

in

Stefan Fuchs

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WRITTEN BY	Stefan Fuchs	August 5, 2022	

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Chapter 1

in

1.1 PatchSetFunc Documentation

PatchSetFunc V1.43 -- Redirect SetFunction() to patch. ↔
library

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1.2 Motivation

This one was written as a support program, for my patch.library. It patches the exec.library/SetFunction() to use patch.library instead of the normal OS-function.

Although I'm aware that there exist a couple of programs, which perform the same task quite well (e.g.: SetManager by Nicola Salmoria, SaferPatches by Martin Adrian, PatchControl etc..), I thought it would be nice, if more programmes could use my patch.library.

1.3 Features

FEATURES:

If you're not expert with the Amiga operating system, all you need to know about PatchSetFunc is that it will, under certain circumstances, avoid GURUs.

If you're an expert, here come the details. There's a function in exec.library, whose name is SetFunction(). You know that Amiga libraries contain a 'jump table', where the address of every function in the library is stored. Library functions are always executed via the jump table, and NEVER through absolute addressing. SetFunction() allows the user to modify the jump table, in order to insert a custom routine in place of the standard one. For example, one could modify the DisplayBeep() vector to play a sound instead of flashing the screen.

SetFunction() is a very useful feature of the Amiga operating system, but it has the major drawback that there's no system supervising of concurrent use of the same vector by different tasks. Under certain circumstances, that can be deadly. Before removing its custom vector, a program should check that it was not modified again. However, very few do that, and so if you do not terminate such program in REVERSE order of when you executed them, you'll probably get a system crash.

Another fault of Kickstart 1.x is that the dos.library vectors cannot be modified by SetFunction(), because they do not follow the conventions established by Commodore itself.

All this could be fixed if all programmers would use the patch.library.

Unfortunately patch.library is quite new and many programs still use SetFunction().

So I wrote PatchSetFunc, which allows any program to take profit from patch.library.

1.4 Requirements

SYSTEM REQUIREMENTS:

- Any Amiga with any Kickstart version
- patch.library v4+ must be installed in libs:
(make sure you have the latest version)

1.5 Installation

The program 'PatchSetFunc' should be placed as the first command in the startup-sequence after the SetPatch command. You must specify the full path, if you place the command in a directory other than c:.. You may also want to redirect the output to nil:..

The patch.library should be copied to LIBS:..

1.6 Notes

NOTES & WARNINGS & KNOWN BUGS:

- Programs directly reading addresses from the jump-table, may fail to quit! (This behavior is illegal and not supported by Commodore!)
- In order to make patch.library to work with XOper a kludge has been added, which stops PatchSetFunc the exec.library/Switch() function (which in fact does the actual multitasking in the Amiga) of being patched
- Some programs patch the Expunge() function of a library, to ensure that the library won't get expunged, while a patch is active. If the support program PatchSupervisor is active PatchSetFunc ignores patches to the Expunge() function.
- Programmers should use patch.library directly to ensure maximum safety, when patching library functions
- A developer package with full documentation and includes is available on Aminet (util/libs/PatchLibV4.lha) or (util/libs/PatchLib.lha)
- This software will show its full capabilities once the preferences editor for the patch.library is available in the near future. Programs can be excluded from using PatchSetFunc....

1.7 Compatibility

In general PatchSetFunc should work together with all programs, that know about SetManager, because for these programs it will look like SetManager was active. (The public messageport 'SetMan' can be found via FindPort())

Other programs should be configured (if possible), not to check, if a patch was installed after its patch.

Program: Change when using PatchSetFunc:
XOper V2.x turn SmartPatch OFF

The following programs are known not to work fully with patchsetfunc:
enforcer

Error: Can not be turned off
Reason: unknown
Solution: excluded from PatchSetFunc

Executive

Error: crashes during install
Reason: unknown
Solution: excluded from PatchSetFunc

NoDraw + NoFill from Aminet CD 11: util/wb/NoFillNoDraw.lha

Error: crashes after install/does not work
Reason: Direct read from jump-table/depends on undocumented values residing on stack
Solution: do not use

NoIconBorder V1.3 from Aminet

Error: crashes after install/does not work
Reason: depends on undocumented values residing on stack
Solution: do not use

NewIcons V3 from Aminet CD 14: util/wb/NewIconsV3.lha

Error: The No Borders patch does not work
Reason: depends on undocumented values residing on stack
Solution: PatchSetFunc does not redirect the graphics.library/Draw() patch to patch.library when the taskname is "NewIcons" (SetFunction() will be used)

MCP V1.21 from Aminet CD 14: util/cdity/MCP121.lha

Error: The No Borders patch does not work
Reason: depends on undocumented values residing on stack
Solution: PatchSetFunc does not redirect the graphics.library/Draw() patch to patch.library when the taskname is "MCP" (SetFunction() will be used)

1.8 Bugreports

If you find any programs not working together with PatchSetFunc please send me a bugreport containing the following information:

- What versions of patch.library and PatchSetFunc are you using?
 - What is the name and version number of the program not working with patchsetfunc and what is the archivname on the Aminet (if possible)?
 - What steps are to be taken to reproduce the bug?
 - What exactly goes wrong (crash, guru,...)?
 - What patches are installed on your system?
-

The output of the PatchList program (Aminet:util/libs/PatchLibV4.lha) would be nice.

- Are there any alerts with the Gurnumber: \$44000xyy ?
These alerts are send out by PatchSetFunc, if patch.library reports an error. There is no way to tell this an application, because the original SetFunction() never fails.
x indicates the function, that failed.
yy is the errorcode as defined in the patch.h include file supplied in the PatchLibV4.lha or util/libs/PatchLib.lha archive

1.9 History

- V1.43 ENHANCEMENT: Workarounds for the NoBorder options of MCP and NewIcons
(Note: All known No-Icon-Border programs depend on the value 8 residing on the stack to find out, if Workbench indents to draw icon borders or something else. This was never documented and may fail with future versions of the OS)
DOCUMENTATION: Problems with NoIconBorder
- V1.42 FIX: No longer patches the exec.library function ReleaseSemaphore()
(This fixes crashes with RetinaEmu)
- V1.41 ENHANCEMENT: Sets a private bit in the patch.library base structure, if ← active
DOCUMENTATION: Problems with NoDraw & NoFill
- V1.40 ENHANCEMENT: Automatically extends the stack to at least 2000 bytes for each patch, if patch.library V5+ is installed
- V1.35 FIX: Patching of Expunge() is now possible for programmms other than unarp
(This fixes crashes with GPFax)
- V1.33 FIX: By passing a wrong tag to patch.library, too many internal poject-structures were created (This reduces memory usage)
- V1.32 ENHANCEMENT: Now does nothing, if the librarybase or the function passed to SetFunction() is NULL.
(This fixes problems with the buggy CEDPatch)
(Reported by Robert Hofmann)
- ENHANCEMENT: Docs now in AmigaGuide format
- V1.31 FIX: No longer used for Executive, because of crashes when removing patches
- V1.30 FIX: Calling SetFuction() for the same patch for the same function twice installs this function now only once
(This fixes crashes with PatchSetFunc + RTPatch + Iconian)
(Reported by Alberto Caporro, Ariel Magnum, Niels Bache)
- V1.28 FIX: Loadresource reenabled (crashes were caused by bugs in earlier versions of patch.library, which have been fixed)
- V1.25 FIX: Disable patch after removing failed
- V1.24 FIX: Display some alerts, if something goes wrong
- V1.23 FIX: No longer used for LoadResource, because of crashes
(Reported by Ariel Magnum)
- V1.22 FIX: No longer patches the exec.library private functions Schedule() and ExitIntr(). This caused ShapeShifter to crash on exit.
- V1.21 ENHANCEMENT: Now supports project management of patch.library V4
- V1.10 ENHANCEMENT: Now uses less stack
- V1.06 FIX: The public message port was spelled 'Setman' instead of 'SetMan'
- V1.02 RELEASE:First public release
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1.10 Distribution

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- The author will not be liable for any damage arising from the failure of the programs or the library to perform as described, or any destruction of other programs using the library residing on a system. While I know of no damaging errors, the user of this package uses it at his or her own risk.

This package may be distributed in PD-series (e.g.: the Fred Fish library) or on the Aminet.

1.11 Author

To contact the author for bugreports, hints, ideas, donations, write to:

Stefan Fuchs E-Mail: snfuchs@socrates.franken.de
Oskar-von-Miller-Str. 49 Fido: Stefan Fuchs@2:2490/1901

D-90478 Nuernberg
GERMANY
