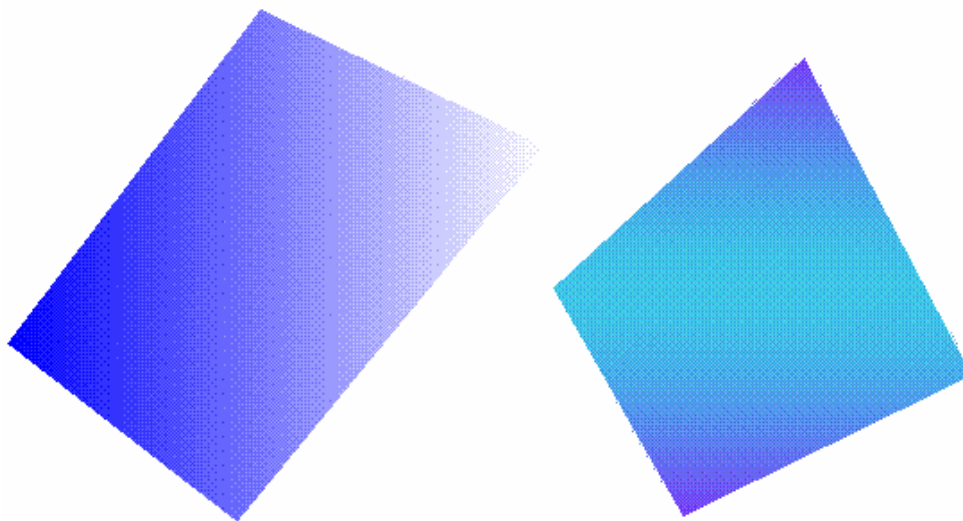


## AutoCAD 2004 – What's New

Many have asked what is in the new version of AutoCAD with 2004. You will find many things have changed from large to small in size. Below is a break down on many of the items that I have listed out.

### What's New

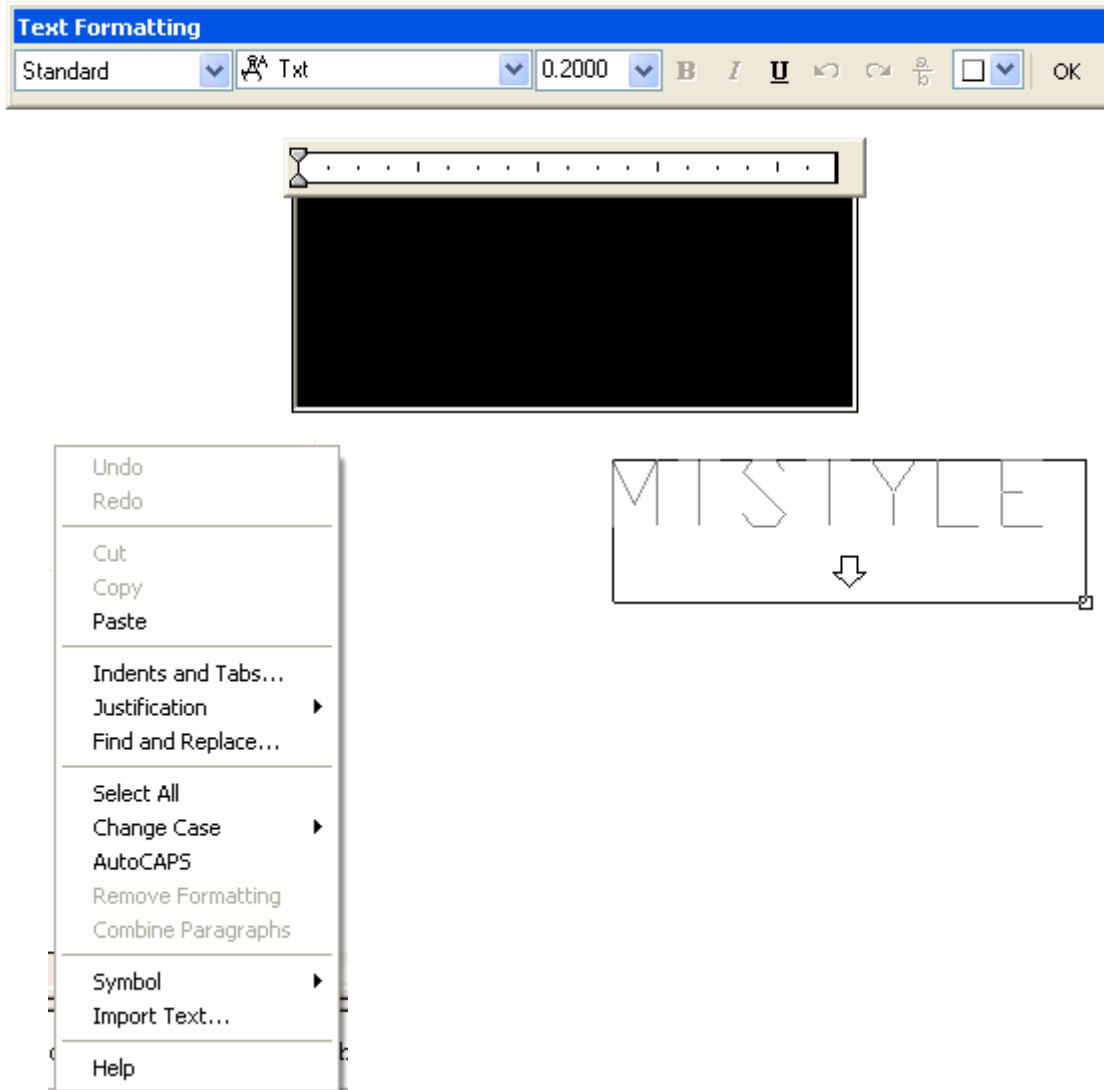
1. **Drawing file format** – The new drawing file format is a compressed file allowing file open access of 30% faster and between 45 – 60% faster save time. This file format is also a great deal smaller than previous versions allowing for less storage space being required. This helps in backing up your drawing files as well. So over all this is a big ticket item for all members of a corporation.
2. **New License Manager** – The new License Manager allows for a check in check out system for serial numbers. This allows for lower cost of ownership for the software allowing more people to share licenses. The renewal system has low over head and can be done through a dial-up connection.
3. **Gradient Fills** – Gradient Fills allow you to fancier presentation type concepts with out the need for applications like PhotoShop.



---

Notes:

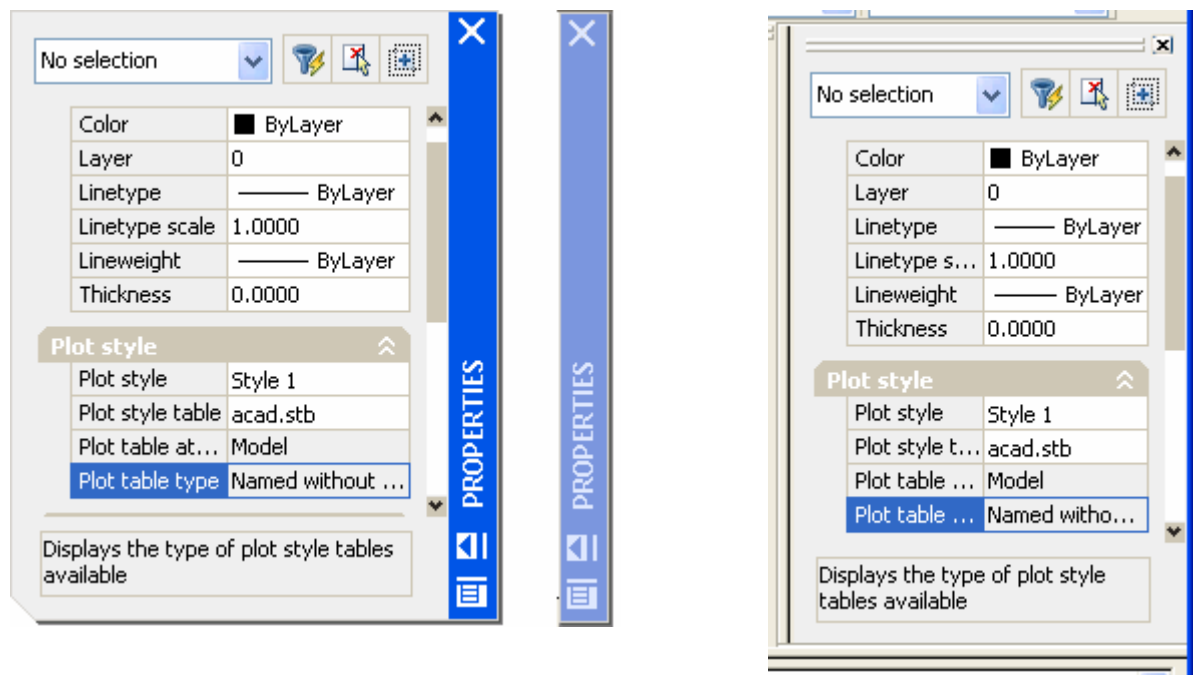
4. **Mtext Enhancements** – Mtext has been greatly enhanced with this release. It now boasts a new editor that gives the feel of in-place editing and supports Indents and tabs. It allows you to exit the dialog box by clicking outside of the framed editor as well. There is also a preview of what the text will look like with the current style while creating the paragraph size. There is also a new right-click menu that supports many new and old features. Node snap have been added to the four corners of the bounding box for Mtext to help in lining up several notes.




---

Notes:

5. **Creating empty Mtext objects** – The Mtext command will not let you create empty Mtext objects now. The object must have at least a space or tab character in order to create the new object, but it will not let you create a Mtext object with nothing in it anymore.
6. **New Palette Interfaces** – All the dockable containers that were introduced with 2000 have gotten a face lift and increased functionality. The palettes now support new functionality from Auto-hide to Transparency. The Palettes still have the ability to dock to the wide of application window like they could when first introduced back in 2000.

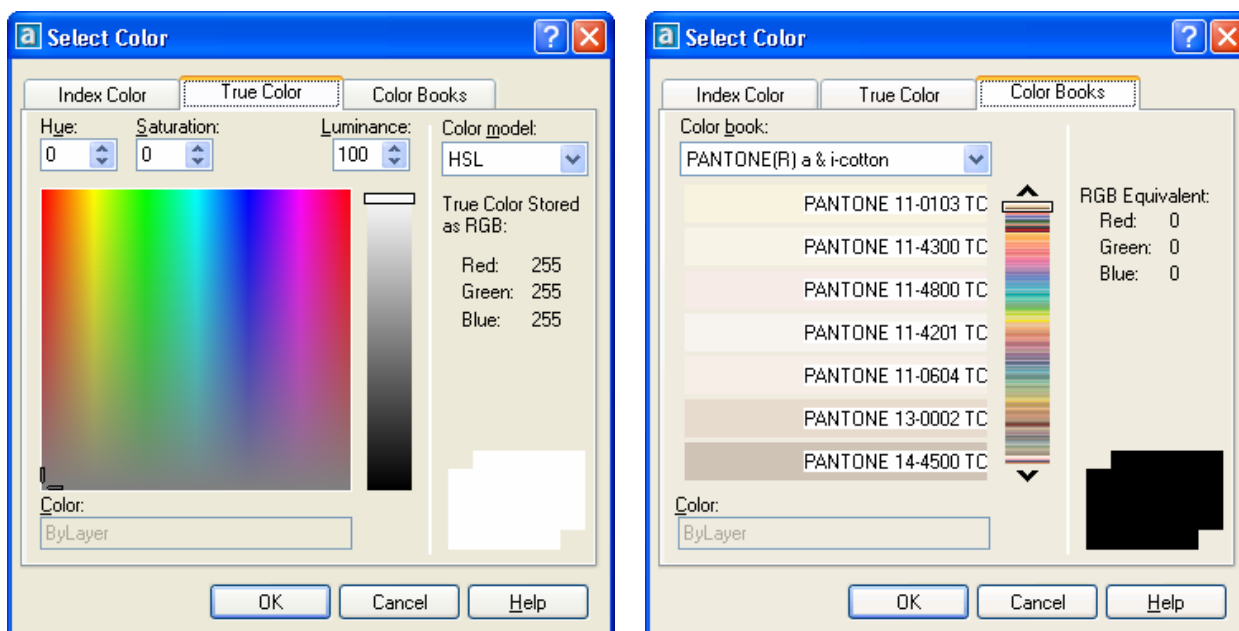


7. **Express Tools** – The Express Tools Vols. 1 – 9 are included on the CD browser and can be installed separately. Some of the Express Tools have been integrated into the core, but most still remain as Express Tools.
8. **New Revision Cloud Command** – The old Express Tool Revision Cloud has been brought over to the AutoCAD and now supports some new functionality. It now has the ability to convert some object types to a Revision Cloud. This allows for more control over the Revision Clouds path and size.

---

Notes:

9. **True Color and Color Book Support** – True colors can now be used for not only Gradient hatches, but also for standard entity colors.

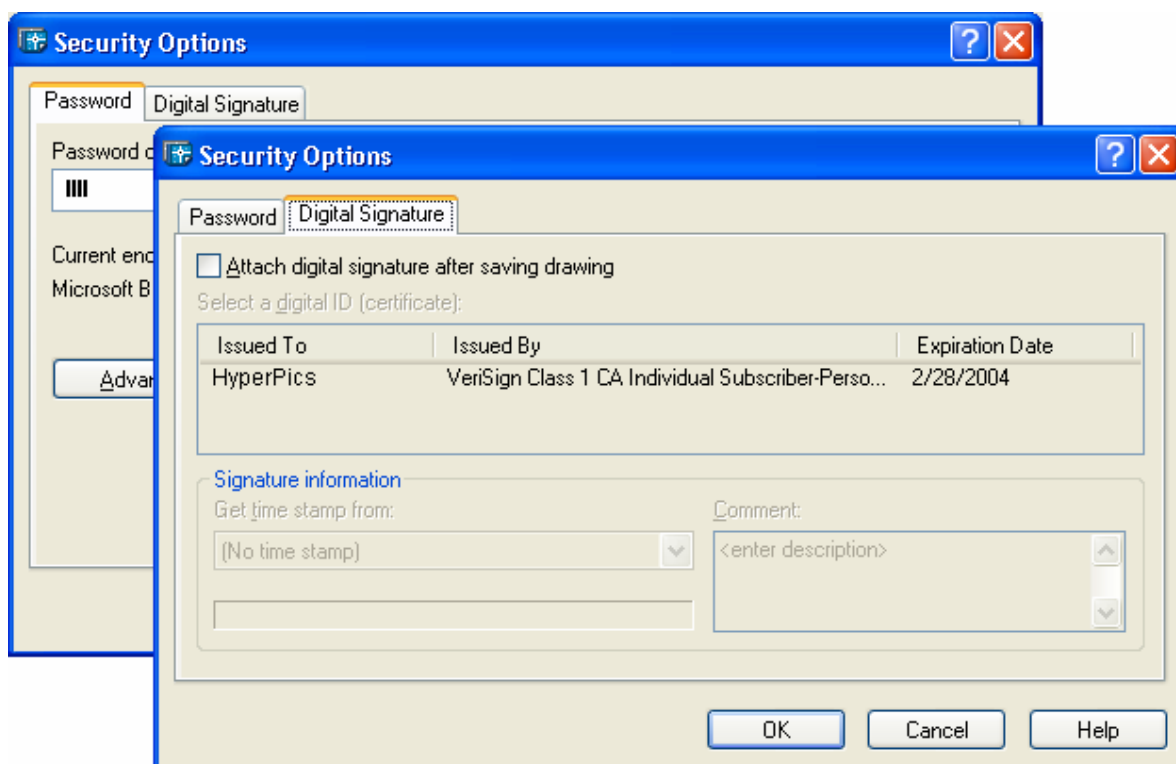


10. **Clean Screen** – If you liked the Express Tool Full Screen you will find the Clean Screen functionality very useful and easy to use. The Clean Screen works very similar to the Full Screen On/Off commands, but can be toggled through the Ctrl+0 key combinations. Clean Screen removes all the Toolbars and Palettes from the screen. It also removes the Caption bar across the top of the application. Unlike the Full Screen functionality it keeps the pull downs visible on screen versus, hiding them.
11. **Power User Rights** – Administrator and Power User are no longer needed in order to run AutoCAD with the introduction of 2004. AutoCAD 2004 also meets all requirements for Windows XP certification.
12. **Side-by-Side Install** – AutoCAD 2004 can be installed side-by-side with any of the 2000+ based products. This allows for easier migration of the new software.
13. **Match Properties Enhancements** – Match Properties will now work on some of the properties that are specific to Viewports and Polylines.

---

Notes:

14. **Digital Signatures and Password protection** – AutoCAD drawings can now be marked with a digital signature to verify that nothing has been changed since it was last signed ensuring the contents have not been altered. A password can also be applied to the drawing file to ensure unwanted eyes are not seeing your designs. This was an extension for AutoCAD 2002 and is added as a standard feature with 2004. Passwords are also cached during the session of AutoCAD. So if you open and close the same document several times during a session you will only be prompted for the password the first time the document is open. The feature can be disabled during the network deployment of the software. Disabling the password protection feature only affects adding passwords to a document and not opening a document with a password added to it. Passwords also can not be retrieved if they are loss.

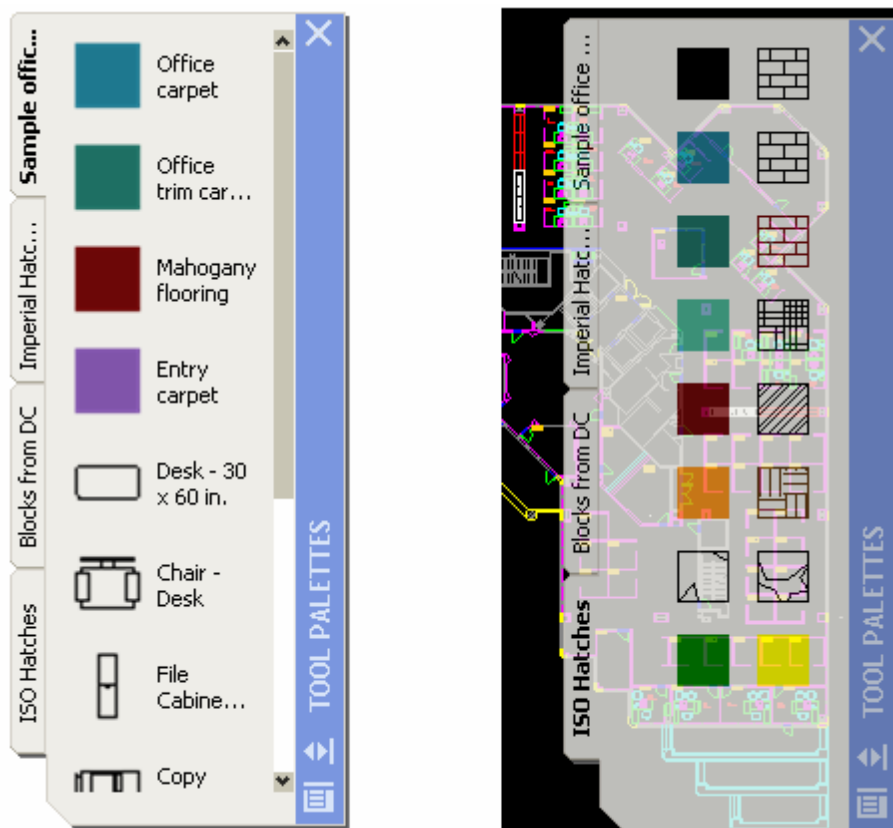


15. **Attach Digital Signature** – The Attach Digital Signature is an application that runs outside of AutoCAD and allows you to add a Digital to multiple files at one time. This is faster than opening each file individually.

---

Notes:

16. **Enable\Disable Digital Signature Icon** – You can specify whether or not a drawing that is digitally signed has a different icon under Windows Explorer vs. a drawing that is unsigned. This can be accessed via Right-clicking over a drawing file. Having this option enabled does slow down opening folders with a large number of drawing files just slightly.
17. **Tool Palette** – The new Tool Palette allows you to organize office standards for Hatch patterns and blocks in an organized container. The Tool Palette allows you to setup layers and some of the other properties a head of time to ensure objects are place and created correctly. There is a variety of options that this feature has and they range from content display and size of icons as well as where the content can come from. Most of the content can be created directly on the Tool Palette or drag 'n dropped from Design Center or Windows Explorer.

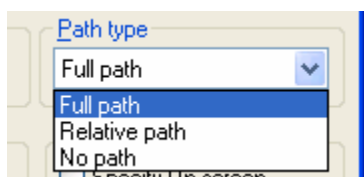


Notes:

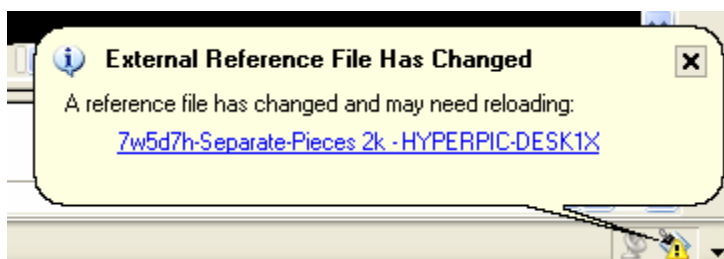
---

Notes:

18. **Attach Xref Enhancement** – You can now attach multiple Xref files at one time versus in the past of one at a time. All Xrefs would use the same insertion values. There is also an option for Path type added to the Xref Attach dialog which affects how the pathing for the Xref is affected. There are Path type choices of Full Path, Relative Path and No Path.



19. **Xopen Command** – The new Xopen command allows you to open Xrefs for direct file editing versus using Refedit.
20. **Xref Notification** – AutoCAD now supports a notification system for Xrefs. So if a change occurs to an Xref that is currently being referenced you are notified of the change and can take the correct measure to ensure that everything is OK.



21. **Other interface changes** – This section lists some of the smaller, but very helpful user interface changes
- The Layer pull down on the Object Properties Toolbar has been stretched to show longer layer names
  - There is a new Styles Toolbar that has dropdowns for Text Styles and Dimension Styles, as well as access to their appropriate editors.
  - Toolbars now support True colors
  - Object Properties Toolbar now has been split into two different Toolbars. One contains the Layer functionality and the other contains the other settings for Color, Linetype, Lineweight and Plot Style.
  - Smaller Standard Toolbar with less clutter on it has been introduced

---

Notes:



22. **Viewport Enhancements** – Viewports have been enhanced for printing and editing. You are now allowed to select several Viewports and change their properties via the Right click context menu. Viewports now support other options other than just Hidden Line. It now supports As Displayed so if you Hide, Shade or Render inside the Viewport it will plot that way based on options selected. You can also mark a Viewport for Hidden, Wireframe or Render.
23. **Property Palette Enhancements** – The Properties Palette has many new enhancements for several different object types. Some of them are listed below.
- a. Attributes now can be edited for blocks
  - b. Polyline length now is displayed
  - c. 1 1/2" = 1'-0" is now as selection for a Viewport scale
  - d. Now remembers what sections you close and have open per entity type. This is retained between sessions as well.
24. **Communication Center** – The Communication Center allows for information about AutoCAD to be streamed down from the Internet. This information can be Tips and Tricks or even updates for you AutoCAD.

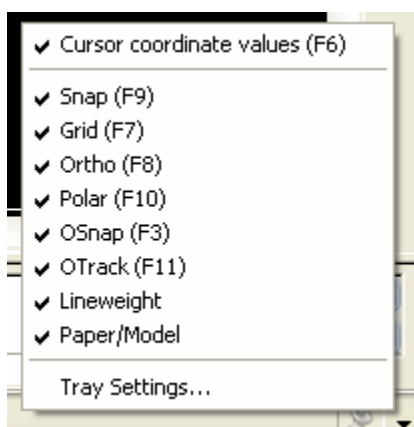


---

Notes:

25. **Right-click Delay** – A new Right-click feature allows for greater flexibility in mouse operation. The delay allows for a user to have a quick right-click for an Enter or a press and hold for a user defined interval to bring up the context sensitive menu. This allows users that have the Middle mouse button set as Enter to be freed up to allow it to work as a Real-time pan/zoom and Zoom Extents.

26. **Status Bar Enhancements** – You can customize what buttons and items are displayed in the Status Bar area. This allows the user to only display what they use on a daily basis and removing what isn't needed.



27. **QNEW Command** – The QNEW command allows you setup a template to use so you don't have to browse for a template each time you want to create a new drawing file.

28. **Command Enhancements** – General command updates and enhancements.

- a. Chamfer has a Multiple option.
- b. Fillet has a Multiple option.
- c. Refedit automatically selects sub-objects.
- d. Pedit can be defaulted to converting objects to a Polyline automatically via a System Variable flag.
- e. –Vports command has an option change that to include a new Shadeplot option and removes the Hideplot option. The Shadeplot is used to support the ability to Shade, Hide or Render a Viewport when plotted.
- f. The Color command has been enhanced to support the new color models with ACI, True and Color books.

---

Notes:

## 29. New AutoLISP/Visual LISP Functions – General command updates and enhancements.

- a. **ACAD\_TRUECOLORDLG** – An new function based off of the ACAD\_COLORDLG function. The ACAD\_COLORDLG function still works just like it did in the past. The new function allows the user to select a color that is ACI, True or Color Book. The return value unlike ACAD\_COLORDLG is a list.

Usage for setting ACI: (acad\_truecolordlg 152)

Usage for True color: (acad\_truecolordlg (cons 420 2594))

Usage for Color book or Pantone: (acad\_truecolordlg (cons 430 "PANTONE(R) a & i-cotton\$PANTONE 11-4800TC"))

Return for ACI: ((62 . 144))

Return for True color: ((62 . 137) (420 . 2594437))

Return for Color book or Pantone: ((62 . 254) (420 . 15789027) (430 . "PANTONE(R) a & i-cotton\$PANTONE 11-4800 TC"))

## 30. New System Variables (Partial listing)

- a. **CLEANSCREENSTATE** – contains the current state of the Clean Screen functionality
- b. **GFANG** – gradient fill angle
- c. **GFCLR1** – gradient fill color 1
- d. **GFCLR2** – gradient fill color 2
- e. **GFCLRLUM** – gradient luminance value
- f. **GFCLRSTATE** – number of colors used for gradient fills, 1 or 2
- g. **GFNAME** – type of gradient fill used
- h. **GFSHIFT** – type of shifting applied to the gradient fill
- i. **GRIPHOVER** – Color used to show the what grip the crosshairs is over
- j. **GRIPOBJLIMIT** – the maximum number of objects that are selected to display grips
- k. **GRIPTIPS** – controls if tooltips are displayed for custom grips
- l. **LOCALROOTPREFIX** – parent folder to the locations of the Templates and Textures by default "C:\Docuemnts and Settings\<user name>\Local Settings\Application Data\AutoCAD 2004\R16.0\enu"
- m. **MTEXTFIXED** – disables in place editing with the new Mtext editor
- n. **MTJIGSTRING** – the preview string that is displayed when creating the bounding box for a new Mtext object

---

Notes:

**New System Variables (Partial listing) cont.**

- o. **MYDOCUMENTSPREFIX** – folder to the locations of My Documents  
C:\Docuemnts and Settings\\My Documents”
- p. **PEDITACCEPT** – determines if PEDIT asks to convert a line or other object to a Polyline or if it automatically does it
- q. **PALETTEOPAQUE** – controls whether or not the Tool Palette and Command Line can use transparency or not
- r. **REPORTERROR** – controls whether or not the new Error Report utility is used when AutoCAD is crashing
- s. **ROAMABLEROOTPREFIX** – parent folder to the locations of the customizable files that are carried around when you are using a network that has roam able profiles enabled. By default “C:\Docuemnts and Settings\\Application Data\AutoCAD 2004\R16.0\enu” is the path.
- t. **SIGWARN** – controls if a message box is displayed notifying the user that a drawing with a digital signature is being opened
- u. **STANDARDSVIOLATION** – controls if the notification system is used to monitor the drawing with the referenced CAD Standards file
- v. **TPSTATE** – the current state of the Tool Palette

**31. Changed System Variables (Partial listing)**

- a. **CECOLOR** – added support for True colors
- b. **CHAMFERA** – default is now set to 0.0000 (or zero) versus 0.5000
- c. **CHAMFERB** – default is now set to 0.0000 (or zero) versus 0.5000
- d. **FILLETRAD** – default is now set to 0.0000 (or zero) versus 0.5000
- e. **SAVETIME** – default is now set to 10 versus 120
- f. **SHORTCUTMENU** – added support for the right-click delayer feature
- g. **OPMSTATE** – has an additional value to when it is active, but rolled up

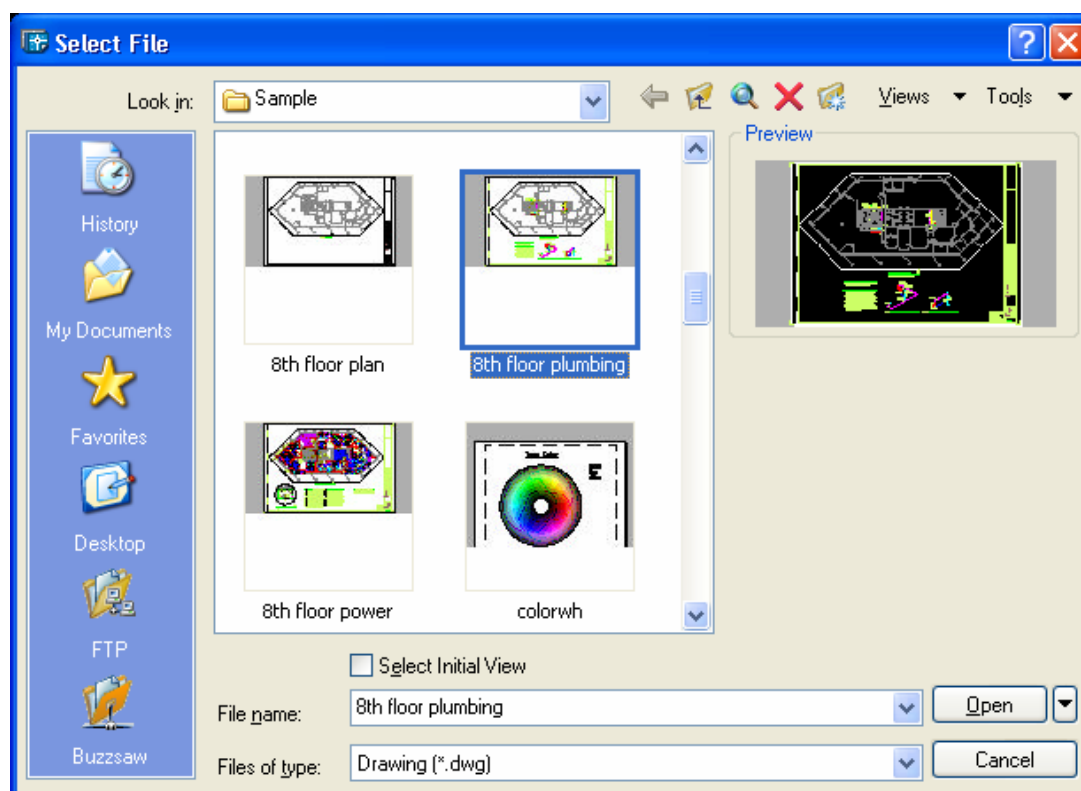
**32. Creating empty Mtext objects** – The Mtext command will not let you create empty Mtext objects now. The object must have at least a space or tab character in order to create the new object, but it will not let you create a Mtext object with nothing in it anymore.

**33. Edge Pan and Zoom** – AutoCAD 2004 supports an edge of the screen real-time zoom and pan when being run on the Windows XP operating system. This allows for the zoom and pan commands to continue in operation once the cursors has reached the edge of the screen and eliminating the need of picking up the mouse to continue the operation.

---

Notes:

34. **Explorer Thumbnails** – A new shell extension to view the embedded thumbnail views that are stored directly in the drawing file through Windows Explorer was added to find files faster. This extension will work with any AutoCAD file that has had the ability to embed a preview image in the file.

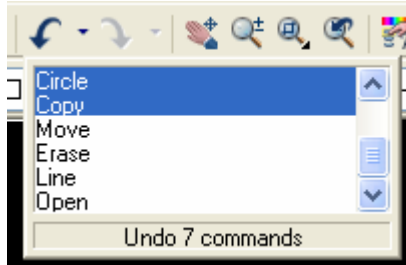


35. **Today has been removed** – The AutoCAD Today startup dialog box has been removed. Some of the functionality was moved to the Communication Center. One of the things that many people might miss if they were using AutoCAD Today is the history tracking for files opened organized by days and weeks.
36. **Save As AutoCAD R14 and R13 removed** – Only saving back to R2000 file format for DWG format is supported. You can save back to R12 DXF for a more of a generic file format. This obviously was going to happen since Autodesk dropped support for R14 over a year ago.

---

Notes:

37. **Multiple Undo/Redo** – After many years of asking it finally has happened. The ability to Undo and Redo multiple times has been added to the software. There is also a new command called MREDO to handle multiple Redo at the command line.

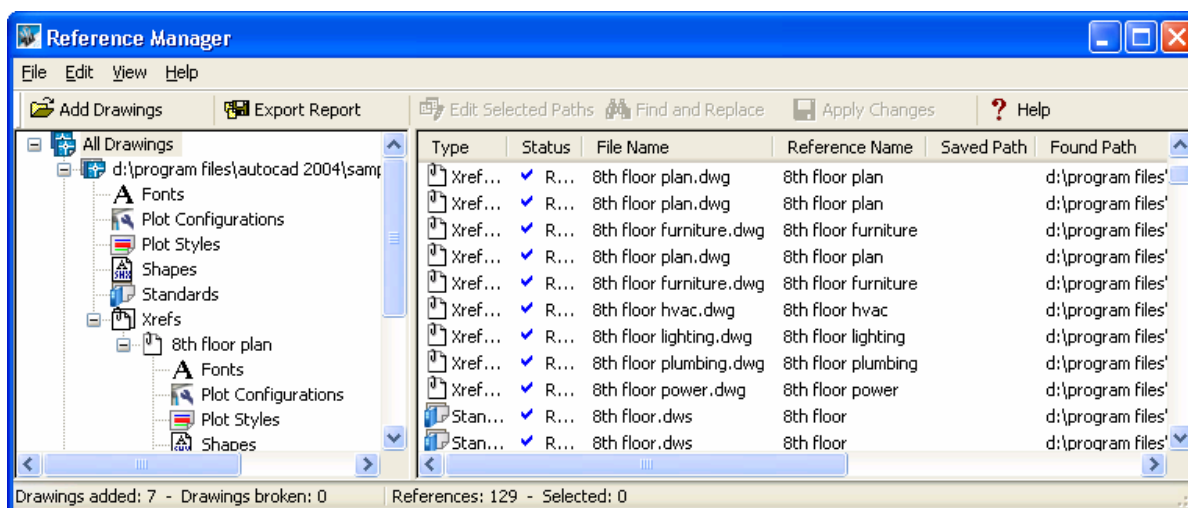


38. **Multi-Sheet DWF** – The new DWF file format contains several new enhancements. The enhancements include a format with many more options in it from how fonts are handled to multiple sheet layouts and password protection. The new multiple sheet design allows for delivery of a single file for a document set versus the previous one layout or drawing per DWF file.
39. **Education Drawing Warning** – A new message box is displayed when a drawing file that was created with an Educational version of the software is opened. This allows you up front to make the decision of not using the file before you get too far in the design cycle.
40. **Layout Tab Navigation** – You can use the key combinations of Ctrl+Page Up and Ctrl+Page Down to cycle through the layout tabs of your drawing like you can with tabs in a spreadsheet.
41. **Draworder Enhancements** – Changes that are made to objects are now represented correctly in Xrefs and blocks. The changes are permanently stored with the object now.
42. **Active Assistant** – By default the Active Assistant is turned off or set to On Demand and will not load at start up.

---

Notes:

43. **Reference Manager** – The Reference Manager is an application that runs outside of AutoCAD and allows you to gather information about a drawing file and its Xrefs. It will list information about fonts, nested drawings, CAD Standards, Shape files, Plot Styles and Plot Configuration files that go along with it.

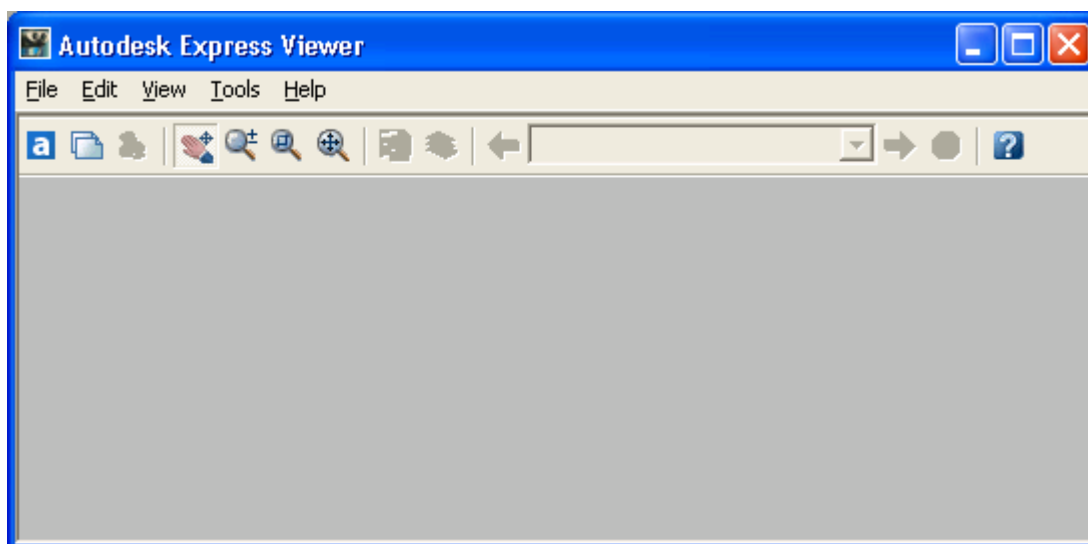


44. **Layer Filters Enhancements** – The problem with Layer Filters being carried over when a CopyClip is performed between two drawing files has been resolved. This resulted in many problems with a lot of Layer Filters being added to a drawing unknowingly. There is also an additional option in the Layer Filters dialog box to Delete All filters.
45. **New CD Browser** – The new CD Browser includes the information for installing and managing your AutoCAD deployments in a simple to understand interface that steps you through the proper sequence.
46. **Operating System Support** – AutoCAD 2004 does not support any of the Windows 9x operating systems, Windows ME and Windows NT 3.51. You need to have Windows NT w/ SP6, Windows 2000, Windows XP Professional, Home or Tablet PC. The software will run to a limited extent under Windows 98, but there are many features that will not run correctly or at all.

---

Notes:

47. **MeetNow** – The MeetNow feature has been removed with used Microsoft NetMeeting. You can still use Microsoft NetMeeting with AutoCAD, it just isn't part of the feature set of AutoCAD internally anymore.
48. **Wipeout** – The Wipeout command has been added to the core of AutoCAD and no longer needs to be installed as an Express Tool anymore. This resolves many problems with people receiving drawing files that contain Wipeouts in them and don't have the Express Tools loaded.
49. **Autodesk Express Viewer** – This is the new generation of viewing software that supports the new DWF file format. Originally, introduced late 2002, is now installed with AutoCAD to view DWF files. It is a much lighter weight viewing software than its predecessor Volo View Express. The new viewer however doesn't support Mark up functionality like Volo View Express does. The interface is very clean and user friendly.



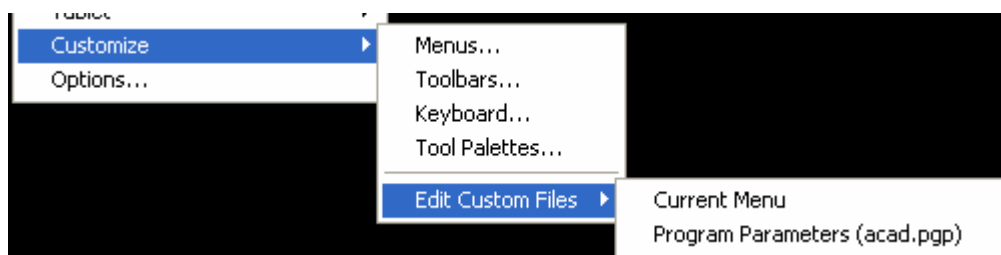
50. **OLE Limitations** – The limitation of OLE object size has been removed, but Office XP is needed as part of the solution though. So you can not display as many rows and columns of an Excel spreadsheet in your drawings as you would like to.

---

Notes:



51. **Access to Custom Files** – AutoCAD allows you to directly load some of the customizable files directly in a text editor that was set during installation. These files include the current base menu (or MNS) file and the PGP (or Program Parameters) file. This only allows you to make changes to the files, but once the changes are made, you are still responsible for reloading the files while you remain inside of AutoCAD. A simple closing and re-opening of AutoCAD will also reload the updated files for you as well.

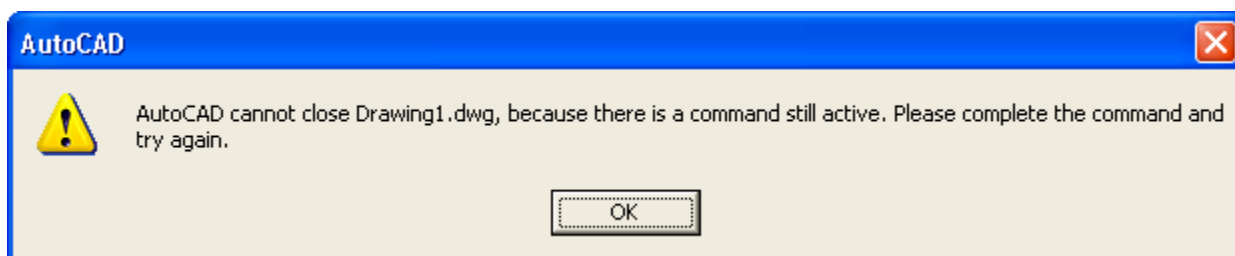


52. **Compiled Menus are different** – If you use custom menus that are partially loaded into AutoCAD you will need to keep one set for AutoCAD 2004 and another set for prior releases of AutoCAD. With the introduction of True Color toolbars into AutoCAD they now have a different format when compiled. AutoCAD 2004 will notify you if you load a menu that was compiled in 2002 or prior that it will need to be recompiled before it can be loaded.
53. **DesignXML removed** – The support for DesignXML has been removed from the application. It has also been removed from the ObjectARX APIs as well. This was one of those features that Autodesk was trying to push for, but never gained acceptance in the Design community.
54. **New Image export commands** – Support for exporting JPEGs, TIFFs and PNGs has been added. These are the same formats that are found in the Publish to Web feature. The commands are respectfully called JPGOUT for JPEGs, TIFOUT for TIFFs and PNGOUT for PNGs. This is the only what to export to these file formats because they were not added as part of the Export command.

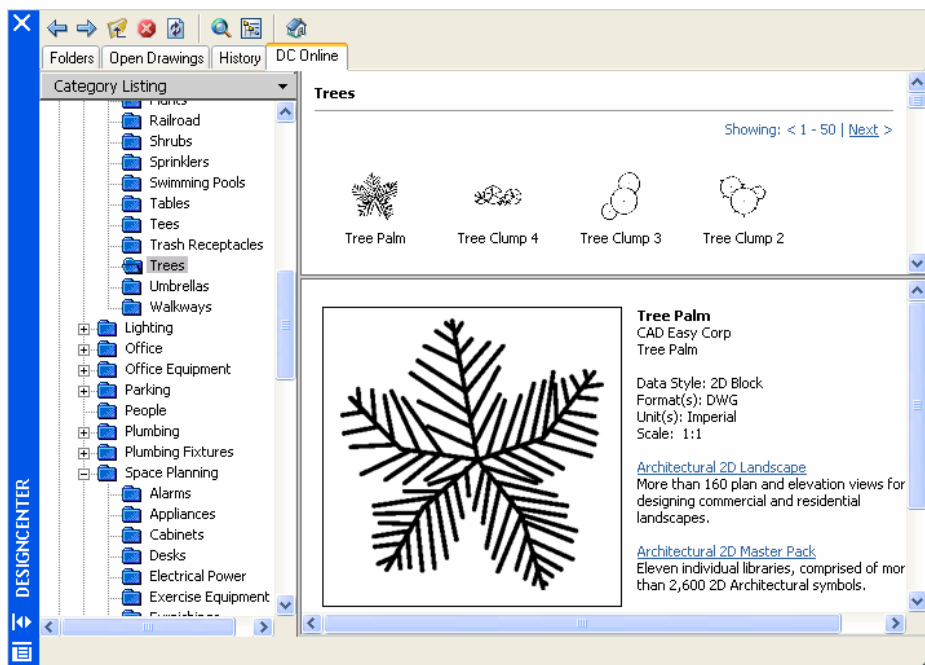
---

Notes:

55. **Command still active message** – The message box that pops up when a command is still active when you go to close AutoCAD has been removed. You can now close AutoCAD with a command still active like you could prior to AutoCAD 2000. So you should no longer see the message box below.

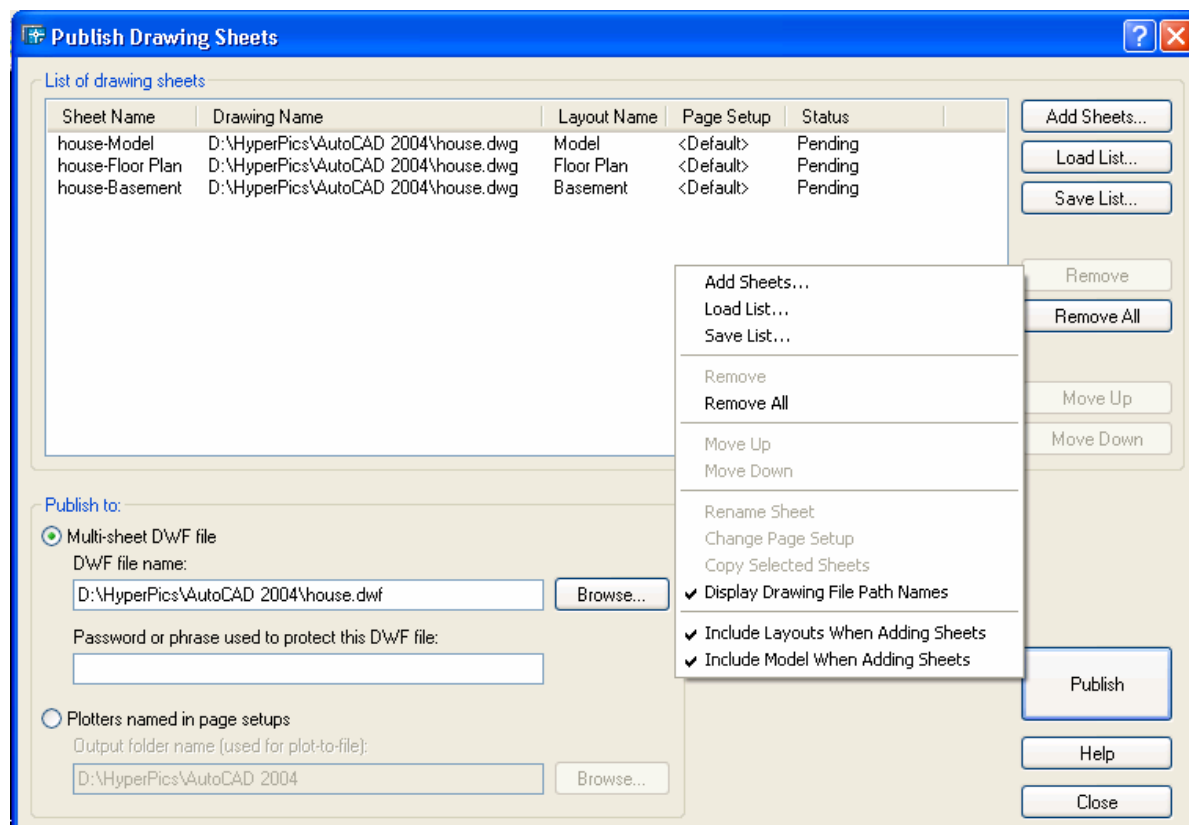


56. **DC Online** – The new Design Center Online functionality combines the easy of use functionality with Design Center and the symbols that were found on the Point A web site. The functionality uses a web page format with the i-drop functionality that has been around since 2000i. The feature functions at a reasonable speed on a dial-up connection, but anything faster would be ideal though.



Notes:

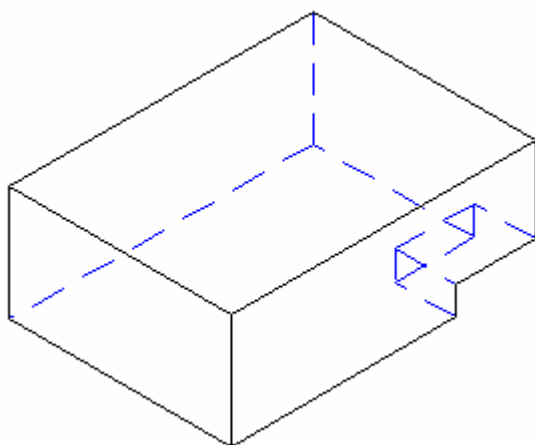
57. **Publish** – The Publish feature allows you to take several drawings and create a set that can be printed to hard copy or to the new DWF file format. This is a very nice feature when you need to distribute changes or even company details in large numbers. Build the set once, make changes to your drawings and then publish the original set again. This feature can save an enormous amount of time based on what your company does with drawing sets.



58. **Render Window** – The Render Window no longer loads when you first run the Render command. The Render Window now can be closed out by clicking the Close button in the title bar area; previous releases had the Close button disabled.

Notes:

59. **Hide Line Settings** – The Hide Lines feature allows you to configure how AutoCAD handles and displays lines beyond when the Hide command is used. By default nothing beyond is displayed if it can't be seen, but the lines can be displayed if desired to show true depth of an object and its features. The image below shows the feature enabled with dashed lines and being displayed in the color Blue. This feature will work with both solids and faces.

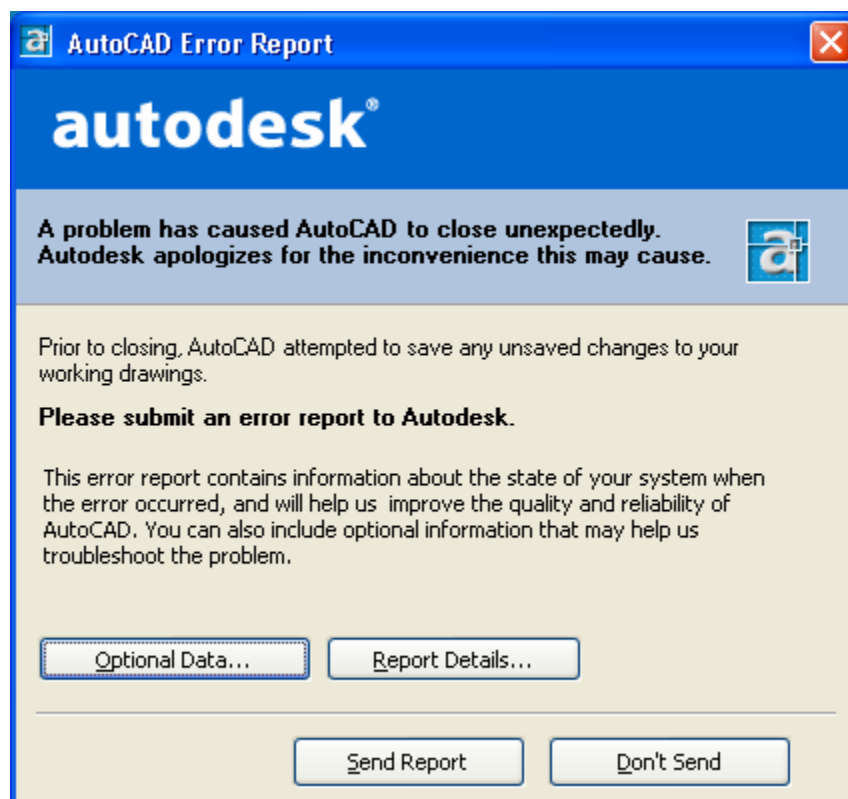


60. **Grip Enhancements** – Grips have been enhanced to work correctly in a rotated UCS and 3D views. There has also been supported added for a hover appearance so you know what Grip will become hot if clicked on a complex drawing and also has a Object Limit control. The Object Limit control affects how many objects can be selected before Grips won't be displayed on screen. This allows for faster editing when you don't need Grips.
61. **Migration Assistance** – An updated set of Migration Assistance tools is included with the install. These include:
- AutoLISP Compatibility Analyzer
  - Batch Drawing Converter
  - Layer State Converter
  - Command Alias (PGP) Porter
  - Menu and Toolbar Porter
  - ScriptPro

---

Notes:

62. **AutoCAD Learning Assistance (ALA)** – The AutoCAD Learning Assistance is no longer a part of AutoCAD as a second CD.
63. **Error Reporting Tool** – There is a new Error Reporting tool that works just like the one found in Windows XP. This one will send information directly to Autodesk about the problem that was encountered in the software so they can get these problems identified quicker and get the updates out in the form of Service Packs. This feature can be turned on and off via a System Variable called REPORTERROR.



### Summary

This list is only some of the features that I have come across and have identified. This document will be updated along the way as things come up.

---

Notes: