

Lesson One: Technology Overview

What Envision3D Does

Delivers Only What is Needed Envision3D's revolutionary technology allows the server and your workstation to communicate with each other while you navigate 3D models. Based on that communication, the server dynamically delivers only those portions of the 3D model relevant to your current viewpoint in the model.

Benefits of Specialized Streaming The benefits of using specialized streaming are that Envision3D models:
Provide immediate access to models (with no download wait)
Are quickly and easily navigated
Allow wider access to models by more users (LAN, WAN)
Can use standard PC workstations
No need to have CAD software installed -- requires only a standard browser

Benefits to End Users Faster model load time—10 to 20 times faster than traditional approaches.
Faster navigation times—5 to 10 times faster.
Shorter product design review cycle, less review-time-to-market.
Early inputs from all reviewers improves quality and reduces design time.
Use of product engineering data is available throughout the enterprise.
Design and project information can be shared across multiple sites.
Saves travel and meeting time costs.

Collaborative Benefit Envision3D enables the distribution of highly complex 3D model designs across the enterprise resulting in a more collaborative and efficient working environment beneficial to the design process.

Envision3D Product Suite Components

Envision3D Optimizer This is the first product used in the creation and delivery process. It allows the user to convert 3D model files into Envision 3D format model files.

From other Formats	Into Envision3D Format Files
VRML	.3DI
DGN	.3DD
Pro/E	.AMM
	.AM3

The Optimizer also sends attribute data to the DatabaseManager server, which then creates an attribute/annotation database associated with the converted 3D model.

Based on the options the user chooses, the 3D model files are converted into the Envision3D format so they can be streamed.

Envision MediaManager This is the next product used in the process of creating and delivering the converted model.

MediaManager streams Envision3D model files to client systems so users can navigate them using Envision 3D DeskTop.

Envision MediaManager runs as a Windows NT service on the Envision Media Server. Although MediaManager has no interface, users can check how media streams are requested and delivered by MediaManager using MediaManager Administrator.

Media Manager Administrator MediaManager Administrator is not required in the file conversion process, but it is crucial in managing the delivery and maintenance of Envision3D content. MediaManager Administrator allows you to monitor the delivery of Envision3D content and change different parameters that affect how the Envision server delivers that content. The role of MediaManager and MediaManager Administrator are covered in Lesson Three.

Envision Database Manager The next product used in the process is Envision DatabaseManager. This system runs as a Windows NT service on the Data Server. The Database manager acts as an interface between a Microsoft Access

database and client system. DatabaseManager sends information from associated Access databases (.MDB) to Envision3D DeskTop, and vice versa. With this, users can create annotations, check object attributes, and perform database queries. DatabaseManager also communicates with Envision Optimizer when Optimizer converts a model. It then automatically creates and populates the associated attribute/annotation database on the DatabaseManager server. There is no user interface for the DatabaseManager.

Web Server A standard Web server is used to distribute Envision3D presentation files and HTML pages that are linked to Envision3D content.

Envision3D DeskTop The final product in the process. Envision3D DeskTop works as a Netscape Browser plug-in or an Active-X control. It allows the user to navigate Envision3D models that are streamed over a standard IP network.

The DeskTop includes standard controls and many features, such as:

- expert movement mode
- viewpoints
- annotations
- examining objects
- isolating objects
- dimensioning
- interrogation of database information associated with objects

How Envision3D Works

Envision3D Workflow

The general workflow involved with using the Envision3D system involves several key individuals.

A typical workflow would involve

- a designer,
- a system administrator, and
- collaboration team.

The designer would create a model and save it in a standard CAD format. The Envision3D System Administrator or other designated individual would use Optimizer to convert the file to Envision3D format and to create an attribute database. The file would be set up in an appropriate Envision3D environment where it would be available for viewing and collaboration by the team. Each team member would have access to the model and the ability to add annotations to the model from his or her desktop.

Step 1: Set Up an Envision3D Environment

The first step in making this process work is to set up an Envision3D environment. A complete Envision3D environment includes:

- An Envision3D MediaManager server system
- An Envision3D DatabaseManager server system (could be the same system for practice, although this is not a recommended configuration in a production environment)
- An Envision3D Optimizer system
- A web server system
- Client workstations

How to install the Envision3D software and configure each system is covered in Lesson Two.

Continued on next page

How Envision3D Works, Continued

Step 2: Convert an Existing 3D Model

Once an Envision3D environment is established and a model has been created and saved in a standard CAD file format, the next step of the process is to convert an existing 3D model into the Envision3D format. During conversion, you specify a variety of user options to customize the resulting Envision3D model in order to optimize the functionality with respect to your needs. This conversion process is completed using the Envision3D Optimizer. Once the conversion is completed, the files must be moved to the appropriate locations in order to allow for viewing. You will learn about the specific options available and how to complete the process in Lesson Four: Optimizing and Publishing.

Clearly one of the most important benefits of Envision3D comes in the authoring stage after a model is converted. Using views, paths and special settings you can add tremendous value to your Envision3D models. Provide easy ways to identify, focus on or navigate the models or components in models. Use attributes effectively to gain a better understanding of the components in the model. Adding this value is ideal at the Administrator level and can also be done at the user level.

Step 3: Viewing the Model

Once the model has been converted and is available for viewing, you can use the Envision3D DeskTop to work with the model. The Envision DeskTop allows for navigation, working with objects, using annotations, setting viewpoints and establishing paths. You will get a chance to use the Envision3D DeskTop to view the sample model and try some of the features during the exercise at the end of this lesson.

Technology Overview: Review Notes



Topics:
How the parts work together
Components
Workflow

Technology Overview Exercise

Resources Before beginning Lab, have access to the following:
Envision3D Guide
Envision3D Software

General Directions for Creating the Student Environment

You will be installing the training environment on your machine. The "Adaptive" directory will be installed on the primary server that you will use for class. Your instructor will provide the correct path to this directory.

Copy the "Adaptive" directory and notice the sub-directories we have included here. The "install" directory contains all of the client software you will need. The "source" directory includes sample CAD files (the source files) that you will work with during your exercises. The web server directory includes an MIIS installation in the event that you do not have this readily available. The "tools" directory includes special utilities or scripts that you will find helpful in managing your application. These tools are not included in the standard installation provided by Adaptive Media. They are specially created for our students.

Install the Envision3D "Client" plug-in software on your machine (open the "install directory" and choose the Envision3D DeskTop folder. This is what you will install for your users. Click on Setup.exe. Depending on your environment, you may be prompted to run the core components program. This updates your system in preparation for Envision3D. Recent versions of NT will already have all of these core components and you will simply proceed with the installation. As you move forward in the installation, you will have the opportunity to select the actual components to install. You will find two of these are already checked (Optimizer and Desktop). Scroll down and check "MediaManager Administrator" and then click Next to continue until the end of the installation program.

You now have all the pieces you need to function as a "client" to the main "server" program. Be sure to use all of the available resources, including the Online Help, to complete the steps below.

When you're finished, complete the self-assessment for the Technology Overview exercise.

Getting Started

For this first exercise you will have a chance to work with a model that has been enabled on the web through the Envision3D program. This first model is a fishing reel. We will use it to demonstrate several things:

- Basic Navigation
- Getting Lost and Finding Yourself Again
- Looking at Attributes

Start your browser and access the model using the URL provided by your

instructor. Write it here: _____.

Single click on the image of the reel. Note the "tips" that appear and be sure to take advantage of these. Dismiss with OK. This will start the client program on this file. A few viewpoints have been set up for your use. A *viewpoint* presents a specific view that has been named. Begin by selecting the "handle" viewpoint. One important role for administrators is to determine the valuable viewpoints for your models. For example, you can now select the "starting point" viewpoint. It is always a good idea to provide an easy starting place for your users. If they get lost in the picture, they can quickly return to a familiar point.

Basic Navigation

Under the main picture you will find the navigation panel. Using the Movement toolbar. Click on icons to move in direction of arrows.

- Slider Bar: change speed of movement
- Middle Section: pan left, right, up and down
- Right Section: move forward and back



Start by moving forward and backward. Now, move to the left and right, and move the model around on the screen.

Using the Rotation toolbar, click on icons to move in direction of arrows.

- Left Section: straighten the camera view
- Slider Bar: change speed of rotation
- Middle Section: turn left, pitch up, pitch down, turn right
- Right Section: roll left, roll right



Try this and if you get lost (meaning you can no longer see the image) you can use your viewpoints to return to the "starting point." Also notice that the "Home" icon has been set to correspond to this "starting" viewpoint and that you can click on it directly to move to the starting point. This is an important setting to ensure "being found" is just one click away.

The navigation icons provide clear visual choices on how to move around. You can also move around the model (in Expert Mode) just using your mouse. Click your "home" icon to start at the starting point. Place the

mouse under the model (just about center) and hold down the left mouse button as you move the mouse forward just a bit. Practice for a few minutes moving left and right and up and down. While you're here, click your right mouse button and choose a top view under "Auxilliary Views." Notice that another window opens and you can zoom in and out to see the model. Also, notice the small wire frame icon at the bottom of this popup. Click on this to see the wire frame view and click it again to return to the regular view. Close this window.

Notice the speed settings for rotation and movement. These are provided for you to adjust the speed to what is most comfortable for you. Reset the Movement speed to slower. Using the mouse in the window, practice with movement to see what works best for you. Adjust the speed up or down and do the same for rotation.

Under Viewpoints you will see Paths. We have created a path (called Basic Tour) for you to navigate this reel. A path provides a directed tour through the model. It can be a very powerful way to present your ideas to others (especially novices) and you can create many different paths as appropriate to the model.

This lab focused on the basic use of a model and you will have a chance to practice more in upcoming labs.

User Training Program

There are many additional methods of working with models. You will learn how to select, hide, show, isolate and examine objects. You will learn to create additional viewpoints and navigation paths.

If you will not participate in the user-training program, please notify your instructor and be sure to get a copy of the student guide for the user course, as it provides details about using models.

Technology Overview Exercise Self-Assessment Checklist

Action	Comments or Questions for Trainer
<p>___ Installed Class Program Environment</p> <p>Copied class program directories ("Adaptive")</p>	
<p>___ Installed Client Software Plug-In.</p> <p>Loaded Model into Browser.</p>	
<p>___ Navigated with Navigation Panel.</p> <p>Moved forward and backward Turned left and right Panned left, right, up, and down Pitched up and down Turned left and right</p>	
<p>___ Navigated in Expert Mode (Mouse Only).</p> <p>Moved forward and backward Turned left and right Panned left, right, up, and down Pitched up and down Turned left and right</p>	
<p>___ Used Viewpoints and Paths.</p> <p>Used the "starting point" viewpoint Used the "basic tour" path</p>	

✓ means *completed*



Adaptive Media



Envision3D
Administrator Training

Student Guide

Application Administrator Course Introduction



Course Objectives

At the end of today, you will be able to:

1. Describe how Envision3D works.
 2. Recognize the benefits of using Envision3D.
 3. Match various Envision3D system components with their respective functions.
 4. Recognize the responsibilities of the Envision3D Administrator.
 5. Complete the Installation Planning Worksheet.
 6. Install Envision3D.
 7. Modify configuration options.
 8. Transcode each primary document type.
 9. Create annotations and check object attributes.
 10. Change views.
-

Who should attend?

The Envision3D System Administrator course is designed for those responsible for setting up and maintaining the Envision3D workgroup environment. As an administrator attending this course, you should already have an understanding of 3D modeling programs such as Pro/Engineer, AutoCAD, or MicroStation. In addition, you should have an understanding of Windows NT.

Why should I attend?

The purpose of this course is to prepare you to install the Envision3D software system, customize its configuration, publish 3D models for streaming across the internet or intranet, and maintain the 3D system environment for optimum performance.

Continued on next page

Application Administrator Course Introduction Continued

How will the course be presented?

The course is organized into four lessons, each with an associated hands-on exercise. The first two lessons will be presented in the morning and lessons three and four will be presented after a lunch break. The lessons are:

1. Technology Overview
 2. Installing Envision3D
 3. Adding Value
 4. Application Specific Guidelines
-

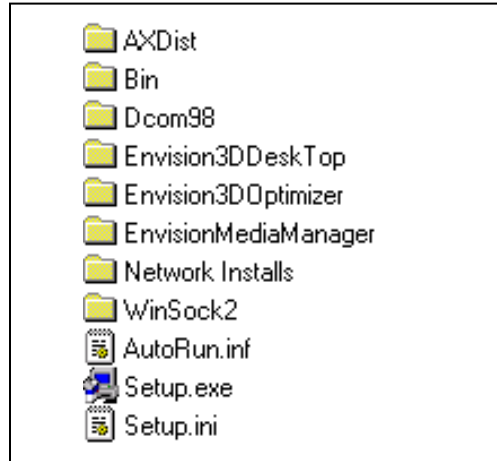
Will there be a test?

There is no test associated with this course. During the hands-on exercises you will be performing a self-assessment and will be able to ask for assistance in meeting the course objectives.

Lesson Two: Installing Envision3D

What the Envision3D CD contains

Envision3D This folder contains the installation program and all files needed to install any component of the Envision3D Suite. When the Setup.exe file is run, the installation program will only allow installation of the DeskTop or MediaManager Administrator if the computer is not a Windows NT server.



AXDist

This is the Win32 Cabinet Self-Extractor Program used for installing NT programs. It is used for all product installations on your NT server.

Bin

This directory contains a demo program that provides helpful information about Adaptive Media products and services. You can install products from this demo program.



Dcom98

This is the Win32 Cabinet Self-Extractor Program used for Windows95/98 installations only. It is used to install the client plugin, Envision3D Desktop.

Envision3D DeskTop

This directory contains the installation programs for the DeskTop program. This is the only program required by client programs to work with Envision3D models. The ReadMe.txt file contains installation instructions and any known problems or limitations specific to the DeskTop application.

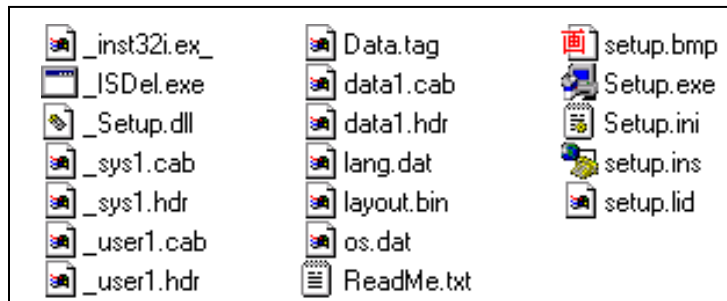


After installation, you will find these files in the Envision3D DeskTop folder.



Envision3D Optimizer

This directory contains the installation programs for the Envision3D Optimizer. This is the program that converts your original files into the specialized Envision3D format. Once transcoded, these files can be accessed by anyone with the DeskTop client program installed. Optimizer also sends attribute data to the DataServer so the attribute/annotation database for a model can be created. The ReadMe.txt file contains installation instructions and any known problems or limitations specific to the Optimizer application.

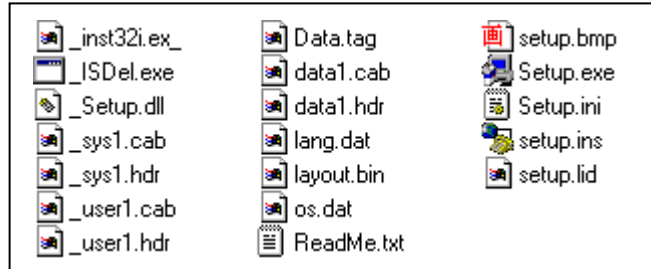


After installation, you will find these files in the Envision3D Optimizer directory. The Tutorial directory contains sample files you can use to practice with Envision3D Optimizer. Your Envision3D user guide will help you explore using these files.

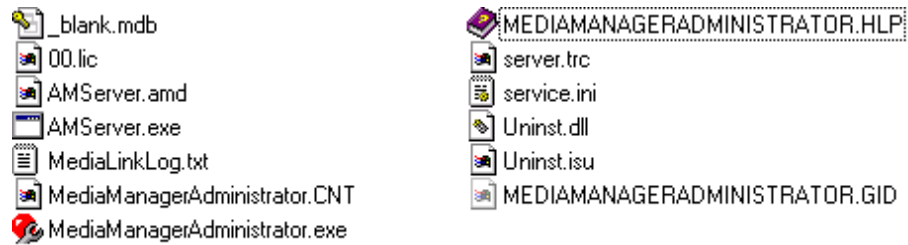


Envision3D MediaManager

This directory contains the installation programs for the Envision3D MediaManager. This is a standalone Windows application that allows you to logon to a MediaManager server, check and change the configuration of a MediaManager server, and monitor how a MediaManager server is functioning. The ReadMe.txt file contains installation instructions and any known problems or limitations specific to the MediaManager application.

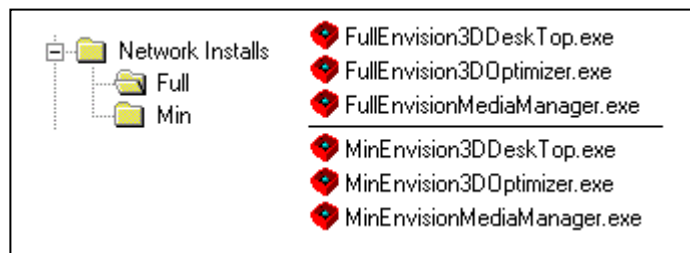


After installation, you will find these files in the Envision3D MediaManager directory.



Network Installs

This directory allows you to install the product directly from your network. You can choose full or minimal installs.



Planning and Preparing to Install Envision3D

Where to Install Each Envision3D Component

It makes sense to do a bit of planning before you install the Envision3D product suite. You should refer to the *Envision3D Configuration* information in your Training Guide for the specific requirements and recommendations of each component. Some general considerations are outlined below.

Component	Considerations
MediaManager	<ul style="list-style-type: none"> • Requires Windows NT 4.0, Service Pack 3.0 or higher • Should be a dedicated server • Should not be installed on the same server as the DataServer
DataServer	<ul style="list-style-type: none"> • Requires Windows NT 4.0, Service Pack 3.0 or higher • Should be a dedicated server • Should not be installed on the same server as MediaManager

Optimizer	<ul style="list-style-type: none"> • Requires Windows NT 4.0, Service Pack 3.0 or higher • Display must be set to a minimum of 800 x 600 and 16-bit color to use built-in viewer
Web Server	<ul style="list-style-type: none"> • Requires Windows NT 4.0, Service Pack 3.0 or higher • Requires standard Web server software • Can be any standard Web server already in use • Can run on MediaManager server, but could reduce performance
DeskTop	<ul style="list-style-type: none"> • Requires Windows 95 or NT 4.0, Service Pack 3.0 or higher • Requires Internet Explorer or Netscape Navigator Browser • Display must be set to a minimum of 800 x 600 and 16-bit color
Pro/E Plug-in	<ul style="list-style-type: none"> • Requires Windows NT 4.0, Service Pack 3.0 or higher • Requires Pro/ENGINEER version 19 or higher
MediaManager Administrator	<ul style="list-style-type: none"> • Requires Windows 95 or NT 4.0, Service Pack 3.0 or higher • Can run on MediaManager server or remotely

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Envision3D Program and Data Map, Continued

Preparing the Systems for Installation

Prior to running the installation program, you should do the following:

- Ensure the required software listed on the *Envision3D Configuration Sheet* is loaded on the appropriate systems.
- Create a working folder on the MediaManager server
- Create a database folder on the DataServer
- Designate or create a special Adaptive folder on the Web server directly below the Web server root directory

Note that for class these directories will be on the same server and that the step-by-step guidelines for creating this environment will be included in the lab.

Recommended Directory Structure

It is recommended that the directory structure be set up as follows:

Web server	c:\inetpub\wwwroot
MediaManager	d:\amserver
Models default location	d:\amserver\models
Database default location	d:\amserver\database

Envision3D Program and Data Map

Once you have installed the product, you should complete the Envision3D Program and Data Map. This map documents the locations and paths to all application programs and data used by the Envision3D system for both the training course and your own site. This map is provided on the following page.

Envision3D Program and Data Map

Server IP Address and Name:

Program or Data Type	Training Location (Directory Address)	Your Application Directories
MediaManager Administrator Directory		
DataServer Directory		
Web Server Directory		
DeskTop Directory		
Optimizer Directory		
Source Files (.wrl, .dgn, .3dx, etc.)	<i>Used by Optimizer</i>	
Project Files (.a3p)	<i>Used by Optimizer</i>	
HTML Files (.htm, html)	<i>Used by Web Server</i>	
Presentation Files (.am3)	<i>Used by Web Server</i>	
Meta Files (.amm)	<i>Used by MediaManager</i>	
Content Files (.3di and .3dd)	<i>Used by MediaManager</i>	
Database Files (.mdb)	<i>Used by DataServer</i>	

How to Install the Envision3D Components

Ready to Install?

Once the location of application components has been determined and the appropriate folders have been created, you are ready to install the Envision3D software.

Installation Notes

You should be sure to review the installation issues found in the Additional Materials section of this workbook. Remember that Adaptive Media provides these files in the installation directory for each product. They are also displayed for review during the installation process.

Executing the installer

The installer makes it very easy to install the Envision3D components on the system. You should exit all other Windows applications before starting the installation. The detailed installation steps are found in the release notes. The basic steps are outlined below:

Step	Action
1.	Insert the CD in the system's CD-ROM drive.
2.	Verify all other Windows programs are closed.
3.	Agree to the License Agreement. You will be using the 30-day trial version for class.
4.	Read the current release notes that are displayed.
5.	Select the default directory for the programs.
6.	Select the components to install from the list. Only those components that are compatible with the system's operating system are displayed. For example, if installing from a Windows 95 system, only the DeskTop and the MediaManager Administrator will display on the selection list.
7.	Select the default folder where the Envision3D components will be installed.

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How to Install the Envision3D Components, Continued

Adding the MIME Types to the Web Server

You must set the Multipurpose Internet Mail Extension (MIME) types for your Web server to allow recognition of the Envision3D presentation files with the .ami and .am3 extensions. How to set the MIME types varies based on the Web server software and version. Detailed instructions for Netscape Server, IIS 3.0, and IIS 4.0 are included in the installation notes (see Additional Materials in this workbook).

Media Manager

MediaManager will normally start as an NT service as soon as it is installed. You will be prompted to reboot your system, if required. If a reboot is required, you will also need to login before the MediaManager NT service will be started.

DataServer

DataServer will normally start as an NT service as soon as it is installed. Just as with MediaManager, you will be prompted if rebooting your system is required. If a reboot is required, you will also need to login before the DataServer NT service will be started.

To See if Media Manager and DataServer Started

Check the status of the service using the Windows NT Service manager. The Service name for MediaManager is "Envision MediaManager." The Service name for DataServer is "Envision3D DataServer." If either one is not started, you can start the service manually from this window.

MediaManager Administrator

The Role of MediaManager MediaManager streams CAD models to client workstations. It runs as a Windows NT service and has eight configuration parameters, which can be set to meet custom needs. The parameters can also be scheduled to change at set times.

The Media Manager Administrator MediaManager Administrator is a standard Windows application used to check and change the configuration of the MediaManager server. Administrator can run on any workstation connected to the same network as the MediaManager server to be configured.

Using MediaManager Administrator

Overview of Media Manager Administrator To use MediaManager Administrator, you must first logon to the server. Once logged on you can:

- Check the server's current configuration
- Change the server's configuration values on a schedule or permanently
- Check Current Statistics
- Check Stream Details

Starting Media Manager Administrator MediaManager Administrator can be started from the Start, Programs menu. Once the MediaManager Administrator main screen is displayed, you must logon to the desired MediaManager server. How to logon to a new server and how to change the username and password are covered in detail in the *Envision3D Guide*.

Checking Current Configuration

Checking Current Configuration Click the Current Configuration tab once you are logged on to a MediaManager server and the current configuration will be displayed. The configuration is the values of the eight parameters described in detail below.

Configuration Parameter: This is the path where the meta files (.amm) are stored.

- The default value is the same as the folder where MediaManager

AMM_base_path

is located; d:\amserver if you installed using the recommended directory.

- This is the root off which relative pathnames are based to locate the AMM files. By default the AMM_base_path and the working_directory are set to the same directory as where you installed the MediaManager executable file.
-

**Configuration
Parameter:**

Max_bandwidth
_per_client

This parameter controls the maximum bandwidth that is allotted to media streams delivered to any client.

- The parameter's units are bits per second (bps).
 - Higher max bandwidth yields higher potential quality of media playback on the client workstation. No maximum value, but less powerful client workstations will have difficulty processing data at over 2 megabits per second.
 - Lower max bandwidth allows MediaManager to deliver more streams simultaneously. The minimum value is 64,000 in order to deliver 3D streams to clients.
 - Actual bit rate to a client workstation depends on the network bandwidth available at the time the presentation starts, not to exceed this maximum value.
-

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Checking Current Configuration, Continued

**Configuration
Parameter:**

Max_clients

This parameter controls how many client machines may connect to the server at any one time.

- It is preset based on the server license.
 - Max_clients can be set to any value below the preset license value.
 - If you set this number lower while clients are connected, they will not be cancelled, but no new connections will be allowed until open clients falls under this number
-

**Configuration
Parameter:**

Max_total_bandwidth

This parameter controls the maximum bandwidth of all streams combined that MediaManager will deliver at any one time.

- The parameter's units are bits per second (bps).
 - Should be set to reflect the difference between the total capacity of the network and the capacity you want to reserve for other services and programs. (For example if you wanted to reserve half of the bandwidth for other network traffic on a 10 megabit network, you would set this parameter to 5000000.)
 - Never set this parameter higher than the actual capacity of your network.
 - An "Insufficient Bandwidth" error is added to the Event Log when a client requests a stream once this value has been reached.
 - Other network traffic may result in an available bandwidth lower than the maximum.
-

**Configuration
Parameter:**

Smm_inactivity_timeout

If Envision DeskTop stops unexpectedly, the bandwidth is reserved until MediaManager checks the inactive stream. This parameter controls how often MediaManager checks inactive streams to identify when Envision DeskTop is stopped and free up that bandwidth.

- The parameter's units are milliseconds.
 - Higher values for this parameter result in longer times until unused bandwidth becomes available.
 - Lower values for this parameter result in more bandwidth used by MediaManager timeout queries.
 - Default value of 300,000 milliseconds (5 minutes) is appropriate for most networks.
-

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Checking Current Configuration, Continued

**Configuration
Parameter:**

Trace_file

This parameter identifies the location of the MediaManager log file.

- The file has the extension .TRC.
 - The file location can be relative to the working directory or an absolute path.
 - The default is server.trc, a relative path to the working directory.
-

**Configuration
Parameter:**

Trace_level

The level of information included in the trace file

- The default value is 0, which means no trace file is created.
 - Should only be changed when troubleshooting a problem because it may adversely affect the normal performance of MediaManager.
 - Adaptive Media personnel may ask you to set this parameter to 3, 4, or 5 to create trace files.
-

**Configuration
Parameter:**

Working_directory

This is the root directory for all Envision3D relative paths.

- Should be set to the same folder as AMM_base_path.
 - If you store content files on a separate disk from the AMM files, set both to the same path and use an absolute path to specify the location of the AMM files.
 - The default value is the path entered for the MediaManager installation.
-

**Changing
Configuration
Parameters**

Configuration parameters can be changed permanently or on a schedule. Changing the max_bandwidth_per_client and max_clients parameters on a schedule based on off-peak usage times could enhance performance for users during that time. How to change server configuration values using both methods are covered in detail on pages (3-1):7-9 of the *Envision3D Guide*.

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Checking Current Configuration, Continued

Permanent Configuration Changes

Permanent configuration changes will affect the base values which are in effect during all times except when a scheduled configuration change is active.

Scheduled Configuration Changes

Scheduled configuration changes are in effect only during the time specified in the Schedule Rule.

Checking Current Statistics and Streams

Checking Bandwidth

Bandwidth can be reviewed by selecting the Current Statistics tab in MediaManager Administrator. The Current Statistics display the last time MediaManager was started, the MediaManager version, and the following two parameters relating to bandwidth:

current_bandwidth_allocated	The total bandwidth of all streams currently being sent by the server.
peak_bandwidth_allocated	The highest amount of bandwidth required by simultaneous client content requests since MediaManager was last started.

Checking and Closing Current Streams

You can check the status and characteristics of individual streams currently being sent to clients and even close the streams using the Stream Details tab in MediaManager Administrator. Information on how to display the stream details, a description of the information available, and how to close a current stream is found in the user guide.

Installing Envision3D: Review Notes



Topics:

- What the CD contains
- Planning and preparing for installation
- Installing the application components
- Post installation review

Installing Envision3D Lab Exercise

Resources	Before beginning this lab, have access to the following: <ul style="list-style-type: none">• Envision3D Guide• Envision3D CD• Server running Windows NT 4.0, Service Pack 3.0 or higher
General Directions	Use the available resources, including the release notes and Help, to complete the steps below. Consult your instructor, as needed. When you're finished, complete the self-assessment for the Installing Envision3D exercise.
Prepare for Installation	Ensure the Envision3D system meets the requirements specified in the Envision3D Configuration Sheet, including the installation of all required software. You will need to create your application environment, which is the area that will store the Envision3D files you create. Ideally you will place this on a separate drive, but for class you can just move to the root (C:) and create a directory called amserver. Under this directory create two directories: models and database.
Complete the Program and Data Map	Complete the Envision3D Program and Data Map to document the IP names and addresses, locations and paths to all application components and data used by the Envision3D system. Notice the second column for documenting these details for your actual production application.
Installing the Components	<p>Return to the install directory, open the Envision3D directory, and run the setup program. Install all of the components except Pro/E (unless you will be using your own Pro/E models during class exercises). You may see messages about removing older versions (from your earlier client installation) and these are okay. Envision3D installer always removes existing installations when you install the product.</p> <p>Your training environment allows you to work on individual servers. It assumes a Web Server is already installed and running. If you need to install a Web Server, follow the guidelines on the "Installing a Temporary Web Server" handout provided by your instructor. If there is any reason why you cannot perform this installation directly, you will be able watch the installation process as your instructor installs the server.</p> <p>Your class environment assumes a single machine for both your MediaManager and DataServer. Keep in mind that in production these are best setup on separate machines.</p>
Verify that NT Services are Running	Use the "Start" menu, then Settings to select the Control Panel and select "Services" to verify that the Envision 3DDataServer and the Envision MediaManager are both running.

Add MIME Types

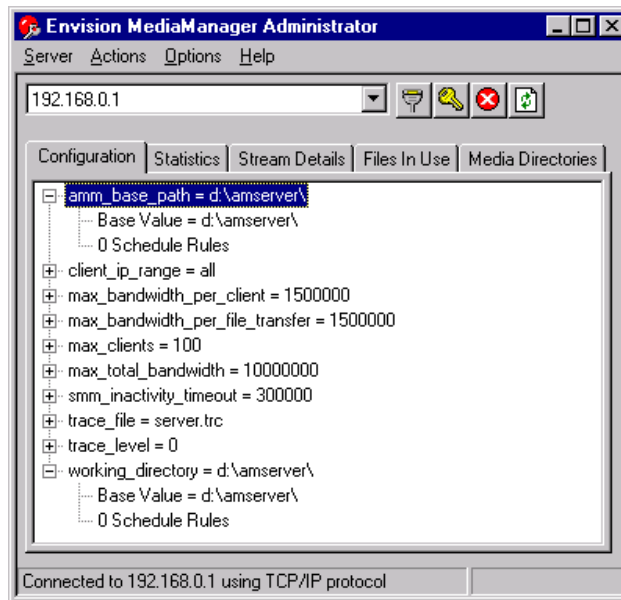
You will need to have write access to the web root directory to be able to add mime types. Using the release notes, if you need help (a copy is in the tools directory), add MIME types for .ami and .am3 extensions to the Web server software.

Configure MediaManager

From "Start," Program Files, Envision3D, choose Envision3D MediaManager Administrator to configure your server.

Logon to your server (you can use the server IP address, name or localhost noting that by default, you do not need to enter a username and password). Your current configuration is displayed. This configuration is based on the defaults provided by Adaptive Media and relative to your installation directory. You will change two important settings here.

Click on the Configuration tab. This is where you will edit two important values – the amm_base_path and the working_directory path. Click on the "plus sign" and it will expand to show you the current "base value." Double-click on the value to popup an edit box. Be sure to change both as described below.



The amm base_path and the working directory provide the default location for your models. You will set this to the amserver directory you just created. When a user says they want to see a model on your server, this is where the search will start from to answer the user request. Later, when we look at files that are actually created during the process of transcoding models for use in Envision3D, you will be able to see how these paths are added to clarify where to look for files.

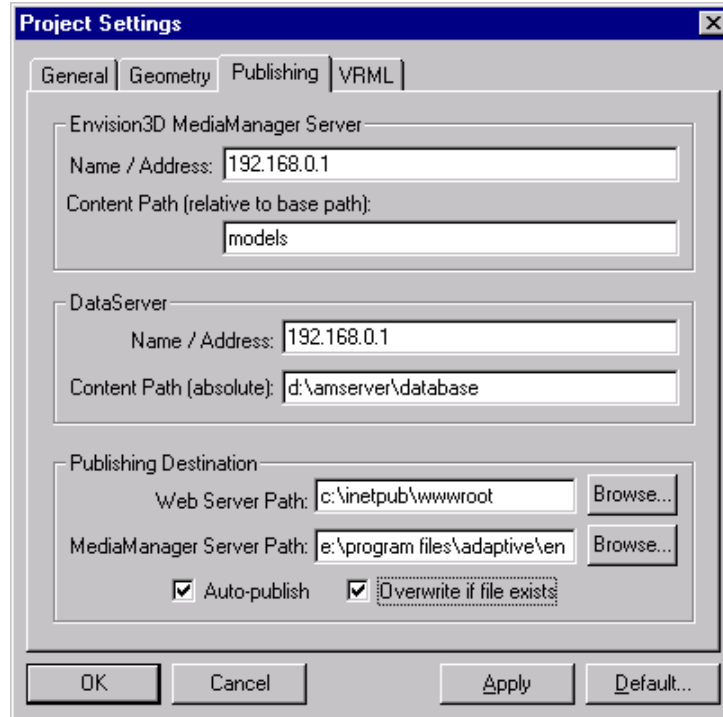
Prepare to Transcode a CAD File

You are now ready to transcode your first CAD model. In the Adaptive\source directory you will find a VRML file called kitchen.wrl (this is the standard extension for VRML files). You will be transcoding this file into the Envision3D format.

Start the Optimizer

From "Start," Program Files, Adaptive Media Envision, Envision3D Optimizer. From the File menu, select "Create new project" and enter the project name: c:\amserver\models\kitchen. Click the "Add" button, selecting the file to transcode: c:\Adaptive\source\kitchen.wrl and click "Open."

Click on the Settings menu option and select "Project" to define your project level settings. Select the "Publishing" tab and enter the appropriate values for your project. You can leave the database path blank and specify it directly in the file where needed or you can enter it here and update the value that is captured.



Click OK and then again from "Settings" choose "Save Project Settings Global" to set these same values for use on each subsequent project.

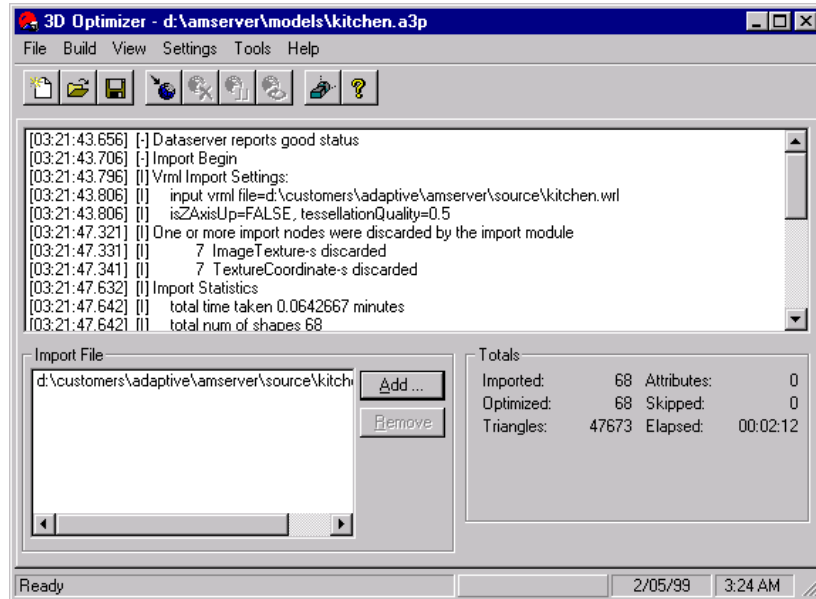
You have now created a new project called kitchen. Open a new window on your amserver directory. You will see the two files you created, database and models. Notice that at this point there are no files under either folder.

Minimize this window for now, but don't close it.

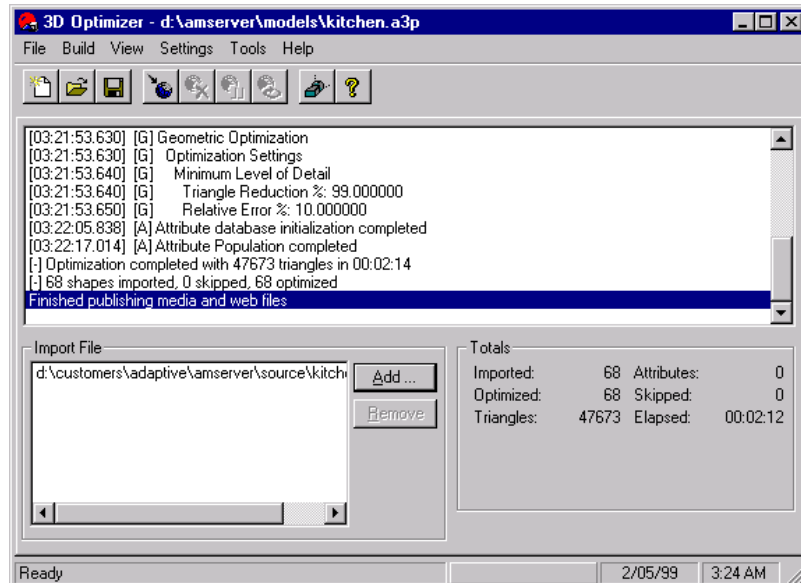
Transcode the Model



Click on Build and choose "Start" or click the start icon. You will see the kitchen model begin to transcode. If you have set up all paths correctly, you will see a successful start. If not, you may see error messages that the DataServer does not appear to be ready. You will be asked if you want to continue with attributes disabled. Please notify your instructor if you are not able to proceed with attributes.



The build will continue for a few minutes, during which time information will be shown in the window. This information is being written to a log at the same time, which we can view later. The Optimizer will continue to report on status until the build is complete.



Noticing Changes

Note that even though the database was ready to receive attribute information, this model didn't contain any. This is a very important part of working with attributes. If they exist, the Optimizer will capture them. If not, the database will simply be created empty. Later in the course you will have an opportunity to practice with a special program called DBEDIT. This program was developed by Adaptive Media's technical support group to allow you to add, change or delete attribute information.

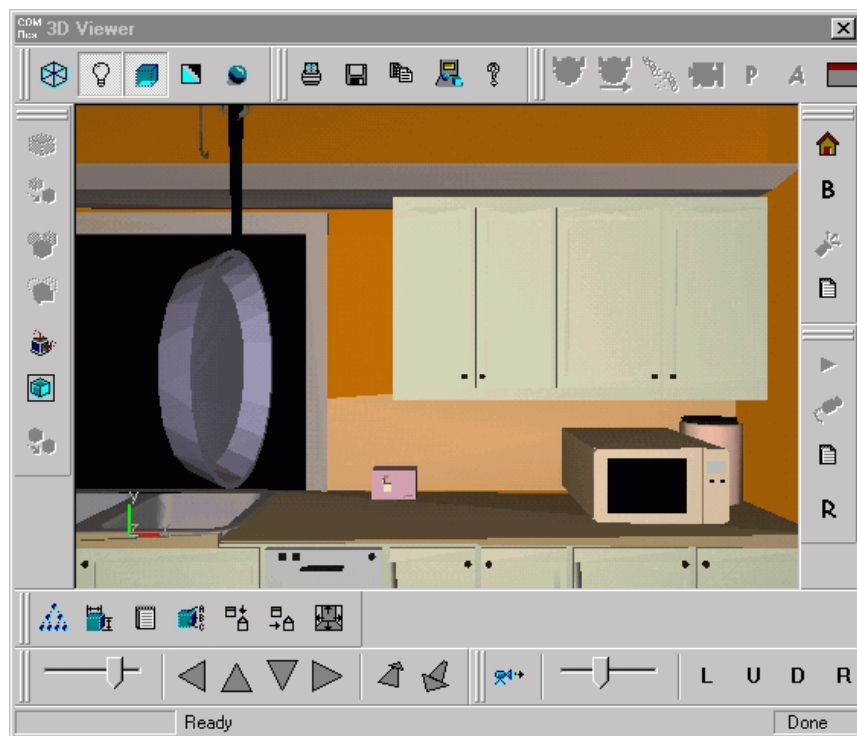
Reopen the amserver window and take a look at what's been created.



Viewing the Envision3D Model

When your model has finished transcoding, you can view it directly from the Optimizer. You can also begin developing some added value in the model. As we've discussed along the way, a key role for Administrators is to prepare the basic viewpoints in transcoded models, to ensure users can quickly find key views.

Select Tools and choose "Viewer" to see your kitchen model. The Viewer loads the 3D-model index file (.3DI) directly rather than loading the model through the Envision3D DeskTop.



This provides a good look at how the model converted. It is a good idea to check this 3D model in the viewer against the original CAD file. When finished, close the Optimizer and open your browser.

You want to be sure to check that your model is working fine for clients through their browsers. You have choices about how you launch to the model. You can either reference it right in your default.html or index.html page or you can embed an href in the document. This second choice is especially nice for displaying more than one model. The picture below shows the affect.

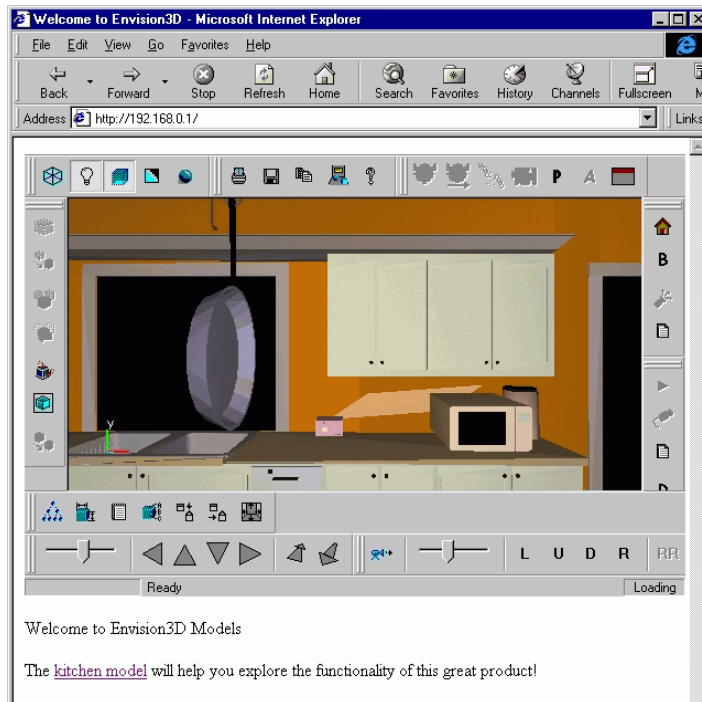
```
<html>
<head>
<meta HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=iso-8859-1">
<meta NAME="Author" CONTENT="Kathy Uadasz">
<meta NAME="GENERATOR" CONTENT="Microsoft FrontPage 3.0">
<title>Welcome to Envision3D</title>
</head>

<body>

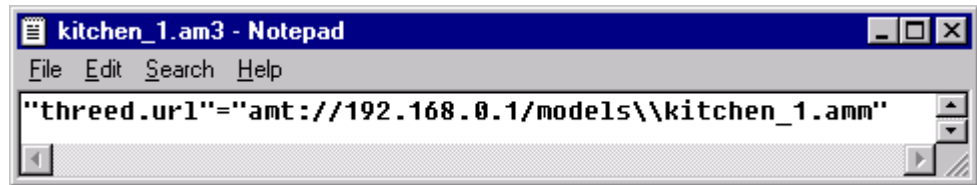
<p><embed src="http://192.168.0.1/kitchen_1.am3" height="400" width="600"></p>
<!--webbot bot="HTMLMarkup" startspan TAG="XBOT" -->
</EMBED><!--webbot bot="HTMLMarkup" endspan -->

<p>Welcome to Envision3D Models </p>

<p>The <a HREF="http://192.168.0.1/kitchen_1.am3">kitchen model</a> will help
you explore the functionality of this great product! </p>
</body>
</html>
```



Move to the root directory of your Web server and verify that the .am3 file has been placed in this directory. This file describes how to locate the .amm file.

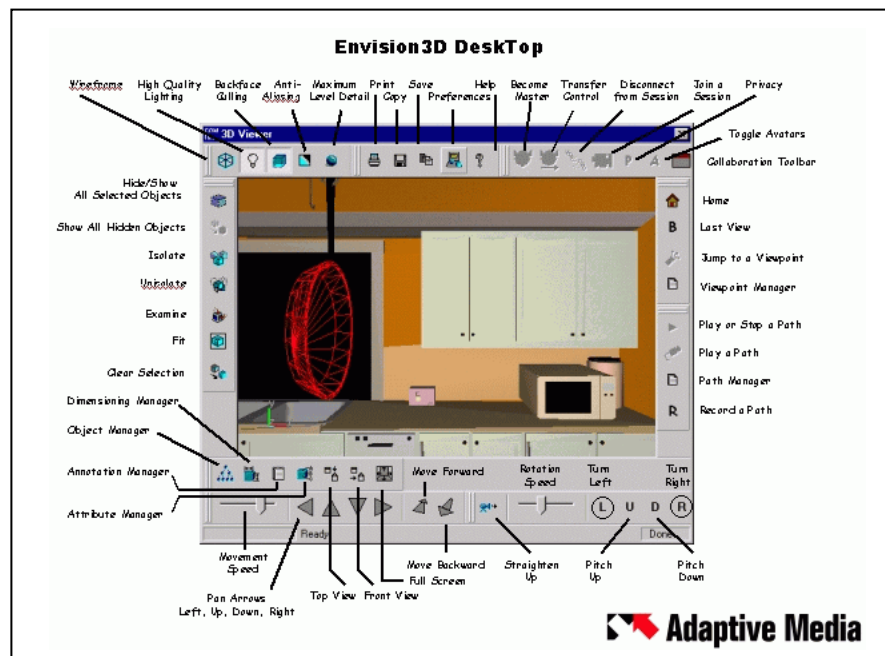


The .amm file points to the location of the index (attribute database) and data (content) files that were created during the optimization process. Remember that the server knows the base path (which you specified earlier) so these locations are relative to that base path (amserver\models).

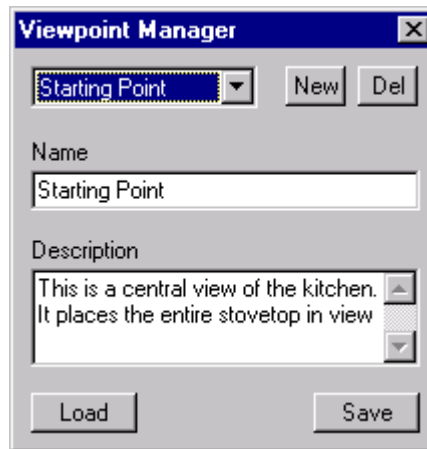
```
srm.media_type = ThreeD
srm.codec_type = 8
srm.3d.ssg.index.filename = "models\kitchen_1.3di"
srm.3d.ssg.data.filename = "models\kitchen_1.3dd"
```

Once you've verified the model converted well, you are ready to add some value to the model with viewpoints and paths. Close your browser and reopen Optimizer. Because you closed it, you will now need to reload the project file.

From the File menu, choose "Load Project" and select the project file (kitchen.ap3). When the project is loaded, choose Viewer from the Tools menu. Your training materials include a DeskTop QuickStart Card. Locate this to help you work with the many features of the Envision3D Desktop.



Back up so you can see the entire stovetop in the kitchen. Make this your starting viewpoint by clicking on the Viewpoint Manager and choosing "New." Label your viewpoint "Starting Point" and add a good description like "This is a central view of the kitchen. It places the entire stovetop in view."



Save the viewpoint, and notice that you are being asked if you want to add these viewpoints to the main index. When you do this, your users can take advantage of them. If you created a viewpoint, and only wanted to preserve it for the session, you could simply click the "X" to close the box.

Move to a nice view of the dining room and create another viewpoint called "Dining Room," adding the description "This is a view of new dining area."

When you click the "X" to close the dialog, the views will disappear if not authored and saved. The load and save buttons are only for external use.

Before you leave this lesson, take one more look at the files that have been created in your "database" and "models" directories. Here is a brief overview:

```
\database
kitchen_1.mdb    (attribute/annotation database file)

\models
kitchen.a3p     (project file tracks preferences and files in project)
kitchen_1.3dd  (content file that makes up the model)
kitchen_1.3di  (index file that makes up the model)
kitchen_1.am3  (presentation file on webserver point to meta file)
kitchen_1.amm  (meta file pointing to index and content files)
kitchen_1.attrlog (log file tracking attribute transfers from server)
kitchen_1.log  (log file reflecting information during build of model)
```

Installing Envision3D Exercise Self-Assessment Checklist

Action	Comments or Questions for Trainer
<p>___ Prepared the Systems for Installation</p> <ul style="list-style-type: none"> • Identified locations for files and applications • Verified hardware met requirements • Verified necessary software was installed • Created application folders 	
<p>___ Completed the Component and Data Map</p> <p>Noted IP Address and paths for:</p> <ul style="list-style-type: none"> • MediaManager • DataServer • Web Server • MediaManager Administrator • Optimizer <p>Noted network path for all file types.</p>	
<p>___ Installed Envision3D</p> <ul style="list-style-type: none"> • Installed programs • Verified that NT services were running for both MediaManager and DataServer 	
<p>___ Added MIME types on Web server</p> <p>Added MIME types for:</p> <ul style="list-style-type: none"> • .amm and .am3 	
<p>___ Configured MediaManager</p> <ul style="list-style-type: none"> • Set amm_base_path • Set working directory 	
<p>___ Transcoded a Model</p> <ul style="list-style-type: none"> • Set up a project • Saved global settings • Transcoded a VRML file • Viewed the model • Created key viewpoints • Review files created in the database and models directories 	

✓ means *completed*