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The 12 Hidden Secrets of AutoCAD® Productivity Revealed!

Matt Murphy - ACADventures

GD501-2 AutoCAD has been around for a long time. Yet simply using AutoCAD every day does not necessarily make you more productive. You may not realize it, but old habits, bad habits, and inefficient commands and techniques may be robbing you of productivity. You'll become more productive by eliminating clicks and picks -- period! In this session, you'll learn how to tap into AutoCAD secrets that banish repetitive steps and tasks. After this session, you'll walk away with productivity-enhancing knowledge that you'll be able to apply immediately.

About the Speaker:

Matt has been recognized by Autodesk as a leader in providing professional training since 1985. He has served as an advisor and consultant to the training industry as chair of the Autodesk Training Center Advisory Board (ATCAB) and Executive Committee (ATCEC). Matt is also an Autodesk Approved Instructor (AAI) and a Certified Technical Trainer (CTT). He has received numerous instructional awards, including the ATC Eastern Regional Instructor of the Year for 2004. A widely acclaimed top trainer and featured columnist for *CADalyst* and *AUGIWorld* magazines, he has presented at Autodesk University for 14 years and was the top Autodesk University speaker in a large session for 2006.

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Introduction

Without a doubt more people than ever are frustrated with their ability to become truly productive with AutoCAD. I have also found that the majority of users I meet have had no formal training on how to use AutoCAD. Why should they? – because “You don’t know what you don’t know!” Getting training from knowledgeable and certified training professionals will give you the skills you don’t know you need, so you can improve your productivity. Attending this session and other sessions at AUGI CAD Camp is an excellent step toward greater productivity.

Let’s begin by addressing a couple of major misconceptions. The first is that productive users are programmers. This is not necessarily true. There are many advantages to writing code and the goal of programming is to eliminate repetitive tasks and steps. There are many ways to reduce the number of clicks and picks, thus eliminating repetitive operations, without having to program.

The second misconception is that if you work faster you’ll be more productive. Speed has nothing to do with being productive! Even today’s super-fast computers may only save a few seconds in processing speed on large drawings as compared to machines from just a few years ago. I find many users are wasting time by trying to “do it” faster.

In this session I will address many of the simplest yet most powerful techniques to bring your AutoCAD experience to a new productivity level by eliminating many of your daily repetitive steps. You can become instantly more productive by choosing the shortest, most efficient method and best technique for each specific drawing problem. What if you could eliminate 20, 30, or even 50 percent of the clicks and picks you are doing today? Wouldn’t you be more productive?

I’m always finding something new in each release of AutoCAD that eludes users from greater productivity. In this session you’ll experience what I’ve found to be the 12 greatest tips for better productivity. We’ll count them down beginning with number 12!

#12 – Where’s my AutoCAD?

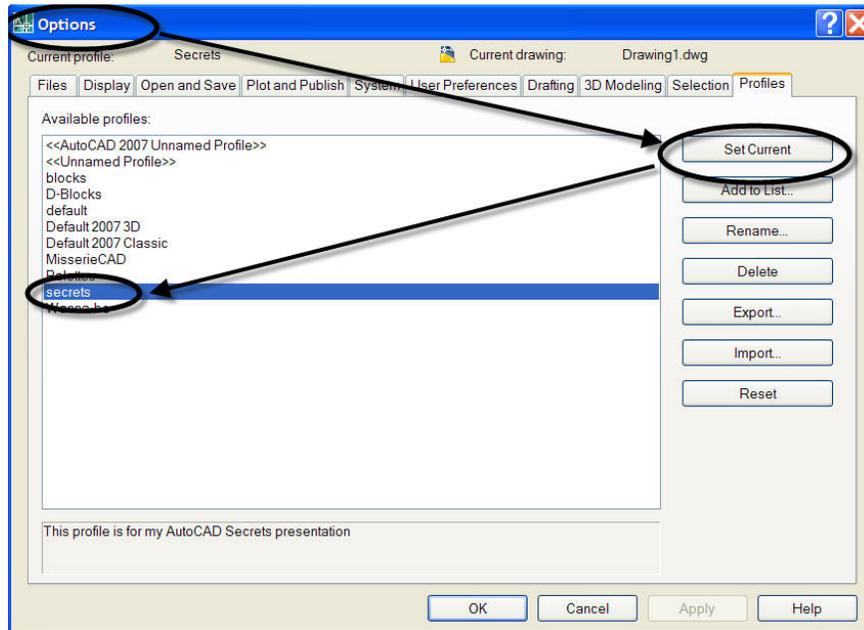
Use profiles, workspaces and scripts

Do you ever get the feeling that AutoCAD has a mind of its own? Have you ever started AutoCAD and found that not only does it not look right, but system and drawing variables have also been changed from the way you normally work? So how do you fix this annoying little problem and rein your AutoCAD back under control?

Use profiles

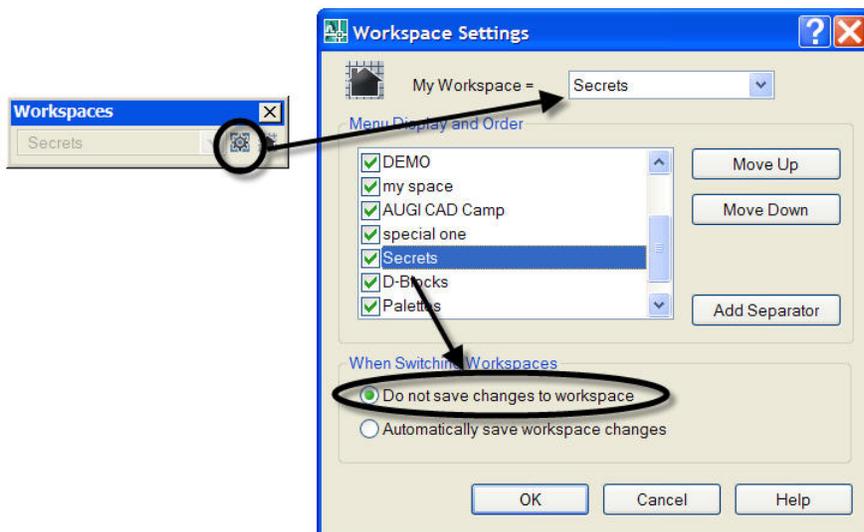
Profiles are added and controlled using the Profiles tab in the Options dialog box. From here you can create and save your drawing environment settings as a profile. If you share your workstation with other users who use the same login name, you can restore your options by making the profile current. You can also create and save profiles to use with different projects or for different tasks.

A profile collects many of your user options, drafting settings, paths, and values. Profiles are automatically updated each time you make a change to an option, setting, or other value. This also saves toolbar information as well such as what toolbars are open, floating or docked. The profile information is stored in the system registry and can be saved to a text file (an ARG file). AutoCAD organizes essential data and maintains changes in the registry as necessary.



Use workspaces

While workspaces change the display of your drawing environment, in much the way that profiles do, workspaces are not the same as profiles. Workspaces control the display of menus, toolbars and dockable windows in the drawing area. When you use or switch to a workspace, you change the display of your drawing area. You can easily switch to another workspace within a drawing session from the Workspaces toolbar. You can also manage your workspaces to switch between display environments.





When you make changes to the drawing display, the changes are stored in your profile and are displayed the next time you launch the program, regardless of your workspace settings. The profile changes are not automatically saved to a workspace unless you select the Automatically Save Workspace Changes option in the Workspace Settings dialog box.

Use scripts

There are more than 897 drawing variables, system variables and commands in AutoCAD 2008. This means that there are more than 897 individual settings, over 70 of which are just for dimensioning. What do you do if AutoCAD system or drawing variables have been changed? Running a script routine is one of the easiest things to do, but seems to be one of those mysterious things that people find difficult. A script file is very simple, yet is a potentially very powerful customizing tool.

A script routine is similar to a macro or batch routine. Ever run the macro recorder while in Microsoft® Word® or Excel®? A script executes a series of commands that are inside an ASCII text file with a file extension .SCR. The script file can be generated using Microsoft® Notepad or another text editor, though you can use Microsoft® Word® if you can remember to save the file as Plain ASCII Text. All you need to know is the correct command sequence. The easiest way to write a script is to execute all the commands or variable settings you wish to set. Then cut and paste your F2 text window into Notepad. You'll need to do a little cleanup. Just remember each space and each line is a "return" from the AutoCAD command prompt.

Here's one that I use just in case someone has changed the grips settings and made monkey grips in AutoCAD 2005.

```
GRIPBLOCK 0  
GRIPCOLOR 5  
GRIPHOT 1  
GRIPHOVER 3  
GRIPOBJLIMIT 100  
GRIPS 1  
GRIPSIZE 7  
GRIPTIPS 1
```

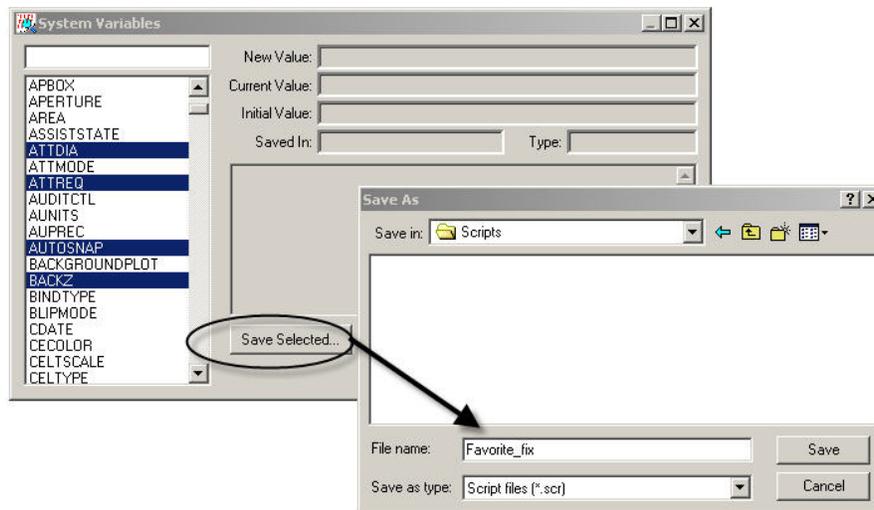
In AutoCAD 2008, it would look like this:

```
BGRIPOBJCOLOR "141"  
BGRIPOBJSIZE 8  
DYNDIGRIP 31  
GRIPBLOCK 0  
GRIPCOLOR 160  
GRIPDYNCOLOR 140  
GRIPHOT 1  
GRIPHOVER 3  
GRIPOBJLIMIT 100  
GRIPS 1  
GRIPSIZE 5  
GRIPTIPS 1
```

SECRET REVEALED: If you cut and paste your system variable settings from your AutoCAD Text window into Microsoft Word, you can do an Edit>Replace with a ^W for all white spaces (find) and replace with a <space> to clean up your custom script file with just two clicks.

SECRET REVEALED: System variables and their settings vary from release to release. It's always important to use variables from your currently working and active AutoCAD desktop.

If you want to get all the drawing and system variables or just a select few variables for AutoCAD 2004, use the editor in the Express Tools. This is the fastest way to create an editable script file. Remember that Express Tools are NOT supported in AutoCAD 2005 and AutoCAD 2006. That means Express Tools do not gather the new system variables when you use this creation tool. This problem has been fixed in AutoCAD 2007 and 2008 express tools.



Warning: When using AutoCAD 2005 or AutoCAD 2004, the System Variables editor under Express Tools only gathers variables up to and including AutoCAD 2004!

SECRET REVEALED: But you can fix your Express Tools for AutoCAD 2005 and AutoCAD 2006 by downloading an updated version of the sysvdlg.dat file from either www.autodesk.com or www.augi.com. Once you copy this file, replace the existing one in your Express Tools support folder. This will get your system variable editor updated. Cool!

#11 – Take it from the start – use startup switches!

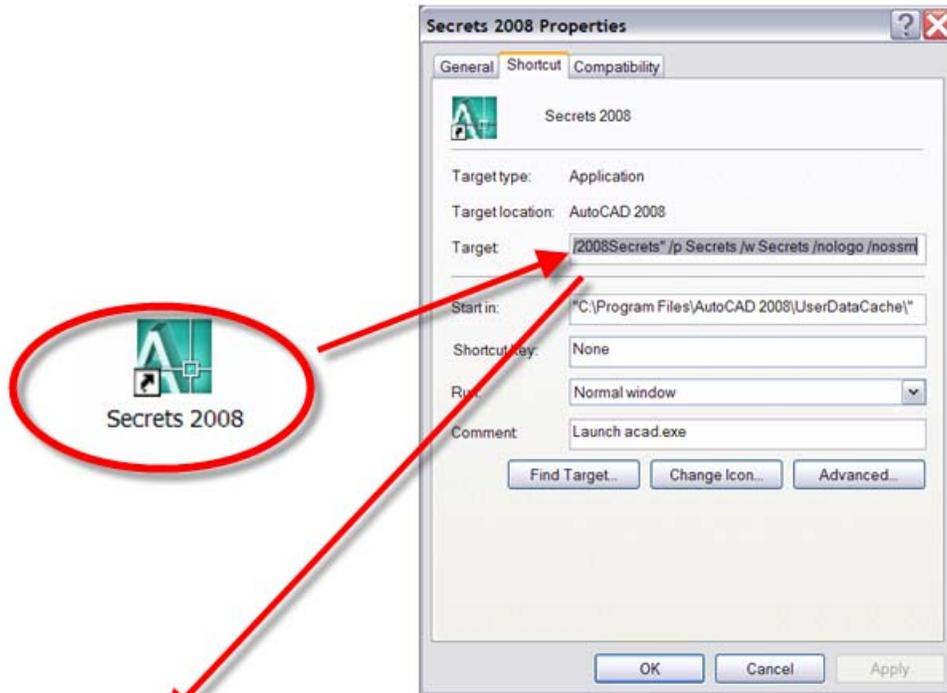
Use startup or command switches

Let's set our profile and workspace and run our favorite script file right from the desktop. This will not only save you time but it ensures AutoCAD starts exactly the way you want every time. Startup or command switches get AutoCAD set before you even start. Startup switches are added in the "Target" of your desktop icon. Here are the ones I use:

Remove startup screen in desktop /nologo

Every time AutoCAD is started, the AutoCAD logo makes a brief appearance. A quick way to make AutoCAD load faster is to remove the AutoCAD logo startup screen. Right-click once on the AutoCAD desktop icon and select Properties. Once the AutoCAD Desktop Properties dialog

box opens, put your cursor in the Target display and at the end of the default text that is already there, outside the quotation marks, type “/nologo” with a space in front of it. This will prevent the logo from appearing on the startup.



"C:\Program Files\AutoCAD 2008\acad.exe" /b "C:/AUGI_CAD_Camps/AutoCAD_2008/SECRETS/SCRIPTS/2008Secrets" /p Secrets /w Secrets /nologo /nossm

Add profile in startup Target: /p <nameofprofile>

By starting with a profile you are setting up your AutoCAD desktop for the task at hand. Starting with a profile presets many of the AutoCAD system settings and makes your desktop ready. Once inside AutoCAD, right-click in the middle of the screen and select Properties. Then choose the Profiles tab. Create as many profiles as necessary for each occurrence that you might need. Exit AutoCAD and right-click once on the AutoCAD desktop icon and select Properties. Once the AutoCAD Desktop Properties dialog box opens, put your cursor in the Target display. At the end of the default text that is already there, outside the quotation marks, type “/p” with a space in front of it and then add the name of the profile. Copy your desktop icon, rename to the new profile name, and then change the /p name.

Add workspace in startup Target: /w <nameofworkspace>

By starting with a workspace you are setting up your AutoCAD with the correct display of menus, toolbars and dockable windows in the drawing area. Setting a workspace is similar to creating a profile. Once inside AutoCAD, open the Workspace Settings dialog box as described previously. Create your workspaces and ensure you toggle “Do not save changes to workspace.” This ensures the display will always return to your preferred default. Exit AutoCAD and right-click once on the AutoCAD desktop icon and select Properties. Once the AutoCAD Desktop Properties dialog box opens, put your cursor in the Target display. At the end of the default text that is already there, outside the quotation marks, type “/w” with a space in front of it and then add the name of the profile. Copy your desktop icon using the name of the workspace.



Add a script to startup Target /b <c:\scriptnameandpath>

Let's remove the splash screen logo, set our profile, take that system variable script, and reset those troublesome variables before we start our drawing session.

Remove Sheet Set Manager by adding startup Target /nossm

Hey, we don't all use the Sheet Set Manager, so why have it appear at startup if you don't need it? What this switch does is override your setting in your workspace.

All available startup switches

/B Script name
/T Template file name
/C Hardware configuration folder
/V View name
/LD ARX or DBX application
/S Support folder
/LD ARX or DBX application
/R Default system pointing device
/SET Loads sheet set
/NOLOGO No AutoCAD logo screen
/P Profile
/NOHARDWARE Disables hardware acceleration
/NOSSM No Sheet Set Manager
/SET Sheet Set
/W Workspace
/PL Background plotting/publishing

#10 – Let's get visual!

Give your drawings that hand-drawn look. Forget about nicely snapped endpoints. This new tool that was added in AutoCAD 2007 allows you to use a slider to adjust the overhang of endpoints and intersections within the display.

When you open the Dashboard palette, you'll find the Visual Style control panel, one of seven panels. If the panel is not open, simply right click on the title bar of the Dashboard to turn the panels on or off.

The Dashboard was incorporated into AutoCAD 2007 to give easier access and coordination to commands for creating 3D models. But there are many features within the Dashboard that can be used for 2D drawings as well.

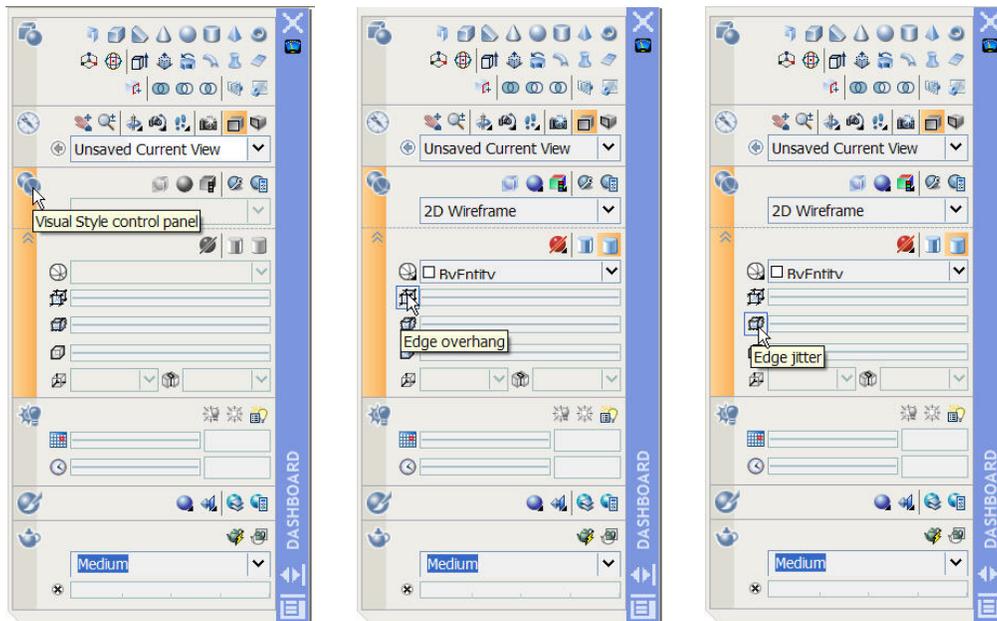
Most people think of using the Visual Style Control Panel on the Dashboard as simply a way to control a preview of settings that are in turn responsible for controlling the display of edges and shading in the viewport for a 3D Model. Well, the first time I saw Edge overhang and Edge jitter, I thought of a LISP routine back in the 80's called skwiggle or twizler or something like that. This particular routine took nicely refined, very precise-looking plots and made them look more human again. These are my favorites.

Edge overhang

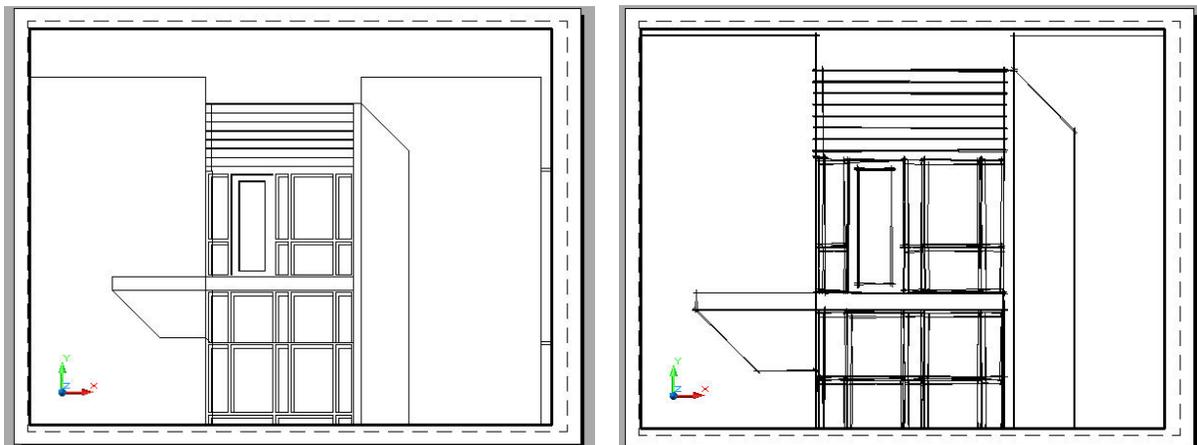
This creates the illusion that lines overhang and are not object snapped to endpoints and intersections.

Edge jitter

This gives new meaning to the coffee shake. It also controls the display with a slider to help give your drawing that hand-drafted look.

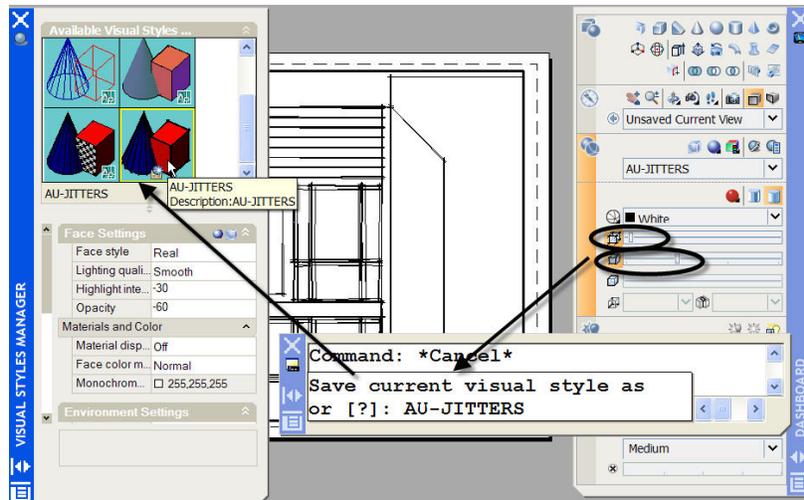


When you adjust the sliders, you are essentially creating a visual style override. A default AutoCAD drawing has 5 visual styles that allow you to transition from a 2D wireframe up to 3D realistic settings. The settings that you adjust in the Dashboard dynamically change the system and drawing variables in the background. Let's take a plain old 2D elevation view of a building (below, left) that we would typically print. Add some Edge overhang and Edge jitter and you've got a hand-drafted look on the right.



Now here's the problem. When you play with the settings on the Dashboard, you get to see the settings adjust on the drawing instantly. Yet none of these settings are saved into the visual styles within the drawing. Worst of all, you can't save them to be used in future drawings either.

SECRET REVEALED: You can save a new visual effect from the Dashboard palette into the Visual Styles Manager palette using the VSSAVE command. You must be in model space to save a visual style. If you enter a name that is already in use for a visual style, the original style will be replaced. If you enter a new name, it will create a new visual style.



SUPER SECRET REVEALED: Once you've saved the settings of your 2D visual effect as a new visual style within your drawing, you'll want to put it on a Tool Palette so you can access it and manage it there to be used in other drawings. From the Visual Style Manager, simply right click on the icon that represents the visual style to export it to the active tool palette. You can also drag and drop it there as well.

#9 – Seeing is believing if you can find what you're looking for

What is the number one command used by AutoCAD users?

Over the years I have found that the thousands of AutoCAD users I've trained are using Zoom and Pan more than any other command. Why? Because they are constantly looking for the things they need to edit.

Get the best performance from your AutoCAD session by adjusting real-time Pan and Zoom with IntelliMouse® inside AutoCAD and on your PC. Zoom in a drawing without using Autodesk software commands. Setting to optimize your mouse are:

- ZOOMFACTOR
- MBUTTONPAN
- ZOOMWHEEL

ZOOMFACTOR



To adjust the zoom percentage, change the value of the ZOOMFACTOR system variable. The initial value of ZOOMFACTOR is 10. You can enter an integer value for ZOOMFACTOR in the range 3-100. The value you enter represents the percentage change in zoom level for each increment of wheel rotation. For example, when ZOOMFACTOR is set to 10, each increment of wheel rotation changes the zoom level by 10 percent.

MBUTTONPAN

To ensure the pan feature works when you depress the wheel, make sure the MBUTTONPAN system variable is set to one (1). When MBUTTONPAN is set to zero (0) you'll get the Object Snap popup menu.

ZOOMWHEEL

Toggles the direction of transparent zoom operations when you scroll the middle mouse wheel. Set to zero (0) and the mouse when moves the wheel forward zooms in; moving wheel backwards zooms out. Set to one (1) and the mouse when moves the wheel forward zooms out; moving wheel backwards zooms in.

Another way to adjust the scroll value is in your Windows® Control Panel:

1. In Windows Control Panel, double-click the Mouse program icon.
2. In the Mouse Properties dialog box, choose the Wheel tab.
3. In the Wheel area, choose Settings.
4. In the Settings for Wheel dialog box, change the settings for scrolling (you can also change the wheel direction in this dialog).
5. Choose OK to close the Settings for Wheel dialog box.
6. Choose Apply, then OK to close the Mouse Properties dialog box.

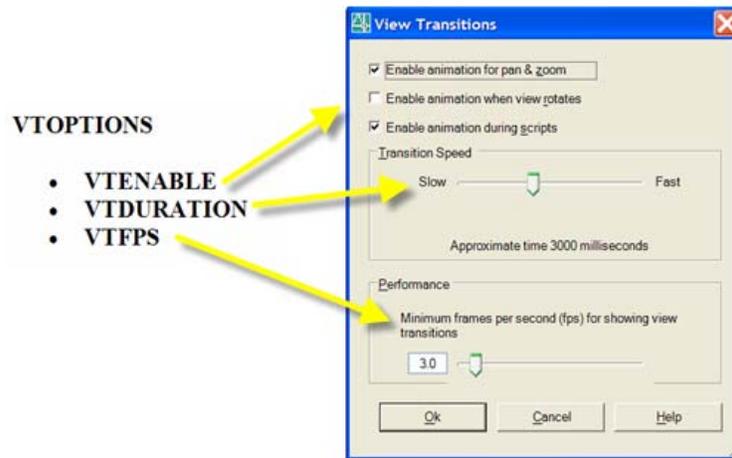
More Intellitips

If you are using an Intellimouse, you can Zoom and Pan using the wheel. Roll the wheel away from you to zoom in; roll the wheel towards you to zoom out. When you zoom in and out, AutoCAD zooms in and out around the location of the cursor. Press the wheel down and move the mouse to pan. Double-click on the wheel to zoom extents.

Hold the CTRL button on the keyboard while you hold down the wheel and move the mouse to use another mode of panning called Joystick Pan.

VT options

The new View Transitions feature was added in AutoCAD 2007, which lets you pan and zoom at varying speeds — thus providing the Matrix or Neo effect in AutoCAD!



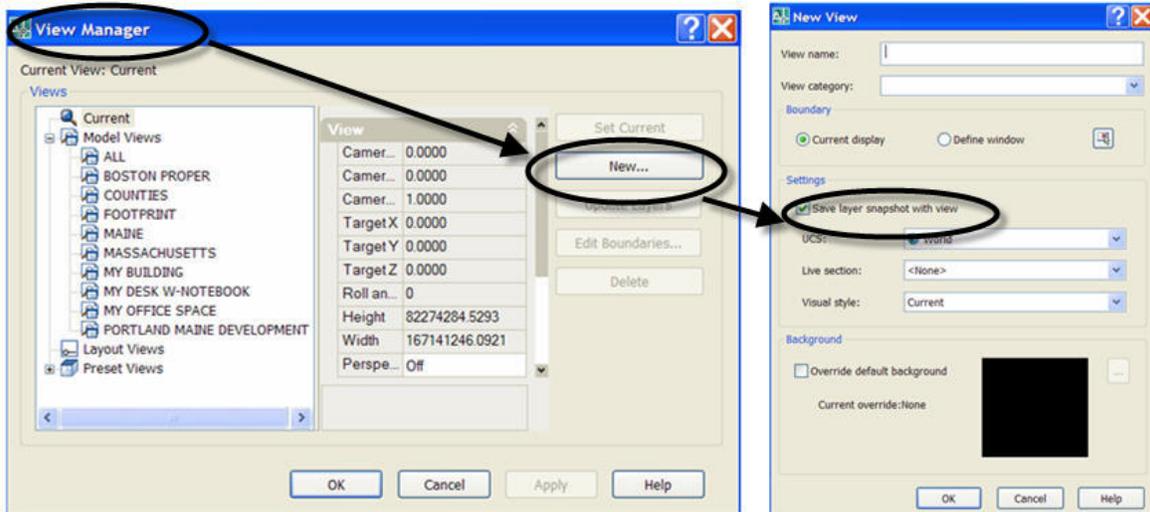
Switching between zoom and pan

In either Zoom Realtime or Pan Realtime, you can right-click to bring up a shortcut menu with viewing options. Pick the option you want from the menu and continue with another viewing option. Zoom Window in this option requires that you hold down the pick button while you draw the window. Zoom Original returns the display to the view that was current when the Zoom/Pan Realtime command was started.

Use named views

Saving your zoom window with a name – because there is more to viewing your drawing than zooming and panning.

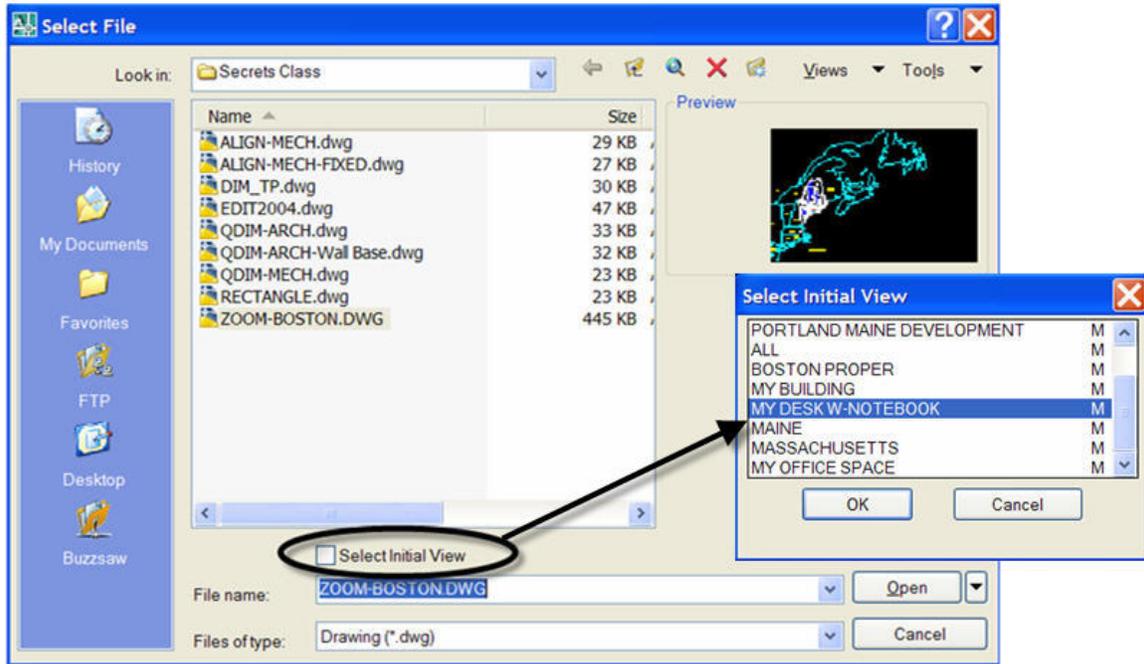
You can create named views or essentially save your current display window with a name so you can recall it at anytime. The name of a view can be up to 255 characters long and contain letters and digits, the special characters dollar sign (\$), hyphen (-), and underscore (_).



If you want to save only part of the current view, select Define Window. Then click the Define Window button to use the pointing device to specify opposite corners of the view. Otherwise, select Current Display.



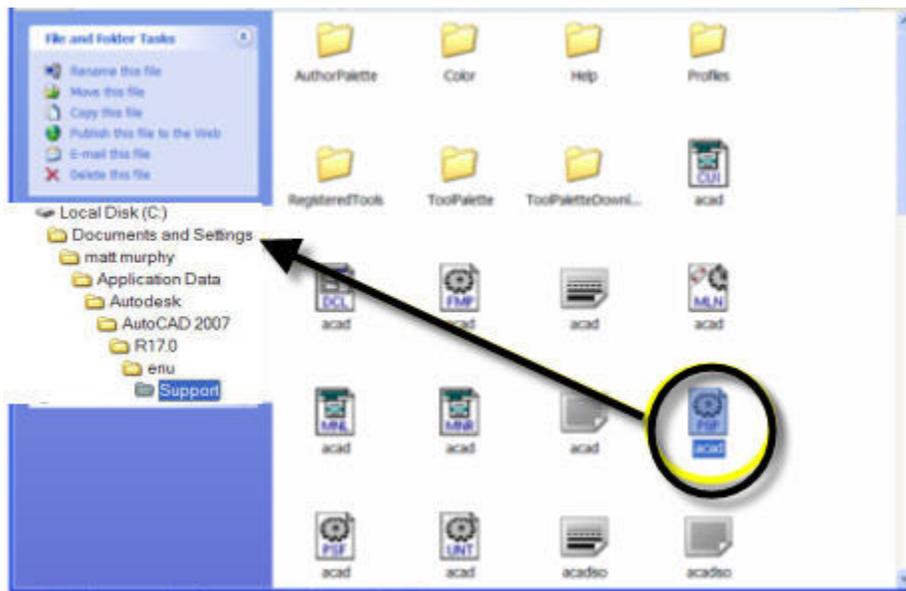
Note that we can also save a layer snapshot. A layer snapshot saves the current layer state so you don't have to deal with setting layers anymore. That will save you clicks and picks too!



#8 – Alias who? The abbreviated short-cut to commands

Command aliases

Fewer clicks and picks is one way to productivity but what about eliminating the number of keystrokes you execute? Rather than typing the entire command name, you can use abbreviations called command aliases. Many AutoCAD commands are already programmed for three or fewer keystrokes.



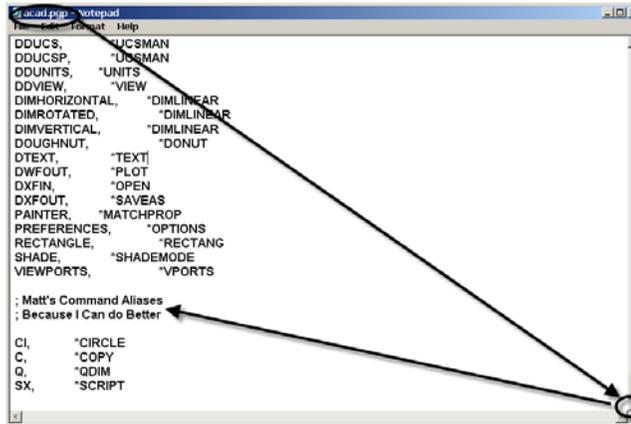
If you want to add aliases, this is done by editing the text file acad.pgp, which stands for the **ProGram Parameters** file. The acad.pgp file can be found in the Support directory of AutoCAD's program placement (for AutoCAD 2002: C:\Program Files\Autodesk\AutoCAD 2002\Support\acad.pgp) and (for AutoCAD 2004 and later: C:\Documents and Settings\LOGIN NAME\Application Data\Autodesk\AutoCAD 200X\RXX.X\enu\Support\acad.pgp). Please note that since AutoCAD 2004 there is a hidden support folder for each user login. This was done to support roaming profiles in the Windows 2000 and XP environments.

Second, read through for any commands that you may wish to customize that are present in the file already. There might be an alias already. Another reason is so that you don't take a short key assigned to another command or vice versa. For instance, many people like to type "C" for COPY rather than "C" for CIRCLE. Adding your command alias will overwrite any previously assigned key.

Add to the .PGP file – do NOT modify existing alias!

Add your command aliases to the bottom of the ppg file. The last alias read is the one that works. Also if you would like to return to the default aliases you only have to delete the ones you created at the bottom of the file.

This whole idea behind this file is to allow the user to take plain commands and reduce the number of keystrokes necessary to execute them. It is not intended to combine several commands together or to support LISP files or other programming features.



Don't forget to use Reinit to reset the acad.pgp

When you modify this file while AutoCAD is still open and running, the changes will not take effect until you run Reinit from the command line. This is one of those little secrets that many people forget to tell you about editing the acad.pgp file. In the old days of AutoCAD Release 9 and prior we had to shut AutoCAD down and restart. That's because this file is only read on the initial start-up of AutoCAD.

SECRET REVEALED: Do NOT use the Express Tool editor to change the PGP file as it does not map the correct path to the user login PGP file in AutoCAD 2004. I recommend to always use the Program Parameter Editor under the Tools pull-down menu.

SECRET REVEALED: Make your additions to the program parameters file at the bottom of the file. Do NOT change existing command aliases. This way you can easily remove any customization. The last alias read is the one that is in effect. The AutoCAD 2006 and higher PGP file there is a recommendation to do this. That's provided you read to the bottom of the file.

#7 – The keys to acceleration and control

Windows® keys

Use arrow keys to cycle through commands or coordinates that have been previously used.

Windows+E	Explorer
Windows+F	Search
CTRL+N	New
CTRL+O	Open
CTRL+P	Print
CTRL+S	Save
CTRL+V	Paste from Clipboard
CTRL+X	Cut to Clipboard
CTRL+Y	Redo
CTRL+Z	Undo
Windows+R	Run
Windows+M	Minimize your open windows

More keys to control

People either love or hate control keys but control freaks usually have their house in order. The importance of control keys is indicated by the presence of two of them on the keyboard!

The following is a list of Control Keys defined in Windows® and in AutoCAD®.

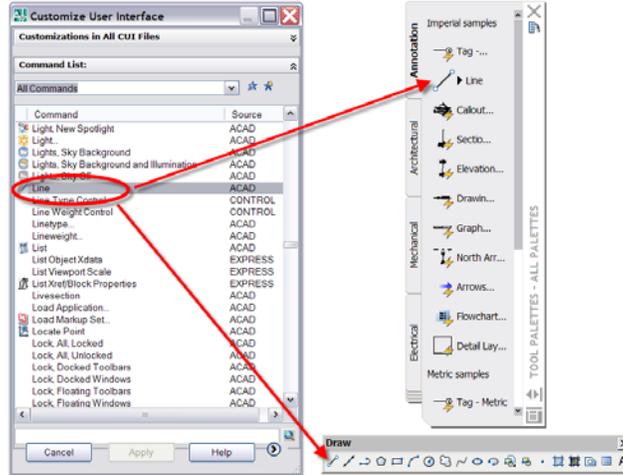


CTRL+TAB	Cycles through open drawings – forwards
CTRL+SHIFT+TAB	Cycles through open drawings – backwards
CTRL+1	Properties
CTRL+2	AutoCAD DesignCenter
CTRL+3	Tool Palette Window
CTRL+6	dbConnect
CTRL+0	Cleanscreen
CTRL+A	Select all
CTRL+SHIFT+A	Toggles Group*
CTRL+B	Toggles Snap
CTRL+C	Copy to Clipboard
CTRL+D	Toggles coordinate display
CTRL+E	Cycles through isometric planes
CTRL+F	Toggles running Object Snap
CTRL+G	Toggles Grid
*CTRL+H	Toggles Group
CTRL+J	Executes last command
CTRL+K	Insert hyperlink
CTRL+L	Toggles Ortho on/off
CTRL+T	Toggles Tablet mode

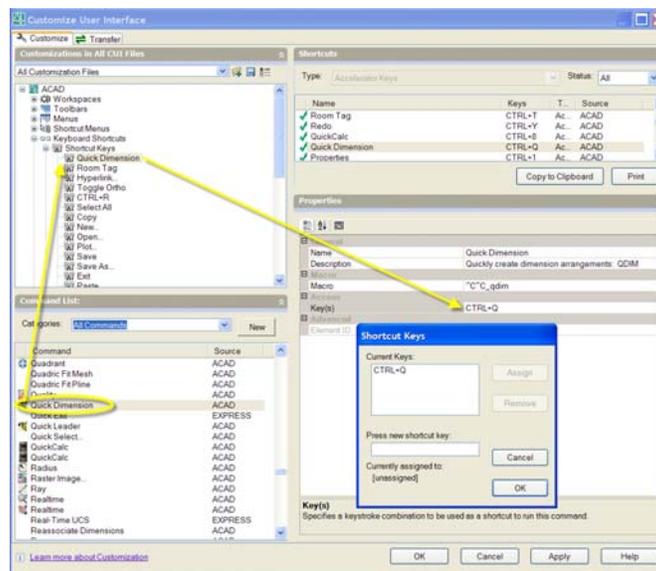
AutoCAD 2005 and earlier: If you want to make your own keyboard shortcuts, type “customize” in the command line, right-click on any toolbar button or from the “Tools” pull-down menu choose “customize” and choose “keyboard”. Pick a Category such as Dimension. Pick a command such as QDIM. No current keys are assigned, so you can pick your own. In “Press New Shortcut Key:” assign it a shortcut such as “CTRL+Q” or add multiple keys. You can also use unassigned accelerator keys like F12.

AutoCAD 2007: If you want to make your own keyboard shortcuts, type “customize” in the command line and right-click on any toolbar button or from the “Tools” pull-down menu. Choose “customize” and choose “Interface.” Pick your favorite command from the “command list” inside the Custom User Interface (CUI). Then drag and drop the command into the “shortcut key.” Once you place your shortcut into the CUI, you can drag it and resequence the list. Pick on the command in the “shortcut key” section, and you’ll see the properties display. Choose “Keys” and assign your favorite keystroke.

AutoCAD 2008: If you type “customize” in the command line you’ll get palette groups and if you right-click on any toolbar button and choose “customize” you’ll get the mini-CUI for drag and drop commands to toolbars and tool palettes but NOT to the Dashboard.

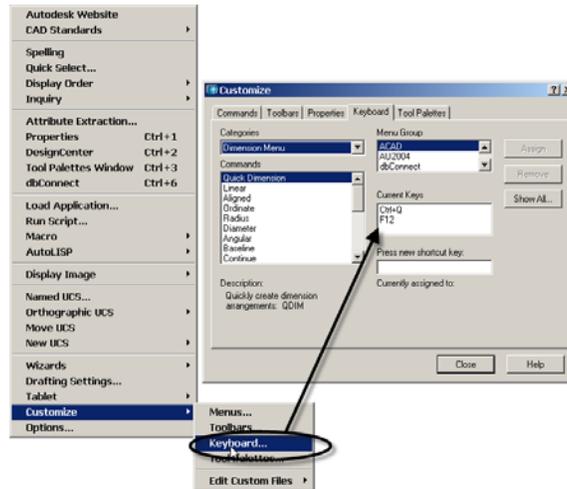


SECRET REVEALED: For AutoCAD 2006, AutoCAD 2007 and AutoCAD 2008 the accelerator keys and shortcut keys are kept in the full ACAD.CUI file.



SECRET REVEALED: Most people try to choose keystrokes with semantic meaning, when in fact they only need to make sense to yourself. For example, left-mousers should use right-side keys, and right-mousers should use left-side keys. This way, there is no hand-crossing or awkward reaching across the keyboard.

SECRET REVEALED: For AutoCAD 2005 and earlier the accelerator keys and shortcut keys are kept in the ACAD.mnc file.



SECRET REVEALED: When you make your own keys, the info is stored in ACAD.MNS file (Menu Source File) (for AutoCAD 2002: C:\Program Files\Autodesk\AutoCAD 2002\Support\ACAD.MNS) and (for AutoCAD 2004 or 2005: C:\Documents and Settings\LOGIN NAME\Application Data\Autodesk\AutoCAD 200X\R16.X\enu\Support\ACAD.MNS). Please note that for AutoCAD 2004 users this is a hidden support folder for each user login.

#6 – Custom commands and macro mayhem

Customize your UI

Making custom commands is now as easy as drag and drop. All your customization is now done inside the CUI. Simply drag and drop your command from the command list into the customize menu. Click on the command within the CUI menu and you'll see the property window open. Now you can write your own command sequence as a macro.

A macro is simply a series of commands and steps that AutoCAD will perform for you. I've listed the most common codes. Simply map out the steps you find yourself doing repetitively everyday. Using the following command codes you can write your own custom command. This will save you clicks and picks by reducing those repetitive tasks as AutoCAD will now do those steps for you.

Writing your own command sequence

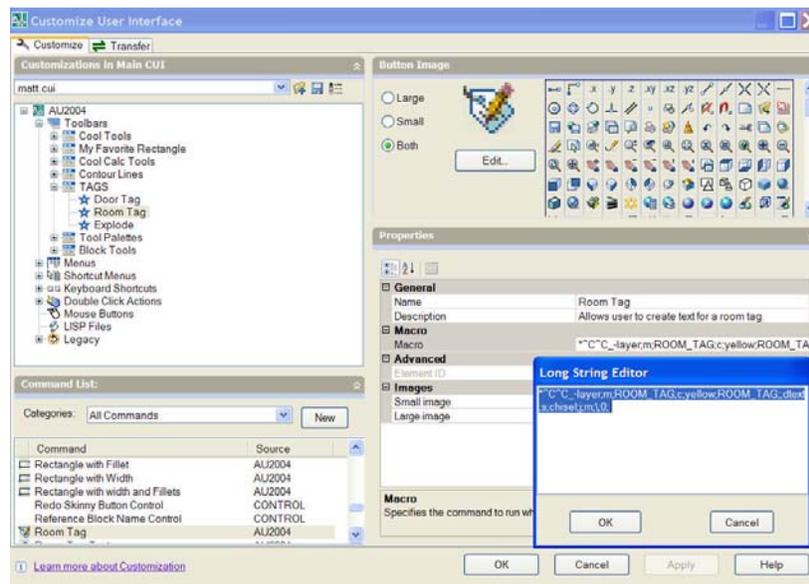
Use the following command codes to automate existing commands into custom commands

- **^c** executes a cancel
- **** pauses for user input
- ***** preceding string repeats command string
- ***** within the string sets an environment variable
- **_** native English
- **-** suppresses any dialog box
- **;** executes an "Enter"

If you wanted to draw a rectangle with a fillet of 2 and a width of .5 it would look like this:

^C^C_rectang;fillet;2;width;.5

Create a new command, menu or toolbar and write your macro in the Macro line under properties.



Here's one for you. This string will allow you to place single-line text on a layer called "ROOM_TAG" that is placed using the CHISEL text style, justified by middle with a height of 12 units. This string also creates the layer and sets the color of layer text to yellow even if the layer doesn't exist. Once complete, the command repeats until you ESC.

Note: This string does require that the Text Style "CHISEL" exists in the current drawing. Here is the string:

```
*^C^C_layer;m;ROOM_TAG;c;yellow;ROOM_TAG;;dtext;s;chisel;j;m;\;0;
```

#5 – Use tool palettes for maintaining blocks and standards – making palatable tools

The power of content

Tool Palettes don't make you go out of your way to create content, although you can go out of AutoCAD to find it. This technique of managing tools and content is new to most AutoCAD users. Tool Palettes allow you to tap into the content that has already been established. You'll need to think out of the AutoCAD box to understand the power of using this new style of interface. Below are many of the ways to populate your Tool Palettes with Content Tools.

Drag and drop

A finished drawing contains the guidelines and company standards that were used to create it. So the objects in the drawing can be used to build new tools to help adhere to these standards for future projects. You can create block tools from these drawings.

DesignCenter (ADC)

Now let's go back to AutoCAD 2000 when Autodesk introduced DesignCenter. Back then, AutoCAD Design Center (ADC) added a way to re-use information from existing drawings. However, it was a poor way to ensure that drawing standards were being used. DesignCenter allows you to steal or cannibalize content from one drawing into another. Although powerful, it

gives you almost no control. For example, blocks are placed on the current layer only. Block tools give you much more control for consistency and maintaining standards.

Creating a block tool

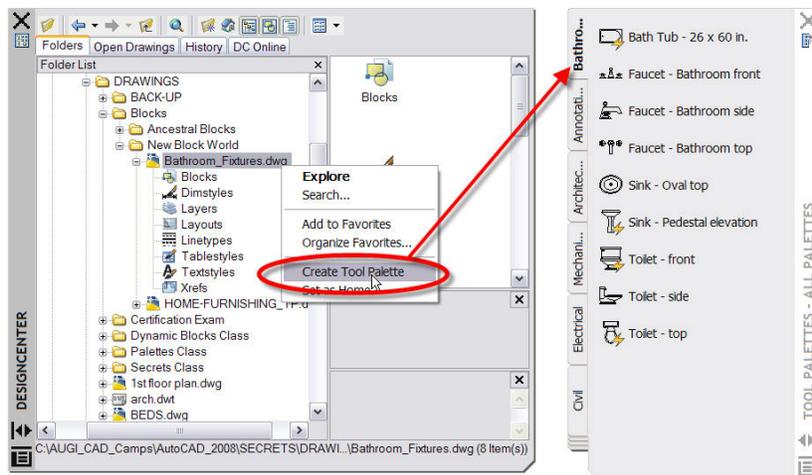
Blocks are by far the most popular method of customizing AutoCAD and building reusable content. They are probably the most common element that you might find on a Tool Palette due to the flexibility of the Block tool.

The power of the Tool Palettes' Block tool allows you to assign properties such as layer, color, etc. to the blocks on a palette. There are even more powerful properties of the Block tool that allow you to set rotation and scale and even whether the block should be exploded or not when it is inserted into a drawing.

The procedure for creating Block tools from an entire drawing is easy. Right-click on any drawing file found in DesignCenter and choose Create Tool Palette. A new palette will be made from all the Blocks within the drawing with the name of the drawing as the name of the palette.

SECRET REVEALED: Make sure you use the purge command three times on any drawing you intend to create a Tool Palette from, because anonymous blocks will be added to the palette with this technique.

You can also use this exact same technique for your ancestral block libraries that exist on your network drive. Simply navigate to the folder in DesignCenter, right-click on the folder and choose Create Tool Palette.



SECRET REVEALED: You can add an Image tool by dragging an image file from DesignCenter onto the Tool Palette.

SUPER SECRET REVEALED: You can also change the scale and rotation of a block tool without exploding or redefining the Block. Right-click on the Block Tool and choose Properties.

Windows and Internet Explorer

Autodesk enabled the use of dragging and dropping files directly from Windows Explorer onto a Tool Palette. This works in a similar way to dragging content from the DesignCenter to a Tool

Palette. Some of the file types that can be dragged to the Tool Palette from Windows Explorer are drawing files and image files.

Sharing your blocks on Tool Palettes

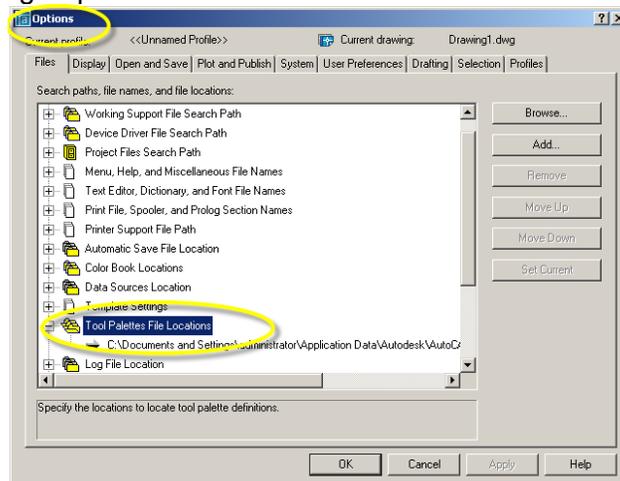
Tool Palette groups

Tool Palette groups are a way to simultaneously control the display of certain Tool Palettes. You might have a Tool Palette for electrical and another for plumbing when creating building plans. Maintaining organization used to be difficult as all palettes were open and active at once. But this organization problem has been resolved with the Group feature when customizing. In AutoCAD 2004 or AutoCAD 2005, by default, all Palettes are active.

There are also some problems with the group feature in AutoCAD 2006 and earlier. Groups are not easily shareable, as they are stored with each user's AutoCAD profile. But I have a solution for you!

Managing Tool Palettes with paths

Just like managing your support path statements in AutoCAD, you can set a Tool Palette path location and not use the group feature.



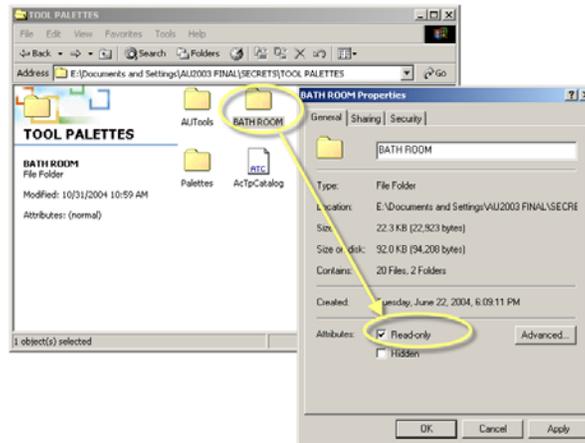
SUPER SECRET REVEALED: You can also create a blank palette window with no tools by setting an empty path or a path that does not exist. AutoCAD will automatically build the necessary XML content as an ATP file with support folder locations for images.

Note: The technique listed here is for “vanilla” AutoCAD only. Architectural Desktop (ADT) and Autodesk Building Systems (ABS) do not have an Import or Export option like the ones found in AutoCAD 2004 and 2005.

Note: It might seem obvious but it's worth saying: Make sure the path locations for the source files exist in your support path locations under Options... Files.

Protecting your tools

Once you have created your content and set your palettes in a shared folder, you'll want to protect them from being modified. Network drives can be set to read only and local drives can be set by right-clicking on the file in Windows Explorer and setting the properties of the folder to read only.



The next time you restart AutoCAD and open the Tool Palette Windows, you'll see a small padlock in the lower corner.

SECRET REVEALED: Locking the Tool Palette folder only prevents the content from being changed. Individuals who have access to the folder that contains the definition will still have the ability to rearrange the tools on the palette as well as control the appearance of the palette.

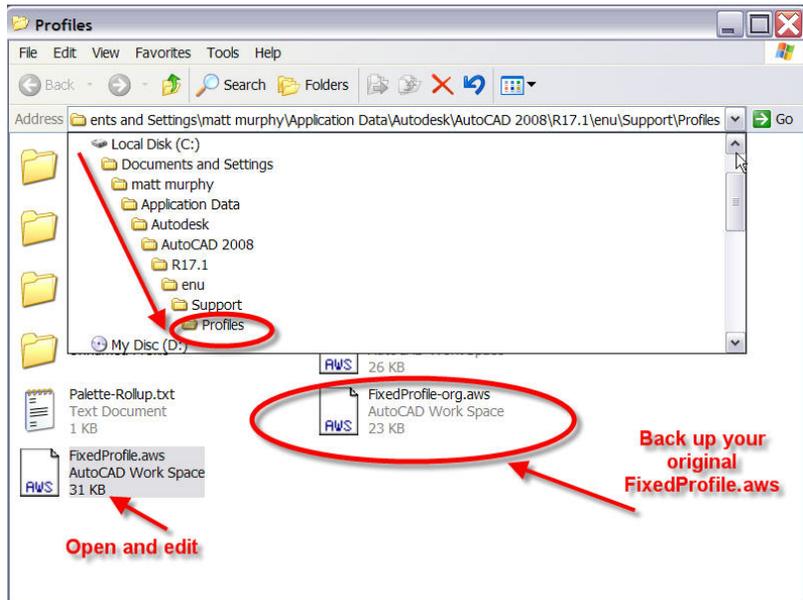
SECRET REVEALED: When moving ATC files and folders to new locations, tools that appear in the palette will appear in the order they were created.

Controlling Palette rollup

Speaking of the fixed profile, everywhere I go, someone will ask me if there is a system variable that controls the rollup and rollout speed of not only Tool Palettes but the Property Palette and all other AutoCAD palettes when you “Anchor Left <” or “Anchor Right >”. The answer is no, there is no system, drawing or environment variable to control this, but you can modify the fixed profile to get a slower or faster speed.

“The timer settings for rollup, rollout, the new “roll out then rollup” (called “holdopen”) are **stored in the fixed profile XML file**. By default, these settings are not specified and the programmed defaults are used. You can add these settings to the file by editing it to provide non-default values for each of these behaviors.

- 1- To make the changes, first back up the “FixedProfile.aws” file.

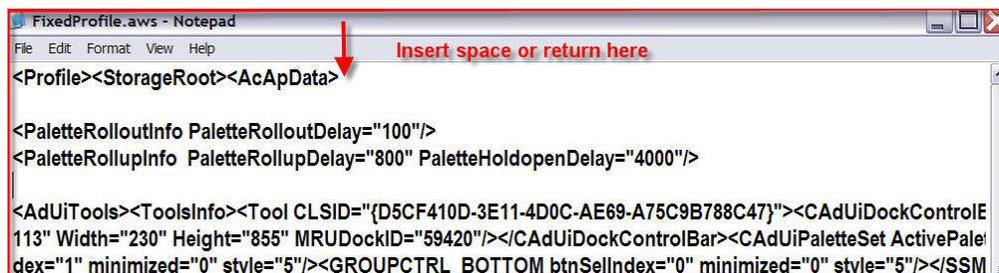


- 2- Open the FixedProfile.aws in Microsoft Notepad or any text editor. The file will be hard to read because it is not well formatted, but thankfully the changes to make are near the top of the file.

Search for the word “ **<AcApData** ” (should be right at the top), and immediately after this string paste in the following:

```
<PaletteRolloutInfo PaletteRolloutDelay="100"/>  
<PaletteRollupInfo PaletteRollupDelay="800" PaletteHoldopenDelay="4000"/>
```

It's OK to insert carriage returns or additional white space in this file, but just be sure to not introduce any returns/spaces in the middle of a word (like "PaletteRolloutDelay" or value). The key here is only separate >< brackets when they are nose-to-nose.



Each of the values is specified in milliseconds. In the sample above, the values provided are the same as the defaults (1/10th second rollout delay, 8/10th second rollup delay, 4 second holdopen delay). These changes are global and affect all palettes.

So to change the holdopen delay to 3 seconds use:

```
<PaletteRollupInfo PaletteRollupDelay="800" PaletteHoldopenDelay="3000"/>
```

You will need to restart AutoCAD for these changes to take effect.



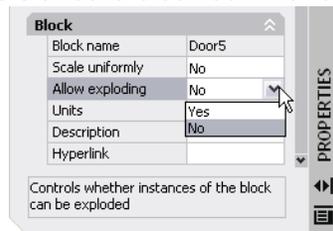
SECRET REVEALED: Make sure you exit out of AutoCAD first before attempting to edit the FixedProfile.aws for two reasons. First, AutoCAD will only read this file upon start-up. Second, AutoCAD will rewrite this file upon close with all current profile settings. Any manual edits will get overwritten if you do not close AutoCAD first.

FINAL SECRET REVEALED: Changes that you make to the Palette speeds will affect all anchored palettes not just Tool Palettes! That's wicked cool!

Special thanks to John Beltran of the AutoCAD Software Development Team for revealing the secret on how to change the speed of the Palette Rollout and Rollup.

Finally, don't leave your blocks open for modification or exploding.

SUPER SECRET REVEALED: Lock your block! A new option in the Properties window enables you to prevent someone from exploding the block references. To access this option, open your block definition in the block editor. Use the Properties window without any objects selected. This option can also be selected from the standard block command.



#4 – Eliminate construction lines

There is no greater waste of time and effort than to use construction lines. You can eliminate construction lines using any of the following techniques.

Direct distance entry

With direct distance entry, you can quickly specify a point relative to the last point you entered. At any AutoCAD prompt for a point location, you move the cursor first to specify the direction, and then enter a numeric distance.

Tracking at angles

Polar Tracking restricts cursor movement to specified angles. When increment angles are set, the cursor will move at all multiples of that angle. You can enter any angle, or select a common angle of 90, 45, 30, 22.5, 18, 15, 10, and 5 degrees from the list. This setting is also controlled by the POLARANG system variable.

Additional angles

Makes any additional angles in the list available for polar tracking. The Additional Angles check box is also controlled by the POLARMODE system variable. Additional angles are NOT incremental. You can add a maximum of 10 additional angles.

Polar Snap

Like using Grid/Snap, Polar Snap will restrict cursor movement to specified increments but only along a polar angle.



Temporary Tracking Points and From Object Snaps

Temporary Tracking Points and From Object Snaps allow you to specify a distance and direction away from existing objects whenever AutoCAD asks you to select a point. When using the From method with Object Snaps, you can use absolute coordinates or Object Snaps to set temporary references. Once your “from” point is established, you can specify relative coordinates for locating and specifying subsequent points.

Angle overrides

Forget about setting those unusual angle increments. But don't give up using Polar Tracking. You can specify an angle override that locks the cursor for the next point entered. Like a Temporary Object Snap that overrides running Object Snap modes, the angle override locks in only one angle for the next point to be specified.

To specify an angle override, enter a left angle bracket (<) followed by an angle whenever a command asks you to specify a point. Then use direct distance entry by moving the cursor to specify the distance.

Object Snap Tracking SECRET REVEALED: Still confused by all the tracking lines? Set the TRACKPATH system variable to 1 to only show tracking lines in the direction of the cursor movement and not to infinity in both directions on the screen.

#3 – When in doubt, right-click

Where? Everywhere!

Heads-up design was incorporated into AutoCAD 2002. For the user it means less typing and more on-screen access to the features and functions of AutoCAD. I've listed some of the most common places you can right-click. But if you're wondering if you can or not, all I say is just “do it!” (Right-click that is.)

Middle of screen

Allows you to repeat the last command as well as cut, copy, copy with base point, and paste. You also get real-time Zoom and Pan and the options dialog.

Middle of a command

Brings up command options, Recent Input, Snap Overrides and the QuickCalc.

Toolbars

Allows you to toggle toolbars on/off and customize...

Command line

Shows the six most recent commands plus copy, copy history, paste, and the options dialog.

Status bar

Brings up settings for each of the toggle switches.



Layout tabs

Brings up Layout setting, delete, rename, move, and copy plus page setup and plot. You can also right-click on model tab to Page Setup and Plot.

On objects

Double-clicking on several objects will bring up their editing tools.

Attribute Definitions	DDEDIT
Attributes in a Block	EATTEDIT
Blocks	REFEDIT
Hatch	HATCHEDIT
Leader Text	DDEDIT
Mine	MLEDIT
Mtext	DDEDIT
Text	DDEDIT

Other right-clicks

Mtext editor – converts text to all caps.

Layer dialog – brings up selection and filter settings.

Properties dialog – brings up docking, hide, description, and undo.

#2 – Super groups

Super groups are legends

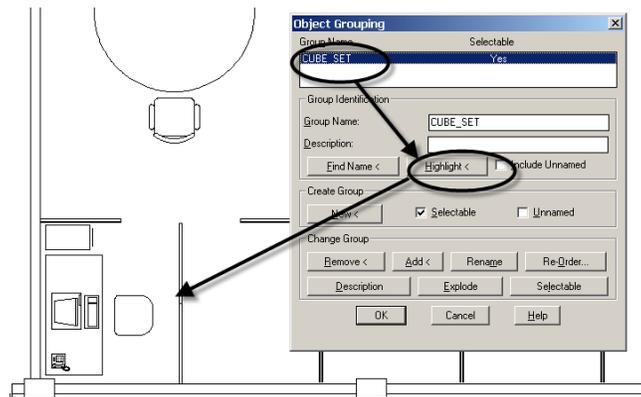
The GROUP command has been around for a long time. It allows you to group objects so they act as one item. They will move as one unit as long as they are grouped. This command is most useful for items you need to move together frequently but you don't need to make into a block.

Grouping objects is more flexible than blocking, since you can easily turn the grouping feature on or off. However, it does not have the same memory advantages as blocks for multiple copies of objects.

A group is a named selection set of objects. Unlike unnamed selection sets, groups are saved with the drawing. Group definitions are maintained when you use a drawing as an external reference or insert it in another drawing. However, until you have bound and exploded external references or exploded blocks, you cannot directly access groups that have been defined in an external reference or block.

When you create or edit a group, you can specify whether it is selectable. If a group is selectable, selecting one of its members selects all members in the current space that meet the selection criteria (for example, members on locked layers are not selectable). The ability to select groups is also affected by the PICKSTYLE system variable. When PICKSTYLE is off for group selection, you can individually select group members.

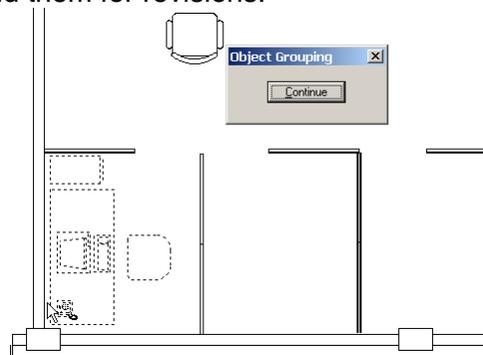
An object can be a member of more than one group. You can list all the groups to which a selected object belongs by using the Find Name option in the Object Grouping dialog box. Highlight all the members of a specified group with the Highlight option. Group members are numerically ordered and can be reordered. Reordering may be useful in some batch operations on objects or when it's important which object is "on top" for display purposes.



Creating groups

When you create a group, you can give the group a name and description. If you copy a group, the copy is given the default name **Ax** and is considered unnamed. Unnamed groups are not listed in the Object Grouping dialog box unless you select Include Unnamed.

If you choose a member of a selectable group for inclusion in a new group, all members of that selectable group are included in the new group. Selectable groups can also be highlighted making it easy to track and find them for revisions.



Selecting groups

You can select groups by name at the Select Objects prompt. If the PICKSTYLE system variable is set to 1 or 3 and you select any member of a selectable group, AutoCAD selects all group members that meet the selection criteria. You can also toggle group selection on and off by pressing CTRL+H or CTRL+SHIFT+A.

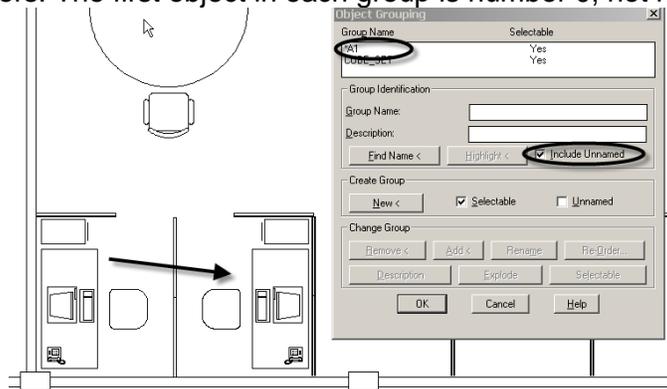
All members of selectable groups are also selected when you use object selection cycling. Selecting an object that is a member of more than one selectable group selects all the members of all the groups that contain that object. To select groups for editing with grips, use the pointing device to select the group at the Command prompt.

Editing groups

At any time, you can add or remove group members and rename groups. You can also copy, mirror, and array groups. Erasing a group member deletes that object from the group definition. When a group member is included in a deleted block, the object is deleted from the drawing and also from the group. If deleting an object or removing it from a group leaves the group empty, the group remains defined. You can remove the group definition by exploding the group. Exploding a group deletes it from a drawing. Objects that were part of the group remain in the drawing.



You can alter the group's member order (the order in which the objects were selected), its description, and whether it's selectable. You can reorder group members in two ways: either change the numerical position of individual members or ranges of group members, or reverse the order of all members. The first object in each group is number 0, not number 1.



Note: The first object in each group is number 0, not number 1.

#1 – Join and attend your Local Users' Group, AUGI and AU!

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