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CUSTOMIZING
THE USER
INTERFACE**CHAPTER OBJECTIVES**

After completing this chapter you should:

1. understand how to use the *Customize User Interface* window;
2. know how to create and edit a command;
3. be able to use special characters in a command macro;
4. understand the different user interface elements;
5. understand partial and enterprise customization files;
6. be able to transfer customization from a previous release.

CONCEPTS

This chapter builds on the introduction of the *Customize User Interface* window that was covered in Chapter 44. Here, you will learn how different components of the user interface can be managed and customized using the *Customize User Interface* window (CUI). In previous releases, customizing the user interface was not something that could be accomplished entirely from within AutoCAD using the *Customize* dialog box. Instead, the *Customize* dialog box was limited to customizing toolbars, toolbar buttons, tool palettes, and keyboard shortcuts.

In previous releases of AutoCAD, if you wanted to customize pull-down menus, shortcut menus, screen menus, or digitizing tablet menus or create non-standard shortcut keys, it had to be done externally to AutoCAD using a text editor. Customizing these menus externally required a fair amount of time and expertise and was reserved for experienced AutoCAD users.

AutoCAD 2006 introduces a much easier and intuitive way to customize the user interface completely from within AutoCAD. This new approach uses the *Customize User Interface* window for customizing most aspects of accessing commands, including toolbars, pull-down menus, shortcut (right-click) menus, keyboard shortcuts, and mouse buttons, as well as legacy interface elements such as screen menus, image tile menus, and digitizing tablet menus. The CUI tool is used to create and save a new feature called workspaces, which is helpful for managing the display of specific user interface elements.

CUSTOMIZATION FILE TYPES AND LOADING CUSTOMIZATION

Customization File Types

Customization for AutoCAD is made up of a set of files that work together to define the appearance and functionality of the user interface that is loaded with each session of AutoCAD. A number of file extensions are associated with the basic AutoCAD customization file. The following table defines the various file extensions that may be associated with the customization file:

<u>File Extension</u>	<u>Description</u>
.CUI	Customization file: This XML-based file contains the definitions of commands and user interface elements, such as toolbars and pull-down menus.
.MNR	Menu resource file: This binary file contains the bitmaps used by the customization file.
.MNL	Menu LISP file: This ASCII file contains AutoLISP expressions that are used by the customization file. It is loaded into memory when a customization file of the same name is loaded.

NOTE: Before you begin to create your own customization, you should make a backup copy of the ACAD.CUI and the ACAD.MNL files. Then you can safely make alterations to the new files for your own customization needs and restore the original files if needed. Each new customization file you create should have its own .MNL file (using the same filename) to evaluate and load the necessary LISP routines to interact with the other menu files.

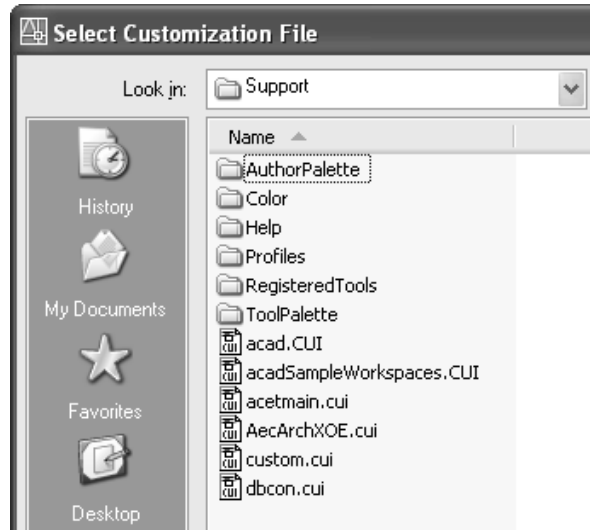
Loading Menu Files

Menu

Pull-down Menu	Command (Type)	Alias (Type)	Short-cut	Screen (side) Menu	Tablet Menu
...	<i>Menu</i>	...	...	...	...

The *Menu* command loads a Customized User Interface (CUI) file or a Legacy Menu Template File (.MNU/.MNS). Normally this command is used to load a base, or core, customization file, complete with all user interface elements such as pull-down menus, toolbars, shortcut menus, image tile menus, screen menus, etc. The *Menu* command opens the *Select Customization File* dialog box (Fig. 45-1) to enter or select a customization file name.

FIGURE 45-1



When the *FILEDIA* system variable is set to 0, the command line issues the following prompt:

```
Enter customization file name or [. (for none)]
<C:\Documents and Settings\...\support\acad>:
```

The name of the most recently loaded customization file is stored in the system registry. The name of this customization file can be accessed with the system variable *MENUNAME*. The last customization file used is loaded each time you restart AutoCAD. In order to speed up initial drawing loads, AutoCAD does not reload the customization file each time you open a drawing file in any one AutoCAD session. The main customization file can be specified under the *Customization Files* node of the *Files* tab in the *Options* dialog box.

Cuiload

Pull-down Menu	Command (Type)	Alias (Type)	Short-cut	Screen (side) Menu	Tablet Menu
...	<i>Cuiload</i>	...	...	...	...

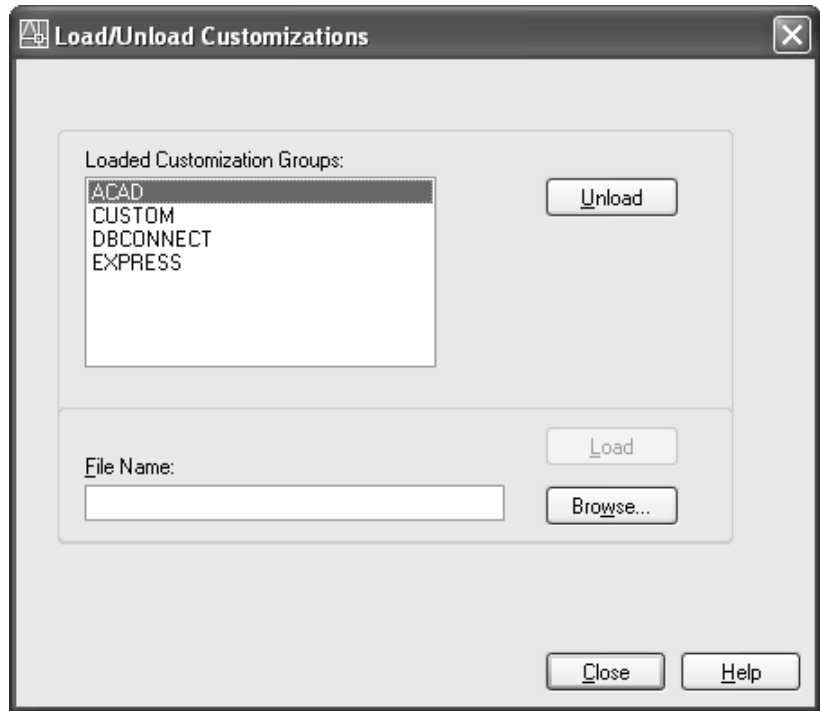
Each time you restart AutoCAD or load a specific customization file with the *Menu* command, AutoCAD systematically searches for the menu file based on the library search path (see “Library Search Path”).

The *Cuiload* command is used to load additional customization files that contain a subset of the user interface elements that are in a base customization file. These files are known as partial customization files. Partial customization files support all the same user interface elements that the base files do, with the exception of workspaces. If a partial customization file is loaded that contains pull-down menus, the pull-down menus are not automatically loaded in the menu bar of AutoCAD. To load the additional pull-down menus, they must be added to a workspace.

The *Cuiload* command produces the *Load/Unload Customizations* dialog box (Fig. 45-2). Use the *Menu Groups* of the dialog box to *Load*, *Unload* and *Browse* for partial customization files. When the *FILEDIA* system variable is set to 0, the command line issues the following prompt:

Enter name of customization file to load:

FIGURE 45-2



Cuiunload

Pull-down Menu	Command (Type)	Alias (Type)	Short-cut	Screen (side) Menu	Tablet Menu
...	<i>Cuiunload</i>	...	...	...	...

The *Cuiunload* command also produces the *Load/Unload Customizations* dialog box (see Fig. 45-2). Here you can unload and load partial customization files. When the *FILEDIA* system variable is set to 0, the command line issues the following prompt:

Enter the name of a Customization Group to unload:

Library Search Path

When AutoCAD attempts to locate a customization file specified by the system registry, the *MENUNAME* system variable, or the *Menu* or *Cuiloadd* commands, the following search path order is used:

1. Current directory
2. Directory that contains the current drawing file
3. Directories listed in the Support path (for more information, see “Support File Search Path” in the *Installation Guide*)
4. Directory that contains the AutoCAD program files

NOTE: Two or more of these directories may be the same, depending on your drawing environment.

Loading Order for Customization Files

When AutoCAD initially starts, or when a drawing is either created or opened, several things take place from the standpoint of customization files. Below is the order in which the menu customization files are loaded.

Files loaded at the initial startup of AutoCAD:

1. ACAD2006.LSP
2. ACAD.LSP
3. ACAD2006DOC.LSP
4. ACADDOC.LSP
5. ACAD.MNL

Files loaded when opening an existing drawing or creating a new drawing:

1. ACAD2006.LSP
2. ACAD2006DOC.LSP
3. ACADDOC.LSP
4. ACAD.MNL

ACAD2006.LSP and ACAD2006DOC.LSP are located by default in the *Support* directory. By default, AutoCAD is installed in *C:\Program Files\AutoCAD 200X* (where X represents the number of the current release).

ACAD.LSP and ACADDOC.LSP are user-created files that do not exist by default and are used to override or configure AutoCAD settings and create new commands with the AutoLISP programming language.

ACAD.MNL is the .MNL file that is associated with the ACAD.CUI file. Each customization file can have its own .MNL file for loading external AutoLISP, VBA project or ObjectARX files that contain commands that the customization might be dependent on. The .MNL file is loaded last and can be used to override any setting or command created in any of the previously loaded LSP files up to that point.

When the *ACADLSPASDOC* system variable is set to 1, the file ACAD.LSP is loaded when opening or creating a new drawing.

UNDERSTANDING THE *CUSTOMIZE USER INTERFACE* WINDOW

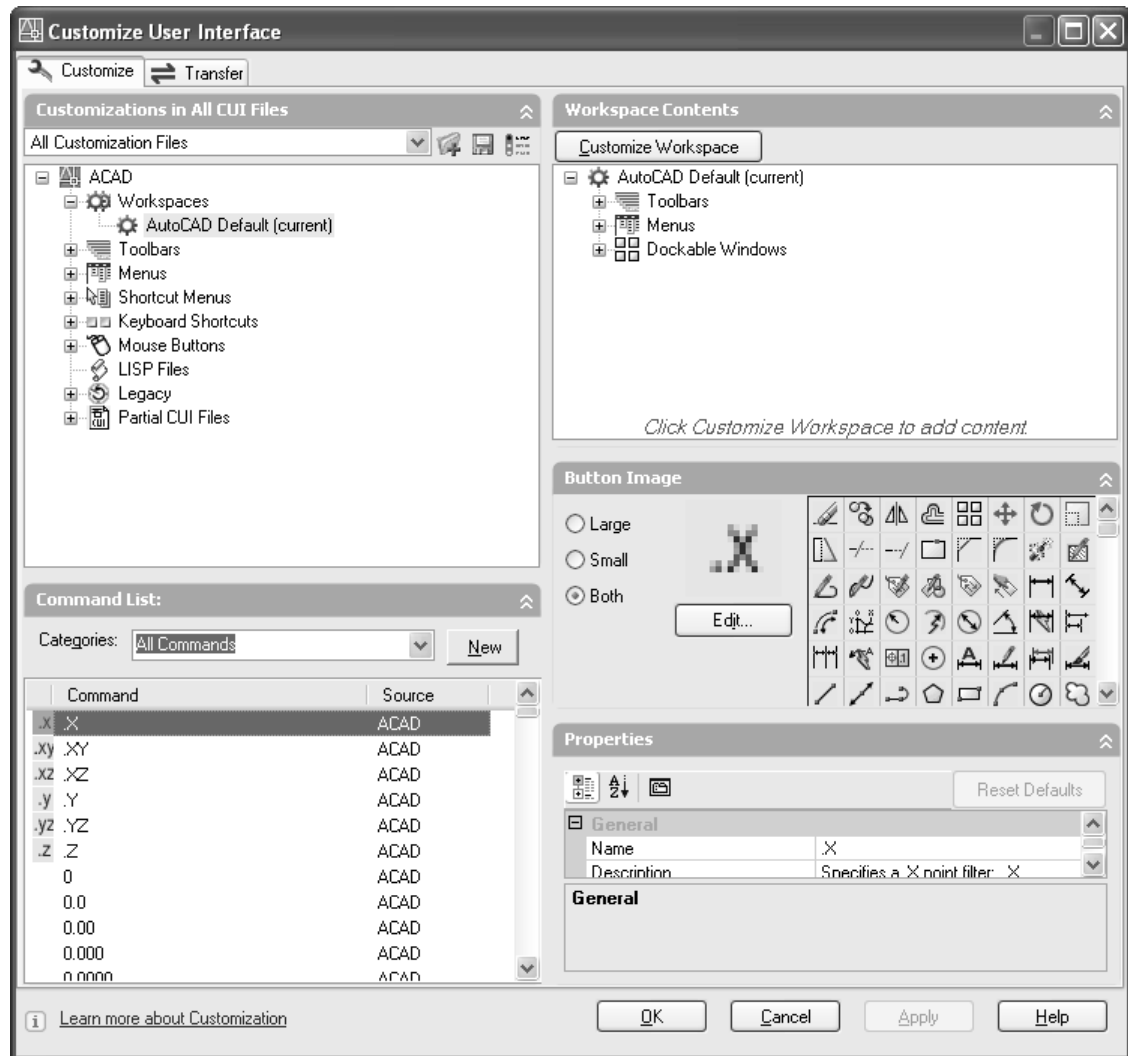
Use the *Cui* command to produce the *Customize User Interface* window.

Cui

Pull-down Menu	Command (Type)	Alias (Type)	Short-cut	Screen (side) Menu	Tablet Menu
<i>Tools</i> <i>Customize</i> <i>Interface...</i>	<i>Cui</i>	...	...	...	...

The *Cui* command produces the *Customize User Interface* window (Fig. 45-3). As an alternative to the options shown in the table above, you can produce the *Customize User Interface* window by selecting the Window pull-down menu, then *Workspaces, Customize*.

FIGURE 45-3



The *Customize User Interface* window provides an easy and visual method to accomplish all aspects of customization for the user interface. With this tool, even novice AutoCAD users can get involved with customization without the required tedium and expertise required in previous releases of AutoCAD.

In the top-left section (see Fig. 45-3), note the existence of two different tabs: *Customize* and *Transfer*. The *Customize* tab allows you to create and manage the different user interface elements and is the primary subject of this chapter. The *Transfer* tab allows for migrating customization to and from other customization files. (If you have an existing menu customization file from a previous release, you use this tab to get the customization into the AutoCAD 2006 CUI file format. The *Transfer* tab is discussed later in this chapter.)

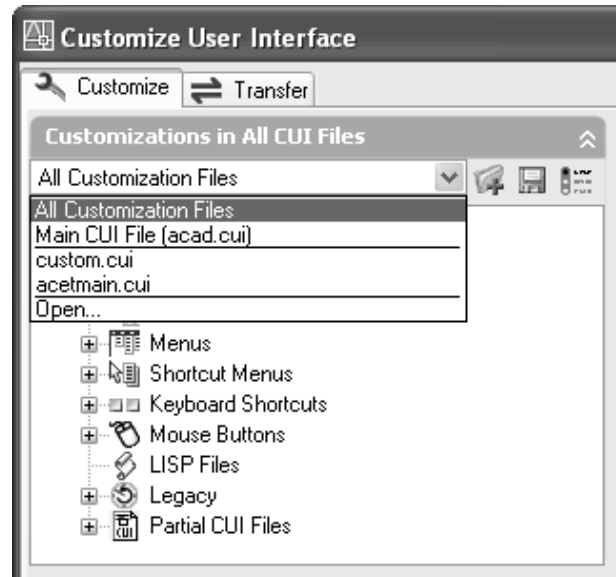
Customizations in Pane

Located just below the tabs of the *Customize User Interface* window is the *Customizations in pane* (Fig. 45-4). This pane helps you to accomplish many tasks, such as controlling which elements are displayed in the tree, creating new user interface elements, organizing elements, and loading partial customization files.

Drop-down list

The drop-down list displays the customization files that are currently loaded and an option to *Open* a customization file. By default there are two options that are listed along the top of the drop-down list. The first option is called *All Customization Files*, which displays the main and enterprise customization files along with any partial customization files in the tree view of the *Customizations in pane*. The second option is called *Main CUI File (Acad.cui)*, which is used to only display the contents that are associated with the Main Customization File that is called out under the *Customization Files* node of the *Files* tab in the *Options* dialog box. Other customization files might appear in the drop-down list, which are related to the *Enterprise CUI File* or partial customization files.

FIGURE 45-4



Load partial customization file



The *Load partial customization file* button (just to the right of the drop-down list) opens the *Open* dialog box and allows you to browse for a customization file or a legacy menu file. The selected file is then loaded into the *Customize User Interface* window and added under the *Partial CUI Files* node of the current main customization file.

Save all current customization files



The *Save all current customization files* button commits all changes of the loaded .CUI files out to disk.

Open Display Filter Dialog



The *Display Filter Dialog* button produces the dialog box shown in Figure 45-5. This dialog box allows you to control which user interface elements are displayed or hidden in the tree view. This action affects only the *Customizations in pane* and has no effect over what is displayed in the user interface of AutoCAD.

Tree View

The *Tree View* is the heart of the *Customizations in* pane and is the location used to associate a command with a user interface element. This area displays the selected customization file from the drop-down list and the user interface elements based on the options selected in the *Display Filter* dialog box (Fig. 45-5).

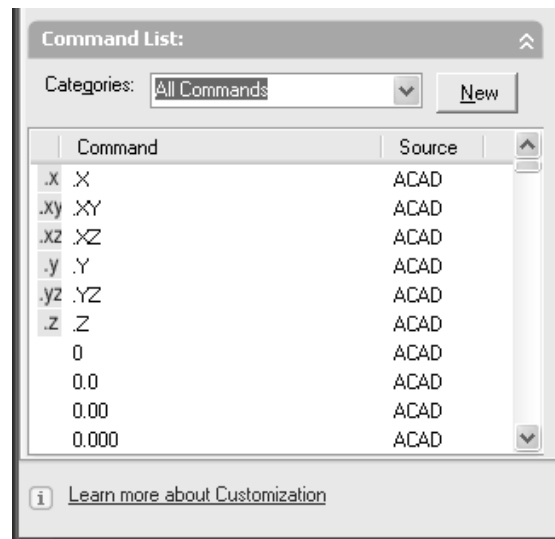
FIGURE 45-5



Command List Pane

Located just below the *Customizations in* pane is the *Command List* pane (Fig. 45-6). This pane allows for managing the inventory of standard and custom commands that are part of the loaded customization files.

FIGURE 45-6



Categories Drop-down list

The *Categories* drop-down list provides a filtering mechanism for the commands that are in the list box below. The *Categories* drop-down list includes four main categories, *All Commands*, *ACAD Commands*, *Custom Commands* and *Control Elements*. Along with these four main categories there are many other categories that match the standard pull-down menu names except for one called *Legacy*. The *Legacy* category contains the commands that are related to the *Legacy* user interface elements like *Screen Menus* and *Tablet Menus*.

New

The *New* button creates a new command, where *Command1* is the default command name. Each new command that is created has its default name incremented by one if a command with that name already exists as part of the customization file. When the *New* button is selected, two dynamic panes are displayed along the right side of the *Customize User Interface* window. These two panes are named *Button Image* and *Properties* (see “Dynamic Display Pane”).

Command list box

The *Command* list box displays all the commands that are part of the selected category and in the loaded customization files.

Dynamic Display Pane

Located on the right side of the *Customize User Interface* window is the Dynamic Display pane (Fig. 45-7). This part of the window is not just one pane, but rather a collection of different panes that are displayed based on what is currently selected in the *Customizations in* or *Command List* panes. Some of the panes that are found in this area are *Button Image*, *Properties*, and *Workspace Contents*.

Information pane

The *Information* pane (not shown) provides a description for select user interface elements that do not have properties. This information gives a brief overview of the user interface element and a related link to the online AutoCAD Help file. The top level nodes in the tree view such as the *Menus* and *Toolbars* nodes display an *Information* pane.

Properties pane

The *Properties* pane (see Fig. 45-7) displays the properties of user interface elements from the tree view of the *Customizations in* pane and commands from the *Command List* pane. User interface elements that display properties are pull-down menus, shortcut menus, toolbars, toolbar buttons, shortcut keys, among many others.

Button Image pane

The *Button Image* pane (see Fig. 45-7) displays controls to specify a pre-created image to a command from the *Command List* pane or access to the *Button Editor* dialog box where you can create custom images for a command.

Shortcuts pane

The *Shortcuts* pane (not shown) displays the *Shortcut Keys* and *Temporary Keys* that have been defined in the customization file.

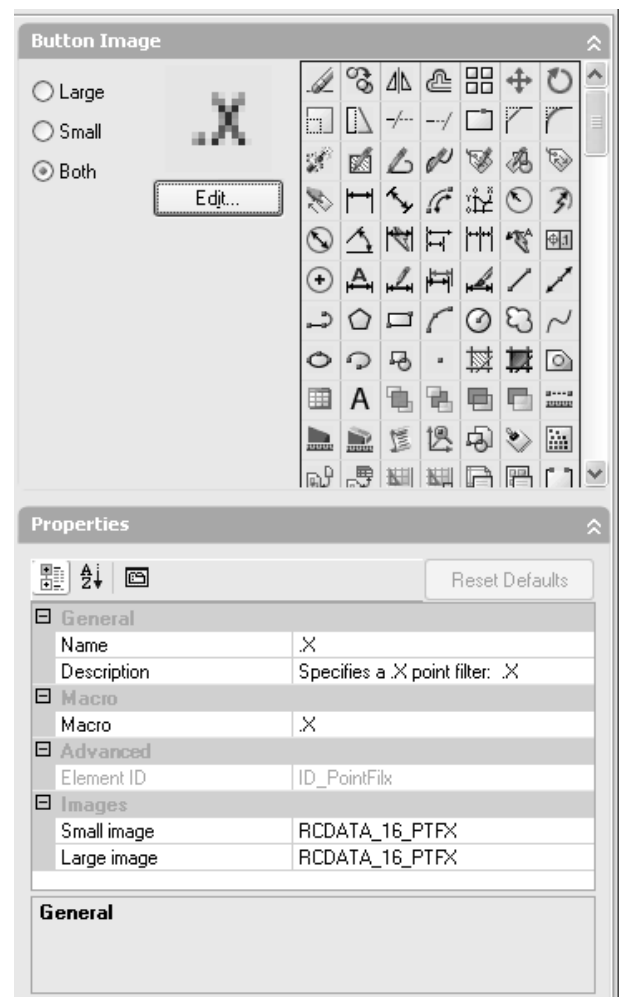
Workspace Contents pane

The *Workspace Contents* pane (not shown) is used to organize how *Toolbars*, *Pull-down Menus* and *Dockable Windows* are to be organized on screen.

Preview pane

The *Preview* pane (see Fig. 45-19) is used to give feedback on how a *Toolbar* will look after it is customized. The *Preview* pane is activated when a *Toolbar* is selected in the tree view, not a *Toolbar Button*.

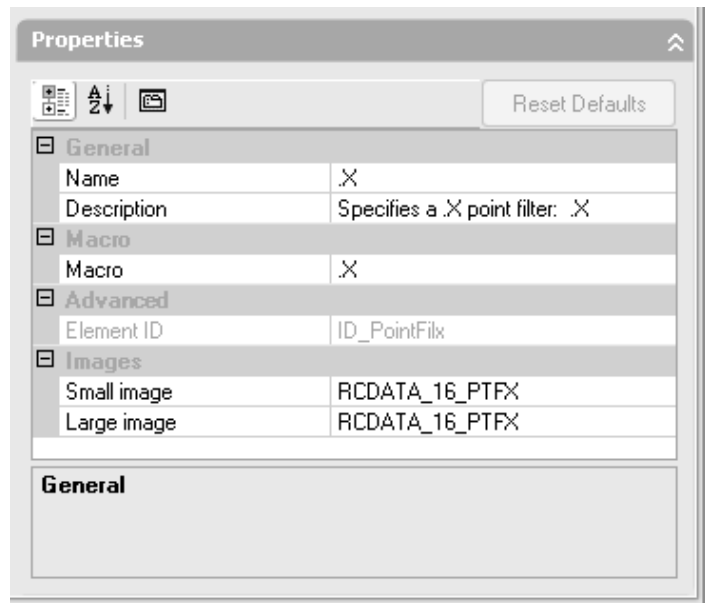
FIGURE 45-7



Properties Pane

Located on the right side of the *Customize User Interface* window is the *Properties* pane (Fig. 45-8). This pane is part of the Dynamic Display pane, which allows for tweaking standard and custom commands, and user interface elements that are part of the loaded customization files.

FIGURE 45-8



Sort properties according to categories



The *Sort properties according to categories* button allows for controlling how the properties are organized within the *Properties* grid. If selected, a hierarchy is used to display and logically organize the properties of the selected command or user interface element. This is the default view for the *Properties* grid.

Sort properties alphabetically



This button allows for controlling how the properties are organized within the *Properties* grid. This format is based on the name of the property and does not use a hierarchical format.

Toggle the display of the Tips box below the Properties grid



Use this button to toggle the display of the tips box at the bottom of the *Properties* pane. This box gives a quick and simple description of the selected property in the grid. The tips box is displayed by default.

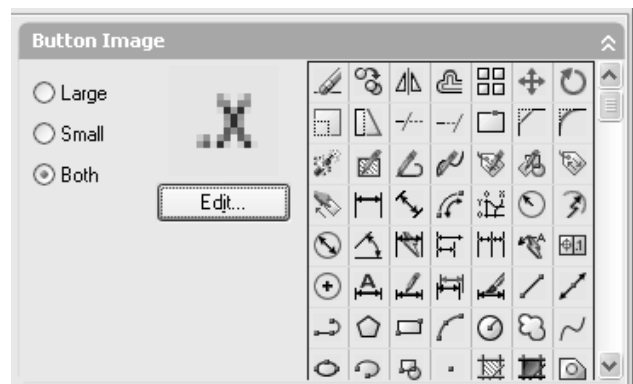
Reset Defaults

The *Reset Defaults* button allows for restoring any changes to the properties of a command or user interface element before the changes have been committed to the .CUI file. Changes in the *Properties* pane are displayed in **bold** text.

Button Image Pane

Located on the right side or upper-right corner of the *Customize User Interface* window is the *Button Image* pane (Fig. 45-9). This pane is part of the Dynamic Display pane which allows assigning, selecting and creating custom images for both standard and custom commands that are part of the loaded customization files.

FIGURE 45-9



Specify Image Size

The three option buttons on the left side of the pane allow for assigning a *Small*, *Large* and/or *Both* image sizes to a command when selecting an image from the Image List. Select one of the image size options before assigning an image to a command to have it assign the image to the small and/or large image fields simultaneously.

Image Preview

Image Preview displays the image that is currently assigned to a command or is the image that has been selected from the list box, and will be displayed in the *Button Editor* dialog box if the *Edit* button is clicked.

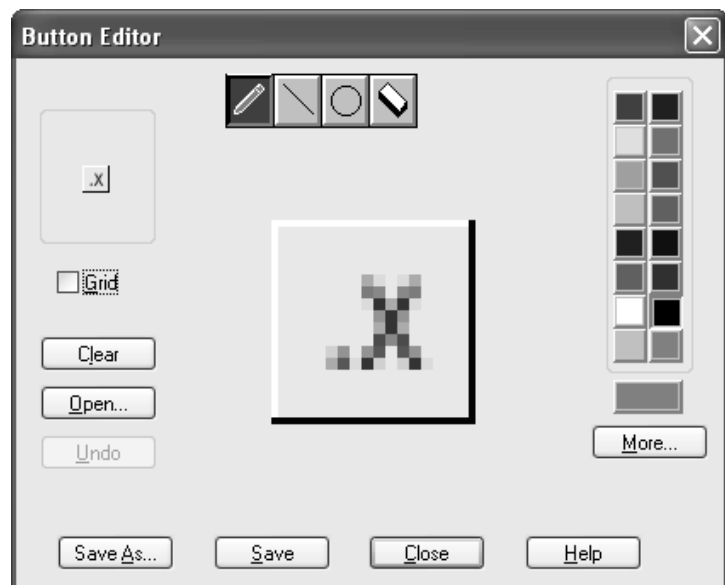
Edit

Edit displays the *Button Editor* dialog box, (Fig. 45-10), which is used to create custom images for commands. The images are added to the *Image List* box of the *Button Image* pane and saved out to file on disk with the file extension .BMP.

Image list box

Image List box contains the images that are part of the loaded customization files. The images are loaded from the compiled .MNR files.

FIGURE 45-10



CREATING A COMMAND

When you create new user interface elements such as toolbars or pull-down menus, it helps to organize and improve the work flow based on company standards. A “command” is used to organize a group of properties that are used to form the foundation of the many user interface elements in a customization file. On the next page is an overview of the properties that are part of a command.

Properties of a Command

The following properties are listed in the *Properties* pane when a command is highlighted in the *Customizations in list* or the *Command List* pane.

Name

The command *Name* is used in several ways for user interface elements and the .CUI file. The name is used to locate the command in the *Command List* pane, the caption for a menu item, and the tool tip for a toolbar button.

Description

When the cursor is hovering over the menu item or toolbar button that the command is associated with, the *Description* is displayed in the status bar and provides information about the command.

Macro

A *Macro* is used to define the specific task that will be carried out when the command is executed from the user interface element that it has been assigned to. A macro must be defined with the proper syntax, otherwise you may get unexpected results. Every character in a macro is significant—even blank spaces serve a vital purpose and must be located properly. With each revision and upgrade of AutoCAD, command syntax might change, so you may be required to make minor changes to your customization. Sometimes with new releases, command names or options can change.

One example of a command name change is the *Hatch* command, which in previous releases was the Command line version of the *Bhatch* command. In AutoCAD 2006, *Bhatch* was renamed *Hatch*, which opens the *Hatch and Gradient* dialog box. Therefore, to invoke the Command line version of the *Hatch* command, it must be prefixed with a dash (-). See “Special Characters for Macros” for more information on the significance of the dash and other characters in macros.

To specify a macro, enter the value in the text field. If the macro is lengthy, click the ellipsis button located at the right side of the text field. This action opens the *Long String Editor* (Fig. 45-11). In previous releases you used a plus sign when dealing with long macro strings, which is no longer the case in AutoCAD 2006.

Element ID

The *Element ID* is used to create a unique identifier for the command or user interface element and is enforced by the *Customize User Interface* window. This value is used when importing customization from other .CUI files and even among the current .CUI file when a command is assigned to a user interface element. To specify an *Element ID*, enter the value in the text field.

FIGURE 45-11



Small Image

The *Small image* designates which icon will be displayed next to a menu item or on a toolbar button. The image must measure 16x16 pixels in size, otherwise it will be scaled to fit. There are two different ways to assign a small image to a command. The first is to select either the *Small* or *Both* option buttons in the *Button Image* pane, then select an image from the list on the right side of the *Button Image* pane. The second method is to select the *Small image* field in the *Properties* pane. Selecting the *Small image* field displays an ellipsis button that allows you to browse for a custom image with the file extension .BMP, .RLE or .DIB. These are the only types of image files that can be used for a custom image of a command.

Large Image

A *Large image* is used only on a toolbar button when the option *Use large buttons for Toolbars* is checked under the *Display* tab of the *Options* command. The image must measure 32x32 pixels in size, otherwise it will be scaled to fit. There are two different ways to assign a large image to a command. The first is to select either the *Large* or *Both* option buttons in the *Button Image* pane, then select an image from the list on the right side of the *Button Image* pane. The second method is to select the *Large Image* field in the *Properties* pane. Selecting the *Large image* field displays an ellipsis button that allows you to browse for a custom image with the file extension .BMP, .RLE or .DIB.

Creating a Command

To create a new command follow these steps:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Command List* pane, click the *New* button. Both the *Button Image* and *Properties* panes open in the *Dynamic Display* pane.
3. Make the necessary changes to the new command. You should change at least the *Name*, *Macro*, *Description* and *Element ID*.
4. Click *Apply* to save the new command to the .CUI file.

Editing a Command

To edit a command follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Select the command that you are interested in editing from the *Command List* pane. If needed, use the *Categories* drop-down list to help locate the command.
3. Select the command in the list box. This action opens both the *Button Image* and *Properties* panes for the selected command.
4. Make the necessary changes to the command's properties.
5. Click *Apply* to save the custom command to the .CUI file.

Removing a Custom Command

To remove a custom command, follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Select the command that you want to remove from the *Command List* pane. Use the *Categories* drop-down to locate the command if needed.
3. Select the command in the list box and right-click. From the right-click menu, select *Delete*.
4. Click *Apply* to save the changes back to the .CUI file.

NOTE: Since you cannot undo this deletion after applying the changes to the .CUI file, make sure you won't need the command in the future. As an alternative to deleting a command, it may be better to remove the command from the user interface elements.

UNDERSTANDING A MACRO

Creating macros can be somewhat intimidating and confusing at first. However, with some experience you will find that creating macros is not much more advanced than using commands and their options at the command line. The following table is from the AutoCAD 2006 Customization Guide and explains many of the special characters that are used with macros.

Special Characters for Macros

<u>Character</u>	<u>Description</u>
;	(Semicolon) Issues Enter
^M	Issues Enter
^I	Issues Tab
[blank space]	Enters a space; a blank space between command sequences in a command is equivalent to pressing the Space bar
.	(Period) Use the default AutoCAD command definition if it was redefined
\	(Backslash) Pauses for user input
_	(Underscore) Translates AutoCAD commands and keywords that follow
=*	Displays the current top level pull-down, shortcut, or image menu
*	(Asterisk) Repeats a command until another command is chosen or the Escape key is pressed
\$	(\$M=) Special character code that loads a menu section or introduces a conditional DIESEL macro expression
^B	Toggles <i>Snap</i> on or off (Ctrl+B)
^C	Issues a single Escape (ESC)
^D	Toggles <i>Coords</i> on or off (Ctrl+D)
^E	Sets the next isometric plane (Ctrl+E)
^G	Toggles <i>Grid</i> on or off (Ctrl+G)
^H	Issues a backspace
^O	Toggles <i>Ortho</i> on or off (Ctrl+O)
^P	Toggles <i>MENUECHO</i> on or off
^Q	Echoes all prompts, status listings, and input to printer (Ctrl+Q)
^T	Toggles <i>Tablet</i> on or off (Ctrl+T)
^V	Changes the current Viewport (Ctrl+V)
^Z	Null character that suppresses the automatic addition of the Space bar at the end of a command

Examining a Macro

Seeing all the special characters in a single table is helpful, but it doesn't give a full understanding how they might be used together to form a macro. The following macro is what is used for the command *Circle, Diameter* from the *Command List* pane.

```
^C^C_circle \_d
```

Each of the elements of this macro is explained below.

^C^C = A single ^C acts like pressing the ESC key. Two are commonly added to a macro to ensure that the current command is cancelled. The *Color* option of the *Layer* command requires up to three presses of the ESC key to exit the command and any option.

<code>_</code> (underscore)	=	This element translates the following command or option into a foreign language release of AutoCAD. The use of the underscore character is optional, but recommended if you work for a company that might have international offices.
<code>circle</code>	=	Uses the AutoCAD <i>Circle</i> command.
<code>[blank space]</code>	=	Issues an Enter to start the <i>Circle</i> command.
<code>\</code>	=	Pauses for user input, in this case it is the center point of the circle object. Each backslash that is part of the macro is a request for user input.
<code>_d</code>	=	Use the <i>Diameter</i> option of the AutoCAD <i>Circle</i> command.
<code>blank</code>	=	AutoCAD automatically adds a blank space at the end of the macro to ensure the command or option prior to it is executed.

Examine the prompts at the command line for the *Circle* command and how they match up with the macro.

Command: ***circle***

Specify center point for circle or [3P/2P/Ttr (tan tan radius)]: (Select a point or enter a coordinate value)

Specify radius of circle or [Diameter]: ***d***

Specify diameter of circle: (Enter a diameter size, select a point or enter a coordinate value)

NOTE: Since the backslash (\) pauses for user input, whenever you need to specify a directory path you need to use two backslashes together (\\) or a single forward slash (/) for any and all directory path delimiters (for example, "\\directory\filename" or "/directory/filename").

When you use the backslash to pause for user input, continuation of the macro will be delayed under the following conditions:

1. When input of a point is expected, the user may set Object Snap modes prior to entering the data to the prompt for a point.
2. When X/Y/Z point filters are used, the macro is suspended until the entire point is entered.
3. For the *Select* command only, the menu item does not resume until object selection is completed.
4. When the user responds with a transparent command, the menu macro remains suspended until the transparent command is completed and the original requested input is received.
5. When the user responds by choosing another menu item to supply options, the menu macro remains suspended until the options portion is processed and the original requested data is received.
6. When the user responds by selecting a completely different command, most likely the menu macro will be terminated.

It is often difficult to read blank spaces within a macro (and especially at the end of a macro), so in these cases you could use the semicolon (;) character. Below is the same macro that was previously shown for the *Circle*, *Diameter* command with the exception of using semicolons instead of blank spaces to represent the pressing of the Enter key. The macro works exactly the same.

```
^C^C_circle;\_d;
```

WORKING WITH TOOLBARS

One of the most important elements of the user interface is a toolbar. The ability to customize toolbars can greatly improve your overall productivity. As you have seen in Chapter 44, it is fairly straightforward to add new commands to an existing toolbar.

Properties of a Toolbar

When a toolbar is selected in the *Customizations in* pane, the *Preview* pane and the *Properties* pane appear on the right side of the *Customize User Interface* window. The following items appear in the *Properties* pane.

Name

The *Name* section can be used to locate the toolbar in the *Customizations in* pane and serves as the caption of the toolbar when it is floating (undocked).

Description

If you rest the pointer in an open area of the toolbar, the *Description* of a toolbar is displayed in the Status bar at the bottom of the AutoCAD window. You can place a description of the toolbar, pull-down menu, or shortcut menu in the field, or you might also place information such as the last date of the revision history here.

On By Default

This setting is used to control the initial state of the toolbar when the customization file is loaded the first time. After the initial loading of the toolbar, the display is controlled by the current AutoCAD profile or workspace. To specify the display state, select the field and click the arrow on the drop-down. There are only two choices in the drop-down, either *Hide (Off)* or *Show (On)*. By default when a new toolbar is created, the default for the display of the toolbar is set to *Show*.

Orientation

Orientation is used to control whether the toolbar is initially docked or floating. After the initial loading of the toolbar, the orientation is controlled by the current AutoCAD profile or workspace. To specify the orientation, select the field and click the arrow on the drop-down. There are five choices in the drop-down list, *Floating*, *Top*, *Bottom*, *Left* and *Right*. When a new toolbar is created, the default orientation is set to *Floating*.

Default X Location

The *Default X Location* determines the initial location of the toolbar from the left side of the screen when it is floating (undocked). The upper-left corner of the screen is 0,0 (the origin) and where all measurements are made from. To specify a new X location, enter a positive value into the field. The higher the number, the farther right the toolbar will be placed on screen. If a negative number is entered, the toolbar will not appear on the screen.

Default Y Location

The *Default Y Location* determines the initial location of the toolbar from the top side of the screen when it is floating (undocked). To specify a new Y location, enter a positive value into the field. The higher the number, the farther down the toolbar will be placed on the screen. If a negative number is entered, the toolbar will not appear on the screen.

Rows

The value in *Rows* specifies how many rows of buttons the toolbar will have when it is floating (undocked). To specify the number of rows, enter a number in the field.

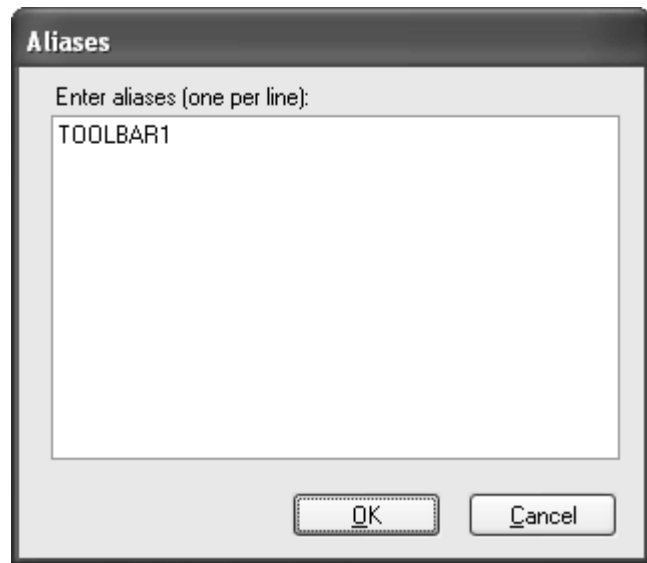
Aliases

Aliases are used to display and access a toolbar through one of the programming languages that can be run inside AutoCAD and are used when creating a *Flyout* (see “Adding a Flyout”). To specify a new alias or to change an existing one, select the field to display the ellipsis button. Click the ellipsis button to display the *Aliases* dialog box (Fig. 45-12). Enter one alias per line by placing the cursor at the end of the last line and pressing Enter to create a new line. Press OK to add the list of aliases for the toolbar. It is a good idea to change the default alias to prevent future problems when migrating customization files.

Element ID

The *Element ID* is a unique identifier for the toolbar and is enforced by the *Customize User Interface* window. This value is used when importing customization from other .CUI files and when a command is assigned to a user interface element in the current .CUI file. To specify an *Element ID* (for new commands only), enter the value in the text field.

FIGURE 45-12

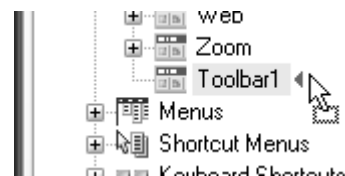


Creating a Toolbar

To create a new toolbar follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, right-click on the *Toolbars* node in the tree view. Select *New> Toolbar* from the shortcut menu. The *Properties* pane opens in the *Dynamic Display* pane.
3. Make the necessary changes to the new toolbar's properties. As a minimum, you should change the *Name* and *Aliases* properties.
4. In the *Command List* pane, locate the command(s) that you want to add to the new toolbar. Select the command with the left mouse button. Hold down the left mouse button while you drag and drop the command up to the new toolbar under the *Toolbars* node (Fig. 45-13).
5. Click *Apply* to save the new toolbar to the .CUI file.

FIGURE 45-13



NOTE: More than one command can be selected at a time by using the Ctrl and Shift keys when selecting commands in the *Command List* pane. This action allows you to quickly add a number of commands to a user interface element, such as a toolbar or pull-down menu.

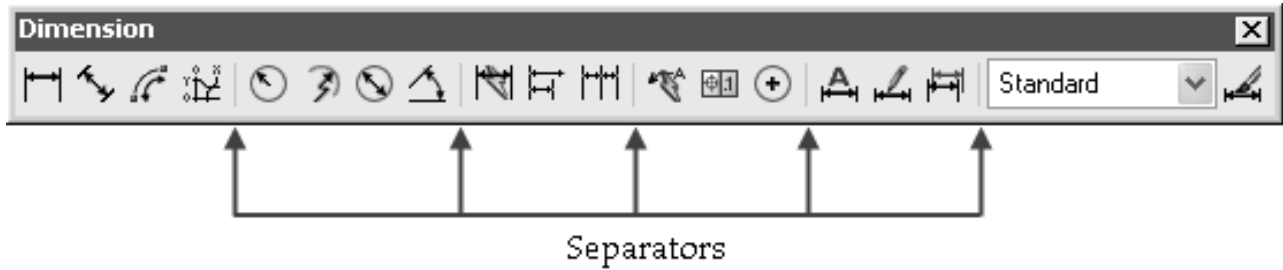
Editing a Toolbar

To edit a toolbar follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Toolbars* node in the tree view.
3. Select the toolbar that you want to change. The *Properties* pane opens in the *Dynamic Display* pane.
4. Make the necessary changes to the toolbar properties and its associated commands.
5. Click *Apply* to save the changes back to the .CUI file.

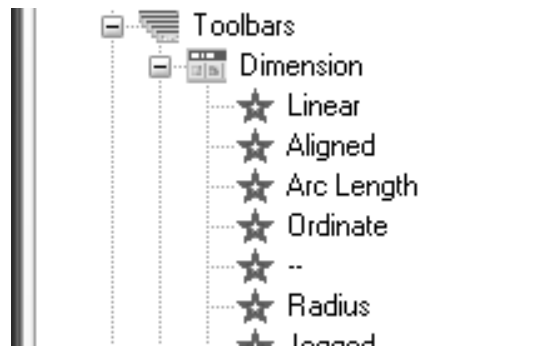
Adding a Separator

FIGURE 45-14



A *Separator* is used to organize items into groups of commands that are used to perform related tasks. AutoCAD uses separators on many of the standard toolbars. As an example, consider how separators are used on the *Dimension* toolbar to organize the different types of tools (Fig. 45-14). A *Separator* in the *Customize User Interface* window is represented by the Name “-” and has the property *Is separator* which is set to *Yes* and cannot be changed (Fig. 45-15).

FIGURE 45-15



To add a *Separator* to a toolbar, follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Toolbars* node in the tree view.
3. Select the toolbar that you are interested in adding a *Separator* to.
4. Right-click the command above the location you want the *Separator* to be inserted.
5. Click *Apply* to save the changes back to the .CUI file.

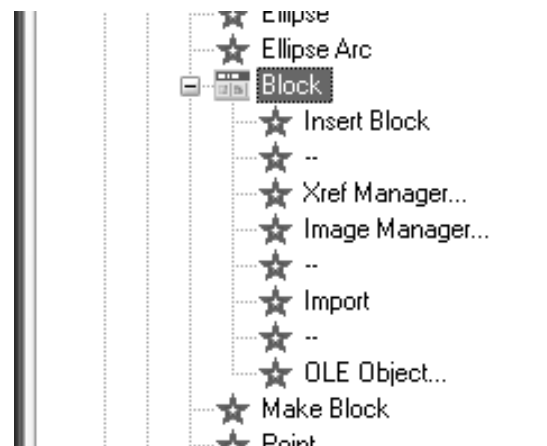
FIGURE 45-16



Adding a Flyout

A *Flyout* is used to display a toolbar that “flies out” from another toolbar. There are many existing standard flyouts in AutoCAD, such as the group of block-related commands from the *Draw* toolbar. These commands are added to the toolbar based on the contents of the *Insert* toolbar. Figure 45-16 shows the *Block* flyout on the *Draw* toolbar. A *flyout* on a toolbar is represented by a small black triangle in the lower right corner of the button. In the *Customize User Interface* window, a flyout is represented by a toolbar node with its commands located below it (Fig. 45-17).

FIGURE 45-17



To add a *Flyout* to a toolbar follow these steps:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Create a new toolbar following the steps outlined previously (see “Creating a Toolbar”).
3. In the *Customizations in* pane, locate the toolbar you want to use as a flyout. Select the toolbar with the left mouse button and hold down the left mouse button. Drag the selected (flyout) toolbar to and drop it under the desired (parent) toolbar. A copy of the original toolbar is not created for the flyout, but instead an association to the original toolbar and all of its commands is created.
4. Click *Apply* to save the changes back to the .CUI file.

NOTE: It is possible to create a new flyout by right-clicking over the toolbar and selecting *New> Flyout* from the shortcut menu. This action creates a new toolbar and automatically adds the flyout association to the toolbar. Next, add the commands to the new toolbar.

Properties of a Flyout

A *Flyout* shares many of the same properties that a command has, with two exceptions. Below are the properties that are unique to a flyout.

Source Toolbar

Source Toolbar is the first alias under the *Aliases* property of the referencing toolbar that is being used as the flyout. This property is automatically assigned, and there is no way of changing the *Source Toolbar* unless it is deleted and re-added to the toolbar.

Use Own Icon

The *Use Own Icon* property specifies whether the flyout displays a different icon than the image of the most recently used command. By default this value is set to *No*, but if it is set to *Yes* the images assigned to the properties *Small image* and *Large image* are used.

Organizing Commands, Separators and Flyouts on a Toolbar

Organizing commands, separators, and flyouts after they have been added to the toolbar is crucial to making them easy to find and use. The same process that is used to add commands to a toolbar or to create a flyout should be used to organize the buttons on a toolbar. Select the command, separator, or flyout and drag it up or down under the toolbar. A drop location indicator (Fig. 45-18) is displayed to show where the item will be located when it is dropped. Once you have organized the items under the toolbar, it is possible to preview the toolbar by selecting the toolbar under the *Toolbars* node. This action displays the *Preview* pane (Fig. 45-19).

FIGURE 45-18

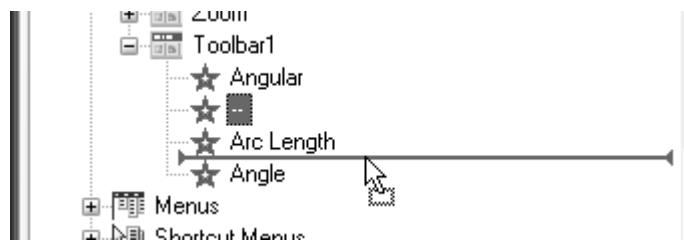
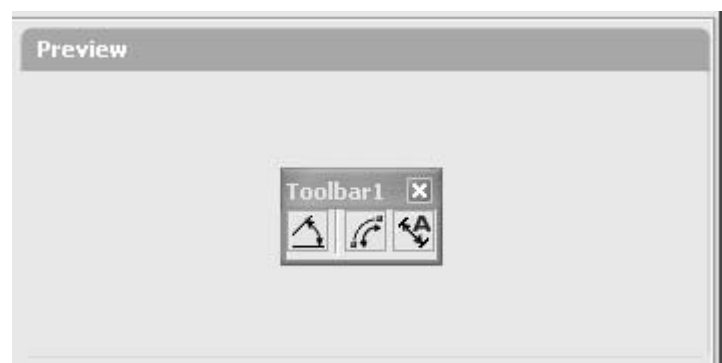


FIGURE 45-19



WORKING WITH PULL-DOWN MENUS

The second most commonly used user interface element (after toolbars) is pull-down menus. Pull-down menus are not quite as immediately accessible as toolbars, but they normally contain more commands than the standard toolbars. In addition, pull-down menus, compared to toolbars, conserve valuable space within the drawing area. Pull-down menus fall in the range of aliases POP1 through POP499. Only the first 16 menus are displayed automatically when the customization file is loaded into AutoCAD. If more than 16 pull-down menus are to be displayed you need to control the display of the pull-down menus within a workspace.

Properties of a Pull-down Menu

Pull-down menus are listed under the *Menus* section of the *Customizations in* pane in the *Customize User Interface* window. When a pull-down menu is selected from the list, the *Properties* pane appears on the right side displaying the following items.

Name

The *Name* edit box serves as the caption of the pull-down menu as it appears in the menu bar along the top of the application window of AutoCAD.

The *Name* property can contain an ampersand (&), which displays an underscore under the character immediately following the ampersand in the caption. The underscored character serves as the key that is used to access the pull-down menu from the keyboard with the combination of the Alt key. For example, the *Name* of the *File* pull-down menu in the *Customize User Interface* window is "&File", which allows you to press and hold the Alt key followed by the F key to open and navigate the menu from the keyboard. See "Special Characters for Pull-down and Shortcut Menus" for information on how to add conditionals to a menu item, such as making a disabled menu item.

Description

The *Description* of pull-down menu is used for informational purposes but is not displayed on the Status bar.

Aliases

Aliases are used for displaying and accessing a pull-down menu through one of the programming languages that can be run in AutoCAD. To specify a new alias or to change an existing one, select the field to display the ellipsis button, then click the ellipsis button to display the *Aliases* dialog box. Enter one alias per line. Press Enter to create a new line. Click *OK* to complete the process. Remember to change the default alias to prevent problems migrating customization files.

Element ID

Element ID is used to create a unique identifier for the pull-down menu and is enforced by the *Customize User Interface* window. This value is used when importing customization from other .CUI files or when a command is assigned to a user interface element in the current .CUI file. Enter a value in the text field to specify an *Element ID*.

Creating a Pull-down Menu

Follow these steps to create a new pull-down menu:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, right-click over the *Menus* node in the tree view. Select *New> Menu* from the shortcut menu. The *Properties* pane opens on the right side.
3. Make the necessary changes to the new pull-down menu's properties. At minimum, you should change the *Name* and *Aliases* properties.

4. In the *Command List* pane, locate the command(s) that you want to add to the new pull-down. Drag and drop the command up to the new pull-down menu under the *Menus* node.
5. Click *Apply* to save the new pull-down menu to the .CUI file.

NOTE: When selecting commands in the *Command List* pane, you can select multiple commands using the Ctrl or Shift keys. This action allows you to quickly add a number of commands to a user interface element, such as a toolbar or pull-down menu.

Editing a Pull-down Menu

To edit a pull-down menu follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Menus* node in the tree view.
3. Select the pull-down menu that you want to change. The *Properties* pane opens on the right side of the window.
4. Make the necessary changes to the pull-down menu properties and its associated commands.
5. Click *Apply* to save the changes to the pull-down menu back to the .CUI file.

Adding a Separator

You can use a *Separator* to organize menu items into groups of commands that are used to perform related tasks. A separator in the *Customize User Interface* window is represented with the Name “- -” and has a disabled property, *Is separator*.

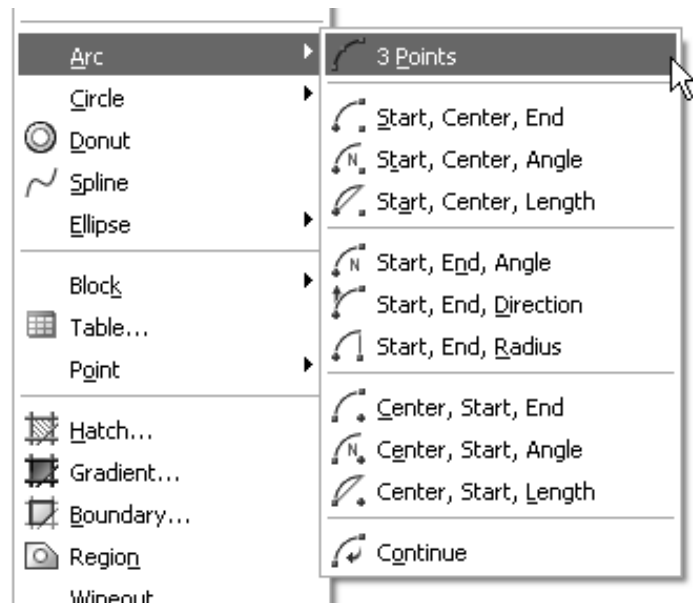
Follow the steps below to add a separator to a toolbar:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Menus* node in the tree view.
3. Select the desired pull-down menu.
4. Right-click the command above the location where you want to insert the separator, then select *Insert Separator* from the menu.
5. Click *Apply* to save the changes back to the .CUI file.

Adding a Sub-menu

A *Sub-menu*, or cascading menu, is very similar to a flyout on a toolbar, but it is created differently. A flyout represents the contents of another toolbar, whereas a sub-menu is similar to a directory folder that contains commands within it; however, these commands are not linked to the parent menu item. Sub-menus often contain options of a command. There are many instances of standard sub-menus in AutoCAD, such as the *Draw* pull-down menu that utilizes several different sub-menus to access options of one main command. Items are added to a sub-menu the same way commands are added to a toolbar. Figure 45-20 shows the *Arc* sub-menu under the *Draw* pull-down menu.

FIGURE 45-20

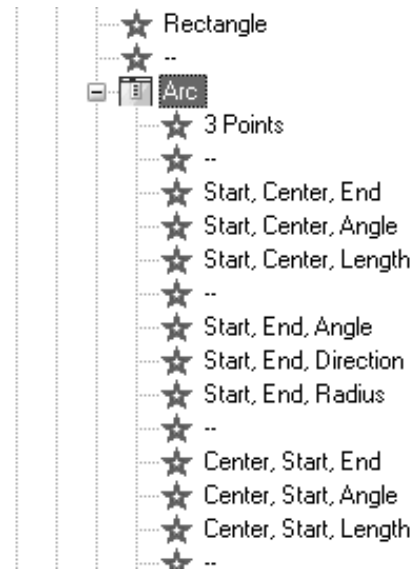


A small black arrow on the right side of the menu item in a pull-down menu indicates the availability of a sub-menu. In the *Customize User Interface* window, a sub-menu is shown in hierarchical format (Fig. 45-21).

To add a sub-menu to a pull-down menu follow these steps:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Menus* node in the tree view.
3. Select the desired pull-down menu.
4. Right-click on the desired command in the main menu and select *New> Sub-menu* from the options. Add any commands to the new sub-menu as desired.
5. Click *Apply* to save the changes back to the .CUI file.

FIGURE 45-21



Special Characters for Pull-down and Shortcut Menus

<u>Character</u>	<u>Description</u>
\$(	Enables the pull-down or shortcut menu item label to evaluate a DIESEL string macro if \$(are the first characters.
~	Label prefix that makes a menu item unavailable.
!.	Label prefix that marks a menu item with a check mark.
&	An ampersand placed directly before a character specifies that character as the menu accelerator key in a pull-down or shortcut menu label. For example, "S&le" displays in the menu as "S a mple."
\t	Specifies that all label text to the right of these characters is pushed to the right side of the menu item label. \t is interpreted as a tab character.
&&	Displays an ampersand character in the menu items label.

Organizing Commands, Separators, and Sub-menus on a Pull-down Menu

Organizing the new commands, *separators*, and *sub-menus* is important for making them easy to find and use. The same process that is used to add commands to a pull-down menu or sub-menu is used to organize the menu items on a pull-down menu. That is, select the command, separator, or sub-menu and drag it up or down under the pull-down menu. A drop location indicator is displayed to designate the position for the item. Unlike a toolbar, there is no way to preview a pull-down menu until it has been saved and added to the menu bar of AutoCAD.

WORKING WITH SHORTCUT MENUS

Shortcut menus are very similar to pull-down menus except they are event-driven and context sensitive. In other words, the shortcut menu that is displayed and the options that appear on it are dependent on several conditions current at the time you invoke the menu. The shortcut menu can depend on the pointer location, whether an object is selected, or if a command is in progress. The possible areas in the AutoCAD window that can cause a specific shortcut menu to appear are listed on the next page.

Drawing area
 Command line
 Dialog boxes and windows such as DesignCenter
 Toolbars
 Status bar
 Model tab and layout tabs

Shortcut menus are defined in a very similar fashion to pull-down menus except they use a special naming convention for aliases. This naming convention determines when the shortcut menu is used. Shortcut menus fall in the range of aliases POP0 and POP500 through POP999. The first shortcut menu, POP0, defines the default Object Snap shortcut menu, and POP500 through POP999 are reserved for context shortcut menus.

Properties of a Shortcut Menu

Produce the *Properties* pane on the right side of the *Customize User Interface* window by selecting a menu name under the *Shortcut Menus* section of the *Customizations in* pane. When a shortcut menu is selected from the list, the *Properties* pane displays the following items.

Name

The *Name* is the shortcut menu item that appears (generally the command name) but can contain special characters.

Description

Description is the text that is displayed in the status bar area.

Aliases

An *Alias* can be used to display and access a shortcut menu using one of the programming languages that can be run in AutoCAD. The alias determines when the shortcut menu should be displayed (see “Context Menu Types”). To specify a new alias or to change an existing one, select the field to display the ellipsis button. Click the ellipsis button to display the *Aliases* dialog box. Enter one alias per line. Select *OK* to add the new aliases.

Element ID

The *Element ID* field is used to create a unique identifier for the shortcut menu. This value is used when importing customization from other .CUI files and in the current .CUI file when a command is assigned to a user interface element.

Using Shortcut Menus in the Drawing Area

When your pointing device is located in the drawing area and you right-click, one of six shortcut menus appears: the Default menu, Edit-mode menu, Command-mode menu, Object Snap menu, Hot Grips menu, or the OLE menu (see “Shortcut Menus” in Chapter 1). The following table describes how to access the shortcut menus that are displayed when you right-click in the drawing area.

<u>Shortcut menu</u>	<u>How to access Menu options</u>
Default	Right-click when no commands are active and no objects are selected, and select <i>Copy</i> , <i>Paste</i> , <i>Pan</i> , or <i>Zoom</i> .
Edit	Cancel the active command, select the desired objects, and right-click. Options are specific to the kind of object selected.
Command	While a command is active, right-click. Options are specific to the command in progress and any options currently displayed on the command line.
Object Snap	Press Shift and right-click. Select from object snap options, object snap settings, and point filters.

Hot Grips	Select a grip on an object, then right-click. Grip editing options are available.
OLE	Right-click an OLE object and select from the OLE object editing options.

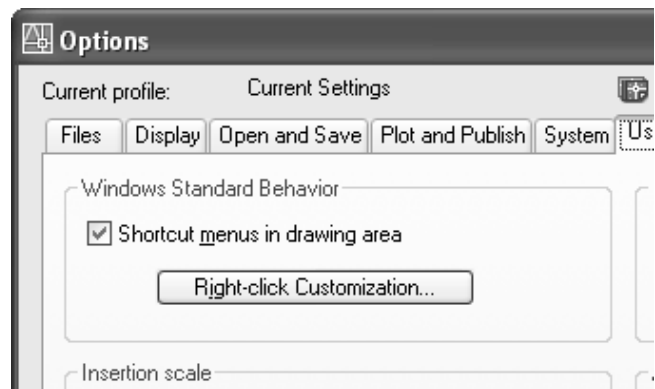
You can control the action of the Default menu, Edit-mode menu, and Command-mode menus using the *User Preferences* tab in the *Options* dialog box (explained next in “Controlling Default-mode, Edit-mode, and Command-mode Shortcut Menus”). For information about additional shortcut menus, see “Using Other Shortcut Menus.”

Controlling the Default-mode, Edit-mode, and Command-mode Shortcut Menus

The Object Snap, Hot Grips, and OLE shortcut menus are always turned on. However, you can control the display of the Default-mode, Edit-mode, and Command-mode shortcut menus using the *Options* dialog box. Changes you make in the dialog box to control the display of these menus are automatically stored in the *SHORTCUTMENU* system variable. Alternately, you can make changes directly to the *SHORTCUTMENU* system variable instead of using the *Options* dialog box.

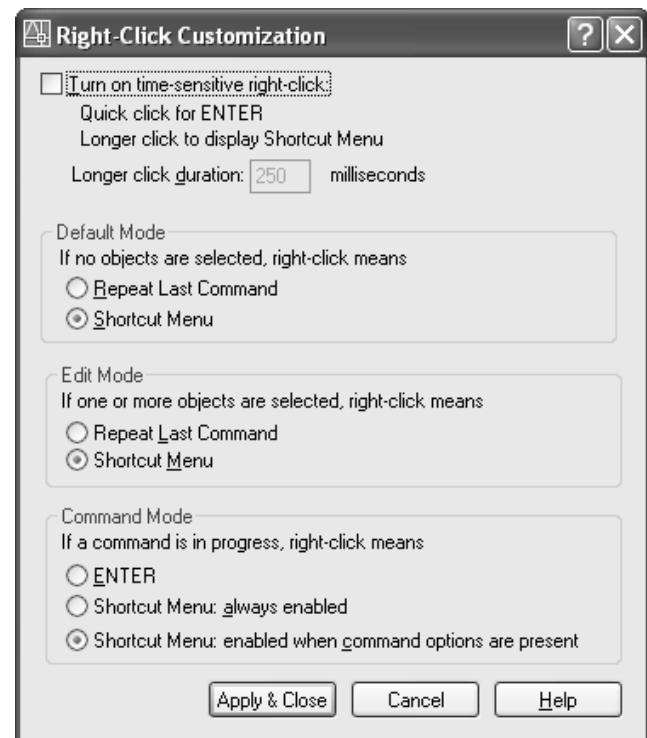
To turn off the display of the Default-mode, Edit-mode, and Command-mode shortcut menus in the drawing area, open the *Options* dialog box. In the upper-left corner of the *User Preferences* tab (Fig. 45-22), remove the check from *Shortcut menus in drawing area*.

FIGURE 45-22



If you want to control the Default-mode, Edit-mode, and Command-mode menus individually, select the *Right-click Customization* button in the *User Preferences* tab (see Fig. 45-22). This action opens the *Right-Click Customization* dialog box (Fig. 45-23). A brief explanation of the options is given here.

FIGURE 45-23



Default Mode and Edit Mode

Repeat Last Command

Selecting this option turns off the Default-mode and Edit-mode shortcut menus. Right-clicking has the same effect as pressing the Enter key; that is, right-clicking repeats the last command.

Shortcut Menu

This option turns on the Default-mode or Edit-mode shortcut menu when you right-click in the drawing area.

Command Mode

Enter

This option turns off the Command-mode shortcut menu. Right-clicking in the drawing area while a command is in progress has the same result as pressing the Enter key.

Shortcut Menu: always enabled

When this option is checked, right-clicking in the drawing area while a command is in progress always displays the Command-mode shortcut menu.

Shortcut Menu: enabled when command options are present

This option displays the Command-mode shortcut menu only when options are currently available in the command line prompt. Command line options are shown in enclosed square brackets [like this]. If no options are available, right-clicking has the same effect as pressing Enter.

SHORTCUTMENU

The *SHORTCUTMENU* system variable stores right-click customization settings that you specify in the *Options* dialog box as described in the previous section. You can, however, specify the right-click customization settings directly using the *SHORTCUTMENU* variable. See AutoCAD 2006 Instructor Appendix A, for the legal bit code settings you can use. Keep in mind that understanding the purpose of the *SHORTCUTMENU* system variable is essential to your ability to write customized menus in AutoCAD.

In addition to specifying your preferences for the Default-mode, Edit-mode, and Command-mode shortcut menus using the *Options* dialog box and the *SHORTCUTMENU* system variable, you can customize the individual options that are displayed on them by using the *Customize User Interface* window. For example, you may want to add options to the Edit shortcut menu that appear only when a certain type of object is selected. For information about writing customized shortcut menus, see “Working with Pull-Down Menus.”

Using Shortcut Menus Outside the Drawing Area

In addition to right-clicking in the drawing area to display shortcut menus, you can right-click in other AutoCAD window areas to display shortcut menus. The following table describes ways to access these shortcut menus and the options that appear. These shortcut menus cannot be turned off by using the *Options* dialog box or the *SHORTCUTMENU* system variable. In other words, settings in the *SHORTCUTMENU* system variable do not affect these menus.

<u>Shortcut menu</u>	<u>How to access Menu options</u>
Toolbar	Right-click on any toolbar. Hide, display, or <i>Customize</i> (right-click the empty area to the right of the Standard toolbar to display a list of toolbar menu groups).
Command Line	Right-click the command line or the text window. Options are <i>Recent commands</i> , <i>Paste to Cmd line</i> , <i>Copy</i> , <i>Copy History</i> , <i>Paste</i> , and <i>Options</i> .
Dialog Box or Window	Right-click individual items in most dialog boxes or windows. Depending on the type of dialog box or list, the options are: <i>Rename</i> , <i>Delete</i> , <i>Copy</i> , <i>Paste</i> , and other file management commands and context-specific options.
Status Bar	Right-click the coordinate display or any Status bar buttons. Select from <i>On</i> , <i>Off</i> , and <i>Settings</i> .
Model/Layout	Right-click the <i>Model</i> tab or any of the layout tabs. Select <i>New layout</i> , <i>From template</i> , <i>Delete</i> , <i>Rename</i> , <i>Move or Copy</i> , <i>Select all layouts</i> , <i>Page Setup</i> , <i>Plot</i> , or <i>Publish Selected Layouts</i> .

Context Menu Types

The names *GRIPS*, *CMDEFAULT*, *CMEDIT* and *CMCOMMAND* are reserved shortcut menu aliases for use by AutoCAD. It is possible to extend these shortcut menus to add your own commands to them or create new shortcut menus when editing or running a command that doesn't have a menu defined by default.

GRIPS

The content of this menu defines the Hot Grip shortcut menu (right-click in the drawing area while an object's grip is hot [selected]).

CMDEFAULT

The content of this menu defines the Default-mode shortcut menu (right-click in the drawing area while no command is active and no objects are selected).

CMEDIT

The content of this menu defines the Edit-mode shortcut menu (right-click in the drawing area while one or more objects are selected [but no grips are hot], and no command is active). In addition to the content of the *CMEDIT* menu, the appropriate object menu (if one exists) is inserted into this menu when one or more of a specific object type is selected. Object menus use the following naming convention:

OBJECT(S)_objectname

If a single object is selected, the OBJECT_objectname menu is used, and if more than one of the same object is selected, the OBJECTS_objectname is used. If no OBJECT_objectname is available, AutoCAD uses the OBJECTS_objectname menu (if one exists).

The object name is the DXF name of the object in all cases except the insert object. To differentiate between a block insertion and an xref, use the names BLOCKREF and XREF. The following AutoLISP code defines the command OTYPE, which reports the selected object's DXF name.

```
(defun C:OTYPE() (cdr (assoc 0 (entget (car (entsel))))))
```

CMCOMMAND

The content of this menu defines the Command-mode menu (right-click in the drawing area while a command is active). In addition to the content of the *CMCOMMAND* menu, the command line options (keywords within the square brackets) are inserted into this menu.

Like the *CMEDIT* menu, the *CMCOMMAND* menu can have context-sensitive information added to it. Any menu named *COMMAND_commandname* is appended to the *CMCOMMAND* menu. The text of *commandname* can be any valid AutoCAD command, including any custom-defined or third-party commands. To make this work with a hyphen-prefixed command (such as *-Insert*), you need to name the menu *COMMAND_-insert*.

Creating a Shortcut Menu

To create a new shortcut menu follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, right-click on the *Shortcut Menus* node in the tree view. *Select New> Shortcut Menu* from the menu that appears. The *Properties* pane opens on the right.
3. Make the necessary changes to the new shortcut menu's properties. At minimum you should change the *Name* and *Aliases* properties. In order for the shortcut menu to work properly when editing one or more objects and when the specific command is active, you need to add the correct alias name to the *Aliases* property.
4. In the *Command List* pane, locate the command(s) that you want to add to the new shortcut menu. Select the command and hold down the left mouse button. Drag and drop the command up to the new pull-down menu under the *Shortcut Menus* node.
5. Click *Apply* to save the new shortcut menu to the .CUI file.

NOTE: More than one command can be selected at a time using the Ctrl and Shift keys when selecting commands in the *Command List* pane. This action allows you to quickly add a number of commands to a user interface element, such as a toolbar or pull-down menu.

Editing a Shortcut Menu

Edit a shortcut menu using the steps below:

1. Use the *CUI* or *Toolbar* command to open.
2. In the *Customizations in* pane, click the plus sign next to the *Shortcut Menus* node in the tree view.
3. Select the desired shortcut menu. The *Properties* pane opens on the right of the *Customize User Interface* window.
4. Make the necessary changes to the shortcut menu properties and its associated commands.
5. Click *Apply* to save the changes back to the .CUI file.

Adding a Separator or a Sub-menu

For more information on these two topics see "Adding a Separator" or "Adding a Sub-menu" under "Working with Pull-down Menus."

Organizing Commands, Separators, and Sub-menus on a Pull-down Menu

After they have been added to a shortcut menu, it is helpful to organize the commands, separators, and sub-menus to make them easy to find and use. The same process that is used to add commands to a shortcut menu or sub-menu is used to organize the menu items on a shortcut menu. Select the command, separator or sub-menu and drag it up or down under the shortcut menu. A drop location indicator is displayed to indicate where the current item will be placed. Unlike a toolbar, there is no way to preview a shortcut menu until it has been saved and used in AutoCAD.

WORKING WITH KEYBOARD SHORTCUTS

Keyboard shortcuts in AutoCAD are represented by two different kinds, shortcut keys and temporary override keys. Shortcut keys are used to execute a command, whereas temporary override keys are used to toggle a setting on or off or to run two different macros based on the position of the key combination.

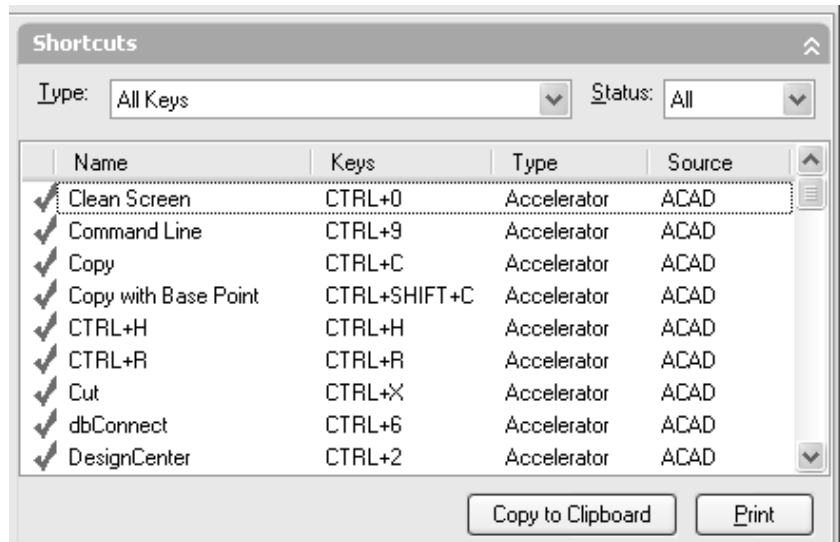
There are many standard shortcut keys that you may use everyday. Shortcut keys use a combination of either the Ctrl key with or without the Shift and/or Alt key plus some other alpha-numeric key on the keyboard. For example, Ctrl+S executes the *Qsave* command.

Temporary override keys are new for AutoCAD 2006. Temporary override keys use a combination of the Shift key with some other alpha-numeric key on the keyboard. Temporary override keys are used to toggle an individual drafting setting, but can also run a macro when certain commands, like *Line*, are active.

Shortcuts Pane

A new pane in the dynamic display pane (right side of the *Customize User Interface* window) titled *Shortcuts* is available for both shortcut keys and temporary override keys (Fig. 45-24). This pane provides information about the existing shortcut keys, such as what key sequences are assigned. You can use the *Shortcuts* pane to access either one of the two types of keys already set up. You could also copy the listing of keys to the clipboard and paste them in a different application or make a hard-copy of the keys using your printer.

FIGURE 45-24



Properties of a Shortcut Key

Since a shortcut key is based on a command in the *Command List* pane, it inherits the *Name*, *Description*, *Macro*, and *Element ID* properties from the command. Only one new property called *Key(s)* is introduced and is explained below.

Key(s)

Key(s) is used to assign which key combination(s) execute the command. To specify a new key or to change an existing one, select this field to display the ellipsis button. Click the ellipsis button to display the *Shortcut Keys* dialog box (Fig. 45-25). Click in the *Press new shortcut key* text field and press and hold down the desired modifier keys (Ctrl and/or Alt) along with the desired single alpha-numeric key to create the shortcut key combination. Click *Assign* to add the key combination to the shortcut key. Then click *OK* to add the new key combination.

FIGURE 45-25



Creating a Shortcut Key

To create a new shortcut key follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to both the *Keyboard Shortcuts* and *Shortcut Keys* nodes in the tree view.
3. In the *Command List* pane, locate the command(s) that you want to use to assign a shortcut key. Select the command with the left mouse button and holding down the left mouse button drag and drop the command(s) up to the *Shortcut Keys* node.
4. Make any desired changes to the *Key(s)* property of the new shortcut key.
5. Click *Apply* to save the new shortcut key to the .CUI file.

NOTE: Remember that you can use the Ctrl and Shift keys when selecting commands in the *Command List* pane to quickly add a number of commands to a user interface element, such as a toolbar or pull-down menu.

Editing a Shortcut Key

Follow the steps below to edit a shortcut key:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to both the *Keyboard Shortcuts* and *Shortcut Keys* nodes in the tree view.
3. Select the desired shortcut key that you want to change. The *Properties* pane opens on the right.
4. Make the necessary changes to the shortcut key's properties.
5. Click *Apply* to save the changes back to the .CUI file.

Properties of a Temporary Override Key

Unlike shortcut keys, temporary override keys are not based on existing commands from the *Command List* pane. Although shortcut keys and temporary override keys both have *Name*, *Description* and *Key(s)* properties, a temporary override key also has a *Macro1 (Key Down)* and a *Macro2 (Key Up)* property to toggle the drafting setting. These macros are created in the same way that a macro is created for a command.

Macro 1 (Key Down)

Macro 1 (Key Down) is used to define what command string is executed when the key combination is pressed and held down while an AutoCAD command is running. If no macro is added to the *Macro 2 (Key Up)* property, the same macro is used from the *Macro 1 (Key Down)* property.

Macro 2 (Key Up)

Macro 2 (Key Up) is used to define what command string is executed when the key combination is released while an AutoCAD command is running.

Creating a Temporary Override Key

To create a new temporary override key follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Keyboard Shortcuts* node in the tree view.

3. Right-click on the *Temporary Override Keys* node and select *New> Temporary Override* from the shortcut menu to open the *Properties* pane.
4. In the *Properties* pane, make the necessary changes to the *Key(s)*, *Macro 1* and *Macro 2* property of the new temporary override key.
5. Click *Apply* to save the new temporary override key to the .CUI file.

Editing a Temporary Override Key

To edit a temporary override key follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Keyboard Shortcuts* node, then the *Temporary Override Keys* node.
3. Select the temporary override key that you are interested in making changes to. The *Properties* pane opens in the *Dynamic Display* pane.
4. Make the necessary changes to the temporary override key's properties.
5. Click *Apply* to save the changes back to the .CUI file.

WORKING WITH MOUSE BUTTONS

The *Mouse Buttons* section of the *Customize User Interface* window is used to specify the actions that occur by clicking the mouse buttons. The left mouse button (button 1) is always used to pick (select) a location, menu item, or object in AutoCAD unless it is otherwise "remapped" using mouse software provided by the manufacturer. In most cases, button 2 is the right mouse button and button 3 is the middle mouse button. The mouse buttons can be used as a simple click (press) operation alone or with a combination of the Ctrl and/or Shift key.

Mouse buttons have only an *Aliases* property. The *Aliases* start at AUX1 for the first combination (*Click*), increments to AUX2 for the next combination (*Shift+Click*), and so on. There are only four mouse button combinations possible; however, it is possible to add more than one command (and button) to these combinations. You can add new buttons using basically the same procedure used to add commands to a toolbar or pull-down menu. If a new button or command is added to the combination, AutoCAD increments the button number by 1.

Adding a Button to a Mouse Button

Create a new button using the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to *Mouse Buttons*, then click the plus sign next to the desired combination node (such as *Shift+Click*).
3. In the *Command List* pane, locate the command(s) that you want to add to the mouse button. Select the command with the left mouse button, and holding down the left mouse button drag and drop the command up to the desired mouse button node.
4. Click *Apply* to save the new shortcut menu to the .CUI file.

NOTE: You can use the Ctrl and Shift keys to select multiple commands in the *Command List* pane.

Editing a Button to a Mouse Button

To edit a button follow these steps:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to *Mouse Buttons*, then click the plus sign next to the desired combination node (such as *Shift+Click*).
3. Select the button that you want to edit.
4. Make the necessary changes to the button's properties.
5. Click *Apply* to save the changes back to the .CUI file.

Pointing Devices and the *MBUTTONPAN* and *ZOOMFACTOR* System Variables

You can specify points in the AutoCAD drawing area and select commands using a pointing device such as a standard mouse, an IntelliMouse®, or a digitizing tablet. Some pointing devices, such as a mouse, may have only two buttons, while others, such as a digitizing puck, may have many buttons. AutoCAD assigns the actions of the first 10 buttons automatically, but you can reassign the action of the buttons (except the pick, or first, button) by modifying the *Mouse Buttons* in the *Customize User Interface* window. The following sections explain the actions of the buttons, assuming that the ACAD.CUI file contains the default settings supplied with AutoCAD.

Two-Button Mouse

On a two-button mouse, the left button is the “pick” (or select) button used to specify points on the screen, or select menu options, or select objects. The right button can either produce a shortcut menu or act as an Enter, depending on your pointer location and the right-click settings you specify in the *Options* dialog box or *SHORTCUTMENU* system variable (see “Controlling Default-mode, Edit-mode, and Command-mode Shortcut Menus”). Also with a two-button mouse, holding down the Shift key while right-clicking displays the Object Snap shortcut menu.

Three-Button Mouse and *MBUTTONPAN*

With a three-button mouse, holding down the middle button and dragging the mouse accomplishes a real-time *Pan* by default. However, the middle button can either activate real-time panning or display the Object Snap shortcut menu. You can control which action the middle button has using the *MBUTTONPAN* system variable. Possible settings for *MBUTTONPAN* are as follows:

- 0 Supports the action defined in the AutoCAD customization (.CUI) file
- 1 Supports panning by holding and dragging the button or wheel

Since the middle button carries out the action as defined in the *Customize User Interface* window when *MBUTTONPAN* is set to 0, you can use this button to produce the Object Snap shortcut menu by default, or you can customize the button in the *Customize User Interface* window to define some other action for the button. System pointing devices such as a mouse use the sections defined under the *Mouse Buttons* node in the *Customize User Interface* window to define the button actions.

IntelliMouse, *MBUTTONPAN* and *ZOOMFACTOR*

The IntelliMouse is a two-button mouse with a small wheel between the buttons. The left and right buttons have the same functions as a standard two-button mouse. The wheel, however, can be rotated to real-time *Zoom* in your drawing and can be held down to real-time *Pan* in the drawing without using any commands.

The wheel is designed to rotate in small increments rather than rotating smoothly. Each increment in the wheel rotation changes the *Zoom* by some regular amount (about 60% by default). The *ZOOMFACTOR* system variable controls the amount of this incremental change. However, the amount of change is inversely proportional to the value. In other words, the higher the number, the smaller the change. On the IntelliMouse, you can press and hold down the wheel as well as rotate it. If you press and hold down the wheel, it has the same action as the middle button on a three-button mouse; that is, it performs a real-time *Pan*. As with a three-button mouse, you can change the *MBUTTONPAN* system variable setting to 0 to cause the wheel button to display the Object Snap shortcut menu instead when it is clicked. Also, you can customize the .CUI file to define another action for the wheel button when *MBUTTONPAN* is set to 0 (see “Three-Button Mouse and *MBUTTONPAN*”).

WORKING WITH LISP FILES

The *LISP Files* section of the *Customize User Interface* is used to specify what AutoLISP files are to be loaded with the .CUI file. This is a more organized approach than using the *Startup Suite* under the *Load/Unload Applications* dialog box of the *Appload* command. For a group of computers, if you don't want to manually go around to each machine and add the AutoLISP file to the *Startup Suite* and don't know any AutoLISP programming code, this method is much easier to use. The disadvantage to this method is that it only supports files with the extension .LSP but not .FAS or .VLX. If you want to load these and other external program files, like ObjectARX programs, it is best to learn some AutoLISP programming and add the load statements to the ACAD.MNL file or ACADDOC.LSP. In this case, a few AutoLISP load statements are given below to get you started.

Use the statement below to load a .LSP, .FAS or .VLX file into AutoCAD through the .MNL file.

Syntax: (load “filename”)
Example: (load “my_utils.lsp”)

The example loads a file called my_utils.lsp which must be present in the AutoCAD support directories.

Use the statement below to load an ObjectARX (.ARX) file into AutoCAD through the .MNL file.

Syntax: (arxload “filename”)
Example: (arxload “my_utils”)

The example loads a file called my_utils.arx which must be present in the AutoCAD support directories. The file extension is not required since the arxload function only loads files with an .ARX file extension.

WORKING WITH LEGACY MENU ELEMENTS

The *Legacy* node contains some of the older user interface elements that have been around for some time and are slowly being phased out. Under this section *Tablet Menus*, *Tablet Buttons*, *Screen Menus* and *Image Tile Menus* can be located. Tablets, or digitizers as they are more commonly known, are a form of inputting coordinates and executing commands. *Screen Menus* once were one of the main ways to execute commands in early versions of AutoCAD. The replacement of screen menus started in Release 10 with the introduction of pull-down menus and in Release 13 with the introduction of toolbars. The screen menu window is still available in AutoCAD 2006, but is turned off by default.

Much like the screen menu, *Image Tile Menus* are being phased out. Once a very powerful and visual user interface element, these menus have been replaced for the most part by a much improved interface called Tool Palettes. Image tile menus can still be useful in managing existing block libraries with some of the customization that is out there. To learn more about the *Legacy* interface elements, select the *Legacy* node in the *Customizations in* pane. Once the *Legacy* node is selected, click the *Learn more about legacy interface elements* link in the *Information* pane.

WORKING WITH PARTIAL .CUI FILES

The concept of using partial customization files has been around for a long time in AutoCAD and is still supported with AutoCAD 2006. AutoCAD 2006, however, makes the implementation of partial customization files much easier than in previous releases.

A partial customization file normally contains a special set of custom commands and user interface elements. It is called a partial customization file because it acts as an “overlay” to the ACAD.CUI file itself. Therefore, the ACAD.CUI file (standard commands and elements) is loaded by default, and you can overlay a custom .CUI file (with special commands and elements) to your user interface. Typically a partial customization file contains a small set of commands and user interface elements specific to company standards or a set of personal tools that is added “on top of” the standard set of elements in the ACAD.CUI file. The main advantage of using this feature is that the customized elements are self-contained, making it simple to create, maintain, and overlay these to the standard elements, as well as making migration to future AutoCAD releases easier. There is no limit to the number of partial customization files that can be used, and unlike previous releases, references to partial .CUIs that are loaded are maintained in the main ACAD.CUI file. This action ensures that specific partial customization files are loaded with the main customization file each time it is loaded, without having to write AutoLISP code to control the files.

NOTE: An inconvenience in the *Customize User Interface* window is that you cannot directly create new commands and elements in a new partial customization file. You must first create an “empty” partial customization (.CUI) file (that is, one containing no special commands or user interface elements), and second, load the new file and create the new commands and user interface elements such as toolbars and menus.

1. To Create an “Empty” Partial Customization (.CUI) File

Follow these steps to create a new partial .CUI file containing no commands or elements:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Select the *Transfer* tab at the top of the *Customize User Interface* window. (Before this point you have been doing everything in the *Customize* tab.)
3. In the *Customizations in* pane on the right side of the *Customize User Interface* window, select *New CUI File* from the drop-down list. If you double-click each node in the new .CUI file you can see that there are no commands or elements associated with any node.
4. Select *Save As* from the same drop-down list
5. In the *Save As* dialog box, enter a name for the partial customization file in the *File name* text field.
6. Click *Save* to create the .CUI file on disk.

2. To Create New Commands and Elements in a New Partial .CUI File

Once the new partial customization file has been created, follow these steps to create new commands and user interface elements.

1. Type in *MENUNAME* at the command line. Take note of the current customization file. By default the *ACAD.CUI* file is the loaded customization file which is located at *C:\Documents and Settings\\Application Data\Autodesk\AutoCAD 2006\R16.2\enu\support*.
2. Enter the *Menu* command at the Command line to open the *Select Customization File* dialog box. Select the newly created menu (.CUI) file.
3. Browse to the location where you saved your new partial customization file. Select the new .CUI file and click *Open*. This action ensures that the partial customization file is set as the main file.
4. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
5. Select the *Customize* tab at the top of the *Customize User Interface* window.
6. In the *Command List* pane, select the *New* button. Create new commands from scratch by entering the desired *Name* and *Macro* in the *Properties* pane. If needed, create new button images for the commands using the *Button Image* pane. Press *Apply* to add new commands to the *Command List*.
7. In the *Customizations in Main CUI* pane, create any user interface elements such as pull-down menus and toolbars. Drag and drop the new commands from the *Command List* up to the new toolbars and menus.
8. In the *Customization in* pane, select *Open* from the drop-down list and reload the previous customization file that you took note of back in step 1 as the main .CUI file.
9. Load your newly edited .CUI file by right-clicking on the *Partial CUI* node and selecting *Load partial customization file*.
10. Click *OK* when the *Warning* dialog box is displayed informing you that any workspaces in the partial customization files are not available for use. Once the partial customization file is loaded, be sure to update any workspaces with any of the user interface elements located in the partial customization file that you want displayed (see “Using Workspaces to Organize the User Interface”).

The previous procedure assumes a typical application—that commands are created “from scratch” by entering the needed command names, special characters, AutoLISP routines, or other information into the *Macro* field of the *Properties* pane. However, you may want to load standard AutoCAD commands into your custom .CUI file, then alter those commands. To load standard AutoCAD commands into a partial customization file, follow the steps below:

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Switch to the *Transfer* tab in the *Customize User Interface* window. In the *Customization in* pane on the left side, ensure the *Main CUI File (acad.cui)* is listed. If not, select it from the drop-down list. In the *Customization in* pane on the right, use the drop-down list to select your new partial customization file (you may have to select *Open* from the list). If the *Warning* dialog box is displayed, click *OK*.
NOTE: This process varies slightly based on whether your partial .CUI file is already loaded or not.
3. Drag and drop the desired elements and commands from the *ACAD.CUI* to the partial customization CUI. Create new toolbars and menus as needed in the partial customization file.
4. Select *OK* to save the changes.

WORKING WITH ENTERPRISE .CUI FILES

Enterprise customization files are new in AutoCAD 2006. An enterprise customization file, or company customization file, is designed primarily for a CAD manager to control company standards and tools, whereas a partial customization file is designed for personal preferences. One of the advantages of the enterprise customization file for CAD managers is that it cannot be customized through the *Customize User Interface* window because it is displayed there as read-only. Unlike partial customization files, enterprise customization files are capable of controlling workspaces to help enforce company standards. An enterprise customization file can be thought of as a replacement for the main customization file, although it is possible to use both the main and enterprise customization files. An enterprise customization file is loaded prior to the main customization file.

The following steps explain how to load an enterprise customization file in AutoCAD 2006.

1. Use the *Options* command to open the *Options* dialog box.
2. Select the *Files* tab and double-click *Customization Files*.
3. Double-click *Enterprise Customization File*. The default value is ' . '.
4. Click *Browse* and select the customization file that you want to load as the enterprise customization file in the *Select a file* dialog box. Click *Open* after selecting the customization file.
5. Click *OK* to accept the change to the *Enterprise Customization File* option.
6. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window to verify the enterprise customization file cannot be changed.

NOTE: Be sure not to set the same customization file for both the *Main Customization File* and *Enterprise Customization File* under the *Files* tab of the *Options* dialog box. You usually use one or the other customization file in most cases.

MIGRATING CUSTOMIZATION FILES FROM A PREVIOUS RELEASE

The *Customization User Interface* window is not only a very powerful editor for creating and editing user interface elements, but it can be used to migrate older customized menu files to the new release of AutoCAD. You can open either of the legacy menu formats from a previous release (.MNU or .MNS) using the *Transfer* tab of the *Customization User Interface* window. Here a .MNU or .MNS menu file is automatically converted to the new .CUI file format when saved, but the selected .MNU or .MNS file is not changed or removed from the disk.

Although it is possible to migrate an entire older customized menu (.MNU or .MNS) file to a new customization (.CUI) file, the resulting new .CUI file would not contain any of the new commands that are in the new release of AutoCAD. Therefore, two methods of migration are most useful. First, you can open an older .MNU or .MNS file and drag and drop individual user interface elements (such as a toolbar item, menu item, or entire pull-down menu or toolbar) into an existing main .CUI file. Second, you can use a similar method to create a new customization (.CUI) file that can be loaded as a partial customization file.

The following steps explain how to load a .MNU or .MNS file from a previous release and drag and drop selected user elements to a main .CUI file.

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window.
2. Select the *Transfer* tab at the top of the *Customize User Interface* window.
3. In the *Customizations in* pane on the right side of the *Customize User Interface* window, select *New CUI File* from the drop-down list. (You can actually use either side of the *Transfer* tab since items can be copied to or from either side.)
4. In the *Open* dialog box that appears, browse to the location of the desired .MNU or .MNS file from a previous release. By default the *Open* dialog box displays only customization (.CUI) files; therefore, to view legacy menu files, select *Menu files* from the *Files of type* drop-down list. (The .MNU and .MNS files for AutoCAD 2004 or 2005 are located in the directory *C:\Documents and Settings\\Application Data\Autodesk\AutoCAD 200x\R16.x\enu\support* by default. If you are upgrading from AutoCAD 2000 to 2002, the .MNU or .MNS files are located in the directory *C:\Program Files\AutoCAD 200x\Support*.)
5. Select the desired file and click *Open*. AutoCAD creates a new .CUI file from the contents of the menu file.
6. Expand the desired user interface element node under the new .CUI file. Do the same for the .CUI file located in the *Customizations in* pane located on the left side of the *Customize User Interface* window.
7. Drag customization items from the right to the left side of the *Customize User Interface* window.
8. Click *OK* to save the changes.

It is also possible to use the *Transfer* tab to create a new customization file that can be loaded as a partial customization file. To export older customization elements to a new customization file, first create a new .CUI file using the *Transfer* tab, then copy the older elements to the new file in a manner similar to that described above. Once the desired customization has been copied, use the *Save As* option to save the .CUI file to disk.

NOTE: If your existing menus use custom images for any of the toolbar buttons, make sure the button image files are copied into a directory that is part of the AutoCAD 2006 support paths. If not, the images appear as a question mark.

NOTE: If you have custom screen menus and/or image tile menus, you must also migrate those through the *Customize User Interface* window. These menus, as well as tablet menus and buttons, are located under the *Legacy* node in the *Customizations in* pane.

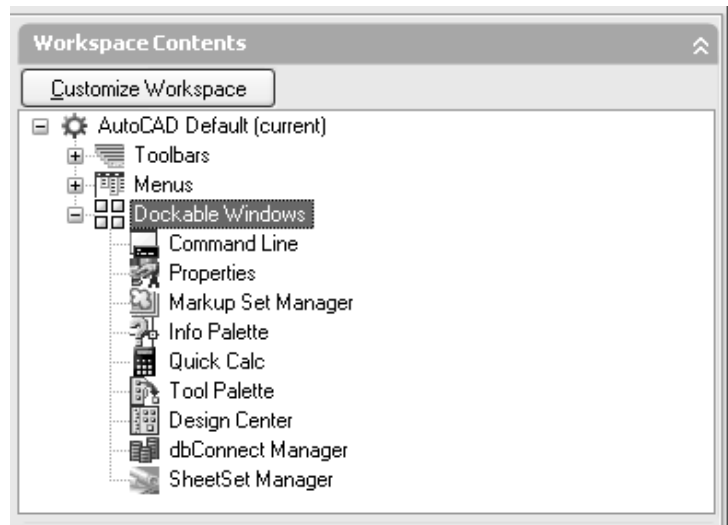
USING WORKSPACES TO ORGANIZE THE USER INTERFACE

A workspace is a new feature in AutoCAD 2006 that provides a method for organizing and saving user interface element configurations. The user interface elements that are controllable through a workspace are toolbars, pull-down menus, dockable windows (such as the *Properties* palette, *Tool Palette*, *DesignCenter*, etc.), and a few other application settings. Therefore, use workspaces to configure and save specific user environments in AutoCAD. There are two ways to create and manage workspaces: the *Customize User Interface* window and the *Workspace* toolbar.

Working with Workspaces in *Customize User Interface* Window

The *Customize User Interface* window provides the greatest control over the way workspaces can be created and managed. Workspaces are saved within the .CUI file and can be shared with others who use the same .CUI file. Workspaces utilize a *Workspace Contents* pane (Fig. 45-26) for making changes to the visibility of toolbars, pull-down menus, and dockable windows, and control the order in which pull-down menus appear along the menu bar (at the top of AutoCAD window).

FIGURE 45-26



Properties of a Workspace

To view the properties of the default workspace, open the *Customize User Interface* window, examine the *Customizations in* pane, and expand the *Workspaces* node (at the top of the hierarchy) by selecting the + (plus) sign. Next select the *AutoCAD Default* workspace. This action opens the *Workspace Contents* pane (see Fig. 45-26) and the *Properties* pane on the right. The following properties are displayed for a workspace.

Name

Each workspace must have a unique *Name*. Each workspace is listed or referenced by its *Name* in the *Customize User Interface* window, the *Workspaces* toolbar, the *Workspaces* option under the *Window* pull-down menu and the *Wsettings* command.

Description

Description is not displayed in the status bar area, but this field can be used to save additional text information for the workspace if needed.

Start On

The *Start On* property determines which type of layout, if any, should be set current when the workspace is applied. The three options are: *Model* (sets the *Model* tab current), *Layout* (sets the last active layout current), and *Do not change* (keeps the current layout).

Model/Layout tabs

This option determines the display of the *Model* and layout tabs at the bottom of each drawing window when the workspace is applied. The three options are: *On* (displays the *Model* and layout tabs), *Off* (hides the *Model* and layout tabs), and *Do not change* (keeps the current *Model* and layout tabs settings).

Screen menus

This option controls the display of the screen menu when the workspace is applied. This setting is important only if you use the legacy screen menus. The three options are: *On* (displays the screen menu window), *Off* (hides the screen menu window) and *Do not change* (keeps the current setting).

Scroll bars

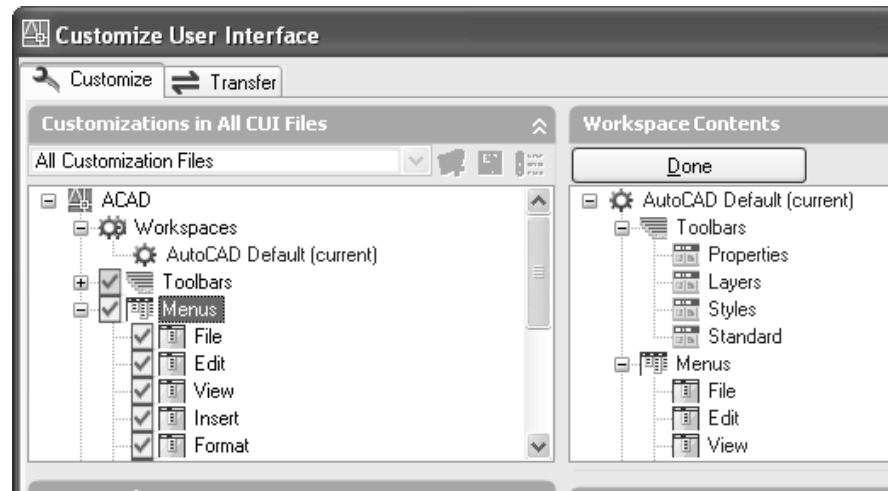
The *Scroll bars* property is used to control the display of the scroll bars when the workspace is applied. Similar to the previous properties, the options are *On*, *Off*, and *Do not change*.

Creating a Workspace with the *Customize User Interface* Window

The following steps explain how to create a new workspace to specify the existence and location of toolbars, pull-down menus and dockable windows.

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window and select the *Customize* tab at the top of the *Customize User Interface* window.
2. In the *Customizations in* pane, select the *Workspaces* node in the tree view.
3. Right-click on the *Workspaces* node and select *New> Workspace* from the shortcut menu. The *Workspace Contents* and *Properties* panes are opened on the right side of the *Customize User Interface* window.

FIGURE 45-27



4. Make the necessary changes to the new workspace *Properties*. You must at least change the *Name*.
5. Click the *Customize Workspace* button at the top of the *Workspace Contents* pane.
6. In the *Customizations in* pane, expand the *Toolbars* and/or *Menus* node under any of the loaded *.CUI* files (including loaded partial customization files). Figure 45-27 shows the *Menus* node expanded under the *Customizations in* pane.
7. Select the user interface elements that you want displayed in the new workspace. A check in the checkbox indicates the item next to the box is included in the new workspace, while no check clears the item from being included. You can select individual toolbars and pull-down menus, or you can select the entire set of toolbars and/or menus.
8. Once the desired menus and toolbars have been included in the new workspace, use the *Workspace Contents* pane to change the order of the toolbar and menu items, if desired, using drag-and-drop. (Top down order in the *Customize User Interface* window equates to left to right on the menu bar.)
9. Specify the orientation of individual toolbars by selecting each in the *Workspace Contents* pane, then changing the *Orientation*, *Default X Location*, and *Default Y Location* in the *Properties* pane below.
10. Specify the appearance and size of the dockable windows by selecting each in the *Workspace Contents* pane, then changing the specific properties in the pane below.
11. Click *Done* at the top of the *Workspace Contents* pane to save and exit the customize workspace process.
12. To set the workspace current, right-click the workspace under the *Workspaces* node of the tree view in the *Customizations in* pane, then select *Set Current* from the shortcut menu.
13. Click *OK* to save the changes back to the *.CUI* file and apply the workspace.

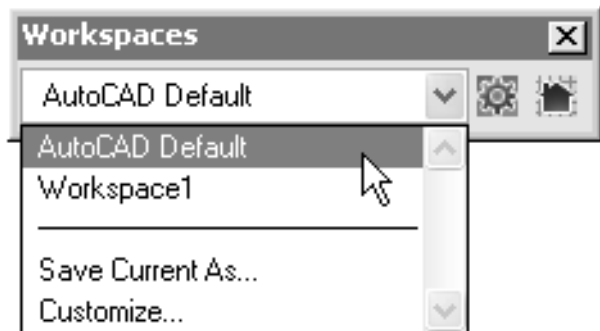
Editing a Workspace

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window and select the *Customize* tab at the top of the *Customize User Interface* window.
2. In the *Customizations in* pane, click the plus sign next to the *Workspaces* node in the tree view.
3. Select the desired workspace and click *Customize Workspace* under the *Workspace Contents* pane.
4. Make any necessary changes, then select *Done* in the *Workspace Contents* pane.
5. Click *OK* to save the changes to the .CUI file.

The Workspaces Toolbar

The *Workspaces* toolbar (Fig. 45-28) allows you to perform a variety of tasks with workspaces. For example, this feature provides a fast way to specify the display and position of toolbars and dockable windows for the current workspace outside of the *Customize User Interface* window. Although these tasks are made easy, it is not possible to completely customize a workspace using the *Workspaces* toolbar. The order and display of pull-down menus must be specified using the *Customize User Interface* window.

FIGURE 45-28



Functions of the *Workspaces* toolbar are given below.

1. Make a workspace current: Select an existing workspace from the drop-down list.
2. Create a new workspace: (See "Creating a Workspace with the *Workspaces* Toolbar.")
3. Produce the *Customize User Interface* window: Select *Customize* from the drop-down list.
4. Produce the *Workspace Settings* dialog box: Select the *Workspace Settings* button (see "*Workspace Settings* and *WSCURRENT*" for more information).
5. Make *My Workspace* current: Select the *My Workspace* button (see "*Workspace Settings* and *WSCURRENT*" for more information).

Creating a Workspace with the Workspaces Toolbar

The following steps explain how to create a new workspace using the *Workspaces* toolbar.

1. Right-click on a toolbar and select *Workspaces* to display the *Workspaces* toolbar.
2. Make the desired changes to the layout of toolbars and dockable windows in your current session of AutoCAD.
3. Select *Save Current As* from the drop-down list on the *Workspaces* toolbar to produce the *Save Workspace* dialog box (not shown).
4. Enter a name for the new workspace in the *Name* field and click *Save*.

Workspace Settings and WSCURRENT

The *Workspace Settings* dialog box (Fig. 45-29) allows you to control how changes to a workspace are saved and what options appear in the *Workspaces* toolbar and *Workspaces* menu option under the *Window* pull-down menu. The *Workspace Settings* dialog box provides the following options.

My Workspace drop-down list

This list allows you to specify which workspace is used when the *My Workspace* button is clicked. The *My Workspace* button appears in the *Workspaces* toolbar (see Fig. 45-28). This feature allows you to quickly reset the user interface elements in the current session with any existing workspace you designate as *My Workspace*.

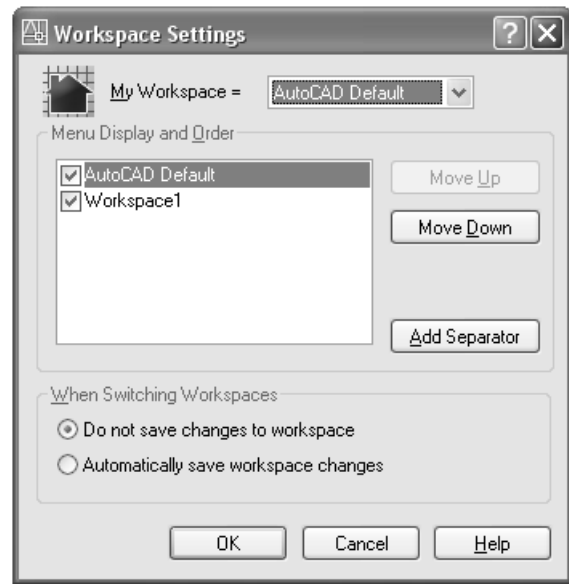
Menu Display and Order

The middle section is used to adjust the order in which the workspaces are arranged in the drop-down list on the *Workspaces* toolbar and under the *Workspaces* option under the *Window* pull-down menu. You can select which workspaces are displayed and use separator bars to group workspaces.

When Switching Workspaces

The bottom section of the *Workspace Settings* dialog box specifies if changes to workspaces are automatically saved or not. For example, if *Automatically save workspace settings* is checked, the current workspace (the current display and position properties of the toolbars and dockable windows) is automatically saved when you switch to a different workspace.

FIGURE 45-29



The Workspaces option in the Windows pull-down menu

The *Window* pull-down menu (Fig. 45-30) contains the same functionality that can be found on the *Workspaces* toolbar. However, there is one exception—the *My Workspaces* option is not available.

WSCURRENT

The *WSCURRENT* system variable stores the name of the current workspace and can be used to set a workspace current.

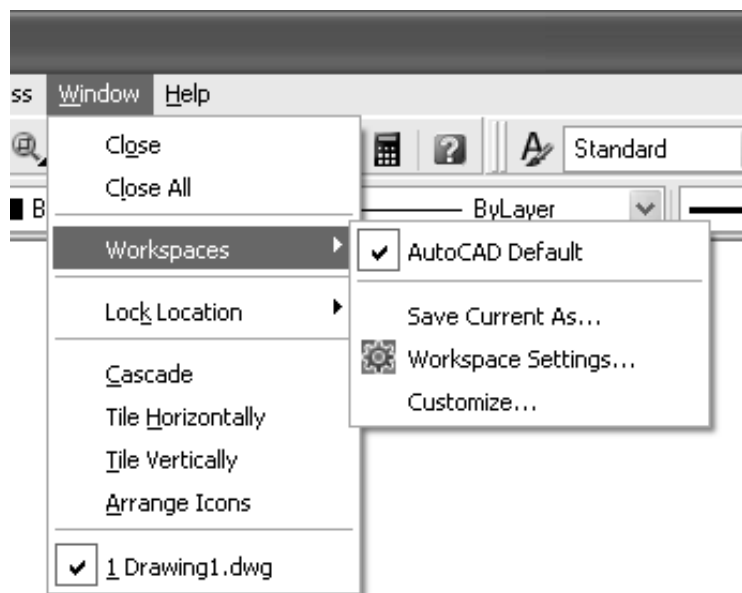
Command: **wscurrent**

Enter new value for WSCURRENT
<"AutoCAD Default">: (Enter an existing workspace name)

Command:

One use of the system variable might be to ensure that the expected workspace is set current during the loading of the ACAD.LSP file that is automatically loaded at startup.

FIGURE 45-30



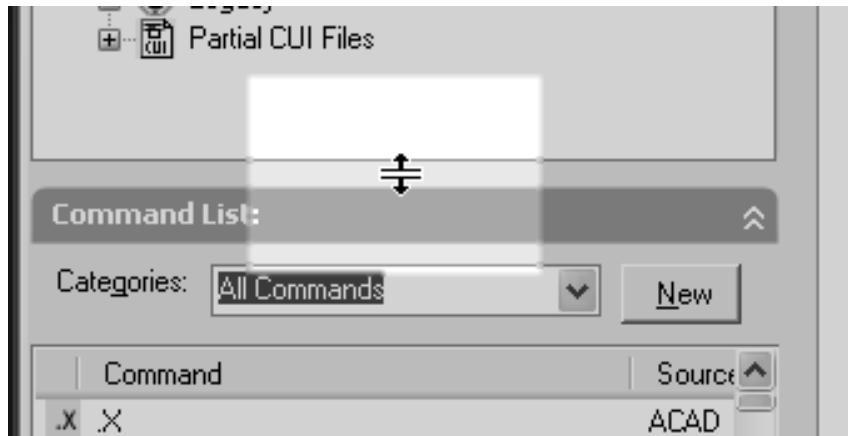
TIPS AND TRICKS

Below are some tips and tricks that help to improve productivity with the *Customize User Interface* window and extend the capabilities of the shortcut keys that are part of the *Customize User Interface* window.

Resizing Panes in the *Customize User Interface* window

It is possible to resize the individual panes of the *Customize User Interface* window. This feature allows you to see some of the items that might normally be hidden or that you would have to scroll to see. To resize the panes in the *Customize User Interface* window, position the cursor between two panes vertically or horizontally. The cursor changes to a divider with arrows pointing in opposite directions so the pane can be adjusted (Fig. 45-31). Hold the left mouse button down and drag in the direction you want the pane to stretch.

FIGURE 45-31



Adding Command Tools to a Tool Palette Based on Commands Created in the *Customize User Interface* Window

One of the enhancements to tool palettes added in AutoCAD 2005 was the ability to add a command to a tool palette, including a newly created "custom" command created in the *Customize* dialog box. Although this task is still possible, the process has become more involved in AutoCAD 2006. The following steps explain how to add a command that is created in the *Customize User Interface* window to a tool palette.

1. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window and select the *Customize* tab at the top of the *Customize User Interface* window.
2. If not already existing, create the desired new commands.
3. Create a new toolbar and add the commands to it (commands that you eventually want to place on the tool palette).
4. Click *OK* to save the changes back to the .CUI file.
5. If the new toolbar is not visible on the screen, display the new toolbar by right-clicking on a toolbar that is currently displayed and selecting the new toolbar name from the shortcut menu.
6. Ensure the desired tool palette (that you want to add the commands to) is also displayed on the screen.
7. Use the *Customize* command to open the *Customize* dialog box.
8. With the *Customize* dialog box displayed, drag the new commands from the toolbar to the tool palette. This will cause a new command tool to be added to the tool palette.
9. Click *Close* to save changes to the tool palette and to exit the *Customize* dialog box.

Using Virtual Keys with Shortcut Keys

In previous releases of AutoCAD, it was possible to create shortcut keys using virtual keys. Virtual keys are keys on the keyboard that have specific names like F1 or NUMPAD0. Virtual keys are not supported in the *Customize User Interface* window. However, it is still possible to create shortcut keys that use virtual keys in AutoCAD 2006 using a .MNU or .MNS file format to import the keys.

The virtual keys that you can create using this method are listed in the table below. The keys must also have double quote marks on both sides of the name as shown in step 4 below for the key assignments.

<u>String</u>	<u>Description</u>	<u>Exceptions</u>
F1	F1 key	Although the F1 key can be assigned a menu macro, this change is discouraged because this key is generally associated with <i>Help</i> . Using a modifier with this key is acceptable.
F2	F2 key	Unmodified, this toggle key switches the state of the text window.
F3	F3 key	Unmodified, this toggle key switches <i>OSNAP</i> on or off.
F4	F4 key	Unmodified, this toggle key switches <i>TABMODE</i> on or off.
F5	F5 key	Unmodified, this toggle key switches <i>ISOPLANE</i> on or off.
F6	F6 key	Unmodified, this toggle key switches <i>COORDS</i> on or off.
F7	F7 key	Unmodified, this toggle key switches <i>GRIDMODE</i> on or off.
F8	F8 key	Unmodified, this toggle key switches <i>ORTHOMODE</i> on or off.
F9	F9 key	Unmodified, this toggle key switches <i>SNAPMODE</i> on or off.
F10	F10 key	Unmodified, this toggle key switches Polar Tracking on or off.
F11	F11 key	Unmodified, this toggle key switches Object Snap Tracking on or off.
F12	F12 key	Unmodified, this toggle key switches <i>DYNMODE</i> on or off.
INSERT	Ins key	None
DELETE	Del key	None
ESCAPE	Esc key	Although the Esc key can be assigned a menu macro, it is discouraged because this key is generally associated with Cancel. Ctrl+Esc and Ctrl+Shift+Esc cannot be assigned a menu macro; these sequences are controlled by Windows.
UP	up arrow key	Must be used with the CONTROL modifier.
DOWN	down arrow key	Must be used with the CONTROL modifier.
LEFT	left arrow key	Must be used with the CONTROL modifier.
RIGHT	right arrow key	Must be used with the CONTROL modifier.
NUMPAD0	0 key	None
NUMPAD1	1 key	None
NUMPAD2	2 key	None
NUMPAD3	3 key	None
NUMPAD4	4 key	None
NUMPAD5	5 key	None
NUMPAD6	6 key	None
NUMPAD7	7 key	None
NUMPAD8	8 key	None
NUMPAD9	9 key	None

To create shortcut keys using virtual keys, follow the steps below:

1. Start Notepad by going to the *Start* button in the Windows taskbar. Then select *Programs > Accessories > Notepad*.
2. In Notepad, select *File > Save As*.
3. In the *Save As* dialog box, select *All Files* from the *Save as type* drop-down list.
4. Enter a name ending with *.MNS* in the *File Name* field, like *ExtendKeys.mns* and click *Save*. Make sure to remember where the file is being created on disk.
5. In Notepad, type the following:

```
***MENUGROUP=SKEYS
```

```
***ACCELERATORS
```

The value after the equals symbol on the line beginning with ***MENUGROUP* can be any name that you want as long as it uses all alpha characters and contains no spaces. The value is just to get the file imported into the *Customize User Interface* window and nothing more. ***ACCELERATORS* is used to notify the import process that the interface elements to follow are of the shortcut key type.

6. Once the header information is in the file, the actual key definitions need to be added. To do that, follow the syntax and examples below.

Syntax: [Modifier(s)+accelerator_key] command string

Examples:

```
[CONTROL+"INSERT"]._-INSERT
[INTERNAL+"F1"]^c
["NUMPAD9"]45
```

The first example uses the *Ctrl* modifier with the *Ins* key to start the *Insert* command. The *Shift* modifier can be used with the *Ctrl* modifier, like *[CONTROL+SHIFT+"INSERT"]._-INSERT*. The second one uses a special modifier called *INTERNAL* which overrides the Function keys. The third and final example shows how to map an angle value to the Number Pad section of the keyboard.

7. In Notepad, select *File > Save*.
8. Use the *CUI* or *Toolbar* command to open the *Customize User Interface* window and select the *Transfer* tab at the top of the *Customize User Interface* window.
9. In the *Customizations in* pane on the right side of the *Customize User Interface* window, select *Open* from the drop-down list. In the *Open* dialog box, browse to the *.MNS* file that you created. Make sure *Menu files* is selected from the *Files of type* drop-down list.
10. Select the menu file and click *Open*.
11. Expand both the *Keyboard Shortcuts* and *Shortcut Keys* nodes in the two *Customization in* panes.
12. Select the shortcut keys from the menu file that was just imported and drag them over to the *.CUI* file that is on the left side of the *Customize User Interface* window. Once copying the commands is complete, click *OK* and test the new shortcut keys.

You can make changes to the macros as needed once they have been placed into the *.CUI* file, but you won't be able to reassign the virtual key in the *Customize User Interface* window if it gets removed accidentally. In this case, you must repeat the import process.