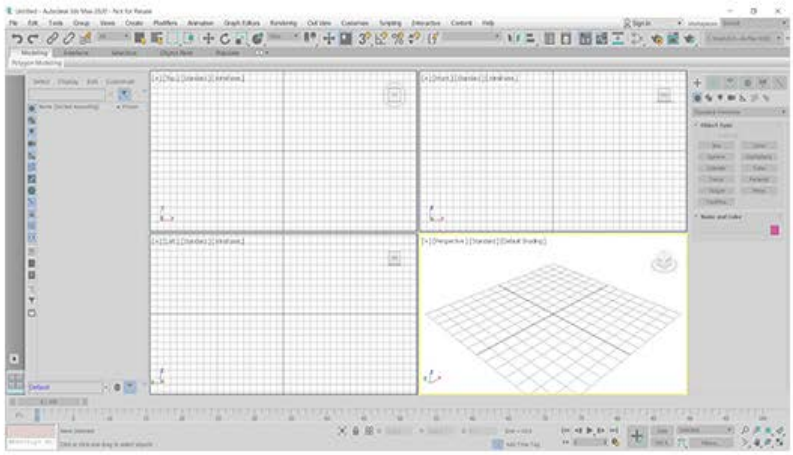
1

Introduction to Autodesk 3ds Max 2020

Learning Objectives

After completing this chapter, you will be able to:

- *Understand the Autodesk 3ds Max interface components*
- *Use controls for creating or modifying objects*
- *Use and customize hotkeys in Autodesk 3ds Max*
- *Customize the colors of the scene elements*



INTRODUCTION TO Autodesk 3ds Max 2020

Welcome to the world of Autodesk 3ds Max, an advanced application that is used to create still or animated 3D models and objects. With the help of this application, you can create realistic scenes by modifying objects, applying maps and materials to a scene, assigning environment to a scene, adding lights and cameras, and so on. Before working with Autodesk 3ds Max, you should have the basic knowledge of various tools and commands available in this software. In this chapter, you will learn the basic features of Autodesk 3ds Max.

GETTING STARTED WITH Autodesk 3ds Max

First, you need to install Autodesk 3ds Max 2020 on your computer. On installing the software, the **3ds Max 2020** shortcut icon will be created automatically on the desktop. Double-click on this icon to start Autodesk 3ds Max. Alternatively, you can start Autodesk 3ds Max from the Start menu. To do so, click the **Start** button from the taskbar to display the Start menu and then choose **Autodesk > 3ds Max 2020**, refer to Figure 1-1.

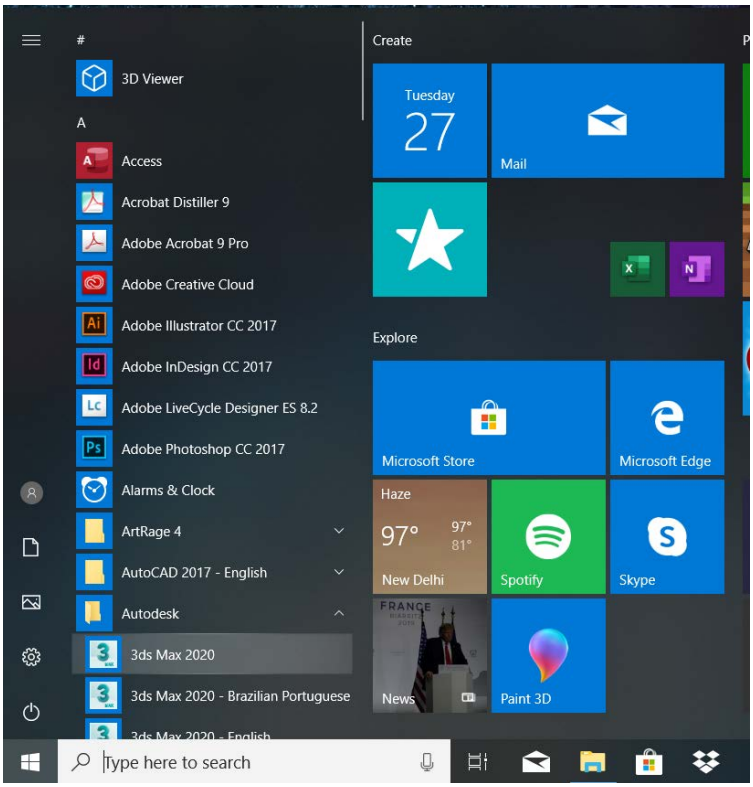


Figure 1-1 *Starting Autodesk 3ds Max 2020 from the taskbar*

When you start 3ds Max the first time, the Welcome Screen is displayed, as shown in Figure 1-2. The Welcome Screen consists of a set of slides that contain information for new users to inspire and get them started. If you do not want to see the Welcome Screen the next time you start 3ds Max, clear the **Show this Welcome Screen at startup** check box located in the bottom-left corner of the screen. You can bring back the Welcome Screen anytime by choosing **Help > Welcome Screen** from the menubar.

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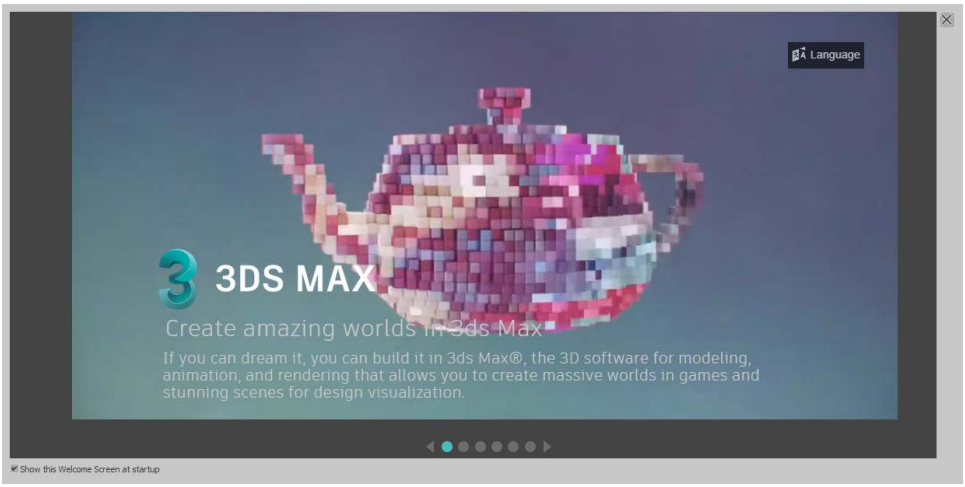


Figure 1-2 *The Welcome Screen*

STARTING A NEW FILE IN Autodesk 3ds Max

To start a new file in Autodesk 3ds Max, choose the **File > New** from the menu bar; a new file will be displayed in the 3ds Max interface. The new file will clear all the contents of the current file. Alternatively, press the CTRL+N keys; the **New Scene** dialog box will be displayed, as shown in Figure 1-3. By default, the **New All** radio button is selected in this dialog box. Choose the **OK** button; a new file will be displayed.

You can also reuse the objects from the current scene in the new scene. Select the **Keep Objects** radio button in the **New Scene** dialog box to keep only the objects from the current scene for the new file. However, on selecting this radio button, all the animation keys and links between the objects will be cleared. To keep the objects and the links between them, select the **Keep Objects and Hierarchy** radio button. However, in this case, the animation keys will be deleted.

Before starting a new scene in Autodesk 3ds Max, it is recommended to reset Autodesk 3ds Max and start afresh. By doing so, you will be able to reset all settings for the new scene. To reset Autodesk 3ds Max, choose **Reset** from the **File** menu; the **3ds Max** message box will be displayed, as shown in Figure 1-4. The message box will ask if you really want to reset 3ds Max. Choose the **Yes** button; the 3ds Max will be reset.

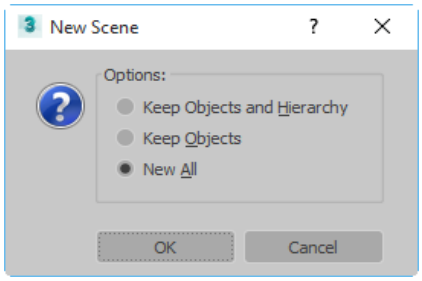


Figure 1-3 *The **New Scene** dialog box*

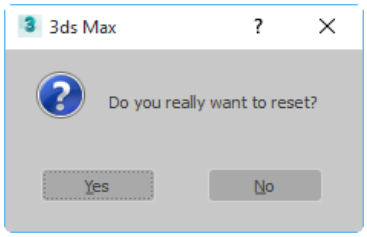


Figure 1-4 *The **3ds Max** message box*

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Autodesk 3ds Max INTERFACE COMPONENTS

The 3ds Max interface consists of different components, as shown in Figure 1-5.

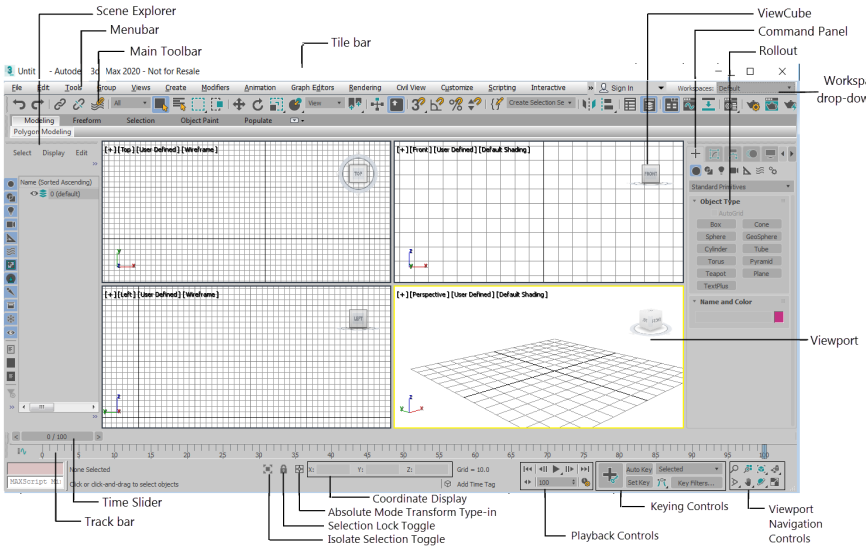


Figure 1-5 *Different screen components of Autodesk 3ds Max interface*

You can customize the interface in a variety of ways by adding toolbars, moving toolbars and Command Panel, and so on. The interface in 3ds Max is high DPI aware that ensures that the interface scales correctly to the latest high DPI displays.

You can easily customize the workspace by floating and docking elements of a scene such as panels, windows, menu, and so on. You can dock or float any element that has the handle. A handle is denoted by double dotted line. A handle can be on the top or left of the element, refer to Figure 1-6.

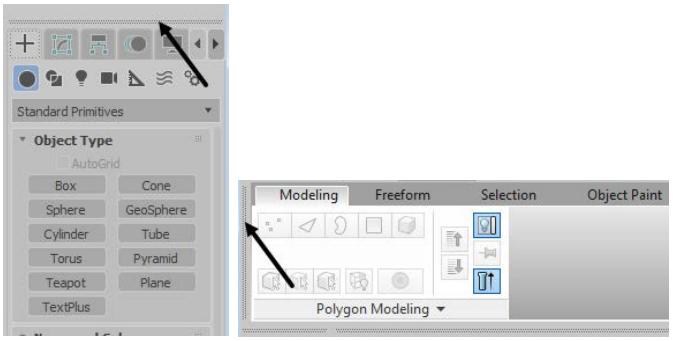


Figure 1-6 *The handles marked with arrows*

To float an element, click-drag the handle. As you drag around the element over the interface, valid docking areas are highlighted in blue. If you want to dock the element, drop it on the blue highlighted area. Keep in mind that the toolbars can only be docked on the outer edge of the interface. When you move around the elements over the interface, not all elements will resize automatically. Sometimes, manual adjustment might be required.

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The 3ds Max interface components are discussed next.

Menu Bar

The menu bar is located just below the title bar, refer to Figure 1-5 and contains various pull-down menus. Some of the pull-down menus are standard window menus such as **File**, **Edit**, **Help**, and so on while others are 3ds Max pull-down menus such as **Create**, **Modifiers**, **Animation**, **Graph Editors**, **Rendering**, **Customize**, and so on. The title of each pull-down menu indicates the purpose of commands in the menu. When you choose one of the menu titles, Autodesk 3ds Max displays the corresponding pull-down menu. Each menu consists of a collection of commands. In a pull-down menu, the dots after a command indicate that a dialog box will be displayed on choosing that command. An arrow next to a command indicates that a cascading menu will be displayed on placing the cursor on that command. For some of the commands in the pull-down menus, the keyboard shortcuts are displayed on their right side, as shown in Figure 1-7.

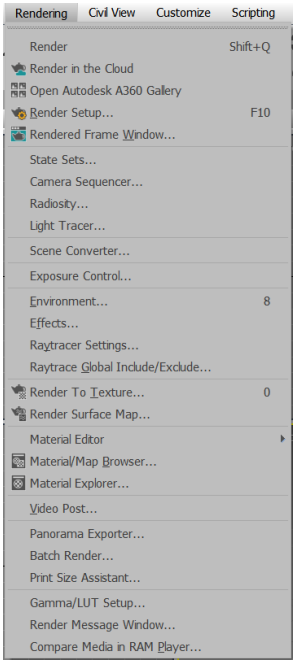


Figure 1-7 *The keyboard shortcuts in the* ***Rendering*** *pull-down menu*

Workspaces

The workspace includes toolbars, menus, the ribbon, hotkeys, quad menus, and viewport layout presets. You can switch between different workspaces by selecting the required option from the **Workspaces** drop-down list located on the top-right corner of the interface, refer to Figure 1-5. To create a new workspace, you need to change the interface setup as required and then choose the **Manage Workspaces** option from the **Workspaces** drop-down list; the **Manage Workspaces** dialog box will be displayed. In this dialog box, choose the **Save as New Workspace** button; the **Create New Workspace** dialog box will be displayed. Enter the name for the workspace in the **Name** text box in the **New Workspace** area and then choose the **OK** button to close the dialog box. Next, close the **Manage Workspaces** dialog box. The newly created workspace will be active now.

Toolbars

In Autodesk 3ds Max, various commands can be invoked by using the buttons or tools in the toolbars. By default, only the **Main Toolbar** will be displayed on Autodesk 3ds Max screen. However, you can display other toolbars such as **Snaps**, **Axis Constraints**, **Extras**, **MassFX Toolbar**, and so on in the 3ds Max interface. Also, you can move, resize, and undock them based on your requirements. To display these toolbars, right-click in the blank area on the **Main Toolbar**; a shortcut menu will be displayed with the names of all toolbars, as shown in Figure 1-8. Next, choose the required toolbar; the chosen toolbar will be displayed on the screen. Also, you can hide any of the displayed toolbars by choosing its label from the shortcut menu.

The **Main Toolbar** provides quick access to many tools and dialog boxes such as **Select and Link**, **Unlink Selection**, **Select Object**, **Material Editor**, and so on. This toolbar is docked just below the menu bar. You will learn more about the tools available in various toolbars in the later chapters.

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Command Panel

By default, the **Command Panel** is docked on the right in the 3ds Max screen. There are six tabs in the **Command Panel**: **Create**, **Modify**, **Hierarchy**, **Motion**, **Display**, and **Utilities**, as shown in Figure 1-9. Most of the 3ds Max modeling and animation tools are placed in these tabs. The tools in the **Command Panel** are used to create, modify, and animate the objects. Each tab has several rollouts that can be expanded or collapsed. The tabs in the **Command Panel** are discussed next.

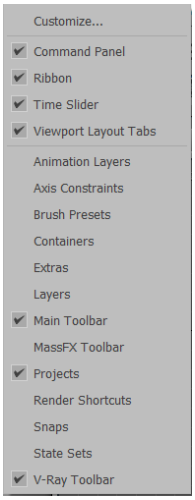


Figure 1-8 *The shortcut menu displayed to view the hidden toolbars*

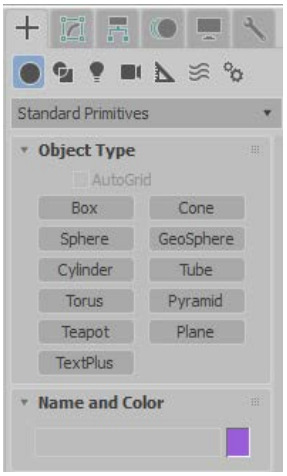


Figure 1-9 *The* ***Command Panel***



The **Create** tab is chosen by default. The tools in the **Create** tab are used to create objects, cameras, lights, and so on.



The **Modify** tab is used to modify the selected objects by modifying their parameters, applying various modifiers, and editing the mesh as well as polygonal and patch objects.



The **Hierarchy** tab is used to control the links in the hierarchy, joints, and inverse kinematics.



The **Motion** tab is used to control the animation controllers and trajectories.



The **Display** tab is used to hide and unhide the objects in the viewports.



The **Utilities** tab is used to access various utility programs.

Scene Explorer

The Scene Explorer is used to view, select, filter, and sort objects. It is also used to rename, delete, group, freeze, and hide objects. By default the Scene Explorer is docked on the left in the default workspace, refer to Figure 1-5. It is discussed in detail in Chapter 2.

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Viewports

When you start Autodesk 3ds Max, the default interface screen appears. This interface consists of four equal sized viewports surrounded by tools and commands, refer to Figure 1-5. These viewports are labeled as Top, Front, Left, and Perspective. The viewports in Autodesk 3ds Max are used to create 3D scenes. Also, they enable you to view a scene from different angles. When you create an object in the viewport, the Top, Front, and Left viewports will display the top, front, and left orthographic views of the object, respectively.

You can loop between viewports to make a particular viewport active by using the WINDOWS+SHIFT keys. The active viewport in 3ds Max is highlighted with a yellow border. Only one viewport can remain active at a time. All commands and actions in 3ds Max are performed in the active viewport. You can switch between the viewports by using the WINDOWS + SHIFT keys. However, if only one viewport is maximized, then on repeatedly pressing the WINDOWS + SHIFT keys, a window with available viewports will be displayed, refer to Figure 1-10. When the WINDOWS + SHIFT keys are released, the window will disappear and the viewport you have chosen will become active.

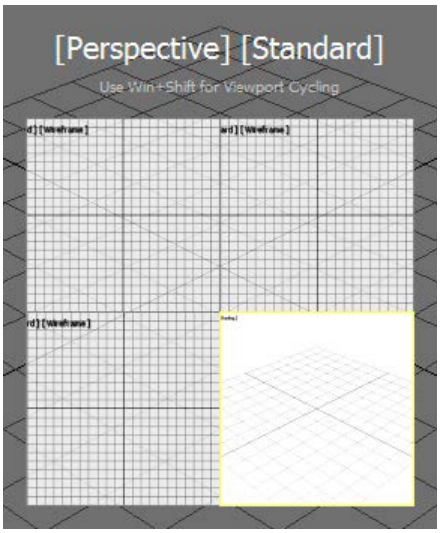


Figure 1-10 *Selecting a viewport to make it active*

You can modify the size of the viewports by dragging the intersection of the viewports on the splitter bars. To restore the original layout, right-click on the intersection of the dividing lines; a shortcut menu will be displayed, as shown in Figure 1-11. Choose the **Reset Layout** option from the shortcut menu; the viewports will be restored to their default size.

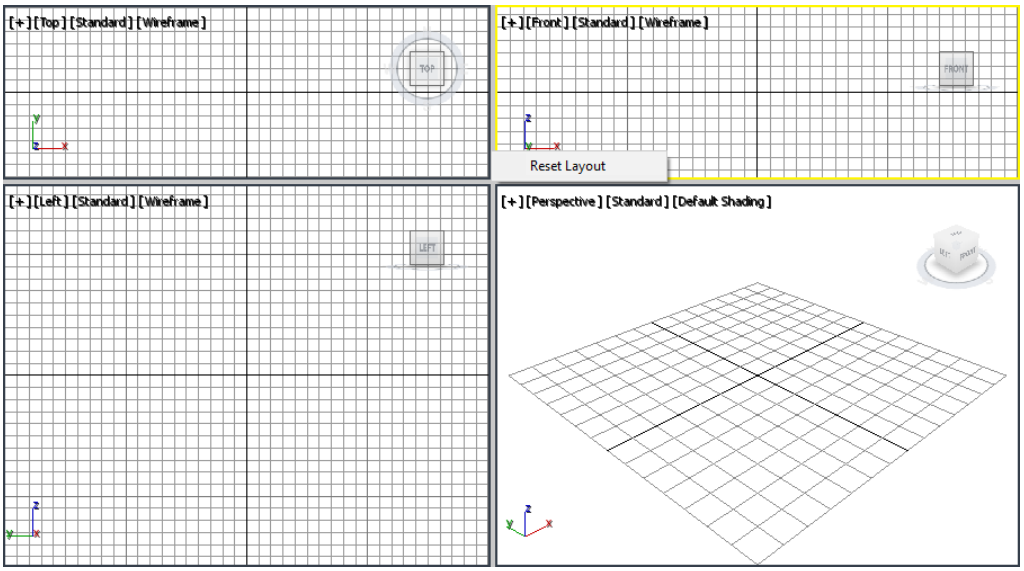


Figure 1-11 *The **Reset Layout** option in the shortcut menu*

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On the bottom left corner of each viewport, there is a world-space tripod, as shown in Figure 1-12. The world-space tripod has three axes, X, Y, and Z, which are displayed in red, green, and blue colors, respectively. The tripod always refers to the world coordinate system, regardless of the local coordinate system. ViewCube is placed at the top right corner of the viewport, refer to Figure 1-12. The ViewCube provides visual feedback of the current orientation of the viewport.

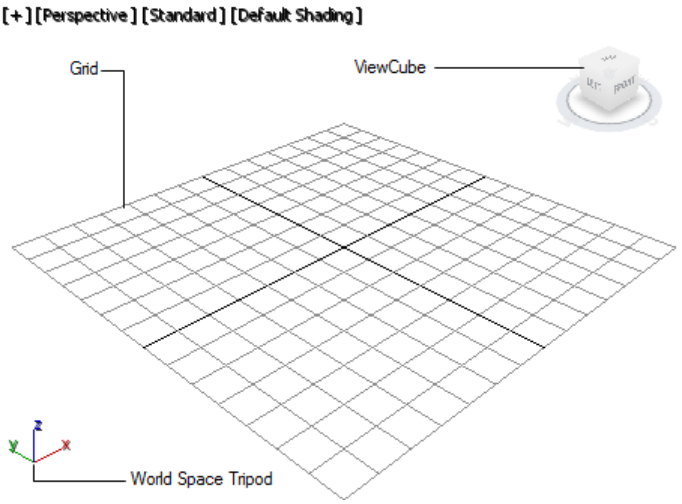


Figure 1-12 *The world space tripod, grid, and ViewCube in the Perspective viewport*

Note

The ViewCube will not be visible in the camera and light viewport.

It is important to note that the Local coordinate system defines local position of an object in a scene whereas the World coordinate system uses fixed axes to define the position of all the objects in the world space. Each viewport has a grid placed in it, refer to Figure 1-12. It is like a graph paper in which all the lines intersect each other at right angles. You can modify the spacing in the grids. The grids in all viewports act as an aid to visualize the spacing and distance while creating objects. Also, they are used as a construction plane to create and align the objects. You can also use the grids as a reference system while using the snap tools to align the objects. You can also hide the grid in the viewport. To do so, press the G key; the grid will disappear from the viewport. To make the grid visible, press G again.

At the top left corner of each viewport, there are four viewport labels: General viewport label, Point of view (POV) viewport label, Settings viewport label, and Shading viewport label, refer to Figure 1-13. When you click on any of the viewport labels, the corresponding flyout will be displayed, as shown in Figure 1-14. The options in these shortcut menus are used to modify various aspects of the active viewport.

You can configure the active viewport by using the options in the General viewport label menu. Choose the **Configure Viewports** option from this menu; the **Viewport Configuration** dialog box will be displayed. Various options in this dialog box can be used to configure the viewports. You already know that four equally sized viewports are displayed on the screen. However, you can change the viewport configuration based on your requirement. To change the basic configuration of the viewports, choose the **Layout** tab of the **Viewport Configuration**

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dialog box, refer to Figure 1-15. In the **Layout** tab, you can specify the division method of the viewports. There are 14 types of configurations displayed at the top in the tab. Select the required configuration and then choose the **OK** button; the viewports will be displayed according to the configuration that you have selected in the **Viewport Configuration** dialog box.

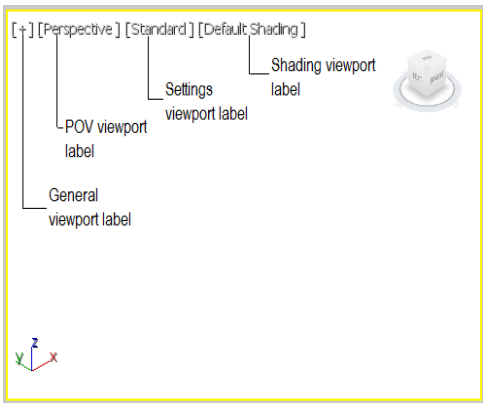


Figure 1-13 *The viewport labels in the Front viewport*

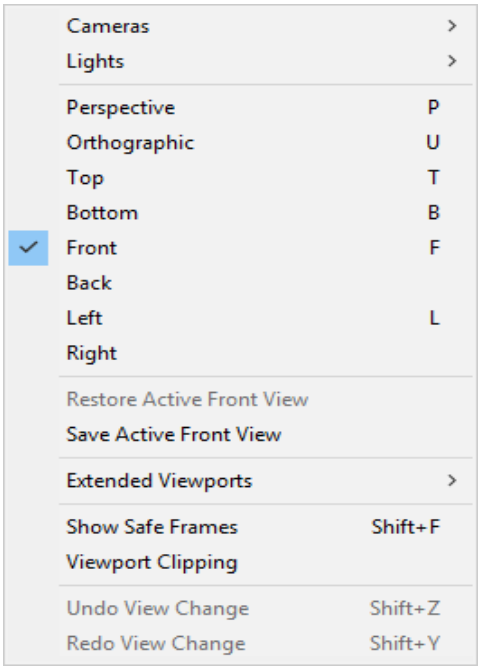


Figure 1-14 *The flyout displayed on clicking the POV viewport label*

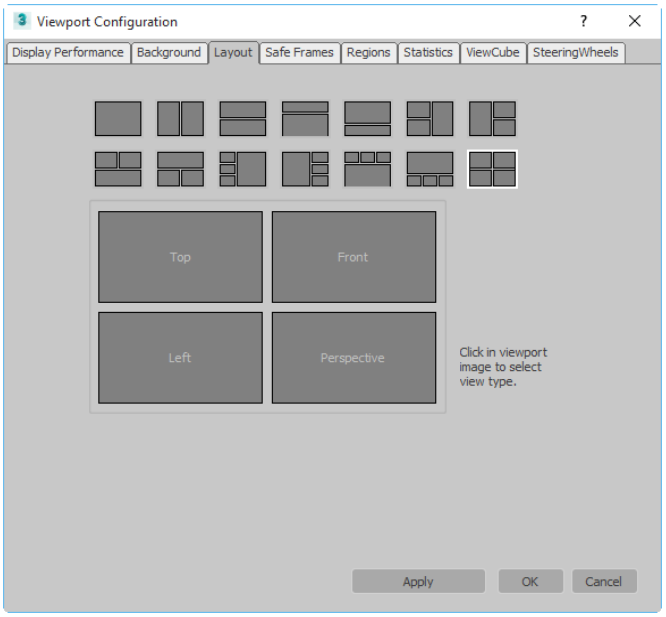


Figure 1-15 *The **Layout** tab of the **Viewport Configuration** dialog box*

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Note

The viewport configuration specifies how the viewports will be arranged on the screen.

You can change the default viewport to any other viewport type available such as Bottom, Right, and so on, by using the options in the POV viewport label menu. To do so, click on the POV viewport label; a flyout will be displayed. Choose the viewport that you want to display. Using the Settings viewport label, you can change the display quality in viewports as well as lighting, shadows, and material settings. Different types of shading types that can be defined using the Settings Viewport label are: **Default shading**, **Facets**, **Flat color**, **Bounding Box**, **Clay**, and so on. However, some other shading types are available in the cascading menu of the **Stylized** option, refer to Figure 1-16. These shading types are **Graphite**, **Color Pencil**, **Ink**, and so on. You can choose any one of the options to change the shading.

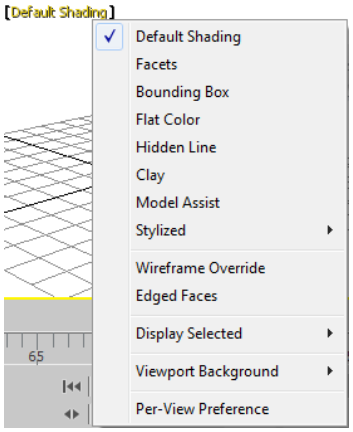


Figure 1-16 *The flyout displayed on clicking the Shading viewport label*

Viewport Navigation Controls

There are various tools available at the bottom right corner of the Autodesk 3ds Max screen, as shown in Figure 1-17. These tools are known as viewport navigation controls and they are used to control the display and navigation of the viewport. The tools displayed in the viewport navigation controls depend on the viewport selected. For example, if the Camera viewport is selected, its corresponding tools will be displayed in the viewport navigation control. These tools are discussed in detail in the later chapters.

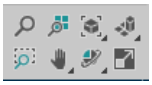


Figure 1-17 *The viewport navigation controls*

Viewport Layout Tab Bar

The Viewport Layout tab bar enables you to store multiple viewport setups in a single scene. You can switch between different viewport setups with a click. To display the viewport layout tab bar if it is not displayed, right-click in the blank area on the **Main Toolbar**; a shortcut menu will be displayed with the names of all toolbars. Next, choose the **Viewport Layout Tabs** option; the Viewport Layout tab bar will be displayed on the screen. By default, there is a single tab at the bottom of the bar that represents the startup layout. To add more layout tabs to the bar, click on the arrow button on the bar; the **Standard Viewport Layouts** flyout will be displayed. Next, choose the required option from the flyout; the chosen layout tab will be added to the bar. To remove a tab from the bar, right-click on the tab; a shortcut menu will be displayed. Next, choose **Delete Tab** from the shortcut menu.

Animation Playback Controls

The tools in the animation playback controls are displayed on the left side of the viewport navigation controls, refer to Figure 1-18. These tools are used to control the animation in the active viewport. Also, you can set the total number of frames, animation length, and other settings of the animation using these tools.

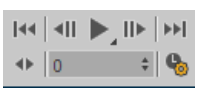


Figure 1-18 *The animation playback controls*

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Animation Keying Controls

The tools in the animation keying controls are displayed on the left side of the animation playback controls, refer to Figure 1-19. These tools are used to enter or exit different animation modes.



Figure 1-19 *The animation keying controls*

Track Bar

The track bar lies between the time slider and the status bar, refer to Figure 1-20. It displays a timeline along with the frame numbers.

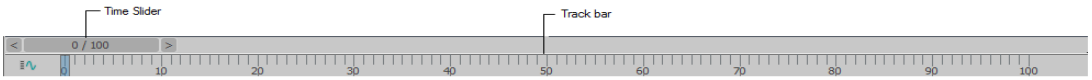


Figure 1-20 *The track bar and the time slider*

Time Slider

The time slider displays the current frame and the total number of frames in the current time segment, refer to Figure 1-20. You can view the animation at each frame by dragging the time slider. The time segment is the total range of frames that you can access using the time slider. By default, it ranges from 0 to 100. You can set the range using the **Time Configuration** dialog box, about which you will learn in the later chapters.

Status Bar

There are various tools in the status bar that provide information about the scene and the active command, as shown in Figure 1-21. The prompt line, which is located at the bottom of the screen, displays information about the active command or tool. On top of the status bar, a text box known as the status line is available. This status line displays the number of currently selected objects (current selection set). The **Selection Lock Toggle** tool available on the right side of the status bar is used to lock the selection set. The Coordinate display/transform type-in area displays the X, Y, and Z coordinates of the cursor or the currently selected object. The Coordinate display/transform type-in area can also be used to enter transform values while moving, scaling, or rotating the selected object(s).

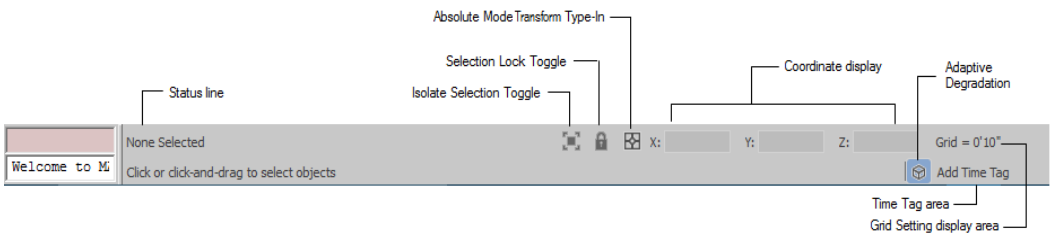


Figure 1-21 *The status bar*

The Grid setting display area is placed on the right of the Coordinate display area. It displays the size of the grid. The time tag area located below the grid setting display area is used to assign the text labels at any point of time in your animation. Click on the time tag area; a flyout with the **Add Tag** and **Edit Tag** options will be displayed. Use these options to add or edit the text labels at any point of time in your animation.

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The **Adaptive Degradation** button placed on the right of the prompt line is used to improve the viewport performance in a complex scene by decreasing the visual fidelity of some of the objects temporarily. This results in smoother viewport motions and object transformations in such scenes. It also improves viewport quality incrementally, depending on the availability of processing time. To activate this feature, right-click on the **Adaptive Degradation** button; the **Viewport Configuration** dialog box will be displayed, as shown in Figure 1-22. The **Display Performance** tab is chosen by default in this dialog box. Change the settings in the **Display Performance** tab based on your requirement and choose the **OK** button.

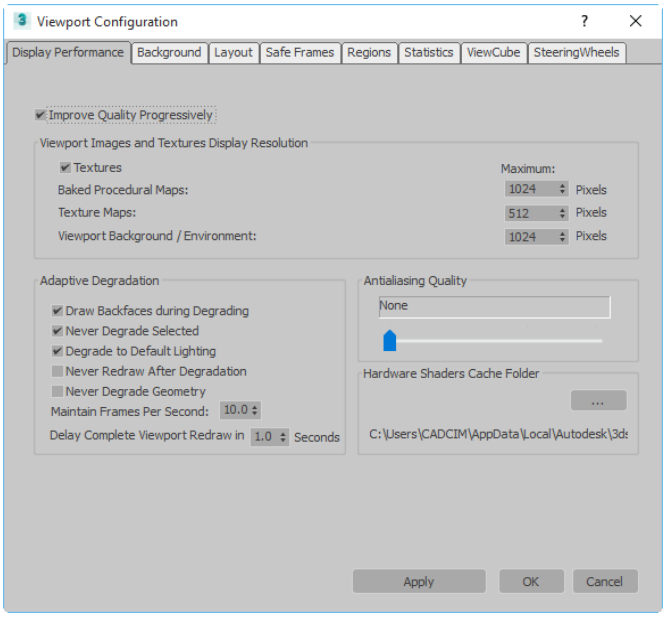


Figure 1-22 *The* ***Viewport Configuration*** *dialog box*

MAX CREATION GRAPH

Max Creation Graph uses node based Max Creation Graph Editor. Using this editor, you can create customized tools which are used to create various geometrical shapes, create modifiers, specify render settings, create utilities, and so on. To open Max Creation Graph Editor, choose **Scripting > Max Creation Graph Editor** from the menu bar; the **Max Creation Graph-Untitled** window will be displayed, as shown in Figure 1-23. This window has a menu bar at the top and four panels: **Operator Depot**, **Node Properties**, **View Navigator**, **Message Log**, and active graph view. All these panels in the **Max Creation Graph-Untitled** window can be resized, undocked, and closed.

The **Operator Depot** panel consists of a number of nodes and operators under various categories. These categories are **3ds Max**, **Array**, **Bitmap**, and so on. Click on the arrow at the left of the category name to expand it. The **Node Properties** panel provides detailed information of selected operator/node.

The view panel is used to connect nodes and operators. You need to drag the nodes and operators from the **Operator Depot** panel to the active view to create a graph. These nodes and operators has input and/or output connector(s) to create a network of nodes and operators.

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This network is then evaluated using the commands in the menu bar to create customized tools. The **Message Log** panel displays messages for the network created in the **Main Graph Window** panel once the networks are evaluated. On creating the network of nodes and operators, you need to evaluate it and save it at the default location with desired name to use it as a customized tool in 3ds Max interface.

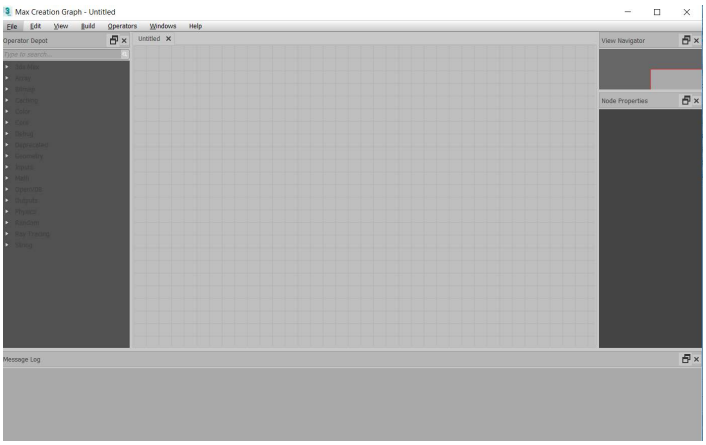


Figure 1-23 *The* ***Max Creation Graph - Untitled*** *window*

SNAPS SETTINGS

Snaps restrict the movement of the cursor to a specific part of an object or grid. There are four buttons available for snap settings in the **Main Toolbar**: **Snaps Toggle**, **Angle Snap Toggle**, **Percent Snap Toggle**, and **Spinner Snap Toggle**. If you right-click on the **Snaps Toggle**, **Angle Snap Toggle**, or **Percent Snap Toggle** button, the **Grid and Snap Settings** dialog box will be displayed, as shown in Figure 1-24. In this dialog box, you can select different parts of the objects or grid where the cursor will snap to. You can turn the snap command on and off by pressing the S key or by choosing the **Snaps Toggle** tool. If you choose and hold the **Snaps Toggle** tool, a flyout will be displayed. This flyout contains the **2D Snap**, **2.5 Snap**, and **3D Snap** tools, which can be chosen to snap the cursor.

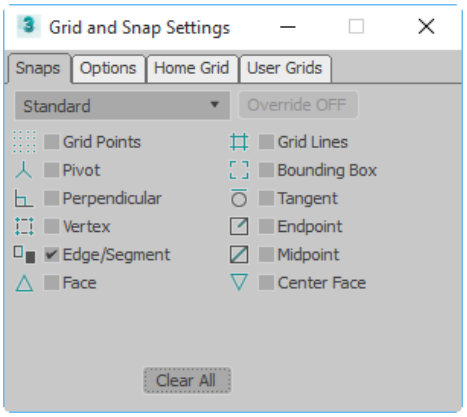


Figure 1-24 *The* ***Grid and Snap Settings*** *dialog box*

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Snaps Toggle

Main Toolbar: Snaps Toggle
Menu bar: Tools > Grids and Snaps > Snaps Toggle
Keyboard: S

The **Snaps Toggle** tool is used to snap the objects on the grid. On invoking the **Snaps Toggle** tool, a flyout will be displayed, as shown in Figure 1-25. This flyout has three tools which are discussed next.



Figure 1-25 *The* ***Snaps Toggle*** *flyout*

2D Snap



If you choose the **2D Snap** tool from the **Snaps Toggle** flyout, then the cursor snaps to the active grid in two dimensions, X and Y. The Z-axis is not taken into consideration.

2.5D Snap



If you choose the **2.5D Snap** tool from the **Snaps Toggle** flyout, then the cursor snaps to the vertices and edges of the objects projected on the active grid.

3D Snap



If you choose the **3D Snap** tool from the **Snaps Toggle** flyout, then the cursor snaps to any object in 3D space using the **3D Snap** tool.

On moving the gizmo or snap handle, this axis center will act as the start snap point. This feature also helps in increasing the accuracy of snaps.

Angle Snap Toggle

Main Toolbar: Angle Snap Toggle
Menu bar: Tools > Grids and Snaps > Angle Snap Toggle
Keyboard: A



The **Angle Snap Toggle** tool enables you to rotate an object in angular increments. The increment value is specified in the **Angle** spinner of the **Grid and Snap Settings** dialog box. By default, the value in the **Angle** spinner is set to 5.0.

Percent Snap Toggle

Main Toolbar: Percent Snap Toggle
Menu bar: Tools > Grids and Snaps > Percent Snap Toggle
Keyboard: CTRL+SHIFT+P



The **Percent Snap Toggle** tool enables you to scale an object in percent increments. The increment value can be specified in the **Percent** spinner of the **Grid and Snap Settings** dialog box. By default, the value set in the **Percent** spinner is set to 10.0.

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Spinner Snap Toggle

Main Toolbar: Spinner Snap Toggle



The **Spinner Snap Toggle** tool is used to set the single increment or decrement value for all the spinners in Autodesk 3ds Max. By default, the increment or decrement value is set to 1. To set the increment value, right-click on the **Spinner Snap Toggle** tool; the **Preference Settings** dialog box will be displayed. In this dialog box, choose the **General** tab, if it is not already chosen. Now, in the **Spinners** area, set a value in the **Snap** spinner, refer to Figure 1-26.

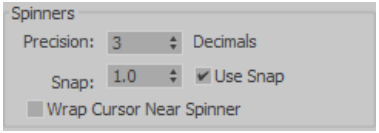


Figure 1-26 *The* ***Spinners*** *area in the* ***Preference Settings*** *dialog box*

Also, select the **Use Snap** check box and then choose the **OK** button; the **Spinner Snap Toggle** tool in the **Main Toolbar** is chosen. Now, when you use any spinner in 3ds Max, the value will increase or decrease according to the value that you have specified in the **Preference Settings** dialog box.

UNITS SETUP

The units setup in 3ds Max is used to specify the units that help in measuring the geometry in a scene. You can change the settings for units by using the **Customize** pull-down menu. To do so, choose **Customize > Units Setup** from the menu bar; the **Units Setup** dialog box will be displayed, as shown in Figure 1-27. By default, the **Generic Units** radio button is selected in the **Display Unit Scale** area in this dialog box. You can select any other radio button as per the requirement from the **Display Unit Scale** area of this dialog box and then choose the **OK** button; the limits in all the spinners in 3ds Max will be modified accordingly.

Setting Grid Spacing

To set the spacing between the visible grids in the viewports, choose **Tools > Grids and Snaps > Grid and Snap Settings** from the menu bar; the **Grid and Snap Settings** dialog box will be displayed. Choose the **Home Grid** tab in this dialog box, as shown in Figure 1-28. In the **Grid Dimensions** area, set the value in the **Grid Spacing** spinner to specify the size of the smallest square of the grid. The value in the spinners will be measured in the units that you specify in the **Units Setup** dialog box. Set the value in the **Major Lines every Nth Grid Line** spinner to specify the number of squares between the major lines in the grid. Set the value in the **Perspective View Grid Extent** spinner to specify the size of the home grid in the Perspective viewport. Note that the default grid displayed in the viewports on starting 3ds Max is known as the home grid.

In the **Dynamic Update** area, the **Active Viewport** radio button is selected by default. It is used to update the active viewport according to the new values of the **Grid and Snap Settings** dialog box. Select the **All Viewports** radio button to update all viewports simultaneously according to the new values that you set in the spinners of the **Grid and Snap Settings** dialog box.

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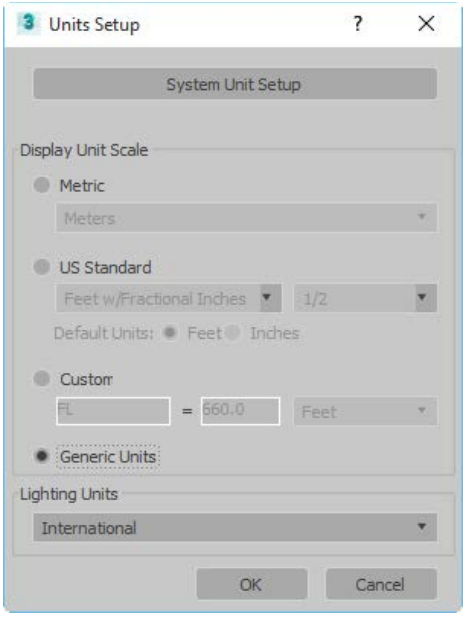


*Figure 1-27 The **Units Setup** dialog box*

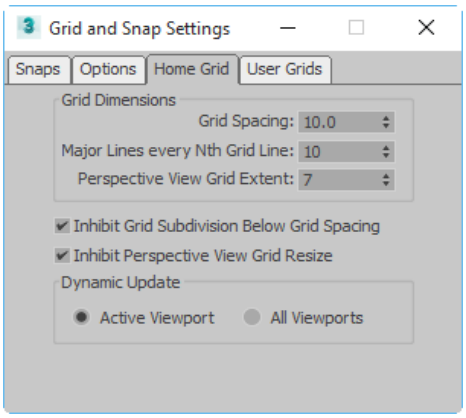


*Figure 1-28 The **Home Grid** tab chosen in the **Grid and Snap Settings** dialog box*

UNDO AND REDO TOOLS

Menu bar:	Edit > Undo or Redo
Keyboard:	CTRL+Z (Undo) or CTRL+Y (Redo)

The **Undo** tool is used to revert the last actions performed while creating or modifying a model in Autodesk 3ds Max. To undo an action, choose the **Undo** tool from the **Main Toolbar** or press the CTRL+Z keys. You need to choose the **Undo** tool repeatedly till all the previously performed actions are reversed. To reverse a number of actions at a time, right-click on the **Undo** tool in the **Main Toolbar**; a shortcut menu will be displayed, refer to Figure 1-29. Move the cursor over the number of actions that you want to reverse; the actions will be selected and then choose **Undo**. By default, you can reverse your actions up to 20 times. If you want to change this number, choose **Customize > Preferences** from the menu bar; the **Preference Settings** dialog box will be displayed. By default, the **General** tab is chosen in this dialog box. In the **Scene Undo** area, set the new value in the **Levels** spinner, as shown in Figure 1-30.

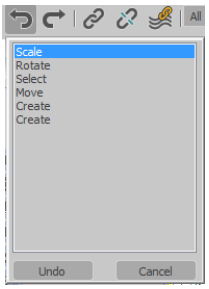


Figure 1-29 The list of actions displayed

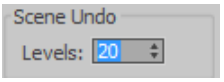


*Figure 1-30 The **Scene Undo** area in the **Preference Settings** dialog box*

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The **Redo** tool is used to revert the last actions performed by the **Undo** tool. To redo an action, choose the **Redo** tool from the **Main Toolbar** or press the CTRL+Y keys. You need to choose the **Redo** tool repeatedly till you want to reverse the actions performed earlier. To reverse number of actions at a time, right-click on the **Redo** tool in the **Main Toolbar**; a list of last actions will be displayed in the shortcut menu. Move the cursor over the number of actions that you want to reverse; the actions will be selected. Next, choose **Redo**; the selected action will be displayed.

HOLD AND FETCH TOOLS

Menu bar:	Edit > Hold or Fetch
Keyboard:	CTRL+H (Hold) or ALT+CTRL+F (Fetch)

Sometimes you may want to perform experiments on a scene. In such as a case you need to hold the scene. The **Hold** tool is used to hold a scene and to save the work done in a temporary file with the name *maxhold.mx*.

The file is saved at the location *\Documents\3dsmax\autoback*. To perform an experiment in a scene, choose the **Hold** tool from the **Edit** menu or press the CTRL+H keys. Next, if you need to go back to the previous command, choose the **Fetch** tool from the **Edit** menu or press ALT+CTRL+F; the **About to Fetch. OK?** dialog box will be displayed, as shown in Figure 1-31. Choose the **Yes** button; the scene with the previous command will be displayed. In this way, you can go back to a series of commands using the **Hold** tool.



Figure 1-31 *The* ***About to Fetch. OK?*** *dialog box*



Note

When you use the ***Fetch*** *tool in a scene, the history of the actions performed so far will be deleted. As a result, you cannot undo or redo the actions performed before invoking this tool.*

HOT KEYS

In 3ds Max, you can use the hot keys to choose some of the commonly used tools and commands. These keys are known as the hot keys. You can work faster and more efficiently using the hot keys. The major hot keys and their functions are listed next.

Main Toolbar

The hot keys that can be used to invoke the tools available in the **Main Toolbar** are given next:

H	Invokes the **Select From Scene** dialog box
S	Invokes the **Snaps Toggle** tool
A	Invokes the **Angle Snap Toggle** tool
CTRL+SHIFT+P	Invokes the **Percent Snap Toggle** tool
M	Invokes the **Material Editor** dialog box
SHIFT+Q	Invokes the **Render Production** tool

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Viewport Navigation Controls

The hot keys that can be used to invoke the tools available in the viewport navigation controls are given next:

ALT+CTRL+Z	Performs the action of the **Zoom Extents** tool
ALT+W	Invokes the **Maximize Viewport Toggle** tool
ALT+Z	Invokes the **Zoom** tool
CTRL+W	Invokes the **Zoom Region** tool
CTRL+P	Invokes the **Pan View** tool
Scroll the middle mouse button	Zooms in or out the active viewport
CTRL+R	Invokes the **Orbit** tool
SHIFT+Z	Used to undo the **Zoom** or **Pan** command actions
ALT+ press and hold the middle mouse button and move the mouse	Performs the actions of the **Orbit** tool

The following hot keys are used to change the POV viewport labels:

V	Invokes the viewport quad menu
T	Invokes the Top viewport
F	Invokes the Front viewport
L	Invokes the Left viewport
P	Invokes the Perspective viewport
B	Invokes the Bottom viewport
U	Invokes the Orthographic viewport

Animation Playback Controls

The hot keys that can be used to invoke the tools available in the animation playback controls are given next:

N	Invokes the **Auto Key** tool
Home	Go to start frame
End	Go to end frame
/ (backslash)	Plays animation
ESC	Stop the animation
, (comma)	Go to previous frame
. (period)	Go to next frame

Customizing the Hot Keys

In 3ds Max, you can create your own keyboard shortcuts. To do so, choose **Customize > Customize User Interface** from the menu bar; the **Customize User Interface** dialog box will be displayed, as shown in Figure 1-32. In this dialog box, the **Keyboard** tab is chosen by default. Next, select

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a command from the **Group** and **Category** drop-down lists; a list of corresponding actions will be displayed just below the **Category** drop-down list. Now, select one of the actions from the list and then enter the key that you want to assign to the selected action in the **Hotkey** text box. Next, choose the **Assign** button; the key is assigned to the selected action.

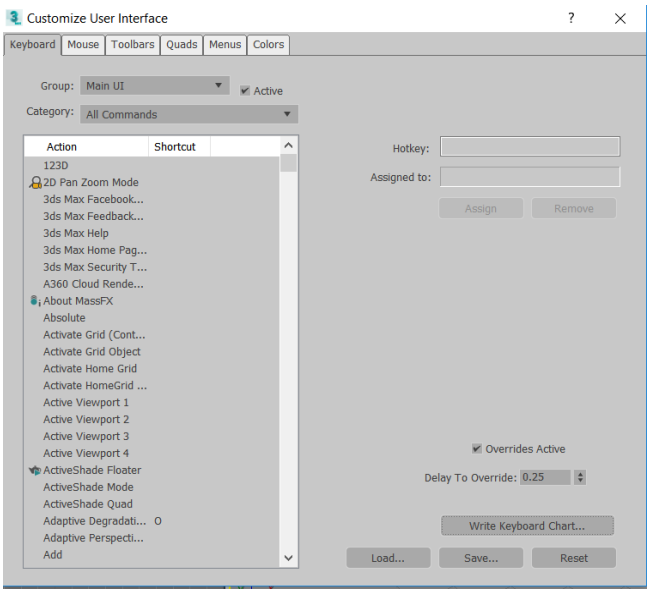


Figure 1-32 *The* ***Customize User Interface*** *dialog box*

CUSTOMIZING THE COLORS OF THE USER INTERFACE

3ds Max allows you to modify the colors of the interface. You can modify the colors for almost every element in the interface. To modify the colors, choose **Customize > Customize User Interface** from the menu bar; the **Customize User Interface** dialog box will be displayed. Choose the **Colors** tab from this dialog box, refer to Figure 1-32. Next, select the category of the interface element from the **Elements** drop-down list; the list of the corresponding elements will be displayed just below the **Elements** drop-down list. Now, select one of the elements from the list and click on the **Color** swatch on the right of the **Elements** drop-down list; the **Color Selector** dialog box will be displayed. Select a new color and choose the **OK** button to close the **Color Selector** dialog box.

To reset the new color to the default one, click on the **Reset** button located next to the **Color** color swatch. You can also reset all the changes you made to colors. To do so, choose the **Reset** button at the bottom of the **Customize User Interface** dialog box; the **Revert Color File** message box will be displayed, as shown in Figure 1-33. Choose the **Yes** button; the default colors will be displayed in the color swatches.

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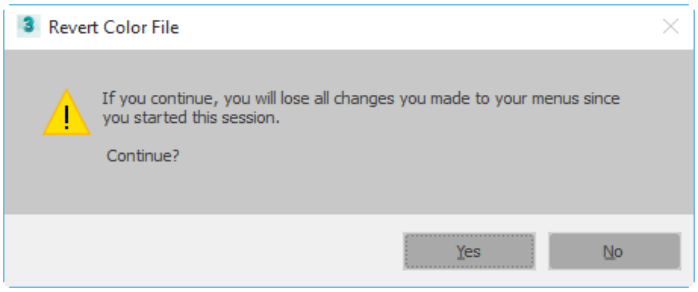


Figure 1-33 *The* ***Revert Color File*** *message box*

HELP PREFERENCES

When you choose **Help > Autodesk 3ds Max Help** from the menu bar, the 3ds Max help will be displayed. If you want to open help from a local drive, you need to download it from *http://www.autodesk.com/3dsmax-helpdownload-enu* and then install it on your system. Next, choose **Customize > Preferences** from the menu bar; the **Preference Settings** dialog box will be displayed. Choose the **Help** tab in this dialog box, refer to Figure 1-34. Select the **Local Computer/ Network** radio button from the **Help Location** area and then choose the **Browse** button; the **Browse For Folder** dialog box will be displayed. Select the path where you have saved the file and then choose the **OK** button to exit the dialog box. Next, choose the **OK** button in the **Preference Settings** dialog box; the dialog box will be closed. Now, you can access the help from your local drive.

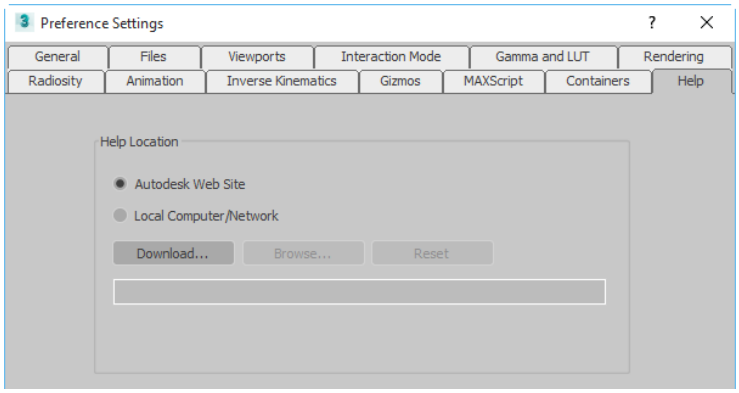


Figure 1-34 *The* ***Help*** *tab chosen in the* ***Preference Settings*** *dialog box*

If you choose **Help > Search 3ds Max Commands** from the menu bar or press X, a search field will be displayed, refer to Figure 1-35. Next, enter the initial characters of a command; a list of command names that contain the specified characters will be displayed, refer to Figure 1-36. Now, you can execute the desired command by choosing it from the list displayed.



Note

For the printing purpose, this textbook will follow the white background. However, for better understanding and clear visualization, this textbook will follow other color schemes as well at various places. In addition, the ***Default Shading*** *shading type has been used throughout the textbook in all screen captures. Moreover, at some places in figures, grids have been hidden for better understanding and visualization.*

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Figure 1-35 *The search field*

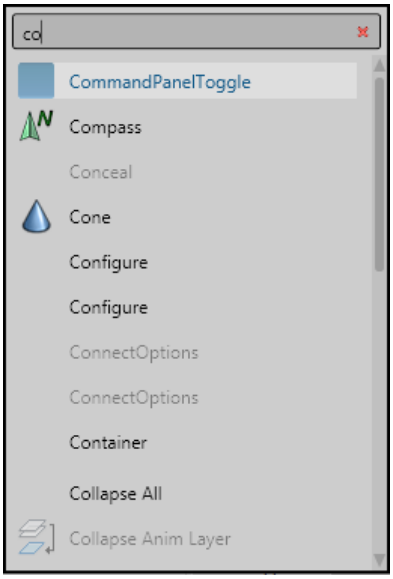


Figure 1-36 *List of commands displayed on entering first few characters*

Self-Evaluation Test

Answer the following questions and then compare them to those given at the end of this chapter:

1. Which of the following buttons is used to improve the performance of a viewport in a complex scene by temporarily decreasing the visual fidelity of some of the objects?

   (a) **Adaptive Degradation** (b) **Time Configuration**
   (c) **Auto Key** (d) All of these

2. Which of the following tabs should be chosen to control the animation controllers?

   (a) **Motion** (b) **Display**
   (c) **Hierarchy** (d) None of these

3. Which of the following dialog boxes is used to set the spacing in the grids displayed in the viewports?

   (a) **Customize User Interface** (b) **Grid and Snap Settings**
   (c) **Units Setup** (d) All of these

4. The _____ provides visual feedback of the current orientation of the viewport.

5. The _____ is located at the bottom of the screen and displays the information about the active command or tool.

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6. The _____ is used to float an element of the interface.

7. Most of the 3ds Max modeling and animation tools can be chosen from the tabs located in the **Command Panel**. (T/F)

8. The default interface of 3ds Max consists of three equal sized viewports surrounded by tools and commands. (T/F)

9. In 3ds Max, you can modify the colors of almost every element in the interface. (T/F)

10. The tools in the animation playback controls are used to control the display of a viewport. (T/F)

Review Questions

Answer the following questions:

1. Which of the following combinations of keys is used to choose the **Pan** tool?

(a) CTRL+P (b) SHIFT+Z
(c) CTRL+A (d) CTRL+W

2. The _____ is located between the time slider and the status bar.

3. The _____ tool located on the right of the status bar is used to lock a selection set.

4. The Viewport Layout Tabs bar enables you to store multiple viewport setups in a single scene. (T/F)

5. Snapping restricts the movement of the cursor to a specific part of an object or grid. (T/F)

6. The options in the General viewport label menu are used for defining the type of shadings displayed in the viewport. (T/F)

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Answers to Self-Evaluation Test

1. a, **2.** a, **3.** b, **4.** ViewCube, **5.** prompt line, **6.** handle, **7.** T, **8.** F, **9.** T, **10.** F