



FME Desktop

Administrator's Guide

 **User Guide**

 **Version:** 2022.1

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FME Desktop Administrator's Guide

FME Desktop 2022.1



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Intended Audience

The FME Desktop Administrator's Guide is intended for system administrators and anyone who is responsible for installing and licensing FME Desktop.

For FME Server installation and licensing procedures, see the FME Server Administrator's Guide, located at http://docs.safe.com/fme/html/FME_Server_Documentation/Default.htm.

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Resources

Get the support you need from Safe Software.

Training

Training courses on FME Desktop are offered by Safe Software and our reseller network.

Access training at <https://www.safe.com/training/live-online/>.

- » **Recorded:** Take our full-length FME training courses for free at your own pace. Each course includes hours of instructional video from one of our trainers, hands-on exercises with sample data, and a copy of the course manual.
- » **Live Online:** Get live hands-on training from FME-certified trainers in our virtual classroom. All of Safe Software's online courses include a virtual machine complete with FME license, sample data, workspaces, and a copy of the course manual.
- » **In-Person:** Browse a list of FME training courses held in cities throughout the world.

Or, contact your Safe Software account manager or your FME reseller to arrange a private training course for your organization.

Downloads and Documentation

Access the latest FME betas, service packs, documentation and other helpful technical resources.

[Access FME Downloads](#)

[Access FME Documentation](#)

FME Community

The FME Community (<https://community.safe.com/s/>) is the online source for all information on Safe Software products, including:

- » **Knowledge Base:** Our library of authoritative how-to's, FAQs, demos, and more.
- » **Community Answers:** Ask questions and get answers from our community of customers and partners.
- » **Ideas Exchange:** Help improve FME. Suggest, vote, and comment on new features.

Support

Get the support you need from Safe Software. We are happy to help. Visit <https://community.safe.com/s/support> for more information.

Live Chat/Leave a Message

Not able to find what you want? We are online or only a message away. On almost every page at www.safe.com, you will see a dialog that allows you to ask us a question.

Safe Software Partner Program

At Safe Software, we are enthusiastic about equipping people with tools and training. We have several [partner programs](#) designed to promote the development of FME skills and extend FME's capabilities to suit your specific needs:

- » Value-Added Resellers (VAR) Program: Represent an established brand in your region.
- » Consultant Partner Program: Receive FME tools and training that you can use to help your clients.
- » Developer Partner Program: Obtain an FME development license to extend the technology to work within your own applications.

Accessing Product Help Files

In-depth technical reference documentation is available on the safe.com website at <https://community.safe.com/s/documentation>, and is also included with your FME installation.

By default, when Help is invoked from any FME Desktop tool (FME Workbench, FME Data Inspector, and others), it is opened from the safe.com website. This means that you will always see the latest help topics for updates and for new features.

You can change this default behavior and access product documentation from the help files that are installed locally (for example, if Internet access is unreliable or is not available).

To change the default help location

1. Start FME Workbench.
2. On the menu bar, click **Tools** and select **FME Options**.
3. On the sidebar of the FME Options page, click **Default Paths**.
4. Under "Documentation Help Locations," click the checkbox beside **Use Offline Help**.
5. Click **OK**.
6. Restart FME Workbench.

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Before You Begin


Before installing FME Desktop, Safe Software recommends that you exit all programs, and ensure that the installation directory has access permission for all FME users who may log onto that computer.

Prerequisites

- » You have system administrator privileges in the installation environment.
- » The installation environment must meet the minimum requirements listed on the [FME Desktop Technical Specifications](#).
- » If you have purchased FME Desktop, you will need:
 - » The FME Desktop installer. If you do not already have the installer, download it from [here](#).
 - » The Serial number or license file that was provided by Safe Software. To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.
- » If you are evaluating FME Desktop, obtain the [FME Desktop Trial Installer](#). If you require assistance after installing, contact fmetrial@safe.com.

Other Requirements

[Windows](#)

 **Note** To install FME on a server for use with a thin-end client (for example, a Citrix[®] installation), you must use an FME floating license. To install floating licenses, you must be running a TCP/IP network.

[Linux: Red Hat and CentOS](#)

Check for Active Subscription (Red Hat Only)

FME may not be installed on a Red Hat instance unless it has an active subscription. For more information:

» https://access.redhat.com/documentation/en-us/red_hat_subscription_management/1/html/quick_registration_for_rhel/

EPEL Package Repository

On Red Hat or CentOS, you must first download and install the Extra Package for Enterprise Linux (EPEL) Community Project repository.

For more information:

» https://fedoraproject.org/wiki/EPEL#How_can_I_use_these_extra_packages.3F

See also:

» http://www.rackspace.com/knowledge_center/article/install-epel-and-additional-repositories-on-centos-and-red-hat

NumPy and Matplotlib

NumPy and Matplotlib must be installed, via pip and pip3. This may be done before or after installing FME.

Determining the FME License Type to Install

Safe Software offers flexible licensing options for FME.

The type of license that you receive (fixed or floating) is determined at the time of your request for evaluation or purchase.

Single-Fixed License

A single-fixed FME license (also known as node-locked or CRC license) enables FME to work on a single specified computer. The FME Licensing Assistant generates a unique registration

key for that computer, which is used to create the license. If FME is installed on more than one computer, each computer requires its own license.

By default, all evaluation licenses are single-fixed, unless you specify otherwise.

We recommend using a floating license when installing FME on a virtual machine. Safe Software may not provide updated license files if the [registration key](#) of the physical machine is no longer valid due to frequent hardware changes. For more information, see [About Floating Licenses on page 43](#).

» [Installing a Single-Fixed License on page 37](#)

Floating License

A floating license means that a single computer is provided with a number of licenses and acts as a server by issuing these licenses to any other computer that requests one. A floating license is a common way for a company to share a limited number of licenses among its FME users.

A FlexNet software license manager provides the floating license capability to FME. The FlexNet software is installed on a computer that acts as a license server. Every time FME is started on a computer, the server issues a license, provided there is one still available. When a computer closes FME, that license is returned. For example, consider a five-seat floating license and 30 workstation computers. Each workstation has FME installed. Any workstation can run FME, but only a maximum of five at any one time.

To install FME on a server for use with a thin-end client (for example a Citrix/Winframe installation), it is highly recommended that you use a floating license. Fixed licenses can be used, but keep in mind that you will need a fixed license for each user who will be making use of the software.

For failover purposes, there is an additional option to install an array of three licenses on three separate servers.

For more information, see [About Floating Licenses on page 43](#).

Glossary of Terms

[Activation](#)

Associating a [registration key](#) with a single-fixed license, using the FME Licensing Assistant.

[Borrowing \(a floating license\)](#)

If your FME Desktop product uses a floating license, and your organization supports this option, a computer that will not be connected to the license server can borrow a license for offline use and run FME for a maximum of 30 days.

The computer must be connected to the license server at the time of borrowing.

[Floating License](#)

A floating license means that a single computer is provided with a number of licenses and acts as a server by issuing these licenses to any other computer that requests one. A floating license is a common way for a company to share a limited number of licenses among its FME users.

[Floating License Manager](#)

A FlexNet software license manager provides the floating license capability to FME. The FlexNet software is installed on a computer that acts as a license server. Every time FME is started on a computer, the server issues a license, provided there is one still available. When a computer closes FME, that license is returned. For example, consider a five-seat floating license and 30 workstation computers. Each workstation has FME installed. Any workstation can run FME, but only a maximum of five at any one time.

[Grid Shift File](#)

Grid shift files are used when reprojecting between coordinate systems that have different datums. FME supports conversions between coordinate systems using different datums. Many datum transformations are not mathematically definable and require the use of grid of shifts. If you attempt to make a datum transformation of this kind without the appropriate grid shift file in place, FME will abort the translation.

Single-Fixed License


A single-fixed FME license (also known as node-locked or CRC license) enables FME to work on a single specified computer. The FME Licensing Assistant generates a unique registration key for that computer, which is used to create the license. If FME is installed on more than one computer, each computer requires its own license.

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Installing FME Desktop on Microsoft Windows

1. If you downloaded FME from www.safe.com, double-click the downloaded file.
2. On the FME Desktop Installation Extractor dialog, specify a *Destination folder* in which to extract installation files. Note that this folder only specifies where installation files are extracted—it does not specify where FME Desktop program files are installed. That location is specified later in the installer.


 **Tip** Take note of the specified *Destination folder* location. Following installation, you may wish to:


- » Review the installation .log file
- » Remove these files to save disk space.

3. Click **Install**.
4. When extraction is complete, the installer opens. On the Welcome to FME Desktop screen, click **Next**.
5. *Choose Setup Type*

[Express or Custom Install?](#)

The FME Desktop installer gives you the option of an *Express* or *Custom* installation. If you choose *Express*, the following installation settings are configured automatically. If you choose *Custom*, the installer gives you the option of configuring each setting separately.

 **Note** If you choose *Custom*, FME saves the specified settings as new default values for subsequent *Express* installations on the same machine.

Setting	Description	Default Value in an Initial Express Install
<i>Associate FME with the supported file formats</i>	Whether to associate FME Desktop with its supported file formats, which enables Windows Explorer right-click functionality to open, view, translate, and transform files using FME Desktop.	Yes
<i>Install Software Development Kit</i>	Whether to install the SDK, which provides access to FME Objects and FME Plug-in Builder APIs. You can use the APIs to create your own applications and plug-ins that make use of FME functionality.	No
<i>Implicit NAD27 <-> NAD83 Datum Shift</i>	<p>Whether implicit NAD27 to NAD83 datum shifts use Canadian or U.S. grid shift files. If None, FME prompts for a selection at workspace runtime.</p> <div style="border: 1px solid #0070C0; background-color: #E6F2FF; padding: 10px; margin-top: 10px;"> <p> Note You can change this setting after installation in the FME Options menu. For more information, see Coordinate Systems.</p> </div>	None


6. Follow the remaining instructions in the installation wizard, depending on setup type.
7. When FME is finished installing, the [Licensing Assistant](#) starts.

Installing FME Desktop from the Windows Command Prompt

We recommend installing FME Desktop using the [installation wizard](#). However, installing from the command prompt may be useful when you want to perform a silent or remote installation.

About the Installer

The FME Desktop installer is a self-extracting executable from which you can directly call an installer package (MSI) in a single command. Alternatively, you can manually extract installation files, then call the MSI file to silently install.

 **Note** A command prompt installation does not prompt you to uninstall any previous versions of FME that are in the same folder. We strongly recommend that you uninstall any previous FME before silently installing another into the same folder.

Performing an Installation

Example Syntax

Extract the installer to C:\FME\installer and install with all default options

This examples assumes you are running a command line from a directory that contains an installer named fme-desktop-win-x64.exe.

```
fme-desktop-win-x64.exe -d"C:\FME\installer" -s -sp"/qb /norestart  
INSTALLLEVEL=3 ENABLE_POST_INSTALL_TASKS=no"
```

Extract the installer to C:\FME\installer and install to C:\Program Files\FME12345

This examples assumes you are running PowerShell from a directory that contains an installer named fme-desktop-win-x64.exe.

Example

```
msiexec /i fme_beta.msi /qb INSTALLLEVEL=3 INSTALLDIR="C:\Program Files\FME" ENABLE_POST_INSTALL_TASKS=no
```

Note `INSTALLLEVEL=3` must always be specified when installing silently from the command line.

MSI-Specific Parameters

[Flags](#)

Note To view all flags, type `msiexec` and hit Enter.

```
/i <installFile.msi>
```

Installs the package specified by <installFile.msi> on your computer.

```
/q[n|b]
```

Quiet mode. If `/qb` is specified, a dialog with a progress bar displays, but there is no user interaction. If `/qn` is specified, no GUI displays.

When `/qn` is specified, the installer appears to return immediately; however, the installation process continues to run in the background. When installing silently, we recommend enabling logging (see below) so you can check for errors.

```
/x <installFile.msi>
```

Uninstalls <installFile.msi> if it is installed on your system.

```
/l*v <logfile>
```

Enables verbose logging of the installation to <logfile>.

[Directives](#)

Directives are specified after flags, in the following format:

<directive name>=<directive value>

General Directives

INSTALLLEVEL

If installing with the /q flag, the directive INSTALLLEVEL=3 must be specified for the installation to proceed correctly.

INSTALLDIR

Specifies the full path location of the main installation directory. If the directory does not exist, it is created. Spaces may be used with quotes.

The default path is C:\Program Files\FME on Windows XP, and C:\apps\FME on Windows Vista and later.

Installer Behavior Directives

The following directives affect the installer's runtime behavior.

EXTRACTONLY

Extracts the .msi installation file, but does not run the installer. A C++ runtime package and MSSQL driver only are installed.

ENABLE_SOUNDEVENTS

Sets up sound events. Allowed values are yes and no (case-sensitive). Default is yes.

CHECK_ADMIN_RIGHTS

Checks to ensure that the user installing FME has admin privileges. Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_SHORTCUTS

Creates shortcuts in the Windows Start menu. Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_FILETYPE_REGISTRATION

Enables FME applications to view, open, and work with FME files and GIS data files. Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_PATH_UPDATE

Allows the installer to update the PATH environment variable. Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_STANDARD_EXE_INSTALLATION

Installs all of the standard FME executables (Data Inspector, Workbench, etc). Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_LICENSE_COPY

Allows the installer to search for old license files, and copy them into the current installation folder if present. Allowed values are yes and no (case-sensitive). Default is yes.

ENABLE_POST_INSTALL_TASKS

Controls whether the license wizard is run after the installer has completed. See also FMEREG_CMDLINE (below). Allowed values are yes and no (case-sensitive). Default is yes.

FMEREG_CMDLINE

Passes values into the license wizard (fmlicensingassistant_cmd.exe) at install time to automate licensing, using syntax similar to [Licensing FME Desktop from the Windows Command Prompt on page 28](#). For example, to license FME with a Smallworld license on floating license server named "license_server", specify `FMEREG_CMDLINE="--floating license_server smallworld"`. For license type (FME edition) values, see [Specifying the FME Edition to Use on page 70](#).

ENABLE_ZERO_SIDE_EFFECT

Sets the following options to "no":

ENABLE_SOUNDEVENTS, CHECK_ADMIN_RIGHTS,INSTALL_SYSTEM_DLLS, ENABLE_SHORTCUTS,ENABLE_FILETYPE_REGISTRATION, ENABLE_POST_INSTALL_TASKS,ENABLE_PATH_UPDATE,ENABLE_LICENSE_COPY

Allowed values are yes and no (case-sensitive). Default is no.

ENABLE_NAD83_NAD27_DATUMSHIFTS

Controls whether implicit NAD27 to NAD83 Datum Transformation is set to USA or CANADA. Allowed values are yes, no and none. Default is no, which sets this directive to USA. A yes setting specifies CANADA only. Specifying none disable the transformation, which causes workspaces to error when trying to use that shift.

REPORTSTATISTICS

Controls whether statistics about format and transformer use are sent to Safe Software. Allowed values are yes and no (case-sensitive). Default is yes.

File Installation Directives

Some files that are installed by the installer can be omitted by these directives.

INSTALL_USER_DOCUMENTS

Installs directories to the user's 'Documents' folder, including a 'My FME Workspaces' folder. Default is yes.

INSTALL_SYSTEM_DLLS

Updates older system DLLs as needed, and run the Microsoft Visual Studio C++ Runtime Installer. Allowed values are yes and no (case-sensitive). Default is yes.

If set to no, the user is responsible for manually running the C++ Runtime installer, and ensuring that atl.dll and atl71.dll are installed on the target system. This option is not recommended, and may lead to non-functional FME installations.

INSTALL_THIRDPARTY

Installs application extenders. Allowed values are yes and no (case-sensitive). Default is yes. Enabling application extenders is controlled by the FME Administrator.

INSTALL_FMEOBJECTS

Installs FME Objects DLLs and other components. Allowed values are yes and no (case-sensitive). Default is yes. For more information, see [Installing the Software Development Kit for FME Desktop on page 77](#).

INSTALL_GALLERY

Installs the gallery directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_HELP

Installs the help directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_HELP_DLL

Installs the help DLLs. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_METAFILE

Installs the metafile directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_PLUGINBUILDER

Installs the pluginbuilder directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_REPROJECT

Installs the Reproject directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_TCL

Installs the tcl directory. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_WORKBENCH_EXE

Installs the the FME Workbench application. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_FME_EXE

Installs the fmeapplication. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_FMEADMIN_EXE

Installs the FME Administrator application. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_FMEVIEWER_EXE

Installs the FME Universal Viewer application. Allowed values are yes and no (case-sensitive). Default is yes.

INSTALL_FMEGUI_EXE

Installs the FME Universal Translator application. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_FMEREK_EXE`

Installs the FME Licensing Assistant application. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_WHATSNEW`

Installs the what's new/great text files. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_FMECOMUTIL_DLL`

Installs the fmecomutil DLL. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_FME_SHELLEXT_DLL`

Installs the fme shell extension DLL. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_SPATIAL_ASSISTANT_EXE`

Installs spatialassistant.exe. Allowed values are yes and no (case-sensitive). Default is yes.

`INSTALL_FMEGEOS_DLL`

Installs geos_fme.dll. Allowed values are yes and no (case-sensitive). Default is yes.

Post-Install Tasks

Licensing FME Desktop from the Windows Command Prompt

You can activate an FME installation for a [floating license](#) using the following syntax:

```
fmlicensingassistant --floating <server>[:<port>] <license type>
```

Example

```
fmlicensingassistant --floating testserver oracle
```

To get the proper values for `<license type>`, run:

```
fmlicensingassistant_cmd.exe --query <server>[:<port>]
```

Example

```
fmlicensingassistant_cmd.exe --query testserver
```

MSSQL Formats Only

If you plan to run workspaces that reference Microsoft SQL Server and Azure SQL Database (MSSQL_*) readers and writers, you must manually install the OLE DB Driver for SQL Server and Microsoft System CLR Types for SQL Server. To install, navigate to the [INSTALLDIR] and run:


```
msiexec /i msoledbsql.msi /qb IACCEPTMSOLEDBSQLLICENSETERMS=YES  
msiexec /i SQLSysClrTypes.msi /qb
```

Updating to a Newer FME Version

If you are updating to a newer version of FME, follow these steps.

Make sure you back up or relocate any custom files that you have saved in your FME installation directory.

1. Download and run the new installation file.
2. On the FME Desktop Installation Extractor dialog, specify a *Destination folder* in which to extract installation files. Note that this folder only specifies where installation files are extracted—it does not specify where FME Desktop program files are installed.

 **Tip** Take note of the specified *Destination folder* location. Following installation, you may wish to:

- » Review the installation .log file.
- » Remove these files to save disk space.

3. Click **Install**.

4. When extraction is complete, the installer opens. On the Welcome to FME Desktop screen, click **Next**.
5. On the Destination Folder dialog, specify a destination folder and click **Next**.
6. If the installation wizard finds a previously installed version of FME in the specified destination folder, the installation wizard asks if you would like to uninstall it. If you answer **Yes**, click **Next**. If you answer **No**, click **Back** and enter a new destination folder. You can install [multiple versions of FME Desktop](#).
7. follow the remaining instructions in the installation wizard.

Installing FME Desktop on Linux

Updating to a Newer FME Version

If you are updating to a newer version of FME Desktop, you must first manually uninstall the earlier version. Alternatively, you can install to a different directory and have multiple versions of FME Desktop (see [Multiple Installations of FME Desktop in Parallel on page 34](#)).

Make sure you back up or relocate any custom files that you have saved in your FME installation directory.

Uninstalling

Run the following command, "as root", depending on your Linux distribution:

» Debian, Ubuntu:

```
apt remove fme-desktop-<release>
```



Example

```
apt remove fme-desktop-2018
```

» RedHat, CentOS:

```
yum remove fme-desktop-<release>
```



Example

```
yum remove fme-desktop-2018
```

Updating Linux

To avoid dependency errors, we recommend updating Linux before installing.

[Offline Updating and Installation](#)

FME on Linux requires many third party packages. These dependencies must be satisfied when FME is installed. The easiest way to satisfy these dependencies is to install FME on a computer that is connected to the internet, allowing packages to be downloaded as needed.

It is possible, however, to manually prepare an offline computer for FME installation.

For more information:

» Ubuntu/Debian: [Installing packages without an Internet connection](#)

» Red Hat/CentOS: <https://access.redhat.com/solutions/29269>

Dependencies can be determined on-demand by using one of the following commands:

» Ubuntu/Debian: `dpkg -I <package_name>`

» Red Hat/CentOS: `yum deplist <package_name>`

Warning If you are accessing local mirrors of public repositories, ensure they match the version of your Linux.

Debian, Ubuntu

```
apt update && apt upgrade
```

RedHat, CentOS

```
yum update
```

Installing

Before installing, be sure to:

1. Review the installation [Prerequisites on page 13](#).
2. [Update Linux](#).

All installation steps must be performed "as root" (via the *sudo* command on some distributions). FME Desktop is installed for ALL users.

The install location is `/opt/fme-desktop-<release>`. (For example, `/opt/fme-desktop-2017`.)

When complete, the installer generates a configuration (.cfg) file to the install directory.

The following installers are available:


Platform	Installer Name	Example
Debian, Ubuntu	fme-desktop-<release>_ <version>.<build>_amd64.deb	fme-desktop-2017_ 2017.0.0.0.17228~ubuntu.18.04_ amd64.deb
RedHat, CentOS	fme-desktop-<release>- <version>-<build>.x86_64.rpm	fme-desktop-2017-2017.0.0.0- 17228.el7.centos.x86_64.rpm

Downloading the Installer

Download the FME Desktop Installer to your local machine. To obtain the installer, visit <http://www.safe.com/support/downloads.php>.

Running the Installer Using the Package Manager

To use the package manager to install FME Desktop and all dependencies, double-click on the package.

 **Note** The Debian installation package does not support the Ubuntu Unity package manager previous to version 16.04.2. Instead, use the command line to install.

Running the Installer Using the Command Line

Run the following commands, depending on your Linux platform, substituting *<release>*, *<version>*, and *<build>* with the corresponding values from your installer name.

Debian package:

If gdebi is not already installed: `apt install gdebi-core`
`gdebi fme-desktop-<release>_<version>~ubuntu.<build>_amd64.deb`

RedHat, CentOS package:

`yum install fme-desktop-<release>-<version>.el7.centos.x86_64.rpm`

Alternatively, to install to a non-default location, you must first manually install FME dependencies:

```
yum deplist fme-desktop-<release>-<version>.el7.centos.x86_64.rpm |  
grep provider | awk '{print $2}' | sort | uniq | sed ':a;N;$!ba;s/\n/  
/g' | xargs yum install -y
```

Next, run:

```
rpm -Uvh --relocate /opt=/usr/etc/fme --relocate /usr=/usr/fmeicons  
fme-desktop-<release>-<version>.el7.centos.x86_64.rpm
```

Each `--relocate` argument relocates a prefix to a new location. In the preceding example, FME installs to `/usr/etc/fme/fme-desktop-<release>` and the icons, shortcuts, and others will install to `/usr/fmeicons`. Note that these arguments are optional: you can relocate both prefixes, one, or none.

What's Next?

To license FME Desktop, see [Licensing on page 36](#).

Multiple Installations of FME Desktop in Parallel

If you want to have multiple of installations of FME Desktop on the same system, we recommend the following procedure:

1. Install the first copy of FME Desktop as described in [Installing FME Desktop on Linux on page 30](#).
2. Copy the contents of the install directory (`/opt/fme-desktop-<release>`) to another location (for example, `/home/user/fme-desktop-b18228`).
3. Install the second copy of FME Desktop as described in [Installing FME Desktop on Linux on page 30](#).
4. Run the first copy of FME Desktop directly from the location to which it was copied (for example, `/home/user/fme-desktop-b18228`) - *not* from a desktop shortcut. You can run the second copy of FME Desktop from a desktop shortcut, which points to the original install location (`/opt/fme-desktop-<release>`).

Installing FME Desktop on Mac

1. Double-click the FME Desktop.dmg file.
2. On the FME Desktop Installer dialog, double-click the FME icon.
3. Follow the instructions in the installation wizard.
4. When FME finishes installing, the [Licensing Assistant](#) starts.

Licensing

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Installing a Single-Fixed License

A single-fixed FME license (also known as node-locked or CRC license) enables FME to work on a single specified computer. The FME Licensing Assistant generates a unique registration key for that computer, which is used to create the license. If FME is installed on more than one computer, each computer requires its own license.

Before You Begin

To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop. If you do not know or cannot find your serial number, please send an e-mail to codes@safe.com to request a license file.

To [activate your license](#), you will need an Internet connection.

Activating a Single-Fixed License

If you have a serial number and an Internet connection, follow these steps to activate a fixed license from Safe Software.

If you already have a licensed installation, you will be prompted to update it.

1. Open the FME Licensing Assistant
 - » On Windows, the Licensing Assistant is in the Start menu under FME Desktop, or `fmelicensingassistant.exe` in the root folder of the FME Desktop install directory.
 - » On Linux, the Licensing Assistant is in the Applications menu, or in the root folder of the FME Desktop install directory.
 - » On Mac, `/Library/FME/<version>/Apps/FME Licensing Assistant`.
2. The FME Licensing Assistant opens.
3. On the Activate FME Desktop License dialog, select **Fixed license** (under "Have a license?"). Enter the Serial Number in the corresponding field, and click **Activate**. To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

4. On the License Summary dialog, click **Finish**.

You will see a confirmation message when FME Desktop is successfully licensed.

Troubleshooting

If you change your system's hardware configuration after installation, or move your installation to a new system, your license may not work and you will need to enter your serial number into the licensing assistant as described above.

If you are unable to use the FME Licensing Assistant to activate a license, see [Installing a License File Provided by Safe Software below](#).

Other Licensing Options

- » To connect to a floating license server, see [Installing a Floating License Server on Microsoft Windows](#).
- » To activate a trial version of FME, visit: <https://www.safe.com/fme/fme-desktop/trial-download/>

Installing a License File Provided by Safe Software

Follow the steps below if you have a problem with the automated license generator. If this happens, you will need to install a license file (*.fmeLic) provided by Safe Software.

For Linux users, you must log in as the same user who installed FME Desktop.

1. Go to the FME Desktop License Activation web page (<http://www.safe.com/activation/>).
2. Provide the following:
 - » **Serial number** – To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.
 - » **Registration key** – This is the 10-digit number located at the bottom left corner of the install pane of the FME Desktop Licensing Assistant. Click the number to copy it.

3. Click Retrieve License File and download the file.

If the previous steps are unsuccessful, you can also send an e-mail message to codes@safe.com with your serial number and registration key. You will receive an e-mail message from Safe Software with an attached `.fmelic` license file.

4. Open the FME Desktop Licensing Assistant (fmelicensingassistant.exe)
 - » On Windows, the Licensing Assistant is in the Start menu under FME Desktop, or `fmelicensingassistant.exe` in the root folder of the FME Desktop install directory.
 - » On Linux, the Licensing Assistant is in the Applications menu, or in the root folder of the FME Desktop install directory.
 - » On Mac, the Licensing Assistant is in `/Library/FME/<version>/Apps/FME Licensing Assistant`.
5. On the Activate FME Desktop License dialog, expand **Manual licensing**.
6. Provide the license file, either as a path, or by copying and pasting the contents of the file directly in the field provided.
7. Click **Activate**.
8. On the License Summary page, click **Finish**.

FME Desktop is successfully licensed.

Licenses are tied to physical properties of systems. If you change your system's hardware configuration, your FME license may not work and you will need to request a new one.

Troubleshooting Single-Fixed Licenses

About the Registration Key

A registration key is a unique ID generated from system information by the FME Licensing Assistant. It is Safe's method of limiting a single-fixed license to a single computer. Safe needs the registration key from your installation to create a license for FME.

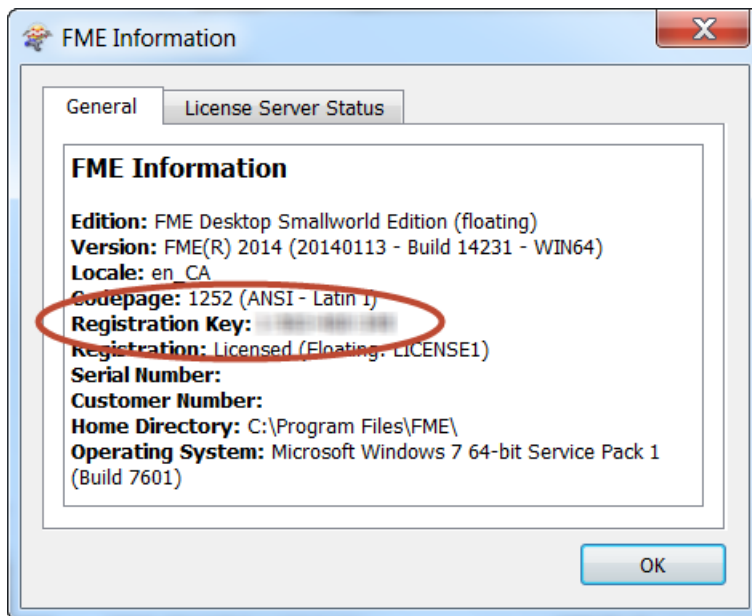
In most cases, such as when you are requesting an evaluation license or a new license for an updated FME version, the Licensing Assistant is able to pass the key on to Safe automatically, allowing us to create a matching license immediately.

However, in some cases, you will need to quote the number to us directly. Some examples of when this may happen are:

- » The connection to the Safe server is not working.
- » We need to see the code to help debug a license problem.

The registration key is shown in the bottom left of the FME Licensing Assistant. (You can hover over and copy it.)

It can also be found in FME Workbench or Data Inspector under Help > About... > More Info.



Changing Computers

When you move FME to another computer, you will need a new license, since the new computer's registration key will not match the one encoded within your existing license. Ask for a new license by entering your serial number into the FME Licensing Assistant of the new computer/FME installation that you wish to license. To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

The new license created on our Safe license server will be for your new registration key. If you have any issues, contact codes@safe.com.

Virtual Machines

We recommend using a floating license when installing FME on a virtual machine. Safe Software may not provide updated license files if the registration key of the physical machine is no longer valid due to frequent hardware changes. For more information, see [About Floating Licenses on page 43](#).

The Licensing Wizard fails with "Unable to create local license files" error message
This error indicates the Licensing Assistant was not run as Administrator.

To run the Licensing Assistant as Administrator

The Licensing Assistant is in the Start menu under FME Desktop, or `fmelicensingassistant.exe` in the root folder of the FME Desktop install directory. Right-click and select Run as administrator.

It may also help to delete any existing licenses from these locations:

- » The FME installation directory, under `\licenses`.
- » `C:\ProgramData\Safe Software\FME\Licenses`.

I installed my license but I still cannot run FME Workbench

- » Ensure that your machine key matches the key in your license file. Open your license file at `C:\ProgramData\Safe Software\FME\Licenses\fme_license.fmelic` in a text editor. You will see a line labeled MACHINE CODE. The code shown here must match exactly your registration key shown on the bottom left of the Licensing Assistant¹. If they do not match, you will need to [request another license](#). You cannot edit a license file directly.
- » Does it appear that your license has expired? Ensure you have installed your permanent license. If you have not received your permanent license you may need to [request it](#). A temporary license may also stop working if you have changed the time and date settings on your computer, and you will need to contact your account manager to request a new license.

- » Do you see a message, "Duplicate license file."? This is not an error, and FME should still run correctly. At times, an unlicensed FME will try to contact our licensing server to see if there is a license available for that serial number. If so, it automatically licenses itself. This message is caused when you try to manually license FME using the same license it has already automatically obtained for itself.
- » Do you see a message, "FME Licensing Notice Your current license is AutoDesk Map. This application cannot be used with current license..."? You may be using a Training or Generic license. Using your file explorer, navigate to C:\ProgramData\Safe Software\FME\Licenses. Delete every file in this directory except the file fme_license.fmelic. Restart FME Workbench or the FME application you were attempting to use.
- » Do you see a message, "Administrator permissions are required to license FME..."? The licensing assistant may need to be run with elevated privileges. Right-click on FME Licensing Assistant, and select Run as administrator.
- » If you have confirmed the machine key matches your license file and still cannot license FME, or you see error code -500 or -501, in rare cases a registry entry may be blocking your license. Run regedit and navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Safe Software Inc.\LICENSE. Delete the key called LICENSE.
- » Do you see a message, "License quota exceeded..."? Please contact the Technical Support Team.
- » Do you see another message? Please go to <https://community.safe.com/s/article/troubleshooting>.

¹To Run the FME Licensing Assistant, open FME Desktop under the Start menu. In previous versions of FME this is also known as the FME Licensing Wizard and may be found in a slightly different location.

FME is licensed but I am still having licensing trouble

- » Are you having trouble with a specific format that you cannot see in the format list or FME cannot read or write to it? Some formats in FME require a higher level of licensing, and some formats are provided by 3rd party vendors. Also, some formats require another application to be installed. In particular, reading/writing ESRI Geodatabase requires a licensed ArcGIS installation and GeoMedia Access Warehouse writing requires a licensed GeoMedia installation. For a complete list of formats and required helper applications, see <http://www.safe.com/fme/format-search/>. If you would like to upgrade your FME to use a specific format, contact your account manager or sales@safe.com.
- » Are you experiencing another problem? Contact the Technical Support Team. It may help to ensure that you are, in fact, running a fixed license. Please include the FMEReport.html file by running the FMETroubleshoot.bat file from the [General Troubleshooting page](#).

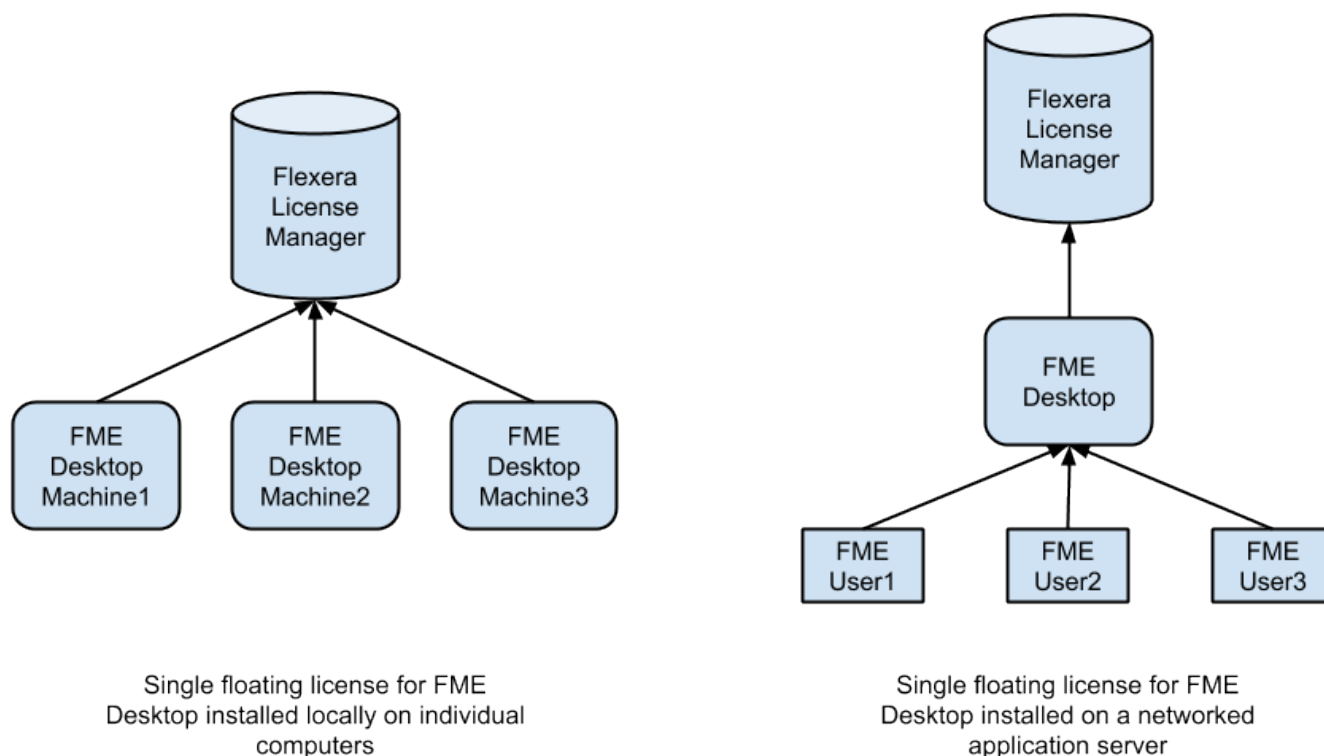
About Floating Licenses

A floating license means that a single computer is provided with a number of licenses and acts as a server by issuing these licenses to any other computer that requests one. A floating license is a common way for a company to share a limited number of licenses among its FME users.

A FlexNet software license manager provides the floating license capability to FME. The FlexNet software is installed on a computer that acts as a license server. Every time FME is started on a computer, the server issues a license, provided there is one still available. When a computer closes FME, that license is returned. For example, consider a five-seat floating license and 30 workstation computers. Each workstation has FME installed. Any workstation can run FME, but only a maximum of five at any one time.

For a full description, visit the Flexera Software website: <http://www.flexera.com>.

A floating license serves multiple instances of FME Desktop that are installed locally on each computer (recommended); or to a single installation on a networked application server that is accessed remotely by individual users.



A floating license can serve different FME editions. For example, a floating license can serve both FME Professional Edition and FME Smallworld Edition.

If the expiry dates associated with multiple FME installation serial numbers vary, the floating license applies the shortest expiry date to all serial numbers.

If you need to transfer an existing floating license to a new license server, you must perform a new installation since you still need to request a new license file from Safe Software.

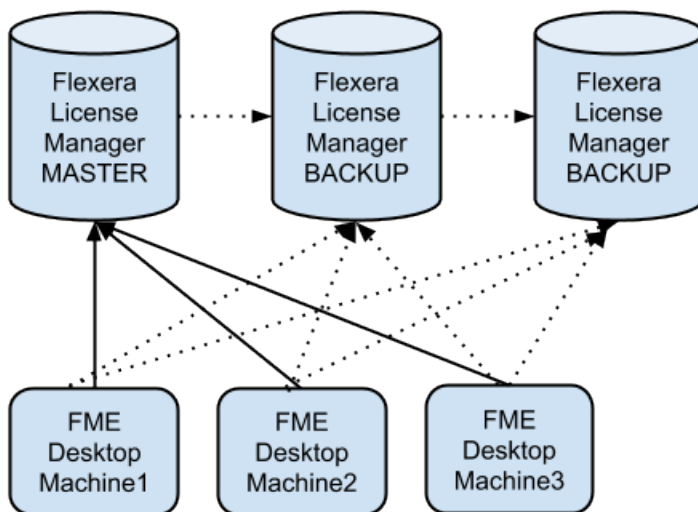
To Install a Floating License

- » [Installing a Floating License on Windows on the next page](#)
- » [Installing a Floating License on Linux on page 50](#)

Three-Server Redundant Floating Licenses

The Flexera License Manager allows for redundancy by using a set of three license servers. With three-server redundancy, the floating license server stays functional, handing out its total complement of licenses when any two of the three license servers are up and running.

A master server that performs all licensing operations is elected when the redundant servers are started. The other two servers provide a secure licensing mechanism in the event of hardware failure or if the master node needs to be rebooted.



Permanent Three-Server Redundant Floating Licenses

It is not a requirement for each of the server nodes to have the same architecture or operating system, although they should have reliable network communications with each other and should be on the same subnet. Often, this means that the three servers are located physically close to each other.

To Install a Three-Server Redundant Floating License

» [Installing a Three-Server Redundant Floating License Server on Windows on page 55](#)

» [Installing a Three-Server Redundant Floating License Server on Linux on page 60](#)

Installing a Floating License on Windows

To install a floating license on Windows, follow these steps:

1. [Before You Begin below](#)
2. [Download and Run the Installer on the next page](#)
3. [Request and Install the License on page 48](#)
4. [Install FME on Client Computers on page 50](#)
5. [Start FME Registration on page 50](#)

Before You Begin

Ensure that the following requirements are met before beginning the installation:

- » You must be running a TCP/IP network.
- » One computer on the network is designated as the license server. The license server may be any computer on the network that is visible to all computers that are dependent on it for their licenses. You should choose a computer that is always running and always connected to the network because the client computers must be able to communicate with the license server to use the FME. The processing burden on the licensing server is negligible.
- » You must have Administrator privileges to install the FME Floating License server.
- » If the computer you want to use as your floating license server has a firewall, you must open a port through which the FlexServer can communicate. By default, the range of ports used is 27000-27009, although you can also configure other ports. For more information, see [Specifying Floating License Server Ports on page 66](#).
- » If FlexNet is already installed on your license server, you still need to perform a new installation. FME requires the version of FlexNet that is included in the installer. In addition, if your organization is configuring license borrowing (see [Borrowing a Floating License on page 67](#)), you will require LMTOOLS version 11.8 or newer.

The FME license server cannot be installed on a virtual machine that is built and moved around among many physical machines. It must be locked to a single fixed MAC address.

Download and Run the Installer

The FME installer contains the utility program `fme-flexnet-win-x64.msi` required to get the license server up and running

To download and run

1. On the [FME Downloads page](#), specify the desired version under "Select an FME Version."
2. Under "FlexNet License Server Installer for FME Desktop" click **Download**.
3. On the computer that acts as the license server, run (double-click) the installer to create a FlexServer directory.

The following table lists the shortcuts that are created in the Safe Software program group.

Shortcut	Description
Generate hostid.txt	Creates a text file that contains the hostname and Host ID information required when requesting a floating license from www.safe.com/activation/floating/ .
Launch LMTOOLS	Launches LMTOOLS. Used for debugging or changing configuration.
License Administration Guide	Opens Flexera Software's License Administration Guide.
Start - Restart FME License Server	Starts the license manager process.
View FME License Server Log	Opens the license manager log file. Used for debugging.
View hostid.txt	Reopens text file, if required by Safe Software.
View Readme	Opens the installation and configuration instructions.

Request and Install the License

Perform the following steps on the computer that acts as the license server:

1. From the Windows Start menu, select FlexNet for Safe Software > View hostid.txt to open the hostid.txt file.

If you are installing FlexNet on Windows Vista, Windows 7, or Windows 8 and User Account Control (UAC) is enabled, right-click *Start-Restart FME License Server* and run this function using administrator privileges. If UAC is not enabled, you do not have to perform this step.

2. Complete the online license request form:

<http://www.safe.com/activation/floating/>

You will need a product serial number (for example, BEGP-F7MG-21YL). To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.:

If you do not have a product serial number, e-mail your `hostid.txt` file to codes@safe.com.

If you are requesting a combined license and are entering multiple serial numbers, separate them with commas.

If you do not have `hostid.txt` and are entering host information manually:

- » Hostname is the name of the computer hosting the floating license.
- » Host ID is the MAC address (or "Ethernet address") of the host computer (lowercase, with no colons or dashes).

Your `hostid.txt` may contain multiple Host IDs; however, you can enter only one in the online request form.

3. You will receive an email with instructions for installing the license:

- a. Save the `safe.lic` file to the FlexServer directory. For example: `C:\Program Files\FlexServer\`
- b. Restart the FME License Server:

From the Windows Start menu, select FlexNet for Safe Software> Start - Restart FME License Server

Install FME on Client Computers

After the license server is running, install FME on the client computers or on the Network Server (if you have a fast and non-congested network).

If this is a license upgrade from fixed license to floating license (and not a new FME installation), then ensure that there are no existing `fme_license.dat` files in the licenses directory (commonly at `C:\ProgramData\Safe Software\FME\Licenses`). Also ensure there are no FME tasks running before starting the registration process.

Start FME Registration

Perform this step for each computer that has FME installed.

For command prompt instructions, see [Licensing FME Desktop from the Windows Command Prompt on page 28](#).

1. From the Windows Start menu, open the FME Licensing Assistant under FME Desktop > FME Licensing Assistant.
2. Select *Connect to a floating license server*, and enter the name of the computer that is hosting the FME licenses.
3. Click the Next button.
4. If your configuration contains more than one type of FME license, select the license that you want to use.
5. Click Finish to complete the connection.

Installing a Floating License on Linux

To install a floating license on Linux, follow these steps:

1. [Before You Begin on the next page](#)
2. [Locate the Flexera License Manager Files on the next page](#)
3. [Create a Directory for the Flexera License Manager on page 52](#)
4. [Provide the Information to Generate a Floating License on page 52](#)

5. [Install the Floating License on page 54](#)
6. [Configuring FME Desktop to Use the Floating License on page 54](#)

Before You Begin

Ensure that the following requirements are met before beginning the installation:

- » You must be running a TCP/IP network.
- » One computer on the network is designated as the license server. The license server may be any computer on the network that is visible to all computers that are dependent on it for their licenses. You should choose a computer that is always running and always connected to the network because the client computers must be able to communicate with the license server to use the FME. The processing burden on the licensing server is negligible.
- » You must have Administrator privileges to install the FME Floating License server.
- » If the computer you want to use as your floating license server has a firewall, you must open a port through which the FlexServer can communicate. By default, the range of ports used is 27000-27009, although you can also configure other ports. For more information, see [Specifying Floating License Server Ports on page 66](#).
- » If FlexNet is already installed on your license server, you still need to perform a new installation. FME requires the version of FlexNet that is included in the installer. In addition, if your organization is configuring license borrowing (see [Borrowing a Floating License on page 67](#)), you will require LMTOOLS version 11.8 or newer.

The FME license server cannot be installed on a virtual machine that is built and moved around among many physical machines. It must be locked to a single fixed MAC address.

Locate the Flexera License Manager Files

If you have purchased an FME floating or single-fixed license for Linux, copy the `Linux\FlexServer` directories from the FME installer. Alternatively, follow these steps:

1. On the [FME Downloads page](#), specify the desired version under *Select an FME Version*.
2. Under ***Floating License Installer for FME Desktop***, select **Linux 64-bit** and click **Download**. This will download the file: `fme-flexnet-linux-x64.tar.gz`

Create a Directory for the Flexera License Manager

Create a directory for the Flexera License Manager on your license server computer, which is the computer that will manage the licenses. Extract the contents of `fme-flexnet-linux-x64.tar.gz` into this directory. For example:

```
% mkdir /opt/FlexServer
% cd /opt/FlexServer
% gunzip < ~/fme-flexnet-linux-x64.tar.gz | tar xf -
```

This directory is referred to as the *FlexServer directory* for the remainder of these instructions.

Provide the Information to Generate a Floating License

Safe Software requires three pieces of information to generate a floating or node-locked license:

» [hostname](#)

» [host ID](#)

» [FME serial number](#)

What's Next?

» [Install the Floating License on page 54](#)

Obtaining the Hostname

To obtain the **hostname**, type the `hostname` command.

Example

```
% hostname  
worf
```

In this example, the host name is `worf`.

Determining the Host ID

To determine the **host ID**, use the `lmutil lmhostid` command within the `FlexServer` directory. The output should be an eight-character alphanumeric string (or a 12-character alphanumeric string on Linux). For example:

```
% ./lmutil lmhostid  
lmutil - Copyright (c) 1989-2009  
The FlexNet host ID of this machine is "807abc12"
```

In this example, the host ID is `807abc12`.

Note When you are running `./lmutil lmhostid`, you may see the following error message:

```
>-bash: ./lmutil: No such file or directory
```

This error appears when FlexNet is missing necessary libraries to run on Linux. To clear the error, install `lsb-core` by typing the command:

```
sudo apt install lsb-core
```

Determining the FME Serial Number

To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

Visit www.safe.com/activation/floating/ and submit the Floating License Request.

Safe Software will send you a file called `safe.lic` that contains the key code file for the license code server.

Copy the `safe.lic` file into the `FlexServer` directory on your license server computer.

The filename must remain in lowercase text. Safe Software recommends that you do not change the filename.

Install the Floating License

To start the Flex Server, you must have a `/usr/tmp` directory. Verify that the `/usr/tmp` directory exists and if it doesn't exist, create this directory as follows:

```
% mkdir /usr/tmp
```

To start the License Manager:

```
% <FlexServerDir>/lmgrd -c <FLEXServerDir>/safe.lic
```

This action runs the License Manager in the foreground, logging activity to the terminal. To store the log to a file instead, use the `-l` option:

```
% ./lmgrd -c ./safe.lic -l safe.log
```

When a log file is used, `lmgrd` detaches as a background process, so there is no need to explicitly background the application. However, you'll have to start the server each time the license server host is rebooted. The system administrator can make sure the preceding command is run at system start-up time.

Configuring FME Desktop to Use the Floating License

To configure an installation of FME to use a License Manager, follow these steps.

1. Once FME Desktop is installed on Linux, log in as the same user who installed FME Desktop.
2. Navigate to Applications > FME Desktop > FME Licensing Assistant. The FME Licensing Assistant opens.
3. On the Activate FME Desktop License dialog, select *Have a License?* > **Floating license**.
4. Enter the name of the license server and click **Connect**.

5. On the Select an Edition dialog, select the FME Edition from the list and click **Activate**.
6. On the License Summary dialog, click **Finish**.

A floating license is installed to borrow a license.

Installing a Three-Server Redundant Floating License Server on Windows

To install Three-Server Redundant Floating Licenses on Windows:

1. [Before You Begin](#)
2. [Download and Run the Installer](#)
3. [Start the License Servers](#)
4. [Configure FME Desktop to Use the Floating License](#)

Before You Begin

Ensure that the following requirements are met before beginning the installation:

- » You must be running a TCP/IP network.
- » Three computers on the network are designated as license servers. The license servers may be any computers on the network that are visible to all computers that may dependent on them for their licenses. You should choose computers that are always running and always connected to the network because the client computers must be able to communicate with any one license server to use FME. The processing burden on the licensing server is negligible.
- » You must have Administrator privileges to install the Flexera Licensing Manager.
- » If the computers you want to use as your floating license servers have firewalls, you must open a port on each one through which the FlexServer can communicate. By default, the range of ports used is 27000-27009, although you can also configure other ports.

» If FlexNet is already installed on your license servers, you still need to perform a new installation. FME requires the version of FlexNet that is included in the installer. In addition, if your organization is configuring license borrowing (see [Borrowing a Floating License on page 67](#)), you will require LMTTOOLS version 11.8 or newer.

The FME license servers cannot be installed on a virtual machine that is built and moved around among many physical machines. It must be locked to a single fixed MAC address.

Download and Run the Installer (Three-Server Redundant Floating License Server)

The FME installer contains the utility program that is needed to get the license server up and running:


`fme-flexnet-win-x86.msi`

or

`fme-flexnet-win-x64.msi`

To download and run

1. On the [FME Downloads page](#), specify the desired version under "Select an FME Version."
2. Under "Floating License Installer for FME Desktop," click **Download**.

 **Note** If you are viewing this link in a PDF file, your Acrobat security settings may prevent access to the installer. Instead, paste <https://www.safe.com/support/downloads/> into a web browser.

3. On each computer that acts as a license server, run (double-click) the installer to create a FlexServer directory.
4. Send an e-mail to codes@safe.com and include the FlexNet Host ID, the hostname assigned to each of the computers, and serial number. To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

The table that follows lists the shortcuts that are created in the Safe Software program group:

Shortcut	Description
Generate hostid.txt	Creates a text file to send to codes@safe.com .
Launch LMTOOLS	Launches LMTOOLS. Used for debugging or changing configuration.
License Administration Guide	Opens Flexera Software's License Administration Guide.
Start - Restart FME License Server	Starts the license manager process.
View FME License Server Log	Opens the license manager log file. Used for debugging.
View hostid.txt	Reopens text file, if required by Safe Software.
View Readme	Opens the installation and configuration instructions.

5. We will e-mail you a file called `safe.lic` that contains the key code file for the license code servers. Copy the `safe.lic` file into each of the `FlexServer` directories on your license server nodes.

Start the License Servers

Specify the Master Node


On all three servers, open the `safe.lic` file, and specify the `PRIMARY_IS_MASTER` attribute for the `SERVER` line corresponding to the server you want to be the master license node. The `SERVER` line that is configured with the `PRIMARY_IS_MASTER` parameter should also be the first `SERVER` line.

Example

```
SERVER pat 17003456 27009 PRIMARY_IS_MASTER
SERVER lee 17004355 27009
SERVER terry 17007ea8 27009
```

Start the License Manager

On all three servers, start the license manager. From the Windows Start menu, select Safe Software, and run Start - Restart FME License Server.

 **Note** On Windows Vista, right-click *Start-Restart FME License Server* and run this function using administrator privileges.

Regardless of which order you start the servers, the server specified above always assumes the master role.

Configure FME Desktop to Use the Floating License

Set Environment Variables


On each server running FlexNet, set these environment variables, as follows:

```
>> FME_USE_LM_ENVIRONMENT=YES
```

```
>> LM_LICENSE_FILE=<port1>@<host1>,<port2>@<host2>,<port3>@<host3> where  
<port1>, <port2>, and <port3> are the ports you opened on each server for  
communication with FlexServer, and <host1>, <host2>, and <host3> are the  
hostnames of each server, respectively. For example:
```

```
LM_LICENSE_FILE=27009@pat,27009@lee,27009@terry
```


List each `<port>@<host>` combination in the same order as they appear in the `safe.lic` file.

 **Note** If FME Desktop is the only application for which you run FlexNet or any FlexEnabled application, you can set the `SAFE_LICENSE_FILE` environment variable in the same manner, instead. the `LM_LICENSE_FILE` environment variable applies to all FlexEnabled applications.

Start FME Registration

Perform this task for each computer that has FME installed.

1. Once FME Desktop is installed, log in as the same user who installed FME Desktop.
2. From the Windows Start menu, select > **FME Desktop** > **FME Licensing Assistant**. The FME Licensing Assistant opens.
3. On the FME Licensing Assistant, under *Have a license?*, select *Floating License* and enter the name of the [master node computer](#) that is hosting the license.
4. Click **Connect**.

 **Note** If you are connecting through a VPN, ensure the domain to which you are connecting is set as the default domain in your network or VPN settings.

5. Select the FME Edition from the list and click **Activate**.
6. Click **Finish**.

A floating license is installed to borrow a license.

Installing a Three-Server Redundant Floating License Server on Linux

To install Three-Server Redundant Floating Licenses on Linux:

1. [Before You Begin below](#)
2. [Download and Run the Installer on the next page](#)
3. [Start the License Servers on the next page](#)
4. [Configure FME Desktop to Use the Floating License on page 62](#)

Before You Begin

Ensure that the following requirements are met before beginning the installation:

- » You must be running a TCP/IP network.
- » Three computers on the network are designated as license servers. The license servers may be any computers on the network that are visible to all computers that may dependent on them for their licenses. You should choose computers that are always running and always connected to the network because the client computers must be able to communicate with any one license server to use FME. The processing burden on the licensing server is negligible.
- » You must have Administrator privileges to install the Flexera Licensing Manager.
- » If the computers you want to use as your floating license servers have firewalls, you must open a port on each one through which the FlexServer can communicate. By default, the range of ports used is 27000-27009, although you can also configure other ports.

» If FlexNet is already installed on your license servers, you still need to perform a new installation. FME requires the version of FlexNet that is included in the installer. In addition, if your organization is configuring license borrowing (see [Borrowing a Floating License on page 67](#)), you will require LMTTOOLS version 11.8 or newer.

The FME license servers cannot be installed on a virtual machine that is built and moved around among many physical machines. It must be locked to a single fixed MAC address.

Download and Run the Installer

Install the floating license server on three different computers using the instructions in sections [Before You Begin on page 51](#) through [Install the Floating License on page 54](#).

Send an e-mail to codes@safe.com and include the FlexNet Host ID, the hostname assigned to each of the computers, and serial number. To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

We will e-mail you a file called `safe.lic` that contains the key code file for the license code servers. Copy the `safe.lic` file into each of the `FlexServer` directories on your license server nodes.

Start the License Servers


Specify the Master Node

On all three servers, open the `safe.lic` file, and specify the `PRIMARY_IS_MASTER` attribute for the `SERVER` line corresponding to the server you want to be the master license node. The `SERVER` line that is configured with the `PRIMARY_IS_MASTER` parameter should also be the first `SERVER` line.

Example

```
SERVER pat 17003456 27009 PRIMARY_IS_MASTER
SERVER lee 17004355 27009
SERVER terry 17007ea8 27009
```

Start the License Manager

 **Note** Regardless of which order you start the servers, the server specified above always assumes the master role.

To start the License Manager:

```
% <FlexServerDir>/lmgrd -c <FLEXServerDir>/safe.lic
```

This action runs the License Manager in the foreground, logging activity to the terminal. To store the log to a file instead, use the `-l` option:

```
% ./lmgrd -c ./safe.lic -l safe.log
```

When a log file is used, `lmgrd` detaches as a background process, so there is no need to explicitly background the application. However, you'll have to start the server each time the license server host is rebooted. The system administrator can make sure the preceding command is run at system start-up time.

Configure FME Desktop to Use the Floating License

Set Environment Variables


On each server running FlexNet, set these environment variables, as follows:

```
» FME_USE_LM_ENVIRONMENT=YES
```

```
» LM_LICENSE_FILE=<port1>@<host1>,<port2>@<host2>,<port3>@<host3> where  
<port1>, <port2>, and <port3> are the ports you opened on each server for  
communication with FlexServer, and <host1>, <host2>, and <host3> are the  
hostnames of each server, respectively. For example:
```

```
LM_LICENSE_FILE=27009@pat,27009@lee,27009@terry
```


List each `<port>@<host>` combination in the same order as they appear in the `safe.lic` file.

 **Note** If FME Desktop is the only application for which you run FlexNet or any FlexEnabled application, you can set the `SAFE_LICENSE_FILE` environment variable in the same manner, instead. the `LM_LICENSE_FILE` environment variable applies to all FlexEnabled applications.

Start FME Registration

Perform this task for each computer that has FME installed.

1. Once FME Desktop is installed, log in as the same user who installed FME Desktop.
2. Navigate to **Applications > FME Desktop > FME Licensing Assistant**. The FME Licensing Assistant opens.
3. On the FME Licensing Assistant, under *Have a license?*, select *Floating License* and enter the name of the [master node computer](#) that is hosting the license..
4. Click **Connect**.

 **Note** If you are connecting through a VPN, ensure the domain to which you are connecting is set as the default domain in your network or VPN settings.

5. Select the FME Edition from the list and click **Activate**.
6. Click **Finish**.

A floating license is installed to borrow a license.

Monitoring Floating License Use

To find out who is currently using FME licenses from your floating license pool:

1. Ensure the Flexera license manager utility (lmutil) is installed. This tool is installed with the floating license manager, available on the FME Downloads site (<http://www.safe.com/support/support-resources/fme-downloads/>). On Windows, it is installed by default in C:\Program Files\FlexServer.

2. Create a "license file" that you will use on your computer. You can call it safe.lic, or any other name ending in .lic. It should contain the following:

```
SERVER <IP address or name of license server> Any [optional port number]
```

Example

```
SERVER 107.22.68.36 Any
```

or

```
SERVER license1 Any 27000
```

You can use either the IP address or the name of the floating license server. We recommend using the server name because the IP address might change.

Any is required because the license server query requires both the host name and host id. **Any** can be used as the hostid. If known, you can also use the MAC address of the license server.

The port number is generally between 27000 and 27009. If you do not know what port is being used for the Safe floating license server, leave this blank, and lmutil will find it automatically. If you do [specify the port](#), the **lmstat** query is much faster.

3. Open a Command Window

Use the safe.lic file to query all details using the command:

```
lmutil lmstat -a -c <license file>
```

Example

```
lmutil lmstat -a -c safe.lic
```

This will return a lot of information. You may want to query for specific features in the license file. You can do this using a command like:

```
lmutil lmstat -f FME -c safe.lic
```


The `-f` flag specifies the feature you want reported. If you want to know who has checked out any FME feature, use `-f FME`. You can also look for specific license types like `smallworld`, `oracle`, `esri`, `professional`, `base`, and `server`.

If you do not specify a license file, `lmutil lmstat` will query all files in its folder ending in `.lic`. This can be useful if you have multiple floating license servers; you can query all of them at once by having a separate `.lic` file for each, and then omitting the `-c` flag in the `lmutil` command.

Interpreting the output of the `lmstat` query

The output of `lmstat -a` looks similar to:

```
lmstat - Copyright (c) 1989-2012 Flexera Software LLC. All Rights Reserved. Flexible License Manager status on Wed 02/28/2012 14:49 [Detecting lmgrd processes...]
License server status: 40000@prod
License file(s) on prod: C:\prod\i86_n3\counted.lic:
prod: license server UP v11.5
Feature usage info:
Users of f1: (Total of 4 licenses issued; Total of 1 license in use)
"f1" v1.0, vendor: demo
floating license
daniel myhost2 19.36.18.26 (v1.0) (myhost1/40000 102), start Fri 2/28 14:29
```

where:

Output	Argument	Description
daniel	user	User name.
myhost2	user_host	Host where user is running.
19.36.18.26	display	Display where user is running.
v1.0	version	Version of feature.
myhost1	server_host	Host where license server is running.
40000	port	TCP/IP port on server_host where license server is running.
102	handle	License handle.
start Fri 2/28 14:29	checkout_ time	Time that this license was checked out.

Specifying Floating License Server Ports

This topic explains how to specify ports used by the floating license server. By default, communication between the floating license server and a client running FME occurs on a random port. Specifying ports can be useful in specific security configurations. For example, if you have a firewall between your floating license server and a client machine running FME, you may want to open a specific port for this communication. Or, you may wish to avoid conflict when multiple FlexNet servers are installed in the same environment. For example, FME may use a random port, but ArcGIS may use a fixed port, and a conflict will occur if the same port is in use.

To specify Floating License Server Ports

Edit the `safe.lic` file in your FlexServer directory so that `yyyy` on the `VENDOR` line is the port you want to open for the communication to the client machine running FME. The port in the `SERVER` line (`xxxx`) can also be set, but this is necessary only for a [three-server redundant configuration](#), or if another FlexNet license server is using a specific port.

```
SERVER servername 000c290de0df xxxx
VENDOR safe PORT=yyyy
```

The port number for the `SERVER` and the `VENDOR` must be different. On Windows, the `VENDOR` port is typically between 1024 and 65535. On Linux, the default `VENDOR` port is between 32768 and 61000. The `SERVER` port is typically between 27000 and 27009. Be sure to add the `VENDOR` port and `SERVER` port to your firewall exceptions.

If the `VENDOR` port is specified, the FME running on the client machine must specify this port as well. Using the FME Licensing Assistant, specify the port number when prompted to "Connect to a Floating License Server," as shown below:

```
LicenseServerName:yyyy
```

where `yyyy` is the port number used in the `VENDOR` line of the `safe.lic` file.

In earlier releases of FME, the `fme_license.dat` file in the `<FMEDir>\licenses\` directory must be edited manually. It should contain the following line:

```
SERVER LicenseServerName Any yyyy
```

where `yyyy` is the port number used in the `VENDOR` line of the `safe.lic` file.

Finally, restart the FME License Server:

- » Windows: Start Menu > FlexNet for Safe Software > Start - Restart FME License Server
- » Linux: % `<FlexServerDir>/lmgrd -c <FLEXServerDir>/safe.lic`

Borrowing a Floating License

If your FME Desktop product uses a floating license, and your organization supports this option, you can borrow a license for offline use.

A fixed license configuration does not allow you to borrow a license. In addition to a floating license, you need a floating license server with the license borrowing capabilities enabled.

License borrowing requires LMTOOLS version 11.8 or newer.

If a license is available, you can borrow it and run FME for the maximum period, as specified in your license file, on a computer that will not be connected to the license server. The default period is 30 days.

If a different license period than the default is required, ask your System Administrator to contact us at codes@safe.com.

When the borrowing period expires, the license also expires. After the expiry date, the license automatically becomes available for other users to borrow.

You do not have to return the license after an expiry date; however, you can choose to return a license early. See [Return the License on the next page](#).

To Borrow a Floating License

1. [Connect to the Floating License Server below](#).
2. [Specify the Terms of the License on the next page](#).

Connect to the Floating License Server

To borrow a license, you first need to connect to a floating license server. (Please see your System Administrator if you do not know the server name.)

1. Open the FME Desktop Licensing Assistant. From the Windows Start menu, select FME Desktop > FME Licensing Assistant.
2. On the Activate FME Desktop License dialog, select *Have a License?* > **Floating License**.
3. Enter the name of the floating license server, and click **Connect**.
4. On the Select an Edition dialog, select the license type from the list, and click **Activate**.

5. On the License Summary dialog, click **Finish**.

You will see a message when you are successfully connected to the floating license server.

To borrow the license for offline use, you will have to start FME Workbench and specify the terms of the license. See [Specify the Terms of the License below](#).

Specify the Terms of the License

To access the License Borrowing option, start FME Workbench:

1. From the Windows Start menu, select FME Desktop > FME Workbench.
2. Click Tools > License Borrowing.
3. Click **Yes, borrow a license for**, and then enter or adjust the number of days. Click **OK** to close the dialog.
4. on the confirmation dialog, click **OK**.

You have successfully borrowed the floating license for the specified number of days.

To run FME Desktop during this time frame, you do not need to be connected to the license server.

Return the License

To return a borrowed license before the time expires:

1. Start Workbench.
2. Click Tools > License Borrowing.
3. On the License Borrowing pane, select *Yes, return the borrowed license early*. Click OK.
4. Click OK to close the dialog.

The license is now available for other FME Desktop users to borrow.

You cannot change or update licenses when you have borrowed a floating license. You must first return a borrowed license.

Restricting Licenses to Users or Groups

You can restrict floating licenses to specific users, groups, or machines. Create a file called `safe.opt` in the FlexServer directory. There is no need to reference this file in any other configuration files; FlexNet knows to look for it automatically. However, the file must be named `safe.opt`, and it must be in the same folder as `safe.exe`.

Any licenses reserved for a user are dedicated to that user. Even when that user is not actively using the license, it is unavailable to other users.

Example

Here is an example of an options file:

```
RESERVE 1 professional GROUP groupA
GROUP groupA xxxx yyyy
RESERVE 1 professional GROUP groupB
GROUP groupB aaaa
```

This example reserves one FME Desktop Professional license for users xxxx and yyyy, who are in group groupA, and one Professional license for user aaaa, who is in group groupB. GROUP member names are case-sensitive.

To restrict a license to specific hosts (i.e. machines) instead, replace the keyword GROUP with HOST_GROUP.

For more documentation, including additional options, see `<FlexServer>\Documents\LicenseAdministration.pdf`, where `<FlexServer>` is the directory where you installed the FlexNet software.

Troubleshooting Floating Licenses

Specifying the FME Edition to Use

If your floating license service supports multiple editions of FME, you can use the `flexlm_config.dat` file to tell FME what edition to use.

To determine the FME editions you are licensed for, consult the safe.lic file on your license server.

To specify the FME Edition to Use

On the computer that is running FME Desktop, edit (or create) flexlm_config.dat in the C:\ProgramData\Safe Software\FME\Licenses folder.

The contents should be the following two lines:

```
Registered Product=<FME edition name>  
<Displayed name in FME>
```

Example

```
Registered Product=smallworld  
FME Desktop Smallworld Edition
```

<FME edition name> is case-sensitive. <Displayed name in FME> appears when you navigate to Help > About in FME Workbench or FME Data Inspector.

Possible values for FME Edition Name are:

FME Edition Name	Displayed Name in FME
professional	FME Desktop Professional Edition
esri	FME Desktop ESRI Edition
database	FME Desktop Database Edition
smallworld	FME Desktop Smallworld Edition

System error 1067 has occurred

Symptoms

The following error occurs following an attempt to start the license server:

```
system error 1067 has occurred
```

Cause

This error can occur if you were provided an invalid license file.

Resolution

Open the safe.lic file that you saved to your FlexServer directory. (For example: `C:\Program Files\FlexServer\.`) It should contain a number of lines starting with 'FEATURE'.

If the file only has the following contents, then it is invalid:

```
SERVER 0022fb821528 skyfire
VENDOR safe
USE_SERVER
```

Send your hostid.txt (Start > Programs > FlexNet for Safe Software > View hostid.txt) and safe.lic files to codes@safe.com and mention that the license file is empty. A new license file will be generated for you.

The License Server will not Start on Linux

The FlexNet license server fails on Linux

Symptoms

On the client machine, the error message is:

```
....License system failure. Check that the safe daemon version is newer
than the FME client version. Program Terminating.
```

On the license server, the error message is:

```
./lmgrd -c ./safe.lic -l safe.log
>-bash: ./lmgrd: No such file or directory
```

Cause

FlexNet is missing necessary libraries to run on Linux

Resolution

On the license server, install `lsb-core` by typing the following command in the Linux terminal:

```
sudo apt install lsb-core
```


Access to Floating License Times Out Over VPN

Access to the FlexNet floating license over a virtual private network (VPN) may time out if the network is slow. To minimize this issue, set the FLEXLM_TIMEOUT environment variable.

1. Open the Windows System Properties dialog (Start > Control Panel > System > Advanced System Settings).
2. On the Advanced tab, click Environment Variables.
3. Under System Variables, click New.
4. In the Variable name box, enter: FLEXLM_TIMEOUT
5. In the Variable value box, enter: 1000000
6. Click OK to close each dialog box.

Licensing from the Linux Command Line

To activate a single-fixed license with your serial number

» Run:


```
./fmelicensingassistant --serial <serial-number>
```

To get your serial number, see the confirmation e-mail you received after purchasing FME Desktop.

To get a serial number for FME Desktop Trial, go to <https://www.safe.com/trial-serial-number>.

To activate a license file provided by Safe Software

1. Complete steps 1-3 under [Installing a License File Provided by Safe Software on page 38](#).

 **Note** To obtain the registration key, navigate to the FME Desktop installation folder and run:

```
./fmlicensingassistant --key
```


2. Run:

```
./fmlicensingassistant --file <filename>
```

To configure FME Desktop to use a floating license

1. Complete steps 1-5 under [Installing a Floating License on Linux on page 50](#).
2. Run:


```
./fmlicensingassistant --floating <server>[:<port>] <FME-Edition>
```

 **Note** For information about specifying *<FME-Edition>*, see [Specifying the FME Edition to Use on page 70](#).

To configure FME Desktop to use a three-server redundant floating license

1. Complete steps 1-3 under [Installing a Three-Server Redundant Floating License Server on Linux on page 60](#)
2. Run:

```
./fmlicensingassistant --floating <master-node-server>[:<port>]  
<FME-Edition>
```

 **Note** For information about specifying *<FME-Edition>*, see [Specifying the FME Edition to Use on page 70](#).

Getting Your Current Licensing Status

To find out the current licensing status of your FME Desktop installation, open the FME Licensing Assistant.

- » On Windows, the Licensing Assistant is in the Start menu under FME Desktop, or `fmelicensingassistant.exe` in the root folder of the FME Desktop install directory.
- » On Linux, the Licensing Assistant is in the Applications menu, or in the root folder of the FME Desktop install directory.
- » On Mac, `/Library/FME/<version>/Apps/FME Licensing Assistant`.

The Licensing Assistant opens and displays the current licensing status.

See Also

- » [About the Registration Key on page 39](#)

Other Common Tasks

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Installing Grid Shift Files	77
Using FME Desktop with Third-Party Applications	78

Installing the Software Development Kit for FME Desktop

The FME Desktop [installer](#) allows the option of installing the Software Development Kit (SDK) for FME Desktop. The SDK provides access to the FME Objects and FME Plug-in Builder APIs. You can use the APIs to create your own applications and plug-ins that make use of FME functionality.

Installing Grid Shift Files

FME supports conversions between coordinate systems using different datums. Many datum transformations are not mathematically definable and require the use of grid of shifts. If you attempt to perform a datum transformation of this kind without the appropriate grid shift file in place, FME stops the translation.

Installing Grid Shift Files on Windows

When you install FME for Windows, the grid shift files provided by Safe Software are automatically installed in the correct location.

If you have already installed FME, you can find more information on which files are included by opening Workbench help and clicking on the Coordinate Systems topic, or by choosing Tools > Browse Coordinate Systems and pressing the F1 key.

You can manage grid shift files by choosing Tools > FME Options > Coordinate Systems.

Click the Help button for more information on how you can maintain grid shift files.

Installing Grid Shift Files on Linux

When you install FME for Linux, the grid shift files provided by Safe Software are automatically installed in the correct locations.

You can find more information on which files are included in Linux and UNIX installations by viewing our FME FME Community site:

[FME Knowledge Center.com/index.php/Datum_Transformations_and_Grid_Shift_Files](https://www.safe.com/knowledge-center/index.php/Datum_Transformations_and_Grid_Shift_Files)

The files in the Reproject subdirectory of your FME installation folder include a path to the location of your grid file. The order in which the grids are listed is the order in which FME uses them.

To register a file, add the full pathname of the file to the beginning of the appropriate `.gdc` file. For example, in `Nad27ToNad83.gdc`, add:

```
fmehome\Reproject\GridData\Canada\NTV2_0.gsb
```

To make sure the files were registered correctly, check the log file when you run a translation.

If you have access to the FME Workbench user interface, you can manage grid shift files through the Workbench > Tools > FME Options menu. Click the Coordinate Systems icon.

Using FME Desktop with Third-Party Applications

FME Desktop integrates with a number of popular GIS applications. Visit www.safe.com for more information.

This section provides instructions for using the FME Integration Console to extend any applicable third-party applications.

About the FME Integration Console

DEPRECATION NOTICE: The FME Integration Console is deprecated, and will be removed from FME Desktop 2023.0.

FME Application Extensions are products that use or embed FME functionality in other applications. The exact functionality varies from product to product, but can include the ability to read datasets not native to that application, to export to non-native datasets, or to convert between two non-native formats.

FME can "extend" several different applications. Some extensions are packaged as part of FME, some are sold as add-ons, and some are packaged as part of the other GIS

application. Unless they are packaged as part of FME, support for Application Extensions is usually provided by the application vendor.

For information about how FME works with other applications, please see [Solutions for GIS Applications](#).

 **Note** FME does not currently extend any applications on Mac or Linux.

Installation Notes

When extending an application using FME Desktop, please be aware of the following:

- » Only 64-bit applications can be extended with FME.
- » Fixed (node-locked) licenses of FME Desktop will automatically extend compatible third-party software installed on the same system. You can easily [revert the extensions](#).
- » FME cannot extend shared applications that are installed on a different machine. FME and the application to be extended must be installed on the same logical machine, whether it is a physical machine or a virtual machine.

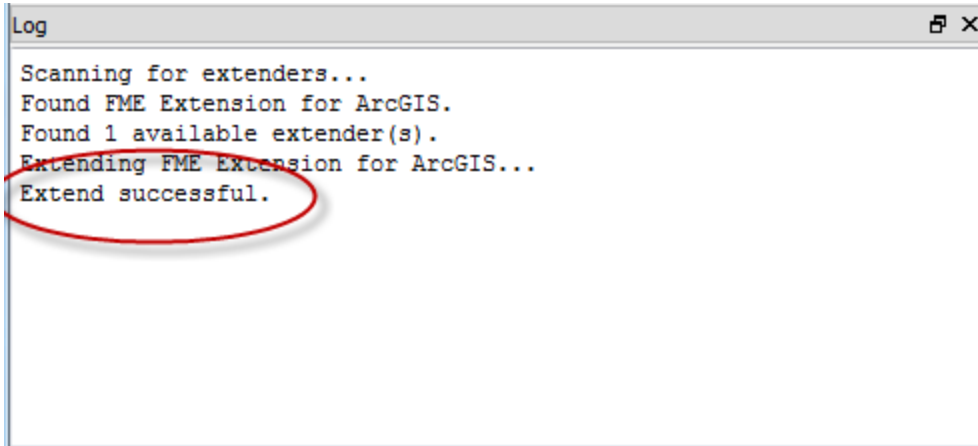
Integration Console Menus and Windows

The File and View menus contain basic window-level commands that allow you close the application or adjust the visible areas.

Through the Help menu, you can view the current FME build number, and check for FME updates.

Log Pane

The log pane shows status information and results.



```
Log
Scanning for extenders...
Found FME Extension for ArcGIS.
Found 1 available extender(s).
Extending FME Extension for ArcGIS...
Extend successful.
```

The screenshot shows a window titled "Log" with a close button in the top right corner. The log text is as follows: "Scanning for extenders...", "Found FME Extension for ArcGIS.", "Found 1 available extender(s).", "Extending FME Extension for ArcGIS...", and "Extend successful.". The last line, "Extend successful.", is circled in red.

Properties Pane

Click on the name of the application to display its Properties:

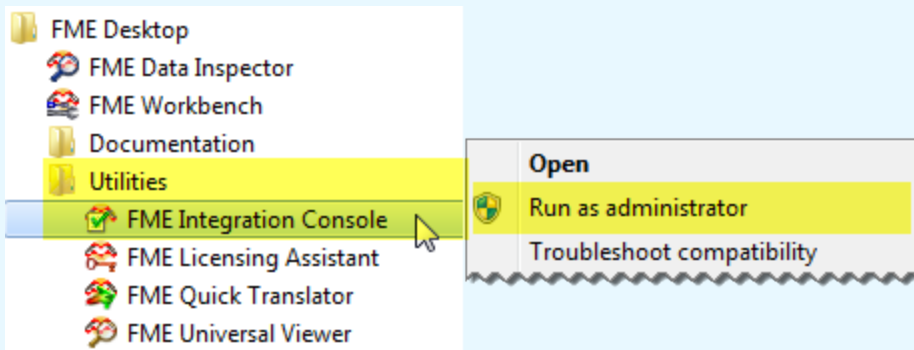
Property	Value
Application	The name of the application.
Status	The FME build number that extends the application. The build number will change each time you update FME.
Extendable	Is this application extendable by FME? A Yes in this column indicates that the application is ready to be extended.
Extended	Is this application extended by FME? If No, then you can extend the application from the Action column.
FME Build	The current FME build installed on your machine.
FME Home Path	The location of the FME installation folder.

Buttons	
Copy Text	Copies the properties so you can paste details into an e-mail application or text file. This information might be required if you need to troubleshoot an installation.
Options	<p>This button is enabled only when certain third-party applications are installed.</p> <p>When it is enabled, you can set application-specific top-level defaults.</p>

Extending Applications

After installing FME Desktop, open the Windows Start menu, and click the Programs (or All Programs) submenu. Click **FME Desktop > Utilities > FME Integration Console**.

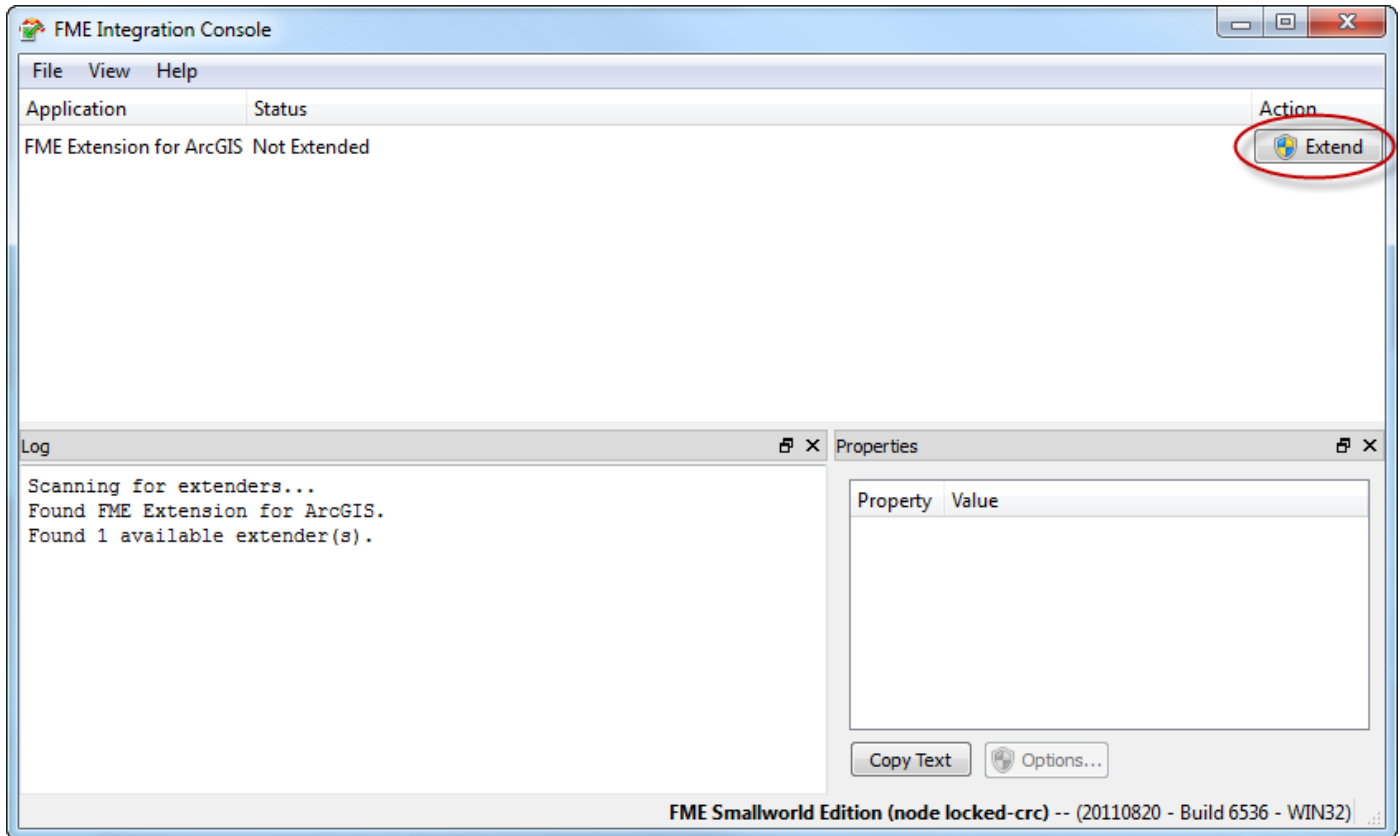
Note To ensure that you do not encounter any integration issues, we recommend that you run the Integration Console with Administrator privileges. To do this, right-click on the Integration Console menu entry, and select Run as administrator, as shown here:



When the FME Integration Console starts, click the Extend button next to the application. (Note that the application must be closed.)

FME will scan your machine for any installed applications that can be extended to support FME. The results appear in the Application column.

If the status of an application is *Not Extended*, the Action column will show an Extend button. Press the button to extend the application. The log pane will display information.

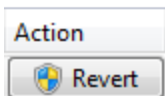


The Log will display the message Extend Successful.

Note Open the extended application to ensure that FME has been successfully extended from within that application. In the example above, FME is extended with FME Extension for ArcGIS. To check this extension, open the Extensions window from ArcCatalog or ArcMap (from the Customize > Extensions menu in ArcGIS 10.x) and ensure that FME Extension for ArcGIS is selected.

Reverting Applications

If the Status of an application is *Extended*, the Action column will contain a Revert button.



 **Note** Ensure that the extended application is closed.

Press the button to revert the application to a Not Extended state.

The log pane will display status information.

Troubleshooting

Always make sure an application is closed before extending or reverting it in the FME Integration Console.

If an application status does not show Extended:

- » Ensure that you have the correct license for extending the application. Training licenses will not work.
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