



Synplify[®] DSP Installation and License Configuration

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Installation and License Configuration

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Synplify DSP and MATLAB

The Synplify® DSP product works off a foundation made up of the MathWorks® MATLAB® (technical computing language) and Simulink® (model-based design) design tools. These applications need to be installed before the Synplify DSP product. For a list of supported MathWorks versions, see the Release Notes.

Your MathWorks installation must include the following features for Synplify DSP to run correctly. Make sure you install all the toolboxes and features described below.

Feature	Description
MATLAB	This is the main MathWorks desktop, and has scripting capabilities for algorithm development and data analysis.
Simulink	It provides an interactive graphical environment and a customizable set of block libraries that let you accurately design, simulate, implement, and test systems. It has a built-in notion of time (continuous and multi-rate discrete).
Fixed Point Toolbox	Additional option that provides fixed-point data types and arithmetic in MATLAB. Use it to develop algorithms for testing, modeling, and verifying your fixed-point implementations. It also includes an interface from Simulink Fixed Point to MATLAB Fixed Point workspace.
Simulink Fixed Point	Additional option that enables the fixed point data type in Simulink. Use it to execute fixed-point simulation in Simulink, Stateflow, the Signal Processing Blockset, and the Video and Image Processing Blockset. It includes tools to identify overflow and saturation errors.
Signal Processing Toolbox	Additional option for performing signal processing, analysis, and algorithm development. The Signal Processing Toolbox is a collection of industry-standard algorithms for analog and digital signal processing. It provides graphical user interfaces for interactive design and analysis and command-line functions for advanced algorithm development. It includes basic filter functionality (with FDATool).
Filter Design Toolbox	Additional option for designing, simulating, and analyzing fixed-point, adaptive, and multirate digital filters. It extends the capabilities of the Signal Processing Toolbox with filter architectures and design methods, like adaptive and multirate filtering. When used with the Fixed-Point Toolbox, the Filter Design Toolbox provides functions that simplify the design of fixed-point filters and the analysis of quantization effects.
Signal Processing Blockset	Additional option that provides a foundation blockset for DSP simulation in Simulink. It extends Simulink functionality with efficient frame-based processing and blocks for signal processing systems.

Synplify DSP Software Installation Instructions

Installation of the Synplify DSP software is a two-step process: you must first install Synplify DSP using the platform-specific installation instructions, and then ensure that it is installed in the MATLAB environment. The following procedures explain the details:

- [Installing the Software on a Windows Platform, on page 4](#)
- [Installing the Software on a Linux Platform, on page 5](#)

Installing the Software on a Windows Platform

The following procedure shows you how to install the Synplify DSP tool.

1. Make sure you have one of the following releases of the MATLAB and Simulink® software from The MathWorks® installed:
 - For supported versions, check the release notes.
 - For a list of required MATLAB features that must be installed, see [Synplify DSP and MATLAB, on page 2](#).

For Linux installations, you must have write permission for the MATLAB installation, because the Synplify DSP installation process writes into the MATLAB toolbox directory.

2. Install the software.
 - Download the Synplify DSP application from the location provided to you by Synplicity.
 - Double click the .exe file and follow the installation instructions. For further client and server setup instructions, see [License Configuration, on page 8](#).
3. Start MATLAB. In MATLAB, change the working directory to C:\Program Files\Synplicity\Synplify_dsp_<version>\mathworks.

Note that if you had a previous version of the Synplify DSP software installed, you must start a new MATLAB session.

4. At the MATLAB command line prompt, do the following:
 - Type `setup` to execute the setup script (`setup.m`) in the working directory.
 - When the Timing Engine Configuration window opens, specify the location of the Synplify Pro executable and click OK. You must specify this because the tool uses the synthesis timing engine for Advanced Timing Mode. If you do not specify it or the tool cannot find the executable, you will get warning messages in the log file telling you that the software is using estimation mode instead.



- When the installation is complete, the tool confirms the locations with a popup window. Click OK to close the window.

-
5. Double check the installation by typing the following at the MATLAB command line:
 - Type `syndsproof`. The software echoes the path where the Synplify DSP software is installed.
 - Type `path`. The window shows the path where the MATLAB software is installed:
 - Check the version number by typing `syndspver`. You see information about the installed version of the Synplify DSP software.
 6. Check that you have all the necessary MATLAB features installed by typing the following at the MATLAB prompt:

```
setup('check')
```

This command checks the platform and licenses for the MATLAB features required for Synplify DSP. It lists all the licenses it finds, and generates warnings for any missing licenses.

Installing the Software on a Linux Platform

You can use one of two procedures to install the software on a Linux platform, depending on whether you have write permission to the MATLAB installation. The following describe the procedures needed to install on the Linux platform:

- [Installing with Write Permissions to the MATLAB Installation, on page 5](#)
- [Installing Without Write Permissions to the MATLAB Installation, on page 6](#)

Installing with Write Permissions to the MATLAB Installation

Use this procedure when you have write permission to the MATLAB installation and you want to install Synplify DSP permanently into the MATLAB environment. If you do not have write permission, use the procedure described in [Installing Without Write Permissions to the MATLAB Installation, on page 6](#).

1. Make sure you have a supported version of the MATLAB and Simulink[®] software from The MathWorks[®] installed.
 - For supported versions, check the release notes.
 - For a list of required MATLAB features that must be installed, see [Synplify DSP and MATLAB, on page 2](#).
2. Install the Linux software.
 - Download the software from the Synplicity website.
 - Extract the software using the `tar` command, where *toolversion* is the combined tool name abbreviation or tool suite name and version string. For example:

```
% tar -xvf toolversion_linux.tar
```

- Run the installation script in the directory location containing the extracted files. For example:

```
% cd <extract_directory>  
% ./linux/install.sh
```

-
3. Start MATLAB. In MATLAB, change the working directory to `<SynDSP_install>/mathworks`.

If you had a previous version of the Synplify DSP software installed, you must start a new MATLAB session.

4. Type `setup` to execute the setup script (`setup.m` file) in the working directory. Note that the setup script adds some paths to certain scripts in the MATLAB installation directory. If you do not have write permission to the MATLAB installation, refer to [Installing Without Write Permissions to the MATLAB Installation, on page 6](#) for information about manually adding the `addpath` commands.

The installation confirms the software location with a popup window.

5. Click OK to close the popup window.
6. Double check the installation by typing the following at the MATLAB command line:
 - Type `syndsproot`. The software echoes the path where the Synplify DSP software is installed.
 - Type `path`. The window shows the path where the MATLAB software is installed.
 - Check the version number by typing `syndspver`. You see information about the installed version of the Synplify DSP software.
7. Check that you have all the necessary MATLAB features installed by typing the following at the MATLAB prompt:

```
setup('check')
```

This command checks the platform and licenses for the MATLAB features required for Synplify DSP. It lists all the licenses it finds, and generates warnings for any missing licenses.

Installing Without Write Permissions to the MATLAB Installation

Use this procedure to install Synplify DSP when you do not have write permission to the MATLAB installation. If you do have write permission, use the procedure described in [Installing with Write Permissions to the MATLAB Installation, on page 5](#).

1. Follow steps 1 and 2 from [Installing with Write Permissions to the MATLAB Installation, on page 5](#), but install the Synplify DSP software in a directory where you have write permission. This directory is now your `<SynDSP_install>` directory.
2. Start MATLAB.
3. To add Synplify DSP to the MATLAB environment, type the following commands at the command line or add them to a startup script file like `startup.m`. If you use a startup

script, save it in the working directory. Use the commands that match the MATLAB version you are using.

MATLAB R2006b	<pre>addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/MATLAB7/ linux') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/demos') dspstartup</pre>
MATLAB R2007A	<pre>addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/MATLAB74/ linux') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/demos') dspstartup</pre>
MATLAB R2007B	<pre>addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/MATLAB75/ linux') addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/demos') dspstartup</pre>

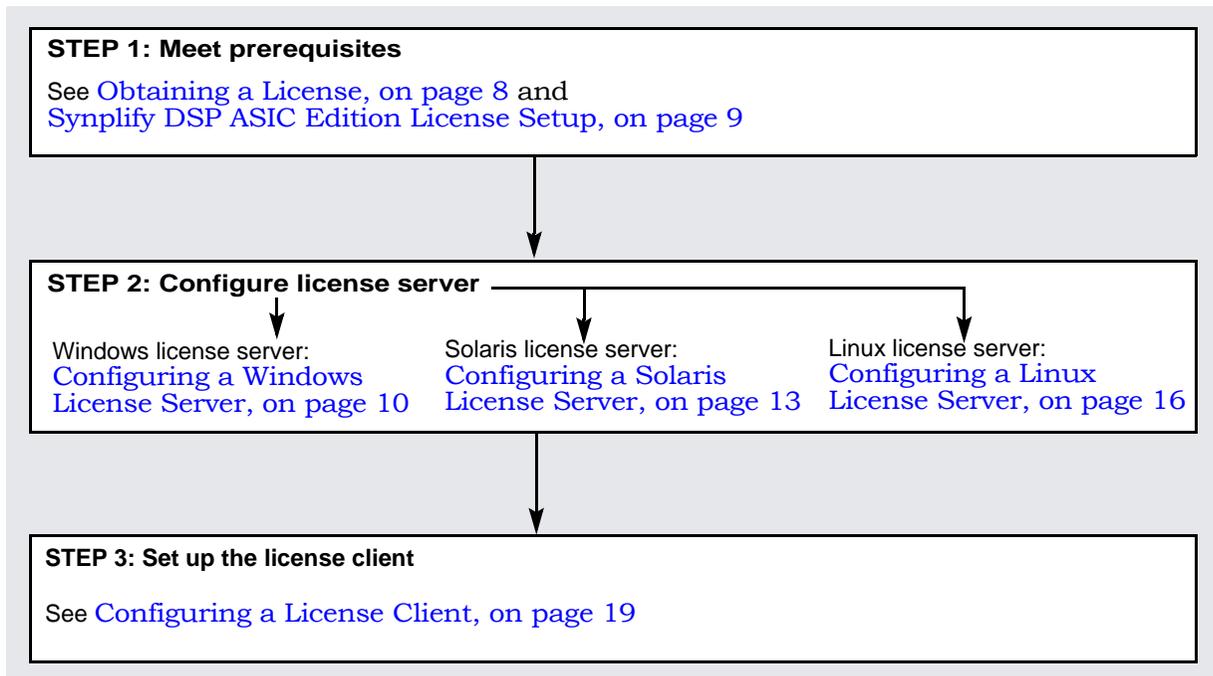
<SynDSP_Home> is the absolute path of the directory where you installed the Synplify DSP software. Note the following:

- Directory order is important, so specify the commands in the order shown. If you do not specify them in this order, some Synplify DSP blocks are not initialized and will not simulate.
 - The dspstartup command is optional but often gives better simulation performance. It is a Simulink function that sets the simulation engine to an optimal configuration for discrete-time DSP systems.
4. Double-check that the software by following steps 6 and 7 of the procedure in [Installing with Write Permissions to the MATLAB Installation](#), on page 5.

License Configuration

You probably already have licenses and license servers set up for other Synplicity products, which permit a wider range of platform and licensing combinations. This document only contains the information needed for Synplify DSP licenses; for details about other setups, see the platform-specific licensing documentation that came with the product.

This section describes how to set up your software license and license server.



Obtaining a License

Your Synplicity software license is normally emailed to you. It is also printed on the Synplicity Authorization Form included with your product shipment. For evaluation licenses, you must request and download a trial license for running evaluation software. You will be asked for a host ID for an evaluation license.

If you do not have licensing information, contact Synplicity through one of the following:

- Email: support@synplicity.com
- Phone: +1 408 215-6000
- Contact your local applications engineer

Synplify DSP ASIC Edition License Setup

If you have the Synplify DSP ASIC Edition tool, there could be a conflict with a previous FPGA-only license of the tool. The Synplify DSP ASIC Edition tool lets you target both ASIC and FPGA devices, so you do not need another version of the tool for FPGA devices. To avoid the potential licensing conflict, do the following:

1. Open the license file, search and comment out the line for the FPGA-only license, as shown in the following excerpt.

```
FEATURE synplifydpsl synplctyd 2005.136 09-apr-2007 1 \
  ODD5329BCBF7BC83416A \
  NOTICE=CUSTID=N241174318846228 SIGN="028C EBB3 4064 74CE C113 \
  FB5C CA5D 677C 9862 E9D0 8300 28A2 94B2 DEDD E0DD D408 DB3E \
  BF55 DFC5 B687 85F7"

FEATURE synplifydsp synplctyd 2005.137 01-may-2007 5 \
  DD3564F2BD5C357404DC VENDOR_STRING=asic \
  NOTICE=CUSTID=N112414556092034 SIGN="0353 1C47 20FE 6918 2ED6 \
  D8F2 3C4A 64AC 50E7 9A39 6D02 D61A 2446 3878 B6FF F35A 44F2 \
  E714 FBCA 803F A3FC"

#FEATURE synplifydsp synplctyd 2005.136 09-apr-2007 1 \
# 3DC5F24B5FA14999F0C4 VENDOR_STRING=fpga \
# NOTICE=CUSTID=N2411743111074777 SIGN="0350 FA93 03C0 C9F5 FDFB \
# B608 1486 DFCE 8765 E096 0801 5AC1 A55F 113D 8B1A BAB9 3B2D \
# 7E77 FC5F C36C 3210"
```

Comment out previous FPGA-only license.

Do not comment out ASIC license.

Do not comment out the simulation license.

2. After modifying the file, shut down and restart the license server, or run `lmutil lmreread`.

Configuring a Windows License Server

If you intend to use an existing Windows license server with a Linux version of the tool, you must update the Flex files for the Windows server. Contact Synplicity for details and a download.

The following instructions explain what you need to do to set up a Synplicity license server on a Windows machine. For information about setting up a Linux or Solaris license server, see [Configuring a Linux License Server, on page 16](#) and [Configuring a Solaris License Server, on page 13](#), respectively.

Setting up a Windows License Server

1. Install the software as described in [Synplify DSP Software Installation Instructions, on page 3](#). During installation, make sure that you select the FLEXnet component for installation.
2. Set up the license file.
 - Create a `license.dat` file in your `c:\SynLM` directory and locate your licensing information. For purchased licenses, use the dongle and license sent with the software. For evaluation licenses, obtain a license as described in the previous step.
 - Cut and paste the licensing information into the `license.dat` file. Edit the file and make the following changes:
 - Replace `[server]` with the name of the machine that will act as the server. Do not include the brackets.
 - Make sure that the path to the Synplicity license daemon (*path_to_synplctyd*) is correct `C:\SynLM\synplctyd.exe`.
 - Replace the TCP number at the end of the `SERVER` line with a port number that is not in use. If you are not sure of the port number, use the default value, which is usually 1709.

The following example shows an edited license file for a server named `genie`. The backslash at the end of some `FEATURE` lines is a line-continuation character that indicates that the entry is continued on a second line without a line break.

```
SERVER genie 000F250E0D6E TCP:1709
DAEMON synplctyd C:\SynLM\synplctyd.exe

FEATURE synplifydpsl synplctyd 2005.120 15-apr-2005 1 BD60BB706517AEF78361\
NOTICE=CUSTID=N225903325646784 \
SIGN="0001 B095 BD0D C59C 5155 CE83 DBF3 6D0A 741F F0CA 8F33 F098 E040 0BB9 0054\
E5BD 7E10 8F9E 5F9A 89E3 FE3F"

FEATURE synplifypro synplctyd 2005.120 15-apr-2005 1 9D202BC08BF2358EF64E \
VENDOR_STRING=fpga NOTICE=CUSTID=N225903326616299 \
SIGN="0045 616C 7343 4C8E 0B58 078F 96D7 66AB 6E6F 6ADB E801 7C64 D7FA 0217 FCE1\
3EE7 30F2 90D9 0D59 3FB0 24B2"
```

```
FEATURE synplifydsp synplctyd 2005.120 15-apr-2005 1 4D206B804B05F48B3A8F\  
NOTICE=CUSTID=N2259033212385636 \  
SIGN="0246 01E8 CDF1 5F0D 1B22 FCDE A25D AE38 1B34 9B88 5703 A948 9E20 FDBE C5BE\  
FB3D F1E4 160A 6DCD 93F6 8EBD"
```

3. If you are using Windows XP with the Service Pack 2 (SP2) or later as your floating license server, configure the firewall application as described in [Windows Firewall Considerations, on page 12](#).
4. Make sure that the specified TCP port on the server is opened up, so that the synplctyd.exe program can talk to the network.
5. Set up the license manager:
 - Open the LMTOOLS utility by clicking on the lmtools.exe icon in the c:\SynLM directory. The LMTOOLS dialog box will open to the first tab (Service/License File). Note that all tabs/settings are not required. For more detailed information, refer to the Macrovision Corporation website (<http://www.macrovision.com>).
 - On the Service/License File tab, make sure that Configuration using Services is selected.
 - Select the Config Services tab and make sure that the paths to the following files are correct. Browse if needed. This table shows the default locations:

lmgrd.exe	c:\SynLM\lmgrd.exe
License File	c:\SynLM\license.dat
Debug Log File	c:\SynLM\debug.log

If you are using an lmgrd executable other than the one supplied in the SynLM directory, use the lmver option of the lmutil command to verify the version of the executable (e.g., c:\SynLM\lmutil lmver *path_to_exe*\lmgrd.exe). If the version is not 10.8.2.1 or later, use the lmgrd.exe supplied in the SynLM directory.

- If you want the server to automatically start at power-up, check Use Services and then check Start Server at Power-Up.
- Select the Start/Stop/Reread tab. If prompted to save the settings for the service, click Yes. Make sure that the correct license file appears in the status line at the bottom of the form and then click Start Server. The status line will display Server Start Successful.
- Again select the Config Services tab and click View Log to verify that the licensing information is correct and that the Synplicity license daemon (synplctyd) is running. Click Close Log to dismiss the log window.
- Close LMTOOLS.

You can now set up the client license on the same machine or a different one.

Windows Firewall Considerations

Windows XP Service Pack 2 (SP2) and later enhance the security capabilities of the Windows operating system. If you are using a Windows XP machine with an SP2 or later update as your floating license server, you must configure the XP firewall application to allow client access to the Synplicity floating license ports.

Defining TCP and Port Variables

The license manager daemon (lmgrd.exe) and the Synplicity license daemon (synplctyd.exe) are separate processes and each requires a separate port to run its associated driver. For Synplicity floating licenses, you must define both a TCP variable for the license manager daemon and a PORT variable for the Synplicity license daemon. These user-defined variables are entered on the SERVER and DAEMON lines in your Synplicity license file as shown in the example below.

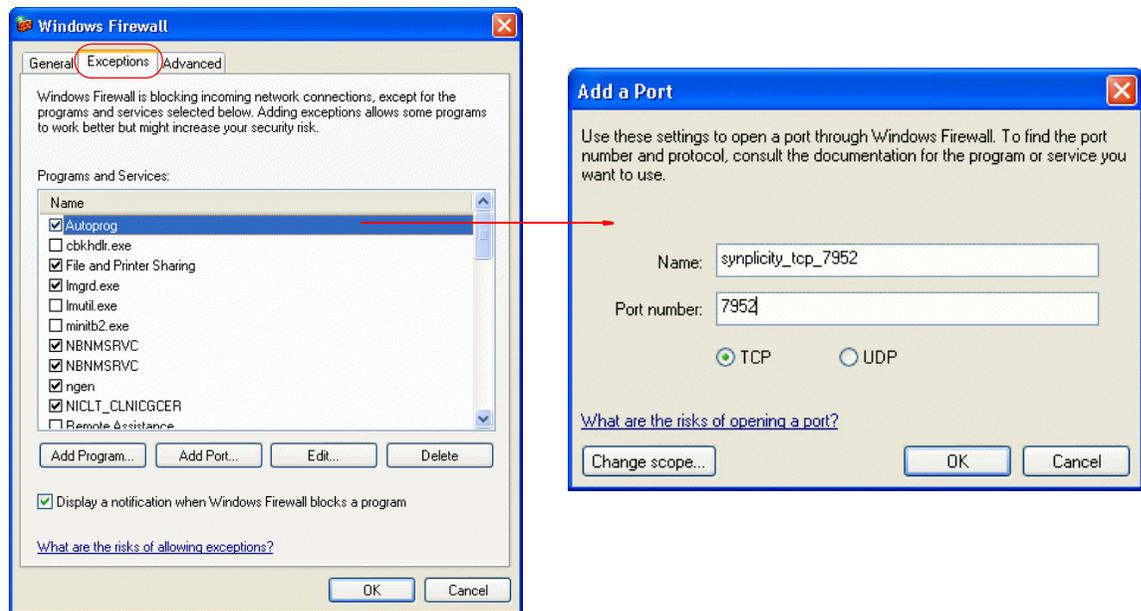
```
SERVER <server_name> FLEXID=9-089Dxxxx TCP:7952
DAEMON synplctyd c:\synlm\synplctyd.exe PORT=7900
FEATURE synplify_asic_f synplctyd 2006.120 31-dec-2006 1 \
...
```

The values that you enter in the Synplicity license file are then added to the Exceptions list in the Windows Firewall application as described in [Updating the Microsoft Windows Firewall, on page 12](#).

Updating the Microsoft Windows Firewall

Here is the procedure for defining the ports in the Windows Firewall application:

1. From the control panel, bring up the Windows Firewall application.
2. Click the Exceptions tab, and then click the Add Port button to display the Add a Port dialog box.



-
3. Add a TCP port by doing the following in the Add a Port dialog box:
 - In the Name field, specify a name for the TCP port. For example, `synplicity_tcp_7952`.
 - In the Port number field, enter the assigned TCP port value from the Synplicity license file. Using the sample license file as an example, enter 7952.
 - Click OK in the Add a Port dialog box to accept the entry and close the dialog box.
 4. Specify a port for the Synplicity license daemon as follows:
 - Click the Add Port button to redisplay the Add a Port dialog box, and then set the following options.
 - In the Name field, specify a name for the Synplicity license daemon port. For example, `synplicity_port_7900`.
 - In the Port number field, enter the assigned PORT value from the Synplicity license file. Using the sample license file as an example, enter 7900.
 - Click OK in the Add a Port dialog box to accept the entry and close the dialog box.
 5. Verify that the port names you assigned are included in the Programs and Services list of the Exceptions pane.
 6. Click OK in the Windows Firewall dialog box to exit the Windows Firewall application.

Configuring a Solaris License Server

The following sections provide detailed instructions for setting up a Solaris license server; for instructions on setting up a Windows system as your license server, refer to [Configuring a Windows License Server, on page 10](#). The assistance of a system administrator can be helpful, if one is available.

This section describes the configuration processes and some common installation mistakes:

- [Setting up the License Server, on page 13](#)
- [Starting the License Manager Daemon, on page 15](#)
- [Troubleshooting License Server Installation Errors, on page 15](#)

Setting up the License Server

The following steps describe how to set up a Solaris or Linux license server:

1. Locate your licensing information.
2. Create a `license.dat` file and cut and paste the licensing information into this file.
 - Put the license anywhere EXCEPT in the Synplicity software directory, `/toolname_version`. If you put your license file in this directory, the file will be overwritten by future installations and upgrades to the software.

- Edit the license.dat file with your specific setup information, as follows:

Line in the File	What to do...
SERVER <i>host_name</i> <i>host_id</i> TCP:1709	Replace <i>host_name</i> with the host name of your license server and verify that the host ID is correct (use the hostname and lnhostid commands).
DAEMON synplctyd / <i>toolname_version</i> /synplctyd	Use the full path for the Synplicity license daemon (synplctyd). Change it to DAEMON synplctyd <i>synplicity_home/toolname_version/platform/synplcty</i> , replacing the variables as described below. If the Synplify DSP software is the only Synplicity tool you have, replace the complete path in the daemon line with the location of synplctyd, wherever you installed it.
DAEMON line variable: <i>synplicity_home</i>	Replace this variable with the path to your Synplicity software.
DAEMON line variable: <i>toolname_version</i>	Replace this variable with the name and release version of your Synplicity tool. If you do not already have the Synplicity license software, contact your applications engineer.
DAEMON line variable: <i>platform</i>	Replace this variable with either solaris or linux, according to the platform you are using.

3. You can check the installation, using the LM_LICENSE_FILE variable as described below. For the pros and cons of using this environment variable instead of SYNPLCTYD_LICENSE_FILE, see [Environment Variables for Licenses, on page 14](#).

- Set the LM_LICENSE_FILE environment variable to point to the local copy of the license.dat file:

From a C shell	% setenv LM_LICENSE_FILE <i>path_to_license_file</i>
From a Korn or Bourne shell	\$ LM_LICENSE_FILE= <i>path_to_license_file</i> \$ export LM_LICENSE_FILE

- Verify the path to your license file by entering the following at the command prompt:

```
% echo $LM_LICENSE_FILE
```

- Set your LM_LICENSE_FILE to start automatically when you log in by setting the LM_LICENSE_FILE environment variable in your shell start-up script (.cshrc, .kshrc, or .profile file).

Environment Variables for Licenses

You must set up an environment variable to point to your license file. You can use either LM_LICENSE_FILE or SYNPLCTYD_LICENSE_FILE. The main advantage to using LM_LICENSE_FILE is that you can run some diagnostics using built-in commands. This can be useful if you have problems with licensing. However, LM_LICENSE_FILE can be slow, as other tools could use the same variable. If you use SYNPLCTYD_LICENSE_FILE, you can initialize and start much faster, but you will not have access to diagnostics.

Starting the License Manager Daemon

Starting the server license manager daemon automatically starts the Synplicity license daemon. To prevent security violations, make sure you are not logged into the root account.

1. If this is the first time you are running the Synplicity license daemon on a Solaris or Linux machine, contact your applications engineer or support@synplicity.com to get the FLEXnet license server software for your platform.
2. If you already have the FLEXnet license server software, go to the directory where the license daemon software is installed, and start the server license daemon using the `lmgrd` command as shown in the following example:

```
% lmgrd -c $LM_LICENSE_FILE -l /usr/tmp/lmgrd.log &
```

Typically, the license daemon software is installed in `synplicity_home/toolname_version/platform`, but your installation might be different.

In the command line above, the `-l` switch specifies a destination for the FLEXnet log file, and the `-c` switch specifies that your license file will be used.

3. Use the following command to check that the Synplicity license daemon is running and that the correct number of licenses are available:

```
% synplicity_home/toolname_version/platform/lmutil lmstat -a | more
```

No errors should be reported. The status returned should confirm that the server is up and that licenses are available. You should see information like the following.

```
Vendor daemon status on servername:  
daemon:UP version_number  
...  
Users of toolname: (Total of n licenses available)
```

4. If you have difficulties installing or licensing your tool, refer to [Troubleshooting License Server Installation Errors, on page 15](#) for some common installation problems.

Troubleshooting License Server Installation Errors

If you have difficulties installing or licensing Synplicity, read this section before contacting Synplicity or your local technical support representative.

If `lmstat` reports errors, read the log file `/usr/tmp/lmgrd.log`. The log file gives you information that can help you resolve problems. Repeat the licensing steps as needed. Some common problems include the following:

- Typographical errors in the `license.dat` file.
- An environment variable that has not been set properly.
- Multiple Synplicity license manager daemons (`lmgrd`) executing. In this case, use one of the following commands to list the `lmgrd` processes, kill the older process, and try again.

```
% ps -ef | grep lmgrd
```

or

```
% ps -auxw | grep lmgrd
```

If you still have trouble, ask your system administrator for assistance, or send email to support@synplicity.com. When you contact Synplicity, make sure you include the following:

- A copy of your license.dat file
- If you used the LM_LICENSE_FILE variable, a support.log file. Create this file using the following commands:

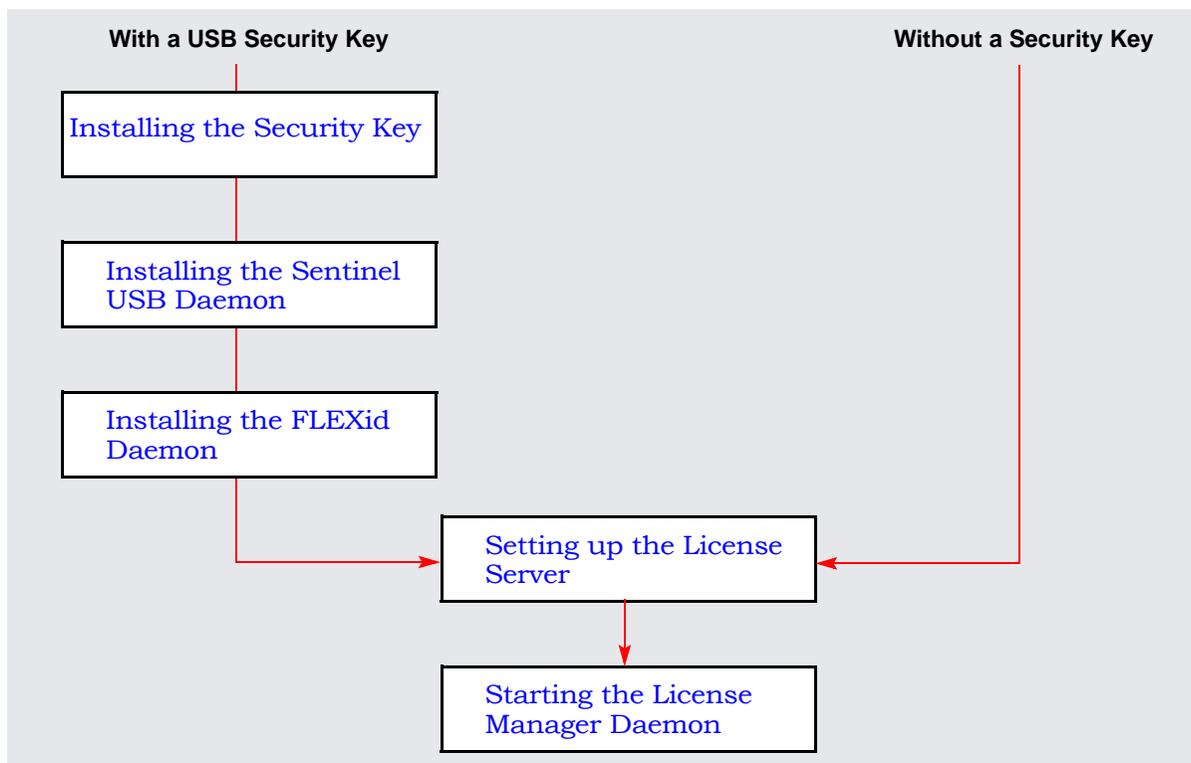
```
% echo $LM_LICENSE_FILE > support.log
% ps -auxw | grep lmgrd >> support.log
% ps -auxw | grep synplctyd >> support.log
% synplicity_home/toolname_version/solaris/lmutil lmstat -a >> support.log
```

Based on your system environment, you might need to use the `ps -ef` command instead of the `ps -auxw` command; the rest of the command line remains the same.

Configuring a Linux License Server

This section is included in case you are using a Linux license server because of an existing setup for other Synplicity products. For details about setting up the license server and starting the license manager daemon, refer to the Linux licensing document that came with your Synplicity product.

The following figure summarizes the steps you must follow.



The following are described here:

- [Installing the Security Key, on page 17](#)
- [Installing the Sentinel USB Daemon, on page 17](#)
- [Installing the FLEXid Daemon, on page 18](#)

The process for setting up the license server and starting the license manager daemon is the same as on a Solaris platform; see [Setting up the License Server, on page 13](#) and [Starting the License Manager Daemon, on page 15](#) for details.

Installing the Security Key

Linux-based servers use a USB security key (dongle) as part of their software licensing mechanism. The security key ID is used to create the license file. You can use one of the following supported USB security keys: Sentinel key (purple dongle) or a FLEXid key (green dongle). See the following for information about installing the appropriate security driver:

Sentinel security driver (purple) [Installing the Sentinel USB Daemon, on page 17](#)

FLEXid driver (green) [Installing the FLEXid Daemon, on page 18](#)

Installing the Sentinel USB Daemon

The Synplicity software installation includes an RPM that installs the USB daemon (usbdaemon), which is used in conjunction with the Sentinel USB security key. By default, the RPM is located in the *install_directory/linux/sentinel* subdirectory. Do the following to install the USB daemon:

1. Login in as root. You must have administrator privileges to run the RPM.
2. Locate an available USB port on your computer. If a USB security key is currently connected, disconnect that key before proceeding.
3. Insert the USB security key (purple dongle) into the USB port.
4. Go to the *install_directory/linux/sentinel* subdirectory and type the following to run the RPM:

```
rpm -i --force --nodeps sntl-sud-7.3.0-0.i386.rpm
```

5. Log off as root. The USB daemon starts automatically whenever the server is rebooted.

The *load_daemon.sh* utility has commands for manually starting, stopping, and monitoring the daemon. The RPM installs the utility in */opt/safenet_sentinel/common_files/sentinel_usb_daemon*. You must be logged in as root to use the utility to stop and/or start the USB daemon.

The following *load_daemon.sh* commands are available:

load_daemon.sh start Starts the USB daemon.

load_daemon.sh stop Stops the USB daemon.

<code>load_daemon.sh restart</code>	Restarts the USB daemon. Use it in place of a stop-start sequence.
<code>load_daemon.sh status</code>	Reports USB daemon status, whether it is running or is stopped.

Configuring the Daemon for Server-Based, Node-Locked Compatibility

If you are using the USB daemon for server-based, node-locked configurations, you must configure the daemon for backwards-compatibility as outlined below:

1. Log in as root.
2. Change to the `/opt/safenet_sentinel/common_files/sentinel_usb_daemon` directory and type the following:

```
% load_daemon.sh support
```
3. Verify that an `/opt/RainbowTechnologies` directory was created.

Installing the FLEXid Daemon

When you used the USB daemon in conjunction with the FLEXid USB security key, you must install it from the `install_directory/linux/flexid/HDD_Linux_dinst` subdirectory. Follow these steps to install the daemon.

1. Login in as root. You must have administrator privileges.
2. Locate an available USB port on your computer. If a USB security key is currently connected, disconnect that key before proceeding.
3. Insert the USB security key (green dongle) into the USB port.
4. Enter the following command to determine if the USB port is mounted:

```
mount -v | grep usb
```

If the USB port is mounted, the command returns a mount location like the following:

```
usbfs on /proc/bus/usb type usbfs (rw)
```

If the USB port is not mounted, mount the port by typing this command:

```
mount -t usbdevfs none /proc/bus/usb
```

5. Enter the following command to start the daemon:

```
dinst install_directory/linux/flexid/HDD_Linux_dinst
```

A series of messages is displayed and indicates that the AKSUSB daemon is running.

Note that the `dinst` command is not a Linux command; it is located in the `/install_path/linux/flexid` directory.

6. If the daemon does not start, use one of the RPMs included in the `flexid` subdirectory as outlined below:
 - Mount the USB files with the following command:

```
mount -t usbfs none /proc/bus/usb
```

-
- Change to the *install_directory/linux/sentinel/flexid* subdirectory and type one of the following command to run the RedHat RPM:

```
rpm -i HDD_RPM_RedHat_i386/aksusbd-redhat-1.8.1-3.i386.rpm
```

7. Log off as root.

The USB daemon starts automatically whenever the server is rebooted. To verify that the daemon is up and running, use the following *lmutil* command option:

```
% install_directory/linux/lmutil lmhost -flexid
```

If it reports the FLEXid key as shown below, the USB daemon is running.

```
The FLEXnet host ID of this machine is "FLEXID=9-xxxxxxxxx"
```

Configuring a License Client

The following procedure describes how to set up a client machine with a license. Repeat this procedure for each client machine.

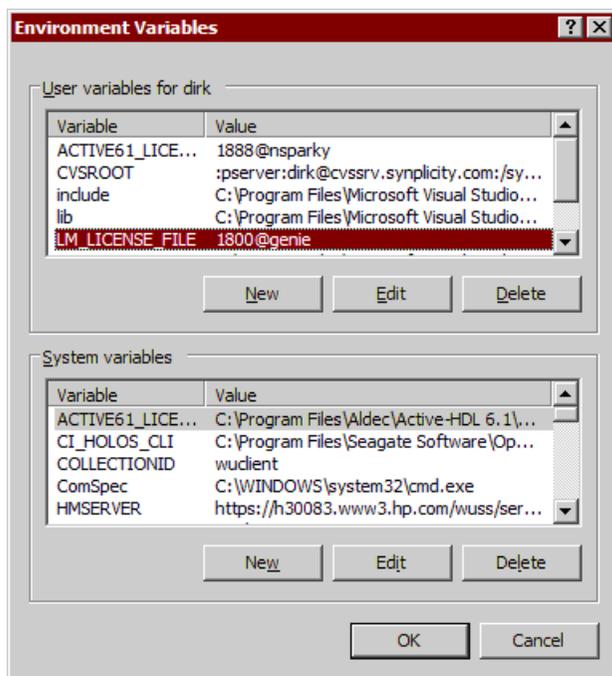
1. Install the Synplify DSP software as described in [Synplify DSP Software Installation Instructions, on page 3](#).
2. Set up the `LM_LICENSE_FILE` or `SYNPLCTYD_LICENSE_FILE` environment variable to check out a license from the server, using a *port number/host name* string. See [Environment Variables for Licenses, on page 14](#) for the pros and cons of these variables.
 - Obtain the port number and name of the license server from your administrator.
 - Open the Control Panel (Start->Settings->Control Panel or Start->Control Panel).
 - Select System->Advanced-Environment Variables. In the User Variables section, click New.
 - In the New User Variables dialog box, add the following variable, with a value of *portnumber@servername*. In the following example, 1800 is the port number and genie is the server name.

```
Variable: LM_LICENSE_FILE or SYNPLCTYD_LICENSE_FILE  
Value: 1800@genie
```

Use the `LM_LICENSE_FILE` environment variable if it contains just one or two entries. Too many entries makes MathWorks slow down. Make sure there are no extra spaces. To speed up MathWorks, migrate the vendor licenses to their respective `<vendor>_LICENSE_FILE` variables.

- Click OK.

The following shows the Windows environment variable dialog box.



3. Manually check that the LM_LICENSE_FILE or SYNPLCTYD_LICENSE_FILE variable is set up correctly. Do not use the FLEXnet lmstat utility, because this reports licenses for the SYNPLICITY_LICENSE_FILE variable and all other *_LICENSE_FILE variables, which the Synplify DSP software does not use.



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