PopChar Control Panel
Version 2.5.2, © 1990,1991,1992 by Günther Blaschek

Using PopChar

PopChar is a little control panel (formerly known as a cdev) that enables you to generate every possible character that is available in the current font without having to remember keyboard combinations.

Suppose, you are working with MacWrite (which you probably are when you read this documentation) and you would like to insert the character "◊" in your document for some reason. Looking it up with Key Caps can become quite cumbersome, especially when the character you're looking for can only be generated by first pressing option-"n". Another simple way to quickly find the desired character would be to use the Character Map DA (written by myself for exactly this purpose).

Now there is an even more convenient possibility to do this. Once you have PopChar installed by copying it into your System folder, you will see a small square with a "P" in it in the top left corner of the screen (that is, in the menu bar):

All you have to do is to move the cursor into this square and press the mouse button. Do not press any modifier keys, and do not let the mouse button go too early. Depending on the type of your machine and other installed software, it may take up to half a second before anything happens. Anyway, a menu with all characters available in the current font will pop up eventually. The following screen dump shows how this menu will look like when Monaco is the current font:

Simply move the cursor over the character you want and release the mouse button. The character will get inserted in your text as if you had typed the proper key combination on the keyboard.

If you need the same character again and again, it will be more efficient to press the appropriate keys. PopChar provides some help for such cases by displaying the keyboard equivalents of the current character in the top right corner of the table.

How does PopChars know about the current font? Well, this is the main trick and also a possible source of incompatibility with certain applications. PopChars first inspects the menu bar by looking for a checked font name. If it finds one, then this is the current font. Otherwise, the current font of the frontmost window is used. If there isn't any window, PopChars will display the Chicago font. This means that PopChar will very likely not work as expected when the application doesn't display the current font in any of its menus.
By the way: It doesn't matter whether the fonts are listed in a "regular" or in a hierarchical menu. PopChar looks through all levels of menus.

Configuration

Since PopChar is a Control Panel, you can configure it to match you requirements and your personal taste:
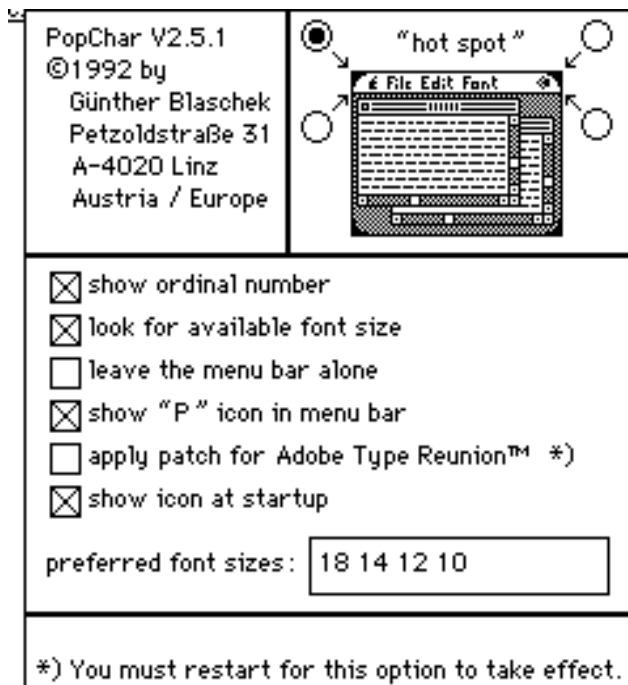
In the "hot spot" area, you can specify where PopChar should look for mouse clicks. PopChar is preconfigured with the very top left corner of the main screen as the hot spot. If you use other utilities that also look for clicks in this corner, you may want to configure PopChar to come up when the mouse is clicked in a different corner of the menu bar. By the way: PopChar does not conflict with OnCue™, since PopChar uses a smaller sensitive area in the very corner of the screen. It will not come up when you click directly on the OnCue icon.
Note that PopChar is deliberately confined to the main screen (i.e., the screen that contains the menu bar) for configurations with multiple monitors. The hot spot is always located in the menu bar, and the character table will also always be displayed on this screen.

"show ordinal number" makes PopChar display the ASCII code of the currently selected character in decimal and hexadecimal, as shown in the following figure.

"look for available font size" affects the way PopChar selects the font size it uses in the display. see the paragraph on font sizes below for details.

The PopChar window normally appears on top of the menu bar. This can cause problems with some non-Apple monitors and with certain INITs that draw into the menu bar even when PopChar's character table is shown. An example for that is Møire's clock feature. Checking "leave the menu bar alone" makes PopChar move the window below the menu bar, so that such interferences cannot happen any more.

If you agree with Bruno Schäffer (in whose opinion the "P" icon pollutes the menu bar), you can turn the "P" icon off by unchecking the corresponding check box. This is, however, not recommended when you have set the hot spot to the bottom of the menu bar, since you would then probably find it difficult to hit the hot spot.

"apply patch for Adobe Type Reunion™" applies an additional patch at startup time that disables Type Reunion when the mouse button is pressed in PopChar's hot spot. Since this patch is only applied when the Macintosh boots, you have to restart you computer if you changed this setting. See the section on Type Reunion below for details.

"show icon at startup" makes PopChar display its icon on the bottom of the screen when you (re)boot you Mac.

The "preferred font sizes" field is dedicated to "Snuffy" Smith and all others who suffer from bad eyesight. You can specify up to 5 favorite font sizes (separated by spaces) in which PopChar should display the character table. PopChar comes preconfigured with the setting "14 18 12 10", as shown in the snapshot above. This means that 14 is the preferred size. If the current font is available in this size, PopChar will use it, otherwise it will look for alternate sizes in the order specified in the list. Now, what happens if the current font is not available in any of these sizes? This depends on the setting of the "look for available font size" check box. If the box is checked, PopChar will scan for an available font size. First, it scans the font sizes starting with the preferred size up to 48, and – if that attempt fails – once more from the preferred size down to 10. This procedure should usually find an available font size. If there really is no font size available in the range 10 thru 48 (or if the "look for available font size" check box was clear in the first place), PopChar will finally give up and display the characters in the preferred size, in which case the characters will have a jaggy appearance.
Since *TrueType fonts* are available in virtually any size, PopChar will always use the preferred size if the current font is a TrueType font. This is not the case when PostScript fonts are used with Adobe Type Manager. ATM pretends that only the sizes for which you have a bitmapped font are available.
Select your favorite font sizes carefully! Some fonts may not be legible in small sizes, while others can easily fill your screen in bigger sizes, particularly if you have a small monitor. It is even possible to set the preferred size to, say, 80, in which case you will only see the first couple of characters. I suggest a maximum font size of 18 for small monitors and 24 for portrait monitors and larger. Since big font sizes also take longer to draw, you should use them only if there is a good reason.
*Hint:* If you want your fonts always displayed in a single particular size, enter only this size in the list and clear the "look for available font size" check box.

Want More Characters?

When you move the cursor from the character table to the header of the window, the item "More…" appears in the top right corner of the window (where the key combination is normally displayed). If you want to insert more characters in a row, select the "More…" item and release the mouse button:

The table will then briefly disappear and reappear in a larger window with an additional text area and three buttons. The next picture shows how this looks like on a black and white monitor. When your monitor can display at least 16 colors or shades of gray, the display will be much nicer, of course.
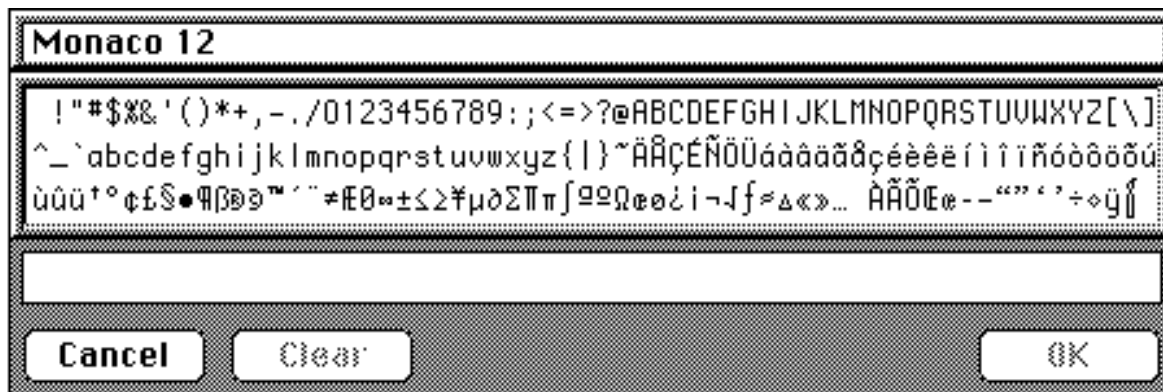
You can now click several characters in a row and insert all of them by clicking the "OK" button. The characters will appear in the white area above the buttons. Clicking "Cancel" aborts the whole process, as you would expect, and "Clear" removes all characters inserted so far.
You can also insert characters by typing them on the keyboard. The following keys have special meanings:
  Return, Enter: Same as clicking "OK". These keys default to "Cancel" when no characters were selected, in which case the "OK" button is disabled.

ESC, Clear: Same as clicking "Cancel".
Delete: Removes the last displayed character.

Please note that the area where the selected characters appear is not editable. I may include this in a future version, but for now, you can only remove the last character and clear the whole string.

When the extended window is shown, PopChar cannot be invoked again by clicking the hot corner. When you have the "show P icon" option enabled, you will also notice that the icon has been removed from the menu bar.

When you invoke PopChar while SoftPC is active, the "More…" item is not available. This has to do with the special trick PopChar performs for SoftPC. This trick only works for a single character, but not for a series of characters.

When the current font is displayed in an exceptionally big size, the buttons at the bottom of the window may not be visible. In this case, you will have to use the keyboard to confirm or cancel the dialog.

PopChar and Adobe Type Reunion™

The struggle for ATR compatibility began when I received the first complaints that PopChar did not recognize fonts that appeared in ATR's hierarchical menus. When I figured out that ATR can be disabled temporarily by holding down the shift key, I included a patch that made ATR believe that the shift key was down when the mouse was clicked in PopChar´s hot spot. This workaround worked reasonably well — until System 6.0.7 was released. For some unknown reason, PopChar disabled ATR entirely on machines equipped with System 6.0.7. I desperately tried different things to work around this problem. One day, I removed the patch again and was surprised to find that everything was fine — until one user running System 6.0.5 complained that PopChar was incompatible with ATR…

Another month later, I had to discover that this incompatibility had absolutely nothing to do with the version of the System file. I must admit that I still do not know under which circumstances PopChar conflicts with ATR. Lacking this knowledge, there seems to be only one reasonable way to make PopChar cooperate with ATR: to place the burden on you, the user.

When you find that PopChar does not recognize stylistic variations in submenus, you should check the "apply patch for Adobe Type Reunion™" option and restart your Macintosh.

When PopChar seems to disable ATR entirely, you should try to uncheck the "apply patch" option and restart.

I cannot guarantee that this procedure will work in all cases. There is still a chance that PopChar refuses to find stylistic variations in submenus when the option is unchecked **and** disables ATR when the option is checked. In this case, you should uncheck the option and hold down the shift key when you click in PopChar's hot spot. Pressing the shift key temporarily disables ATR and flattens the hierachical menus so that PopChar can find the current font. I sincerely hope that you will never need this workaround, but experience shows that one can never be sure…

There is also no guarantee that a particular setup will work forever. I received one report where PopChar worked together with ATR until another utility was installed. Strange enough, removing the utility in question did not cure the problem any more. Should you discover an incompatibility, try to change the setting of the "apply patch" option.

If everything fails, please send me a report with as many details as possible. Your contribution could help me to find a general solution to this problem.

PopChar and TrueType

Version 1.4 of PopChar was released at about the same time as Apple´s TrueType. US users were the first to discover that PopChar did not work with TrueType fonts. I spent many hours to figure out what went wrong and finally discovered that the FMSwapFont toolbox routine produces funny results when called for a TrueType font. Since this routine provides the only way to figure out which characters are available in a given font, I could not find any way to fix this bug (which was not mine). Versions 1.5 and higher of PopChar contain special code that displays all characters with the ordinal numbers 32 through 255 (except 127) in the PopChar window, when a TrueType font is detected. This range can contain so-called "missing characters" which are then displayed as rectangles. This is for example the case with the Symbol font.

I will make further attempts to find a workaround for this problem, but in the meanwhile you will have to live with this interim solution.

TrueType uses a character cache to keep track of already generated characters. It is fast in most cases, because the characters are generated only on demand. When you activate PopChar with a TrueType font, you will find that it takes excessively long to fill the pop-up window with *all* characters of the font. For example, it takes almost 10 (=ten!) seconds to display all characters of Times on a Macintosh IIsi. When you watch PopChar filling the window, you will realize that there are considerable pauses when unusual characters (e.g., accented letters) are drawn. This is because these characters have not been written before and hence are not yet available in the character cache. If you activate PopChar a second time for the same font, the display is much faster (unless the character cache has been cleared

again, because many other characters in different fonts have been drawn in the meanwhile).

You can avoid the above problems altogether by installing the preferred font sizes as bitmapped fonts together with each TrueType font. For example, my System file contains both the TrueType version of Times and the sizes 9, 10, 12, and 14 as bitmapped fonts. The bitmapped characters can be displayed much faster than their TrueType equivalents, and the problems with determining the available characters do not occur any more. Another advantage (which is not related to PopChar) is that characters in small sizes are more readable in the traditional bitmapped fonts than in TrueType fonts.

PopChar and SoftPC

SoftPC – the famous IBM PC emulator by Insignia Solutions – uses key codes rather than character codes to simulate an IBM keyboard. Versions 2.1 and newer of PopChar try to determine whether SoftPC is running by looking at the name of the current application. If the application's name starts with "SoftPC" (e.g., "SoftPC AT"), PopChar will not generate a single keystroke but rather simulate a sequence of Alt+keypad keystrokes. This seems to work in most cases, although I have found that some characters cannot be generated always. If you have problems with direct insertion of certain characters, enable the "show ordinal number" check box and note the decimal number of the desired character. Then hold down the option (aka "Alt") key and type the number on the keypad.

Installation and Deinstallation

To install PopChar, simply move it into your System Folder and restart your Macintosh. When PopChar is installed, it permanently takes up 13518 bytes of memory. To temporarily disable it, hold down the mouse button during restart. To permanently remove it, drag it out of your System folder.

Possible Problems

There is a known incompatibility between older versions of the Mover control panel and PopChar. When both are installed, PopChar will crash with an address error or a bus error when you release the mouse button. I was not able to find the source of this conflict. You must therefore remove Mover if you want to use PopChar. However, I was told recently that PopChar works together well with Mover version 3.0.
Some users reported a conflict between PopChar and several versions of MacWrite. I also use MacWrite together with PopChar, but have never experienced this problem. I have therefore not yet been able to find the source of this incompatibility.
I have also received reports that PopChar does not work with MacDraw Pro. This seems to be the case only when running under a System older than System 7.
Some applications use custom keyboard mappings or rely on key codes rather than character codes. An examples for that is the terminal emulator tn3270. PopChar will display the current font in these applications, but an attempt to insert the selected character will not produce the expected result. There is no solution for this problem.
There is a conflict between older versions of BeHierarchic and PopChar. If you want to use BeHierarchic together with PopChar, make sure you have version 1.0.5 or higher of BeHierarchic.

If PopChar Refuses to Find the Current Font

If PopChar should fail to find the current font in a particular application, you should provide me with as much information as possible (see also the "Any Problems?" section below). Versions 2.3 and higher of PopChar contain extra debugging code that can help me to solve such problems. Hold down the control key (not the cloverleaf key, but the one labeled "ctrl" on extended keyboards) while clicking in the hot spot. Whenever you do this, PopChar appends some crucial information to a file named "PopChar Log" in the System Folder. This is a TeachText file that you can look at. Don't bother trying to find the error by yourself, but rather e-mail me a copy of the file or send me a diskette with such a file on it. Please do not send me just a printout of the file, since it may contain special characters that do not appear on the paper. I really do need a copy of the file itself that I can inspect.

Version History

Version 1.0 of PopChar was an INIT. It worked in principle, but had a couple of nasty bugs and inconveniences.

Version 1.1 was turned into a Control Panel Document. The ability to define the hot spot and to suppress the icon display at startup was added.

Version 1.2 had two additional features: The first was that PopChar displays a nicer pop-up window when running on a color monitor or on a monitor with at least 16 shades of gray. The second was the display of the character's ordinal number.

Version 1.3 also offered two new features. The "always use available font size" check box was added, and a first attempt was made to make PopChar compatible with Adobe Type Reunion.

Version 1.4 corrected some minor bugs and included the "leave menu bar alone" option (which unfortunately introduced a new bug).

Version 1.5 corrected the bug in the "leave menu bar alone" option and introduced an ugly special case for compatibility with TrueType (see above).

Version 1.6 was made "more compatible" with Adobe Type Reunion under System 6.0.7.

Version 1.7 introduced the "big font" option and a workaround for the nasty ATR problem.

Version 1.8 included a couple of cosmetic changes. The Control Panel display was redesigned, and color icons were included for System 7.0. This version was never publicly released.

Version 1.9 included a new routine for drawing color icons during startup and introduced the "apply ATR patch" option.

Version 1.9.1 corrected an error that caused crashes under System 7.0 with both virtual memory and 32-bit addressing enabled.

Version 1.9.2 corrected an error that caused the character table to be displayed incorrectly on systems with multiple monitors.

Version 1.10 also displayed the size of the currently displayed font in the pop-up window.

Version 2.0 introduced the "P" icon in the menu bar and corrected an internal error that might have been the cause of some incompatibilities in earlier versions. The version numbering step from 1.x to 2.0 was made because several users thought that 1.10 were identical with 1.1.

Version 2.1 was the result of a change in the display of the characters. Some users complained that they had to wait until all characters were shown before they could select a character. Now the display is done while a selection is in progress. This is in particular useful when a TrueType font is displayed. Furthermore, an attempt was made to generate the proper Alt+number keystrokes for SoftPC.

Version 2.2 introduced the check box for turning the "P" icon off.

Version 2.2.1 was the result of some internal changes. The menu scanning algorithm was improved, a bug that had to do with the system font was removed, and the ability to generate a log file was included.

Version 2.3 provided additional radio buttons in the control panel with which you can move the hot spot to the bottom of the menu bar. Also, the "P" in the menu bar is drawn in red if you have a color monitor. And – most important – the "More…" feature had been included.

Version 2.4 was an internal version that contained a simple workaraound for RagTime (which, unfortunately, did not quite work).

Version 2.5 introduced the flexible font size selection and corrected an error that resulted in a crash when the ATR patch was installed. Also, PopChar was made compatible with RagTime.

Version 2.5.1 was a bug fix release. Editing the font size string caused occasional crashes, particularly on pre-System 7 Macs. Another attempt was made to fix the ATR incompatibility.

Version 2.5.2 corrects an error that caused a crash in Think Pascal and also with certain non-standard menus. Also, PopChar now hilites the menus during its search for a font menu.

Frequently Asked Questions

Q: The top left and the top right corner of my screen are already occupied by other utilities. Can I still use PopChar?
A: Perhaps. You could try to rename PopChar so that it loads before or after the other utilities. PopChar uses a rather small sensitive area right in the corner of the screen. One of the other utilities might be more tolerant, so that you can use the same corner for different purposes. For example, you can activate OnCue by clicking on its icon and PopChar by clicking in the square in the very corner. It might also help to move the hot spot to the bottom of the menu bar, although this makes it more difficult to quickly access PopChar.

Q: Could PopChar be customized such that it activates by clicking in a bottom corner of the screen?
A: No. When PopChar recognizes a click in the hot spot, it first passes the original click to the application before displaying the pop-up window. The application must react to the click by updating its menus, which is only possible when the click was in the menu bar. The next best thing I could do was to provide you with a possibility to move the hot spot to the bottom of the menu bar.

Q: Could PopChar be modified so that it displays only those characters which require special key combinations? The window would become much smaller, because the letters and digits would not have to be shown.
A: PopChar deliberately shows *all* characters of the present font. Although this might seem too much of a good thing for fonts like Geneva or Times, it is absolutely necessary for fonts like Symbol, Cairo, Mobile, or Zapf Dingbats, as these fonts contain special characters which correspond to letters and digits.

Q: Since I live in Wonderland, my Mac has a keyboard with a different key layout. PopChar suggests wrong keyboard combinations in some cases. Can it be corrected such that the Wonderlandish keyboard is recognized?
A: PopChar scans the currently active KCHR resource in the System file to determine the proper key combination. This is correct in most cases. There are, however, countries where additional translations are made which are not reflected in the KCHR table. This is, for example, the case in Austria and Germany. I have not yet found a way to determine the correct key combination in all these cases. You will have to live with that (as I have to).

Q: To insert a character from the System font, I always have to select "System" from the Font menu first. Couldn´t PopChar be modified such that pressing the option key makes PopChar display the Symbol font and insert the selected character in this font?
A: This is possible in principle, but would require PopChar to feed the application with a sequence of "user" input: a) menu selection of Symbol, b) key press, c) menu selection of the previous font. Faking a menu selection is a fairly complex task, which would make PopChar much bigger with only a little gain of power.

Distribution

PopChar is free, but I reserve all rights to it. This means that you may use it without paying for it, and that you may give it to others without charging for it — nothing more and nothing less. If you like PopChar very much, just send me a picture postcard of your home town with some nice words on it. It is this sort of feedback that keeps me publishing utilities like this one for free. By the way, it would also be great if you could find some unusual stamps. My son collects them all.

Bundling PopChar with your product or including it on commercially distributed media requires my explicit consent. Contact me under the address below for details.

You are encouraged to upload PopChar on any bulletin board you know of. The only requirements are that PopChar must be distributed in its original form and that this documentation must go along with it. If you have access to a bulletin board and would like to help me to distribute new versions of PopChar, please contact me under one of the e-mail addresses listed below.

Any Problems?

Should you experience any problems with PopChar, PLEASE provide me with as much information as possible. Your report should include
- Macintosh model (also: which keyboard type, which monitor, color mode, etc.)
- System version
- PopChar version
- What exactly happens when you do what?
- Which other INITs and cdevs do you use?
- With which other product (which version) is PopChar incompatible?

Before reporting a problem, you should try different configurations and see whether the problem persists. For example, try to
- use PopChar on another Macintosh or with another System version
- disable other INITs until you find out which one causes the conflict
- rename PopChar to load it before or after other INITs. Under System 7, also try to move it into the Extensions Folder or into the System Folder proper.

I will make every reasonable attempt to improve PopChar. However, I cannot promise that I will ever be able to fix your problem (in particular, if I do not have the hardware or software to reproduce your problem) or that I will find the time to do so.

Please do not send diskettes, asking me to send you an updated version of PopChar. I don't want any money for PopChar, but neither do I want to spend money for distributing it.

Credits

Many PopChar users have contributed their ideas and sent me their wish lists. I am obliged to all of them, but in particular I would like to thank
- ALF (alias Alexander Falk), who spent hours on the phone during remote debugging sessions.
- Gary Holland and Joe Buccino, who provided the information I needed to make PopChar compatible with Adobe Type Reunion. Gary also discovered that PopChar couldn't recognize the system font in some cases.
- Tony Affigne, who kindly acts as my gateway to CompuServe.
- Andrea Pessino, who found out that PopChar trashed an important register and also suggested a fix for this bug.

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