

Installing mental ray

Version 3.2



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Installing mental ray 3.2

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1

Installing mental ray for Windows

This chapter describes how to install and license mental ray® version 3.2 for Windows® XP Professional and Windows 2000 Professional.

Installation requirements

The minimum requirements for running mental ray 3.2 on Windows XP Professional and 2000 Professional are as follows.

Hardware requirements

To install and run mental ray 3.2, your workstation must have:

- Pentium® II or higher processor, 300 Mhz or greater
- 128 MB or more available memory
- a network card
- a CD-ROM drive
- License server only: a hardware lock (dongle) and adapter cable
- License server only: an active and available serial port for the hardware lock

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Note The Software Protection Manager (SPM) and rayserver (mental ray network rendering) both require a free TCP port on your machine. If you choose to use service ports other than 7050 and 7054, then after each software installation you must edit the service ports to the non-default port of your choice. This can be done using the installer, or it can be done on the license server machine and the client machines after software installation. See "Editing service ports" on page 49.

Other requirements

Netscape® 6.0 (or higher) or Internet Explorer 5.0 (or higher) is required to view the online documentation.

Disk space requirements

Minimum: 20 MB for mental ray 3.2.

Note You need at least 30 MB of free disk space for the installer to unpack the files.

Installing mental ray 3.2

Follow these instructions to install and license mental ray 3.2. At the end of the installation you can choose to continue with licensing. If you choose to exit the setup and want to license mental ray 3.2 later, see "Licensing mental ray 3.2" on page 12.

Prerequisite steps

- Stop Maya and any license server processes, if running.

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To stop the SPM Licenser Server

Select Start > Settings > Control Panel > Administrative Tools > Services to open the Services window; in the Services window, scroll to find the SPM License Manager, right-click it and select Stop.

- Make sure you meet the "Installation requirements" on page 7.
- License server only: Install the hardware lock (dongle) on an available COM (serial) port.
- Obtain the mental ray 3.2 software CD from Alias.

To install mental ray 3.2

- 1 Insert the mental ray software CD into the target machine.
The installation window opens automatically within a few seconds.

Note If the installation window does not open automatically, then open Windows Explorer®, open the CD-ROM drive, double-click the Win32 folder and then double-click the mentalray.exe file.

- 2 Read the Welcome window and click Next to continue.
If you have a previous version of mental ray 3.2 installed, such as beta version, the Program Maintenance dialog box may appear. If so, select Remove and click Next. Then click Remove to uninstall the product and click Finish when done.
The Customer Information dialog box appears.
- 3 Enter your User Name and Organization and then click Next to continue.
The Setup Type dialog box appears.

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- 4 Select either the Complete or Custom setup option. Click Next to continue.

If you select Custom, the Custom Setup window appears. Make your selection and click Next to continue. The Ready to Install dialog box appears.

Note If you want to specify another drive or path for the installation, or modify the service ports, select Custom. In the Custom Setup window, you can:

- click Change to change the drive and/or path, click Space to view the drives and available space,
- click Next when ready to continue.

The default path is C:\Program Files\mental images\mental ray 3.2

To modify the service ports, in the Custom Setup window click Next to get to the Service Configuration window. Modify the TCP Ports and click Next.

If the Disk Space window appears automatically then you do not have enough disk space on your system (usually C:) or target drive. A minimum of 30 MB must be free on your system drive (usually C:) in order for the installation to unpack the files. Free up space on the appropriate drive and continue with the installation.

- 5 Click Install to proceed with the installation.
- 6 After the software is installed you are prompted to select either License or Exit. Make your selection and click Next to continue.

If you selected License then go to step 7.

If you selected Exit then go to step 9.

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- 7** Select the type of license you are installing, either a Floating Server or a Floating Client license. Click Next to continue.
- 8** Do one of the following:
 - For a Floating Client license you are prompted for the SPM License server name. Enter it and select Next to continue.
 - For a Floating Server license, you are prompted to request a license or install it if you have it already.
 - If you already have a license and choose to install it, either cut and paste or type the license text in the text box, or specify the license file's path using the Browse button. Click Install.
 - If you choose to request a license, follow the instructions in the window being careful to specify the correct COM port and dongle type (see table below for more information on your dongle type). All dongle types are case sensitive and end in a number.

Dongle type	Dongle vendor	Dongle color
AW0	Alias	green
SI0	SoftImage	grey
AD0	AutoDesk	yellow
MI0 or MI2	mental images	blue

The machine information displayed in the final window should look like this:

```
Request Code: 107C0D416C696120010627-<dongle type>
Host Name: dongle_host
Key Level: 0
```

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where `<dongle type>` is the type of dongle you have.

If you instead receive an `SPM_ERROR`, read the error carefully. Errors occur if the mental images license tools cannot access the COM port specified or if the dongle type is incorrect. If you cannot troubleshoot the SPM error, please send the error message to Support Services via email at `hotline@alias.com`

- 9 Click Finish when prompted that the installation is complete. You must restart your computer in order for the installation settings to take effect.

Licensing mental ray 3.2

If you are a new Alias customer, or if you need to obtain new licenses, you must request a license. See "Obtaining a license" below. In response, we send you an e-mail, fax, or mail containing the license information. Once you receive the license, you save the license in a temporary file, then run the License mental ray program to insert the license into the permanent license file. See "Installing the license" on page 13.

Obtaining a license

To obtain your license, you must send a request to Alias with your request code (system ID), host name and key level, as well as the products you want to license.

If you request a license, then the machine information is displayed as follows:

```
Request Code: 107C0D416C696120010627-<dongle type>
Host Name: dongle_host
Key Level: 0
```

where `<dongle type>` is the type of dongle you have.

Follow the steps in "To obtain a license" on page 13.

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If you did not record this information, then you can obtain it again by running the installer. The installer detects that mental ray is already installed and prompts you with the Program Maintenance dialog box. Select the Modify or License option and click Next, then select the License option and click Next. Proceed with requesting a license and be sure to record the machine information.

To obtain a license

- 1 Record your machine information.
- 2 Do one of the following:
 - In a Web browser, complete the online SPAR form at <http://www.alias.com/spar> and click Finished.
 - Complete the printed SPAR form that comes with your software shipment and fax or mail it to the location listed on the back of the form.

Installing the license

For floating licenses, perform the following steps on the machine that serves the licenses in your facility. For client machines accessing floating licenses, the licensing process that follows the software installation process is sufficient for installing the license.

To license mental ray 3.2

- You should have already obtained a license from Alias. If not, refer to “Obtaining a license” above.
 - Ensure you have Administrator privileges.
- 1 (Windows 2000) Select Start > Programs > AliasWavefront > Common Utilities > License mental ray products
(Windows XP) Select Start > All Programs > AliasWavefront > Common Utilities > License mental ray products

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Licensing mental ray 3.2 >

The Alias | Wavefront mental ray License Installer window appears.

- 2 Do one of the following:
 - Cut and paste the license you received from Alias into the "Cut and paste OR type Product License(s) here:" text box. If you received the license via fax, carefully type the license in; use uppercase and lowercase letters exactly as shown.
 - Enter the path and filename of the license you received by email in the input text field.
- 3 Ensure the COM port and dongle type are set correctly.
For dongle information, see the table under step 9 of "To install mental ray 3.2" on page 9.
- 4 Click the Install button. The mental ray 3.2 License Installer program installs the license into the appropriate location on your machine.
- 5 Continue with "Additional setup for floating licenses" below.

Additional setup for floating licenses

After installing a floating license, the license installer prompts you to restart/start the license server machine. If you choose not to do this, then use the following procedure to restart/start the license server machine manually, "To set options and start the license server daemon" on page 14. This procedure is not necessary for client machines accessing their licenses from a license server machine. For more information on client machines, see "Setting up each client machine" on page 16.

To set options and start the license server daemon

The software installer automatically installs the license server daemon: SPM License Server as a Service.

- 1 To start this service do one of the following:

1 | Installing mental ray for Windows

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- Reboot your server machine.
- Start the SPM License Server using the Service Manager. To do this, select Start > Settings > Control Panel > Administrative Tools > Services to open the Service Manager window, and then, in the Service Manager, scroll to find the SPM License Server, right-click it and select Start.

- 2** To verify whether the license server installation has succeeded, type the following in the DOS prompt:

```
C:\WINNT\system32\spm\spmstat -KD
```

A message like this should appear:

```
SPM-daemon on <hostname>:  
License from Alias|Wavefront:  
License name version lic# used beg_date end_date cpu#  
type
```

where <hostname> is the name of your server machine. The information listed should be consistent with what you purchased from Alias.

- 3** If the machine was already running the SPM License Server when the new mental ray 3.2 licenses were installed, you will need to restart the SPM License Server in order to make the new licenses available. Restart the SPM License Server by rebooting your machine or stop and restart the SPM License Manager from the Service Manager.
- 4** Run mental ray to confirm the installation. See "Starting mental ray 3.2" on page 17.

If you receive an SPM error, read the error carefully. If you cannot troubleshoot the SPM error please send the error and the output of the following command to Support Services:

```
C:\WINNT\system32\SPM\spmstat -kd
```

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Setup is now complete for floating license servers. For client machines accessing their licenses from a floating license server, continue with "Setting up each client machine." If you want to run mental ray on your floating license server you also need to set up the floating license server as a client machine using the instructions in "Setting up each client machine" on page 16.

Setting up each client machine

Windows client machines do not require any additional setup if you chose the Floating Client option during installation and entered the name of the license server that is serving the SPM licenses.

For IRIX, Linux, or Mac OS X clients, you need to install mental ray on each client machine and set some environment variables. Follow the instructions below in "To set up an IRIX, Linux, or Mac OS X client machine."

To set up an IRIX, Linux, or Mac OS X client machine

- 1 Install the mental ray software on each client machine that will run mental ray. (If you also want to run mental ray on the license server machine, you will also need to set up the license server as a client machine using the instructions below.)

- 2 Add the following to your path:

```
/usr/local/mi32/bin
```

- 3 Create a new environment variable called SPM_HOST to identify your license server machine, for example:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

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Starting mental ray 3.2 >

Note For Mac OS X these environment variables need to be set up manually each time a user logs on, unless a `.cshrc` or `.kshrc` file is set up to do it at login. See your network administrator.

Starting mental ray 3.2

mental ray can be started from a command line using the `mentalrayrender` command in the Command Prompt window, for example:

```
mentalrayrender myscene.mi
```

For more information about mental ray 3.2, please see the online mental ray reference guide.

To open the mental ray reference guide

Do one of the following:

- Select Start > Programs > AliasWavefront > mental ray 3.2 > mental ray documentation.
- Select Start > Run and browse to C:\Program Files\mental images\mental ray 3.2\doc\index.html, and click OK. (This path is the default location for the documentation.)

1 | Installing mental ray for Windows

Starting mental ray 3.2 >

2

Installing mental ray for Mac OS X

This chapter describes how to install and license mental ray® version 3.2 for Mac® OS X.

Installation requirements

The minimum requirements for running mental ray 3.2 on Mac OS X are as follows.

Hardware requirements

To install and run mental ray 3.2, your workstation must have:

- At least a 450 MHz G4 processor.
- a network card
- a CD-ROM drive
- a hardware lock (dongle) (for license server only)
- an active and available USB port for the hardware lock (for license server only)

Note Do not remove a dongle when the floating license server is running as it may corrupt the Software Protection Manager (SPM) software.

2 | Installing mental ray for Mac OS X

Installation requirements >

Note The Software Protection Manager (SPM) and rayserver (mental ray network rendering) both require a free TCP port on your machine. If you choose to use service ports other than 7050 and 7054, then after each software installation you must edit the service ports to the non-default port of your choice. This can be done on the license server machine and the client machines after software installation. See "Editing service ports" on page 49.

Operating system and user accounts

- Mac OS X version 10.2 or higher installed on your computer
- An administrator account with a password on your computer to install mental ray

You do not need to be an administrator to use mental ray once it is installed.

Other requirements

Netscape® 6.0 (or higher) or Internet Explorer 5.0 (or higher) is required to view the online documentation.

Disk space requirements

Minimum: 22 MB for mental ray 3.2

Note You need at least 30 MB of free disk space for the installer to unpack the files.

Installing mental ray 3.2

Follow these instructions to install mental ray 3.2. When you are ready to license mental ray 3.2, see "Licensing mental ray 3.2" on page 23.

Prerequisite steps

- If you had a previous version of mental ray installed, you will need to stop any SPM license server processes, by typing (you need an administrator account to do this):

```
sudo /var/spm/rcspm stop
```

- Make sure you meet the "Installation requirements."
- For license server only: Install the hardware lock (dongle) on an available USB port. See "To attach the dongle" on page 23.
- Obtain the mental ray 3.2 software CD from Alias

To install mental ray 3.2

- 1** Insert the mental ray software CD into the target machine and open the MacOSX folder.
- 2** Open the mental ray folder and double-click the installer icon.
You are prompted for an Administrator password.
- 3** Click the lock icon, enter your user ID and password and then click OK.

The language prompt appears.

- 4** Select English and click OK.
The Introduction dialog box appears.
- 5** Read the information and click Next to continue.
The Choose Install Folder dialog box appears.

2 | Installing mental ray for Mac OS X

Installing mental ray 3.2 >

Note We recommend installing to the default location, which is `/usr/local/mi32`

- 6** Click Next to continue.
A Pre-Installation Summary dialog box appears.
- 7** Read the pre-installation summary thoroughly.
- 8** Click Install to proceed with the installation.
When the installation is finished the Install Complete dialog box appears.
- 9** Read the information in the Install Complete dialog box and then click Done.

To install SPM License Utilities

- 1** Insert the mental ray software CD into the target machine and open the MacOSX folder.
- 2** Open the SPM_Licensing_Uutilities folder and double-click the installer icon.
You are prompted for an administrator password.
- 3** Click the lock icon, enter your user ID and password and then click OK.
The Introduction dialog box appears.
- 4** Read the information and click Next to continue.
The Choose Install Folder dialog box appears.

Note We recommend installing to the default location, which is `/var/spm`

- 5** Click Next to continue.

2 | Installing mental ray for Mac OS X

Licensing mental ray 3.2 >

The Pre-Installation Summary dialog box appears.

- 6** Click Install to proceed with the installation.
Once the installation is finished the Install Complete dialog box appears.
- 7** Read the information in the Install Complete dialog box and then click Done.

Licensing mental ray 3.2

If you are a new Alias customer, or if you need to obtain new licenses, you must first send Alias a license request. See “Obtaining a license” below. In response, we send you an e-mail, fax, or mail containing the license information. Once you receive the license, you save the license in a temporary file, then run the License mental ray program to insert the license into the permanent license file. See “Installing a license” on page 25.

Obtaining a license

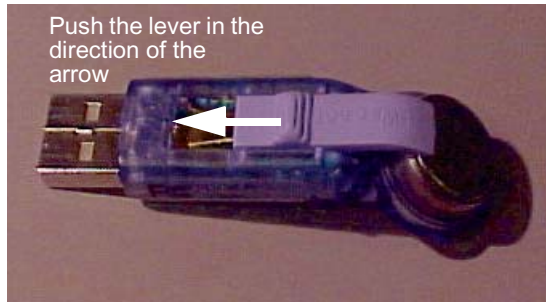
You must request a license from Alias, but first you must attach the dongle and then follow the steps in “To obtain a license.”

To attach the dongle

- 1** Attach the dongle to any available USB port on your system.
- 2** Push the lever on the dongle so that it makes contact with the battery.

2 | Installing mental ray for Mac OS X

Licensing mental ray 3.2 >



Mac dongle

To obtain a license

- 1 After you have installed the mental ray and SPM software, log in to an account with administrator privileges.
- 2 Open a Terminal window and type:
`sudo /var/spm/getSpmRequestCode`
Enter the password when prompted.

Tip Reboot your computer with the dongle attached if you get an error.



- 3 Read and record your machine information.

2 | Installing mental ray for Mac OS X

Licensing mental ray 3.2 >

- 4 Get a license by doing one of the following:
 - Launch your Internet browser and complete the online SPAR form at: <http://www.alias.com/spar>
 - Complete the printed SPAR form that comes with your software shipment and fax or mail it to the location listed on the back of the form.

Installing a license

For floating licenses, perform these steps on the machine that will run the license server process.

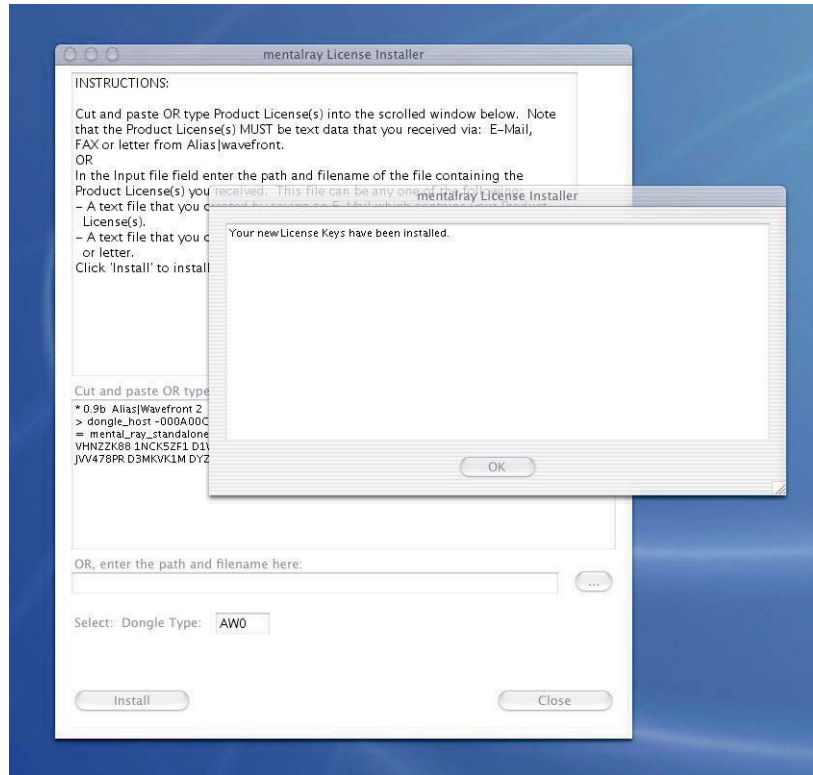
To install a mental ray license

- 1 You should have already obtained a license from Alias. If not, refer to "Obtaining a license" on page 23.
- 2 Log in to Mac OS X using an account with administrative access.
- 3 In a Terminal window, type `open /var/spm` and then double-click the `instKeyMental` icon in the finder window that appears.

The Alias | Wavefront for mental ray License Installer window appears.
- 4 Cut and paste the license you received from Alias into the Cut and paste OR type Product License(s) here: text box. If you received the license via fax, carefully type the license in; use uppercase and lowercase letters exactly as shown. Type `AW0` (zero) in the Dongle Type field.
- 5 Click the Install button. The mental ray License Installer program installs the license into the appropriate location on your machine.
- 6 Continue with "Additional setup for floating licenses."

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mental ray License Installer window

Additional setup for floating licenses

After installing a floating license, the license installer prompts you to restart/start the license server machine. If you choose not to do this, then use the following procedure to start/restart the license server machine manually, "To set up options and start the license server daemon" on page 27. This procedure is not necessary for

2 | Installing mental ray for Mac OS X

Licensing mental ray 3.2 >

client machines accessing their licenses from a license server machine. For more information on client machines, see "Setting up each client machine" on page 28.

To set up options and start the license server daemon

Note You need an administrator account to use `sudo`.

- 1 SPM needs a service port to be installed. To do so, run the following:

```
sudo /var/spm/install_niservice install
```

- 2 Start the `spmd` daemon by typing:

```
sudo /var/spm/rcspm start
```

- 3 Set the following environment variable manually:

```
setenv SPM_HOST <your_license_server>
```

where `<your_license_server>` is the name of your license server machine. To get `<your_license_server>` type:

```
hostname
```

- 4 Verify the license server installation by typing:

```
sudo /var/spm/spmstat -KD
```

You should see a message that looks like this:

```
SPM-daemon on '127.0.0.1':  
License from Alias|Wavefront:  
License name version lic# used beg_dateend_date cpu#  
type
```

The information in the message should be consistent with what you purchased from Alias.

2 | Installing mental ray for Mac OS X

Licensing mental ray 3.2 >

Note For systems that will be serving licenses, but not running mental ray, the licensing setup is complete. Continue with “Setting up each client machine” for all other machines.

Setting up each client machine

Windows client machines do not require any additional setup if you chose the Floating Client option during installation and entered the name of the license server that is serving the SPM licenses.

For IRIX, Linux, or Mac OS X clients, you need to install mental ray on each client machine and set some environment variables. Follow the instructions below in “To set up an IRIX, Linux, or Mac OS X client machine.”

To set up an IRIX, Linux, or Mac OS X client machine

- 1** Install the mental ray software on each client machine that will run mental ray. (If you also want to run mental ray on the license server machine, you will also need to set up the license server as a client machine using the instructions below.)
- 2** Add the following to your path:

```
/usr/local/mi32/bin
```

- 3** Create a new environment variable called SPM_HOST to identify your license server machine, for example:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

2 | Installing mental ray for Mac OS X

Starting mental ray 3.2 >

Note For Mac OS X these environment variables need to be set up manually each time a user logs on, unless a `.cshrc` or `.kshrc` file is set up to do it at login. See your network administrator.

Starting mental ray 3.2

mental ray can be started from a command line using the `mentalrayrender` command in the Terminal window, for example:

```
/usr/local/mi32/bin/mentalrayrender myscene.mi
```

For more information about mental ray 3.2, please see the online mental ray reference guide.

To open the mental ray reference guide

- 1 In the Terminal window, type:

```
cd /usr/local/mi32/doc
```

- 2 Then type:

```
open index.html
```

The default browser is launched and the mental ray online library appears.

- 3 Click mental ray reference.

2 | Installing mental ray for Mac OS X

Starting mental ray 3.2 >

3 Installing mental ray for IRIX

This chapter describes how to install and license mental ray version 3.2 for IRIX.

Installation requirements

The minimum requirements for running mental ray 3.2 on IRIX are as follows.

Hardware requirements

To install and run mental ray 3.2, your workstation must have:

- 24-bit graphics
- 128 MB or more available memory
- a hardware Z-buffer (unless the workstation is an Indy or Indigo2 XL)

Note The Software Protection Manager (SPM) and rayserver (mental ray network rendering) both require a free TCP port on your machine. If you choose to use service ports other than 7050 and 7054, then after each software installation you must edit the service ports to the non-default port of your choice. This must be done on the license server machine and client machines after software installation. See "Editing service ports" on page 49.

Disk space requirements

Minimum: 30 MB for mental ray 3.2

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Note You need at least 30 MB of free disk space for the installer to unpack the files.

Other requirements

Netscape® 6.0 (or higher) is recommended to view the online documentation.

Installing mental ray 3.2

Follow these instructions to install mental ray 3.2. At the end of the installation proceed with licensing. See "Licensing mental ray 3.2" on page 35.

Prerequisite steps

- Stop Maya.
- Stop any SPM license server processes, by typing:
`/var/spm/install_spm -t`
- Make sure you meet the "Installation requirements" on page 31.

To install mental ray using Software Manager

- 1 Log in to the target machine as root. If you don't have root user privileges, see your system administrator.

Note Remember to log out of root when you want to run mental ray. We don't recommend running mental ray as a root user.

3 | Installing mental ray for IRIX

Installing mental ray 3.2 >

- 2 Insert the mental ray software CD into the target machine or a remote machine with a CD-ROM drive.
- 3 Check for the following CD-ROM icon on your desktop, indicating that your CD-ROM is mounted.



If you do not have this icon, check that the CD-ROM drive is mounted by typing the following in a shell:

```
ls /CDROM
```

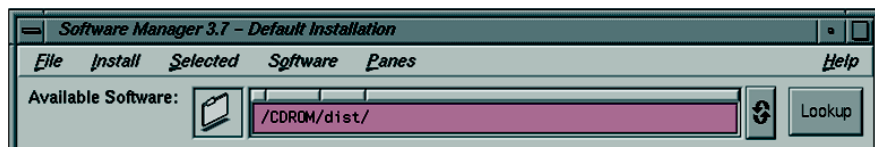
The contents of the directory are listed.

- 4 On the target machine, start Software Manager by typing the following in a shell:

```
swmgr
```

- 5 Enter the path to the CDROM at the top of the Software Manager window, such as `/CDROM/dist`.

Note *dist* must be added to the path or this step won't work.



If you are using a remote CD-ROM drive and your network is set up to use NFS with auto-mount, enter the path to the remote CD-ROM. For example:

```
/remote/host/CDROM/dist
```

where *remote* is the auto-mount point and *host* is the remote machine name.

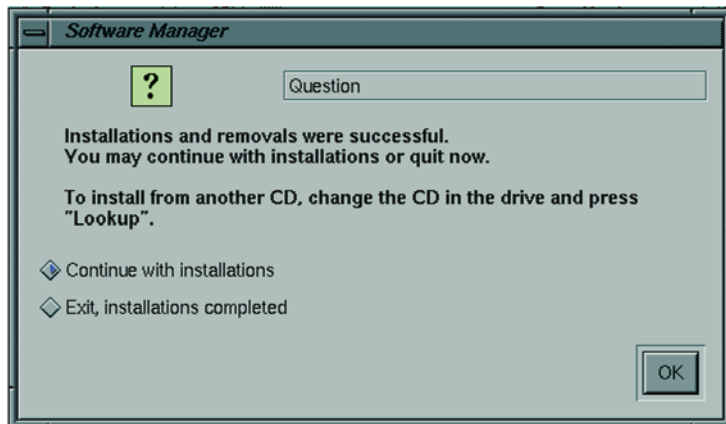
3 | Installing mental ray for IRIX

Installing mental ray 3.2 >

- 6 Click the Lookup button.
- 7 Do one of the following:
 - Select Default Installation and click Start. With the Default Installation option, mental ray 3.2 and SPM utilities are installed.
 - Select Customize Installation to install a subset. You must install the mental ray and SPM utilities packages. Click Start after you've selected the packages to be installed.

Note On some machines, the Start button is disabled when you choose Default Installation. In this case, you must click Customize Installation and then click Start.

- 8 Look for the following dialog box to indicate the software was installed successfully.



- 9 Select Exit and click OK.

Licensing mental ray 3.2

If you are a new Alias customer, or if you need to obtain new licenses, you must request a license from Alias. See “Obtaining a license” below. In response, we send you an e-mail, fax, or mail containing the license information. Once you receive the license, you save the license in a temporary file, then run the License mental ray program to insert the license into the permanent license file. See “Installing a license” on page 35.

Obtaining a license

To obtain your license you must send a request to Alias with your machine information.

To obtain a license

- 1** After you have installed the mental ray software, log in as root and run the following:

```
/var/spm/getSpmRequestCode
```
- 2** Read and record your machine information.
- 3** Do one of the following:
 - Launch your Internet browser, complete the online SPAR form at <http://www.alias.com/spar> and click Finished.
 - Complete the printed SPAR form that comes with your software shipment and fax or mail it to the location listed on the back of the form.

Installing a license

For floating licenses, perform these steps on the machine that will run the license server process.

3 | Installing mental ray for IRIX

Licensing mental ray 3.2 >

To install a mental ray license

- 1 You should have already obtained a license from Alias. If not, refer to "Obtaining a license" on page 35.
- 2 Log in as root.
- 3 Type the following command:

```
/var/spm/instKeyMental
```

The Alias | Wavefront for mental ray License Installer window appears.
- 4 Cut and paste the license you received from Alias into the "Cut and paste OR type Product License(s) here:" text box. If you received the license via fax, carefully type the license in; use uppercase and lowercase letters exactly as shown because the license won't work if you've made a typing error.
- 5 Click the Install button. The license is installed into the appropriate location on your machine.
- 6 Continue with "Additional setup for floating licenses."

Additional setup for floating licenses

After installing a floating license, the license installer prompts you to restart/start the license server machine. If you choose not to do this, then use the following procedure to restart/start the license server machine manually, "To set up options and start the license server daemon" on page 36. This procedure is not necessary for client machines accessing their licenses from a license server machine. For more information on client machines, see "Setting up each client machine" on page 38.

To set up options and start the license server daemon

- 1 SPM needs a service port to be installed. To do so, run the following:

```
/var/spm/install_service install
```

3 | Installing mental ray for IRIX

Licensing mental ray 3.2 >

- 2 Install the licensing daemon in the /etc/init.d directory by typing:

```
/var/spm/install_spmc -i
```

- 3 Start the spmd daemon by typing:

```
/var/spm/install_spmc -s
```

- 4 Set the following environment variable manually by typing:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

- 5 Verify the license server installation by typing:

```
/var/spm/spmstat -KD
```

You should obtain a message that looks like this:

```
SPM-daemon on '127.0.0.1':  
License from Alias|Wavefront:  
License name version lic# used beg_dateend_datecpu#  
type
```

The information listed in the message should be consistent with what you purchased from Alias.

- 6 If the SPM License Server (the spmd daemon) was already running when you installed new licenses, restart the SPM License Server by rebooting your server machine.

Note For systems that will be serving licenses, but not running mental ray, the licensing setup is complete. Continue with the following steps for all other machines.

3 | Installing mental ray for IRIX

Licensing mental ray 3.2 >

Setting up each client machine

Windows client machines do not require any additional setup if you chose the Floating Client option during installation and entered the name of the license server that is serving the SPM licenses.

For IRIX, Linux, or Mac OS X clients, you need to install mental ray on each client machine and set some environment variables. Follow the instructions below in “To set up an IRIX, Linux, or Mac OS X client machine.”

To set up an IRIX, Linux, or Mac OS X client machine

- 1 Install the mental ray software on each client machine that will run mental ray. (If you also want to run mental ray on the license server machine, you will also need to set up the license server as a client machine using the instructions below.)

- 2 Add the following to your path:

```
/usr/local/mi32/bin
```

- 3 Create a new environment variable called SPM_HOST to identify your license server machine, for example:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

Note For Mac OS X these environment variables need to be set up manually each time a user logs on, unless a `.cshrc` or `.kshrc` file is set up to do it at login. See your network administrator.

Starting mental ray 3.2

mental ray can be started from a command line using the `mentalrayrender` command in a shell, for example:

```
/usr/local/mi32/bin/mentalrayrender myscene.mi
```

For more information about mental ray 3.2, see the online mental ray reference guide.

To open the mental ray reference guide

- 1** In the shell window, type:

```
cd /usr/local/mi32/doc
```
- 2** Then type the command line to start your browser followed by `index.html`, for example:

```
netscape index.html
```

The default browser is launched and the mental ray online help home page is displayed.
- 3** Click mental ray reference.

3 | Installing mental ray for IRIX

Starting mental ray 3.2 >

Installing mental ray 3.2

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4 Installing mental ray for Linux

This chapter describes how to install and license mental ray version 3.2 for Linux.

Installation requirements

The minimum requirements for running mental ray 3.2 on Linux are as follows.

Hardware requirements

To install and run mental ray 3.2, your workstation must have:

- Pentium II or higher processor, 300 Mhz or greater
- 128 MB or more available memory
- a CD-ROM drive
- For license server only: a hardware lock (or dongle) and adapter cable

Note The Software Protection Manager (SPM) and rayserver (mental ray network rendering) both require a free TCP port on your machine. If you choose to use service ports other than 7050 and 7054, then after each software installation you must edit the service ports to the non-default port of your choice. This must be done on the license server machine and client machines after software installation. See "Editing service ports" on page 49.

Disk space requirements

Minimum: 21 MB for mental ray 3.2

4 | Installing mental ray for Linux

Installing mental ray 3.2 >

Note You need at least 30 MB of free disk space for the installer to unpack the files.

Other requirements

Netscape® 6.0 (or higher) is recommended to view the online documentation.

Installing mental ray 3.2

Follow these instructions to install mental ray 3.2. At the end of the installation proceed with licensing. See "Licensing mental ray 3.2" on page 43.

Prerequisite steps

- Stop Maya.
- Stop any SPM license server processes, by typing:
`install_spm -t`
- Make sure you meet the "Installation requirements" on page 41.

To install mental ray using RPM

- 1** Log in as root.
- 2** Insert the mental ray CD into a CD-ROM drive.
- 3** Mount the CD-ROM drive. For example, type:
`mount -r /dev/cdrom /mnt/cdrom`
- 4** Change to the CD-ROM directory. For example, type:
`cd /mnt/cdrom`
- 5** Use the `ls` command to list the packages on the CD.

4 | Installing mental ray for Linux

Licensing mental ray 3.2 >

Package Name (# is the package number)	Description	When Required
mental_ray3_2-3.2.4-#.i686.rpm	mental ray 3.2 software	Always
mental_ray_SPM_utilities1_1-1.1.11-#.i686.rpm	SPM licensing software	Always

- 6** To install mental ray, enter the following command:

```
rpm -ivh mental_ray3_2-3.2.4-#.i686.rpm
```

- 7** To install SPM utilities, enter the following command:

```
rpm -ivh mental_ray_SPM_utilities1_1-1.1.11-#.i686.rpm
```

- 8** You should see the software files installed in the following directory:

```
/usr/local/mi32
```

Once the mental ray software is successfully installed, unmount and eject the CD and store it in a safe place.

Licensing mental ray 3.2

If you are a new Alias, or if you need to obtain new licenses, you must first send Alias a license request. See “Obtaining a license” below. In response, we send you an e-mail, fax, or mail containing the license information. Once you receive the license, you save the license in a temporary file, then run the License mental ray program to insert the license into the permanent license file. See “Installing a license” on page 44.

4 | Installing mental ray for Linux

Licensing mental ray 3.2 >

Obtaining a license

To obtain your license you must send a request to Alias with your machine information.

To obtain a license

- 1** After you have installed the mental ray software, log in as root and run the following:

```
/var/spm/getSpmRequestCode
```
- 2** Read and record your machine information.
- 3** Do one of the following:
 - Launch your Internet browser, complete the online SPAR form at <http://www.alias.com/spar> and click Finished.
 - Complete the printed SPAR form that comes with your software shipment and fax or mail it to the location listed on the back of the form.

Installing a license

For floating licenses, perform these steps on the machine that will run the license server process.

To install a mental ray license

- 1** You should have already obtained a license from Alias. If not, refer to “Obtaining a license”.
- 2** Log in as root.
- 3** Type the following command:

```
/var/spm/instKeyMental
```

The Alias | Wavefront for mental ray License Installer window appears.

4 | Installing mental ray for Linux

Licensing mental ray 3.2 >

- 4 Cut and paste the license you received from Alias into the Cut and paste OR type Product License(s) here: text box. If you received the license via fax, carefully type the license in; use uppercase and lowercase letters exactly as shown.
- 5 Click the Install button. The license is installed into the appropriate location on your machine.
- 6 Continue with “Additional setup for floating licenses.”

Troubleshooting SPM

If you get FATAL ERROR (/var/spm/spm_key) : Error while checking protection system while requesting a license use the instructions below to resolve it.

To resolve FATAL ERROR (/var/spm/spm_key) : Error while checking protection system

- 1 Open the Terminal window.
- 2 Type `/etc/init.d/spm start`

If you get a message like the one below, then re-request your license information.

```
SPM kernel module (spmkmmod.smp.24) loaded.  
SPM daemon started.
```

Additional setup for floating licenses

The following steps must be performed on floating servers. These steps are not necessary for floating client machines. For more information on client machines, see “Setting up each client machine” on page 47.

To set up options and start the license server daemon

- 1 SPM needs a service port to be installed. To do so, in a shell type:

```
/var/spm/install_service install
```

4 | Installing mental ray for Linux

Licensing mental ray 3.2 >

- 2 Install the licensing daemon in the /etc/init.d directory by typing:

```
/var/spm/install_spmc -i
```

- 3 Start the spmd daemon by typing:

```
/var/spm/install_spmc -s
```

- 4 Set the following environment variable manually by typing:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

- 5 Verify the license server installation by typing:

```
/var/spm/spmstat -KD
```

You should get a message that looks like this:

```
SPM-daemon on '127.0.0.1':  
License from Alias|Wavefront:  
License name version lic# used beg_dateend_datecpu#  
type
```

The information in the message should be consistent with what you purchased from Alias.

- 6 If the SPM License Server (the spmd daemon) was already running when you installed new licenses, restart the SPM License Server by rebooting your server machine.

Note For systems that will be serving licenses, but not running mental ray, the licensing setup is complete. Continue with the following steps for all other machines.

4 | Installing mental ray for Linux

Licensing mental ray 3.2 >

Setting up each client machine

Windows client machines do not require any additional setup if you chose the Floating Client option during installation and entered the name of the license server that is serving the SPM licenses.

For IRIX, Linux, or Mac OS X clients, you need to install mental ray on each client machine and set some environment variables. Follow the instructions below in “To set up an IRIX, Linux, or Mac OS X client machine.”

To set up an IRIX, Linux, or Mac OS X client machine

- 1 Install the mental ray software on each client machine that will run mental ray. (If you also want to run mental ray on the license server machine, you will also need to set up the license server as a client machine using the instructions below.)

- 2 Add the following to your path:

```
/usr/local/mi32/bin
```

- 3 Create a new environment variable called SPM_HOST to identify your license server machine, for example:

```
setenv SPM_HOST <your_license_server>
```

where <your_license_server> is the name of your license server machine.

Note For Mac OS X these environment variables need to be set up manually each time a user logs on, unless a `.cshrc` or `.kshrc` file is set up to do it at login. See your network administrator.

4 | Installing mental ray for Linux

Starting mental ray 3.2 >

Starting mental ray 3.2

mental ray can be started from a command line using the `mentalrayrender` command in a shell, for example:

```
/usr/local/mi32/mentalrayrender myscene.mi
```

For more information about mental ray 3.2, see the online mental ray Reference Guide.

To open the mental ray Reference guide

- 1 In the shell window, type:

```
cd /usr/local/mi32/doc
```

- 2 Then type the command line to start your browser followed by `index.html`, for example:

```
netscape index.html
```

The default browser is launched and the mental ray online help home page is displayed.

- 3 Click mental ray reference.

5

Editing service ports

Editing service ports

This chapter describes how to edit the service ports on all four platforms, Windows, IRIX, Linux, and Mac OS X.

If you choose to use service ports other than 7050 for SPM services and 7054 for mental ray network rendering (`mi-ray3_2maya5_0`), then after each software installation you must edit the service ports to the non-default port of your choice. This must be done on the license server machine and the client machines.

To edit the service ports on Windows

- 1** Make sure you have administrator privileges on your machine.

- 2** In a text editor, such as Notepad, open the file:

```
C:\WINNT\system32\drivers\etc\services
```

- 3** Edit the lines:

```
mi-spm 7050/tcp
```

```
mi-ray3_2maya5_0 7054/tcp
```

to

```
mi-spm <yourportnumber>/tcp
```

```
mi-ray3_2maya5_0 <yourportnumber>/tcp
```

where `<yourportnumber>` is the port number you want to use.

- 4** Save the file.

5 | Editing service ports

Editing service ports >

Tip To edit the service port on Windows you could also re-run the mental ray installer. Select Modify and click Next to get to the Service Configuration window where you would edit the service ports.

To edit the service ports on IRIX or Linux

- 1 Log in as root.
- 2 Open the file `/etc/services` using your preferred text editor.
- 3 Edit the lines:

```
mi-spm 7050/tcp  
mi-ray3_2maya5_0 7054/tcp  
to  
mi-spm <yourportnumber>/tcp  
mi-ray3_2maya5_0 <yourportnumber>/tcp
```
- 4 Save the file.

To edit the service ports on Mac OS X

- 1 From the Apple Finder menu, select Go > Applications and then double-click the Utilities folder.
- 2 Double-click the NetInfo Manager icon.
- 3 Under the Services directory of the NetInfo database, find and select the appropriate service, for example, `mi-ray3_2maya5_0` or `mi-spm`.
- 4 Click the lock icon at the bottom of the panel and then enter your administrator user name and password. This allows you to unlock the NetInfo database and make changes.
- 5 Select the port field and change its value to the desired port number.

5 | Editing service ports

Editing service ports >

- 6 Click the lock icon again when you're done.
- 7 From the Apple Finder menu, select Domain > Save Changes to commit your changes to the NetInfo database.

5 | Editing service ports

Editing service ports >

6

Troubleshooting

What went wrong?

Access is denied

To fix the error “Access is denied”

- 1 Ensure that only the SPM dongle is attached to the COM port you are attempting to use.
- 2 Select Start > Settings > Control Panel.
- 3 Double-click the Administrative Tools icon and then double-click the Services icon.
- 4 In the Services window, scroll to find the SPM License Server (Ray3_2maya5_0 Server or Ray3_1maya5_0 Server).
- 5 Right-click SPM License Server and select Stop.

Keylevel already used up

To correct the error “keylevel already used up” follow the instructions for one of the two solutions:

- “To delete the spm-kf files and re-install the current license encryption”
- “To request a new key level and license encryption from Alias | Wavefront”

To delete the spm-kf files and re-install the current license encryption

Note Only delete the `spm-kf` and `spm-kf.bak` files if you DO NOT have any other mental ray software installed. All mental ray license information is contained in those files.

6 | Troubleshooting

Keylevel already used up >

On Windows

- 1 Open Windows Explorer and go to the folder
`C:\WINNT\ssytem32\SPM`
- 2 Delete the `spm-kf` and `spm-kf.bak` files from the SPM folder.
- 3 Re-install the mental ray license using your current license encryption starting with the mental ray license request.

Note If you can't see the `spm-kf` and `spm-kf.bak` files, in Windows Explorer select Tools > Folder Options and click the View tab. Make sure that Show hidden files is selected and Hide file extensions for known file types is turned off.

On IRIX, Linux and Mac OS X

- 1 Log in as root user.
- 2 Open a UNIX shell or Terminal window and type:
`cd /var/spm`
- 3 To confirm that the `.spm-kf` and `.spm-kf.bak` files are in the `spm` directory type:
`ls -la`
- 4 Type `rm -r .spm-kf` and `rm -r .spm-kf.bak`
- 5 Re-install the mental ray license using your current license encryption starting with the mental ray license request.

To request a new key level and license encryption from Alias|Wavefront

On Windows

- 1 Insert the mental ray CD and select the Modify or License mental ray option.

(Windows) SPM Warning due to dongle date >

- 2 Follow the steps to obtain a new license request.
- 3 Re-submit the request at:
`www.alias.com/spar`

On IRIX

- 1 Log in as root.
- 2 To get the updated machine information, in a shell type:
`/var/spm/getSpmRequestCode`
- 3 Re-submit the request at:
`www.alias.com/spar`

(Windows) SPM Warning due to dongle date

The following warning message appears if the mental ray dongle date doesn't match the Windows system date.

```
SPM_WARNING (spm_key):  
System time is Fri Jun 28 2002 11:52:44 while the  
time in the dongle is Thu Jan 17 2002 21:58:06  
Do you really want to irrevocably adjust time in  
dongle?
```

To fix this problem, follow the instructions below on the machine to which the dongle is attached.

To fix the dongle date to match the system date

- 1 Select Start > Settings > Control Panel.
- 2 Double-click Administrative Tools and then double-click Services.
- 3 Scroll to find the SPM License Server and then double-click it to open it.

6 | Troubleshooting

(Windows) SPM Warning due to dongle date >

- 4** In the SPM License Server Properties window click Stop to stop the service. Keep the window open.
- 5** Open a command shell and type the following command:
`C:\WINNT\system32\SPM\spm_key -t`
The same warning message is displayed.
- 6** Type y and press Enter. The dongle date is updated.

Note If the customer's license expires before the current date a new license is needed.

- 7** Go back to the SPM License Server Properties window and click Start to restart the SPM License Server service.
- 8** You should now be able to use mental ray. You can verify that the licenses are available by typing the following into a command prompt:
`C:\WINNT\system32\SPM\spmstat -KD`

A Software terms and conditions

Alias Systems Software License Agreement

IMPORTANT - PLEASE READ CAREFULLY

ALIAS (DEFINED BELOW) IS WILLING TO LICENSE THE SOFTWARE (DEFINED BELOW) ONLY TO THE CUSTOMER (DEFINED BELOW) AND ONLY IF ALL OF THE TERMS CONTAINED IN THIS SOFTWARE LICENSE AGREEMENT ARE ACCEPTED BY THE CUSTOMER. BY INSTALLING AND/OR USING AND/OR OTHERWISE ACCESSING THE SOFTWARE, THE CUSTOMER EXPRESSLY ACKNOWLEDGES AND AGREES THAT IT SHALL BE BOUND BY THE TERMS CONTAINED HEREIN.

Article 1 - Definitions

- a) "Activation Date" means the date upon which the Software shall be deemed to be activated, which shall be the earlier of: (i) the date upon which Alias or Reseller provides the Enabling Mechanism to Customer; (ii) the date upon which Alias provides the Enabling Mechanism to Reseller for delivery to Customer; or (iii) the ninetieth (90th) day following Delivery;
- b) "Agreement" means this Alias Systems Software License Agreement;
- c) "Alias" means Alias Systems, a division of Silicon Graphics Limited;
- d) "Customer" means the end user of the Software that acquires the License pursuant to this Agreement, as identified on the Order;
- e) "Delivery" means delivery of the media upon which the Software is provided to a carrier by Alias, its supplier, representative, agent or fulfillment services provider for carriage to Customer, or, where the Software is to be delivered via download, at such time when the Software is made available to Customer for download;
- f) "Enabling Mechanism" means a mechanism by which the Software is activated or by which Customer can activate the Software;
- g) "License" shall have the meaning ascribed thereto in Article 2(a);
- h) "Materials" means any and all documentation and/or material provided to Customer by Alias or Reseller in relation to the Software;
- i) "Order" means either: (i) the purchase order of Customer relating to the acquisition of one or more Licenses, which has been accepted by Alias or by a Reseller in Alias' or Reseller's sole discretion, as applicable; or (ii) a quotation that has been issued by Alias or a Reseller in respect of one or more Licenses, which has been accepted by Customer in accordance with and subject to its terms;
- j) "Original Site" means the Customer site identified on the Order;
- k) "Proprietary Material" means the Software and the Materials, including any portion thereof in any embodiment, including copies thereof, and any other information or data relating to the Software, in written, graphic, or machine readable form, received by Customer from Alias or from a Reseller, including, but not limited to, designs, improvements, concepts and ideas, provided, however, that

Proprietary Material does not include information and/or data that is rightfully in Customer's possession prior to its receipt from Alias or Reseller;

- l) "Reseller" means an authorized reseller of Alias, which has been authorized to distribute Software within the territory in which the Original Site is located;
- m) "Software" means the Alias software product(s), in object code form, described on the Order and provided to Customer pursuant to this Agreement and shall include any and all updates or upgrades thereto subsequently acquired by or provided to Customer;
- n) "Third Party Material" means any software and/or documentation and/or material provided to Customer with the Software or in relation thereto, which has been produced and/or licensed by a third party and subsequently provided and/or made available and/or licensed to Alias by such third party for inclusion with the Software; and
- o) "Warranty Period" means the period commencing upon Delivery and ending upon the earlier of: (i) the thirtieth (30th) day after the Activation Date; or (ii) the ninetieth (90th) day after Delivery.

Article 2 - Software Rights

- a) License Grant. Alias has granted to Customer and Customer has accepted, a non-exclusive, non-transferable, non-sublicensable, limited license to use the Software, subject to the terms and conditions of this Agreement (the "License").
- b) Initial Hotline Support. Alias may, from time to time, elect to provide a period of initial hotline support services to Customer following acquisition of Software. Alias reserves the right to amend or terminate such policy at any time in its sole discretion, without notice. Alias' current policy is that, for a period of thirty (30) days from the Activation Date, Alias shall provide Customer with access to Alias' hotline support services in relation to the Software, where available. Unless Customer otherwise purchases support or maintenance services from Alias or a Reseller and with the sole exception of the above-noted temporary access to the hotline, Customer shall not be entitled to any form of support services, software maintenance services or products relating to the Software.
- c) Installation Location. Use of the License shall be limited to the Original Site or any other Customer site within five (5) kilometers of the Original Site. In the case of a "floating" or "network" License, Customer may install the Software on one local area network at the Original Site and Customer may simultaneously operate multiple copies of the Software on any computer directly connected to the applicable file server, provided that the number of copies of the Software operating simultaneously does not exceed the total number of floating Licenses acquired by Customer and further provided that the users accessing the Software through the network are no farther than five (5) kilometers from the applicable network server. Relocation of the Software may only be done with the express prior written consent of Alias.

Installing mental ray 3.2

A | Software terms and conditions

>

d) **Licenses Non-Transferable.** Licenses shall not be transferred without the prior written consent of Alias, which may be granted or withheld in Alias' sole and absolute discretion. If such transfer is authorized, Customer agrees to provide any and all information reasonably requested by Alias relating to such transfer and Customer shall promptly execute and/or have executed by the proposed transferee any and all documentation provided by Alias required to effect such transfer.

e) **Back-Up Installations.** In the event of a major malfunction causing the specified computer hardware on which the Software has been installed to become inoperable for an extended period of time, Customer may install the Software on a back-up system on a temporary basis during such malfunction. Customer agrees to promptly notify Alias of any such back-up use and specify the location of the back-up system.

f) **Internal Use Only.** Customer may use the Software only in connection with operation and management of Customer's own internal business, subject to the terms hereof. Customer is not authorized to grant sublicenses to use the Software nor to permit other persons to use the Software on a time-sharing or any other basis.

g) **Customer Responsibilities.** Customer shall be exclusively responsible for the supervision, management and control of its use of the Software, including, but not limited to: (i) selection of the Software to achieve Customer's intended results; (ii) determining the appropriate use and establishing the limitations of the Software in Customer's operations; (iii) assuring operation of the Software by qualified, trained personnel, in the specified computer environment, including proper machine hardware configuration and operating system software; (iv) assuring proper operating methods; (v) establishing adequate back-up plans to prevent loss of data in the event of a malfunction of the Software; and (vi) implementing sufficient procedures and checkpoints to satisfy its requirements for security and to assure accuracy of input and output.

h) **License Termination on Non-Payment.** Alias reserves the right to disable the Software and/or terminate the License upon written notice if Customer fails to pay either Reseller or Alias for the License pursuant to the terms of the Order.

Article 3 - Protection of Proprietary Material

a) **Ownership.** Alias and/or its suppliers and/or its licensors retain all right, title, and interest in and to all Proprietary Material (including, without limitation, all rights under any applicable copyrights, patents, trademarks and trade secrets) and to all copies thereof made by Customer.

b) **Reverse Engineering.** Customer shall not reverse compile, reverse engineer or disassemble the Software, except to the extent that Alias is not permitted by law to exclude or limit such rights. Customer shall not use the Software for the purpose of developing, modifying or improving a software product without the express prior written consent of Alias.

c) **Proprietary Material Confidential.** Customer acknowledges that the Proprietary Material is confidential and constitutes a valuable asset of Alias and/or its suppliers and/or licensors and shall not

disclose, publish, display or otherwise make available to any persons any of the Proprietary Material or copies thereof without Alias' prior written consent.

d) **Limitation on Reproduction.** Customer shall not copy or reproduce any of the Proprietary Material, except: (i) in the ordinary course of exercising its rights hereunder; (ii) for back-up purposes; or (iii) with the express prior written consent of Alias.

e) **Limitation of Access, Disclosure and Use.** Customer shall not use any Proprietary Material for any purpose not specifically authorized in this Agreement. Customer shall limit the use of and access to the Software and other Proprietary Material to its bona fide employees and/or consultants whose use of or access to such Proprietary Material is necessary to Customer's use of the Software (in accordance with the terms hereof) and Customer shall take appropriate action, by agreement, instruction or otherwise, to protect the Proprietary Material from unauthorized publication, disclosure or use.

f) **Notices.** Customer shall not remove any copyright, intellectual property or proprietary rights notice(s) included in or on any Proprietary Material and shall reproduce all such notices on any permitted copies made of any Proprietary Material.

g) **Inspection.** Alias shall have the right to inspect, upon reasonable prior notice and during normal business hours, any Customer location at which any Proprietary Material is used or kept to ensure or confirm compliance with the terms of this Agreement.

h) **Irreparable Harm.** Customer acknowledges and agrees that in the event of any breach of its obligations under this Article, Alias will suffer irreparable harm of a nature that is not compensable by damages and Alias shall be entitled to seek injunctive or other equitable relief on an expedited basis.

Article 4 - Warranty and Liability

a) **Limited Warranty.** During the Warranty Period and subject to the provisions of this Article, Alias warrants as follows: (i) the media upon which the Software is provided to Customer, if any, shall be free of material defect; and (ii) the Software shall reasonably conform to the specifications contained in the Software documentation furnished to Customer.

b) **Remedies.** Alias' sole responsibility under the limited warranty provided for in Article 4(a) shall be, at its election, to: (i) replace the media upon which the Software has been provided to Customer, provided that Customer first returns the allegedly defective media to Alias; (ii) correct or replace the Software or that portion of the Software that fails to conform with the provided specification; or (iii) refund the purchase price paid by Customer for the License.

c) **Disqualifying Events.** Customer acknowledges and agrees that the limited warranty provided in Article 4(a) shall be invalidated and Customer shall have no claim whatsoever thereunder if: (i) Customer fails to report in writing to Alias any defect or error claimed to be a breach of warranty during the Warranty Period; (ii) the Software or the media upon which the Software is provided is misused; (iii) the Software or the media upon which the Software is provided is damaged, altered or affected by accident, neglect, misuse or other abuse; (iv) the claimed defect or error has been caused, in whole or in

A | Software terms and conditions

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part, by persons other than Alias; or (v) if the Software has been installed on a system that has not been certified by Alias as compatible with the Software at the time of acceptance of the Order.

d) THE LIMITED WARRANTY SET FORTH IN THIS ARTICLE 4 IS THE ONLY WARRANTY MADE BY ALIAS WITH RESPECT TO THE SOFTWARE AND/OR THE LICENSE. ALIAS MAKES NO OTHER WARRANTIES, EXPRESS, IMPLIED OR ARISING BY CUSTOM OR TRADE USAGE, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

e) IN NO EVENT SHALL ALIAS' AND/OR ALIAS' AFFILIATES' TOTAL AGGREGATE LIABILITY ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE SOFTWARE AND/OR THE LICENSES EXCEED THE AMOUNT ACTUALLY PAID BY CUSTOMER FOR THE LICENSES HEREUNDER. IN NO EVENT SHALL ALIAS BE LIABLE TO CUSTOMER FOR SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES, HOWEVER CAUSED, WHETHER FOR BREACH OF WARRANTY, CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY CLAIMS RELATING TO LOST PROFITS, BUSINESS OR OPPORTUNITIES, EVEN IF ALIAS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF SUCH DAMAGES WERE FORESEEABLE.

Article 5 - Intellectual Property

Alias shall defend or, at its option, settle, any claim or proceeding brought against Customer to the extent that it is based on an assertion that the Customer's authorized use of the Software constitutes direct infringement of any Canadian or United States copyright or patent(s) registered on or before the date of the Order, and shall indemnify Customer against all reasonable costs, damages and expenses finally awarded against Customer which result from any such claim, provided that Customer notifies Alias promptly in writing of any such claim or proceeding and gives Alias full and complete authority, information and assistance to defend such claim or proceeding and all negotiations for a compromise or settlement. Alias shall have no liability or obligation to Customer hereunder for any patent or copyright infringement or claim thereof based upon: (i) the combination of the Software with other products not furnished by Alias; (ii) any addition to or modification of the Software made after installation by any person or entity other than Alias; or (iii) any software or other technology not claimed to be owned by Alias, including without limitation the Third Party Material. Alias shall have no obligation hereunder for any costs incurred by Customer without Alias's express prior written authorization. If the Software or any part thereof becomes, or in Alias's opinion is likely to become, the subject of a claim of infringement, Alias shall have the right, at Alias's option and expense, to (i) procure for Customer the right to continue using the Software, (ii) replace or modify the Software so that it becomes non-infringing, or (iii) refund the amounts actually paid to Alias by Customer for the License, less a reasonable allowance to provide for use of the Software by Customer prior to the date of the refund. The provisions of this Article state the sole, exclusive and entire liability of

Alias and the sole, exclusive and entire remedy of Customer, with respect to any claim of patent or copyright infringement with respect to the Software, and any part thereof.

Article 6 - Term and Termination

a) Term. This Agreement takes effect on the date on which the Order is received and accepted by Alias or a Reseller and shall remain in effect unless terminated as provided herein. Notwithstanding the foregoing, in the event that the Software is provided to Customer for evaluation and/or demonstration purposes, this Agreement shall be effective from the date such Software is provided to Customer until the date of termination of such evaluation or demonstration, as determined by Alias in its sole and absolute discretion.

b) Termination. If Customer shall fail to perform or be in breach of any of its obligations hereunder, Alias may terminate this Agreement and the License provided hereunder, by giving written notice of termination to Customer, which shall be effective immediately upon its sending. This Agreement and the License granted hereunder shall terminate automatically and without notice if Customer should cease to carry on its business as a going concern in the ordinary course, including any act or omission constituting bankruptcy, the appointment of a trustee, liquidator or receiver for the assets of Customer, or the taking advantage of any legislation providing protection of Customer from its creditors.

c) Consequences of Termination. Within five (5) days after any termination of this Agreement, Customer shall, at Alias' election, deliver or destroy all Proprietary Material, including all copies thereof, within its possession, custody or control. Customer shall delete or destroy any and all such Proprietary Material that is stored in any computer software or storage facility that, for any reason, cannot be delivered to Alias. Customer expressly represents and warrants that it shall delete or destroy any and all such information and data that is subsequently detected or discovered. An executive officer of Customer shall certify in writing to Alias that all Proprietary Material has been so destroyed or returned. Articles 1, 3, 4, 6(c), and 7 - 10 hereof shall survive any termination of this Agreement.

Article 7 - Government End Users

This Article applies if the Software is acquired directly or indirectly on behalf of a unit or agency of the United States Government. For civilian agencies: the Software was developed at private expense and is "restricted computer software", submitted with restricted rights in accordance with subparagraphs (a) through (d) of the Commercial Computer Software - Restricted Rights clause of FAR 52.227-19 (June 1987) and its successors; and it is unpublished and all rights are reserved under the copyright laws of the United States. For units of the Department of Defense (DoD), the Software is licensed only with "Restricted Rights" as that term is defined in the DoD Supplement to the FAR, clause 252.227-7014 (June 1995), Rights in Technical Data and Computer Software and its Successors (including clause 252.227-7014(b)(3) (1994)), and use, duplication or disclosure is subject to the restrictions set forth therein.

Article 8 - Third Party Material

Installing mental ray 3.2

A | Software terms and conditions

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The parties hereto expressly acknowledge and agree that, notwithstanding any other provision hereof, Alias makes no warranties whatsoever with respect to the Third Party Material and Customer acknowledges and agrees that Customer's rights and obligations with respect to such Third Party Material may be governed by the terms of a separate and/or supplementary license agreement, which may be provided and/or made available by Alias. ALIAS MAKES NO WARRANTY OF ANY KIND WITH RESPECT TO THE THIRD PARTY MATERIAL, EXPRESS, IMPLIED OR ARISING BY CUSTOM OR TRADE USAGE, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NOTWITHSTANDING ANY OTHER PROVISION HEREOF, TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER ALIAS NOR ITS AFFILIATES SHALL HAVE ANY LIABILITY WHATSOEVER ARISING OUT OF OR IN RELATION TO THE THIRD PARTY MATERIAL.

Article 9 - Academic and Educational Licenses

If Customer acquired the Software pursuant to one of Alias' academic or educational access programs (including, without limitation, student and/or instructor access programs) as they may exist from time to time and which shall be defined by Alias in its sole discretion from time to time, the following additional restrictions apply: Customer shall use the Software for educational purposes only and under no circumstances shall Customer use or permit others to use the Software in any manner for a commercial purpose or in respect of a for-profit enterprise of any kind. If Customer is a training or educational institution or an instructor at such an institution and acquired the Software pursuant to an Alias program designed to afford access to such Software to enable Customer to train others to use the Software, then Customer shall use the Software for educational purposes only and only as incorporated into such training or educational programs or curricula (the "Training Programs"). For clarity, if the third parties being trained by Customer pursuant to the Training Programs pay to Customer a fee for such training, the receipt of such payment by Customer shall not in itself constitute a violation by Customer of the non-commercial use restrictions contained in this Article.

Article 10 - General Provisions

a) Entire Agreement, Severance. This Agreement sets forth the entire agreement and understanding of the parties with respect to the subject matter hereof. Neither party shall be bound by or be liable for any alleged representation, promise, inducement or statement of intention not set forth herein and no waiver, alteration, modification, or cancellation of any of the provisions of this Agreement shall be binding unless made in writing and signed by the parties. Any provisions of the Order that are in any way inconsistent with or in addition to the terms and conditions of this Agreement shall not be binding upon Alias and Alias' failure to object to any such provision or processing or acceptance of such Order shall not be construed as a waiver of the terms and conditions of this Agreement nor as an

acceptance of any such provisions. The failure of either party to require performance of any provision hereof shall not affect the right at a later time to enforce such provision. In the event that one or more of the provisions contained in this Agreement shall for any reason be held invalid, illegal or unenforceable in any respect, no other provisions contained in the Agreement shall be affected.

b) Evaluation or Demonstration Licenses. In the event that the Software is provided to Customer for evaluation and/or demonstration purposes, Articles 2(b), 4(a), 4(b), 4(c) and 5 shall not apply. All Software provided for evaluation and/or demonstration purposes is provided "as is" and without warranties of any kind.

c) Governing Law / Export. This Agreement shall be governed by and interpreted in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein for purposes of any action commenced under this Agreement or with respect to any tort committed or alleged to be committed in the performance of this Agreement. No choice of law rules of any jurisdiction shall apply hereto. The parties hereto expressly waive any right they have to a jury trial and agree that any court proceeding under this Agreement shall be tried by a judge without a jury. Customer shall at all times comply with all Canadian, U.S., foreign and local export laws and regulations, as applicable, with respect to the acquisition, shipment or receipt of the Software.

d) Notices. Any notice or other document required or permitted to be given hereunder shall be validly given if delivered personally (including courier service) or by prepaid registered mail, return receipt requested or sent by facsimile transmission to the addressee thereof. Notices shall be deemed received three (3) days after mailing in the case of certified mail, and on the next business day in the case of courier delivery or facsimile transmission, except a notice of termination, which is governed by Article 6(b). Notices shall be sent to Customer at the address specified on the Order. Notices shall be sent to Alias as follows: Alias Systems, a division of Silicon Graphics Limited, 210 King St. East, Toronto, Ontario, Canada M5A 1J7; Fax 416.369.6135; Attn: General Counsel.

e) Headings. Article headings used in this Agreement are for reference purposes only and shall not be used in the interpretation of this Agreement.

f) Ennurement. This Agreement shall be binding upon and enure to the benefit of the parties and their respective successors, permitted assigns and legal representatives, provided, however, that the rights and obligations of Customer hereunder may not be assigned, sublicensed or otherwise transferred, in whole or in part, without the prior written consent of Alias, which may be granted or withheld by Alias in its sole and absolute discretion.

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