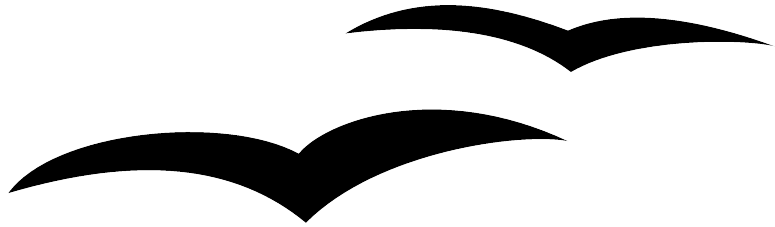


How to Handle Special Characters in OpenOffice.org



How to Handle Special Characters in OpenOffice.org
[0.2]
First edition: [04/22/2004]
First English edition: [04/22/2004]

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Overview

This document describes some of the methods that a user can use to insert Special Characters into OpenOffice.org documents. The methods here are tried and tested but there is no guarantee that any or all will work on every system. Three of the methods, using the Special Characters dialogue, the AutoCorrect Replace list and Macros, will probably work in OpenOffice.org on all platforms. The final method requires some operating system level configuration of the keyboard but is extremely flexible and uses key combinations that should work on most UNIX, Mac or Windows systems. Selecting the 'best' method depends on how often you need this function. The special Characters dialogue is practical for rarely used characters. Macros which are assigned to buttons, menu items and shortcut keys, are practical when the characters are needed more often, but they become impractical when you need several dozens. In that case, key combinations, like deadkeys, Multi_key and Mode_switch, can be a better solution. The advantage of key combinations is, that they are available in all X applications.

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Feedback

Please direct any comments or suggestions about this document to:
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Acknowledgments

I wish to acknowledge the work of Natalie whose original work is what inspired this document.

Modifications and updates

<i>Version</i>	<i>Date</i>	<i>Description of Change</i>
[0.1]	[05/02/2004]	Initial Edition
[0.2]	[2006-01-30]	[grs: hyperlinked contents and added ALT sequences]

Introduction

OpenOffice.org offers several ways in which Special characters can be inserted.

- Use the Special Characters dialogue.
- Add the characters to the AutoCorrect/AutoFormat Replace list.
- Create Macros and assign these to buttons, menu items or shortcut keys.
- Use Key Combinations using deadkeys, Multi_ keys and/or Mode_ switch.

The first three methods are effective only in OpenOffice.org applications whereas the last method, **Key combinations**, is particularly effective on X11-based systems and has the advantage that it can also be used by most X applications and is also available on Windows systems.

Before deciding which method is best for your needs, see OpenOffice.org Help for a short tutorial on inserting Special Characters. To get to it

Click on **Help > Contents > Index > Search Term** and enter the following:

special characters; inserting (tutorial)

In this **Help** document, there is a bullet section that states: *“in any text input field (such as the URL field of the Function Bar or in the input fields in the Find&Replace dialogue) you can press Shift+Ctrl+S to call the Special Characters dialogue.”* This key sequence is very useful to remember.

Inserting Special Characters from the Menu

The availability of special characters depends on which font you use. For example, your document uses Times New Roman so go to **Insert>Special Character** to insert the Copyright symbol (©). In this case, the font has this glyph. However, let us take another scenario with another font, say Caption, and try repeating the action. The next two screen shots might help to explain this.

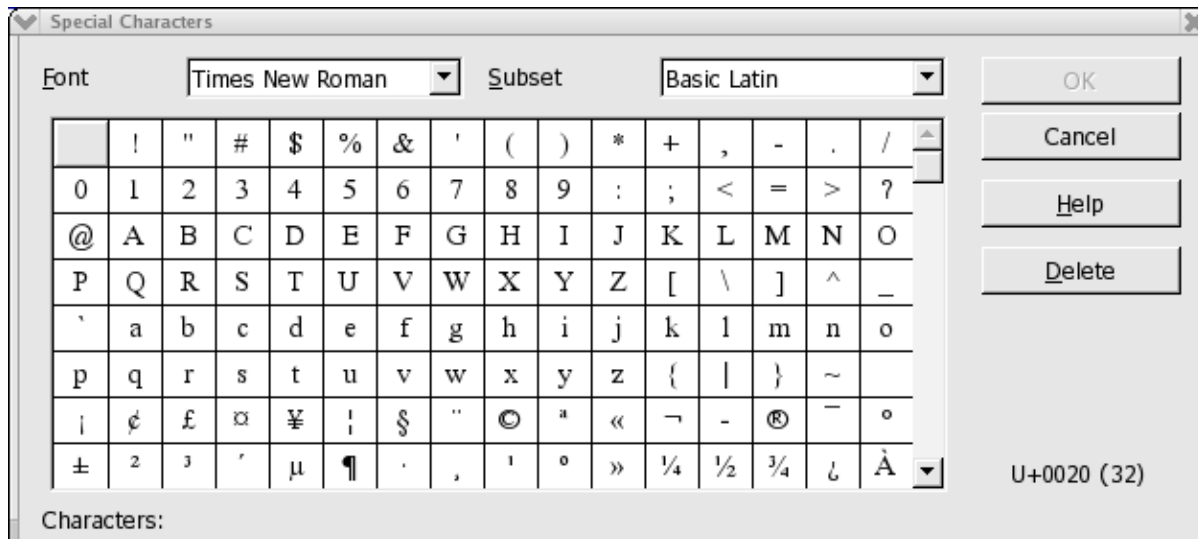


Illustration 1

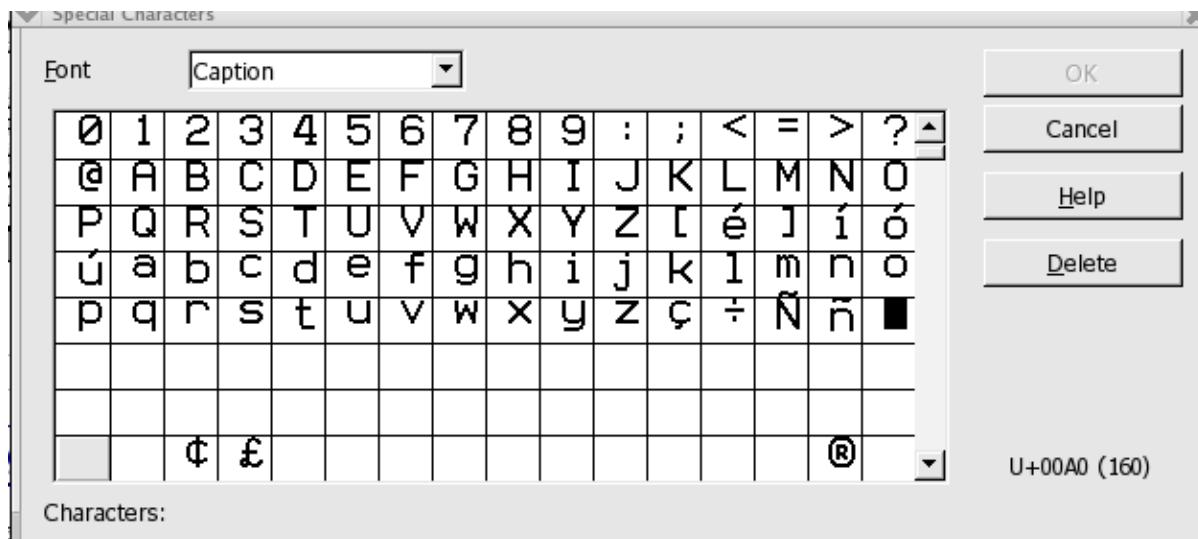


Illustration 2

As you can see, the Caption font is not as complete as for Times New Roman. In fact it has only 14 rows of characters and no Subset list box in the dialogue. Since there is no copyright special character available; trying to insert one will fail.

There are two ways that can be used to insert special characters using the menu methods:

Insert > Special Character from the drop down menu.

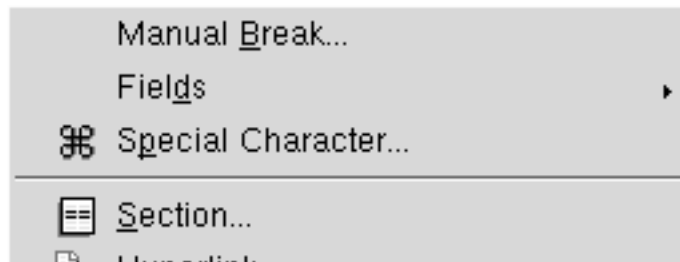


Illustration 3

or

Click the Insert button on the Main tool bar to open the floating toolbar, then click the Insert Special Character button.

The following annotated screen shots illustrate second process since employing the OpenOffice.org tools is some times not obvious.

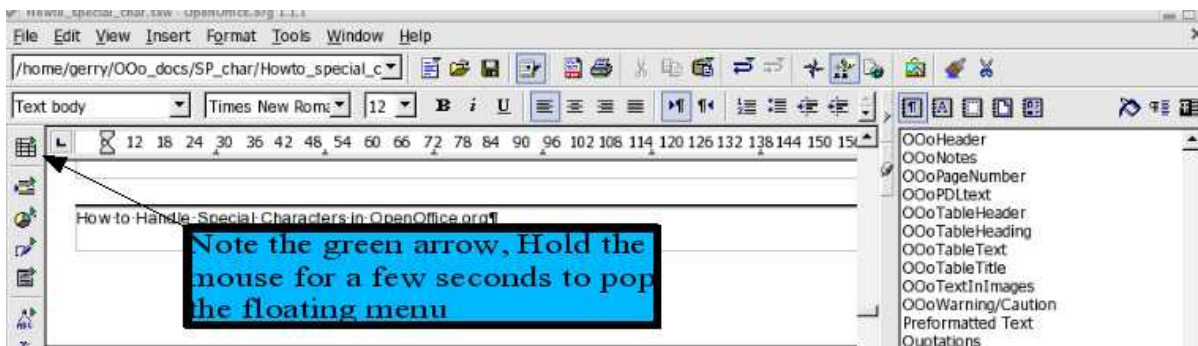


Illustration 4

which brings up the floating window as shown below:

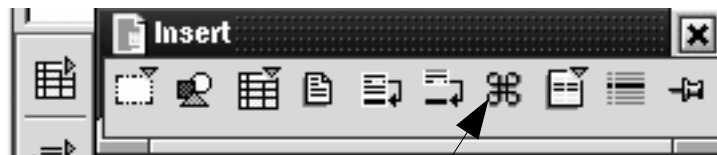


Illustration 5

Click the Special Characters icon.

The Special Characters dialogue opens with the current font selected in the same manner as invoking it from the Insert menu.

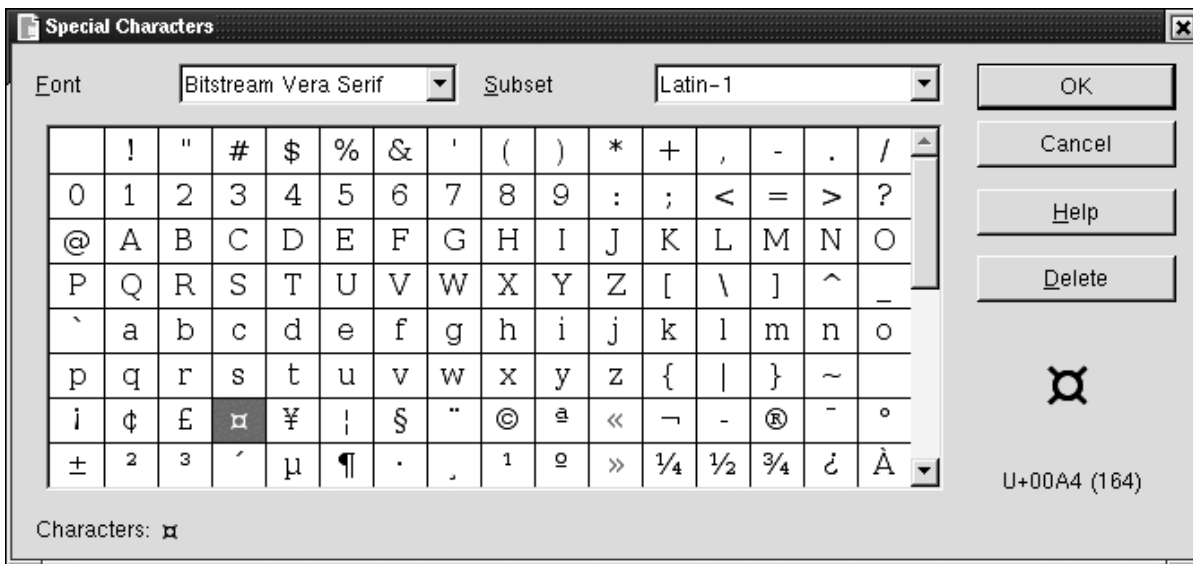


Illustration 6

The Font list box shows a list of available fonts. The Subset list box shows the character subsets that are available in the selected font. The Character table shows all characters that are available in the selected font. Every selected character will be added to the Characters field at the bottom of the dialogue. On the right side, below the buttons, an enlarged view of the selected character is shown as well as the Unicode and the ANSI code (in parenthesis). The Delete button or Alt+D will remove all characters from the Characters field. Click Cancel or press the Esc key to close the dialogue without inserting a character. Click OK or press the Enter key to insert the characters from the Characters field.

Summary

Using the mouse: Using the mouse, click Insert on the toolbar to open the menu, then select Special Characters to open the dialogue. Use the mouse to select the list boxes and use the scrollbar to scroll up or down to locate the character you need. Use the Subset list box to jump to the desired subset, or use the scrollbar on the right side of the character table. Click a character in the Character table to select it. The Delete button will remove all characters from the Characters field. Click Cancel to close the dialogue without inserting a character. Click OK to insert the characters from the Characters field.

Using the keyboard: Use the Tab key to navigate between the list boxes, character table and buttons. Type one or more letters to select another font or subset. For example: type 'c' to move to the first font name that starts with a 'c', type 'ch' to move to the first font name that starts with 'Ch'. Use the Home, End, PageUp, PageDown, Up and Down keys to scroll up or down. Use the Arrow keys to navigate through the character table, or press a key to jump

to the respective character. Press the `Space` bar to select a character. `Alt+D` removes all characters from the `Characters` field. Press the `Esc` key to close the dialogue without inserting a character. Press the `Enter` key to insert the characters from the `Characters` field.

Using the AutoCorrect Replace List

To implement this method, do the following:

Select **Tools > AutoCorrect/AutoFormat** to open the dialogue.

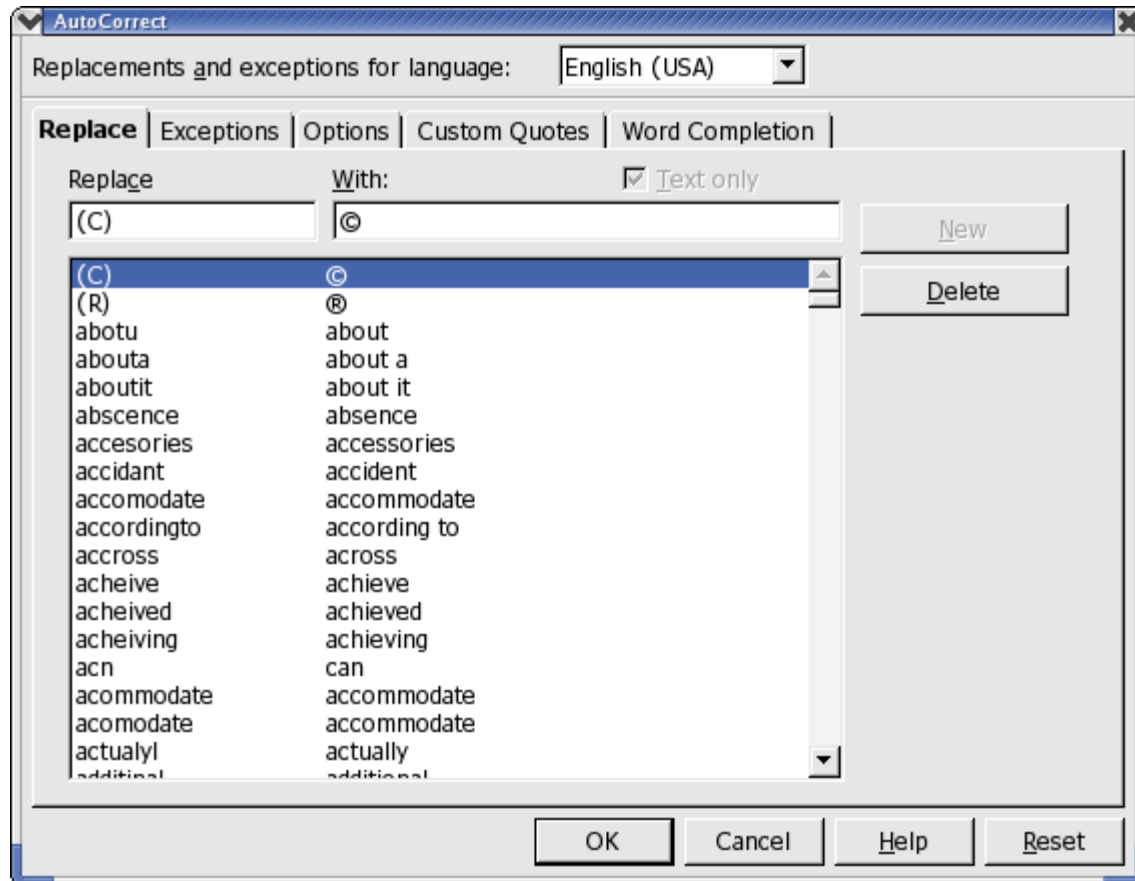


Illustration 1

Using **Shift+Ctrl+S** to bring up the Special Character dialogue box also works for inserting characters into the text input fields of the AutoCorrect dialogue. However, the Font list box is disabled, which means that it is impossible to select another font.

*Note: This AutoReplace function works only when the languages in the Replacements and exceptions for language list box and in **Format > Character > Language** are the same.*

Adding special characters to the AutoCorrect Replace list is fairly straight forward. Here is a tested way to do it:

- a) Open the Special Character dialogue.
- b) Select the desired characters and insert them all in a document, for example: á é ê.
- c) Copy (Ctrl+C) the entire string to the clipboard.

- d) Open the AutoCorrect/AutoFormat dialogue.
- e) Select the desired language in the Replacements and exceptions for language list box.
- f) Paste (Ctrl+V) the string in the With input field.
- g) Choose an easy to remember combination for the first character, and type it in the Replace input field. For example: character+\ for characters with grave accents, character+/ for characters with acute accents.
- h) Select all characters except the first one in the With input field and cut (Ctrl+X) these characters to the clipboard.
- i) Click the New button to add the replacement to the list.
- j) Paste (Ctrl+V) the new string in the With input field.
- k) Choose a combination for the first character, and type it in the Replace input field. Repeat steps (g) to (k) until all characters are entered.

Note: It is not possible to add single uppercase characters to the Replace list when the single lowercase character is already present. When the entry a/ is present in the list to be replaced by á, OpenOffice.org changes A/ to á as well. To add accented uppercase characters to the list, either use a combination like AA/ or aa/ to be replaced by Á. Another possibility is to select the accented lowercase character in the document and select

Format > Case/Characters > Uppercase.

For example:

<i>Replace</i>	<i>With</i>
a/	á
AA/	Á
a:	ä

Table 1

The following screen shot shows the contents of the AutoCorrect Replace list after adding these three new replacements :

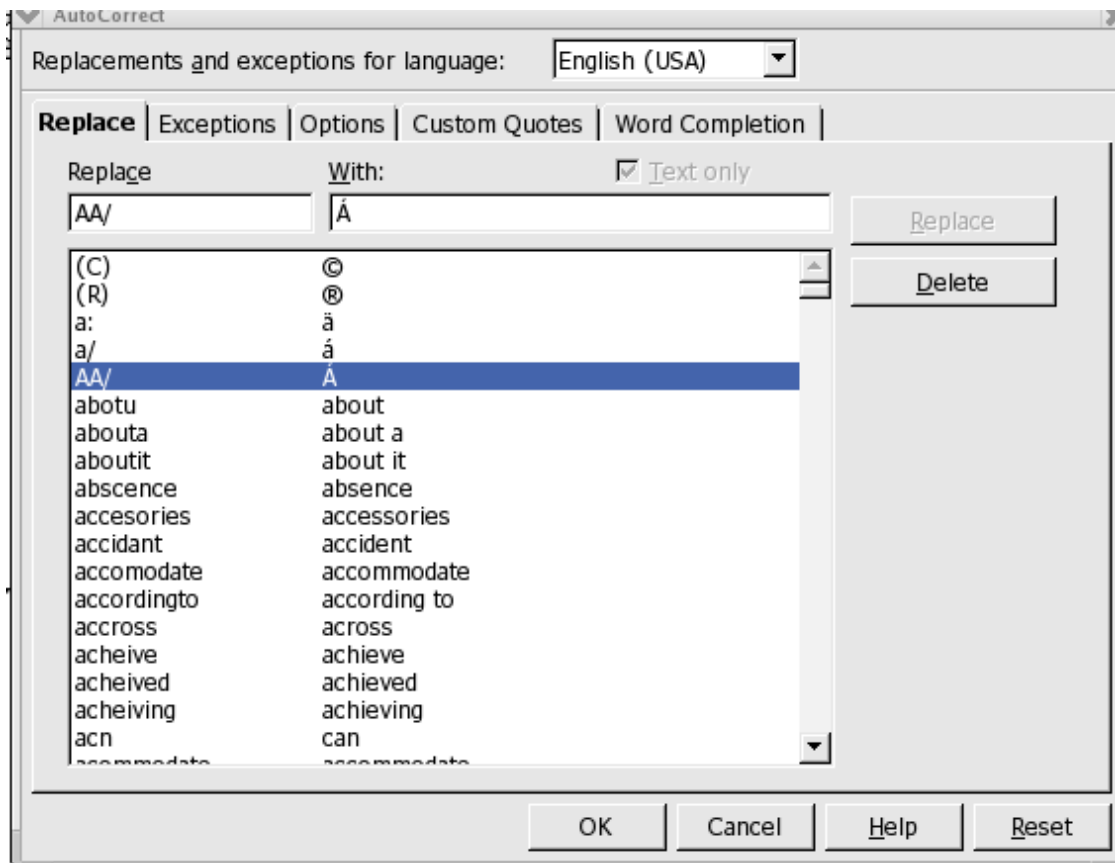


Illustration 2

Using Macros to Insert Special Characters

Using macros to manage Special Character needs is made easy with the Macro Recorder that comes with OpenOffice.org releases later than 1.1. This section describes how to use the recorder to enable Special Characters in OpenOffice.org. Because macros that are recorded by navigating with the keyboard often behave better than macros which record mouse clicks, the following procedure will employ only keyboard navigation.

Note: Keys used in this section are based upon the 101 keyboard found with most Windows and Linux systems.

Recording the Macro

- i. Choose **Tools > Macros > Record Macro**, a small Record Macro dialogue appears.



Illustration 1

- ii. Press **Alt+Tab** or click in the document to put the focus back to the document window.
- iii. Choose **Insert > Special Character** (**Alt+I P**) to open the Special Characters dialogue.
- iv. By default, the focus is in the first cell in the Character table; however, if the dialogue box was opened previously, then the focus could be anywhere in the table. To ensure that the macro behaves the same, regardless of the current focus, press the **Home** key which will change the focus to the first cell in the table.
- v. Use the Arrow keys to navigate to the desired character.
- vi. Press the Space bar to select the character.

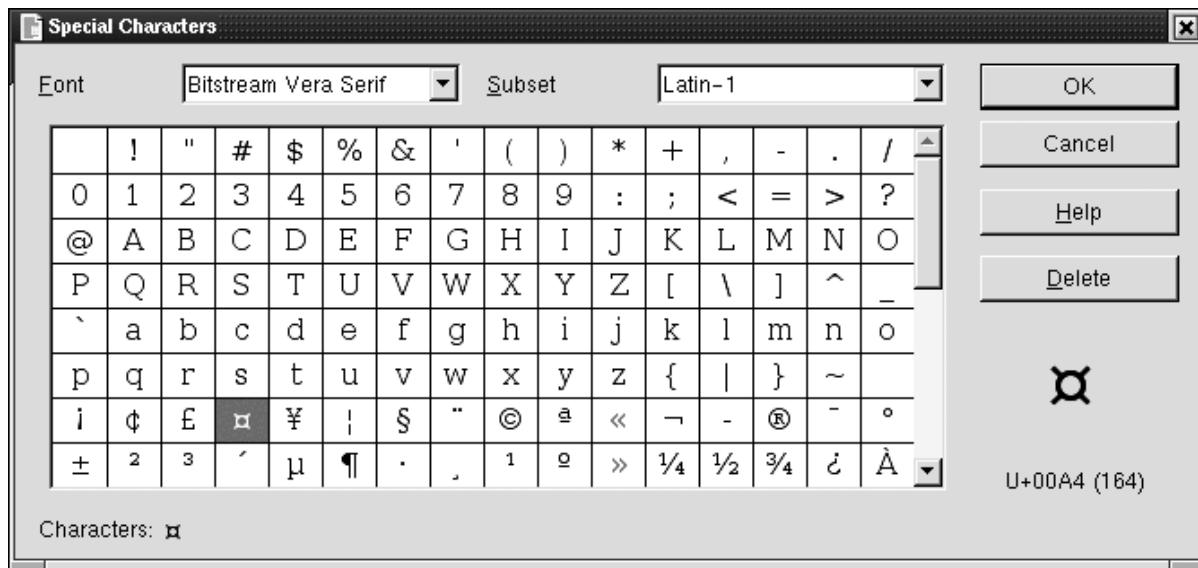


Illustration 2

- vii. Press **Enter** to insert the character and close the dialogue.
- viii. Click **Stop Recording** in the **Record Macro** dialogue and the Macro dialogue will open.

Saving the Macro

1. Select the file in which to save the macro, the default is `Module1` in the `$HOME/install_dir/user/basic/Standard` (`%HOME%\install_dir\user\basic\Standard` in windows) directory. Macros stored in this file are available to all OpenOffice.org applications.
2. Enter a name for the macro in the Macro name field. In this example, the name is "SPchar"

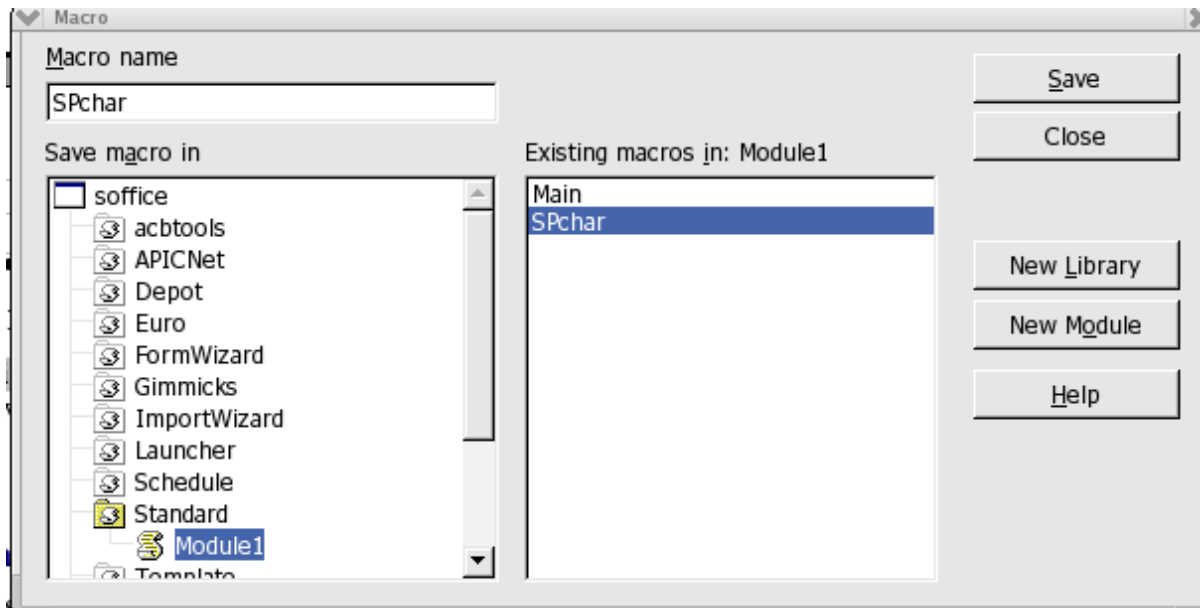


Illustration 3

3. Click the Save button to save the macro as part of Standard.

Assigning the Macro

1. Select **Tools > Macros > Macro** to open the Macro dialogue.
2. Select the file in the Macro from list, select the macro in the **Existing macros** list.

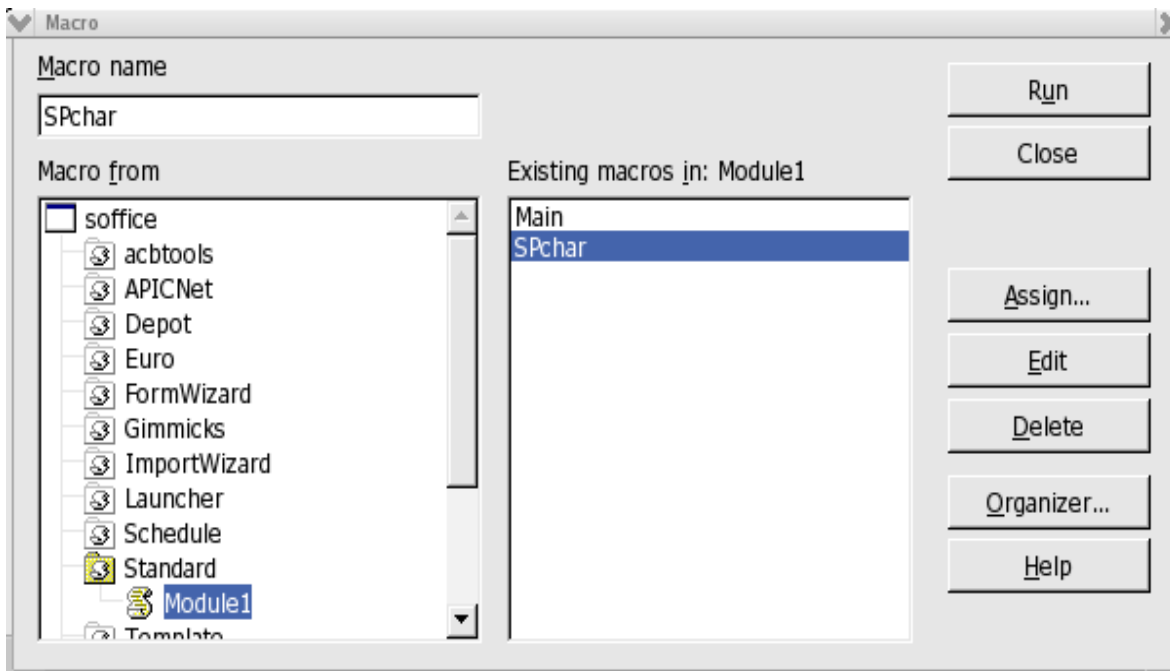


Illustration 4

3. Click the **Assign** button, the Configuration dialogue opens.
4. At this point choose how the macro should be assigned. e.g. a shortcut key, a toolbar button or a menu item. The following sections provide step-by-step instructions for each procedure: KB for keyboard, TB for Toolbar and M for Menu.
5. Click the **Close** button to close the Macro dialogue.

Assign the Macro to a Keyboard Shortcut Key (KB)

KB-1. Select the Keyboard tab.

KB-2. For shortcut keys to be available in all applications, select the `OpenOffice.org` radio button.

KB-3. Select `OpenOffice.org BASIC Macros` in the Category list.

KB-4. Click on the +-symbol to expand the list.

KB-5. Select the file in which the macro is saved.

KB-6. Click on the +-symbol to expand this list.

KB-7. Select the Module where the macro is saved.

KB-8. Select the macro in the Functions list.

KB-9. Select the keys in the Shortcut keys list.

KB-10. Click the Modify button.

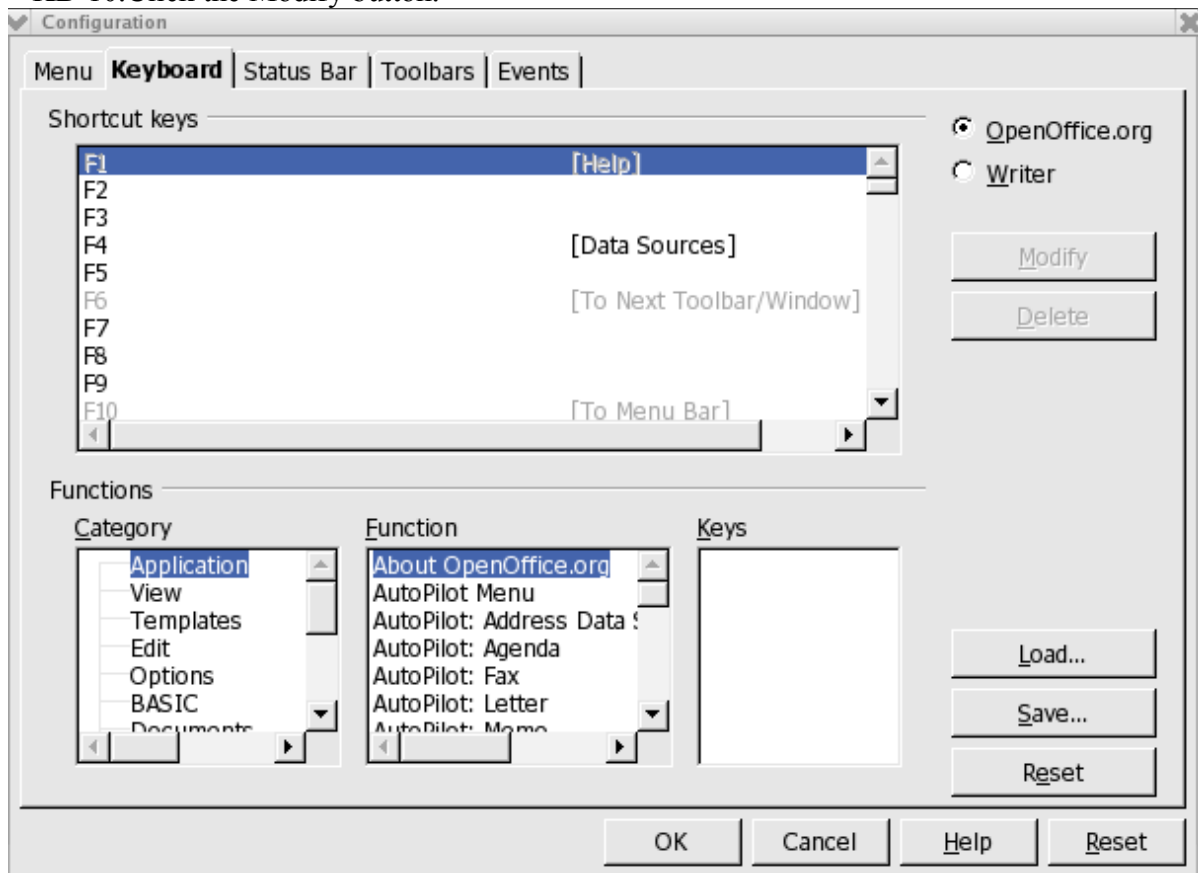


Illustration 5

KB-11. Click OK.

Assign the Macro to a Toolbar Button (TB)

TB-1. Select the Toolbars tab.

TB-2. Click the Customize button.

TB-3. Select the toolbar where the button has to be added from the Toolbars list box.

TB-4. Select OpenOffice.org BASIC Macros in the Available buttons list.

TB-5. Click on the +-symbol.

TB-6. Select the file in which the macro is saved.

TB-7. Click on the +-symbol.

TB-8. Select the Module where the macro is saved.

TB-9. Click on the +-symbol.

TB-10. Select the macro.

TB-11. Click the Add-> button to add the macro to the Buttons in use list, the new button will be added after the selected item.

TB-12. Click the Move Up or Move Down button to move the button to another position.

TB-13. Click the Icons button to add an icon to the toolbar button.

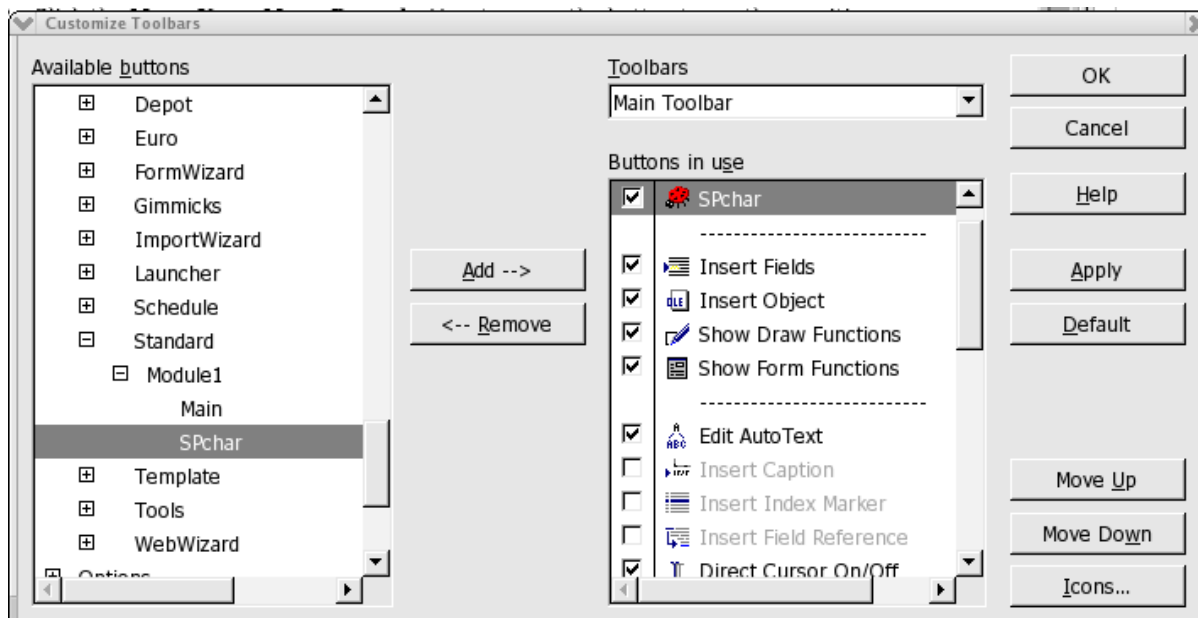
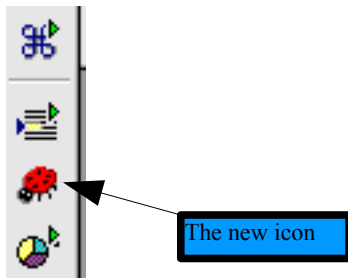


Illustration 6

TB-14. Click Apply.

TB-15. Click OK.

Voila a new icon on the main toolbar



Assign the Macro to a Menu Item (M)

M-1. Select the Menu tab.

M-2. Select the menu item after which to insert the new menu in the Menu entries list.

M-3. Select OpenOffice.org BASIC Macros in the Category list.

M-4. Click on the +-symbol.

M-5. Select the file where the macro is saved.

M-6. Click on the +-symbol.

M-7. Select the Module where the macro is saved.

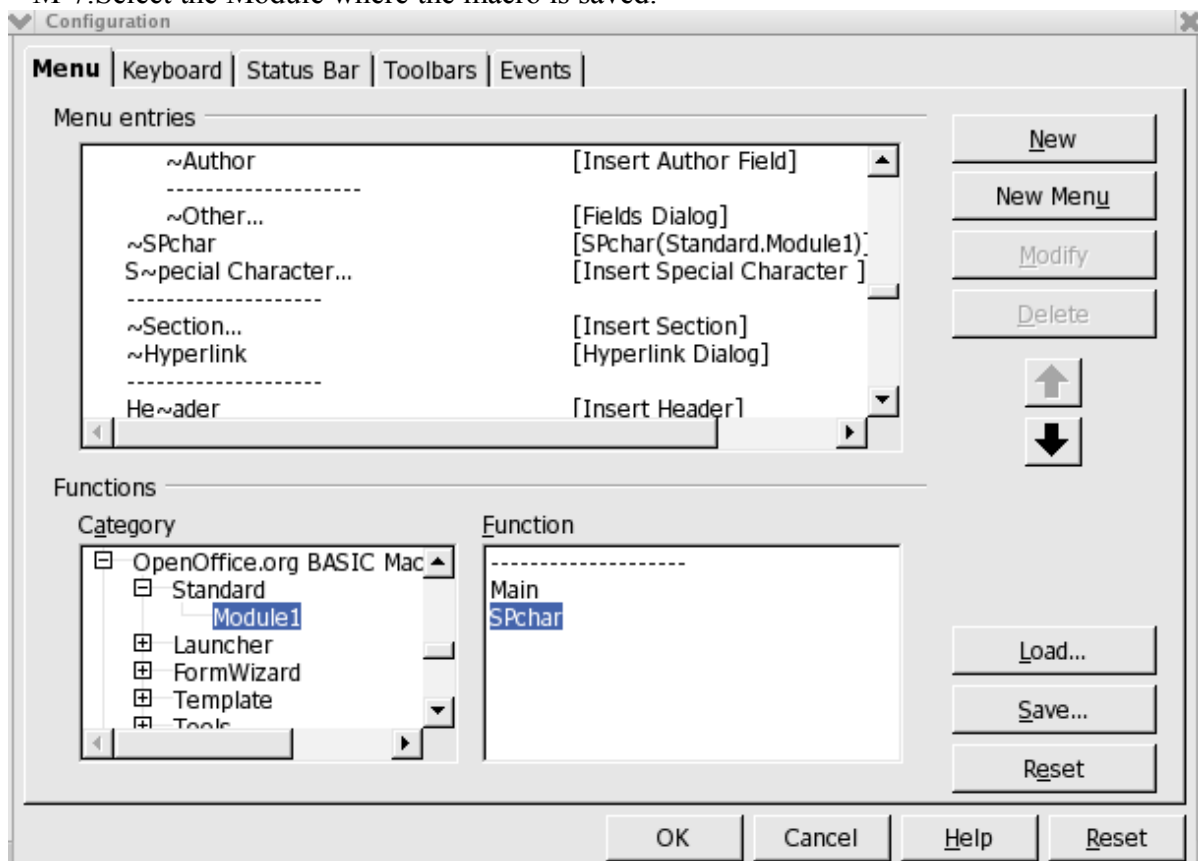


Illustration 7

M-8. Select the macro in the Functions list.

M-9. Click the New button.

M-10. Click OK.

A new item is in the Insert menu:

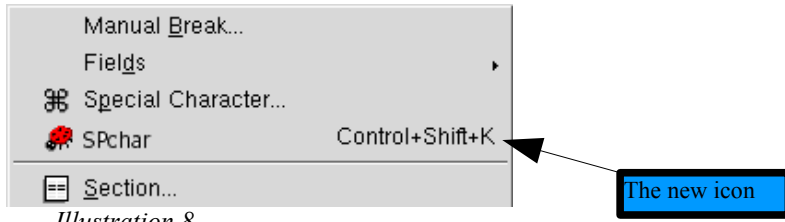


Illustration 8

Using Key combinations to insert Special Characters Under UNIX

Using key combinations to produce special characters is independent of language and locale settings. However, you must make some changes at system level to enable this feature. This section explains how to accomplish this in relatively easy steps.

First, assuming windows or Linux, you should set your keyboard to `us_intl`. Other systems should be similar but may require a bit of research to discover equivalents. This method is enabled for production of this document. For example, while the language for this document is set to English (USA), one can still enter foreign characters, such as, the French `ê`, the German `ß`, the Spanish `ñ`, or the Scandinavian `ø`.

Setting up

Using Deadkeys

Deadkeys are keys that seemingly do nothing when pressed once. When the key is pressed a second time, the expected character appears, or when another key is pressed, an accented character appears. Not all characters produce an accented character when pressed after a deadkey. Some of the most well-known accents in western European languages are: grave and acute accents, circumflex, tilde, and diaeresis (or Umlaut in German, trema in Dutch). Whether an accented character appears after pressing a deadkey plus another key, depends upon the font that is used. To be able to use deadkeys, the system must be configured to support these via the keyboard. On most systems, the utility to configure the keyboard is called `kbdconfig`.

This is an excerpt from a typical `/etc/X11/XF86Config`:

```
Section "InputDevice"

# Specify which keyboard LEDs can be user-controlled (eg,
# with xset(1))
#   Option "Xleds"          "1 2 3"
# To disable the XKEYBOARD extension, uncomment XkbDisable.
#   Option "XkbDisable"
# To customise the XKB settings to suit your keyboard,
# modify the
# lines below (which are the defaults).  For example, for a
# non-U.S.
# keyboard, you will probably want to use:
#   Option "XkbModel"       "pc102"
# If you have a US Microsoft Natural keyboard, you can use:
#   Option "XkbModel"       "microsoft"
#
# Then to change the language, change the Layout setting.
# For example, a german layout can be obtained with:
#   Option "XkbLayout"      "de"
# or:
#   Option "XkbLayout"      "de"
#   Option "XkbVariant"     "nodeadkeys"
#
# If you'd like to switch the positions of your capslock and
# control keys, use:
#   Option "XkbOptions"      "ctrl:swapcaps"
# Or if you just want both to be control, use:
#   Option "XkbOptions"      "ctrl:nocaps"
```



```
#
    Identifier "Keyboard0"
    Driver     "keyboard"
    Option     "XkbRules" "xfree86"
    Option     "XkbModel" "pc105"
    Option     "XkbLayout" "us_intl"
EndSection
#XkbVariant "" #XkbOptions ""
```

When `XkbVariant` is set to `"nodeadkeys"`, deadkeys are disabled. Please, read your distribution's set up manual, or the man pages, for more information.

To type an accented character: Press the deadkey once, then press the character key. To type one of the deadkey characters: Press the deadkey once and press the `Space` bar, or press the deadkey twice. See the chapter *Customize Key mappings* for a description of how to assign and customize deadkeys. On page 24, there are two tables showing frequently used accented, lowercase and uppercase, characters.

Multi_key

`Multi_key` combinations produce characters that are combinations of two characters, like the `(th)` and `(ss)`. To type a multi-character: Press and hold the `Multi_key` down, press the two character keys. See the chapter *Customize Key mappings* for a description of how to assign the `Multi_key`. A list of sequence Definitions for the `Multi_key` can be found in the file `Compose` in the directory

`/usr/X11R6/lib/X11/locale/[charset]`, where `[charset]` is the used character set, for example `iso8859-1` or `en_US.UTF-8`.

Mode_switch

`Mode_switch` key combinations produce special characters and symbols, like © and €. To type a special character: Press and hold the `Mode_switch` key down, press the character key.

The section, *Customize Key mappings*, describes how to assign and customize the `Mode_switch` and the resulting characters.

Customize Keymappings

Keymappings can be customized by creating a `usermodmap` file or by editing the existing `usermodmap` file. To get a list of the current keymappings open an XTerm and type the following command: `$ xmodmap -pke > keymappings` See the `xmodmap` man page for descriptions of the options and some examples.

The file `keymappings` is a plain ASCII text file. Use a text editor to edit these keycodes, or, when you prefer to use `Writer`, be sure to save the file as a plain text (*.txt) file. The first few lines look like this:

```
keycode 8 =
keycode 9 = Escape
keycode 10 = 1 exclam
keycode 11 = 2 at
keycode 12 = 3 numbersign
keycode 13 = 4 dollar
keycode 14 = 5 percent
keycode 15 = 6 dead_circumflex asciicircum asciicircum
keycode 16 = 7 ampersand
keycode 17 = 8 asterisk
keycode 18 = 9 parenleft dead_breve dead_breve
```

Every keycode has a maximum of four key mappings: normal, shifted, modified and modified shifted. To use the `Multi_key` and the `Mode_switch`, they must be assigned to a keycode. The `Left` and `Right Windows-Logo` keys are good candidates. Their keycodes are:

```
keycode 115 = Super_L
keycode 116 = Super_R
```

Change these for example to:

```
keycode 115 = Multi_key
keycode 116 = Mode_switch
```

For example, here are two lines from a generated `keymappings` file:

```
keycode 26 = e E
keycode 27 = r R paragraph registered
```

Since keycode 26 has no additional characters assigned, this key could be used for the Euro currency symbol. To find the name of a character, open the file `/usr/include/X11/keysymdef.h` in an editor or file viewer. This is a definition file with the names of all available characters. The section `#ifdef XK_LATIN1` includes the line `#def XK_currency` and the section `#ifdef XK_CURRENCY` includes the line `#def XK_EuroSign`. To assign the Euro sign to the E key (e), and the currency symbol to the shifted E key (E), append the words `EuroSign` and `currency` to the keycode:

```
keycode 26 = e E EuroSign currency
```

To test this new key assignment, save the `keymappings` file, and in an Xterm, type the

following command: `$ xmodmap keymappings`. Now, in a Writer document, or any X application, press and hold down the `Mode_switch` key and press the `E` key, the `€` should appear; press and hold down the `Mode_switch` key and press `Shift+E`, the `⊠` should appear.

It is also possible to switch the deadkeys back to normal keys. Say you need the apostrophe and double quotes more frequently than the deadkeys, change:

```
keycode 48 = dead_acute dead_diaeresis apostrophe quotedbl
to
```

```
keycode 48 = apostrophe quotedbl dead_acute dead_diaeresis
```

Now you can type normal apostrophes and double quotes, and when a deadkey character is needed, for example an `é`, press and hold down the `Mode_switch` key, press the apostrophe key (`'`) and then the `E` key.

To make these changes permanent, rename the file `keymappings` to `.Xmodmap`. When the X server is started, one of the files that is run, is `/etc/X11/xinit/xinitrc`. This shell script checks the existence of a `usermodmap`. When found this file is used. These lines are from the `xinitrc` shell script:

```
...
userresources=$HOME/.Xresources
usermodmap=$HOME/.Xmodmap
userxkbmap=$HOME/.Xkbmap
...
```

By using a personal `.Xmodmap` file, each user can personalize their keymappings for their on-going needs.

Using Key combinations to insert Special Characters Under Windows

Change or add *Keyboards*

In order to be able to enter special characters directly from the keyboard, the type of keyboard must be changed to a configuration that supports this feature. Microsoft Windows allows a number of different keyboard languages and layouts. Installation of the "typical", or "default" options provides capabilities for French, Spanish, and other Western European languages.

To change the keyboard languages and layout, click *the Start button, then choose Settings, Control Panel, and Keyboard* (or Regional and Language Options). Click the "Language" or "Input Locales" tab. *Add* a language and give it *properties* - one of which is the US-International English keyboard (see below). Use *Apply* to finish the process; the Windows installation CD is usually needed. The keyboard and multi language sections in *Start - Help* provide details.

The **US-International English keyboard layout** is installed as above (choose English as the language and US-International as the layout in properties) and has these features:

- It uses the following intuitive methods which work with most (or all) Windows applications, while keeping the familiar **QWERTY** keyboard. (e.g. French uses AZERTY with letters a/q and z/w interchanged)
- Press one of the five modifier keys ` ' " ~ ^ , **then** the letter to be modified. (' then a = á, " then u = ü, ' then c = ç, etc.)
- Press the right alt key + another key. Examples:
 - right alt + , = ç (or ' + c)
 - + ? = ÿ
 - + ! = ÿ
 - + c = ©
 - + 5 = Euro currency symbol
- The **US-International English keyboard layout** is installed as shown below (choose English as the language and US-International as the layout in properties). It uses the following intuitive method which works with most Windows applications, while keeping the familiar *qwerty* keyboard. To use, press one of the five (in purple below) punctuation keys ` ' " ~ ^ , then the letter to be modified. (' then a = á, " then u = ü, ' then c = ç, etc). Or use the **right alt key** + another key: right alt + ? = ÿ, + ! = ÿ, + c = ©, + e = é plus all those shown in the image below. Also +5 is Euro.

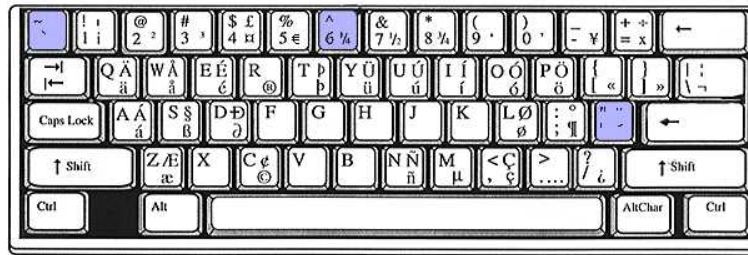


Illustration 1

Note that this maintains the "qwerty" layout. However, each modifier key ` ' " ~ ^ must be followed by pressing the space bar if it is actually intended. The system is smart enough to accept words requiring an apostrophe, such as it's, without the space bar.

- **To install both the US-International English keyboard layout and United States English:**
 - One can fool a Win 9X system by adding an unused language, such as Icelandic. Then change its *layout* to the US-International in the language *properties* or layout section.
 - **Windows XP allows both.** Click *Start, Settings, Control Panel, Regional.options, Languages, Details, Settings, Add.* Set *Input Language* to English - United States. Set *Keyboard layout/IME* to United States-International. Press *Apply* and *OK*.
- If you are having punctuation key troubles such as your computer's quote and apostrophe key behaving strangely, the cause may be that your keyboard was accidentally set to the International English Keyboard. The solution is to reset it to a standard English or United States keyboard.

Character Map

- This is useful for the infrequent accent or symbol. It is located at *Start - Programs - Accessories - System Tools - Character Map* (OR click *Start, Run,* and type *charmap*). After choosing a font, double click the desired character(s). After clicking *Copy*, return to your document and paste. Some fonts (such as *Symbol, Webding, and Wingding*) provide Greek, icons, arrows and symbols. This system may fail if a particular combination of keystrokes, as seen in the lower right of the window, has been reserved for another application.

Alt key sequences

Windows users can also insert special characters using the Alt key plus a number. For example, *Atl+0150* inserts an 'en' dash which appears as – using the Times Roman Font.. TO use this feature users must have an enhanced keyboard.

Please see <http://www.starr.net/is/type/altnum.htm> for one list of key sequences.

Changing Keyboard Layout under Linux.

For those who may need to work in languages where the keyboard layout for that language is not compatible with the keymapping method outlined previously, there are system level tool that will permit setting the layout to the needed local. On Linux, use

```
setxkbmap gr where gr is the locale for the language needed.
```

To reset the keyboard to North American US English enter:

```
setxkbmap us
```

`setxkbmap` has many command line switches available for more complicated scenarios. In this case, please check the distribution manpage for `setxkbmap()` for details of how to use this tool.

Other tools may exist that can make switching easier but at the time of writing this document none were as universally available as this one.

On most windows releases, you can enable keyboard switching from the control panel which, in turn, provides a icon in the panel for switching.

Deadkeys under Linux

Deadkeys: accented lowercase characters

grave		acute		diaeresis		tilde		circumflex	
`a	à	'a	á	"a	ä	~a	ã	^a	â
`e	è	'e	é	"e	ë	^e	ê		
`i	ì	'i	í	"i	ï	^i	î		
`o	ò	'o	ó	"o	ö	~o	õ	^o	ô
`u	ù	'u	ú	"u	ü	^u	û		
'y	ý	"y	ÿ						
'c	ć								
						~n	ñ		

Deadkeys: accented uppercase characters

grave		acute		diaeresis		tilde		circumflex	
`A	À	'A	Á	"A	Ä	~A	Ã	^A	Â
`E	È	'E	É	"E	Ë	^E	Ê		
`I	Ì	'I	Í	"I	Ï	^I	Î		
`O	Ò	'O	Ó	"O	Ö	~O	Õ	^O	Ô
`U	Ù	'U	Ú	"U	Ü	^U	Û		
'Y	Ý	"Y	ÿ						
'C	Ć								
						~N	Ñ		

Appendix 1 – Keymapping Patch file

The following is a patch file, created using

```
diff -c keymappings.orig keymappings,
```

that you may use as a model to modify your local needs:

```
*** keymappings.orig      2004-05-03 13:17:15.000000000 -0400
--- keymappings          2004-05-03 13:28:42.000000000 -0400
*****
*** 16,22 ****
    keycode 23 = Tab ISO_Left_Tab
    keycode 24 = q Q
    keycode 25 = w W
!   keycode 26 = e E
    keycode 27 = r R
    keycode 28 = t T
    keycode 29 = y Y
--- 16,22 ----
    keycode 23 = Tab ISO_Left_Tab
    keycode 24 = q Q
    keycode 25 = w W
!   keycode 26 = e E EuroSign currency
    keycode 27 = r R
    keycode 28 = t T
    keycode 29 = y Y
*****
*** 105,112 ****
    keycode 112 = KP_Divide XF86_Ungrab
    keycode 113 = Alt_R Meta_R
    keycode 114 =
!   keycode 115 = Super_L
!   keycode 116 = Super_R
    keycode 117 = Menu
    keycode 118 =
    keycode 119 =
--- 105,112 ----
    keycode 112 = KP_Divide XF86_Ungrab
    keycode 113 = Alt_R Meta_R
    keycode 114 =
!   keycode 115 = Multi_key
!   keycode 116 = Mode_switch
    keycode 117 = Menu
    keycode 118 =
    keycode 119 =
```


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