLL is required for the Manual Response Generator interface, but is not part of the Microsoft Vista operating system.

Using LMTOOLS

You must run `LMTOOLS` as an administrator on Windows. If you do not run this executable as an administrator, the User Account Control (UAC) dialog displays as soon as it is started (as long as the UAC prompt is not disabled on the system).

Using the Windows Registry to Store the License Search Path

On Windows versions later than Windows XP, it is stored in this location:

```
HKEY_CURRENT_USER\Software\FLEXlm License Manager
```

Complying with Windows Logo Programs for Software

This section provides information about how the FlexNet Publisher components have been built and packaged, so that you can identify the additional steps necessary to certify your FlexEnabled applications and license server. It does not comprehensively describe the requirements for the Windows Logo Programs for Software. For information about those program, see the Microsoft documentation.

Preparation through Signing, Manifests, and Version Resources

The Windows Logo Programs for Software have certain requirements for software applications to be certified under this program. Although FlexNet Publisher is not certified under these programs, some components have been prepared in such a way that they should not prevent FlexEnabled applications from being certified. To support this, toolkit components have been prepared as follows:

- Certain executables contain embedded manifests that define the execution level.
- Dynamic link libraries and executables contain a version resource.
- Dynamic link libraries and executables have been signed with an Authenticode certificate.

Not all dynamic link libraries and executables have been prepared. For example, binaries built by the packaged `makefile` or `makefile.act` (for example, the vendor daemon) files are not signed. The software publisher must prepare these files to comply with the Windows Logo Programs for Software. In addition, publisher utilities are not signed because they should not be packaged into a FlexEnabled application. The following table summarizes the files that are affected and how they are affected.

Table 1-1 • FlexNet Publisher Licensing Toolkit files

File Name and Installation Location	Version Resource	Embedded Manifest	Signed
i86_n3\appactutil_libFNP.dll	Yes	No	No
i86_n3\demo_libFNP.dll	Yes	No	No
i86_n3\ezcalc_libFNP.dll	Yes	No	No
i86_n3\ezcalcsdtplus_libFNP.dll	Yes	No	No
i86_n3\ezcalcsdt_libFNP.dll	Yes	No	No
i86_n3\FLEXID_Dongle_Driver_Installer.exe	Yes	Yes	No
i86_n3\FNP_Act_Installer.dll	Yes	Yes	Yes
i86_n3\FNPLicensingService.exe (embedded inside FNP_Act_Installer.dll)	Yes	Yes	Yes
i86_n3\installanchorservice.exe	Yes	Yes	Yes
i86_n3\lmborrow.exe	Yes	Yes	Yes
i86_n3\lmdiag.exe	Yes	Yes	Yes
i86_n3\lmdown.exe	Yes	Yes	Yes
i86_n3\lmadmin\lmadmin.exe	Yes	Yes	Yes
i86_n3\lmgrd.exe	Yes	Yes	Yes

Table 1-1 • FlexNet Publisher Licensing Toolkit files

File Name and Installation Location	Version Resource	Embedded Manifest	Signed
i86_n3\lmhostid.exe	Yes	Yes	Yes
i86_n3\lminstall.exe	Yes	Yes	Yes
i86_n3\lmpath.exe	Yes	Yes	Yes
i86_n3\lmrand1.exe	Yes	Yes	Yes
i86_n3\lmremove.exe	Yes	Yes	Yes
i86_n3\lmreread.exe	Yes	Yes	Yes
i86_n3\lmstat.exe	Yes	Yes	Yes
i86_n3\lmstrip.exe	Yes	Yes	Yes
i86_n3\lmswitch.exe	Yes	Yes	Yes
i86_n3\lmswitchr.exe	Yes	Yes	Yes
i86_n3\lmtools.exe	Yes	Yes	Yes
i86_n3\lmutil.exe	Yes	Yes	Yes
i86_n3\lmver.exe	Yes	Yes	Yes
i86_n3\preptool.exe	Yes	Yes	Yes
i86_n3\serveractutil_libFNP.dll	Yes	No	No
i86_n3\tsreset_app_libFNP.dll	Yes	No	No
i86_n3\tsreset_svr_libFNP.dll	Yes	No	No
i86_n3\uninstallanchorservice.exe	Yes	Yes	Yes
i86_n3\examples\serviceinstall\installshield12\FLEXnetActivationService\FNP_Act_Installer.dll	Yes	Yes	Yes
i86_n3\publisher\FnpCommsSoap.dll	Yes	Yes	Yes
i86_n3\publisher\responsegen.dll	Yes	Yes	Yes
i86_n3\publisher\responsegen.exe	Yes	Yes	Yes
i86_n3\publisher\responsegenUI.exe	Yes	Yes	Yes

Table 1-1 • FlexNet Publisher Licensing Toolkit files

File Name and Installation Location	Version Resource	Embedded Manifest	Signed
i86_n3\publisher\tcencrypt.exe	Yes	Yes	Yes
i86_n3\publisher\xmlsign.exe	Yes	Yes	Yes

Using the FLEXnet Licensing Service Installer

The FLEXnet Licensing Service (`FNPLicensingservice.exe`) is used with trusted storage–based licensing only. The FLEXnet Licensing Service (`FNPLicensingservice.exe`) is delivered embedded inside an installer DLL (`FNP_Act_Installer.dll`). To install or uninstall the service, software publishers must call functions exported from this DLL. This file is needed for only those applications that use trusted storage. The Windows Vista Logo Program for Software has specific requirements for installation, make sure you deploy this file in a way that meets those requirements.

For an example about how do install, see the InstallShield 2008 sample project supplied with the kit. This is available in the *platform*`\examples\serviceinstall` directory. This directory also contains a README file explaining how to use the example. It is recommended that you use the InstallShield 2008 project example because it has additional support for Microsoft Vista.

Building the Vendor Daemon

The vendor daemon is used with trusted storage–based and license file–based licensing when licenses are served from a license server. Each software publisher must build their own custom vendor daemon that contains unique vendor keys and encryption seeds.

If you want the vendor daemon to comply with the Windows Logo Programs for Software, you must perform certain additional steps. See the *Development Environment Guide* for more information about building the vendor daemon.

For information about the requirements for the Windows Logo Programs for Software, see the Microsoft documentation.

Adding Support for Windows Event Logging

Windows toolkits contain the file `VendorLicenseServerMsgs.dll`, which you can use with the license server manager to write messages to the Windows Event Log, in addition to the debug log. (It can be used to log English messages only.) This file is not compliant with the Windows Logo Programs for Software because it has not been signed, nor does it contain a version resource.

In general, each publisher should generate their own messages DLL, rather than use this one. For more information about finding and using the source files to build a message DLL, see the *Development Environment Guide*.

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Using FlexNet Publisher with Mac OS X

When using FlexNet Publisher with Mac OS X 10.7, there are some unique characteristics that software publishers must be aware of. This chapter contains information relevant to license file–based licensing.

Code Signing

Mac OS X 10.7 supports the digital signing of executable code as well as other files. This allows both the operating system and the user to know the authenticity of files that are installed on the system. For more information about code signing, see the Apple documentation.

Files provided within the version of the production toolkit that is used on Mac OS X 10.7 are signed when they are not recompiled during use. Files that you create when you are creating a licensed product, including the licensed application, you should sign yourself. The following table lists files and indicates which are provided as signed files and which you need to sign.

Table 2-1 • FlexNet Licensing Files and Code Signing

File Name	Description	Code Signing
	FlexEnabled application	Recommended
	Vendor daemon	Recommended
FnpCommsSoap.dylib	SOAP communications component for transactions with FlexNet Operations	Signed
lmadmin	Web-based license server manager	Signed
lmgrd	Command line license server manager	Signed
lmrand1	Random number generator used to generate LM_SEEDS	Signed

Table 2-1 • FlexNet Licensing Files and Code Signing

File Name	Description	Code Signing
lmstrip	Utility used to obfuscate and add security to FlexEnabled applications	Signed
lmutil	Utilities used for license server management and administration	Signed