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Profiles: The Good, Bad, and Ugly

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CM23-1 Have you come across profiles in the options dialog box and ever wondered what they mean and how they can help you? This class will explain what profiles are all about and how they can be really help you in your daily use of AutoCAD or in enforcing CADD standards. We will discuss the good side of what profiles control as well as the downside. You will learn how to incorporate profiles to meet the needs of company standards, client standards, while still allowing some flexibility to your CADD users.

About the Speaker:

Pieter has been an avid AutoCAD user for the past 12 years. The last 7 of which were spent in the AE field doing structural drafting, CADD support, training and documentation, and servicing as CADD coordinator for the office as well as various clients. He has been responsible for keeping all the various company and client standards organized and implemented with new software rollouts. Pieter has an Associates Degree in Computer-Aided Engineering and his own consulting company.

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The Profile Tab:

The Profile Tab in the options dialog box may be something you are aware of even if you know nothing about creating and using Profiles. This tab (Figure 1) allows the user to manage their profiles within the AutoCAD environment. Select **Tools** then **Options** from the pull-down menu to display the Options Dialog box.
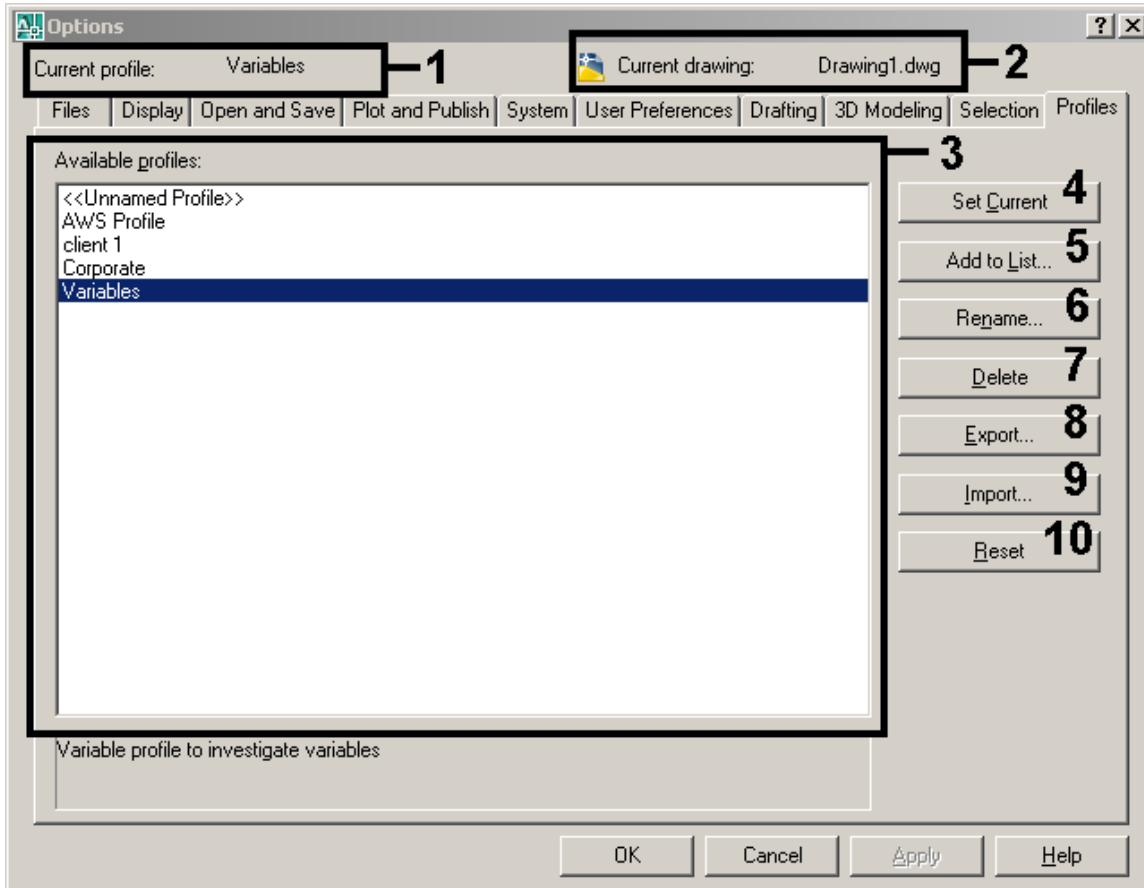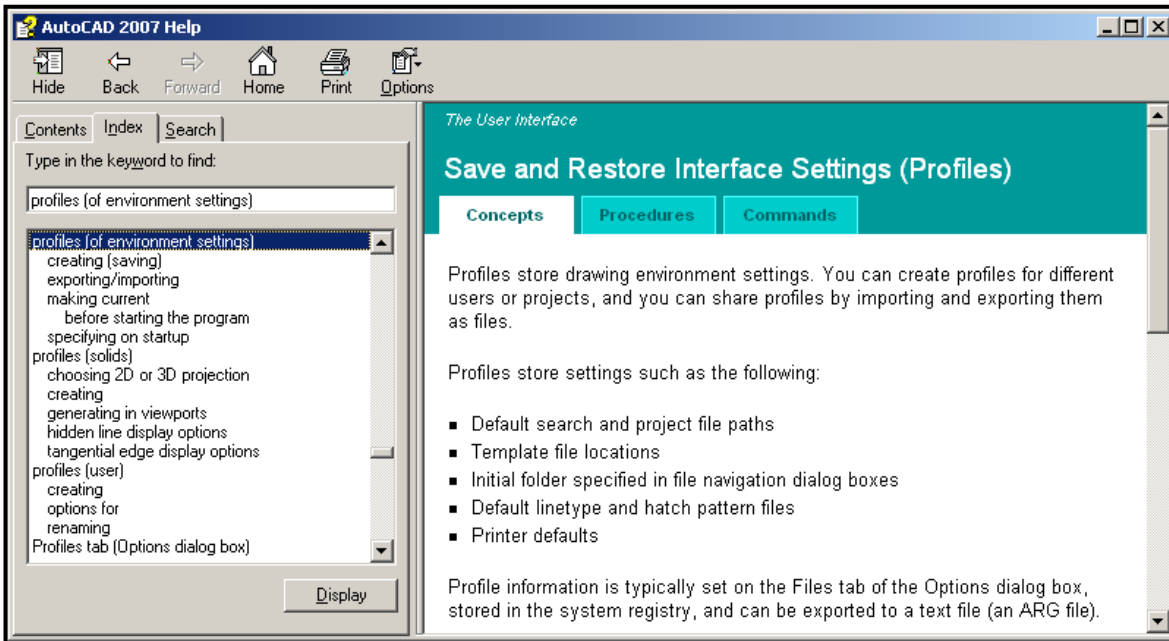

(Figure 1)

Item 1: Displays the current profile and is visible in all tabs

Item 2: Displays the current drawing name and is visible in all tabs

Item 3: Displays the available profiles

Item 4: This button will allow the user to set a selected profile current from the list in item 3.

Item 5: Select this button if you would like to create a new profile.
AutoCAD will prompt you for a name and description.

Item 6: Will allow you to rename a profile and modify the description.

Item 7: Will allow you to delete a profile.
Beware: this will remove the profile completely

Item 8: This will allow the user to export a profile which will create an *.ARG file.

Item 9: This will allow the user to import a profile which is an *.ARG file.

Item 10: This will allow the user to set a profile back to its default values.
Beware: this will reset all settings back to the installed defaults

What is a Profile?

I could rattle off the specifics that are listed in the help files (figure 2), but most of you have read them from start to finish or will be doing that as soon as you get back to your office.


(Figure 2)

The basic definition of a Profile is a container or wrapper to store drawing environment/application settings such as search paths, template file locations, printer configurations, plot styles (ctb's or stb's) and fonts, just to name a few. These would be the items found on the first tab of the Options dialog box (figure 3). Profiles also hold variables that are not accessible via a dialog box.

**A quick note about search paths; AutoCAD searches in the order that they are listed and as soon as it finds a specific file, AutoCAD no longer searches for that file. IE: If X:\AutoCAD\Temp is listed first and AutoCAD finds a file named "Acad.pgp" in Temp, it will no longer search for that file in any other directory even if it's suppose to be in a users' directory. Be careful of your directory order and what AutoCAD may find in those folders.

As we dig deeper, we will learn that this wrapper or container is really a registry edit. The registry is a Windows® database that stores configuration information for everything that is vital to your computer to run properly. Take note that if you are not comfortable editing your registry, create a backup before you start or risk reloading your system.
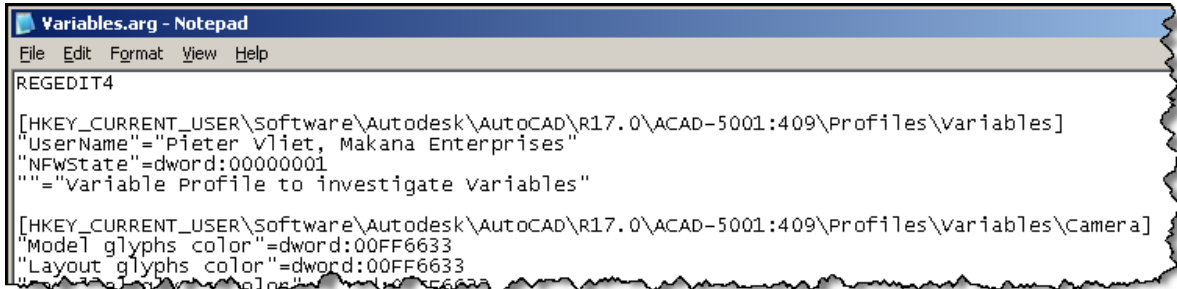
As a disclaimer, we will not be editing the active registry file. The truth is, AutoCAD makes the registry edits when loading in a Profile.

(Figure 3)
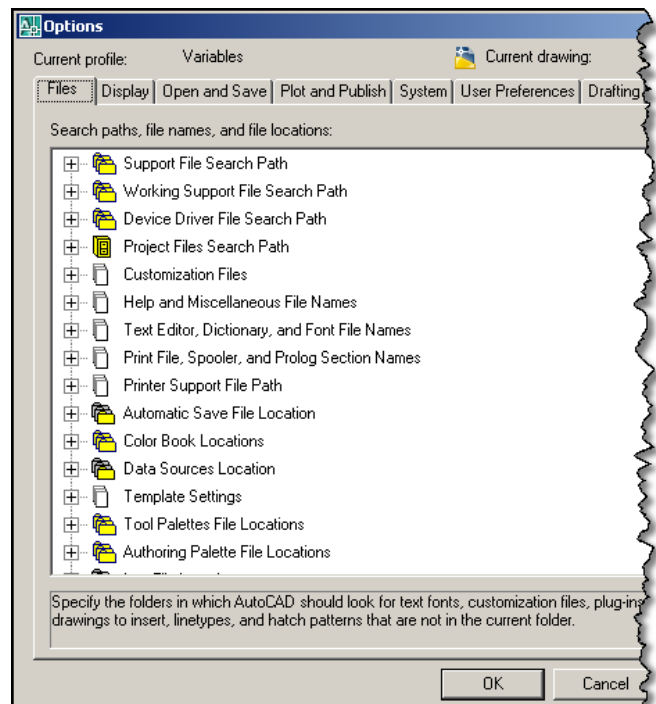
The ARG File:

The *.ARG file is the native file extension created when exporting a profile. I normally use notepad to view/edit this file to reduce the risk of introducing any file formatting. Navigate to your *.ARG file, **right-click**, select **edit**. Figure 4 will be similar to what you see.
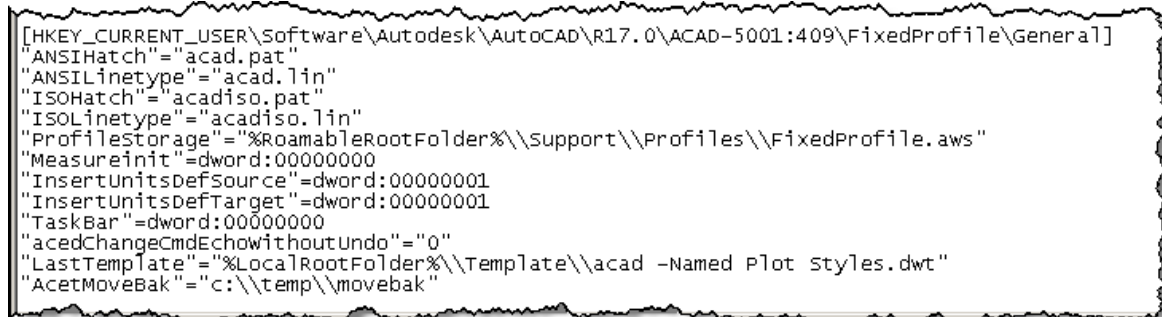
(Figure 4)

You will see that it resembles a directory structure via a command prompt. The items contained within the **[Brackets]** will be your registry key or main folder. The variables are contained in the first set of quotes and their values (also in quotes) are followed after the equal sign. In this example, the variable called **"username"** has a value of **"Pieter Vliet, Makana Enterprises"**. Where you read **..\Variables]**, this represents the Profile name of "Variables". As you scroll through the endless lines of text, something will change with the path that is enclosed by the brackets. Instead of **..\Profiles\..**, you will read **..\FixedProfile\..** (figure 5). This is part of the Profile that is fixed or constant between all profiles. Values stored in this area consist of items such as the active hatch pattern file or active linetype file. Notice the last entry is "AcetMoveBak" which is the variable that controls where AutoCAD places the *.BAK files. Unless you physically set this variable, you will not see this line in your *.ARG file.

(Figure 5)

While scrolling through an *.ARG file, be aware of word wrap which is when the line is longer than able to be displayed so it drops down to the next line (figure 6). You will notice that the left (opening) bracket is on the top line and the right (closing) bracket in on the second line. This holds true for the values stored except these are enclosed with quotes instead of brackets. This example tells AutoCAD what to do with plot stamps and where to look for the file in regards to this entry.

(Figure 6)

There is a part of the *.ARG file that will seem familiar to many of you even if all you have done is modify some search paths. The following registry key named **General** holds many familiar variables. **"ACAD"** is your main search paths, **"PrinterConfigDir"** will be where your printer *.PC3 files are located and **"PrinterStyleSheetDir"** will be where your plot styles are located.

[HKEY_CURRENT_USER\Software\Autodesk\AutoCAD\R17.0\ACAD-5001:409\Profiles\Variables\General]

"AVEMAPS"="C:\\Documents and Settings\\All Users\\Application Data\\Autodesk\\AutoCAD 2007\\R17.0\\enu\\Textures\\;C:\\Documents and Settings\\All Users\\Application Data\\Autodesk\\AutoCAD 2007\\R17.0\\enu\\Textures\\Bump;C:\\Documents and Settings\\All Users\\Application Data\\Autodesk\\AutoCAD 2007\\R17.0\\enu\\Textures\\Cutout"
"DatabaseWorkSpacePath"="%RoamableRootFolder%\\Data Links"
"PlotLogPath"="%LocalRootFolder%\\"
"AlternativePageSetUpsTemplate"="%LocalRootFolder%\\Template\\SheetSets\\Architectural Imperial.dwt"
"PrinterDescDir"="%RoamableRootFolder%\\plotters\\PMP Files"
"PrinterStyleSheetDir"="X:\\Client 1\\Plot Styles"
"PrinterConfigDir"="%RoamableRootFolder%\\plotters"
"SheetSetTemplatePath"="%LocalRootFolder%\\Template"
"ACAD"="%RoamableRootFolder%\\support;%InstallFolder%\\support;%InstallFolder%\\fonts;%Install Folder%\\help;%InstallFolder%\\Express;%InstallFolder%\\support\\color;%InstallFolder%\\lsp;"
"ToolPalettePath"="%RoamableRootFolder%\\support\\ToolPalette"
"TemplatePath"="%LocalRootFolder%\\Template"
"ColorBookLocation"="%InstallFolder%\\support\\color;%RoamableRootFolder%\\support\\color;"
"ACADDRV"="%InstallFolder%\\drv"
"ACADHELP"="%InstallFolder%\\help\\acad170.chm"
"NewStyleSheet"=""
"DefaultFormatForSave"=dword:0000000C
"DefaultConfig"="HP LaserJet 4V"
"LastModifiedConfig"="HP LaserJet 4V"
"MRUConfig"="HP LaserJet 4V"
"ACET-ACETMAIN-MENULOADED"="1"
"RegisteredToolsPath"="%RoamableRootFolder%\\Support\\RegisteredTools"
"ACADLOGFILE"="%LocalRootFolder%\\acad.log"
"CmdVisLines"=dword:00000002
"MaxDwg"=dword:00000000
"PlotToFilePath"="%UserProfileFolder%\\My Documents"
"DefaultPlotStyle"="ByLayer"
"DefaultLayerZeroPlotStyle"="Normal"
"LineWeightUnits"=dword:00000001
"LWDEFAULT"=dword:00000019
"Delobj"=dword:00000001
"UseStartUpDialog"=dword:00000000
"MTextJigString"="abc"
"WSCURRENT"=""
"LayerPMode"="1"
"CustomColors"=dword:00000001
"PLQUIET"=dword:00000000
"DisplayPlotBubble"=dword:00000001
"DontShowBkgPlotInProgressDlg"=dword:00000001
"Osmode"=dword:00000000
"SelectionArea"=dword:00000000
"ToolTips"=dword:00000000
"AuthorPalettePath"="%RoamableRootFolder%\\Support\\AuthorPalette"
"VtEnable"=dword:00000000
"EdgeMode"=dword:00000001
"HatchPatternAssociativity"=dword:00000000
"Coords"=dword:00000002
"ProfileStorage"="%RoamableRootFolder%\\Support\\Profiles\\Variables\\Profile.aws"

What are some of your options in regards to the *.ARG file? You can make changes to your profile by editing this file. Remember that this does not get incorporated into your active registry until you load it in via AutoCAD.

> Here is the scenario, your boss comes to you at 10:00a.m. and hands you a CD with a new clients' CADD Standards. He says, "This needs to be implemented on the server and working properly by lunch!" In your mind, you need to create a new Profile, the directories and test it to make sure it all works. You're thinking that you don't have enough time, let alone the fact that you were going to leave for the day at lunch!

The reality is if you have implemented the use of Profiles, there will be existing Profiles that work and are in daily use. If you copy an existing *.ARG to become newclient.arg, you now have a new Profile with wrong variables. Open the newclient.arg file and the utility of Find/Replace is your best friend. This feature will save you a considerable amount of time. Select **Edit** then **Replace** from the pull-down menu (Figure 7).
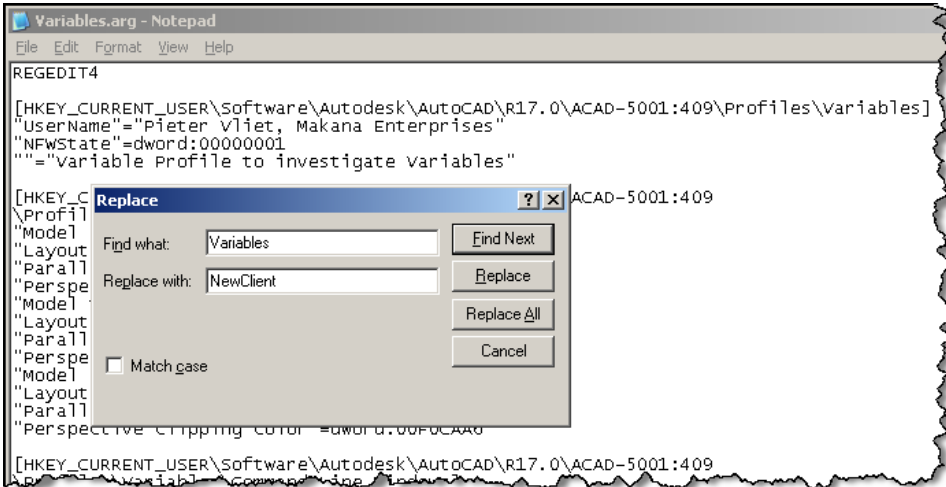
Find/Replace will allow you to instantly change all references of the existing profile to the new profile. I've used this method to successfully create many profiles without problems.

This will allow you to create the new profile and implement it on the server by lunch, so you can leave as scheduled.

(Figure 7)

To understand how this works in detail, let's take the issue of sorting plot styles by various clients

> The registry key is:
>> [HKEY_CURRENT_USER\Software\Autodesk\AutoCAD\R17.0\ACAD-5001:409\Profiles\Variables\General]
>
> The default value is:
>> "PrinterStyleSheetDir"="%RoamableRootFolder%\\Plot Styles"
>
> The Corporate value is:
>> "PrinterStyleSheetDir"="X:\\Corporate\\Plot Styles"
>
> By doing a **Find/Replace** of Corporate to NewClient, this line will now read:
>> "PrinterStyleSheetDir"="X:\\NewClient\\Plot Styles"

This will hold true for all your settings and directory paths with two conditions:

> 1) It is vital that your naming conventions and folder structure be identical from client to client.
> 2) Your find/replace criteria have to be unique for it to work properly.

Vertical application profiles will act similarly with the exception that there are more variables and search paths, making these packages more powerful. Take caution as you could disable some of the functionality if the application can no longer find the required resources or if the users don't have read/write rights to certain files.

For the AutoCAD LT users, does LT have or use profiles? You may be shocked to know that LT does indeed use a Profile even though there is no Profiles Tab in the Options Dialog box. More info regarding this as we dig deeper…

Profiles and the Windows Registry:

We will take a moment to investigate the live Windows Registry. **Left-Click** the start button then select **run** and type in regedit (figure 8).
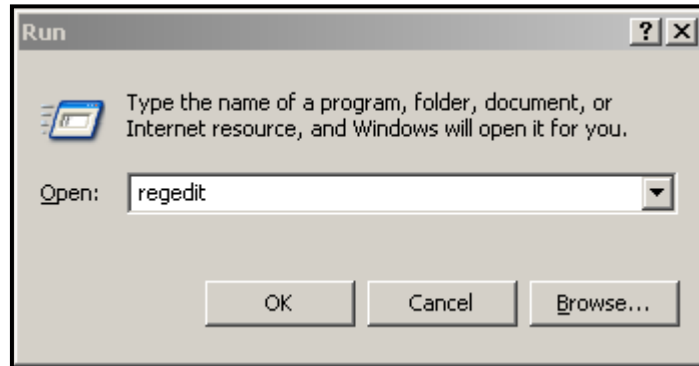
(Figure 8)

What you will see on your screen will be similar to figure 9. Be very careful while navigating this file and don't accidentally hit the delete button. You might need to click on some folders to collapse or expand them. The registry navigates much like Windows Explorer so it will be familiar to navigate. You will notice both AutoCAD and AutoCAD LT exist if installed. Expanding the AutoCAD folder, you will notice a directory called **FixedProfile** and another called **Profiles**, which contains sub-folders for the various profiles loaded on the system (figure 10).
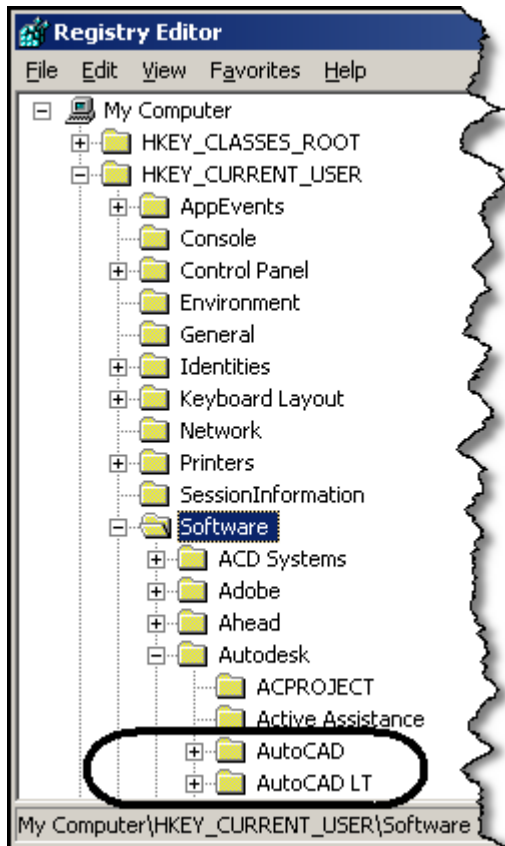
(Figure 9)
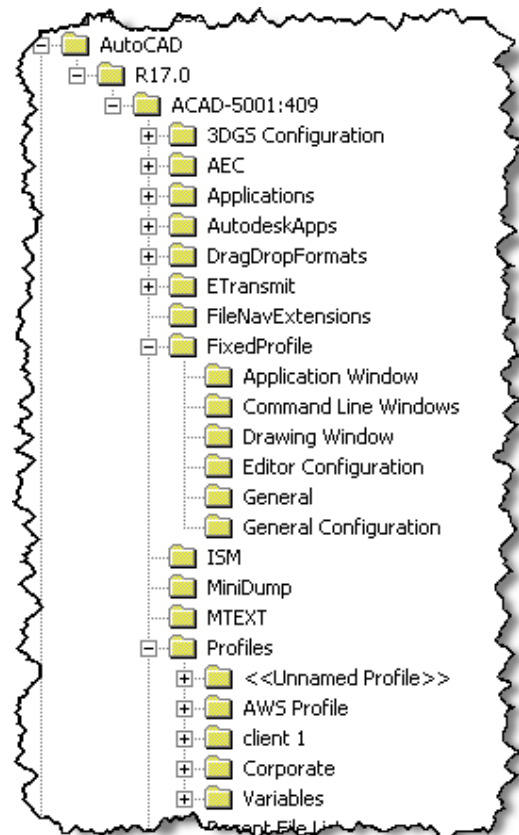
(Figure 10)

I have expanded the AutoCAD LT Profiles folder (figure 11) which displays the **General** registry key along with some of the variables and their values. Notice that AutoCAD LT uses a default Profile named <<Unnamed Profile>>. The next screen capture (figure 12), shows the same folder for the AutoCAD 2007 profile named Variables. You will notice many similarities between the two screen captures. Obviously, there are more variables with the AutoCAD profile as compared to the LT Profile. Take note that most of these variables/names are similar to ones mentioned earlier and you will notice commonality such as "PrinterStyleSheetDir" for the location of Plot Styles between both versions.

For the AutoCAD LT managers, how do you go about setting all the search paths for your multiple machines? Many managers will sit at each machine and type them in. With this new information you are now able to set up one machine with everything correctly, then export the **Profiles** folder to create your own *.ARG/*.REG file or you may opt to export only the keys that concern you. For those that think this is too risky, there are third party software packages that perform similar operations.
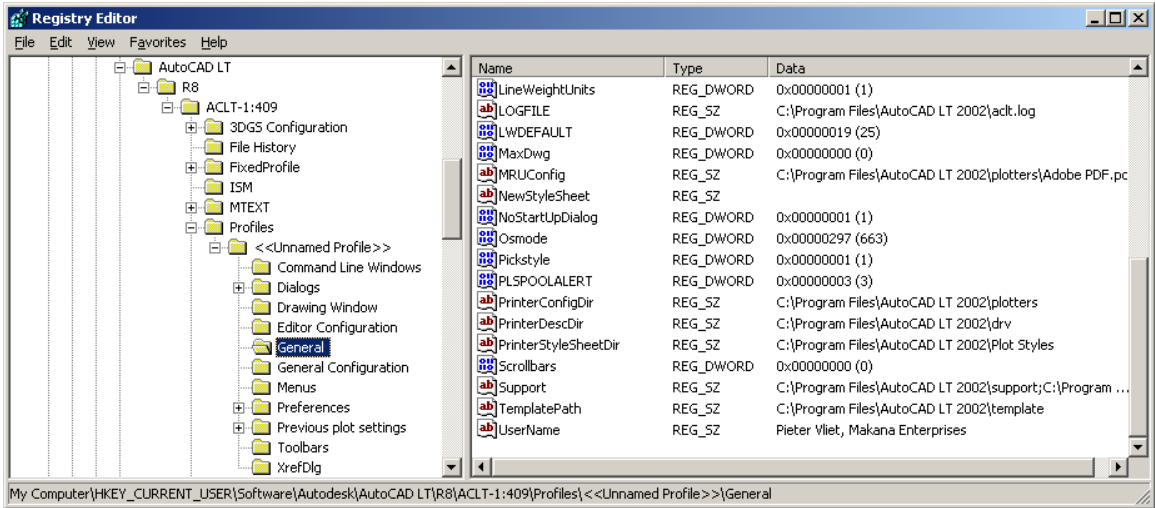
(Figure 11)
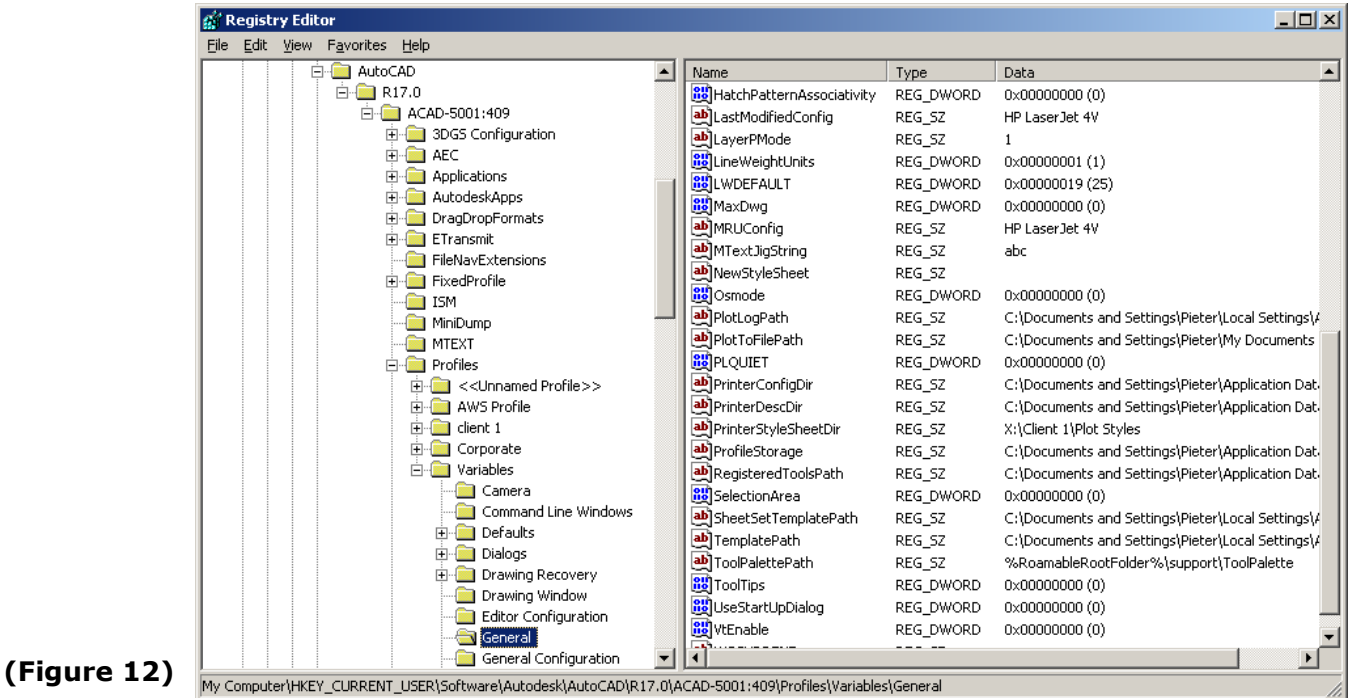
(Figure 12)

Ways to set a Profile:

One way to set a profile is to navigate to the Profile Tab in the Options Dialog box. Here you will select the desired profile from the available profiles window and select the **set current** button.

> In the four plus years that I have worked with Profiles, we had one major issue switching profiles with this method. While plotting, even when selecting the appropriate plot style, the plots would not print correctly. The lineweights and screening printed as if no plot style was selected. We never obtained a good resolution on why prints would not print correctly and the only solution was to exit and restart AutoCAD.

Another way to set a Profile is via the startup icon that is selected to launch AutoCAD. Here the user will place a command line switch in the AutoCAD icon command line. There are various command line switches which maybe used on their own or in conjunction with one another for varied results. The profile command line switch will utilize a **/p** (forward slash p). After the /p, add a space, then type the Profile name. If your profile is on the local machine, all you need is the profile name. If the profile is located on a server, you will need to put in the full path. If your path includes any spaces, you will need to incorporate quotes around the path.

(Figure 13)
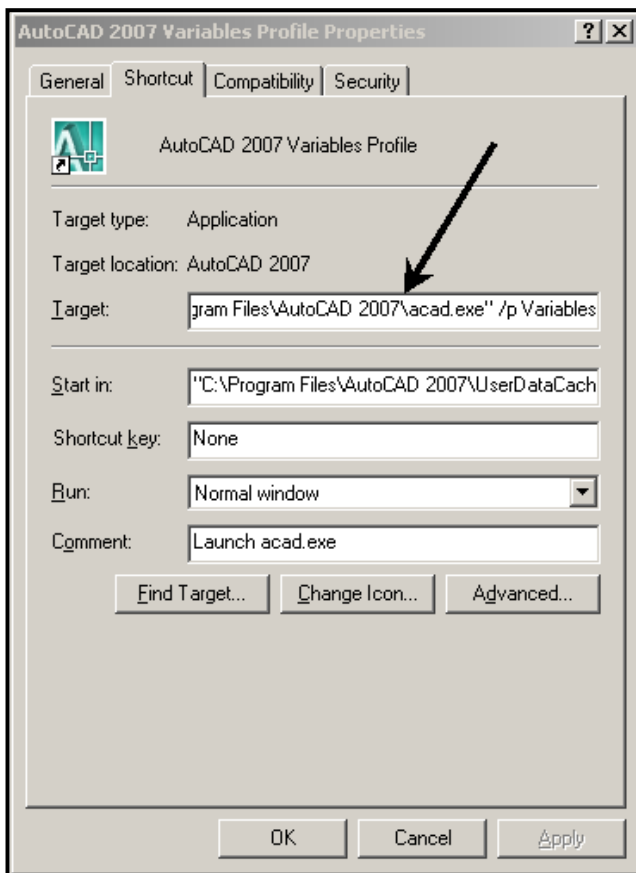
The easiest way is to copy/edit an existing AutoCAD icon. **Select** an existing AutoCAD icon, **right-click** then select **copy**. **Richt-click** then select **paste shortcut**. **Right-click** then select **rename** to give this icon a unique name. Here I named it "AutoCAD 2007 Variables Profile".

Next, **right-click** on the newly created icon and select **properties**. A dialog will appear which will be similar to figure 13. We have four tabs on the top and want to select the **Shortcut tab**.

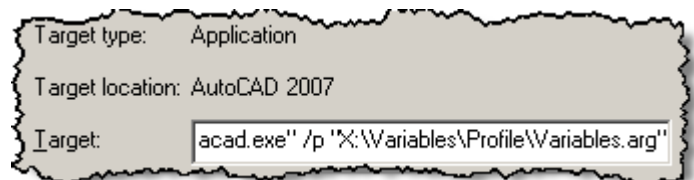In the Target window (arrow), we will add a **/p profile name** after the **..\acad.exe** to obtain:
..\acad.exe" /p Variables
for a local profile named variables.

By adding:
..\acad.exe" /p "X:\Variables\Profile\Variables.arg"
we will call/set a profile that is located on the network (figure 14).

**Note: An error will occur if the profile is not created prior to launching AutoCAD with a specified profile.

(Figure 14)

The Bad & Ugly of Profiles:

I will be combining the bad and ugly items because they can go hand in hand depending on interpretation.

- Let us discuss the way AutoCAD does a call or set of a Profile which is located on the network. When the user launches AutoCAD with this newly created icon for the very first time, the shortcut tells AutoCAD to start and load in a Profile named "Variables". AutoCAD initially looks in the local registry to see if such a profile exists. When it does not find this Profile, AutoCAD will then read that Profile from the specified network location and writes it to the local machine's registry.

  The user goes home and the next day uses a different Profile in the morning. After lunch the user launches AutoCAD with the Variables Profile. Does AutoCAD use the local registry entry or does it use the network version? AutoCAD will always use the local registry entry once it has been written locally from the network location the first time.

  You may be asking yourself why is this a bad thing? Remember that search paths are something that the Profile manages. What if after three months of implementing a Profile, you need to add another search path for a block directory or you realize there is a mistake in an existing search path. In order to make corrections; you have several options.

    Send an email out to all users telling them to delete a profile. Once deleted, the new Profile will be written to the local registry. In reality, this isn't dependable because users will sometimes ignore an email and if they do pay attention, they may still choose to ignore it for various reasons.

    Another option is to do a registry push by your IT department. If you are the IT department, this is a simple task. If you are not the IT department, they may question why you want to do a registry update and give you much resistance.

    A third option it to realize that most of the settings for a profile are stored as a variable. For example, the variable for your main search paths is "ACAD". Via lisp, you can check the value for this via **(getenv "ACAD")** at the command prompt. To set this value via lisp you would write something like: **(setenv "ACAD" "enter your path's here").** If you have multiple paths, place a semi-colon between the different paths. For example:

      (setenv "ACAD" "X:\\AutoCAD\\Color; X:\\AutoCAD\\Fonts; X:\\AutoCAD\\Hatch")

    There are other languages that will allow you to set such values in AutoCAD. Remember that AutoCAD LT does not accept lisp entries, so this is not an option.

- We have just mentioned that a profile becomes a static entity once it is loaded on a local machine from a network location. This makes it very tedious for the CADD Manager to control what changes a user has done on their local machine. The user may modify a search path to point to a personal plot style or add another directory for a personal set of blocks. What if by chance the user put their folder first in the search path and just happens to have a file named acad.cui or 500 font files from the Internet? This would cause total havoc!

    There is not much a CADD Manager can do in this situation unless he/she incorporates a way to always load the Profile from the network or do a comparison against local and network settings. This situation mostly relies on trust between the CADD Manager and user's. The renegades will always find a way…

- One of the biggest reasons for not liking Profiles is their effect on the users. The users are the people that we need to keep happy because they use the software day in and day out. The look of AutoCAD is controlled via the profile. This means everything visual about the AutoCAD interface is forced upon the user as defined in the Profile. The individual that creates the Profile will propagate their AutoCAD interface to all users. For instance, I have very few toolbars visible, set mbuttonpan to 0 and use full-screen crosshairs that many users despise.

Prior to the creation of Workspaces, the user would spend anywhere from a few minutes to however long they feel adjusting the AutoCAD interface. If your company utilizes many Profiles, a user could spend a considerable amount of time tweaking things to their liking for just one Profile and will have to repeat this for each Profile they use.

With the introduction of Workspaces, the user can easily switch the AutoCAD interface providing the company has implemented this flexibility to the user. This then allows the user to see the same interface for all profiles. Note that the variable "WSCURRENT" which holds the value for the current workspace, is stored in the profile but the actual definition/settings of the workspace is defined elsewhere.

▪ The preferred method for me is to exit AutoCAD and restart AutoCAD with the correct Profile. This process may not seem bad but it does take time. Say your users need to change profiles four times a day. Assume it takes two minutes each time to close and restart AutoCAD. For this one user, eight minutes are spent waiting on their machine. How many users do you have? One or one hundred? With one hundred users, you are spending eight hundred minutes or 13 hours and 20 minutes a day! Extrapolate that over a year and factor in your billable rate. This adds up and any manager should be looking for ways to reduce this.

Your options are pretty limited to reduce this value other than to be aware of it and keep an eye out for ideas that might reduce these numbers. One option may be to streamline AutoCAD to launch faster or reduce the number of Profiles that your users have to use in any given day. Regardless of exiting/restarting AutoCAD for Profiles, this in an interesting fact to think about and might give a CADD Manager some bargaining power for upgrades.

▪ Staying on the fact the profile is a registry entry; you sometimes risk the corruption of the registry or the possibility that the profile is not always written correctly. Registry entries can be risky and every now and again they just fall short. This mostly happens on slower machines, but faster machines are not immune.

Again, this is mostly a fact of life and is just something to be aware of. We all can't have new machines every year nor run on a gigabit or faster network.

▪ If you are using a version of AutoCAD with the Batch Plot Utility, Profiles can be a nuisance. This utility comes with it's own startup icon which theoretically should be able to use the command line switch of /P to set a Profile upon start-up. When I initially tested this with various clients, I would have bet that the /p switch worked and switched Profiles. In the end, it didn't correctly switch Profiles.

Our workaround was to start AutoCAD with the Profile we'd like to plot with. End AutoCAD and restart using the Batch Plot utility icon. Very time consuming for the users.

The Good of Profiles:

▪ As a CADD Manager, has a user or department manager come up to you with a stack of prints that have not plotted with the correct lineweights or screening?

▪ Has this same person also noted that the font doesn't look like the company/client standard?

▪ Do all your users have access to the same printers/plotters?

▪ Do all your users have the same menu structure and how would they really know if something is missing if they have no knowledge of it or have never seen it?

▪ Did you know that if you have more then fifty (50) plot styles in a folder, AutoCAD will not be very cooperative and start running very slow. You may think that you can create sub-directories in your plot style folder, but AutoCAD will look in sub-directories of your plot styles as well.

If you have witnessed any of the above issues or others, Profiles might be a good choice for you. Depending on your scenario, you may have all your fonts, plot styles, menu files, company files, client specific files and everything else lumped together. This leads to problems if your users are neither diligent nor informed on what they exactly need to know or use. I prefer to have a company profile for my company CADD Standards that will keep my company files separate from client files.

If you do work for other clients who have provided established CADD Standards and the associated files to go with them, create a new profile and populate their files into the appropriate folders. You may have to create new or additional files for a particular client if not provided. It's best to keep client files in a separate location and accessed with their own Profile.

Let's take the plotting issue. The job was plotted with the wrong plot style and the lineweights or screening didn't come out correctly. The location that AutoCAD looks for the plot styles is controlled via the profile. If you are working on a corporate drawing, do your users need to see the plot styles for Client A or B? No, It just makes room for error and plotting problems. The same philosophy can be used for many other resource files such as but not limited to fonts, linestyles, colorbooks, hatch patterns, etc at your office.

Profiles, Workspaces and the CUI:

We've discussed multiple aspects of Profiles with their definition, how they work, how they may help or hurt your work environment. At this point you may wonder what the future might hold for Profiles. Profiles may get boiled down to store AutoCAD search paths or maybe just the environment variables. The next release may eliminate Profiles altogether.

We've touched on the subject of workspaces and how the current workspace name is stored in the Profile, but the actual definitions/settings/listings are stored elsewhere.

Towards the end of the *.ARG file, you will see lots of seemingly unreadable text. Located on your computer at **..\AutoCAD 2007\R17.0\enu\Support\Profiles** directory, you will find a file named FixedProfile.AWS. Below this, you will see different folders with names matching Profiles for which you have **exported** the *.ARG file. In the Profile directory, there will be a file named Profile.AWS. Within these *.AWS files, you will find more unreadable text. Coincidentally, the text in these two *.AWS files, matches the text in the *.ARG file. For how confusing this text seems, it may as well be written in another language. As you try to understand the information, it seems to be in regards to tool palettes. Is the data contained here for Workspaces, Profiles or tool palettes? Why is it duplicated in two places? Even I am not 100% sure.

The CUI, what can we really say about the CUI. Most of us are still learning how it works, how to modify and discover the best approach regarding the CUI. Some are having better luck then others and some have yet to be brave enough.

I believe this partnership between these three ideas is still in the developmental stage. More time and experimentation will be needed to know exactly how things interact and which process takes priority. During this time, a new version will be released and I am sure there will be changes/updates in regards to these ideas. For that, we will need to have a Profile update at the next AutoDesk University!

File Structure: (Reference)

One thing that I will include is an explanation of my File Structure. In order to have consistency and fewer problems, I encourage you to place as many support type files on a server in a central location. It is possible to place too many files on the server, so be diligent and think things through thoroughly. It may be a good idea to have your folder structure locked down so only designated staff members have the ability to add or make changes.
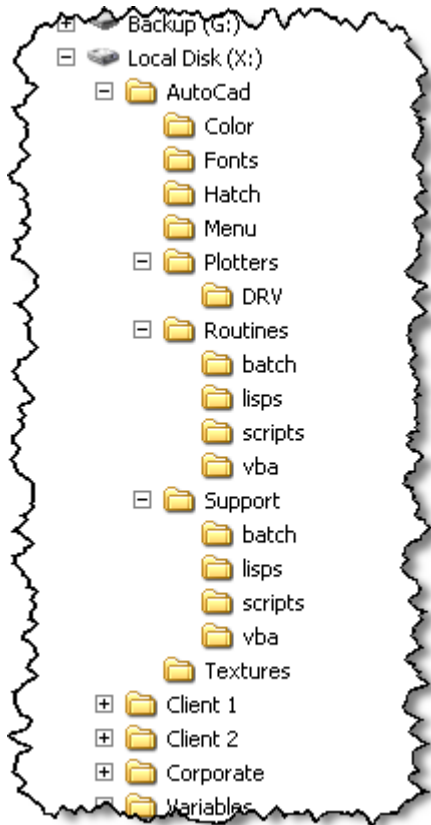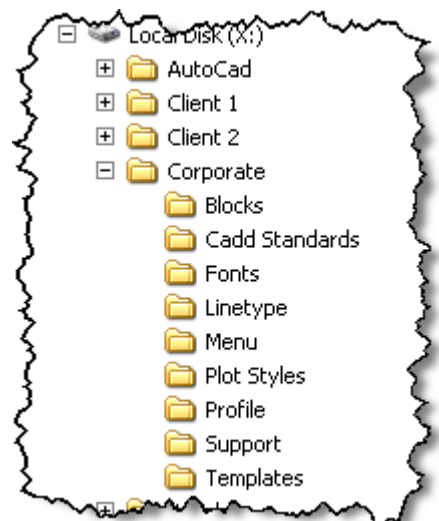
One folder is named "AutoCAD" and this folder contains sub-folders and files for AutoCAD to run and is partly emulating what is normally installed. I've added other folders and sub-folders to help organize files depending on their use. Depending on how much restriction you want to place on your users, you may place all the standard fonts, linestyles, colorbooks etc to this AutoCAD folder. You may chose to place your main menu here as well. The various sub-folders of this directory are not as important as having something setup that fits your needs and is comfortable to work with (figure 15).

I then have a default folder structure for the various clients. Corporate is considered a client. This is where you can place specific information for that particular client. Items may include fonts, colortables, colorbooks, hatch patterns, linestyles just to name a few for that one client. You would not find a plotter folder in a client directory, as this is a common item between all Profiles within your office. As with the AutoCAD folder, the various sub-folders are not as important as having something setup that fits your needs and is comfortable to work with (figure 16).

(Figure 15)

One reason for folder lockdown is the proliferation of files. I've had instances where the number of plot styles in a folder has grown from six to twenty-six in days. Security settings will allow individuals to see who has ownership of files. When confronted, most users can't remember why they put files on the server. Creating a simple text log file (in the plot style folder) helps to keep information about plot styles as long as it is utilized. Information might include details such as filename, client, who it was from, date received, purpose and any other pertinent information. After a year or two, you'll forget why you need a specific file and this information will make housekeeping much easier and safer.

(Figure 16)