Customizing the AutoCAD 2006 User Interface

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Have you spent countless hours creating menu pull-downs, toolbars, and shortcut menus in an attempt to customize the AutoCAD® user interface (UI) only to spend additional time migrating and managing changes from release to release? Have you wanted to learn how to customize AutoCAD, but just didn't know where to begin or found the process awkward and confusing? The solution is CUI, a new graphical tool for editing the menu customization files used in AutoCAD software.

Menu Customization in Previous Releases

AutoCAD menu customization has always been somewhat of a mystery to some users. It involved many different files, and you needed to learn a specialized syntax—and having the stars aligned helped, too. Well, maybe the alignment of the stars didn't matter, but accounting for syntax errors certainly helped the cause.

In the past, menu customization was stored in a couple different files with the extensions MNU and/or MNS. These files contained the definitions of the menu sections for menu pull-downs, toolbars, and the other various UI elements you interact with inside of AutoCAD. These were textual (or ASCII) based files that were editable with a text editor, such as Notepad, outside of AutoCAD. AutoCAD featured a Customize dialog box, but it limited users to creating and editing toolbars and shortcut keys from inside the application. Both these methods had various limitations, the two most significant being a) the migration to a new release, and b) duplication of macro strings that needed to be created for each of the different menu sections.

Once your menu was customized outside of AutoCAD, you then had to return to AutoCAD and load your customized menu through a command such as Menu or Menuload. Loading the MNU or MNS resulted in the creation of the MNC and MNR files. During the loading of the menu file, the AutoCAD program checked for syntax and duplicate sections and, if everything went correctly, MNC and MNR files were created. However, if the loading of the menu didn't go as planned, a list of syntax errors would echo at the command line, and the frustration of menu customization would begin (i.e., switching back to the menu file in an attempt to fix the problems in the file, and then going back to AutoCAD to reload it). The process would continue until all errors were resolved, and only then could testing actually begin on the new elements/macros that were added to the UI.

Menu Customization in AutoCAD 2006

AutoCAD 2006 forever changes the way menu customization is done in AutoCAD. There is no need to spend countless hours in an application like Notepad outside of AutoCAD. All menu customization can be done through a tool that is accessible from the pull-down menu Tools > Customize > Interface or by using the command CUI. These two methods launch the

CUSTOMIZING THE AUTOCAD 2006 USER INTERFACE

Customize User Interface dialog box, which is shown in the following image.
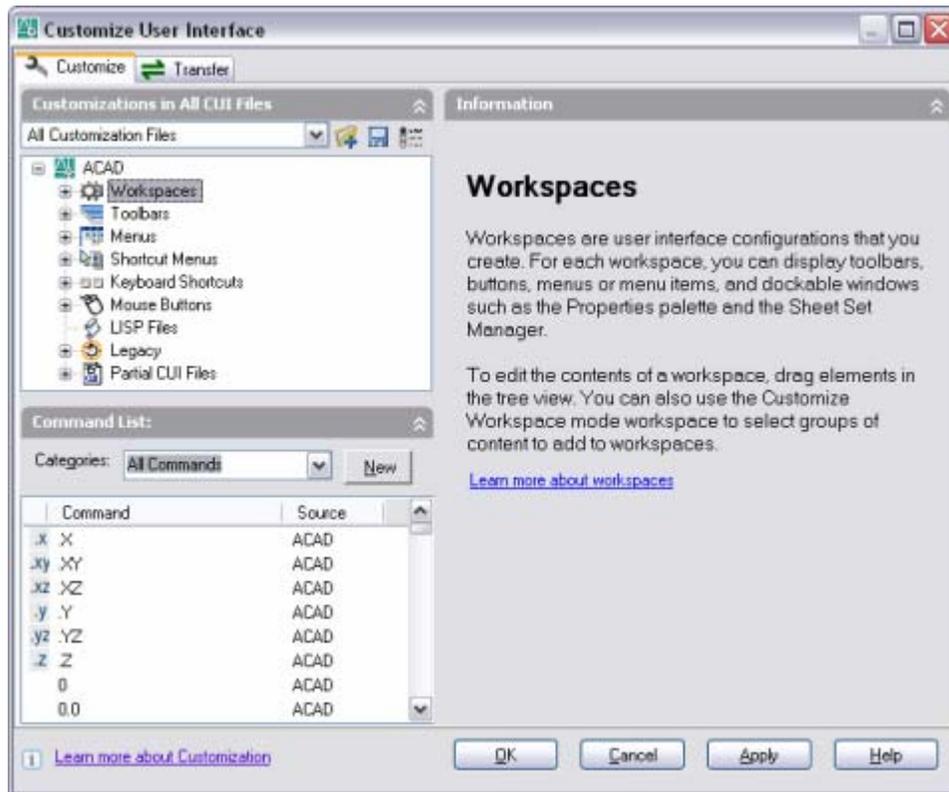
Both of the previously mentioned methods give you access to the new CUI (Customize User Interface) tool. Because it doesn't require learning the menu syntax and structure like in previous releases, the learning curve for menu customization is much shorter.. As you can see in the image above, the CUI tool provides an easy-to-understand layout, a vast improvement over using Notepad to view pure text in the old MNU/MNS files. With the introduction of the new CUI tool comes a new file format that is still ASCII-based, but is an XML file format. Even though the file can be opened in Notepad, it is advised to perform all the editing within the CUI tool.

Some of the benefits of the CUI tool and format are:

- A new XML-based file format replaces MNU/MNS. This new file format uses the file extension of CUI. The XML file allows for easier migration to future releases because the CUI file keeps track of changes and additions, even within the main Acad.cui file

- New graphical editor that results in a shortened learning curve for both newbies and experienced users who have been customizing AutoCAD for awhile.

- No need to use a text editor outside of AutoCAD and then return to AutoCAD to load/reload the file.

- No longer necessary to learn the menu syntax and structure to create new menu elements.

- Provides an easier way to manage commands (or macros) than previous releases. By creating the command separate from the UI element, it allows you to use the same macro

on a menu pull-down and a toolbar. This makes it easier to change the command in one centralized place instead of several locations.

- Images are associated to commands. In addition, they are displayed next to a menu pull-down item and on a toolbar button.

- The CUI tool can import MNU/MNS files from previous releases, resulting in faster migration to AutoCAD 2006 and less rework. The original MNU/MNS files are maintained and not removed after importing.

- The new Workspaces concept is similar to a Profile, but it is used to control the display and placement of UI elements such as toolbars, pull-downs, and palettes. Profiles are designed to store things such as grip settings, color schemes of AutoCAD, and other user-based settings that are not directly related to the displaying of UI elements. Workspaces are stored in the CUI file and can be shared with other users who access the CUI file from a network location.

- In previous releases, managing menu customization was based on a single base menu. This concept is still true, but a new Enterprise menu—which is similar to using a partial menu—has been introduced. The difference between an Enterprise menu and a partial menu is that the Enterprise menu is set up under the File tab of the Options dialog box. It also set to read-only in the CUI, so a user can't make changes to the file when in the CUI tool.

Some of the things that have not changed with the introduction of CUI are:

- Menu file is stored in the default location *"C:\Documents and Settings\<user name>\Application Data\Autodesk\AutoCAD 2006\R16.2\enu\support"*.

- As in previous releases, MNL files are still supported with menu customization for loading AutoLISP files or routines. If the CUI file is named MyMenu.cui, you would use the name MyMenu.mnl for the MNL file.

- The MNR or menu resource file is still used with the CUI file. This file is created automatically when a CUI file is loaded. The MNR file contains all the necessary bitmaps that are assigned to the commands in the CUI file.

- Custom bitmaps for toolbars and menu pull-down items are still stored in separate files. And just like in previous releases, they need to be located within the AutoCAD Support paths.

- The Diesel macro language is still supported for menu labels and commands.

- The use of Partial menus is still supported and encouraged with the CUI tool.

Parts of the Customize User Interface

The CUI tool is broken into two distinct areas (or workflows). The first area is the Customize tab, which allows you to create new content in the form of commands, UI elements, button images, and Workspaces. The second area is the Transfer tab, which allows you to create a new customization file, copy UI elements between two different customization files, and convert MNU/MNS files into the CUI file format.

Customize tab

The Customize tab is where you will spend most of your time when in the CUI tool. As you saw in the previous image, the Customization tab contains several different panes. These panes are context specific based on what is currently selected in the CUI. The "Customizations in…" pane located in the upper-left corner of the Customize tab displays the different UI elements in a tree view similar to Windows Explorer. The following image shows the different features under "Customizations in…" pane. The image shows that the CUI tool contains some familiar elements, such as menu pull-downs and toolbars, and a couple new ones, such as Workspaces and LISP Files, that weren't available under the old menu file format.
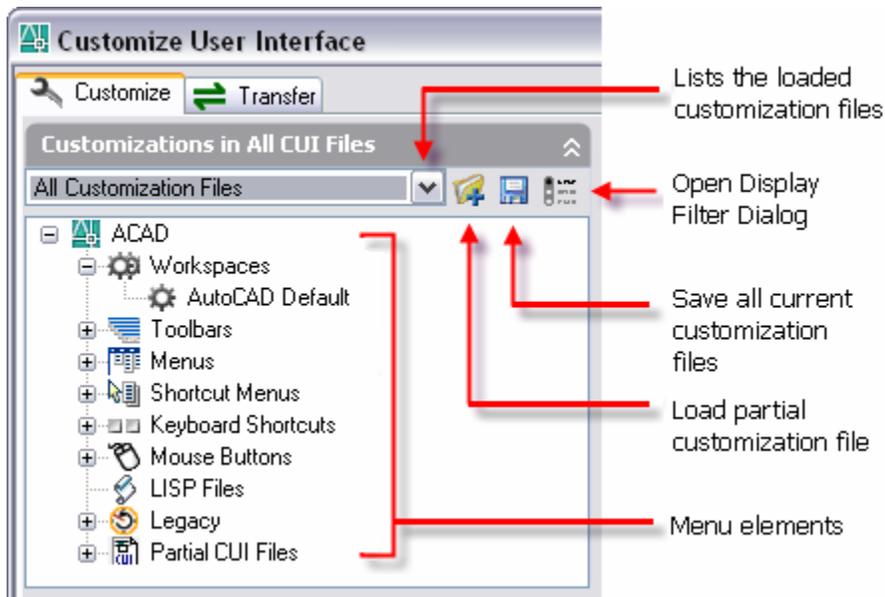
To learn more about how the different menu elements are used, select the top level of each menu element and click the "Learn more about…" link located on the right side of the dialog box under the Information pane.


The "Command List" pane located in the lower-left corner of the dialog box is where you select commands to associate to a UI element in the "Customizations in…" pane directly above. The Categories list allows quick access to commands based on whether the commands were created by you or are part of a specific menu.
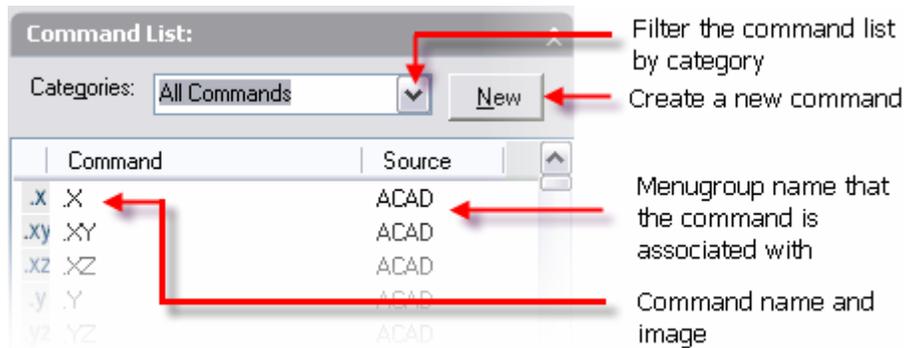
If a command is selected from either the "Customizations in…" or "Command List" pane, it will activate two additional panes named Button Image and Properties. These panes allow you to work with the properties of a command. The properties range from the name that appears as a tool tip or the display value for a menu item to a description that is displayed in the AutoCAD Status Bar.
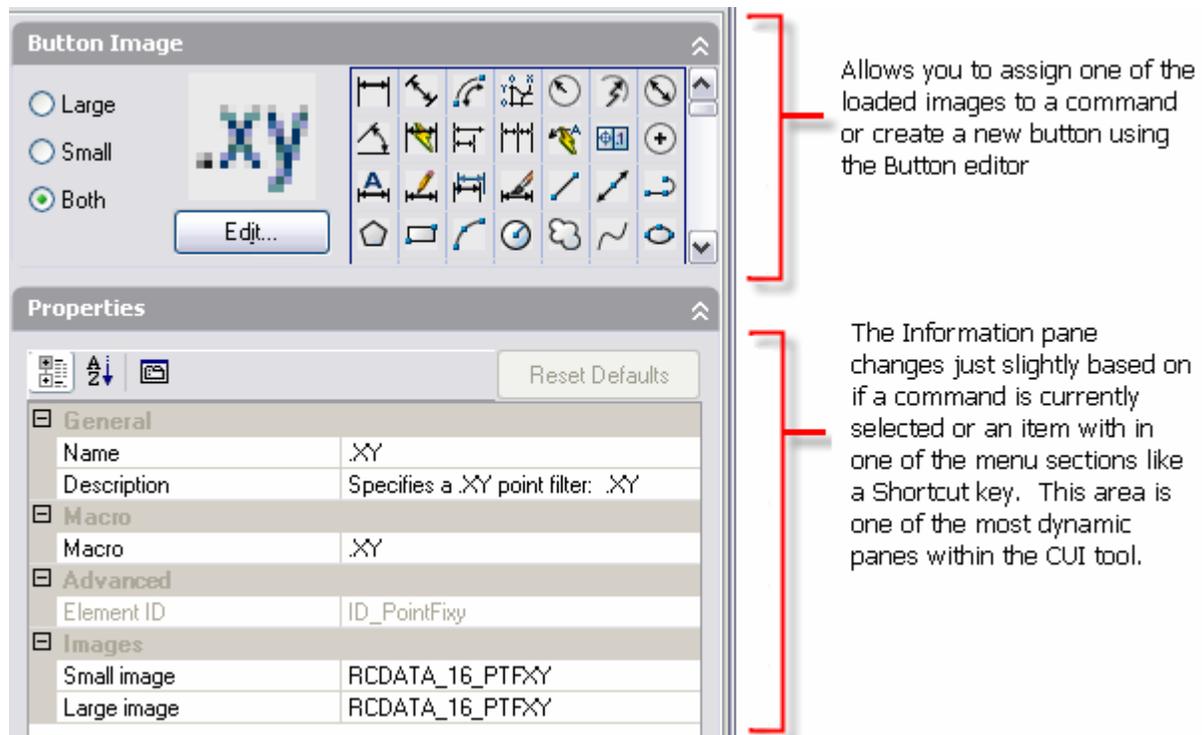

Transfer tab

The Transfer tab is where any existing MNU/MNS file(s) are imported into the CUI tool. The existing menu file can be either full or partial. The CUI tool migrates over the different sections of the existing menu and converts the macros into commands that can be accessed from the Command List pane. The Transfer tab also allows you to open two different CUI files at one time and copy items between the two files. The main difference between the

Transfer and Customize tab is that the Transfer tab doesn't allow you to create new commands and add them to a menu element.
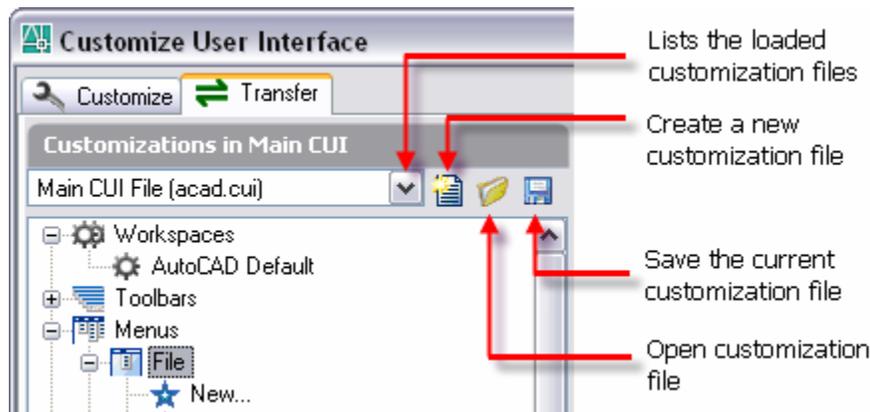
Going Forward

There is no turning back—once you start using the CUI, you'll never want to return to the old way of menu customization.

Now that you have an overview of the new CUI tool, you will want to take advantage of the embedded help links that can be found throughout the tool. Menu customization just became a lot easier and more intuitive.

Autodesk