AutoCAD®
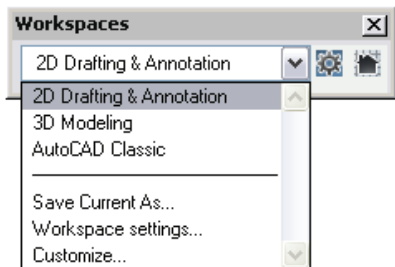
Lynn Allen's Tips and Tricks
## For Using AutoCAD 2008 Software

Autodesk®

New 2D Workspace
If you are using only 2D AutoCAD® commands, why not use the new 2D Drafting & Annotation workspace? This capability displays powerful 2D tools on the Dashboard.

2D Dashboard Control Panels
New 2D control panels provide easy access to layers and include controls for annotation scaling, text, dimensions, multiple leaders, tables, 2D navigation commands, object properties, and block attributes. When you select a tool from the Dashboard, the corresponding tool palette also displays, where applicable.
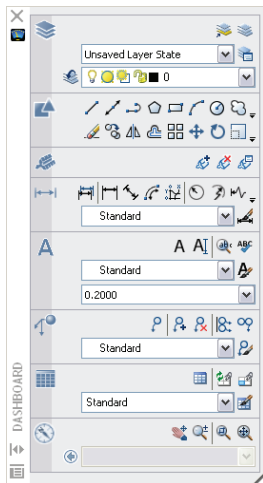
Tool Palettes

When you drag geometry to an inactive tool palette, it is automatically activated for easy placement—just give it an extra second to switch.

- A new Specify Image option on the shortcut menu makes it easy to assign an image to any tool.

- The location of tools on a tool palette is now saved in the tool catalog (and the profile), making it easier to share your tool palettes with others and maintain the same look and feel.

- Use TPNAVIGATE to set a tool palette current at the command line (for programming purposes).

Clean Screen

Use the Clean Screen button located in the lower-right corner of the screen to turn off everything except for the status and menu bars and the command window. This feature comes in handy when showing files to a client and you need to quickly clean up your interface.

Controlling Toolbar and Tool Palette Placement

Anchor your palettes to the left or right side of the drawing area for quick access. Palettes roll open or closed as the cursor moves over them, keeping them out of the way. You can easily stack several on each side of the screen for maximum productivity. Simply right-click the name bar, and choose Anchor Left or Anchor Right from the shortcut menu.

```
  Move
  Size
  Close
✔ Allow Docking

  Anchor Left   <
  Anchor Right  >

✔ Auto-hide
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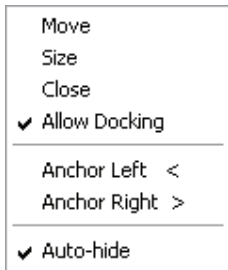
Layout Tab Improvements

- Rename a layout by double-clicking the Layout tab.
- Reorder layouts with a simple drag-and-drop.
- Use the Ctrl and Shift keys to select multiple layouts for dragging and dropping.
- Hold down Ctrl while dragging to create a copy.
- Drag layout tabs onto the active sheet set to add a new sheet, or select Import Layouts as Sheet from the shortcut menu.

Annotation Scaling

If you've found getting the proper scale factors per viewport to be frustrating and confusing, then you'll love the new annotative scaling! No longer do you need to create multiple sets of text and dimensions on multiple layers. Now you create one set of annotative objects (such as text, dimensions, balloons, blocks, attributes, and hatches), indicate the desired actual plotted size, and it magically displays at the correct size.

Controlling Annotation Scale

A new annotative property can be assigned to objects such as text, dimensions, blocks, and hatches. Just create the object at the actual size you want it to plot and indicate the intended scale factor(s). Any object with an annotative property can have one or more scales assigned to it (such as ¼"=1' or 1:50). This capability makes it easy to display the same object in different viewports with varying scale factors. For example, the same text object could appear in one viewport that is scaled 1/8" = 1', and another viewport at 1"=1'.
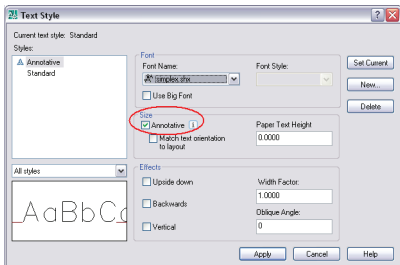
You can change an existing object to annotative using the Properties command.

TIP Redefining a style or definition to be annotative does not affect existing objects. Use the new ANNOUPDATE command to update selected objects to match their style or definition (model space only).

How can you tell if an object is annotative just by looking at it? Drag your cursor over the object to see the new annotative indicator.
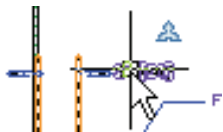

TIP Set the annotative scale factor in model space to reflect the most prevalent scale factor in the drawing.

For those objects that need to display at multiple scale factors, use the Properties palette to add scale factors. You can also use the OBJECTSCALE command.

TIP It's faster to use the OBJECTSCALE command when dealing with different object types.

New Annotative Controls on the Status Bar
- Use the two new controls on the status bar to set the VP Scale and Annotation Scale (accessible only if the viewport is unlocked).
- A new Lock/Unlock Viewport button appears when a viewport is selected.
- Only the annotative objects that have the same scale factor as the viewport appear in a viewport. Toggle the new Annotation Visibility button to display annotative objects for all scales (even if they are not supported by the viewport's current annotation scale).
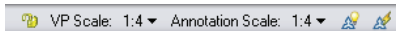

TIP Use SCALELISTEDIT to customize the list of scales.

BONUS If an annotative object disappears (and you don't want it to), click the Automatically Add Scales to Annotative Objects button before changing the Annotation Scale.

Backward Compatibility
A new option on the Open and Save tab of the Options command helps ensure that those who are not using AutoCAD® 2008 can see your annotative objects. Each scale of the objects is saved as an independent object on its own layer. The layers are automatically frozen in the appropriate viewport.
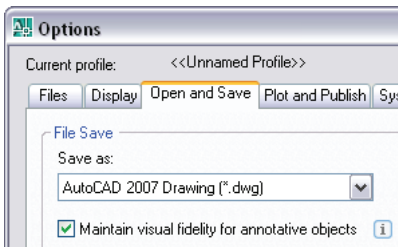
TIP If you have a large quantity of annotative objects, you can speed things up by turning off the Maintain Visual Fidelity option. Be sure to turn it back on before you save the file to a previous version!

BONUS Linetypes are automatically scaled by the viewport's annotation scale. Disable this behavior with the MSLTSCALE setvar if needed.

Annotation Scaling

New Multiple Leaders
The new MLEADER command permits more control over leaders than ever before. Not only can you control the order of leader creation (head first, tail first, or content first), but you can also add multiple leader lines where needed.

New Multiple Leader Style Manager
The new MLEADERSTYLE command controls format and display options, just like dimension styles. New options include the following:

- Type of leader line (straight, spline, or none)
- Type of arrowhead
- Leader connection info
- Text information
- Assign a block (great for creating balloons!)
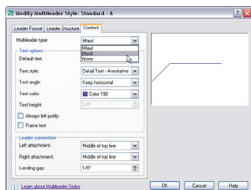
TIP Use the shortcut menu to add leader lines. Use grips for speedy editing.

Aligning Leader Lines
Leaders not lining up properly? The new Multiple Leader Align tool snaps leaders into place for you. You can even control the spacing between them!
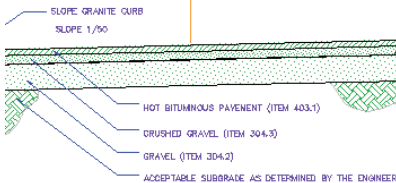

Use the MLEADERCOLLECT command to combine multiple block-type leaders into a single multiple leader.

Smart Dimension Break Command
The new DIMBREAK command breaks dimension or extension lines where they intersect objects or other dimensions. The breaks automatically update if you move the intersecting objects—even if they no longer intersect! You can also use the Restore option to remove all breaks.
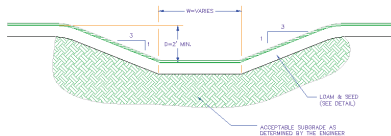
More Cool Dimension Features:
- Create inspection dimensions with the new Inspection Dimension tool (DIMINSPECT).
- Add a jog to linear dimensions with the DIMJOGLINE command.
- Evenly space dimensions with the DIMSPACE command.
- Dimension an arc beyond its endpoints with the updated diameter and radial dimension commands.

- Place the dimension text outside the angle being measured with the updated Angular Dimension command.
- The new Tolerance alignment option in the Dimension Style dialog box allows you to align decimal separators or operational symbols.

Dimensioning Techniques

Step Savers

Text Step Savers
Use these handy tricks to buy yourself some time when working with text in AutoCAD 2008.

MTEXT Column Wrap
Ever wish text would automatically wrap across multiple columns in wide areas of your drawing? Your wish has been granted with the new dynamic columns option in the MTEXT command. Use grips along with the text formatting ruler to get the exact results you are after.
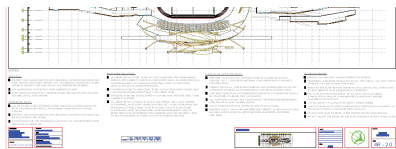

More Control over Paragraphs
The updated MTEXT command permits more control over paragraph alignment, indentations, and spacing.
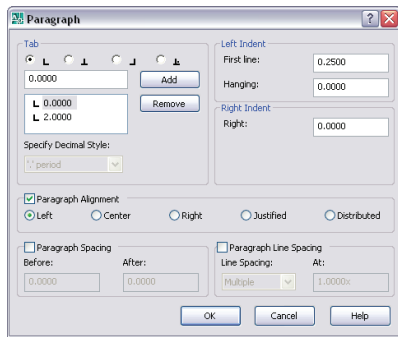
More Efficient Spell Checker
No need to select objects first. The updated spell checker searches the entire drawing by default. You can also specify the current space or specific objects if you prefer. When an error is found, AutoCAD now highlights and zooms to the word in the drawing.

The new Check Spelling Settings dialog box allows you to customize the spell checker. You can choose to include dimension text, attributes, and xrefs, and set a variety of exclusions, such as capitalized words or words with numbers.
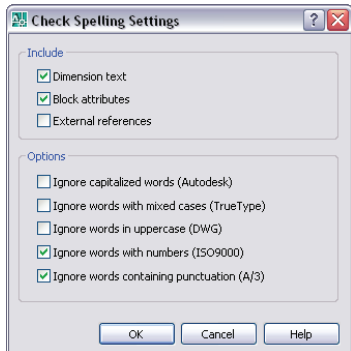
Create Attributes with Multiple Lines of Text
The new Multiple Lines option allows you to create attributes that support multiple lines, underlining, overlining, fields, and so forth.

Step Savers

Table Step Savers
Improved capabilities in AutoCAD 2008 take away the pain when you're working with tables.

Bidirectional Excel Tables
Wouldn't it be nice if you could bring a Microsoft® Excel® file into AutoCAD and truly link the file? If you could change the Excel file and have it update in AutoCAD, and vice versa? Good times are here at last, because now you can do exactly that!

Just use the updated Paste Special command, choose AutoCAD Entities, and select Paste Link to insert the Excel spreadsheet into AutoCAD. This process creates a data link. Should any changes occur in the XLS file, a bubble notification lets you know that the data link has changed and provides an easy option to update the table.

Create a Table from a Data Link
A new option in the TABLE command also allows you to create a table from an Excel file. Just select all or part of the sheet. You can also create a table from object data.
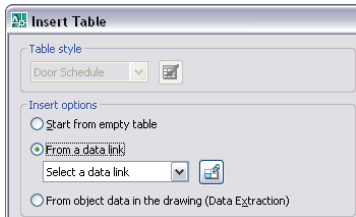
Retain Changes in Tables
Any changes you make to an AutoCAD table are retained, even if you update the table to reflect any changes in the Excel file!

TIP Use the DATALINK command to manage all of your various data links.

Wrap Long Tables Across Multiple Rows
To wrap tables across rows, simply select the table and adjust it with grips or use the new Table Break tool in the Properties palette.

Create Incremental Data Fast
New auto-fill allows you to quickly increment data in cells by dragging, just as in Excel. You can also combine blocks and text in the same cell!

More Step Savers
It just doesn't get any easier than this!

View New Grip Tips on Dynamic Blocks
As you hover the cursor over a dynamic block grip, the associated parameter description displays as a tooltip.

Easily Extract Object Data
Use the new DATAEXTRACTION command to sort and extract object data, such as plines, to a table (including summations!). This feature is great for gas or water lines.

Recover Drawings Along with Xrefs
A new drawing utility allows you to run the recover process on a drawing and all the associated xrefs. Find this capability under Files>Drawing Utilities or use the RECOVERALL command.

Change Copy Multiple Default
To default to a single copy, set the system variable COPYMODE to 1.

Publish Sheet Sets in Reverse Order
A new option on the Sheet List shortcut menu allows you to publish in reverse order.

Publish One Sheet at a Time
The new PUBLISHCOLLATE system variable allows you to print one sheet at a time. This variable allows other plots to enter the printing queue.

Step Savers

3D Tools

Dashboard
The 3D control panels on the Dashboard provide a one-stop shop for nearly all things 3D. It can be found under Tools›Palettes›Dashboard or by entering the DASHBOARD command.
- 3D Make: Easily access 3D solids and surfaces.
- 3D Navigate: Set up 3D views and animations.
- Lights: Add lighting to your model.
- Visual Styles: Create and move from one visual style to another.
- Materials: Apply materials and textures to objects.
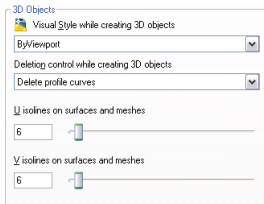- Render: Access basic rendering functions.
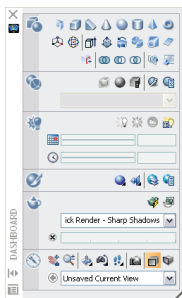
OPTIONS 3D Modeling Tab
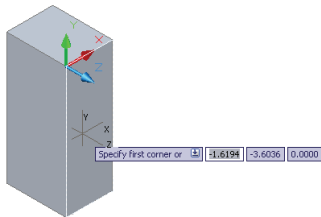This tab focuses entirely on 3D functionality. Here are some highlights:

3D Objects
Controls the display of 3D solids and surfaces.

Dynamic Input
Use this control to add a Z coordinate field when using dynamic input. Be sure to turn it on!
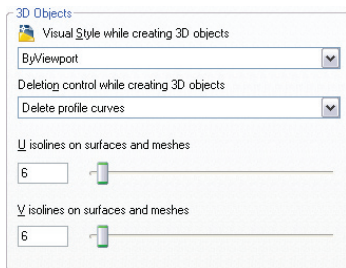
3D Objects
These settings control the display of 3D solids and surfaces.

Visual Style While Creating 3D Objects
One means of switching visual styles (the Dashboard is another).

Deletion Control While Creating 3D Objects
This key setting controls whether the profile and path curves are deleted once your 3D object is created. You may also choose to be prompted each time.
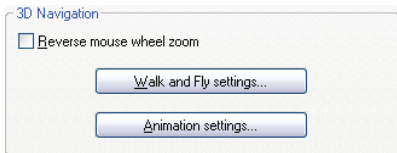
U and V Isolines on Surfaces and Meshes
Controls the number of isolines for surfaces and meshes.

3D Navigation
If you've used Autodesk® Inventor™ software, you've noticed the wheel zoom is the opposite of that in AutoCAD. Now you can match them!

This section of the tab also enables you to control walk, fly, and animation settings.

3D Tools

3D Tools

Dynamic Geometric Feedback

• The size, shape, and location dynamically display as you create 3D objects, making it easier to visualize your design. Enter dimensions manually using Dynamic Input, or drag the cursor to specify dimensions visually.
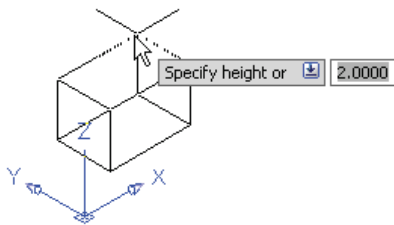

• No more fighting with the UCS command. Now you can easily draw on a new work plane by passing your cursor over the edge of an existing face until it highlights. This becomes a temporary UCS (DUCS, a new button on the status bar, needs to be on).

• Object tracking now works dynamically in 3D (even in perspective mode!).

TIP Holding down the Ctrl key as you pass your cursor over a solid lets you select the various components of the solid for editing (very handy!). Select the blue grip to edit. Select an axis on the grip tool to lock in an X, Y, or Z direction for easy editing.
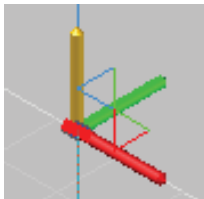
TIP Use the spacebar to cycle from Stretch to Move to Rotate!

3D Solids and Surfaces
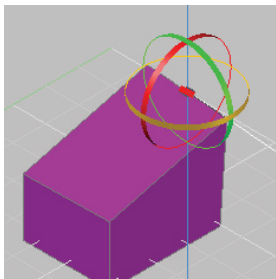
Creating Solid Primitives
Creating 3D solid primitives is easy and intuitive because they follow the same steps as the correlating 2D commands.

Box
This is similar to RECTANG, but you can dynamically add the height. You can also use a center point to define the cube.

Wedge
Draw the base rectangle and the height (the sloped face is placed opposite the first corner). Cube option draws a wedge with equal sides. You can also use a center point to define the wedge.

Cone
Same options as CIRCLE command to define base followed by the height, which is easily picked dynamically. You can also specify an elliptical base. Define height by selecting between two points (2P), or an axis endpoint. The Top Radius option creates a cone that does not meet at a point (cone frustum).
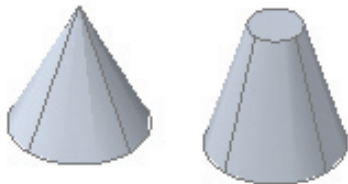

Cylinder
Same options as Cone, but the base and the top radius are equal.

Sphere
Same options you'd find in the CIRCLE command (center point, 3P, 2P, TTR), but this command generates a sphere.

Pyramid

Use the PYRAMID command to draw a solid pyramid (similar to the POLYGON command). You'll input the number of sides (3 to 32), base radius, inscribed or circumscribed (or use the Edge option), top radius, and height.
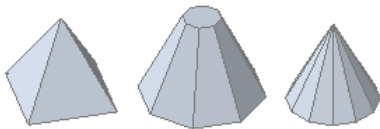
Torus

Use the same options as the CIRCLE command to define the distance from the center of the torus to the center of the tube. Use 3P and 2P to define the circumference. Then define the radius or diameter of the tube.

Helix

It's easy to create helical shapes by specifying the height, base, top radii, number, and height of turns and direction (clockwise or counterclockwise).

Creating Swept Solids and Surfaces

Creating swept solid and surfaces is also easy and intuitive with the tools available in AutoCAD 2008.

Polysolid

Draw a polysolid the same way you draw a polyline, but include a height and width (like walls). You can also convert an existing line, pline, arc, or circle into a swept solid.

Extrude

Extruding an open object creates a surface. Extruding a closed object creates a solid. To create a solid from a profile using lines or arcs, use the Join option of the PEDIT command first to convert them to a single PLINE (you could also convert the objects to a region before you extrude).

Use the following extrusion profile options:
• Path: Specify an object as the profile for the path. The path is moved to the centroid of the object and used as the profile.
• Direction: Select the length and direction with two points.
• Taper Angle: Positive angles taper in from the base, negative angles taper out (0 is perpendicular).

**BONUS** You can also extrude an existing face. Just use the Ctrl key to select.

BONUS Press Ctrl+Alt inside an open or closed boundary to press or pull! You don't even have to enter a command to do this extra cool tip!

Sweep

Sweep an open or closed profile along an open or closed 2D or 3D path. A closed curve results in a solid. The profile is moved and aligned perpendicular to the path—you no longer need to align it yourself. The final result is in the shape of the profile, or swept object.

You can also twist or scale objects as they are swept.

TIP Use a helix as a path to create a variety of helical shapes.

3D Solids and Surfaces
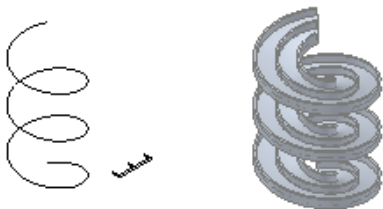
Loft

Draw a 3D solid or surface through a set of two or more cross sections. Lofting through a set of closed cross sections results in a solid.

There are many options for getting the perfect loft: guide angles, drafting angles, smooth fit, and so forth.
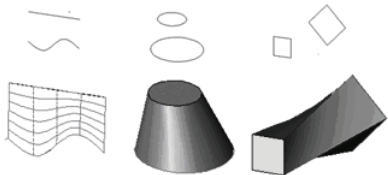
Revolve

The updated REVOLVE command can create surfaces or solids based on the profile and axis of rotation.

1. Select the objects to revolve.
2. Specify the start and endpoint of the axis of revolution.
3. Specify the angle of revolution.

Creating Surfaces

These commands make it fast and easy to create surfaces:

- Convert objects into surfaces with the CONVTOSURFACE command.
- Create surfaces from 3D solids with curved faces by using the EXPLODE command.
- Use XEDGES to extract wireframe geometry from solids, surfaces, and regions.
- Use PLANESURF to create a planar surface by
  - Selecting one or more objects that form an enclosed area
  - Specifying the opposite corners of a rectangle

Creating Solids

With these commands, creating solids has never been easier:

- CONVTOSOLID converts the following objects into extruded 3D solids:
  - Uniform-width polylines with thickness
  - Closed zero-width polylines with thickness
  - Circles with thickness
- THICKEN converts surfaces to solids by thickening a surface.
- SLICE creates new solids by slicing existing ones. Define the cutting plane by specifying points or by selecting a surface or planar object.
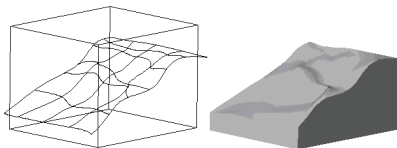

Creating Composite Solids

Union, Subtract, Intersect, Fillet, and Chamfer create composite solids. Use the Show History option in the Properties palette to display wireframes of the original forms that make up the composite (or use the SHOWHIST command).

Editing Solids

Easily edit existing solids in the Properties palette or by grip editing the solid. Use the Ctrl key to select the face or edge, or to select objects within a composite solid. You can also use the grip tool to move along an axis or plane by hovering the cursor over the Move grip of a selected solid.
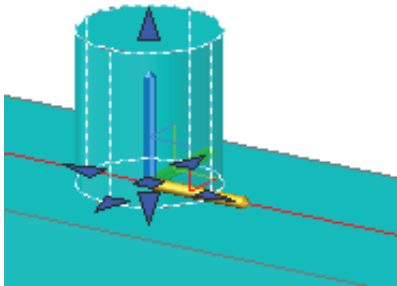
TIP If you are having trouble selecting the correct face or edge, use the spacebar to cycle through all the possibilities.

Checking for Interference

Use INTERFERE to identify solids that interfere with one another. You can even select blocks and xrefs when searching for interferences and individual nested solids within a block or xref. Temporary solids are created and highlighted where solids intersect.

Align

Align works dynamically with 3D objects so you see the selected geometry align as you specify the destination points.

3D Viewing

3D Orbiting and Viewing
Use the improved 3DORBIT command to view your 3D models. Dragging the cursor horizontally moves the camera parallel to the XY plane; dragging it vertically moves it parallel to the Z axis. The shortcut menu lets you choose from a variety of navigation modes.

Navigation modes are as follows:
- The Constrained Orbit mode keeps you from rolling the geometry completely over (3DORBIT).
- Free Orbit mode returns you to previous behavior and allows orbiting in any direction (3DORBIT).
- Continuous Orbit allows you to set the objects in continuous motion (3DORBIT).
- Adjust Distance controls the distance toward or away from the objects (3DDISTANCE).
- Swivel simulates the effect of swiveling the camera on a tripod (3DSWIVEL).
- Walk through a model at a fixed height above the XY plane (3DWALK).
- Fly through the model without any height restrictions (3DFLY).

- Similar to Adjust Distance, Zoom simulates moving the camera closer or further away (3DZOOM).
- Pan moves the view in the direction you drag (3DPAN).

TIP Press Shift+middle mouse button for quick access to 3DORBIT.

Perspective
Easily toggle from Perspective to Parallel from the dashboard, or use the PERSPECTIVE system variable.

Walk-Throughs
Use 3DWALK to walk-through your design using the four arrow keys. Alternatively, use W, forward; A, left; S, back; D, right. Drag the mouse in the direction you want to look. Perspective mode must be on.

TIP Use the mouse wheel to roll in a walk-through and the left mouse button to swivel to a new direction. Adjust the step size and speed in the Navigation control panel.

TIP You can also create an animation of your walk-through (ANIPATH command).

Creating Cameras
Use the CAMERA command to set up cameras for viewing your design. A camera icon is added to the drawing with a corresponding named view.
• Location: The point from which you are viewing the model.
• Target: The point that you are viewing (center of the view).
• Lens Length: Magnification properties of the camera's lens. The greater the lens length, the narrower the field of view.
• Front and Back Clipping Planes: Specifies the boundaries that define or clip a view. Everything between the camera and the front clipping plane is hidden. Everything between the back clipping plane and the target is hidden.

TIP Use the drop-down menu in the Navigation control panel of the Dashboard to quickly restore a camera's view.

Visual Styles
Use Visual Styles to quickly change the display of edges and shading in a viewport. Create your own Visual Styles in the Visual Style Manager.
• 2D Wireframe: Displays objects using lines and curves to represent boundaries with model space colors.
• 3D Wireframe: Displays objects using lines and curves with a 3D look and feel. 2D objects such as raster images, OLE objects, linetypes, and lineweights are not visible.
• 3D Hidden: Wireframe representation, hidden lines removed.
• Realistic: Shades the objects and smoothes the edges. Materials are displayed.
• Conceptual: Shades the objects and smoothes the edges using the Gooch face style. Objects are outlined. Less realistic but easier to see.
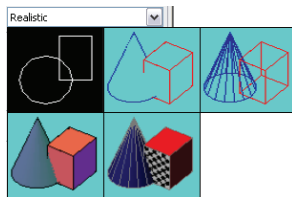
Layers

The Layer command is the third most frequently used command in AutoCAD. These additions make this popular command even better!

Customize the Layer Manager
Now you control the display order of the layer property columns by dragging the column headings—put your favorites on the left for easy access. Too many columns? Turn off the ones you aren't using by choosing Customize from the shortcut menu.
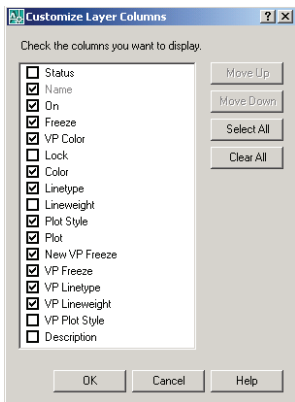
Freezing a Layer in All Viewports
The shortcut menu allows you to create a new layer that is frozen in all viewports, a function that is also available as a new button. Here you also find additional controls to freeze or thaw the selected layer(s) in all viewports.

Renaming Layers
There are now three ways to rename a layer. Double-click the layer name, select a layer and press F2, or choose Rename from the shortcut menu.

Layer Properties per Viewport
How often have you wished you could assign layer properties per viewport? Wish granted! No more tedium duplicating geometry on separate layers and flipping the layers on and off per viewport. Now you can double-click in a viewport and assign a specific color, linetype, lineweight, and plotstyle per layer that affect only the current viewport. (Hoorah!)

VP Color	VP Linetype	VP Lineweight	VP Plot Style
mag...	CONTINUOUS	Default	Solid
9	CONTINUOUS	0.15 mm	Solid
green	CENTER2	0.30 mm	Solid
9	CONTINUOUS	0.18 mm	Solid
green	CONTINUOUS	0.09 mm	Solid
mag...	DASHED	0.09 mm	Solid
9	CONTINUOUS	0.35 mm	Solid

Remove these viewport overrides from the right-click menu. Use VPLAYEROVERRIDESMODE (phew!) to temporarily ignore the overrides for viewing or plotting. These overrides affect only those objects that are bylayer. Use the new SETBYLAYER command to quickly change objects to bylayer, including those within blocks and nested blocks!

Direct Access to the Layer States Manager
A new LAYERSTATE command (LAS alias) provides access to the Layer State Manager from the command prompt (also on the layer panel of the Dashboard). Use the new Import option to bring in layer states directly from DWG™, DWT, or DWS files. Now you can also edit or view layer states from xrefs!

Layers

New Layer Evaluation Tool

A new Settings button in the Layer command allows you to turn on a new layer evaluation tool.

- The first time you save or plot, the current list of layers is stored for evaluation purposes.
- When new layers are added, an "Unreconciled New Layers" notification appears. Click the link to view the non-matching layers.
- A new layer filter for unreconciled layers is automatically created.
- Layer Settings allows you to customize this process.
- Two new system variables, LAYEREVAL and LAYERNOTIFY, are now available.
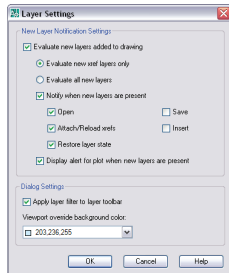
New Layer Panel on the Dashboard

The new Layer panel provides quick access to all these cool new tools, including the very popular Layer Isolate (LAYISO) and Layer Unisolate (LAYUNISO) commands! New fading options allow you to lock and fade background layers, rather than hiding them completely.


Layers
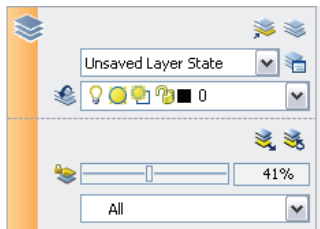
New CUI Features

Now you can customize the Dashboard and palettes with all your favorite commands in the CUI command. Simply drag a command from the command list directly to the palette. Customize the Dashboard by dragging commands to the new Dashboard panel that displays in the upper right of the CUI. You can even create a new row of tools on the Dashboard by dragging a toolbar from the Toolbar node to the Dashboard node.

A new search tool makes it easy to find commands. The macro associated with each command appears as a tooltip as you hover the cursor over the command.
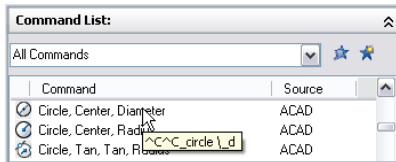
New Quick CUI

The QUICKCUI command displays a simplified Customize User Interface dialog box for speedy customization. Just drag commands to toolbars or palettes.
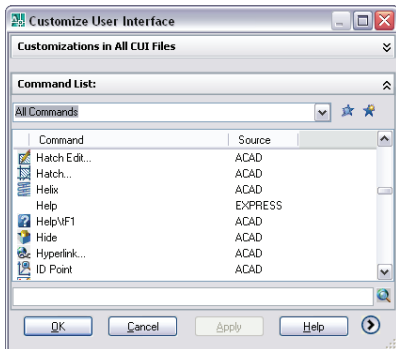
New Dynamic Preview Panel
It's easy to drag Dashboard and toolbar tools to the Preview Panel in the CUI.

Double-Clicking
When you double-click an object, a command is launched. Now you can assign which command is executed for each type of object! For example, when you double-click an attribute definition, the DDEDIT command is executed, allowing you to edit only the attribute value. Maybe you'd prefer the EATTEDIT command, which allows you to edit all the properties in addition to the attribute value. Simply replace DDEDIT in the macro with EATTEDIT or drag Edit Attribute from the command list to the double-click menu.

TIP For you Autodesk Inventor users, why not assign 3DORBIT to the F4 key in the CUI? It will make the transition between the two products so much easier!

Customize

Share

Sharing your drawing information is important, and AutoCAD 2008 makes it even easier to do so.

Using DWF Files as Underlays

The DWFATTACH command enables you to use a DWF™ file as an underlay, just as you can with raster images. The DWF file is linked and not physically embedded into the drawing file, thus keeping the file size down. You can snap to an attached DWF file and adjust the fade, contrast, and monochrome from the Properties palette or DWFADJUST command. Use the shortcut menu to clip the DWF file and control the layer visibility of a selected DWF file.
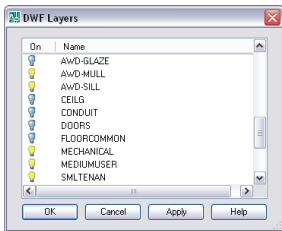
Working with DGN files

Now you can attach Bentley MicroStation® V8 DGN files to your AutoCAD drawings or export DWG files to V8 DGN format using File>Export. Bring them in as externally referenced underlays with DGNATTACH using Insert>DGN Underlay. Clip the DGN from the shortcut menu (or use DGNCLIP) and use Properties to adjust contrast, fade, and monochrome (or DGNADJUST).

Import V8 DGN data with DGNIMPORT using File>Import. When importing, a dialog box prompts for information regarding external DGN references, text nodes, and units to help you get the best results.
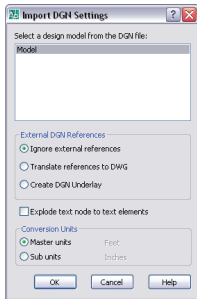
External References

Now you can use the XREF command to see all externally referenced files in one handy central location. Here you find any attached drawing files, DWF files, images, and DGN files.

A new option in the XCLIP command enables you to clip the inverse of a selected boundary by removing the inside rather than the outside.
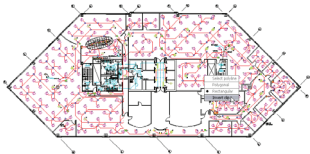
Plotting to PDF

Use the Add Plotter wizard to print your drawings to PDF format. Under Manufacturers, select Autodesk ePlot (PDF), and under Models select PDF.
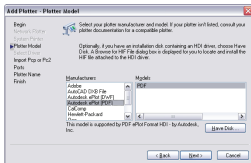
Access to DWG Files

AutoCAD 2008 lets you open DWG files all the way back to AutoCAD version 2.0 (ancient!).

• Backward and forward conversion of DWG files from AutoCAD Release 14 to AutoCAD 2008 using the conversion features of DWG TrueView™ 2008 software.
• Now anyone can view, publish, and plot DWG files with DWG TrueView.

Download DWG TrueView for free (and we all love free!) at **www.autodesk.com/dwg.**

TIP Use DWG TrueView to quickly apply a page setup to multiple layouts!

Share

Lynn Allen, *Cadalyst* columnist and worldwide Autodesk Technical Evangelist, speaks to more than 30,000 users each year. For the past fourteen years she has written a monthly column in *Cadalyst* magazine called "Circles and Lines." Lynn started using AutoCAD® software with Release 1.4, over 20 years ago, and has taught at the corporate and collegiate level for 13 years. A sought-after public speaker with a unique comedic style, Lynn is consistently one of the highest rated speakers at Autodesk University. Her latest book is entitled *AutoCAD Professional Tips and Techniques*.

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