Installation Guide

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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. Access to our files on our website (www.ensight.com and click on support then click on download), OR a CD created from our website iso image, OR a DVD created from our website 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. Approximately 300 MB will be required, depending on how many architectures are installed. Data files, some printable documentation, and some executables can be removed after installation to save space.
6. Sufficient memory. A minimum of 256 MB of memory is recommended for minimum usage. If you work with large datasets you will require more.

Per-platform notes: **SGI** IRIX 6.5 is required, 64-bit. SGI periodically releases various patches to the IRIX system software. It is vital that all recommended patches be installed for proper EnSight operation. SGI provides patches free over the Internet: see http://support.sgi.com.

Sun Solaris 2.8 is required, 64-bit. EnSight uses the OpenGL libraries provided by Sun for 3D graphics support for the EnSight Client. These libraries are provided for Solaris 2.5.1 or greater. Execute the following to determine if the libraries are installed:

```
% ls -l /usr/openwin/lib/libGL.so
```

If the response indicates that there is "no such file ..." the OpenGL libraries are *not* installed. Contact Sun for information on how to obtain the libraries. Sun's OpenGL libraries support essentially all of the available graphics systems that Sun has produced over the past few years. However, only the Creator3D and later boards provide hardware graphics support. Since other boards emulate the graphics in software, performance will be quite limited.

Note that EnSight will only run under the Common Desktop Environment (CDE).

HP On PA-RISC processors, HP-UX 11.00 64-bit is required. If you are running an earlier OS level, you *must* upgrade in order to run EnSight 8

Compaq Tru64 Unix v5.1 is required. On this platform, the server will run as normal, but the client will only run in batch mode. If you are running an earlier OS level, you *must* upgrade in order to run EnSight 8.

IBM AIX 5.1 is required, 64-bit. If you are running an earlier OS level, you *must* upgrade in order to run EnSight 8. In addition, you must enable your X server to support OpenGL. See *Installing the EnSight License Keys* on page 1-23 for details.

Linux RedHat 7.3 and RedHat 9 have been tested - other distributions based on the Linux 2.4 kernel may work also. The Linux 2.6 kernel is now supported. Both 2.4 and 2.6 are supported for both 32- and 64-bit configurations.

Apple Apple Macintosh support for OS 10.4 (32-bit).

WindowsWindows XP and 2000 are both supported (32-bit).

Supported operating system levels and platforms are subject to change. The most recent information can be obtained from our website:

www.ensight.com/products/hardware.html

Vendor	Supported OS Level / Processors
SGI	IRIX 6.5 (64-bit)
HP	HPUX 11.00 (64-bit) PA-RISC processors
Sun	Solaris 2.8 (64-bit) Sparc processors
Compaq	Tru64 Unix v5.1 (64-bit) Alpha Processors (client available batch only)
IBM	AIX 5.1 (64-bit) Power processors
Linux	Kernel 2.4 X86 (32-bit AMD / INTEL) X86-64 (64-bit AMD64 / INTEL EM64T) Kernel 2.6 X86 (32-bit AMD / INTEL) X86-64 (64-bit AMD64 / INTEL EM64T) IA-64 (64-bit Itanium2)
Apple	Macintosh OS 10.4 G5 (64-bit)
Microsoft	Windows 2000/XP X86 (32-bit) 2003/XP (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 (ensight8 -X for
UNIX/LINUX/Mac, or use ens82cl.exe -X for Windows)*

*Supported operating system levels and platforms are subject to change. The most
recent information can be obtained from our website:*

www.ensight.com/products/hardware.html

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 (assuming you have a computer somewhere with internet connectivity and a CD and/or DVD burner) by downloading the CD or DVD iso image 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 Support then click on Downloads and follow the links to the EnSight8 download area. Then click on the link indicating "Network Installer". This will bring up a html page with links to the available network installers. 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

1. 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.
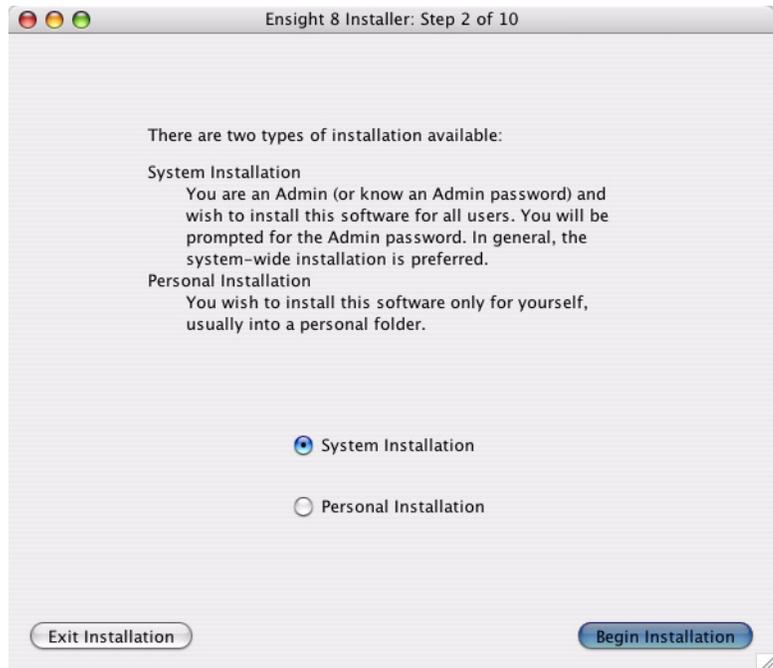
3. Note that a system installation will require administrator (root) privileges. You will see the following screen if you are not the Administrator (root) or a member of the Windows Administrator group.

This screen shows up if you if you are not the Administrator (root) or member of the Administrator Group

4. 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 <u>only</u> 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
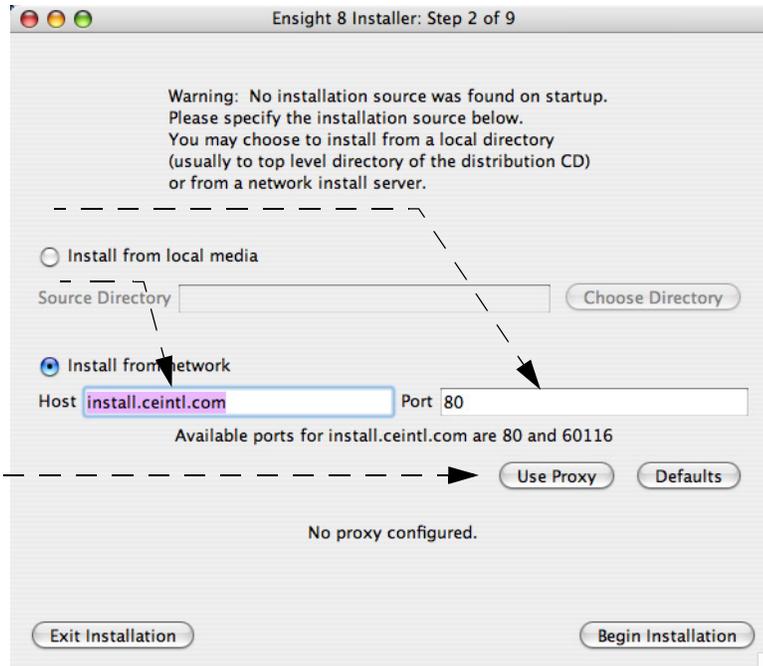
If you install from the network, then only those files newer than your existing installation (if any) will be installed, effectively an update of your install.

If you install from local media, all files from the ISO image will overwrite your install directory, effectively a clean install.

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.
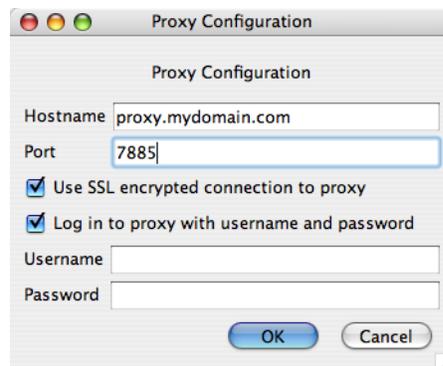
On the proxy configuration dialog, you are required to enter the hostname for your proxy and the port to connect to (usually 80). If you need to provide a username and password to log in to the proxy, check the box and enter the information into the Username and Password fields.You can also enable SSL 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.

5. Choose the Ensight distribution version to install.

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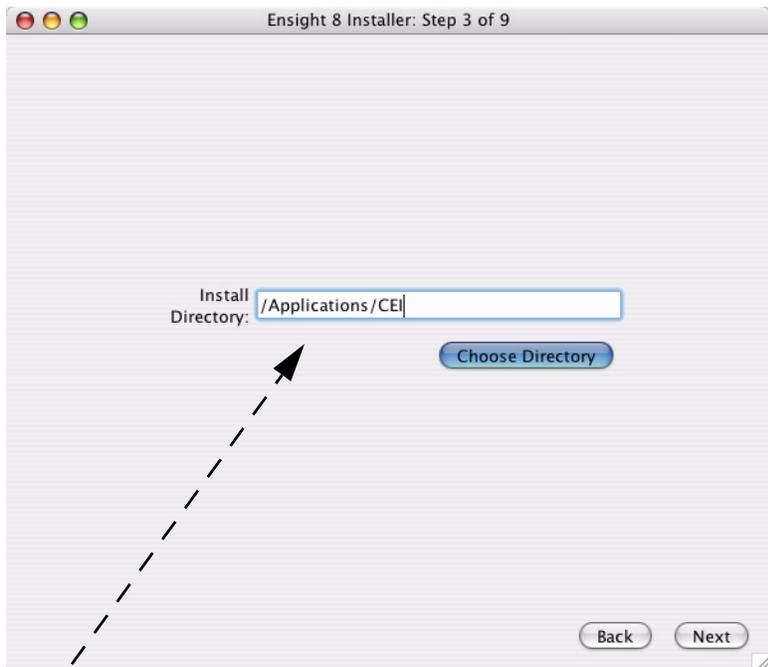

Note: default install directory on
Windows is C:\Program Files\CEI
Mac is /Applications/CEI
UNIX is /usr/local/CEI

7. 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 for visualization and manipulation of EnSight analysis results as parts.

- The documentation files should be installed unless you already have them.

- 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, because you'll need to start the EnSight 8 License Manager, (Slim8).

- EnVe if you wish to do image animation editing.

- Chromium is only necessary if you are using distributed rendering. Our implementation is in testing phase. Most users will not need this, but those who are interested should see `$CEI_HOME/ensight82/doc/prdist` for more details.

- Reveal is required to view CSF files. Most users will not need this.
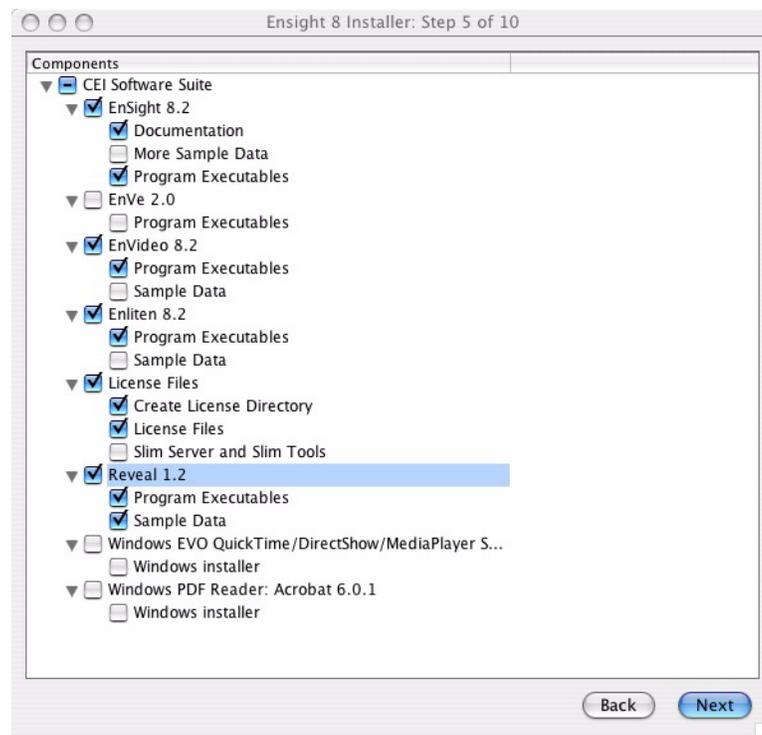
8. Choose the desired hardware platform(s) that you want to install. The default is the platform which is running the installer. You can install more than one.
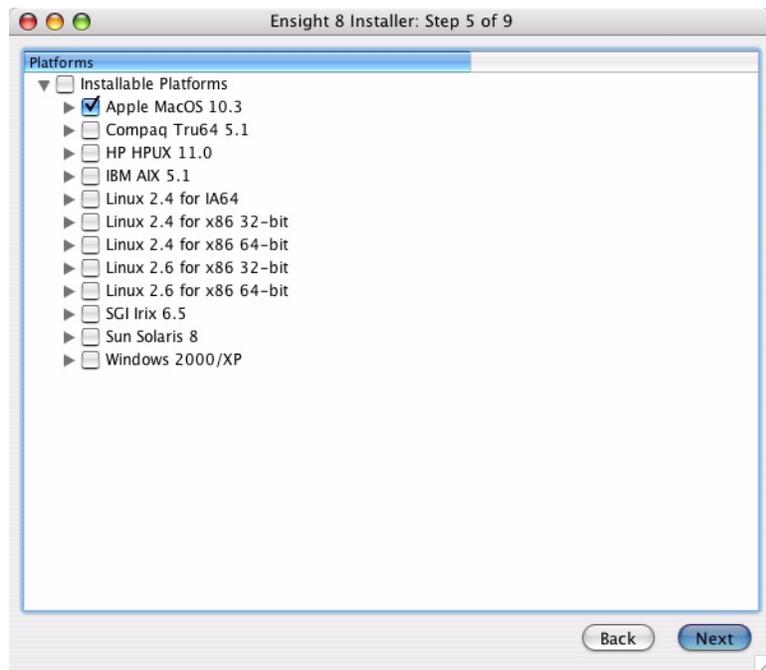
9. The installer can automatically update your environment. Most users should check this box. You'll have to update your environment manually if you don't check the box or you wish to run on a different machine with network access to the installation area. This procedure is described in the Post Installation Instructions below.

On Mac and Unix/Linux you get a screen similar to this
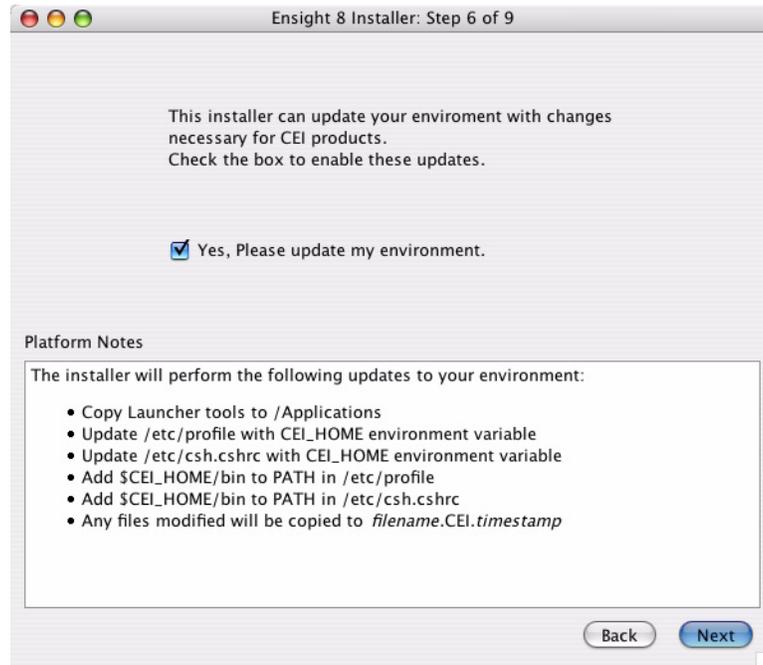
On Windows the Platform Notes will read as follows:

The installer will perform the following updates to your environment:

Update the system PATH

Update the CEI_HOME

Register File Types with Windows

Create Desktop ShortCuts for all users

Create Start Menu ShortCuts for all users

10. The summary allows you to verify the upcoming install. If correct, click Install. Otherwise, click Back and modify appropriately.
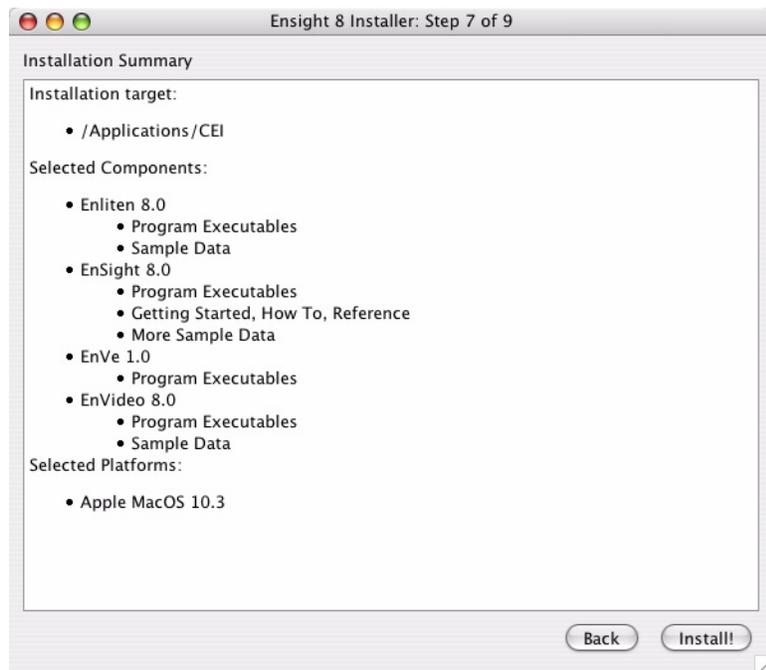
11. Wait patiently while your applications are installed.

12. Finished! You should now reboot your Mac or your PC.

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

Post Installation Instructions

Adobe Acrobat .pdf files of all EnSight 8 documentation were installed in the *INSTALL_DIR*/ensight82/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 applic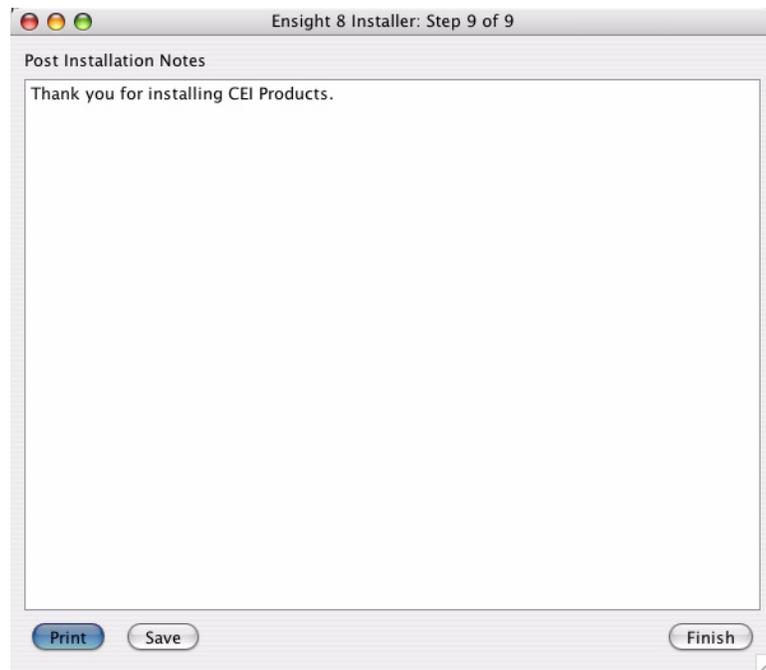ations work fine and you can skip down to section 1.3. If you did not check the box, say because you've installed all the executables on one network drive, then you'll need to modify the CEI_HOME environment variable and modify the PATH on each hardware platform that you want to run EnSight to point 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, then on Windows, 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 2000
```
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}/ensight82/machines/linux_2.6_32` to be used.

ENSIGHT8_INPUT

A dynamic input device library to load with EnSight. May be set to an input device name (i.e. polhemus) to load from `${CEI_HOME}/ensight82/machines/${CEI_ARCH}/lib_input` or to a full path name to load from a user-specified location.

ENSIGHT8_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}/ensight82/src/readers/` for more information.

ENSIGHT8_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}/ensight82/src/writers/` for more information.

ENSIGHT8_MAX_THREADS

> The maximum number of threads to use for each EnSight server. Threads are used to accelerate the computation of streamlines, clips, isosurfaces, and other compute-intensive operations. At this time threads are supported on all systems that run EnSight. A maximum of 2 threads may be used with a Standard license, while 128 threads are allowed with a Gold license.

ENSIGHT8_MAX_CTHREADS

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

ENSIGHT8_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.

Platform-specific settings

Certain systems require additional settings.

IBM The X Server must be started with the OpenGL extension. There are a number of ways this can be done under the Common Desktop Environment. See `/usr/lpp/OpenGL/README` for information.

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 `ensight8` script in the `bin` directory to add some additional flags for your site. You should then copy the modified file to `ensight8.custom`. When you upgrade via the installer, after all the new files are installed, `ensight8.custom` will be copied over to `ensight8`. The original `ensight8` file from the software distribution will be saved as `ensight8.original`. If you experience problems after the upgrade, please compare `ensight8` to `ensight8.original` to see what changes may have been made to the original.

Installing from Command Line

Parameters   Usage ./install_unix <options>

```
            -h,--help                   this message
            -a                          install all archs
            -c                          install all components
            -d /some/path               set default installation destination
                                         path
            --daemon                    detach from tty and run in
                                         background (server mode only)
            -g                          batch mode (no gui)
            --instarchs <archlist>      install list(*) of archs
            --instcomps <complist>      install list(*) of toplevel
                                         components
            -k <url to keyfile>         install specified keyfile
            -l,--list                   list available architectures and
                                         components
            --logfile <logfile>         redirect output to <logfile> mode
                                         only, useful for testing)
            -n <host>                   network install from <host>
            --no-cache                  don't create checksum cache (server
            --no-postinstall            do not run post-install scripts
            --no-update                 do not update system settings (batch
                                         mode default)
            -p <port>                   use <port> for network client or
                                         server
            --proxy <proxyflag>         use a web proxy for the install
            --fileproxy <proxyflag>     use a web proxy and file for
                                         password
            -q                          disable output (batch mode only)
            -s /some/path               set default installation source path
            --server                    start network installation server
            -update                     update system settings (gui mode
                                         default)
            -V                          print version info and exit
            -v                          verbose output
            -x                          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_10.4_32,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: ensight82,enliten82,enve10
	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

Installation of EnSight 8

--fileproxy	For security reasons, you may not want to list your password on the command line. You can use the --fileproxy flag instead, passing it a filename. The proxy specification will be read from the first line of that file.
--no-update	Do not update the system settings, personal or system wide. This is the default for batch mode.
--no-postinstall	Do not run post-install scripts.
-p <port>	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
-q	Normally in batch mode, installation status messages are printed to the screen. This options disables that output. It does not affect verbose output (-x and -v).
-s /some/path	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.
--server	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 -p 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
--update	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 .tcshrc/.bashrc or the system tcshrc/bashrc depending on installation mode, personal or system. Similarly on windows, the registry is updated, either system wide or for a particular user.
-V	Print version info and exit.
-v	Enable verbose output.
-x	Enable extremely verbose output. This implies the -v 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:
    Acrobat Reader             acrobat4          4.0.0
    Apex Application Framework  apex10            2.0.1
    Chromium CEI Build         cr1               1.0.0
    EnLiten                    enliten82 (*)     8.0.6a
    EnSight                    ensight82 (*)     8.0.6a
    EnVe                       enve10            1.0.0
    EnVideo                    envideo8 (*)      8.0.8
    EVO DirectShow Plugin      evosupport        1.0.0
    Slim License Tools         license8 (*)      8.6.0
    Reveal                     reveal12          1.0.8
Available architectures:
    apple_10.4_32
    apple_10.4(*)
    cpq_5.1
    hp_11.0_64
    hpia_11.2_64
    ibm_5.1_64
    linux_2.4
    linux_2.4_64
    linux_2.6_32
    linux_2.6_64
    linux_ia64_2.4
    sgi_6.5_n64
    sun_8_64
    win32
    win64
```

Default selections are noted by the (*). Remember that some packages require others
that may not be marked as default. EnSight, for example, requires the Acrobat Reader,
so Acrobat 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. ensight82,envideo8,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
ensight82,enliten82 -d /tmp/CEI -g
```

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

```
    ./install_unix -s /mnt/cdrom --instcomps license8 --instarchs
cpq_5.1 -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

Note: For mounting the CD on an HP system, see the next section.

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. On many SGI systems, the CD-ROM will be automatically mounted on `/CDROM`. On a Sun system running `vold`, the CD-ROM will be mounted on `/cdrom/cdrom0`.

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
SGI	`/sbin/mount -t iso9660 -r /dev/rdsk/dks1d4vol /cdrom`
Sun	`/sbin/mount -f hsfs -r /dev/dsk/c0t6d0s0 /cdrom`
Compaq	`/usr/sbin/mount -t cdfs -r -o rrip /dev/rz4c /cdrom`
IBM	`/usr/sbin/mount -v cdrfs -r /dev/cd0 /cdrom`
Linux	`mount /mnt/cdrom`

Mounting the CD-ROM Drive on an HP system

The EnSight CD was written under IOS9660 using Rockridge extensions. There are two ways to read this format on an HP. **We recommend that you use the first method.**

1.   HP has released 11.0 and 11i/11.11 patches that enable Rockridge CD's to be mounted via the normal mount command.

   (a) Install the following patches (patch numbers are superceded over time - you may need to contact HP support to obtain the latest patch numbers):

   For 11i/11.11: PHCO_25841, PHKL_26269, and PHKL_26520.

   For 11.00: PHKL_28060, PHCO_26449, and PHKL_26450.

(b) 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.

(c) Mount the CD-ROM drive by:

```
                                      site specific
                                  |------------|
    % mount -F cdfs -o rr /dev/dsk/c0t0d0  /cdrom
```

2. If you are not able to patch your system, the older HP method of mounting Rockridge extended CD's may be used.

(a) 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.

(b) Mount the CD drive by:

```
    % pfs_mountd &                            site specific
    % pfsd 4 &                            |-----------|
    % pfs_mount -t rrip -x unix /dev/dsk/c0t0d0 /cdrom
```

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. However, the file now contains information concerning which IP networks are valid for the license. In addition, 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 within the given IP network 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 1-27. If you encountered problems, please consult *Troubleshooting the Installation* on page 1-26 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 1-26). 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 1-27. If you encountered problems, please consult

Troubleshooting the Installation on page 1-26 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	Check the Simple License Manager log file (`${CEI_HOME}/license8/slimd-log-`*HOST*`.txt` where *HOST* is the license manager host name) for error messages and correct as necessary.
		Make sure you stop the old version of slim before you attempt to install and run the new version. To stop slim, use `slimd_stop.`
		Review: `${CEI_HOME}/license8/README.TXT`
		Check system log file.
		Search on "slim" or "license" on our website FAQ's: `www.ensight.com/FAQ/license_index.html`

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 `ensight8` shell script:

```
% ensight8
```

On Windows you can double-click the EnSight 8.2 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:
   ```
   % ensight8.client -cm
   ```
   The `-cm` option tells the Client to begin listening for a connection from the Server.
   On Windows, type
   ```
   ens82cl.exe -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`.
   ```
   % telnet SERVER_HOST
   ```
4. In the same shell window as step 3, start the EnSight Server:
   ```
   % ensight8.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 after a successful connection with the Server process. Note the licensing information in the center of the Graphics Window.

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 `CEI_HOME` is not set correctly.	Set the appropriate path and environment variable on both *CLIENT_HOST* and *SERVER_HOST* as described in the previous section.
Client and Server start, but manual connection fails.	Incorrect *CLIENT_HOST* provided to the Server.	Double-check your Client's host name: run the `hostname` command on the Client system. Use the resulting name when starting the Server: `ensight8.server -c CLIENT_HOST`
	Possible networking problem.	Be sure you can `telnet` from *CLIENT_HOST* to *SERVER_HOST*. If not, consult your local system administrator for assistance.
	EnSight socket ports (1105 and 1106) are in use.	Quit the Client. Execute the netstat command: `your_path/netstat -a	grep 110` on both *CLIENT_HOST* and *SERVER_HOST*. If either 1105 or 1106 is listed, reboot the system. If the problem persists, contact CEI support. Note: *your_path* will vary according to machine and OS, typically, for sgi: /usr/etc for linux: /bin; for HP, IBM, Sun: /usr/bin; and for Compaq: /usr/sbin
Wrong license or license cannot be found	The `slim8.key` file is not properly installed in the `${CEI_HOME}/license8` directory	Make sure the license key(s) have been installed correctly and that all users have read permission for the file(s). Review: `${CEI_HOME}/license8/README.TXT`
	You have a floating license and SLiM (slimd) is not running	Start the slimd license manager.
Previous versions of EnSight start when I type 'ensight8'	CEI_HOME is not set to installation location or your site uses custom bin scripts which are not correct.	Be sure CEI_HOME is set correctly, and that CEI_HOME/bin is in your path. If custom bin scripts used, fix them.

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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