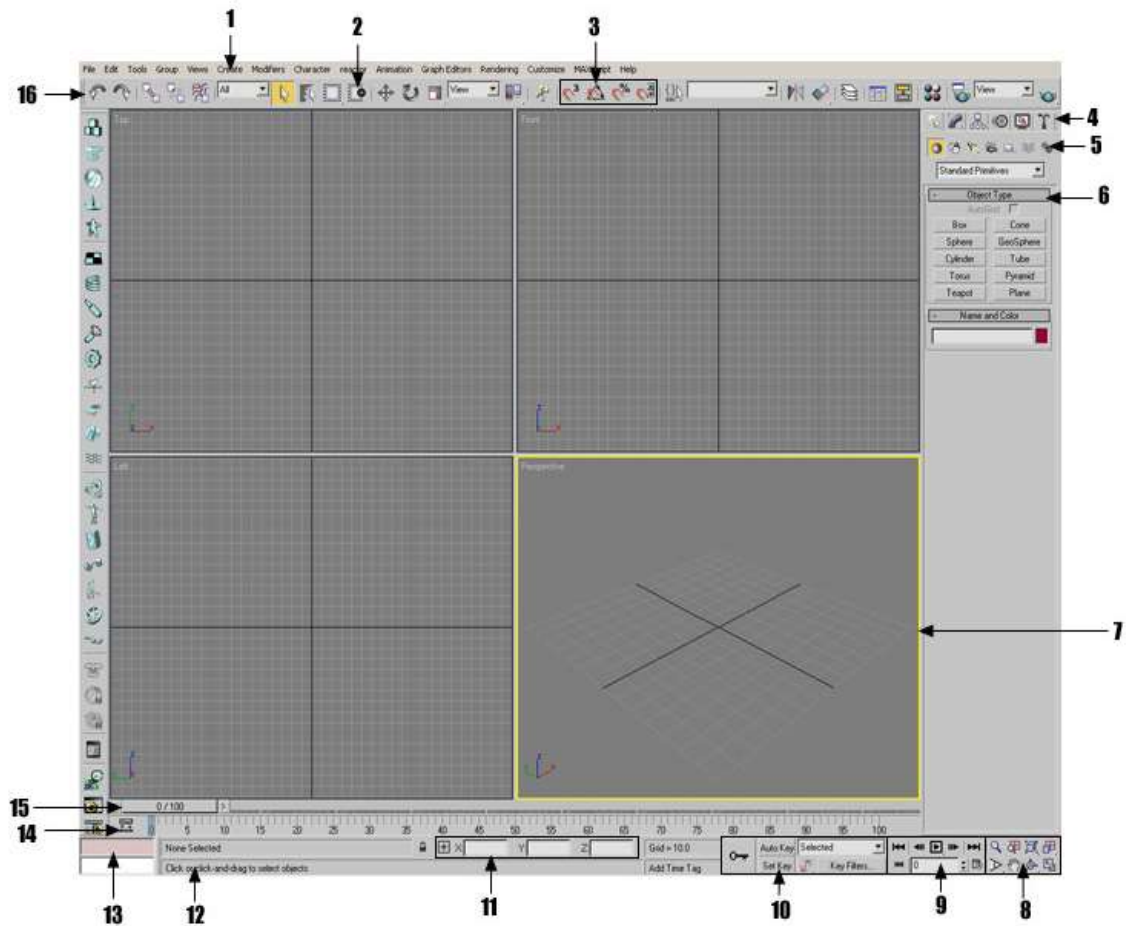


Getting Started with 3ds Max



The 3ds Max Window

1. Menu bar
2. Window/Crossing selection toggle
3. Snap tools
4. Command panels
5. Object categories
6. Rollout
7. Active viewport /Viewport Controls

8. Viewport navigation controls

9. Animation playback controls

10. Animation keying controls

11. Absolute/Relative coordinate toggle and coordinate display

12. Prompt line and status bar

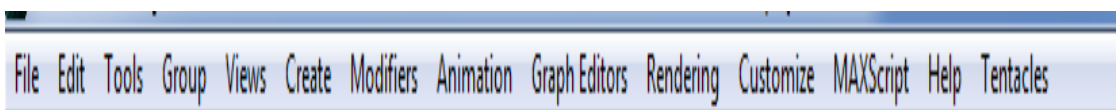
13. MAXScript mini-listener

14. Track bar

15. Time slider

16. Main toolbar

1- Menu bar



A. Tools contains many important program functions, including precision functions.

B. Group contains commands for managing combined objects ,

1. Group
2. Ungroup
3. Open
4. Close
5. Attach
6. Detach
7. Explode
8. Assembly

1. Group : Grouping lets you combine two or more objects into a single grouped object. The grouped object is given a name, and then treated much like any other object.

2. Accessing Objects in a Group : You can open and close groups to access the individual objects contained in them without dissolving the group. These commands maintain the integrity of the group.
 - a) Open: Temporarily opens the group so that you can access its member objects
 - b) Close: Restores the group when you're finished working with the individual objects.
3. Ungroup: Goes one level deep in the group hierarchy. It separates the current group into its component objects (or groups), and deletes the group dummy object.
4. Explode: Similar to Ungroup, but dissolves all nested groups as well, leaving independent objects.
 - a) Views contains commands for setting up and controlling the viewports.
 - b) Create contains commands for creating objects.
 - c) Modifiers contains commands for modifying objects.
 - d) Rendering contains commands for rendering, Video Post, radiosity, and the environment.

2- Command panels



- Create holds all object creation tools.
- Modify holds modifiers and editing tools.
- Hierarchy holds linking and inverse kinematics parameters.
- Motion holds animation controllers and trajectories.
- Display holds object display controls.
- Utilities holds miscellaneous utilities.

3- Viewport Navigation

Perspective and orthographic viewport controls

A. Zoom all objects in one viewport

B. to zoom all objects in all viewport

How To zoom all views:

- Activate a Perspective or orthographic viewport.
- Click Zoom All.
- The button highlights when it is on.
- Drag in a viewport to change magnification in all viewports.
- Drag upward to increase magnification.
- Drag downward to decrease magnification.
- Press Esc or right-click to turn off the button.

C. Zoom extents all centers all visible objects in one viewports.

How to use zoom all objects in a scene?

- Activate any viewport.
- Click Zoom Extents All.

The viewports display all objects in the scene.

D. Zoom extents all centers all visible objects in all viewports. This control is useful when you want to see every object in a scene in every available viewport.

How to use zoom all objects in a scene?

- Activate any viewport.
- Click Zoom Extents All.

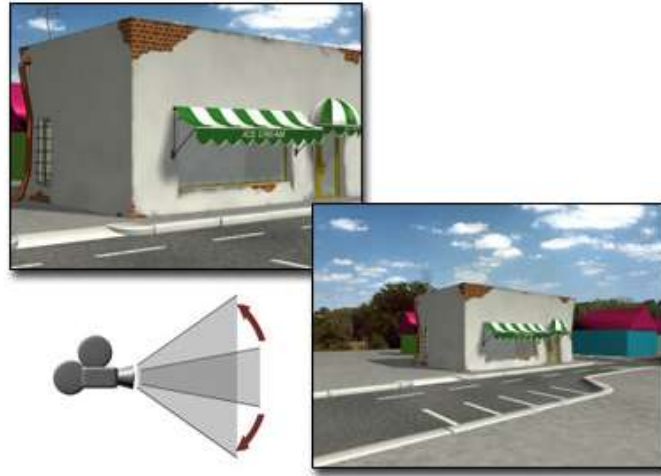
The viewports display all objects in the scene.



E. Click Field-of-View.

In a Perspective viewport, Field-of-View defines the width of your view as an angle with its apex at your viewpoint and the ends at the sides of the view.

In a Camera viewport, Field-of-View controls the width of the area a camera views, and represents the arc of the camera's horizon in degrees.



Above: Narrow field of view

Below: Wide field of view

How to use the field of view in a viewport?

1. Activate a Perspective or Camera viewport.
2. Click Field-of-View.

The button highlights in gold when it is on.

3. Drag in the viewport to adjust the FOV angle.
 - Dragging down widens (increases) the FOV angle, reduces lens length, displays more of your scene, and exaggerates perspective.
 - Dragging up narrows (decreases) the FOV angle, increases lens length, displays less of your scene, and flattens perspective.
4. To turn off the button, press Esc or right-click.

F. Pan View : Pan moves the view parallel to the current viewport plane.

To pan a viewport:

1. Activate a Perspective or orthographic viewport, and then click Pan View.
2. Drag in the viewport in the direction you want to move.
3. To turn off the button, press Esc or right-click.

G. The Orbit flyout

The Orbit flyout contains the Orbit, Orbit Selected, and Orbit Sub-Object buttons. Use these to rotate your viewpoint around the view.



H.

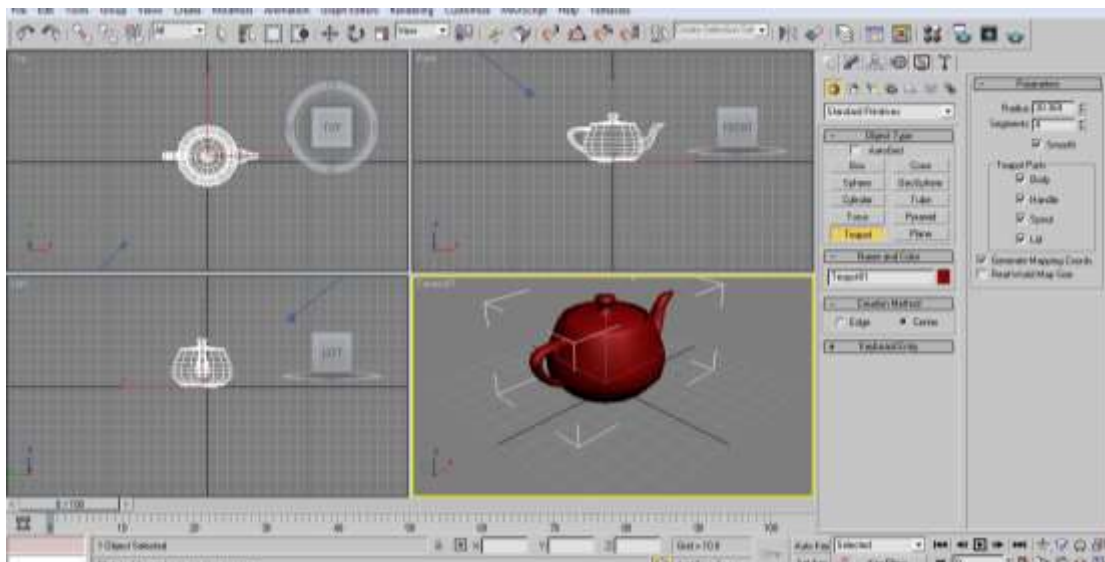


(Maximize Viewport) to display multiple viewports.

4- Viewport Controls

To choose a different layout, right-click the viewport label and choose Configure. Click the Layout tab of the Viewport Configuration dialog to see and choose the alternative layouts.

Typical viewport layout (see Fig)



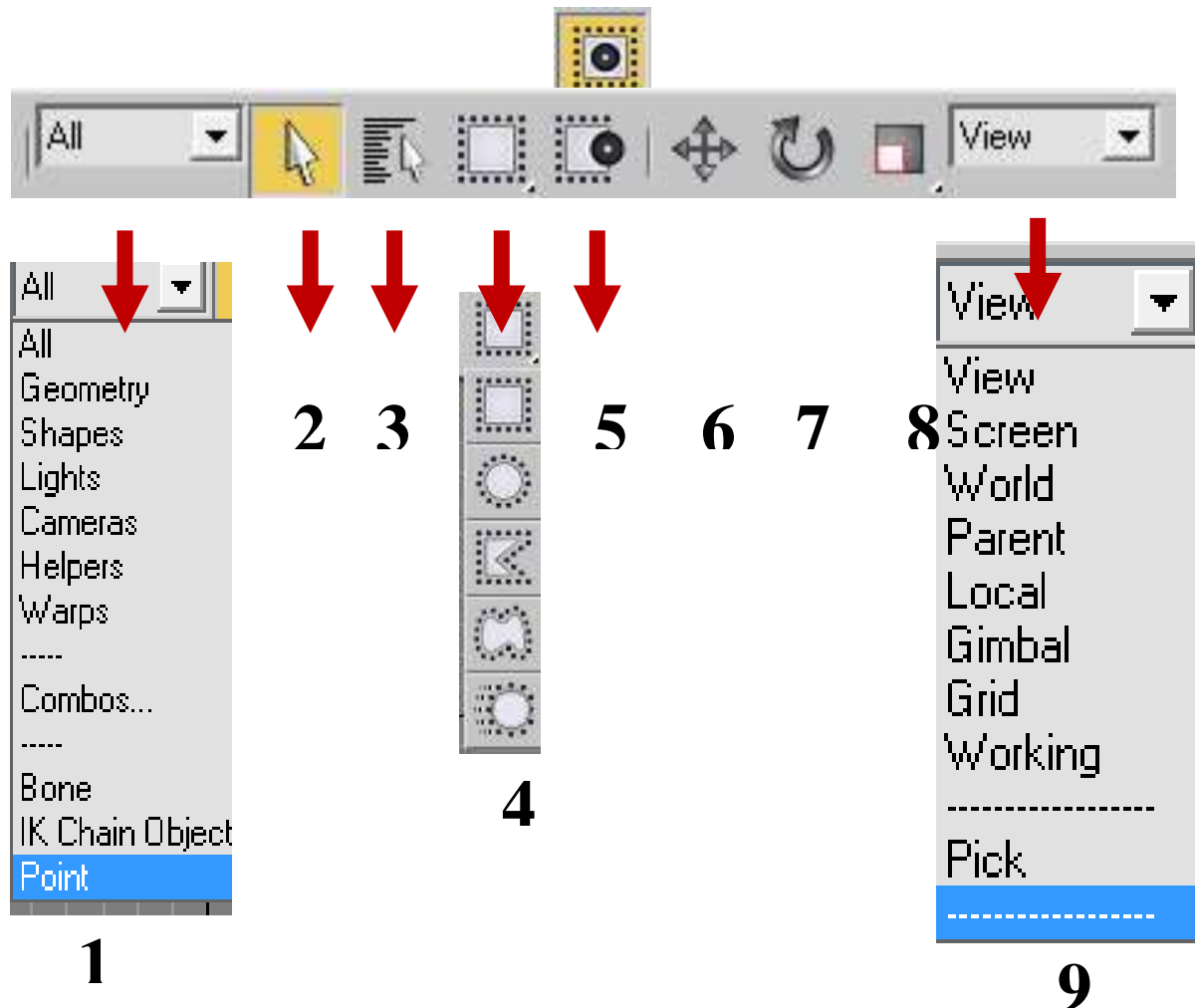
To switch between single and multiple viewports:

Activate the viewport you want to minimize or maximize, and do one of the following:

1. On the keyboard, press the W key.
2. On the keyboard, press Alt+W.

3.  Click the Maximize Viewport Toggle button in the lower-right corner of the 3ds Max window.

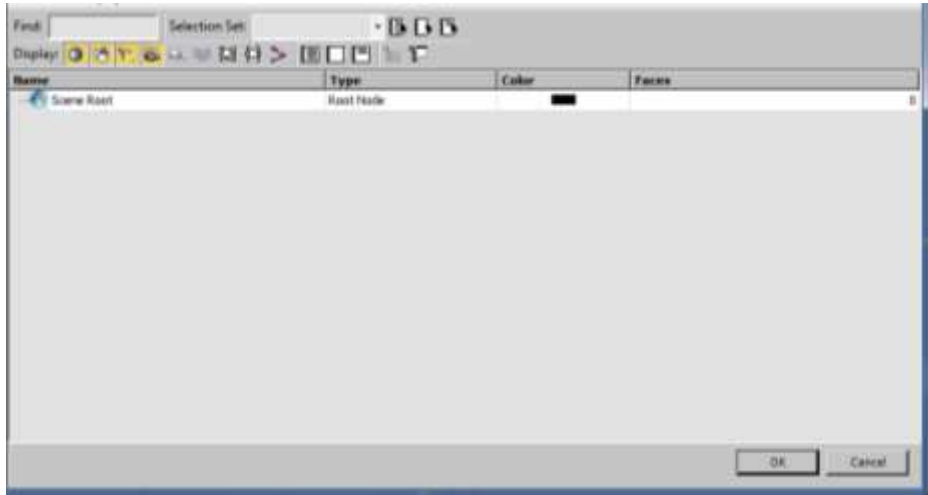
5- Window/Crossing selection toggle



- 1- Selection Filter List
- 2- Select Object
- 3- Select by Name / Select From Scene
- 4- Selection Region flyout
- 5- Select Region Window or Select Region Crossing
- 6- Select And Move

- 7- Select And Rotate
- 8- Select And Scale
- 9- The Reference Coordinate System list

1- Selection Filter List



To select objects by name:

1. Do one of the following:

- On the main toolbar, click  (Select By Name).
- Choose Edit menu > Select By > Name.
- Press **H**.

The Select From Scene dialog opens. By default, this dialog lists all objects in the scene. Any selected objects are highlighted in the list.

2. Use the mouse to highlight one or more objects in the list. To select multiple objects, drag vertically in the list or use **Ctrl** to add to the selection.
3. Click OK to make the selection.

The dialog closes and the objects are selected.

4. Alternatively, to select a single object and close the dialog at the same time, double-click the object name.

2- Select Object

To add or remove individual objects from a selection set:

1. Hold down the Ctrl key and select the objects to add or remove.
2. Hold down the Alt key and select objects to remove from the current selection set

To toggle the selected/deselected state of multiple objects in the selection set:

- Hold down the Shift key and drag to region-select the objects to toggle

3- Select by Name / Select From Scene

4- Selection Region flyout

Top Left: Selecting face sub-objects with a rectangular region

Top Right: Selecting vertex sub-objects with a circular region

Center: Selecting face sub-objects with a painted region

Bottom Left: Selecting edge sub-objects with a fence region

Bottom Right: Selecting edge sub-objects with a lasso region

The region-selection tools let you use the mouse to select one or more objects by defining an outline or area.

5- Select Region Window or Select Region Crossing

The Window/Crossing Selection toggle switches between window and crossing modes when you select by region.

- In Window mode, you select only the objects or sub-objects within the selection.
- In Crossing mode, you select all objects or sub-objects within the region, plus any objects or sub-objects crossing the boundaries of the region.

– **Select on Keyboard**

- **Select All** : This command selects all objects in the scene

Keyboard > Ctrl+A

- Select None :This command deselects all objects in the scene

Keyboard > Ctrl+D .

- Select Invert : All objects not currently selected are selected, and all objects currently selected are deselected

Keyboard > Ctrl+I

- Select Similar: This command also applies to objects native to 3ds Max. It selects all objects of the same type. This includes primitives and editable object types.

Keyboard > Ctrl+Q

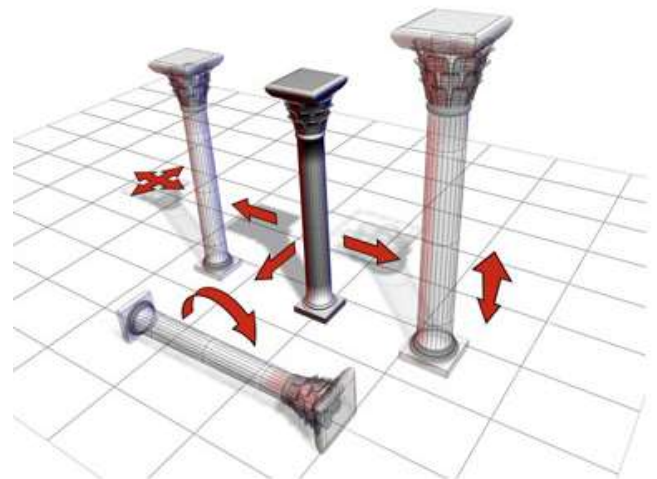
For example, if you add some boxes and cylinders, select one of the cylinders, and then invoke Select Similar, all of the cylinders will be selected, but not the boxes.

6- Moving,

7- Rotating,

8- Scaling Objects

To change an object's position, orientation, or scale, click one of the three transform buttons on the main toolbar or choose a transform from a shortcut menu. Apply the transform to a selected object using the mouse, the status bar Coordinate Display fields, a type-in dialog, or any combination of the above.



column can be moved, rotated, and scaled.

- Clone Options Dialog

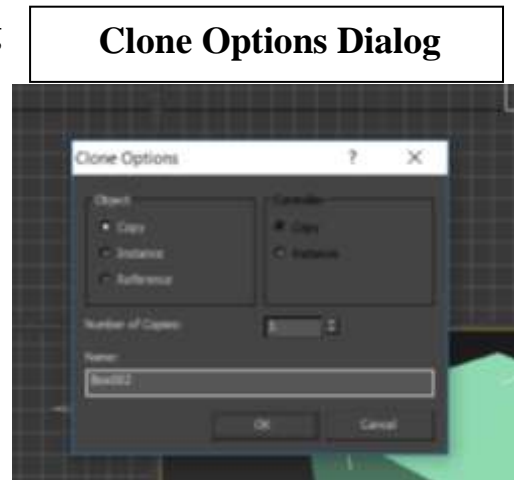
For all three methods, the original and clone (or clones) are identical at the geometry level

Overview of Copies, Instances, and References

Copy method: Creates a completely separate clone from the original. Modifying one has no effect on the other.

Instance method: Creates a completely interchangeable clone of the original. Modifying an instanced object is the same as modifying the original.

Reference method: Creates a clone dependent on the original up to the point when the object is cloned. Changing parameters for modifiers that were applied to the object before the object was referenced, will change both objects. However, a new modifier can be applied to one of the reference objects, and it will affect only the object to which it is applied.



9- Reference Coordinate System

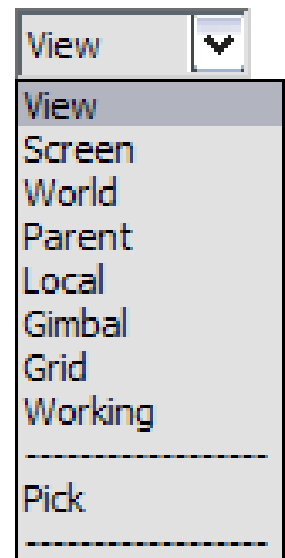
Reference Coordinate System drop-down menu

The Reference Coordinate System list lets you specify the coordinate system used for a transformation (Move, Rotate, and Scale). Options include View, Screen, World, Parent, Local, Gimbal, Grid, Working, and Pick.

In the Screen coordinate system, all views (including perspective views) use the viewport screen coordinates.

View is a hybrid of World and Screen coordinate systems. Using View, all orthographic views use the Screen coordinate system, while perspective views use the World coordinate system.

- In the World coordinate system the X, Y, and Z axes are interpreted based on the Home Grid, even if a user-defined grid is active.
- In the Screen coordinate system the X-axis is always measured along the bottom of the viewport, the Y-axis is always measured along the side, and the Z-axis is measured perpendicularly out of the screen.
- The View system is a combination of World and Screen. In an orthographic view the Screen system is used, while other views use the World system.



- The Pick option enables you to pick any object in the viewport or from a list and use the reference coordinate system of that object as the reference for transforms. You can