PatchWork

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COLLABORATORS

	TITLE : PatchWork	

ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Richard Körber	July 31, 2024	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

PatchWork

1.1 PatchWork: Table Of Contents

#
# # # # # # #
#
#
##
#
#
V0.15
P R E R E L E A S E
ANYTHING IS SUBJECT TO CHANGE

-- TABLE OF CONTENTS --

1.2 PatchWork: Introduction

I N T R O D U C T I O N

PatchWork is another system debugging tool like MuForce, Enforcer,
Mungwall, Poolwatch and so on. It also makes it's output to the
debug port, so you should use Sushi to read it, unless you have
got a second Amiga available...
Now, what does PatchWork do?
It all began when I read the exec.library autodocs and started to
wonder if all the warnings and restrictions mentioned in there are
really observed. There was no such tool available (at least I hope
so ;-), so I sat down and wrote a first test version of PatchWork.
I expected to see no single PatchWork hit, but I was wrong. There
are a lot of programs throwing PatchWork hits, recent programs as
well as some old Commodore commands! So there really seems to be a
demand for that tool...
Well, then I constructed a real tool out of PatchWork. I added
better outputs (as known from e.g. Enforcer) and checked even more
restrictions. The result is what you have on your harddisk now.
I stopped PatchWork due to the low acceptance of the community. Most
of the people didn't know about it after all, or just didn't use
it. Then Thomas Richter asked me to add PatchWork to his MuForce
packet. I agreed immediately, and resumed my work on PatchWork.
Anyhow, my time is very limited, so don't expect much more improvements,
unless there is a really overwhelming feedback and acceptance of the

community. (Remember that you are a part of the community!)
Please note that this is only a pre-release. It is by far from
being complete, and I expect several bugs. But I want to know if
this tool is also useful for other programmers. If you like it,
please send me a small e-mail.
Remember: the future of PatchWork still depends on YOU!
Richard Körber

1.3 PatchWork: Features

F E A T U R E S

This are the features of PatchWork:
· Catches bad function calls from
- commodities.library
- dos.library
- exec.library
- graphics.library
- gadtools.library
- intuition.library
- utility.library
· Reminds you that a minimum OS version is required for special cases.
· Full debug output, including registers, stack, PC, disassembly and
SegTracker. As you are used from MuForce!
· Additionally, the function call will be shown, too!
· Four different severity levels, threshold adjustable
· Annoys you with pedantic PatchWork hits... ;-)
PatchWork is NOT:
· A replacement for Enforcer and/or Mungwall. Use them, too!
· A system protector that magically ’repairs’ bad function calls.
This is not the philosophy behind PatchWork!

1.4 PatchWork: Copyright

C O P Y R I G H T

Please read the following parts carefully.

If you do not entirely agree to these Copyright notes, you must delete
this archive and all related files.

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==========

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and material. This means a maximum of 3 Euro (or the equivalent amount
in other currencies) for disks and 15 Euro for CD-ROMs containing a PD
software collection.
I explicitly permit the distribution via AmiNet series, and as part
of the mmu.library packet by Thomas Richter.
I explicitly forbid the distribution on a coverdisk of a magazine,
if it is announced as "Full Version", "Special Offer" or similar.

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You are using the program as it is, with all flaws, and on your
own risk! I grant no warranty for the software meeting a special
purpose. This software may cause financial damage or harm people.

Please note that one purpose of this software is to crash your
system if poor software is executed. This crash may also result in
data loss, loss of all unsaved documents and all files on your RAM
disk.
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· for fascism or military purposes
· on Amigas used in a sensible area
· if you do not agree to the copyright note
In this case you must delete the software and all related and
generated files immediately!
CONTENTS OF THE PACKAGE

The package is only entire with these files:
PatchWork/PatchWork (Main program)
PatchWork/PatchWork.guide (This documentation)
PatchWork.info
FILE_ID.DIZ
This package may be a part of the mmu.library package by Thomas
Richter.

1.5 PatchWork: Address

A D D R E S S

You can reach me through one of the following ways:
E MAIL

Use e-mails if ever possible. My address is:
shred@eratosthenes.starfleet.de
richard.koerber@koeln.netsurf.de
Please do not send mails larger than 40KB without prior permission.
If you should have serious trouble reaching me, check my web page for
other e-mail addresses.
SNAIL MAIL

If you do not have an e-mail account, you may also write a snail mail.

Include a preformatted floppy disk and sufficient stamps if you want to
get an update this way!
Richard Körber
Überm Rost 13
51465 Bergisch Gladbach
Germany
WORLD WIDE WEB

Updates are available through my web page. URL:
http://shredzone.home.pages.de
SUPPORT BBS

You can also get the latest update from my official support BBS
Eratosthenes in Germany.
Number: +49-228-239522 (ISDN, V.34)
Login: SUPPORT (no password required)
Board: /SUPPORT/SHRED
Please note that even though the BBS can be switched to English, the
main language is German, and discussions will be held in German only.
PRETTY GOOD PRIVACY

If you feel that way, you may also use PGP (note that the use of
PGP is restricted in some countries). My PGP public key is attached
below.

Type Bits/KeyID Date User ID
pub 1024/3D5D331D 1997/01/08 Richard Koerber <shred@chessy.aworld.de>
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: 2.6.3i
mQCNAjLTMucAAAEEAOMY/3jzWBFV2Annpc6/VPhZQqF81btsqjyRR670uOELH+iO
PXkrXX7IEo1vtNbKAc/MKDkcn2p4g5159yK2OoZkoqFsCs1JXzFLVfAM41tvaNG0
RTibFJAYCZ03umli5q4EtCj1DCMMeZGzmyAO9mpfuyIC+k6qu/NEvrU9XTMdAAUR
tChSaWNoYXJkIEtvZXJiZXIgPHNocmVkQGNoZXNzeS5hd29ybGQuZGU+iQCVAwUQ
M0R4IfNEvrU9XTMdAQGe5gQAizTK/KmKymt5GtQQL1PW7m7tmZYBqglwtbSf7RBF
fnntdkyeTQvRlbfjSAKjMYD0ZV34JtjMPJrRifIF6J6abSMQ1xT8IrEpyV8JrRcW
Tjb4YEz+qEqo0Pj+l/87fqez1vUpTz19C5R5KNqHBk7/icCBGKuoLGtAmR6oifj4
PKc=
=GI6y
-----END PGP PUBLIC KEY BLOCK-----

1.6 PatchWork: Bugs

B U G S

KNOWN BUGS

· PatchWork will hang up the system for some reason. I hope this bug
will be fixed when I implement the asynchronous I/O routines.
· There will for sure be some more bugs inside. Please help me find
them to make PatchWork a reliable tool.
KNOWN ENFORCER/MUNGWALL/PATCHWORK HITS

· none known yet... :-)
BUGGY SOFTWARE WORKAROUNDS

· If PatchWork crashes during startup, or shows an 8BADC0DE alert,
you should try the NOPERMIT option. Anyhow this is an indicator for
a flawed Patch Utility, so find out who made it and write him a
mail.

PatchWork is written and tested on:
** HARDWARE **
System: Amiga 4000
CPU: CPU=68060/50 MHz (Rev 1), FPU=68060/50 MHz, MMU=68060
Chips: AGA (RAMSEY F, GARY Normal, CHUNKY None) VBR=0x0803AE08
Agnus: Alice 8374 Rev. 3-4 (Mode: PAL)
Denise: Lisa 8364 (Revision: 0)
AmigaOS: 3.1 (V40.68, SetPatch V43.6) Exec V40.10 Workbench V40.42
Support: GraphicOS: CyberGraphX 3, AudioOS: AHI, TCP/IP: Miami
Clock: Power 50 Hz, VBlank 50 Hz, E 709379 Hz
RAM: Motherboard 32 bit, 60 ns, Double CAS, 4x Bandwidth
Memory: CHIP FAST TOTAL ROM = 512.0KB SLOW = 0
NORMAL ~2.0MB 41.5MB ~43.5MB
VIRT. 0 0 0
TOTAL ~2.0MB 41.5MB ~43.5MB
** EXPANSIONS **
Nr ID Adresse Größe Hersteller Produkt

---

1 2140.22 40000000 64MB Phase 5 CyberVision 64 Graphics

2 2140.19 00EA0000 128KB Phase 5 CyberStorm ’060 MK-II Flash ROM

3 082C.10 00E90000 64KB BSC Multiface II Multi I/O

4 4754.0C 00EC0000 64KB MacroSystem Germany Toccata Audio

5 0877.CA 00ED0000 64KB VillageTronic Ariadne II Ethernet

6 4754.05 00EE0000 64KB MacroSystem Germany MaestroPro Audio

(This list has been made using Identify.)

1.7 PatchWork: History

H I S T O R Y

V0.15 » (5.11.1999)

· V0.14 revision was not bumped

· Using disassembler.library now to disassemble around the PC,
with the parameters DISPC and DISRANGE (thanks, Thomas Richter)

V0.14 » (24.10.1999)

· gadtools.library tests implemented

· Documentation has been reworked

V0.13 » (10. 9.1999)

· Bugfix: CxBroker nb_Unique of 3 is legal [Jeroen T. Vermeulen]

· Ambiguous formulation in this guide’s SetCxObjPri() chapter
[Jeroen T. Vermeulen]

· Added the NOPERMIT option

· Renamed "Badness" to "Severity"

· Reassembled it with proper optimizer settings, saving some
bytes

V0.12 » (4. 4.1998)

· Bugfix: the ShowHit function scratched A5, resulting that all
subsequent relative accesses to A5 threw enforcer hits. This
was a really ugly one. [Børge Nøst]

· Bugfix: Disable() implies Forbid(), this is honoured in all
exec checkings now. [Thomas Richter]

· Bugfix: BitMapScale width>1024 was wrong documented here. Anyhow
PatchWork was accurate. [Dave]

· DISABLECHECK implemented

· Permit() similar checking for Enable()

V0.11 » (12. 2.1998)
· utility.library tests implemented
· commodities.library tests implemented
V0.10 » (7.11.1997)
· Bugfix: BestModeIDA() said "0 is not allowed" when the tag is exactly *non* null. No good... [Børge Nøst]
· Removed CopyMem() and CopyMemQuick() with 0 bytes hit. It was quite annoying and is absolutely clean, anyhow.
· Added exec ReleaseSemaphore() and ReleaseSemaphoreList(). Don't know why I left them out...
· AllocSpriteDataA() checks the SPRITEA_OldDataFormat tag now, all further checkings are ignored then [Allan Purtle]
· DeleteMsgPort() now does a level 3 hit if port is still public
· Removed the superfluous and annoying CreateNewProc() suggestion
· intuition.library tests implemented
· PatchWork quits now if called a second time
V0.9 » (7.10.1997)
· Bugfix: signed compares for EraseRect() and RectFill()
· WaitBOVP() temporarily disabled, due to a clean usage in CGX3
· Added the MinOS option [Eric Sauvageau]
· Bad patch manager will result in an Alert (untested)
V0.8 » (6. 7.1997)
· AllocMem() and AllocVec() checking against -1 [Dave Jones]
V0.7 » (10. 6.1997)
· graphics.library tests implemented
· CopyMem() and CopyMemQuick() with overlapping areas are finally Badness 3. Yeah!
· Automatical BPTR calculation
· NULL as STRPTR will not cause Enforcer hits any more
· WORD parameters are displayed correctly now
· Mistake in the guide file: AttemptLockDosList() returns NULL for failure. PatchWork works accurately, though! [Christian Wasner]
· CreateProc() isn't really obsoleted [Kenny], so it will be just a suggestion to use CreateNewProc() and got severity level 0.
V0.6 » (29. 5.1997)
· ROMHITS implemented
V0.5 » (29. 5.1997)

· dos.library tests implemented

V0.4 » (29. 5.1997)

· Improved output using a new structure, showing library

name, function parameters, severity level, cause

V0.3 » (28. 5.1997)

· STACKLINES,SHOWPC,STACKCHECK,AREGCHECK,DREGCHECK added

· Bugfix: bad Forbid() state recognition, works fine now

V0.2 » (28. 5.1997)

· CopyMem(), CopyMemQuick() react on size==0

· Permit() checks tdNestCnt

· DEADLY implemented

V0.1 » (26. 5.1997)

· First internal pre-release

1.8 PatchWork: Credits

C R E D I T S

I wish to thank all the people who wrote me! :-)
I also want to credit:
Thomas Richter for MuForce, the disassembler.library and all his
kind help and hints. Without him, PatchWork would
have been discontinued.
Eric Sauvageau for his great MINOS idea!
Dave Jones for his help regarding memory flushing.
Frank Wille for PhxAss, the best assembler available! (FreeWare)
Michael Sinz for Enforcer, SegTracker and his help for all the
bugfree Amiga software.

//
\\ // -- Amiga - Cow inside --
\X/

1.9 PatchWork: Future

F U T U R E

This is what I plan in future releases:
· Limit the output to a task name using wildcards
· Using asynchronous output and also output on the shell.
· Fixing all bugs
· Checking even more functions and also other libraries
· Modularize it, and make the module format public so library programmers
can write PatchWork modules for their libraries.
If you have some more ideas, just write! :-)
Anyhow, I have a lot of other projects and very limited time, so please
be patient. Also, don't take anything for granted. Personally, I don't
believe that all the above will ever be implemented. (Sigh)

1.10 PatchWork: Usage

U S A G E

REQUIREMENTS

· AmigaOS 2.04 (V37) or higher (V36 won't work!)
· A terminal connected to the internal serial port, or Sushi
· SegTracker (not required, but suggested)
INSTALLATION

Just copy PatchWork into your CLI path and this guide file into whereever
you store good documentations. ;)
You should start PatchWork after SetPatch and after any SetFunction()
enhancer (e.g. PatchControl).
START

You must start PatchWork from the shell.
PatchWork won't detach, so you should use "run <>NIL: PatchWork" if you
want to start it in the startup-sequence.
You can always remove PatchWork by pressing <CTRL>-<C>, sending a break,

or starting another instance of PatchWork.

SHELL PARAMETERS

LEVEL/K/N Set the severity threshold to be put out. Defaults
to 0. More about severity levels see below.

MINOS/K/N You can provide the minimal required OS version of your
program here. Any PatchWork hit that is fixed starting
from this OS version will be suppressed. E.g. if your
program requires at least AmigaOS 39, just provide MINOS=39.

TINY/S Tiny output. Just show the cause of the hit.

SMALL/S Small output. Shows the cause of the hit and the PC,
TCB and Task name.

STACKLINES/K/N Number of stack lines to be output. Each stack line
consists of 32 stack bytes. There is no limit here!

STACKCHECK/S Check also all stack entries with SegTracker

SHOWPC/S Show 32 bytes around the current PC

AREGCHECK/S Check also the contents of the address registers
with SegTracker.

DREGCHECK/S Check also the contents of the data registers with
SegTracker.

ROMHITS/S Usually, all hits caused by the AmigaOS ROM will be
suppressed. With this option set, they will also be shown.

DEADLY/S With this option set, some functions will return a worst
case scenario return code instead of the real return code
under certain conditions. See patch documentation below.

DISABLECHECK/S It is only allowed to disable system interrupts for a
maximum time of 250ms. This option will check if this time
range is kept. A 68020 or better is required for this test.
It won't work on most Amiga emulations and might trouble on
DraCo. Even more, this test could cause hardware timeouts,
so be very careful and do not use this option permanently.
If you don't know what I'm talking about, I strongly
encourage you not to use this option!

NOPERMIT/S Does not patch the Permit() function. This is useful
if your system crashes on start of PatchWork (or shows an
8BADC0DE alert), caused by a poor patch utility. There is no
reason to use this option if PatchWork starts up without any
problems.

DISPC/S Show a disassembly of the code around the current PC. This

option requires Thomas Richter's disassembler.library to
be installed properly.
DISRANGE/K/N Range of bytes to be disassembled before and after the
PC. Defaults to 32.
BADNESS LEVELS

All hits are divided into four levels of severity. The higher the
level, the more probable is a system crash caused by it.
0 Hits with level 0 won't crash the system. They are legal and
absolutely harmless. The only function of level 0 hits are
for mental notes, e.g. that a special OS version is required
for the function or the way it is used. Also see MINOS.
1 Hits with level 1 also won't crash the system, but they are
ugly, obsoleted, needless or waste system time, as e.g. an
"AllocMem(0)" or "OldOpenLibrary("...")".
2 Hits with level 2 might crash the system, especially with
multitasking interaction. This are e.g. FindPort()s without
a prior Forbid(). You must not rely on a result you get from
a level 2 hit! It has most probably already changed. If not,
it is just luck, but nothing more... ;-)
With the DEADLY option, some of the level 2 hits will try to
crash your program by returning worst case return codes.
3 Hits with level 3 will crash the system sooner or later. They
are used against the rules of AutoDocs, and thus will have
insecure results. Or they will result in memory loss. In any
way, they are used wrong.
Two examples: CopyMem() with overlapping memory areas, or
DeleteMsgPort() without clearing up the message queue before.
ANY hit starting from level 1 is a real bad hit, and should be
removed if possible, to enhance system stability and future compatibility.

1.11 PatchWork: How it works

H O W I T W O R K S

That is easy peasy: PatchWork just patches some library functions.
If one of them is called, PatchWork checks the passed structures and
parameters and finds out if they meet the AutoDocs specifications.

If a test should fail, you will be notified through the debug
channel, or through the Sushi output console.
PatchWork is not made to protect the system from crashing. It won't
correct bad structures and parameters. It just reports what you forgot
and then leaves you alone with that mess.
In fact, you can even try to crash your program by using the DEADLY
option.
Note: we can discuss about anything, but not about something you
explicitely MUST or MUST NOT do regarding to the AutoDocs. The AutoDocs
are law! Even if it should work, it is simply wrong to break the rules,
and it will most probably fail in future releases! See the philosophy
chapter.

1.12 PatchWork: Patch Utilities

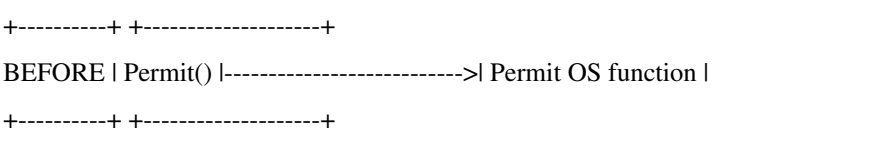
P A T C H U T I L I T I E S

The AmigaOS' patch function is quite limited. It is only possible to remove
all patches in the opposite order they were installed. Otherwise, trouble
will occur.
So, some smart programmers wrote utilities that patches the OS patch function
and replace it with a better one. Then you can remove all patches in any order
you like. I strongly suggest to use such a program.
Anyhow, some problems may occur, since PatchWork patches some fundamental
functions (e. g. AllocMem() and Permit()). If you have such problems, delete
the bad patch utility and find a new one.
STACK TROUBLE

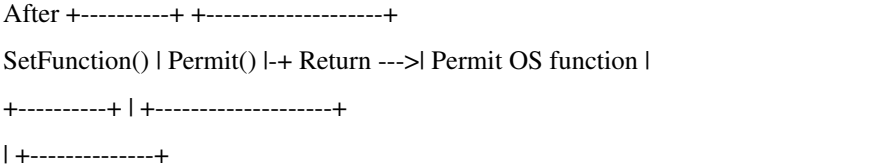
It is crucial that PatchWork finds the caller's PC on the stack, and nothing
before that. If a patch utility pushes some data on the stack before starting
the patch functions, PatchWork will show the utilities PC instead of the callers
PC.
I currently don't know a patch utility with that problem. Anyhow, be prepared.
FUNCTION TROUBLE

A serious problem is if the new SetFunction() routine of the patch utility uses
any OS functions after setting the new function vector. Let me explain why.
For example, our program will patch the Permit() function.

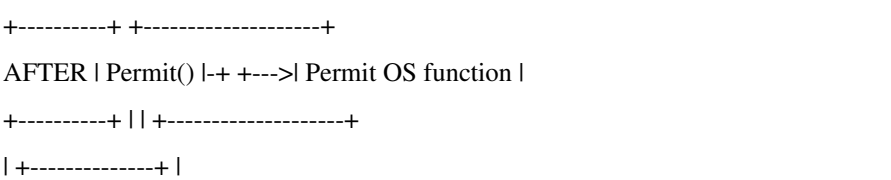
This is the state before SetFunction() has been called.



We can see the Permit() entry pointing to the Permit OS function in ROM, and
our patch which has not yet been inserted.
Usually, SetFunction() writes the new function address into the library and
returns a pointer to the old function address.



Our patch can now jump to the original Permit OS function, thus building a
chain:



But there is one weak point! After SetFunction() has been executed (but before
our patch points back to the ROM function), the Permit patch still points to NIL.
If someone would call Permit() at this stage, the system would crash immediately.
Usually, there is no chance for that, since patches are applied while the system
is Disable()d. But when the patch utility calls Permit(), or breaks the disabled
state, the system will crash!
PatchWork does not point to NIL, but will show up the alert "8BADC0DE" instead.
If this one will show up while starting PatchWork, you will know that your
patch utility is faulty. Anyhow, this alert won’t show in all cases. Another
good hint is if your system crashes after launching PatchWork.

WORKING ONES

These Utilities are known to work with PatchWork:

· PatchControl V2.3 or higher (AlienDesign, see MCP packet)

· SaferPatches V2.04 or higher

· No patch utility at all... ;-)

NOT WORKING ONES

These Utilities are known to fail:

· SaferPatches V2.03 and before

· MagicMenu V2.25 (use NOPERMIT)

INSTALLATION

If you are using patch utilities, then make sure that they are started before
PatchWork is running. Don’t start them afterwards!
If the system will then crash during startup, or the alert occurs, then delete
that tool and use a newer or other one...
There is an alternative you may try: use the NOPERMIT parameter to disable the
exec/Permit() patch. This will help in some cases, as e.g. MagicMenu V2.25.
Anyhow, please send a mail to the author of the faulty patch tool and ask him
to correct it.

1.13 PatchWork: Output example

O U T P U T E X A M P L E

This is how a PatchWork hit looks like:

```
exec.library OldOpenLibrary("dos.library")
Severity 1: obsoleted, use OpenLibrary() instead
PC=08339720 TCB=08399D58 ("Shell Process")
Data: 00000001 020CE5C5 00004000 08350BA4 00000001 00000001 020CFF85 08339714
Addr: 08350BA4 08339732 08014E0C 08339714 084F3C08 00F92D70 0800083C 084F3BFC
----> 08339732 - "pwtest" Hunk 0000, Offset 0000001A
----> 00F92D70 - "ROM - dos 39.23 (8.9.92)" Hunk 0000, Offset 00000314
PC-8: 00000000 00000000 0833653C 00000000 00000030 00000000 43FA0018 2C780004
PC *: 4EAEFE68 22402C78 00044EAE FE627000 4E75646F 732E6C69 62726172 79004E71
Stck: 084F3BFC 08339724 00F9359C 00004000 0839A74C 08533B40 00001970 48E7303E
Stck: 24482649 61A66730 2C6A0018 206A0014 4EAEFF94 2848204B 610000B8 661C2449
----> 08339720 - "pwtest" Hunk 0000, Offset 00000008
----> 08339724 - "pwtest" Hunk 0000, Offset 0000000C
----> 00F9359C - "ROM - dos 39.23 (8.9.92)" Hunk 0000, Offset 00000B40
```

Now for the single lines:

The first line contains what function caused the hit:

exec.library OldOpenLibrary("dos.library")

^^^^^^^^^^^^^--- passed parameters

^^^^^^^^^^^^^^----------------- function name

^^^^^^^^^^^^-------------------------------- library name

The second one describes the hit itself:

Severity 1: obsoleted, use OpenLibrary() instead

^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^--- cause

^^^^^^^^^^-- severity level

(With the TINY option set, no more lines are displayed.)

The third line locates the hit:

PC=08339720 TCB=08399D58 ("Shell Process")

^^^^^^^^^^^^^^^^--- task name

^^^^^^^^-------------------- address of the task structure

^^^^^^^^--------------------------------- address of the JSR instruction

that caused the hit.

(With the SMALL option set, no more lines are displayed.)

After that, the data and address register contents follow:

Data: 00000001 020CE5C5 00004000 08350BA4 00000001 00000001 020CFF85 08339714

Addr: 08350BA4 08339732 08014E0C 08339714 084F3C08 00F92D70 0800083C 084F3BFC

If you enabled DREGCHECK or AREGCHECK, the contents of any register

will be passed to SegTracker (of course SegTracker must be running):

----> 08339732 - "pwtest" Hunk 0000, Offset 0000001A

----> 00F92D70 - "ROM - dos 39.23 (8.9.92)" Hunk 0000, Offset 00000314

With SHOWPC enabled, 64 bytes around the PC at hit time will be shown:

PC-8: 00000000 00000000 0833653C 00000000 00000030 00000000 43FA0018 2C780004

PC *: 4EAEFE68 22402C78 00044EAE FE627000 4E75646F 732E6C69 62726172 79004E71

After that, all stack lines will be shown. You can change the number

of stack lines using the STACKLINES parameter. Defaults to 2 lines.

Stck: 084F3BFC 08339724 00F9359C 00004000 0839A74C 08533B40 00001970 48E7303E

Stck: 24482649 61A66730 2C6A0018 206A0014 4EAEFF94 2848204B 610000B8 661C2449

If SegTracker is running, it will be fed with the PC:

----> 08339720 - "pwtest" Hunk 0000, Offset 00000008

And last but not least, if STACKCHECK is enabled, all longwords shown

in the stack lines above are passed to SegTracker:

----> 08339724 - "pwtest" Hunk 0000, Offset 0000000C

----> 00F9359C - "ROM - dos 39.23 (8.9.92)" Hunk 0000, Offset 00000B40

1.14 PatchWork: Philosophy

P H I L O S O P H Y

I got a lot of feedback like: "Hey, this function is working fine, so why does PatchWork bark about it?" Okay, let me tell you the philosophy behind PatchWork, and software documentation in general.

In the early days, when the first home computers like the ZX Spectrum and C64 were popular, computers were some kind of static. They were constructed by some smart people, and then they were never touched again. Even if there were hardware improvements, the kernel ROM did not change, to ensure compatibility to the existing software.

This was because everyone could buy a book with the commented ROM listing, and then they knew where to find what function, and exact details of the kernel functionality. And since only one software could run on these systems simultaneously, you didn't need to care about sharing resources and you never had to deal with 3rd party software updates.

Well, times have changed. The static ROM has been replaced by operating systems, which are updated frequently (at least they should be). These systems are able to run a number of programs simultaneously, but since they run on the same hardware, they have to share their resources.

You have to follow exact rules if you want to write software that can interact with several versions of the operating system and other software installed on the software.

First, you always have to use the operating system instead of accessing the hardware resources yourself. A good example for this is the DraCo, which is able to run all conformous software without modifications, just because they do not access the Amiga chipset directly.

The other, even more crucial thing is documentation. You don't know how the operating system or the piece of software works exactly. You aren't ought to know it, and you won't even be able to know since software is growing more and more complex. So there is only one interface between your software and the operating system. This is the documentation that explains how your operating system works.

If you are a tool programmer, you rely that the OS call works exactly as documented. You want to have a certain result if you pass in the right mixture of parameters.

If you are a driver or patch programmer, you rely that OS functions

were called in a definite way. You cannot catch all variations and eventualities, since this would unnecessarily slow down your function.
I want to mention a good example of what happens if people ignore the documentation. When Amiga started to get popular, it was delivered with the AmigaOS 1.2, and later with AmigaOS 1.3. Some people wrote programs like they have been used to write it on their C64: they knew the address of some functions in the ROM, and they knew for example that the graphics.library was always the 3rd library after exec.library (or was it the 4th, I don't know exactly). So, to save some microseconds, they ignored the documentation and used their hacks. And they worked fine!
Until the day when Commodore released the AmigaOS 2.0.
This was really a black day for the Amiga, because a LOT of games and hacker tools crashed on the new AmigaOS. Commodore was not to blame, they did the right thing. Instead of trying to be compatible to as much existing software as possible (which was the philosophy of Microsoft these days), they were only downward compatible to their documented features. So all conformous software still worked on AmigaOS 2.0, while all the hacks crashed awfully.
Unfortunately, Commodore WAS blamed for the crashing applications! In all shops, the new Amiga models were considered as unstable, not compatible and just awful. I heard a lot of vendors who told their customers this scrap! They suggested to buy the AmigaOS 1.3 and a switchboard as well, but the mounting would void the warranty. Most customers decided to better buy a PC with Windows 3.1, which was said to be more stable.
This rumour of AmigaOS being incompatible and unstable, is told until today. And all this just because some lame programmers ignored the rules and wrote some bad hacks.
As you see, the documentation is the most important part if you want to write rock stable and reliable software. And this is why you should use PatchWork! Certainly, PatchWork is no guarantee that your software will still run on future AmigaOS releases, but it comes very close to that.
PatchWork knows about the AutoDocs, the MUSTs and MUST-NOTs. And it is quite pedantic. It will surely annoy you some time with hits that seem to be harmless at the first sight. But if you fix these hits, you can be sure that your program might also work with clean system patches, OS updates or other software.
Anyhow, if you don't get any PatchWork hits, it is no sign for your program being 100% compatible. It also depends on some other factors. The best rule of thumb is not to play the smart Alec and regard undocumented features as given. If you find some behaviour that is not documented, better try to find a documented way to reach your aim, instead of just using the undocumented feature and rely on that it will still work in future versions.

1.15 PatchWork: commodities.library

c o m m o d i t i e s . l i b r a r y

These commodities.library patches are implemented:

AttachCxObj

CxBroker

CxMsgData

CxMsgID

CxMsgType

DisposeCxMsg

DivertCxMsg

EnqueueCxObj

InsertCxObj

RouteCxMsg

SetCxObjPri

1.16 PatchWork: commodities.library / AttachCxObj

c o m m o d i t i e s . l i b r a r y AttachCxObj

REPORT V38+ required for headObj==NULL

SEVERITY Level 0, MinOS 38

EXPLANATION NULL does only work since V38

DEADLY has no effect.

1.17 PatchWork: commodities.library / CxBroker

c o m m o d i t i e s . l i b r a r y CxBroker

REPORT nb_Name string is too long

nb_Title string is too long

nb_Descr string is too long

SEVERITY Level 3

EXPLANATION You must keep the maximum string length as defined in

<libraries/commodities.h>. If you use locale.library for

the strings, set the maximum length in the .cd as well.

DEADLY has no effect.

REPORT nb_Name string is NULL

nb_Title string is NULL

nb_Descr string is NULL

SEVERITY Level 3

EXPLANATION You must provide these strings.

DEADLY has no effect.

REPORT nb_Unique 1234 is not allowed

SEVERITY Level 1

EXPLANATION The provided nb_Unique value is not defined in the

<libraries/commodities.h>. Do not forget to initialize

this variable as well!

DEADLY has no effect.

1.18 PatchWork: commodities.library / CxMsgData

c o m m o d i t i e s . l i b r a r y CxMsgData

REPORT V38+ required for cxm==NULL

SEVERITY Level 0, MinOS 38

EXPLANATION NULL does only work since V38

DEADLY has no effect.

1.19 PatchWork: commodities.library / CxMsgID

c o m m o d i t i e s . l i b r a r y CxMsgID

REPORT cxm must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

1.20 PatchWork: commodities.library / CxMsgType

c o m m o d i t i e s . l i b r a r y CxMsgType

REPORT cxm must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

1.21 PatchWork: commodities.library / DisposeCxMsg

c o m m o d i t i e s . l i b r a r y DisposeCxMsg

REPORT cxm must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

1.22 PatchWork: commodities.library / DivertCxMsg

c o m m o d i t i e s . l i b r a r y DivertCxMsg

REPORT cxm must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

1.23 PatchWork: commodities.library / EnqueueCxObj

c o m m o d i t i e s . l i b r a r y EnqueueCxObj

REPORT V38+ required for headObj==NULL

SEVERITY Level 0, MinOS 38

EXPLANATION NULL does only work since V38

DEADLY has no effect.

1.24 PatchWork: commodities.library / InsertCxObj

c o m m o d i t i e s . l i b r a r y InsertCxObj

REPORT V38+ required for headObj==NULL

SEVERITY Level 0, MinOS 38

EXPLANATION NULL does only work since V38

DEADLY has no effect.

1.25 PatchWork: commodities.library / RouteCxMsg

c o m m o d i t i e s . l i b r a r y RouteCxMsg

REPORT cxm must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

REPORT co must not be NULL

SEVERITY Level 3

EXPLANATION NULL is not allowed, and will throw Enforcer hits.

DEADLY has no effect.

1.26 PatchWork: commodities.library / SetCxObjPri

c o m m o d i t i e s . l i b r a r y SetCxObjPri

REPORT Priority is out of range (-128..127)

SEVERITY Level 1

EXPLANATION Even though the parameter is LONG, you must keep the

BYTE range as stated in the AutoDocs.

DEADLY has no effect.

REPORT V38+ required for a result

SEVERITY Level 0, MinOS 38

EXPLANATION The old CxObj priority is only returned since V38.

DEADLY 0xFACEDEAD is returned in any case.

1.27 PatchWork: dos.library

d o s . l i b r a r y

These dos.library patches are implemented:

AttemptLockDosList

CreateProc

DoPkt

Examine

ExamineFH

ExAll

ExAllEnd

ExNext

GetVar

Info

MatchEnd

MatchFirst

MatchNext

RunCommand

SetVBuf

NOTE: BPTRs are marked with a 'Bx' prefix and will
automagically be transformed into an APTR for your convenience!

1.28 PatchWork: dos.library / AttemptLockDosList

d o s . l i b r a r y AttemptLockDosList

REPORT also returns 0x00000001 until V39.24 dos
SEVERITY Level 0, MinOS 40
EXPLANATION Due to a bug, this function could also return 1
for failure. This bug is fixed in dos.library V39.24,
which was released after AmigaOS V39.106! Thus,
a check against dos V39 is not sufficient.
I hope you took this into consideration when using the
function!
DEADLY If not successful, DEADLY returns the worst case
return code, namely 0x00000001. If your program is bad, it
will think about a successful call even though this call
failed. Unfortunately, this won't crash your system. :(

1.29 PatchWork: dos.library / CreateProc

d o s . l i b r a r y CreateProc

REPORT pri is out of range (-128..127)
SEVERITY Level 2
EXPLANATION Even though pri is LONG, you must keep a BYTE
range!
DEADLY has no effect.

REPORT stack size must be a multiple of 4
SEVERITY Level 2
EXPLANATION No further comment required, I think...
DEADLY has no effect.

1.30 PatchWork: dos.library / DoPkt

d o s . l i b r a r y DoPkt

REPORT DoPkt() from a task requires V37+
SEVERITY Level 0, MinOS 37
EXPLANATION You called DoPkt() from a task. This is only possible
since AmigaOS V37. Remember that!
DEADLY has no effect.

1.31 PatchWork: dos.library / Examine

d o s . l i b r a r y Examine

REPORT FileInfoBlock is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Other-
wise Enforcer and Mungwall hits will occur! Creating this
structure on stack is not sufficient.
DEADLY has no effect.

1.32 PatchWork: dos.library / ExamineFH

d o s . l i b r a r y ExamineFH

REPORT FileInfoBlock is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Otherwise Enforcer and Mungwall hits will occur! Creating this structure on stack is not sufficient.
DEADLY has no effect.

1.33 PatchWork: dos.library / ExAll

d o s . l i b r a r y ExAll

REPORT buffer is not word aligned
SEVERITY Level 3
EXPLANATION buffer must be at least word aligned. Better do a longword alignment if possible!
DEADLY has no effect.

REPORT buffer should be longword aligned
SEVERITY Level 1
EXPLANATION It is even better if you longword align the buffer. And it doesn't hurt. So why don't you do it? :-)
DEADLY has no effect.

1.34 PatchWork: dos.library / ExAllEnd

d o s . l i b r a r y ExAllEnd

REPORT buffer is not word aligned
SEVERITY Level 3
EXPLANATION buffer must be at least word aligned. Do a longword alignment if ever possible!
DEADLY has no effect.

REPORT buffer should be longword aligned

SEVERITY Level 1

EXPLANATION It is even better if you longword align the buffer.

And it doesn't hurt. So why don't you do it? :-)

DEADLY has no effect.

1.35 PatchWork: dos.library / ExNext

d o s . l i b r a r y ExNext

REPORT FileInfoBlock is not longword aligned

SEVERITY Level 3

EXPLANATION Longword alignment is vital for this function. Other-

wise Enforcer and Mungwall hits will occur! Creating this

structure on stack is not sufficient.

DEADLY has no effect.

1.36 PatchWork: dos.library / GetVar

d o s . l i b r a r y GetVar

REPORT this flags will require V37+

SEVERITY Level 0, MinOS 37

EXPLANATION GVF_DONT_NULL_TERM in combination with GVF_LOCAL_ONLY

is only available since AmigaOS V37.

DEADLY has no effect.

REPORT this flags will require V39+

SEVERITY Level 0, MinOS 39

EXPLANATION GVF_DONT_NULL_TERM without GVF_LOCAL_ONLY is only

available since AmigaOS V39.

DEADLY has no effect.

1.37 PatchWork: dos.library / Info

d o s . l i b r a r y Info

REPORT parameterBlock is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Otherwise Enforcer and Mungwall hits will occur! Creating this structure on stack is not sufficient.
DEADLY has no effect.

1.38 PatchWork: dos.library / MatchEnd

d o s . l i b r a r y MatchEnd

REPORT AnchorPath is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Otherwise Enforcer and Mungwall hits will occur! Creating this structure on stack is not sufficient.
DEADLY has no effect.

1.39 PatchWork: dos.library / MatchFirst

d o s . l i b r a r y MatchFirst

REPORT AnchorPath is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Otherwise Enforcer and Mungwall hits will occur! Creating this structure on stack is not sufficient.
DEADLY has no effect.
REMARK In fact, it is quite funny that even Commodore did it wrong on AddDataTypes, Dir and Mount. Use "Patches" from Flavio Stanchina (flavio@ies.it) to remove those hits.

1.40 PatchWork: dos.library / MatchNext

d o s . l i b r a r y MatchNext

REPORT AnchorPath is not longword aligned
SEVERITY Level 3
EXPLANATION Longword alignment is vital for this function. Otherwise Enforcer and Mungwall hits will occur! Creating this structure on stack is not sufficient.
DEADLY has no effect.

1.41 PatchWork: dos.library / RunCommand

d o s . l i b r a r y RunCommand

REPORT argptr does not end with '\n'
SEVERITY Level 2, MinOS 38
EXPLANATION The argument string must end with \n, so even old parsers and old AmigaOS releases can handle it correctly.
DEADLY has no effect.

REPORT strlen(argptr) does not match to argsize
SEVERITY Level 1
EXPLANATION argsize does not match the real argument string length.
DEADLY has no effect.

1.42 PatchWork: dos.library / SetVBuf

d o s . l i b r a r y SetVBuf

REPORT buff is not longword aligned
SEVERITY Level 3
EXPLANATION You must longword align the buffer!
DEADLY has no effect.

REPORT not implemented until V40+

SEVERITY Level 0, MinOS 40

EXPLANATION In fact, this function is not implemented up to AmigaOS V39! You can call it, but it will always succeed with returncode 0, even though it did nothing!

DEADLY has no effect.

1.43 PatchWork: exec.library

e x e c . l i b r a r y

These exec.library patches are implemented:

AddPort

AllocMem

AllocVec

CopyMem

CopyMemQuick

CreateIORequest

DeleteMsgPort

Enable

FindPort

FindSemaphore

FindTask

FreeSignal

InitSemaphore

OldOpenLibrary

Permit

Procure

ReleaseSemaphore

ReleaseSemaphoreList

SetFunction

Vacate

1.44 PatchWork: exec.library / AddPort

e x e c . l i b r a r y AddPort

REPORT port name not initialized

SEVERITY Level 2
EXPLANATION With this function, the MsgPort will be made publically
available. Thus, a valid ln_Name entry must be provided,
so FindPort() can find your node without trouble.
If ln_Name is a NULL pointer, FindPort() will cause
Enforcer hits.
DEADLY has no effect.

1.45 PatchWork: exec.library / AllocMem

e x e c . l i b r a r y AllocMem

REPORT allocating 0 bytes
SEVERITY Level 1
EXPLANATION Allocating 0 bytes is ugly, wastes time and might also
fail. Avoid this if possible.
DEADLY has no effect.

REPORT don't use AllocMem(-1) to flush memory
SEVERITY Level 1
EXPLANATION To flush the memory, you should either call AvailMem(),
then add some byte to the result and allocate this, or (not
that good, but still acceptable) do an AllocVec(0x7FFFFFF0).
DEADLY has no effect.

1.46 PatchWork: exec.library / AllocVec

e x e c . l i b r a r y AllocVec

REPORT allocating 0 bytes
SEVERITY Level 1
EXPLANATION Allocating 0 bytes is ugly, wastes time and might also
fail. Avoid this if possible.
DEADLY has no effect.

REPORT don't use AllocVec(-1) to flush memory
SEVERITY Level 1
EXPLANATION To flush the memory, you should either call AvailMem(),
then add some byte to the result and allocate this, or (not
that good, but still acceptable) do an AllocVec(0x7FFFFFF0).
DEADLY has no effect.

1.47 PatchWork: exec.library / CopyMem

e x e c . l i b r a r y CopyMem

REPORT memory areas are overlapping (incremental)
SEVERITY Level 3
EXPLANATION Copying overlapping memory areas are not supported. See
AutoDocs! This is a incremental copy (destination before
source).
DEADLY has no effect.
REMARK I got a lot of request to remove this hit, or at least
set it to Level 1 or so because it works fine. This is
against the philosophy of PatchWork. To cite the AutoDocs:
"Arbitrary overlapping copies are not supported."
I think this is plain speak. We have to obey this, if we
like it or not, and if it may currently work or not.
I will remove this hit as soon as the AutoDocs says that it
is all right to do so. No further discussion.

REPORT memory areas are overlapping (decremental)
SEVERITY Level 3
EXPLANATION Copying overlapping memory areas is not supported. See
AutoDocs! This is a decremental copy (source before
destination), which will even fail on AmigaOS up to 3.1!
DEADLY has no effect.

1.48 PatchWork: exec.library / CopyMemQuick

e x e c . l i b r a r y CopyMemQuick

REPORT pointer/size not longword aligned
SEVERITY Level 3
EXPLANATION This is a raw violation, and will most probably cause
a crash! In this case, you MUST use CopyMem() instead.
DEADLY has no effect.

REPORT memory areas are overlapping (incremental)

SEVERITY Level 3
EXPLANATION Copying overlapping memory areas are not supported. See
AutoDocs! This is a incremental copy (destination before
source).
DEADLY has no effect.
REMARK I got a lot of request to remove this hit, or at least
set it to Level 1 or so because it works fine. This is
against the philosophy of PatchWork. To cite the AutoDocs:
"Arbitrary overlapping copies are not supported."
I think this is plain speak. We have to obey this, if we
like it or not, and if it may currently work or not.
I will remove this hit as soon as the AutoDocs says that it
is all right to do so. No further discussion.

REPORT memory areas are overlapping (decremental)
SEVERITY Level 3
EXPLANATION Copying overlapping memory areas is not supported. See
AutoDocs! This is a decremental copy (source before
destination), which will even fail on AmigaOS up to 3.1!
DEADLY has no effect.

1.49 PatchWork: exec.library / CreateIORequest

e x e c . l i b r a r y CreateIORequest

REPORT size is too small
SEVERITY Level 3
EXPLANATION There is something wrong with your code. Size cannot
be smaller than the size of a minimal IORequest struc-
ture. This will most probably cause Enforcer hits and
Mungwall hits.
DEADLY has no effect.

REPORT ioReplyPort not initialized
SEVERITY Level 2
EXPLANATION CreateIORequest requires an initialized structure. See
AutoDocs!
DEADLY has no effect.

1.50 PatchWork: exec.library / DeleteMsgPort

e x e c . l i b r a r y DeleteMsgPort

REPORT MsgPort contained unreplied Messages
SEVERITY Level 3
EXPLANATION You must reply all messages you have in your MsgPort
before deleting it. Otherwise it will cause memory loss
and some programs might wait for the reply forever. Also
see AutoDocs!
DEADLY has no effect.

REPORT MsgPort is still public
SEVERITY Level 3
EXPLANATION First call RemPort() before deleting the port!
DEADLY has no effect.

1.51 PatchWork: exec.library / Enable

e x e c . l i b r a r y Enable

REPORT Disable() missing
SEVERITY Level 2
EXPLANATION There was an Enable() call though interrupts are already
enabled. Do not use Disable() to neutralize a following
Enable().
DEADLY has no effect.

REPORT Disable time exceeded (1234 ms)
SEVERITY Level 3
EXPLANATION Only if DISABLECHECK has been enabled!
Autodocs allow to disable interrupts for a maximum of
250ms. This time has been exceeded. Try to split up the
code in the disabled section, so interrupts are enabled
in appropriate time slices. It would be even better if
you find a solution to avoid disabling the interrupts
at all.

This test requires at least an 68020, and will not work
properly on Amiga emulations.
It may also occur if the disabled section threw other
hits.
DEADLY has no effect.

1.52 PatchWork: exec.library / FindPort

e x e c . l i b r a r y FindPort

REPORT Forbid() missing, unreliable result
SEVERITY Level 2
EXPLANATION This is one of the hits that occures most. You MUST
freeze multitasking before searching through the public
list for a message port. Otherwise the port could be
shut up shortly after you've got the pointer. The next
PutMsg() will then throw Enforcer hits in best case, or
it will just trash memory. Also see AutoDocs!
DEADLY In DEADLY mode, this function call will return the
true return code only if multitasking was forbidden.
Otherwise it will pass NULL if the Port wasn't there
anyhow, or 0xFACEDEAD if the Port was found. So, just
finding out if this port existed will still work, but
accessing it will cause Enforcer hits.
REMARK Some people claim that this hit is annoying, since they
consider this practice to be legal if you only want to
find out if a port is available or not.
I don't think so. There is still a slight chance to
crash the system. Imagine your program is iterating the
list without Forbid(), looking for a certain Node B
which comes after Node A. Now, while FindPort() is
fetching Node A, a scheduling occurs and another process
gets the processor. This other process now removes Node A
from the list and changes its memory contents. If your
program then gets the processor back, it will get a
completely messed up 'Node A', and will crash.
It is sad, but as long as AmigaOS does not provide a
semaphore mechanism for public lists, we must use Forbid()
if we iterate through them.

1.53 PatchWork: exec.library / FindSemaphore

e x e c . l i b r a r y FindSemaphore

REPORT Forbid() missing, unreliable result
SEVERITY Level 2
EXPLANATION You MUST freeze multitasking before searching a
public Semaphore. Otherwise the semaphore could be
removed shortly after you've got the pointer. An access
to the structure will then throw Enforcer hits in best
case, or it will just trash memory. Also see AutoDocs!
DEADLY In DEADLY mode, this function call will return the
true return code only if multitasking was forbidden.
Otherwise it will pass NULL if the Semaphore wasn't
there anyhow, or 0xFACEDEAD if the Semaphore was found.
So, just finding out if this semaphore existed will still
work, but accessing it will cause Enforcer hits.
REMARK Some people claim that this hit is annoying, since they
consider this practice to be legal if you only want to
find out if a port is available or not.
I don't think so. There is still a slight chance to
crash the system. Imagine your program is iterating the
list without Forbid(), looking for a certain Node B
which comes after Node A. Now, while FindPort() is
fetching Node A, a scheduling occurs and another process
gets the processor. This other process now removes Node A
from the list and changes its memory contents. If your
program then gets the processor back, it will get a
completely messed up 'Node A', and will crash.
It is sad, but as long as AmigaOS does not provide a
semaphore mechanism for public lists, we must use Forbid()
if we iterate through them.

1.54 PatchWork: exec.library / FindTask

e x e c . l i b r a r y FindTask

REPORT Forbid() missing, unreliable result
SEVERITY Level 2
EXPLANATION If you search for a task by its name, you MUST freeze
multitasking before searching through the public task
list. Otherwise the task could be removed shortly after
you've got the pointer. Any access to the TCB will then
throw Enforcer hits in best case, or it will just trash
memory.
Anyhow, FindTask(NULL) will work fine even with enabled
multitasking. This is because there is no iterating
through the public lists of tasks required to find the
own task, and if you can use the result, you'll surely
be still alive... ;-)
DEADLY In DEADLY mode, this function call will return the
true return code only if multitasking was forbidden
or NULL has been passed as task name. Otherwise it will
return NULL if the task really wasn't there, or
0xFACEDEAD if the task was found. So, just finding out
if this task existed will still work, but accessing it
will cause Enforcer hits.
REMARK Some people claim that this hit is annoying, since they
consider this practice to be legal if you only want to
find out if a port is available or not.
I don't think so. There is still a slight chance to
crash the system. Imagine your program is iterating the
list without Forbid(), looking for a certain Node B
which comes after Node A. Now, while FindPort() is
fetching Node A, a scheduling occurs and another process
gets the processor. This other process now removes Node A
from the list and changes its memory contents. If your
program then gets the processor back, it will get a
completely messed up 'Node A', and will crash.
It is sad, but as long as AmigaOS does not provide a
semaphore mechanism for public lists, we must use Forbid()
if we iterate through them.

1.55 PatchWork: exec.library / FreeSignal

e x e c . l i b r a r y FreeSignal

REPORT V37+ will be required
SEVERITY Level 0, MinOS 37
EXPLANATION Just a rememberance that you'll need at least AmigaOS
V37 to call FreeSignal(-1).
DEADLY has no effect.

1.56 PatchWork: exec.library / InitSemaphore

e x e c . l i b r a r y InitSemaphore

REPORT structure is not cleared
SEVERITY Level 2
EXPLANATION The memory space passed to be initialized as a new
semaphore must be cleared according to the AutoDocs.
Even if it seemingly works fine without clearing up the
memory mess, you must do it! No further discussion.
DEADLY has no effect.

1.57 PatchWork: exec.library / OldOpenLibrary

e x e c . l i b r a r y OldOpenLibrary

REPORT obsoleted, use OpenLibrary() instead
SEVERITY Level 1
EXPLANATION Not much to say. Just follow the advice! But please
do NOT just replace it by a lazy OpenLibrary(...,0).
This isn't much better...
DEADLY has no effect. Yet...
REMARK I've got a lot of response on this one. All of them have
two arguments in common that people gave against this hit.
The first one is that the AutoDocs do not explicitely say
not to use this function. Anyhow, this is implied by: "This

obsolete function is provided so that object code compiled
using a 1.0 system will still run." To say it in another
words: this call is only to be used in software that is
ought to run under Kick 1.0. Obsolete functions must not be
used in new code!
The second argument is that you can save 2 (in words: two)
byte by using this function instead of OpenLibrary(). This
is ridiculous, IMHO. First of all, let your program have
10 Open calls (which is rather much), you'd save 20 byte.
This is no price for future compatibility. Another problem
is the missing library version checking.

1.58 PatchWork: exec.library / Permit

e x e c . l i b r a r y Permit

REPORT Forbid() missing
SEVERITY Level 2
EXPLANATION There was a Permit() call though multitasking is already
active. Do not use Permit() to neutralize a following
Forbid().
DEADLY has no effect.
REMARK This check will not be performed with the NOPERMIT
option set.

1.59 PatchWork: exec.library / Procure

e x e c . l i b r a r y Procure

REPORT V39+ will be required
SEVERITY Level 0, MinOS 39
EXPLANATION Procure() is only working in V39 or higher. Don't use
it on older AmigaOS releases!
DEADLY has no effect.

1.60 PatchWork: exec.library / ReleaseSemaphore

e x e c . l i b r a r y ReleaseSemaphore

REPORT semaphore is not obtained
SEVERITY Level 3
EXPLANATION The semaphore has already been released. You must
release any semaphore exactly as often as you obtained
it.
DEADLY has no effect.

1.61 PatchWork: exec.library / ReleaseSemaphoreList

e x e c . l i b r a r y ReleaseSemaphoreList

REPORT semaphore @0x4321ABDC is not obtained
SEVERITY Level 3
EXPLANATION The semaphore has already been released. You must
release any semaphore exactly as often as you obtained
it.
DEADLY has no effect.

1.62 PatchWork: exec.library / SetFunction

e x e c . l i b r a r y SetFunction

REPORT The function offset must be negative
SEVERITY Level 3
EXPLANATION You must provide a negative function offset!
DEADLY has no effect.

REPORT Requested function does not exist
SEVERITY Level 3
EXPLANATION The library does not have a function with that offset. If
you want to patch functions which are only available in
later OS versions, you must make sure that you have the

right version number before applying the patch!
DEADLY has no effect.

REPORT Your patch is called before SetFunction() returns
SEVERITY Level 2
EXPLANATION This is a lack of the AutoDocs, so be careful. If you use
the SetFunction()'s result to build a chain, you must not
patch CacheClearU() and SumLibrary() since SetFunction()
will call these function after writing the new vector, but
before returning to the client!
If there is no extra Forbid()/Disable(), you also must not
patch Supervisor() and Schedule()! (Like all private functions,
you shouldn't patch Schedule() anyhow!)
DEADLY has no effect.

REPORT Forbid() missing
SEVERITY Level 2
EXPLANATION You should generally forbid the task scheduling when you
are about to patch the system. There is a slight probab-
ility that your patched function is called by another task
while you are still building up the chain.
If you are patching functions which can be called by
interrupts, make sure to also Disable() the system for
the time that your patch is not completed.
BTW: don't forget to clear the instruction cache when you
have finished the chaining.
DEADLY has no effect.

1.63 PatchWork: exec.library / Vacate

e x e c . l i b r a r y Vacate

REPORT V39+ will be required
SEVERITY Level 0
EXPLANATION Vacate() is only working in V39 or higher. Don't use
it on older AmigaOS releases!
DEADLY has no effect.

1.64 PatchWork: gadtools.library

g a d t o o l s . l i b r a r y

These gadtools.library patches are implemented:

CreateContext

CreateGadgetA

GT_GetGadgetAttrsA

GT_RefreshWindow

GT_SetGadgetAttrsA

1.65 PatchWork: gadtools.library / CreateContext

g a d t o o l s . l i b r a r y CreateContext

REPORT glistpointer is not set to NULL

SEVERITY Level 2

EXPLANATION The glistpointer you pass in must be initialized to NULL.

DEADLY has no effect.

1.66 PatchWork: gadtools.library / CreateGadgetA

g a d t o o l s . l i b r a r y CreateGadgetA

REPORT illegal gadget kind 19

SEVERITY Level 2

EXPLANATION The gadget kind you've passed in, is unknown to GadTools

DEADLY has no effect.

REPORT previous must not be NULL

SEVERITY Level 2

EXPLANATION You have to set the previous parameter!

DEADLY has no effect.

REPORT newgad must not be NULL

SEVERITY Level 3

EXPLANATION You have not passed in a NewGadget structure. This hit
will most probably also cause Enforcer hits.
DEADLY has no effect.

REPORT no ng_VisualInfo given
SEVERITY Level 3
EXPLANATION You must pass a valid VisualInfo in your NewGadget
structure. This hit will most probably also cause
Enforcer hits.
DEADLY has no effect.

REPORT no ng_TextAttr given
SEVERITY Level 3
EXPLANATION You must pass a valid TextAttr in your NewGadget
structure. This hit will most probably also cause
Enforcer hits.
DEADLY has no effect.

1.67 PatchWork: gadtools.library / GT_GetGadgetAttrsA

g a d t o o l s . l i b r a r y GT_GetGadgetAttrsA

REPORT set req to NULL for future compatibility
SEVERITY Level 2
EXPLANATION speaks for itself.
DEADLY has no effect.

1.68 PatchWork: gadtools.library / GT_RefreshWindow

g a d t o o l s . l i b r a r y GT_RefreshWindow

REPORT set req to NULL for future compatibility
SEVERITY Level 2
EXPLANATION speaks for itself.
DEADLY has no effect.

1.69 PatchWork: gadtools.library / GT_SetGadgetAttrsA

g a d t o o l s . l i b r a r y GT_SetGadgetAttrsA

REPORT set req to NULL for future compatibility

SEVERITY Level 2

EXPLANATION speaks for itself.

DEADLY has no effect.

1.70 PatchWork: graphics.library

g r a p h i c s . l i b r a r y

These graphics.library patches are implemented:

AllocSpriteDataA

AreaEllipse also AreaCircle()

BestModeIDA

BitMapScale

ChangeSprite

ChangeVPBitMap

DrawEllipse also DrawCircle()

EraseRect

FreeColorMap

GetExtSpriteA

MakeVPort

RectFill

ScalerDiv

SetChipRev

SetFont

SetMaxPen

WaitBOVP

1.71 PatchWork: graphics.library / AllocSpriteDataA

g r a p h i c s . l i b r a r y AllocSpriteDataA

REPORT bitmap (h=10) isn't tall enough for sprite (h=16)

SEVERITY Level 3

EXPLANATION See AutoDocs! You can see the height of the BitMap and

the height of the sprite.

DEADLY has no effect.

1.72 PatchWork: graphics.library / AreaEllipse

g r a p h i c s . l i b r a r y AreaEllipse

REPORT ellipse radius must be > 0

SEVERITY Level 3

EXPLANATION Speaks for itself. Also see AutoDocs!

DEADLY has no effect.

REMEMBER that AreaCircle() is only a macro calling AreaEllipse()!

1.73 PatchWork: graphics.library / BestModeIDA

g r a p h i c s . l i b r a r y BestModeIDA

REPORT Tag BIDTAG_NominalWidth: 0 is not allowed

Tag BIDTAG_NominalHeight: 0 is not allowed

Tag BIDTAG_DesiredWidth: 0 is not allowed

Tag BIDTAG_DesiredHeight: 0 is not allowed

SEVERITY Level 3

EXPLANATION Will most probably cause a division by zero.

DEADLY has no effect.

REPORT Tag BIDTAG_NominalWidth: out of UWORD range

Tag BIDTAG_NominalHeight: out of UWORD range

Tag BIDTAG_DesiredWidth: out of UWORD range

Tag BIDTAG_DesiredHeight: out of UWORD range

SEVERITY Level 1

EXPLANATION These tags require an UWORD. The upper word will

most probably be ignored.

DEADLY has no effect.

1.74 PatchWork: graphics.library / BitMapScale

g r a p h i c s . l i b r a y BitMapScale

REPORT bsa_XSrcFactor (=16395) must be within 1..16383

bsa_XDestFactor (=0) must be within 1..16383

bsa_YSrcFactor (=16777) must be within 1..16383

bsa_YDestFactor (=0) must be within 1..16383

SEVERITY Level 3

EXPLANATION No further comment required.

DEADLY has no effect.

REPORT bsa_Flags is not 0

SEVERITY Level 3

EXPLANATION Don't ask, just do it!

DEADLY has no effect.

REPORT Bug: cannot copy with width > 1024 (see autodocs)

SEVERITY Level 2

EXPLANATION BitMapScale is only capable to use the old Agnus'

blitter, so width is limited to 1024, if XSrcFactor

equals XDestFactor. You must accept this even if it

works fine under your graphics board emulation.

DEADLY has no effect.

REPORT Bug: cannot expand in Y direction (see autodocs)

SEVERITY Level 2

EXPLANATION The Y range has been exceeded. See AutoDocs for

their calculation.

DEADLY has no effect.

1.75 PatchWork: graphics.library / ChangeSprite

g r a p h i c s . l i b r a y ChangeSprite

REPORT spriteimage not initialized

SEVERITY Level 3

EXPLANATION You must initialize the spriteimage structure as
described in the autodocs. Otherwise your sprite might
be messed up.
As only exception, this test is skipped if the sprite
has a height of 0 (i.e. it is hidden).
DEADLY has no effect.

REPORT spriteimage must be in CHIP RAM
SEVERITY Level 3
EXPLANATION ...since Amiga custom chips need it there. ;-)
DEADLY has no effect.

1.76 PatchWork: graphics.library / ChangeVPBitMap

g r a p h i c s . l i b r a r y ChangeVPBitMap

REPORT Current bitmap @0x12345678 and new bitmap @0x3456789A do not match
SEVERITY Level 3
EXPLANATION For double buffering, both bitmaps must match in
dimension, arrangement and depth. For better debugging,
you get a pointer to the currently displayed BitMap and
the BitMap structure that will replace it.
DEADLY has no effect.

1.77 PatchWork: graphics.library / DrawEllipse

g r a p h i c s . l i b r a r y DrawEllipse

REPORT ellipse radius must be > 0
SEVERITY Level 3
EXPLANATION Speaks for itself. Also see AutoDocs!
DEADLY has no effect.
REMEMBER that DrawCircle() is only a macro calling DrawEllipse()!

1.78 PatchWork: graphics.library / EraseRect

g r a p h i c s . l i b r a r y EraseRect

REPORT max must be >= min

SEVERITY Level 3

EXPLANATION xmax/ymax must not be lower than xmin/ymin!

DEADLY has no effect.

1.79 PatchWork: graphics.library / FreeColorMap

g r a p h i c s . l i b r a r y FreeColorMap

REPORT V39+ will be required

SEVERITY Level 0, MinOS 39

EXPLANATION if you pass a NULL pointer!

DEADLY has no effect.

1.80 PatchWork: graphics.library / GetExtSpriteA

g r a p h i c s . l i b r a r y GetExtSpriteA

REPORT V40+ will be required for proper operation

SEVERITY Level 0, MinOS 40

EXPLANATION This function is very buggy until V40.

DEADLY has no effect.

1.81 PatchWork: graphics.library / MakeVPort

g r a p h i c s . l i b r a r y MakeVPort

REPORT ViewPort->RasInfo has not been set

SEVERITY Level 3

EXPLANATION RasInfo must be valid!

DEADLY has no effect.

REPORT DUALPF ViewPort->RasInfo.Next has not been set

SEVERITY Level 3

EXPLANATION You must pass a second RasInfo if you use the Dual

Playfield mode.

DEADLY has no effect.

1.82 PatchWork: graphics.library / RectFill

g r a p h i c s . l i b r a r y RectFill

REPORT max must be >= min

SEVERITY Level 3

EXPLANATION xmax/ymax must not be lower than xmin/ymin!

DEADLY has no effect.

1.83 PatchWork: graphics.library / ScalerDiv

g r a p h i c s . l i b r a r y ScalerDiv

REPORT parameters are out of range

SEVERITY Level 3

EXPLANATION see AutoDocs.

DEADLY has no effect.

1.84 PatchWork: graphics.library / SetChipRev

g r a p h i c s . l i b r a r y SetChipRev

REPORT don’t use this function!

SEVERITY Level 1

EXPLANATION Must be called only once. SetPatch does it for you.

DEADLY has no effect.

1.85 PatchWork: graphics.library / SetFont

g r a p h i c s . l i b r a r y SetFont

REPORT NULL fonts are not allowed
SEVERITY Level 3
EXPLANATION Since V36, NULL fonts are not allowed any more. They
will produce Enforcer hits!
DEADLY has no effect.

REPORT BTW: foobar.font/8 variant is obsoleted in V36+
SEVERITY Level 0
EXPLANATION Just a remember that this font does not meet the V36
requirements any more. SetFont will convert it for proper
use, but you shouldn't use this font any more.
DEADLY has no effect.

1.86 PatchWork: graphics.library / SetMaxPen

g r a p h i c s . l i b r a r y SetMaxPen

REPORT maxpen==0 doesn't make much sense
SEVERITY Level 1
EXPLANATION No further comment.
DEADLY has no effect.

1.87 PatchWork: graphics.library / WaitBOVP

g r a p h i c s . l i b r a r y WaitBOVP

REPORT busy wait, don't use if ever possible
SEVERITY Level 1
EXPLANATION In fact, this function busy waits until the desired
raster line has been reached. If you can avoid this
function, then you should do it by all means!
DEADLY has no effect.
REMARK This check has been temporarily disactivated, since
CyberGraphX does a clean emulation without busy loop.

1.88 PatchWork: intuition.library

i n t u i t i o n . l i b r a r y

These intuition.library patches are implemented:
CloseWindow
EasyRequestArgs
GadgetMouse
GetDefaultPubScreen
MakeClass
MakeScreen
ModifyIDCMP
RemakeDisplay
Request
RethinkDisplay
ScreenDepth
SetEditHook
SetMenuStrip
SetPointer

1.89 PatchWork: intuition.library / CloseWindow

i n t u i t i o n . l i b r a r y CloseWindow

REPORT still 4 Messages in the shared Window queue
SEVERITY Level 3
EXPLANATION This are two very serious mistakes in one. If you
use a shared Window MessagePort, you MUST reply all
pending messages, then clear the UserPort pointer and
set the IDCMP flags to 0. See the intuition AutoDocs
for a good example of how to safely close a shared
window.
It is most likely that this hit is followed by several
Enforcer and Mungwall hits.
DEADLY has no effect.

REPORT MenuStrip @0x4567ABAC not cleared
SEVERITY Level 3
EXPLANATION You must clear the menu strip before closing the
window.
DEADLY has no effect.

1.90 PatchWork: intuition.library / EasyRequestArgs

i n t u i t i o n . l i b r a r y EasyRequestArgs

REPORT no gadget specified
SEVERITY Level 3
EXPLANATION You must at least specify one gadget!
DEADLY has no effect.

REPORT es_StructSize is wrong (12 byte)
SEVERITY Level 2
EXPLANATION The es_StructSize field must be properly initialized.
Set the size of the EasyStruct.
DEADLY has no effect.

1.91 PatchWork: intuition.library / GadgetMouse

i n t u i t i o n . l i b r a r y GadgetMouse

REPORT obsoleted, improve your class implementation
SEVERITY Level 1
EXPLANATION This function is obsoleted, since the hook routines get
the mouse pointer position directly. It is recommended
not to call this function!
DEADLY has no effect.

1.92 PatchWork: intuition.library / GetDefaultPubScreen

i n t u i t i o n . l i b r a r y GetDefaultPubScreen

REPORT -
SEVERITY None, DEADLY mode only
EXPLANATION None
DEADLY This function usually returns a pointer to the public
screen, but you must not use this pointer for reading
the screen's structure! In DEADLY mode, NULL is returned
when GetDefaultPubScreen() returned NULL itself. Otherwise
0xFACEDEAD is returned, so you will get an Enforcer hit
when you try to read the screen structure.

1.93 PatchWork: intuition.library / MakeClass

i n t u i t i o n . l i b r a r y MakeClass

REPORT no superclass specified

SEVERITY Level 3

EXPLANATION You must specify the superclass of your class.

DEADLY has no effect.

1.94 PatchWork: intuition.library / MakeScreen

i n t u i t i o n . l i b r a r y MakeScreen

REPORT return code requires V39+

SEVERITY Level 0

EXPLANATION See autodocs.

DEADLY Always returns FALSE (non-zero).

1.95 PatchWork: intuition.library / ModifyIDCMP

i n t u i t i o n . l i b r a r y ModifyIDCMP

REPORT still 4 Messages in the shared Window queue

SEVERITY Level 3

EXPLANATION This is very serious. You MUST reply all pending messages

of the window BEFORE setting the IDCMP flags to 0.

It is most likely that this hit is followed by several

Enforcer and Mungwall hits.

Also see CloseWindow.

DEADLY has no effect.

REPORT return code requires V37+

SEVERITY Level 0

EXPLANATION See autodocs.

DEADLY has no effect, to guarantee an useable system.

1.96 PatchWork: intuition.library / RemakeDisplay

i n t u i t i o n . l i b r a r y RemakeDisplay

REPORT return code requires V39+
SEVERITY Level 0
EXPLANATION See autodocs.
DEADLY Always returns FALSE (non-zero).

1.97 PatchWork: intuition.library / Request

i n t u i t i o n . l i b r a r y Request

REPORT maximum of 8 requesters exceeded
SEVERITY Level 3
EXPLANATION Due to a bug in intuition, there is a maximum of 8 requesters
that are supported in a window and can be changed in
size, position, or depth.
DEADLY has no effect.

1.98 PatchWork: intuition.library / RethinkDisplay

i n t u i t i o n . l i b r a r y RethinkDisplay

REPORT return code requires V39+
SEVERITY Level 0
EXPLANATION See autodocs.
DEADLY Always returns FALSE (non-zero).

1.99 PatchWork: intuition.library / ScreenDepth

i n t u i t i o n . l i b r a r y ScreenDepth

REPORT reserved must be NULL
SEVERITY Level 3
EXPLANATION The parameter in A1 is reserved and must be set to NULL
for future compatibility!
DEADLY has no effect.

1.100 PatchWork: intuition.library / SetEditHook

i n t u i t i o n . l i b r a r y SetEditHook

REPORT risky function

SEVERITY Level 0

EXPLANATION See autodocs.

DEADLY has no effect.

1.101 PatchWork: intuition.library / SetMenuStrip

i n t u i t i o n . l i b r a r y SetMenuStrip

REPORT where is the menu?

SEVERITY Level 3

EXPLANATION You provided a NULL pointer as menu.

DEADLY has no effect.

1.102 PatchWork: intuition.library / SetPointer

i n t u i t i o n . l i b r a r y SetPointer

REPORT sprite data must be in CHIP ram

SEVERITY Level 3

EXPLANATION to be reachable by the custom chips. DraCo user

can ignore this hit.

DEADLY has no effect.

REPORT width must be below 16

SEVERITY Level 3

EXPLANATION The hardware is limited to a width of 16 pixel.

DEADLY has no effect.

REPORT hot spot is outside of the sprite

SEVERITY Level 1

EXPLANATION The provided offset defines a hot spot that lies outside

of the sprite borders and could irritate the user. This
is perfectly legal and should be level 0, but might then
be ommitted too early, because you may not know that the
offset must be negative or zero to be inside the sprite.
DEADLY has no effect.

1.103 PatchWork: utility.library

u t i l i t y . l i b r a r y

These utility.library patches are implemented:
AllocNamedObjectA
MapTags
SDivMod32
UDivMod32

1.104 PatchWork: utility.library / AllocNamedObjectA

u t i l i t y . l i b r a r y AllocNamedObjectA

REPORT no object name specified
SEVERITY Level 3
EXPLANATION You must provide a string pointer in A0
DEADLY has no effect.

REPORT bad ANO_Flags=0x12345678
SEVERITY Level 1
EXPLANATION You must only use NSF_NODUPS or NSF_CASE. All other bits
are reserved for future purposes.
DEADLY has no effect.

1.105 PatchWork: utility.library / MapTags

u t i l i t y . l i b r a r y MapTags

REPORT V39+ required for this mapType
SEVERITY Level 0
EXPLANATION Only MAP_KEEP_NOT_FOUND is functional until V39.
DEADLY has no effect.

1.106 PatchWork: utility.library / SDivMod32

u t i l i t y . l i b r a r y SDivMod32

REPORT division by zero

SEVERITY Level 0

EXPLANATION See elementary school.

DEADLY has no effect.

1.107 PatchWork: utility.library / UDivMod32

u t i l i t y . l i b r a r y UDivMod32

REPORT division by zero

SEVERITY Level 0

EXPLANATION See elementary school.

DEADLY has no effect.