View Transitions and Resolution

View Transitions

When you use zoom or pan options other than realtime zooming and panning, the operation performs a smooth transition from the current display to the new display. Use the **VTOPTIONS** command to display the **View Transitions** dialog box. The dialog box has options for controlling the smooth transition feature. See **Figure 6A-1**.

Deselect the **Enable animation for pan and zoom** check box to turn off smooth transitions when zooming and panning. Check boxes are also available to toggle the smooth transitions for view angle changes and for scripts. Use the **Transition Speed** slider to adjust smooth transition speed. Use the **Performance** slider or enter the frames per minute in the text box to define the minimum smooth transition speed.

Type
VTOPTIONS

View Resolution

Hardware acceleration is the method by which a computer uses hardware, such as the graphics processing unit (GPU), to carry out software operations quickly. AutoCAD hardware acceleration is on by default if your computer video card and graphics support the system. One of the most obvious effects of hardware acceleration is the enhanced appearance and smoothness of curves. Access the **Graphics Performance** dialog box to adjust hardware acceleration settings. See **Figure 6A-2**.

Figure 6A-1.
Use the **View Transitions** dialog box to change smooth transitions for zooming and panning operations, view angle changes, and scripts.
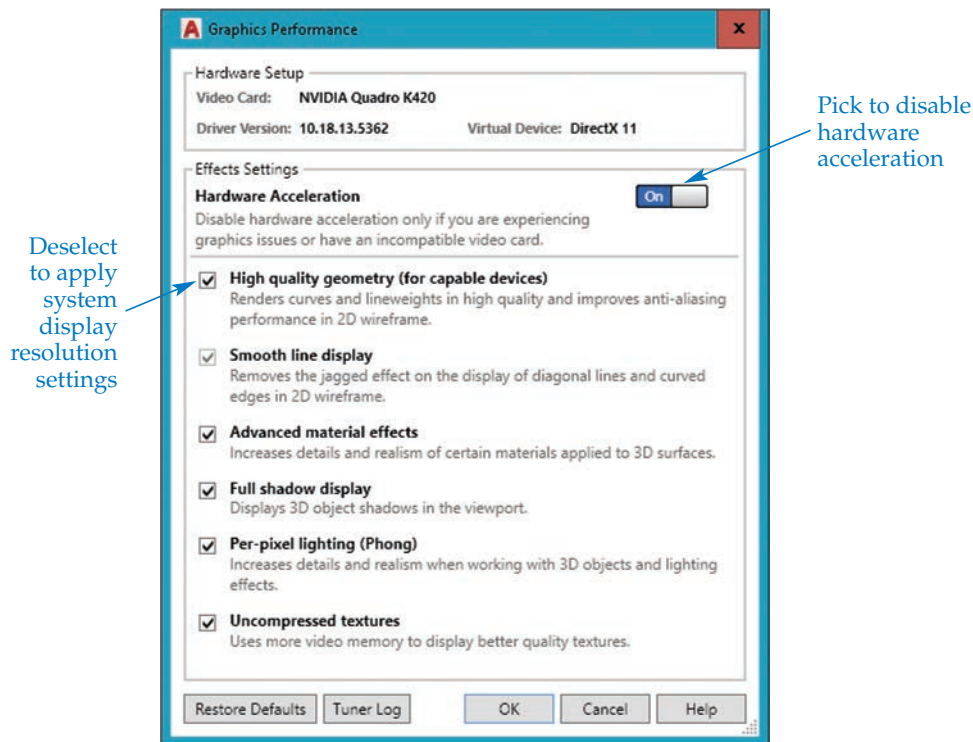

Turn smooth transitions on and off
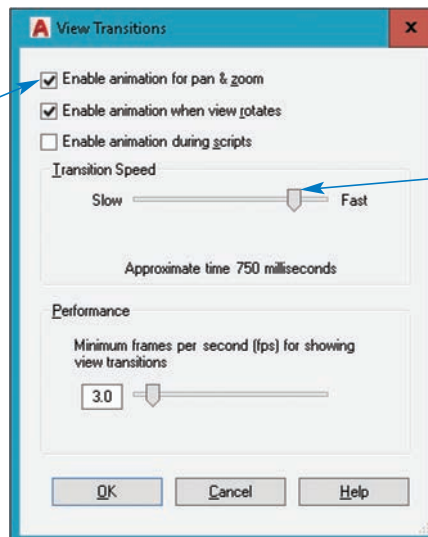
Speed control for transitions

Figure 6A-2.
Use the **Graphics Performance** dialog box to adjust hardware acceleration and display resolution settings.

Pick to disable hardware acceleration

Deselect to apply system display resolution settings

A quick way to access the **Graphics Performance** dialog box is to right-click on the **Graphics Performance** button on the status bar and select **Graphics Performance...**. Turn hardware acceleration on and off using the **Hardware Acceleration** slider, or make changes to effects settings using the check boxes.

NOTE

View resolution is a display function only and has no effect on the plotted drawing. Drawings are plotted using an optimum number of vectors for circles and arcs. In other words, even if a circle looks like a polygon on-screen before you regenerate the drawing, the object is still a circle, and it looks like a circle on a plot.

Smooth Line Display

If your computer system does not support hardware acceleration, or hardware acceleration is off, you still have options for controlling the appearance of curves. You can save time during zooming and panning functions at the expense of display accuracy, or you can display high accuracy at the expense of zoom and pan speed. The main factor is the view resolution. High-resolution values display smooth circles and arcs. Low-resolution values display segmented approximations of circles and arcs. You can use the **Display resolution** area of the **Display** tab in the **Options** dialog box to set view resolution. See **Figure 6A-3**. Enter a value between 1 and 20000 in the **Arc and circle smoothness** text box. The default setting is 1000, which produces relatively smooth circles.

Figure 6A-3.
Set the view resolution in the **Options** dialog box.

Set the view resolution
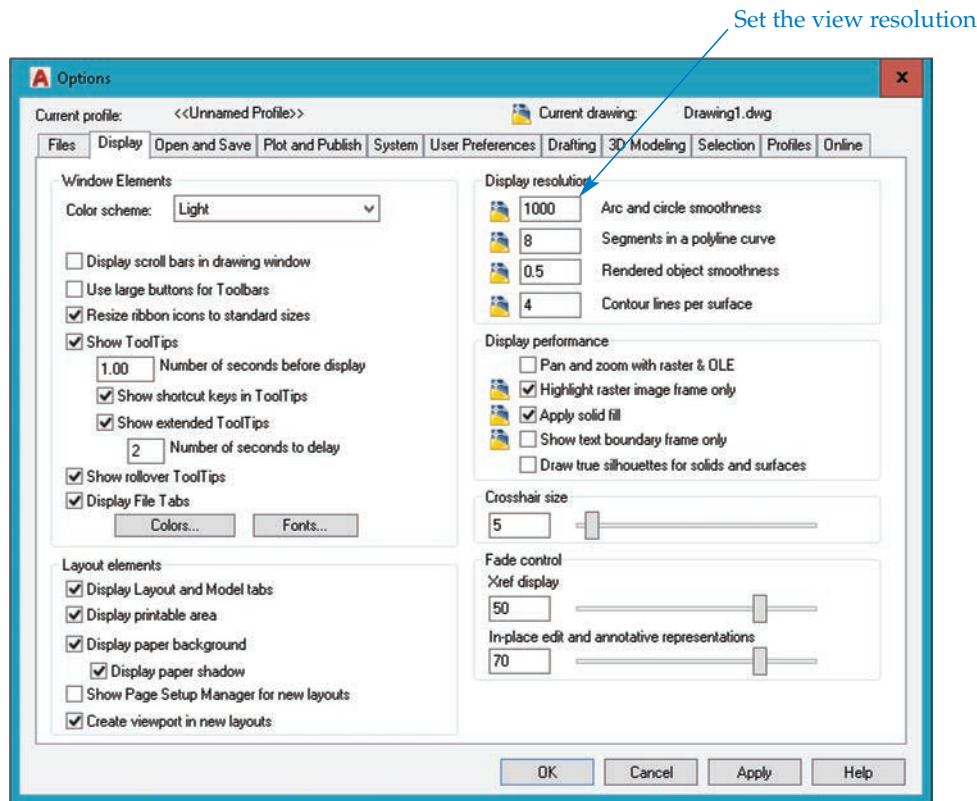
A number smaller than 1000 causes circles and arcs to be drawn with fewer vectors (straight lines). See **Figure 6A-4**. A number larger than 1000 includes more vectors in circles. Hardware acceleration must be off in order to view changes to display resolution settings.

NOTE

You can also change the view resolution setting by typing **VIEWRES**. A Do you want fast zooms? prompt appears. This prompt is no longer useful, but it remains in AutoCAD so programs written for earlier versions still function properly.

Figure 6A-4.
The higher the view resolution value, the smoother a circle will appear.

50   100   1000
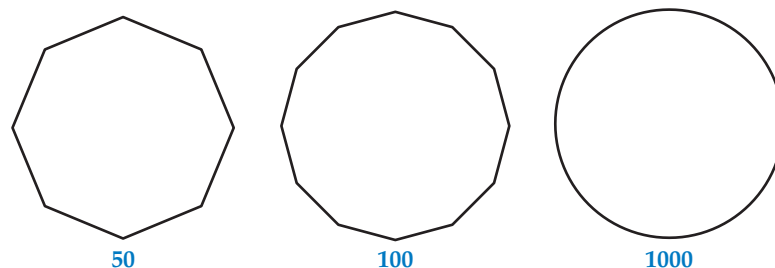
Activity 6A-1

To become familiar with the effects of changing view resolution, perform the following steps.

1. Open a previously created drawing that contains circles or arcs.
2. Turn off hardware acceleration if it is on, and observe the change in display.
3. Adjust the display using each of the following options.
   A. Access the **Display** tab of the **Options** dialog box and change the **Arc and circle smoothness** value to 10. Pick the **OK** button and observe the change in the on-screen display.
   B. Draw some circles and arcs.
   C. Set the **Arc and circle smoothness** value to 10000 and observe the change in display.
4. Turn on hardware acceleration and observe the change in display.
5. Close the drawing without saving changes.