

# identify.library

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A library that converts cryptical IDs to a human-readable form  
Version 8.2, 4 December 1997

**Richard Körber**

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Please read the Copyright chapter!

# 1 Introduction

The `identify.library` has a rather long history.

It all began when I got mad about all the System info programs only showing the expansion boards as a number. So I wrote `expname.library`, which you may already be familiar with.

Later, `expname` could also identify the system's parameters (even if it was wrong sometimes ;). I still have new ideas for this library. The only trouble is that the name does not fit any more.

Well, now you have the second generation of the `expname.library`, called `identify.library`. It has been completely rewritten and expanded. The conceptional flaws of the `expname.library` have been removed, and a lot of new features have been added.

The library has currently these features:

- Converting manufacturer and product id into manufacturer name, product name, and product class.
- Converting the cryptical Amiga Guru codes into readable descriptions.
- Analyzing the system's configuration (system type, processor, memory, graphics and so on...).
- Converting shared library offsets into function names.

Even if the library appears to be quite ready — it is still far from complete!

I need your help! Please send manufacturer and product names and IDs, your system's configuration, suggestions, bug reports and so on; simply all you want to see implemented in the library.

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### **DISCLAIMER**

By using this product, you accept the FULL responsibility for any damage or loss that might occur through its use or the inability to use it. The developer of the software can NOT be held responsible.

**CONTENTS OF THE PACKAGE**

The Identify package is *only* complete if these files are present:

```
FILE_ID.DIZ
Identify.info
Identify/Function
Identify/Guru
Identify/ListExp
Identify/arexx/alert.ify
Identify/arexx/commodities.ify
Identify/arexx/expansions.ify
Identify/arexx/functionname.ify
Identify/arexx/gfxaudio.ify
Identify/arexx/system.ify
Identify/arexx/versioncheck.ify
Identify/catalogs/deutsch/Identify.catalog
Identify/catalogs/deutsch/IdentifyTools.catalog
Identify/catalogs/Identify.cd
Identify/catalogs/Identify.ct
Identify/catalogs/IdentifyTools.cd
Identify/catalogs/IdentifyTools.ct
Identify/examples/ExpansionMUI
Identify/examples/ExpansionMUI.c
Identify/examples/MyExp
Identify/examples/MyExp.c
Identify/identify.doc
Identify/identify.doc.info
Identify/Identify-D.dvi
Identify/Identify-D.dvi.info
Identify/Identify-D.guide
Identify/Identify-D.guide.info
Identify/Identify-E.dvi
Identify/Identify-E.dvi.info
Identify/Identify-E.guide
Identify/Identify-E.guide.info
Identify/include/identify_lib.i
Identify/include/clib/identify_protos.h
Identify/include/fd/identify_lib.fd
Identify/include/inline/identify.h
Identify/include/libraries/identify.h
Identify/include/libraries/identify.i
Identify/include/modules/identify.m
Identify/include/modules/identify.txt
Identify/include/modules/libraries/identify.e
Identify/include/modules/libraries/identify.m
Identify/include/Pascal/identify.lib
Identify/include/Pascal/libraries/identify.h
Identify/include/pragmas/identify_pragmas.h
Identify/include/proto/identify.h
```

```
Identify/libs/identify.library  
Identify/libs/rexxidentify.library
```

## **TRADEMARKS**

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## 3 My Address

Please send all bug-reports, board descriptions, missing graphic OS, keyfiles, flames and so on to one of the following e-mail addresses:

### INTERNET

I'm reachable through Internet via these E-Mail address:

`shred@chessy.aworld.de`  
`richard.koerber@koeln.netsurf.de`

Check my home page for the latest release and other programs. The URL is:

`http://www.is-koeln.de/einwohner/shred/`  
`http://shredzone.home.pages.de`

### SNAIL MAIL

You can send me a snail mail letter, too. My address is:

Richard Körber  
Hornstraße 20  
51465 Bergisch Gladbach  
Germany

Please enclose a "1,10 DM" stamp if you live in Germany and want to get a reply.

### INFOLIST

You can add yourself to a information list to get notified when new versions of the library are available. Just write a mail with the subject "HELP" (body will be ignored) to:

`richard.koerber@koeln.netsurf.de`

This list is handled offline, so please allow some days for the reply.

### SUPPORT BBS

You can also find the latest release in the official support BBS **Eratosthenes**.

**Number:** +49-228-230083 (V.32bis, V.Fast-Class)  
+49-228-239522 (V.32bis, V.34, ISDN X.75)

**Login:** SUPPORT (no password required)

**Board:** /SUPPORT/SHRED

Please note that even though the BBS is also to use in English, the main language is German.

## 4 ListExp

ListExp is a small tool that was already included in the `expname.library` package.

It describes the hardware components of the system. On the first line it will write some hardware parameters (like CPU, Memory). After that, all expansion boards will be listed (hopefully by name).

By using the option `FULL`, all currently used commodities are listed too. The output is then useable for bug reports and similar.

A further option allows to get the manufacturer name, product name and class from manufacturer ID and product ID. Use the options `MANUFID` and `PRODID` to do so.

Finally, the option `UPDATE` forces identify to re-check all hardware information. Use this option e.g. after you started VMM.

Example:

```
> ListExp MANUFID=514 PRODID=9
-- ListExp V8.1 -- by Richard Koerber

Manufacturer: Commodore West Chester
Product:      A2060
Class:        ArcNet
```

If some entries in the expansion list begin with a '#' instead of a name, you should send a copy of the ListExp output and the description of the missing board (manufacturer name, product name, product class) to me. :-)

Please write me if an expansion name has been guessed. You can easily recognize this by the class (`guessed`).

It is also not possible to check out all combinations of Amiga expansions. If your hardware is not properly recognized, please write me.



*Please note:* Some manufacturers, especially GVP and Phase 5, assigned the same ID to different boards. `identify.library` is prepared and tries to differ these boards, anyhow it can't in any case decide right.

## 5 Guru

Guru translates the cryptical alert code into a human-readable form.

You may provide your alert code (all eight digits without any symbols before or behind) as parameter. An example:

```
> guru 81000005
-- Guru V1.2 -- by Richard Koerber

Alert Code: 81000005
Type:      Deadend
Subsystem: exec.library
General:   General fault
Specified: Corrupt memory list detected in FreeMem
```

Or you can pass LASTALERT. In this case, the last alert code will be examined.

Please read the results like this::

### Alert Code

This is the alert code that has been decoded.

**Type**        What kind of alert is it? It may be a deadend alert, or a recovery alert.

### Subsystem

Which system caused the alert?

**General**    To what general class does this alert belong? In this case, it is a general fault which must be specified later.

### Specified

What was the cause? This example shows that the memory list has been corrupted by a badly written program.

## 6 Function

You can use the tool `Function` to decode the name of a function by providing the library name and the function offset.

The first argument is the library name, e.g. `'exec.library'`. You may also specify device or resource names here. All letters after the point (including the point itself) are optional, but it is case sensitive.

The last argument is the function offset to be decoded. It must be a multiple of 6, but it doesn't need to be signed.

Example:

```
> Function exec.library -456
-- Function V1.0 -- by Richard Koerber

Library:    exec.library
Offset:     -456
Function:    DoIO
```

This function requires the `.fd` files and an assign `'FD:'` to the drawer containing these files. The files must have the usual file name format, e.g. `'exec_lib.fd'`.

## 7 ARexx

Since V6.0 an ARexx function library is available. You can now also use Identify in your ARexx scripts.

To do so, you just have to install the `rexxidentify.library` into `libs:.` The library is included into ARexx by using a `CALL AddLib("/libs/rexxidentify.library",0,-30,0)` command.

These functions are available since Release 1:

### ID\_Release()

Returns the release- and version numbers of the `rexxidentify.library`. The format is: '`<release> <version>.<revision>(<date>)`' (Example: '`1 1.0(23.4.97)`'). You should use the `<release>` part to check out if a function or option is available (e.g. `Word(ID_Release(),1)`). The result can also be easily split up into the single contents by using the `PARSE` command.

### ID\_NumBoards()

Returns the number of expansion boards added to the system. You can easily construct a loop for `ID_Expansion`, using this function.

### ID\_Expansion(<board>,<result code>)

Returns the appropriate result to the board number `<board>` (0 to `ID_NumBoards()-1`) and the `<result code>`. Result codes are:

MANUF	Manufacturer name
PROD	Product name
CLASS	Product class (localized)
ADDRESS	Memory address of the expansion (hexadecimal)
SIZE	Reserved amount of memory for the expansion board (decimal, KBytes)
SHUTUP	Has the expansion been shut up? (0:No, 1:Yes)
SECONDARY	(since Release 4) Checks if the entry is primary (Result: <b>Primary</b> ) or secondary (Result: <b>Secondary</b> ).
CLASSID	(since Release 5) Returns the Class ID of the expansion board, see include files (decimal).

### ID\_Function(<library>,<offset>)

Returns the name of the `<library>`'s function and the offset `<offset>`. See the Shell program `Function`.

`ID_Alert(<code>,<result code>)`

Returns the appropriate result to the alert code `<code>` (hexadecimal string) and the `<result code>`. Result codes are:

DEAD	Deadend or Recovery?
SUBSYS	System causing the alert
GENERAL	General alert class
SPEC	Specific alert class

See the Shell program `Guru`.

`ID_Hardware(<result code>,{<option>,...})`

Returns a description of the hardware. `<result code>` are:

SYSTEM	Used Amiga model (e.g. 'Amiga 4000')
CPU	Used CPU
FPU	Used FPU, if available
MMU	Used MMU, if available
OSVER	AmigaOS ROM version
EXECVER	exec.library version
WBVER	Workbench version, if available
ROMSIZE	Size of the AmigaOS ROM.
CHIPSET	Available chip set (e.g. 'AGA')
GFXSYS	Used graphics system (e.g. 'CyberGraphX')
CHIPRAM	Total size of Chip RAM (includes virtual RAM)
FASTRAM	Total size of Fast RAM (includes virtual RAM)
RAM	Total size of total RAM (includes virtual RAM)
SETPATCHVER	SetPatch version, if available.
AUDIOSYS	Used audio system (e.g. 'AHI')
OSNR	Used OS version (e.g. '3.0')
VMMCHIPRAM	Size of virtual Chip RAM
VMMFASTRAM	Size of virtual Fast RAM

VMMRAM	Size of virtual RAM
PLNCHIPRAM	Size of physical Chip RAM
PLNFASTRAM	Size of physical Fast RAM
PLNRAM	Size of physical RAM
VBR	Address of the processor vectors
LASTALERT	Last system alert
VLANKFREQ	VBlank interrupt frequency
POWERFREQ	Power frequency
ECLOCK	Special system clock's frequency
SLOWRAM	Size of the A500 and A2000's special Fast RAM.
GARY	Gary version
RAMSEY	Ramsey version
BATTCLOCK	Battery backed up clock available?
CHUNKYPLANAR	Does a chunky planar hardware exist?
POWERPC	Is a PowerPC available?
PPCCLOCK	The clock of the PowerPC, in MHz units.
CPUREV	(since Release 5) Returns the revision of the built-in CPU, if available.
CPUCLOCK	(since Release 5) Returns the CPU clock, in MHz units.
FPUCLOCK	(since Release 5) Returns the FPU clock, if available, in MHz units.
RAMACCESS	(since Release 6) Returns the access time of the motherboard RAM (units), if available.
RAMWIDTH	(since Release 6) Returns the width of the motherboard RAM (bit), if available.
RAMCAS	(since Release 6) Returns the CAS mode of the motherboard RAM, if available.

**RAMBANDWIDTH**

(since Release 6) Returns the motherboard RAM bandwidth, if available.

These <options> are allowed:

**EMPTYNA** Returns an empty string if the item is not available. Otherwise, a localized 'not available' kind of string is returned.

**NOLOCALE** The return string is always in English, independent of the current language.

See also the AutoDocs of `IdHardware()`.

These functions are available since Release 2:

**ID\_ExpName(<manufid>,<prodid>,<result code>)**

Returns the appropriate result to the manufacturer <manufid> (0 to 65535), product <prodid> (0 to 255) and the <result code>. Note that Identify cannot differ between expansions with the same product ID in this access mode. Result codes are:

<b>MANUF</b>	Manufacturer name
<b>PROD</b>	Product name
<b>CLASS</b>	Product class (localized)

These functions are available since Release 4:

**ID\_LockCX()**

Fetches a copy of all currently present commodities and returns a slot for it. You must always provide this slot to the other functions.

**ID\_CountCX(<slot>)**

Results is the number of commodities found.

**ID\_GetCX(<slot>,<nr>,<result code>)**

Returns the appropriate result to the commodity <nr> of the slot <slot>. Result codes are:

<b>NAME</b>	Name of the commodity
<b>TITLE</b>	Title of the commodity
<b>DESC</b>	A short description
<b>GUI</b>	Result is '1' if the commodity provides a GUI, '0' otherwise.
<b>ACTIVE</b>	Result is '1' if the commodity is active, '0' otherwise.

`ID_UnlockCX(<slot>)`

Frees the slot. You must not use it after that!

These functions are available since Release 6:

`ID_Update()`

Actualizes the hardware information. Please use it wisely (see AutoDocs).

Some example programs you'll find in the **arexx** drawer.



## Appendix A Known Bugs

This is a snapshot of my current Amiga:

```
-- ListExp V8.1 -- by Richard Koerber (mailto:shred@chessy.aworld.de)
ListExp is a part of the Identify package (see AmiNet util/libs)
```

**\*\* HARDWARE \*\***

```
System:  Amiga 4000
CPU:      CPU=68060/50 MHz (Rev 1), FPU=68060/50 MHz, MMU=68060
PowerPC:  None/0 MHz
Chipset:  AGA (RAMSEY F, GARY Normal, CHUNKY None) VBR=0x0803AF80
AmigaOS:  3.0 (V39.106, SetPatch V43.6)  Exec V39.47  Workbench V39.29
Support:  GraphicOS: CyberGraphX 3, AudioOS: AHI
Clock:    Power 50 Hz, VBlank 50 Hz, E-Clock 709379 Hz
```

```
Memory:
          CHIP    FAST    TOTAL ROM = 512.0KB    SLOW = 0
          PLAIN   ~2.0MB  25.5MB ~27.5MB
          VIRTUAL      0      0      0
          TOTAL   ~2.0MB  25.5MB ~27.5MB
```

**\*\* EXPANSIONS \*\***

Nr	ID	Address	Size	Manufacturer	Product
1	2140.22	40000000	64M	Phase 5	CyberVision 64 Graphics
2	2140.19	00EA0000	128K	Phase 5	CyberStorm MK-II Flash-ROM
3	082C.10	00E90000	64K	BSC	Multiface II Multi I/O
4	4754.0C	00EC0000	64K	MacroSystem Germany	Toccata Audio
5	4754.05	00ED0000	64K	MacroSystem Germany	MaestroPro Audio

### THESE BUGS ARE CURRENTLY KNOWN:

- ‘Phase 5’ and ‘GVP’ have sometimes assigned one ID to two or more boards. In this case, `identify.library` may return a name that does not fit to the hardware.
- Currently, an 68030 will always be recognized with MMU.
- All `IDHW_LASTALERT` accesses will most probably cause an Enforcer hit "LONG-READ from 00000100". This is necessary and harmless.

## Appendix B Frequently Asked Questions

*An enforcer hit occurs while analysing the system.*

This hit is necessary to read the last alert code. It is harmless.

*The CPU/FPU clock isn't accurate.*

Measuring the clock requires real Fast RAM for best results, else there may occur major faults.

*The PowerPC clock isn't accurate.*

This is a bug in the `ppc.library`.

*The system crashes at system queries (e.g. `ListExp`).*

Make sure that you have *not* installed the `ppc.library` if you do not really have a PowerPC.

*Where can I find another FAQ?*

On my home page: <http://www.is-koeln.de/einwohner/shred/>

## Appendix C History

### V 8.2

- Improved UAE recognition
- Improved 68060 compatibility
- Visibly shortened by several optimizations

### V 8.1

- Improved SlowRAM recognition
- Implemented IdHardwareUpdate()
- Implemented motherboard RAM tests (RAMACCESS, RAMWIDTH, RAMCAS, RAMBANDWIDTH)
- Removed stupid IDHW\_VBR and IDHW\_LASTALERT caching
- ListExp actualized

### V 8.0

- Bugfix: IdFunction produced mungwall hits on oversized lines
- Bugfix: VMM messed up the memory results
- IdExpansion speed improvement
- IDTAG\_ClassID returns numerical board's class code [Jens Langner]
- IDTAG\_Localize returns builtin language only, if TRUE
- IDTAG\_NULL4NA returns NULL ptr instead of "N/A" string
- IDHW\_CPUREV returns the revision of the main CPU
- IDHW\_CPUCLOCK, IDHW\_FPUCLOCK returns the clock frequencies
- Reorganized the catalog files
- UAE recognition implemented
- Updated ListExp and rexxidentify.library
- Added .ct files for translation

### V 7.3

- Bugfix: GfxOS detection was broken under certain situations
- Added Commodities to rexxidentify.library [Domenic Gebauer]
- Minor DraCo bugfixes [Udo Reuchlein]
- Picasso96 (hopefully) is properly recognized now [Jens Langner]
- Added further boards.

### V 7.2

- Bugfix: LowMemory handler now works fine
- Some minor optimizations
- Added IDTAG\_Secondary
- Added SECONDARY to rexxidentify.library
- Increased IdFunction() parser maximum line length, due to some lines in the cybergraphics\_lib.fd.

**V 7.1**

- Bugfix: rexxidentify.library returned additional Null termination [Bossman]
- Bugfix: LowMemory handler hangs up and is temporary disabled
- Added further boards.

**V 7.0**

- Chunky to planar hardware recognized
- PowerPC recognition implemented, but not yet completed
- Added an LowMemory handler (AmigaOS V39+ only)
- Memory sizes are shown like in ShowConfig

**V 6.1**

- Added further boards.
- Enforcer hit now only occurs on LASTALERT query.
- Added ARexx command EXPNAME

**V 6.0**

- Added further boards.
- OS2.1 recognized properly.
- Some new hardware requests (VBR, Gary, RAMSEY, Slow-RAM, Frequencies, BattClock)
- You can list all expansions without the need to open expansion.library now
- IdHardwareNum() implemented: you can also request a numerical result for own evaluating purposes now
- localized and actualized ListExp, Function and Guru
- ARexx access to the library via rexxidentify.library
- More example programs

**V 5.2**

- Added further boards.
- Wrote a small C example: using identify with MUI

**V 5.1**

- Bugfix: did not recognize AHI properly
- Added further boards.
- Properly recognizes A500 with A570 expansion.
- AmigaE include files [Roger Hågensen]

**V 5.0**

- Better Picasso96 recognition
- Should now FINALLY recognize OCS/ECS Amiga with OS3.1
- Added further boards.
- Now also checks Audio OS and AmigaOS.
- Added plain and VMM memory checkings.
- Supports shared Manufacturer IDs now.
- Bugfix: Enforcer hit when asking directly for an unknown expansion
- Gained several KB by optimizing tables, database compression and clean-ups
- Adapted ListExp

**V 4.4**

- Recognizes Picasso96
- Added further boards.
- Bugfix: "-?-" printed beside guessed expansion name
- Bugfix: Some Amiga 1200 were recognized as "Walker" :-)

**V 4.3**

- Recognizes CyberGraphX V3
- Added further boards.

**V 4.2**

- CyberGraphX wasn't recognized properly.
- Added further boards.

**V 4.1**

- Bug fix: still some problems with Amiga recognition.
- Picasso will be recognized.
- Added further boards.

**V 4.0**

- IdFunction() implemented.
- New tool Function.
- Added further boards.

- Bugfix: In some cases the manufacturer name was trashed.
- Pascal include files (made by Axel Dörfler)
- Identifies SetPatch version

**V 3.1**

- 2 boards added
- Bugfix: always recognized an Amiga 3000 on ECS machines with OS3.1.
- Bugfix: recognized CyberGraphX even when PictDT was installed only.
- Improved memory rounding

**V 3.0**

- Bases on the `expname.library`, but completely rewritten.
- Now convert alert codes, too.
- Wrote GURU.

## Appendix D Users

These programs are already using the `identify.library`:

### **cP!\_ShowConfig**

Autor: Domenic Gebauer  
AmiNet: `util/wb/cP_ShowConfig.lha`  
E-Mail: `campino@gmx.net`

### **EuraTools Register**

Autor: Richard Körber  
AmiNet: `util/misc/EuraTools.lha`  
E-Mail: `shred@chessy.aworld.de`

### **IdentifyBB2**

Autor: Ferraris Luca  
AmiNet: `dev/basic/IdentifyBB2.lha`  
E-Mail: `ferraris.luca@educ.di.unito.it`

### **P96Speed**

Autor: Jens Langner  
AmiNet: `gfx/board/P96Speed.lha`  
E-Mail: `deck@rcs.urz.tu-dresden.de`

### **Scout**

Autor: Andreas Gelhausen, Richard Körber  
AmiNet: `util/moni/Scout.lha`  
E-Mail: `shred@chessy.aworld.de`

### **ShowSystem**

Autor: Jarmo Laakkonen  
AmiNet: `util/moni/showsystem.lha`  
E-Mail: `jami@dlc.fi`

### **SL!-BoxStatus**

Autor: Sascha Sauer  
AmiNet: `comm/bbs/SL-BS??.lha`  
E-Mail: `SPACEMAN@SPACELND.ruhr.de`

### **SIP**

Autor: Andreas R. Kleinert  
AmiNet: `util/moni/SIP.lha`  
E-Mail: `Andreas_Kleinert@t-online.de`

### **SystemPrefs**

Autor: Richard Körber  
AmiNet: `util/wb/SytemPrefs.lha`  
E-Mail: `shred@chessy.aworld.de`

**ToxicBoards**

Autor: Sascha Reissner  
AmiNet: `comm/cnet/TBoards20f.lha`  
E-Mail: `sascha@toxic.franken.de`

**XOpa**

Autor: Axel Dörfler, Alexander Bartz  
AmiNet: `util/moni/XOpa1_??_lha`  
E-Mail: `axeld@ax.westfalen.de`

Your program is missing? Write me!



## Appendix E Credits

I want to thank especially these fellows (in no special order):

**Andreas Gelhausen**

for Scout, his board list and his ideas.

**Martin Wietfeld**

for his great board list!

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**Kössi**

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...and for their contributions (sorted alphabetically):

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James Kückmann, Rask Lambertsen, Jens Langner, Lutz Legero, Mika Lembke, Petter Lindquist, Mika Lundell, Gunther Mannigel, Peter Marquardt, Peter Mattsson, Mario Misic, Gernold Mühling, L Mac Mullan, David Oakes, Jürgen Ofner, Jakob Ölund, Chris Painter, Oliver Peike, Markus Pietz, Heiko Polig, Giuseppe Premoli, Michael Reichenbach, Sascha Reissner, Jan Rembser, Udo Reuchlein, Kai Rode, Timo Ronkko, Gregor Rosenauer, Andre Schenk, Kai Schindelka, Andreas Schlick, Bodo Schulz, Thomas Schürger, Frank Seidel, Simon Shead, Karsten Soeth, Mark Sorensen, Nicholas Stallard, Teemu Suikki, Johan Sundstrom, Adam Szymczak, Patrick Thato, Colin Thompson, Henrik Tikanvaara, Jürgen Urbanek, Geert Uytterhoeven, Jarkko Valtjus-Anttila, Milco Veljanoski, Federico Villata, Christian Wasner, Pete Wason, Ralph Wermke, Henrik Wetterstrom, Martin Wietfeld, Alexander Wild, Frank Wille, Beno Zidaric, Rolf Zuercher, Alessandro Zummo.

(and all I might have forgotten!)

Keep on!

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      //  
  \ \ //  -- Amiga - The Computer for Creative Mind --  
   \X/
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