

Deep Publish User Reference Guide

'...visual communication and collaboration'

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Introduction



Welcome to Right Hemisphere's Deep Publish User Reference.

Deep Publish is an authoring tool that enables you to insert 3D models into Adobe FrameMaker documents, and Microsoft PowerPoint presentations, Word documents, and Excel spreadsheets. You can also convert that 3D content into the PDF document format, and view 3D content within Right Hemisphere HTML documents created using Deep Exploration (http://www.righthemisphere.com/products/dexp/de_cad.html).

Complex engineering and animation data can be easily used for sales presentations, training material, technical documentation and online catalogues yet only basic computer skills are needed to create these stunning visuals.

This reference contains detailed information about all the features and capabilities of Deep Publish, and is organized mainly by functional areas. The User Interface (on page 76) section gives you a guide to program controls and where to find them.

If you have already used previous versions of this program, you might want to start here: Deep Publish Overview (on page 25).

If you are new to this software, this would be a good place to start: Getting Started with Deep Publish (on page 26).

You can find a guide to using the online reference here: Using the Reference Online (on page 14), and below is a list of important introductory topics.

- Inserting Files. (on page 28)
- Downloading Files and Internet Shortcuts (on page 32).
- Inserting Internet Shortcuts (on page 33).
- Editing the Active Area (on page 36).
- Viewing Content (on page 38).
- Editing Content.
- Objects and Materials (on page 48).
- Drawing and Markups (on page 52).
- Measurements (on page 62).
- PMI Data (on page 68).
- Steps (on page 69).
- Converting to 3D PDF (on page 70).
- Editing Configuration Settings (on page 72).
- Printing Files (on page 74).
- Deleting Files (on page 75).

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Conventions

Several user interface controls are utilized within the application, similar to the functionality in most Windows applications. These controls are graphical objects that represent the various properties of the interface components and functions. Some controls display and allow editing of particular values. Other controls start associated commands. Each control has a unique appearance and operation designed for a specific form of interaction.

Help

Help is accessed from the product menu and, depending on the product you are using, by pressing **F1**. Certain conventions are used within the product and documentation to make them easier to use.

Mouse Controls

The mouse is an intuitive way of interacting with the application. The buttons can be used singularly, in conjunction with each other, and in conjunction with other keys on your keyboard to perform a variety of functions via shortcuts (on page 112).

Pressing and holding both mouse buttons is used for a variety of navigation methods including zooming in and out from scenes.

Left-mouse button: Referred to simply as the 'mouse' or 'left-click'. It is used for a number of selection functions including selecting objects, menu commands, buttons, and check boxes.

Right-mouse button: Referred to as 'right-click'. It is used for displaying the right-click menus; the available commands differ depending on the position of the cursor in the interface.

Middle/wheel button: Pressing and holding the middle or wheel button is used to perform certain zoom functions (on page 114).

Product Menus

The product menus are your main means of interacting with the application. Each menu contains commands used to perform various functions that relate to the application. Many menus contain sub-menus and commands.

Submenu buttons : Indicates that the selected command includes a submenu.

On/off toggles : Indicates that the menu command is 'on'.

Either/or toggles : Indicates that the menu command is the one selected from a group of mutually exclusive commands.

Close buttons : Used to close the current user interface component. For example, the various application dialogs.

Ellipsis : Indicates that a dialog will appear from where you can select various options.

Keyboard shortcuts (on page 112): Menus display any available keyboard shortcuts to the right of the commands. For example, the File > Open command can be accessed via the keyboard shortcut CTRL+O.

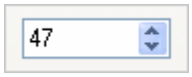
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Special Controls

Several special user interface controls are utilized within Deep Publish, similar to the functionality in most Windows applications. These controls are graphical objects that represent the various properties of the interface components and functions. Some controls display and allow editing of particular values. Other controls start associated commands. Each control has a unique appearance and operation designed for a specific form of interaction.

Spinners

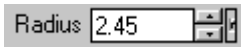
A spinner is a control for numeric fields. You can click or drag the spinner arrows to increment or decrement the value.



To change a value using a spinner, do any of the following:

- Click the spinner to increment or decrement the value.
- Drag up to increase the value, or drag down to decrease it.
- Press CTRL while you drag to increase the rate at which the value changes.

Spinners



An edit box is a place where you can enter a value. This value can be a number or a string. Place the cursor over an edit box and press the mouse button to activate the edit box. Right-clicking over an edit box allows clipboard operations to be used with the edit box, such as Cut, Copy, Paste, Delete, and Select All.

Numeric edit boxes work in conjunction with spinners and sliders, each described below. The number of decimal places that are maintained in numeric edit boxes can be set in the Deep Publish Configuration dialog.

Edit boxes that take numeric values can have mathematical expressions typed into them. For example if you wanted to enter the value 4 divided by 5 you would enter '4/5' (without the quotes), and when you press ENTER, the edit box is filled with 0.8. More information about using mathematical expressions in edit boxes can be found below. The valid mathematical operators are:

- * Multiply.
- + Add.
- - Subtract.
- / Divide.
- ^ Exponent.

Portions of the mathematical expressions can be grouped together with ( ). Operations within parentheses are evaluated first. For example:

- (4*5)+3
- 4/4.56
- (5+67)*(4/3)

You can also use the following mathematical functions:

- sqrt, abs, acos, asin, atan, cos, cosh, exp, log, log10, sin, sinh, tan, and tanh.

Note: All trigonometric functions use angles measured in radians.

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The following are examples of using mathematical functions:

- sqrt(0.5)
- acos(4+4)

The following constants are also defined:

- rand = a random number
- pi = 3.141592654
- rad = 3.141592654/180.0
- deg = 180.0/3.141592654
- mi = 100000.0/2.54/12.0/5280.0
- km = 5280.0*12.0*2.54/100000.0

Simply type the constant you want to use:

- rand
- (4*pi)

Sliders

Sliders work in a similar way to spinners but allow more control over the value.



To use a slider, do any of the following:

- Drag the slider arrow left to decrease the value.
- Drag the slider arrow right to increase the value.

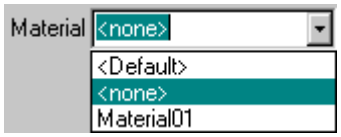
Cyclical Dialog Fields

Many dialogs contain fields that can cycle through the options every time you click in the field.

Tabs

Tabs are analogous to the dividers in a notebook or the labels in a file cabinet. They define multiple pages for the same area of a window or dialog box. Each tab comprises a set of information or a group of controls that are displayed when you select the corresponding tab.

Drop Down Lists

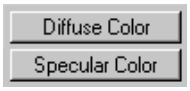


A combo box consists of a list box combined with either a static control or edit control. The list-box portion of the control can be displayed at all times or can only drop-down when you select the drop-down arrow next to the control.

The currently selected item (if any) in the list box is displayed in the static or edit control. In addition, if the combo box has the drop-down list style, you can type the initial character of one of the items in the list, and the list box, if visible, highlights the next item with that initial character.

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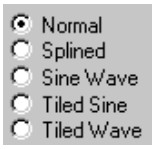
Buttons



Buttons are controls that start actions or change properties. When you click a command button with the primary mouse button, a command is carried out. When you press the mouse button, the input focus - a dotted rectangle - moves to the command button, and the command button state changes to its pressed appearance. If you move the pointer off the command button while the mouse button remains pressed, the command button returns to its original state but still displays the input focus rectangle. If you move the pointer back over the command button while pressing the mouse button, the command button returns to its pressed state.

When you release the mouse button with the pointer on the command button, the command associated with the control starts. If the pointer is not on the control when you release the mouse button, no action occurs.

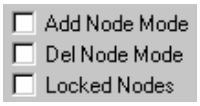
Option Buttons



Option buttons represent a single choice within a limited set of mutually exclusive choices. That is, you can choose only one of a set of options. Option buttons appear as a set of small circles. When an option button choice is set, a dot appears in the middle of the circle. When the item is not the current setting, the circle next to the current setting is empty.

As with command buttons, the mouse interface for choosing an option button requires you to click the primary mouse button, either on the option button circle or on its label. When you press the mouse button, the input focus moves to the option button label, and the option button displays its pressed appearance. If you move the pointer off the option button before releasing the mouse button, the option button returns to its original state but retains the input focus. The option is not set until you release the mouse button while the pointer is over the control. In addition, repeated mouse clicks on the same option button do not toggle the button's state; you need to explicitly select another value in the group to change or restore a setting.

Check Boxes



A check box represents an independent or non-exclusive choice. A check box can have three states:

- **Checked**—The associated value or property is set.
- **Cleared**—The associated value or property is not set.
- **Mixed value**—The associated value is set for some, but not all, elements of the selection.

A check box appears as a square box with an accompanying label. When the choice is set, a check mark appears in the box. When the choice is not set, the check box is empty.

When you click a check box with the primary mouse button, either in the check box or on its label, the check box is selected and its state is toggled. When you press the mouse button, the input focus moves to the control and the check box displays its pressed appearance. Like option buttons and other controls, if you move the pointer off the check box or its label while pressing the mouse button, the control's appearance returns to its original state and retains the input focus. The state of the check box does not change until the mouse button is released.

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Documentation Conventions

Certain conventions are used within the documentation to make it easier to use:

- Commands, tools, and selections are displayed in **bold** typeface. For example, click **OK**.
- Menu and submenu commands are separated by the greater-than (>) sign. For example, **File > Open**.
- Specific keystrokes are represented in capitals. For example, DELETE.
- Instructions are displayed as numbered steps.
- Related section headings are displayed in *italic* typeface if the section is within the current Help topic.
- Related section headings are linked (underlined), to the appropriate section if it is located in another Help topic.
- Where the word 'the application' is mentioned, the content relates to the application that you are using.
- Where the word 'image' is mentioned, the content relates specifically to a 2D representation.
- Where the word 'scene', 'model', or 'object' is mentioned, the content relates specifically to a 3D representation.
- Where words are displayed within square brackets [ ], substitute the relevant text for the described action.
- Where the plus (+) and minus (-) keys are mentioned, they relate to the number pad and not the QWERTY section of the keyboard.
- Where modules are mentioned, the term refers to products for which modules may be purchased.

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Using the Reference Online

This reference gives you information about every aspect of the software. Each topic contains an overview discussion followed by a 'Procedures' section with steps for using a command or feature, and sometimes an 'Interface' section detailing controls and parameters for the user interface.

Interface

Topic Overview—Tells you the name of the feature, command, user interface control, or concept, and gives you a description.

Procedures—Contains steps for tasks that illustrate the typical use of the feature.

Interface—Describes the controls for this feature as they appear in the user interface, with a description of their behaviors and settings.

Finding Information Fast

The online information system (Help User Reference) is a compiled HTML Help file and is viewed using the HTML Help Viewer. This section explains how to retrieve information quickly. Detailed information on using the HTML Help Viewer is explained later in this document.

Use the Navigation pane in the Help Window to get to information quickly. The pane comprises the Contents, Index and Search tabs that let you use search techniques for finding the information you need.

Contents Tab

The Contents tab displays the main sections of this online system as book icons. When you click a book, it expands to show the list of topics contained within it, like chapters in hard-copy books.

If a book is expanded already, clicking on it collapses the topics.

Index Tab

The Index is an alphabetical listing of keywords found in each topic.

Keywords may be linked to more than one topic. You can also type the first few letters of a subject, the whole word or a number of words for which to search.

Search Tab

The Search tab summons a full-text search engine that operates on a database of every word in the reference, created when the HTML Help system was compiled. You can use tools on the Search tab to find the Help topics containing any word or phrase.

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Procedures

To go to a topic from the Contents tab:

1. Click the Contents tab to display the table of contents.
2. Click the book icon representing the area for which you want information. The page icons for the book expand below representing all the topics for the book's feature area.
3. Click the page icon for the topic you want.

To go to a topic from the Index tab:

1. Click the Index tab to display the Help Index.
2. Do one of the following:
   - Double-click the keywords for which you want to to find information. The topic is displayed in the right pane. The topic is displayed in the right pane.
   - Type the subject you want to find in the 'Type in the keyword to find' field and press ENTER. The topic is either displayed in the right pane or, if a topic list is displayed, click the topic you require and click **Display**.

Using the HTML Help Viewer

This online information system is a compiled HTML Help (.chm) file; you view it using the HTML Help Viewer. The HTML Help Viewer is a two-pane window and a toolbar:

- The Navigation pane is on the left side of the window. It contains three navigational tabs, for Contents, Index and Search.
- The Topic pane is on the right side of the window. It displays the selected or default Help topic and is the pane from which you are reading right now.
- The Help Viewer toolbar comprises tools from which you can choose to help you use the Help Viewer and search for information.

Following are some tips on how to find more information when using the HTML Help Viewer:

- To link to another topic or a list of other topics, click the colored, underlined words in the Topic pane.
- Right-click the Contents tab or the Topic pane for shortcut menu commands.

Note: Most of information about using the HTML Help Viewer has been supplied directly by Microsoft. It has been made freely available for inclusion in HTML Help projects such as this one. This information has been edited and reformatted to match that of the other online information system delivered with this product.

Procedures

To find a Help topic:

1. In the Navigation pane, do one of the following:
   - Click the Contents tab to browse through a table of contents.
   - Click the Index tab, and then type a word or scroll through the list to see a list of index entries.

     Note: Topics are often indexed under more than one entry.

   - Click the Search tab, and then type the word to locate every occurrence of a word or phrase that may be contained in a Help file.
2. Click the contents entry, index entry, or search results entry to display the corresponding topic.

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To see where the current topic fits in the table of contents:

While viewing the Index and Search tabs, press ALT+C. The Contents pane is displayed with the current topic highlighted.

To copy a Help topic:

1. Right-click in the pane of the topic you want to copy, and then click **Select All**.
2. Right-click again, and then click **Copy**.
3. Paste the copied topic into the document you require.

To copy only part of a topic:

Select the text you want to copy, right-click, and then click **Copy**.

To print the current Help topic, do one of the following:

- Click the **Print** button on the toolbar, select the print options you require, and then click **OK**.
- Choose **Options > Print** on the toolbar, select the print options you require, and click **OK**.
- Right-click a topic in the Topic pane and then click **Print** twice.
- Right-click a topic name on the Contents tab, click **Print**, select the print options you require, and then click **OK**.

To hide or show the Navigation pane:

On the toolbar, click **Hide** or **Show** to close or display the Navigation pane.

If you close the Help Viewer with the Navigation pane hidden, it is remains hidden when you next open the Help.

HTML Help Viewer Toolbar

File > Help
Keyboard F1



The Help Viewer toolbar contains a number of useful tools including print, refresh, and highlighting functionality.

Interface

Hide / Show 

—Hides or shows the Navigation pane.

Back 

—Moves to the previously viewed topic.

Print 

—Prints the current topic if the Topic pane is active. If the table of contents is active on the Navigation pane, you can choose to print the current topic, or the topic and its subtopics.

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Options 

—Used to display the 'options' menu and modify the viewing settings.

- **Hide/Show Tabs**—Hides or shows the Navigation pane.
- **Back**—Moves to the previously viewed topic.
- **Forward**—Moves to the topic viewed after the previously viewed topic.
- **Home**—Displays the main topic of this online system.
- **Stop**—Halts the display of a topic.
- **Refresh**—Refreshes the Help display.
- **Internet Options**—Opens the Internet Options dialog and is used to modify browser settings. We recommend not using this command.
- **Print**—Prints the current topic if the Topic pane is active. If the table of contents is active on the Navigation pane, you can choose to print the current topic, or the topic and its subtopics.
- **Search Highlight On/Off**—Toggles highlighting on and off for each occurrence of a word or phrase found with a search.

Searching for Help Topics

A basic search consists of the word or phrase you want to find. You can use Boolean, wildcard, and nested expressions. You can also limit the search to previous results, match similar words, or search topic titles only to further define your search.

The basic rules for formulating queries are:

- Searches are not case-sensitive, so you can type your search in uppercase or lowercase characters.
- You may search for any combination of letters (a through z) and numbers (0 through 9).
- Punctuation marks such as the period, colon, semicolon, comma, and hyphen are ignored during a search.
- Group the elements of your search using double quotes or parentheses to set apart each element. You cannot search for quotation marks.

Note: If you are searching for a file name with an extension, you should group the entire string in double quotes, ("filename.ext"). Otherwise, the period breaks the file name into two separate terms and, as the default operation between terms is AND, the logical equivalent to "filename AND ext." is created.

Searching for Words or Phrases: Using Wildcards

You can search for words or phrases and use wildcard expressions. Wildcard expressions allow you to search for one or more characters using a question mark or asterisk.

You can select the Match Similar Words check box to include minor grammatical variations for the phrase you search.

The table below describes the results of these different kinds of searches.

Search for	Example	Results
A single word	select	Topics that contain the word, 'select'. Note that grammatical variations, such as 'selector' and 'selection' are also found.
A phrase	"new operation" or new operation	Topics that contain the literal phrase 'new operation' and all its grammatical variations. Without the quotation marks, the query is equivalent to specifying "new AND operation", which finds topics containing both of the individual words instead of the phrase.
Wildcard expressions	esc* or 80?86	Topics that contain the terms 'ESC', 'escape', 'escalation', and so on. The asterisk cannot be the only character in the term. Topics that contain the terms '80186', '80286', '80386', and so on. The question mark cannot be the only character in the term.

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Defining Search Terms: Using Boolean Expressions

The AND, OR, NEAR and NOT operators enable you to precisely define your search by creating a relationship between search terms. The following table shows how you can use each of these operators. If no operator is specified, AND is used. For example, the query "spacing border printing" is equivalent to "spacing AND border AND printing".

Search for	Example	Results
Both terms in the same topic.	operation AND parameter	Topics containing both the words 'operation' and 'parameter'.
Either term in a topic.	operation OR parameter	Topics containing either the word 'operation', or the word 'parameter' or both.
The first term without the second term.	operation NOT parameter	Topics containing the word 'operation', but not the word parameter.
Both terms in the same topic, close together.	operation NEAR parameter	Topics containing the word 'operation' within eight words of the word 'parameter'.

Note: The |, &, and ! characters do not work as Boolean operators (you must use OR, AND, and NOT).

Using Nested Expressions

Nested expressions allow you to create complex searches for information. For example, "XML AND ((operation OR parameter) NEAR configuration)" finds topics containing the word 'XML' along with the words 'operation' and 'configuration' close together, or containing 'XML' along with the words 'parameter' and 'configuration' close together.

The basic rules for searching Help topics using nested expressions are:

- You can use parentheses to nest expressions within a query. The expressions in parentheses are evaluated before the rest of the query.
- If a query does not contain a nested expression, it is evaluated from left to right. For example. "XML not operation OR parameter" finds topics containing the word 'XML' without the word 'operation', or topics containing the word 'parameter'. On the other hand, "XML not (operation OR parameter)" finds topics containing the word 'XML' without either of the words 'operation' or 'parameter'.
- You cannot nest expressions more than five levels deep.

If you search for words within the HTML files, all HTML topic files are searched, including any that are not listed in the table of contents.

If you search for words that are similar to your search term, you can include minor grammatical variations for the phrase you search. For example, a search on the word 'add' finds 'add', 'adds', and 'added'. This feature only locates variations of the word with common suffixes. For example, a search on the word 'add' finds 'added', but not 'additive'.

If you search only the last group of topics you searched, you can narrow a search that results in too many topics found. You can also search through your results list from a previous search.

When searching for words in Help topics, you can have each occurrence of the word or phrase highlighted in the topics that are found. If you are viewing a long topic, only the first 500 instances of a search word or phrase are highlighted.

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Procedures

To go to a topic from the Search tab:

1. Click the Search tab, and then type the word or phrase you want to find.
2. Click the 'Boolean' button to the right of the text field, and then one of the operator names to add Boolean operators to your search.
3. If required, do one of the following:
   - To define a search precisely, use a wildcard expression, nested expression, and Boolean operators.
   - To request similar word matches, search only the topic titles or search the results of a previous search.
4. Click **List Topics**, choose the topic you want, and then click **Display**.

Note: To sort the topic list alphabetically, click the Title column heading.

To search for words in the titles of HTML files:

1. Click the Search tab, type the word or phrase you want to find.
2. Select the Search titles only check box.
3. Click **List Topics**, choose the topic you want, and then click **Display**.

To find words similar to your search term:

1. Click the Search tab, type the word or phrase you want to find.
2. Select the Match similar words check box.
3. Click **List Topics**, choose the topic you want, and then click **Display**.

To search only the last group of topics you searched:

1. On the Search tab, select the Search previous results check box.
2. Click **List Topics**, choose the topic you want, and then click **Display**.

Note: If you want to search through all of the files in a Help system, this check box must be off. If you previously used this feature, the Search tab opens with this check box turned on.

To repeat an earlier search:

Click the down arrow on the text-entry field, select a previously used search string, and then click **List Topics**.

To highlight words in searched topics:

Choose **Options > Search Highlight On** on the Help Viewer toolbar.

To turn highlighting off:

Choose **Options > Search Highlight Off** on the Help Viewer toolbar.

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Keyboard Shortcuts: Help Viewer

The following keyboard shortcuts can be used for navigation in the Help Viewer.

Action	Keyboard Shortcut
Close the Help Viewer	ALT+F4
Switch between the Help Viewer and other open windows	ALT+TAB
Display the Options menu	ALT+O
Hide or show the Navigation pane	ALT+O and then press T
Print a topic	ALT+O and then press P Right-click in the Topic pane and click Print
Move back to the previous topic	ALT+LEFT ARROW ALT+O, and then press B
Move forward to the next topic if you have just viewed it	ALT+RIGHT ARROW ALT+O, and then press F
Turn on or off search highlighting	ALT+O and then press O
Return to the home page	ALT+O and then press H
Switch between the Navigation and Topic panes	F6
Scroll through a topic	UP ARROW and DOWN ARROW PAGE UP and PAGE DOWN
Scroll through all the links in a topic	TAB

Contents Tab

The following keyboard shortcuts can be used for navigation in the Contents tab of the Help Viewer.

Action	Keyboard Shortcut
Display the Contents tab Note: Use this shortcut to see where a topic fits in the table of contents.	ALT+C
Open and close a book/folder	PLUS SIGN and MINUS SIGN LEFT ARROW and RIGHT ARROW
Choose a topic	DOWN ARROW and UP ARROW
Display the selected topic	ENTER

Index Tab

The following keyboard shortcuts can be used for navigation in the Index tab of the Help Viewer.

Action	Keyboard Shortcut
Display the Index tab	ALT+N
Type a keyword for which to search	ALT+W and then type the word
Choose a keyword in the list	UP ARROW and DOWN ARROW
Display the associated topic	ALT+D

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Search Tab

The following keyboard shortcuts can be used for navigation in the Search tab of the Help Viewer.

Action	Keyboard Shortcut
Display the Search tab	ALT+S
Type a keyword for which to search	ALT+W and then type the word
Start a search	ALT+L
Choose a topic in the results list	ALT+T and then UP ARROW and DOWN ARROW
Display the selected topic	ALT+D
Search for a keyword in the result list of a prior search	ALT+U and press ENTER
Search for words similar to the keyword. For example, to find words like 'running' and 'runs' for the keyword 'run'.	ALT+M and press ENTER
Search through topic titles only	ALT+R and press ENTER

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Support

Online

Our online support page contains technical support information relating to all of the Right Hemisphere products. It provides access to the latest patch releases, tutorials, links to the registration pages, and the Right Hemisphere Forum including newsletters, FAQs, and tips and tricks.

Please take the time to check the support page (http://www.righthemisphere.com/support/contact_support.php) if you have any queries **before** sending us an email, in particular, you should check the Knowledgebase http://www.righthemisphere.com/support/kb/. It is most likely that the answer is right there!

Registration and Activation

If you require assistance with registration or activation, please contact us using our support form (http://www.righthemisphere.com/support/contact_support.php).

Help

The application User Reference is accessed from the product menu and, depending on the product you are using, by pressing F1. It contains detailed information about all the product features and capabilities and includes guides to the program controls.

Silver Support

Right Hemisphere Client Customers who purchase the Silver Support Plan will get high priority & fast resolution to the technical queries. In addition to the complimentary technical support, we provide the following supplementary technical support:

- Direct response to technical queries within one business day
- Support Availability Monday through Friday 11AM - 6 PM EST
- Direct contact with our customer support personnel via e-mail AND telephone
- Software Upgrades - 50% off Retail
- BETA Program Participation

To learn more about the Silver Support Plan, please see the Silver support http://www.righthemisphere.com/support/support_overview.html page on our website.

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Updating

Menu bar > Help > Internet Update

Deep Publish can be updated in a number of different ways:

- Scheduled automatic updates via Deep Publish's Help menu. This method uses Right Hemisphere's Cortex utility (http://www.righthemisphere.com/support/help/cortex/cortex_readme.htm), which is installed by default when Deep Publish is installed.
- User-triggered automatic updates from within the Cortex utility.
- Manual download and copy of files via the Patches section (http://www.righthemisphere.com/support/register/all_reg2.php?ara=1) of the Right Hemisphere Web site. This method should be used if you do not have an Internet connection.

Below, we describe the process of updating files from within Deep Publish. Please see your Cortex Help documentation for further information.

Cortex Updates

By default, Cortex automatically checks for new plugins every two weeks. However, you can specify the frequency by which the plugins are updated using the Update dialog. For example, you can set Cortex to update Deep Publish every month or every week.

You are advised if there are new files, and from there you can either immediately update Deep Publish or ignore the updates until you are ready. You can also manually check for updates at any time.

Note: You must have an Internet connection to be advised of the latest updates. If you do not have a connection, you can subscribe for the latest technical bulletin (http://www.righthemisphere.com/support/newsletter/index.php) to be advised of the updates.

During the update process, Cortex compares the current files (located in Deep Publish's installation folder), with the latest file versions (located on the Right Hemisphere Web site). Note that if a new version of Cortex is available, it must be updated before plugins or modules are updated.

Scheduled updates are performed after Deep Publish is started and the specified time interval has elapsed. They can be disabled from within Cortex or when Cortex is checking for updates.

If a new version of Cortex is available, it must be updated before plugins or modules are updated.

When updating, any new files that are found are downloaded in a compressed format. They are then decompressed and copied to Deep Publish's folder. You can change the location where Cortex looks for updates from with the Cortex utility. For example, a local update server.

Certain folder 'write' permissions are required to update plugins. When Deep Publish is installed, a user group is created for it that has 'write' permissions to the Deep Publish's plugin folder and to Cortex's root folder. If you want to update Deep Publish, you must belong to that application user group.

Note: Certain user groups already have the required permission to update Deep Publish. For example, Administrators and Power Users.

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File Updates

Procedures

To manually update files in Office applications:

1. Start PowerPoint, Word, or Excel.
2. Choose **Deep Publish > Internet Update** on the menu bar.
3. Do one of the following:
   - Click **Yes** to continue the update process.
   - Click **Help** to display a list of the files that are available to update, click **OK**, and then click **Yes**.
   - Click **Settings** to modify the time of the next update.

   Note: The dialog displays the size of the update that will be downloaded. You can exit the update process by clicking No.
4. Click **OK**, and restart Deep Publish.
5. Do one of the following:
   - Close Deep Publish and then click **Retry** to install the updated files.

     Note: If you choose to cancel the installation, this dialog is displayed every time you start Deep Publish until you install the updated files.
   - Click **Help** to display a list of all files that were not updated, click **OK**, and then click **Retry**.

To manually update files in FrameMaker:

1. Start FrameMaker.
2. Do one of the following:
   - Insert a file (on page 29) into a FrameMaker document.
   - Open a document which contains content created with Deep Publish, and then double-click the content.
3. Right-click in the viewport and click **Internet Update**.
4. Do one of the following:
   - Click **Yes** to continue the update process.
   - Click **Help** to display a list of the files that are available to update, click **OK**, and then click **Yes**.
   - Click **Settings** to modify the time of the next update.

   Note: The dialog displays the size of the update that will be downloaded. You can exit the update process by clicking No.
5. Do one of the following:
   - Close Deep Publish and then click **Retry** to install the updated files.

     Note: If you choose to cancel the installation, this dialog is displayed every time you start Deep Publish until you install the updated files.
   - Click **Help** to display a list of all files that were not updated, click **OK**, and then click **Retry**.

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Deep Publish Overview

Deep Publish is designed to work seamlessly with PowerPoint, Word, FrameMaker, Excel and Deep Server Web as an authoring tool of 3D models that can be used for presentations, training material, technical documentation, and online catalogues.

Deep Server Web is an easy-to-use Web site tool to search for, view, manage and utilize 2D, 3D, and CAD assets by various attributes including managing by metadata. It enables the efficient management of visual information to improve processes and workflows, and enables your organization, customers, and partners to work together on a unified visual information system, anytime and anywhere.

When Deep Publish is installed, the core functionality for Deep Publish creates the Deep Publish menu (on page 77) in the Office applications to allow viewing of 3D files.

Deep Publish supports a variety of 2D (on page 119) and 3D file formats (on page 120).

Right Hemisphere's Deep View, which uses the same control technology, lets you view 3D content created with Deep Publish. It is free for download from Right Hemisphere (http://www.righthemisphere.com/deepview).

Some of the numerous features of Deep Publish include:

- Linking and embedding files.
- Resizing and moving images and models.
- Converting files to 3D PDF.
- Adding markups to images and scenes.
- Adding measurements to scenes.
- Viewing steps and model views.

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Getting Started with Deep Publish

This section is designed to help you get started with Deep Publish.

When Deep Publish is installed in Office applications, the Deep Publish menu (on page 77) is created in PowerPoint, Word, and Excel. When Deep Publish is installed in FrameMaker, a '3D Model' option is created in the Insert Object dialog in the Insert > Object menu. These menus are used to perform certain Deep Publish functions including inserting 3D models. Various other Deep Publish functions are found in the right-click menus (on page 103).

A folder called 'My 3D Models' is also created as a part of the installation process and can be used to store your 3D models.

Display Renderer

When you first insert a file into a document (on page 28), the Default Render Mode dialog displays a list of the available display renderers for the graphics card that is installed on your computer. The display renderer determines how scenes are rendered while you work, and the best renderer for your graphics card is automatically detected as the default.

We recommend using the default renderer. However, you can modify it (on page 105) at a later date if required.

Procedures

To start Deep Publish, do one of the following:

- Open PowerPoint, Word, Excel, or FrameMaker.
- Open a document with Internet Explorer from within Deep Server Web.

You can now begin using Deep Publish (on page 27).

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Using Deep Publish

Once you have started Deep Publish, you can establish your settings, insert 2D and 3D files into documents, and then edit the images or models.

This section presents these topics, designed to help you use and understand Deep Publish. It also introduces you to the Deep Publish terminology and some essential features.

The User Interface (on page 76) section presents the program controls and shows you where to find them.

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Inserting Files

2D and 3D files can be inserted into PowerPoint spreadsheets, Word documents, FrameMaker documents, and Excel spreadsheets.

Files are inserted into documents in one of two 'working modes (on page 30)'. The mode in which a file is inserted depends on the type of application you are using. For FrameMaker and Excel, the file is inserted in the Interactive mode which is optimized for viewing. For PowerPoint and Word, the file is inserted in the Image mode with the 'active area' determined by 'controls'.

The active area refers to the entire scene in both Image and Interactive mode. When files are first inserted into PowerPoint, Word, FrameMaker, or Excel, you may need to resize the active area (on page 36) to display the entire Scene Tree.

If you are using Deep Exploration CAD Edition or the Standard Edition and the CAD modules, CAD files should be saved as .rh files before being inserted or dragged into Office documents.

Note: If you are using Deep Server Web or the Gateway Module, you must ensure the content is downloaded before inserting. Please see the Deep Exploration User Reference (Start > Programs > Right Hemisphere > Deep Exploration > Help) or the Deep Server Web User Reference (Deep Server Web > Help) for further information.

Inserting Files in Office

Menu bar > Deep Publish > Insert 3D Model
Drag a file into a Word document
Drag a file into a PowerPoint presentation

2D and 3D files can be inserted into documents in two different ways:

- Using the 'Insert 3D Model' Deep Publish menu (on page 77) command in Windows applications.
- By dragging a file from Windows Explorer or Right Hemisphere's Deep Exploration into an open document in Windows applications.

Inserting files using the menu command gives you the option of either linking, embedding, or linking and embedding (on page 30) the file. Dragging files links and embeds the file by default.

Insertion Rules

The following rules apply:

- Files cannot be inserted into text boxes in PowerPoint or Word.
- Only file types that are selected for drag and drop in the configuration settings (on page 72) can be dragged into Office applications.
- Dragging is unavailable in Excel.
- Linking, and linking and embedding is unavailable for 2D images in PowerPoint.
- Dragged 2D images are inserted as standard Windows images; double-click to access the 3D viewport right-click menu (on page 103).

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Procedures

To insert a file into a document:

1. Open a new or existing PowerPoint presentation, Word document, or Excel spreadsheet.
2. Choose **Deep Publish > Insert 3D Model**.
3. Select a file.
4. Do one of the following:
   - Click **Link** to link the source file to the image/model in the destination document.
   - Click **Embed** to place a copy of the source file directly in the destination document.
   - Click **Link&Embed** to link the source file to the image/model in the destination document.
5. Click **Open**.
6. If you are inserting a file for the first time, click **OK** in the Default Rendering Mode dialog to select the automatically detected renderer (on page 26) as the default.

Note: You can modify the default default renderer (on page 104) at a later date if required.

To drag a file into a document:

1. Open a new or existing PowerPoint presentation or Word document.
2. Drag a file from Windows Explorer, Deep Exploration, or Gateway into the current document.
3. Save the document in the usual way for the application you are using.

Inserting Files in FrameMaker

Menu bar > File > Import > Object > 3D Model

2D and 3D files can be inserted into FrameMaker documents, as either linked, embedded, or linked and embedded (on page 30). Files are inserted into documents in the Interactive mode; optimized for viewing.

Note: You cannot drag files into FrameMaker.

Procedures

To insert a file into a FrameMaker document:

1. Open a new or existing document.
2. Choose **File > Import > Object**.
3. Select **3D Model** and click **OK**.
4. Navigate to and select a file.
5. Do one of the following:
   - Click **Link** to link the source file to the image/model in the destination document.
   - Click **Embed** to place a copy of the source file directly in the destination document.
   - Click **Link&Embed** to link the source file to the image/model in the destination document.
6. Click **Open.**

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7. If you are inserting a file for the first time, click **OK** in the Default Rendering Mode dialog to select the automatically detected renderer (on page 26) as the default.

Note: You can modify the default default renderer (on page 104) at a later date if required.

Linking and Embedding Files

Deep Publish linking and embedding files is generally consistent with linking and embedding files within Office applications.

Linking

When a file is inserted as linked, it references a source file that resides outside of the document in which the file is inserted - the destination document.

If the source file is modified, the changes are reflected in the destination document as long as the link is maintained. This is useful when file size is a consideration or when you want to include information that is maintained independently.

If the link is broken, the image/model is not displayed in the destination document. Additionally, the original camera view of the model is displayed each time the document is opened.

Embedding

Embedding places a copy of the source file directly in the destination document.

If the source file is modified, the file is not updated in the destination document. This is useful when you want to distribute a version of the document to people who don't have access to the independently maintained source file.

Linking and Embedding

The Link&Embed option offers a combination of linking and embedding when inserting files into documents.

The image/model is updated as the source file changes. However if the link is broken, the file still displays in the destination document.

Working Modes

Two modes are used to work with 2D images and 3D models once a file is inserted into a document:

- **Image mode:** Presents a 2D representation which can be moved and resized using controls. The Scene Tree and the toolbars are not displayed in Image mode.

  Note: You cannot move images in Word documents.

- **Interactive mode:** Presents a 3D representation which can be rotated, panned, scaled, or zoomed (on page 39). The 3D viewport menu (on page 103), Drawing and Markup toolbar (on page 90), and Animation toolbar (on page 99), can be used to control scene settings, objects, materials, and animation.

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Procedures

To switch to Image mode:

- If you are using PowerPoint, Word, FrameMaker, or Excel, right-click over the scene and click **Image Mode**.
- If you are using PowerPoint, double-click outside the active area.

To switch to Interactive mode, do one of the following:

- If you are using PowerPoint, Word, or Excel, right-click over the image and click **Interactive Mode**.

  Note: You can also select 3D Model Object > Edit to switch to Interactive mode.

- If you are using PowerPoint, Word, or FrameMaker, double-click inside the active area.
- If you are using FrameMaker, right-click over the image and click **Edit 3D Model Object**.

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Downloading Files and Internet Shortcuts

You can download 2D and 3D files and Internet shortcuts via the Deep Server Web site (http://www.righthemisphere.com/products/dserv/index.htm), if you have one installed. These files and shortcuts can then be inserted (on page 28) into PowerPoint, Word, FrameMaker, and Excel documents.

Deep Server Web is an easy-to-use Web site tool to search for, view, manage and utilize 2D, 3D, and CAD assets by various attributes including managing by metadata from a single Web page. You can then create and view 2D and 3D derivatives.

Files and shortcuts are downloaded to sub-folders that are named according to the asset's assigned project, assigned category, asset name, and asset ID. By default, these sub-folders are created in the 'My 3D Models' folder. However, you can choose alternate folder locations as required. For example, downloaded files are placed in the C:\Documents and Settings\[user name]\My Documents\My 3D Models\[project name]\[category]\[asset name_asset ID] folder.

Note: If the 'My 3D Models' folder does not currently exist, one is created in the 'My Documents' folder.

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Inserting Internet Shortcuts

Office Menu bar > Deep Publish > Insert Deep Server Link
FrameMaker Menu bar > File > Import > Object > 3D Model

2D and 3D files can be inserted into FrameMaker and Office by inserting an Internet shortcut. An Internet shortcut references a source file that resides in Deep Server. The file in which the Internet shortcut is inserted, is known as the destination document. When you insert a Internet shortcut into the destination document, either the image of the 2D source document, or the model of the 3D source document is displayed.

Only certain files can be downloaded (on page 32) as an Internet shortcut. See the Deep Server Web Help Reference for details.

Insertion Rules

The following rules apply:

- Dragging is unavailable in PowerPoint, Word, FrameMaker, and Excel.
- Embedding is unavailable in Excel.
- Linking, and linking and embedding is unavailable for Internet shortcuts to 2D content in PowerPoint.

Procedure

To insert an Internet shortcut into an Office document:

1. Open a new or existing PowerPoint presentation, Word document, or Excel spreadsheet.
2. Choose **Deep Publish > Insert Deep Server Link** and navigate to and select the Internet shortcut to insert.
3. Do one of the following:
   - Click **Link** to link the source file to the image/model in the destination document.
   - Click **Embed** to place a copy of the image/model directly in the destination document.
   - Click **Link&Embed** to link the source file to the image/model in the destination document.
4. Click **Open**.

To insert an Internet shortcut into a FrameMaker document:

1. Open a new or existing document.
2. Choose **File > Import > Object.**
3. Select **3D Model** and click **OK**.
4. Navigate to and select an Internet shortcut.
5. Do one of the following:
   - Click **Link** to link the source file to the image/model in the destination document.
   - Click **Embed** to place a copy of the image/model directly in the destination document.
   - Click **Link&Embed** to link the source file to the image/model in the destination document.
6. Click **Open.**

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Updating Internet Shortcuts in Office

Menu bar > Edit > Links

Internet shortcuts are dynamic, in that they are linked to the most recent version of that file. Linking and embedding Internet shortcuts is generally consistent with linking and embedding files within Office applications.

Linking

An Internet shortcut references a source file that resides outside of the document in which the file is inserted - the destination document.

If the source file is modified, the changes are reflected in the destination document as long as the link is maintained. This is useful when file size is a consideration or when you want to include information that is maintained independently.

If the link is broken, the image/model is not displayed in the destination document.

Embedding

Embedding places a copy of the Internet shortcut directly in the destination document.

If the source file is modified, the content is not updated in the destination document. This is useful when you want to distribute a version of the document to people who don't have access to the independently maintained source file.

Linking and Embedding

The Link&Embed option offers a combination of linking and embedding when inserting an Internet shortcut into documents.

If the link is broken, the image/model still displays in the destination document.

Procedures

To update linked Internet shortcuts:

Open an existing PowerPoint presentation, Word document, or Excel spreadsheet. The images/models are automatically updated. You can then save the document in the usual way for the application that you are using.

To update linked and embedded Internet shortcuts in Word:

1. Open an existing Word document.
2. Choose **Menu bar > Edit > Links**.
3. Select the Internet shortcut to update.
4. Click **Update Now**.
5. Save the document in the usual way for the application that you are using.

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Updating Internet Shortcuts in FrameMaker

Internet shortcuts are dynamic, in that they are linked to the most recent version of that file.

Linking

An Internet shortcut references a source file that resides outside of the document in which the file is inserted - the destination document.

If the source file is modified, the changes are reflected in the destination document as long as the link is maintained. This is useful when file size is a consideration or when you want to include information that is maintained independently.

If the link is broken, the image/model is not displayed in the destination document.

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Linking and Embedding

The Link&Embed option offers a combination of linking and embedding when inserting an Internet shortcut into documents.

If the link is broken, the image/model is still displayed in the destination document.

Procedure

To update Internet shortcuts:

Open an existing FrameMaker document. The images/models are automatically updated. You can then save the document in the usual way for the application that you are using.

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Editing the Active Area

After creating content, you can move and resize the active area. Active area refers to the entire scene.

Active Area in Office

The active area is moved and resized in Image mode; images are moved and resized within the document using the controls that appear when the image is selected. These procedures conform to the Windows conventions for moving and resizing images. In Interactive mode, models are moved and resized within the scene (on page 39).

Note: You cannot move images within a Word document when they are displayed in the default 'In line with text' text wrapping style. Please see your Word documentation for further information.

Procedures

To move the active area in Image mode:

In PowerPoint or Excel, select the image and drag it to it to its new location in the document.

To resize the active area in Image mode:

Position mouse pointer over one of the sizing controls, drag mouse away from or toward the center.

- To keep the center of an object in the same place, hold down CTRL while dragging the mouse.
- To maintain the object's proportions, hold down SHIFT while dragging the mouse.
- To maintain the proportions while keeping the center in the same place, hold down CTRL and SHIFT while dragging the mouse.

Active Area in FrameMaker

The active area is moved and resized in either Image or Interactive mode. Models are moved and resized within the scene (on page 39) in Interactive mode only.

The active area is moved and resized within the document using the controls that appear when the image is selected. These procedures conform to the Windows conventions for moving and resizing images.

Note: Refer to the Adobe FrameMaker Help for further information on moving and resizing anchored frames.

Procedures

To move the active area:

- Relocate the anchored frame to the new anchoring position in the document. The active area moves with the anchored frame.
- Select the active area and drag it to the new position within the anchored frame. If the anchored frame covers any part of the image, the image is cropped and the frame must be resized.

  Important Note: We recommend not moving the active area out of the anchored frame.

To resize the active area:

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Position the mouse pointer over one of the sizing controls, drag the mouse away from or toward the center. Note that the anchored frame should always be larger than the active area, otherwise the active area is cropped.

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Viewing Content

2D images and 3D models that are displayed in Interactive mode can be viewed in a number of different ways by using various tools. In this section we discuss using preset or user-defined views, displaying perspective, orthographic and isometric views, applying various render and lighting modes, and displaying the viewport across your monitor.

You can also:

- Rotate, scale, and pan (on page 39) the scene contents.
- Display an image across the viewport background.
- Focus the camera (on page 108) on all visible and hidden objects.

You must have either Deep Publish or Deep View (http://www.righthemisphere.com/deepview) installed on your computer to view content created with Deep Publish in 3D.

You can then open the document you want to view in the usual manner for the application you are using. For example, if you want to view a PowerPoint presentation, ensure either Deep Publish or Deep View is installed on your computer, open the PowerPoint document, and view the presentation as a slide show.

See also 3D Viewport Right-Click Menus (on page 103).

Using Viewports

The active area includes a viewport that is used to view and edit the current file. The type of viewport that is displayed depends upon the current file, current working mode, and current application.

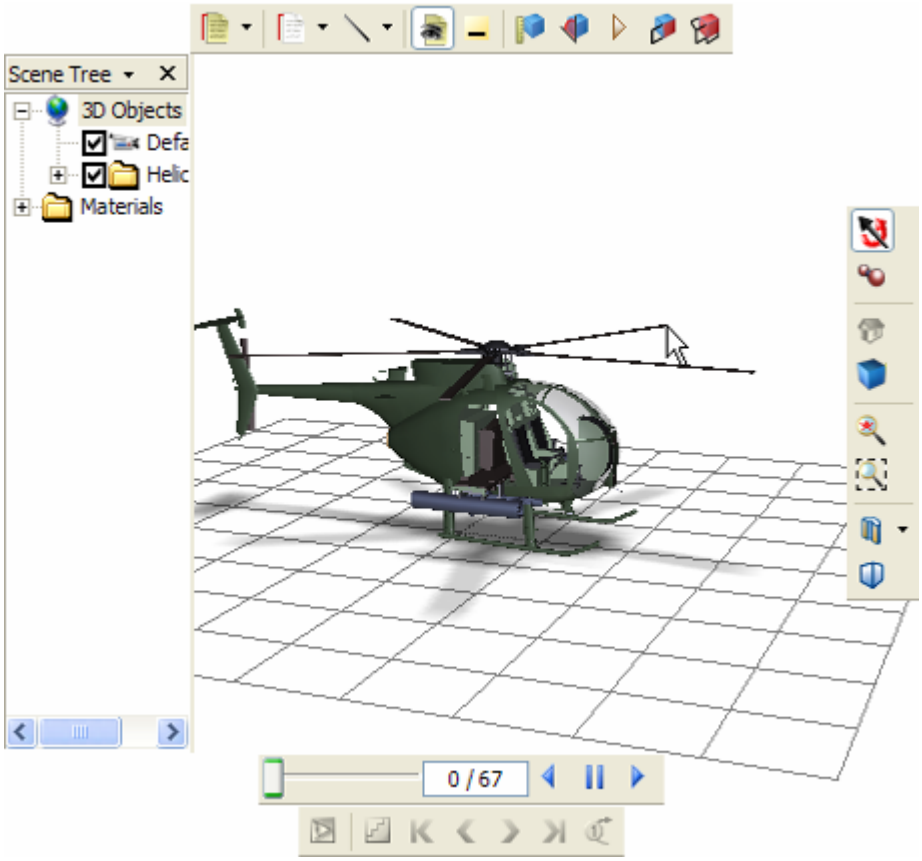
For example, 3D content displayed in Image mode in Office is seen in a 2D viewport.



2D viewport and active area

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3D content displayed in Interactive mode in Office is seen in a 3D viewport.



3D viewport showing the Active area and File Information panel

Various right-click menus (on page 103) are also available.

Navigating the Viewport

The 3D viewport can be navigated in a number of different ways.

- Rotating models.
- Rolling the camera.
- Panning scenes.
- Viewing scenes from different angles.
- Zooming in and out of scenes.
- Displaying the scene at its 'best fit' within the viewport.
- Displaying 3D scenes in their standard camera view.

Keyboard shortcuts are available for many of the 3D navigation tools (on page 114).

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Panning Scenes

Keyboard > LEFT ARROW
Keyboard > RIGHT ARROW
Left+right-click / middle-click > Drag in 3D viewport

You can pan the scene in the 3D viewport by rotating the camera 360^0 around a vertical axis. You can also view scenes from different angles, laterally or vertically, using certain mouse keys.

Procedures

To pan an image of scene:

1. Select the 3D viewport.
2. Hold down the LEFT or RIGHT ARROW.

The camera is rotated around the vertical axis.

To view a scene from a different angle:

1. Select the 3D viewport.
2. Left+right-click or middle-click and drag the image or scene around the viewport.

The camera is moved laterally or vertically.

Rotating Models

Drag model in viewport
Keyboard > SHIFT+drag in 3D viewport

You can rotate models and roll the camera in the 3D viewport. When you rotate a model, the camera moves around a point of rotation (focal point) to orbit the scene. The focal point is the center of the scene by default; however, you can change the focal point by panning, scaling, and zooming the scene. When you roll the camera, it is moved around the viewing axis.

Procedures

To rotate a model:

1. Select the 3D viewport.
2. Drag the model around the viewport.

The camera moves around the focal point and the model is rotated.

To roll a camera:

1. Select the 3D viewport.
2. Press SHIFT and drag the model around the viewport.

The camera is moved around the viewing axis.

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Zooming Scenes

Rotate IntelliMouse Wheel
Right-click > Drag in 3D viewport
Keyboard > UP/DOWN ARROWS
Keyboard > +
Keyboard > -
Keyboard > CTRL++
Keyboard > *

Zooming is used to enlarge or reduce the magnification of scenes, display them as they best fit within the viewport, and display them in their standard view.

When you zoom in on a scene, the camera angle's field of view (FOV) is narrowed to magnify scene. When you zoom out from a scene, the camera angle is widened to reduce the magnification.

You can also use the arrow keys to 'truck' the scene, in other words, move the camera into a scene to view more closely, or out from a scene to view more distantly. When trucking, the focal point is always a fixed distance from the camera.

Procedures

To zoom in on a scene:

1. Select the 3D viewport.
2. Do one of the following:
   - Rotate the IntelliMouse wheel away from you.
   - Right-click, hold down the mouse button and drag the mouse into the viewport centre.
   - Press the PLUS SIGN (+).

The scene is magnified.

To zoom out from a scene:

1. Select the 3D viewport.
2. Do one of the following:
   - Rotate the IntelliMouse wheel towards you.
   - Right-click, hold down the mouse button and drag the mouse out from the viewport centre.
   - Press the MINUS SIGN (-).

The scene magnification is reduced.

To zoom scene to the best fit:

1. Select the 3D viewport.
2. Press CTRL and the PLUS SIGN (+).

The entire scene is displayed within the viewport.

To zoom images to their standard view:

1. Select the 3D viewport.
2. Press the MULTIPLICATION SIGN (*).

The scene is displayed in standard view.

To truck into a scene:

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Hold down the UP ARROW. The camera moves into the scene.

To truck out from a scene:

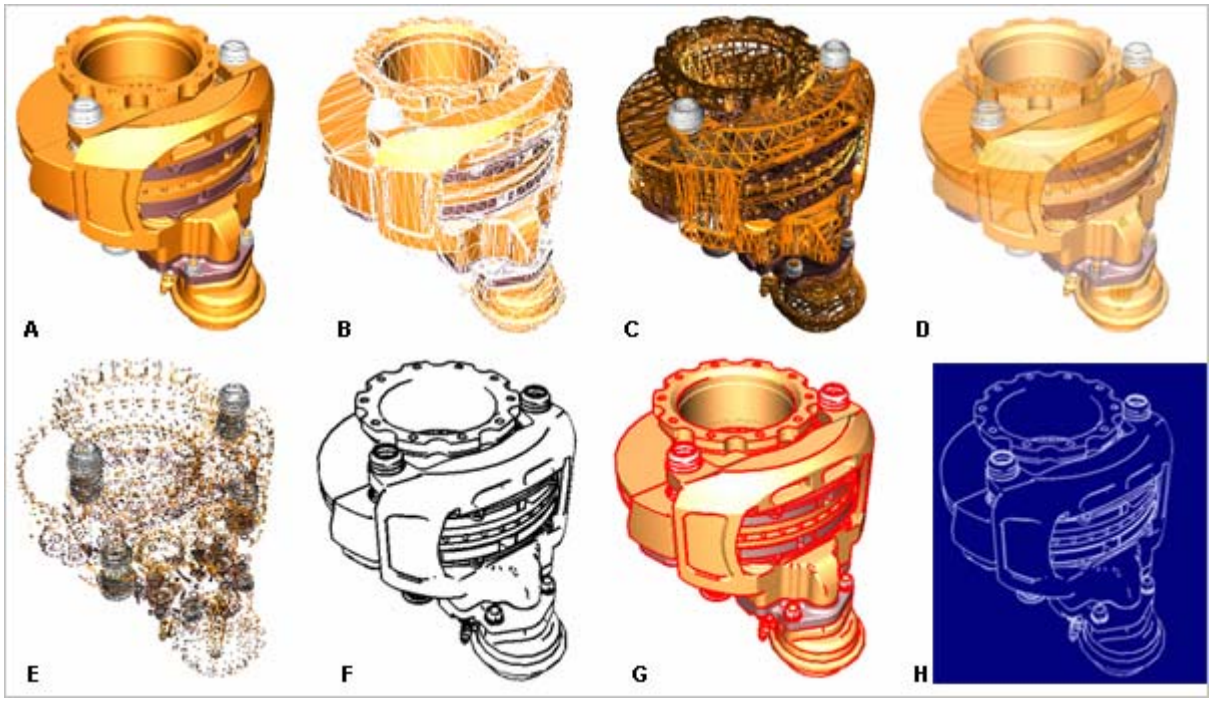
Hold down the DOWN ARROW. The camera moves out from the scene.

Render Modes

Right-click 3D viewport > Render Mode

Various render modes can be used to apply preset scene settings that manipulate a number of display elements including solid, transparent, wireframe. Employing different rendering styles can give a more realistic appearance by enhancing the clarity and three-dimensionality of a scene.

Below are some examples of the render modes.



A: Solid
B: Solid Wireframe
C: Shaded Wireframe
D: Transparent
E: Shaded Vertices
F: Line Illustration
G: Shaded Illustration
H: Blueprint (Line Illustration with modified settings)

Note: The Blueprint render mode is a customized mode created in Deep Exploration.

Various shortcuts (on page 114) are available from where to apply certain render modes. See also Render Mode menu (on page 104).

Note: The term 'wireframe' indicates that all polygon edges are shown, and the term 'outline' indicates only silhouette and crease edges are displayed. The colors of lines and vertices may be based on the object or the object's material.

Procedures

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To apply a render mode, do one of the following:

- Right-click the 3D viewport, click **Render Mode**, and then click the name of the mode you want to apply.
- Click **Model Render Mode**  on the 3D Editing toolbar, and then click the name of the mode you want to apply.

Preset Views

Right-click 3D viewport > View > Click view

A number of different preset camera views can be used to display scenes in the selected viewport:

- **Perspective** (on page 108): Perspective views most closely resemble human vision. Objects appear to recede into the distance, creating a sense of depth and space. For most 3D computer graphics, this is the view used in the final output that the client sees onscreen or on the page. This is used when an isometric is not suitable. Perspective projections are also used for location drawings.
- **Orthographic** (on page 108): Orthographic views that display the scene from the selected viewpoint. Orthographic views are a type of parallel projection used for drawing engineering blueprints and is used for accurate description of objects and their positioning. Most 3D design relies on 2D representations or 'orthographic' views, for example, maps, plans, cross-sections, and elevations. In familiar terms, you might think of these views as 'flat' or 'straight-on', or as 'looking at right angles'. Orthographic views are two-dimensional, each defined by two world coordinate axes. Combinations of these axes produce three pairs of orthographic views: top and bottom; front and back; left and right.
- **Views** (on page 108): Displays all user-defined views and various preset views including isometric, dimetric, and trimetric.
  - **Isometric**: These views have three surfaces equally foreshortened and is the most frequently used projection. It is the simplest to understand because it is based on equals and parallels. Isometric views should be viewed without perspective.
  - **Dimetric**: A dimetric view has two of the three surfaces equally foreshortened.
  - **Trimetric**: Trimetric views have all three surfaces foreshortened by a difference ratio and can be used as an alternative when an isometric view is not suitable.

These views are accessed via the right-click viewport menus (on page 103).

Viewpoints

The isometric, dimetric and trimetric menus display the following commands from which to choose a viewpoint:

- **LTF—**View the model with the selected viewpoint from the left, top, front of the scene.
- **LTA—**View the model with the selected viewpoint from the left, top, aft (back) of the scene.
- **RTA—**View the model with the selected viewpoint from the right, top, aft of the scene.
- **RTF—**View the model with the selected viewpoint from the right, top, front of the scene.
- **LBF—**View the model with the selected viewpoint from the left, bottom, front of the scene.
- **LBA—**View the model with the selected viewpoint from the left, bottom, aft of the scene.
- **RBA—**View the model with the selected viewpoint from the right, bottom, aft of the scene.
- **RBF—**View the model with the selected viewpoint from the right, bottom, front of the scene.

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Lighting Modes

Right-click 3D viewport > Lights

Various lighting modes can be used to apply preset settings for the display of the scene's lights, which imitate different kinds of real-world light sources such as the sun, office lamps, or stage and film lighting. Adding lights gives a more realistic appearance by enhancing the clarity and three-dimensionality of a scene.

A number of light settings can be applied either 'from the file', or by applying one of several lighting presets including colored lights, cube lights, and CAD optimized lights.

Note: The scene's lighting is also affected by the scene's ambient and illumination colors (on page 83).

The available lighting modes are:

- Lights from file.
- Colored Lights Red/Green.
- Colored Lights Blue/Green.
- Cube Lights.
- CAD Optimized.

When the 'Lights from file' command is selected, any lights that are visible in the Scene tree are activated and their effects seen in the viewport. This includes any lights loaded from the file, as well as any lights that have been added to the scene using the 'Create Editable Lights' function in Deep Exploration (http://www.righthemisphere.com/products/dexp/de_cad.html). If there are no lights in the Scene tree, then the current preset lighting mode is used. For example, CAD Optimized Lights.

Note that as there is always one preset lighting mode selected, selecting the 'Lights from File' command does not clear that preset mode. However, selecting a new preset mode does clear the Lights from File' command, so that the effect of the mode can be seen immediately.

Various shortcuts (on page 115) are available from where to apply certain lighting modes.

Procedures

To apply a lighting mode, do one of the following:

Right-click the 3D viewport, choose **Lights**, and then click the name of the mode you want to apply.

To increase or decrease the lighting brightness, do one of the following:

- Right-click the 3D viewport, choose **Lights**, and then click **Increase Brightness**.
- Right-click the 3D viewport, choose **Lights**, and then click **Decrease Brightness**.
- Press [to increase the brightness.
- Press] to decrease the brightness.

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Model Views

You can display user-defined views that are based on the current view of the scene. These are called 'model views' and they emulate the properties of schematic diagrams found in various types of manuals, for example, training and reference manuals. Each model view associates the current camera position and render mode.

When you display a model view, the view is created immediately with all settings from the current scene (lighting, visibility, etc.) and all the default settings (layer, camera position, active display settings).

Note: Model views are created with Deep Exploration and must be saved within the .rh version 4.0 file format.

When you display a model view:

- The viewport is set to the associated camera render mode.
- All objects that are not associated with the view become invisible.



Model view with all objects displayed / Model view with some objects hidden

Note that whenever a markup (on page 52) is added to a scene, model views, based on the current view of the scene, are created or updated. The results depend on whether existing model views exist, or whether the scene has been transformed:

- If there are no existing model views, a new model view is created that incorporates the new markup.
- If the scene has not been transformed, the existing model view incorporates the new markup. Note that you must update the model view to see the changes.
- If the scene has been transformed, a new model view is created that incorporates the new markup.

Procedure

To display a model view:

1. Click **Model Views**  in the Steps and Models Views toolbar.
2. Click the model view that you want to view.

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Display Modes

Right-click 3D viewport > Full Screen

Two display modes can be used to view either the entire application or the entire viewport across your monitor, Full-screen and Standard.

When in Full-screen display mode, the current toolbars and panels are still displayed.

Procedures

To switch to Full-screen display mode:

Right-click the 3D viewport and click **Full Screen** in Standard display mode.

To switch to Standard display mode:

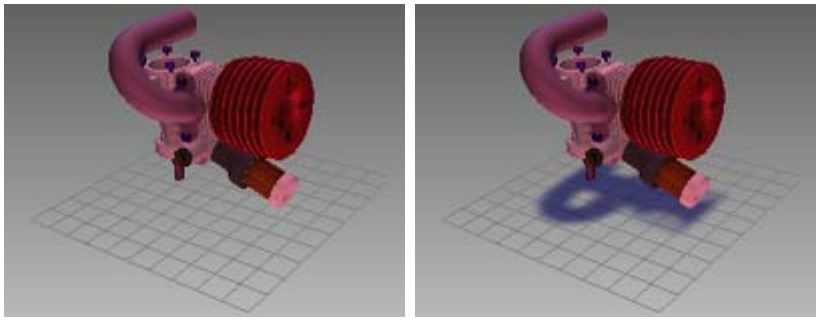
Right-click the 3D viewport and click **Full Screen** in Full Screen display mode.

Viewport Grid

Right-click 3D viewport > Show/Hide > Grid

A grid can be displayed in 3D scenes to assist with the placement of objects and images and making them easier to distinguish. When displayed in scenes, grids can be thought of as the 'floor'. This can be helpful in creating a sense of model scale, model position, and world orientation. It can be useful for marketing presentations by giving products a place in the world.

In scenes, you can also display a shadow that is projected from the model onto the grid.



Scene: Grid / Grid with shadow

Note: The time taken to refresh the scene may increase slightly if you display a grid.

Procedures

To display and hide the grid in a scene:

Right-click the 3D viewport, choose **Show / Hide**, and then click **Grid**.

If the grid was displayed, it is now hidden. If it was hidden, it is now displayed.

To display and hide the scene shadow in a scene:

Right-click the 3D viewport, choose **Show / Hide**, and then click **Shadow**.

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If the shadow was displayed, it is now hidden. If it was hidden, it is now displayed.

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Objects and Materials

Models can comprise a number of scene elements including objects and materials. The Scene Components panel displays all objects and materials in the current scene in a tree-view hierarchy.

There are a number of different object types including cameras, lights, markups, and parts. Objects can comprise of multiple sub-objects and can have materials and textures applied to them.

Objects and materials can be controlled in numerous ways including:

- Selecting (on page 48) and searching for objects.
- Modifying object visibility (on page 50).
- Highlighting objects.
- Modifying object properties (on page 83).
- Viewing materials (on page 51).
- Adding materials (on page 51) to objects.
- Modifying the default material and textures visibility (on page 51).
- Modifying the material properties (on page 85).

Object and Material Selection

Objects and materials must be selected before their properties can be modified.

This can be done in a variety of ways including manually selecting objects and materials in the Scene tree, and searching for objects by name, size, polygon count, or vertex count.

Individual, and grouped objects (both selected and unselected) can be highlighted or made transparent. This 'isolates' the objects to make it easier to distinguish them from others.

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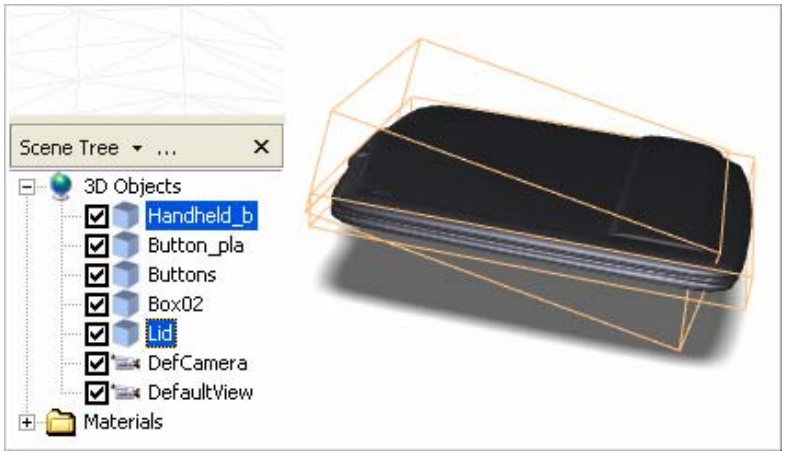
Selecting Objects

Scene Components panel > Scene tree > 3D Objects list
Scene Components panel > Select Objects (checkboxes)

Objects can be selected in a number of different ways. Here, we describe how to select objects manually using the 3D Objects list (on page 81) or from within the scene by using the Select Objects dialog to manually select objects, and by searching for objects by name, size, polygon count, or point count. We also describe how to manually clear objects from selection.

You can also select objects and clear the selection using the 3D viewport right-click menu (on page 103) and the 3D Objects list right click menu (on page 111).

When an object is selected, a bounding box outlines the object in the viewport, and the object name is highlighted in the 3D Objects list as shown below.



Multiple non-adjacent objects selected

Procedures

To manually select objects, do one of the following:

- Click the object in the 3D Objects list . Hold down SHIFT to select adjacent objects or CTRL to select non-adjacent objects and click other objects in the list.
- Open the Select Objects dialog and click the objects you want to select. Hold down SHIFT to select adjacent files and folders, or hold down CTRL to select non-adjacent files and folders and click other objects in the list.

To search for and select objects:

1. Click the search tab for the type of search you require in the Select Objects dialog.
2. Do one of the following:
   - If you are searching by name, enter the letter/s contained in the name of the objects you want to select.
   - If you are searching by size, polygon or point count, use the slider to specify the size or count for the objects you want to select.
3. Do one of the following:
   - If you are searching by name, select the Case-sensitive search check box to search for upper and lowercase characters.

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- If you are searching by size, polygon or point count, select the Invert selection check box to select the objects that are outside of the specified size or count.

To clear objects from selection, do one of the following:

- Click the selected objects in the 3D Objects list.
- Click another object in the 3D Objects list.

Selecting Materials

Scene Components panel > Scene tree > Materials tab

Materials can be selected manually using the Materials tab, or from directly within the scene. When a material is selected, the material name is highlighted in the Materials tab.

Procedure

To manually select materials, do one of the following:

- Click the material in the Materials tab.
- Press SHIFT and click the material in the scene.

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Showing and Hiding Objects

Scene Components panel > Scene tree > Select object check box
Scene Components panel > Scene tree > Clear object check box
Right-click object in Scene tree > Hide Selection/Hide Unselected/Hide All Objects
Right-click object in Scene tree > Show Selection/Show All Objects

The 3D Objects list (on page 81) check boxes and right-click menu (on page 111) can be used to show and hide objects. You can also use the 3D viewport right-click menu (on page 103) to show objects.

The Scene tree check boxes respect hierarchy if it is present. For example, clearing the highest check box in a hierarchy clears all subordinate check boxes.

Procedures

To hide objects, with the objects displayed, do one of the following:

- Clear the objects' check boxes in the 3D Objects list.
- Select the objects you want to hide, right-click over the objects in the 3D Objects list, and then click **Hide Selection** to hide all selected objects.
- Select the objects (on page 48) you want to show, right-click over the objects in the 3D Objects list, and then click **Hide Unselected** to hide all unselected objects.
- Right-click in the 3D Objects list and click **Hide All Objects** to hide all objects.

To show objects, with the objects hidden, do one of the following:

- Select the objects' check boxes in the 3D Objects list.
- Select the objects (on page 48) you want to show, right-click over the objects in the 3D Objects list, and then click **Show Selection** to show all selected objects.
- Right-click in the viewport or 3D Objects list and click **Show All Objects** to show all objects.

Materials

Scene Components panel > Materials

The materials list displays the names of the materials and the number of textures that have been applied to each material, the maps to which those textures have been applied, if the opacity had been modified, and if the UV offsets have been modified.

Procedures

To view the materials:

Open the Materials folder or the Materials list.

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Drawing and Markups

Deep Publish can be used to create and edit various kinds of markups (on page 52) which can be used to direct attention to, and identify parts of a model. The Drawing and Markup tools enable you to create and edit markups. Using these tools, you can:

- Create (on page 53) note, line, and shape markups.
- Hide markups and modify the scene colors (on page 58).
- Modify markup settings (on page 59) for the individual markup types.
- Hide and show markups (on page 58).
- Delete markups (on page 58).

The editing (on page 54) of markups can be performed using a number of different methods.

Note: You cannot save markups when viewing content with Internet Explorer.

Drawing and Markup Rules

Certain rules apply to drawings and markups:

- Markups are objects and as such are displayed in the 3D Objects list when they are created.
- Using the 3D Objects list, you can select, hide and show markups, group, merge, and delete markups in the same way as other objects.
- For markups to be displayed on an image or model, the Show Markups option must be selected on the **Show / Hide** right-click menu.
- Model views (on page 44), based on the current view of the scene, are created or updated every time a markup is added to a scene. The results depend on whether existing model views exist, or whether the scene has been transformed:
  - If there are no existing model views, a new model view is created that incorporates the new markup.
  - If the scene has not been transformed, the existing model view incorporates the new markup. Note that you must update the model view to see the changes.
  - If the scene has been transformed, a new model view is created that incorporates the new markup.

Markups

Various markups can be used to direct attention to, and identify parts of a model. These include:

- Callouts (on page 55): created using the Illustration tools in Deep Exploration. They comprise a text circle with an assigned part number and a line pointing to the part.
- Dimensions (on page 65): created using the Measurement tools in Deep Exploration and Deep Publish. They comprise white and red lines denoting where the measurement was made with text denoting the actual dimension.
- PMI markups (on page 57): created using the PMI tools in Deep Exploration. They comprise a text item with an assigned part number and a line pointing to the part.
- Markups (on page 56): created using the Drawing and Markup tools in Deep Exploration and Deep Publish. They comprise a text item with an assigned part number and a line pointing to the part.

Individual markups can be edited using the Edit Markup dialog. You can translate (move, rotate, and scale) markups using the 3D Editor tools in Deep Exploration. For markups to be displayed on an image or model, the **Show Markups** command must be selected from the right-click **Show / Hide** (on page 106) menu.

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Note: You are unable to save changes to markups when viewing content with Internet Explorer.

Creating Markups

Select > Drawing and Markup toolbar > Markup
Select > Drawing and Markup toolbar > Note
Select > Drawing and Markup toolbar > Line

The Markup, Note, and Line tools are used to create markups. When you select one of these tools, the cursor changes to a small cross . You can then begin creating a markup by clicking the model's surface to place the start point. Certain actions are then required to finish creating the markup, and these differ depending on the tool selected as described below.

Create Markup Actions

Text, Point, Cloud, Arrow note, Rectangle, Line and Freehand tools: Click, drag.

Note Circle tool: Click, drag, click.

Arc tool: Three clicks.

Polyline tool: Multiple clicks, right-click.

Procedure

To create a markup:

1. Click one of the Markup, Note, and Line markup tools on the Drawing and Markup toolbar.
2. Click **Settings** on the tool's submenu to establish the default markup's settings (on page 59).
3. Do one of the following:
   - If you are creating a text, point, arrow, or a line markup, click where you want to place the start point and drag to the leader length.
   - If you are creating a circle note markup, click where you want to place the start point, drag outwards and inwards to set the circle radius, and click once more to set the leader length.
   - If you are creating an arc markup, click where you want to place the start point, click again to place the centre of the arc circumference, and click once more to place the end point.
   - If you are creating a circle markup or a rectangular markup, click where you want to place the start point and drag outwards and inwards to set the circle radius or markup size.
   - If you are creating a polyline markup, click where you want to place the start point, click to place the second point, and so on, then right-click to place the end point.
   - If you are creating a freehand markup, hold down the left mouse button and drag to set the shape.
   - If you are creating a cloud markup, click where you want to place the start point and drag outwards to set the markup size.

The markup is added with the user name, date and time information. The Markup Layer object and newly created markup object are displayed in the 3D Objects list. You can now edit the markup type, size, font, colors and text.

To modify the markup settings:

1. Open the Settings dialog for the markup type settings you want to modify.
2. Make the selection you require.

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3. Click **OK**.

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Editing Markups

Double-click markup in viewport or 3D Objects list

Individual markups can be modified using the Edit Markup dialog. The tabs and options differ depending on the markup you are editing. For example, you can modify the font type and line color of markups using the Markup tab.

Note: You are unable to save changes to markups when viewing content with Internet Explorer.

Any editing you perform using this dialog is applied to the selected markup only, and for all new markups subsequently created.

Procedure

To edit a markup:

1. Double-click the markup you want to edit in the viewport.
2. Make the selections you require.
3. Click **OK**.

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Callout Tab

Edit Markup dialog > Callout tab

The Callout tab is used to adjust the appearance of callouts including the leader style, the color of the callout, and the appearance of the text.

Interface

Line color—Used to open the color for the markups lines.

Text color—Used to open the color selector and select the text color.

Background—Used to open the color selector and select the background color.

Material—Used to select a material to apply to the callout.

Transparent—Makes the callout transparent.

No Border—Controls whether or not the callout has a border.

Size slider—This tool is unavailable in Deep Publish, and as such is not documented in this release.

Font—Opens the Font dialog and is used to edit the font type, style, and size.

Always on top—Draws markups on top of all objects. Selecting this option ensures that when you rotate the model, the markups are always displayed on top.

Line end—Used to select the leader style for the note markup.

Note / Markup—Determines whether the callout is a note or a markup.

Text window—Used to enter text for markup text.

User name / date stamp—Displays the user, date, and time information within the markup.

Link—Used to determine the type of link.

- **None**—No link.
- **URL**—The URL address for the markup.
- **Model View**—The callout is linked to a particular model view.
- **Step**—The callout is linked to a particular step.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Markup Tab

Edit Markup dialog > Markup tab

The Markup tab is used to adjust the appearance of markups including markup component colors and any text that displays in the markup.

Note: The options differ depending on the markup you are viewing. For example, you can view the font for notes and markups, and you can view the position of drawing markups.

Interface

Line color—Used to open the color for the markup lines.

Text color—Used to open the color selector and select the text color.

Background—Used to open the color selector and select the background color.

Material—Used to select a material to apply to the markup.

Transparent—Makes the markup transparent.

No Border—Controls whether or not the markup has a border.

Font—Opens the Font dialog and is used to edit the font type, style, and size.

Always on top—Draws markups on top of all objects. Selecting this option ensures that when you rotate the model, the markups are always displayed on top.

Line end—Used to select the leader style for the note markup.

Note/Markup—Determines the type of markup.

Text window—Used to enter text for markup text.

User name/date stamp—Displays the user, date, and time information within the markup.

Link—Used to determine the type of link.

- **None**—No link.
- **URL**—The URL address for the markup.
- **Model View**—The callout is linked to a particular model view.
- **Step**—The callout is linked to a particular step.Used to determine the type of link.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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PMI Markup Tab

Edit Markup dialog > Markup tab

The Markup tab is used to adjust the appearance of the PMI markup object including any text that is displayed in the markup.

Interface

Display—Used to change the display settings for a specific PMI markup.

Always On Top—Draws the vectors and vector lines on top of and through all the objects in the scene even if the markup is behind the object or obscured by the geometry.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the setting are lost.

Help—Opens the relevant Help topic.

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Displaying and Deleting Markups

Select > Drawing and Markup toolbar > Show/Hide Markup

You are able to hide, show, and delete markups. For markups to be displayed on an image or model, the Show Markups option must be selected on the Show/Hide right-click menu.

Procedures

To show and hide markups, do one of the following:

- Click **Show / Hide Markup** on the Drawing and Markup toolbar.
- Check or clear the Callout, Markup, or Dimension object check boxes in the scene tree.
- Check or clear the Show/Hide > Markups command on the 3D viewport right-click menu.

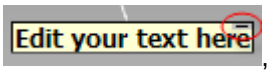
To delete markups:

Select the markups (on page 48) you want to delete, right-click over the objects in the 3D Objects list, and then click **Delete Object** to delete the markup.

To minimize all notes and markups:

- Click **Minimize All Notes**, on the Drawing and Markup toolbar. All notes and markups will be replaced by the minimized text icon, .
- To redisplay all notes and markups, press **Minimize All Notes** or the minimized text icon again.

To minimize individual notes and markups:

- Click the top right corner of the text box, 

, the note or markup will be replaced by the minimized text icon, .
- To redisplay the note or markup, click on the minimized text icon again.

Markup Settings

Select > Drawing and Markup toolbar > Markup > Markup Global Settings
Select > Drawing and Markup toolbar > Note > Note Global Settings
Select > Drawing and Markup toolbar > Line > Drawing Global Settings

Using the Settings dialogs, you can modify the default settings for individual markups. The settings are saved to your computer registry (on page 23) for future use. Any changes you make to the settings are applied to all markups that are subsequently created.

You can also edit individual markups (on page 56) using the Edit Markup dialog.

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Markup Global Settings

Select > Drawing and Markup toolbar > Markup > Markup Global Settings

Using the Markup Global Settings dialog, you can modify the settings for markups. The settings are saved to your computer registry (on page 23) for future use. Any changes you make to the settings are applied to all note markups that are subsequently created.

Procedure

To open the Teamwork dialog, displaying Markup Global Settings:

Click **Markup Global Settings**  on the Drawing and Markup toolbar for the Markup tool.

Interface

Type—Line, Point, Arrow, Circle or Normal.

Line Material—Select a material for the line from the drop down list.

Edit—Used to edit the characteristics and line styles.

Text Color—Used to open the color selector to select a color for the text.

Background Color—Select a background color for the text box from the color selector, or select transparent.

Transparent—No border.

Border—Select to display a border.

Always on top—Select if you want all leaderlines to be on top.

Font—Opens the Font dialog and is used to edit the font type, style, and size.

Non-overridable settings

- **Attach to mesh**—The end of the markup snaps to the nearest 3d object surface.
- **Markups Group by Author**—Groups all markups by author in the scene tree window.
- **Markups Group by Date**—Groups all markups by date in the scene tree window.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Note Global Settings

Select > Drawing and Markup toolbar > Note > Note Global Settings

Using the Note Global Settings dialog, you can modify the settings for note markups. The settings are saved to your computer registry (on page 23) for future use. Any changes you make to the settings are applied to all note markups that are subsequently created.

Note: These settings do not apply to callouts. Callout settings are edited in the Partslist dialog.

Procedure

To open the Teamwork dialog, displaying Note Global Settings:

Click **Note Global Settings**  on the Drawing and Markup toolbar for the Note tool.

Interface

Type—Line, Point, Arrow, Circle or Text.

Line Material—Select a material for the line from the drop down list.

Edit—Used to edit the characteristics and line styles.

Text Color—Used to open the color selector to select a color for the text.

Background Color—Select a background color for the text box from the color selector, or select transparent.

Transparent—No border.

Border—Select to display a border.

Always on top—Select if you want all leaderlines to be on top.

Font—Opens the Font dialog and is used to edit the font type, style, and size.

Non-overridable settings

- **Attach to mesh**—The end of the markup snaps to the nearest 3d object surface.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Drawing Global Settings

Select > Drawing and Markup toolbar > Line > Drawing Global Settings

Using the Drawing Global Settings dialog, you can modify the settings for line markups. The settings are saved to your computer registry (on page 23) for future use. Any changes you make to the settings are applied to all line markups that are subsequently created.

Procedure

To open the Teamwork dialog, displaying Drawing Global Settings:

Click **Drawing Global Set**tings  on the Drawing and Markup toolbar for the Line tool.

Interface

Type—Line, Arc, Polyline, Freehand, Closed Freehand, Rectangle, Circle or Cloud.

Line Material—Select a material for the line from the drop down list.

Edit—Used to edit the characteristics and line styles.

Always on top—Select if you want all markup drawings to be on top of all the objects in the scene.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

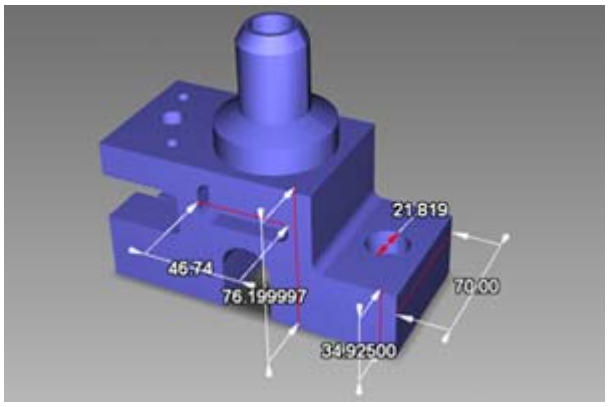
Help—Opens the relevant Help topic.

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Measurements

Select > Drawing and Markup toolbar > Measurements
Click Measurements icon on toolbar

The measurement tools allow you to measure the distance between two object elements in a scene, or for a single object element, for example, between an object's faces, arcs, and vertices. In many cases, these measurements can replace the need for 2D drawings. For example, you can add key measurements to the scene, and you can read key dimensions for manufacturing checks.

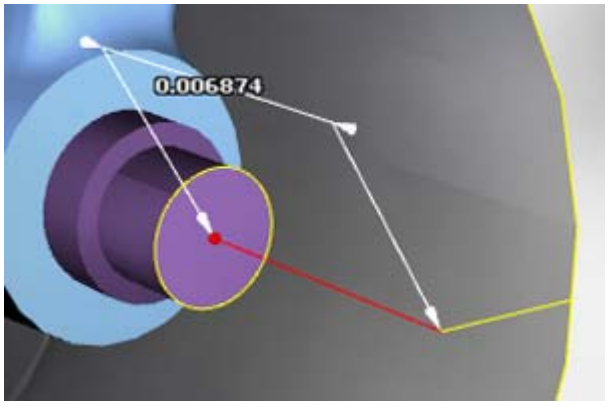


Object with multiple dimensions

When performing a measurement, the elements that can be measured within the object are highlighted when your cursor moves over them. You can limit the types of elements that are highlighted when you perform a measurement via the Object Element tools (on page 92):

- **Vertices:** Green 'points' indicating a corner of a polygon where two edges meet, or of a polyhedron where three or more faces meet. A polyhedron is a three-dimensional solid bounded by polygons.
- **Edges:** Lines of intersection between two faces.
- **Faces:** Planar surfaces of a geometric solid.
- **Arcs:** Lines that curve around a face with a center point displayed in red.

The first element that is measured is displayed as bounded; this determines the bounds of the measurement. For example, the distance is not calculated past the end of an edge, or off the boundary of a face. The second measurement is unbounded. This allows you to measure the distance between a face and a plane or the extension of an edge. For example, in the image below the arc is bounded and the face is unbounded.



Distance measurement between an arc and a face

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When you perform a measurement for a single object element, the resulting values are:

- **Measurement on a vertex:** The position of the vertex in the scene.
- **Measurement on an edge:** The length of the edge.
- **Measurement on a face:** The area of the face.
- **Measurement on an arc:** The radius of the circle.

Once you perform a measurement, a dimension object is created in the scene. Dimensions are treated in the same way as other objects and can be edited and deleted (on page 52).

Various settings (on page 65) can also be applied to the measurement tools to determine the way in which the measurements are calculated and displayed.

Note: Accuracy is reduced if a model uses a high level of polygon reduction.

Measurements are automatically updated as the objects to which they are associated are moved in the scene.

Note: You cannot save markups when viewing content with Internet Explorer.

Measurement Rules

Certain rules apply to measurements:

- Once a measurement is made, the related dimension object is created in the scene.
- Dimensions are markup objects and as such are displayed in the 3D Objects list when they are created.
- Using the 3D Objects list, you can select, hide and show dimensions, and delete dimensions in the same way as other objects.
- When you rotate, scale, or pan models, the dimensions move in relation to the parts while remaining the same size.
- Dimensions can be moved, rotated, and scaled separately from the model.
- For dimensions to be displayed on an image or model, the Show Markups command must be selected from the Render Modes menu.

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Procedures

To measure a single object element:

1. Click **Settings**  on the Drawing and Markup toolbar and modify the settings (on page 65) as required.
2. Click **Distance**  on the Drawing and Markup toolbar.
3. Click the element types which you want to measure on the Object Elements (on page 92) toolbar.
4. Place the cursor over the area from which you want to measure until the first element is highlighted, and then click the element.
5. Move the cursor away from the model and, with no elements highlighted, click again.
6. Drag the dimension away from the model, and then click again.

The measurement is made and the dimension is created.

To measure the distance between two object elements:

1. Click **Distance**  on the Drawing and Markup toolbar.
2. Click the element types which you want to measure on the Object Elements (on page 92) toolbar.
3. Place the cursor over the area from which you want to measure until the first element is highlighted, and then click the element.
4. Click other element types if you want to measure between other elements.
5. Place the cursor over the area to which you want to measure until the second element is highlighted, and then click the element.
6. Drag the dimension away from the model and click again.

The measurement is made and the dimension is created.

To measure the angle between two object elements:

1. Click **Angle**  on the Drawing and Markup toolbar.
2. Click the element types on which you want to measure on the Object Elements (on page 92) toolbar.
3. Place the cursor over the element from which you want to measure until it is highlighted, and then click the element.
4. Place the cursor over the element to which you want to measure until the second element is highlighted, and then click the element.
5. Select either the internal or external angle, the angle is measured and the dimension is created.

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Measurement Global Settings

Select > Drawing and Markup toolbar > Measurement Global Settings

The Settings dialog is used to adjust the appearance of measurements (on page 62) including displaying the dimensions, measurement of arcs or circles, and the units in which to display the angle.

Procedures

To open the Teamwork dialog, displaying Measurement Global Settings:

Click **Settings**  on the Drawing and Markup toolbar.

To modify the dimension settings:

1. Open the Measurement Global Settings dialog.
2. Make the selections you require.
3. Click **OK**.

Interface

General—Used to establish general settings.

- **Always on top**—Draws the dimension and dimension lines on top of all the objects in the scene.
- **Draw construction lines**—Draws the red construction line between the points that are being measured.
- **Draw surface features**—Draws the surface features. These include the vertices, highlighted edges, and surfaces.
- **Line color**—Select a color from the color palette.
- **Precision**—Determines the number of decimal places to display in the dimension.
- **Display Dimension**—Used to establish how to display the measurement.
  - **Vectors**—Draws the measurement as a vector.
  - **Billboards**—Draws the measurement as a billboard. That is, the measurement rotates to always face the camera. When printed to a vector-based file, the measurement is converted to vector line art.
- **Font**—Opens the Font dialog and is used to set the markup font type, style, and size.
- **Vector font scale**—Determines the displayed font scale in the measurement.

Arcs—Used to establish the dimension to measure when measuring arcs or circles.

- **Radius**—Measures the circle's radius.
- **Diameter**—Measures the circle's diameter.

Angles—Used to establish the angle dimension between lines.

- **Degrees**—Measures the angle in degrees.
- **Radians**—Measures the angle in radians.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Cancels the process and closes the dialog. Any changes made to the settings are lost.

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Help—Opens the relevant Help topic.

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PMI Data

Product Manufacturing Information (PMI) is an implementation of the 'Digital Product Definition Data Practices', which establishes requirements for preparing, organizing, and interpreting three-dimensional digital product images. PMI markups provide a way to render PMI data such as tolerances, dimensional data, and other markup annotations.

PMI comprises different types of markups and conveys information on the design of a product's components for manufacturing.

The PMI markups types are:

- **Text**: Text markups.
- **Rich text**: Special formatted text markups.
- **GD&T**: Measurements, tolerances, material data, and reference datum.
- **Dimensions**: Detailed dimension line markups.
- **Datum**: Special reference points or planes for measurement markups sometimes shown as a single letter enclosed within a box.
- **Metadata**: Attributes and properties that are associated with a part when it was created.

Procedures

To view PMI markups:

1. Ensure the Markups command is selected on the **Show / Hide** 3D viewport right-click menu.
2. Do one of the following:
   - Check the required PMI check box in the 3D Objects list.
   - Click **Show / Hide Markups**  on the Drawing and Markup toolbar.
   - Click the Model Views down arrow and then select the model view that you want to view.

To hide PMI markups, do one of the following:

- With the PMI data displayed, clear the related markup check box in the 3D Objects list.
- Clear the Markups command on the **Show / Hide** 3D viewport right-click menu to hide all PMI markups.
- Click **Show / Hide Markups**  on the Drawing and Markup toolbar.

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Steps

Select > Steps and Model Views toolbar > Steps
Scene Components panel > Steps information

Just as model views emulate the properties of schematic diagrams, so 'steps' can emulate sequences of instructions; they present a list of steps each with a label and associated text. Each step comprises a number of user-defined animated sequences that are displayed when you play the step.

Steps are helpful for including 3D-view instructions in files, such as PDF files. They are based on the current view of the scene. Each step has an associated camera, and render mode.

When you view steps, the description for each step is displayed below the Steps controls (on page 97).

When you select a step:

- The active viewport is set to the associated camera and render mode.
- All objects that are not associated with the step become invisible.

Procedure

To play a step do one of the following:

- Click **Steps**  on the Steps and Model Views toolbar, and click the step you want to view.
- Click the step you want to view from the Steps information list in the Scene Components panel.

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Converting to 3D PDF

Office Menu bar > Deep Publish > Convert To 3D PDF
Office Deep Publish 3D PDF Conversion toolbar > Deep Publish Convert To 3D PDF
Office Menu bar > Deep Publish > Convert To 3D PDF And Email
Office Deep Publish 3D PDF Conversion toolbar > Deep Publish Convert To 3D PDF And Email

Once you have created 3D content with Deep Publish, you can publish that content from within PowerPoint and Word to the Adobe Portable Document (.pdf) format using Right Hemisphere's conversion tools (on page 102). All 3D content is converted to the Universal 3D (.u3d) format. You can choose to convert content to PDF, or convert content and send it via email.

You can then view the converted content with any 3D-enabled Adobe application such as Adobe Reader version 7.0.x or Adobe Acrobat 3D. Once you have opened a PDF document, you can interact with the 3D content using Adobe's 3D tool.

Note: You must have Adobe Acrobat Professional version 7.0.x or higher, or Acrobat 3D 7.0.7 or higher installed on your computer to be able to convert content to PDF. You can convert 3D content from either Image or Interactive mode, however, you cannot convert content to PDF from within Excel in either mode.

Please note that converting to 3D PDF only applies to Office applications.

For further information about the .u3d file format, please see www.3dif.org (http://www.3dif.org). For further information regarding 3D interactivity within .pdf documents, please see the Acrobat Professional Help.

Procedures

To convert 3D content directly to 3D PDF:

1. Open the 3D PowerPoint or Word document that you want to convert.
2. Do one of the following:
   - Choose **Deep Publish > Convert To 3D PDF** in either Word or PowerPoint.
   - Click **Deep Publish Convert To 3D PDF**  on the Deep Publish 3D PDF Conversion toolbar in PowerPoint.
3. Navigate to and select a location in which to save the document, enter a name, and then click **Save**.

To convert 3D content to 3D PDF and email:

1. Open the 3D Word or PowerPoint document that you want to convert.
2. Do one of the following:
   - Choose **Deep Publish > Convert To 3D PDF And Email** in either Word or PowerPoint.
   - Click **Deep Publish Convert To 3D PDF And Email**  on the Deep Publish 3D PDF Conversion toolbar in PowerPoint.
3. Enter the recipients's email address, and then click Send.

The .pdf document is saved as the current filename and is attached to an email message.

To display the Adobe 3D tool:

1. Open a PDF document.

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2. Click the 3D content in the viewport.

The 3D tool is displayed and you can now interact with the 3D content.

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Editing Configuration Settings

Office Menu bar > Deep Publish > Settings

Various configuration settings are generated during installation.

These settings can be modified as required using the Deep Publish Settings dialog.

Please note that these settings are only available for Office applications.

Procedure

To modify the Deep Publish settings:

1. Choose **Deep Publish > Settings**.
2. Modify the settings as required in the Deep Publish Settings dialog.
3. Click **OK**.

Drag and Drop Tab

Office Menu bar > Deep Publish > Settings > Drag and Drop tab

'Drag and drop' registration is performed automatically when new plugins are added to Deep Publish; the associated 3D file types are then available for dragging into Office application documents and they appear in the Drag and Drop tab.

The Drag and Drop tab is used to modify drag and drop functionality by selecting file types to which this functionality is applied. Please note that these settings are only available for Office applications.

Procedure

To modify drag and drop functionality:

1. Do one of the following:
   - Select the file type check boxes, or click **Select All** to select all file types.
   - Clear the file type check boxes, or click **Deselect All** to clear all file types from selection.
2. Click **OK**.

Interface

File associations—Displays all the 3D file types that are available for dragging into Office documents, and is used to select file types that can use drag and drop functionality.

Select All—Selects all the 3D file type check boxes.

Deselect All—Clears all 3D file type check boxes.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Print Quality Tab

Office Menu bar > Deep Publish > Settings > Print Quality tab

The Print Quality tab is used to control the print resolution of images that have been inserted into Word documents using Deep Publish. This option does not affect the quality of 3D models that are displayed in the Word or in any other application. For example, FrameMaker or PowerPoint.

Note that saving models with a high image resolution can increase the size of the files.

Please note that these settings are only available for Word.

Interface

High resolution (Microsoft Word only)—Prints the document with a high resolution for any models that are contained within the document. Otherwise, the models are printed at the default resolution.

OK—Closes the dialog and applies the settings. Any changes made to the settings are saved.

Cancel—Closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Printing Files

When you print a Word document that contains 3D content, you are able to print the images of the models with high resolution (on page 72). This option does not affect the quality of 3D models that are displayed in Word or in any other application; for example, FrameMaker or PowerPoint.

You cannot change the resolution of a printed image in PowerPoint, FrameMaker, or Excel.

Note: Saving models with a high image resolution can increase the size of the files.

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Deleting Files

Select 2D file > Keyboard > DELETE
3D file > Image mode > Select file > Keyboard > DELETE

3D files are deleted from documents in Image mode. 2D files can be deleted as soon as they are selected within the document.

Procedures

To delete a 2D file from a document:

1. Click the image to select it.
2. Press **DELETE**.

The file is deleted immediately.

To delete a 3D file from a document:

1. In Image mode, click the image to select it.
2. Press **DELETE**.

The file is deleted immediately.

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User Interface

The application interface in Office applications consists of the Deep Publish menu. In FrameMaker, these commands are accessed via the right-click menu. Certain other interface elements and tools become available once 3D content is created.

See the topics referenced below for detailed information on all of the user interface components.

Interface

Deep Publish menu (on page 77)—Provides access to the main Deep Publish menu commands.

Viewports (on page 78)—Comprises one of two viewports that are used to view and modify the currently opened file. For example, a 3D scene or 2D image. The viewport type depends on the current Deep Publish mode:

- **Image mode**: Displays 2D content in the 2D viewport (on page 78).
- **Interactive mode**: Displays 3D content in the 3D viewport (on page 78).

Scene Components panel (on page 79)—Comprises a number of components including the Scene tree, the Materials list, the Parts List and Steps Information. It presents, and is used to control all of the scene's 3D objects, materials, parts and steps from within a tree-view hierarchy.

Drawing and Markup toolbar (on page 90)—Used to display the Drawing, Markup and Measurement control tools.

3D Editor toolbar (on page 94)—Used to display various view modes, clipping and pull apart tools.

Steps and Model Views toolbar (on page 97)—Used to display the Model Views and and Steps control tools. This toolbar also contains right-click access to the Animation toolbar.

Animation toolbar (on page 99)—Provides controls for animated scenes.

Note: The above four toolbars are not displayed when content is viewed in Internet Explorer.

3D PDF toolbar (on page 102)—Used to convert 3D content to 3D PDF.

Right-click menus (on page 103)—Sets of commands relating to the standard Deep Publish functionality.

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Deep Publish Menu

Office Menu bar > Deep Publish

The Deep Publish menu bar is used to perform a variety of commands including inserting 3D models, converting documents to PDF, and activating Deep Publish.

Note: Not all these options are available in FrameMaker. Options that are available in FrameMaker are accessed via the right-click menu.

Interface

Insert 3D Model (on page 28)—Used to insert a 3D file, either from the 'My 3D Models' folder that was created during the Deep Publish installation, or the folder of your choice.

Insert Deep Server Link (on page 33)—Used to insert an Internet shortcut to a Deep Server file into the document.

Convert to 3D PDF (on page 70)—Creates a PDF document and converts all 3D content to the .u3d format.

Convert to 3D PDF and Email (on page 70)—Creates a PDF document and converts all 3D content to the .u3d format, and then attaches the published .pdf document to an email.

Settings (on page 72)—Used to modify the configuration settings that are established during installation.

Deep Publish Help—Displays the application's User Reference (online Help).

Deep Publish Licensing—Used to activate Deep Publish after registration. This command disappears from the menu once Deep Publish is activated.

Support—Displays the Right Hemisphere Web site support page.

About Deep Publish—Displays a range of information about Deep Publish including copyright and version information. You can also use this option to activate the product after registration.

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Viewports

When you insert a 2D or a 3D file into FrameMaker or an Office application, there are two modes; Image mode and Interactive mode. The area in which the file is displayed is known as either the 2D or 3D 'viewport' depending on the current mode or the current application:

- **Image mode**: Displays the 2D viewport. A right-click menu (on page 103)is available with which you can switch between the working modes (on page 30).
- **Interactive mode**: Displays the 3D viewport. This area defines the boundary in which a model can be moved, panned, and resized. A right-click menu (on page 103) is also available with which you can modify the scene.

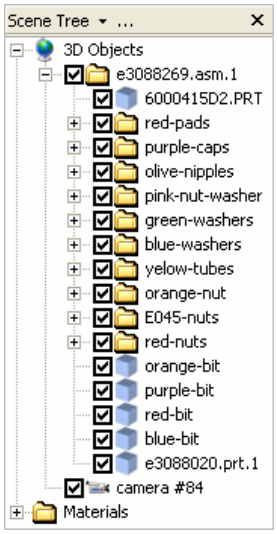
Various right-click menus (on page 103) are available depending on the current mode, where the cursor is positioned when you click, and whether you added 2D content using the 'Insert 2D for Collaboration' command. Double-clicking objects in the 3D viewport displays the Object Properties dialogs (on page 83).

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Scene Components Panel

The Scene Components panel is displayed with 3D files and comprises a number of components; the navigation bar, the Scene tree, Material list, Parts list, and Step information. It is used to control the file components from within a tree-view hierarchy. Every node, object, and material is indicated by a separate icon (on page 80).

You can display, hide, and select scene components, and edit markups. You can also collapse object hierarchy. The navigation bar is used to display the different components, and close the panel.



Scene Components Panel: Scene tree

Windows hierarchy conventions apply to the panel. For example, if you select an object's parent check box, all child objects are also selected. However, pressing CTRL and selecting a parent check box, selects only that object.

The panel contains various right-click menus (on page 110) that relate to the area you are using.

Procedures

To display the scene tree:

Click the scene tree icon in the 3D viewport.

To display the panel's components:

1. Click the down arrow in the panel.
2. Click one of the following:
   - **Scene Tree** to display the Scene tree.
   - **Materials** to display the Materials list.
   - **Parts List** to display the Parts list.
   - **Steps Information** to display the associated steps in detail.

To change the size of the Scene Tree:

Drag left or right from the right of the Scene Tree.

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To close the Scene Tree:

Click the cross in the top, right of the Scene Tree.

Interface

Scene tree—Comprises the the 3D Objects list, Materials folder, and Parts list.

- **3D Objects list**—Displays all objects within a scene. It is used to select, display, and hide objects, and to edit the object's properties. Once an object is selected, the object name is highlighted in the list.
- **Materials list**—Displays all materials within a scene and is used to select materials, and to edit the material properties. Once a material is selected, the material name is highlighted in the Materials folder.

Parts List—Displays a list of all parts.

Steps Information—Displays all steps associated with a model.

Scene Components Panel Icons

Every node, object, and material displayed in the Scene Components panel (on page 79) is indicated by an icon.

Interface

 **3D Objects list node**

 **Group node**

 **Mesh object**

 **Bone object**

 **Camera object**

 **Light object**

 **Target object**

 **Markup object**

 **Materials folder node**

 **Material with no map**

 **Material with one map**

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 **Material with multiple maps**

 **Material with missing maps**

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Scene Tree

Scene Components panel > Scene tree

The Scene tree comprises the 3D Objects list and the Materials folder. It can be used to show, hide, and select objects and materials within scenes. Scenes can be enhanced by modifying the scene, object, or material properties.

When you create markups in a scene, the markup objects are displayed in this list, from where they can be edited, hidden, and deleted.

The tree's check boxes can be used to show and hide objects. They respect hierarchy if it is present; clearing the highest check box in a hierarchy clears all subordinate check boxes.

Note: You can also use the 3D viewport right-click menu (on page 103) to show and hide objects.

A number of properties can be set for 3D scenes, objects and materials using the dialog boxes.

3D Objects List

The 3D Objects list presents, and is used to control all of a scene's objects and materials from within a tree-view hierarchy. The check boxes can be used to select, display, and hide the objects.

A right-click menu (on page 111) can be used for object display and selection. This menu increases in importance as the complexity of the scene increases. You can also view and modify the properties of the scene and all its objects.

Materials Folder

The Materials folder presents, and is used to control the materials within a scene. A right-click context menu can be used to open the Material Properties dialog from where you can view and edit the material's properties.

Note: You can also view the scene's materials in the Materials list.

Scene Properties Dialog

Scene tree > 3D Objects list > Double-click 3D Objects node
Scene tree > 3D Objects list > Right-click with no selection > Scene Properties
Right-click 3D viewport with no selection > Scene Properties

A number of properties can be set for 3D scenes including the ambient and illumination colors.

Procedure

To open the Scene Properties dialog, do one of the following:

- Double-click the 3D Objects node in the 3D Objects list.
- Right-click in the 3D Objects list with nothing selected, and then click **Scene Properties**.
- Right-click in the 3D viewport with nothing selected, and then click **Scene Properties**.

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Summary Tab

Scene Properties dialog > Summary tab

The Summary tab is used to view a summary of the information relating to the scene's appearance including the number of vertices and faces, any texture coordinates, and any animation values.

The information is automatically updated when you modify the properties of the scene.

Interface

OK—Closes the dialog.

Cancel—Closes the dialog.

Help—Opens the relevant Help topic.

Environment Tab

Scene Properties dialog > Environment tab

The Environment tab is used to modify the global display settings including scene's environment attributes and the unit measurement.

Interface

Global ambient color—Opens the color selector and is used to select a color for the scene's ambient color.

Global illumination color—Opens the color selector and is used to select a color for the scene's illumination color.

Units—Used to select the unit type for which you want to view its custom unit (scene unit) measurement in meters. For example, 1 custom unit = 0.01 meters.

Custom unit—Displays the custom unit measurement for the selected unit type.

OK—Applies and saves the settings, and then closes the dialog.

Cancel—Closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Object Properties Dialog

Scene tree > 3D Objects list > Right-click an object > Object Properties
Scene tree > 3D Objects list > Double-click object
Parts list > Right-click a part > Object Properties
Parts list > Double-click part
Right-click selected object in 3D viewport > Object Properties
Double-click object in 3D viewport

Properties can be viewed and/or set for individual objects using the Object Properties dialog.

As these settings apply only to individual objects, you can apply a render method to objects that are separate from the render method applied to the entire scene (on page 104). Note that you cannot modify 'parent' objects. That is, objects that contain sub-objects (child objects).

If you double-click a markup object or select to view properties of a markup object, the Edit Markup dialog is displayed from where you can edit the markup (on page 54).

Procedure

To open the Object Properties dialog, do one of the following:

- Right-click an object or a part in the 3D Objects, and click **Object Properties**.
- Double-click an object or a part in the 3D Objects, and click **Object Properties**.
- Open the Materials Properties dialog for a material associated with the object, click the Usage tab, select the object in the used objects list, and then click **Object Properties**.

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Metadata Tab

Object Properties dialog > Metadata tab

This option lets you attach or edit metadata in individual objects or the complete scene. Metadata will be exposed on a per-scene and per node basis, and can be viewed, created and edited via the properties dialog.

Procedures

To create a new value:

1. Choose a category, or create one, if one is not already selected.
2. Type a key name in the key combo box.
3. Type a value in the edit control.
4. Click **Set**.

To edit a value:

1. Select a value in the list view or pick from the key combo box.
2. Edit the value in edit control.
3. Click **Set**.

Interface

Category—This is set to avoid conflict between different applications.

Key—The key name.

Type—The type of metadata.

- **BOOL**—Used to indicate a boolean value. That is, true or false.
- **INT**—Used to indicate a 32 bit integer.
- **STRING**—Used to indicate a unicode string.
- **FLOAT**—Used to indicate a floating point number and two special "collection" classes
- **OBJECT**—Used to indicate an object. An **OBJECT** is analogous to a Javascript Object, and is like a sub-directory for metadata. You can double click to "descend" into an object (similar to browsing folders and double clicking) and view/edit/create new data inside.
- **ARRAY**—Used to indicate an array. An **ARRAY** is analogous to a Javascript Array, and stores a list of values numbered from zero to n-1. You can descend into an array and add new items similar to OBJECT.

Value—The metadata value.

Set—Applies the settings.

OK—Closes the dialog and saves the current settings.

Cancel—Closes the dialog.

Help—Opens the relevant Help topic.

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Material Properties Dialog

Scene Components panel > Materials tab > Right-click a material > Material Properties
Scene Components panel > Materials tab > Double-click material

You can view and modify material properties using the Material Properties dialog. Material properties describe how polygons reflect light, or appear to emit light, in a 3D scene. Essentially, a material is a set of properties that provide various information about the polygons being rendered including:

- How they reflect ambient and diffuse light.
- What their specular highlights look like.
- Whether the polygons appear to emit light.

Material properties detail a material's diffuse reflection, ambient reflection, light emission, specular highlight characteristics, glossiness etc. Material properties affect the colors that are used. With the exception of the specular property, each property is described as an RGBA color that represents how much of the red, green, and blue parts of a given type of light it reflects, and an alpha blending factor - the alpha component of the RGBA color.

You can also open the Object Properties dialog (on page 83) from within the Material Properties dialog for any materials that are associated with the object.

Procedure

To open the Material Properties dialog, do one of the following:

- Double-click a material in the Materials tab and click **Material Properties**.
- Right-click a material in the Materials tab and click **Material Properties**.
- Open the Object Properties dialog for an object that is associated with the material, click the Materials tab, select the material in the used materials list, and then click **Material Properties**.

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Basic Tab

Material Properties dialog > Basic tab

The Basic tab is used to adjust the appearance of the material including the ambient light, opacity across all channels, and shading. Note that 'alpha' for a specific channel (ambient, diffuse, specular, etc) is controlled by using an RGBA map (texture map, bitmap, etc) for that channel via the **Maps** tab.

Interface

Name—The name of the currently selected material.

Ambient—Used to select the ambient light color. Ambient light is the light that illuminates the entire scene. It has uniform intensity and is uniformly diffuse. It has no discernible source and no discernible direction. Ambient light has a lesser impact on the apparent color than diffuse light color, but it does affect the overall color and is most noticeable when little or no diffuse light reflects off the material.

Diffuse—Used to select the diffuse light color. Diffuse color describes how a material reflects diffuse light in a scene. Because most scenes contain much more diffuse light than ambient light, diffuse reflection plays the largest part in determining overall color. Additionally, because diffuse light is directional, the angle of incidence for diffuse light affects the overall intensity of the reflection. Diffuse reflection is greatest when the light strikes a vertex parallel to that vertex normal. As the angle of reflection increases, the effect of diffuse reflection diminishes. The amount of light reflected is the cosine of the angle between the incoming light and the vertex normal.

Specular—Used to select the specular light (reflection) color. Specular reflection creates highlights on objects making them appear shiny. By setting this color, you establish the color of the highlights.

Emissive—Used to select the 'glow' light color. This can be useful for displaying pre-lit models (where the light energy of the room is computed explicitly), or for displaying scientific data.

Opacity—Determines the opacity of the material. Opacity is the opposite of transparency. As you reduce the opacity value, the object becomes more transparent.

Shading—The Shaders drop down menu displays all the sample shader files that are delivered with the application and any additional shaders that may have been saved.

Glossiness—Determines the model's highlighting. As you increase the glossiness, the highlight gets smaller and the material appears shinier.

Specular level—Determines the intensity of the specular light. You can set the specular level to a very high value to achieve very strong, tight highlights. This value is also known as 'shininess strength'.

Raytrace reflection—Determines the material's ability to reflect.

Index of refraction—Determines how much light is bent when travelling through a substance such as glass. The lower the number, the less the light is bent.

Double-sided—Applies the double-sided attribute to the selected material. Note that this option disables back-facing culling.

Render outlines—Used to render the thickness of outlines relative to the selected number.

OK—Applies and saves the settings, and then closes the dialog.

Cancel—Closes the dialog. Any changes made to the settings are lost.

Help—Opens the relevant Help topic.

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Information Tab

Material Properties dialog > Information tab

The Information tab is used to view a summary of all information relating to the material's appearance including the lighting, texture mapping parameters, and texture file names.

The information is automatically updated when you modify the properties of either the material or any associated object.

Interface

OK—Closes the dialog.

Cancel—Closes the dialog.

Help—Opens the relevant Help topic.

Usage Tab

Material Properties dialog > Usage tab

The Usage tab displays the numbers, names, and faces of the objects to which the selected material is associated. It can also be used to access the Object Properties dialog where you can view and modify the selected object's properties.

Procedure

To open the Object Properties dialog from the Usage tab:

Click the **Object properties** link on the Usage tab.

Interface

Object Properties (on page 83)—Opens the Object Properties dialog and is used to modify the selected objects' properties.

Number—Displays the system-generated numbers of the objects used by the material.

Name—Displays the names of the objects used by the material.

Faces—Displays the number of faces of the objects used by the material.

OK—Closes the dialog.

Cancel—Closes the dialog.

Help—Opens the relevant Help topic.

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Materials List

Scene Components panel > Materials

The Materials tab displays a list of all the materials that are associated with the current 3D file.

See Materials (on page 51) for further information and procedures.

Parts List

Scene Components panel > Parts List

The Parts List tab displays a list of all the parts that are associated with the current 3D file.

A right-click menu is available from where you can perform a number of object-type functions including displaying and selecting objects, and modifying the properties of the selected object.

The Parts List displays all duplicated objects and the number of times that they are used in the scene. However, it displays only the objects that are part of the selected BOM source.

Interface

 **Show / Hide Callouts**—Used to toggle between showing and hiding callouts.

Steps Information

Scene Components panel > Steps Information

The Steps Information tab displays a list of all the steps that are associated with the current 3D file.

See Steps (on page 69) for further information and procedures.

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Drawing and Markup Toolbar



The Drawing and Markup toolbar contains sets of buttons relating to standard measurement and markup functionality.

The toolbar can only be displayed in Interactive mode.

This toolbar is unavailable when viewing content with Internet Explorer.

Note: When you click outside the 3D viewport the Drawing and Markup toolbar fades away. You can show it again by pointing to it.

Interface

Drawing and Markup (on page 90)—A set of markup tools used to markup 2D images and 3D models.

Measurements (on page 91)—Used to measure the distance or angle between two elements in a scene, or within a single element. When taking a measurement, the Object Element tools are also displayed.

Drawing and Markup Tools



The Drawing and Markup tools comprise a number of buttons with which you can perform a number of markup actions to the scene.

Interface

Markup Line (on page 52)

Markup Point (on page 52)

Markup Arrow (on page 52)

Markup Circle (on page 52)

Markup Normal (on page 52)

Markup Global Settings (on page 59)

Note Line (on page 52)

Note Point (on page 52)

Note Arrow (on page 52)

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 **Note Circle** (on page 52)

 Note Normal (on page 52)

 **Callout** (on page 52)

 **Note Global Settings** (on page 59)

 **Line** (on page 52)

 **Polyline** (on page 52)

 **Arcs** (on page 52)

 **Freehand** (on page 52)

 **Closed Freehand** (on page 52)

 **Rectangle** (on page 52)

 **Circle** (on page 52)

 **Cloud** (on page 52)

 **Drawing Global Settings** (on page 59)

 **Show / Hide Markup** (on page 58)

 Minimise All Notes

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Measurement Tools



The Measurement tools (on page 91) are used to measure the distance between two elements in a scene, or within a single element, and modify the measurement properties (on page 65). There are also options available to calculate the volume and surface area of a model.

Interface

 **Distance** (on page 62)

 **Angle** (on page 62)

 **Settings** (on page 65)

 **Calculate Area**—Calculates the surface are of the model using the models current measurement unit.

 **Calculate Volume**—Calculates the volume of the model using the models current measurement unit.

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Object Elements Tools



When you create a measurement, you use the Object Elements tools to display, and snap to only the object elements (on page 62) that you want to measure; either vertices, edges, faces, or arcs. For example, if you select Vertices and Faces on the toolbar, only those elements are highlighted in the scene.

The elements that can be measured within the object are highlighted when your cursor moves them.

Procedures

To display the object elements tools to measure distance:

Click **Distance**  on the Drawing and Markup toolbar.

To display the object elements tools to measure angle:

Click **Angle**  on the Drawing and Markup toolbar.

Interface

 **Vertices**—Displays green 'points' indicating a corner of a polygon where two edges meet, or of a polyhedron where three or more faces meet. A polyhedron is a three-dimensional solid bounded by polygons.

 **Edges**—Displays lines of intersection between two faces.

 **Faces**—Displays planar surfaces of a geometric solid.

 **Arcs**—Displays lines that curve around a face with a center point displayed in red.

Cancel—Closes the object element tools and cancels the process.

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3D Editor Toolbar



The 3D Editor toolbar contains buttons relating to different 3D views and modes.

The toolbar can only be displayed in Interactive mode.

This toolbar is unavailable when viewing content with Internet Explorer.

Note: When you click outside the 3D viewport the 3D Editor toolbar fades away. You can show it again by pointing to it.

Interface

 **Scene Rotate Mode**

 **Pull Apart Mode** (on page 94)

 **Home Position** (on page 94)

 **Model Render Mode** (on page 42)

 **Best Fit** (on page 40)

 **Zoom Window** (on page 40)

 **Clipping pane** (on page 95)

 **Use Orthographic Projection** (on page 96)

 **Use Perspective Projection** (on page 96)

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Pull Apart Mode

Pull Apart mode enables objects to be manually selected from directly within the scene. Selecting the Pull Apart icon,  'freezes' the scene in the viewport, i.e. it is not possible to rotate the scene, only pan and scale, so that individual objects can be selected (highlighted), and pulled apart from the model. It is possible to return to the previously saved view by clicking the Home icon, .

Note: If an object has an animated sequence, click the play button to return the scene to the 'Home' (saved) position before playing the animation, i.e. any object movements, using the 'Pull Apart' feature will be ignored.

Procedures

To pull apart selected objects:

1. Click **Pull Apart Mode**,  on the 3D Editor toolbar.
2. Select the objects that you want to move.
3. Drag the object to the required position within the scene.

To return to the previously saved view:

Click **Home**, .

Cross Section

Cross section planes let you exclude some of a scene's geometry to view or render only certain portions of the scene.

The plane can be moved to 'slice' though a 3D model along the cross section plane's x, y, and z axes and also by rotating the plane.

Note: If you move the cross-section plane, its original position can be restored by selecting **Clipping Plane** , then selecting **Reset** .

Procedure

To create a cross section pane:

1. Click **Clipping Pane**  on the 3D Editor toolbar.
2. Click the down arrow to select an initial cross section plane to work with.

Interface

 **X**—Cross section on the x axis.

 **Y**—Cross section on the y axis.

 **Z**—Cross section on the z axis.

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 **Flip**—Flips the cross section plane.

 **Reset**—Return to the original position.

Orthographic and Perspective Projection

Views can be changed between orthographic projection and perspective projection by using the Projection icons,  or .

This button acts as a 'toggle'. That is, you can use it to switch from one view to the other. If you are viewing your scene using orthographic projection, the button displays as 'Use Perspective Projection', and if you are viewing your scene using perspective projection, the button displays as 'Use Orthographic Projection'.

Procedures

To use orthographic projection to view your scene:

1. Click **Use Orthographic Projection**, .

The scene displays using orthographic projection.

To use perspective projection to view your scene:

1. Click **Use Perspective Projection**, .

The scene displays using Perspective projection.

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Steps and Model Views Toolbar



The Steps and Model Views toolbar contains sets of buttons relating to displaying and controlling all user-defined steps (on page 69) and model views.

Interface


Model Views (on page 44)


Steps (on page 69)


First Step (on page 97)


Previous Step (on page 97)


Next Step (on page 97)


Last Step (on page 97)


Play All Steps (on page 97)


Forward (on page 97)

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Step Controls

When you view steps, you use the Step controls to move between steps and play the animation sequence for each step. For example, you can move between individual steps and play each animation sequence or play all the steps in succession.

Interface


First Step—Moves to the first step and plays the animation sequence.


Previous Step—Moves to the previous step and plays the animation sequence.


Next Step—Moves to the next step and plays the animation sequence.


Last Step—Moves to the last step and plays the animation sequence.


Play All—Plays all the animation sequences from the first to the last sequence.

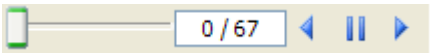

Forward—Moves the animation sequence forward.

Note: Right-click the Forward button to display the expanded animation toolbar (on page 99).

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Animation Toolbar

Right-click Forward button on Steps and Model Views toolbar > Show Animation Toolbar
Right-click 3D viewport > Animate Options > Show Animation Toolbar



The Animation toolbar is used to control scene animation. It includes a time/frame slider and animation options.

The toolbar is only available when a scene is animated and is in Interactive mode. In Word, Powerpoint, and Excel it automatically displays when a document is opened that contains an animated scene.

Note: You may need to resize the active area (on page 36) to display the entire bar.

Procedures

To display the Animation toolbar, do one of the following:

- Right-click **Forward**  on the Steps and Model Views toolbar, and click **Show Animation Toolbar**.
- Right-click the 3D viewport, click Animate Options, then click **Show Animation Toolbar**.

To manually advance through the animation:

Drag the time/frame slider to move forwards and backwards through the animation.

To close the Animation toolbar:

With the toolbar displayed, right-click the toolbar and click **Hide Animation Toolbar**.

Interface

Time/frame slider—Used to show the real-time status of the animation in progress, the current frame number, the total number of frames, and manually advance through the animation.

Reverse—Plays the animation in reverse.

Stop—Stops the animation from playing.

Forward—Plays the animation forward.

Animation toolbar right-click menu—Used to access options to establish animation settings and the type of play (simple, cyclic, ping-pong), or to select an animation sequence, if any.

- **Options** (on page 100)—Opens the Animation Options dialog where you can modify the animation settings.
- **Simple**—Sets the animation to play once from beginning to end.
- **Cyclic**—Sets the animation to play continuously from beginning to end.
- **Ping-pong**—Sets the animation to play continuously back and forth from beginning to end, and from end to beginning.
- **Sequences**—Used to view a specific sequence. This option is only available if more than one sequence has been created for the animation.

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- **[sequence name]**—Moves to the selected sequence.

Animation Options

Animation Toolbar > Right-Click > Options
Right-click 3D viewport > Animate Options > Options

Using the animation options in the Animation Options dialog, you can control various animation settings including frame rate, duration, and time display.

The Sequence window displays a list of the animation sequences, including the default sequence. That is, the current scene animation.

Procedure

To open the Animation Options dialog, do one of the following:

- Right-click the Animation toolbar and then click **Options**.
- Right-click the 3D viewport, click Animate Options, then click **Show Animation Toolbar**.

Interface

Sequence window—Displays the current scene's animation sequence.

- **Name**—The name of the animation sequence.
- **Start**—The number of the frame where the animation begins.
- **End**—The number of the frame where the animation ends.
- **FPS**—The frames per second, that is, the number of frames of an animation sequence that are displayed every second. The higher the frame rate, the smoother the animation. However, more processing power and system bandwidth are required. This setting reflects on the playback system as various film, computer, and TV playback systems differ.

Playback Control—Used to select the percentage playback speed and to skip frames.

- **Speed**—Determines the percentage playback speed, that is, the speed the animation plays back as a percentage of real-time speed. For example, if the animation is 10 seconds long and you enter 100%, it will take 10 seconds to playback. However, if you enter 50%, the animation will take 20 seconds to playback.
- **Skip frames**—Skips frames if the computer cannot keep pace with the current frame rate (FPS). This causes certain frames to be missed when playing the animation. Otherwise, all frames are displayed during playback even if they are not displayed at the current frame rate.

Continuous time—Calculates the animation between frames (frame interpolation) using the real time value. For example, 1,250 seconds. Otherwise, the closest keyframe time value is used. For example, 1 second, even if the animation is in between 1 second and 2 second frames.

Snap to frames—Moves frame to frame without frame interpolation, when playing the animation.

Time Display—Used to select how to display the time in the time/frame slider. This setting operates in relation to the FPS. For example, if the time slider is at frame 45, and the FPS is set to 30, the time slider displays the following for each of the different time display options: Frames: 45, Seconds: 1.5, MM:SS: 0:1.50 and SMPTE: 0:1:15.

- **Frames**—Displays the time in frames.
- **Seconds**—Displays the time in seconds.
- **MM:SS**—Displays the time in minutes and seconds.

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- **SMPTE**—Displays the time in the Society of Motion Picture Technical Engineers standard. This standard measures video and television production time.

OK—Applies and saves the settings, and then closes the dialog.

Cancel—Closes the dialog. Any changes made to the settings are lost.

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3D PDF Toolbar

Right-click menu bar > Deep Publish 3D PDF Conversion
Menu bar > View > Toolbars > Deep Publish 3D PDF Conversion

The 3D PDF toolbar is used to publish 3D content (on page 70) from within Word and PowerPoint to the Adobe Portable Document (.pdf) format.

Note: This toolbar is only available in PowerPoint.

Note: Converting to 3D PDF does not apply to FrameMaker documents.

Procedures

To show the 3D PDF toolbar, do one of the following:

- With the toolbar hidden, right-click in the menu bar and click **Deep Publish 3D PDF Conversion**.
- With the toolbar hidden, choose **View > Toolbars > Deep Publish 3D PDF Conversion**.

To hide the 3D PDF toolbar, do one of the following:

- With the toolbar displayed, right-click in the menu bar and click **Deep Publish 3D PDF Conversion**.
- With the toolbar displayed, choose **View > Toolbars > Deep Publish 3D PDF Conversion**.

Interface

 **Deep Publish Convert To 3D PDF** (on page 70)

 **Deep Publish Convert To 3D PDF And Email** (on page 70)

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Right-Click Menus

A number of right-click menus are available within the Scene Components panel, the 2D viewport (on page 103), and the 3D viewport (on page 103), providing tools to manage and edit your 3D content.

Note: The menus displayed may vary depending on the graphics card installed in your computer.

2D Viewport Menus

Right-click 2D viewport

The 2D viewport right-click menu contains a number of commands with which to switch to Interactive mode.

The available options differ depending on the application you are using.

Note: Certain menu options use standard Windows and Adobe conventions, and as such are not described in this reference.

Interface

Interactive mode—Switches to Interactive mode.

3D Model Object—Used to switch to Interactive mode.

- **Edit**—Switches to Interactive mode.

Edit 3D Model Object—Switches to Interactive mode.

3D Viewport Menus

Right-click scene no selection
Right-click one or more objects

The 3D viewport right-click menu contains a number of commands including commands for selecting a display renderer, editing the scene settings, controlling model animation, and screen display.

Note: The available options differ depending on the application you are using, and the location of your cursor.

Interface

Render Mode (on page 104)—Use this menu to edit the settings for the entire scene.

Show / Hide (on page 106)—Use this menu to control whether items display or are hidden in the scene. For example, grid lines.

Animate Options (on page 107)—Use this menu to control model animation.

Background (on page 107)—Use this menu to alter the appearance of the background.

View (on page 108)—Use this menu to select the aspect of the model you require.

Lights (on page 109)—Use this menu to select one of several lighting presets

Help (on page 109)—Use this menu to select the online help.

Zoom Active Object—Zooms the selected object to the best fit in the scene.

Zoom Visible—Zooms all visible objects to the best fit in the scene.

Zoom All—Resizes all objects to the best fit in the scene.

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Home—Return to home.

Default View—Restores the model to its default camera position.

Full Screen (on page 45)—Displays the scene over the full screen. If the background is set to transparent for either Image or Interactive mode, the full screen background is black by default and can be changed using the Background menu.

Note: You must click the scene before using the keyboard commands.

Image Mode—Switches to Image mode.

Note: Once you are in Image mode, you can return to Interactive mode by right-clicking the 2D active area (on page 28) and then clicking Interactive mode.

Select All—Selects all objects in the scene.

Show All Objects—Displays all objects.

Hide Selection—Hides the selected object.

Scene Properties (on page 82)—Opens the Scene Properties dialog and is used to view and edit the current scene's properties.

Object Properties (on page 83)—Opens the Object Properties dialog and is used to view and edit the selected objects' properties.

Render Modes Menu

Right-click 3D viewport > Render Modes

The Render Modes menu contains commands for the display of the scene including the render method, lights, and vertices. These settings apply to the entire scene.

Note that you can apply a render method to an individual object (on page 83), regardless of the render method selected for the scene.

Interface

Solid—Displays each object as solid.

Wireframe—Displays each object as a wireframe.

Transparent—Displays each object as transparent.

Solid Wireframe—Displays each object as solid with a wireframe.

Line Illustration—Displays each object as solid, based on the 'background top' color, with outlines. That is, a solid rendering with outlines overlaid on top.

Solid Outline—Displays each object as solid with outlines. That is, only silhouette and crease edges are shown.

Shaded Illustration—Displays each object as solid with outlines with material color overrides. That is, the objects' material colors can be replaced or blended with other colors.

Bounding Box—Displays each object as a bounding box.

Other (on page 105)—Use this menu to select further display options for an object.

Smoothing (on page 105)—Use this menu to select a smoothing angle for the scene while in Solid or Transparent render mode.

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Display Renderer (on page 105)—Used to select the renderer that determines how the scene is rendered while you work. The available options depend on the graphics cards installed on your computer.

Other Menu

Right-click 3D viewport > Render Modes > Other

The Other menu contains further options for the display of the scene. These settings apply to the entire scene.

Note that you can apply a render method to an individual object (on page 83), regardless of the render method selected for the scene.

Interface

Transparent Bounding Box—Displays each object as a transparent bounding box.

Transparent Bounding Box Outline—Displays each object as a transparent bounding box with outlines along the edges. Each bounding box is axis-aligned (AABB) instead of the object's actual geometry. An AABB is a box with all its edges parallel to the X, Y, and Z axes, and is the smallest box that can completely contain the given object.

Shaded Wireframe—Displays each object as a shaded wireframe.

Transparent Wireframe—Displays each object as transparent with a wireframe.

Hidden Wireframe—Displays or hides the wireframe view without any visible hidden surfaces. A similar effect can be obtained using Solid Outline mode with the outline angle set to '0'.

Vertices—Displays all objects as vertices.

Shaded Vertices—Displays all objects as shaded vertices. The shading colors are based on the object's material colors.

Smoothing Menu

Right-click 3D viewport > Render Modes > Smoothing

The Smoothing menu is used to apply smoothing to selected objects in Solid or Transparent mode (on page 42). This can be helpful in improving the 'look' of the objects.

These settings are global, that is, they change the smoothing for the entire scene. Individual objects can possess local smoothing settings that override these global settings.

Note: These commands may lessen the display performance. They also have no effect on wireframe views.

Interface

Use existing smoothing normals—Applies the smoothing normals from the current file.

0-180—Applies the selected smoothing angle degree.

Custom Angle—Used to open the Custom Smooth Angle dialog and apply a user-defined smoothing angle.

Smoothing Disabled—Disables all smoothing.

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Display Renderer Menu

Right-click 3D viewport > Render Modes > Display Renderer

The display renderer determines how scenes are rendered while you work. By default, the Software Z-Buffer renderer is selected.

You can change the display renderer at any time.

Note: If you have the OpenGL graphics driver installed on your computer, you can enable the 3D graphics acceleration card by selecting the OpenGL display renderer to boost rendering speed by three to five times.

Line styles are supported in all display renderers except Dx9. For example, .dwg and .dwf files use line styles. You are able to view any line styles that are within these file, as illustrated below, when viewing or exporting the files.

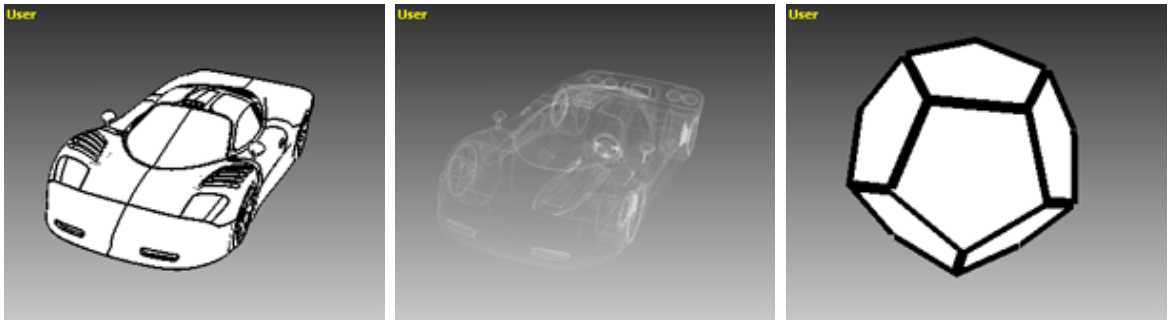
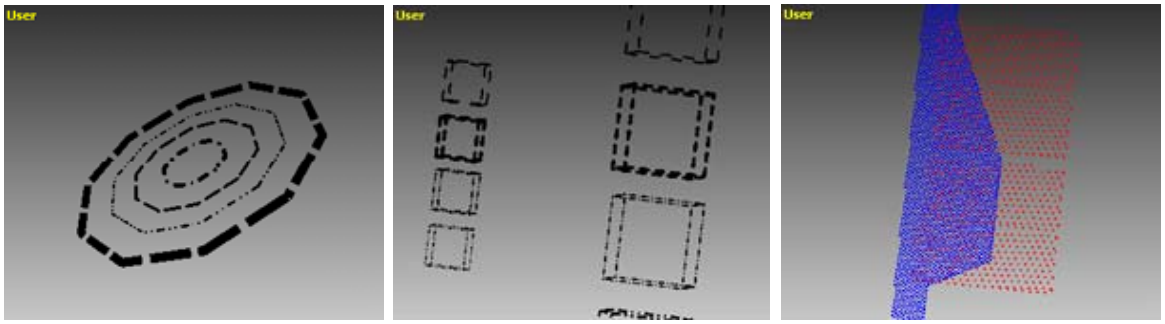


Illustration with high detail/Thin wireframe/Thick and thin lines



Various line thickness/Orthographic styles/Dots

Note: Dx9 does not support Illustration or wireframe line thickness greater than 1px.

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Show/Hide Menu

Right-click 3D viewport > Show/Hide

The Show/Hide menu contains commands that control the display of the scene, and determine whether objects are displayed or hidden. This includes lights, markups, and vertices. These settings apply to the entire scene.

Interface

2 sided Rendering—Displays or hides the reverse side of the model.

Bones—Displays or hides bones.

Cross Section—Displays or hides the cross section plane.

Grid—Displays or hides the grid or 'floor' of the scene. Note that this option may reduce the speed of screen refreshes slightly.

Lights and Cameras—Displays or hides the scene lights and cameras.

Markups (on page 52)—Displays or hides any text labels associated with the model.

Shadow—Displays or hides an object's shadow.

Scene Bounding Box—Displays or hides the scene bounding box.

Textures—Displays and hides textures on objects in Solid render mode. The textures are displayed in the most realistic and detailed representation for the scene.

Vertices—Displays or hides all object vertices. Each vertex is displayed as a small cross in DX Graphics mode or as a point in OpenGL mode.

World Axes—Displays or hides the world axes.

Fade Effect—Controls whether the toolbars have a 'fading effect' when they are not used for a time.

Animate Options Menu

Right-click 3D viewport > Animate Options
Right-click Forward button on Steps and Model Views toolbar

The Animate Options menu enables you to control model animation and is only available when a model is animated.

The menu options are also found on the Animation toolbar, and as such are described in Animation Toolbar (on page 99).

Interface

Auto-Rotate—Rotates the model automatically. When the model is rotated with the mouse, auto rotate is initiated in the direction and at the speed of the mouse action until you click over the model again. This option may lessen the display performance.

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Background Menu

Right-click 3D viewport > Background

The Background menu contains commands for the display of the background.

Interface

Transparent—Applies a transparent background.

Opaque—Applies the currently selected color as an opaque background.

View Menu

Right-click 3D viewport > View

The View menu is used to view scenes through any user-defined views or through the isometric, dimetric, or trimetric preset views. You can select any number of viewpoints through which to view the current model.

You can also display the model using any available cameras, and reset these views by selecting the User option.

Interface

Perspective (on page 43)—Displays a view of the model in perspective projection mode. The default projection mode is parallel, and is used when this option is unselected.

Orthographic (on page 43)—Used to select an orthographic viewpoint through which to view the model.

- **Top**—Displays a view of the model orthographically from the top of the scene.
- **Bottom**—Displays a view of the model orthographically from the bottom of the scene.
- **Front**—Displays a view of the model orthographically from the front of the scene.
- **Aft (Back)**—Displays a view of the model orthographically from the back of the scene.
- **Right**—Displays a view of the model orthographically from the right of the scene.
- **Left**—Displays a view of the model orthographically from the left of the scene.

30° Isometric—Used to to view the model using a 30º isometric viewpoint from the selected point. All lengths are parallel to the axes and are displayed at their true length. See Preset Views (on page 43) for information on the viewpoint menu commands.

27° Isometric (1:2)—Used to select a 27º isometric viewpoint through which to view the model. See Preset Views (on page 43) for information on the viewpoint menu commands.

45° Isometric (Military)—Used to select a 45º isometric viewpoint through which to view the model. See Preset Views (on page 43) for information on the viewpoint menu commands.

Dimetric (42°/7°)—Used to select a dimetric viewpoint through which to view the model. See Preset Views (on page 43) for information on the viewpoint menu commands.

43° Trimetric—Used to select a 43º trimetric viewpoint through which to view the model. See Preset Views (on page 43) for information on the viewpoint menu commands.

48° Trimetric—Used to select a 48º trimetric viewpoint through which to view the model. See Preset Views (on page 43) for information on the viewpoint menu commands.

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Lights Menu

Right-click 3D viewport > Lights
Keyboard > ALT+0, ALT+1, ALT+2, ALT+3, ALT+5, ALT+6, ALT+7, ALT+8, ALT+9, [,], HOME, ALT+S

The Lights menu contains commands for the display of the scene's lights, which imitate different kinds of real-world light sources such as the sun, office lamps, or stage and film lighting. Adding lights gives a more realistic appearance by enhancing the clarity and three-dimensionality of a scene.

You can either use the lights from the file or you can use one of several lighting presets.

Note: The scene's lighting is also affected by the scene's ambient and illumination colors (on page 83).

Interface

Lights from File—Applies any lights that are visible in the Scene tree including any lights loaded from the file. If there are no lights in the Scene tree, the current preset lighting mode is used.

Note: Selecting a preset lighting mode clears this command. Therefore, you must select a preset lighting mode before selecting the 'Lights from File' command to ensure it functions correctly.

White Lights—Applies white lighting.

Day Lights—Applies lighting to simulate daylight.

Hard Lights—Applies hard lighting.

Colored Lights Red / Green—Applies red, blue, and green lighting. The color from each light remains separate from the others.

Colored Lights Blue / Green—Applies blue and yellow lighting. The color from each light remains separate from the others.

Blue Lights—Applies blue lighting.

Marsiano Lights—Applies red lighting.

Cube Lights—Applies cube lighting.

CAD Optimized Lights—Applies lighting that is optimized for CAD files. This should be used in conjunction with CAD files.

Single Light from Eye—Applies a single light originating from the viewer's eye.

No Lights—Turns all the lights off.

Increase Brightness—Applies more brightness.

Decrease Brightness—Applies less brightness.

Restore Brightness—Restores the original level of brightness.

Specular Lights—Adds a specular light component into the lighting calculation.

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Help Menu

Right-click 3D viewport > Help

The Help menu is used to perform a variety of commands including viewing the online help, and activating Deep Publish.

Note: These options are also available in the Deep Publish menu.

Interface

Deep Publish Help—Displays the application's User Reference.

Activate Deep Publish—Used to activate Deep Publish after registration. This command disappears from the menu once Deep Publish is activated.

About Deep Publish—Displays a range of information about Deep Publish including copyright and version information. You can also use this option to activate the product after registration.

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Scene Components Panel Menu

Certain context menus are available when you right-click within the Scene Components panel. The available menu options depend on your current selection within the Scene tree.

For example, if you have an object selected in the 3D Objects list, object selection options are available. However, if you have a material selected in the Materials folder, only the Material Properties option is available.

3D Objects List Menu

Scene Components panel > Scene tree > 3D Objects list > Right-click object
Scene Components panel > Scene tree > 3D Objects list > Right-click no object selection

The 3D Objects list menu enables you to select objects, cancel your selection, and show and hide objects. You can also view and edit object or scene properties, depending on your selection within the list. The available commands differ depending on your selection.

Interface

Activate camera (on page 43)—Changes the scene to the view from the selected camera. This option is only available if a camera object is selected.

Select All—Selects all objects in the scene.

Invert Selection—Inverts the current selection.

Show All Objects—Displays all objects.

Show Selection—Displays any hidden objects that are selected.

Hide All Objects—Hides all objects.

Hide Selection—Hides the selected object.

Hide Unselected—Hides all unselected objects.

Object Properties (on page 83)—Opens the Object Properties dialog and is used to view and edit the properties of the selected object(s). This option is only available if one or more objects are selected.

Scene Properties (on page 82)—Opens the Scene Properties dialog and is used to view and edit the properties of the selected scene. This option is unavailable if an object is selected.

Materials Folder Menu

Scene Components panel > Scene tree > Materials folder > Right-click material

The Materials folder menu enables you to view and edit material properties. The available commands differ depending on your selection. That is, whether the Materials folder or an individual material is selected.

Interface

Material Properties (on page 85)—Opens the Materials Properties dialog and is used to view and edit the properties of the selected material.

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Keyboard Shortcuts

This section shows the pre-assigned keyboard shortcuts; keyboard alternatives to program functions. It also describes any shortcuts that can be accessed using the mouse buttons.

If a keyboard shortcut is available for a command, it is displayed to the right of the command name on the menu.

The shortcuts differ depending on the viewing application you have installed on your computer: Deep Publish (http://www.righthemisphere.com/deeppublish) or Deep View (http://www.righthemisphere.com/deepview). Please see either the Deep Publish User Reference (Start > Programs > Right Hemisphere > Deep Publish > Help), or the Deep View Help (Start > Programs > Right Hemisphere > Deep View > Help) for further information.

Mastery of these shortcuts is the difference between an average user and a 'Power User'. We strongly recommend you practice these shortcuts as they are explained in the tutorials, and wherever possible in your own projects.

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Image Mode Shortcuts

These are the pre-assigned keyboard shortcuts for general procedures within the main user interface while in Image mode.

User Interface Function	Keyboard Shortcut
Delete the current image file	DELETE

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Interactive Mode Shortcuts

These are the pre-assigned keyboard shortcuts for general procedures within the main user interface while in Interactive mode.

3D Navigation Shortcuts

These are the pre-assigned keyboard shortcuts for 3D navigation.

User Interface Function	Keyboard Shortcut
Roll camera (move camera around viewing axis)	SHIFT+drag
Orbit scene (move camera around focal point)	Drag mouse
Pan scene (rotate camera around vertical axis)	LEFT / RIGHT ARROW
View from different angle (move camera laterally/vertically)	Left+right-click+drag Middle-click+drag
Truck in (move camera into scene to view more closely) Note: The focal point is a fixed distance from the camera.	UP ARROW
Truck out (move camera out from scene to view more distantly) Note: The focal point is a fixed distance from the camera.	DOWN ARROW
Zoom in (narrow the camera angle (FOV) to magnify scene)	Right-click+drag into scene PLUS SIGN (+) IntelliMouse
Zoom out (widen camera angle (FOV) to reduce scene magnification)	Right-click+drag out from scene MINUS SIGN (-) IntelliMouse
Zoom to extents (fit scene to viewport/screen)	CTRL+PLUS SIGN (+)
Restore to default camera view	MULTIPLICATION SIGN (*)

Render Mode Menu Shortcuts

These are the pre-assigned keyboard shortcuts for the Display (on page 104) and Show/Hide (on page 106) menus.

User Interface Function	Keyboard Shortcut
Bounding Box render mode	CTRL+1
Transparent Bounding Box render mode	CTRL+2
Vertices render mode	CTRL+3
Wireframe render mode	CTRL+4
Solid render mode	CTRL+5
Transparent render mode	CTRL+6
Solid Wireframe render mode	CTRL+7
Transparent Wireframe render mode	CTRL+8
Toggle scene bounding box	CTRL+B
Toggle back-facing geometry	CTRL+H
Toggle vertices	CTRL+I
Toggle cameras and lights	ALT+L
Toggle cross section	ALT+X

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General Shortcuts

These are the pre-assigned keyboard shortcuts for general procedures within the main user interface.

User Interface Function	Keyboard Shortcut
Display right-click menus	Right-mouse click
Toggle Full-screen and Standard display modes	F11
Return to Standard display mode from Full-screen mode	ESC or F11
Open Scene Properties dialog	Double-click 3D Objects node in Scene tree

Lights Menu Shortcuts

These are the pre-assigned keyboard shortcuts for the Lights menu (on page 109).

User Interface Function	Keyboard Shortcut
Display lights from file	ALT+0
Display white lights	ALT+1
Display daylight	ALT+2
Display hard lights	ALT+3
Display colored lights red/green	ALT+4
Display colored lights blue/green	ALT+5
Display blue lights	ALT+6
Display marsiano (red) lights	ALT+7
Display single white light from eye	ALT+8
Turn all lights off	ALT+9
Apply more brightness	SHIFT++]
Apply less brightness	SHIFT+- [
Restore original brightness	HOME
Toggle specular lights	ALT+S

Materials Menu Shortcuts

These are the pre-assigned keyboard shortcuts for the Materials menu.

User Interface Function	Keyboard Shortcut
Toggle default material	CTRL+M
Toggle textures	CTRL+T

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Scene Components Panel Shortcuts

These are the pre-assigned keyboard shortcuts for the Scene Components panel (on page 79).

User Interface Function	Keyboard Shortcut
Open the Materials Properties dialog	Double-click material in Scene tree
Open the Object Properties dialog for selected object	Double-click object in Scene tree Select object+ALT+ENTER
Toggle selected object and sub-object display	Select object+H
Edit object or material name	Click name of selected object or material in Scene tree F2

Selection Shortcuts

These are the pre-assigned keyboard shortcuts for selection procedures.

User Interface Function	Keyboard Shortcut
Select an object	Click object icon in Scene tree Click object in viewport
Select a material	SHIFT+click over objects in viewport
Select all sub-objects of the selected objects	ALT+click object icon in Scene tree
Select multiple objects	CTRL+click objects in Scene tree CTRL+click objects in viewport
Open Select Objects dialog	F3

Smoothing Menu Shortcuts

These are the pre-assigned keyboard shortcuts for the Smoothing menu (on page 105).

User Interface Function	Keyboard Shortcut
Toggle smoothing	CTRL+S

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Hints and Tips

This section contains hints on using Deep Publish.

All Applications

- Microsoft Dx9 is supported.
- Avoid overlapping active windows or active areas.
- Files cannot be inserted into text boxes.
- For best results when viewing a 2D image inserted for collaboration, you should use the 'Orthographic top' view.

3D PDF

The following features are not supported when viewing 3D PDF documents:

- Animation bar.
- Object Properties dialog.
- Scene Properties dialog.
- Tools toolbar.

PowerPoint

- Certain keys on the keyboard can be used to control the model's lighting and size while in presentation mode. Once you have selected the model, the lighting and zoom modes become active.
  - Lighting mode is available using the square brackets ([ ]) to increase and decrease the model's brightness. Restore the original level of brightness by pressing HOME.
  - Zoom mode is available using the UP and DOWN arrows and the PLUS (+) and MINUS (-) signs to increase and decrease the size of the model.
- Leave some space below the active window on each slide, to click to the next slide when in presentation mode.
- If you want to to play animation during presentation mode, save the document with either the animation Forward or Reverse options 'on'. When the presentation slide is displayed, the animation is played automatically. Presentation performance is typically slowed if you choose to do this.

Word

- Deep Publish inserts 3D models into Word as a graphic, so many of the same Word conventions apply. However, formatting options are unavailable in Interactive mode.
- Set the document background to opaque white for best results.
- Ensure that 'Drawing objects' is selected in Tools > Options > Print when printing documents.
- If you want to to play animation on switching to Interactive mode, save the document with either the animation Forward or Reverse options 'on'. When you next switch to Interactive mode, the animation is played automatically. Presentation performance is typically slowed if you choose to do this.
- You can turn high resolution printing on and off as required.

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FrameMaker

- The anchored frame should always be larger than the active area. Please see the Adobe FrameMaker Help for further information.

Excel

- If you want to to play animation on opening, save the document with either the animation Forward or Reverse options 'on'. When you next open the document, the animation is played automatically. Presentation performance is typically slowed if you choose to do this.

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Appendix A: 2D File Formats

The following supported 2D file formats are part of the standard application delivery. This list is organized alphabetically by file format.

File Format	Type	Extension	Version/Notes
Adobe Illustrator Vector Graphics	Image	AI	
Adobe Photoshop Document	Image	PSD	
Autodesk Animator Graphic	Image	CEL	
EA/Amiga Interchange File Format	Image	IFF	
DirectX DirectDraw Surface	Image	DDS	
FLIC Animator Animation (fli)	Image	FLI	First frame only; resolution limited to 320x200.
FLIC Animator Animation (flc)	Image	FLC	First frame only.
Graphics Interchange Format	Image	GIF	
JPEG 2000 J2K	Image	JP2K	
JPEG 2000 JP2	Image	JP2	
JPEG 2000 JPC	Image	JPC	
JPEG 2000 JPX	Image	JPX	
JPEG Image	Image	JPEG, JPG	
Portable Network Graphics	Image	PNG	All sub-types supported.
Portable Pixelmap Graphic	Image	PPM	
Publisher's Paintbrush Bitmap Graphic	Image	PCX	
Scalable Vector Graphic	Image	SVG	
Silicon Graphics Image	Image	RGB, RGBA, INT, INTA	8-32 bpp; RLE or uncompressed; no color maps.
SOFTIMAGE Picture	Image	PIC	
Tagged Image File Format	Image	TIF, TIFF	
TGA Image	Image	TGA	All sub-types supported.
Windows Bitmap Graphic	Image	BMP, DIB	
Windows Run Length Encoding Bitmap	Image	RLE	

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Appendix B: 3D File Formats

The following supported 3D file formats are part of the standard application delivery. This list is organized alphabetically by file format.

File Format	Type	Extension	Version/Notes
Autodesk 3D Studio	Scene	3DS	
Autodesk 3D Studio Project	Scene	PRJ	
AutoCAD Drawing Interchange	Scene	DXF	
AutoCAD Drawing Object	Scene	DWG	
AutoCAD Sheet Sets	Scene	DST	
Computer Graphics Metafile	Scene	CGM	
Lightwave 3D Object	Scene	LWO	
Lightwave Binary	Scene	LW	
Lightwave Scene	Scene	LWS	
Open Inventor	Scene	IV	
Rhinoceros 3D Model	Scene	3DM	
Right Hemisphere Binary	Scene	RH	
Universal 3D	Scene	U3D	
VRML Worlds	Scene	WRL, VRML	
Wavefront Object	Scene	OBJ	

Note 1: The file formats DWG and DXF have 2D characteristics when vector lines are applied, and do not function in the same manner as pure 3D file formats. For example, you cannot rotate a model rendered with vector lines and saved in a DWG format.

Note 2: If you are using Deep Exploration CAD Edition or the Standard Edition and the CAD modules, CAD files should be saved as .rh files before being inserted or dragged into Office documents.

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