
ACE Installation and Licensing Guide (UG002)

All Achronix Devices



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Chapter - 1: General Information and Preparation

Supported Operating Systems

Supported operating systems are: Windows and Linux. For details on versions, releases and kernels, refer to the release notes section, "System and Tool Requirements," for the specific ACE download or delivery.

Minimum Memory Requirements

Criteria		Amount
Minimum	≤100k LUTs	32 GB
Recommended	>100k LUTs	64 GB

Register for an Achronix Support Account

In order to obtain software and evaluation licenses, you must register for an Achronix support account by following these steps:

1. Fill in your details using our [Registration Form](#) to create your support account. Registration helps us set up your account and enable self-service so you can request licenses and download our tools and documentation. The registration will also create your support account for answering technical questions. If this is your first time contacting Achronix, a sales person may contact you to obtain additional information about your needs and interests.
2. When you register for a support account, you will receive an email with the subject "Welcome to Achronix" which includes an invitation link to the [Achronix Support Portal](#), our technical support site. Click the invitation link to set up your support account. If you don't see this email, please check your spam folder.
3. If you have technical questions, please log into the Achronix Support Portal, to file a support ticket. Alternately, when your support account is set up, questions can be sent via email to support@achronix.com. This automatically logs the issue in our support system. Feel free to file separate tickets for each issue you see.

Download the Software

Obtaining Credentials for Download Access

If you have not already done so, follow the instructions above to register for an Achronix support account. Follow the instructions in the [Obtaining Software Licenses \(see page 9\)](#) chapter to obtain your software licenses. Access to the instructions for downloading the software is granted up to one hour after the licenses are delivered. See the section [Downloading Your Software \(see page 14\)](#) for details.

Floating versus Fixed Node Licensing

ACE can be installed to use a node-locked or floating license. Node-locked licenses do not require a license server, while floating licenses do, which can be hosted on a Linux or Windows machine. Synplify Pro always uses a server.

Floating license configurations require that both client and server machines are connected to the same network. The client machines connecting to a floating license server (i.e., the machines running the ACE and Synplify Pro installations) can be Windows or Linux based regardless of the license server's operating system. In other words, a Linux license server can provide licenses to both Windows and Linux clients. Likewise, a Windows license server can provide licenses to both Windows and Linux clients.

Note



If you are accessing the license server remotely, you need a floating license.

Chapter - 2: Obtaining Software Licenses

This chapter describes the process of obtaining licenses for ACE design tools and Synplify Pro for Achronix. When installing ACE, you are asked to agree to the Achronix software license agreement. The process is as follows.

Determine the MAC Address of the License Host

Achronix needs the MAC address of the machine for which the license is being generated and the license type (floating or node-locked). MAC addresses are 12 hexadecimal digits long, represented as six pairs of hex digits, with each pair separated by colons (12:34:56:78:90:AB) or dashes (FE-DC-BA-09-87-65).

Windows

To determine the MAC address for Windows machines, enter the following from the command prompt:

Example ipconfig output

```
D:\examples>ipconfig /all
```

Windows IP Configuration

```
Host Name . . . . . : DEMO-PC
Primary Dns Suffix . . . . . : achronix.local
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : achronix.local
                                example.net
```

Ethernet adapter Local Area Connection:

```
Connection-specific DNS Suffix . : example.net
Description . . . . . : Realtek PCIe GBE Family Controller
Physical Address. . . . . : DE-AD-BE-EF-12-34
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . :
IPv4 Address. . . . . : 192.168.1.5(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . :
Lease Expires . . . . . :
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . :
DHCPv6 Client DUID. . . . . :
DNS Servers . . . . . : 192.168.1.1
NetBIOS over Tcpip. . . . . :
Connection-specific DNS Suffix Search List :
                                example.net
```

The minimum information required are the hexadecimal numbers following the string "Physical Address" (DE-AD-BE-EF-12-34 in the example above).

Alternately, from the Start menu, select **Settings** → **Network & Internet** . Under "Advanced network settings", select **Network and Sharing Center** to open the Network and Sharing Center window. Then click the primary connection link in your active networks, for example **Local Area Connection**, to open the Status dialog:

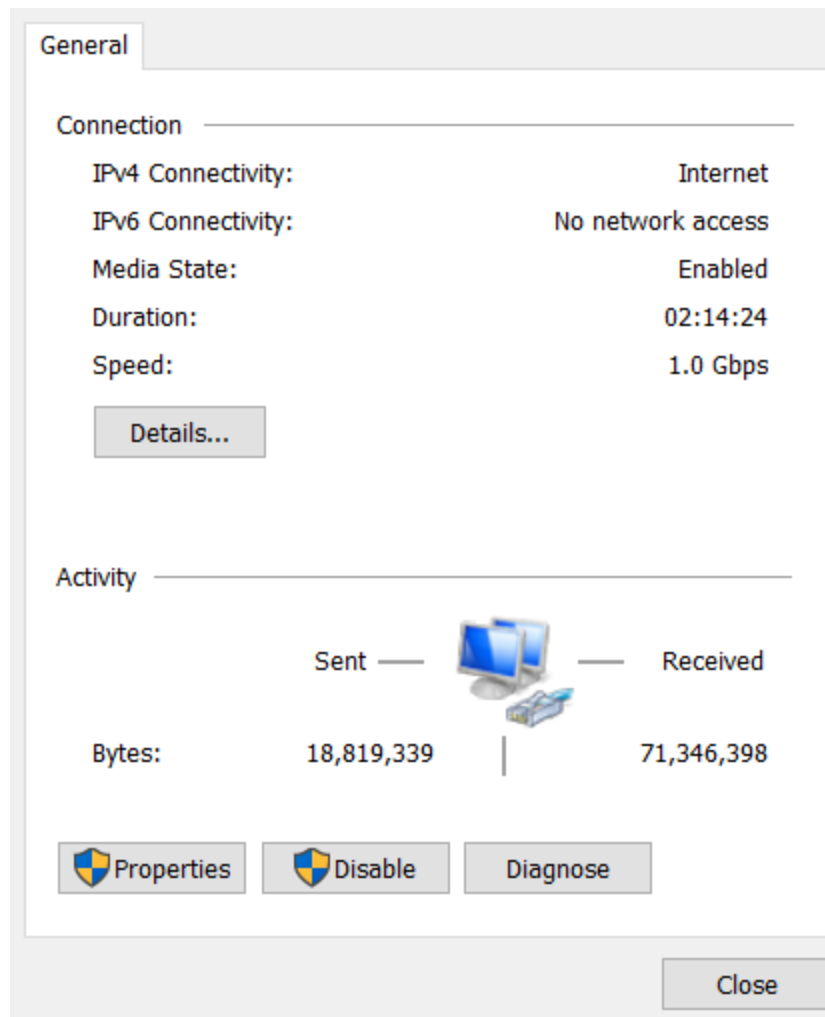


Figure 1: Active Network Status Dialog

From the **Status Dialog Box**, click **Details...** to open the Network Connection Details dialog (see below). The information required are the numbers following "Physical Address" (MAC address) in the form 00-12-34-56-67-89. Click **Close** on both windows and close the Network and Sharing Center and Settings to return to the desktop.

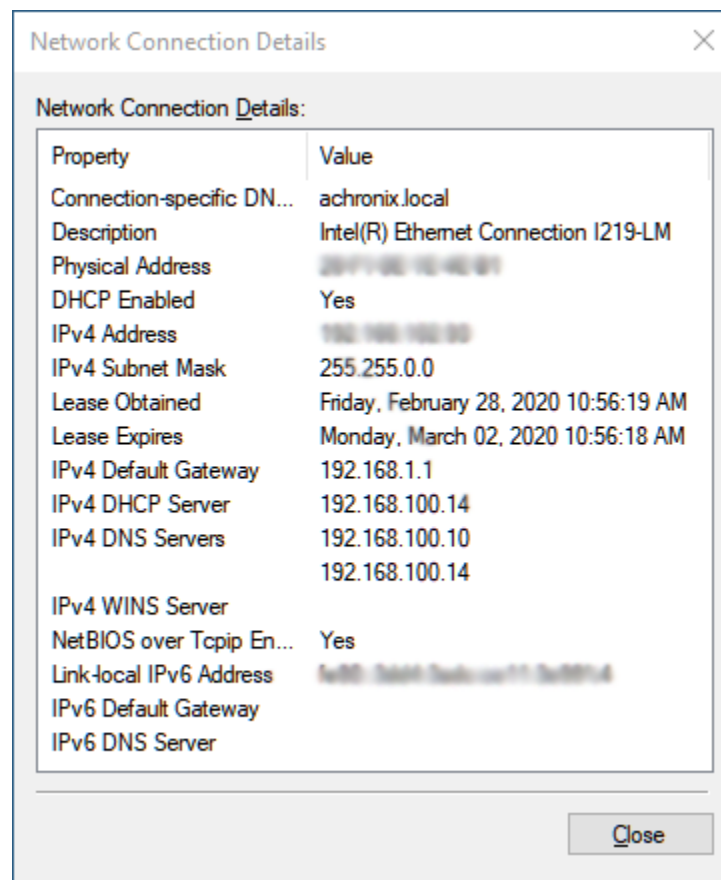


Figure 2: Network Connection Details Dialog

Linux

In RHEL, the physical network address (or MAC) value is typically called the Ethernet "HWaddr", reported in the form "00:00:00:00:00:00" (six pairs of hexadecimal digits separated by colons).

For Linux machines, run the `ifconfig` command to determine the physical network address (or MAC) of the license server. For RHEL/CentOS 7, the physical network address value is typically called "ether". Below is an example of the output:

example ifconfig output from CentOS 7

```
$ /sbin/ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.99.247 netmask 255.255.0.0 broadcast 192.168.255.255
    ether DE:AD:BE:EF:12:34 txqueuelen 1000 (Ethernet)
    RX packets 1763784155 bytes 3080686114867 (2.8 TiB)
    RX errors 0 dropped 35229878 overruns 0 frame 0
    TX packets 1251178054 bytes 2499128995736 (2.2 TiB)
    TX errors 0 dropped 29 overruns 0 carrier 0 collisions 0
```

If ACE has already been downloaded, the MAC address can be determined by running `rlmutil rlmhostid ether` from the `Achronix-Linux/bin` (or `bin64`) directory.

Request an Evaluation License

If you have not already done so, see the section "[Register for an Achronix Support Account \(see page 7\)](#)" to set up a support account with Achronix.



Warning!

When accessing a remote license server, running Synplify Pro in batch mode, or if remotely accessing a machine with the tools installed (including remote desktop) request a *floating* license.

Follow these steps to request an ACE evaluation license:

1. Log into your Achronix support portal account.
2. Click the link "Submit a request" located next to your user name.
3. Select **ACE License Request Ticket** under Submit a request:

Submit a request

Please choose your issue below

-
General Support Issue
ACE License Request Ticket
Document Request

4. Fill in the fields per the example substituting your information:

Subject *

New evaluation license for Speedster7t

Software *

ACE x Synplyfy Pro x

Select the needed software package(s)

Operating System *

Linux

Select machine operating system.

VM Support

☐

Is virtual machine support needed?

License Type *

Node locked

Select the style of license

Number of Seats

1

Enter the number of seats (up to 5).

License Duration

60 days

If other is selected for the license duration, place details in comment section.

MAC Address *

DE:AD:BE:EF:12:34

Enter the MAC address of the host machine (node-locked) or license server (floating). The expect format is 11:22:33:AA:BB:CC

Devices *

Speedster7t x

Select the devices desired. If selecting Other, please provide details below. Note: Selecting Other or Speedcore may delay license issuance.

Description *

New evaluation license for Speedster7t

Please enter the details of your request. A member of our support staff will respond as soon as possible.

5. When your license is approved, a support engineer will attach your license files to the ticket. You will receive an automatic email notification (with your license files attached) when this ticket is available.

For non-evaluation license requests, i.e., tool licenses attached to sales orders for devices, boards, IP or tools, please contact Achronix technical support at support@achronix.com or your sales representative directly to have a purchase order filled out for the generation of new licenses or renewing expired/expiring ones.

Downloading Your Software

Instructions for downloading your software are contained in two restricted-access knowledge base articles:

- [ACE Software Releases](#)
- [Synplify Pro Releases](#)

Access to these articles is granted with your license request. Follow the instructions in the articles to obtain your software files.

Note



Full authorization can take up to one hour to become active after software licenses are delivered.


Chapter - 3: Software Installation (Linux)

This chapter covers installing Linux versions of ACE design tools and Synplify Pro for Achronix.

Installing ACE

Floating and Node-Locked Licensing

Installing ACE includes installing the ACE tool itself, along with any device overlays. The device overlays include library files for the specific device, example designs, etc. The device overlays are detected and installed as part of this flow. If more device overlays need to be added in the future, see [Device Overlays \(see page 62\)](#). After downloading the ACE software archive (e.g., `ACE_8.3.3_Linux.tgz`), the necessary device overlays (in the `*_device_overlays` directories) and `ACE_installation_scripts.zip` (which include the install script, `install_ace.sh`) into one directory, perform the following steps:

 Do not install multiple versions of ACE in the same directory or install ACE in the same directory as a previous install.

1. In the directory containing the downloaded files, set the installation script to be executable:

```
$ cd <download_directory>
$ chmod 755 install_ace.sh
```

2. Extract the software.

```
$ install_ace.sh [-d <installdir> ] or [-i] | [-h]
```

Table 1: Installer Script `install_ace.sh` Options

Option	Description
-d <installdir>	Specifies the root directory to install ACE into. If omitted, ACE is installed in the current directory.
-i (interactive mode)	Prompts the user to enter the name of each TGZ file to install. If omitted, all TGZ files in the current directory are installed.
-h (help mode)	Invokes 'Help' mode where all command line options are listed.

3. Copy the resulting `/Achronix_Linux` directory into the desired "ACE-Install" directory (usually `/opt`).
4. Optionally create an environment variable, `ACE_INSTALL_DIR`, set to the path of the `/Achronix_Linux` directory for use by scripts to easily access ACE.
5. Install the license file and verify the installation per "FloatingNode and Node-Locked Licensing," in [License Installation \(Linux\)](#). (see page 18)

Uninstalling ACE

To uninstall the current installation, delete the directory used to install ACE (default is `/opt/Achronix-linux`):

```
$ rm -r /opt/Achronix-linux
```

Note



Root permissions might be required to delete the install directory.

It is recommended to remove the `~/achronix/` directory located in the home directory. This directory contains ACE session log files, ACE GUI metadata and logs from previous runs of ACE. When installing a new version of ACE, it is good practice to clear out this directory.

Installing Synplify Pro for Achronix

Node-Locked and Floating Licensing

Installing Synplify Pro includes installing the tool and the device overlays. optionally, the overlays alone can be installed if the tool has already been installed (see [Device Overlays \(see page 62\)](#)). Regardless, this version of Synplify Pro (provided by Achronix) must be installed to synthesize designs. After downloading the Synplify Pro software archive and `install_synplify_pro.sh` in the same directory, perform the following steps:

1. In the directory containing the downloaded files, set the installation script to be executable:

```
$ chmod 755 install_synplify_pro.sh
```

2. Install the software:

```
$ ./install_synplify_pro.sh [-d <installdir> ] or [-h]
```

Table 2: Installer Script `install_synplify_pro.sh` Options

Option	Description
-d <installdir>	Specifies the root directory to unzip the Synplify Pro archive into. If omitted, the archive is unzipped in the current directory. Please enter the full path when using this mode.
-h (help mode)	Invokes 'Help' mode where all command line options are listed.

3. Follow the instructions given in the installation script, accepting the default options during the installation process. When prompted to enter the installation directories, please enter the full paths. Tilde (~) is not allowed when specifying the paths. At the conclusion of the installation process, the software creates a sub-directory for the installed version of the tool suite in the current directory, by default, or in the chosen directory, if provided.
4. Install the license file and verify the installation per "Synplify Pro for Achronix License Installation" in [License Installation \(Linux\) \(see page 18\)](#).

Uninstalling Synplify Pro for Achronix

To uninstall the current installation, simply delete the directory used to install Synplify Pro (default is /<install_directory>/):

```
$ rm -r /<install_directory>/fpga
```



Note

Root permissions may be required to delete the install directory.

Chapter - 4: License Installation (Linux)

ACE License Installation

Node-Locked Licensing

- 1. After installing the software per [Software Installation \(Linux\)](#) (see page 15), determine the physical network address (or MAC) of the host system:

```
$ /sbin/ifconfig
```

Alternatively, the MAC address can be determined by running `rlmutil rlmhostid ether` from the `Achronix-Linux/bin` (or `bin64`) directory.

- 2. Request licenses from Achronix as described in [Obtaining Software Licenses](#) (see page 9). Achronix Semiconductor responds with license files as an email attachment. Save these files to a safe location.
- 3. When ACE is installed as described in [Software Installation \(Linux\)](#) (see page 15) (in this example, under `/opt`), the directory tree is configured as follows:

Table 3: Ace Linux Directory Structure

Directory Structure	
/opt/Achronix-linux	
	/bin
	/bin64
	/doc
	/examples
	/libraries
	/system
	/license
	/ace

Navigate to the directory where the license file was saved in step 2, and copy `<license_file_name>.lic` into the license sub-directory.

```
$ cp <license_file_name>.lic /opt/Achronix-linux/license
```

4. Start ACE by launching the executable

```
$ ./install_directory/Achronix-linux/ace
```

Review the license agreement, clicking the **Spacebar** to scroll, then click **y** to agree to the terms. After agreeing to the license, ACE starts up and displays the welcome page (shown below).



Figure 3: ACE Welcome Page

5. If the license was not found or was improperly installed, an error dialog appears. Click **Close** to terminate. Refer to "ACE Licensing Issues" in [Troubleshooting \(Linux\)](#) (see page 27) or contact Achronix Technical Support at support@achronix.com.

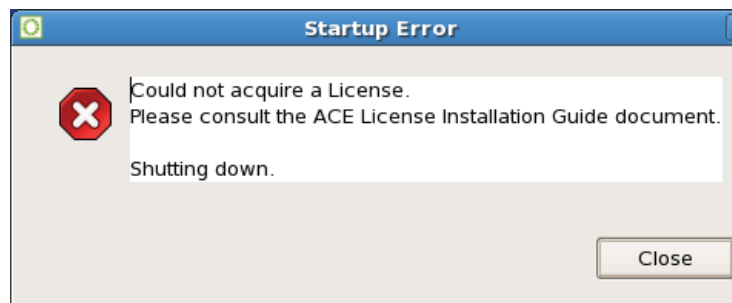


Figure 4: Startup Error Dialog

Floating-Node Licensing

1. After installing the software on the client machine per "Installing ACE" in [Software Installation \(Linux\)](#) (see [page 15](#)), determine the physical network address (or MAC) of the license server:

```
$ /sbin/ifconfig
```

Alternately, the MAC address of the license server can be determined by running the RLM utility copied over from the client machine where ACE was installed. Copy the directory <ACE install dir> /Achronix-linux/bin (or bin64) from the client to the license server. Then run `rlmutil rlmhostid ether` from the Achronix-Linux/bin (or bin64) directory.

2. Request licenses from Achronix as described in [Obtaining Software Licenses](#) (see [page 9](#)). Achronix Semiconductor responds by sending a file, `ace.lic`, as an email attachment. Save this file to a safe location.
3. Copy the license file <license_file_name>.lic to an appropriate directory on the license server (/<license_file_path>).
4. If you have not done so already, copy the directory <ACE install dir>/Achronix-linux/bin(or bin64)from the client to the license server.
5. Edit <license_file_name>.lic to add the license server name and path to the licensing agent:

```
HOST <license_server_host> XXXXXXXXXXXX 1710
ISV achronix <install_directory>/bin/achronix_license_agent
```

Where XXXXXXXXXXXX is the host ID of the license server.

6. Set the environment variable on the client machine: From a C shell:

```
$ setenv RLM_LICENSE 1710@<license_server_host>
```

From a bash shell:

```
$ export RLM_LICENSE=1710@<license_server_host>
```



Note

Use the following command to check that the environment variable is properly set.

```
$ echo $RLM_LICENSE
```

7. Start the remote licensing manager (RLM) on the license server:

```
$ /<install_directory>/bin/rlm -c <license_file_path> &
```

Note

The line above can be copied into `/etc/rc.d` to ensure the server is started each time the license server is restarted,

This command returns an indication that the license server is up:

```
07/14 18:18 (rlm) RLM License Server Version 3.0BL4
Copyright (C) 2006-2007, Reprise Software, Inc. All rights reserved
07/14 18:18 (rlm) License server started on <license_server_host>
07/14 18:18 (rlm) Server architecture: x86_l2
07/14 18:18 (rlm) License files:
07/14 18:18 (rlm)/opt/Achronix-linux/<license_file_name>.lic
07/14 18:18 (rlm)
07/14 18:18 (rlm) Web server starting on port 9000
07/14 18:18 (rlm) Using TCP/IP port 1710
07/14 18:18 (rlm) Starting ISV servers:
07/14 18:18 (rlm)... achronix on port 56255
07/14 18:18 (achronix) RLM License Server Version 3.0BL4 for ISV "achronix"
07/14 18:18 (achronix) Server architecture: x86_l2
Copyright (C) 2006-2007, Reprise Software, Inc. All rights reserved
RLM contains software developed by the OpenSSL Project for use in the
OpenSSL Toolkit (http://www.openssl.org) Copyright (c) 1998-2003 The
OpenSSL Project. All rights
reserved.
07/14 18:18 (achronix)
07/14 18:18 (achronix) Server started on <license_server_host>
(hostid: XXXXXXXX) for:
07/14 18:18 (achronix)ace-v1.0
07/14 18:18 (achronix)
07/14 18:18 (achronix) License files:
07/14 18:18 (achronix) /opt/Achronix-linux/<license_file_name>.lic
07/14 18:18 (achronix)
```

8. Start ACE by launching the executable on the client machine:

```
$ /<install_directory>/Achronix-linux/ace
```

9. Review the license agreement, pressing **Spacebar** to scroll, then click **y** to agree to the terms. After agreeing to the license, ACE starts up and displays a welcome page (Figure: ACE Welcome Page (see page 19)).**Note**

ACE uses the default browser to display information, including the welcome page. If the welcome page is blank, then no default browser is installed.

10. If the license was not found or was improperly installed, an error dialog ([Startup Error Dialog \(see page 19\)](#)) appears. Click **Close** to terminate. Refer to "ACE Licensing Issues" in [Troubleshooting \(Linux\) \(see page 27\)](#) or contact Achronix Technical Support at support@achronix.com.

Synplify Pro for Achronix License Installation

Node-Locked and Floating Licensing

Nodelocked licensing for Synplify Pro under Linux is a simplified floating node installation where the client and server are on the same host.

1. Request licenses from Achronix as described in [Obtaining Software Licenses \(see page 9\)](#). Achronix Semiconductor responds by sending a file, `synplify.lic`, as an email attachment. Save this file to a known location.
2. Create a new directory and extract the contents of the `SCL_Linux_License_Manager_2018.zip` file to this directory.
3. Extract the installer using the following command:

```
$ ./SynopsysInstaller_v3.5.run
```

4. From the directory where the installer was extracted, start the installation:

```
$ ./installer
```

When prompted to enter the path containing the EST (ftp) or CD/DVD-ROM product files for this version, enter the path to the directory containing the SCL *.spf files.

5. In the directory where SCL is installed, under the subdirectory `linux64/bin`, the executables `lmgrd`, `lmstat` and `snpslmd` should appear. Ensure that the path to `lmgrd` is added to the local `$PATH` variable by including the following in your `.cshrc` or `.bashrc` file.

```
$ export PATH=$PATH: /<path_to_lmgrd>
```

6. Copy the license file, `synplify.lic`, to an appropriate directory on the license server (`/<license_file_path>`).

7. Edit `synplify.lic` to set the `hostname1` to 'localhost' or the actual hostname, and set the path to the Synplify Pro license daemon:

```
SERVER localhost 012345678901 27000
VENDOR snpslmd <path_to_snpslmd>/snpslmd
USE_SERVER
INCREMENT SSST snpslmd 1.0 05-Jul-2012 1
ED1EDC268F3F082F8849 \
```

Note



On an unconfigured Linux machine, the default hostname can be set to `localhost.localdomain`. This setting can cause a license problem to occur. Changing the hostname to 'localhost' (using the command `hostname`), or any other name without a '.' should resolve the issue. Also, the `SERVER`, `VENDOR`, `USE_SERVER`, `PACKAGE`, `INCREMENT`, or `#` lines in `synplify.lic` each need to end with a newline return. Moving text files between Windows and Linux machines can cause the newline return to be lost. If the newline returns are lost, licensing problems can occur.

8. Navigate to the SCL installation directory, under `linux64/bin` and start the license server.

```
$ ./lmgrd -c <license_file_path> -l /usr/tmp/lmgrd_synplicity.log &
```

9. Verify that the license server has started correctly.

```
$ ./lmutil lmstat -a
```

This command returns an indication that both the license server and daemon are up:

```
lmutil - Copyright (c) 1989-2006 Macrovision Europe Ltd. and/or
Macrovision Corporation. All Rights Reserved.
Flexible License Manager status on Sat 7/16/2011 16:15
License server status: 27000@localhost
License file(s) on localhost:
/<license_file_path>/<license_file_name>.lic:
localhost: license server UP (MASTER) v10.8
Vendor daemon status (on localhost):
snpslmd: UP v11.6
Feature usage info:
Users of synplifypro_achronix: (Total of 1 license issued; Total of 0 licenses in use)
```

10. Set the required environment variable on the client. From a C shell:

```
$ setenv SNPSLMD_LICENSE_FILE <license_file_path>
```

From a bash shell:

```
$ export $ SNPSLMD_LICENSE_FILE=<license_file_path>
```

To verify that the environment variable is set:

```
$ echo $SNPSLMD_LICENSE_FILE
```


11. Start Synplify Pro.

```
$ ./synplify_pro
```

If the license is properly installed and the license server and daemon are up, the License Agreement dialog appears (Figure: License Agreement Dialog (see page 25)). Click **Yes** to start the program. The main program window opens.

Note

It can take Synplify Pro up to 30 seconds to check out its license and start.

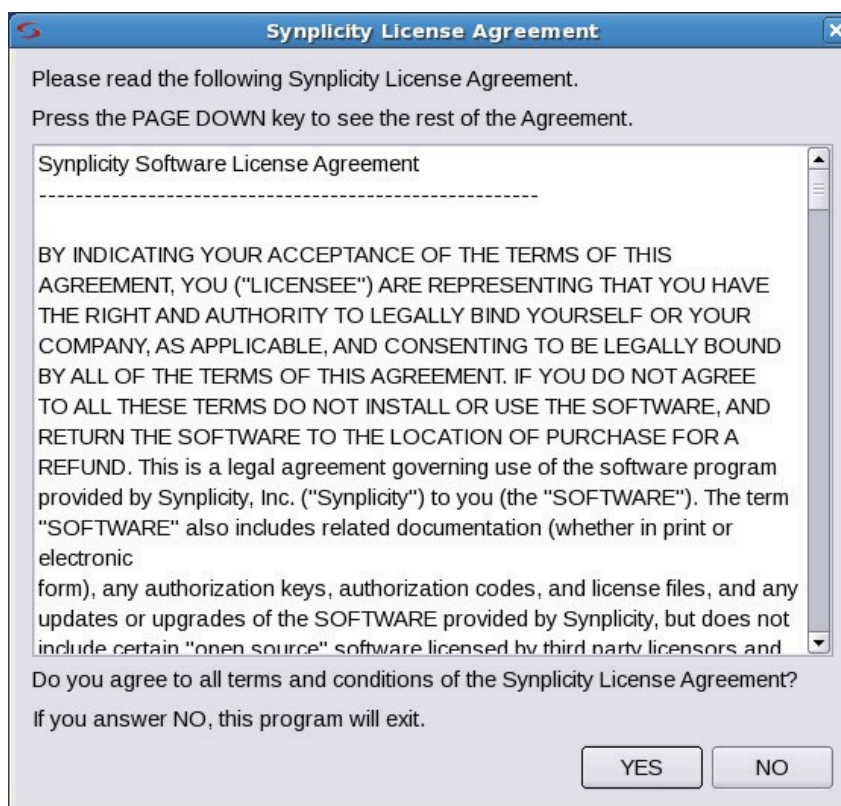


Figure 5: License Agreement Dialog

If the license is not found or is improperly installed, a license error page (Figure: License Error Page (see page 26)) opens. Click **Close** to terminate. Refer to "Synplify Pro for Achronix Licensing Issues" in [Troubleshooting \(Linux\)](#) (see page 27) or contact Achronix Technical Support at support@achronix.com.

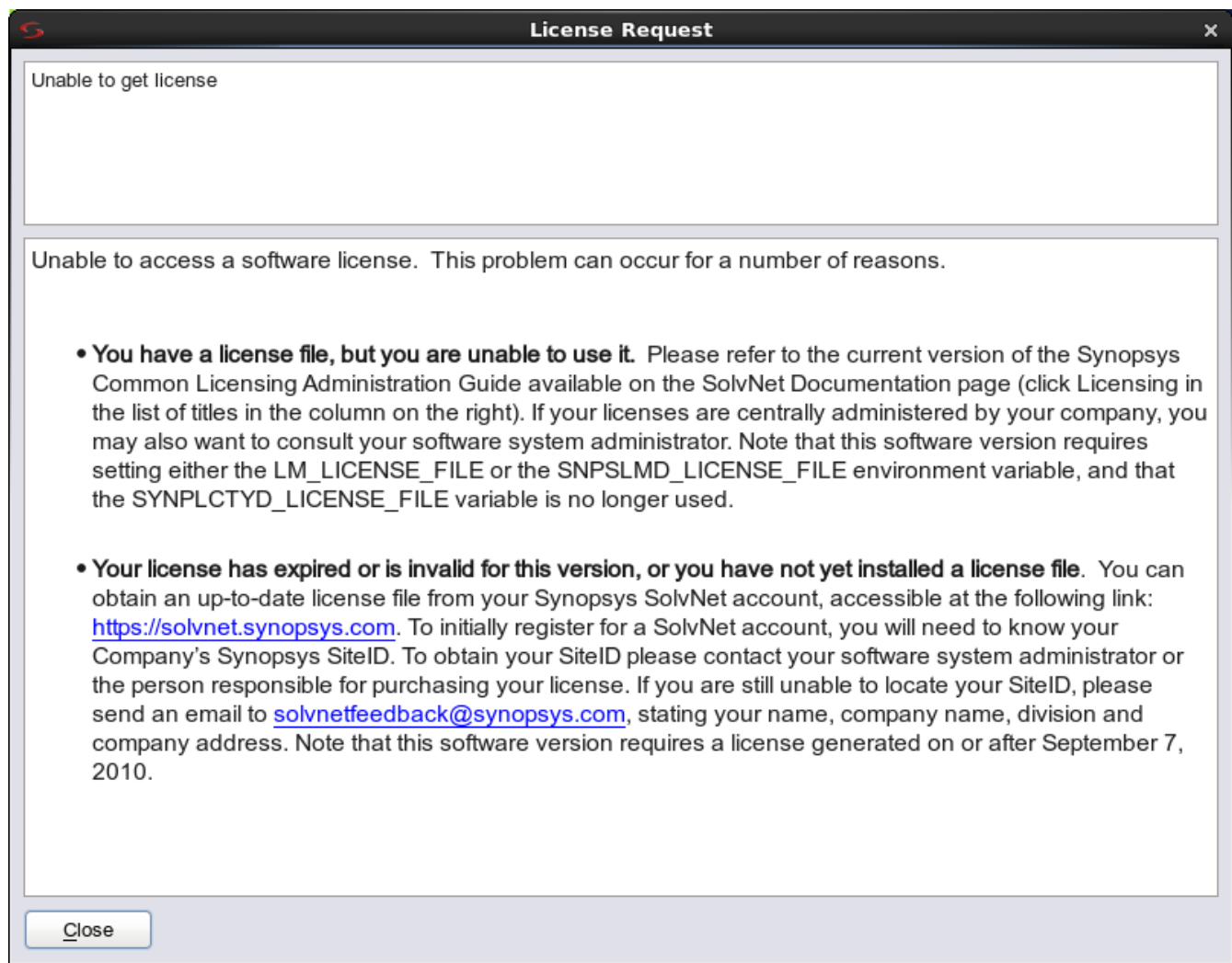


Figure 6: License Error Page

Chapter - 5: Troubleshooting (Linux)

ACE Licensing Issues

Checklist

Node-Locked Installations

- Verify that the host ID listed in the license file matches the MAC address of the first Ethernet adapter in the system (typically marked eth0).
- Verify the install path of the license is correct:

```
<install_directory>/Achronix-linux/license
```

- Verify that license file has the proper extension (.lic) and does not contain an illegal (nonalphanumeric) characters in the name.

Floating-Node Installations

- Verify that the correct type of license (nodelocked versus floatingnode) was requested.
- Verify that the host ID listed in the license file matches the MAC address of the first Ethernet adapter in the system (typically marked eth0).
- Ensure that the machine host name (HOST line), and license agent path (ISV path) are set correctly.
- Ensure that the port number listed in the RLM_LICENSE variable matches the port number listed in the license file.
- Verify the license manager is up on the server by checking the logs.
- If the license manager is running, but the client fails to receive a license, check the license manager logs for an entry showing the license being checked out by the client:

```
01/17 21:12 (achronix) OUT: ace-v1.0 v1.0 by user@client_host
```

...and returned when ACE is closed:

```
01/17 21:19 (achronix) IN: ace-v1.0 v1.0 by user@client_host
```

No entry means that the license request is not reaching the server. Verify that network communication between the client and server is working and that environment variables are properly set.

An entry of DENIED can mean that the number of requested licenses has exceeded the number specified in the license file.

32-bit Libraries

When starting the license server, if the error, `/lib/ld-linux.so.2: bad ELF interpreter: No such file or directory`, is returned, the Linux host is 64-bit but does not have the 32-bit libraries installed. Install the libraries with the following commands:

- On any RPM based distribution (CentOS/RedHat/Fedora/Suse/Mandriva):

```
$ sudo yum -y install glibc.i686
```

- On any DEB based distribution (Debian/Ubuntu/Mint/Crunchbang):

```
$ sudo apt-get update
$ sudo apt-get install ia32-libs
```



Note

ACE 8.5 is officially supported on CentOS/RHEL 7.4 and up, and RHEL 8 only.

Synplify Pro for Achronix Licensing Issues

Checklist

- Verify that the license file name does not contain illegal (nonalphanumeric) characters in the name.
- Verify that the host ID listed in the license file matches the MAC address of the first Ethernet adapter in the system (typically marked `eth0`).
- Ensure that first Ethernet adapter in the system (typically marked `eth0`) is active.
- For nodelocked installations, ensure that the host name in the license file is set to "localhost" or the actual host name.

Note



1. Node-locked licenses are only supported when physically present at the machine. When using a remote server, a floating license should be used instead.
2. The host name can be changed via the command `hostname`.

- Verify that the path to **snpslmd** in the VENDOR line is set correctly.

- Ensure that the license file is formatted properly:
 - Do *not* remove the `USE_SERVER` line. This keyword must exist on a line by itself, before any `INCREMENT` lines.
 - Remove any `VENDOR` or `DAEMON` lines for nonsnpslmd vendor daemons.
 - All lines should start with `SERVER`, `VENDOR`, `USE_SERVER`, `PACKAGE`, `INCREMENT`, or `#`.
 - Lines may only wrap after a space and a continuation character (' \'), and all comment lines must start with '#'.
 - Blank lines must *not* be present in the key file as this can cause problems.
 - Strip out all extraneous characters, such as '>' or '>>' symbols at the beginning of lines.
- Ensure that the port number referenced in the `SNPSLMD_LICENSE_FILE` environment variable matches the port number listed in the license file.
- Problems can occur in batch mode when the license server has both Synplify Pro for Achronix and other Synopsys licenses available. This situation can be avoided by setting an environment variable that sets license preference or using a command line switch that sets license preference:

```
Environment variable
-----
Variable: SYNPLIFYPRO_LICENSE_TYPE
Value: synplifypro_achronix

Command line switch
-----
%synplifypro -batch -licensetype synplifypro_achronix <project_file>
```

License Server

If the command **lmstat** returns:

```
Cannot find license file -1,359:2 (No such file or directory)
```

...even though the license path is set correctly, try running the command with the following option:

```
$ lmstat -a -c /license_path/license.dat
```

If the license file is valid, the program returns the server and daemon status.

Running Multiple License Servers

When running a license server, it is recommended that the version of **lmgrd** be equal to or greater than the highest version of the vendor daemon. Also, two of the same vendor daemons cannot be running on the same system. If multiple Synopsys product licenses are being hosted on this server, the license features for Synplify Pro Achronix have to be appended to the existing license file using the following steps:

1. Stop the license server started for the Synplify Pro Achronix feature.

2. Append the INCREMENT lines for Achronix SynplifyPro to the main license file:

```
INCREMENT SSST  
INCREMENT SCL_WAN_DISABLE  
INCREMENT synplifypro_achronix
```

3. Confirm the versions of **lmgrd** and **snpslmd** being used with the main license file.
4. Run `lmutil lmreread` on the main license server, and then `lmutil lmstat -a` to confirm that the Synplify Pro Achronix feature is being read.

Other Issues

Host Name Resolution

For floatingnode (clientserver) licensing applications, the license manager normally uses the port@host convention for the license file environment variable set on the client. For example, for ACE licensing:

```
RLM_LICENSE=1710@main-server
```

Within some network topologies, the host name might not resolve. In this case, the actual IP address of the license server can be substituted for the host name as a workaround. For example:

```
RLM_LICENSE=1710@192.168.0.15
```

Note



This workaround might not be durable, as the server's IP address could change.

Chapter - 6: Software Installation (Windows)

Installing ACE

**Warning!**

If this is not a first-time installation, refer to [Upgrading an ACE Installation \(see page 39\)](#) below before proceeding. It is generally recommended to uninstall previous versions of ACE before attempting to install a new version of ACE.

Installing ACE includes installing both ACE itself, along with any device overlays. These device overlays include device-specific library files, example designs, etc. After creating an empty directory to receive the files, follow these steps:

1. Download the `ACE_X.Y.Z_Windows.exe`, `ACE_installation_scripts.zip`, and all the device overlays needed for the desired version of ACE into this directory. The device overlays are detected and installed as part of this flow. If more device overlays need to be added in the future, see the [Device Overlays \(see page 62\)](#) chapter.

Note

Only download the files for one version of ACE into this directory; do *not* mix files from multiple versions of ACE.

2. Unzip `ACE_installation_scripts.zip` into the same directory as in step 1 and run the `install_ace.bat` file by right-clicking the file in Windows Explorer and select **Run as Administrator**.
3. If the software was installed previously, the installer asks whether to remove the previous versions (see figure below). If previous version(s) of ACE are *not* desired on this client, click **Yes** to proceed with automatically uninstalling the most recent previous installation of ACE (regardless of version number). with multiple previous versions of ACE, it is necessary to manually uninstall them. To retain previous version(s), click **No** to proceed to step 4.

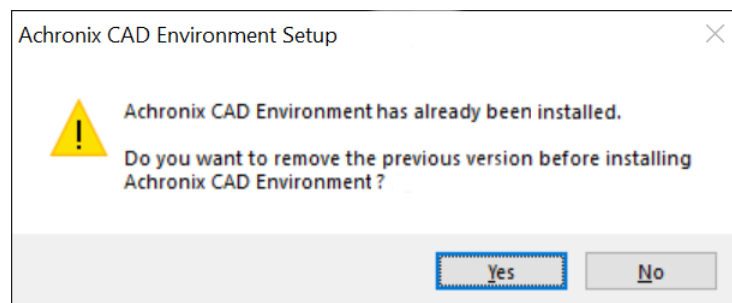


Figure 7: Remove Previous Version Dialog

4. The installer verifies the archive and opens the Installer Language dialog (see figure below). Select the desired language from the pulldown menu and click **OK** to open the Achronix CAD Environment Setup dialog.

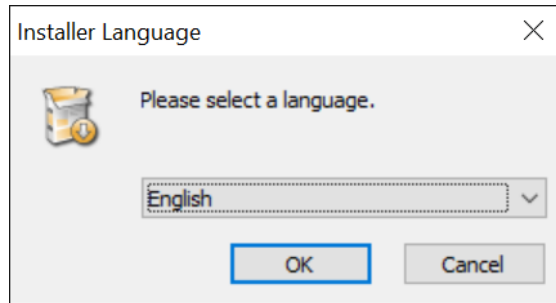


Figure 8: Installer Language Dialog

5. From the Setup dialog, click **Next >** to open the License Agreement dialog.

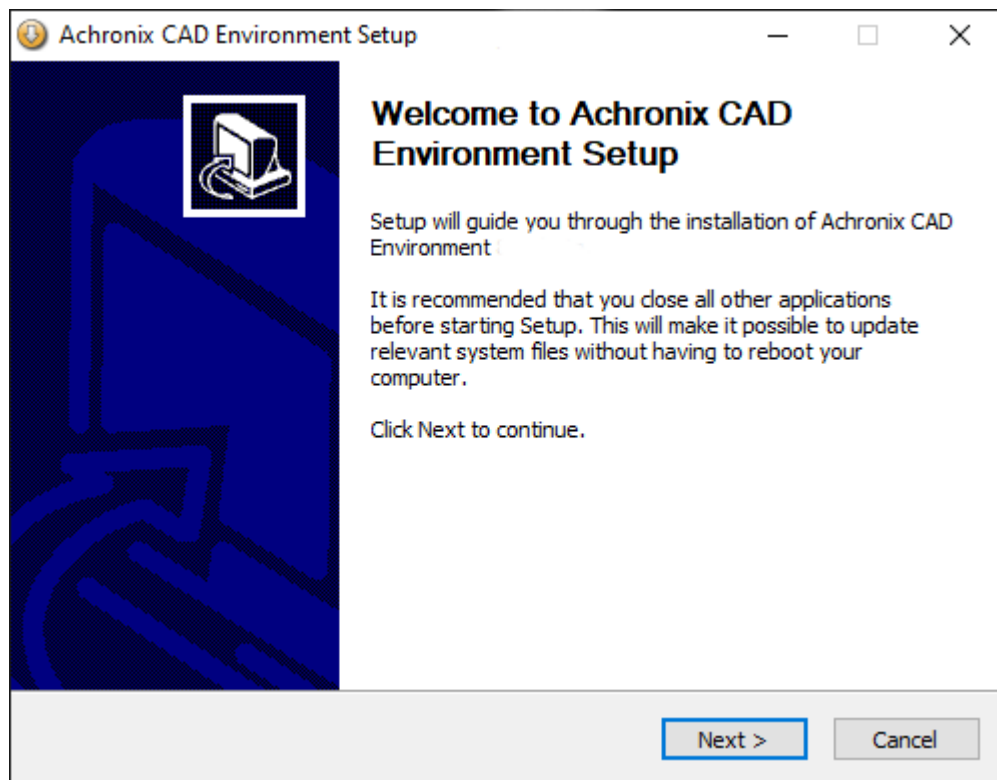


Figure 9: Achronix CAD Environment Setup Dialog

6. From the License Agreement dialog, after reviewing the license, click **I Agree**.

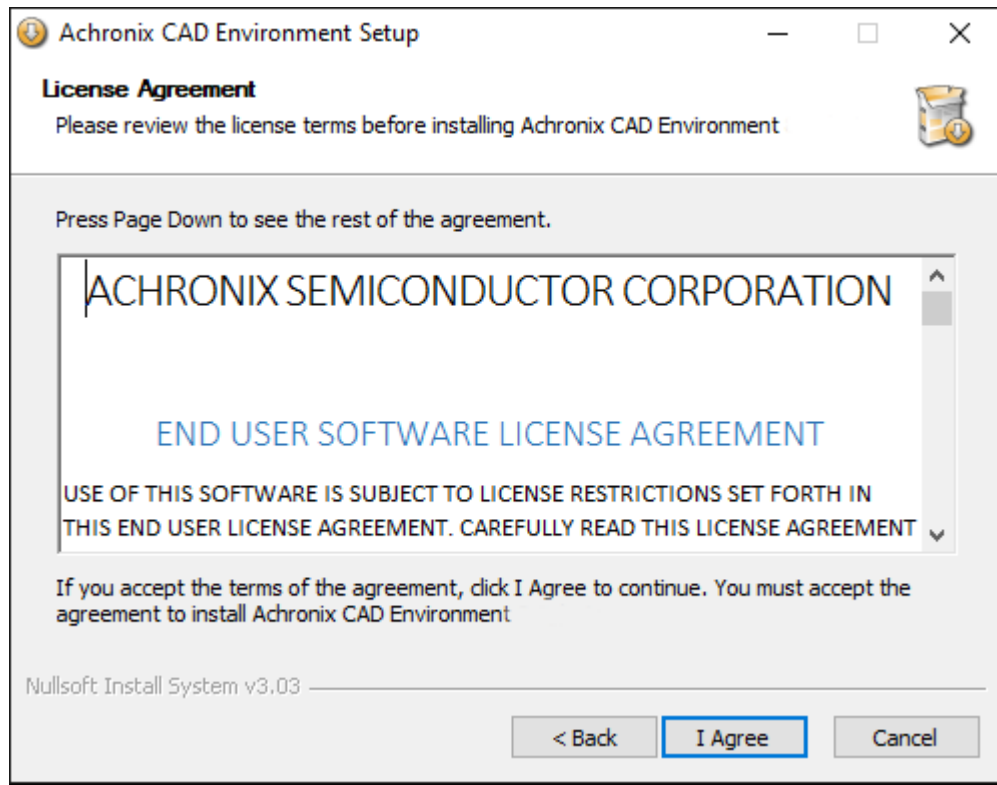


Figure 10: License Agreement Dialog

7. From the Choose Components dialog, select the desired components to install. For example, uncheck **Achronix CAD Environment** to install only the software and drivers needed for programming. Click **Next >** to continue.

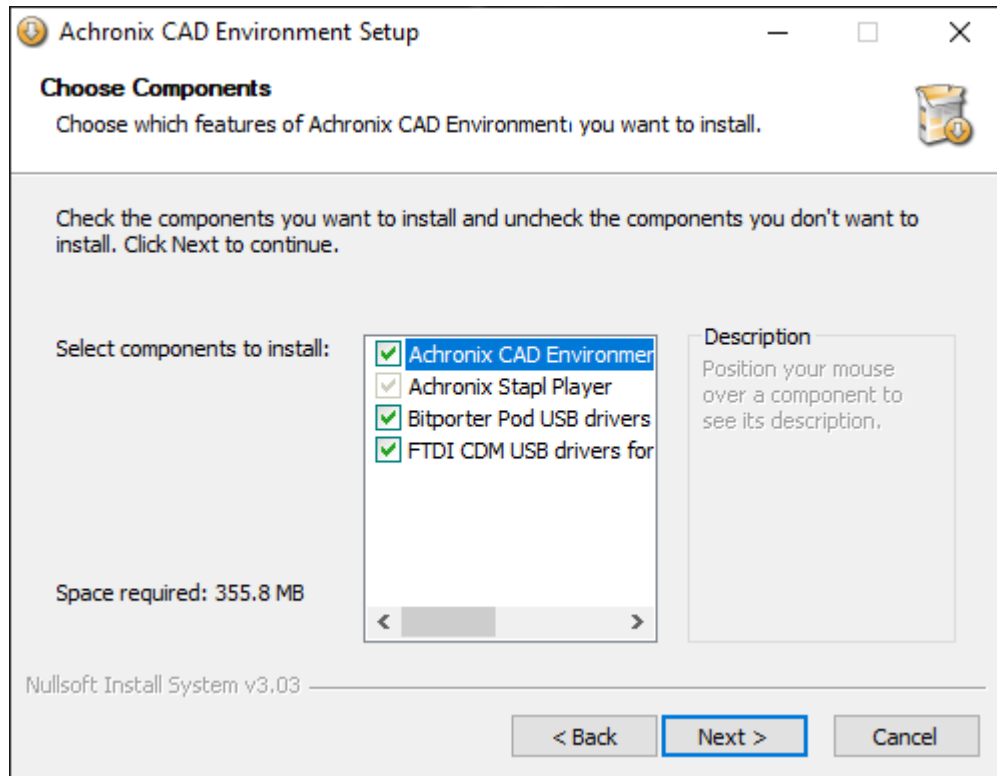


Figure 11: Choose Components Dialog

8. From the Choose Install Location dialog, set the desired installed directory by either typing the path under **Destination Folder** or using the **Browse** button to navigate to the desired location. If previous version(s) of ACE are being retained, pick a location other than where a previous version is installed. For ease of use with scripts, choose a directory name that does not use spaces. Click **Next >** to continue.

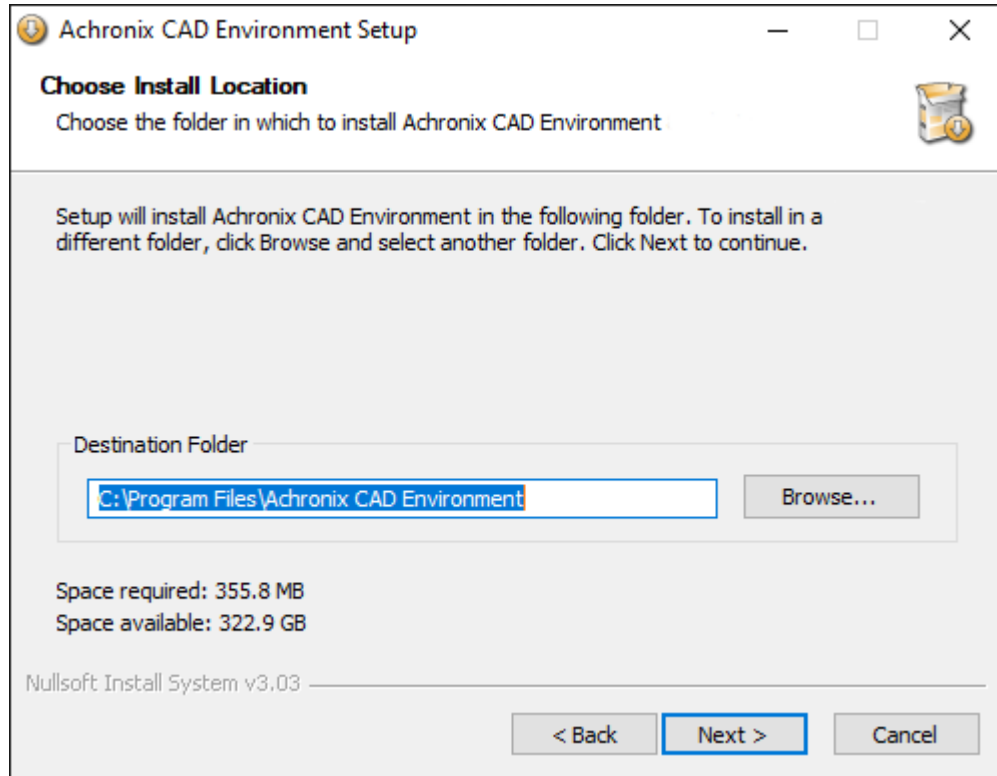


Figure 12: Choose Install Location Dialog

9. From the Choose Start Menu Folder dialog, select the desired folder and click **Install** to start file extraction and begin installation. If a Microsoft Visual C++ installer appears, click **Yes** to accept the license agreement.

10. If **FTDI CDM USB drivers for the Development Board DCC Interface** was selected in step 7, click **Extract** on the FTDI CDM Drivers dialog that appears in order to begin the installation of the drivers. After reviewing the agreement, click **I accept this agreement** and then click the **Next >** button. Click the **Finish** button on the Completing the Device Driver Installation dialog to continue with the ACE install.

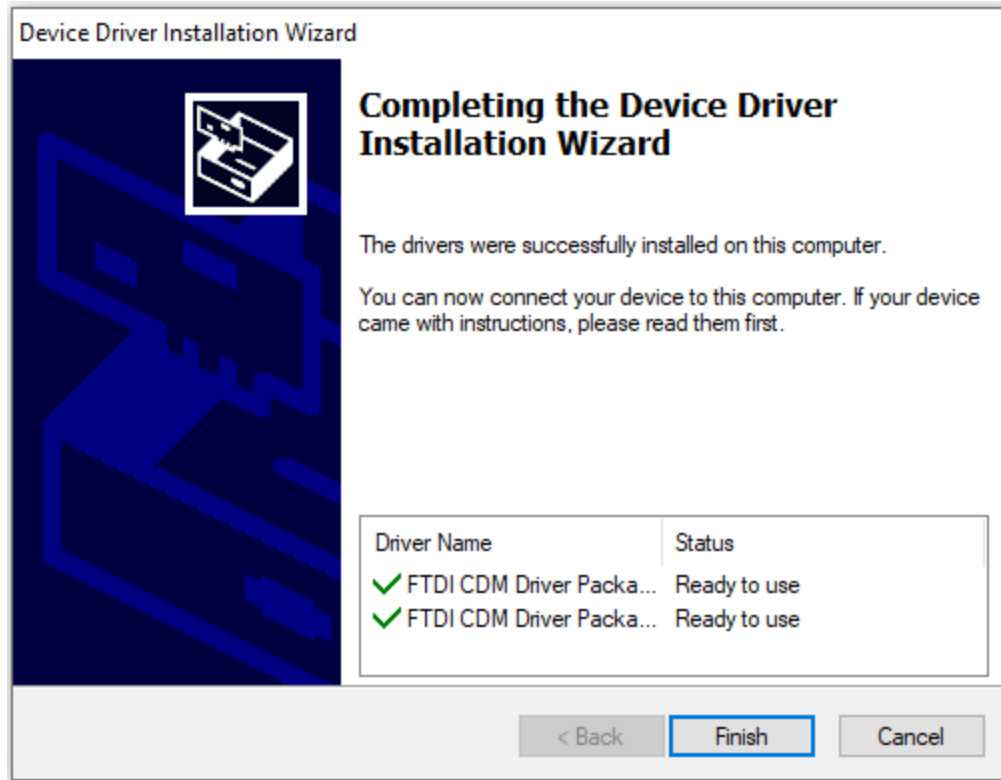


Figure 13: *Completing the Device Driver Installation Dialog*

11. For a first-time installation, from the License Selection dialog, select **Manually install license later** and click **Next**. Otherwise, if a node-locked license or a license server has already been installed, point to the location of the license file or license server and click Next.

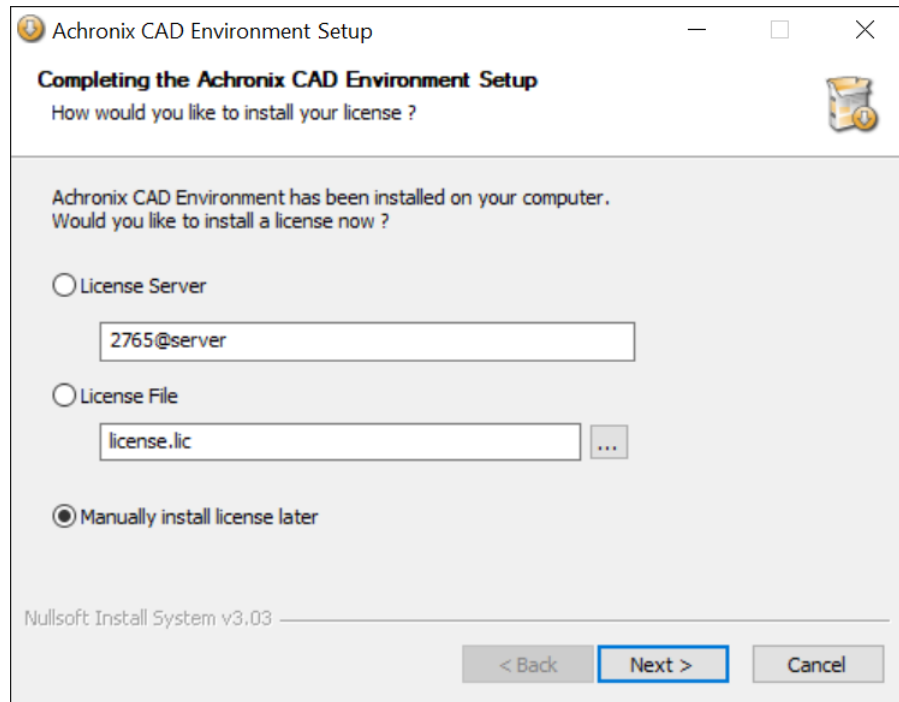


Figure 14: License Selection Dialog

12. From the Completing Setup dialog, click **Finish**. Install the license file and verify the installation per the [License Installation \(Windows\)](#) (see page 48) chapter.

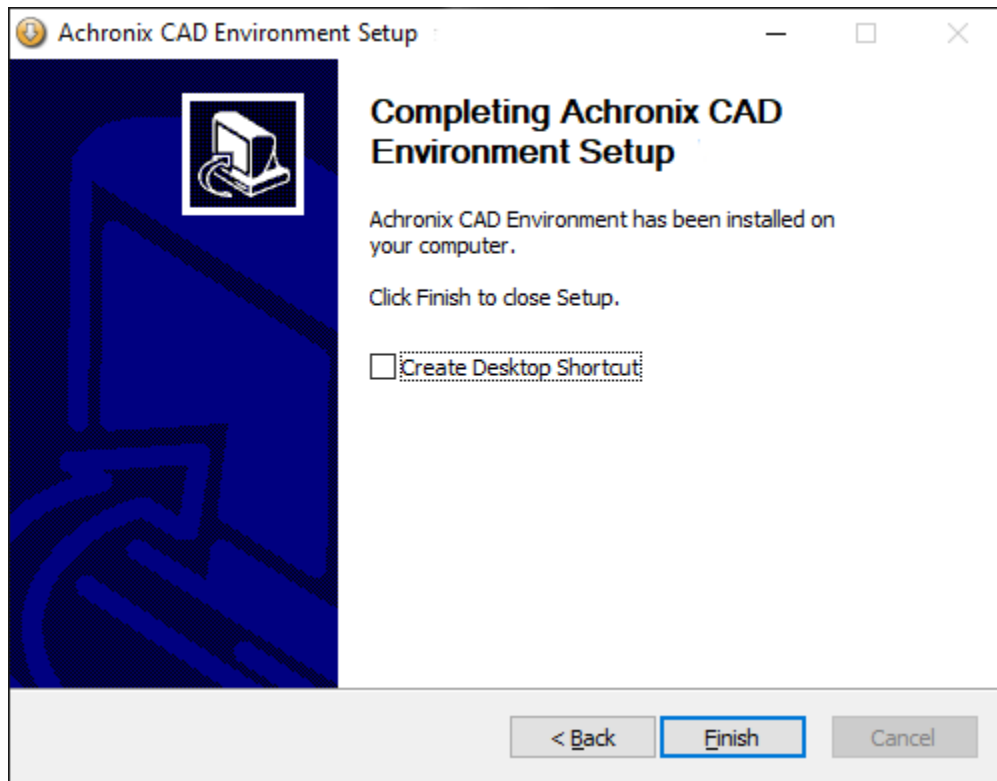


Figure 15: Completing Setup Dialog

13. Optionally create an environment variable `ACE_INSTALL_DIR` to set the location of the `/Achronix` directory that can be used by scripts to easily access ACE.

Upgrading an ACE Installation

Achronix presently does not support multiple parallel versions of ACE on the same machine. Thus before upgrading ACE, the prior version should be uninstalled.

1. Disconnect any USB Bitporters
2. (If a node-locked license is being used for ACE:) Copy the `license/*.lic` file from the ACE installation directory to another location (somewhere not under the ACE installation directory).
3. Uninstall the prior version of ACE
4. Install the desired version of ACE
5. (If a node-locked license is being used for ACE:) Copy the `license/*.lic` file back to the proper location within the new ACE installation directory.
6. Re-connect any USB Bitporters
7. Run ACE



Installing multiple versions of ACE at the same time is not supported in Windows

Unsupported: Installing multiple versions of ACE at once

This is not officially supported due to limitations in the existing installer/uninstaller framework used by ACE. We do hope to support this scenario in a future ACE release.

Unsupported Workaround:

1. Disconnect any USB Bitporters
2. Install each version of ACE into a separate directory. See the directions below regarding uninstalls.
3. Re-connect any USB Bitporters
4. Run the desired version of ACE.



Be aware that the most recently installed version of ACE is also the first one in the PATH environment variable, which affects the version of ACE and the `acx_stapl_player` that gets executed if/when running those tools manually from the Command Prompt.

Unsupported: Uninstalling ACE after having previously installed multiple versions of ACE at once

This scenario is not officially supported, though we do hope to remedy this in a future version of ACE. At this time, the ACE uninstaller is only able to uninstall the most-recently-installed version of ACE. (Note that this is not the same as the most recent release of ACE.)

Unsupported Workaround (if the version-to-be-uninstalled is not the version most recently installed):

1. Disconnect any USB Bitporters
2. Re-install the EXACT version of ACE you wish to uninstall on top of itself. ***The installation directory must match exactly.***
3. Uninstall that unwanted version of ACE. When complete, all remnants of that ACE version should have been removed.
4. Repeat steps 2 and 3 (re-install, then uninstall) for each remaining unwanted version of ACE.
5. Re-install the current favorite version of ACE on top of itself. This ensures the favorite version of ACE is once-again the first version in the PATH environment variable (required when running "`ace`" and "`acx_stapl_player`" from the Command Prompt), and also makes the uninstaller once again aware of that version.
6. Re-connect any USB Bitporters

Uninstalling ACE



Caution!

The ACE (un)installer does not fully support multiple copies of ACE being installed on the same machine simultaneously. The uninstaller always uninstalls the most recently installed version of ACE, regardless of version number. See the section [Upgrading an ACE Installation \(see page 39\)](#) for further details and workarounds.

To uninstall ACE on Windows:

1. Select **Start** → **Programs** → **Achronix CAD Environment** → **Uninstall Achronix CAD Environment** and skip to step 4.
2. Alternately, open the **Control Panel** and click **Programs and Features**.
3. From the Uninstall or change a program dialog, double-click **Achronix CAD Environment**.
4. From the Achronix CAD Environment Uninstall dialog, click **Uninstall** to start the uninstall process. The window closes when the process completes.

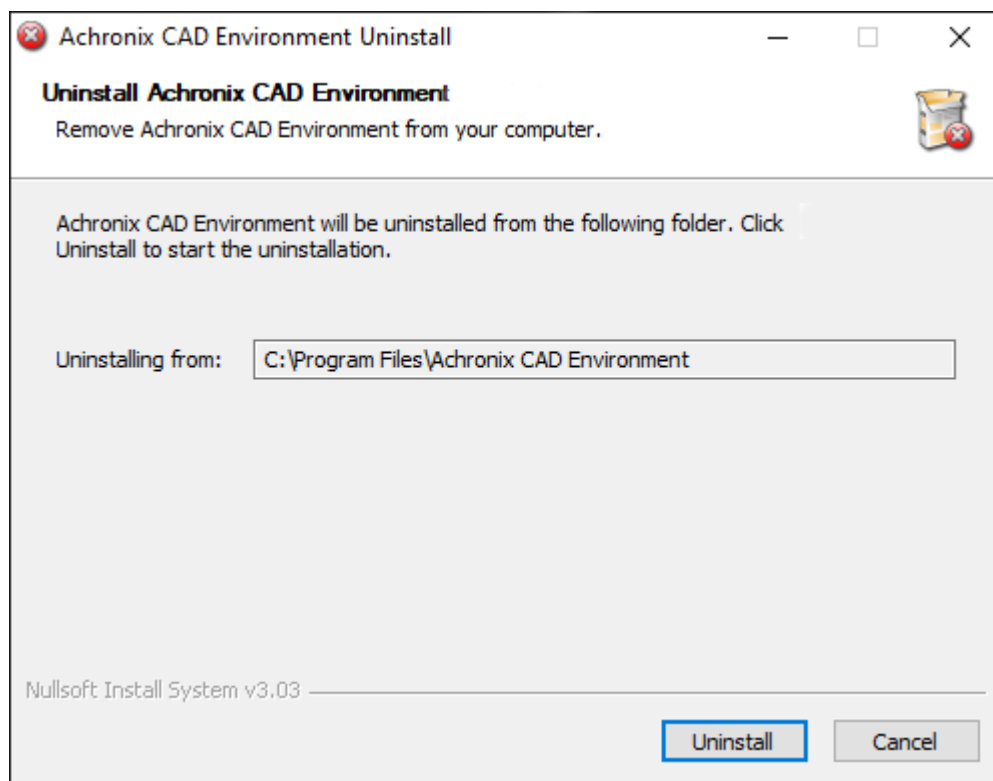


Figure 16: Achronix CAD Environment Uninstall Dialog

Installing Synplify Pro for Achronix



Warning!

If the license configuration is node locked when upgrading Synplify Pro for Achronix, any existing license files in the directory \Synopsys might be removed or overwritten. Be sure to save a copy of the license file in a safe place for reuse after a program upgrade.

Follow the steps below to install Synplify Pro:

1. Download the Synplify Pro zip file (e.g., SynplifyPro_2020.09x-SP1_release_Windows.zip) and extract its contents.

Note



The device overlays (e.g., speedster16t_7t_05sc_R-2020.09X-SP1_overlay.zip) are located in the Synplify Pro zip file, but are installed after the Synplify Pro installation.

2. Doubleclick the install program (e.g., fpga_vL-2016.09X_1w_win.exe) to begin the install.
3. From the Synplify Pro for Achronix Setup dialog (shown below), click **Next >** to open the License Agreement dialog.

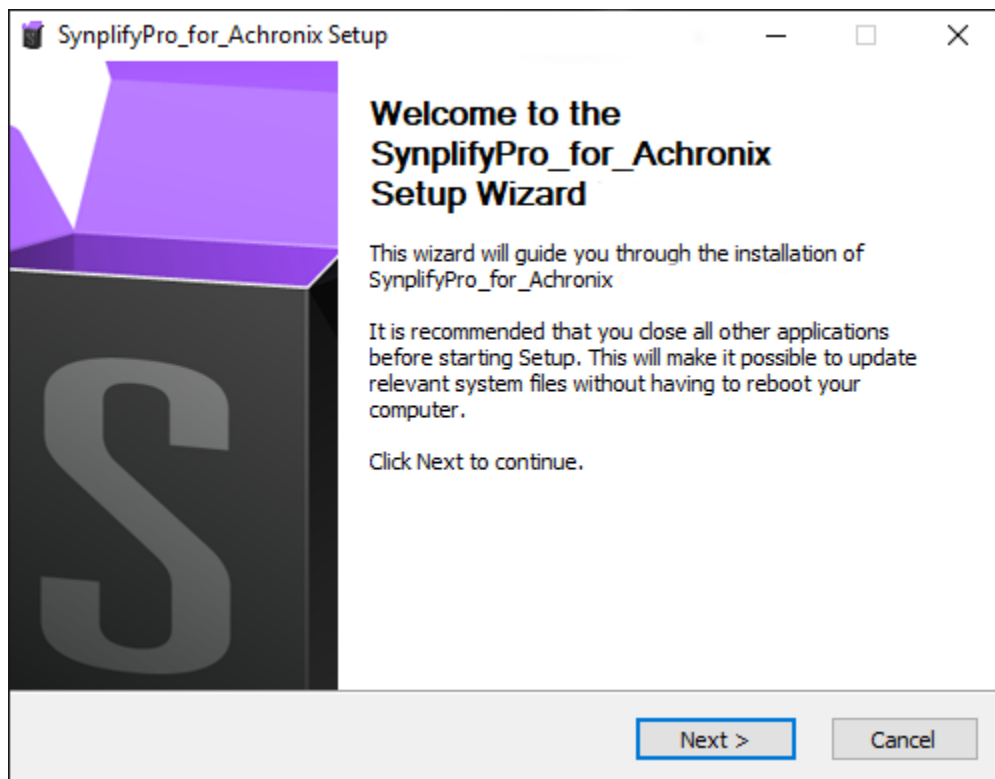


Figure 17: Synplify Pro for Achronix Setup Dialog

4. Select **I accept the terms of the license agreement** followed by **Next >**.

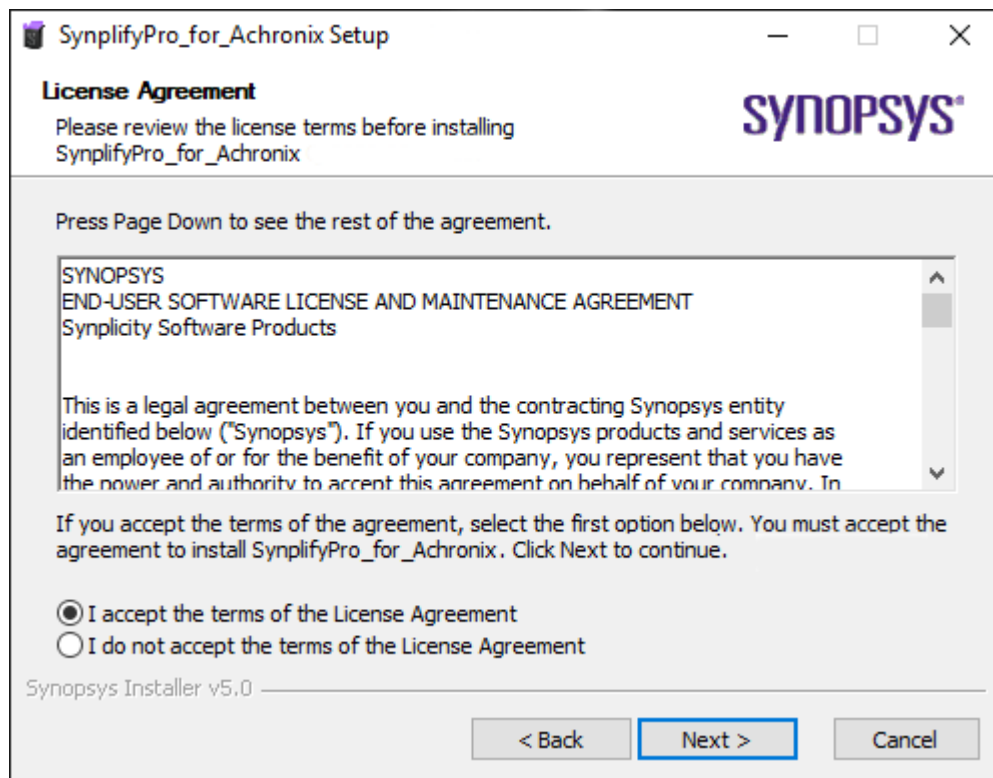


Figure 18: Synopsys End-User License Agreement

5. Choose the destination folder to receive the software.

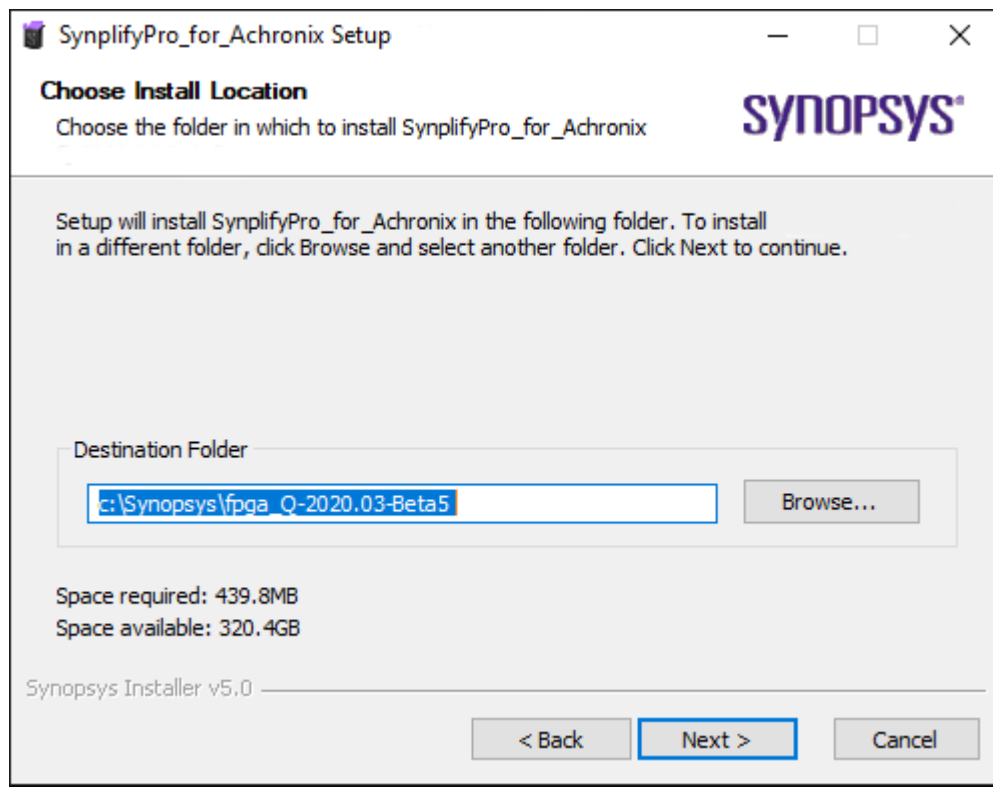


Figure 19: Choose Install Location Dialog

6. From the Choose Start Menu Folder dialog, select the desired folder and then click **Next >**.

7. From the Start Copying Files dialog, select **Accept, Next >** to begin the installation.

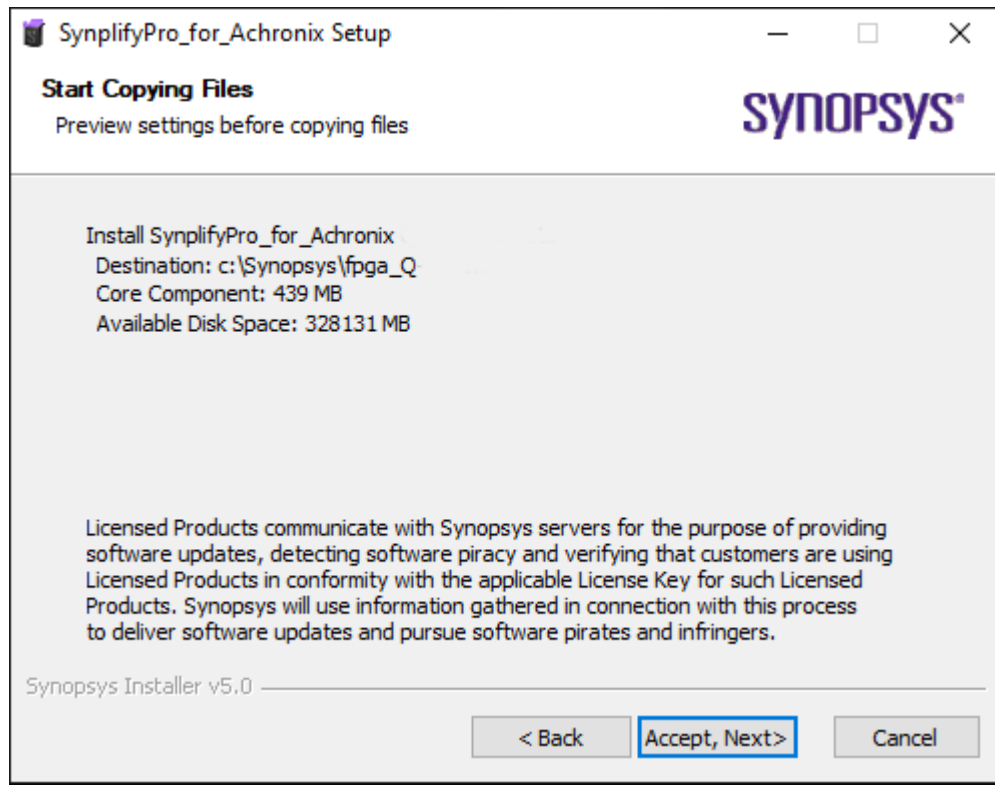


Figure 20: Start Copying Files Dialog

8. From the InstallShield Wizard Complete dialog, click **Finish** to complete the installation.

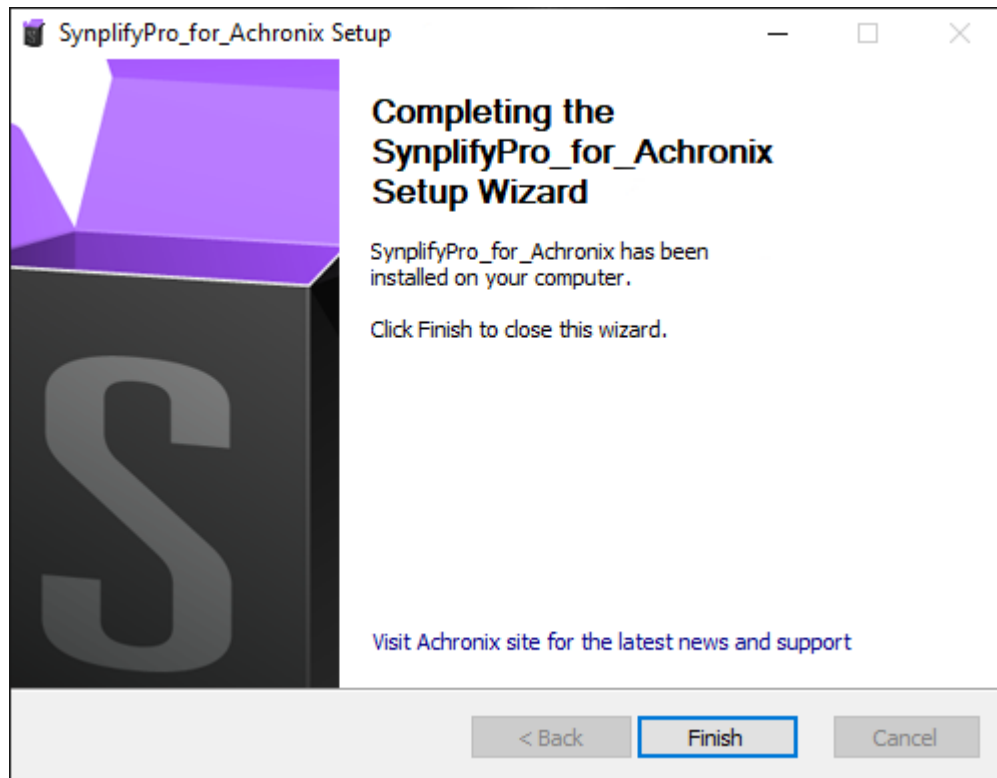


Figure 21: InstallShield Wizard Complete Dialog

9. Install the license file and verify the installation as detailed in "Synplify Pro for Achronix License Installation" in the [License Installation \(Windows\)](#) (see page 48) chapter.
10. Install the device overlays as described in the [Device Overlays](#) (see page 62) chapter.

Uninstalling Synplify Pro

To uninstall Synplify Pro on Windows:

1. Select **Start** → **Programs** → **Synplify Pro** → **Uninstall Synplify Pro** and skip to step 4.
2. Alternately, open the **Control Panel** and click **Programs and Features**.
3. From the Uninstall or change a program dialog, double-click **Synopsys Synplify Pro for Achronix**.

4. From the SynplifyPro for Achronix Confirm Uninstall dialog, click **Uninstall** to start the uninstall process. The window closes when the process completes.

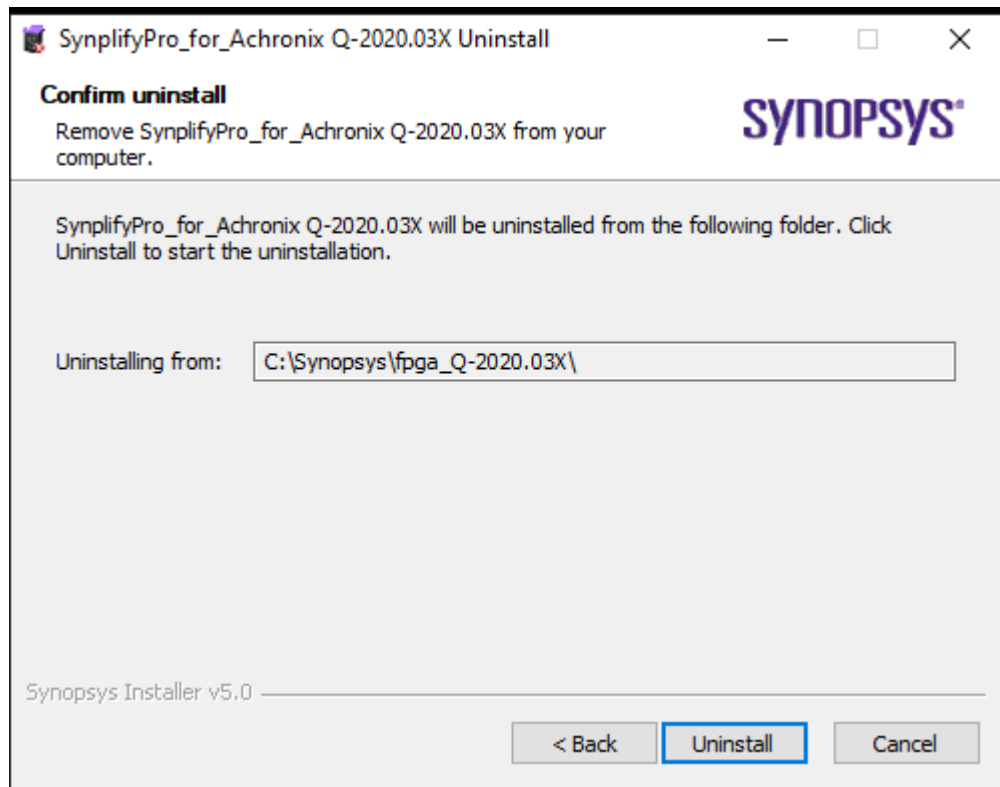


Figure 22: Synplify Pro Confirm Uninstall Dialog

Chapter - 7: License Installation (Windows)

ACE License Installation

Node-Locked Licensing

Follow these steps to install a node-locked license on Windows:

1. Determine the physical network address (or MAC) of the host system.
2. Request licenses from Achronix as described in [Obtaining Software Licenses \(see page 9\)](#). Achronix Semiconductor responds by sending a file, `ace.lic`, as an email attachment. Save this file to a safe location.
3. When the Achronix CAD Environment is installed as described in the [Software Installation \(Windows\) \(see page 32\)](#) chapter, save `ace.lic` to the directory `\Program Files\Achronix CAD Environment\Achronix\license`, or to the location used during install if the default location was overridden. Ensure there are sufficient write privileges for the target directory.

4. To verify installation and licensing, select from the Start menu, **Achronix CAD Environment** → **Achronix CAD Environment** to start ACE. ACE starts up and displays the welcome page shown below.



Figure 23: ACE Welcome Page

If the license is not found or is improperly installed, an error dialog (shown below) appears. Click **Close** to terminate. Refer to [Troubleshooting \(Windows\)](#) (see [page 60](#)) or contact Achronix Technical Support at support@achronix.com.

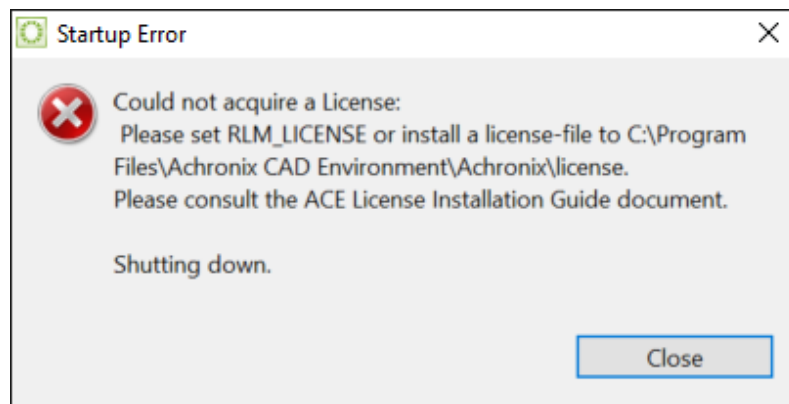
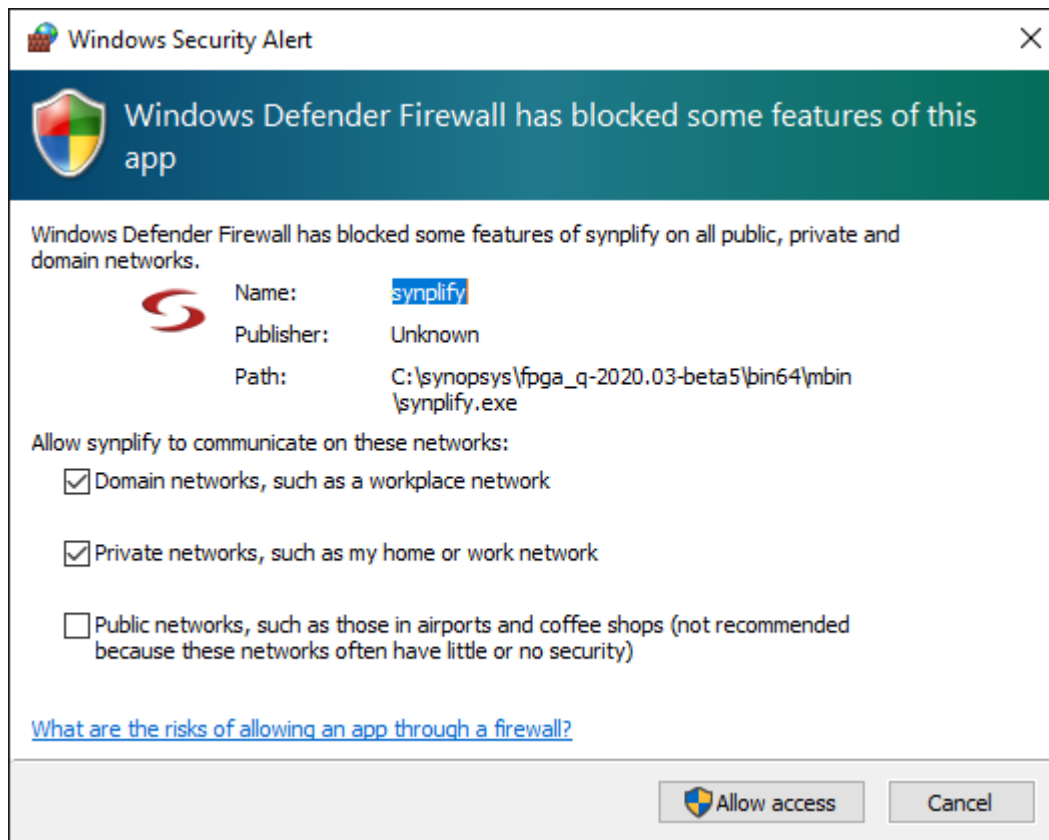


Figure 24: Startup Error Dialog

It is possible that the windows firewall configuration might prompt for permission to allow ACE to access the network (an example is shown below). Grant permission by clicking **Allow access**.



Floating Licensing

For a floating license, the option exists to host a license server on either a Linux or Windows platform, even if the specific license(s) are intended for use on Windows. If hosting a license server on Linux, refer to the [License Installation \(Linux\)](#) (see page 18) chapter. Refer to the following if hosting the license server on Windows.

After installing the software on the client as described in the "Installing ACE" topic in the chapter, [Software Installation \(Windows\)](#) (see page 32):

1. Determine the physical network address (or MAC) of the license server. Refer to the "Windows" section under the topic "Determine the MAC Address of the License Host" in the chapter [Obtaining Software Licenses](#) (see page 9).
2. Request licenses from Achronix as described in [Obtaining Software Licenses](#) (see page 9). Achronix Semiconductor responds with a file, `ace.lic`, as an email attachment. Save this file to a safe location.
3. Copy the license file `ace.lic` to an appropriate directory on the license server.
4. Copy the directory `C:\Program Files\Achronix CAD Environment\Achronix\bin` (or `bin64`) from the client to the license server.
5. Edit `ace.lic` to add the license server name and path to the licensing agent:

```
HOST <license_server_host> XXXXXXXXXXXX 1710
ISV achronix <install_directory>\bin\achronix_license_agent
```

Where XXXXXXXXXXXX is the host ID of the license server.

- Set the environment variable on the client machine. From the Start menu, select **Windows System** → **Control Panel** → **System**. Scroll the About section down and select **Advanced system settings** to open the System Properties dialog (see below):

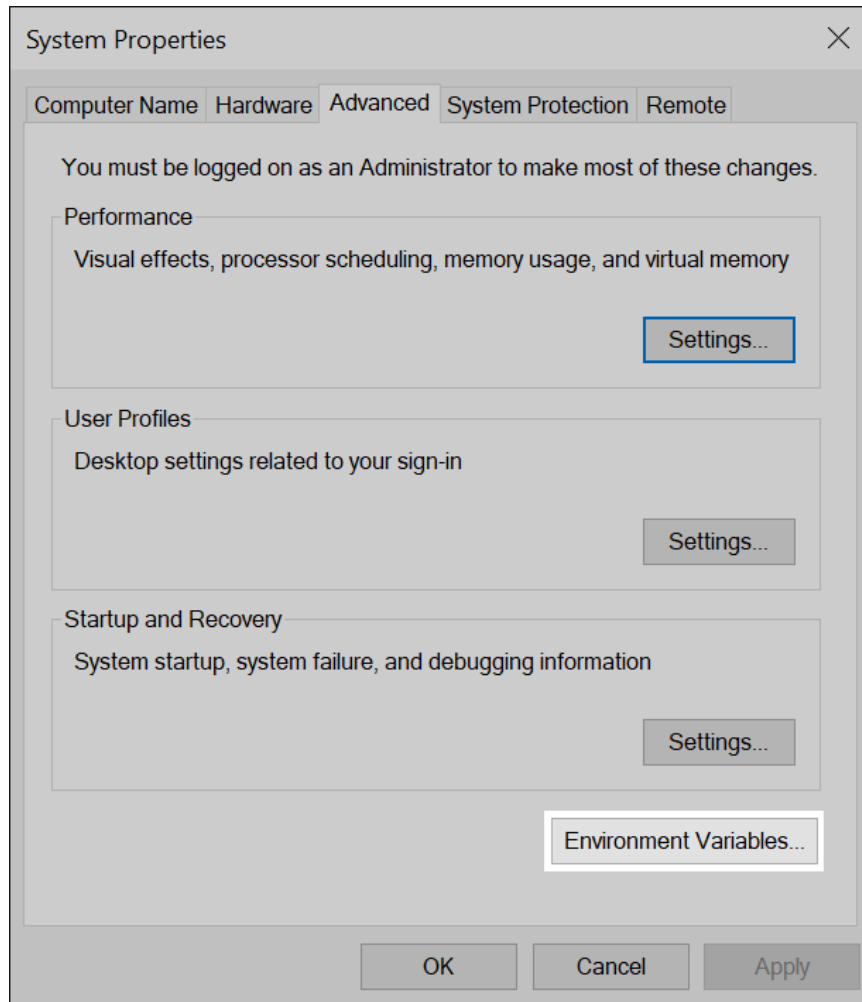


Figure 25: System Properties Dialog

7. Click **Environment Variables...** to open the Environment Variables dialog (see below).

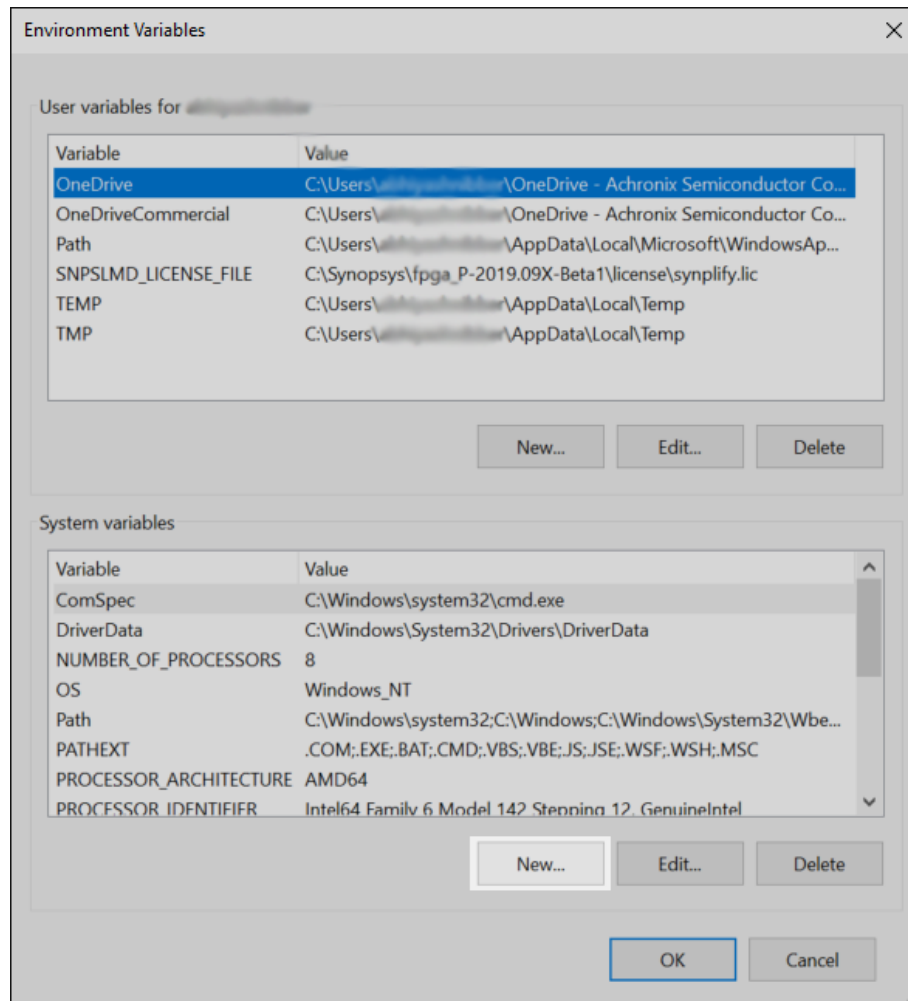


Figure 26: Environment Variables Dialog

8. Under the System variables section, click **New** and enter:
Variable name: **RLM_LICENSE**
Variable value: **1710@<license_server_host>**

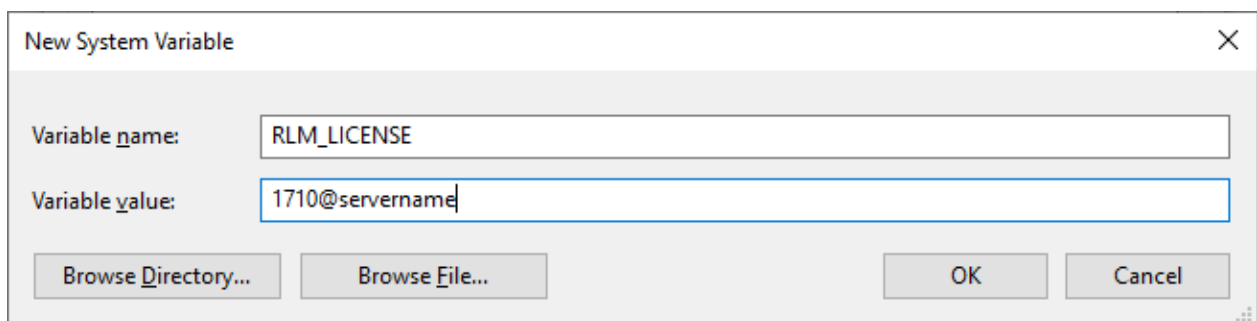


Figure 27: New System Variable Dialog

9. Click **OK** to set, followed by **OK** to close the Environment Variables window and then the System Properties window.

Note

The environment variable can also be set from the command line (but is forgotten as soon as the command line window is closed):



```
C:\> set RLM_LICENSE 1710@<license_server_host>
```

To verify that the environment variable is set:

```
C:\> echo %RLM_LICENSE%
```

10. Start the remote licensing manager (RLM) on the license server. This can either be run as administrator on demand from the server, or run as a Windows service process at startup. A service process set up to start automatically at boot time runs as long as the system is up. To install RLM as a service, enter the following from a command prompt:

```
rlm -install_service -dlog [+]logfile [-service_name sname] [-user username] [-password password] <rlm runtime args>
```

Table 4: RLM Command Parameters

RLM Option	Description
logfile	The path name for the server debug log. This parameter is required. If preceded by the '+' character, the logfile is appended, rather than created.
sname	An optional name for the installed service. If not specified, <i>sname</i> defaults to "rlm". If <i>sname</i> contains embedded whitespace, it must be enclosed in double quotes.
rlm runtime args	Any other command line arguments to be passed to rlm when it is started.

Example

```
rlm -install_service -service_name rlm-xyz -dlog c:\logs\server.log -c c:\licenses\xyz.lic
```

This example installs rlm as a service under the name "rlm-xyz". When started via the Services control panel or at boot time, rlm receives arguments from the file `c:\licenses\xyz.lic`, and writes debug log information to the file `c:\logs\server.log`

This command returns an indication that the license server is up:

```
07/14 18:18 (rlm) RLM License Server Version 3.0BL4
Copyright (C) 2006-2007, Reprise Software, Inc. All rights reserved
07/14 18:18 (rlm) License server started on <license_server_host>
```

```

07/14 18:18 (rlm) Server architecture: x86_l2
07/14 18:18 (rlm) License files:
07/14 18:18 (rlm)/opt/Achronix-linux/<license_file_name>.lic
07/14 18:18 (rlm)
07/14 18:18 (rlm) Web server starting on port 9000
07/14 18:18 (rlm) Using TCP/IP port 1710
07/14 18:18 (rlm) Starting ISV servers:
07/14 18:18 (rlm)... achronix on port 56255
07/14 18:18 (achronix) RLM License Server Version 3.0BL4 for ISV "achronix"
07/14 18:18 (achronix) Server architecture: x86_l2
Copyright (C) 2006-2007, Reprise Software, Inc. All rights reserved
RLM contains software developed by the OpenSSL Project for use in the
OpenSSL Toolkit (http://www.openssl.org) Copyright (c) 1998-2003 The
OpenSSL Project. All rights
reserved.
07/14 18:18 (achronix)
07/14 18:18 (achronix) Server started on <license_server_host>
(hostid: XXXXXXXX) for:
07/14 18:18 (achronix)ace-v1.0
07/14 18:18 (achronix)
07/14 18:18 (achronix) License files:
07/14 18:18 (achronix) /opt/Achronix-linux/<license_file_name>.lic
07/14 18:18 (achronix)

```

Synplify Pro for Achronix License Installation

Floating-Node Licensing

1. Determine the physical network address (or MAC) of the license server. Refer to the "Windows" section under the topic "Determine the MAC Address of the License Host" in the chapter [Obtaining Software Licenses \(see page 9\)](#).
2. Request licenses from Achronix as described in [Obtaining Software Licenses \(see page 9\)](#). Achronix Semiconductor responds with a file, `synplify.lic`, as an email attachment. Save this file to a safe location.

Note



Ensure the FEATURE line in `synplify.lic` begins on a new line. If the newline returns are lost, licensing problems can occur.

3. When Synplify Pro for Achronix is installed as described in "Installing Synplify Pro for Achronix" in [Software Installation \(Windows\) \(see page 32\)](#), save `synplify.lic` to a directory. The license file location is assigned to an environment variable later in this process.
4. Edit `synplify.lic` to set the hostname1 to "localhost" or the actual hostname, and set the path to the Synplify Pro license daemon:

```

SERVER localhost 012345678901 27000 VENDOR snpslmd <path_to_snpslmd>/snpslmd USE_SERVER
INCREMENT SSST snpslmd 1.0 05-Jul-2012 1
ED1EDC268F3F082F8849 \

```

5. Download `scl_v2018.06_OEM_win.exe` from the `/public/Synopsys/Licensing` directory on secure.achronix.com, then run it as administrator.
6. Navigate to the license server directory created from `scl_v2018.06_OEM.exe` and start the license server:

```
C:\> <license_server>\win32\bin\lmgrd.exe -c <license_file_path> -l lmgrd_synplicity.log &
```

7. Verify that the license server has started correctly:

```
C:\> <license_server>\lmutil lmstat -a
```

This command returns an indication that both the license server and daemon are up:

```
lmstat - Copyright (c) 1989-2009 Flexera Software, Inc. All Rights Reserved.
Flexible License Manager status on Mon 10/3/2011 22:04 [Detecting lmgrd processes...]
License server status: 27000@localhost
License file(s) on Australia: C:\license_dir\synplify.lic:
localhost: license server UP (MASTER) v11.8
Vendor daemon status (on localhost):
snpslmd: UP v11.8
Feature usage info:
Users of SSST: (Total of 1 license issued; Total of 0 licenses in use) Users of
synplifypro_achronix: (Total of 1 license issued; Total of 0
licenses in use)
```

8. Set the required environment variable on the host. From the Start menu, select **Windows System** → **Control Panel** → **System**. Scroll the About section down and select **Advanced system settings** to open the System Properties dialog (see below):

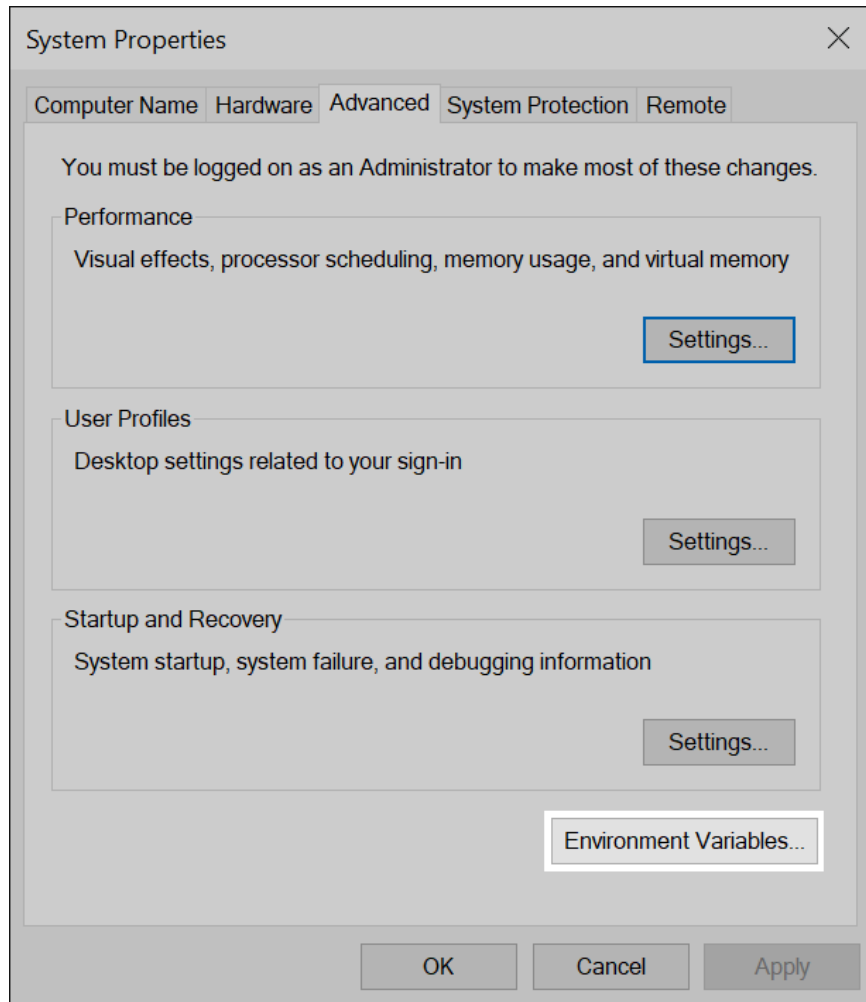


Figure 28: System Properties Dialog

9. Click **Environment Variables...** to open the Environment Variables dialog (see below).

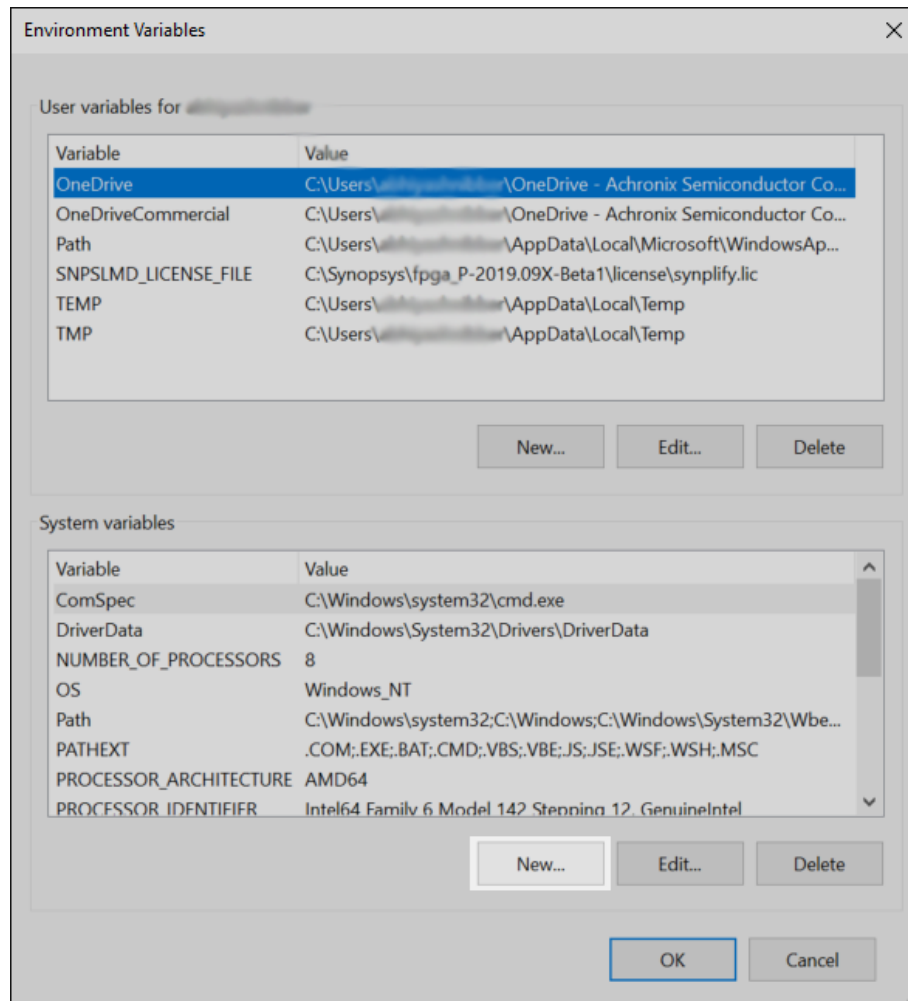


Figure 29: Environment Variables Dialog

10. Under the System variables section, click **New** and enter:
Variable name: **SNPSLMD_LICENSE_FILE**
Variable value: **<license_file_path>**

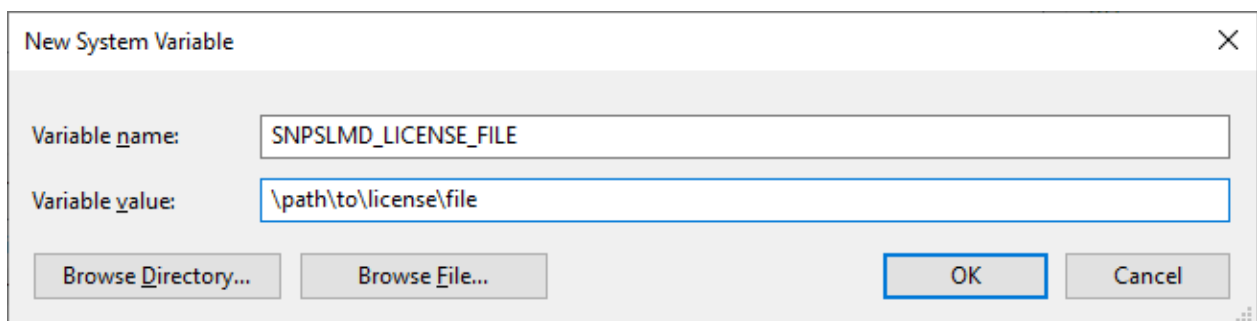


Figure 30: New System Variable Dialog

11. Click **OK** to set, followed by **OK** to close the Environment Variables dialog and then the System Properties dialog.

Note

The environment variable can also be set from the command line (but is forgotten as soon as the command line window is closed):

```
C:\> set SNPSLMD_LICENSE_FILE=C:\<license_file_path>
```

Node-Locked License

Under Windows, Synplify-Pro for Achronix does not require the license server software to be running. Simply store the `synplify.lic` file received from Achronix in a directory on the host machine, and set the `SNPSLMD_LICENSE_FILE` environment variable as in steps 8-11 above.

Starting Synplify Pro for Achronix

To verify installation and licensing, select from the Start menu **Synopsys** → **Synplify Pro for Achronix E-201x.xxx-xxx** → **Synplify Pro** to start the program. A window displaying the license agreement appears. Click **Yes** to start the program. If licensing is properly set, the main program window appears.

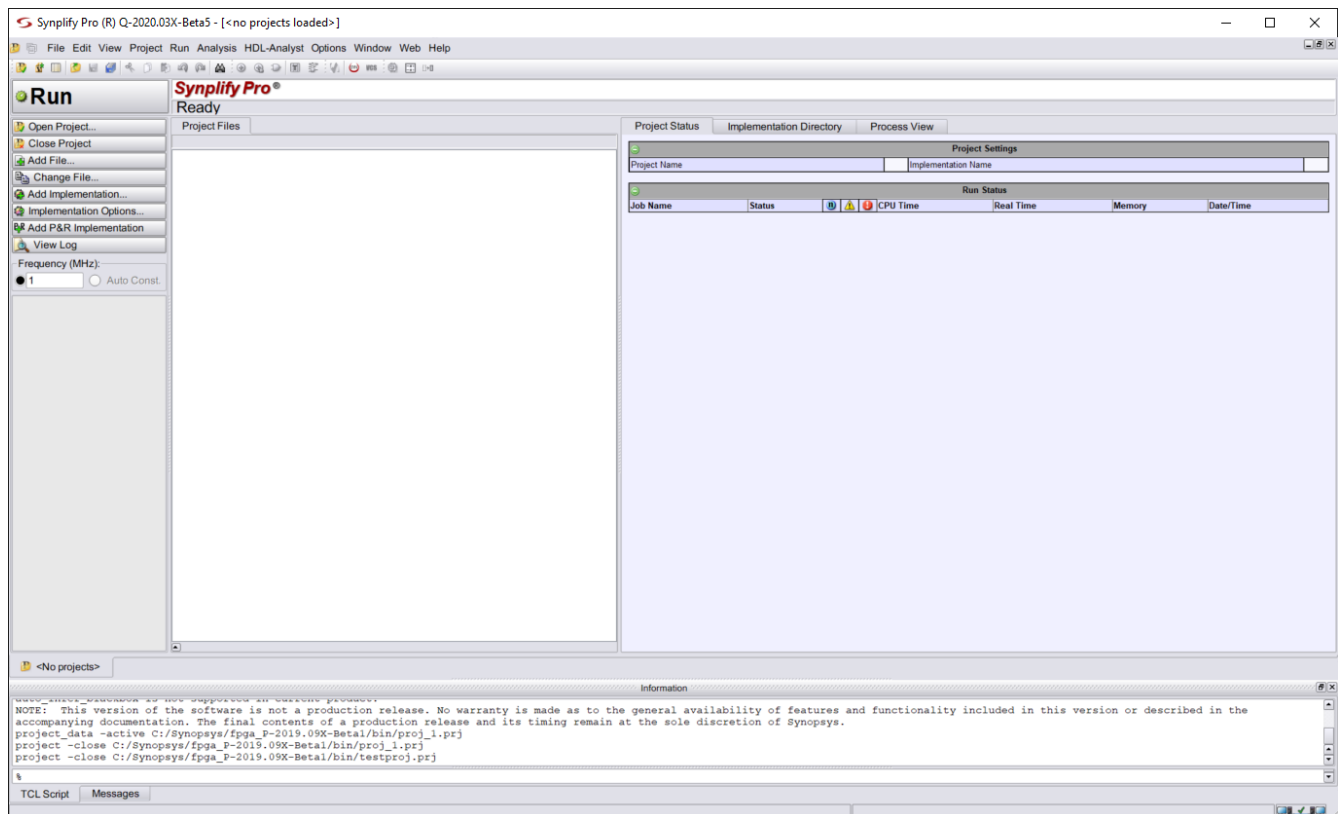


Figure 31: Synplify Pro for Achronix Main Program Window

1. If the license is not found or is improperly installed, the License Request dialog (below) opens. Click **Close** to terminate. Refer to "Synplify Pro for Achronix Licensing Issues" in [Troubleshooting \(Windows\)](#) (see [page 60](#)) or contact Achronix Technical Support at support@achronix.com.

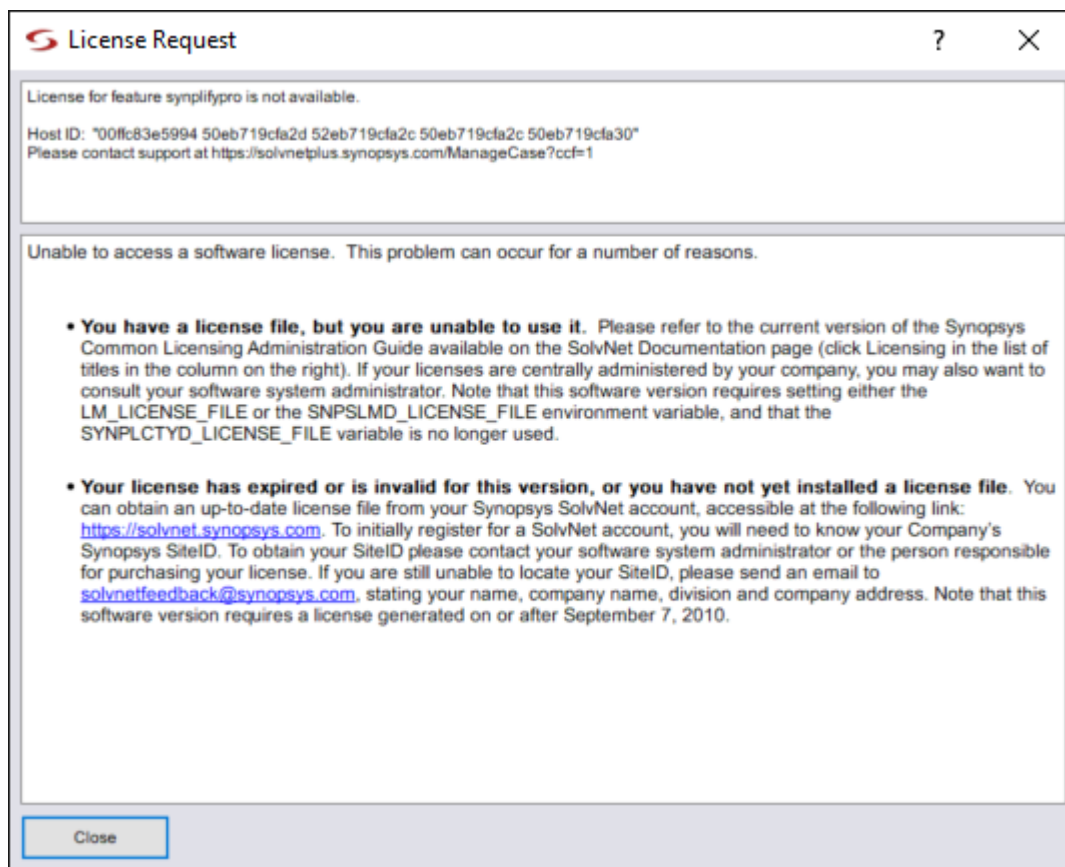


Figure 32: License Request Dialog

Chapter - 8: Troubleshooting (Windows)

This chapter provides troubleshooting hints for Windows licensing.

ACE Licensing Issues

Checklist

- Verify the install path of the license is correct:
`C:\Program Files\Achronix CAD Environment\Achronix\license`
- Verify that license file has the proper extension (.lic) and contains no illegal (nonalphanumeric) characters in the name.
- Verify that the host ID listed in the license file matches the MAC address of an enabled Ethernet adapter in the system.
- Ensure the program path below has been added to the Path statement:
`C:\Program Files\Achronix CAD Environment\Achronix\system\cmd`
The Path variable is set by selecting from the Start menu **Windows System** → **Control Panel** → **System** → **Advanced system settings** to open the System Properties dialog. Then, from the Advanced tab, clicking **Environment Variables** followed by highlighting the Path string and clicking **Edit**.

Other Issues

When upgrading ACE, any existing license files in the directory `./license` might be removed. Be sure to save a copy of the license file in a safe place for reuse after a program upgrade.

Synplify Pro for Achronix Licensing Issues

Checklist

- Verify the install path of the license is correct, for example:
`C:\Synopsys\license.txt`
- Verify that license file contains no illegal (nonalphanumeric) characters in the name.
- Ensure that the `INCREMENT synplifypro_achronix ...` lines in the license file start on new lines.
- Verify that the HOSTID listed in the license file matches the MAC address of an enabled Ethernet adapter in the system.
- Ensure that the `SNPSLMD_LICENSE_FILE` environment variable exists and is set to the correct install path for the license file, for example:
`C:\Synopsys\license.txt`
The Path variable is set by selecting from the Start menu **Windows System** → **Control Panel** → **System** → **Advanced system settings** to open the System Properties dialog. Then, from the Advanced tab, clicking **Environment Variables** followed by highlighting the Path string and clicking **Edit**.

Other Issues

Save the License File when Performing an Upgrade

When upgrading Synplify Pro for Achronix, any existing license files in the directory `\Synopsys` might be removed or overwritten. Be sure to save a copy of the license file in a safe place for reuse when performing a program upgrade.

Multiple Ethernet Cards Present on the System

If the host system has multiple Ethernet cards, first install the Synplify license manager and run `lmutil lmhostid` from the command prompt to get the reported MAC address. Then, use this MAC address when requesting the license.

ACE Startup Error Due to Missing DLL Component in Windows 10

In some Windows 10 configurations, users might see the following error when invoking the ACE GUI. This error occurs due to a missing DLL component from the Visual Studio redistributable installer. This situation can be resolved by reinstalling the `vc_redist.x64.exe` executable. This executable can be downloaded from the following link: <https://www.microsoft.com/en-ca/download/details.aspx?id=48145>.

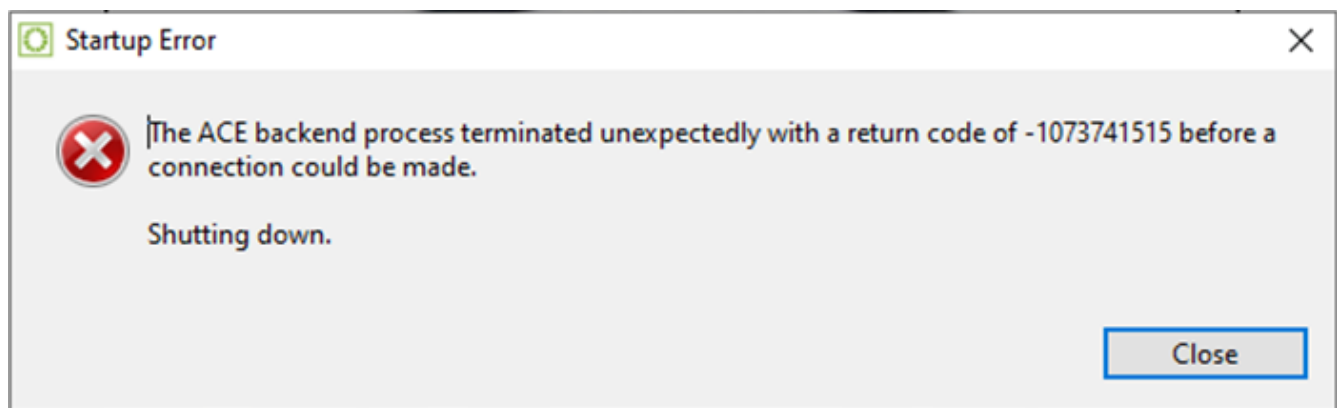


Figure 33: ACE Startup Error

Chapter - 9: Device Overlays

Support for Achronix devices (e.g., Speedcore instances or Speedster devices) is provided in ACE and Synplify-Pro with the use of overlays. Achronix provides device overlays for downloading. All device overlays must be installed for the devices planned to be used.

ACE Overlays

Device overlays for ACE are delivered as a zip or tar file containing the additional library and system files required for the device in use. For example, `ACE_8.1.1_Linux_AC7t1500ES0.tgz` and `ACE_8.1.1_Windows_AC7t1500ES0.zip` contain the necessary overlays to support the Speedster7t AC7t1500 device in ACE version 8.1.1 in Linux (.tgz file) and Windows (.zip file) respectively. To install ACE along with the device overlays on Linux, users can simply use the `install_ace.sh` script provided (see [Installing ACE \(see page 15\)](#) for directions). For Windows, the device overlays are also installed during the ACE installation process (see [Installing ACE \(see page 32\)](#) for directions). If it is necessary to install device overlays manually, follow the directions below.

The zip/tar file contains a directory structure similar to the following:

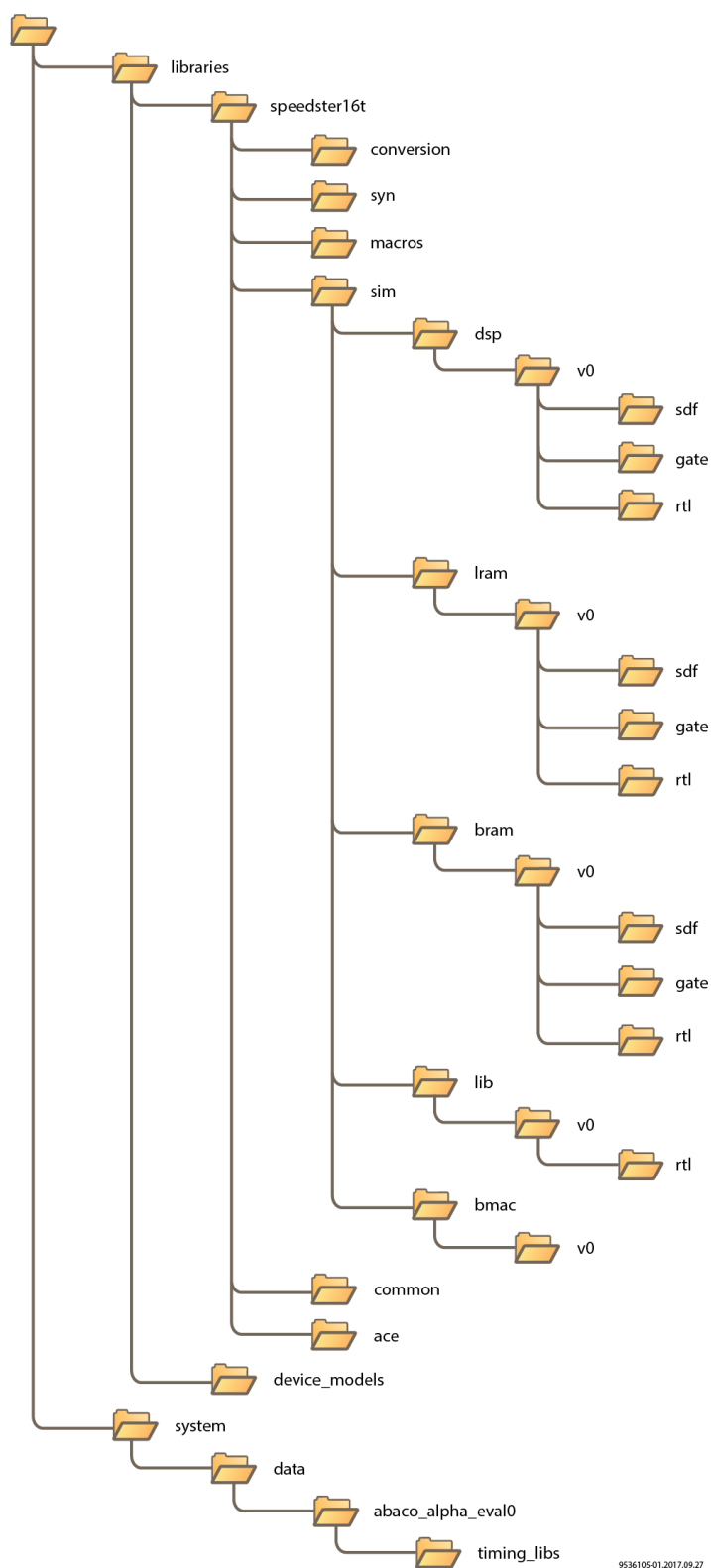


Figure 34: Overlay File Directory Structure

Note

Before proceeding, make sure that write privileges are enabled for the ACE Install directory (usually C:\Program Files\Achronix CAD Environment\Achronix in Windows or /opt/Achronix-Linux in Linux). Also, if using Windows, run the unzip program as administrator by right-clicking the unzip program and selecting **More** → **Run as Administrator**.

Extract the contents of the zip/tar file into the ACE Install directory. ACE now allows the selection of device(s).

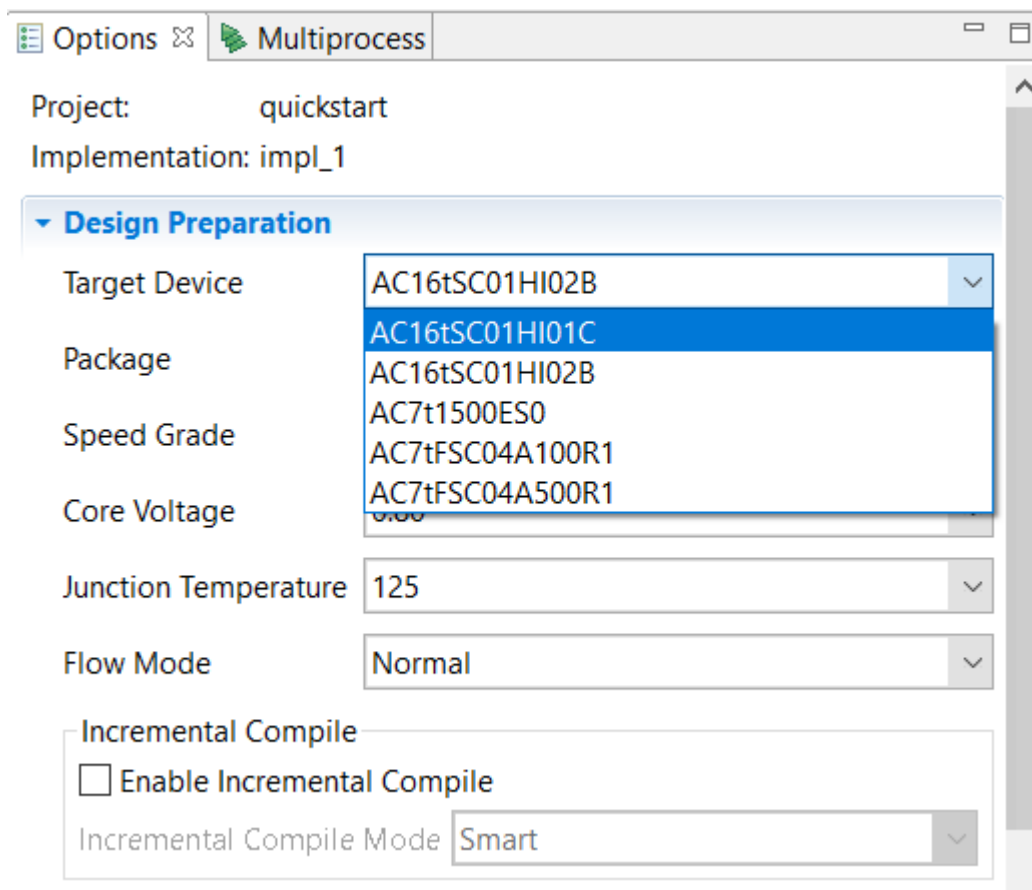


Figure 35: ACE Design Preparation Options Showing the Added Devices

Synplify Pro Overlays

Synplify Pro overlays are delivered as a zip (for Windows) or tar (for Linux) file, with the name indicating the applicable version of Synplify Pro and the custom devices supported. For example, speedster7t_16t_Linux_P-2019.09X-Beta1_overlay.zip represents the overlays for the Speedster7t, Speedcore7t, and Speedcore16t evaluation devices, with the overlays applying to version P-2019.09X-Beta1 of Synplify-Pro.



Caution!

Ensure that the overlay downloaded matches the version of Synplify Pro that is to be updated. If subsequently a new version Synplify Pro is used, then a new overlay file must be requested from Achronix.

After the zip or tar files are downloaded, extract them and continue to [Applying the Overlay \(see page 65\)](#).

Applying the Overlay

1. Locate the subdirectory `/lib` (if using Linux) or `\lib` (if using Windows) within the Synplify Pro installation directory.
2. All of the files from the extracted overlay directories should then be copied to their equivalent locations in the Synplify Pro installation directory. However, if other overlays have been downloaded, it might be necessary to manually merge some files.

Note



If using Linux, files `/lib/generic/custom_partdata.txt` and `/lib/parts/custom_parts.txt` must be manually merged if they already exist in the Synplify Pro installation. In both instances, add the contents of the new overlay file to the existing file using a text editor. If using Windows, the file paths instead are `\lib\generic\custom_partdata.txt` and `\lib\parts\custom_parts.txt`.

3. To ensure that all new devices have been installed, launch Synplify Pro. The splash screen should indicate that the new devices have been detected.

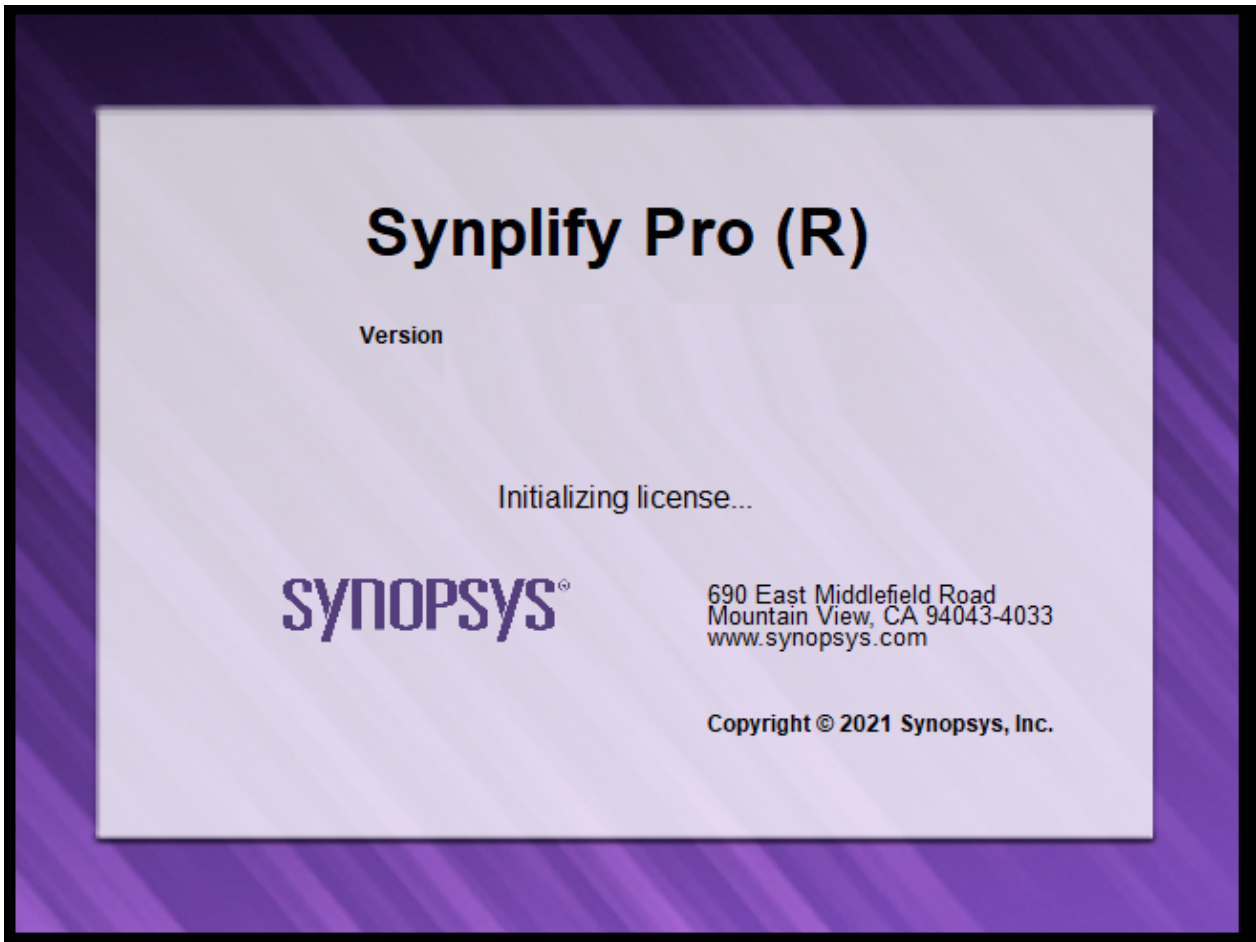


Figure 36: Synplify Pro Splash Screen

4. To confirm the parts are correctly installed, after opening Synplify Pro, create a new project.
5. Select **Implementation Options** → **Device**.

6. The new parts should be available in the "Part:" drop-down list.

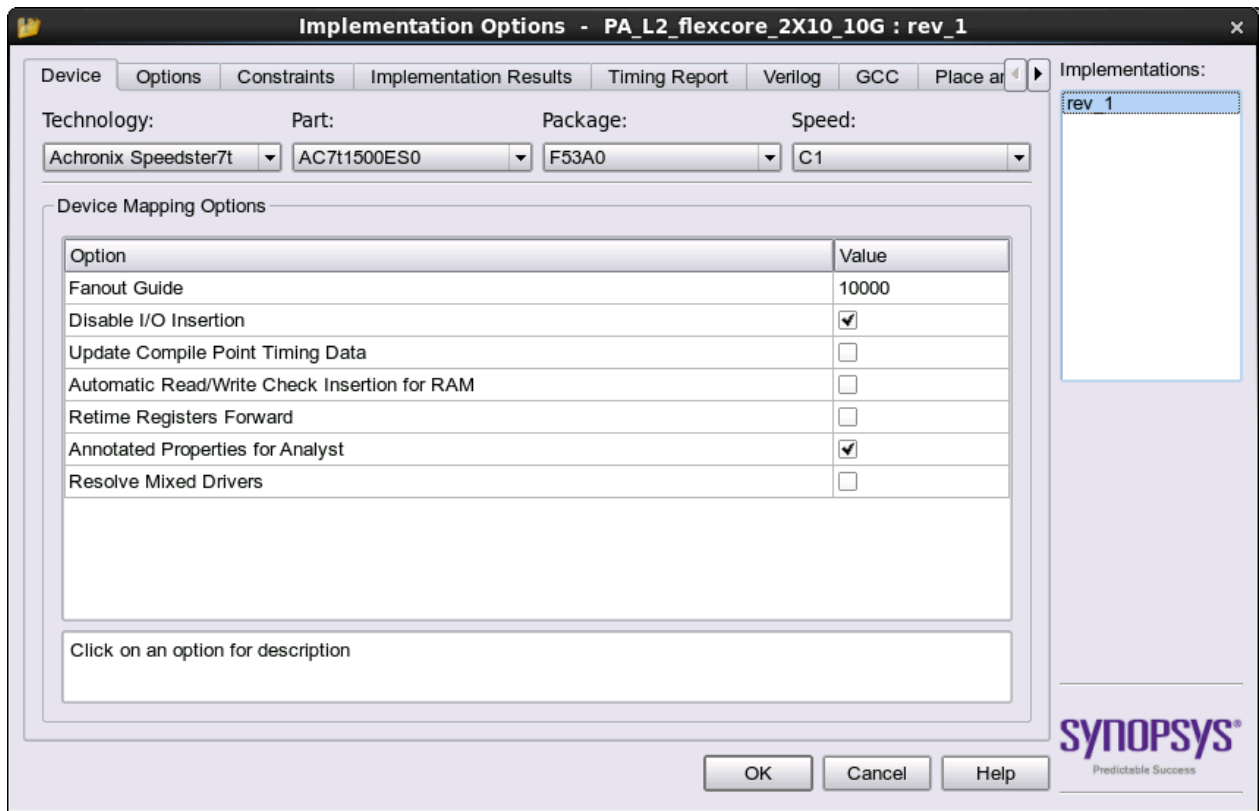


Figure 37: Synplify Pro Implementation Options Screen

Revision History

Version	Date	Description
2.0	01 Oct 2017	<ul style="list-style-type: none"> Significant set of updates for new Synplify-Pro and ACE installation licensing schemes and conversion of document to Confluence.
2.1	23 Oct 2018	<ul style="list-style-type: none"> License Installation (Windows) (see page 48): Updated ACE Welcome screenshot. Obtaining Software Licenses (see page 9): Provided clarifications and a note to differentiate between requesting for an evaluation license and generating PO for licenses attached to sales orders.
2.2	25 Jun 2019	<ul style="list-style-type: none"> Updated all pages and screenshots to reflect the newest licensing and installation schemes based on architecture specifications and after migration to the ACE 7.x infrastructure.
2.3	24 Mar 2020	<ul style="list-style-type: none"> Updated Minimum Memory Requirements (see page 7). Included install_ace.sh instructions for Linux. Updated Synplify Pro Node-Locked License Installation (Windows) (see page 58) to exclude need for server. Updates for Windows 10 and various screenshots.
2.4	20 Jul 2020	<ul style="list-style-type: none"> Updated the Linux and Windows Troubleshooting sections. Included the steps for running install_ace.bat in ACE Windows installation instructions. Updated all screenshots to not include the product version.
2.5	16 Dec 2020	<ul style="list-style-type: none"> Updated the Windows Troubleshooting section. Updated steps for installing SCL. Added note to inform users to request a floating license when accessing the license server remotely.
2.6	28 Jun 2021	<ul style="list-style-type: none"> Added instructions for the ACE Windows floating license Updated steps to run install_ace.sh Added steps for the Windows FTDI CDM install prompt
2.7	16 Sep 2021	<ul style="list-style-type: none"> Update to reflect new licensing procedure