

Edit the Editor: Creating Keyboard Macros in SAS® Enterprise Guide®

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ABSTRACT

Programmers can create keyboard macros to perform common editing tasks in SAS® Enterprise Guide®. This paper introduces how to record keystrokes, save a keyboard macro, edit the commands, and assign a shortcut key. Sample keyboard macros are included. Techniques to share keyboard macros are also covered.

INTRODUCTION

All programmers repeat actions when editing SAS programs. For example, inserting a comment and your initials, or selecting and running the current DATA step. This is a manual process that requires the same amount of time and effort in each instance.


SAS Enterprise Guide can record keystrokes and save them in a keyboard macro. It can be edited as needed and assigned a shortcut key. Keyboard macros can be exported to a file and then imported by others, helping them save time and effort.

This paper illustrates how to create a simple keyboard macro that encloses everything from the cursor to the end of the line in a `/*comment*/`. Three steps are reviewed: 1) recording keystrokes; 2) editing keyboard macros; and 3) assigning shortcut keys. Methods for sharing keyboard macros are detailed. Additional keyboard macros are included in the appendix.

1. RECORDING KEYSTROKES

Keyboard macros can be created from scratch with **Program > Editor Macros > Macros > Create...** It is usually helpful, however, to record keystrokes.

Start recording keystrokes with **Program > Editor Macros > Record New** (or press **Ctrl+Shift+R**).

The cursor bar now includes what appears to be a cassette tape (i.e., and indicates recording): 

Perform any action(s). In our example, we comment the rest of the line:

1. Enter `/*` to start the comment.
2. Press **End** to move to the end of the line.
3. Enter `*/` to end the comment.

Stop recording with **Program > Editor Macros > Stop Recording** (or press **Ctrl+Shift+R** again).

SAS Enterprise Guide opens the Save Keyboard Macro dialog box:

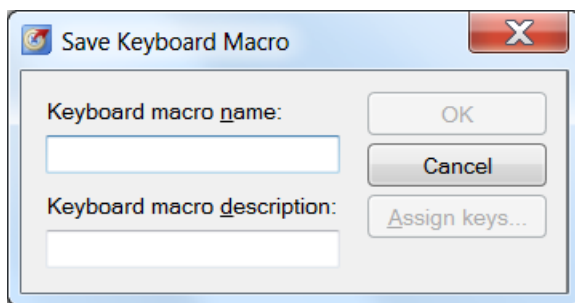


Figure 1. Save Keyboard Macro Dialog Box

Enter values in the “Keyboard macro name” and “Keyboard macro description” text boxes. For example:

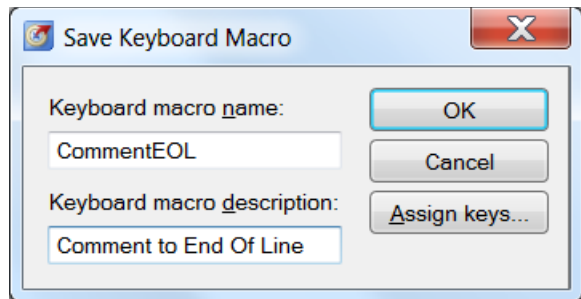


Figure 2. Save Keyboard Macro Dialog Box Values

Click the **OK** button to save the keyboard macro.

Note that a shortcut key could be added with the **Assign keys...** button, but we will edit the keyboard macro first to inspect it and make any needed changes.

2. EDITING KEYBOARD MACROS

Edit a keyboard macro with **Program > Editor Macros > Macros**.

SAS Enterprise Guide opens the Keyboard Macros dialog box:

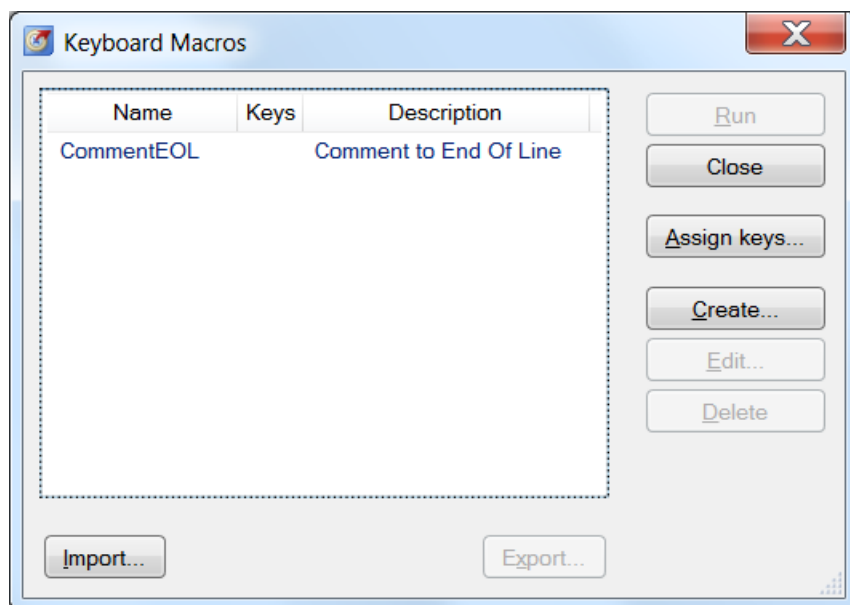


Figure 3. Keyboard Macros Dialog Box

Click on a macro name and then click the **Edit...** button.

SAS Enterprise Guide opens the Edit Keyboard Macro dialog box (see Figure 4 below). It displays the “Keyboard macro name” and “Keyboard macro description” you previously entered.

All of the keyboard macro commands built into SAS Enterprise Guide are displayed in the “Commands” box on the left. Click on the “Command category” drop-down menu to select a category.

Click on any individual command to display details in the “Command description” box.

The recorded actions are displayed in the “Keyboard macro contents” box on the right:

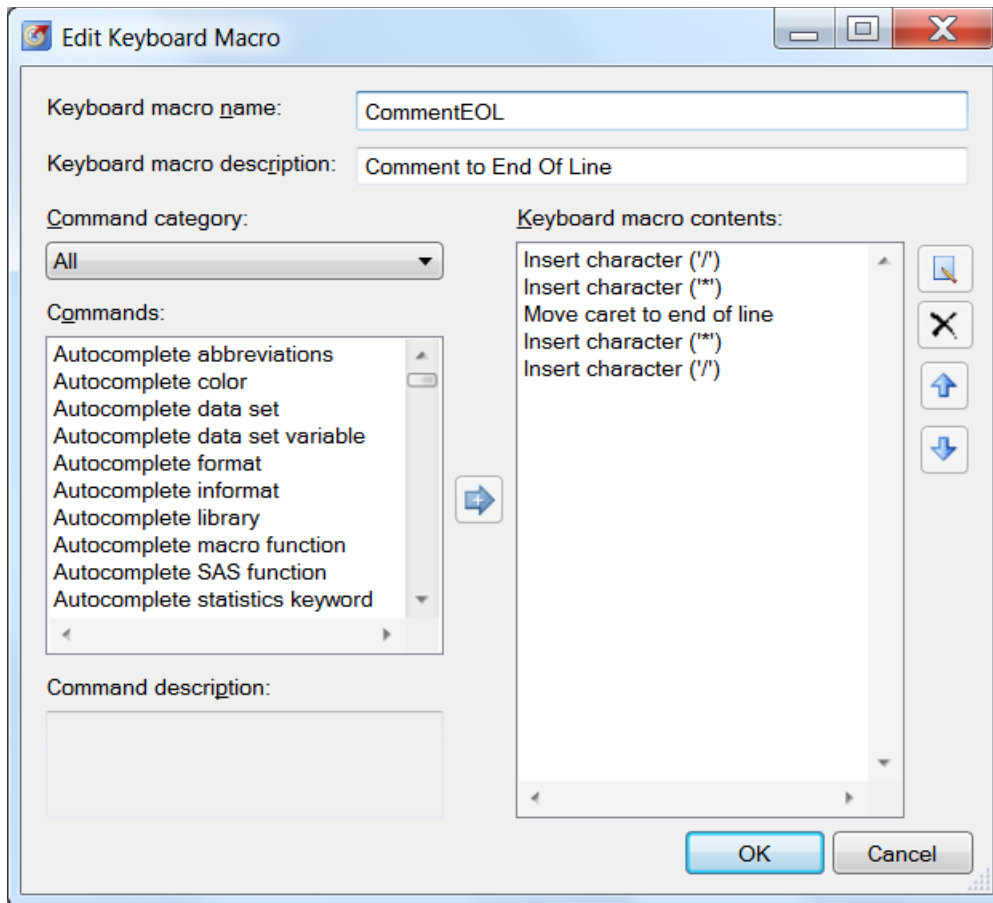



Figure 4. Edit Keyboard Macro Dialog Box





Note that five commands were recorded:

1. Two “Insert character” commands to insert the slash and asterisk, respectively.
2. A navigation command, “Move caret to end of line,” to indicate pressing **End**.
3. Two more “Insert character” commands to insert the closing asterisk and slash.

The keyboard macro contents look correct. Click the **Cancel** button to exit the dialog box. If editing were required, commands can be inserted, modified, deleted, and/or moved.

Highlight a command in the “Commands” box and click  to insert it. It will be inserted after all other commands in the “Keyboard macro contents” box by default or above any command that is highlighted.

Commands in the “Keyboard macro contents” box can be modified, deleted, and/or moved. Click on any command(s) to select them and then click any of the following buttons to perform the respective action:

- | | |
|--|--|
|  modify the selected command |  move the selected command(s) up one line |
|  delete the selected command(s) |  move the selected command(s) down one line |

Click the **OK** button when editing is complete.

3. ASSIGNING SHORTCUT KEYS

Assign a shortcut with **Program > Editor Macros > Macros > [click on a macro name] > Assign keys...** SAS Enterprise Guide opens the Assign Keys dialog box:

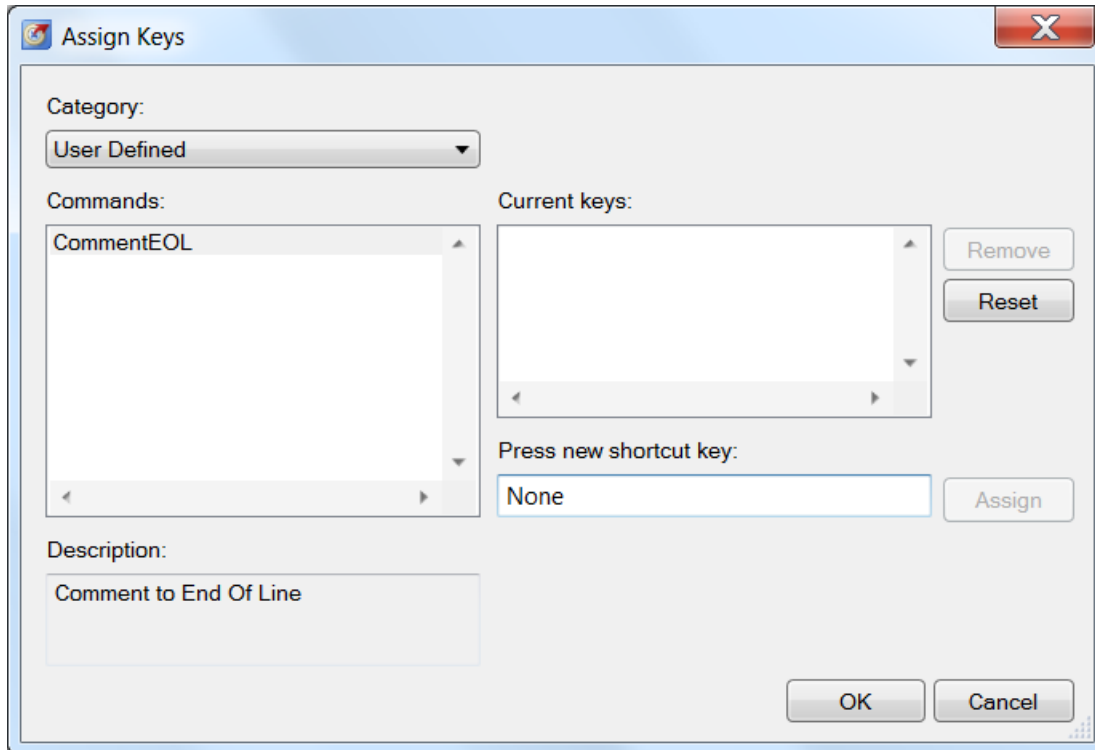


Figure 5. Assign Keys Dialog Box

User-defined keyboard macros are displayed by default in the “Commands” box. Assign a shortcut key as follows:

1. Click on a keyboard macro name.
2. Click in the “Press new shortcut key” box.
3. Press the desired key combination. For example, **Alt+C**. SAS Enterprise Guide notes if that shortcut key is currently assigned to another command. Choose a unique and, if possible, “intuitive” shortcut.
4. Click the **Assign** button.
5. Click the **OK** button.

The keyboard macro shortcut key is now available for use. Consider the following example:

```
proc print data=sashelp.class(obs=10) double;  
var age height weight;  
run;
```

Note that the cursor is positioned immediately after `sashelp.class`. To end the statement and comment the rest of the line, type a semicolon and press the **Alt+C** shortcut key. The code now looks as follows:

```
proc print data=sashelp.class;/*(obs=10) double;*/  
var age height weight;  
run;
```

SHARING KEYBOARD MACROS

Export keyboard macros to a file and then import them in SAS Enterprise Guide on another computer.

EXPORTING KEYBOARD MACROS

Display the keyboard macros available with **Program > Editor Macros > Macros**. SAS Enterprise Guide opens the Keyboard Macros dialog box.

Select a keyboard macro to export by clicking its name. Select multiple keyboard macros by clicking on one name and then **Shift+Click** on another name. Use **Ctrl+Click** to select (or unselect) an individual keyboard macro:

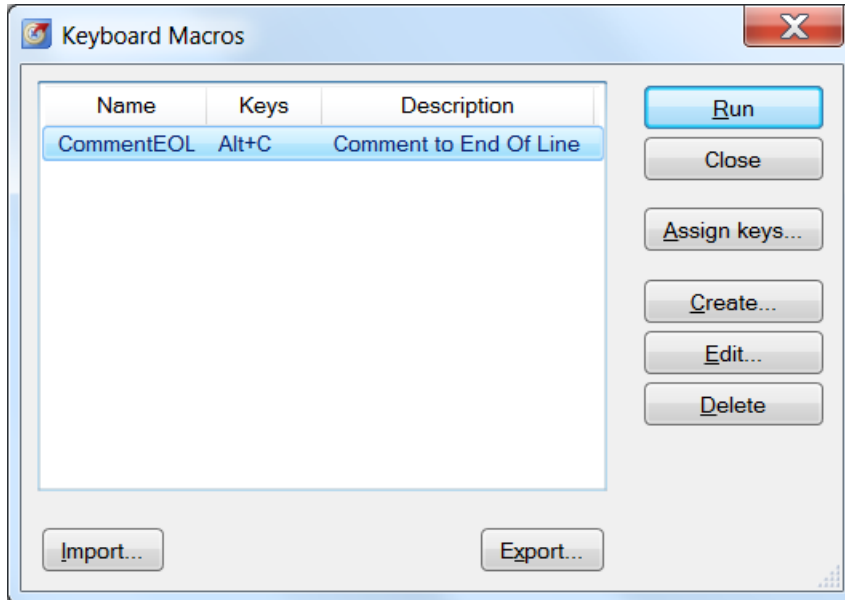


Figure 6. Keyboard Macros Dialog Box

Click the **Export...** button. SAS Enterprise Guide opens the Export Keyboard Macros dialog box:

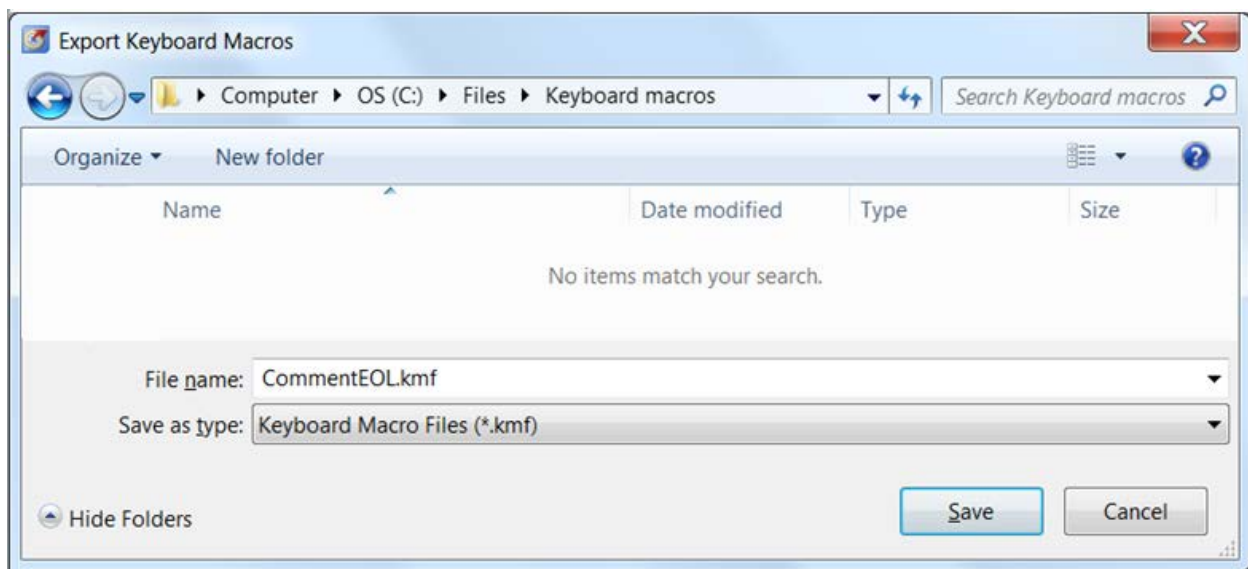


Figure 7. Export Keyboard Macros Dialog Box

Navigate to a folder to save a Keyboard Macro File (*.kmf) that stores keyboard macro(s). In Figure 7, a folder named “Keyboard macros” was created. When exporting multiple macros, you can replace the file name with any name (e.g., mymacros).

Click the **Save** button. The keyboard macro(s) have been exported to the .KMF file.

The .KMF file can be saved to a location available to other users (e.g., shared network drive). It can also be copied, e-mailed, or otherwise distributed.

IMPORTING KEYBOARD MACROS

Open SAS Enterprise Guide on the computer where you want to use the shared keyboard macros with **Program > Editor Macros > Macros**. SAS Enterprise Guide opens the Keyboard Macros dialog box.

Click the **Import...** button.

SAS opens the Import Keyboard Macros dialog box:

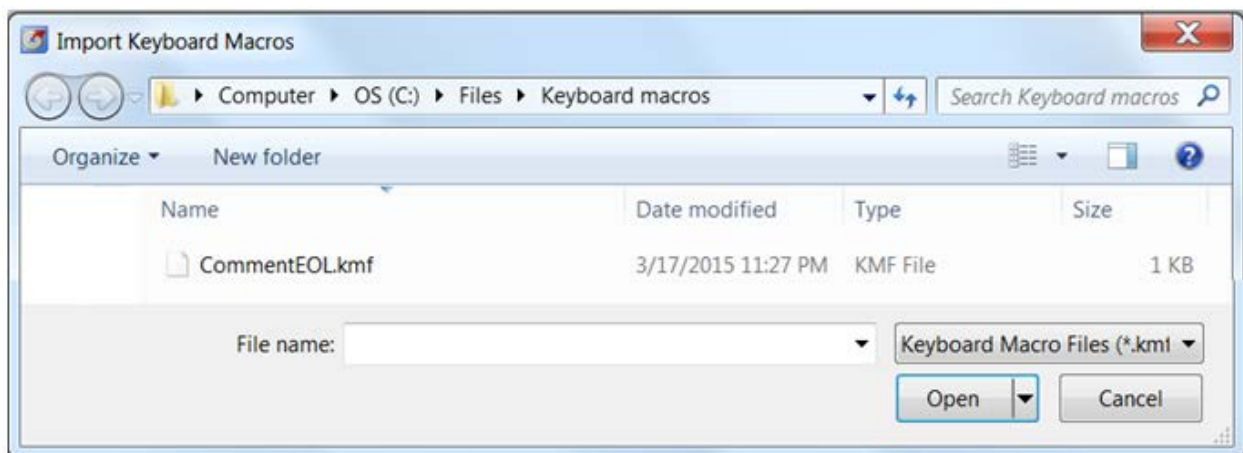


Figure 8. Import Keyboard Macros Dialog Box

Navigate to the location, click on the exported .KMF file, and then click the **Open** button. The keyboard macro(s) are added. Click the **Close** button.

If you attempt to import a keyboard macro that has the same name as an existing keyboard macro, SAS Enterprise Guide prompts: “A keyboard macro with the name “*name*” already exists. Replace the existing keyboard macro?” for each occurrence.

Click the **Yes** button to import the keyboard macro and overwrite the existing keyboard macro. Click the **No** button to not import the keyboard macro.

If you wish to import a keyboard macro without overwriting an existing keyboard macro that has the same name, the existing one can be renamed. In the Keyboard Macros dialog box, click on the keyboard macro name, click the **Edit...** button, change the Keyboard macro name, and click the **OK** button.

Assign shortcuts to the imported keyboard macros as described in Section 3: Assigning Shortcut Keys.

CONCLUSION

Take note of actions you perform repeatedly when editing programs. Consider recording keystrokes, saving keyboard macros, and assigning shortcut keys. Using the shortcuts will save time and effort. Share keyboard macros with others.

This paper demonstrated how to create a simple keyboard macro. See the appendix for details on additional keyboard macros.

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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APPENDIX

Sample keyboard macros are included in the file *CBkeys.kmf* in the .ZIP file that accompanies this paper.

Unzip the file and save to disk. Follow the instructions on importing keyboard macros detailed on page 6.

The following keyboard macros are included:

Name	Shortcut	Description	Usage Notes
AddDateInit	Alt+I	Add date and initials	Edit the line Insert the string “XYZ--” at the current position. to include your initials. Inserts the text: mm/dd/yy--XYZ--
AddLine	F5	Add line after current	Adds line after the current line regardless of the cursor position. Equivalent to pressing End and Enter .
CommentEOL	Alt+C	Comment to EOL	Inserts a /* comment */ around all following text on that line. Do not nest this type of comment.
MoveLineDn	Alt+D	Move line down	Moves current line down one line. Press repeatedly to keep moving.
MoveLineUp	Alt+U	Move line up	Moves current line up one line. Press repeatedly to keep moving.
SelectStep	F7	Select current step	Selects DATA step or PROC step where cursor is positioned. Step must start with DATA or PROC/end with RUN; or QUIT;

Table A1. Sample Keyboard Macros

The “Shortcut” keys are optional but suggested. None of them is preassigned by SAS Enterprise Guide.

These keyboard macros were developed under SAS Enterprise Guide 5.1 for illustrative purposes. They are not guaranteed to work in every situation. They may be shared and/or modified at your discretion.

Be sure to review the built-in commands with **Program > Enhanced Editor Keys...** Click the “Category” drop-down menu and select “All.” Check the box next to “Include commands without key assignments.” There are numerous useful commands available; do not “reinvent the wheel.” Click the **Assign keys...** button to assign your preferred shortcut key.