Autodesk® So You Think Your Version is Enough!

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AC1421

If you are using an older version of Autodesk AutoCAD software and you can't decide when to upgrade or what version to install, or if you still use the current version the same way that you used an older version, you need to attend this class. This class is filled with time-saving tips and features from the latest releases of AutoCAD (2010 to 2014). Use the knowledge from this class to gain the ammunition to upgrade both your software and yourself.

Learning Objectives

At the end of this class, you will be able to:

- Use new AutoCAD features efficiently and productively.
- Use new features of older commands.
- Simplify those 3D models and layouts.
- Use tips that apply to versions of AutoCAD ranging from 2010-2014.

About the Speaker

Jeanne is known for keeping her training sessions fast moving and fun. She is a nationally known speaker and expert in CAD and presents seminars and workshops on CAD productivity for managers and users in both corporate and academic settings. She has over 30+ years' experience involving production drafting, user support, standards coordination, programming, and training in various CAD applications. She is an independent consultant offering training and implementation services and is certified in several Autodesk and Bentley products. She continues to be actively involved in international, national, and local CAD user groups and received the much coveted Top Ten Speaker award for her presentations at AU. She has been a popular speaker at AU for several years.

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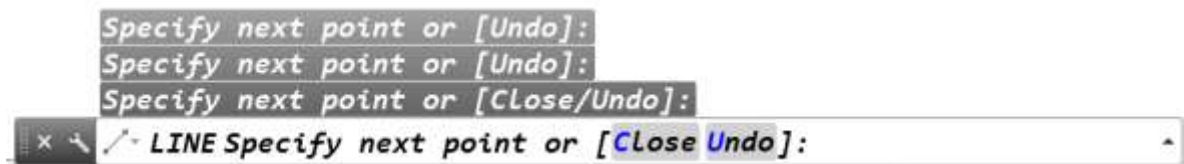
1   **Smarter Command Line**   **2013-2014**

New Command Line Interface

Single Line Floating Command Line
This new "look and feel" is the default command line appearance, and it has some very powerful new options, check this out:

- The new design significantly reduces the amount of screen real-estate required for full use of the command line.
- The "magnetic" feel improves the placement and re-location of the command line.
- The un-useful COMMAND: prompt is gone, and new helpful text is displayed that tells you what command is running.
- Key-in command options are colorized to make it easier for new users to identify the keyboard shortcuts.
- The command keyboard shortcuts are also "links" so you can actually select them just like a button

Command Line Shortcuts

F2   Displays the temporary command history window

Ctrl+F2   Displays the traditional command history window

Smarter Command Options

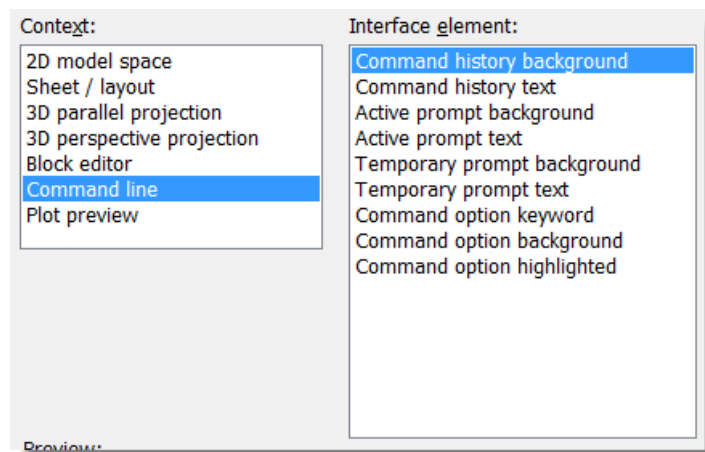Select the customize tool on the command line to control the INPUT SETTINGS, LINES OF PROMPT HISTORY, TRANSPARENCY and OPTIONS.

Input Settings ▶
Lines of Prompt History
Input Search Options...
Transparency...
Options...

Those of you who are greedy with your screen "real-estate"; float the new resizeable command line above the AutoCAD drawing window. It display with a semi-transparent prompt history that doesn't affect the drawing area on a permanent basis. Way too cool!

I didn't even know I wanted this!

```
Specify start point:
Current line-width is 0.0000
Specify next point or [Arc/Halfwidth/Length/Undo/Width]:
x ⚒ ⤵ PLINE Specify next point or [Arc Close Halfwidth Length Undo Width]:      ▲
```

Controlling the Appearance

Use the Options → Display → Colors settings to control the appearance of the new command line interface. There are several new settings available.

Context:
- 2D model space
- Sheet / layout
- 3D parallel projection
- 3D perspective projection
- Block editor
- **Command line**
- Plot preview

Interface element:
- **Command history background**
- Command history text
- Active prompt background
- Active prompt text
- Temporary prompt background
- Temporary prompt text
- Command option keyword
- Command option background
- Command option highlighted

Preview:

Transparency

You can make the command line nearly completely transparent so that it just displays when you hover over it. What a great way to get back that extra drawing window real-estate!

Type a command

x ⚒ ▫- Type a command

- ✔ AutoComplete
- ✔ AutoCorrect
- ✔ Search System Variables
- ✔ Search Content
- ✔ Mid-string Search
-    Delay Time

Input Settings

You can turn off any of the new command line features that don't work for you!

Use the DELAY TIME setting to control how long it takes for the automatic search list to display. If you are a fast typist, you can almost eliminate this list display by increasing the delay time factor.

Lines of Prompt History

Control the number of lines you need for your prompt history.

Command Options

The command name is always displayed on the command line, and you can actually click or select the various command options (displayed in blue) right from the command line!
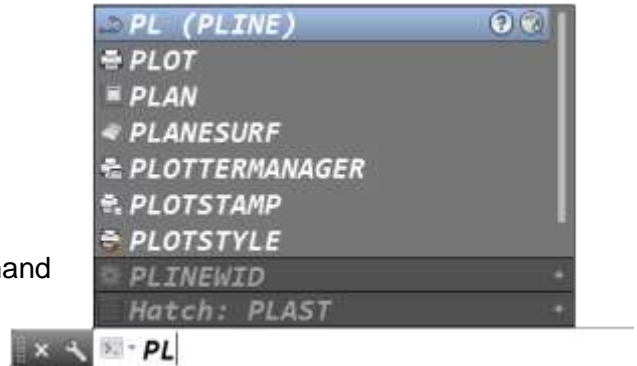
You can even change the color of the command options using Options the Colors tool (Display tab, Options dialog box).

Content Search

Use the command line to access those commonly used items in your drawing. If you key in "DOOR", you can place a door block from the "suggestion list".
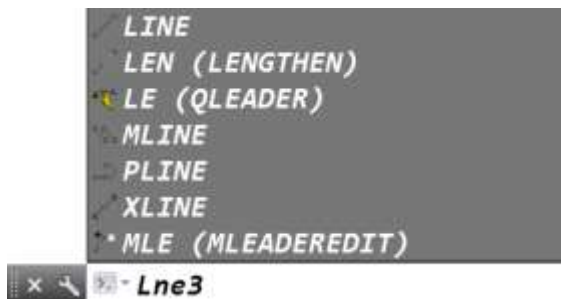
Use the + in the list to expand the categories and access additional content.
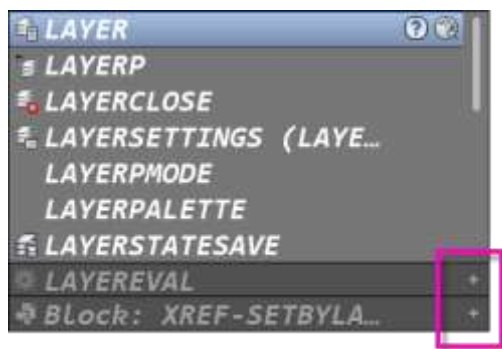
AutoComplete

AutoComplete now supports mid-string search capabilities so you no longer need to know what the command "starts with". If you key in "LINE" for example, you will get all the commands and/or system variables that contain the word LINE.

AutoCorrect

Never see the "unknown command" prompt ever again! If you miss-spell a command, AutoCAD will autocorrect and let you pick the most relevant command.

Synonym Suggestions

When you work on multiple CAD systems it is easy to get your "words" mixed up. The new synonym suggestions will help you find an appropriate match (and it's customizable!)

If you key in the word SYMBOL, AutoCAD will list the INSERT command as a possible replacement. You can customize your synonyms using the ribbon MANAGE → EDIT ALIASES tool to edit the new ACADSYNONYMSGLOBAL.PGP file.

```
LEVEL, *LAYER
CELL,  *INSERT
DROP,  *EXPLODE
```
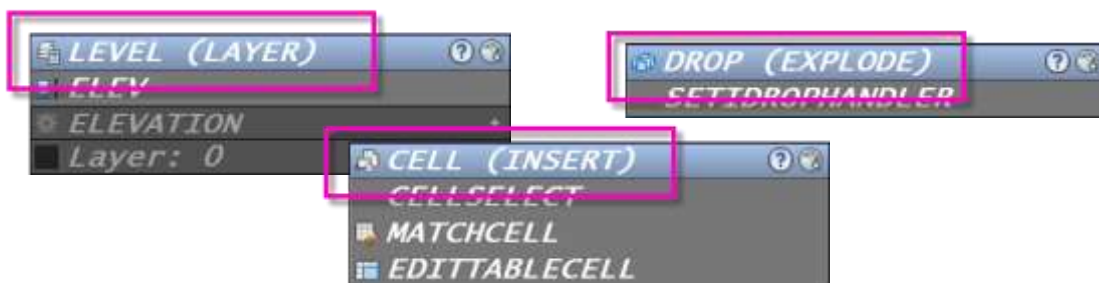
System Variables (2013-2014)

CLIPROMPTLINES

When an undocked command window is set to display only the prompt line, a short history of the most recent prompts temporarily expands up or down from the window.	
0	(minimum)
3 (default)	(default)
50	(maximum)

CLIPROMPTUPDATE

Controls whether the command line displays the progress as a command or script is run.	
0	Turns OFF the display off messages during a command or AutoLISP routine.
1	Turns ON the display of messages during a command or AutoLISP routine.

2 "Psychic" Command Line   2014

You can type block or hatch name at command line. If you have it on the list, you can click it and insert it to your drawing. It also supports layers, and several styles. It will change current layer/styles if you select it on the list.

Input Search Options
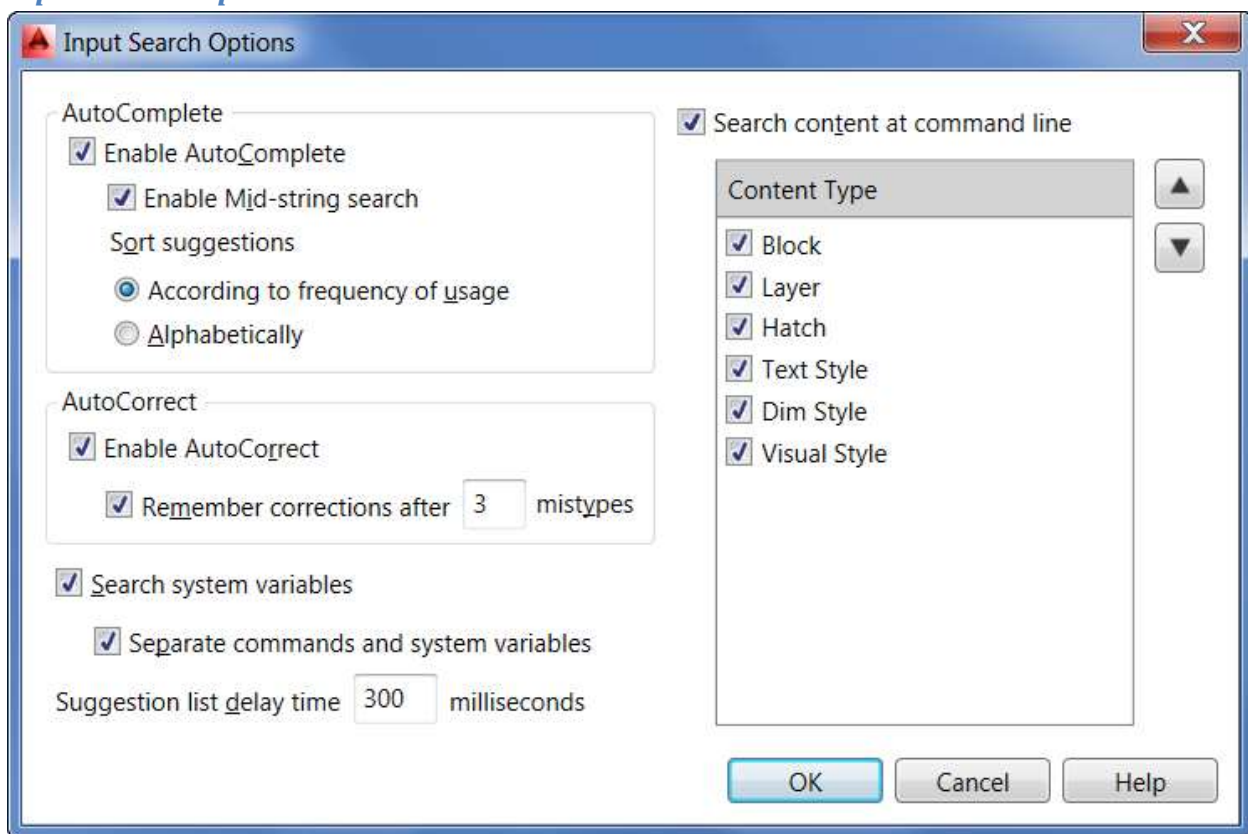
3   Viewport Controls   2012-2014

Every once in a while Autodesk comes up with something that I didn't even know I wanted, and this is one of them!

If you work in 2D or 3D, this is a great way to navigate through various views without having to use any key-in commands or buttons. I always had the following two toolbars open for easy access; VIEWS and VISUAL STYLES. Not any longer!
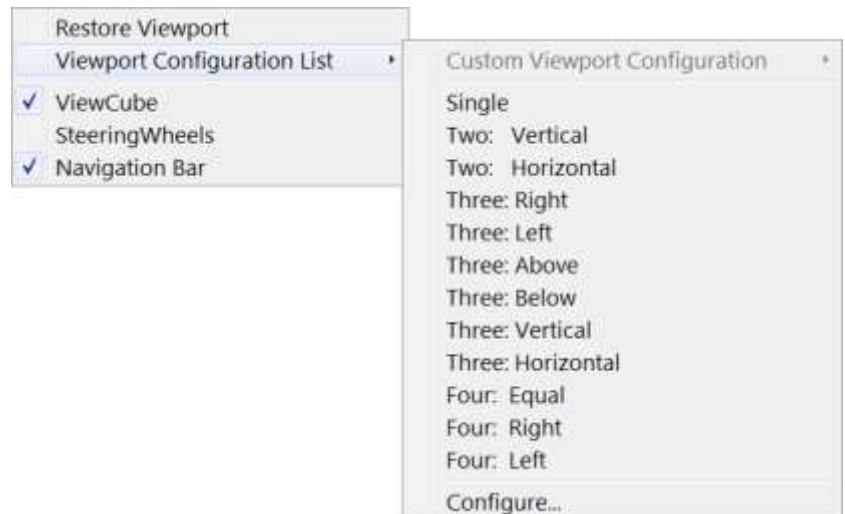
Check this out!

[−] [Top] [2D Wireframe]

Views

[-]

Use the [-] viewport control to access the commands RESTORE VIEWPORT, and to control the display of the VIEWCUBE, STEERING WHEELS, and NAVIGATION BAR.

Restore Viewport
Viewport Configuration List   ▸
✓ ViewCube
SteeringWheels
✓ Navigation Bar

Custom Viewport Configuration   ▸
Single
Two: Vertical
Two: Horizontal
Three: Right
Three: Left
Three: Above
Three: Below
Three: Vertical
Three: Horizontal
Four: Equal
Four: Right
Four: Left

Configure...

Custom Model Views   ▸
✓ Top
Bottom
Left
Right
Front
Back
SW Isometric
SE Isometric
NE Isometric
NW Isometric

View Manager...

✓ Parallel
Perspective

[Top]
Use the [Top] viewport control to access the view orientation commands and the VIEW MANAGER dialog.

Custom Visual Styles   ▸
✓ 2D Wireframe
Conceptual
Hidden
Realistic
Shaded
Shaded with edges
Shades of Gray
Sketchy
Wireframe
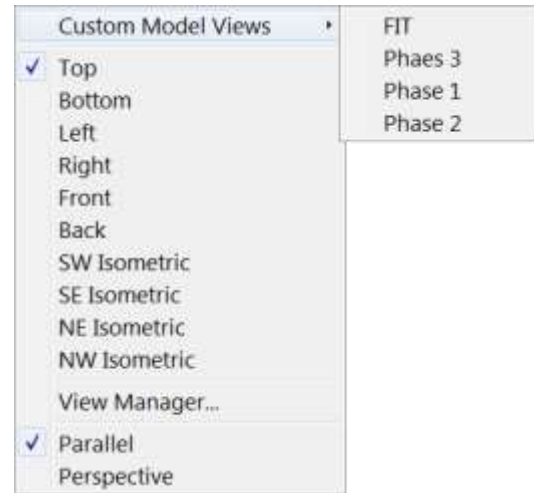X-ray

Visual Styles Manager...

[2D Wireframe]
Use the [2D Wireframe] viewport control to access the VISUAL STYLE commands.

Access Named Views

Use the new Viewport Controls to quickly access saved views.

Viewports

Use the *<Right-Click>* menu in a viewport to access additional viewport control commands.

Custom Model Views ▸	FIT
✓ Top	Phaes 3
Bottom	Phase 1
Left	Phase 2
Right	
Front	
Back	
SW Isometric	
SE Isometric	
NE Isometric	
NW Isometric	
View Manager...	
✓ Parallel	
Perspective	

<Double-Click> on the – to quickly display 4 viewports or the previously specified viewport configuration.

<Double-Click> on the + to quickly maximize a viewport

<Double-Click> on the – to return to the previous viewport configuration.

Options

Use the OPTIONS dialog to customize the color, size and visibility of these new Viewport Controls.

Display Tab
Color

Drawing Window Colors		
Context:	**Interface element:**	**Color:**
2D model space	Uniform background	Red
Sheet / layout	Crosshairs	
3D parallel projection	Viewport control	☐ Tint for X, Y, Z
3D perspective projection	Grid major lines	
Block editor	Grid minor lines	Restore current element
Command line	Grid axis lines	
Plot preview	Autotrack vector	
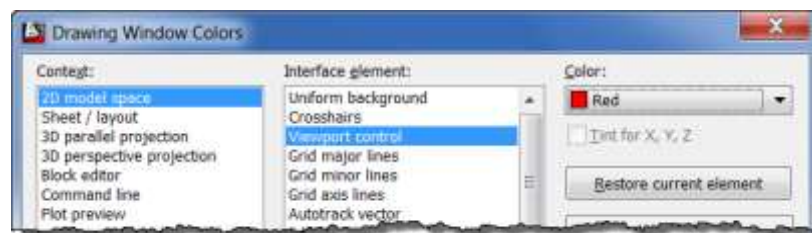
3D Modeling Tab
Visibility

Display Tools in Viewport

Display the ViewCube
☑ 2D Wireframe visual style
☑ All other visual styles

Display the UCS Icon
☑ 2D Wireframe visual style
☑ All other visual styles

☑ Display the Viewport Controls

9
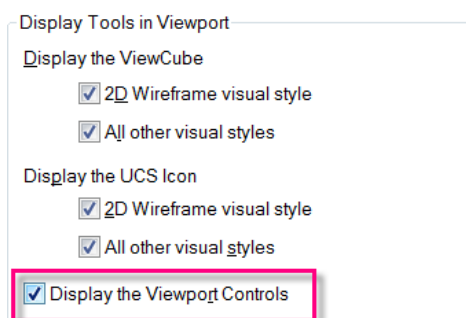
4   ViewCube

2011-2014

Using AutoCAD 2012 and higher, the ViewCube is now supported in the 2D Wireframe visual style. So you can easily rotate your 2D view dynamically using this great tool.

Try it out in a viewport too!
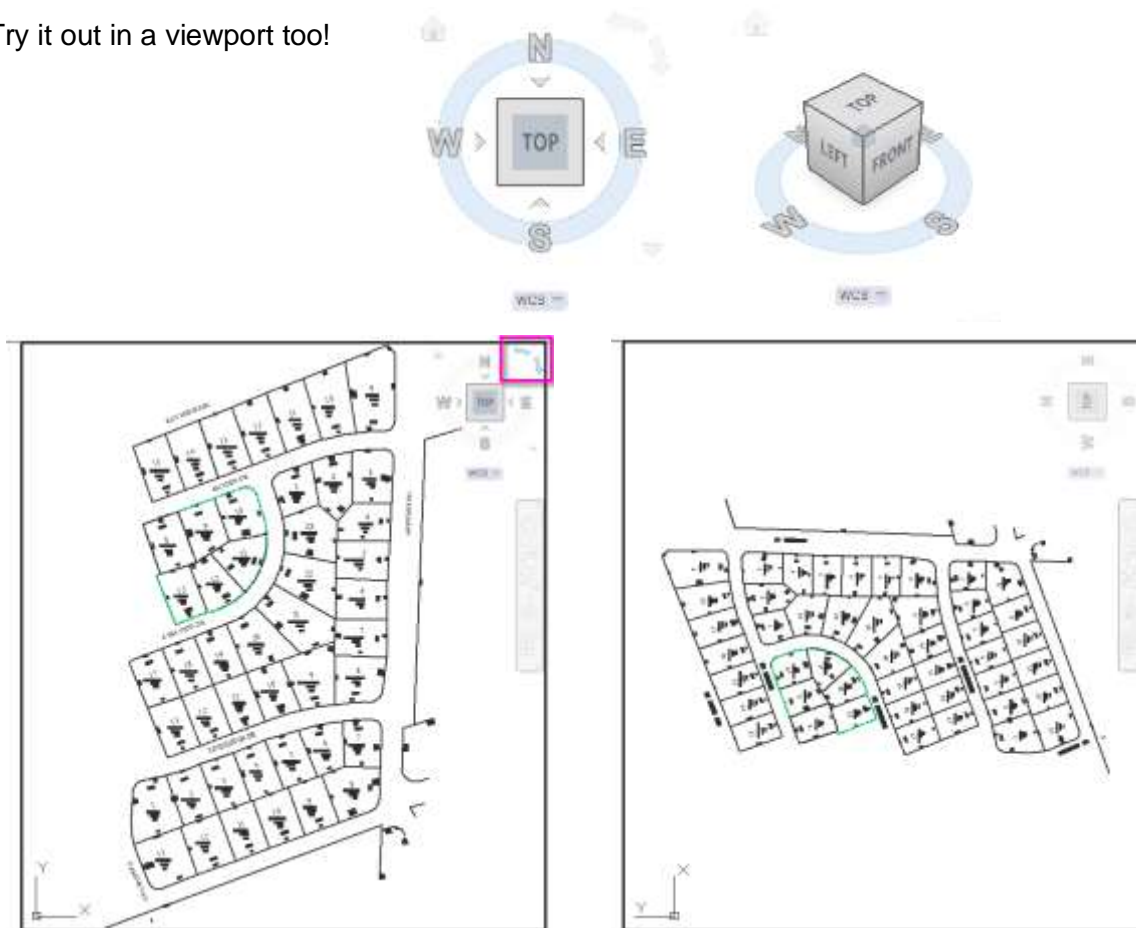
AutoCAD 2011 or earlier!

The ViewCube is not available in any viewport that is copied from an existing viewport. Autodesk has acknowledged this problem and hopefully it will be fixed soon.

GOOD NEWS!!!! This has been fixed in AutoCAD 2012 and newer!

5   Shortcuts   2010-2014

Using the SPACEBAR Key

Simulate ENTER
Use the *<SPACEBAR>* to simulate the *<ENTER>* key and to recall commands quickly. The one exception to this functionality is when you are using a TEXT command.

Cycle Objects
When you have overlapping objects you can use the *<SPACEBAR>* to cycle between overlapping objects. Just "hover" on an overlapping object and use the combination *<SHIFT>+<SPACEBAR>* to cycle between them. Hold down the *<SHIFT>* key and press the *<SPACEBAR>* quickly until the correct object highlights for selection.

Cycle Grip commands
When using grip editing in AutoCAD you can select any grip and use the <SPACEBAR> to cycle between the following commands. The selected grip becomes the basepoint for the selected modification.

>   Stretch, Move, Copy, Scale, Mirror

Cycle Faces
When working with 3D objects you can use the combination of *<CTRL>+<SPACEBAR>* to cycle between object faces. Hold down the *<CTRL>* key and press the *<SPACEBAR>* quickly until the correct face (or sub-object) for selection.

Cycle Gizmos
When working in a 3D environment you can uses the *<SPACEBAR>* to cycle between three available gizmos, the 3D MOVE, 3D ROTATE and 3D SCALE gizmos. These new gizmos are available when using the following commands.

3D Move gizmo   3D Rotate gizmo   3D Scale gizmo
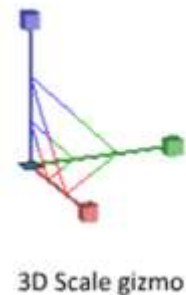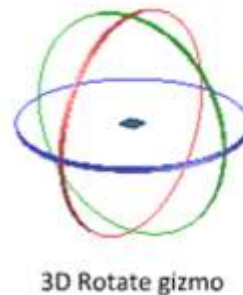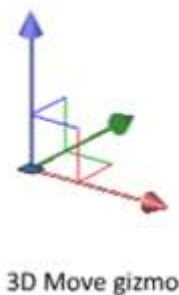
Using the SHIFT Key

ORTHO Override
Use the *<SHIFT>* to access the ORTHO temporary override key while executing a command. Just start the line command and hold down the *<SHIFT>* key to toggle to ORTHO rather than POLAR.

OSNAP Override
Use the *<SHIFT>* + *<Right-Click>* to access the OSNAP pop-up menu to select a single-shot OSNAP command.

Object Selection
Use the *<SHIFT>* key to modify a selection set. Using the *<SHIFT>* key will allow you to ADD and REMOVE an object from the selection set without requiring a key-in option (A or R).

FILLET and CHAMFER Override
Use the *<SHIFT>* key to override the current radius value to 0 (zero).

TRIM and EXTEND Override
Use the *<SHIFT>* key to switch between a TRIM or EXTEND operation when in either the TRIM or EXTEND commands. Saves having to use both commands to perform each operation.

Cycle Object Selection
Use the *<SHIFT>+<SPACEBAR>* key combination to cycle between overlapping objects for better control when selecting objects.

Using the CTRL Key

Sub-Object Selection
Use the *<CTRL>* key to select sub-objects, even in 2D!

For example, if you have a rectangle object, you can use the *<CTRL>* key to select a single edge for manipulation, without exploding it first
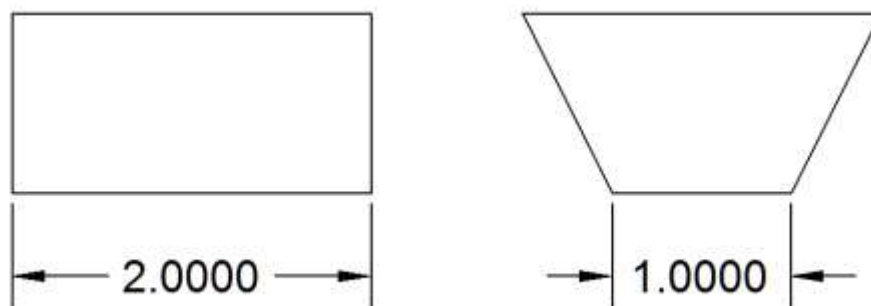
6   Quick Access Toolbar   2011-2014

So what can we do to improve the out-of-the-box ribbon?

Quick Access Toolbar (QAT)

Layer Tools

Using AutoCAD 2011 and higher, the QAT delivers the WORKSPACE control tool. A better choice here might be to include the LAYER control tool. This allows the user to change the active layer while on any ribbon tab. In previous versions, I always turned on the LAYER toolbar in conjunction with the ribbon interface to get the necessary access to the common layer tools.

Now I can use the CUI dialog to re-arrange the tools on the QAT.
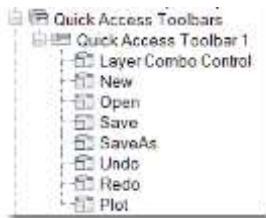
7   Smarter Properties Control   2014

Using the PROPERTIES dialog, you can dynamically preview all property changes using the new PROPERTIES PREVIEW option. No more "guessing" what property is best! You can define this new setting using OPTIONS → SELECTION → PREVIEW → PROPERTY PREVIEW.
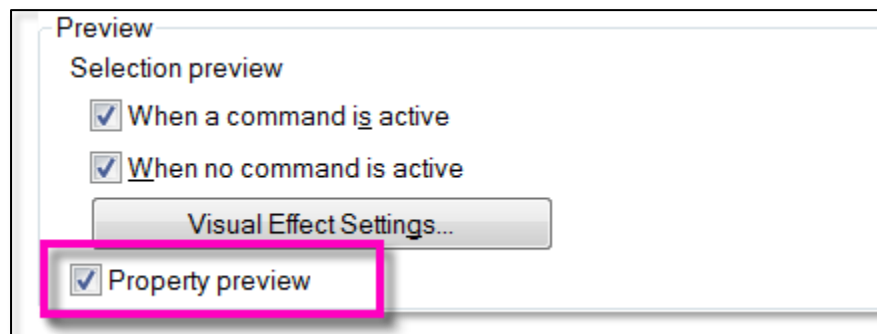
8   File Tabs…Finally!!!!   2014

For years I used an add-on application that provided me with FILE TABS displayed for all open files in the AutoCAD session. AutoCAD 2014 now provides this out-of-the-box using the ribbon tab VIEW → USER INTERFACE → FILE TABS.

The TABS are display in the order the files were initially opened, but you can use *<Drag-n-Drop>* to change the order.

If you run out of room for all the tabs, an overflow menu will appear at the right.
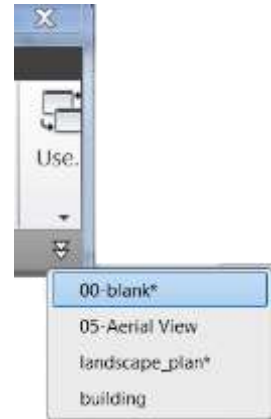
a "plus" sign allows you to create a new drawing file.

an * indicates the file has been modified and not saved.
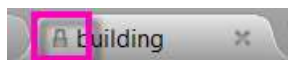
a lock icon indicates the file is read-only.
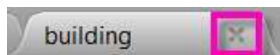
the X icon can be used to CLOSE the file.
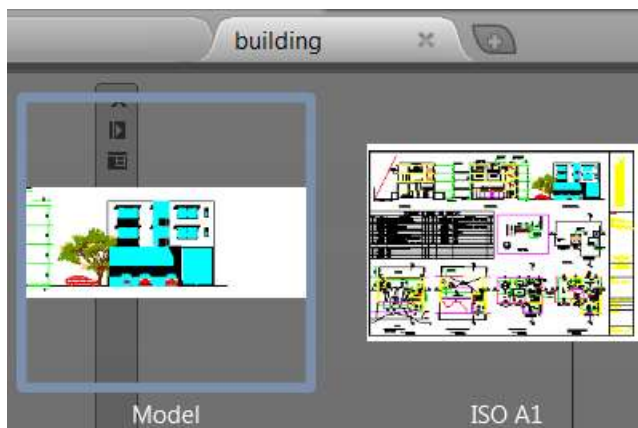
"hovering" over the tab will display preview images of modelspace and all layouts.

If you hover on a preview image, it is temporarily displayed in the entire drawing area.

14

You can also Plot and Publish from these preview images.
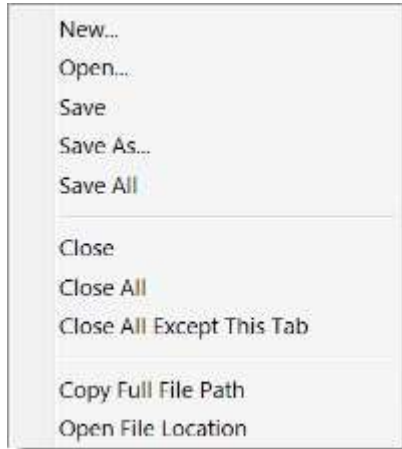
<Right-Click> on a file tab to reveal additional options as shown on the left, including CLOSE ALL EXCEPT THIS TAB…what a great idea! Thanks Autodesk!

9   Improved SNAPS for SELECTIONS   2014

The default SNAPMODE is now temporarily disabled when selecting objects.   You can reset this new feature back to the "old way" using the SNAP command options.

10   Arcs Any Direction   2014

AutoCAD 2014 allows you to easily draw an arc in either direction by pressing the CTRL key to switch directions as you draw. Another THANK YOU to Autodesk for this one!

11   Continue Dimensions in STYLE   2014

The new system variable DIMCONTINUEMODE provides you with more control when creating continued and baseline dimensions using the new GRIP functionality.

DIMCONTINUEMODE

Determines whether the dimension style of a continued or baseline dimension is inherited from the dimension that is being continued or from the current dimension style.

0	Use the current dimension style.
1 (default)	Use the dimension style of the dimension that is being continued or used as a baseline.

12   Layer Manager Enhancements   2012-2014

Modeless Dialog

Layer manager is now a modeless dialog allowing you to leave it open while working. This allows you to dock it, hide it or anchor it like other dialogs. The new layer manager is also dynamic; so no more APPLY button since you can see your changes "live".

Freeze Columns

You can FREEZE columns in the dialog so that when you need to scroll all the way to the right to see other columns your favorite columns won't disappear off the dialog. Sorry you can only freeze one column at a time. Try using this one on the LAYER NAME column!

Restore Layer Properties

If you find a file that has layer property overrides applied; you can reset those properties to the global settings in layer manager on the *<Right-Click>* menu using the REMOVE VIEWPORT OVERRIDES for ALL LAYERS or SELECTED LAYERS.
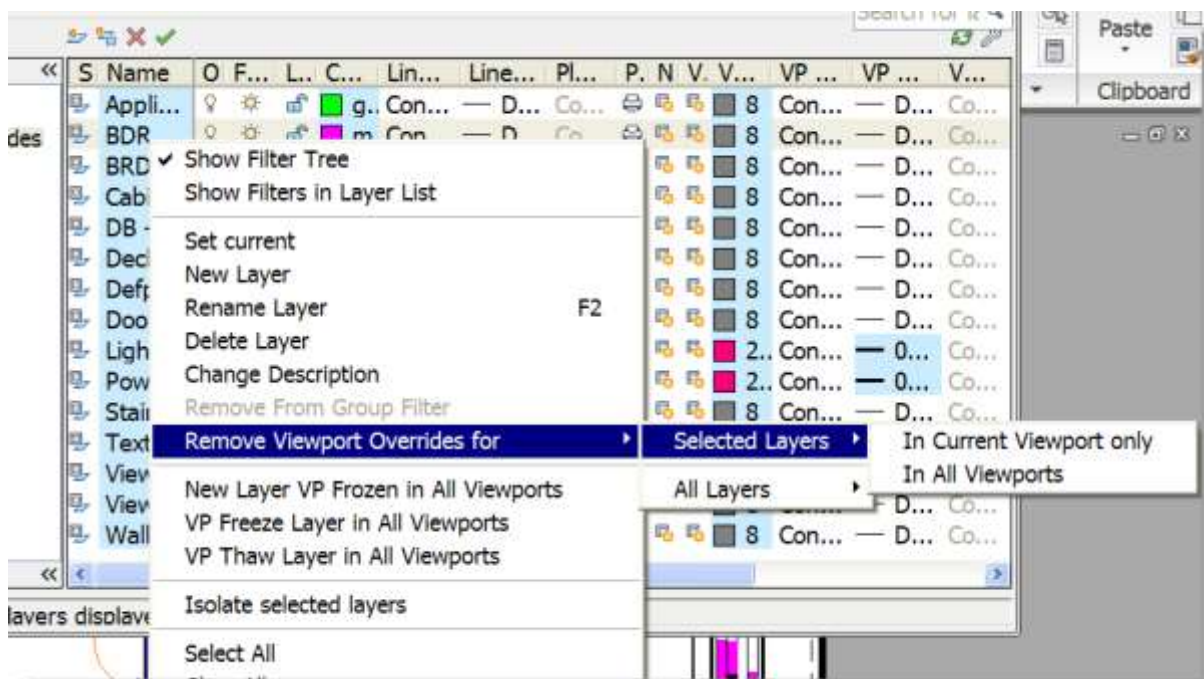
13   Merge Selected Layers   2012-2014

Use the LAYER MERGE command to remove layers that you cannot purge. We have all struggled with this problem. Using the LAYER MANAGER dialog, *<Right-Click>* to access the MERGE SELECTED LAYER(S) TO…command. A dialog appears with a list of all layers to allow you to easily select the layer to merge to.
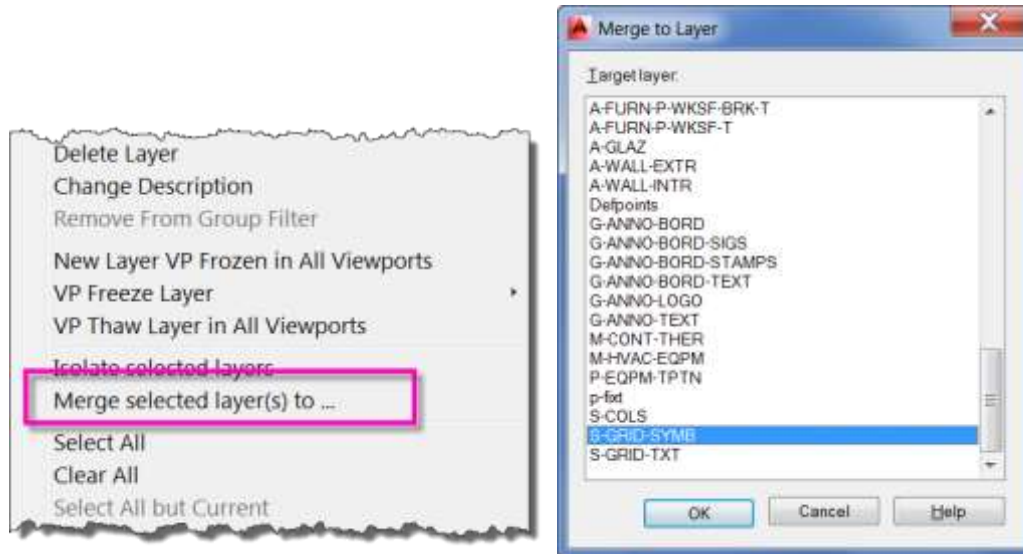
14   Smarter Copy   2012-2014

The COPY command has been enhanced to allow you to perform a multiple copy using the new ARRAY option. Use the new option to create a linear array during the copy command.

```
COPY Specify second point or [Array]
<use first point as displacement>:
```
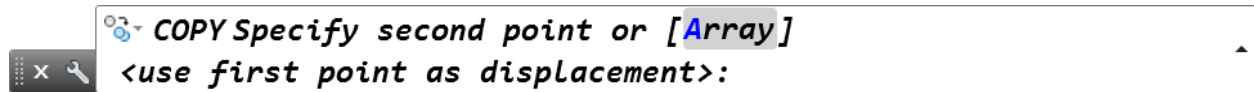
15   Smarter Join   2012-2014

The already productive JOIN command has been enhanced to allow for easier use with multiple objects. Join now supports standard selection methods (such as crossing) or picking objects in any order!

Try using the JOIN command on ALL objects in the file to clean up the segmented graphics. Way too cool!

Example:

Using this command I just decreased the number of objects in a file from 690 to 241.

16   Smarter Fillets/Chamfers   2012-2014

Using AutoCAD 2011 and higher provides display previews when passing the cursor over the second object while using the FILLET or CHAMFER commands making it easier to confirm and change the radius or distance before completing the command!

Connecting Objects

Fillet
Now includes a PREVIEW of the final result.

Chamfer
Now includes a PREVIEW of the final result.

You can also fillet and chamfer spline objects.

If the polyline is not CLOSED, the final endpoints will not fillet or chamfer until the polyline is defined as CLOSED.
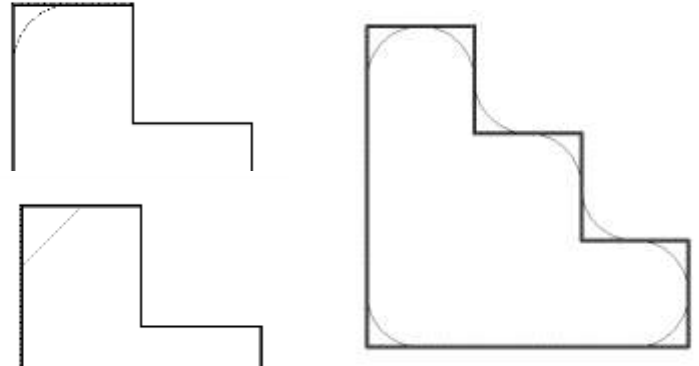
Join
The JOIN command has been updated to allow for the selection of multiple objects.

Blend
The new BLEND command allows you to create a spline object between two objects.
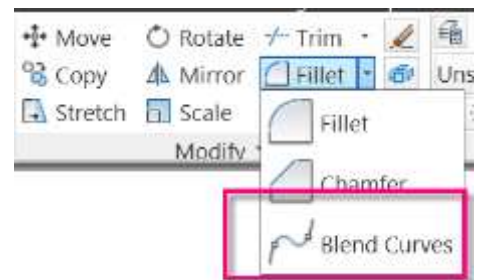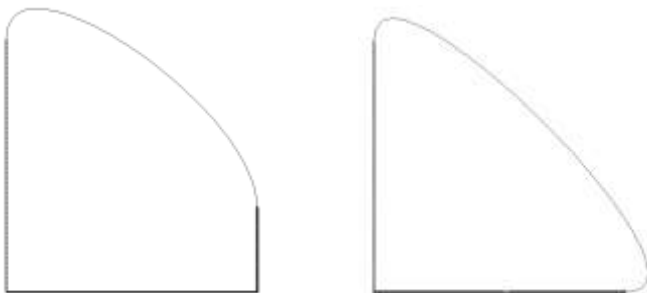
Use the CONTINUITY command option to select either TANGENT or SMOOTH blend options.

17 Smarter Polylines 2014

FINALLY! You can FILLET a POLYLINE to itself. It is the little things that make the difference right?

18 Smarter Hatch 2010-2014

Invalid Boundary Icons

AutoCAD 2010 provides new "red circle" icons if a boundary object is not closed when attempting to hatch an area. Finally, you can immediately see where the problem is!
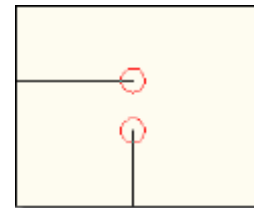
New Grips
Another new feature for hatch objects are additional grips available on an associated hatch.

Edit Vertex grip
Allows you to MOVE or REMOVE the vertex. Use the *<CTRL>* key to toggle between the available command options.

Edit Edge grip
Allows you to ADD or CONVERT an edge between a line or an arc. Use the *<CTRL>* key to toggle between the available command options.

Smarter Hatches
The Hatch Grip functionality is amazing. The new center grip allows direct manipulation of hatch objects. Hover over the grip to stretch, move, or change the origin, angle or scale.

Hatch Layer
We often want our hatches to all reside on a specific layer. Now you can set a default layer for hatches that overrides the current layer.
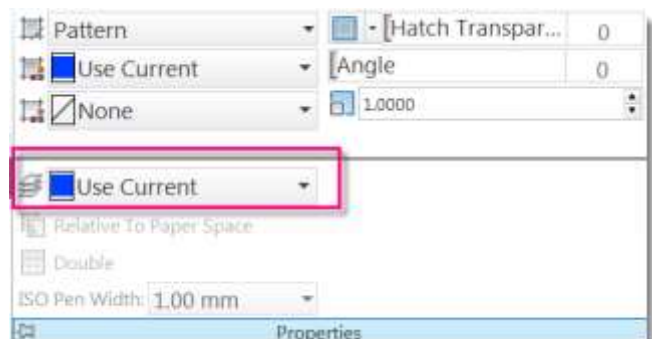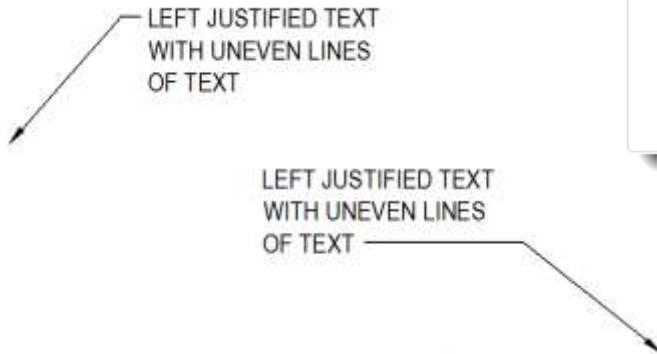
19   Smarter Annotation   2012-2014
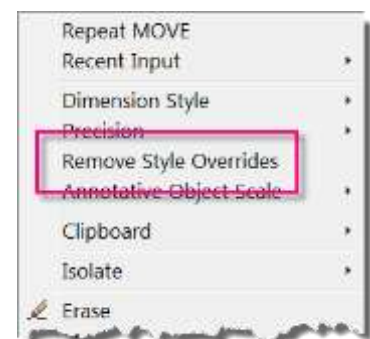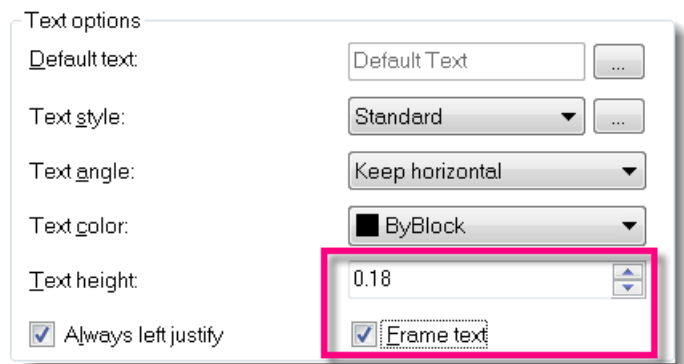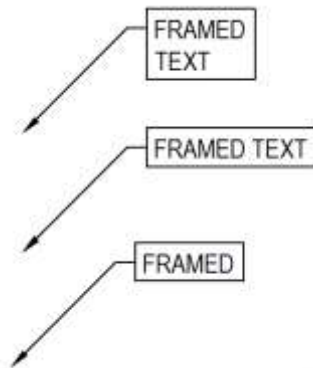
Multi-Leaders

You can now extend the horizontal landing leader line all the way to the end of the text using this new style setting.
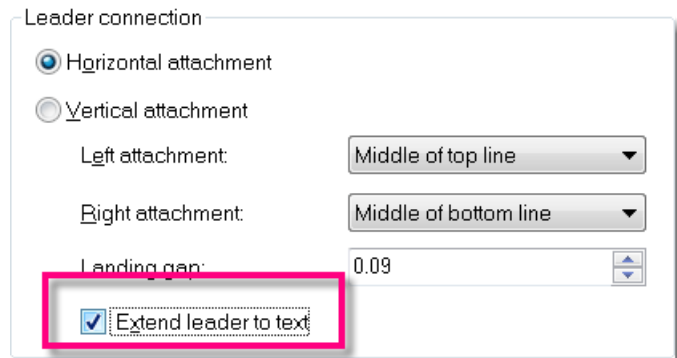
Text Frames in Leaders

You can control the frame margins when using a frame around text content in a leader object using this new style setting.

Yes, the frame shrinks and grows when you edit the text!

20   Selection Cycling   2011-2014

Overlapping objects has always been an issue when trying to select a specific object. Over the years there have been many methods used to solve this problem; and AutoCAD 2011-2013 are no exceptions. In fact, AutoCAD 2011-2013 offer a new, more obvious method for selecting overlapping objects.

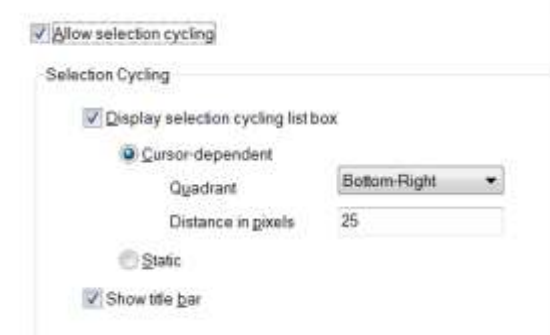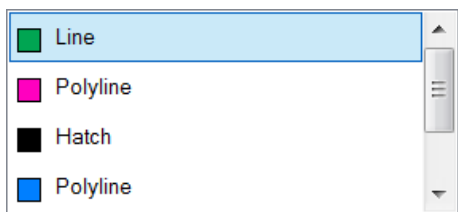Use the status bar to activate the new SELECTION CYCLING tool.

When you "hover" on multiple objects, an icon appears to indicate that more than one object exists at that location.
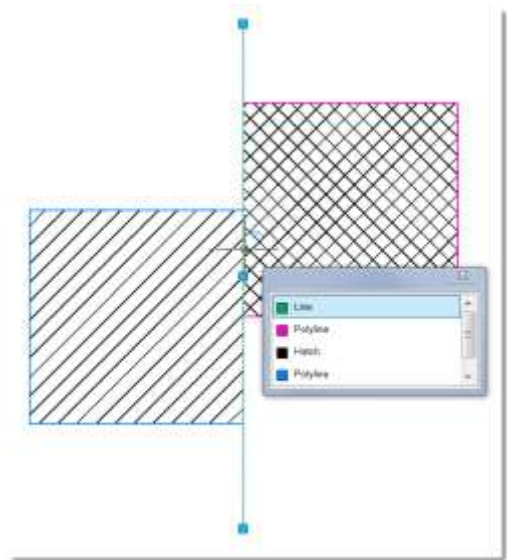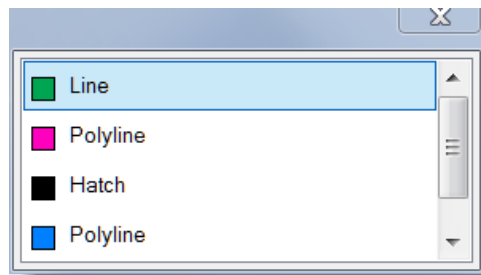
Use the *<Right-Click>* menu on the new *<Single-Clicked>* tool in the status bar to access the SELECTION CYCLING settings.
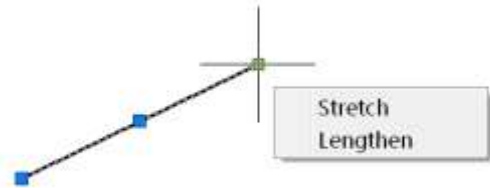
No Title Bar

21 Multi-Function GRIPS   2011-2014

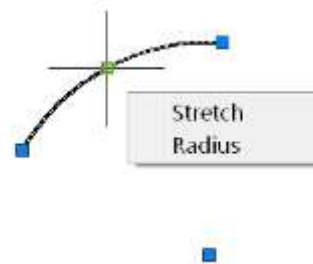Additional grip functionality has been added to the following object types:
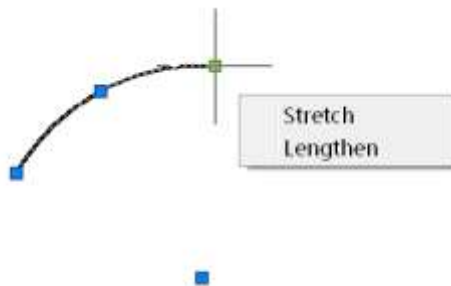
Lines

Hover on an endpoint grip to gain access to the new
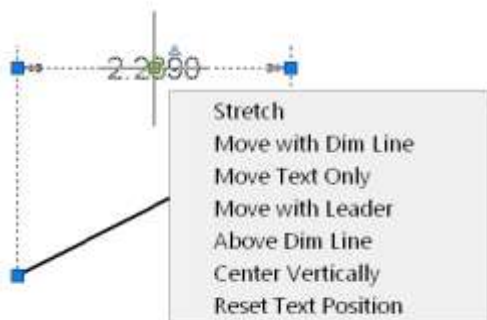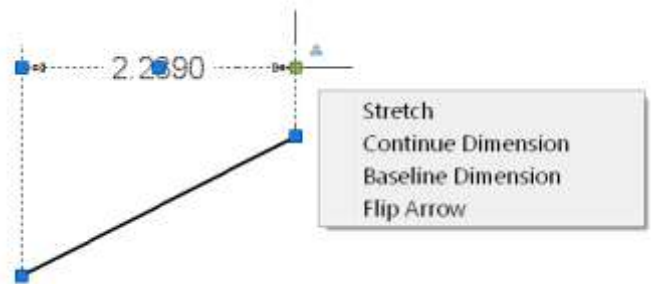STRETCH and LENGTHEN commands.

Arcs

Hover on an endpoint grip to gain access to the STRETCH and LENGTHEN commands.

Hover on a midpoint grip to gain access to the STRETCH and RADIUS commands.

Dimensions

Hover on an arrow grip to gain access to the
STRETCH, CONTINUE DIMENSION, BASELINE
DIMENSION and FLIP ARROW commands.

Hover on a text grip to gain access to the STRETCH,
MOVE WITH DIM LINE, MOVE TEXT ONLY, MOVE
WITH LEADER, ABOVE DIM LINE, CENTER
VERTICAL and RESET TEXT POSTION commands.

22 XREF Enhancements   2014

Linetypes

Reference file linetypes are no longer displayed in the LINETYPE list of the RIBBON or PROPERTIES palette.

Layers

Reference file LAYERS are no longer displayed in the PROPERTIES palette, however, you can still see them in the LAYER dropdown list so you can easily control their visibility.

Reference Paths

Use the new *<Right-Click>* menu in the XREF MANAGER dialog to change the XREF TYPE or XREF PATH on multiple references files

Toggle between OVERLAY and ATTACH settings simply by using a <Double-Click> on the current attachment setting.
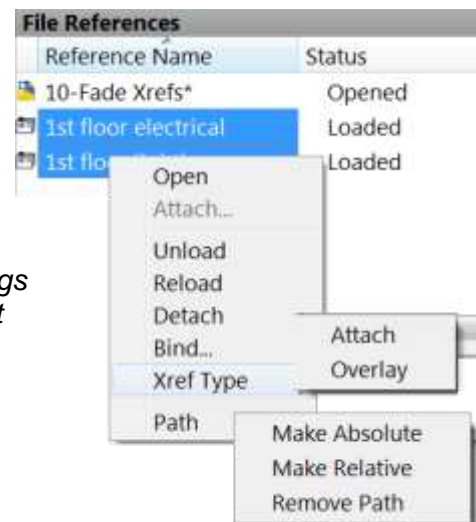
23 Text Justification   2014

Prior to AutoCAD 2014, single line text justification was always defined as LEFT. Even if modified this setting, the next single line text was re-justified back to LEFT. Now, using AutoCAD 2014, you can modify your text justification to CENTER and it will remain that way until you change the setting back.

This is controlled using the system variable TEXTJUSTIFY to define the default text justification.

TEXTJUSTIFY

Displays the default justification used by the TEXT command to create single-line text.

|	
Left (default)	Left-justified at the baseline.
Center	Aligned from the horizontal center of the baseline.
Right	Right-justified at the baseline.
Align	Height and text orientation set by specifying the endpoints of the baseline. Character size adjusts in proportion to the height. The longer the text string, the shorter the characters.
Middle	Aligned at the horizontal center of the baseline and the vertical center of the height. Middle-aligned text does not rest on the baseline.
Fit	Fits within an area and at an orientation defined with two points and a height (horizontally oriented text only).
TL	Left-justified at the top of the text (horizontally oriented text only).
TC	Centered at the top of the text (horizontally oriented text only).
TR	Right-justified at the top of the text (horizontally oriented text only).
ML	Left-justified at the middle of the text (horizontally oriented text only).
MC	Centered both horizontally and vertically at the middle of the text (horizontally oriented text only).
MR	Right-justified at the middle of the text (horizontally oriented text only).
BL	Left-justified at the baseline (horizontally oriented text only).
BC	Centered on the baseline (horizontally oriented text only).
BR	Right-justified at the baseline (horizontally oriented text only).

You can also change this setting using the JUSTIFY option in the TEXT command.

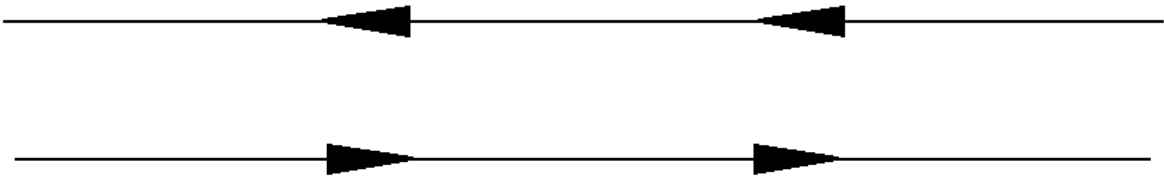# 24 Offset Preview   2014

Finally a preview in the popular OFFSET command!
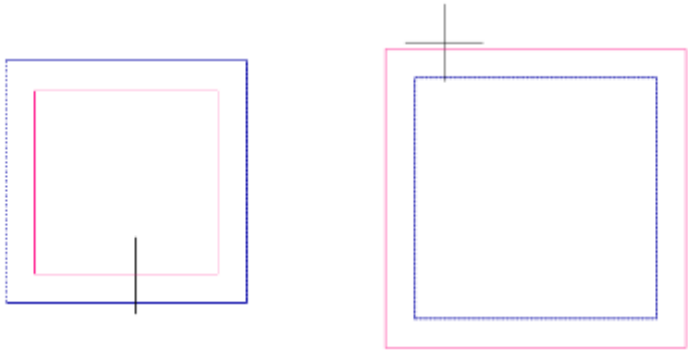
25 Reverse Polylines   2014

Set the new PLINEREVERSEWIDTHS system variable to 1 if you want widths reversed when the REVERSE command is used.

PLINEREVERSEWIDTHS

Controls the appearance of a polyline when its direction is reversed.	
0 (default)	The order of the segments of the selected polyline is reversed, but the order of the segment widths is not reversed.
1	The order and the direction of the segments of the selected polyline are reversed.

26   Strikethrough TEXT   2013-2014

You can use STRIKETHROUGH feature with MTEXT, MULTI-LEADERS, DIMENSIONS and TABLE objects.

At first glance, it appears that you cannot access STRIKETHROUGH text when editing a DTEXT or SINGLE LINE TEXT object since the option is not available in the old editor or ribbon during this type of editing.

However, you can add STRIKETHROUGH text to a DTEXT object using the following method:

%%K

27   Wipeout Frames   2013-2014

The new WIPEOUTFRAME system variable lets you display the wipeout frame without printing it.

WIPEOUTFRAME

| Controls the display of frames for wipeout objects.	
0	Frames are not displayed or plotted
1 (default)	Frames are temporarily displayed for object selection and selection preview.
2	Frames are displayed and plotted

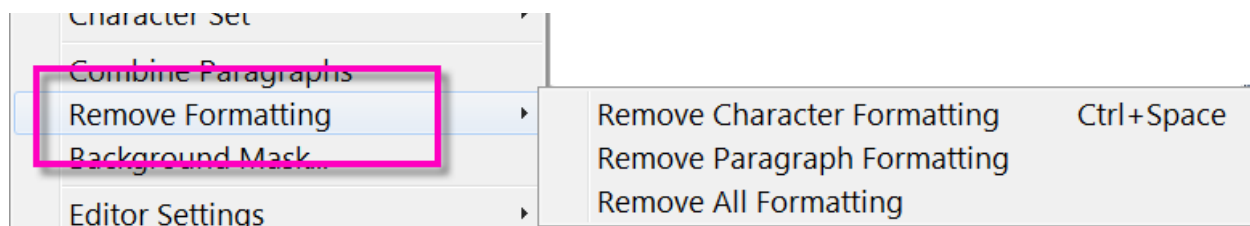# 28 Control Your TEXT   2012-2014

Do you want more control over the appearance of your text objects? Have you used all the settings that are available?

Use the TEXT EDITOR contextual ribbon to modify some of the following "easily overlooked" settings.

Paragraph style:
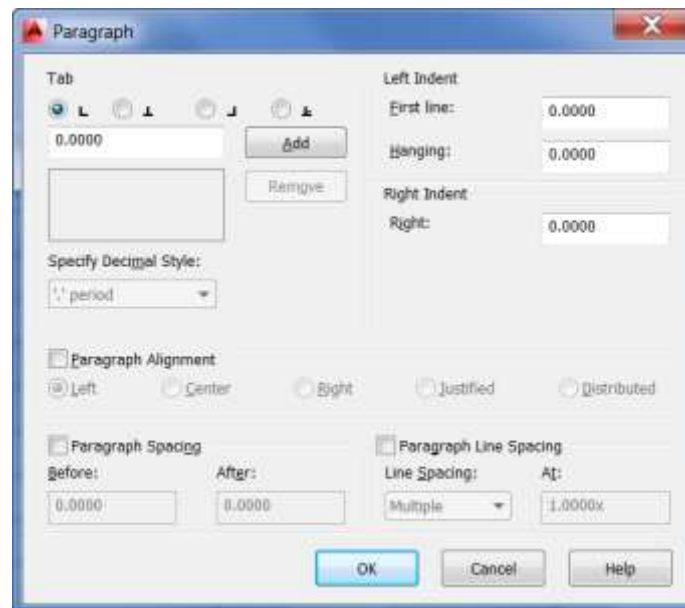
Remove ALL Formatting:

29   Annotation Monitor   2013-2014

Use the new ANNOTATION MONITOR feature to analyze associated dimensions and easily update or remove extraneous or incorrect associations. This feature automatically marks each non-associated dimension with an "information" icon that displays the available commands to correct the problem.

For example, you can REASSOCIATE or DELETE the identified dimension.
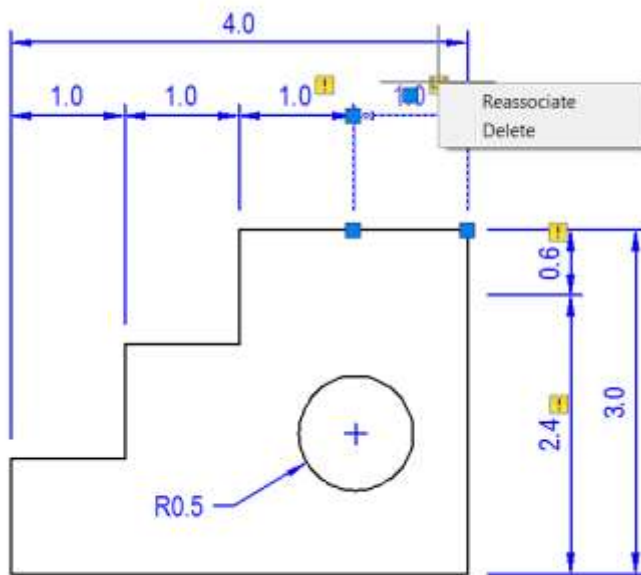
Note the icon located in the status bar that also identifies that there are association problems.

ANNOMONITOR

Turns the annotation monitor on or off. When the annotation monitor is on, it flags all non-associative annotations by placing a badge on them.

2 (default)	Annotation monitor is ON
1	Annotation monitor is ON
0	Annotation monitor is OFF
-1	Annotation monitor is OFF
-2	Annotation monitor off. However, it automatically turns ON or sets ANNOMONITOR to 2, when a model documentation edit or update event occurs.

30   **PressPull on Steroids!** 2014

Now you can PRESSPULL multiple faces at the same time using the new MULTIPLE option.
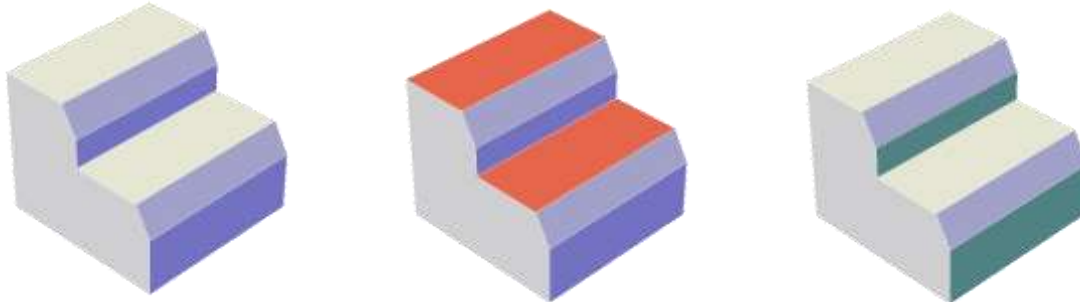
You can also use the SHIFT key to select MULTIPLE FACES of an object.

You can also use the CTRL key to select a planar face to offset as it extrudes to follow tapered angles and sides.