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SigFit

Installation Manual
Version 2012R1f
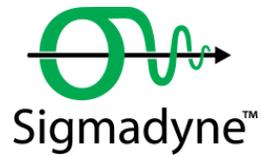
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July 31, 2013

Warning: Use of this program is subject to the terms of the Demo Software Agreement or the Software Agreement agreed upon in writing with the User's authorized representative(s). Installation of this software indicates acceptance of the Software Agreement.

Technical Support

    IMPORTANT: When contacting technical support please provide the following:
1. Your .sig file defining your SigFit analysis.
2. All files referenced by the .sig file. This includes FEA model files, FEA results files, OLOAD files, VECTOR files, etc.
3. The nature of the problem and the error you are seeing, if any.

Licensing Issues

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For more information about Sigmadyne visit our website at: www.sigmadyne.com.

The background theory used in SigFit is discussed in the following book & short courses:

Doyle, K., Genberg, V., Michels, G., **Integrated Optomechanical Analysis, Second Edition**, SPIE Press, November, 2012.

Integrated Optomechanical Analysis short course available from Sigmadyne, Inc.

SigFit short course available from Sigmadyne, Inc.

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1 Installation and Uninstallation

1.1   Upgrading the SigFit Applications

To upgrade SigFit from any SigFit version, simply follow the installation instructions in Section 1.3. The installer will automatically detect and optionally uninstall prior installations of SigFit.

1.2   Installation Requirements

Installation of SigFit requires Administrator permissions.

SigFit requires installation of Microsoft Visual C++ 2005 Redistributable SP1 with the latest security updates and Microsoft Visual C++ 2008 Redistributable SP1 with the latest security updates. The current installer will install these redistributables automatically.

SigFit has been tested on the following platforms:

Microsoft Windows XP on Intel x86_32
Microsoft Windows XP on Intel x86_64
Microsoft Windows Vista on Intel x86_32
Microsoft Windows Vista on Intel x86_64
Microsoft Windows 7 on Intel x86_32
Microsoft Windows 7 on Intel x86_64

SigFit help files are accessible from VSigFit or by the shortcuts in the Start menu require Adobe Reader.

1.3   Installation of the SigFit Application

WARNING: Installation of this software indicates your acceptance of the license agreement supplied with the software.

The following steps will install SigFit and Visual SigFit as well as setting the appropriate environment variables. These steps must be performed on any machine on which the SigFit applications will be executed. Download SigFit2012R1f_x86_32.exe or SigFit2012R1f_x86_64.exe from the Sigmadyne website using the username and password provided by Sigmadyne. To begin, double-click SigFit2012R1f_x86_32.exe or SigFit2012R1f_x86_64.exe and follow the instructions.

IMPORTANT: During the install process, some popup dialogs requiring a response may become hidden behind the main dialog window. If the install appears to be hung, simply move the displayed window(s) around to see if a dialog is present requiring a response. It is very common for the final dialog of the uninstallation of prior security device drivers to be displayed behind Uninstall – SigFit dialog.

A check for an existing installation is made. If a prior version is found, the user may request the installer to uninstall it. If a prior version is left uninstalled, then the user may need to adjust the contents of the PATH environment variable so that the executables of the version being installed will be found instead of those of an earlier version.

This dialog commonly gets displayed behind the one below causing the install to appear to be hung. Simply move the larger UnInstall-SigFit dialog if the install appears to be hung.

Once any detected prior installations have been removed, a Welcome banner will appear. Close any programs you may have running and pick Next. Read the License Agreement and indicate your acceptance by picking the radio button next to "YES" and pick Next.

The Select Components dialogue as shown below can be used to choose which files to install. Select the files groups you wish to install and pick Next. The default installation is to install all files and is recommended.
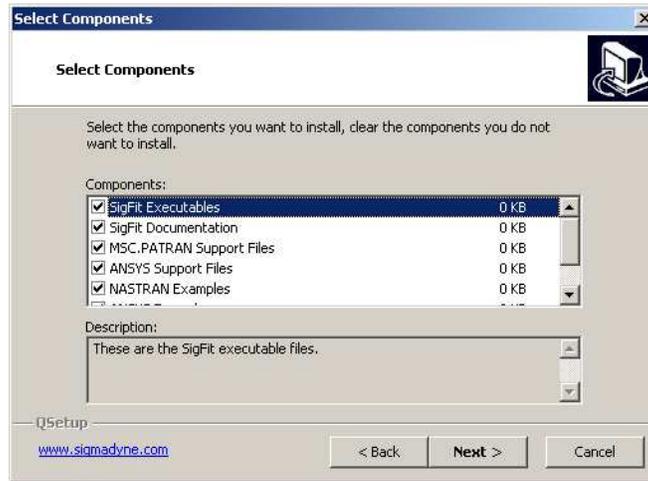
Use the default installation directory or modify it and pick Next.
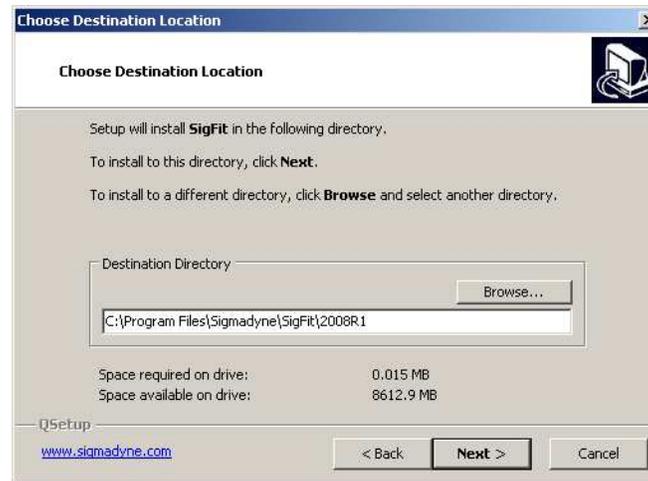
Choose if you would like .sig files associated with SigFit.
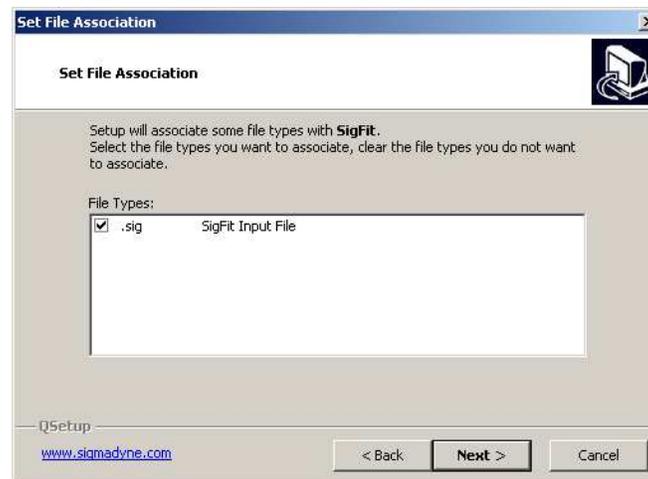
Use the default program folder name or modify it and pick Next.
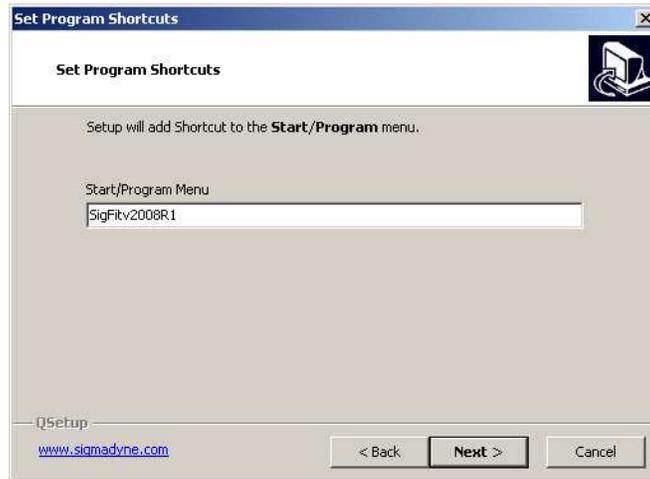
Verify the installation settings and pick Next.
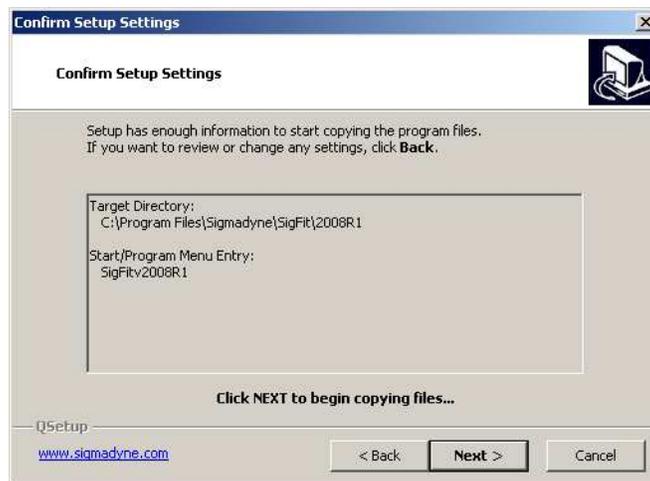
The selected files will copy to the installation directory.
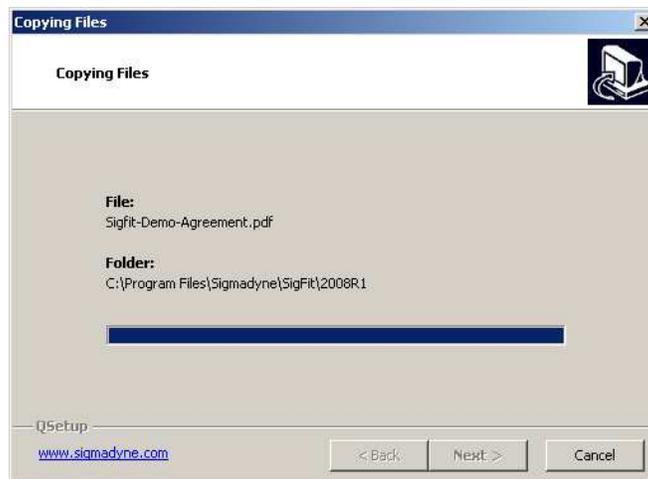
Once the files are copied a choice will be given to select the type of licensing system SigFit should expect to use. The license type chosen here will be stored in the system environment variable SIGFIT_LICENSE_TYPE as either FLEXNET or DONGLE.
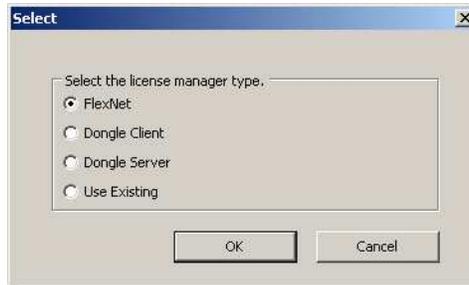
If the FLEXnet licensing system is chosen then the location of the FLEXnet license will be required. This location is given in the form of *port_number@servername*. The port number may be chosen by the user but must be consistent with that used in the FLEXnet license file. Be sure that the port number chosen does not conflict with any other ports being used on your system. The license location specified here will be stored in the system environment variable SIGMADYN_LICENSE_FILE.
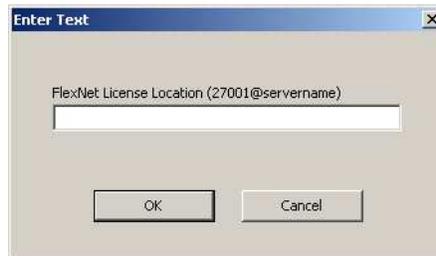
When the copy is complete pick Finish.

Installation of the Microsoft Visual C++ Redistributables will begin. Pick Yes to install the Microsoft Visual C++ 2005 Redistributable.
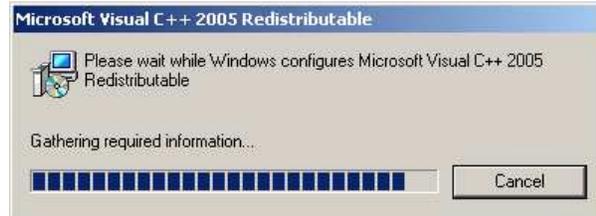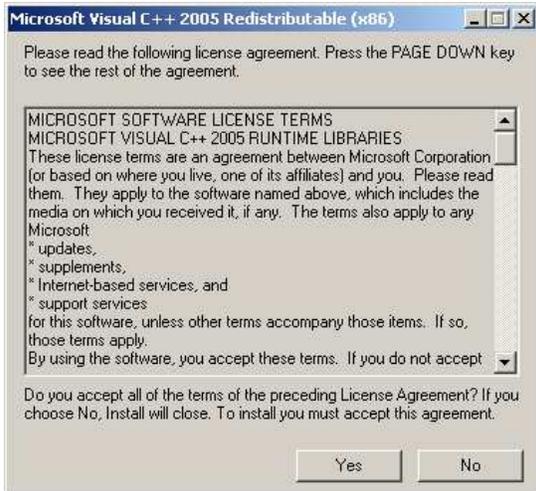
Pick Next to install the Microsoft Visual C++ 2008 Redistributable.
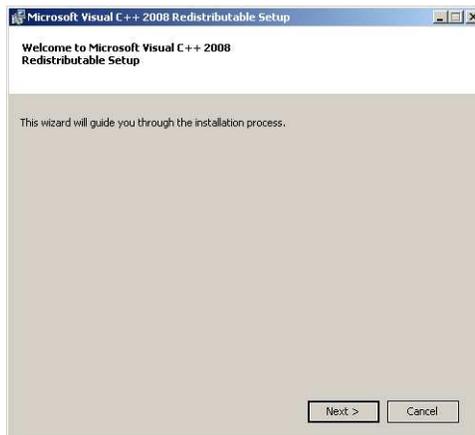
If the Microsoft Visual C++ 2008 Redistributable is not already installed then the following window will appear. Check the box and pick Install. The redistributable package will install.
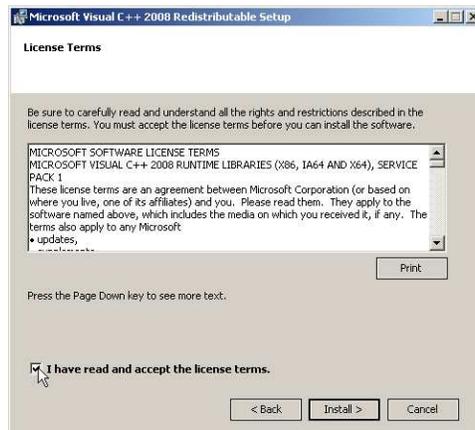
Pick Finish to complete the installation.
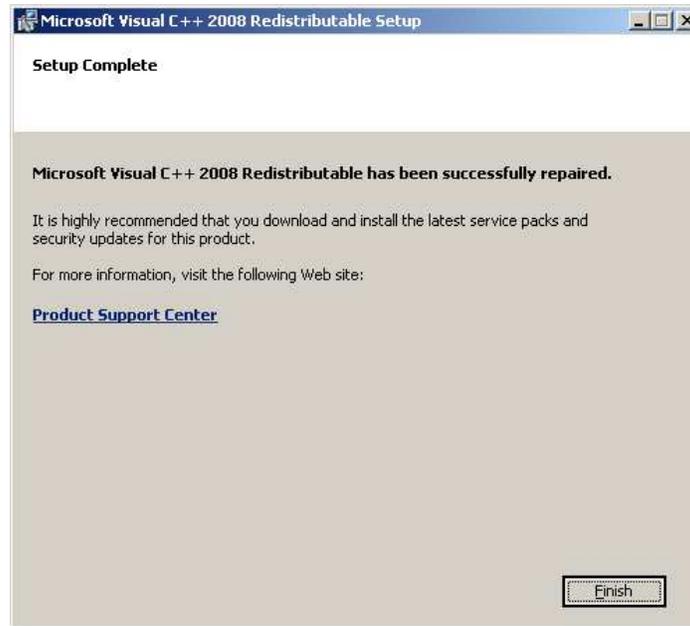
At this point the installation of the SigFit application is complete and the installation will close.

1.3.1   Changing the License Type of an Existing SigFit Client Installation

If you would like to change the license type of an existing SigFit client installation make the changes as shown in the table below.

To switch to …	…follow these steps.
… a dongle licensing system …	1. Change the system environment variable SIGFIT_LICENSE_TYPE to DONGLE. 2. Install the dongle client or server drivers using DongleSecurityInstall.exe.
… a FLEXnet licensing system …	1. Change the system environment variable SIGFIT_LICENSE_TYPE to FLEXNET. 2. Create the system environment variable SIGMADYN_LICENSE_FILE and set it to the location of the FLEXnet license in the form of *port_number@servername*.

1.3.2   Installation of the MSC PATRAN Plotting Template Files

The MSC PATRAN template files for making plots of SigFit results within MSC PATRAN can be found in the MSCPatran_Support folder of the SigFit install directory. You may copy these files to a convenient location in the res_templates folder in the MSC PATRAN install directory. It is suggested that any customized templates be placed in a subfolder such as *{MSC PATRAN install}*\res_templates\Custom. This will allow easier browsing of the SigFit template files rather than browsing amidst the more than 60 templates in the res_templates folder level.

1.3.3   Installation of the Macro File for ANSYS Mechanical APDL

In ANSYS Mechanical APDL the user may choose to use either the macro file *sigout.mac* or the library file *sigfit_library.lib*. Both forms of the macro file can be found in the ANSYS_Support folder in the SigFit installation directory. To install the macro users should perform one and ONLY one of the following steps to make the macro file visible to ANSYS Mechanical APDL.

1. Place the macro file *sigout.mac* in a directory location automatically visible to ANSYS Mechanical APDL. This may be the APDL macro directory (C:\Program Files\ANSYS Inc\v110\ANSYS\APDL in version 11.0, C:\Program Files\ANSYS Inc\v121\ANSYS\APDL in version 12.1, etc.), the user home directory, or, an alternate location which will be searched by ANSYS. Consult the ANSYS documentation for additional information relating to the placment of macro files so that they are visible to ANSYS Mechanical APDL.
2. Place the macro library file, *sigfit_library.lib*, in a suitable location and use the *ULIB command to load the library file. A *ULIB command to load the macro library may be placed in the ANSYS start-up file (*start110.ans* for version 11.0). An example of this startup file is located in the ANSYS APDL directory (C:\Program Files\ANSYS Inc\v110\ANSYS\APDL in version 11.0, C:\Program Files\ANSYS Inc\v121\ANSYS\APDL in version 12.1, etc.). This command would look as follows:

    ULIB,{path}*\sigfit_library,lib

    where, *{path}* is the path to the *sigfit_library.lib* file.

1.3.4   Installation of the Macro File for ANSYS Workbench

In ANSYS Workbench the user must use the library file *sigfit_library.lib*. It should be placed in the ANSYS APDL directory (C:\Program Files\ANSYS Inc\v110\ANSYS\APDL in version 11.0, C:\Program Files\ANSYS Inc\v121\ANSYS\APDL in version 12.1, etc.).

1.3.5   Installation of the ABAQUS ODB API Library

The SigFit interface to ABAQUS requires use of the ODB API library supplied by SIMULIA in addition to a call to ABAQUS itself. Therefore, users must have ODB API library and ABAQUS installed on the machine on which SigFit is to run. Users must download the ODB API library archive from SIMULIA's website at ftp://ftp.simulia.com/CDimages/ODB_API. At this site select the version for which you would like to download. Then select either the *win86_32* or *win86_64* archive depending on your platform. After downloading the archive, extract the *lib* folder and place it in the ABAQUS installation path for the corresponding ABAQUS version. Generally, this is C:\SIMULIA\Abaqus*{version}*. The interface file to SigFit will automatically be installed when the SigFit application is installed.

1.3.6   Installation of the CODEV User Defined Gradient Index Lens DLL

In order to use the results files generated by SigFit with the thermo-optic user-defined gradient index lens feature, a DLL file supplied with SigFit must be placed in the CODEV UMR directory generally located at *{CODEV installation folder}*\umr. It is important for the user to note that only versions of CODEV 10.4 and later are suitable for use with this feature. The DLL supplied with SigFit can be found in the CODEV_Support folder in the SigFit installation path.

1.4   Installation of Sigmadyne FLEXnet Licensing

Sigmadyne FLEXnet licensing is installed on the license server only by double-clicking SigmadyneFNPLicensingv11.4.1_x86_32.exe or SigmadyneFNPLicensingv11.4.1_x86_64.exe. If you have a license certificate file for a specific license server machine, then be sure to install the license server software on that machine. No licensing software is required on client SigFit installations for Sigmadyne FLEXnet licensing.

Follow the instructions of the installation dialogs. You will be given a choice to install a license file.
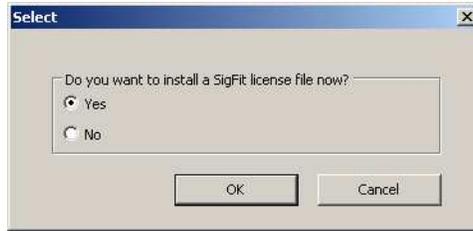
If you answer yes, then you will be prompted to pick a license file which will be installed and used to start the FLEXnet service named Sigmadyne License Manager.
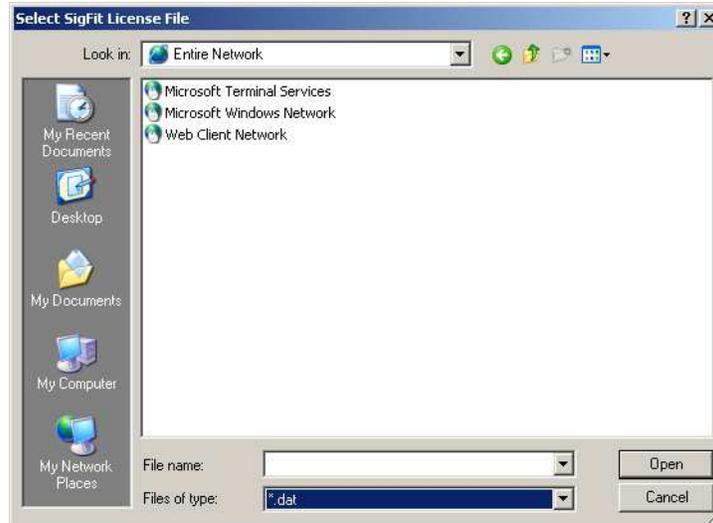
This will complete installation of the FLEXnet licensing software. To further configure the FLEXnet license manager use the lmtools utility found in Start/SigmadyneFNPLicensingv11.4.1.

1.4.1   Firewalls and Sigmadyne FLEXnet Licensing

Two rules may need to be added to the firewall of the license server machine if a firewall is used on the license server machine. The instructions below apply to the Windows Firewall in Windows 7. Test execution of SigFit before adding these rules to determine if your firewall requires them. Add rules similar to those described below for other firewall software. Open the Control Panel from the Start menu. If the icons are displayed by Category then pick System and Security and then pick Windows Firewall. If all icons are shown then simply pick Windows Firewall. Pick Advanced Settings as shown below.
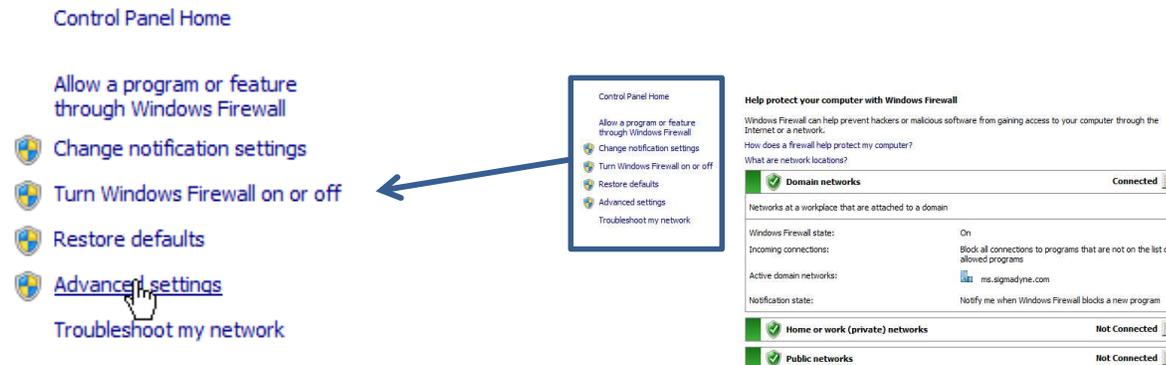
Pick Inbound Rules and then under Actions pick New Rule…

Select Program for the Rule Type as shown below. Pick Next.
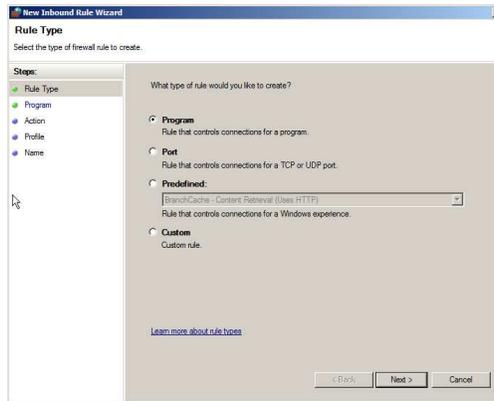
For the program path browse to the location of lmgrd.exe located in the platform dependent location specified in the table below.

Platform	Path to lmgrd.exe and SIGMADYN.exe
32 Bit Windows	C:\Program Files\Sigmadyne\SigmadyneFNLicensing
64 Bit Windows	C:\Program Files (x86)\Sigmadyne\SigmadyneFNLicensing

Pick Next.
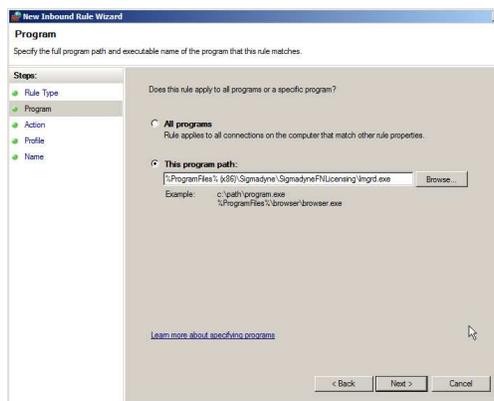
For the Action specify to Allow the connection. Pick Next.
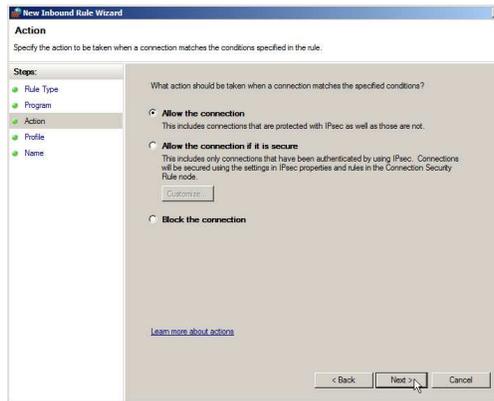
For the Profile it is probably not necessary for your network to allow Public access so that can be unchecked. Pick Next.
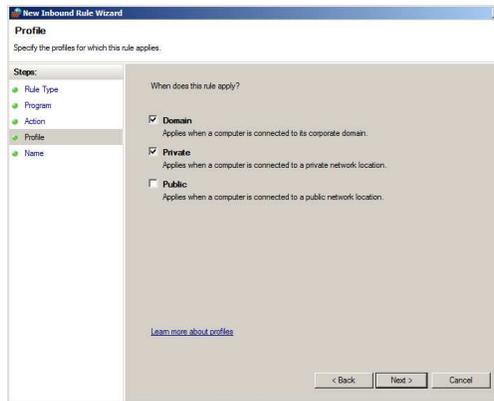
Specify a rule name of Sigmadyne lmgrd (TCP) and pick Finish.
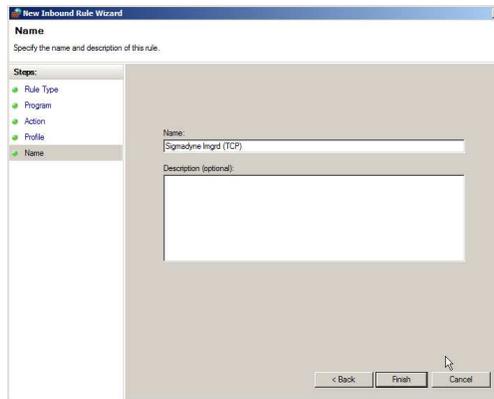
After the rule is created double-click the rule shown in the Inbound Rule list. In the Protocols and Ports tab select TCP for the Protocol type. Specify the Local port to be the Specific Port of 27001 or whatever port number is used in the license file. Pick OK.
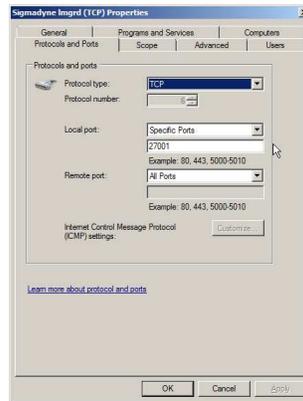
A second inbound rule should be added in a similar fashion to allow SIGMADYN.exe to pass TCP traffic on any port number. It is important that any port be allowed for SIGMADYNE.exe as the port number may change if the license manager service is restarted and is not the port number specified in the license file.

1.5   Installation of Dongle Security Drivers

WARNING: The dongle licensing system does not run on x86_64 platforms. Only FLEXnet licensing runs on x86_64 platforms.

Installation of the dongle security device drivers is performed by double-clicking DongleSecurityInstall.exe file.

Parallel Server
To install the drivers for a dongle license server with a parallel port dongle use the settings shown below and pick OK.
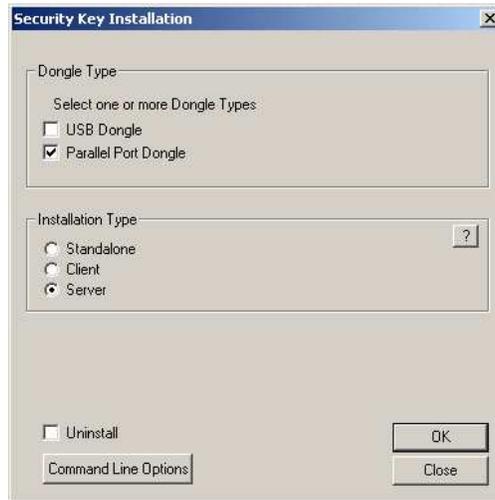
USB Server
WARNING: USB is not supported on Windows NT and Windows 95. For these systems you must use a parallel port server or client install.

To install the drivers for a dongle license server with a USB dongle use the settings shown below and pick OK.
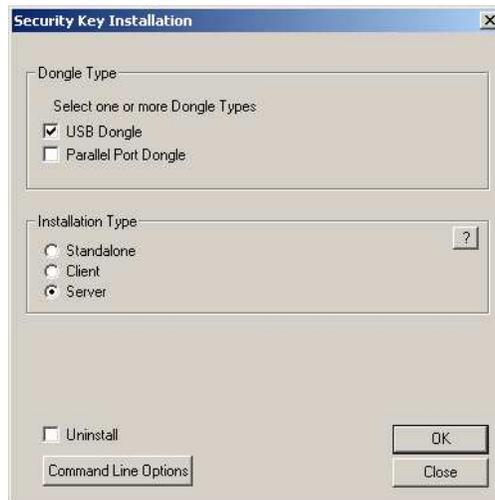
At this time you may plug in your USB device. You will see dialogs indicating that your operating system recognizes the device and its installed driver. However, Windows 2000 and Windows XP respond differently.

Windows 2000
The dialogues indicating that the device has been found may open and close so fast that you may not see what they all say. You should not have to click on any of the windows. You may verify that the device is installed by opening the System icon in the Control Panel and selecting the Hardware tab. Then select Device Manager. USB Dongle – Software Protection Device should be listed under USB.

Windows XP
When you plug in the USB device a few messages appear on the lower task bar and then the following dialogue will appear. Be sure "Install the software automatically" is selected and pick Next.

The following dialogue will appear briefly ….

… and will be followed by the following dialogue. Pick Finish.

Client

A client install is performed on any machine which obtains the license to run SigFit by checking for the security device located on a server machine via a local area network. The driver's TCP/IP protocol allows flexible sharing of the license. However, your license agreement defines the limit of the area over which your license may be shared. If you are unsure of the contents of this agreement for your site license or who in your organization has a copy, please contact Sigmadyne.

To install the drivers for a client SigFit installation use the settings shown below and pick OK. Do not use the Set Server feature.
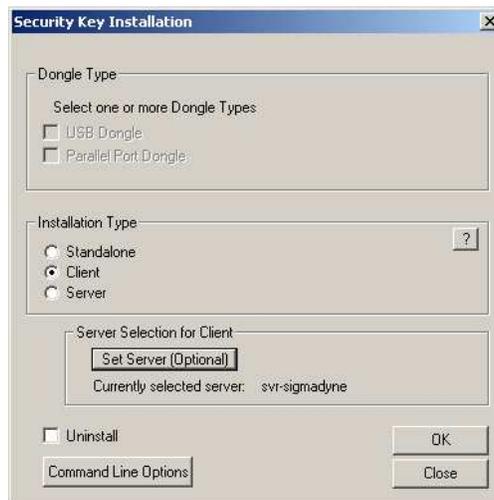
Installation of the security device drivers will commence and will take a few seconds.
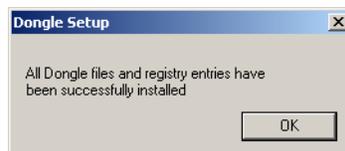
After the above dialog is dismissed open in a text editor such as notepad the file in C:\WINDOWS\system32 called TCPIPSvr.dat. Enter the IP address of the dongle license server and save the file.

IMPORTANT: If a firewall is present between the execution of SigFit and the security device, then the applications DongleServers.exe and KLServer.exe must be added to the approved programs list on port 4242. Be sure to consider software

firewalls resident on either the client or server machines in addition to other firewalls along the network path between the machines.

Access to the server license may be tested with a utility which can be run from any command window or from the Run feature in the Start menu. Simply type *DongleServers* and pick OK. The following utility will open allowing the user to pick *Display Dongle Servers*. This will show a list of the license servers found by TCP/IP. Note that server machines using the old NetBIOS protocols (pre-v2004R1.4) will not show up here.

1.6   Uninstallation of the SigFit Application

SigFit may be uninstalled by the remove program feature in the Control Panel.

1.   Double-click the Control Panel in My Computer.
2.   Double-click the Add/Remove Programs icon.
3.   Pick SigFit from the list and then pick Remove.
4.   Pick Close after the uninstallation is complete.