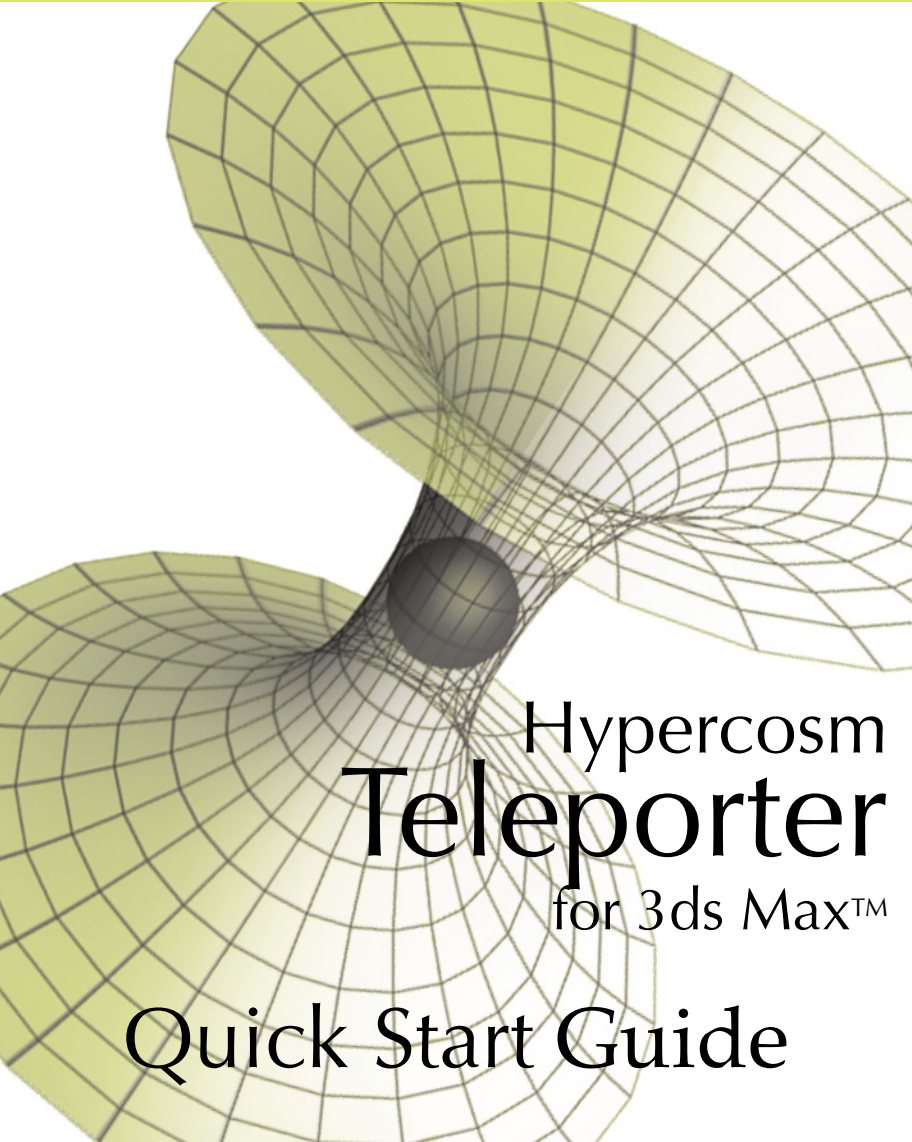




Hypercosm™
We Put 3D To Work!™



Hypercosm Teleporter

for 3ds Max™

Quick Start Guide

Hypercosm Teleporter Quick Start Guide

Revision: November 2005

Copyright © 2005 Hypercosm LLC
All rights reserved.

Hypercosm, OMAR, Hypercosm 3D Player, and Hypercosm Teleporter are trademarks of Hypercosm LLC. All other trademarks are the property of their respective holders.

Hypercosm LLC
(608) 827-5000
www.hypercosm.com

For technical support, please contact Hypercosm by their web site, the phone number above, or by email at support@hypercosm.com

To see support options, frequently asked questions, and other information, please see the Hypercosm support web site at www.hypercosm.com/support/

Table of Contents

Introduction	9
<u>Hypercosm Teleporter Benefits</u>	<u>9</u>
Sharing	10
Low File Sizes	10
Encryption	10
Ease of Use	10
Interactivity	11
Integration	11
<u>Hypercosm System Overview</u>	<u>11</u>
<u>Hypercosm Software Components</u>	<u>12</u>
Hypercosm Viewing Software	12
Hypercosm Development Software	13

Getting Started	15
<u>Installing Hypercosm Teleporter</u>	<u>16</u>
The Evaluation Version Watermark	21
<u>Running Hypercosm Teleporter</u> <u>from 3ds Max™</u>	<u>22</u>
<u>Hypercosm Applets</u>	<u>27</u>
<u>Viewing Hypercosm Applets</u>	<u>27</u>
The Hypercosm Player	27
<u>The Standard Applet User Interface</u>	<u>28</u>
User Interface Components	29
Standard Two Button Mouse Controls	30
The Applet Docking Bar	32
Standard Controls	32
<u>Sharing Hypercosm Applets</u>	<u>34</u>
Downloading Hypercosm Player	35
Posting Hypercosm Applets on a Web Page	35
Emailing Hypercosm Applets	35
Using Hypercosm Teleporter	37
<u>The "Express" Tab</u>	<u>39</u>
Active Camera	39

View After Export	40
<u>The "Textures" Tab</u>	<u>41</u>
Resolution	41
Format	43
Mipmapping	45
<u>The "Animation" Tab</u>	<u>47</u>
Controller Sampling Rate	47
Options	48
<u>The "Interface" Tab</u>	<u>50</u>
Applet Titles	51
Applet Docking Bar	52
<u>The "Web" Tab</u>	<u>57</u>
Options	57
Collaboration	59
<u>The "Advanced" Tab</u>	<u>60</u>
Options	60
Background	61
Precision	61
<u>The "About" Tab</u>	<u>63</u>
File Version	63
<u>How to Get Help</u>	<u>65</u>
3ds Max™ Online Documentation	65
Hypercosm Web Site	65

1

Chapter

Introduction

Welcome to Hypercosm Teleporter for 3ds Max™, one of the most powerful and reliable means of posting your 3D content to the web. Hypercosm makes it easy to share your 3ds Max™ scenes with others and to create dynamic interactive 3D web content.

Hypercosm Teleporter Benefits

The Hypercosm system allows you to publish 3D content just like you publish other rich media content such as video and sound. With Hypercosm, you can turn your 3D models into a rich communica-

tions medium and to open up the benefits of 3D graphics to a wide audience.

Sharing

The Hypercosm system lets you share 3D models with anyone regardless of whether they have 3ds Max™ or not. All they need to do to view Hypercosm models is to install the free Hypercosm Player. This lets you share your 3D concepts with customers, colleagues, family and friends.

Low File Sizes

Hypercosm's patented unique approach to encoding object geometry and behavior results in very low file sizes that can be delivered over the web in a practical and effective manner.

Encryption

Hypercosm Teleporter translates your 3ds Max™ models into a compressed and encrypted form that is practical and safe for you to post on a web site. Once they have been converted into Hypercosm format, your 3D scenes can not be edited in any way so your original models remain safe.

Ease of Use

Hypercosm Teleporter has an easy to use interface for quickly converting your 3ds Max™ scenes into web deployable content. Once you've finished the installation process, with just a few mouse clicks you can translate your 3ds Max™ scenes into web pages that can be posted on the Internet.

Interactivity

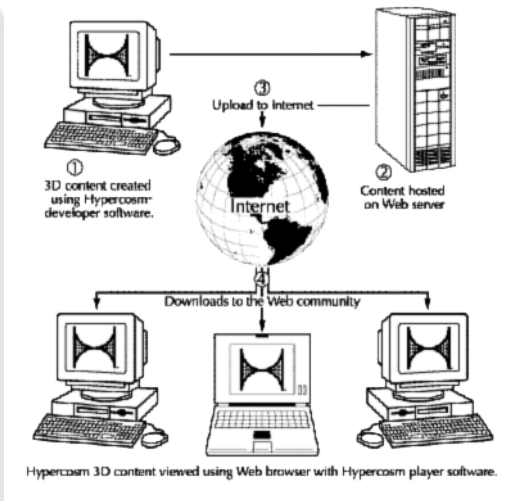
A 3D engine inside of the Hypercosm Player delivers realistic interactive graphics with textures and lighting supported by the 3D capabilities of your video card. Rather than just viewing a static image, viewers can navigate through the 3D scene interactively and gain a much better understanding of the 3D models than is possible with any other technique.

Integration

Hypercosm Teleporter lets you integrate Hypercosm 3D content into web pages, and even PowerPoint documents.

Hypercosm System Overview

Hypercosm 3D content is a powerful, web based medium for interactive, online communication of 3D visual information with online customers, clients, coworkers, collaborators, or students. The transmission of Hypercosm 3D content is made possible by a system of software products. The process of creating, posting, and viewing Hypercosm 3D content is depicted below:



Hypercosm Software Components

There are two essential families of software components in the Hypercosm system. The first is Hypercosm viewing software which is used to display content that is in Hypercosm format. The second family of software is Hypercosm development software which is used to create content in the Hypercosm format.

Hypercosm Viewing Software

- Hypercosm Player

To view Hypercosm content on the Web, online users first need the Hypercosm 3D Player, a web browser plug-in that runs

Hypercosm applets. The Hypercosm 3D Player integrates with the web browser in a similar fashion to other plug-in based media-enabling player technologies. All of these technologies require that end users download and install a player to use the particular media type that they enable. The Hypercosm Player software is freely downloadable from the Hypercosm web site (www.hypercosm.com).

Hypercosm Development Software

- **Hypercosm Teleporter**

The first and most important part of the Hypercosm development software system is Hypercosm Teleporter. Hypercosm Teleporter translates 3D model and animation information from an existing 3D authoring tool such as Discreet's 3ds Max™ and transforms it into a web deployable Hypercosm 3D applet that can be viewed using the Hypercosm Player.

- **Hypercosm Studio**

Hypercosm Studio is a scripting tool used by expert Hypercosm developers. Using Hypercosm Studio, you can program directly in Hypercosm's object oriented OMAR (Object Oriented Modeling, Animation, and Rendering) language for maximum power and control. Hypercosm studio lets you program arbitrary behavior, interactivity, and even physics. For more information on Hypercosm Studio, contact Hypercosm.

2

Chapter

Getting Started

To get started using Hypercosm Teleporter for 3ds Max™, you must first install Hypercosm Teleporter onto a computer that already has 3ds Max™ installed.

Installing Hypercosm Teleporter

The following steps show you how to how install Hypercosm Teleporter. Once the Hypercosm Teleporter has been installed, you can run it from inside of 3ds Max™.

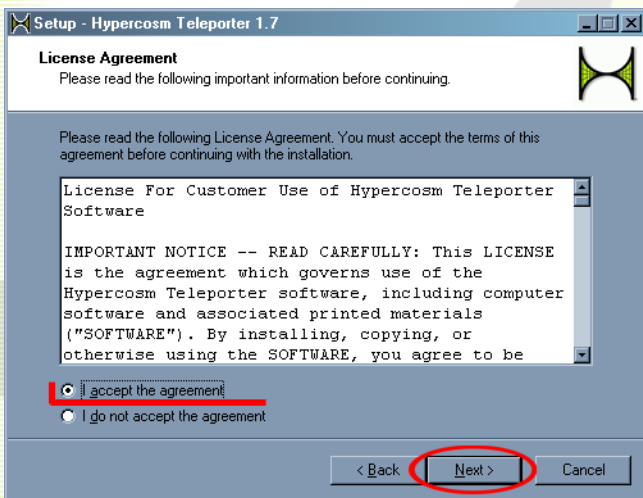
- **Step 1: Run the Installation Program**

To install Hypercosm Teleporter, run the Hypercosm Teleporter installer. This installer software can be found on the CDROM for the product version of Hypercosm Teleporter or can be downloaded from the web for the evaluation version. When the installer starts up, you should see the interface shown below. To proceed, click the “Next” button on the bottom.



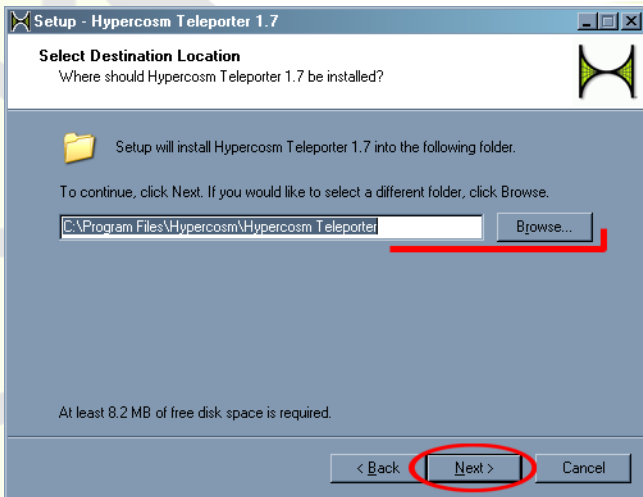
- **Step 2: Accept the License Agreement**

To proceed, you will need to accept the license agreement by clicking the top radio button in the interface shown below. Once this is done, click the “Next” button at the bottom.

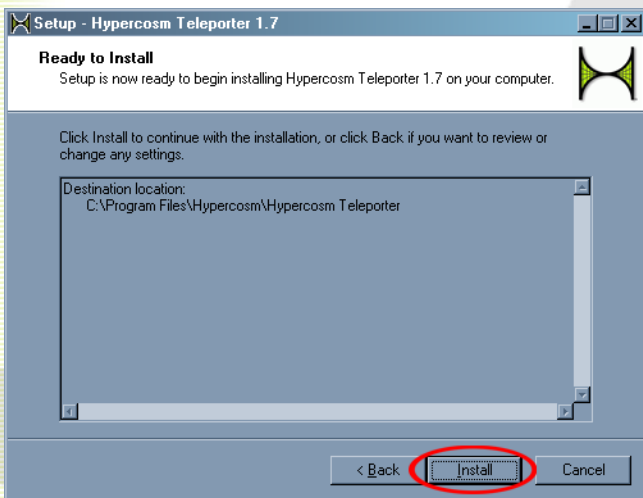


- **Step 3: Select the Destination Folder**

The next step is to select the destination folder for the Hypercosm Teleporter software. Although you can install the software to any location on your hard drive, we suggest that you keep the default location (C:\Program Files\Hypercosm\Hypercosm Teleporter\). To proceed, click the “Next” button at the bottom.

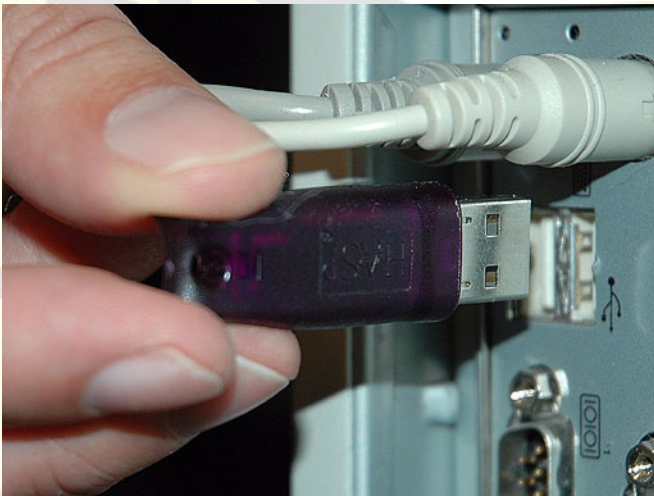


- **Step 4: Start the Installation**
To proceed, click the “Install” button at the bottom.



- Step 5: Plug In Your Dongle (for non-evaluation version only)

If you have purchased the commercial version of the software, then you will need to install your copy protection dongle now. To use this dongle, just insert it into your computer's USB slot as shown below. The dongle should light up when you insert it into the USB slot. This indicates that the HASP drivers have been correctly installed. The dongle is a small hardware device that informs the software that you have purchased a valid copy. Without the dongle in place, your software will still function, but it will run in "evaluation mode" and will place a watermark over the graphics.



The Evaluation Version Watermark

If you are running the evaluation version of Hypercosm Teleporter and you export a 3ds Max™ scene, the software will place a watermark over the top of the running applet. In order to get rid of the watermark, you must purchase the commercial version of the software that comes with a valid HASP dongle and re-export your 3ds Max™ scene.

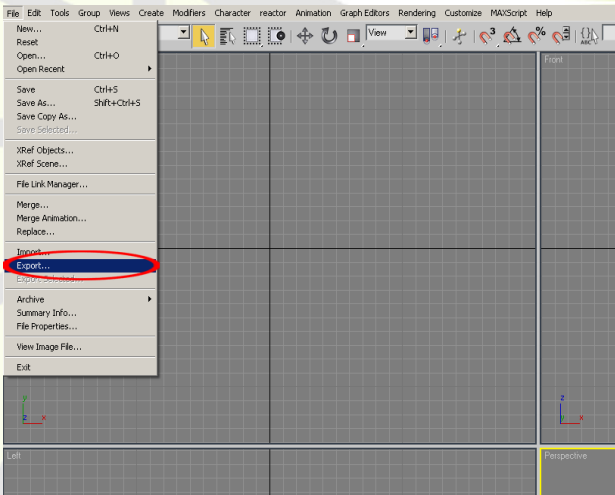


Running Hypercosm Teleporter from 3ds Max™

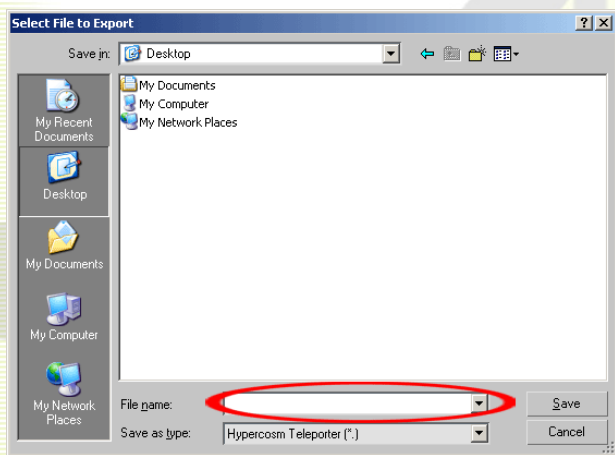
To run Hypercosm Teleporter, start up 3ds Max™ and perform the steps described below.

- Step 1: In 3ds Max™, select “Export...” from the “File” menu

In 3ds Max™, click the File menu on the main menu bar and select the Export menu option as shown below.

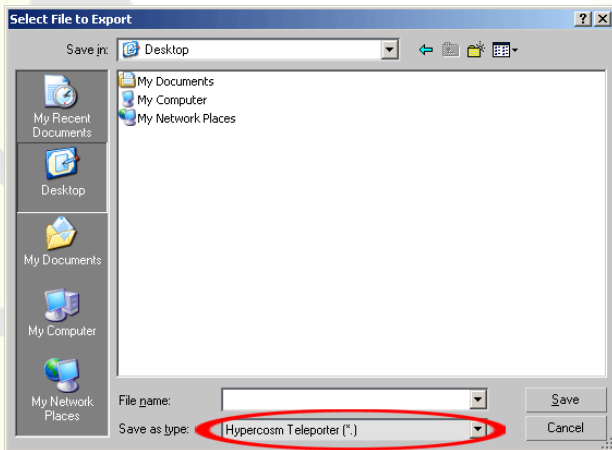


- **Step 2: Type in a name for the exported scene**
By selecting Export from the File menu, a file dialog box will be displayed. In the first text box at the bottom of the dialog, type in a name for the exported scene. This name will be used as the name of a new folder which will contain the web page, the exported Hypercosm applet, and any other resources needed for the web deployable applet (such as sounds, textures, etc).



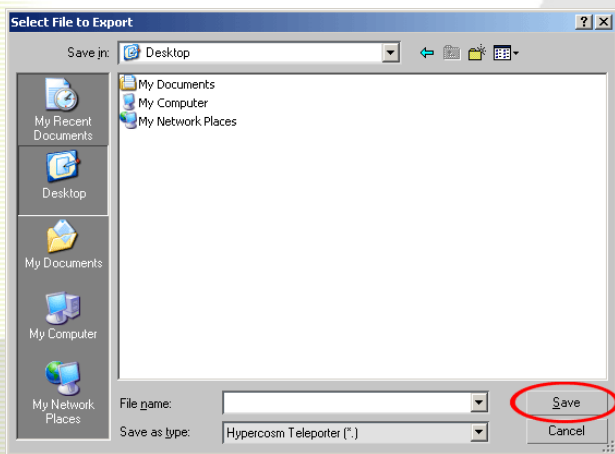
- Step 3: Select the “Hypercosm Teleporter” exporter

Select the Hypercosm Teleporter exporter from a list of available exporters. This is done using the selection box labeled “Save as type” which is located at the bottom of the dialog box.



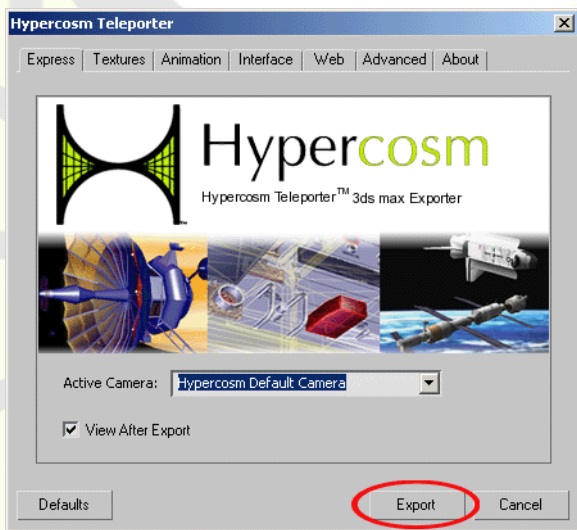
- Step 4: Press “Save”

After you have selected a file name and type, press the “Save” button at the lower right corner of the dialog box.



- Step 5: Press “Export”

After saving the file, the Hypercosm file export dialog box will be displayed. In order to export the scene, press the "Export" button at the bottom of the dialog box. If the "View After Export" checkbox on the left side of the dialog is checked, then the Hypercosm Teleporter will automatically bring up your web browser after it has finished exporting the scene to show you the final exported scene inside of the web browser.



Hypercosm Applets

When you export files out of 3ds Max™ using Hypercosm Teleporter, you will be creating a new type of file that is known as a “Hypercosm applet”. An “applet” is a small program that runs using the assistance of another program, in this case the Hypercosm Player. Hypercosm applets are actually little programs to generate and display the 3D graphics depicted in your 3ds Max™ scene. For those of you who are familiar with programming, the term “applet” usually refers to a Java applet. Hypercosm applets are conceptually very similar to Java applets except instead of using the Java Virtual Machine, they use the Hypercosm Virtual Machine which has special extensions for 3D graphics. For this reason, the applet files will be named using the “.hcvm” file extension which stands for “Hypercosm Virtual Machine”.

Viewing Hypercosm Applets

When you export a 3ds Max™ scene using Hypercosm Teleporter, it will create a Hypercosm Applet. Hypercosm applets are viewed using the Hypercosm Player.

The Hypercosm Player

The Hypercosm Player is automatically installed for you when you install Hypercosm Teleporter. The Hypercosm Player can be started up easily to view an applet in a variety of ways.

- **Using Hypercosm Teleporter**
If you have the “View After Export” option on the Express tab selected, then your web browser will automatically be started up whenever you export a scene to show you a web page containing your newly exported Hypercosm applet.

- **Using Your Web Browser**

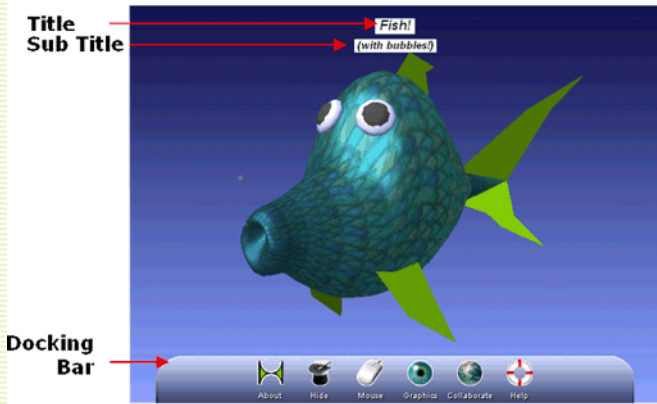
The Hypercosm Player can be run just by starting up a web browser on any page containing a Hypercosm applet. The web browser will automatically start up the Hypercosm Player and display the running applet inside of the web page.

- **Using Windows**

You can start up the Hypercosm Player directly just by clicking on any Hypercosm applet (.hcvn) file. This will start up a Hypercosm applet and will display the graphical simulation inside of a new window.

The Standard Applet User Interface

The Hypercosm Player is unlike many other 3D media players because the interface is part of the content rather than built-in to the player. This means that Hypercosm applets can each have their own custom user interfaces. Even though it's possible to create custom interfaces, most Hypercosm applets will tend to use a standard interface that is defined by the support files that are used when that applet is compiled.



User Interface Components

The standard user interface allows the user to navigate around the 3D scene, to set the number of mouse buttons to use, to collaborate with other users across the network, and to control the graphic settings which determine how the 3D scene is drawn. The standard user interface contains the following components:

- **Title**

The title is used to display the name or other descriptive phrase about the applet.

- **Subtitle**

The subtitle is used to display an additional optional descriptive phrase about the applet.

- **Mouse Controls**

The mouse controls are the main way that the user interacts with the applet. These controls are used to navigate around the three dimensional scene by clicking and dragging on the main display window of the applet. The mouse controls can alter the scene's rotation, viewer's direction of view, and location of the viewer in the scene

- **Docking Bar**

The applet docking bar is displayed at the bottom of the running applet and is the place where the applet controls are kept. These controls allow the viewer to configure the mouse controls, to change the graphics display methods, and to collaborate with other users across the Internet.

Standard Two Button Mouse Controls

The standard mouse controls are used mainly to navigate around a three-dimensional scene. These standard mouse controls assume that you are using a two button mouse. The standard mouse controls allow you to rotate, pan, and zoom.

- **Rotate**



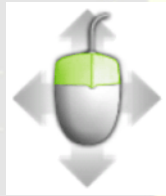
To rotate the scene, position your mouse pointer over the scene, click and hold the left mouse button, and drag the pointer horizontally or vertically in the direction you want the scene to rotate.

- Pan



To change your direction of view, position your mouse pointer over the scene, click and hold the right mouse button and drag the pointer.

- Zoom



To zoom in or out of the scene, position your mouse pointer over a point in the scene that you want to move towards or away. Click and hold both mouse buttons (or middle mouse button), while you drag the pointer towards you (downward) to zoom in or away from you (upward) to zoom out on the scene. Note that the zoom control actually moves your viewing position rather than just changing your field of view so you can use this zoom control to "zoom around" the scene. By combining the zoom control and the pan control, you can easily drag your viewpoint along an arbitrary path through the three dimensional scene.

The Applet Docking Bar

The applet docking bar is displayed at the bottom of the running applet and is the place where the applet controls are kept. Below is a close-up view of the docking bar.



Standard Controls

Hypercosm applets using the standard docking bar may contain any of the icons shown above. Applets may also be configured to omit or add any of these controls, but most standard applets will contain this full set of controls.

- About Icon



This icon can be clicked to cause the web browser to bring up the Hypercosm web page. The Hypercosm web page is a source of information about the various software tools that are available to create and display Hypercosm content and it also provides useful support and troubleshooting information.

- Hide Icon



This icon toggles the dock's auto-hiding feature. When enabled, auto-hiding will cause the dock to disappear when the user moves the cursor away from the dock. When the user moves the cursor back to the location of the dock, the dock will reappear. If the auto-hiding feature is not selected, then the dock will always be displayed.

- Mouse Icon



This icon can be clicked to display a set of controls for setting the number of mouse buttons to use. Normally, the controls are configured to use a 2 button mouse. If the user wants a one button interface, then this control allows the applet to be configured to use just a single mouse button.

- Graphics Icon



This icon can be clicked to bring up a set of controls for configuring the way the 3D graphics are drawn. This is where the user can change the rendering mode of the scene.

- Collaboration Icon



This icon can be clicked to display the collaboration controls. The collaboration controls can be used to configure an applet to run in

synchronization with another applet running on another machine on the network. Hypercosm collaboration allows peer-to-peer collaboration (one person to one other person) across a network without firewalls. The other user may be located across the hall or across the world. If an IP address for the other user is provided in the web page, then the applet will connect with that user. Otherwise, the applet will try to connect with another user on the same subnet. The collaboration controls allow the two users to switch off being the "leader" and the "follower." When the user is playing the "leader," then they control the view point for themselves and for the other user. When the user is playing the "follower," then they see scene from the point of view of the leader and have no control over the view point.

- Help Icon



This icon can be clicked to bring up information about how to use the Hypercosm applet and the various applet controls.

Sharing Hypercosm Applets

One of the great things about exporting 3ds models using Hypercosm Teleporter is that Hypercosm makes it easy to share your models with colleagues and friends. If they have the Hypercosm Player installed, they can view Hypercosm applets that are exported from 3ds Max™. They will not be able to edit the 3ds scenes, but they will be able to view them and navigate through them.

Downloading Hypercosm Player

The Hypercosm Player can be downloaded and installed easily from the Hypercosm web site (<http://www.hypercosm.com>). To download and install the Hypercosm Player, just go to www.hypercosm.com/download and follow the instructions.

Posting Hypercosm Applets on a Web Page

One of the convenient ways of sharing Hypercosm applets is by posting them on a web site. You can post Hypercosm enabled web pages the same way that you post regular web pages. Just copy the directory containing the .HTML file that is exported from the Hypercosm Teleporter into your web site directory and link to it from your web site. Once you upload your web pages, your 3D model will be online. No special server software or other configuration is necessary. If anyone wants to view your 3D models, they just need to install the Hypercosm Player and then visit your web site.

Emailing Hypercosm Applets

Another convenient way to share Hypercosm applets is by using email. You can email Hypercosm applets just by adding them to your email as email “**file attachments**”. One convenient way of emailing web pages and other collections of files is by using a utility such as “Winzip” to group a collection of files into a single file. Once you’ve emailed your Hypercosm applets, the person receiving the email will have to make sure that they have the Hypercosm Player installed. Once this is done, they will just have to save and unzip the file attachment and then click on either the .HTML file in the directory or the Hypercosm applet (.HCVM) file.

3

Chapter

Using Hypercosm Teleporter

Although Hypercosm Teleporter allows you to very easily export files, it also has advanced features that allow you to customize the export process. This section describes Hypercosm Teleporter's advanced features and how you can use these advanced features to optimize the export process for best results.

In the previous section, you saw that the Hypercosm teleporter interface has a series of tabs at the top of the dialog box. These tabs allow you access Hypercosm Teleporter's advanced features and capabilities.



The following pages describe the functions that are available under each of the tabs shown at the top of the Teleporter dialog box shown above.

The "Express" Tab

Pressing the "Express" tab will display the interface shown below:



This interface presents only the most basic and essential options to the user for quick export. The options presented on this tab are:

Active Camera

The active camera is the initial camera that will be used in the exported scene. If you have no cameras defined in the 3ds Max™ scene, then an appropriate camera will be chosen for you automatically. This automatic camera is listed in the drop down menu as "Hypercosm Default Camera." If you have defined a set of cameras in the 3ds Max™ scene, then these cameras will also appear by their names in the list. If you have selected a viewport

for a camera view in 3ds Max™, then that camera will appear in the Teleporter dialog as the default camera selected. If you have selected a view in 3ds Max™ with no associated camera (such as top view, bottom view, left view, right view, etc.), then the Hypercosm Default Camera will be selected as the default camera.

View After Export

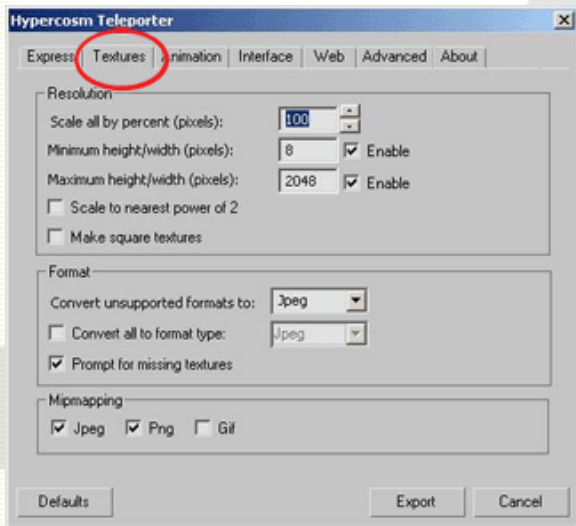
The "View After Export" option causes the Hypercosm Teleporter to automatically open up a web browser to view your scene inside of a web page immediately after it has been exported. If this tab is not checked, then the Hypercosm Teleporter will still export your 3ds Max™ scene, but it will not automatically show you the final exported scene. If you want to view the exported scene, you can at any time use Windows to open up the folder containing the exported scene and double click on either the web page in that folder (.html) or the Hypercosm applet file within that folder (.hcvm). Either of these two actions will launch the Hypercosm Player to allow you to view the exported Hypercosm applet. If you double click on the web browser, then the applet will play inside of a web page. If you double click on the applet file, then the Hypercosm Player will open a window to show the applet.

Defaults Button

The "Defaults" button automatically resets all the options for the export back to the default settings.

The "Textures" Tab

Pressing the "Textures" tab will display the interface shown below:



This interface is used to control the format and appearance of textures that are used to paint the surfaces of objects in the exported Hypercosm applet. These options are broken down into three main groups:

Resolution

The "Resolution" section presents options for controlling the number of pixels in each texture map. These include the following controls:

- **Scale by percent (pixels)**

This option will automatically scale all of the textures used in your 3ds Max™ scene by a constant factor. Often, the size of the textures is the largest factor in determining the file size of an exported scene. In order for 3D scenes to be placed on the web in a practical manner, it is often necessary to rescale the textures to find a good balance between file size (downloading time) and detail. This option provides a quick and easy way to do that without requiring you to go through your model and rescale all of the textures individually. The default value for this parameter is 100%.

- **Minimum height / width (pixels)**

Often, 3D scenes have a mixture of very high resolution textures and small, low resolution textures. This option will allow you to down sample the high resolution textures by a significant amount without losing essential detail in the low resolution textures. By setting this value, you can ensure that textures will not be rescaled to a resolution below a certain point. The default value of this parameter is 8 pixels.

- **Maximum height / width (pixels)**

This option is useful to place a maximum size on textures. This option allows you to automatically select all of the very high resolution textures for re-sampling while leaving the textures below a certain size unchanged. The default value for this parameter is 2048 pixels. Most 3D video cards are not capable of handling textures larger than this amount, so it is always a good idea to limit texture size to a value less than this even if downloading speed is not a problem.

- **Scale to nearest power of 2**

For technical reasons, most 3D video cards require texture sizes that are an even power of 2. That means that if your textures are

not a power of 2, then the Hypercosm Player will have to rescale the images after they are downloaded so they can be displayed. By rescaling the textures when the model is exported, the Hypercosm Player can avoid this extra step.

- **Make square textures**

For technical reasons, most 3D video cards require textures to be square (as well as being a resolution that is an even power of 2). If the textures are not exported as square, then the Hypercosm Player will have to rescale the images after they are downloaded so they can be displayed. Making the textures square avoids this extra step. Making the textures square and preserving the same amount of detail will result in larger textures which increases the downloading time. If downloading time is a concern, then you may choose to deselect this option.

Format

The "Format" section presents a set of options for controlling the file format used for storing texture map images. There are a variety of different file formats that may be used for storing images and each has their different strengths and weaknesses. The file formats that the Hypercosm Teleporter and Player support are as follows:

JPEG (Joint Photographic Experts Group)

The JPEG format is the most popular and most generally useful graphics format for the web. JPEG images offer good compression and work well for images with the wide range of continuous colors that you typically find in digital photographs. Unless you need transparency or have textures that have just a few colors, then you will want to use the JPEG image file format.

GIF (Graphics Interchange Format)

The GIF image format is an older format than JPEG and is not as

good for storing digital photographs. However, the GIF format does have a few unique features not offered by JPEG that make it continue to be popular for certain types of images. There are two main cases where you would want to use the GIF format: The first is if you require textures with transparency. The second case is if you have images with just a few colors. For transparency, GIF images contain a "transparency channel" or "alpha channel" that allows you to mask out certain parts of the image as invisible. This can be very important for creating stencil textures that have cutout areas. Another interesting aspect of the GIF image format is that it uses a compression technique called "run length encoding." This encoding scheme works by detecting places where the color of the image changes. For continuous tone images such as digital photographs, this scheme doesn't work so well because the image color changes at every pixel. However, if you have images with significant areas that are the same color, then this scheme works extremely well. For example, if you are creating texture images of text, symbols, diagrams, logos, or decals, then the GIF image format should be used. For these types of images, the GIF format will result in images that are 2 to 3 times smaller than an equivalent JPEG and look better because the RLE encoding scheme is a "non-lossy" technique that doesn't degrade the image because it doesn't lose any information.

PNG (Portable Network Graphics)

The PNG format was conceived of relatively recently as an alternative to the GIF format. The most important feature of the PNG format is that it allows 256 levels of transparency. The GIF format allows you to create transparent regions in an image, but the transparency in a GIF image is binary - either on or off. In a PNG image, you can have regions that are varying levels of transparency. This is useful for special effects such as clouds, smoke, and lighting and it is also useful if you want to soften the edges of stenciled textures.

The "Format" section of the Hypercosm Teleporter texture control interface contains the following options:

- **Convert unsupported formats to:**
This option selects a format for textures that are part of a 3ds Max™ model but use a format that is not supported by the Hypercosm Player. The most common unsupported formats are TIFF (Tagged Image File Format) and an older format called Targa or TGA. The Hypercosm Player does not support these formats because these formats are not optimized for small file size and so they often result in images that are too large to be practical for web distribution. By default, all textures in unsupported formats will be converted to JPEG format.
- **Convert all to format type:**
This option converts all textures to a uniform format type. This option is provided mainly for convenience and is disabled by default.
- **Prompt for missing textures**
This option displays a warning whenever 3D objects are found with links to missing textures. In order to remedy this situation, use 3ds Max™ to locate and establish valid paths to these textures.

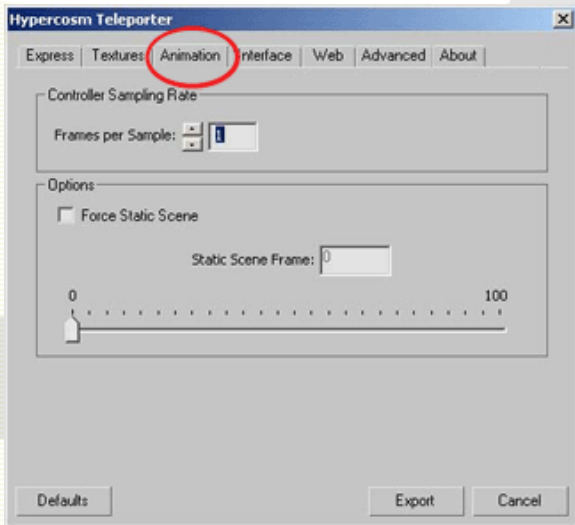
Mipmapping

Mipmapping is a process which allows textures to appear realistic in 3D at a wide range of distances. Without using mipmapping, textures look correct up close, but artifacts can appear when textured objects are placed a large distance away and the texture scale becomes small. The mipmapping interface allows you to enable mipmapping for each of the available file types

(JPEG, PNG, and GIF). The Hypercosm Teleporter interface allows you to enable or disable mipmapping specifically for each of the supported file types. Generally, it is a good idea to always enable mipmapping for most textures. Sometimes, however, mipmapping introduces some extra undesired blurring of the texture image. This can be particularly troublesome for textures used as text labels because the labels can become more difficult to read. For reasons discussed in the previous section, these types of textures are best stored using the GIF file format. If you have a scene with a number of these types of textures that you want to remain very clear and sharp, then you can disable mipmapping for the GIF image file type and keep mipmapping enabled for all of the JPEG textures.

The "Animation" Tab

Pressing the "Animation" tab will display the interface shown below:



This interface is used to control how animation that is defined in 3ds Max™ is exported. All animation is defined using 3ds Max™. Hypercosm Teleporter does not provide a mechanism for defining animation or creating new animation. It only controls exporting animation that has already been defined in 3ds Max™.

Controller Sampling Rate

The Hypercosm Teleporter has two different ways of interpreting animation controllers. For simple controllers, such as linear interpolation controllers, the Hypercosm Teleporter can translate

the controller directly into a form that the Hypercosm Player can understand. This is the simplest and most accurate way to translate an animation controller. For more complex controllers, the Hypercosm Teleporter may not be able to translate the meaning of the controller directly and so it must sample the controller at regular intervals. Once we have sampled the object, we can interpolate the animation between each of the samples for a close approximation of the original animation.

- **Frames per Sample**

The Hypercosm Teleporter allows you to choose how closely to sample. A very close sampling rate will result in a very accurate animation but the resulting applet will have a larger file size. You should generally use as low of a sampling rate as you can without noticeably sacrificing the quality of the animation. The default value is 10 meaning that there will be one sample for every ten animation frames.

Options

The "Options" box contains additional options for disabling the animation.

- **Force Static Scene**

This checkbox disables the animation from being exported. Instead, a static scene will be exported. The particular static scene that is selected from your animation sequence is controlled by the options described below.

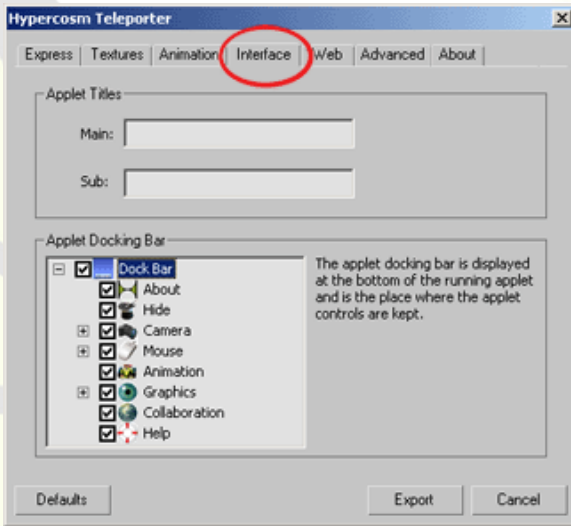
- **Static Scene Frame**

This numeric entry box allows you to set the frame number of the static scene to export. You can only input a frame number which is inside of the range of frames that you have defined inside of 3ds Max™. If you try to input a frame number outside

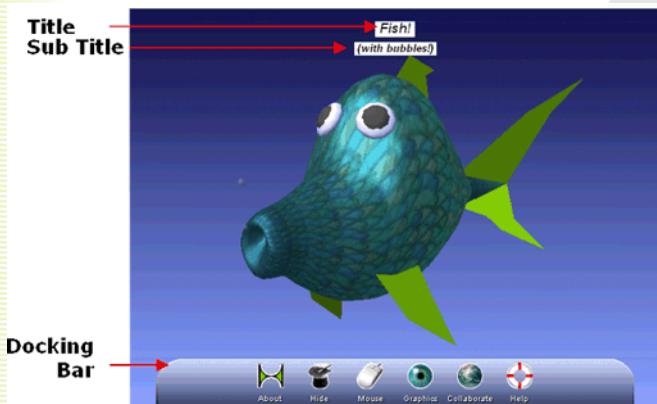
of this range, it will be clamped to a valid number inside of the allowed range. If you don't know the frame number that you wish to export, then you can select the frame number by using the slider below. This slider sets the frame number from the range of frames that is defined for your 3ds Max™ scene. Dragging the slider all the way to the left will set the frame number to the beginning of your animation. Dragging the slider all the way to the right will set the frame number to the end of your animation.

The "Interface" Tab

Pressing the "Interface" tab will display the interface shown below:



This interface is used to configure the user interface that is presented by the exported Hypercosm applet. The applet's user interface allows the user to navigate around the 3D scene, to set the number of mouse buttons to use, to collaborate with other users across the network, and to control the graphics settings which determine how the 3Dscene is drawn. These controls are accessed through the "Docking Bar," which is drawn at the bottom of the running applet as shown below.



The "Interface" dialog box has two main sections: "Applet Titles" and "Applet Docking Bar."

Applet Titles

This interface contains two text input boxes that allow you to input titles to be displayed at the top of your applet.

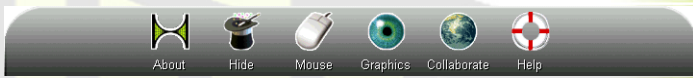
- **Main Title**
The main title is displayed at the top of the applet in a large, easily readable font. The default value for the main title will be chosen from the name of the 3ds Max™ file that you have chosen to export. If you have created a new 3ds Max™ scene that has not yet been saved to disk, then the default name will be "Untitled."

- Sub Title

The sub title is an additional line of text that will be displayed underneath the main title and in a smaller font. The default for the sub title is blank and so by default, no text will be displayed.

Applet Docking Bar

The applet docking bar is displayed at the bottom of the running applet and is the place where the applet controls are kept. Below is a close-up view of the docking bar. A full description of the applet user interface controls is available on the previous chapter in the section titled “The Standard Applet User Interface”.



- Enable Docking Bar



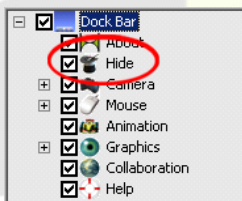
This option tells whether or not to display a docking bar at the bottom of the applet. If no docking bar is displayed, then you will be able to navigate through the scene using the mouse, but you won't be able to use the other user interface controls described below. When the docking bar is displayed, you can choose to incorporate the following controls into the docking bar:

- Enable About



This option causes the About Icon to appear in the docking bar. This will send the user to the Hypercosm web page when clicked.

- Enable Auto Hide



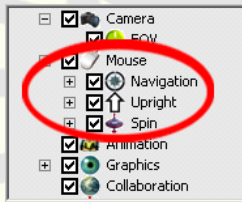
This option causes the Hide Icon to appear in the docking bar. This enables the docking bar's ability to auto-hide.

- Enable Camera



This option causes the Camera Icon to appear in the docking bar. This will allow users to switch camera views and the FOV for the cameras.

- Enable Mouse Options



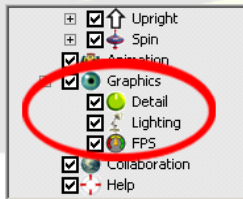
This option causes the Mouse Icon to appear in the docking bar. This will allow users to change navigation styles, enable/disable auto-spin, enable/disable upright, and set the number of buttons.

- Enable Animation



This option causes the Animation Icon to appear in the docking bar. This will allow users to control the speed of the animation and to start/stop the animation.

- Enable Graphic Options



This option causes the Graphics Icon to appear in the docking bar. This will allow users to change rendering modes, change the lighting, and control the of detail of the whole scene.

- Enable Collaboration



This option causes the Collaboration Icon to appear in the docking bar. This will allow users to use the collaboration with the applet.

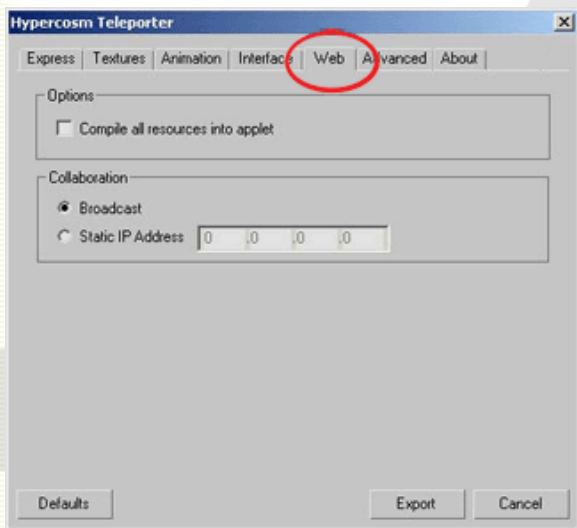
- Enable Help



This option causes the Help Icon to appear in the docking bar. This will allow users to bring up a web page that explains the various applet controls and how to navigate.

The "Web" Tab

Pressing the "Web" tab will display the interface shown below:



The "Web" dialog box is used to control how the 3D scene is exported to a web page. This dialog box has two sections:

Options

The "Options" section includes the following option:

- **Compile all resources into applet**
This option allows you to choose to either compile a 3D scene into a single large file or into a collection of smaller files which can be individually edited and maintained. A complete

Hypercosm applet can contain a variety of different parts. First, it contains the definition of the 3D geometry, materials, and animation. Second, it can also contain a collection of "resources." Resources are units of data that are defined in their own file format and are often represented as separate files. The most common examples of resources are texture images (JPEG, GIF, or PNG files), and sounds (.WAV or .MP3 files).

The advantages of compiling a scene into a single file are (1) simplicity and (2) security. When all of the applets are compiled into a single file, then you never have to worry about losing some of the textures or sounds that go along with the applet. Also, when they are all compiled into a single file, the textures and sounds used by that applet can not be changed. This can help to add an extra element of security to content creators who want to make sure that users of their 3D content can change their content and can not extract out elements of it for unauthorized use.

The advantages of compiling a scene into a series of files are (1) flexibility and (2) quick downloading. When the sounds and textures are kept as separate files, then they can be modified and changed later. This can be useful when tuning content for quick downloading. Second, when the resources are stored as a series of files separate from the applet, then the applet file is smaller. That means that the applet can be started up more quickly because it can be started before all of the resources have been downloaded. In this case, the sounds and textures will stream in after the applet has downloaded and they will appear in the applet as soon as they are downloaded and processed. For 3D scenes with large textures, this can make a significant difference in the amount of time it takes for the applet to start up and begin drawing to the screen.

The default value for this option is to NOT compile all resources into the applet. This is because most applets are

intended to run on the web and the applets will download and start faster if they are not compiled into a single file.

Collaboration

The "Collaboration" section includes a set of options for selecting how the applet connects with the remote collaborator. There are two different ways of doing this.

- **Broadcast**

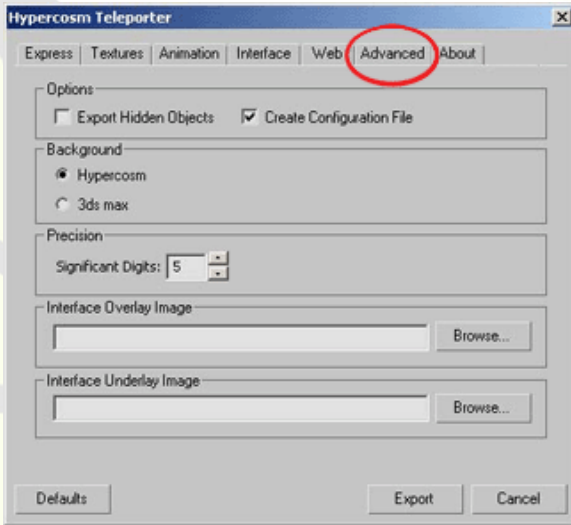
When using this option, the applet will seek out the other collaborator and connect automatically. This option can only be used when the two collaborators are on the same network. For example, this option would be useful inside of a company Intranet where all users are on the same network. This option is also useful when two users are connected on a wireless network such as in a classroom or during a presentation.

- **Static IP address**

This option is useful for connecting two collaborators who are not on the same network. This option must be used to collaborate between two people who are located at different points on the Internet. On Windows, an easy way to find out your IP address is to bring up a command prompt and then type in the command "ipconfig."

The "Advanced" Tab

Pressing the "Advanced" tab will display the interface shown below:



This interface is used to control a variety of more advanced 3ds Max™ features and Hypercosm Teleporter. The Advanced features are broken down into the following groups:

Options

The "Options" box contains the following:

- **Export Hidden Objects**
3ds Max™ has the capability to hide objects that are present in the scene. This is useful when you want to include objects

in the scene that may be used at a future time or in another configuration of the scene. If you want the Hypercosm Teleporter to export everything that is contained in a 3ds Max™ scene, regardless of whether it is hidden or not, then select this option.

- **Create Configuration File**

Allows the user to control whether Hypercosm Teleporter creates an ".ini" file that contains the export settings and options the user chooses on this file for exporting. If selected every time the user exports this file it will use these settings.

Background

The "Background" options allow you to change the appearance of the drawing area that is displayed behind the 3D scene. You can choose from the following options:

- **Hypercosm**

A background will be selected for you by the Hypercosm Teleporter.

- **3ds Max™**

The background that is selected in 3ds Max™ will be used.

Precision

Precision determines the amount of numerical accuracy that is used to represent the positions of points that are used to define the objects in your 3D scene. The downside of using more precision is that it will result in a larger file that will need to be downloaded. Generally, you want to use the lowest level of precision that still maintains the visual quality of the scene.

- **Significant Digits**

The amount of precision that is used is measured in terms of number of significant digits. Each additional significant digit will cause the amount of precision to increase by a factor of 10, but will also increase the amount of storage necessary. The default value is 5, which results in a precision of 1 part in 10,000.

Interface Overlay Image

The Interface Overlay Image places an image over the whole screen of the applet in front of the objects in the scene, including the docking bar.

Interface Underlay Image

The Interface Underlay Image places an image over the whole screen of the applet in front of the objects in the scene, but under the docking bar.

The "About" Tab

Pressing the "About" tab will display the interface shown below:



This interface is used to check the version and supporting files of Hypercosm Teleporter that you have installed. Refer to the Hypercosm website (www.hypercosm.com) for current software version information and updates.

File Version

This is the current version of the Hypercosm Teleporter software that is installed.

SDK Date

This is a date that corresponds to the version of Hypercosm Teleporter that is installed.

How to Get Help

3ds Max™ Online Documentation

The Hypercosm Teleporter online help system can be accessed through 3ds Max™. There are two ways to access the Hypercosm Teleporter Help.

- **From the Windows Start Button**
Just go to the Windows Start Button on the lower left of the screen and go Programs>Hypercosm>Hypercosm Teleporter>Help
- **From 3ds Max™ Help**
In order to view the Teleporter help files from 3ds Max™, start up 3ds Max™ and go to the “Help” menu. Under this menu, you will see an option for >Additional Help. Clicking this will bring up a dialog box with Hypercosm Teleporter listed. Click on Hypercosm Teleporter to bring up the help files.

Hypercosm Web Site

If you don't find the answers that you are looking for here or in the 3ds Max™ online documentation, you can also consult the Support section of the Hypercosm web site located at: www.hypercosm.com/support/. If you still don't find what you're looking for, the Hypercosm web site will direct you to email and phone support information.

