1

Arranging the AutoCAD User Interface

UI—THE USER INTERFACE—is an acronym that is thrown around a lot. Just for a moment, don't think of it as just those two letters. The UI is what comes between you (the user) and it (the essentially incomprehensible computer). The UI lets you interact with the inner workings of the machine, ideally in an intuitive fashion.

Unlike an automobile with a manual transmission, whose stick-shift and clutch are parts of its permanent UI, your computer's UI is highly customizable. You don't like a stick-shift? Click here, and you have an automatic.

The AutoCAD UI is important. Many people gloss over it, thinking the real meat is in using tools and getting the job done. That may be so, but if you're ever going to enjoy the dining experience, you need to pay attention to how you access and work with the tools.

This chapter's techniques are organized into the following topics:

- Tweaking Windows
- Finding Help
- Using Workspaces
- Organizing the Interface
- Inputting with the Keyboard and Mouse

Tweaking Windows

Although using Windows out of the box works, you'll get more out of your operating system—and AutoCAD—if you make a few alterations. This section offers you tips and tricks for tweaking the ubiquitous Windows.

These aren't exactly AutoCAD tips proper, but knowing a few things about maintaining the health of your operating system can make you a much happier CAD user and human being. In addition, it's a little-known fact that a few parts of AutoCAD's UI aren't controlled by AutoCAD at all. Shhh…in these cases, AutoCAD must defer control to Almighty Windows.

Maintain a Healthy Disk Drive

How can you use AutoCAD successfully if you don't install it on a healthy disk drive? The following basic tips are essential reading for all Windows users.

Defragment and Check the File System

The two most important things you can do to maintain a healthy disk drive are to defragment and error-check the file system periodically. We know it sounds like a hassle, but it isn't:

- These things are easy to do, once you know where to find the tools.
- Defragmenting the file system will speed up your hard drive. If you've never done it before, you'll be pleased because you'll probably feel like you have a brand new computer. Maybe you can justify putting off that hardware upgrade for another year once you see what an amazing tip this is.

In this section, we'll reveal how to defragment on a schedule so you can literally set it and forget it, We'll also explain how to troubleshoot through error checking.

Defragmenting

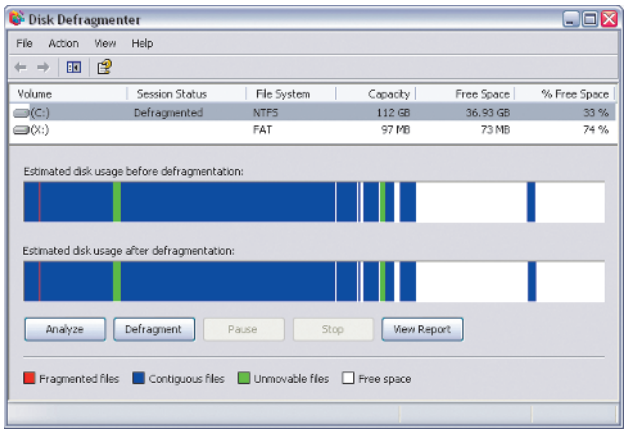
Files aren't the smallest unit of storage on a hard drive. The information in one file may be stored in multiple clusters across several sectors, all over your hard drive (which is probably more than you wanted to know).

Your data gets scattered in the course of doing your digital business, and over time your hard-drive head (one of the moving parts) has to work harder to put all those tiny clusters back together. If you've ever heard your hard drive grinding away without just cause (that's the head moving frantically), it's time to defragment.

Defragmenting is like rearranging your closet. Everything gets tidied up so you save time searching for what you want. Bonus: You'll prolong the life of a hard drive by defragmenting.

To defragment, click the Start menu, and choose Run. Type **`dfrg.msc`**, and click OK. Alternatively, right-click your hard drive in Windows Explorer, and choose Properties. Select the Tools tab, and click Defragment Now.

Select the (C): drive under Volume, and click the Analyze button to see a graphical representation of how fragmented your drive is. Red is bad, blue is good, green is neutral, and white is free. If you see a lot of red, then it's definitely time to clean things up. Select Defragment, and let Windows do the rest (if only organizing my closet were so easy!). If you've never done this, or it's been a long time, defragmenting could take hours; consequently, you'll want to defragment at night when you're finished with work. You may also need to do it multiple times to get rid of all the red.



> You must have at least 15 percent free space on a volume to defragment it. If you don't have this much free space, make some by archiving old files onto DVD or tape backup.

Error Checking

If your system locks up or dies due to power failure (pay attention, California), there is a good chance your hard drive scrambled a few files in its death throes when the head jerked erratically across the platters as they spun down (sounds horrific, doesn't it?). Checking (and fixing) your hard drive is a good idea if you see the Windows blue screen of death after experiencing a serious crash.

Although it may not solve every problem, a Windows utility called CHKDSK (check disk, in English) may be able to repair the damage.

> You have to be logged on with Administrator rights to run CHKDSK.

Click the Start menu, and choose Run. Type **`CHKDSK C: /f`**, and click OK. The `/f` switch is necessary because it fixes problems rather than just telling you about them (like your coworkers). If you do this on your C: drive, you'll see a message like this:

```
Chkdsk cannot run because the volume is in use by another process.

Would you like to schedule this volume to be checked the next time the system restarts?
(Y/N)
```

Type **Y**, and the drive will be checked the next time you start the computer. It may take 20 minutes, so plan ahead.

Put Defragmentation on a Schedule

Manually defragmenting your hard drive can get old. Are you really going to remember to defragment on a regular basis, or are you likely to forget about it until your hard drive slows to a crawl again? Fortunately, there is help for the terminally busy (or lazy). If you schedule defragmentation, then you can potentially forget about it forever (and why isn't this part of Windows already?).

Scheduling defragmentation is a simple two-step process. First, make a batch file that runs the command-line version of DEFRAG. Then, schedule the batch file to run as often as you like. Begin by creating your batch file:

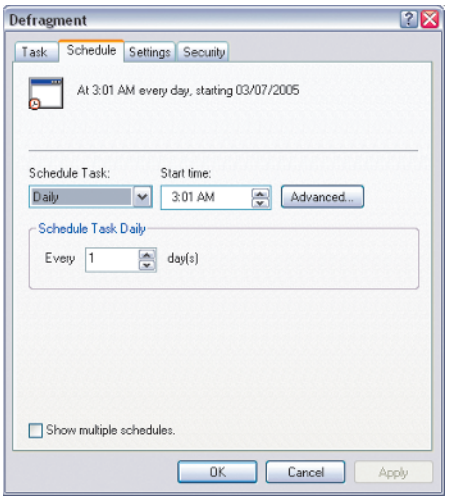
1. Open Notepad (found by selecting Start ➔ Programs ➔ Accessories ➔ Notepad), and type the following:

   ```
   DEFRAG C: /v
   ```

   The /v option shows verbose output in the command window while defragmentation is happening. If you don't care to read this information (or don't need help sleeping), leave off the /v switch.

2. Save the file (under C:\Windows, for example) as DefragmentC.bat—the .bat extension indicates a batch file.

3. Click Start menu ➔ Settings ➔ Control Panel ➔ Scheduled Tasks ➔ Add Scheduled Task. The wizard guides you through the steps. Browse for DefragmentC.bat, which you created in the previous step. This is the task you want to schedule.



4. Select a time when you're likely to be away from your computer, but plan to leave it on. We suggest running DEFRAG daily in early morning hours (if you leave your computer on all the time). Open the task after completing the wizard if you want to make any changes.

Diskeeper is commercial automatic defragmentation software that does a more thorough job than DEFRAG. (www.diskeeper.com).

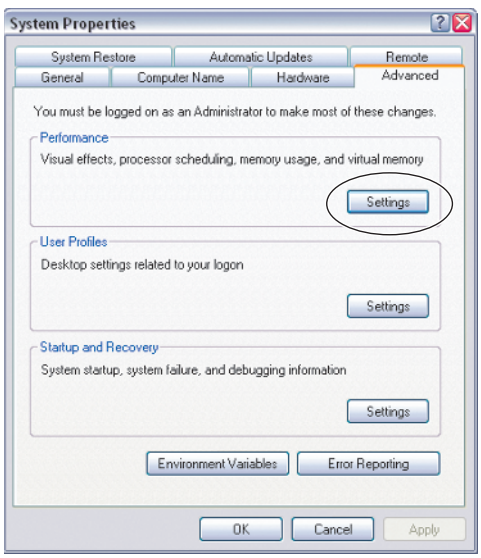
Take Control of the Swap File

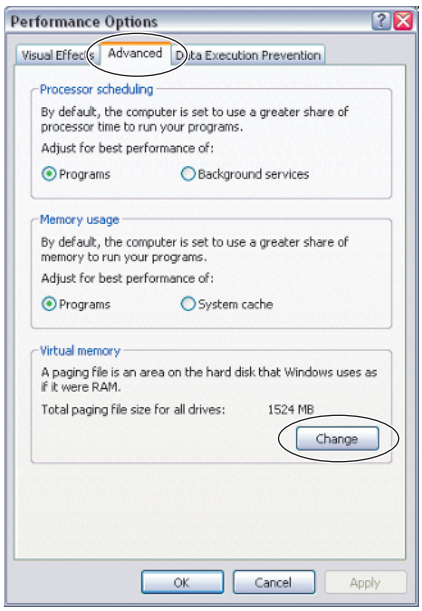
Have you ever opened a number of big drawings, maybe with loads of Xrefs or 3D geometry, only to discover that AutoCAD is taking an inordinate amount of time to do anything? Maybe you also have many different programs running: AutoCAD, Autodesk VIZ, Autodesk Inventor, Microsoft Word, and/or Microsoft Outlook. If you've already defragmented, then there must be another reason for the slowdown. Chances are, you've run out of memory.

When your system is overtaxed with too much information to process, rather than immediately crashing, Windows stores what should be going into the now-full random access memory (RAM) in virtual memory. *Virtual memory* is another way of saying your computer is paging to disk, or recording data to the swap file. Every time your system pages out to disk, you get to sit and wait. Although virtual memory is a poor substitute for physical (real) RAM, it's better than nothing (certainly better than crashing), and we all use it from time to time.

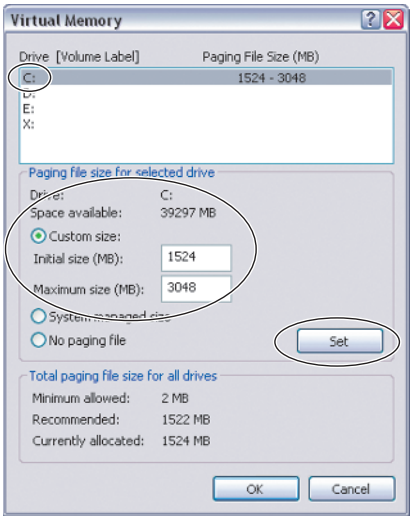
If this is news to you, then you're letting Windows manage the swap file automatically. You can get better virtual-memory performance by setting the swap file two to three times the size of your physical memory (RAM):

1. Choose Start menu ➔ Settings ➔ Control Panel ➔ System. Click the Advanced tab (we're making an expert out of you already!).
2. Click the Settings button in the Performance area, which controls virtual memory (among other things).





3. In the Performance Options dialog box, click the Advanced tab. Click the Change button in the Virtual Memory area.
4. Click the Custom Size radio button, and set Initial Size at twice the size of your RAM. For example, if you have 1 GB of RAM, set Initial Size at 2048 (RAM is in powers of 2) MB.
5. Set Maximum Size at three times your RAM, and then click Set. Click OK in each of the open dialog boxes, and you're done.
6. After a restart, you should see an improvement in your AutoCAD performance.



Clean Out Temporary Crud

When I (Scott) went to college umpteen years ago, I remember discovering what were labeled "temporary buildings" on the campus map (they looked surprisingly identical to Army barracks); I learned that these buildings had been there for some 50 years. They were ramshackle, rusting Quonset hut–type structures that didn't fit into the architectural context. I had the aesthetic pleasure of seeing these surprisingly long-lived structures end their "temporary" status when they were demolished to make room for a library renovation.

The moral of the story is that things (and files) labeled "temporary" often hang around long after they stop being useful and start becoming a nuisance. Windows needs help in deciding just how temporary your temporary files are meant to be. You can avoid all manner of strange crashes, hung systems, frozen mice, and other maladies that mystify technical support personnel by periodically cleaning out your temp files:

1. Close all your programs.
2. Open Windows Explorer. A nice shortcut to do this, by the way, is Windows key+E—if your keyboard has a Windows key. Otherwise, right-click the Start menu, and choose Explore (which is also a nice tip!).
3. Highlight the text in the address bar, type **`%TEMP%`**, and press Enter. This is an environment variable (surrounded by percent symbols) that resolves to the Windows Temp folder, which in my case is

   ```
   C:\Documents and Settings\Admin\Local Settings\Temp
   ```

   This is much easier than trying to scout around for your temp directory yourself; trust me. My user name is Admin, so that's why you see it in this path. Using `%TEMP%` is the easy way for sure.

4. Delete all the files in the `Temp` folder (just do it).
5. Did you know that AutoCAD is tied to Internet Explorer? Yes, AutoCAD has many Internet features like hyperlink, Communication Center, and even Help that borrow from IE. So, you should clean out these temporary files as well. Click Start menu ➔ Settings ➔ Control Panel ➔ Internet Options.
6. Click Delete Files in the Temporary Internet Files area to clean out the browser cache. Click OK in the confirmation dialog, and that's it.

Perform Basic Maintenance

It's surprising how many self-identified "power users" neglect basic computer maintenance. If it sounds like you may be one of these folks, it's time you start taking these things more seriously—because it's no joke.

Clean Up Your Hard Drive

We hate to say it, but clean up your hard drive, will you? Uninstall unused applications, and archive ancient data. This task can become a nightmare if you've put it off for years. Spend a few days, if that's what it takes; and while you're at it, organize your file system. Pick an organizational scheme, and stick to it. A great portion of human productivity is wasted trying to find the right files. It doesn't have to be that way!

Back Up Religiously

Blessed are those who back up regularly, for their files will not be scattered to the winds. Be proactive and perhaps a bit cynical: Expect corruption—of the digital sort. Perhaps it's a bit harsh to say this, but if you don't have a backup, then ultimately you're wasting your time. Never before in history has so much human effort been stored in so ephemeral a medium as magnetism on spinning metallic disks.

If you're concerned about a single machine, then a portable hard drive that matches the size of your system disk is a great backup solution. If you need to back up a local area network (LAN), then consider a tape solution or redundant array of inexpensive disks (RAID). Backup systems pay for themselves many times over; it's a false economy to think that backup systems are too expensive.

Windows XP has a built-in backup program: Click Start menu ➔ Run, and type **`ntbackup.exe`** to launch the Backup or Restore Wizard. Backups should also be scheduled regularly, but that should go without saying.

Practice Safe Computing

Gone are the days when the Internet was a safe network for a few academics and geeks. Now you need protection from malicious adversaries who are into stirring up trouble.

Please tell me that you're using a firewall. In the age of always-on Internet, algorithms are constantly pounding on your digital door. The firewall is the only thing keeping them out.

Let's face it: Windows is chock full of security holes. Microsoft finds more every week, as evidenced by the numerous security patches the company offers via the Automatic Updates feature. Do keep up to date with these, by all means! Usually, people who get hacked could have avoided it by installing readily available security patches. Control how updates are delivered to you in the Automatic Updates control panel.

Windows doesn't come with antivirus software. Clearly, Microsoft has some work to do. Antivirus software is a must. If you're not about to buy a commercial antivirus package, then try one of the free ones like AVG (www.free.grisoft.com). Make sure you set whatever program you're using to update the virus definitions regularly (notice a theme here?).

If you're into privacy, then try Spybot or Ad-Aware.

Don't open attachments from untrusted senders. Don't even open attachments from those you do trust, unless you know what to expect. Many viruses are spread by joke attachments that carry a humorous message and also a dangerous secret payload. Sorry to get into all this fear-based thinking, but you have nothing to fear when you practice safe computing.

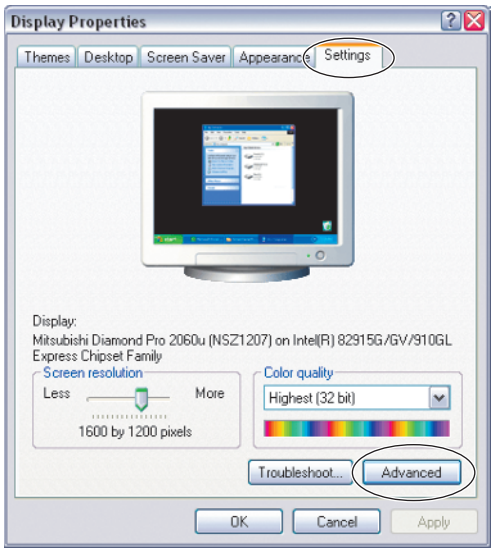
Know Your Display Control Panel

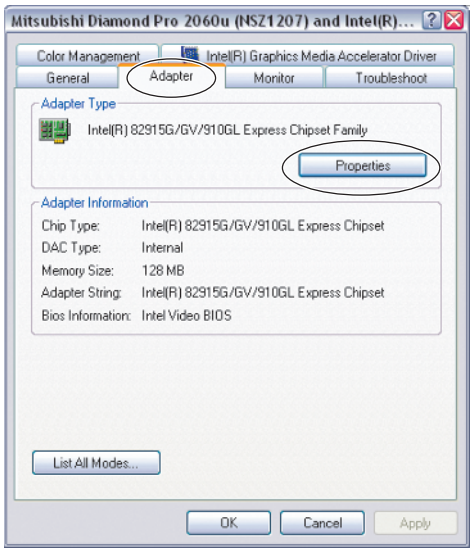
Most folks are aware that the Display Properties dialog box is the place to go to change the resolution of the screen. Fewer know that the Display Properties dialog box also controls how many UI features appear, both in Windows and in AutoCAD. This section will introduce you to the more interesting parts of the Display control panel.

Are Your Graphics Drivers Up to Date?

Before you begin making changes in the Display control panel, update your graphics card drivers to the latest version. Graphics card companies often release new versions that contain bug fixes and/or support for additional features. Follow these steps:

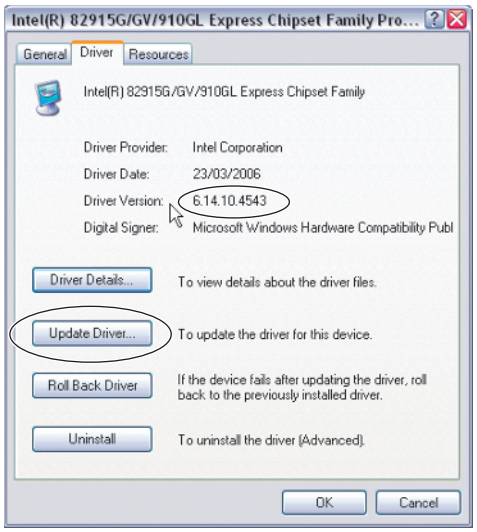
1. You need to find out exactly what graphics driver you have. To do so, minimize all your applications by pressing Windows key+M, or minimize each application manually if you don't have a Windows key (we'd never buy a computer without a Windows key!). Right-click the desktop, and choose Properties from the shortcut menu to open the Display Properties dialog box.
2. Select the Settings tab, and click the Advanced button.
3. A dialog box with your particular graphics adapter appears. Choose the Adapter tab of this dialog, and click Properties.





4. The Properties dialog displays the name of your particular adapter or chipset in the title bar. Note that the driver version is shown on the Driver tab—this is what you're looking for, so make a note of it.

5. Now you need to check for driver updates. Use your browser to surf to the manufacturer's website, and locate the driver download part of the site. Search for your adapter or chipset name and/or driver version. If a new version is available, download and install it. Click OK in all the open dialogs; you'll probably have to restart the computer for the new driver settings to take effect.



Update Autodesk's Hardware Certification Database

AutoCAD 2007 has a new feature that monitors your graphics card driver and compares it with Autodesk's Hardware Certification Database. If a new driver is available, a bubble notifies you when you launch AutoCAD. Unfortunately, you need to manually download the Hardware Certification Database to keep this system up to date. This is worth doing to get the best 3D performance out of the installed graphics card:

1. In AutoCAD, use the Options command, and choose the System tab. Click the Performance Settings button to open the Adaptive Degradation and Performance Tuning dialog.

2. Click the Check for Updates button. Internet Explorer launches and takes you to a page on the Autodesk website.
3. The page that appears has instructions for downloading and installing the latest Hardware Certification Database. Close AutoCAD, follow the instructions, and restart AutoCAD. You'll be notified if a new graphics driver is available and whether it's fully compatible with AutoCAD's new 3D features.

Set Screen Resolution and Color Quality

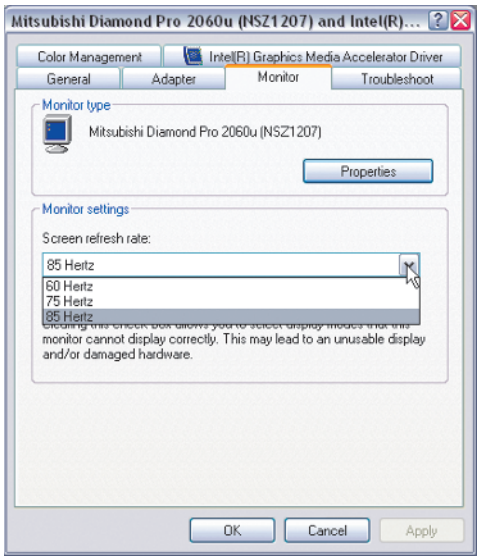
You should set the screen resolution to the maximum you can see (without squinting—squinting causes wrinkles). As you increase resolution, everything gets smaller while screen real estate effectively grows. Use the screen-resolution slider on the Settings tab of the Display Properties dialog box to adjust the resolution.

Everybody wants more screen real estate (it's a valuable commodity); but don't exceed what your tired eyes can comfortably see, or you'll have to boost that eyeglass prescription before you know it (even though Lynn's husband, an optometrist, appreciates the business). Boosting resolution is a poor substitute for a larger monitor after all.

I (Scott) have a 22″ monitor, which is great, and my graphics card supports resolutions up to 2048 × 1536 pixels, but that's way more than I can see—and yes, I'm wearing glasses. I have to compromise and set resolution at a more modest 1600 × 1200 pixels, which is plenty in my humble opinion.

Make certain that color quality is set to Highest (32 bit). Some older graphics cards support higher resolutions only at a lower color depth. It may have been acceptable in the old days to run AutoCAD in 256 colors; but doing so would be a major faux pas today, now that AutoCAD has true color (32-bit) support.

If you perceive a flicker at higher resolutions, there is something you can do that may correct this annoying problem. Click the Advanced button on the Settings tab of the Display Properties dialog box. A dialog box appears that is specific to your monitor. Click the Monitor tab, and change the screen refresh rate from the drop-down list. Try the highest rate, and work your way down the list if necessary until you eliminate that pesky flicker.

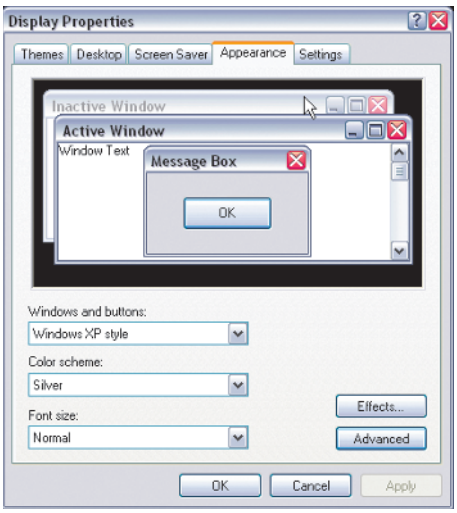


Keeping Up Appearances

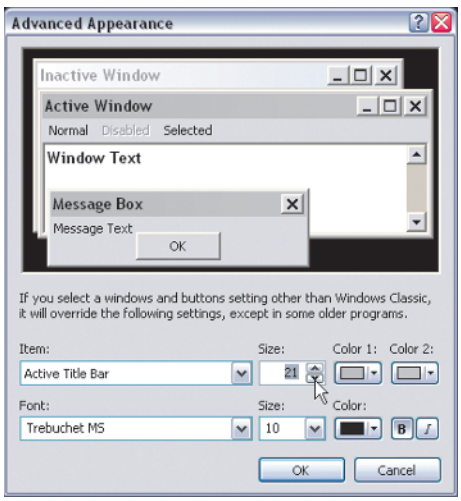
If your aesthetic sense has long been offended by the saturated blues and greens of the default Windows XP interface, then rejoice, for relief is on its way. The Appearance tab of the Display Properties dialog box makes it possible to alter many of the UI components under Windows' control. In turn, these affect how AutoCAD appears—because, after all, AutoCAD runs on Windows.

The first drop-down list allows you to toggle between the classic look of Windows 2000 and the updated look of XP. We'd go with XP, but only on the provision that you choose the silver color scheme rather than the default blues or olive green (yuck). The advantage of this color scheme lies in its neutrality—it's not likely to influence your perception of color as much as the other options.

The Font Size drop-down lets you boost size to Large or Extra Large, which is useful if you're doing client demonstrations with an LCD projector and you want text to be readable in a presentation. Because I (Lynn) spend most of my time doing presentations, I use the extra-large font so the audience can easily read the words. I also change the text color to black on yellow because that is the easiest color combination to see (think of construction signs).



If you want to get into the nitty-gritty, then click the Advanced button. In the resulting dialog box, you can control individual interface components. One pet peeve I have is with the extra-large title bar in the XP style. Why must it take up so much room? Whoever designed the default XP style clearly wasn't using AutoCAD, because they don't value screen real estate as much we typically do.

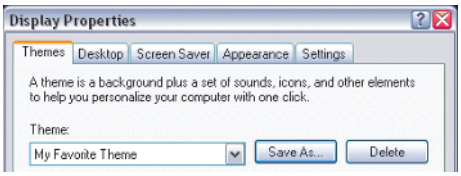


Select Active Title Bar from the Item drop-down, and change Size to 21. Doing so brings the title bar down to a reasonable scale while matching the size of the application and drawing caption buttons in AutoCAD.

The size and font of text on the tool palettes in AutoCAD are controlled by the ToolTip item in the Advanced Appearance dialog box (it's in the

Item drop-down list). Could this be more obscure? I (Lynn) personally find this frustrating because I like the font of the tooltips to be larger than that on my tool palettes.

After you're finished tweaking the appearance of the Windows UI, select the Themes tab of the Display Properties dialog box (if you have one), and save a theme. Should anything change, this will make it easy to recall all your customizations with one click at a later date.



Prepare for AutoCAD Launch

5, 4, 3, 2, 1… Startup switches are options you can add to the shortcut(s) that launch AutoCAD. They allow you to boot up AutoCAD with some preexisting conditions in place. Startup shortcuts are usually placed on the desktop. In the old days (pre–AutoCAD 2000), startup switches were more commonly used, because they set the default folder—something that's handled with a system variable now.

See "Folders: To Remember or Forget?" in Chapter 8.

Startup switches are still useful, giving you the ability to select a particular script, template, configuration folder, view name, support folder, user profile, workspace, and more—to start with AutoCAD. Look up "startup switches" in AutoCAD Help for all the options.

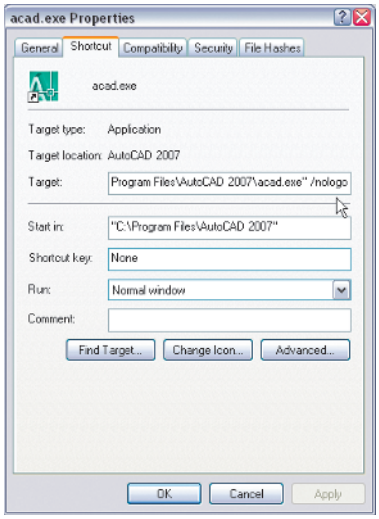
Using Startup Switches

To see how startup switches are used, let's disable the splash screen that appears when AutoCAD launches (in AutoCAD 2007, it's a transparent green box). That splash screen not only slows you down, but it can be downright annoying after a while:

1. Create a shortcut for launching AutoCAD, if you don't already have one on your desktop. Use Windows Explorer to locate `C:\Program Files\AutoCAD 2007\acad.exe` (the file that launches AutoCAD), right-click, and choose Send To ➔ Desktop (create shortcut).
2. Get back to your desktop by minimizing everything (press Windows key+M, or tediously minimize the windows one at a time). Right-click the shortcut to `acad.exe` on the desktop, and choose Properties.
3. Place the cursor at the end of the text in the Target text box, and type **`/nologo`**. All startup switches are added to the end of the target line and immediately follow a forward

slash. These options are passed to the executable when it starts up. Switch to the General tab, and rename the shortcut AutoCAD 2007. Click Apply, and close the dialog box.

4. Launch AutoCAD with the shortcut, and observe that the splash screen no longer appears.



Other Switches in the Startup

Before we tell you about Lynn's favorite switch, let's look at some of the more popular startup switches. Follow each switch with a space and then what it's asking for (script file, template, layout, and so on):

/b Runs a script file upon launching AutoCAD.

/t Creates a new drawing based on the indicated template file. AutoCAD assumes a DWT file type, so complete path information isn't needed. You may decide to have two different startup icons for 2D and 3D. The latter will use the new ACAD3D template file.

/layout Opens a specific layout in the indicated drawing file. The syntax requires you to specify the drawing file and the layout, separated with a vertical bar. For example, if you have a drawing file called Engine and a layout called Assembly: use `"C:\Program Files\AutoCAD 2007\acad.exe" /layout "C:\ACAD 2007 Project\Engine|Assembly"`.

/v Opens the indicated drawing file, and zooms to a specific view (views are much more popular in AutoCAD 2007).

/p Launches AutoCAD, and loads a specific profile. This profile is in effect only for the current AutoCAD session

/nossm Suppresses the existence of the new Sheet Set Manager upon entering AutoCAD (for those of you who haven't embraced it).

/ld Loads a specified ARX or DBX application. You have to include the complete path information.

/c Specifies the path for the hardware configuration file you want to use during your AutoCAD session.

When using these switches, be sure to give each icon a new name so you can easily distinguish them. You can also change the tooltip in the Shortcut tab by modifying the contents in the Comment section. The Shortcut tab also allows you to tell AutoCAD you always want it to launch maximized (which is a must if you find yourself maximizing it manually each time).

Loading Sheet Sets Automatically

Before I (Lynn) got into using sheet sets, I used to load the sheet set manually nearly every day (because AutoCAD didn't remember that I had it loaded when I left the drawing). I'm not a fan of tedium, so I decided to do something about it. My favorite switch gives me the ability to automatically load a specific sheet set so I don't have to load it myself after AutoCAD launches. Here's how you do it.

Let's say the name of the sheet set you want to load automatically is `BigClient.dst`. The startup looks like the following (and yes, in case you're wondering, most of the switches follow this syntax: `/switch "name"`

```
"C:\Program Files\AutoCAD 2007\acad.exe" /set "C:\ACAD 2007 Project\BigClient.dst"

/set is the switch

C:\ACAD 2007 Project is my directory path
```

Notice the directory is in quotes, and you have to use the complete path statement. Switches are a little wishy-washy on the path statements; some require the complete path information (such as sheet sets), but others don't (such as script files). For those that don't, make sure they fall within the AutoCAD search path.

If you plan to work on the same drawing file for a while, you can set up a startup that launches AutoCAD and goes straight to that specific drawing file. To load the drawing file called `Engine` from your ACAD 2007 project directory, you use the following syntax:

```
"C:\Program Files\AutoCAD 2007\acad.exe" "C:\ACAD 2007 Project\Engine"
```

Cycle through Tasks and Documents

If your resume identifies you as a multitasker, then we're sure you have many programs running and multiple drawing files open in AutoCAD at any given moment, while you're also talking on the phone and drinking coffee. Obviously you can use the Windows taskbar at the bottom of the screen to switch between tasks (which means making a running program active, in geekspeak).

Most true multitaskers already know about the Alt+Tab key combination. Holding down the Alt key while pressing the Tab key displays an icon menu in the center of the screen that you can step through by pressing Tab repeatedly to select a specific task. But did you know that Alt+Shift+Tab steps backward through this list of tasks? This factoid should please those who like to keep as many apples in the air as possible.

AutoCAD also has multitasking hotkeys that allow switching between open drawings, which are AutoCAD's version of tasks. Holding down the Ctrl key while pressing Tab cycles to the next open drawing (although no icon menu appears). Keep holding that Ctrl key down and tapping Tab, and you'll continue cycling through open drawings. If you go too far, press

Ctrl+Shift+Tab to cycle backward through the list of open drawings. The Shift key is used to reverse the cycling direction in all multitasking key combinations.

If you're comfortable switching tasks with Alt+Tab but don't think you'll be able to remember Ctrl+Tab, then the TASKBAR system variable is for you. Set TASKBAR to 1, and all open drawings will immediately appear as separate buttons (a.k.a. tasks) at the bottom of the screen.

If you tend to run AutoCAD without any other programs at the same time, having individual drawings visible as tasks on the taskbar may be the way to go. Then, you can toggle between them using Alt+Tab because each drawing is, well, a task.

Finding Help

Perhaps the phenomenon is confined to roughly half of the species, but rumor has it that it's a rare event indeed when a man will ask for help (and yes, Scott is writing this). All the women out there probably don't need to read this section (but please do anyway, because I'm sure you'll learn new ways to find support).

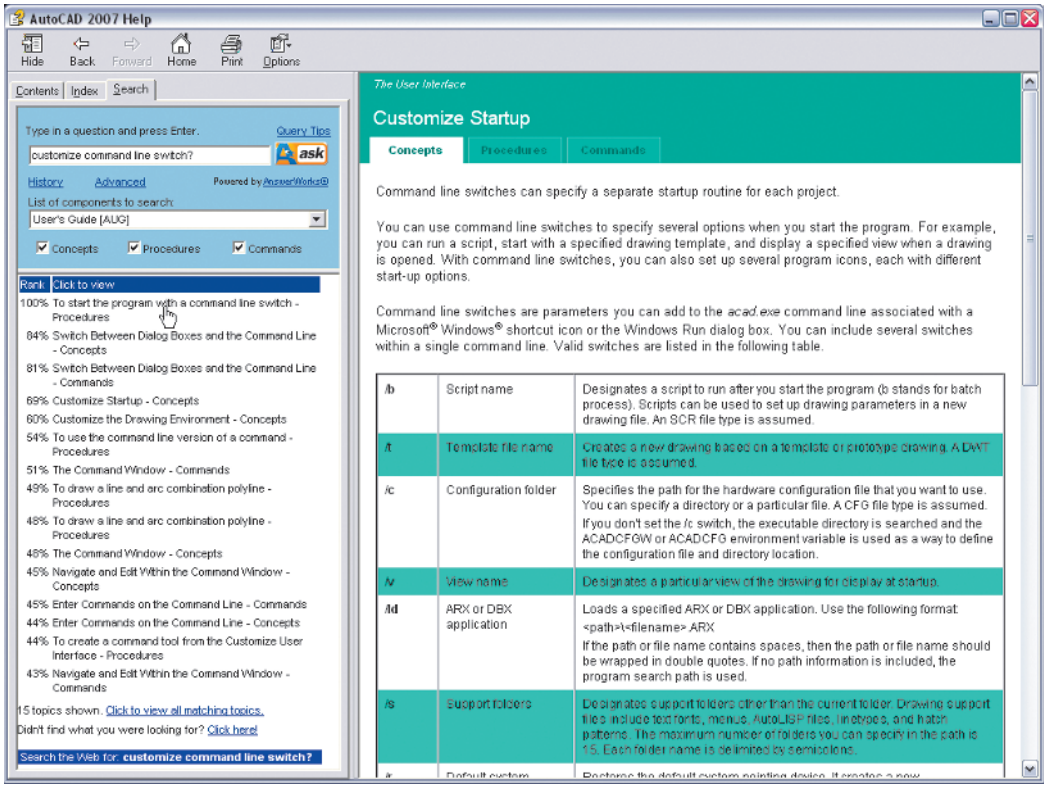
Read this section, and seek help in secret if you need to, or do it overtly with the full confidence that you'll find the answers you seek. The truth is, much help is at your fingertips, if you know where to look. Of course, this book is the ultimate resource for AutoCAD tips and techniques (even if we do say so ourselves), but you may not always have it handy (say it isn't so!). In such an emergency, you'll want to know how to find help in other forms.

Search Tips

The AutoCAD Help system runs in its own window and can be opened by pressing the F1 key, choosing Help ➔ Help from the menu, or using ? on the command line.

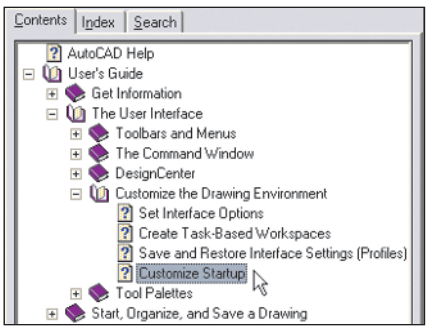
> How many times have you accidentally hit F1 when you meant to press the adjacent Esc key? If you don't want help at your fingertips, see Chapter 10 to learn how to reassign F1 to Cancel (or something else more user friendly).

Click the Search tab, enter a search query, and press Enter. In AutoCAD 2007, you can ask questions in plain language, thanks to the new AnswerWorks engine. AnswerWorks ranks search results with percentages and functions, much like an Internet search engine.



Click Advanced to access a list to search only within a specific component (think book) in the user documentation set, instead of everything together. For example, if you're looking for a customization issue, you can choose the Customization Guide (ACG) from the list; the search results are then updated. Choose a component to search before (or conveniently after) you've performed the search, and the results are updated.

Click a search result, and you see its associated help in the right-hand pane. Now, click the Contents tab—the table of contents tree should expand to the page you just accessed. If the tree doesn't expand, try clicking the Back and Forward arrows (sometimes this does the trick).



The Contents tab reveals the context in which the sought-for page exists. Browsing through the table of contents in the context of a focused search is the fastest way to find what you're looking for.

Disable Antivirus Checking of Help File

If the AutoCAD Help window takes forever to open, there is a good chance your antivirus software is checking it to make sure it's clean (trust us, it is). This can become annoying if it happens every time you open Help.

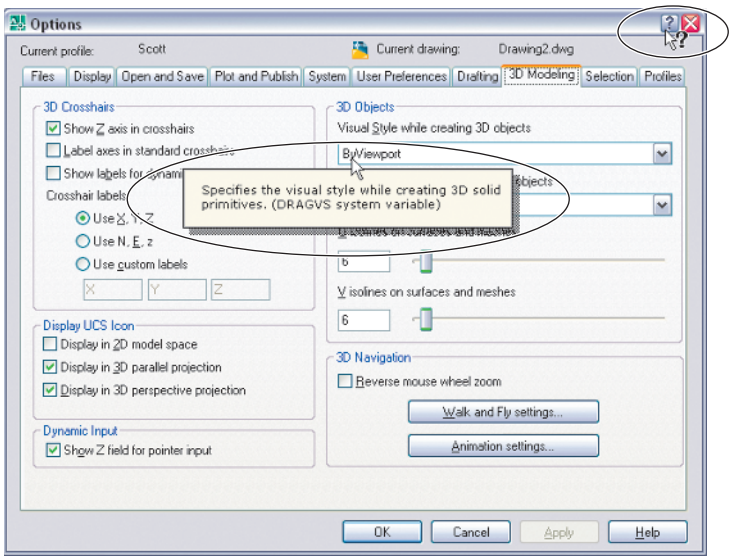
AutoCAD Help is a separate but linked task on the taskbar (it disappears when AutoCAD closes). Many antivirus programs think this is highly suspicious, so they get triggered. You'll have to figure out how to reassure your particular antivirus program that everything is OK. This information is usually buried somewhere in the program options. Try excluding the AutoCAD Help file, specifically `C:\Program Files\AutoCAD 2007\Help\acad170.chm`. You can even exclude `.chm` files in general, but this is the less secure option.

Use Cursor Help in Dialog Boxes

This underused feature is quite helpful. Most dialog boxes in AutoCAD have a question-mark button on their title bars, next to the close box X. Click the ? button, and the cursor will display a question-mark icon next to the pointer.

Now, click any part of the dialog box you're interested in querying. A tooltip appears that displays information about the control you selected. This is a great way to learn which system variables the Graphical User Interface (GUI) elements control. It's also much faster than going through standard Help.

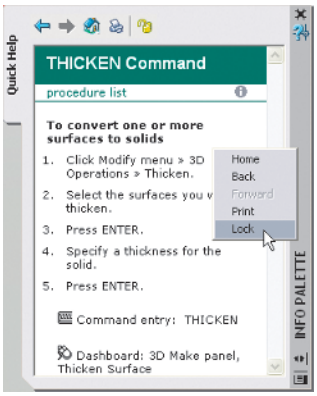
For example, open the Options dialog (right-clicking the command line is a quick way to get to Options). Select the 3D Modeling tab, and click the question-mark button. Then, click the Visual Style While Creating 3D Objects drop-down list. The tooltip describes this drop-down's function in more verbose prose, and it also reveals the name of the associated system variable—`DRAGVS`, in this example.



Quick Help Offers Contextual Information

New users of AutoCAD will benefit most from the Quick Help feature. It displays contextual help information in the Info Palette as you work. Every time you enter a command, information appears about the active command. Obviously, this gets old after you fully understand the commands you're using. However, more experienced users can still benefit by opening the Info Palette just prior to using an unfamiliar command.

Press Ctrl+5, or choose Help ➔ Info Palette. Leave the Info Palette floating and visible or put it in a dock, as you prefer. Any command you enter will automatically open its corresponding documentation page in the Info Palette.



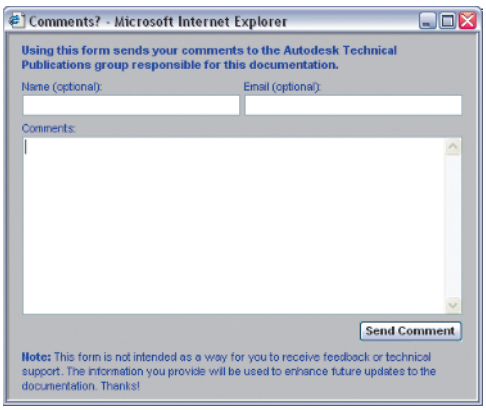
For example, let's say you want help using the new Thicken command in AutoCAD 2007. Type **Thicken**, and press Enter, and documentation is instantly available. The Info Palette displays the brief description "Creates a 3D solid by thickening a surface." (You probably could have guessed as much.) A hyperlinked procedure is also shown.

Click To Convert One Or More Surfaces To Solids, and observe that a step-by-step procedure is listed that you can follow. But wait! As soon as you try to follow the steps, the procedure list disappears, because the Info Palette must follow whatever is happening at the moment.

To keep what is currently displayed in the Info Palette, right-click inside the palette, and choose Lock from the context menu. Now you can go ahead and follow the steps as you work. After you've completed the task, you'll have to unlock the palette to keep it responding to input.

Submit Comments about AutoCAD Help

Let the fine folks at Autodesk Technical Publications group who are responsible for the AutoCAD Help documentation know your mind. Now there is an easy way to report errors, omissions, deficiencies, deliberate obfuscation, and/or praise to the technical writers.



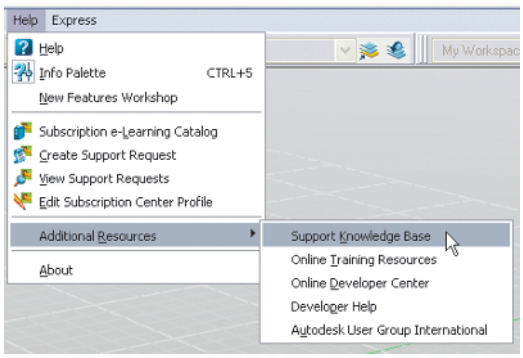
Every page in the Help window has a miniscule link in the lower-right corner that says, "Please send us your comment about this page." (Maybe they're hoping you won't be able to read text that small! No, we're sure that's not it.) Click the link, and a dialog box appears, giving you the power to vent or praise as the case may be. You can optionally enter your name and e-mail address.

Don't use the comment mechanism in the Help system if you want technical support. Instead, submit comments to make AutoCAD Help better in the future.

Online Help

You can access tons of AutoCAD help online. The AutoCAD Help menu has links to many excellent resources, including these:

- e-Learning training is available to subscription customers (a wonderful utility worth trying).
- The Support Knowledge Base is a good place to go when you have a specific technical problem.
- Autodesk User Group International (AUGI) has many interesting resources (www.augi.com). You can also sign up for this organization free of charge (and we all love free).



In addition, point your browser to http://discussion.autodesk.com to access the AutoCAD discussion groups that are available on the Web and via the `news:` protocol. Did you know the Thunderbird e-mail client has built-in newsreader support? You can read news and blogs (anything with syndication) while you peruse your e-mail. This is a great way to keep up to date with the latest issues.

Plus, the AutoCAD blogosphere has exploded in the last few months! What's up in blogistan, you say? Quite a lot! Check it out:

Web log Title	Host	http://
Lynn Allen's Blog	Lynn Allen	blogs.autodesk.com/lynn
Between the Lines	Shaan Hurley	autodesk.blogs.com/between_the_lines
The AutoCAD Insider	Heidi Hewett	heidihewett.blogs.com
Beyond the UI	Lee Ambrosius	hyperpics.blogs.com/beyond_the_ui
Beside the Cursor	Richard Binning	integr-8.com/besidethecursor
Will Render for Food	Beau Turner	rndr4food.blogspot.com
Beth's CAD Blog	Beth Powell	bethscadblog.blogspot.com
In the Dynamic Interface	Mark Douglas	mdouglas.blogs.com/in_the_dynamic_interface
The Mad Cadder	Michael Rotolo	themadcadder.blogs.com

continues on next page

Web log Title	Host	http://
Mistress of the Dorkness	Melanie Stone	mistressofthedorkness.blogspot.com
The Autodesk Informer	Ryan Small	autodeskinformer.blogs.com
CAD Managment Topics	Scott Durkee	scottdurkee.blogspot.com
Raster Design with AutoCAD	Jane Smith	rasterdesign.blogspot.com
The Digital Architect	Scott Onstott	scottonstott.com/vodcast

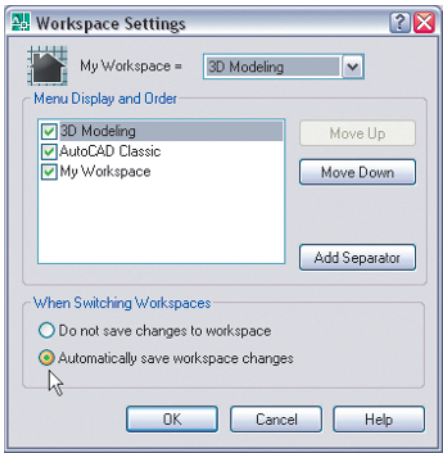
Our apologies to any AutoCAD bloggers who aren't listed here. This is an incomplete list, even at the time of this book's publication. Who knows how many more industry-related weblogs will appear in the coming months and years? Keep them coming!

Using Workspaces

Do you find it impossible to come up with the perfect arrangement of menus, toolbars, and palettes? There are just too many toolbars and palettes and never enough screen real estate to make this wish come true.

Enter *workspaces*. This feature was designed to fulfill this seemingly impossible dream. Workspaces save any arrangement of menus, toolbars, and palettes that you care to create. The idea is that you can save a workspace for every set of tasks that you want to perform. Doing 3D modeling? Save the relevant toolbars and palettes as a workspace. Back to construction documentation? You'll need different palettes, toolbars, …you get the picture—save it all as a workspace.

If you don't want to be bothered to manually save changes to your ever-evolving workspaces, you can elect to automatically save workspace changes. Use the WSSETTINGS command, or click the first button on the Workspaces toolbar. Click the second radio button to make this change.



However, there is some danger with this approach. Everything you change is saved automatically, so there's no room for massive experimentation if you're basically happy with the UI. Perhaps your best bet is to set workspaces to automatically save during a period of experimentation. Then, revert back to Do Not Save Changes To Workspace once you're satisfied that your workspaces are more or less carved in stone.

A hybrid approach is to lock down certain workspaces that *are* carved in stone (read-only) via an Enterprise CUI file. This is an excellent approach to offering standardized drawing environments to everyone on your team. Don't worry about not being able to edit these files, because every user also has their own customizable workspaces that may diverge from the official standards.

See Chapter 10's "CUI for the Enterprise" section for more information.

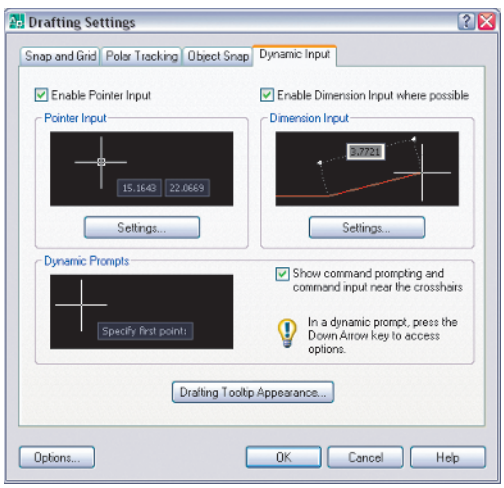
If you want a particular workspace to appear on startup, use the `/w` command-line startup switch in the shortcut that launches AutoCAD (see "Prepare for AutoCAD Launch," earlier in this chapter).

Organizing the Interface

AutoCAD 2007 includes several new features that ought to drastically change the way your user interface looks. Working without a command line in favor of dynamic input is a huge step. Cleaning up the UI and anchoring dockable windows provides for a streamlined interface, the likes of which we've never seen before in AutoCAD.

Hide the Command Line

Some veteran AutoCAD users will think this is pure blasphemy, but now is the time to kill (we mean, hide) the command line. Yes, this anachronism from the days of teletypes has finally become—dare we say it?—obsolete. Maybe we won't go that far, because it's a good idea to have our old friend waiting to come out of hiding at a moment's notice in case something goes wrong. But with screen real-estate values going through the roof, it's easier to make the decision.



Dynamic input effectively replaces the command line. Make sure the DYN toggle is on in the status bar if you're planning to hide the command line. The F12 key toggles dynamic input on and off. In addition, right-click the DYN toggle, and choose Settings from the tiny shortcut menu.

Three check boxes appear on the Dynamic Input tab of the Drafting Settings dialog. Select Show Command Prompting

And Command Input Near The Crosshairs. You'll need this option if you plan to hide the command line. Press the Down Arrow key to access command options on screen instead of on the command line.

See "Input Dynamically" in Chapter 2.

Drag the command-line window out from its dock to palettize it. Turn on auto-hide to save screen real estate. Better yet, anchor the command line—it's a dockable window (see the section "Anchor Dockable Windows").

Certain commands, such as FILLET and OFFSET, don't display the current settings when using dynamic input. Consequently, you can easily display the command line when this additional information is needed.

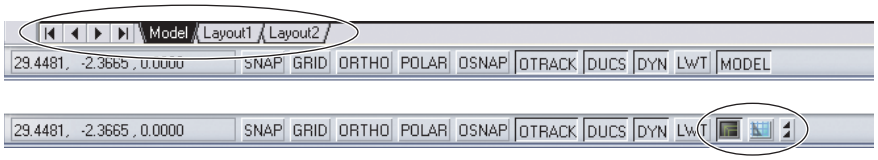
Clean Up the UI

You can do a few things to clean up the UI. The first is to hide the layout tabs. Why? Haven't you noticed that the layout tabs occupy an entire row above the status bar, taking up far more space than they're worth?

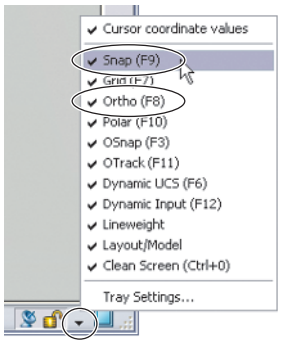
Right-click a layout tab, and choose Hide Layout And Model Tabs from the shortcut menu. The entire bar housing the layout navigation buttons and tabs disappears, making more space available to the drawing window.

Two new buttons (Model and Layout) appear on the status bar, plus a couple of tiny arrows that give you access to additional layouts that appear in a shortcut menu. So, they provide the same functionality as the buttons and tabs they replace. The only thing we miss is the shortcut menu that appeared on the old layout tabs. Right-click the Model or Layout button on the status bar to display the old UI, if you ever want it back.

Another UI tidbit is to hide unwanted individual buttons on the status bar. When is the last time you used snap? We don't mean object snap, which everybody uses every day. Few use the old-school snap that is tied to absolute space. Why not get rid of its status-bar button? While you're at it, get rid of the Ortho button, too; Polar is much better. Unless you're really into 3D, you may also find it useful to remove the Grid button. The fewer buttons you have on your status bar, the less likely you'll be to select the wrong one.



Click the downward-facing arrow in the lower-right corner of the status bar to open the status-bar menu. Turn off any buttons you can live without. These buttons will disappear from the status bar.



Finally, the button adjacent to the status-bar menu is the clean-screen toggle. Click it or press Ctrl+0 (if you aren't on AutoCAD 2007) to experience minimum clutter. AutoCAD is maximized, and all palettes and toolbars disappear. Anchored dockable windows are still usable in this mode. Clean-screen mode gives the drawing window center stage and is most useful in presentations. Many people find it difficult to work for any length of time without palettes and toolbars, so toggle out by pressing Ctrl+0 again.

Anchor Dockable Windows

The ability to anchor dockable windows (also known at times as *floating palettes*) is one of the best new features in AutoCAD 2007. In case you haven't noticed, there has been a proliferation of dockable windows in recent AutoCAD releases. These include the following:

- Advanced Settings Dialog
- Command Line
- Dashboard
- dbConnect Manager
- Design Center
- External References
- Info Palette
- Lights In Model
- Materials
- Markup Set Manager
- Properties
- Quick Calculator
- Sheet Set Manager
- Sun Properties
- Tool Palettes
- Visual Style Manager

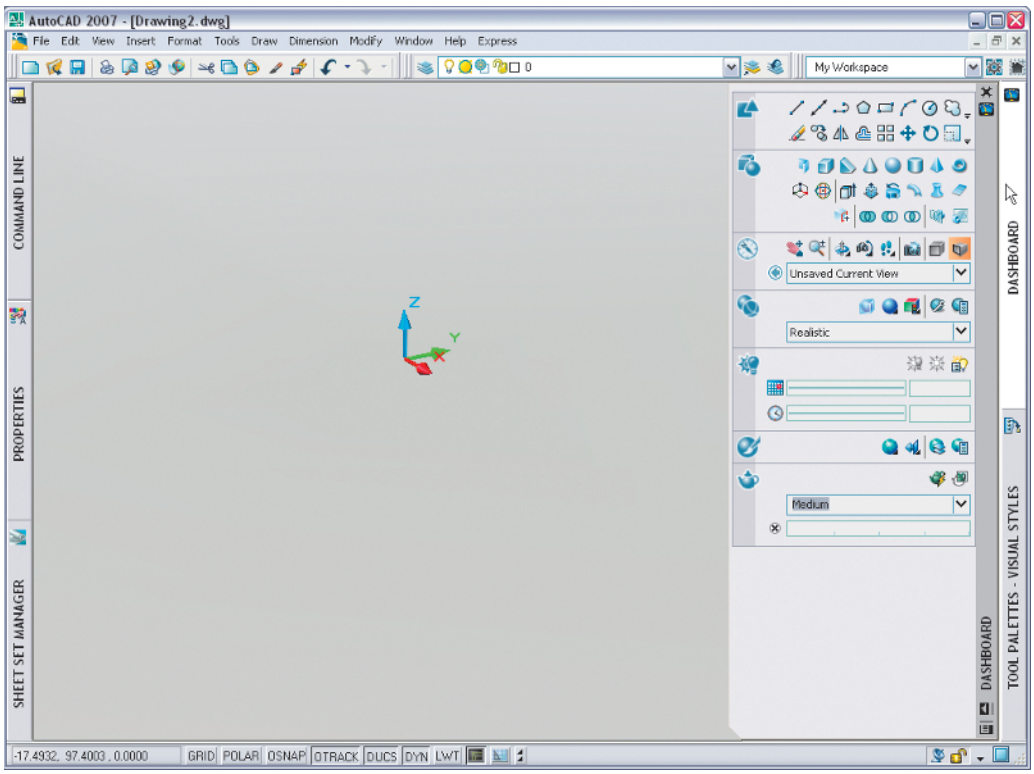
With all these dockable windows competing for space on screen, there is now officially no room left for drawing. Autodesk probably figured that it couldn't just tell everyone to go out and buy three more monitors, so it invented the *anchor* feature.

Right-click the vertical title bar of any palette (or, more correctly, *dockable window*), and toggle on Allow Docking, if it's not already on. Repeat, and choose Anchor Left or Anchor Right.

The best thing about anchoring is that you can anchor multiple dockable windows on each side of the screen without sacrificing any more pixels. Hover the mouse over any labeled anchored dock, and the associated palettes expand, filling all the available space.

Anchoring is the most efficient way to work with dockable windows. Try anchoring as many palettes on the edges of the screen as your display resolution allows. You'll have instant access to most of the UI without having to hunt for palettes in the menu or, worse yet, try to remember shortcut keys.

If you want to decrease the amount of time it takes to unhide palettes, check out the cool program at http://jtbworld.blogspot.com/2006/02/autocad-palette-auto-hide-speed.html



Setup the Dashboard/Tool Palette Connection

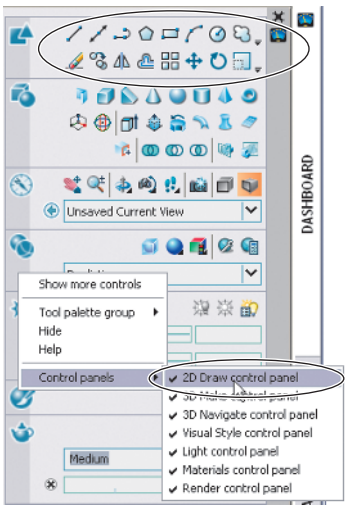
The Dashboard is definitely an interesting new feature in AutoCAD 2007. Did you know that there is a mysterious connection between the Dashboard and the Tool Palettes?

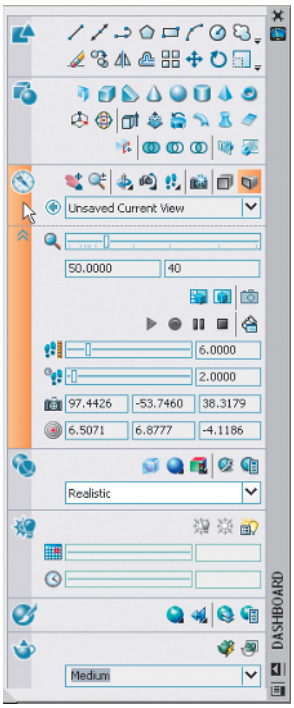
The Dashboard is filled with *control panels* (ahem; didn't Autodesk think about the obvious name collision with this well-known Windows feature?). One of these control panels, 2D Draw, isn't visible out of the box—so let's turn it on. Right-click anywhere inside the Dashboard palette. Choose Control Panels ➔ 2D Draw Control Panel from the shortcut menu. The missing control panel appears at the top of the palette; its icon is a 2D triangle and square. Consider using this control panel for basic drafting tools instead of using the bulkier Draw and Modify toolbars.

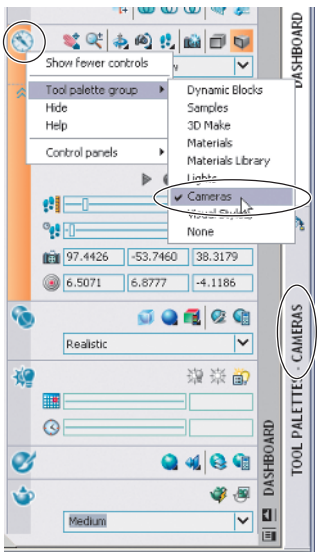
Each control panel can be activated by clicking its icon. When a control panel is active, it's highlighted in orange, revealing more hidden controls. There is more to the control panels than meets the eye.

Bear with us, and activate each control panel one at a time. After you activate one, hover the mouse over the Tool Palettes to unhide them if anchored (no need to hover if they're floating and staring you in the face). Many of the control panels automatically trigger different tool palette groups to activate. This is the mysterious connection alluded to earlier.

For example, when you activate the 3D Navigate control panel, the Cameras tool palette group is likewise triggered, bringing its one and only Cameras palette to the fore. When you activate the Materials control panel, the Materials tool palette group brings numerous palettes to the fore in the Tool Palettes. Get it?







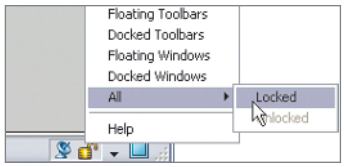
You can customize which tool palette group is connected with each control panel. Activate a particular control panel, and then right-click its icon. From the shortcut menu, choose which tool palette group you want to associate with the active control panel. Now you have the ultimate in customizable interconnected UI convenience!

Lock Down the UI

By now, you've probably spent numerous hours researching the UI, only to realize you haven't gotten any productive work done. Remember that research is an investment in your future productivity. (Tell that to your boss!) When you're finally satisfied with all aspects of your highly customized interface, or you need to get back to work, it's time to lock down the UI.

You lock it down so that some nefarious individual (most likely yourself) doesn't accidentally mess up all the organizing that's been done to make your interface the streamlined masterpiece it has become. Of course, doing this is more critical if you've set the workspace to automatically save changes (see "Using Workspaces," earlier in the chapter).

Click the padlock icon in the lower-right corner of the screen, and choose All ➔ Locked if you're going for a total lockdown. If you're not so sure, lock only toolbars and/or windows, floating and/or docked. Better safe than sorry.



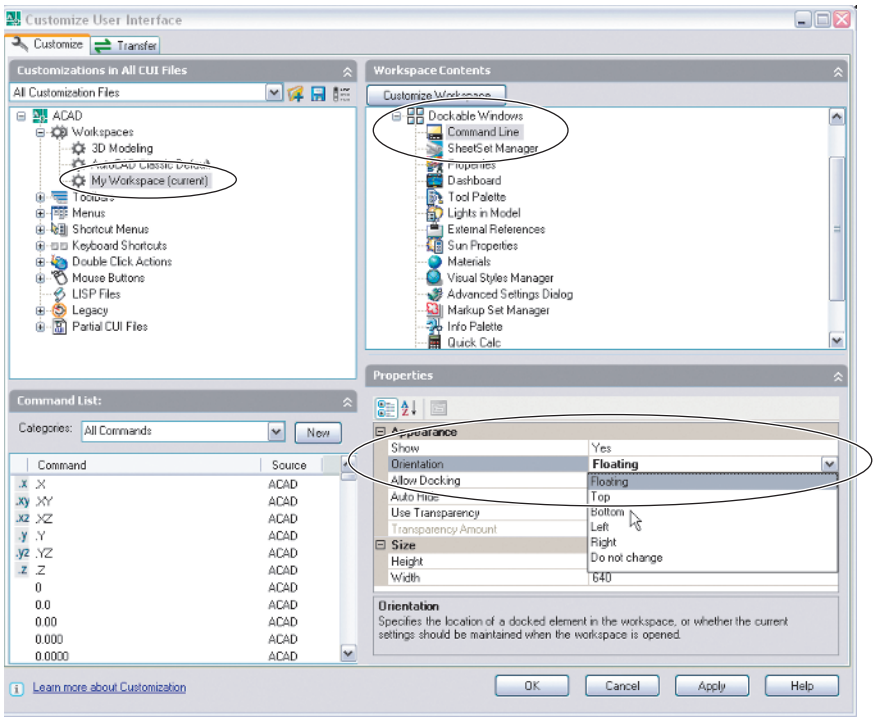
Recover "Lost" Dockable Windows

Have you ever "lost" one of your dockable windows—for example, the Command Line? It isn't visible anywhere on the screen when you toggle it on. Almost immediately, panic sets in. Why did you ever undock it? How will you live without your command line? You toggle the window on and off frantically with shortcut keys, and then you try the menu, before dreading that you might have to reinstall AutoCAD. Wait, don't do that—the fix is easy:

1. Use the CUI command to open the Customize User Interface window.
2. Expand your current workspace in the Customizations In All CUI Files pane.
3. Expand Dockable Windows in the Workspace Contents pane.
4. Select the lost item in the list.
5. Change Orientation to anything other than Do Not Change (Left, for example). Click OK, and the case is closed.
6. Move the recovered dockable window back to your preferred location.

How is it possible to misplace dockable windows? This can happen when you've been using dual monitors in extended desktop mode. You experience the loss when you're away from your second monitor, say with a notebook computer on the road. AutoCAD remembers the position of your floating window but isn't smart enough to know that you can't

see it because it's off the screen. You may also lose your dockable windows when you change the resolution of the screen (which once happened to Lynn in front of about 150 people in Denmark!) If neither one of these situations applies to you, dockable windows have also been reported to disappear for no good reason at all.



Inputting with the Keyboard and Mouse

Long gone are the days when tablets were popular input devices in the AutoCAD community. Although they had some advantages, they made portability impractical. Today, the keyboard and mouse are the only input devices you'll need to get the most out of AutoCAD. The tips in this section—some new and some old—will help you work more efficiently with AutoCAD.

Input Optimizations

The first big optimization is to enter commands using dynamic input on screen rather than on the command line. Old habits are hard to break, but please give dynamic input a chance. To get the most from dynamic input, turn dynamic prompts on in the Drafting Settings dialog box. Use the Down Arrow key when you want to see options.

Autocomplete is another nifty feature that should be popular among the lazy, forgetful, and/or dyslexic (which should include just about everyone). This tool comes in handy when you can't remember how to spell a specific system variable or command. Autocomplete works both in dynamic input prompts and on the command line. To use this practically invisible feature, key in a few letters of a command or system variable you kind-of remember, and then press the Tab key for a suggested command completion. AutoCAD pages through all the commands and system variables that start with those characters.

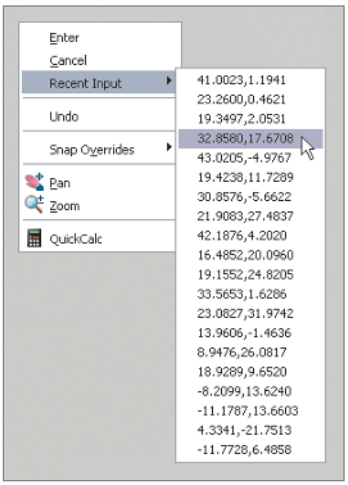
For example, type **SP**, and then press Tab. Keep pressing Tab, and complete commands will cycle at the prompt. You'll see these commands:

- SPACETRANS
- SPELL
- SPHERE
- SPLANE
- SPLINE
- SPLFRAME

…on and on alphabetically ad nauseum. If you're too hasty in pressing Tab, and you go past the command you want, press Shift+Tab to go backward. Press Enter to execute the selected command, and you're back in business.

Command cycling is another input optimization of note. Press the Up Arrow key to see the previous command that you used appear at the prompt. This list isn't alphabetical, like Autocomplete—these are the commands you really used, not just thought about using.

Press the same key again to see the command before that, and so on. Use the Down Arrow key to go forward through the cycle. Press Enter to execute, as always.



Where is this feature useful? Let's say you observe that you're going through the same repetitive motions while drawing. You're using OFFSET and then FILLET and maybe TRIM repeatedly. Instead of hunting for the correct tool button, just press the Up Arrow key for quicker command access. Anything to save a few microseconds.

The final input optimization to mention is Recent Input. This is similar to command cycling but is used for input instead of commands (thus the well-chosen name). When you're at an input prompt (for example, when you're drawing a line), right-click to access the Recent Input shortcut submenu; here you'll find recently used coordinates and commands with quick reuse potential.

Board the Command Alias Express

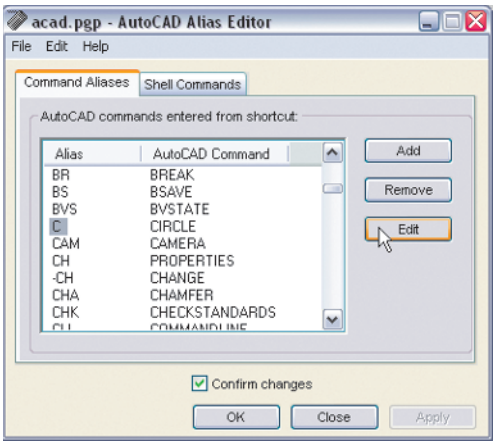
Command aliases are abbreviated command names. L is the alias for LINE, A is for ARC, and so on. Surprisingly, command aliases aren't part of the CUI editor; they're still controlled by the ancient ACAD.PGP file. Ever since Autodesk went with the Microsoft standard for AutoCAD, the support folder that contains the program parameters file is buried deep in the file system. Way deep—look how far you have to go to manually reach this hidden folder:

```
C:\Documents and Settings\<username>\Application Data

\Autodesk\AutoCAD 2007\R17.0\enu\Support\acad.pgp
```

Theoretically, you could edit this text file by hand, but why bother? Instead, use the ALIASEDIT Express Tool to edit the file without leaving the comfort of AutoCAD.

For example, many people prefer to use the alias C for the COPY command rather than CIRCLE. To make this change, use ALIASEDIT. Scroll down the command list, and select the alias C. Click Edit, and change the association to COPY. Click OK in all the dialogs and confirmation dialogs that appear, and AutoCAD will reinitialize so the change is live.



INSTALL THE EXPRESS TOOLS

If you haven't installed all the Express Tools, then drop everything and install them immediately (do a custom install, and select Express Tools). The Express Tools are extremely useful. Some have already found their way into core AutoCAD—they have come of age and are now considered to be grown-up AutoCAD features.

Other Express Tools haven't been so lucky; they still suffer from lack of worldwide acceptance. Some Express Tools are waiting to be *localized*—translated into every language in which AutoCAD is offered. Because the Express Tools don't run on AutoCAD LT, only tools that make their way into the core product are available to LT users.

Function Key Master List

Many of the function keys have been the same since time immemorial (since 1982). But recently a few of them have changed, and it behooves you to make some additional changes on your own. Instead of trying to piece together all this information on your own, you can memorize the following chart, or photocopy it and pin it up (or tattoo it on yourself, if you're into that):

F1	Help
F2	Text Window
F3	Object Snap
F4	Tablet
F5	Cycle Isoplane
F6	Dynamic User Coordinate System
F7	Grid
F8	Orthogonal
F9	Snap
F10	Polar Tracking
F11	Object Snap Tracking
F12	Dynamic Input

All the function keys except F1 are toggles that turn modes on and off. Some of the keys have corresponding buttons on the status bar.

We suggest that you change F1 to Cancel to avoid accidentally hitting the Help function when you miss the Escape key. We also recommend that you change the F4 key from the archaic Tablet to something more valuable. Lynn's is set to 3DOrbit to sync up with the settings in Autodesk Inventor.

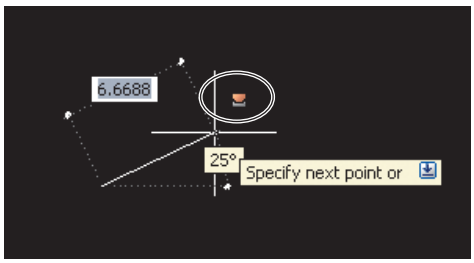
See Chapter 10 to learn how to customize the function keys.

Temporary Overrides Are Here to Stay

Temporary overrides were introduced in AutoCAD 2006 and are worth getting to know only if you can walk and chew gum at the same time. They work when you hold down a key combination (usually involving the Shift key) while doing something with the mouse. A tiny icon appears near the cursor to visually clue you in that something is being overridden at the moment.

This feature comes in handy when you can't be bothered to toggle a mode off because you know you're going to need to turn it right back on in a second (that would mean two clicks or button presses; think of the time waste). Press the correct keys, and the mode in question is overridden—but just temporarily, while you're holding down the keys.

There are two sets of temporary overrides, one for each hand (depending on whether you're right or left handed). One of your hands is on the mouse, right? We certainly wouldn't want you to let go of the mouse. The other hand can hold down a key combo to temporarily override while you continue to use the mouse. (Then, if you really practice, you can answer the phone with your foot.)



This is the default list of temporary overrides, all of which can be customized with the CUI command (see Chapter 10):

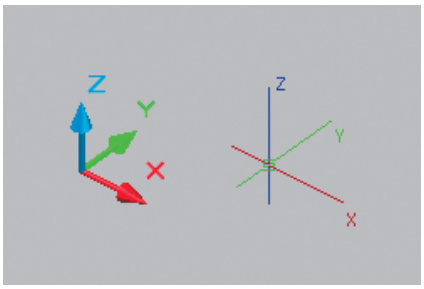
Left Hand	Function
Shift+A	Toggles object snap
Shift+S	Enables object snap enforcement
Shift+E	Object snap override: endpoint
Shift+V	Object snap override: midpoint
Shift+C	Object snap override: center
Shift+Q	Toggles object snap tracking
Shift+D	Disables all snapping and tracking
Shift+X	Toggles polar tracking
Shift+Z	Toggles dynamic UCS
Shift	Toggles orthogonal mode

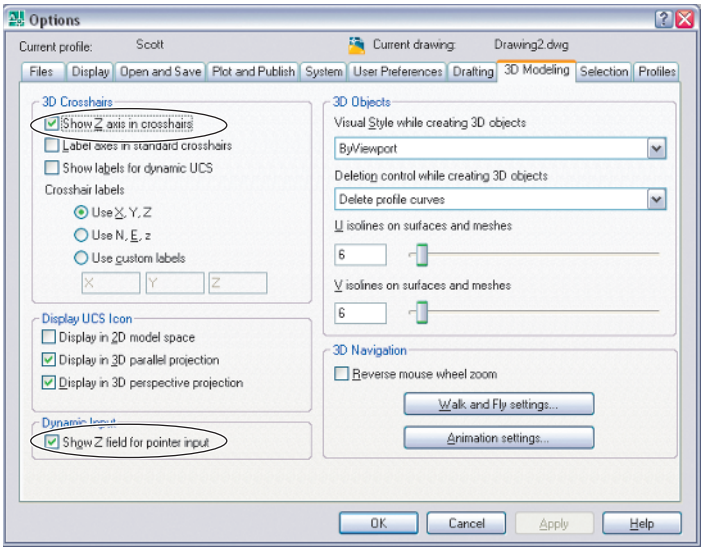
Right Hand	Function
Shift+'	Toggles object snap
Shift+;	Enables object snap enforcement
Shift+P	Object snap override: endpoint
Shift+M	Object snap override: midpoint
Shift+,	Object snap override: center
Shift+]	Toggles object snap tracking
Shift+L	Disables all snapping and tracking
Shift+.	Toggles polar tracking
Shift+/	Toggles dynamic UCS
Shift	Toggles orthogonal mode

Crosshairs in 3D

If you're planning to do any 3D modeling—and you should be, if you're using AutoCAD 2007—set up the crosshair cursor for 3D so you'll know which way is up. Use the Options command, and click the 3D Modeling tab.

Select Show Z Axis In Crosshairs. Doing so adds the third "up" dimension to the crosshairs; it appears in blue. There is a method to the madness of color coding. Anyone who knows computers knows that monitors use RGB color space. Painters often get confused because they learned that yellow is a primary color, and it is—at least, for the *subtractive* color you see with reflected light (as in paint on a canvas). Computer monitors shine light in your eyes, so they use *additive* color, which is an entirely different animal. But we digress.





The mnemonic, or way to remember it, is *RGB=XYZ*—red represents the X axis, green for Y, and blue for Z. The UCS icon is fatter and has conical arrowheads on the axis tips by default, but observe that it follows the same hard and fast color-coding rules.

You might choose to label the axes on the crosshairs (in Options), but once you get the color mnemonic, doing so will be overkill. Before closing the 3D Modeling tab of the Options dialog, select Show Z Field For Pointer Input. This option is helpful if you ever want to key in Z coordinates on screen using dynamic input, but point input must also be enabled in Drafting Settings.

As the Wheel Turns

Tell us that you have a wheel on your mouse. If you don't, what are you thinking? Go out and buy a wheeled mouse ASAP—have a bake sale or a carwash, whatever it takes! The mouse wheel is one of the best productivity boosters. A few important system variables control the behavior of the mouse wheel:

MBUTTONPAN `MBUTTONPAN` is the system variable that controls whether the middle buttons pans or displays the object snap menu (which isn't quite as useful). Panning with the wheel button is so intuitive that most of us take it for granted. It's on by default, but if someone turns it off, you'll probably go crazy—so, this tip will make your day. Set `MBUTTONPAN` to 1 for panning, and set it to 0 to display the object snap menu. There's no need to use the scroll bars on the screen or key in PAN anymore when `MBUTTONPAN` is on—just use the wheel button. Those of you who still have an ancient three-button mouse will prefer setting `MBUTTONPAN` to 0, because you won't be able to pan anyway.

ZOOMWHEEL The ZOOMWHEEL system variable controls the direction you rotate the wheel to zoom. AutoCAD has forever been set to zoom in when you rotate the wheel away from you (forward direction). You're moving the camera toward the objects on the screen by scrolling forward and away from the objects by scrolling backward. It's now possible to reverse that behavior by setting this system variable to 1.

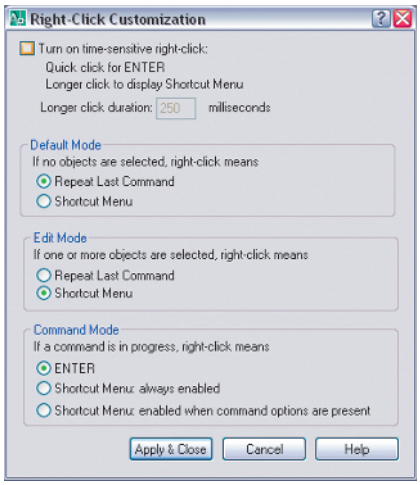
Why would you want to do that? To make it easier on your visual cortex as you switch between AutoCAD and Autodesk Inventor, Google Sketchup, and/or Google Earth. All these apps (and probably many others) use the reverse mouse-wheel zoom direction, so that rotating the wheel forward (away from you) zooms out. The objects are moving away from the camera and vice versa. Now power users will be less disoriented as they switch between 3D programs (although old habits are hard to break).

ZOOMFACTOR ZOOMFACTOR controls how quickly your mouse wheel zooms in and out when it's rotated. The *zoom factor* is a number that represents a percentage of the maximum possible speed. Set ZOOMFACTOR to a number between 1 and 100 to govern zooming speed. Lower speeds give you finer control, but it can take all day rolling the wheel to get anywhere. This is a personal setting that you'll need to choose for yourself.

Customize the Right Mouse Button

If you've been using AutoCAD for a long time, then you'll remember how efficient it was when a right-click meant Enter. You could draft much more quickly with the mouse instead of having to use the other hand to hit the Spacebar or Enter key to end and repeat the last command.

Somewhere along the path of AutoCAD's continual evolution, a shortcut menu began to appear when you right-click instead of our good friend Enter. Although the shortcut menu often has Enter as one of its many options, it's clearly a compromise situation. Right-clicking for Enter is faster.



To be fair, the right-click shortcut menu has advantages, too. Some people have even grown to rely on it. We swear that there are commands in the shortcut menus that we have yet to find anywhere else! The good news is, you can customize right-click behavior so you can have the best of both worlds.

Use the Options command, and select the User Preferences tab. Click the Right-Click Customization button to bring up a dialog box of the same name. Here you can choose exactly how you want the right button to behave.

Should the right button repeat the last command, bring up the shortcut menu, or act like Enter? If you ponder it, your answer probably depends on whether objects are selected and a command is in progress. Amazingly, all these possibilities are customizable, but you'll find in practice that locking in the mouse behavior in this fashion can be a bit too constraining. What if you change your mind on occasion and want the shortcut menu to appear rather than repeating the last command?

Perhaps *the best of all possible worlds* (with deference to Voltaire) is to turn on time-sensitive right-click. Check the box at the top of the dialog, and your act of right-clicking will be timed. This isn't a test: If you click quickly—say, if the click lasts less than 250 milliseconds—that will mean Enter (or repeat the last command, if you're at the command prompt). If you take longer to complete the right-click, then the shortcut menu will appear. Give it a try; you may like leaving your options open until the moment of right-clicking.

If you're not into video games and/or you just can't stomach being timed all of the time, then disable time-sensitive right-click and breathe easier.