AS468498

Managing and Migrating Custom Files and Settings

Lee Ambrosius
Autodesk, Inc.

Learning Objectives

- Learn how to take inventory of your current drawing environment
- Learn how to manage your custom files and settings, locally and remotely
- Learn how to migrate your custom files and settings between releases
- Learn how to define and use plug-in bundles to manage your drawing environment

Description

At its core, AutoCAD software is a platform that you can extend to automate workflows to manage projects and streamline design processes. While there are many benefits to extending AutoCAD, managing the resulting custom files and settings can be challenging. AutoCAD provides a variety of tools to help you develop various custom files and settings, but much is left up to you regarding how you should manage files and settings and eventually migrate them to a newer release. This session will introduce you to some of the tools and best practices that you can use to simplify documenting, managing, and migrating your custom files and settings.

Speaker(s)

Lee Ambrosius is a Principal Learning Experience Designer at Autodesk, Inc., for the AutoCAD® and AutoCAD LT products on Windows and Mac. He works primarily on the customization, developer, and CAD administration documentation along with the user documentation. Lee has presented at Autodesk University for about 15 years on a range of topics, from general AutoCAD customization to programming with the ObjectARX technology. He has authored several AutoCAD-related books, with his most recent project being *AutoCAD Platform Customization: User Interface, AutoLISP, VBA, and Beyond*. When Lee isn't writing, you can find him roaming various AutoCAD community forums, posting articles on his or the AutoCAD blog, or tweeting information regarding the AutoCAD product.

Twitter: @leeambrosius
Email: lee.ambrosius@autodesk.com
Blog: http://hyperpics.blogs.com

1 Introduction

The AutoCAD software is an extensive 2D drafting and 3D modeling program that has grown in functionality since it was first introduced over 35 years ago back in 1982. What sets AutoCAD apart from many other CAD programs is its expansive customization and automation capabilities. The customization and programming features of AutoCAD allow individuals and companies to simplify everyday workflows, such as:

- Initial drawing setup; establish drawing units and format, create layers, insert a title block and populate attribute values
- Extraction of design data for use downstream in a bill of materials or order entry system
- Consumption of project information from a data source such as a spreadsheet or database

For many years, I along with many others have been presenting sessions on customizing and automating AutoCAD during Autodesk University. It has been great over the years to see so many people enhance their productivity by learning to create tool palettes, record action macros, manage standards with drawing templates, write AutoLISP programs, and much more. All these methods are great ways to enhance your productivity, but they do complicate migrating between releases and managing custom files across multiple workstations.

This session tries to provide guidance on managing and migrating custom files based on the questions I have been asked over the years during and outside of Autodesk University. I cover some of the does and don'ts I have learned over the years, as well as some ways you can simplify the management of your custom files and settings across many workstations. Like many things in AutoCAD, there are many ways to accomplish the same task, managing and migrating custom files and settings s no different.

2 Take Inventory of Your Current Environment

Are you responsible for installing and configuring AutoCAD either for yourself or others in your company? How often do you perform those tasks? As an individual user or someone that might work for a small company, chances are it isn't very frequent. If you aren't installing and configuring AutoCAD frequently, the knowledge that you learn can diminish over time causing you to relearn what you might have done the last time you configured AutoCAD.

Taking inventory of and documenting how AutoCAD is configured for yourself or others in your company can help with

- Supporting the product
- Installing and configuring the product on a new workstation
- Managing custom files and settings
- Migrating between releases

So, what is meant by taking inventory of or documenting the way AutoCAD is configured in your environment? Taking inventory of the way AutoCAD is configured means to document where and which custom files you are using along with the main settings that must be changed in order for AutoCAD to load your company's custom files. The resulting document should provide you with a checklist that can be used to configure a new workstation or migrate to a new release.

The following is an example of the type of document I have created in the past to help me better manage and communicate the AutoCAD setup with others in the company and to simplify the migration process:

Current AutoCAD Environment Setup

Original creation: 2006/08/22

Last updated: 2014/05/03

Last updated by: Lee Ambrosius

This document provides a complete understanding of our AutoCAD environment setup as of the *last updated date*. Any changes not included in this document will be picked up during an audit prior to the next AutoCAD release being rolled out.

Note(s):

- Folders add the Support File Search Path should be first in the list to ensure our custom files are found, if they have the same names as files that ship with AutoCAD

Support Paths and Files

Location	What's Here	Setting in AutoCAD
k:\autocad\blocks	Drawing files that represent our block library	• Options > Files Tab > Support File Search Path
k:\autocad\support	Hatch patterns and linetypes • Default and company defined hatch pattern (PAT) files • Default and company defined linetype (LIN) files	• Options > Files Tab > Support File Search Path
k:\autocad\support\autolisp	Custom AutoLISP (LSP, VLX, and FAS) files used to automate and streamline our company workflows	• Options > Files Tab > Support File Search Path • Options > Files Tab > Trusted Locations

Note: You can find an editable version of the above example as part of the files for this session, the file is named *Taking Inventory Example.docx*.

Here are some of the approaches I have used to take inventory of your AutoCAD environment:

- **SETVAR command** – This command allows you to access and list the main settings that are exposed as system variables to AutoCAD. These settings impact the behavior of the application and define the locations in which the program looks for custom files. Use the ? option of the command with the response of * to list all system variables and their current value. The list of system variables and their values can be copied from the Command Line window to a Word document and then stored for future reference.
- **Options Dialog Box** – The Files tab of the Options dialog box contains the paths in which AutoCAD searches for custom files along with which files to load. These paths and files are stored per user profile, a list of all user defined profiles can be found on the Profiles tab of the Options dialog box. Take note of these paths and files and store them in a Word document for future reference. Many of the settings on the Files tab are exposed as system variables and listed with the SETVAR command.

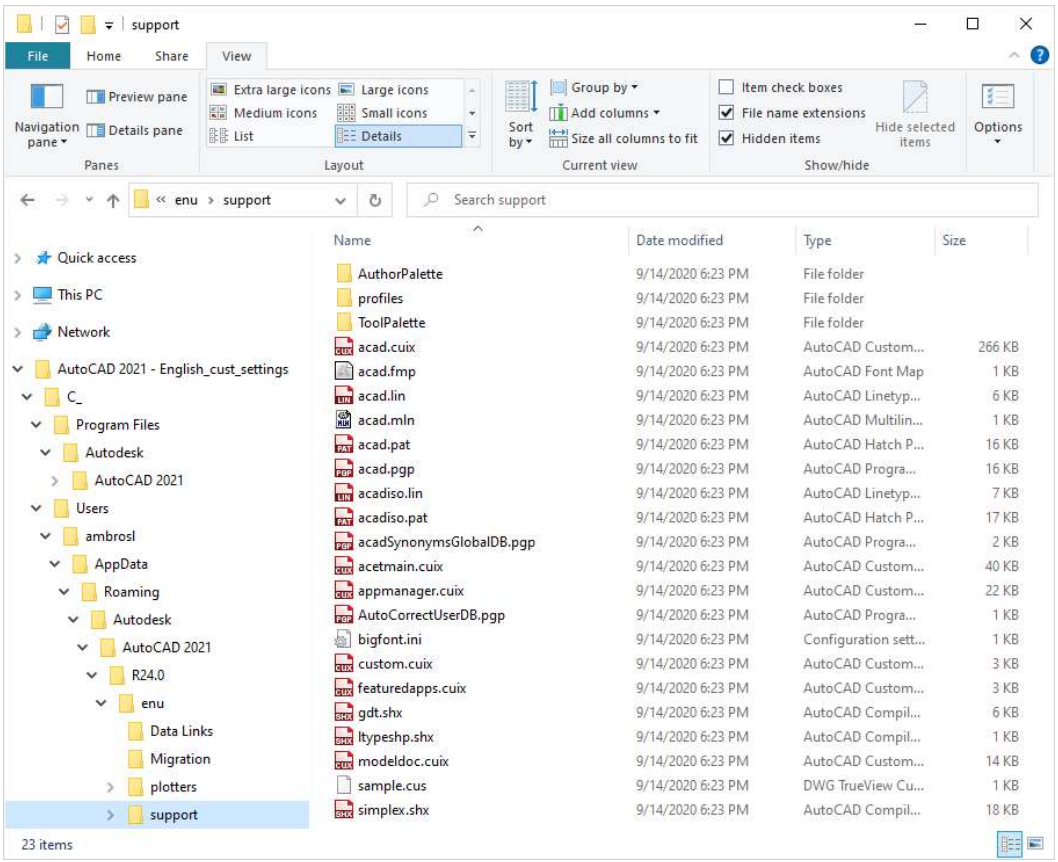
  You can export a user profile and its settings to an ARG file. If you export multiple ARG files, you can use an application to compare the files and see which changes were made and that need to be documented. An exported ARG file can later be imported on another workstation to restore the exported user profile and its settings.

- **Export AutoCAD *<release>* Settings** – Exports the custom files stored on your local drive and optionally in network locations to a ZIP file. Along with the custom files, the ZIP file also includes all user profiles stored in an XML file format. The ZIP file doesn't include all of your custom files, files such as blocks, scripts, AutoLISP files among others are not included.
- **Windows Explorer/File Explorer** – Search your local or network drives for the custom files you might be using and even files that might have been forgotten/lost over time because of CAD management turnover. While the Export AutoCAD *<release>* Settings utility does a good job at listing many of the custom files that AutoCAD supports, not all files are recognized by the utility. You can use the table under the *Custom Files in the AutoCAD Environment* section later in this handout to see which files the Export AutoCAD *<release>* Settings and Migrate Custom Settings utilities allow you to backup and migrate between releases.

A look at a ZIP file created from Export AutoCAD *<release>* Settings

As previously mentioned, the ZIP file created by Export AutoCAD *<release>* Settings contains a copy of your custom files in a folder structure that matches that on a local or network drive. You can learn more about how to export your custom files under the *Backup and Restore AutoCAD Settings* section later in this handout.

The following is an example of the folder structure in a ZIP file that contains exported custom files:



Custom Files in the AutoCAD Environment

The following table lists the file types that you should take inventory of which types are being used and where they are currently stored in your AutoCAD environment. Some of the file types listed are used for multiple purposes, such as DWG files which are not only used to store your designs but are also used to represent blocks in your blocks library.

File Type	Description	Export/Import Settings	Migrate Custom Settings Utility	Not Migrated
**.acb*	AutoCAD Color Book	Yes	No	No
**.actm*	Action Macros	No	No	Yes
.adsklib	Favorites material library - *FavoriteMaterials.adsklib*	Yes	Yes	No
**.arx*	ObjectARX applications	No	No	Yes
**.atc*	Tool palettes definition files	Yes	Yes	No
**.aws*	Fixed profile settings	Yes	Yes	No
**.bmp, *.jpg, *.png, *.gif, *.tif, *.tiff*	Custom images for tools on tool palettes	Yes	Yes	No
**.bmp*, **.dib*, **.rle*, **.png*	Images used in a customization (CUIx) file	Yes	Yes	No
**.crx*	Core ObjectARX application	No	No	Yes
**.ctb*	Color-based plot styles	Yes	Yes	No
**.cui*	“Legacy” customization file used to control the user interface; AutoCAD 2006 through 2009	No	Yes	No
**.cuix*	customization file used to control the user interface; AutoCAD 2010 and later	Yes	Yes	No
**.cus*	Custom dictionary	Yes	No	No
**.dwg*	Drawings/blocks/block libraries	No	No	Yes

File Type	Description	Export/Import Settings	Migrate Custom Settings Utility	Not Migrated
*.*dws*	Drawing standards	No	No	Yes
*.*dwt*	Drawing templates	No	Yes	No
*.*dbx*	ObjectDBX application/Object enabler	No	No	Yes
*.*dll*	Dynamic link library/application resource file	No	No	Yes
*.*dgn*	Microstation Design Templates	No	No	No
*.*dvb*	VBA project	No	No	Yes
*.*fas*	Fast-load AutoLISP application	No	No	Yes
*.*fmp*	Font mappings for True Type fonts	Yes	No	No
*.*ini*	“Legacy” configuration settings for some features	Yes	No	No
	Big fonts - *BigFont.ini*	No	Yes	No
*.*js*	JavaScript application	No	No	Yes
*.*lin*	Linetype definitions	Yes	Yes	No
*.*lsp*	AutoLISP application	No	No	Yes
*.*mln*	Multiline style definitions	Yes	No	No
*.*mnc*	Compile customization (CUI/CUIx) or menu	No	No	Yes
*.*mnl*	AutoLISP menu source file; name must match that of customization (CUI/CUIx) file	Yes	No	No
*.*mnu, *.mns*	“Legacy” menu template and source	No	No	Yes

File Type	Description	Export/Import Settings	Migrate Custom Settings Utility	Not Migrated
*.*nfl*	Named filters	No	No	Yes
*.*pat*	Hatch pattern definitions	Yes	Yes	No
*.*pc3*	Plotter configurations	Yes	Yes	No
*.*pgp*	Command alias definitions, synonyms based on industry terms, and command misspellings			
	acad.pgp	Yes	Yes	No
	acadSynonymsGlobalDB.pgp	No	No	No
	AutoCorrectUserDB.pgp	No	No	No
*.*pmp*	Calibration and paper size settings for a PC3 file	Yes	Yes	No
*.*psf*	Font substitutions to use when exporting to Postscript files	Yes	No	No
*.*pss*	Plot stamps	Yes	No	No
*.*scr*	Scripts	No	No	Yes
*.*stb*	Named plot styles	Yes	Yes	No
*.*shx*	Shape definitions; used for text and complex linetype definitions	Yes	Yes	No
*.*udl*	Microsoft Data Links	Yes	No	No
*.*vlx*	Visual LISP application	No	No	Yes

In addition to the file types mentioned in the previous table, you should export your user profiles from AutoCAD to ARG files. Then take inventory of the ARG files and if possible, document the main settings that are different from the default settings of the program when initially installed.

System Variables that Define the Locations of Custom Files

System variables provide access to persistent application and drawing-based settings. You can get and set system variables with the `GETVAR` and `SETVAR` AutoLISP functions along with the

SETVAR command. The following shows the syntax of the `GETVAR` and `SETVAR` AutoLISP functions:

- `(getvar variable)` – Gets the value of a system variable; variable is the name of the system variable whose value to get
- `(setvar variable value)` – Sets the value of a system variable; variable is the name of the system variable whose value you want to change and value is the new value to assign

Note: An example AutoLISP program under the *Specify Custom File Locations with AutoLISP* section later in this handout shows how you can use the `GETVAR` and `SETVAR` functions to configure the locations of custom files.

The following table lists the system variables that can be used to get and set the paths and filenames of the custom files in your AutoCAD environment as defined by the current user profile.

System Variable	Description	Path or Filename	Read-only
ACADPREFIX	Specifies the paths under the Support File Search Path node on the Files tab of the Options dialog box.	Paths	Yes
ATCPATH	Specifies the paths that the program looks-in for additional action macro (ACTM) files.	Paths	No
ACTRECPATH	Specifies the recording path that the program writes new action macro (ACTM) files.	Path	No
BLOCKSRECENTFOLDER	Specifies the path of the blocks for the Recent tab of the Blocks palette.	Path	No
DCTCUST	Specifies the filename of the custom dictionary.	Filename	No
DGNMAPPINGPATH	Specifies the folder in the DGN mapping setups (*dgnsetups.ini*) file is stored.	Path	Yes
ENTERPRISEMENU	Specifies the enterprise/secondary customization file that is loaded into AutoCAD.	Filename	Yes

System Variable	Description	Path or Filename	Read-only
FONTALT	Specifies the font name that is used for substitution when the font that was originally used isn't found.	Filename	No
FONTMAP	Specifies the font-mapping file used when font specified in a drawing file is not found.	Filename	No
LOGFILEPATH	Specifies the path where the *acad.log* file will be generated.	Path	No
MENUNAME	Specifies the main customization file that is loaded into AutoCAD.	Filename	Yes
SAVEFILEPATH	Specifies the path that is used to save the Autosave files.	Path	No
TEMPPREFIX	Specifies the path that is used to save the temporary files.	Path	No
TRUSTEDDOMAINS	Specifies the URI/URLs from which AutoCAD can safely load JavaScript applications.	Paths	No
TRUSTEDPATHS	Specifies the paths in which AutoCAD can safely load executable files.	Paths	No
XLOADPATH	Specifies the path that is used to store temporary copies of an external reference files.	Path	No

Additional Information

You can find additional information on command aliases with these topics in the AutoCAD Online help system:

- About Program and Support Files
- About System Variables and Bitcodes

Environment Variables that Define the Locations of Custom Files

Environment variables are like system variables, but they allow direct access to values that persist between AutoCAD sessions. You get and set environment variable values with the `GETENV` and `SETENV` AutoLISP functions.

- `(getenv variable)` – Gets the value of an environment variable; variable is the name of the environment variable whose value to get
- `(setenv variable value)` – Sets the value of an environment variable; variable is the case-sensitive name of an environment variable whose value you want to change and value is the new value to assign which must be a string

Note: Autodesk doesn't document environment variables, so the ones in the table below were found through discovery prior to my employment at Autodesk. The names of environment variables can change, and they could be removed in a future release.

The following table lists the environment variables that can be used to get and set the locations of custom files in your AutoCAD environment as defined by the current user profile.

Environment Variable	Description	Path or Filename
ACAD	Stores the available search paths for the current AutoCAD session. All the paths are valid for use. These are the same directories that show up under the Working Support File Search Path section under Preferences. See also the ACADPREFIX system variable.	Paths
ACADCFG	Specifies the location of the AutoCAD Configuration file. **Note:** It is recommended to not change the location of this file.	Path
ACADDRV	Specifies the location(s) in which AutoCAD looks-in for any driver information it needs.	Path
ACADHELP	Specifies the location and name of the AutoCAD help file to use when Help is called.	Filename
ACADLOGFILE	Specifies the location and name of the log file that AutoCAD generates if the option is enabled.	Filename
AlternativePageSetUpsTemplate	Default template that stores Page Setup Overrides that can be applied for publishing from Sheet Set Manager.	Filename

Environment Variable	Description	Path or Filename
AVEMAPS	Specifies the location for the textures and render maps that are used for the RENDER command.	Path
ColorBookLocation	Contains the search path that is used by the Color dialog box and AutoCAD for Color Books.	Paths
CustomDictionary	Contains the path of the custom dictionary that should be used in conjunction with the standard dictionary. See also the DSTCUST system variable.	Filename
DatabaseWorkSpacePath	Specifies the location that the Microsoft Data Link or UDL files reside in for dbConnect database connections.	Path
DGNMAPPINGPATH	Specifies the folder in the DGN mapping setups (*dgnsetups.ini*) file is stored.	Path
EmergencyFont	Font name to use when a font substitution occurs because the original font used isn't found. This environment variable is also referred to as FontAlt or Alternative Font. See also the FONTALT system variable.	Filename
EnterpriseMenuFile	Enterprise/secondary customization file that is loaded into AutoCAD. See also the ENTERPRISEMENU system variable.	Filename
FontMappingFile	Specifies the font-mapping file to use when a font specified in a drawing file is not found. See also the FONTMAP system variable.	Filename
IESWEB	Specifies the path of IES files used to define weblights.	Path
IconFilePath	Specifies the path where the image files used in the CUIx files are found when not stored as part of the CUIx file.	Path

Environment Variable	Description	Path or Filename
LogFilePath	Specifies the path where the *acad.log* file will be generated. See also the LOGFILEPATH system variable.	Path
MenuFile	Main customization file that is loaded into AutoCAD. See also the MENUNAME system variable. **Note:** Setting doesn't take effect until AutoCAD is restarted. An alternative would be to use the CUILOAD command to load a customization file immediately.	Filename
PlotLogPath	Specifies the location that the log files for Plot and Publish should be stored.	Path
PlotSpoolerDirectory	Specifies the path that is used to generate the spool files that are used for creating plots.	Path
PlotToFileDir	Default location when plotting to a file.	Path
PrinterConfigDir	Specifies the location in which the configuration files for the printers/plotters can be found.	Path
PrinterDescDir	Specifies the location in which the description files for the printers/plotters can be found.	Path
PrinterStyleSheetDir	Specifies the location in which the plot style files for drawings can be found.	Path
ProfileStorage	Points to the location on the machine where the Fixed Profile parameters file (*FixedProfile.aws*) is stored. This file contains information about the current drawing environment.	Filename
SaveFilePath	Specifies the path that is used to save the Autosave files. See also the SAVEFILEPATH system variable.	Path

Environment Variable	Description	Path or Filename
SheetSetTemplatePath	Specifies the location of the drawing templates that should be used during the wizard for Create Sheet Set.	Path
TempDirectory	Specifies the path that is used to save the temporary files. See also the TEMPPREFIX system variable.	Path
TemplatePath	Specifies the location in which the drawing template (DWT) files can be found for creating new drawings.	Path
XrefLoadPath	Specifies the path that is used to store temporary copies of an external reference files. See also the XLOADPATH system variable.	Path

3 Manage and Share Custom Files

Now that you have a general understanding of how to locate your custom files within the AutoCAD environment, in this section, I'll discuss how you might go about managing and sharing those custom files with efficiency. Managing and sharing custom files, for the most part, are an inseparable couple.

Where you decide to manage your custom files from will determine how you will likely share those custom files with others. As you move through this section, think about the following:

- Where are your custom programs stored and loaded from right now; local or network drive?

  You might have a better understanding of this after the previous section.
- Who will be using the custom programs; internal or external users, maybe both?
- What is the expertise level of the users?
- Do you often support multiple releases of AutoCAD within your company?

  Important: Not all custom files can be or should be shared across multiple releases, such as customization (CUIx) files if they rely on commands from a specific release.

Additional Information

You can find additional information on managing and sharing custom files with these topics in the AutoCAD Online help system:

- About Program and Support Files
- About Customized File Locations

Store Custom Files Locally, Network, or Cloud Storage Services

Custom files, by default, are stored entirely locally on your workstation under your user profile of the operating system (OS). Of course, part of your user profile could be stored on a network server to enable the ability to roam from one workstation to another.

If you aren't someone or your company doesn't customize AutoCAD, then storing all your custom files on the local drive is fine and no additional action needs to be taken. However, if you are currently or are considering customizing AutoCAD to increase your productivity, you might want to consider storing your custom files in a shared location. Using a shared location or a location the differs from the default does add work when initially setting up AutoCAD but it does make it easier to migrate between releases.

It is possible to store your custom files in a shared location and then copy them locally, but that might not be very efficient if you support multiple workstations. If you want to keep your custom files locally, yet utilize the same set of custom files across multiple workstations, I recommend one of the following approaches:

- **Manually copy the custom files.** – Copy your custom files from a shared location to your local drive.
- **Synchronize custom files locally.** – Use Windows group policies or something similar on another server OS along, VB script, or batch files to copy your custom files from a shared location to the local drive during login. Utilities like RoboCopy can also be used to synchronize files between two locations.

If you have access to a shared location, consider configuring AutoCAD to look for your custom files from that location rather than synchronizing them locally. Relying on the synchronization of files locally does introduce a point of failure. Files might not synchronize because someone isn't restarting their workstation frequently enough, an error occurs during the copying of a file, the local copy of the file gets marked as read-only among other potential problems could occur.

Tip: If many in your company work remote, you can use a cloud storage service such as OneDrive or Dropbox to synchronize custom files locally. This allows you to manage your custom files outside of the default locations which makes it easier to migrate between releases.

Reminder: When sharing your custom files, make sure to keep files that could be release specific separate from others. For example, customization files often have UI elements and commands that are specific to a release, because certain releases might not support that command.

You can use the following techniques to configure AutoCAD to look for custom files in locations other than the defaults:

- **User Profiles.** – Change the default paths and filenames of the custom files on the Files tab of the Options dialog box. These settings are part of the current user profile. You manage user profiles with the Profiles tab of the Options dialog box. See *Specify Custom File Locations and Settings with User Profiles* for more information.

  Note: User profiles can be exported and importing user profiles between workstations. A downside to exporting and importing profiles to manage the locations of custom files is that all other settings in that user profile are also imported. These other settings control the appearance of the application, behavior of drafting and selection tools, and user

preferences which isn't often desired if you need to re-import a user profile after a user has gone through and personalized their AutoCAD environment.

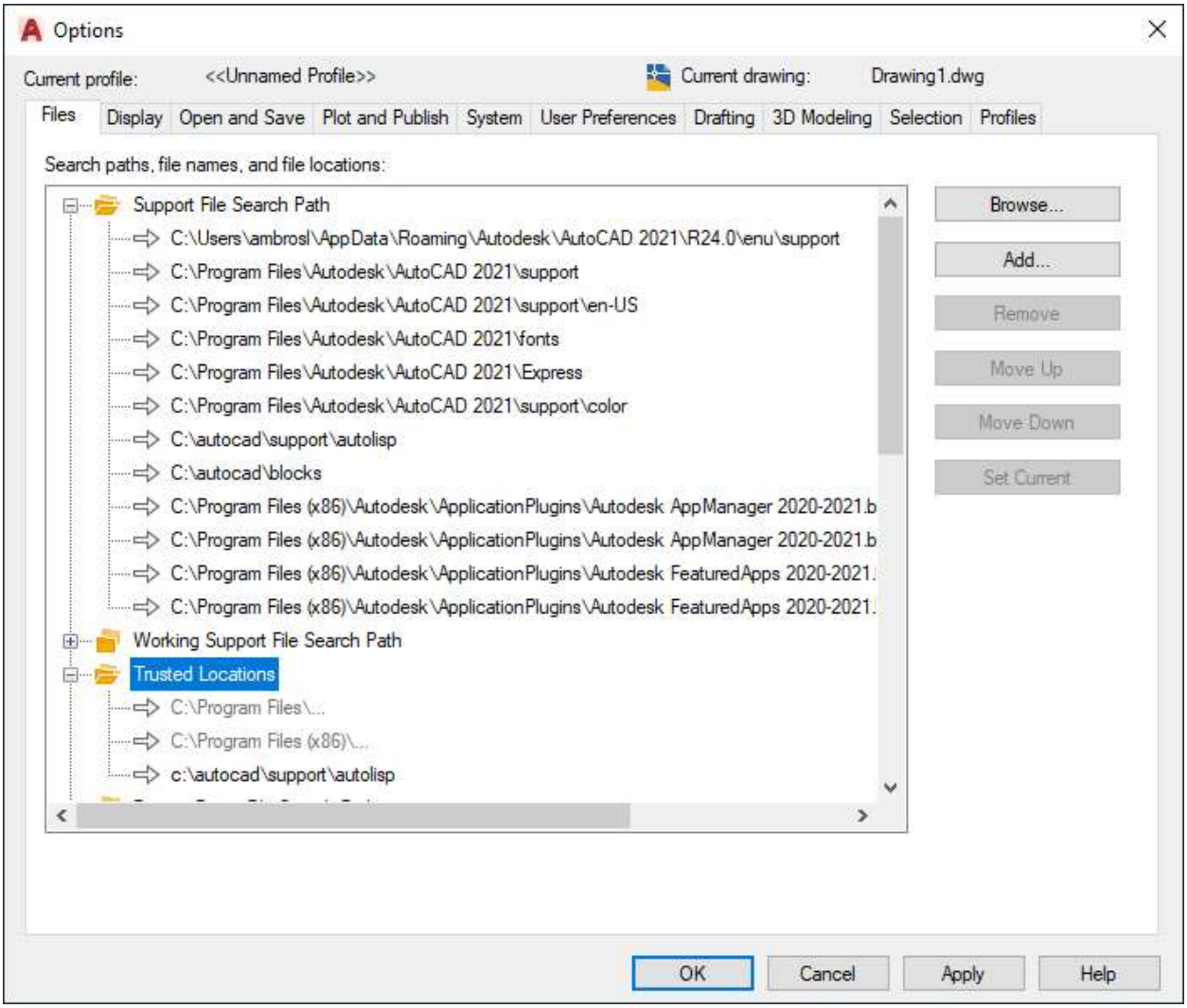
- **AutoLISP Programs.** – AutoLISP, along with other AutoCAD APIs, can be used to change the location of custom files and many settings in the current user profile. These settings can often be accessed using system and environment variables. The AutoCAD ActiveX API with AutoLISP can also be used to create and import user profiles. See *Specify Custom File Locations with AutoLISP* for more information.
- **Plug-in Bundles.** – A folder structure that contains some custom files along with a manifest file which explains to AutoCAD what should be done with those custom files. A plug-in bundle can be used to setup support paths, custom file locations, and other settings based on AutoCAD release. See *Specify Custom File Locations and Settings with User Profiles* for more information.

Tip: AutoLISP and plug-in bundles can simplify the migration of AutoCAD between releases if have your custom files on a shared location. Since a plug-in bundle is loaded into each installed AutoCAD release, a newly installed AutoCAD release would automatically configured during the first time the program is ran.

Specify Custom File Locations and Settings with User Profiles

User profiles are used to organize the settings that affect the AutoCAD application. The settings of a user profile define the locations in which AutoCAD looks for custom files along with the appearance of the application and the behavior of the various drafting, selection, and modeling features in the program.

User profiles are managed on the Profiles tab of the Options dialog box. From the profiles tab, you can export a user profile to an ARG file and then import that ARG file onto another workstation running the same or a newer AutoCAD release. Before you export a user profile, you define the locations of your custom files on the Files tab of the Options dialog. This is one of the most common approaches to setting up new workstations, as it saves you time from manually configuring each workstation one at a time.



Note: While importing a user profile to configure the locations of custom files is helpful, over the years I have learned it can be less productive users. Users tend to like it when their custom settings that control the appearance of the application, behavior of drafting and selection tools, and user preferences are not overwritten. See the next two sections on how to avoid this.

I explain how to export and import user profiles under the *Manually Migrate Your Custom Files and Settings* section later in this handout.

Specify Custom File Locations with AutoLISP

AutoLISP can be used to set the locations of many custom files as part of the current user profile and even create or import user profiles. Using a combination of system and environment variables along with functions from the AutoCAD ActiveX API, you can set the location of custom files during the startup of AutoCAD or upon the opening of a drawing file.

Note: While the *acad.lsp* and *acaddoc.lsp* files are loaded automatically into AutoCAD, if found in one of the support file search paths, this doesn't work as a way to configure AutoCAD at startup. You will need to manually load a LSP file to configure AutoCAD or use a plug-in bundle. Plug-in-bundles can be used to automatically load LSP files without them being in one of the support file search paths defined in the product. I explain using a plug-in bundle to configure AutoCAD in the *Manage Custom Files and Settings with Plug-in Bundles* section.

Earlier in this handout, I listed the system and environment variables that can be used to define the locations of the custom files. Refer to the *Take Inventory of Your Current Environment* section for a listing of these system and environment variables.

The following is an example of appending a path to the Support File Search Path and setting the path for action macros:

```
;; Prefix the autolisp and blocks folders to the support paths
(setenv "ACAD" (strcat
                    "c:\\autocad\\support\\autolisp;"
                    "c:\\autocad\\blocks;"
                    (getenv "ACAD")))
;; Appends the autolisp folder to the trusted locations
(setvar "TRUSTEDPATHS" (strcat
                           (getvar "TRUSTEDPATHS")

";c:\\autocad\\support\\autolisp")))
;; Directs AutoCAD to look in the macros folder for ACTM files
(setvar "ACTPATH" "c:\\autocad\\support\\macros")
```

The following is an example that copies the current profile, reset and change the profile, and then sets the current profile current:

```
(defun c:CopyProfile()
    ;; Copy the current and reset the copied profile
    (setq acadObj (vlax-get-acad-object))
    (setq objPrefs (vla-get-Preferences acadObj))

    ;; Get the PreferencesProfiles object
    (setq objPrefProfile (vla-get-Profiles objPrefs))

    ;; Get the name of the current profile and for the new profile
    (setq curProfile (vla-get-ActiveProfile objPrefProfile)
          destProfile "AU2020-LSP-Copied")

    ;; Copy and reset the profile
    (vla-CopyProfile objPrefProfile curProfile destProfile)
    (vla-ResetProfile objPrefProfile destProfile)
```

```
    ;; Set the new profile current
    (vla-put-ActiveProfile objPrefProfile destProfile)

    ;; Prefix the autolisp and blocks folders to support paths
    (setq objPrefFiles (vla-get-Files objPrefs))

    (setq supportPaths (strcat
                         "c:\\autocad\\support\\autolisp"
                         ";c:\\autocad\\blocks;"
                         (vla-get-SupportPath objPrefFiles)))

    (vla-put-SupportPath objPrefFiles supportPaths)
)
```

Manage Custom Files and Settings with Plug-in Bundles

Plug-in bundles allow you to load custom files which include executable (LSP, ARX, …) files and specify application settings and support paths. The feature was first introduced with AutoCAD 2013 and the AutoCAD App Store. A plug-in bundle is a folder structure with an XML manifest file named *PackageContents.xml*. The *PackageContents.xml* identifies the custom files in the plug-in bundle and how those files should be made accessible to the AutoCAD program.

Rather than use a customization (CUIx) or an *acad.lsp/acaddoc.lsp* file to load LSP files, a plug-in bundle can be used to load LSP files instead when a drawing is opened. Plug-in bundles are easier to manage and are a safer way to deploy custom files than with the use of the *acad.lsp* or *acaddoc.lsp* files.

The following is an example of what the folder structure might look like for a plug-in bundle named *Setup.bundle* that configures the AutoCAD environment:

```
Setup.bundle
  |-> LSP
       |-> main.lsp
  |-> PackageContents.xml
```

The *PackageContents.xml* file for the *Setup.bundle* example, performs the following:

- Adds two folders to the support file search paths, these could be local or network locations
- Sets the drawing template (DWT) files location
- Sets the values for three system variables when the plug-in bundle is initially loaded: ACTPATH, TRUSTEDPATHS, and SAVETIME
- Loads the file *main.lsp* each time a drawing is opened

Note: *main.lsp* in the example plug-in bundle could be used to load executable files, such as LSP and SCR files from a network location.

Here is what the *PackageContents.xml* file might look like for the *Setup.bundle*:

```
<?xml version="1.0" encoding="utf-8"?>
  <!—Bundle general information; ProductCode must be unique-->
  <ApplicationPackage
     SchemaVersion="1.0"
     AppVersion="1.0"
     Name="Company Setup"
     Description="Example of a plug-in bundle to setup AutoCAD"
     Author="Autodesk, Inc"
     ProductCode="{c610f109-bd5a-408f-bf54-425dd47f6c12}"
  >

  <!--Information about the company that authored the plug-in-->
  <CompanyDetails
     Name="Autodesk, Inc"
     Url="http://www.autodesk.com"
  />

  <!--Information about the company that authored the plug-in-->
  <Components Description="Windows operating systems">
    <RuntimeRequirements
       OS="Win32|Win64"
       SeriesMin="R19.0"
       Platform="AutoCAD*"
       SupportPath="c:/autocad/support/autolisp;c:/autocad/blocks"
    />
    <!--SupportPath value is appended after other support paths.
        Use AutoLISP if you want the paths to be before existing
        paths.-->

    <!--Set the drawing template (DWT) files location-->
    <EnvironmentVariables>
      <EnvironmentVariable
         Name="TemplatePath"
         Value="c:/autocad/support/templates"
         Flags="OpenOnce"
      />
    </EnvironmentVariables>

    <SystemVariables>
      <!--Sets the path for additional action macros-->
      <SystemVariable
         Name="ACTPATH"
         Value="c:/autocad/support/macros"
         Flags="OpenOnce"
      />

      <!--Adds a folder to Trusted Paths-->
```

```
      <SystemVariable
         Name="TRUSTEDPATHS"
         Value="+;c:/autocad/support/autolisp"
         Flags="OpenOnce"
      />

      <!--Sets the autosave time to an increment of 5 minutes-->
      <SystemVariable
         Name="SAVETIME"
         Value="5"
         Flags="Open"
      />
    </SystemVariables>

    <!--Defines which custom LSP files to load-->
    <ComponentEntry Description="Main setup LSP file."
       AppName="SetupMain"
       Version="1.0"
       ModuleName="./LSP/main.lsp">
    </ComponentEntry>
  </Components>
</ApplicationPackage>
```

Note: The `ProductCode` value must be unique for each plug-in bundle that is loaded into the AutoCAD product. You can generate a GUID value on the Online GUID Generator website (https://www.guidgenerator.com/).

After a plug-in bundle has been defined, it needs to be copied into one of the following locations for it to be loaded into the AutoCAD product:

Product Installation folder

- **Windows 7, Windows 8, and Windows 10:** %PROGRAMFILES%\Autodesk\ApplicationPlugins
- **Mac OS:** /Applications/Autodesk/ApplicationAddins

All Users Profile folder

- **Windows 7, Windows 8, and Windows 10:** %ALLUSERSPROFILE%\Autodesk\ApplicationPlugins
- **Mac OS:** N/A

User Profile folder

- **Windows 7, Windows 8, and Windows 10:** %APPDATA%\Autodesk\ApplicationPlugins
- **Mac OS:** ~/Library/Application Support/Autodesk/ApplicationAddins

Note: It is recommended to place your plug-in bundles in a folder that is read-only to limit write access to the location by other software.

Commonly Shared Custom Files

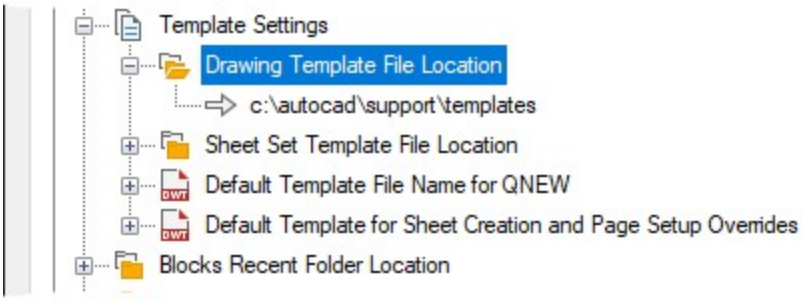
Now that you have an idea of which and where all your custom files stored after taking inventory of your AutoCAD environment, as mentioned earlier in the *Take Inventory of Your Current Environment* section, now to decide which files you might want to share. The following is a list of the most shared custom files:

- Drawing template (DWT) and standards (DWS) files
- Drawing (DWG) files as blocks
- Tool palette (XTP) files
- Plotter configuration (PC3) files
- Plot style (CTB and STB) files
- Customization (CUIx) files
- Program parameter (PGP) files
- Script (SCR) files
- Action macros (ACTM) files
- Executable programs; AutoLISP (LSP), ObjectARX (ARX), Managed .NET (DLL) files

Drawing Template (DWT) and Standard (DWS) Files

You commonly add all your layers and styles and set common drawing-based settings, such as measurement units and arc smoothness, in a drawing template (DWT) file. Then when you create a new drawing based on your drawing template, the new drawing contains all your layers, styles, and settings. A drawing standards (DWS) file is a drawing file that contains your layers and styles and is used to enforce your CAD standards with the STANDARDS and CHECKSTANDARDS commands.

The location AutoCAD looks for drawing templates (DWT) files is under the Template Settings > Drawing Template File Locations node on the Files tab of the Options dialog box (OPTIONS command). I recommend adding your drawing standards (DWS) files to the same folder as your DWT files.



Additional Information

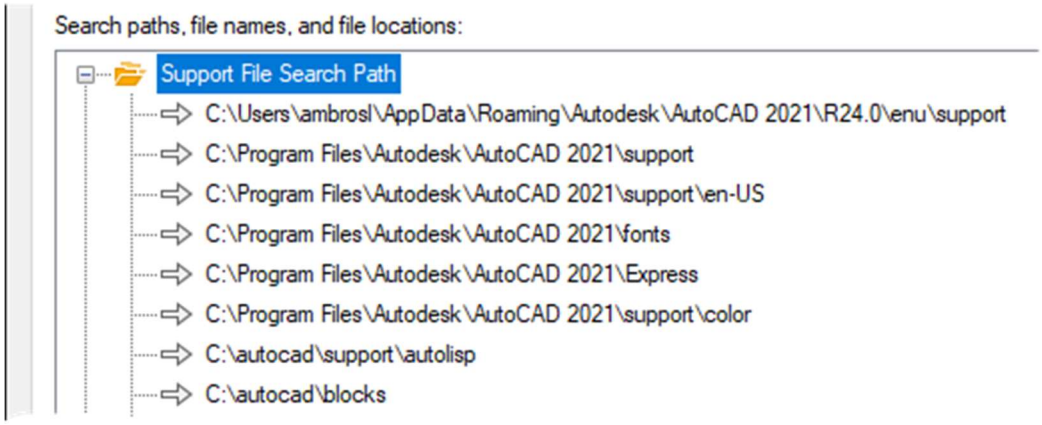
You can find additional information on drawing templates and standards files with these topics in the AutoCAD Online help system:

- About Drawings and Templates
- About Layout Templates
- About CAD Standards

Blocks

A block is a named collection of geometry that is stored in a drawing or it can represent a drawing (DWG) file. AutoCAD looks for blocks in the current drawing first when using the INSERT/-INSERT commands, and then if the block isn't found it looks for a drawing file with a matching name. You can inform AutoCAD where to look for drawings that you want to use as blocks by adding the path to the drawings under the Support File Search Path node of the Files tab in the Options dialog box (OPTIONS command).

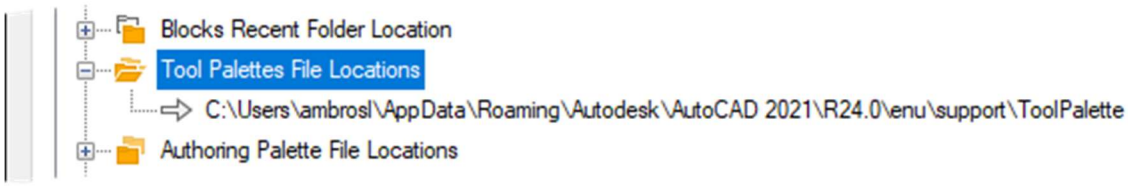
Note: Support file search paths are searched in a top down order.



Tool Palettes

Tool Palettes can be shared between multiple users by exporting a tool palette from one workstation and then importing it onto another workstation. The exporting and importing of tool palettes are handled through the Customize dialog box (CUSTOMIZE command).

Rather than exporting and importing tool palettes, you can create new tool palettes in a shared location or folder synchronized by a cloud storage service, and then share them with others without needing to export and import them between workstations. The location AutoCAD looks for tool palettes is under the Tool Palettes File Locations node on the Files tab of the Options dialog box (OPTIONS command).



Note: The first folder listed under the Tool Palettes File Locations node is where any newly created tool palettes and images are created.

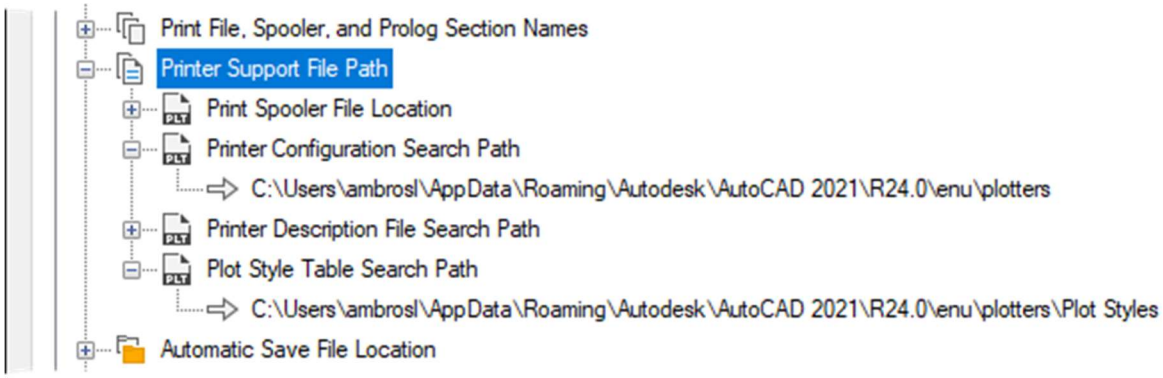
Additional Information

You can find additional information on tool palettes with these topics in the AutoCAD Online help system:

- About Sharing Tool Palettes and Tool Palette Groups

Plotter Configurations (PC3) and Plot Styles (CTB and STB) Files

Output devices are stored in the form of plotter configuration (PC3) files. You use PC3 files to plot and publish your drawings to hardcopy or electronic file formats (PDF, DWF, PNG, …). Plot styles are used to control the lineweight and other characteristics of the geometry linework in your drawings when plotting or publishing. There are two types of plot styles you can choose from: color-dependent (CTB) and named (STB) plot styles. AutoCAD looks for PC3, CTB, and STB files in the Printer Configuration Search Path and Plot Style Table Search Path nodes under Printer Support File Path on the Files tab of the Options dialog box (OPTIONS command).



Customization (CUIx) Files

The AutoCAD user interface (UI) can be customized to include custom tools that improve your workflows and remove other tools that you don't use. There are three types of customization (CUIx) files that can be loaded into the AutoCAD environment: main, enterprise, and partial. By default, the *acad.cuix* file is loaded as the main customization file into AutoCAD. This file defines the default ribbon, Quick Access toolbar, shortcut keys among other UI elements. Several partial CUIx files are also loaded as part of the *acad.cuix* file, these CUIx files are used to load tools related to the Express Tools, App Manager, Model Documentation among others.

Partial CUIx files often contain a small subset of tools compared to the number of tools defined in *acad.cuix*. You can create and load a partial CUIx file to hold your custom commands rather than modify the acad.cuix file, taking this approach can make migrating between releases easier. You load a partial CUIx file into AutoCAD by assigning it to either the main or enterprise customization file with the Customize User Interface (CUI) Editor (CUI command).

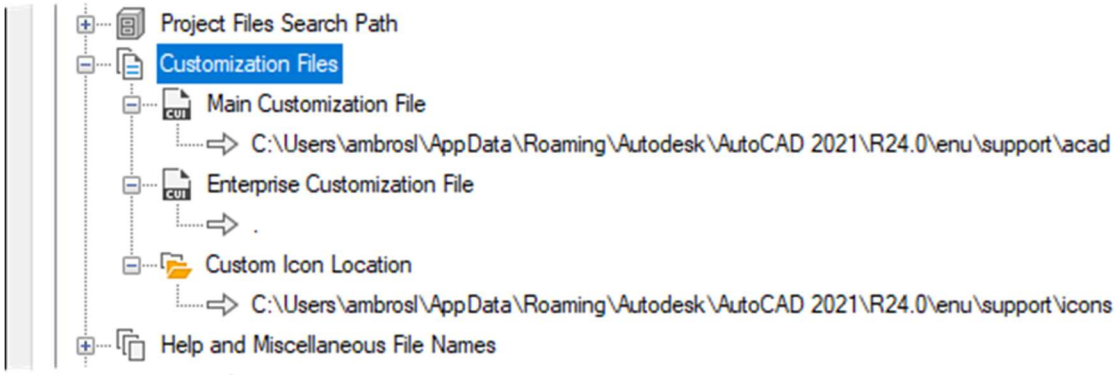
Tip: There is a partial file named *custom.cuix* that is installed with the product. This file should remain locally on the workstation as this is meant to allow individual users to add custom commands and user interface elements to the AutoCAD environment.

While AutoCAD by default doesn't load an enterprise customization file, the purpose of this type of CUIx file is to give a company to define their custom user interface elements rather than modify the *acad.cuix* file.

Tip: The CUIx file loaded as the enterprise customization file is read-only when working with it in the CUI Editor (CUI command). To make it possible to edit the enterprise customization file, consider creating a copy of your user profile on the Profiles tab of the Options dialog box (OPTIONS command) and naming the profile something like Edit Enterprise CUI. Then with the new profile current, reverse the files under the Main Customization File and Enterprise Customization File nodes on the Files tab of the Options dialog box (OPTIONS command), that way both files are still loaded but you are able to edit the enterprise customization file. Set your other user profile current when done editing the enterprise customization file to restore the original order.

Note: There are some companies that specify their own custom CUIx file as the main customization file and the *acad.cuix* file as the enterprise customization file. This keeps the *acad.cuix* in its default state and simplifies migrating between releases.

The locations of the main and enterprise customization files are specified under the Main Customization File and Enterprise Customization File nodes under the Customization Files on the Files tab of the Options dialog box (OPTIONS command).



Note: While there is no specific location for partial CUIx files, you will want to store those CUIx files in the same location as the CUIx file in which they are loaded and make sure that location is listed under Support File Search Path.

Command Aliases

Program parameter (PGP) files contain command aliases that are used to start commands using a shortened or abbreviated name. AutoCAD looks for PGP files in the paths defined under the Support File Search Path node of the Files tab in the Options dialog box (OPTIONS command). The specific PGP files that the program looks for are *acad.pgp*, *AutoCorrectUserDB.pgp*, and *acadSynonymsGlobalDB.pgp*.

Note: The first instance of the PGP file found is loaded by the program, so the order in which the paths are added to the Support File Search Path node is important. Support file search paths are searched in a top down order.

Tip: While some companies do share PGP files among many users, these files are meant for individual users and should be kept locally on each workstation or in a folder specific to the user in a network location to ensure they are backed up. As an alternative to sharing PGP files,

consider creating small AutoLISP expressions that mimic a command alias and then load that file as part of the plug-in bundle. The following is are a few examples of AutoLISP functions that define command alias like commands:

```
; Zoom related aliases
(defun c:ZW ( / )  (command "._zoom" "_w"))
(defun c:ZP ( / )  (command "._zoom" "_p"))

; Circle and copy alias overrides
(defun c:C ( / ) (initcommandversion 2)(command "._copy"))
(defun c:CI ( / ) (command "._circle"))
```

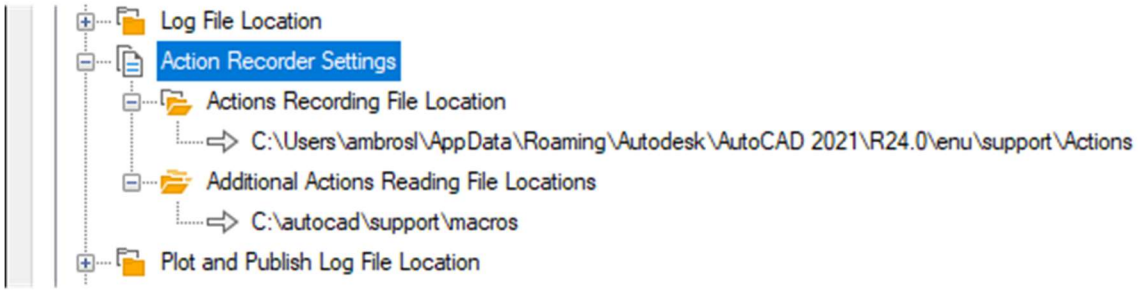
Script (SCR) Files

Commands that you might execute in a specific order multiple times can be defined in a script (SCR) file to automate a workflow. SCR files are ASCII text files that contain command, option, and value sequences that are automatically executed upon the running of a SCR file. When the SCRIPT command is used, you normally browse to the SCR file to run, so specify where your SCR files are located isn't necessary unless you are running them from an AutoLISP program with the SCRIPT command. If you run a SCR file with AutoLISP, then you should specify the path in which your SCR files can be found under the Support File Search Path node of the Files tab in the Options dialog box (OPTIONS command).

Reminder: Support file search paths are searched in a top down order.

Action Macros (ACTM) Files

Action macros are recorded using the Action Recorder panel on the Manage tab of the ribbon. An action macro contains a sequence of commands, options, and values like a script (SCR) file does except they are created while performing tasks on a drawing. When you record new action macros, they are stored in the location specified under the Action Recorder Settings > Actions Recording File Location node on the Files tab of the Options dialog box (OPTIONS command). You could specify this as a shared location, but then any new action macros are made available immediately to everyone before you have a chance to test them. It is recommended to not change this setting and use its default location. If you want to share action macros, you want to specify a shared location under the Additional Actions Reading File Location node.



Additional Information

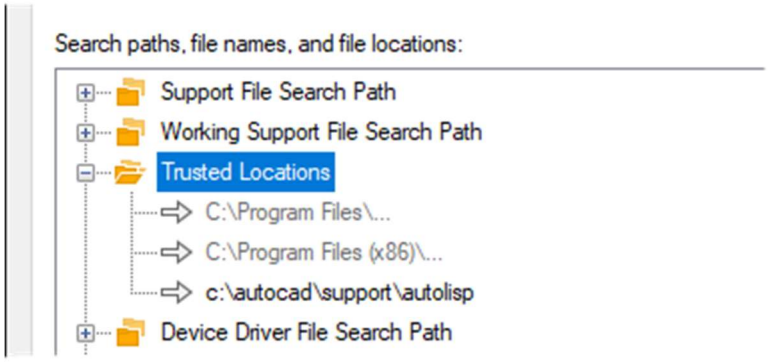
You can find additional information on action macros with these topics in the AutoCAD Online help system:

- About Action Macros

- About Recording Action Macros
- About Managing Action Macros

Executable (LSP, ARX, DLL, …) Files

You can load multiple types of files that allow you to automate workflows and define new commands. The types of files that allow you to automate workflows and define new commands are referred to as executable files. AutoLISP (LSP, VLX, FAS), ObjectARX (ARX, CRX, DBX), Managed .NET (DLL), JavaScript (JS), and VBA Project (DVB) files are all classified as executable files. The locations of your executable files must be specified under the Support File Search Path and Trusted Locations nodes on the Files tab of the Options dialog box (OPTIONS command).



Additional Information

You can find additional information on supported executable files with these topics in the AutoCAD Online help system:

- About Supported Programming Interfaces

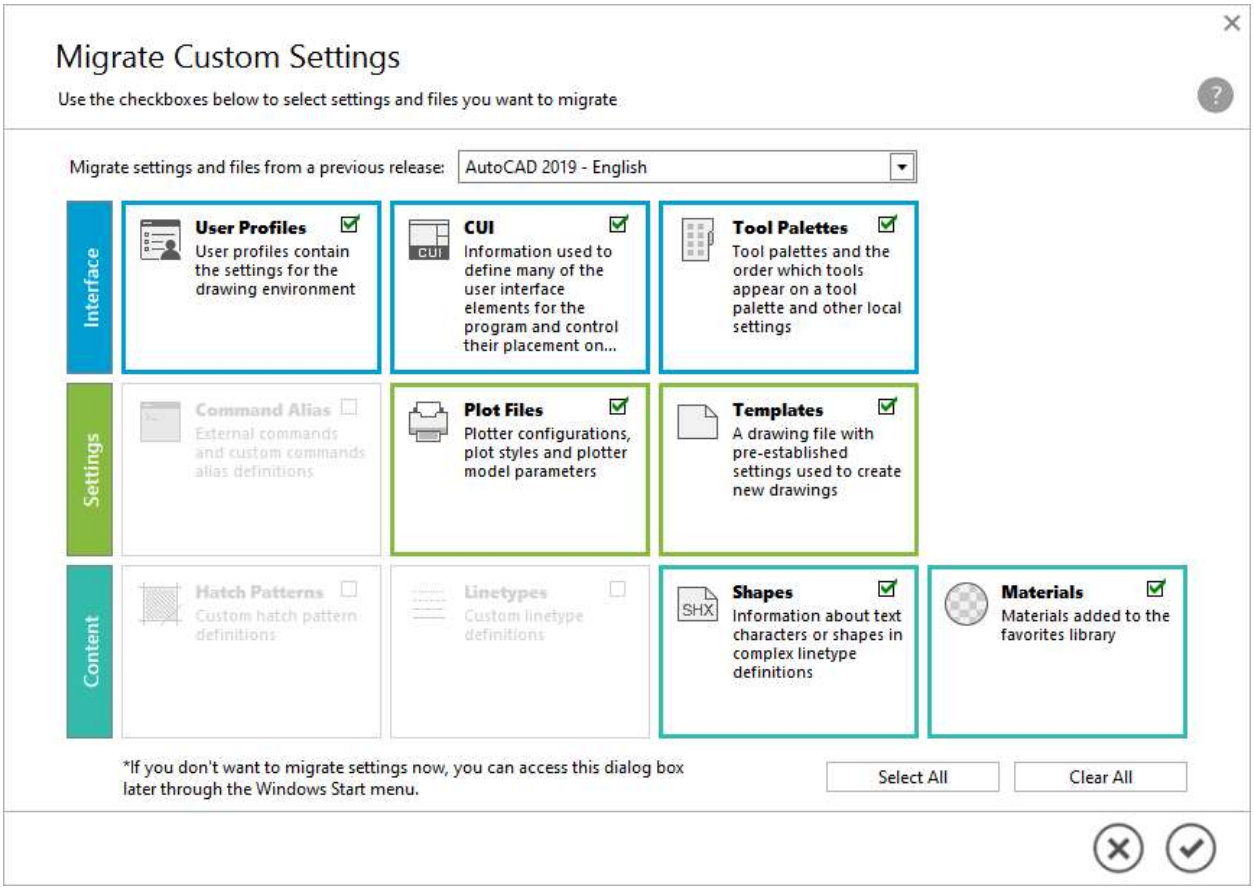
4 Migrate Custom Files and Settings

Before you start using a newly installed release of AutoCAD, you are presented with the question of migrating your custom files and settings from a previous release, if one is still installed. While you don't need to migrate your custom files and settings from a previous release, if you customized the AutoCAD environment, not doing so could result in lost productivity.

AutoCAD provides several utilities to help facilitate the migration of your custom files and settings from a previous to a newer release. In addition to the utilities that come with AutoCAD, manually migrating your custom files and settings is an option. Manually migrating your custom files and settings does provide much greater control over what files and settings are migrated.

Empower AutoCAD to Migrate Your Custom Files and Settings

Migrate Custom Settings is the very first feature you encounter after installing and running a new release of AutoCAD, but only if a previous release is also installed. When Migrate Custom Settings is displayed, you can choose which installed release to migrate custom files and settings from and which of those custom files and settings to migrate to the new release. The interface is streamlined in a way that you can only choose which categories of custom files and settings to migrate, there is no control over individual files or folders in which to migrate. If you want control over the migration of individual files and settings, see the *Manually Migrate Your Custom Files and Settings* section later in this handout.



Note: If you dismiss the Migrate Custom Settings when it is initially displayed, it can be displayed again from the Windows Start screen or menu. Running Migrate Custom Settings later though, could result in the loss of any customization that might have been done since the first time the AutoCAD program was launched.

The following explains how to migrate your custom files and settings from a previous release with Migrate Custom Settings:

1. If Migrate Custom Settings isn't displayed when you launch the product, do one of the following:
   - On the Windows 8 or Windows 10 Start Screen, under the AutoCAD *<release>* - English category, click Migrate From a Previous Release.

     
   - On the Windows 7 taskbar, click the Start button > All Programs > Autodesk > AutoCAD *<release>* - English > Migrate From a Previous Release.

     
2. In the Migrate Custom Settings dialog box, from the Previous Release drop-down list, choose the release from which you want to migrate custom files and settings.
3. Check or clear the categories of custom files and settings you want to migrate.

   If a category isn't enabled, that means Migrate Custom Settings didn't detected any custom files or settings in that category to migrate.
4. Click OK.
5. In the Migrate Custom Settings message box, click Yes.

   If you don't want to review the migration log, click No.
6. Review the migration log. After you are done, close the Web browser window.

When you start AutoCAD, if something isn't right after migrating the custom files and settings from a previous release, you can always reset AutoCAD back to its default files and settings. For more information, see *Reset AutoCAD to Its Default Files and Settings* later in this handout.

Manually Migrate Your Custom Files and Settings

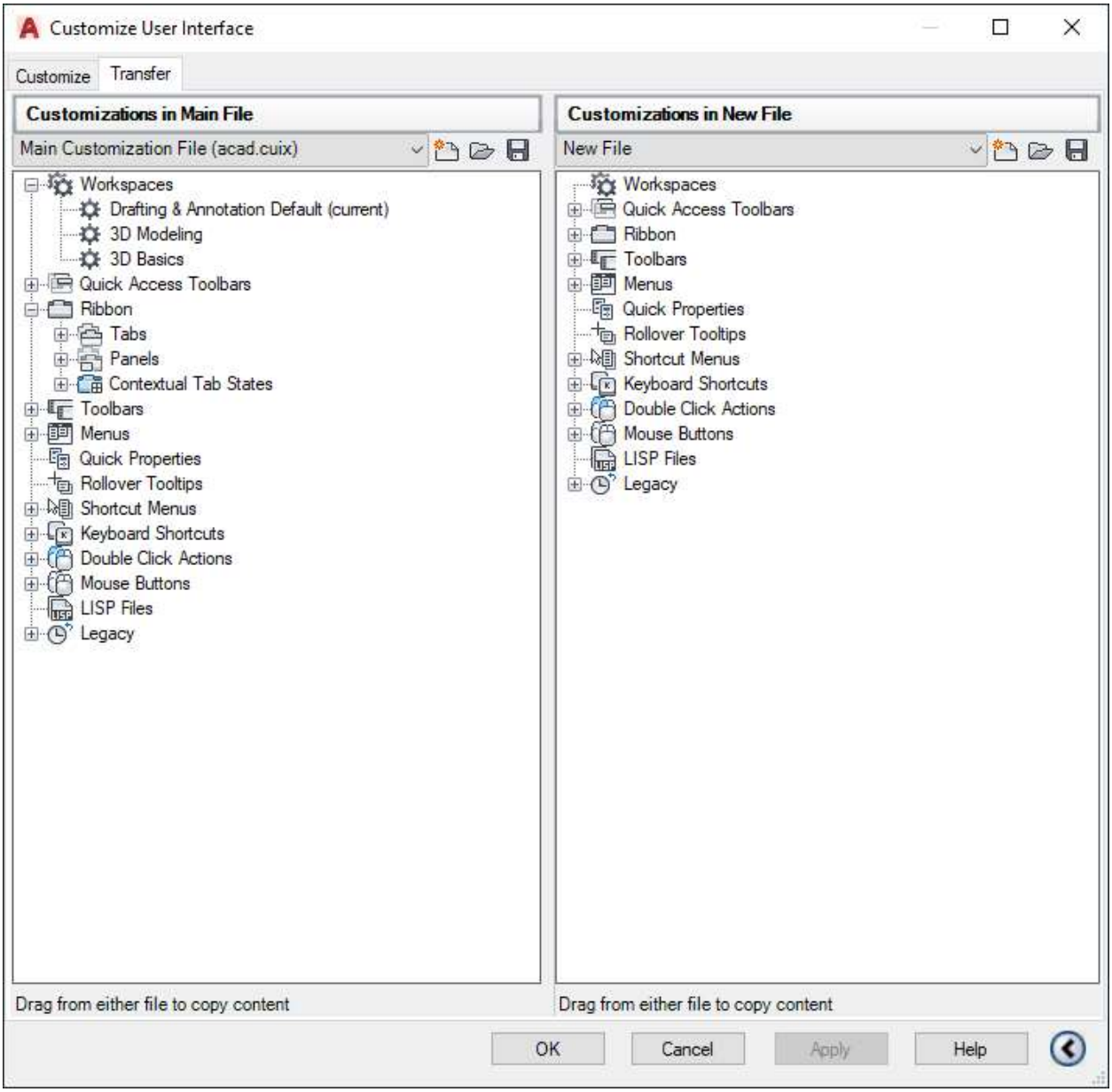
Migrate Custom Settings was designed with a focus on assisting individuals and small companies that don't do a lot of customization to their AutoCAD environment. In those environments, the utility does a great job to migrate all custom files and settings between two releases. However, since it doesn't support all custom files that AutoCAD supports, it might not work well in all environments. Medium to large sized companies often store their custom files in a shared location and use a variety of methods to configure their AutoCAD environment, and rely less on Migrate Custom Settings.

If you want more control over the files or parts of files that you might want to migrate, you can manually migrate the custom files and settings in your environment. The following utilities can be used to migrate your custom files and settings between releases:

- Customize User Interface Editor, Transfer tab
- Options dialog box, Profiles tab
- Customize dialog box, Tool Palettes – All Palettes tab
- Windows or File Explorer
- Notepad

Customize User Interface Editor

The AutoCAD user interface (UI) can be customized to improve the way you work and remove the commands you don't use. The Customize User Interface (CUI) Editor is used to edit CUIx files which define the controls and buttons on the ribbon and Quick Access toolbar along with the behavior of the double-click actions and items on the contextual menus. The default CUIx file that is loaded into AutoCAD is named *acad.cuix*. The options on the Customize tab of the CUI Editor are used to modify the AutoCAD UI, while the lesser used Transfer tab allows you to transfer (or migrate) elements between CUIx files.



If you are not familiar with the CUI Editor and how to customize the AutoCAD UI, see the About User Interface Customization topic in the AutoCAD Online help system.

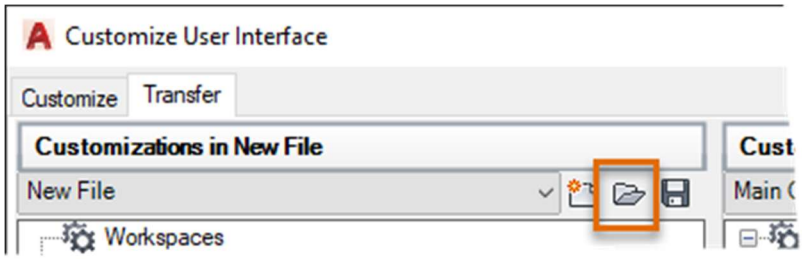
From the Transfer tab of the CUI Editor, you can:

- Create a new or copy of a customization (CUIx) file
- Open an existing customization (CUIx) file without loading it into AutoCAD
- Load a CUIx file as a partial customization file
- Convert a “legacy” toolbar or dashboard panel to a ribbon panel
- Copy elements and associated commands between CUIx files

The following explains how to transfer UI elements in the *acad.cuix* file from a previous release to the *acad.cuix* file in a newer release:

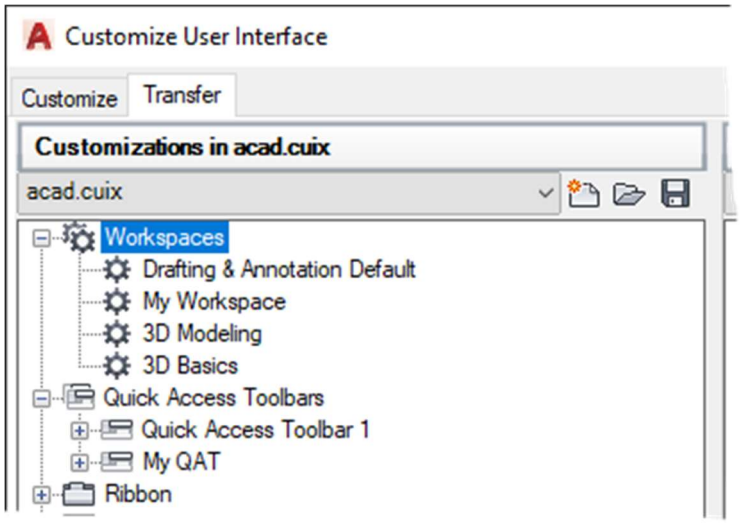
1. In AutoCAD, click Manage tab > Customization panel > Import. 

   The CUI Editor opens to the Transfer tab with the *acad.cuix* file (or the main customization file) open on the right.
2. In the Customize User Interface Editor, on the left, click Open Customization File.



3. In the Open dialog box, browse to and select the *acad.cuix* file or the CUIx file from which you want to transfer UI elements. Click Open.

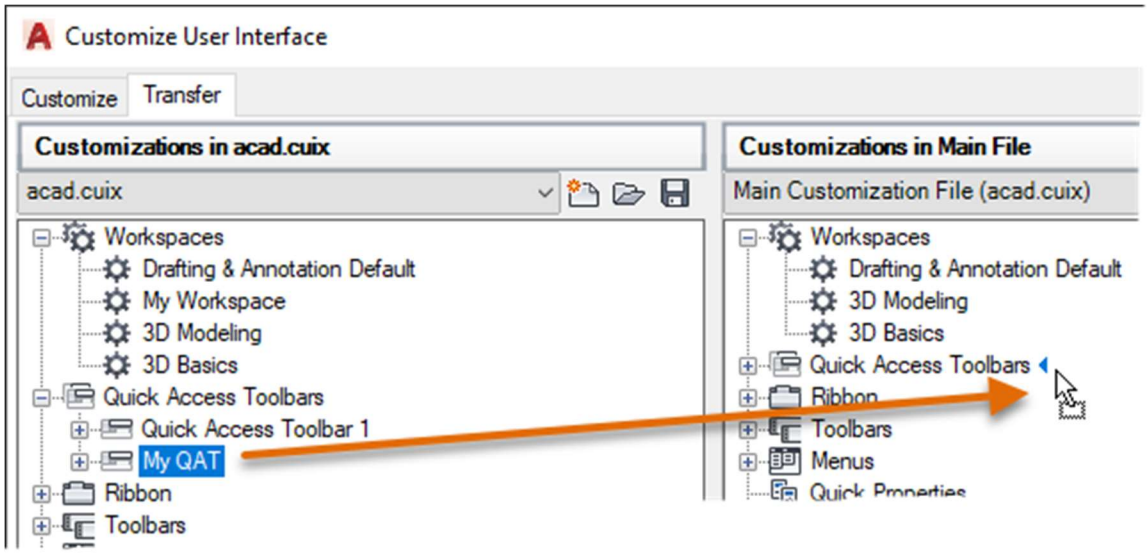
   The CUIx is opened and its elements are displayed in the tree.



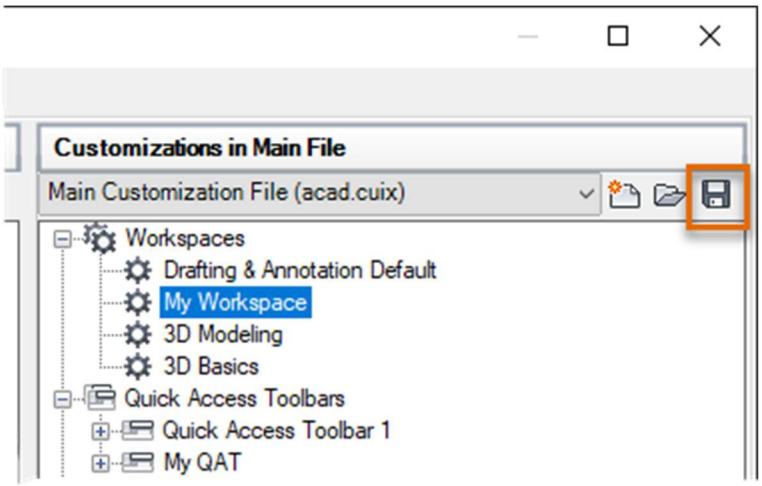
4. In the Customization pane on the left, expand the node which contains the UI element you want to transfer.

5. In the Customization pane on the right, expand the matching node.
6. Drag the UI element from the left to the right.

   The element and associated command are copied.



7. Drag additional elements between the CUIx files, as needed.
8. In the Customization pane on the right, click Save the Current Customization File to save the changes to the CUIx file.



9. Click OK to exit the CUI Editor.

   Changes made to the acad.cuix or main customization (CUIx) file should now be displayed in the AutoCAD UI.

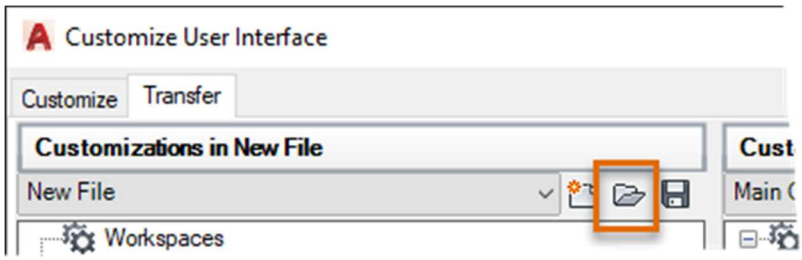
Tip: You could transfer UI elements to a new customization (CUIx) file and then load that file as a partial customization file. A partial customization file can be loaded into AutoCAD alongside other CUIx files, and they require minimal effort to migrate the CUIx file to a new release.

The following explains how to convert a “legacy” UI element to a ribbon panel:

1. In AutoCAD, click Manage tab > Customization panel > Import.

   The CUI Editor opens to the Transfer tab with the acad.cuix file (or the main customization file) open on the right.

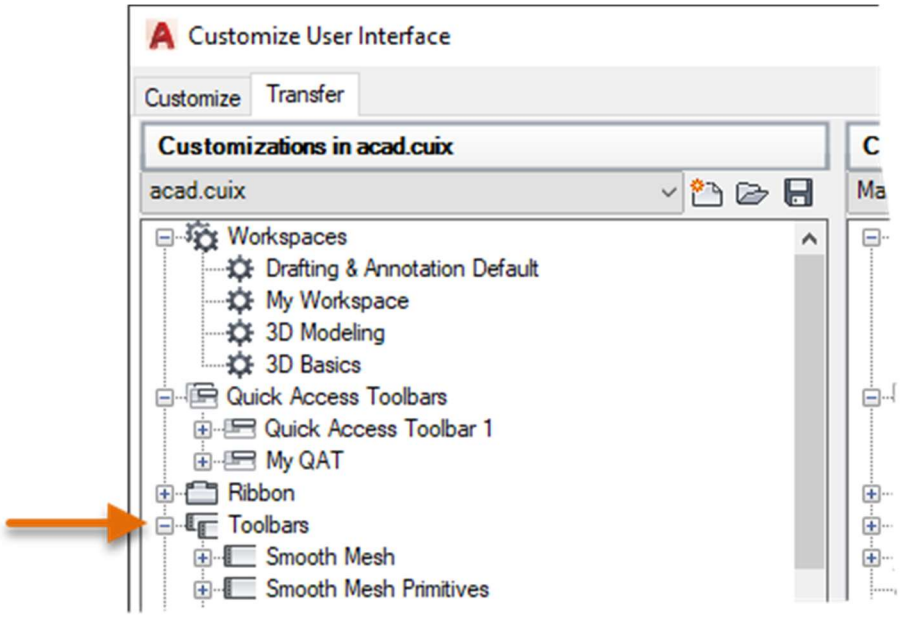
2. In the Customize User Interface Editor, on the left, click Open Customization File.



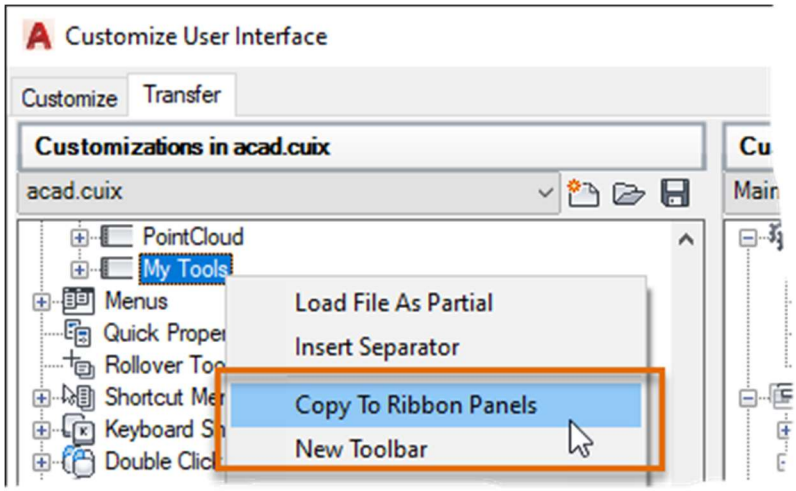
3. In the Open dialog box, browse to and select the acad.cuix file or the CUIx file from which you want to transfer UI elements. Click Open.

   The CUIx is opened and its elements are displayed in the tree.

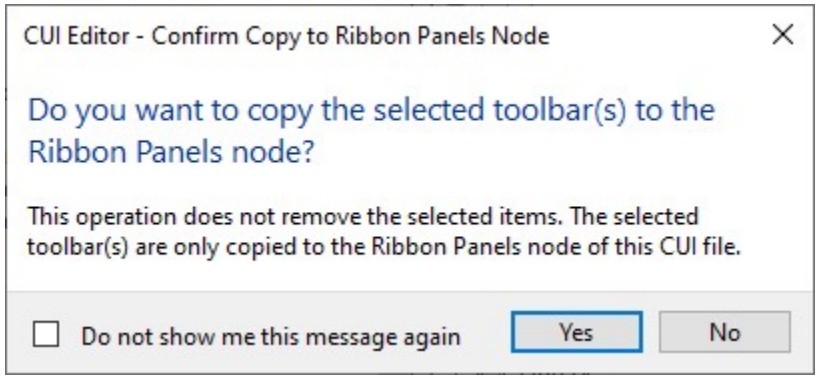
4. In the Customization pane on the left, expand the node (Dashboard Panels or Toolbars) which contains the UI element you want to convert to a ribbon panel.



5. Right-click over the element to convert and choose Copy To Ribbon Panels.

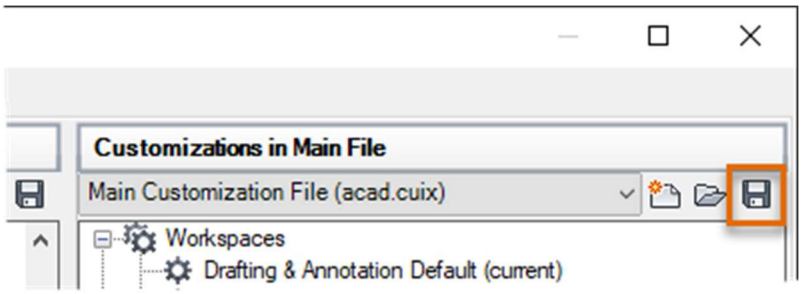


6. In the CUI Editor – Confirm Copy to Ribbon Panels Node message box, click Yes.



Check the Do Not Show Me this Message Again to not show this message the next time you want to convert a dashboard panel or toolbar to a ribbon panel.

7. From the Customization pane on the left, drag the new ribbon panel and drop it onto the Ribbon node in the Customization pane on the right.
8. In the Customization pane on the right, drag the transferred ribbon panel to a ribbon tab so it can be displayed in the AutoCAD UI.
9. Click Save the Current Customization File to save the changes to the CUIx file.



10. Click OK to exit the CUI Editor.

    Changes made to the *acad.cuix* or main customization (CUIx) file should now be displayed in the AutoCAD UI.

Tip: While not shown as being supported in the CUI Editor, it is possible to convert a “legacy” pull-down menu to a ribbon panel. Drag the pull-down menu from the Menus node to the Toolbars node. Once converted to a “legacy” toolbar, right-click the toolbar and choose Copy To Ribbon Panels.

Options dialog box

A user profile is used to organize your AutoCAD settings, such as where your custom files are located, the appearance of the AutoCAD program, object selection behavior settings among many others. You manage user profiles on the Profiles tab of the Options dialog box. From the Profiles tab you can:

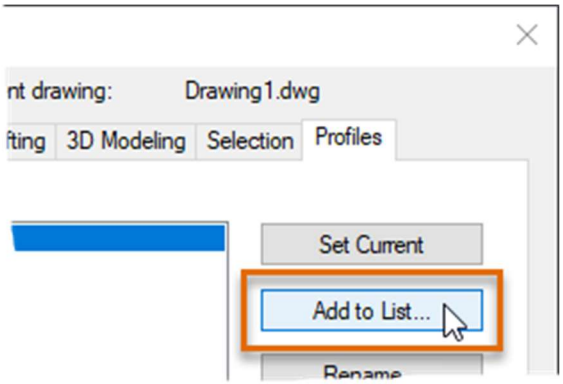
- Add a new profile based on the current profile
- Set a profile current
- Rename and delete a profile
- Export and import a profile
- Reset a profile to use the default settings

This handout primarily focuses on explaining how to export and import a user profile. You can learn more about user profiles in the About Saving Program Settings as Profiles topic found in the AutoCAD Online help system.

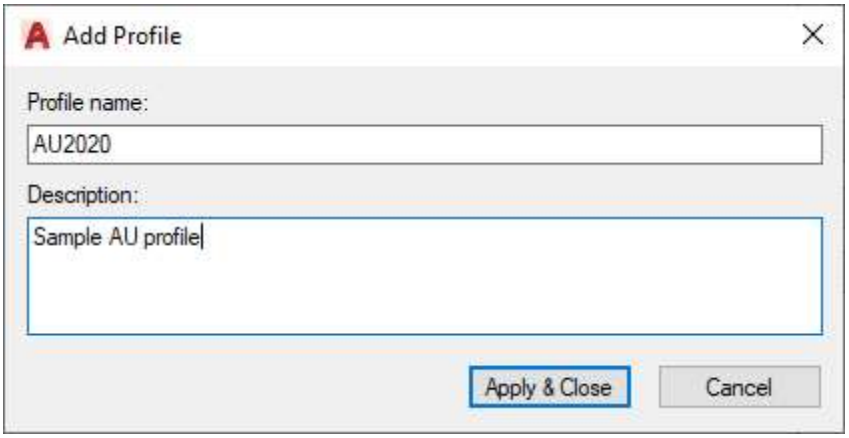
The following explains how to create a copy of your current profile and export it from AutoCAD:

1. In AutoCAD, click Application menu > Options (or at the Command prompt, enter **options**). 
2. In the Options dialog box, Profiles tab, click Add to List.

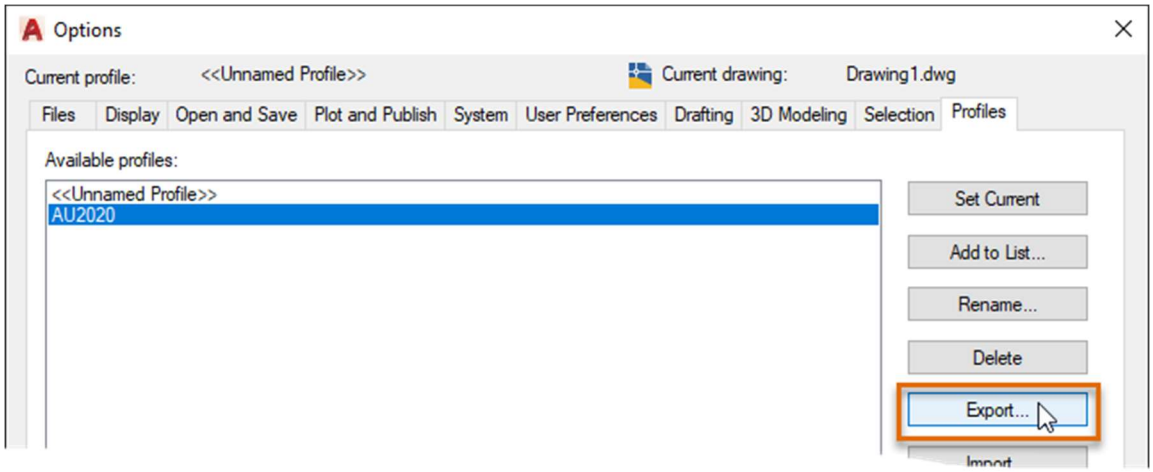
   This starts the creation of a new profile based on the current profile.



3. In the Add Profile dialog box, enter the values as shown in the image and click Apply & Close.
    - **Profile Name:** AU2020
    - **Description:** Sample AU profile



4. On the Profiles tab, select the AU2020 profile and click Export.



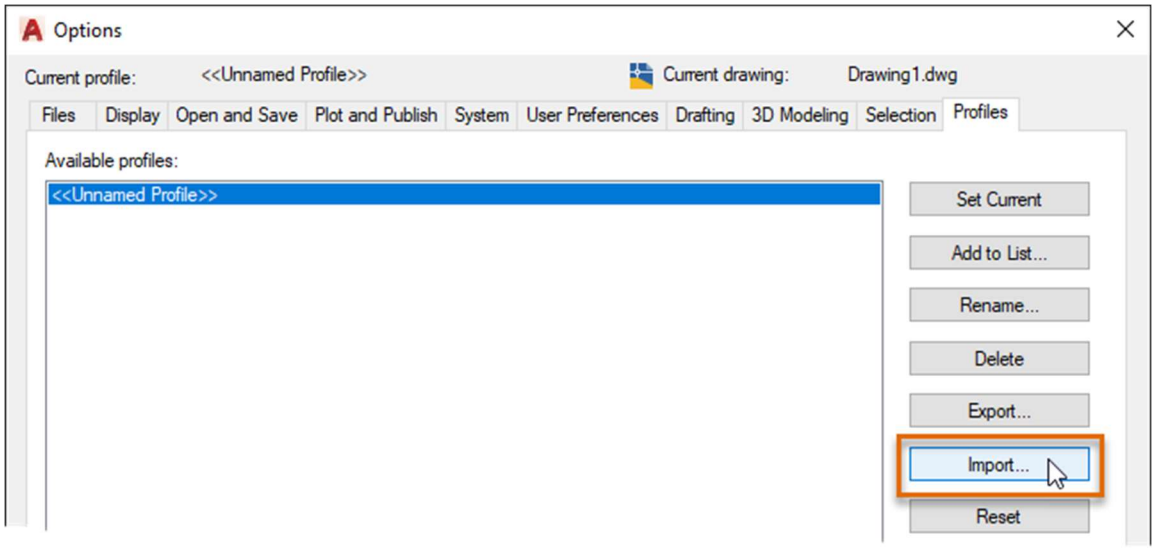
5. In the Export Profile dialog box, browse to the *Desktop* or *Documents* folder.
6. In the File Name text box, highlight the default name and type **AU2020**. Click Save.

   The ARG file created contains the Windows Registry branch of the selected user profile.
7. On the Profiles tab, with the AU2020 profile still highlighted, click Delete. In the message box, click Yes.

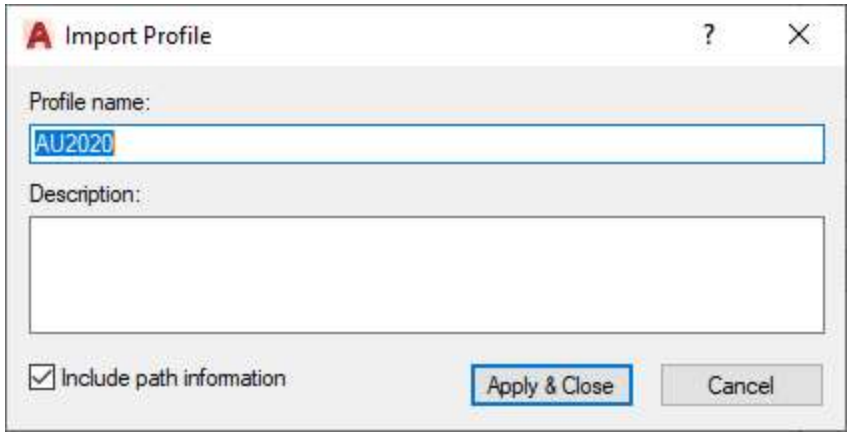
   Warning! This action can't be undone as it removes the user profile from the Windows Registry.
8. Click Cancel to dismiss the Options dialog box.

The following steps explain how to import (restore) a user profile into AutoCAD:

1. In AutoCAD, click Application menu > Options (or at the Command prompt, enter **options**).
2. In the Options dialog box, Profiles tab, click Import.



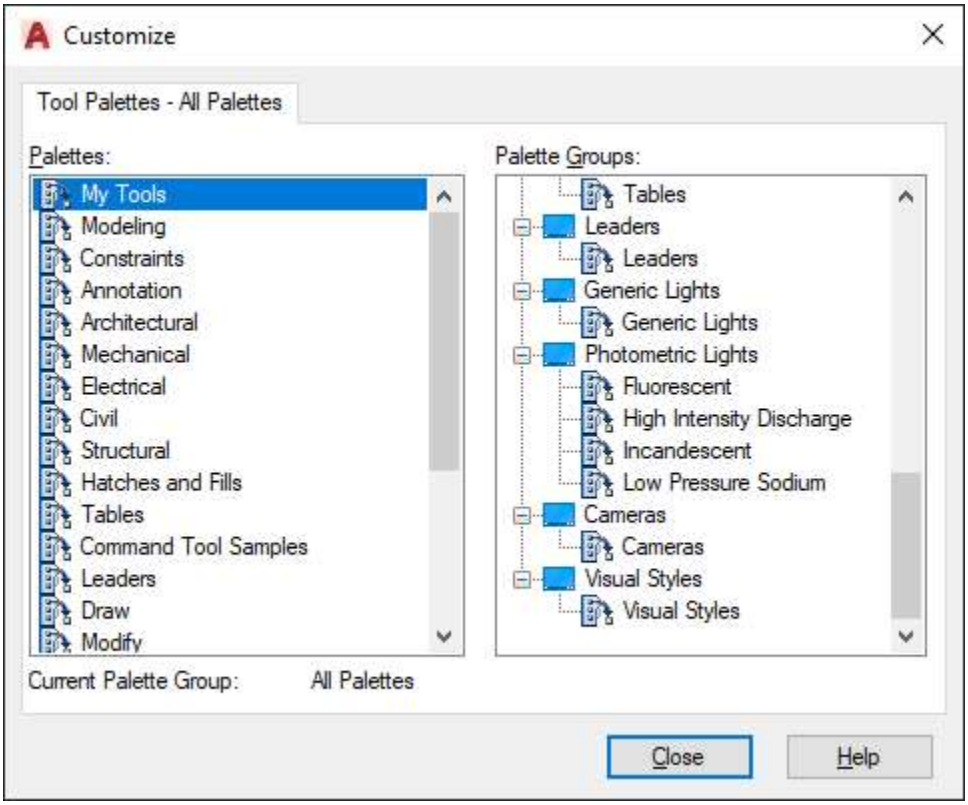
3. In the Import Profile dialog box, browse to the folder which you choose to export the profile.
4. Select the *AU2020.arg* file and click Open.
5. In the Import Profile dialog box, make sure Include Path Information is checked and click Apply & Close.



6. The ARG file is merged back into the Windows Registry, making the user profile available once again in AutoCAD.

Customize dialog box

Tools and tool palettes are typically edited using the Tool Palettes window, but the management of tool palettes and tool palette groups are handled with the Customize dialog box (CUSTOMIZE command). From the Customize dialog box, you can export tool palettes and tool palette groups from one release and then import them into another release. The definition of a tool palette is stored in an ATC file but might reference custom images for the tools it contains. While you can copy ATC files between releases, it is best to export and import them to ensure referenced images are included in the exported output.



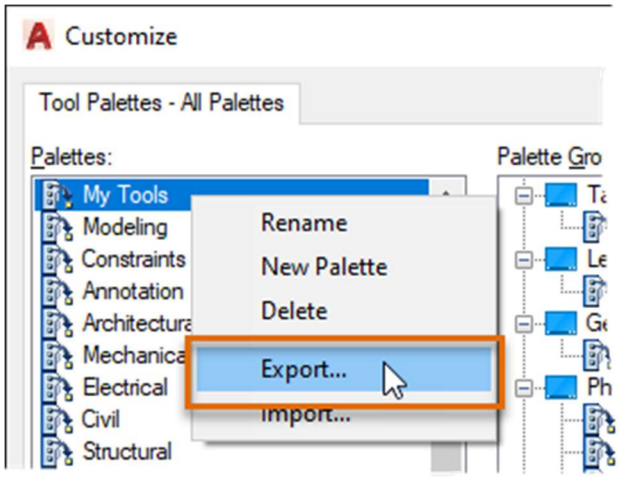
Export and Import Tool Palettes

Using the Customize dialog box, you can export a tool palette from one release and then import it into a newer release on the same workstation or even another workstation. When you export a tool palette, an XTP file of the tool palette is created along with a folder with the same name that contains the images referenced by the palette. You can then copy the XTP file and folder created and import the tool palette on another workstation using the Customize dialog box.

The following explains how to export a tool palette:

1. In AutoCAD, on the ribbon, click Manage tab > Customization panel > Tool Palettes.
2. In the Customize dialog box, Palettes list, select the tool palette you want to export.

3. Right-click the selected tool palette and choose Export.

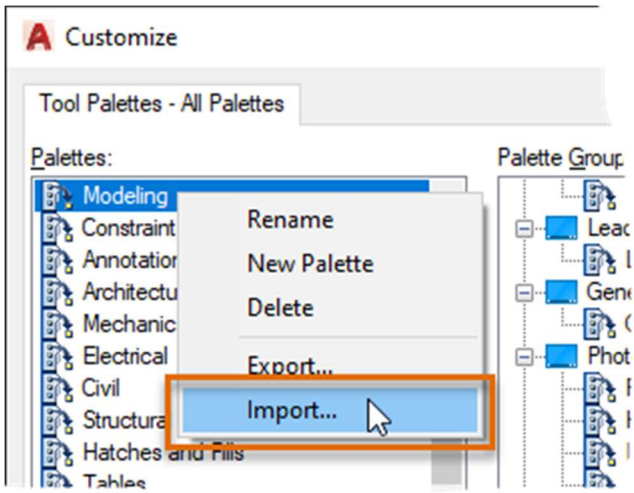


4. In the Export Palette dialog box, browse to the *Desktop* or *Documents* folder, or the folder which you want to store the exported tool palette.
5. Accept the default name and click Save.
6. Click Close to exit the Customize dialog box.

After the tool palette has been exported, make sure to place the XTP file and associated folder of the same name in a location from which they can be imported on another workstation.

The following explains how to import a tool palette:

1. In AutoCAD, on the ribbon, click Manage tab > Customization panel > Tool Palettes.
2. In the Customize dialog box, Palettes list, right-click anywhere in the list and choose Import.



3. In the Import Palette dialog box, browse to and select the XTP file of the exported tool palette which you want to import. Click Open.

Note: If the tool palette already exists, the tool palette will still be imported, and you will end up with a duplicate of the tool palette.

4. Click Close to exit the Customize dialog box.

As an alternative to exporting and importing tool palettes, it can be helpful to create your tool palettes in a shared location from which they can be loaded into AutoCAD. As explained earlier under the *Manage and Share Custom Files* section, you can share tool palettes with others by adding the location of your tool palettes to the Tool Palettes File Locations node on the Files tab of the Options dialog box.

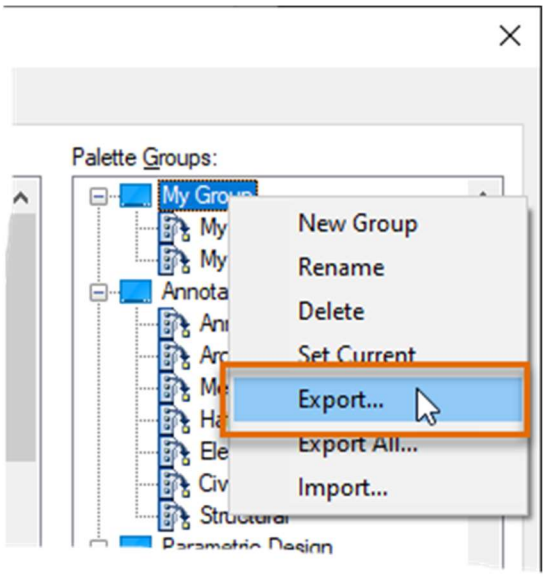
Note: One thing to know is that the order in which tools appear on a tool palette is set when the tool palette initially imported into AutoCAD. Changes to the order of tools after that are defined per workstation and stored in the *FixedProfile.aws* file. Be sure to set the desired tool order on a tool palette before sharing it with others.

Export and Import Tool Palette Groups

Unlike tool palettes, tool palette groups are stored in the *FixedProfile.aws* file which is user specific and, in some ways, release specific making it not sharable. *FixedProfile.aws* is located under each user's Window profile. Since the file can't be simply copied between releases or another workstation, it is best to export and import tool palette groups as needed. You use the Customize dialog box to export and import tool palette groups between releases and workstations. When a tool palette group or groups are exported, they are saved to an XPG file.

The following explains how to export tool palette groups:

1. In AutoCAD, on the ribbon, click Manage tab > Customization panel > Tool Palettes.
2. In the Customize dialog box, Palette Groups list, select the tool palette group you want to export.
3. Right-click the selected tool palette group and choose Export.



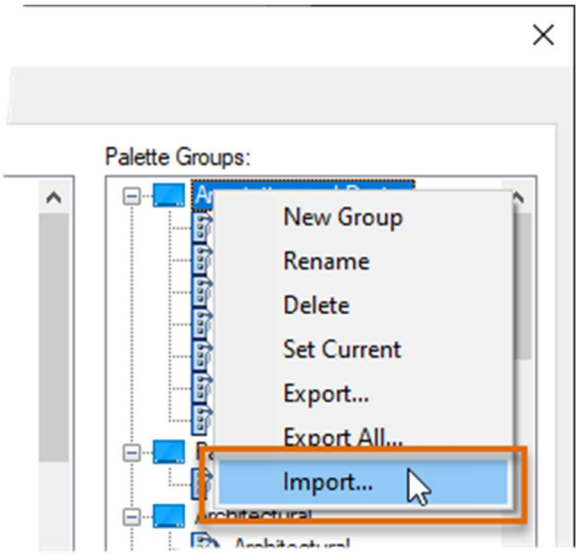
Note: You can also right-click a tool palette group and choose Export All to export all tool palette groups instead of exporting them one at a time.

4. In the Export Group dialog box, browse to the *Desktop* or *Documents* folder, or the folder which you want to store the exported tool palette group.
5. Accept the default name and click Save.
6. Click Close to exit the Customize dialog box.

After the tool palette group has been exported, make sure to place the XPG file in a shared location with any tool palettes you might have exported.

The following explains how to import a tool palette group:

1. In AutoCAD, on the ribbon, click Manage tab > Customization panel > Tool Palettes.
2. In the Customize dialog box, Palette Groups list, right-click over a tool palette group, not a tool palette, and choose Import.



3. In the Import Group dialog box, browse to and select the XPG file of the exported tool palette group or groups which you want to import. Click Open.

   Note: If the tool palette group already exists, the tool palette group will still be imported, and you will end up with a duplicate of the tool palette group.

4. Click Close to exit the Customize dialog box.

Windows File Explorer

There isn't anything really special to know about migrating your custom files with File Explorer (also known as Windows Explorer on Windows 7 and earlier), it is what comes next after copying files with File Explorer that you will want to understand. Copying your custom files with File Explorer is just like copying a drawing or Microsoft Word document, browse to the current folder with the files, select and copy the files, and then paste the files in a new location. Done.

While this can be a good approach for migrating your custom executable (LSP, ARX, …) and drawing template (DWT) standards (DWS) files, this can be a less optimal approach for the migration of files that Autodesk might change between releases or customize directly while you are using the product.

For example, if you just copy a program parameters (PGP) file from an earlier release and simply replace the PGP file of a newer release you will lose any new command aliases that were add to the file. The same is true for files like customization (CUIx) and tool palettes (ATC) files which might see changes to support new commands and objects between releases.

To preserve the changes in these files, you might have to manually edit and transfer any changes made between releases with a utility like the Customize User Interface (CUI) Editor or an editor like Notepad.

Note: It is recommended to not overwrite the plotter configuration (PC3) files that ship with a new release with those from an earlier release. There are times when new options are added, and optimizations are made between releases to the default plot devices. Copying your custom PC3 files from an earlier release shouldn't be a problem, unless something like a port/network address changed in which you might want to re-create the PC3 file rather than just update the file.

Notepad

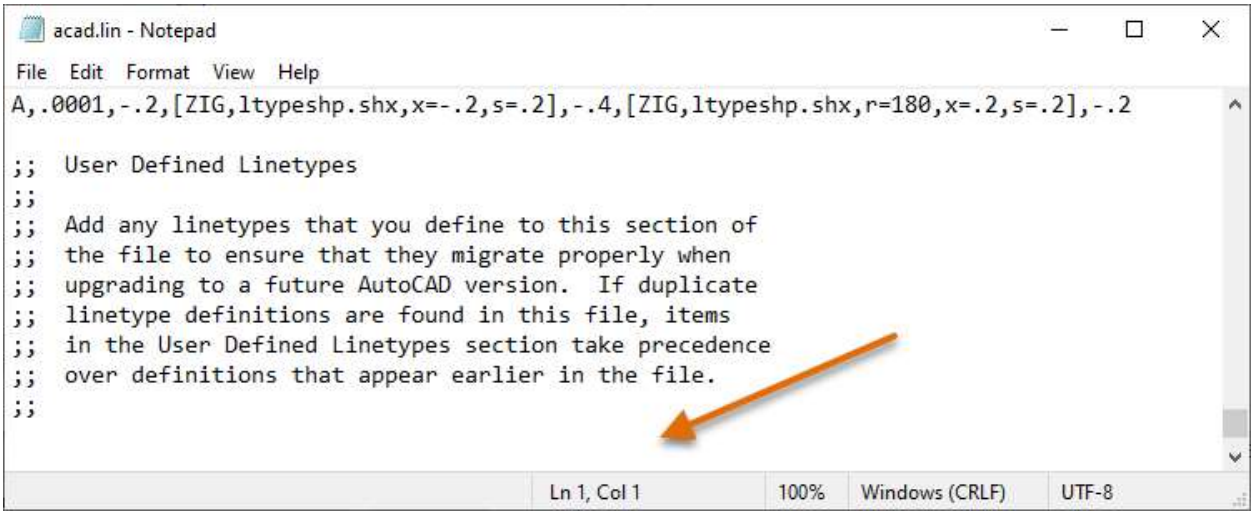
ASCII text editors like Notepad are often used to edit the program parameters (PGP), hatch pattern (PAT), and linetype (LIN) files that ship with AutoCAD. The same holds true for when you want control over which custom command aliases, hatch patterns, and linetypes are migrated from these files. Open the file from the previous and new release, and then copy the changes between the files. You can open the *acad.pgp* file by clicking Manage tab > Customization panel > Edit Aliases > Edit Aliases on the ribbon.

Note: A utility like WinDiff, UltraEdit, or BeyondCompare can be useful in identifying differences between files of the same name from two different releases.

The following lists the files that ship with AutoCAD and are used to store program parameters, hatch patterns, and linetypes:

- **Program parameters** - *acad.pgp*, *AutoCorrectUserDB.pgp*, and *acadSynonymsGlobalDB.pgp*
- **Hatch patterns** – *acad.pat* and *acadiso.pat*
- **Linetypes** – *acad.lin* and *acadiso.lin*

Note: It is recommended to add new command aliases, hatch patterns and linetypes to the User Defined sections at the bottom of the files mentioned above to make it easier in locating the changes you might have made. In the case of custom hatch patterns and linetypes, you might consider storing them in custom files instead of modifying the files that ship with AutoCAD.



For PAT and LIN files with different names from those that ship with AutoCAD, all you need to do is make sure the files can be found in one of the locations add to the Support File Search Path node on the Files tab of the Options dialog box (OPTIONS command) for the new release.

Additional Information

You can find additional information on command aliases, custom hatch patterns, and custom linetypes with these topics in the AutoCAD Online help system:

- About Command Aliases
- About Creating Command Aliases
- About Defining External Commands
- About Custom Hatch Patterns and Hatch Pattern Definitions
- About Custom Linetypes and Linetype Definitions

5 Back Up, Restore, and Reset Custom Files and Settings

As I mentioned earlier in this handout, it is best to store your custom files on a network drive or in a folder that is synchronized to a cloud storage service as it makes backing up and sharing your custom files much easier. However, even if you do this, there are some custom files and settings that you won't be able to or want to store in those locations. For example, most of your AutoCAD settings are organized in named user profiles that are defined in the Windows Registry which is part of the Windows operating system (OS) and custom files like *acad.pgp* are really meant to be a personalized file rather one that is shared with others.

The following utilities can be used to backup and later restore your custom files and/or settings:

- Export and Import AutoCAD <*release*> Settings
- Options dialog box, Profiles tab

  See the *Manually Migrate Your Custom Files and Settings* section earlier in this handout on exporting and importing a user profile.

If anything ever goes wrong after migrating or restoring your custom files and settings, you can always reset AutoCAD back to its default installed state using the Reset Settings to Default utility. The Reset Settings to Default utility removes all user profiles and resets the AutoCAD related files stored under the roaming/local folder of your Windows user profile.

Backup and Restore AutoCAD Settings

The Export AutoCAD <*release*> Settings utility is a companion to Migrate Custom Settings. This utility allows you to back up some, not all, of your custom files and settings to a ZIP file format. See the *Take Inventory of Your Current Environment* section earlier in this handout for the types of custom files and settings that the utility backs up; custom settings are related to user profiles and the *FixedProfile.aws* file.

Reminder: The Export AutoCAD <*release*> Settings utility was mentioned early in this handout, at that time I explained how it could be used to take inventory of your custom files and settings, and even how it could assist in relocating your custom files.

Once you have backed up your custom files and settings, you can use the Import AutoCAD <*release*> Settings utility to import/restore the files and settings stored in the ZIP file onto your workstation or another workstation.

Important: You should only export and import settings between the same product and its release. Going between AutoCAD 2020 and AutoCAD 2020 is fine, but not AutoCAD 2020 to AutoCAD Architecture 2020 or AutoCAD 2021.

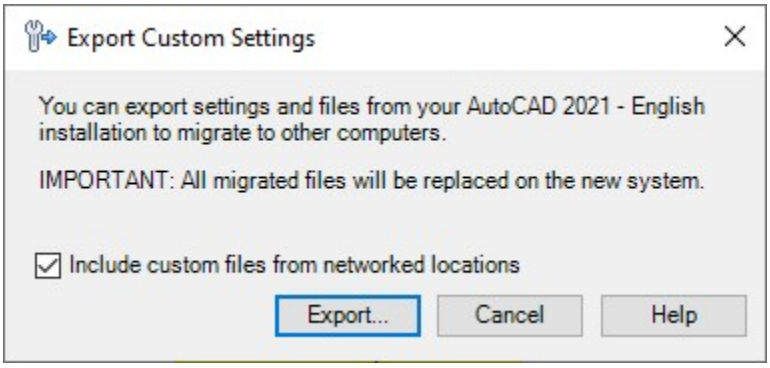
The following explains how to export your custom files and settings:

1. Close all instances of AutoCAD.
2. Do one of the following:
   - On the Windows 8 or Windows 10 Start Screen, under the AutoCAD <*release*> - English category, click Export AutoCAD <*release*> Settings.

     
   - On the Windows 7 taskbar, click the Start button > All Programs > Autodesk > AutoCAD <*release*> - English > Export AutoCAD <*release*> Settings.

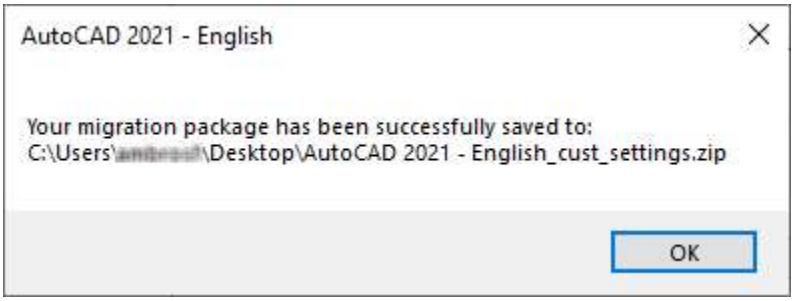
3. In the Export Custom Settings dialog box, click Export.



If you want to back up your custom files from a network drive, check Include Custom Files from Networked Locations.

Note: This can be helpful if you want to setup a device like a laptop that might not always be connected to the network, but keep in mind this option still won't include all of the possible custom files you might have on the network.

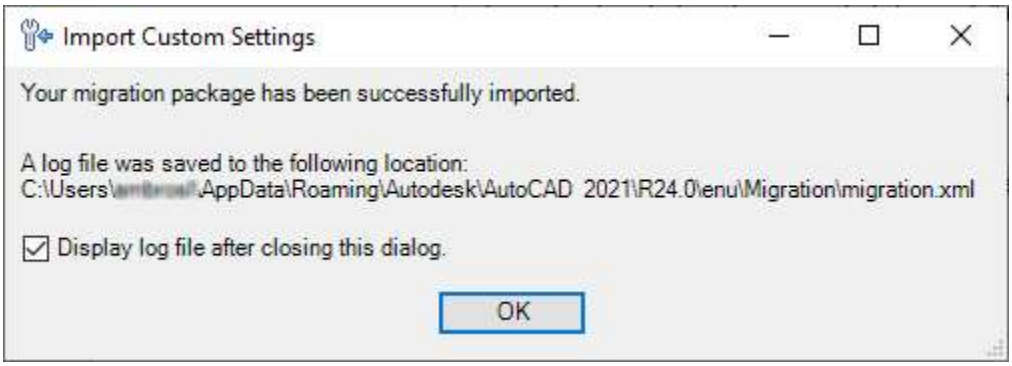
4. In the Export Custom Settings dialog box, browse to the *Desktop* or *Documents* folder, or the folder you want to store the ZIP file.
5. Optionally, change the default name to something more meaningful if you want.
6. Click Save.
7. When the Confirmation message box appears, click OK.



Previously exported custom files and settings can be imported by following these steps:

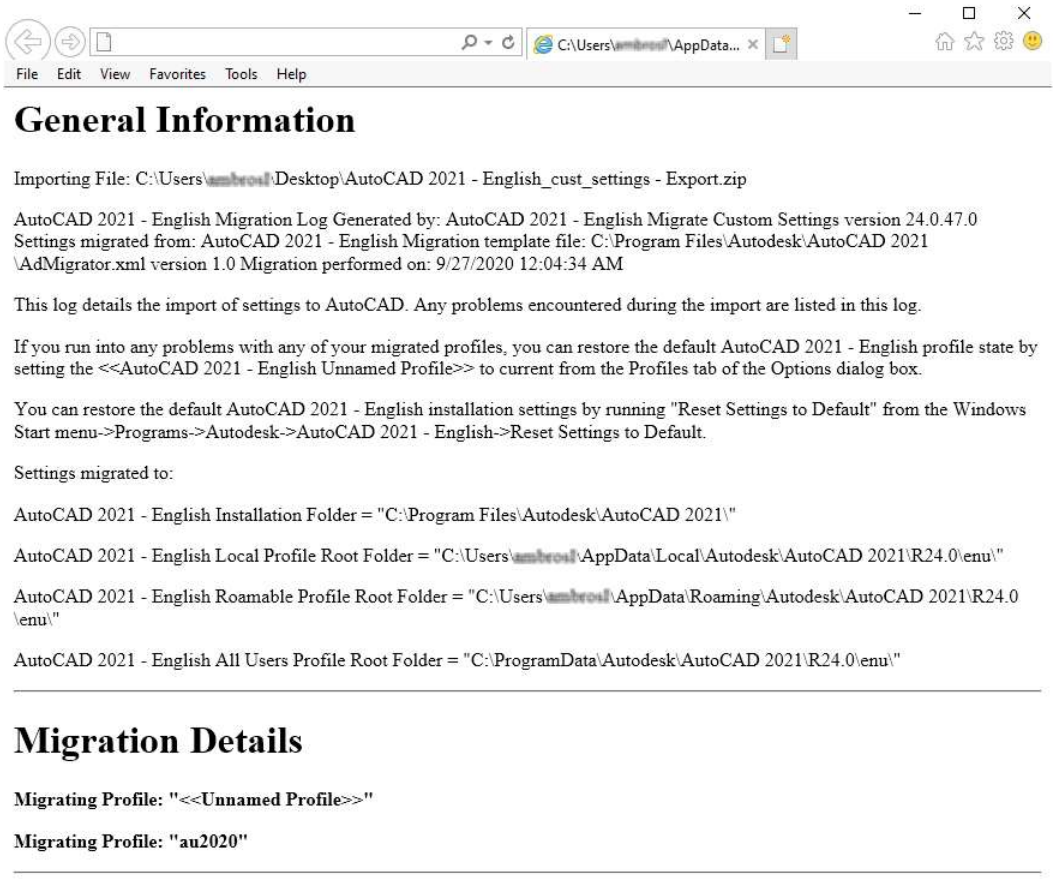
1. Close all instances of AutoCAD.
2. Do one of the following:
   - On the Windows 8 or Windows 10 Start Screen, under the AutoCAD *<release>* - English category, click Import AutoCAD *<release>* Settings.
   - On the Windows 7 taskbar, click the Start button > All Programs > Autodesk > AutoCAD *<release>* - English > Import AutoCAD *<release>* Settings.
3. In the Import Custom Settings dialog box, browse to the folder that contains the ZIP file of the exported custom files and settings.

4. Select the ZIP file and click Open
5. In the Import Custom Settings dialog box, click OK.



If you want to see a log of the results after importing the custom files and settings, check Display Log File after Closing this Dialog. Take note of the location in which the log file will be created if you clear the checkbox.

6. Review and close the log.



Reset AutoCAD to Its Default Files and Settings

Don't panic, if something goes wrong after importing or migrating custom files and settings you can always reset AutoCAD back to its default files and settings. The Reset Settings to Default utility is added to the AutoCAD *<release>* - *<language>* folder on the Windows Start screen or menu, and it allows you to reset AutoCAD.

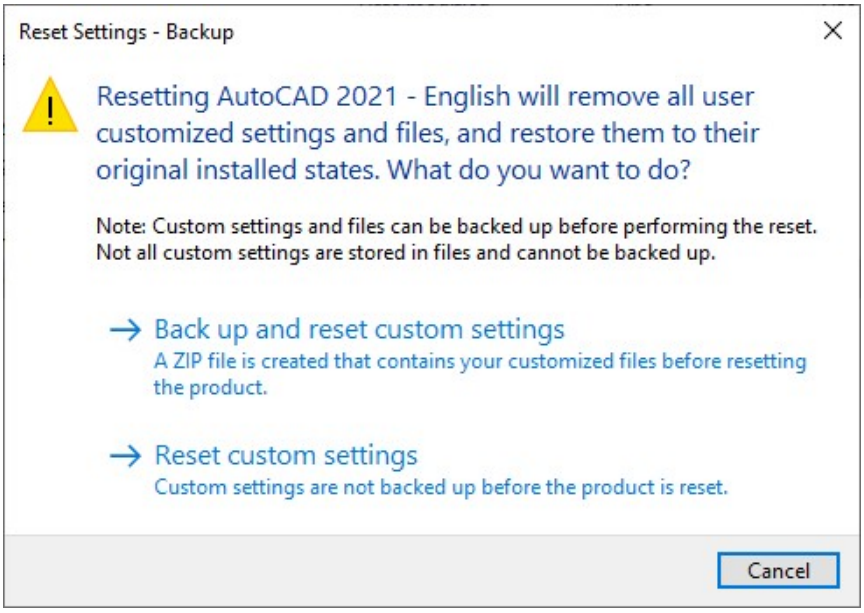
Note: Before you reset AutoCAD, you get the option to back up your current custom files and settings to a ZIP file. Using this ZIP file, you can then restore your custom files and settings with the Import AutoCAD *<release>* Settings utility as mentioned in the previous section of this handout.

The following explains how to reset AutoCAD to its default files and settings:

1. Close all instances of AutoCAD.
2. Do one of the following:
   - On the Windows 8 or Windows 10 Start Screen, under the AutoCAD *<release>* - English category, click Reset Settings to Default.
   - On the Windows 7 taskbar, click the Start button > All Programs > Autodesk > AutoCAD *<release>* - English > Reset Settings to Default.

   Note: If Reset Settings to Default is missing from the Windows Start screen or menu, right-click the AutoCAD *<release>* - English shortcut in one of the mentioned locations above and choose More > Open File Location. Then double-click Reset Settings to Default.
3. In the Reset Settings - Backup dialog box, click Reset Custom Settings.

   Click Back Up and Reset Custom Settings to back up your custom files and settings to a ZIP file which can later be imported to restore your custom files and settings.



4. When the Reset Settings - Confirmation message box is displayed, click OK.

6 Where to Get More Information

When you first start to learn a new skill, there is no doubt that you will have questions and where you go to get answers for those questions might not be clear. The following list of resources can be helpful in locating answers to the questions you might have along with where to go to further learn about managing and migrating custom files and settings for AutoCAD:

- **AutoCAD Help System** – The CAD Administrator's Guide in the AutoCAD Online Help system contains information on migrating from one release to another.

  To access the online help, go to: https://help.autodesk.com/view/ACD/2021/ENU/?guid=GUID-5FC0E6EC-0841-45B7-8A20-4C19534A6645

- **Autodesk Discussion Forums** – The Autodesk forums provide peer-to-peer networking and interactions with Autodesk moderators. Here, you can ask a question about anything AutoCAD related and get a response from a fellow user or Autodesk employee.

  To access the Autodesk discussion forums, go to https://forums.autodesk.com, click Browse By Product near the upper-right of the page and then click AutoCAD. Click the appropriate subgroup link.

- **AUGI Forums** – The AUGI forums provide peer-to-peer networking where you can ask questions about virtually anything in AutoCAD or Autodesk software related and get a response from a fellow user. Visit AUGI at https://www.augi.com/

- **Industry Events and Classes** – Industry events such as Midwest University and Autodesk University are great places to learn about features or workflows in an Autodesk product. Along with industry events, you might also be able to find classes at your local technical college or an Autodesk Authorized Training Center (ATC).

- **Internet** – There are tutorials and information scattered across the Internet that you can read to learn more about managing and migrating custom files and settings for AutoCAD. Use your favorite search engine, such as Google or Bing, to find this information.

- **Books** – There are many books out there that cover general concepts in AutoCAD and some of those books do touch on managing custom files and the migration tools in AutoCAD. Search an online book reseller, such as Amazon (amazon.com) or Barnes & Noble (bn.com), for books that cover AutoLISP programming.