

AUTODESK®
3DS MAX® 
9

Essentials

Autodesk® Official Training Courseware (AOTC)

Autodesk® 3ds Max® 9

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PATENTS

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Introduction

Welcome to the Autodesk 3ds Max 9 Essentials Courseware.

If you are new to 3ds Max, you'll find that this book has been written with you in mind. The material contained within this volume takes you from a raw beginner to a seasoned professional using 3ds Max confidently in a production environment.

This courseware manual was designed primarily for use in an instructor-led classroom, while providing complete instructions so that individuals can also use the material to learn on their own. Since a variety of instructors in a multitude of learning environments use this material, flexibility was built into its design. The manual comprises five chapters: Getting Started, Modeling, Animation, Materials & Mapping and Rendering.

Each chapter has a series of theory lessons and one lab. The theory lessons introduce you to new functional areas of 3ds Max and explain these features with short simple examples. The lab shows you a practical application of the theory learned in a particular chapter. Combined, a chapter gives you a sound understanding of the functions, features, and principles behind 3ds Max, and show you how to apply this knowledge to real-world situations.

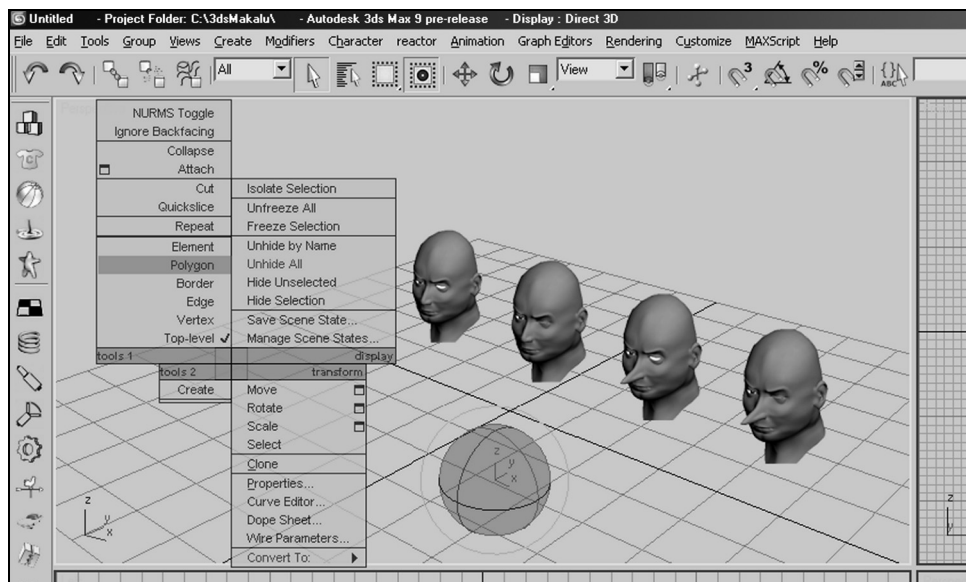
CHAPTER

1

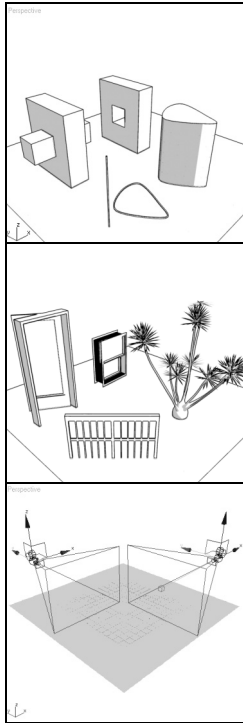
Getting Started

The Getting Started chapter contains a functional overview of the essential tools and principles of 3ds Max. The first lesson discusses the user interface in detail. A practical example of how to use the various tools in 3ds Max follows. You'll then learn how to create and manipulate objects, and properly use transformation and modification tools.

- Lesson 1: User Interface
- Lesson 2: Overview Lab
- Lesson 3: Files and Objects
- Lesson 4: Transform Tools
- Lesson 5: Modifiers



User Interface



This lesson covers the essentials of the 3ds Max user interface. The user interface, or UI for short, is the method by which the user communicates with the software. The UI is split into two main components: the Graphical User Interface or GUI (what you see on the screen), and input devices, such as keyboard and mouse. You can customize most of the 3ds Max UI.

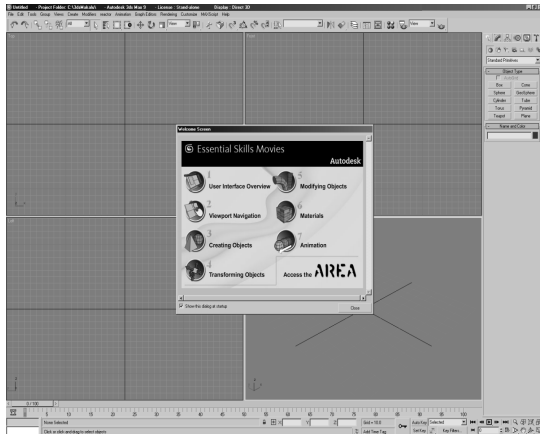
Objectives

After completing this lesson, you will be able to:

- Use the UI components in the 3ds Max interface
- Manipulate and configure the viewport area
- Use the command panel to create a simple object
- Control animation in a 3ds Max scene with the animation playback controls
- Manipulate a model in the viewport with viewport controls

User Interface Components

The first time you start 3ds Max, you will see the following GUI on your screen.



The UI is logically laid out and easy to use. We'll go through the various elements, so you understand how to work with them and the terminology used.

Every time you start 3ds Max, a welcome screen gives you the opportunity to review essential skills by playing back short movie clips. Once you are familiar with those, you can then turn off the display of this screen by disabling the check mark in the bottom left corner of the dialog.

The Welcome screen can be called back from the Help menu.

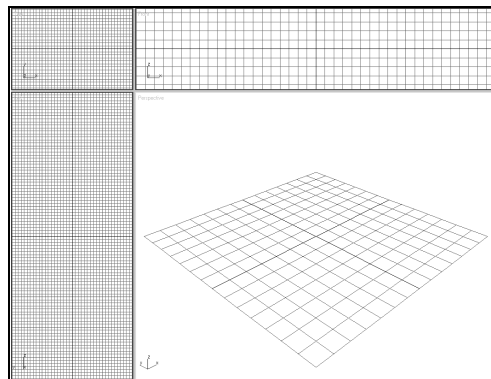
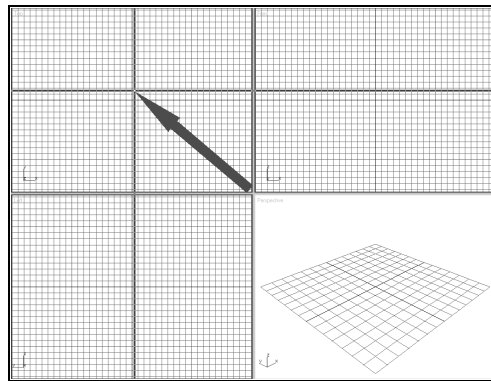
Viewports

The viewport area of the UI displays the scene you are working on. 3ds Max is quite flexible with how you can arrange the viewports and how your model appears in each viewport.

Adjusting Viewport Size

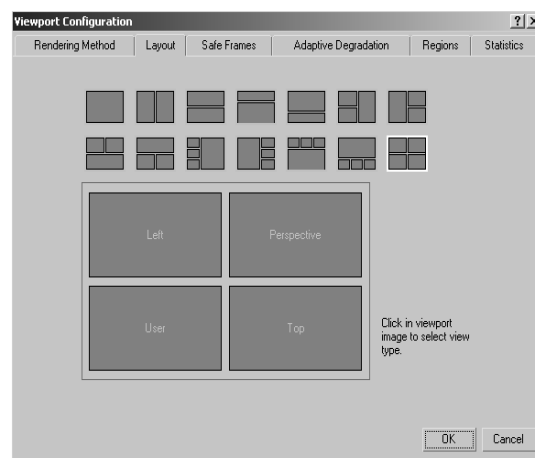
The size of the viewports can be easily adjusted by clicking the line between the viewports, and then dragging it to another point in the viewport area. In the following illustrations, the default four equal viewports have been

changed to a large Perspective viewport by clicking and dragging the center to the upper left.



Viewport Configuration

By default, 3ds Max opens with four equal-sized viewports displayed in the UI. You can change this layout with the Viewport Configuration dialog.

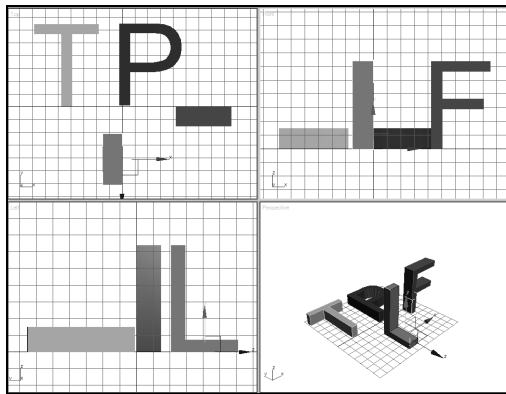


The Viewport Configuration dialog shows the variety of viewport layouts available. You simply choose one to make that layout current. You can also click the active layout in the dialog to change what the viewports show before exiting the dialog. Which layout you choose depends largely on your personal preference and the type of scene you are working on.

Home Grid and Default Views

By default, the four viewports that are displayed when you start 3ds Max are the Perspective view, Front view, Top view, and Left view. Each one of these viewports has its own home grid, which is the working or construction plane of the view. By default, objects are created on that plane or grid.

When you make a viewport active by clicking it, a yellow border appears. The corresponding home grid also becomes current. The following illustration shows four 3D letters, each created in a different viewport while that viewport was active. P is for Perspective, L for Left, T for Top and F for Front.

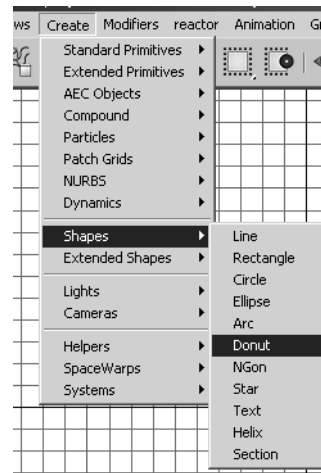


Hint: If you don't like the default layout of the 3ds Max viewports, you can create your own layout and save it as *maxstart.max* in the *\scenes* folder. 3ds Max will look for this file and use it as a base template when you start and reset the software.

Menu Bar

The menu bar, found at the top of the 3ds Max user interface, contains a series of pull-down menus. These

include some common menus, such as File and Edit, found in most Windows applications.

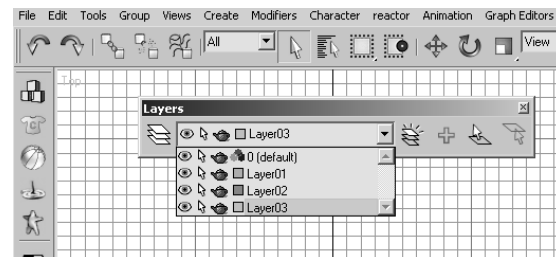


Create menu with submenu. Most Create functions are available here

In addition, the menu bar contains many functions found in 3ds Max that also appear in other menus. For example, the Create menu, shown above, duplicates the Create commands on the command panel.

Toolbars

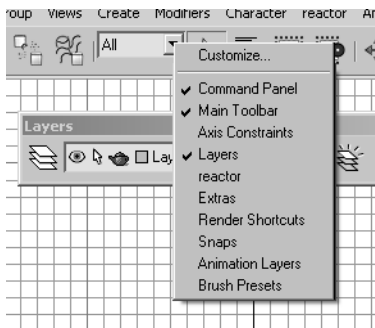
Toolbars play an important role in the 3ds Max. You can dock toolbars at the edge of the viewports, or float them on top of the 3ds Max window or off to the side, for example, on a second monitor.



Toolbars docked on top and side of the UI, and floating

Toolbars are not always displayed by default. For instance, toolbars such as Layers or Reactor do not display when 3ds Max is started for the first time. To display a toolbar, right-

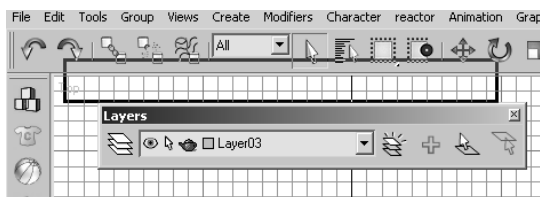
click a blank part of the toolbar, such the area just below a drop-down list.



Right-click menu showing the displayed and available toolbars

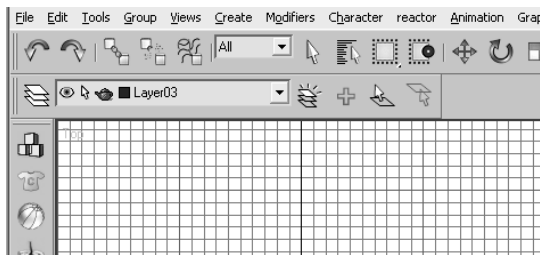
A list of toolbars currently defined in the UI appears. The check marks indicate which toolbars are currently on screen.

You can dock a toolbar by dragging the toolbar's title bar to the edge of the viewport area.



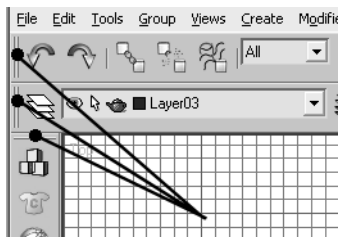
Dragging a floating toolbar to a docked position

The dragged rectangle changes shape when you can release the mouse and dock the toolbar.



Toolbar now docked in position

You can undock a docked toolbar by dragging the double lines at the left end of the toolbar into an open area of the UI.



Handles of toolbars used to undock the toolbar

If the 3ds Max window uses a resolution lower than 1280 x 1024, the main toolbar is not fully visible. If you don't see the teapot icons at the right side of the toolbar, this is the case.



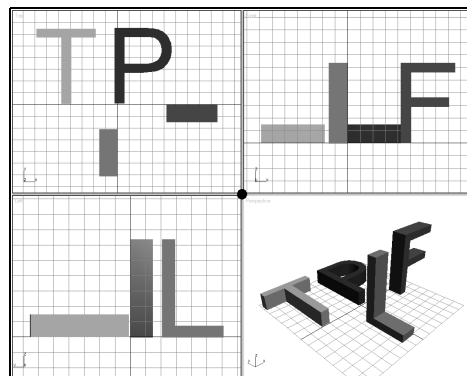
Buttons at the end of the main toolbar

You can scroll the toolbar by positioning the mouse cursor over an empty area of the toolbar. The icon then changes to a Pan hand, and you can drag horizontally or vertically, depending on the orientation of the toolbar.

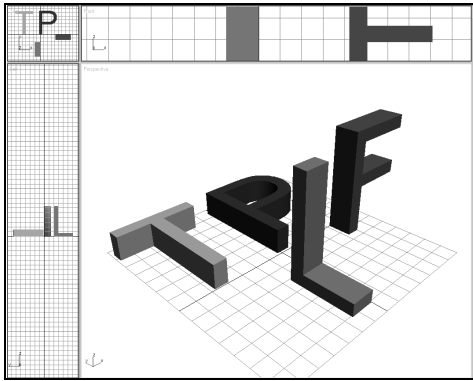
Exercise 1: Working in the User Interface

Now that you have seen a few elements of the UI, you can start using them.

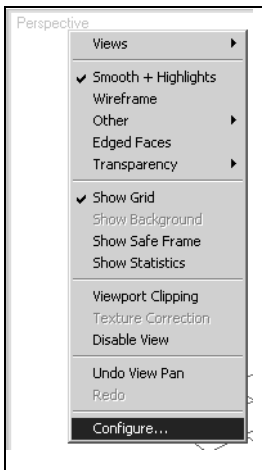
1. Start 3ds Max.
2. From the File menu, choose Open.
3. Navigate to the directory that contains your lesson files and open the file *letters.max*.
If the Units Mismatch dialog appears, click OK to accept the default option.
4. In the viewport area of the UI, position your cursor at the center of the viewports.



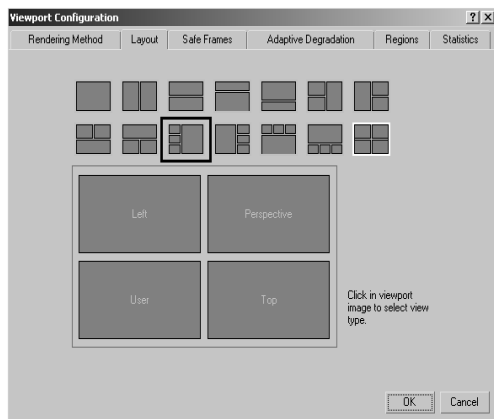
- Click and drag the center point to the upper left of the viewport area.



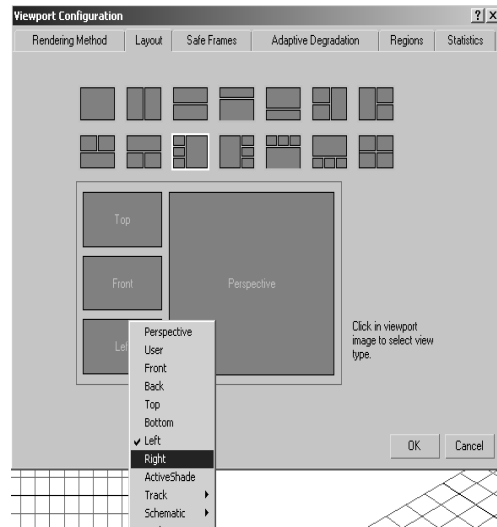
- In the largest viewport, right-click the Perspective label. The viewport right-click menu appears.



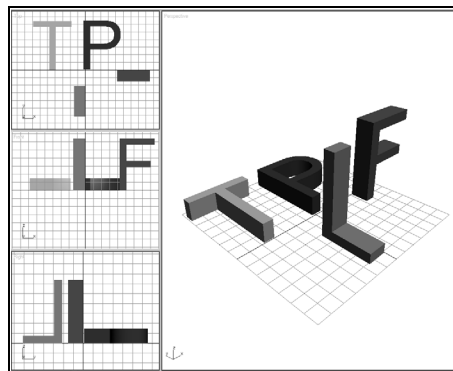
- Choose Configure from the menu.
- Click the Layout tab on the Viewport Configuration dialog.
- Change the viewport layout by choosing the third image in the second row of layouts.



- In the Viewport Configuration dialog, click in the Left viewport. In the menu that appears, choose the Right option to change the viewport to a right-hand view. The Layout changes to three small viewports on the left and one large viewport on the right.

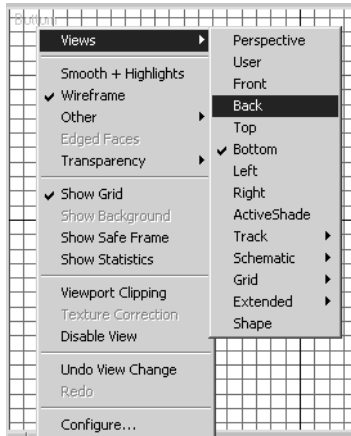


- Click OK to exit the dialog.
- Click the Front viewport. Its border turns yellow.



- Press the **B** key. The view in the viewport changes to the Bottom view. Preset keyboard shortcuts make it easier and faster to switch views.

- In the Bottom viewport, right-click the viewport label. Choose Views > Back to switch to a rear view of the scene.



If there is no keyboard shortcuts, or you cannot remember the keyboard shortcut, you can right-click the viewport label and choose Views to choose from the list of available views.

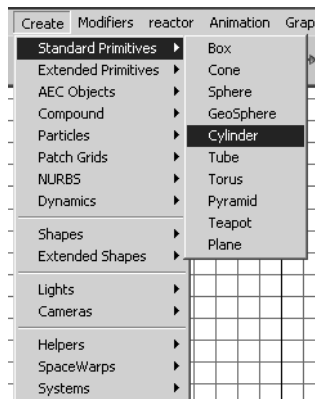
- Go back to the standard four viewport configuration either through the Viewport Configuration dialog or by choosing Reset from the File pull-down menu.

Note: When you reset 3ds Max, the viewports are cleared of objects and returned to their default setup.

Exercise 2: Creating Objects

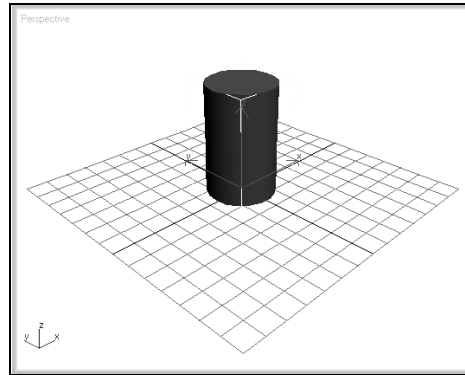
In the next exercise, you will create some objects using the user interface.

- Start or reset 3ds Max.
- From the Create pull-down menu, choose Standard Primitives > Cylinder.



- In the Perspective viewport, click and drag the base radius of the Cylinder.

- Move the cursor upwards and then click to give the cylinder a positive height.



You will want to come back to this point in the scene, so you will use the Hold and Fetch commands found on the Edit pull-down menu.

- From the Edit pull-down menu choose Hold. This bookmarks the progress up to this point.
- Next you'll create another object, this time using the command panel. Click the Create panel tab.
- Click the Geometry button.
- Choose Extended Primitives from the list.

