

Installation Guide



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15. GENERAL. The terms and conditions stated in this Agreement constitute the complete and exclusive statement of the Agreement between Licensee and CEI and supersede all prior oral and written statements of any kind whatsoever made by either party or their representatives.
All preprinted additional or different terms on any purchase order forms or other documents received from Licensee are deemed deleted and Licensee agrees that such terms shall be void even if the Licensee's documentation indicates the terms therein take precedence over other documents. Any waivers of or amendments to the terms and conditions of this Agreement, to be effective, must be in writing and signed by an officer of CEI and Licensee.
CEI Address:
Computational Engineering International, Incorporated
2166 N. Salem Street, Suite 101, Apex, North Carolina
27523
USA

1 Installation Instructions

EnSight is a powerful software package for the postprocessing, visualization, and animation of complex datasets. One of the unique features of EnSight is its ability to run *distributed*, sharing the workload between a Server process (handling data I/O and all compute intensive functions) and a Client process (managing user-interface interaction and graphic rendering). The EnSight Client and Server can either run on the same computer system (*stand-alone* operation) or the Client can run on a workstation and the Server can run on a remote computer system (*distributed* operation).

Important: *The EnSight client is designed to run on a user's workstation. It is not designed to run on a remote machine (that is, a machine in which you've set the DISPLAY environment variable in UNIX) due to its interaction with the windowing system and graphics hardware. If it is run on a remote machine, performance will suffer and rendering errors may occur.*

If you are installing EnSight for a trial evaluation, you will be provided with a license key file which permits you to install and execute EnSight in either stand-alone or distributed mode on any computer system at your site for a limited amount of time.

If you have purchased or are leasing a license for EnSight, have chosen to run distributed, and always intend to run the Client processes on the same workstation(s), the easiest method of installation will be to node-lock the Clients to that (those) workstation(s) and run stand-alone. If however you anticipate running the Client process distributed from a number of different workstations at different times, (the maximum number of concurrent EnSight processes is governed by the number of *seats* for which you are licensed) then you will need to install the *EnSight License Manager*.

What You'll Need For Installation

To install and run EnSight, you will need:

1. Internet access to www.ensight.com and click on support then click on download, OR a CD/DVD created from the installation iso image, OR a CD sent to you by CEI.
2. A computer system capable of running the EnSight Client and/or Server. See Table 1 below for a list of supported EnSight platforms.
3. A network supporting the TCP/IP protocol if you plan to run EnSight distributed as client and server. If you can run `telnet` from the Client to the Server host system, you have TCP/IP installed. If you have questions, consult your local system administrator.
4. A valid EnSight license key. If the key information was not included with your materials, it will be sent via FAX or email.
5. Sufficient disk space. For example, approximately 550 MB will be required for the install of EnSight plus the free applications (EnVe the movie editor, EnVideo the movie player, and EnLiten plus Reveal, the two geometry viewers) on Windows. An additional 100 MB is required if you choose to install the ABAQUS ODB reader libraries. Finally, 1 GB of disk space is required to install EnSight's optional CAD reader package.

- Sufficient memory. A minimum of 1 GB of memory is recommended for usage of EnSight. If you work with large datasets you will require more.

Supported Platforms:

Vendor	Supported OS Level / Processors
IBM	AIX 5.3 (64-bit), Server Only, no Client Power processors
Linux	Kernel 2.6 X86 (32-bit AMD / INTEL) X86-64 (64-bit AMD64 / INTEL EM64T)
Apple	Macintosh OS, Intel or Power PC 10.5 (64-bit)
Microsoft	Windows XP/Vista (32-bit) XP/Vista (64-bit)

Table 1: Supported EnSight Platforms.

Note: All clients require OpenGL for hardware accelerated graphics performance. Software OpenGL emulation is available through the X client (ensight90 -X)

Installation Summary

EnSight can be installed from a CD/DVD or from a network installer.

Installing from a CD/DVD

If your installation platform cannot connect to www.ensight.com via an internet browser you will need to install from a CD or DVD. You can either request a CD set from CEI, or create your own by downloading the CD or DVD iso image from the CEI website and burning them to a CD-R/W or DVD-R/W using any available CD/DVD creation application.

From the CD or DVD run the installer appropriate for your architecture as follows:

- (a) UNIX/Linux install_unix
- (b) Apple install install.app
- (c) Windows setup.exe

Installing from the network installer

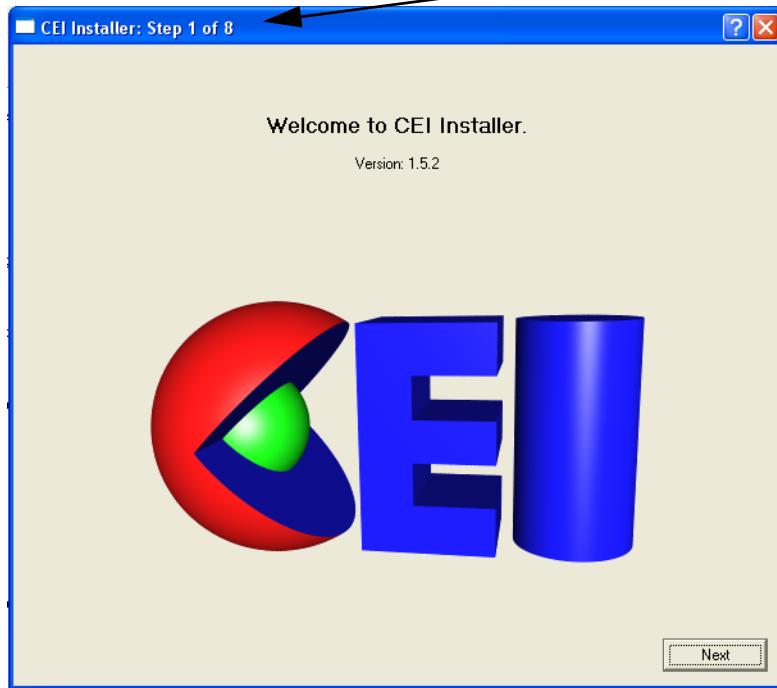
If you have an internet connection, go to the CEI website (www.ensight.com), click on Downloads and follow the links to the ensight90 download area. Then click on the link indicating “Network Installer”. Download the installer you need. Once downloaded:

- (a) UNIX/Linux uncompress and un-tar then run `install.sh`
- (b) Apple double click `install`
- (c) Windows double click `win32.exe` to start the installer

- Once the installer is running (either from the CD/DVD or via a network download of the installer) the installation instructions are the same and you should see the

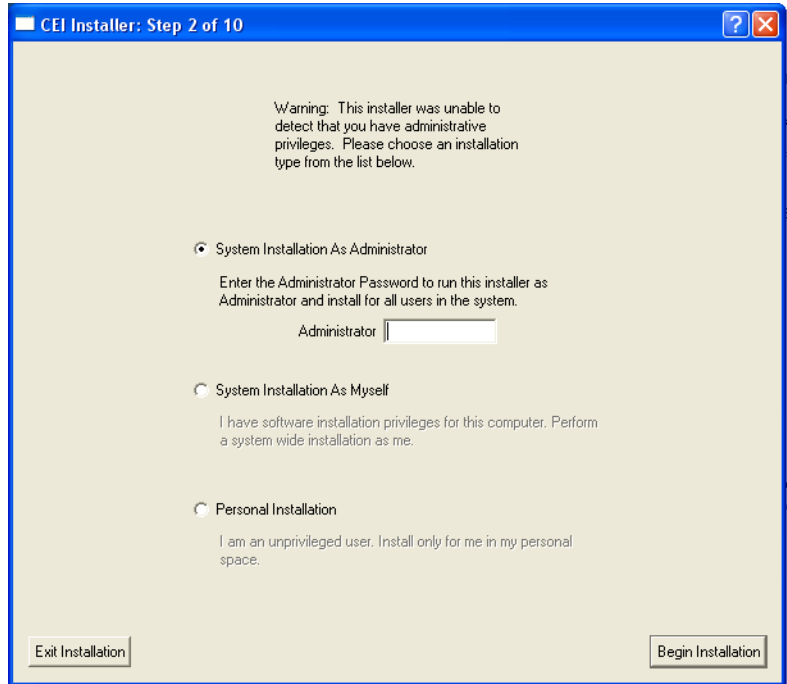
following splash screen (click Next):

Total number
of steps may vary



2. If you are installing from a privileged account (root, Administrator) or an account that is a member of the Windows Administrator group, then you will NOT see the next two screens. Otherwise, you will get a screen similar to the one shown below. Choose either a system install if you wish to install for all users or choose personal install only for yourself then click Begin Installation.

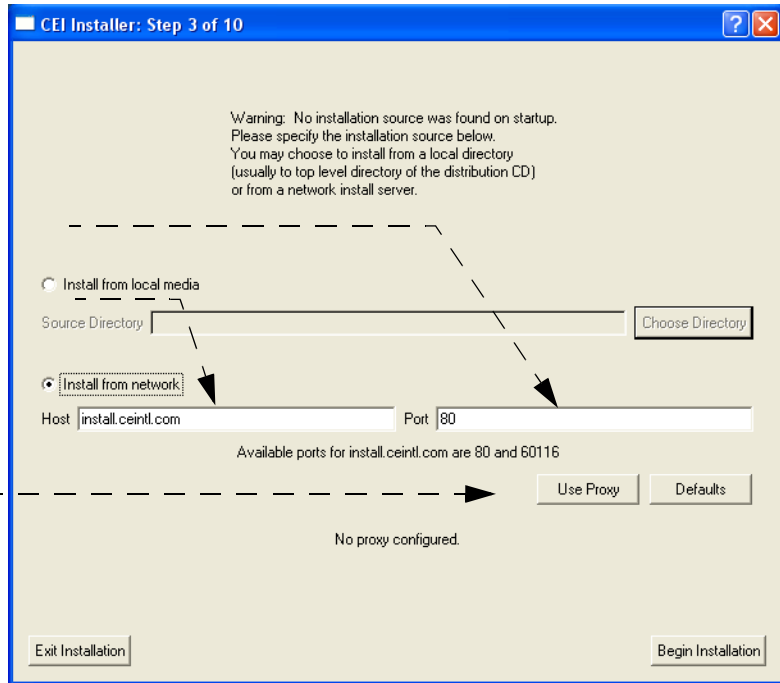
This screen shows up if you need to authenticate to gain system privileges.



- If you are running the installer from a CD/DVD then you will not see this next screen. If you wish to install from the web, then choose install from network. If the install fails please check with your Network Administrator to make sure this port number is open and available for outbound connections. The port number should only be changed if you are running your own install server.

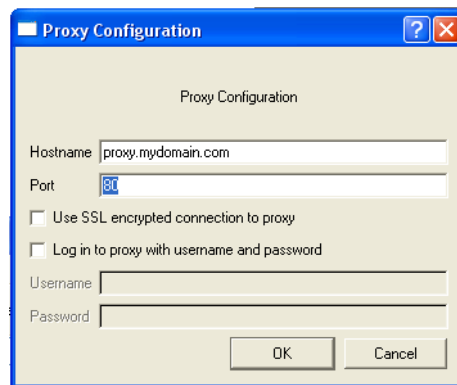
This port must be 60116 or 80 if you are installing from this CEI website

Click here to use a proxy



The installer will install only those files newer than your existing installation (if any).

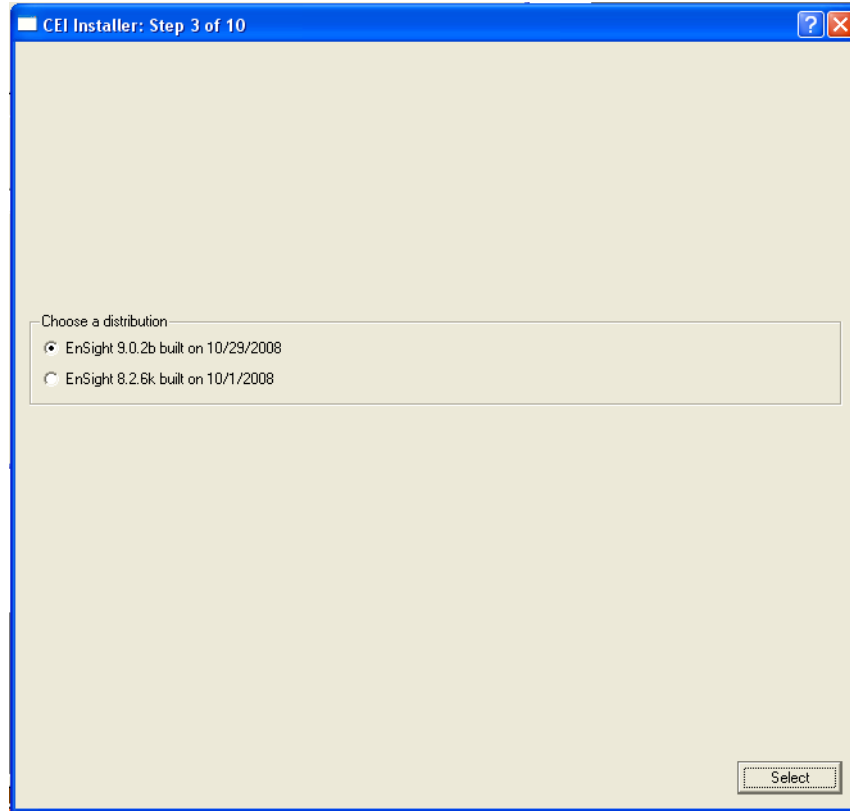
Some networking environments access the Internet via a web proxy. This is a computer on your network that all web traffic goes through in order to improve performance through caching and to protect the internal network. Click the Use Proxy button to enter your proxy settings into the installer to allow it to connect to the installation server.



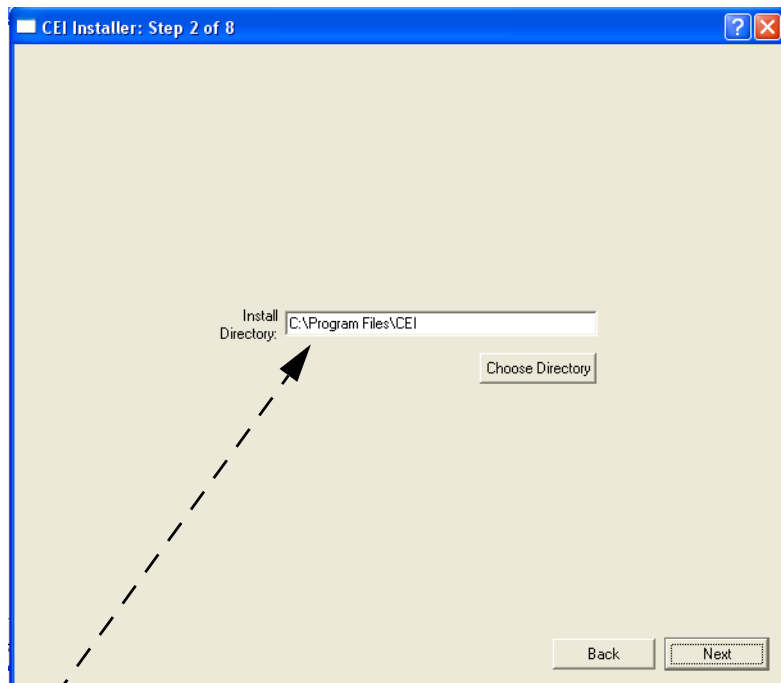
On the proxy configuration dialog, you are required to enter the hostname for your proxy and the port to connect to (usually 80). If you need to provide a username and password to log in to the proxy, check the box and enter the information into the Username and Password fields. You can also enable SSL encryption to your proxy if it is required. Clicking 'OK' will return you to the network install server configuration.

You should see your proxy configuration **shown in red**. Your password will be replaced by a series of x's.

4. Choose the EnSight distribution version to install.

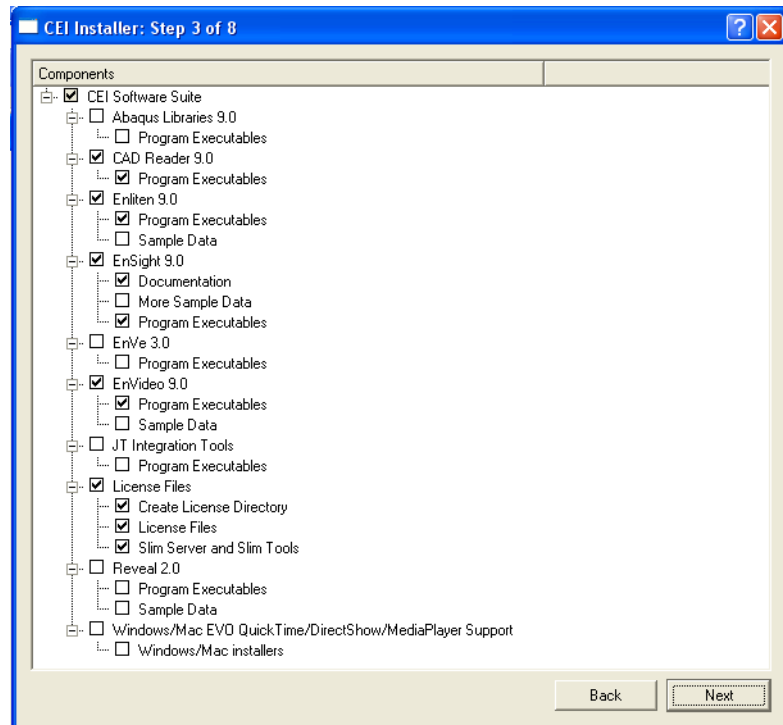


5. Choose a directory where you want to install the application. We recommend that your lowest directory be CEI.

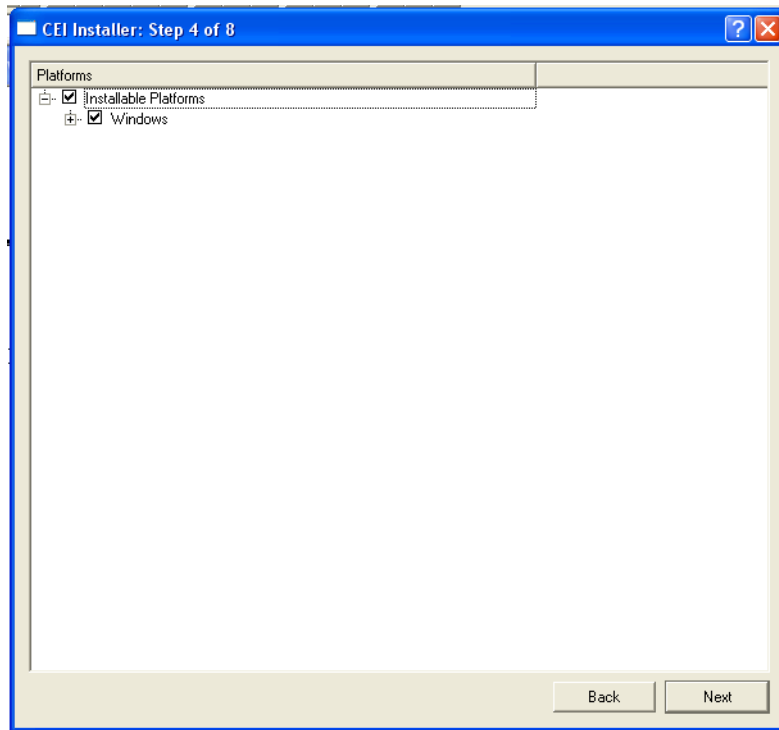


Note: default install directory on
Windows is C:\Program Files\CEI
Mac is /Applications/CEI
UNIX is /usr/local/CEI

6. Choose the components that you wish to install. Most users will choose the default settings.
 - EnVideo for playback and distribution of movies produced in EnSight
 - EnLiten and Reveal for visualization and manipulation of EnSight scenario file output (.els/.csf files respectively).
 - Install the License files and Slim Server on a license manager machine if your licenses are tied to a network (floating) rather than to an individual machine.
 - EnVe if you wish to do image animation editing.

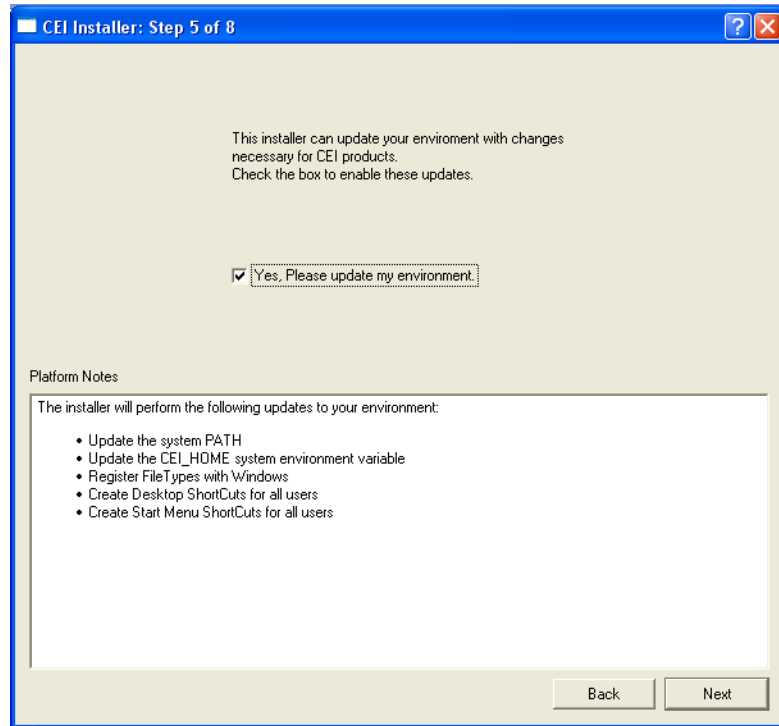


7. Choose the desired hardware platform(s) that you want to install. The default is the platform which is running the installer. You can install more than one.



8. The installer can automatically update your environment. Most users should check this box. You'll have to update your environment manually if you don't check the box or you wish to run on a different machine with network access to the installation area. This procedure is described in the Post Installation Instructions below.

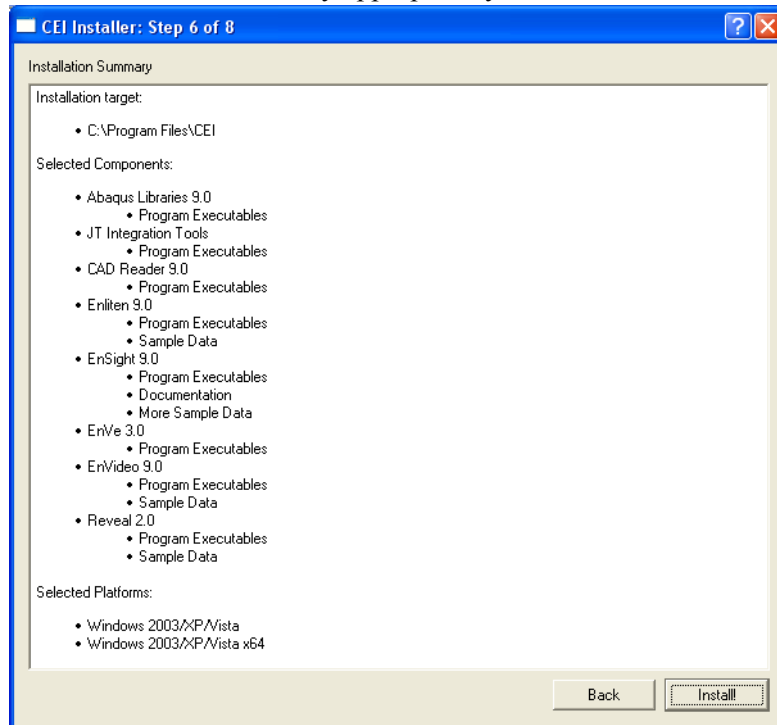
On Windows you get a screen similar to this



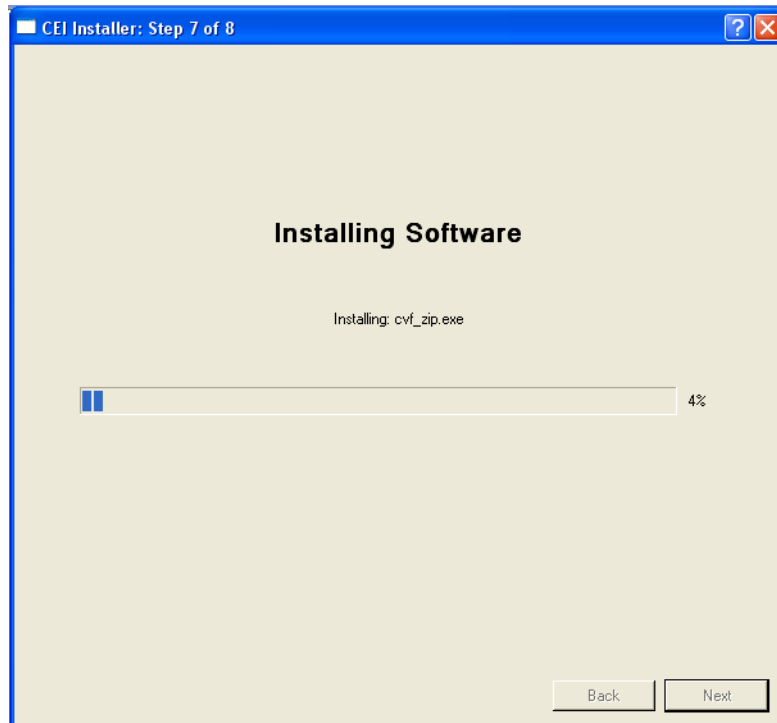
On Mac the Platform Notes will read as follows:

The installer will perform the following updates to your environment:
Copy launcher tools to /Applications
Update CEI_HOME in several locations
Add \$CEI_HOME/bin to PATH in profile and .cshrc

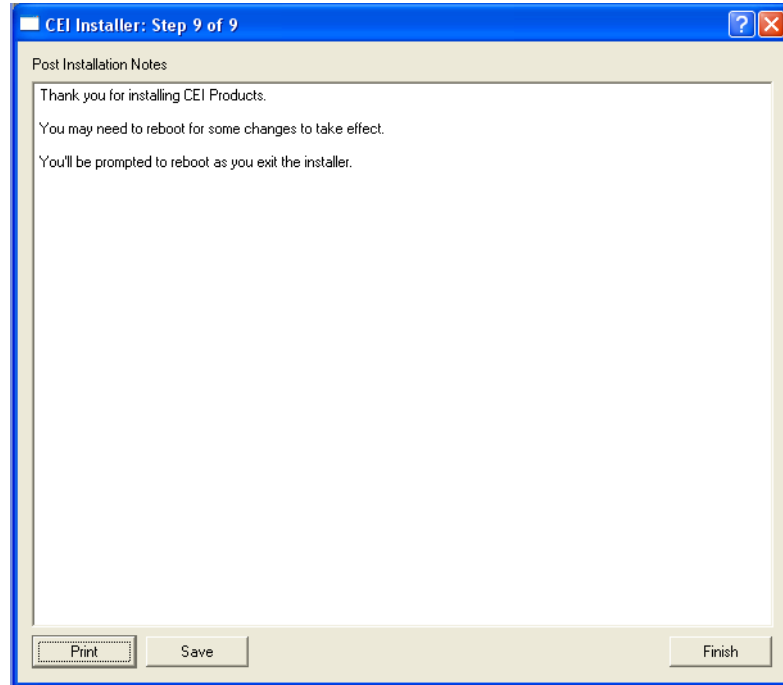
9. The summary allows you to verify the upcoming install. If correct, click Install. Otherwise, click Back and modify appropriately.



10. Wait patiently while your applications are installed.



11. Finished! Under Windows, you should now reboot..



12. If your licenses are tied to a network (floating) rather than to an individual machine, you will need to start the EnSight License Manager (see Section 1.3 below for details).

Post Installation Instructions

Adobe Acrobat .pdf files of all EnSight 9 documentation were installed in the `INSTALL_DIR/ensight90/doc/Manuals` directory.

Environment Setup

If you checked the box to update your environment, then the installer should have modified your path and your environment variables so that the installed applications correctly launch and you can skip down to section 1.3. If you did not check the box, perhaps because you've installed all the executables on one network drive, then you'll need to modify the `CEI_HOME` environment variable and modify the `PATH` on each hardware platform that you want to run EnSight to point to the installation location. Or each user on each platform that you wish to run EnSight can run the installer on their machine, choose their hardware platform, choose to install to the common area, but uncheck all the software boxes, and leave the update environment box checked so that the installer effectively installs nothing, but updates the environment variables to point to the common area.

Windows

If you did not check the box, all users must modify their environment as follows. Be sure to replace `INSTALL_DIR` with the appropriate value. In Windows, open the Control Panel, click System then choose the Advanced Tab, Choose Environment Variables and edit the `PATH` and add/edit `CEI_HOME`. Note you must reboot after making these changes.

XP or Vista

```
define CEI_HOME to be INSTALL_DIR
add to path %CEI_HOME%/bin
```

UNIX, Linux, and Mac

If you did not check the box, then all users must update their shell's startup file (`.tcshrc` or `.cshrc` in c shell, and `.bashrc` or `.profile` in bash). Be sure to replace `INSTALL_DIR` with the appropriate value.

c shell

```
setenv CEI_HOME INSTALL_DIR
set path = ( $path ${CEI_HOME}/bin )
```

You will have to log out and back in again for these changes to take effect.

bash

```
CEI_HOME=INSTALL_DIR/CEI
export CEI_HOME
PATH=$PATH:${CEI_HOME}/bin
export PATH
```

You will have to log out and back in again for these changes to take effect.

Environment Variables

The environment variable has the following meaning:

`CEI_HOME` The CEI installation directory.

In addition, setting the following environment variables can change EnSight's behavior:

`CEI_ARCH` The start scripts for EnSight automatically detect the architecture of the machine you are using. To override this auto detection you can select a specific executable by setting this environment variable. For example, on a Linux system, EnSight may automatically select the 64-bit executables, `linux_2.6_64`. To override this and use the 32-bit executables instead, you can set:

```
setenv CEI_ARCH linux_2.6_32.
```

This will cause the 32-bit executables in `${CEI_HOME}/ensight90/machines/linux_2.6_32` to be used.

`ENSIGHT9_INPUT` A dynamic input device library to load with EnSight. May be set to an input device name (i.e. `polhemus`) to load from `${CEI_HOME}/ensight90/machines/${CEI_ARCH}/lib_input` OR to a full path name to load from a user-specified location.

`ENSIGHT9_READER` A directory which contains additional user-defined readers to be loaded before any user-defined readers that are part of the EnSight distribution. If you need this capability, please see the README file in `${CEI_HOME}/ensight90/src/readers/` for more information.

`ENSIGHT9_UDW` A directory which contains additional user-defined writers to be loaded before any user-defined writers that are part of the EnSight distribution. If you need this capability, please see the README file in `${CEI_HOME}/ensight90/src/writers/` for more information.

ENSIGHT9_MAX_THREADS

Threads are used to accelerate the computation of streamlines, clips, isosurfaces, and other compute-intensive operations. EnSight will automatically adjust the number of threads according to the number of CPUs, so you should not need to set any of the thread variables. However should you need to set the maximum number of threads to use for each EnSight server. A maximum of 2 threads may be used with a Standard license, while 128 threads are allowed with a Gold license.

ENSIGHT9_MAX_CTHREADS

The maximum number of threads to use for each EnSight client. The same 2 thread limitation applies for a Standard license.

ENSIGHT9_MAX_SOSTHREADS

The maximum number of threads to use for each EnSight server-of-servers. This is an EnSight Gold feature, the limit is 128.

Customizing local files.

The installer provides a facility to custom local files so that the local customizations will be preserved when upgrading. In order to preserve local changes to a file named `filename`, be sure to make a copy of that file called `filename.custom`. During an upgrade, the installer will replace `filename` from the distribution with `filename.custom`. For backup purposes, the original file from the distribution will be named `filename.original`.

For example, suppose you modify the `ensight90` script in the `bin` directory to add some additional flags for your site. You should then copy the modified file to `ensight90.custom`. When you upgrade via the installer, after all the new files are installed, `ensight90.custom` will be copied over to `ensight90`. The original `ensight90` file from the software distribution will be saved as `ensight90.original`. If you experience problems after the upgrade, please compare `ensight90` to `ensight90.original` to see what changes may have been made to the original.

Installing from Command Line

Parameters

Usage `./install_unix <options>`

<code>-h, --help</code>	this message
<code>-a</code>	install all archs
<code>-c</code>	install all components
<code>-d /some/path</code>	set default installation destination path
<code>--daemon</code>	detach from tty and run in background (server mode only)
<code>-g</code>	batch mode (no gui)
<code>--instarchs <archlist></code>	install list(*) of archs
<code>--instcomps <complist></code>	install list(*) of toplevel components
<code>-k <url to keyfile></code>	install specified keyfile
<code>-l, --list</code>	list available architectures and components
<code>--logfile <logfile></code>	redirect output to <logfile> mode only, useful for testing)
<code>-n <host></code>	network install from <host>
<code>--no-cache</code>	don't create checksum cache (server
<code>--no-postinstall</code>	do not run post-install scripts
<code>--no-update</code>	do not update system settings (batch mode default)
<code>-p <port></code>	use <port> for network client or server
<code>--proxy <proxyflag></code>	use a web proxy for the install
<code>--fileproxy <proxyflag></code>	use a web proxy and file for password
<code>-q</code>	disable output (batch mode only)
<code>-s /some/path</code>	set default installation source path
<code>--server</code>	start network installation server
<code>--update</code>	update system settings (gui mode default)
<code>-V</code>	print version info and exit
<code>-v</code>	verbose output
<code>-x</code>	extremely verbose output (implies -v)

(*) lists are comma separated with no whitespace

Parameter Details

- `-a` Installs all available architectures. By default the installer only installs the architectures appropriate for the machine the installer is running on. Sometimes this includes multiple architectures. For instance, on a `linux_2.6_64` machine, the installer will also install `linux_2.6_32` as well. Use in conjunction with `-c` to install absolutely everything.
- `-c` Installs all available components. Each product package in the installation source (local or network) is installed. This includes any sub packages that might not be installed by default. Use in conjunction with `-a` to install absolutely everything.
- `-d /some/path` Sets the installation target directory. It is usually best to specify the full path. When in batch mode, this directory should already exist. Typically, this directory path with end in a `/CEI` directory. Platform defaults are
Unix: `/usr/local/CEI`

Windows: c:\Program Files\CEI
Mac: /Applications/CEI

- daemon* Detach from tty and run in background. This option is available only for server mode. If *--logfile* is not specified, all output is redirected to /dev/null.
- g* Execute in batch mode. Display no gui to the user. Executing the installer with only the *-g* flag is equivalent to running with the gui enabled but changing no defaults. The only differences are noted in the man page. Batch mode defaults to a local media installation, but will perform a network installation if the install server hostname is specified on the command line (*-n*).
- instarchs*
<archlist> Specify a list of architectures to install. *<archlist>* is a comma separated list of architecture names, such as reported with *-l*. The list should contain no whitespace. For example: apple_10.5,linux_2.6_32,linux_2.6_64,win32
- Specifying a list here overrides the default value of the architecture of the machine the installer is running on.
- instcomps*
<complist> Specify a list of components to install. *<complist>* is a comma separated list of component names, such as reported with *-l*. The list should contain no whitespace.
- For example: ensight90,enliten90,env30
- Specifying a list here overrides the default values as denoted in the *-l* output.
- k <url to keyfile>* Specify a key file to install by URL. This URL can be of the form http://hostname.com/path/to/slim8.key or file://path/to/slim8.key allowing retrieval of the key via http or via the filesystem. The key can be named anything and will be written to \$CEI_HOME/license8/slim8.key.
- l,--list* List the default installation location and the default architectures and components to be installed. Note that a default package may require a package that is not marked default. Both packages will be installed with the default options. Running in batch mode (*-g*) with no other arguments will install with these defaults chosen.
- logfile <logfile>* Record output to a file *<logfile>* instead of to stdout.
- n <host>* Connect to network install server *<host>* to perform a network install. The standard CEI server is install.ceintl.com. Unless a port is specified with the *-p* flag, the connection will be made on port 60116.
- no-cache* Disable the caching of checksums when running in server mode. Normally, the install server builds a list of checksums of all files that can be installed. These checksums are sent to the client during installation so that only changed files need to be moved across the wire. This option is only useful for debugging server operation.
- proxy* http(s):(username)(password)@myproxy.mydomain.com Items in parentheses are optional. A proxy starting with https:// will use an SSL encrypted connection. Specifying username:password will login into the proxy given. A basic proxy should look like:
- http://myproxy.mydomain.com

<i>--fileproxy</i>	For security reasons, you may not want to list your password on the command line. You can use the <i>--fileproxy</i> flag instead, passing it a filename. The proxy specification will be read from the first line of that file.
<i>--no-update</i>	Do not update the system settings, personal or system wide. This is the default for batch mode.
<i>--no-postinstall</i>	Do not run post-install scripts.
<i>-p <port></i>	In client mode, connect to an install server on the given port number. In server mode, listen for clients on the given port number. In both cases, the default is 60116
<i>-q</i>	Normally in batch mode, installation status messages are printed to the screen. This options disables that output. It does not affect verbose output (<i>-x</i> and <i>-v</i>).
<i>-s /some/path</i>	Sets the directory to install CEI tools from. This is typically the top level of a CDROM or DVD. This is only used for local media installs.
<i>--server</i>	Run in install server mode. The installer will start up, cache checksum on all the files it can deliver and wait indefinitely for installation clients to connect. Unless the <i>-p</i> option is given, it will listen on port 60116. A brief listing of the products available from this server can be found by connecting to it via a web browser, i.e. http://localhost:60116
<i>--update</i>	Update the system settings. In gui mode, this is the default. In batch, the default is not to update system settings. Under unix, this updates the users <code>.tcshrc/.bashrc</code> or the system <code>tcshrc/bashrc</code> depending on installation mode, personal or system. Similarly on windows, the registry is updated, either system wide or for a particular user.
<i>-V</i>	Print version info and exit.
<i>-v</i>	Enable verbose output.
<i>-x</i>	Enable extremely verbose output. This implies the <i>-v</i> flag. All the normal verbose output is generated plus a lot more.

Batch Install Mode

Outlined here is a general description and an example of using the CEI installer in batch mode (using the *-g* option).

First, you need to check for the products available for installation. You can poll local media or a network install server. Polling an install server is done by specifying the host name.

```
./install_unix -l -n install.ceintl.com
```

Similarly, for local media, you can give the top level directory where the cdrom (or image) is mounted. When using the *-s* parameter, its best to give the full path.

```
./install_unix -l -s /mnt/cdrom/
```

The output will look like this:

```
Default Install Location:
  /usr/local/CEI
Available components:
  Apex Application Framework  apex20          2.0.1
  EnLiten                    enliten90      8.0.6a
  EnSight                    ensight90      8.0.6a
  EnVe                       enve30         1.0.0
  EnVideo                    envideo90      8.0.8
  EVO DirectShow Plugin     evosupport     1.0.0
  Slim License Tools        license8       8.6.0
  Reveal                     reveal20       1.0.8
Available architectures:
  apple_10.5
  ibm_5.3_64
  linux_2.6_32
  linux_2.6_64
  win32
  win64
```

Remember that some packages require others that may not be marked as default. EnSight, for example, requires EnVe, so EnVe will also be installed anytime EnSight is selected, including the default case.

When listing components to install using the `--instcomps` options, use the short names from the center column of the 'Available components' list, i.e. `ensight90, envideo90, etc.`

In order to do a batch install, you simply have to specify the changes from defaults on the command line and add the `-g` flag.

Examples:

-- Take all the defaults and install from CEI's installation server.

```
./install_unix -n install.ceintl.com -g
```

-- Take all the defaults and install from a CDROM

```
./install_unix -s /mnt/cdrom -g
```

-- Install only EnSight and EnLiten from the network to a temporary directory in `/tmp/CEI` (`/tmp/CEI` must exist before installing)

```
./install_unix -n install.ceintl.com --instcomps
ensight90,enliten90 -d /tmp/CEI -g
```

- Install the license tools for the linux platform to the default location

```
./install_unix -s /mnt/cdrom --instcomps license8 --instarchs
linux_2.6_64 -g
```

-- Install the all the components for all architectures into a non-standard location

```
./install_unix -s /mnt/cdrom -a -c -d /opt/CEI -g
```

Note: When running from the top level of a CEI cdrom or cdrom image, you can usually omit the -s flag. The installer will default to the local media.

Help from CEI

Should you encounter problems in your installation or use of EnSight, please see our website Frequently Asked Questions (www.ensight.com click on **Support**, then click on **Frequently Asked Questions**).

If that doesn't help you then contact CEI support:

Email: support@ensight.com
Hotline: 800-551-4448 (U.S)
919-363-0883 (Non-U.S.)
Fax: 919-363-0833

1.1 Mounting a CD-ROM in UNIX / Linux

Mounting the CD-ROM Drive

1. The EnSight ISO image was written under ISO9660 using Rockridge extensions. Insert the EnSight CD into the CD-ROM drive. The drive must either be attached to the system on which EnSight will be installed OR be attached to a machine that is accessible (over the network) from the desired installation machine.

On many machines, the CD-ROM drive is mounted automatically when a disk is inserted. To check for this, execute the `df` command.

The directory on which the CD-ROM is mounted will be referred to as `CDROM_DIR`. If the CD-ROM is mounted, proceed to the next section.

2. If you do not see the CD-ROM mounted, you will have to mount it manually (or consult your local system administrator). To mount it manually (note that you will require root permission to perform this operation):

```
% mkdir /cdrom
```

3. Execute the applicable mount command for your system. Note that the actual device name (the parameter after the “-r” flag) will depend on how your system is set up.

Note: *The commands shown below are only examples. The actual command for your system will depend on your platform, OS level, and system setup. See the man page on `mount` or your local system administrator for more information.*

System	Sample Mount commands
IBM	<code>/usr/sbin/mount -v cdrfs -o ro /dev/cd0 /cdrom</code>
Linux	<code>mount /mnt/cdrom</code>

1.2 Installation for UNIX Systems without Attached CD-ROM Drives

If you wish to install EnSight on a system that does not have an attached CD-ROM drive, nor a connection to the internet, then perform the steps described here. Two machines are discussed here: the system on which EnSight will be installed (referred to as *INSTALL_HOST*) and the system on which the CD-ROM drive is attached (referred to as *CDROM_HOST*).

1. On *CDROM_HOST*, select a temporary installation directory. In the discussion below, this directory will be referred to as *TMP_INSTALL_DIR*. Be sure you have write permission (and sufficient disk space) in this directory before proceeding. If the directory is write protected, you may require root (superuser) status to perform the install.
2. Be sure the CD is inserted and change directory to *CDROM_DIR* (be sure to replace *CDROM_DIR* with the directory on which your CD-ROM is mounted as described in the section above *Mounting the CD-ROM Drive*):

```
% cd CDROM_DIR
```

On an HP system:

```
% cd /cdrom
```

3. Execute the installation script:


```
% ./install_unix
```
4. Follow installation instructions outlined at the beginning of this chapter.
5. Change directory to *TMP_INSTALL_DIR*:


```
% cd TMP_INSTALL_DIR
```
6. Pack up the distribution files using the `tar` command and compress:


```
% tar -cvf CEI.tar CEI
% compress CEI.tar
```
7. On *INSTALL_HOST*, select an installation directory. A typical choice is `/usr/local`. In the discussion below, this directory will be referred to as *INSTALL_DIR*. Be sure you have write permission (and sufficient disk space) in this directory before proceeding. If the directory is write protected, you may require root (superuser) status to perform the install.
8. Copy the `CEI.tar.Z` file from *CDROM_HOST* to the *INSTALL_DIR* directory you just created on *INSTALL_HOST*. This can be accomplished using `ftp` or some other file transfer mechanism. Unless you wish to install on additional systems, you can remove `TMP_INSTALL_DIR/CEI.tar.Z` from *CDROM_HOST*.

The remaining steps are performed on *INSTALL_HOST*.

9. On *INSTALL_HOST*, change directory to *INSTALL_DIR*:

```
% cd INSTALL_DIR
```

10. Unpack and remove the tar file:

```
% zcat CEI.tar.Z | tar -xvf -
% rm CEI.tar.Z
```

11. Be sure permissions are set correctly:

```
% cd CEI
% ./set_permissions
```

Perform the post installation instructions.

1.3 Installing the EnSight License Keys

You should have received an EnSight license key file from your EnSight representative. (If not, please contact CEI or your local distributor of EnSight). The following provides a brief overview of the EnSight keying mechanism. The information provided is not critical to the installation process: you can skip it or return to it later if desired.

Keying Overview

The EnSight Client software can be installed either *node-locked* or *floating*. The choice for your installation was made when you purchased EnSight or requested a trial evaluation.

In a node-locked EnSight Client installation, the systemID numbers for all EnSight Client systems were provided to CEI. The Client will read the license key file (`slim8.key`) to determine if it is running on a licensed host. The key file also contains information on the licensing company and expiration date.

Note: If you are installing for a trial evaluation, you will normally be installing EnSight as node-locked. Trial installations will use a key file which allows node-locked operation on any computer system at your site for a limited time.

The advantage of a node-locked EnSight Client installation is that it is simple to install – only the `slim8.key` file is required. The disadvantage is that you will only be permitted to run the EnSight Client on those workstations for which you have submitted systemID numbers.

If you have purchased or are leasing an EnSight license, you have the additional option of a floating EnSight Client installation in which the Client reads the `slim8.key` file as before. The number of permitted *seats* (concurrent executions) is tracked using the EnSight's *Simple License Manager* (or SLiM). The advantage of a floating EnSight Client installation is that EnSight can be executed from any workstation as long as the maximum seat count has not been exceeded. The disadvantage is that a system daemon (`slimd`) must be installed and run in order to track the seat count.

Key Installation

The contents of the `slim8.key` file are provided by your EnSight representative.

*Note: All machines which will execute the EnSight Client **must** have access to the key file. The Client process will always look for the file in the `#{CEI_HOME}/license8` directory.*

Copy the `slim8.key` file into `INSTALL_DIR/CEI/license8`

Be sure the `slim8.key` file is readable by all users of EnSight. In UNIX execute:

```
% chmod 644 slim8.key
```

If you are installing a node-locked license, your installation is complete. You should now proceed to *Verifying the Installation* on page 1-25. If you encountered problems, please consult *Troubleshooting the Installation* on page 1-24 before contacting CEI support.

Floating License

If you are installing EnSight's Simple License Manager, continue. Your designated host system will act as your license manager server and is referred to here as `LM_HOST`. The `slim8.key` file contains a `slimd` line that describes `LM_HOST` (the third word on the line is the name of the system). Most installations will run a single copy of the EnSight License Manager and will therefore have only one `slimd` line. However, it is

possible to run multiple (redundant) license managers. If this was requested, your `slim8.key` file will have a `slimd` line for each host. Execute the following steps for each host, replacing `LM_HOST` as appropriate.

1. Log on to `LM_HOST`.

Note: if the license server is also going to run EnSight, then you can install both at the same time by checking the appropriate toggles on the installer. Should you wish to install SLiM separately to a different directory or for a different architecture, rerun the installer and install the SLiM license manager.

2. Stop any existing versions of `slim` that are currently running. If you are running `slim7`, then run.

```
% slimd_stop
```

If you are running `slim8`, then run.

```
% slimd8_stop
```

3. Copy the `slim8.key` file onto the `LMHOST` machine into the following directory: `INSTALL_DIR/CEI/license8`

Be sure the `slim8.key` file is readable by all users of EnSight. In UNIX execute:

```
% chmod 644 slim8.key
```

4. The EnSight License Manager server will listen for connections on the socket port number given as the first number on the applicable `slimd` line of the `slim8.key` file. If you did not specify a desired port number when you requested your key, port number 7790 is used. If this number conflicts with other usage at your site, you CANNOT change the key file – contact CEI for a new key.
5. Start the EnSight License Manager daemon. (Note that you must have set `#{CEI_HOME}` and the path to the `bin` directory, as explained in the Post Installation Instructions, for these scripts to work – even if all you are installing is the license manager.)

```
% slimd8_start
```

6. To check that the daemon is running properly:

```
% slimd8_status
```

The output should show a license token summary indicating that “`slimd` is running”. The Simple License Manager (SLiM) is now running (if not, see *Troubleshooting the Installation* on page 1-24). If you need to stop the daemon at any time, execute `slimd8_stop`.

If the license manager host is rebooted, the daemon will need to be restarted. On systems that are restarted infrequently, this is not a problem. However, you may want to consider adding the `slimd8_start` program to your system’s boot procedures (remember to set `#{CEI_HOME}` prior to executing `slimd8_start`). Consult your local system administrator for assistance.

This completes the installation process. You should now proceed to *Verifying the Installation* on page 1-25. If you encountered problems, please consult *Troubleshooting the Installation* on page 1-24 before contacting CEI support.

Additional information regarding SLiM can be found in

`${CEI_HOME}/license8/README.TXT`.

Note: Do not try to run a previous `slimd` (from EnSight 7) and a new `slimd8` at the same time.

1.4 Troubleshooting the Installation

Problem	Probable Causes	Solution
CD-ROM does not mount or read	CD not properly seated in the drive	Check that CD is properly seated.
	System problem	Consult your local system administrator.
EnSight's Simple License Manager daemon does not start	Several potential causes	<p>Check the Simple License Manager log file (<code>\${CEI_HOME}/license8/slimd-log-<i>HOST</i>.txt</code> where <i>HOST</i> is the license manager host name) for error messages and correct as necessary.</p>
		<p>Make sure you stop the old version of slim before you attempt to install and run the new version. To stop slim, use <code>slimd_stop</code>.</p>
		<p>Review: <code>\${CEI_HOME}/license8/README.TXT</code></p>
		<p>Check system log file.</p>
		<p>Search on “slim” or “license” on our website FAQ’s: www.ensight.com/knowledge-base.html Click Installation</p>
		<p>Read appropriate FAQs under this listing</p>
		<p>As a last resort, follow instructions under “EnSight can’t check out a key”</p>

1.5 Verifying the Installation

Verifying the installation is simple: the EnSight Client is started and the EnSight Server is connected to it. In the instructions that follow, `CLIENT_HOST` refers to the system on which the EnSight Client was installed and `SERVER_HOST` refers to the system on which the EnSight Server was installed. If the installation is stand-alone, then `CLIENT_HOST` and `SERVER_HOST` actually refer to the same system.

The instructions also assume that the environment variable `CEI_HOME`, as well as the command search path have been set up correctly as described in the Post Installation instructions section.

Starting EnSight for Stand-alone Use

If your installation of EnSight is stand-alone (*i.e.* the Client and Server are both running on the same workstation), EnSight will automatically start and connect the Client and Server processes transparently.

You should be logged in to the console of the workstation on which the EnSight Client and Server have been installed. In a the shell window, start EnSight using the `ensight90` shell script:

```
% ensight90
```

On Windows you can double-click the EnSight 9.0 icon. On the Mac, you can type in the command from a terminal window or double click the icon in the install area. This shell script will automatically start the Client and the Server and make the connection. You can tell if the connection was successful by clicking the Info... button on the right of the desktop and seeing “Connection accepted” in the EnSight Message Window. Licensing and version information should also appear in the Graphics Window. You can now quit EnSight (File > Quit).

If the connection failed, please consult the next section (*Troubleshooting the Connection*) before contacting CEI support.

Starting EnSight for Distributed Use

Starting the Client

1. Log on to the console of `CLIENT_HOST` and open at least two shell windows. Since the EnSight user interface will open on the right side of your screen, place the two shell windows on the left side.
2. In one of the shell windows, start the EnSight Client:

```
% ensight90.client -cm
```

The `-cm` option tells the Client to begin listening for a connection from the Server.

On Windows, type

```
ensight90_client -cm
```

The EnSight Client user interface should appear on your workstation screen.

Starting the Server

3. In a different shell window on your workstation, log on to `SERVER_HOST`:

```
% ssh SERVER_HOST
```

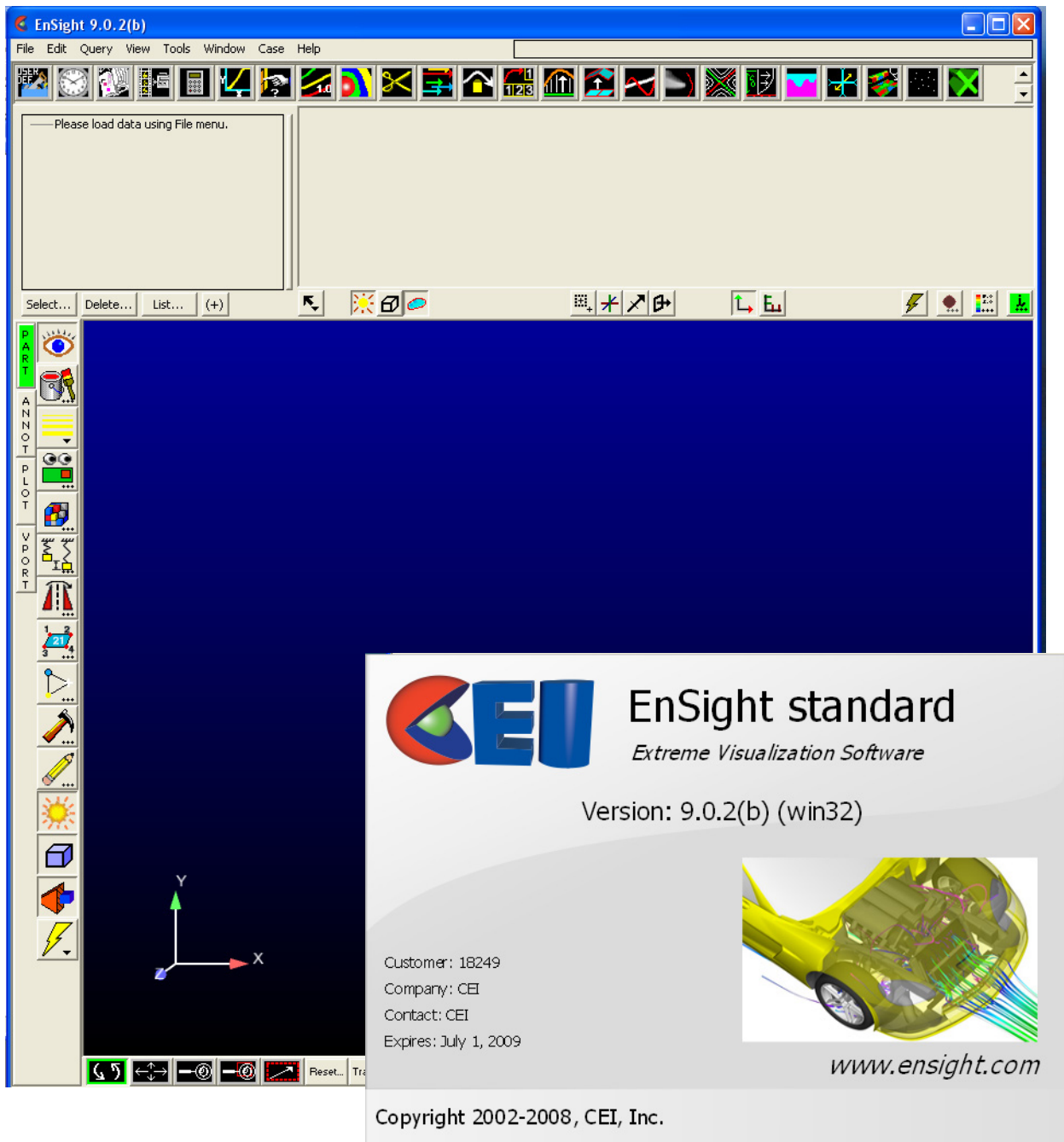
4. In the same shell window as step 3, start the EnSight Server:

```
% ensight90.server -c CLIENT_HOST
```

The `-c CLIENT_HOST` option tells the EnSight Server to connect back to the EnSight Client listening on `CLIENT_HOST`.

You can tell if the connection was successful by clicking the Info... button on the right of the desktop and seeing “Connection accepted” in the EnSight Message Window (see the image below). Licensing information and version should also appear in the Graphics Window.

If the connection failed, please consult the next section (*Troubleshooting the Connection*) before contacting CEI support.



The EnSight Client splash screen and the Client graphics screen after a successful connection with the Server process. Note the licensing and version information in splash screen.

1.6 Troubleshooting the Connection

Problem	Probable Causes	Solution
EnSight Client and/or Server fails to start.	Client and/or Server executables are not found in the user's command search path. The environment variable <code>CEI_HOME</code> is not set correctly.	Set the appropriate path and environment variable on both <code>CLIENT_HOST</code> and <code>SERVER_HOST</code> as described in the previous section.
Client and Server start, but manual connection fails.	Incorrect <code>CLIENT_HOST</code> provided to the Server.	Double-check your Client's host name: run the <code>hostname</code> command on the Client system. Use the resulting name when starting the Server: <code>ensight90.server -c CLIENT_HOST</code>
	Possible networking problem.	Be sure you can <code>telnet</code> from <code>CLIENT_HOST</code> to <code>SERVER_HOST</code> . If not, consult your local system administrator for assistance.
	EnSight socket ports (1105 and 1106) are in use.	Quit the Client. Execute the <code>netstat</code> command: <code>your_path/netstat -a grep 110</code> on both <code>CLIENT_HOST</code> and <code>SERVER_HOST</code> . If either 1105 or 1106 is listed, reboot the system. If the problem persists, contact CEI support. Note: <code>your_path</code> will vary according to machine and OS, typically, for sgi: <code>/usr/etc</code> for linux: <code>/bin</code> ; for HP, IBM, Sun: <code>/usr/bin</code> ; and for Compaq: <code>/usr/sbin</code>
Wrong license or license cannot be found	The <code>slim8.key</code> file is not properly installed in the <code>\${CEI_HOME}/license8</code> directory	Make sure the license key(s) have been installed correctly and that all users have read permission for the file(s). Review: <code>\${CEI_HOME}/license8/README.TXT</code>
	You have a floating license and SLiM (slimd) is not running	Start the slimd license manager.
	Windows has added an extension to your key file: <code>slim8.key.txt</code> or <code>slim8.key.key</code> and you have extensions invisible.	Start>Settings>Control Panel>Folder Options chose view toggle OFF the 'Hide extensions for known files'

1.7 Where's the Rest?

After installing EnSight, you should proceed to the *Getting Started Manual* for an introduction to the user interface and details on how to interact with EnSight.

Where's the Rest?

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