

**ar214**

<b>COLLABORATORS</b>
----------------------

	<i>TITLE :</i> ar214		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		August 10, 2024	

<b>REVISION HISTORY</b>
-------------------------

NUMBER	DATE	DESCRIPTION	NAME

# Contents

<b>1</b>	<b>ar214</b>	<b>1</b>
1.1	Amiga Report Online Magazine #2.14 -- April 15, 1994 . . . . .	1
1.2	Amiga Report Main Menu . . . . .	1
1.3	The Editor's Desk . . . . .	2
1.4	Delphi . . . . .	3
1.5	AR Staff . . . . .	4
1.6	Amiga Report Mailing List . . . . .	4
1.7	Amiga News . . . . .	5
1.8	compt.sys.amiga . . . . .	8
1.9	Positive Thinking! . . . . .	9
1.10	AR Contest! . . . . .	11
1.11	Reader Mail . . . . .	12
1.12	Emulation Rambler . . . . .	13
1.13	Motorola MC68060 Information . . . . .	19
1.14	The Futurist . . . . .	28
1.15	Portal . . . . .	29
1.16	Dealer Directory . . . . .	32
1.17	BIX . . . . .	37
1.18	HWGRCS v5.6.0.1pl8 . . . . .	39
1.19	C-Shell v5.37 . . . . .	40
1.20	IconPack v1.0 . . . . .	42
1.21	CLIEExchange v1.4 . . . . .	43
1.22	Tagline Ripper v1.3 . . . . .	45
1.23	April v1.0 . . . . .	46
1.24	DVI & DVILW v3.62 . . . . .	48
1.25	JForth Professional 3.x Demo . . . . .	50
1.26	TauIcons v1.6 . . . . .	52
1.27	In Closing . . . . .	53
1.28	Columns and Features . . . . .	54
1.29	About Amiga Report . . . . .	54

---

1.30 Commercial Online Services . . . . .	54
1.31 Files Available for FTP . . . . .	54
1.32 NOVA . . . . .	55
1.33 In The MeanTime . . . . .	55
1.34 PIONEERS BBS . . . . .	56
1.35 Biosmatica . . . . .	56
1.36 Amiga Junction 9 . . . . .	56
1.37 BitStream BBS . . . . .	57
1.38 Realm of Twilight . . . . .	57
1.39 Metnet Triangle . . . . .	57
1.40 Omaha Amiganet . . . . .	58
1.41 Amiga-Night-System . . . . .	58
1.42 Ramses Amiga Flying . . . . .	58
1.43 Gateway BBS . . . . .	59
1.44 Talk City . . . . .	59
1.45 Amiga BBS . . . . .	59
1.46 The Stygian Abyss . . . . .	59
1.47 Amiga Do PC BBS . . . . .	60
1.48 Comm-Link BBS . . . . .	60
1.49 Phantom's Lair . . . . .	60
1.50 Tierra-Miga BBS . . . . .	61
1.51 Freeland Mainframe . . . . .	61
1.52 LAHO . . . . .	61
1.53 Falling BBS . . . . .	62
1.54 Command Line BBS . . . . .	62
1.55 Leguans Byte Channel . . . . .	62
1.56 Stingray Database BBS . . . . .	63
1.57 T.B.P. Video Slate . . . . .	63
1.58 Amiga Central . . . . .	63
1.59 Continental Drift . . . . .	64
1.60 Guru Meditation . . . . .	64
1.61 Moonlight Sonata DLG . . . . .	64
1.62 LINKSystem LINK-CH1 . . . . .	64
1.63 Doom of Darkness . . . . .	65
1.64 RedEye BBS . . . . .	65
1.65 Virtual Palace BBS . . . . .	65
1.66 Where to find Amiga Report . . . . .	66

---

## ar214

Turn the Page

d#	###b	g#00	`N##0"	_agN#0P0N#	d#	
d##	jN##	j##F	J##	_dN0"	"	d##
.#]##	_P ##L	jN##F	###	g#0"		.#]##
dE_j##	#	0## jF ##F	j##F	j##'		dE_j##
.0""N##	d"	##L0 ##F	0##	0##	"9##F"	.0""5##
.dF' ]##	jF	##0 ##F	##F	`##k	d##	.dF' j##
.g#_ _j##_g#_	]N	_j##L_	_d##L_	`#Nh_g#N'	.g#_ _j##_	
#####	N	#####	#####	#####	#####	

#####	#####	#####	#####	#####	#####	#####	TM
##	##	##	##	##	##	##	##
##	##	##	##	##	##	##	##
##	####	##	##	##	##	##	##
##	##	##	##	##	##	##	##
##	####	#####	##	#####	##	###	##

International Online Magazine

"Your Weekly Source for Amiga Information."

Copyright 1994 Skynet Publications  
All Rights Reserved

//

[illegible]

## 1.2 Amiga Report Main Menu

Columns and Features  
About AMIGA REPORT

News, Reviews, and More!  
Staff, Copyright information

Dealer Directory	Amiga Dealer Addresses and Numbers
Commercial Online Services	Sign-Up Information
FTP Announcements	New Files Available for FTP
AR Distribution Sites	Where to get AMIGA REPORT

```

// | | //
%%%%%%%%//%%%%| Amiga Report International Online Magazine |%%%%%%%%//%%%%
%%  \// | Issue No. 2.14 April 15, 1994 | \// %%
%%%%%%%%%%%%%%| "Your Weekly Source for Amiga Information" |%%%%%%%%%%%%%%
| |

```

The Editor's Desk	Amiga News	Dealer Directory
Distribution BBS's	Product Announcements	Emulation Editor
Reader Mail	AR Contest!	Motorola 060 specs

#### SPECIAL FEATURES

```

compt.sys.amiga .....Jason Compton
Positive Thinking .....Dennis Julien
The Futurist .....Brad Hansen
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%                DELPHI    PORTAL    FIDO    INTERNET                %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

## 1.3 The Editor's Desk

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% The Editor's Desk                                     By Robert Niles %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Commodore is still in business. The employees there working away, even working on the future AAA machine. They are still getting their paychecks. Commodore is still producing A4000s, A1200s, CD32s, and other devices.

That's what I >>do<< know. What I don't know is how C= is taking care of their financial difficulties. Supposedly they have been meeting with their creditors. We just don't have any news on what exactly is going to happen.

Alot of rumors have been spread around, mentioning take-overs, buy-outs, and all sorts of speculative things. The best I can tell you from the information I am getting is that C= will continue...maybe a bit slower, until they get some sort of financial help.

I doubt there will be a buy-out. Most likely another company will help with C= 's finances. I'm thinking Hewlitt Packard here. Commodore has been working with them in the past, and it looks like they will be working with them for some time yet.

So hang in there...and PLEASE don't believe everything you read! Heck! Discount my comments if you wish. But the best bet would be to just stick with what Commodore puts out officially.

In the MAY issue of Internet World, Amiga Report was mentioned.

If you haven't seen it, I suggest you un out now and get yourself a copy. Aaron Weiss (mw12@crux2.cit.cornell.edu) did a fantastic job placing the Amiga among the members of the Internet. Aaron went through and described just about everything of interest to Amiga users in the article, from Networking to the World-Wide-Web.

I would personally like to thank Aaron, and Internet World as well.

P.S. Aaron said to look for jokes on some of the screen shots.

OK.....I'll shut up...you just enjoy!

## 1.4 Delphi

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%      Delphi Internet Services -- Your Connection to the World!      %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Amiga Report International Online Magazine is available every week in the Amiga SIG on DELPHI. Amiga Report readers are invited to join DELPHI and become a part of the friendly community of Amiga enthusiasts there.

### SIGNING UP WITH DELPHI

=====

Using a personal computer and modem, members worldwide access  
DELPHI services via a local phone call

### JOIN -- DELPHI

-----

Via modem, dial up DELPHI at 1-800-695-4002  
then...

When connected, press RETURN once or twice  
and....

At Username: type JOINDELPHI and press RETURN,  
At Password: type AMIGAREPORT and press RETURN.

DELPHI's best plan is the 20/20 plan. It gives you 20 hours each month  
for the low price of only \$19.95! Additional hours are only \$1.50 each!  
This covers 1200, 2400 and even 9600 connections!

For more information, and details on other plans, call  
DELPHI Member Services at 1-800-695-4005

### SPECIAL FEATURES

-----

Complete Internet connection -- Telnet, FTP, IRC, Gopher, E-Mail and more!  
(Internet option is \$3/month extra)

SIGs for all types of computers -- Amiga, IBM, Macintosh, Atari, etc.

Grolier's Electronic Encyclopedia!

DELPHI - It's getting better all the time!

[illegible]



## AR Mailing List

~~~~~

No Official Amiga Report Distribution Site in your local calling area? Are you tired of waiting for your local BBS or online service to get Amiga Report each week? If so, have we got a deal for you!

If you have an internet mailing address, you can receive Amiga Report in UUENCODED form each week as soon as the issue is released. To be put on the list, send Email to [rniles@hebron.connected.com](mailto:rniles@hebron.connected.com). Your account must be able to handle mail of any size to ensure an intact copy. For example, many systems have a 100K limit on incoming messages.

Many thanks to PORTAL Communications for setting this service up for us!

P.S.: Please be sure to include your Email address in the text of your request message, it makes adding it to the list much easier. Thanks!

\*\* IMPORTANT NOTICE: PLEASE be certain your host can accept mail over  
 \*\* 100K! We have had a lot of bouncebacks recently from systems with a  
 \*\* 100K size limit for incoming mail. If we get a bounceback with your  
 \*\* address in it, it will be removed from the list. Thanks!

~~~~~

## World Wide Web

~~~~~

AR can also be read with Mosaic (in either AmigaGuide or html form). Reading AmigaReport with Mosaic removes the necessity to download it. It can also be read using programs found in UNIX sites such as LYNX.

Simply tell Mosaic to open the following URL:

<http://www.cs.cmu.edu:8001/Web/People/mjw/Computer/Amiga/AR/MainPage.html>

Mosaic for the Amiga can be found on Aminet in directory comm/net, or (using anonymous ftp) on [max.physics.sunysb.edu](ftp://max.physics.sunysb.edu)

Mosaic for X, Macintosh(tm) and Microsoft Windows(tm) can be found on [ftp.nca.uiuc.edu](ftp://nca.uiuc.edu)

~~~~~

## Aminet

~~~~~

To get Amiga Report from Aminet, simply FTP to any Aminet site, CD to docs/mags. All the back issues are located there as well. (ftp.cdrom.com or ftp.wustl.edu are two sites)

## 1.7 Amiga News

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  
 %% Amiga News %%  
 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

F U T U R E ^ S H O C K

----- <<2>> -----

## PRESENTING THE FIRST CD BY SIDEWINDER

- \* 71 minutes \* 15 tracks \* 100% Amiga produced \* STEREO
- \* 'MOD' based hi-fi base thumping hard hitting sound
- \* Digital Mastered \* TECHNO+RAVE+TRIBAL+SYNTH+JAZZ=FS2
- \* Cool rendered 3-D 24-bit color album Gfx by Zak Jarvis
- \* Not available in any stores
- \* Limited edition of 1000 CDs each numbered and signed

Future Shock 2 is a totally new MOD based TECHNO Music CD produced, recorded and remixed by SIDEWINDER of 'MOD' music scene around the world, in 1994.. Taking 1 year to complete, Using the best in audio sampling technology and digital sound processing, for pure hi-fi stereo sound from Amiga based MODs.. Remixed and recorded at Rock House Studios USA.

- \* Taking digital MOD Tracker SOUND to the MAX
- \* Killer Amiga made 3-D Cover Graphics Rendered at 2000 x 1366
- \* Includes title track to the Game 'Scorched Tanks' for Amiga..
- \* PRICE: \$12.95 + \$2.50 S&H USA  
Outside USA/CANADA \$12.95 + \$5.00 S&H Airmail
- \* Future Shock 2 CD available now!  
call toll free (1-800-550-8808) VISA MASTERCARD DISCOVERY

\* Check or MOs write to:  
SIDEWINDER PRODUCTIONS  
8611 Cape Valley  
San Antonio TX 78227  
USA

Additional info call : (210) 675-7592  
eric\_h\_gieseke@fcircus.sat.tx.us

=====

April 14 1994 - Amiga Report - Supra ships SupraFAXModem 288

~~~~~

Supra has started shipping the SupraFAX Modem 288 for the MacIntosh computers and will begin shipping the new high speed modem for other computers next week.

The SupraFAXModem is based on V.Fast, which can provide transfer rates of up to 115,200 bps. The external model has a suggested retail price of US\$399.00.

A special Sysop deal will most likely be provided.

Supra Corporation  
7101 Supra Drive SW  
Albany, OR 97321

---

503-967-2493 (Amiga Tech Support)  
503-967-2401 (fax)

=====

Amiga/Toaster Reference Manual v2.2

~~~~~

RELEASE

Revision 2.221

AUTHOR

David Tiberio (dtiberio@libserv1.ic.sunysb.edu)

DESCRIPTION

AORM is an AmigaGuide based online help system for Amiga computers and Video Toaster Workstations. Using a hypertext point and click interface, users have access to over 2,200,000 bytes of information, contained in over 1000 pages.

Using built in virtual memory, modules may be loaded in as needed, often occupying only 150k of memory. Modules may be updated as new features are added.

Modules include:

Lightwave 3D and Art Department Professional help

Answers to commonly asked questions (over 500).

Explanation and usage of AmigaDOS commands (over 80) and usage of ARexx commands (over 20).

List of people, places, and things created on the Amiga computer.

Index of frequently used charts and tables, such as the Hayes Command Set and S Registers, list of most Amiga screenmodes, frequently used abbreviations such as RTG, XPK, DIG, etc, list of GURU Meditation Errors, AmigaDOS qualifiers and pattern matching, and more. New 3D section includes a list of refraction indexes and color RGB registers for hundreds of common colors.

Dictionary of computer and Amiga related terms (over 800).

Amiga Online Reference Manual is the most complete guide to the Amiga available in a hypertext format. Only a few mouse clicks is all it takes to find out how to use the FORMAT command or how to alphabetize all of your icons on the Workbench.

SPECIAL REQUIREMENTS

AmigaOS 1.3, 2.04, 2.1, or 3.0.

NEW FEATURES

---

**\*\* version 2.2 includes the first software update module \*\***

- over 50% larger in size
- NEW Lightwave 3D section
  - Layout & Modeler
- NEW AdPro 2.2 section
  - how to use operators
- graphical images now included
- improvements in all areas, including:
  - list of area codes and state abbreviations
  - revised list of monitor types and screen resolutions
- CD32 specifications added
- updated Workbench information to new format
- 800 word Dictionary
- added more information on using AmigaGuide or MultiView to online help system

## PRICE

MSRP \$35. Special User Group pricing of \$20 to qualified Amiga and Video Toaster User Groups.

## AVAILABILITY

Contact Area52 at 516-476-1615, or send a check or money order to: Area52, 6 Lodge Lane, East Setauket, New York 11733. Please make all checks payable to Area52. New York State residents must add 7% sales tax. Add \$2 for shipping and handling.

## DISTRIBUTABILITY

Amiga Online Reference Manual may be purchased from your local Amiga dealer. If you wish, you may order direct from us by calling (516) 476-1615.

Amiga Online Reference Manual is a commercial product and may not be redistributed freely. A demo is available on Aminet in /biz/demo/AORM 2.2.lha

## 1.8 compt.sys.amiga

```

%%
%% compt.sys.amiga by Jason Compton %%
%% jcompton@tcity.com %%
%%

```

Hello. I've decided to change the title of my editorial column to this, compt.sys.amiga, since it was more clever.

To start, the CD32. Ahh, what a nice machine. A group of friends were kind enough to buy me one for my birthday. Luckily, they were kind enough to buy Liberation as well, otherwise I'd have a \$400 CD player. Inside was the notorious coupon, good for Microcosm and Chaos Engine, in "6-12 weeks for processing". Grrr. Ok, well, I'll give CEI a call to see if the situation is better than that (the coupon was from CEI). Ring, ring. I ask the question, and eventually get the answer that it's 6-12 weeks and they're backordered. Actually, what it boils down to is that it's 6-12 weeks, backordered because Commodore hasn't sent them ANY yet. They reserved the right to change the titles, too...lucky them, since they have no titles to give away at all.

I had a point in the middle of all this. Actually, a question. I'm trying to get in touch with MicroBotics about their SX-1 expansion that gives a CD32 a serial, parallel, disk drive, etc. port along with a couple of IDE controllers, RGB port, a SIMM slot, and the all-important audio in for karaoke enthusiasts. Unfortunately, the Texas automated operator tells me that the number which Amazing Computing, my local dealer, and Amigaman claim belongs to MB: 214-437-5330, is not a working number. Same goes for their fax line. Now, neither I nor anyone else I've talked to thinks they're suddenly out of business, but I would like to get a hold of them soon, so if anyone can guide me, please do so.

To answer a few rumors, namely that no Commodore stocks were available for sale Friday because of a change of corporate ownership... C= traded as usual this past Monday morning. So much for that report.

I've gotten a few more answers back about 24-bit boards...but no boards yet. GVP and DKB have told me "Not right now"-GVP because all of their review Spectrums are out, DKB because they don't have any Talons available for review in the first place. MacroSystems US and Expert Services have both told me yes, but have been rather slow in furnishing any dates, let alone hardware. No answer from Centaur about the OpalVision.

That does it for random thinking this week. Keep someone warm.

## 1.9 Positive Thinking!

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% The Power of Positive Thinking!                                by Dennis Julien %%
%%                               Dennis.Julien@f303.n249.z1.fidonet.org %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Remember the days of old when you could log on to most any bulletin board system and engage in a hands down, one on twenty battle with MSDOS users and emerge victorious? I do. There was nothing more satisfying than pounding away at the keyboard, on a mission to educate; a calling to elevate the Amiga to the level of admiration it deserved, and a worthy system it was! I remember the resulting awe once information such as '4096 colors' and 'multitasking' had been divulged. EGA, and even VGA

seemed pale in comparison. 4-channel stereo sound, a graphical user interface, and a special chipset for processing duties were all qualities that could be proclaimed endlessly...

Of course, that was several years ago. A new leaf has been turned. The Amiga, once known as a 'games machine' is now a video production machine. The IBM, once known as a stiff, business-executive tool of slavery, is now a platform yielding some of the best games, graphics, and sound tools around. Slowly but surely, the archaic Intel systems of days gone by have evolved into a very powerful and formidable opponent for the beloved Amiga.

"Bah! Untrue...", some of the remaining Amiga die-hards can be heard shouting. I am one of them. Unfortunately, the reality begins to sink in. Of course, despite the leaps and bounds the Intel-based machines have achieved, I still prefer my old Amiga 500. However, I have had to reorganize my relentless attack of the IBM... Doom? Who cares. I've got MegaBallAGA, so take that! Such comments are familiar to the loyal Amiga owners unwilling to let go. Commodore isn't in financial trouble! They've been selling CD32 units at over 20,000 per month in Europe! The fact is that Commodore does appear to be facing some very serious troubles, and because of it I've had to fight off more arguments than Howard Stern will likely have to face to become governor. Here is a good template for all those still insistent on arguing the cause of the Amiga:

- 1) Price: Mention price at every turn. Around here, the A1200 is \$499 without tax. Neglect to mention that this doesn't come with a monitor or HD. Tell them 2 megs of CHIP RAM is equal to at least 4 on the IBM. They'll never know!
- 2) Professional Use: Always include things like, "Hey, it was good enough for Wayne's World!" in the argument. Quickly change the subject if it comes up that IBM systems are used everywhere, for everything.
- 3) WorkBench: WorkBench is still the best operating system around. Use tidbits like the functions available using icons, screen flipping, commodities, etc. Utilitize the senselessness of Windows in your attempts to assimilate.
- 4) Compatibility: Emulation is a key factor. Mention that both IBM and Macintosh disks can be read by the Amiga. Mention that both systems can be emulated. Mention nothing about price or glitches with emulation.
- 5) Lie: Finally, lying is of the utmost importance. "I can run 15-20 programs in the background, download a file, print a report, copying files from harddrive to disk, and play a sound module without \*any\* slowdown..." (Demonstrate only a module and maybe a directory listing on a 68000 for best results...)

Inevitably the next little while will be a new beginning or beginning of the end for Commodore. It would be a terrible shame to see such a great computer fall to a tragic end, and more notably, it would be tragic for me to have to spend my days using MSDOS. You can do your part by plugging the Amiga here and there. I read somewhere about calling a number for Electronics Boutique to annoy them into carrying the CD32.

---

Ironically enough, I went into newly opened store in my hometown, and there was no Amiga software to be found. Asking if there would be any in the future, I was met with a "Probably. About 20 people have been in during the last few days asking for it and the CD32." Really?

With this article coming to a close, you may still be wondering where the point to all of it is. To tell you the truth, I'm not sure. "A Clockwork Orange" is playing in the background, and I'm bored. I think the moral however, is this: While Commodore may be buckling, the Amiga community is still willing to support their computer. It is important that the Amiga continues to thrive with the help of hardware and software developers, along with the help of a quite-large userbase...

"Ticking [typing] away, the moments that make up the dull day [on the Amiga...]"

## 1.10 AR Contest!

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% Amiga Report Contest!                                     by David Tiberio %%
%%                                                         dtiberio@libserv1.ic.sunysb.edu %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

The Amiga Report contest is still going on, and it is not too late to enter. This ongoing monthly contest allows Amiga Report readers a chance to win software by either solving a puzzle or by entering a random drawing. The prize this month is the Amiga/Toaster Reference Manual v2.221, from Area52. This is a 1,000 page help system for the Amiga and Video Toaster, covering the Workbench, AmigaDOS, Lightwave, and more (\$34.95 value). Also, as a second prize, we are offering Merrill Callaway's ARexx Guide, a disk based hypertext manual about using ARexx (\$24 value). All monthly contests end on the morning of the first of the following month. Any entries beyond this date will be entered into the next contest.

To enter the random drawing, select a number from 1 to 262,144 and send it to me at one of my addresses listed below, either by the postal service or email through the Internet.

Also, you may enter by solving the following puzzle. The winner of this puzzle will be decided within the same time frame as the random prize, to allow the contest information to filter through the networks, and to allow your letters and postcards to come in.

The ASCII table contains the alphabetic characters from A to Z, in sorted order. This character set is the basis for many languages, and should be common knowledge to anyone reading this. However, there exists a commonly used set of 26 characters, using these letters, in non-sorted order. Each character appears once and only once. In this non-sorted set, some of the characters do appear in alphabetic order, however there exist two characters which appear in reverse-sorted order. Where is this set found, and what are the two characters?

To enter, simply let your fingers do the talking and type up an email and send it to [dtiberio@libserv1.ic.sunysb.edu](mailto:dtiberio@libserv1.ic.sunysb.edu), or send a post card or letter to:

Amiga Report Contest  
c/o David Tiberio  
6 Lodge Lane  
East Setauket, NY 11733

In your letter or email, please provide the following:

Your full name and address. Please keep in mind that many of you may have addresses that I am not accustomed to, so please include your country or any other information that I would need in case to win. An email address should also be included, if possible.

You must also include a one sentence or "short answer" explanation of the editorial content from the editor, Rob Niles, or any stand-in editor, in the issue in which you read about this contest. You must also include the issue number. For example, if you read this in AR213, then include that in your correspondence. Also, the prize winner will be determined by a random number generator. Choose a number from 1 to 262,144. The closest winner or winners to the randomly generated number will receive the prize in the mail. Anyone who does not provide a number will have one assigned to him randomly.

DISCLAIMER: This contest is being provided as a service to the Amiga community and all persons involved in running this contest cannot be held liable for anything that costs you money or lifetime pain and anguish. Rules are subject to change. All entries must be received by April 30th, 1994. Any entries beyond this date will be entered into the next contest, if any.

Odds of winning are approximately 1:40 for the random drawing and 1:15 for the correct answer to the puzzle, based upon current entries.

SPECIAL THANKS to Merrill Callaway for donating a copy of his ARexx Guide for inclusion in our contest!

[dtiberio@libserv1.ic.sunysb.edu](mailto:dtiberio@libserv1.ic.sunysb.edu)

## 1.11 Reader Mail

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% Reader Mail                                     %%
%% The Readers Speak!                             %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Dear Robert,

I'd like to say how annoyed I get when I download some neat sounding file from AMINET only to find that when I unarc it, out comes an IFF image which



is to say the least:-

```

      H   H U   U GGGG EEEEEE !!
      H   H U   U G   G E   !!
      H   H U   U G   E     !!
      HHHHHH U   U G   EEEE  !!
      H   H U   U G GGG E    !!
      H   H U   U G   G E
      H   H UUUU  GGGGG EEEEEE !!

```

Recently I downloaded some info on how to rig up IBM floppys to Amigas. When I unarced it out popped this picture. A 2408 x 3196 pixel 2-colour IFF image. Unfortunately my poor A2000 with 1Mbyte of Chip ram (4meg fast) spat the dummy at this and refused to show it because there was not enough CHIP RAM. I took the picture to work and loaded it into Graphics Workshop on my 486 PC and displayed it. Believe it or not, it was nothing more than a scanned picture of a hand drawn diagram showing pin connections between the AMIGA drive port and the pins on the header of the PC drive! It could easily have been done in ASCII and saved me some agro but the guy had to show everyone how cleaver he was and SCANNED it in with his scanner.

This is not the first time this kind of thing has happened but I hope it will be the last. Through Amiga Report I would like to send a plea to all those happy little Vegemites out there who own a scanner. If you must scan a picture then PLEASE use a realistic resolution. Scanning an A4 page at 300 dpi is not realistic because you'll end up with an image that is 2480 pixel wide! The screen is only 640 wide! If you scan at 50dpi, then an image of an A4 page will be around 413 pixels wide which I will be able to display.

It really is a bit rich having to admit that my PC was able to display the images when my AMIGA couldn't.

Philip Orr

## 1.12 Emulation Rambler

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% Emulation Rambler                                     By Jason Compton %%
%% All the emulation I can find                          (jcompton@tcity.com) %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

I'll start this week with what has unfortunately become a rare visit to the realm of IBM Bridgeboarding.

Rock around the doubled clock...

GMR Productions/Vortex Worldwide is (I hope) proud to announce that they make a 486SLC2 50mhz bridgeboard for the Amiga now. It sports the usual Vortex BB equipment (IDE HD controller, software screen emulation to 16 col VGA [I have no idea if they've gone AGA], serial/parallel/mouse/keyboard support, SIMM slots, and the ever-important onboard PC speaker), 2.5 megs of RAM and a rather fast SLC2/50 chip. The price? Well, until May, it's \$999. Not exactly a drop in the bucket, but not an

entirely bad price for a bridgeboard. Call them at 718-967-1509 for more particulars.

I should have a review of this board for you very soon, since a friend has decided to chuck her 486/66 for a 4000/040 and this board. But for now, the MacWars are calling.

A-Max IV and the art of running it

-----  
As promised, here's an up-close look at A-Max IV's control window, all 11 buttons of it..

Video: Allows you to configure your various video devices (standard Amiga video and whatever display cards you may have) and their screenmodes for A-Max use. Here is also where the screen refresh options lie: instead of Emplant's frames-per-second selections, you get two "radio buttons" and a gadget. The "Accurate" radio selection is the recommended one, presumably for authenticity, and the "Optimised" button can speed operation but distort display. The option gadget "paranoid" is for use for Mac programs that do not display at all-it will fix the problem but slow the overall performance. "Optimised" and "paranoid" allow you to change the rate at which the screen is refreshed.

Memory: A-Max allows for Amiga memory to be shared between the emulation and Amiga-at least, the emulation gets it on demand. It doesn't have to, however-the "Use External Memory" option decides it. If you choose to lock in a memory size, be it for a program which reads free memory in an odd way or just because you've never liked to share, you can allocate specific amounts of memory to the INIT sequence and to the booted system. The last option, "Best Fit" is described as making as much free memory available as possible at the expense of using slow chip memory. I haven't noticed much either way.

Multitasking: Here, the priority may be set. ReadySoft recommends you not go above 15: I keep it at 8 for most things. Wait in Foreground, in essence, makes sure that if the Mac is selected but not doing anything, the Amiga gets the unused system time. It has a box for input of the timeout delay. The option Wait in Background makes sure that if the Amiga is selected and the Mac is idle, the Amiga gets the system time.

Simple enough.

General: Just an option to select whether or not unrecognized double density floppies should be formatted IBM by the Mac and whether a right mouse button click should be interpreted like a left or like a double-click.

Device: This is where the Amiga devices desired for A-Max are assigned. In addition to the hard drive and DF0, by default the "file device" A-Max Utilities is listed. File devices are AmigaDOS files which by default reside in a DEVS: directory which the MacOS thinks are 800k disks. A-MaxUtilities has the File Transfer IV program in it. The file devices are created by A-Max's double density floppy conversion program. The menu also allows selection of mounted and booted devices and the ability to delete old file devices and the like.

SCSI: Pretty much a run of the mill "pick the SCSI IDs in use and give

---

us the driver" menu. It also allows you to select the type of memory the emulation will use to communicate with the SCSI device.

Networking: The option to configure the driver for your Ethernet card or the like for A-Max's benefit.

Serial/Parallel: Configures A-Max's port emulation. Since A-Max comes with a Mac Printer and Modem/MIDI port, you can choose that the Modem and Printer support come from either the Amiga ports, the A-Max ports, or file, in which case all the port's output is directed to an AmigaDOS file.

Can someone explain the practicality of this to me?

Save: Save your configuration

Start A-Max IV: No-brainer.

Quit: See "Start A-Max IV"

Dueling Filetransfers...

-----  
Both A-Max and Emplant provide for transferring files back and forth between the Amiga and Mac sides. Interestingly enough, the process is started on the Mac side with A-Max and the Amiga side with Emplant. For Emplant, there are two buttons: one from the Mac to the Amiga, one from the Amiga to the Mac. Selecting Amiga to Mac brings up the usual Emplant file requester, at which point a file is selected to transfer. Once this is done, the action switches to the Mac side, where the user finds somewhere to put it. If the Mac to Amiga option is picked, the process is much the same, except that the action immediately switches to the Mac to choose the file, then back to the Amiga for a path destination.

A-Max's process is launched from the Mac, using the aforementioned File Transfer program in the file device. The interface allows for more choices:

Optional translations in text, MacPaint, MacBinary, or PostScript and allows you to manipulate the all-important data and resource forks. The requesters work much the same way on A-Max as they do for Emplant.

What do I think? I think the A-Max program works slightly better: I have run into a few executables which Emplant's transfer turns into plain documents. A-Max hasn't done that. Both are restricted to one file at a time, which is not something many people are happy about.

Dueling BENCHMARKS!

-----  
I know, I know, you've probably had more Speedometer benchmarks than you care to think about printed in this magazine, right? Well, how about I spare you from the print. How about I include them as screen shots? That's right, for your "multimedia" enjoyment, I've included a couple of screen grabs of the Speedometer comparisons done with Slurp. The shots are of the Emplant because, interestingly enough, Slurp doesn't recognize the A-Max screen. Here are the conditions of the test:

All benchmarks, save video, are done 5 times. Video are done 3.  
No other Amiga programs are running in the background, save WB.

---

Emplant is running at 0 priority (if you remember, its maximum)  
A-Max is running at 0 and 10 priority (indicated in the test)  
Benchmarks are conducted with the screenmode black and white.

#### Show Benchmarks

Now...there are a few things you'll notice. Actually, four. The Math composite score for Emplant is much, much larger than A-Max's, and three math benchmarks come out looking hugely in favor of the Emplant. I am not a benchmark expert, nor am I a real programmer. I can say this, though, with a large degree of confidence. One of two things is happening. Either Emplant's emulation has some incredibly efficient routines for these tests, or Speedometer is getting reports which, by accident or by design, are horribly erroneous.

Next time around, I'll run tests of the Amiga's free time while the emulations do something or another Mac-like.

#### Despair and Graphical Analysis: The Bad Boys of Mac Emulation

---

Remember them? They're the programs that wouldn't run under Emplant. Well, they don't under A-Max either. Actually, when I tried to extract Despair under A-Max, I got errors, leading me to believe that it was really corrupted after all. But Graphical Analysis shows the same problems as Emplant: corrupted text that makes it worthless. (It DID work under A-Max II)

#### Sound-Trecker: Now why would I want to play MODs on a Mac emulator?

---

I can now confidently report that Sound Trecker works on both Emplant and A-Max. A-Max, just as Emplant does, loses so much Mac time to the job of playing the music that just moving the Mac pointer fast throws it off. The problem is slightly more noticable with the Emplant, however. The A-Max also allows more time to the Amiga user than Emplant does. Remember, of course, the A-Max was at Priority 8 (my usual).

#### Emplant and A-Max IV and honesty

---

One of the interesting things about Emplant is that in the "About This Macintosh" screen, the emulation refers to itself as a Mac roughly equivalent to its processor. To my 3000 030/25, that means calling itself a Mac IIci. Not far off, I'd say. On the other hand, however, ReadySoft figured they'd go right to the throat and seemingly identify everything as a Mac Quadra 950. So much for subtlety.

#### Putting the Mac out of its misery

---

Every now and then, for whatever reason, one of these fine products is going to crash pretty bad, to the point where the emulation is locked up and doesn't want to shut down normally. Emplant provides a "TURN POWER OFF" Amiga-side option, which will basically yank the plug on the emulator as though it were suddenly turned off. Not a great idea, but better than a lockup using up tons of memory. A-Max IV supports the use of control-alt-esc to quit programs (including Finder) on the Mac side. I'd have to say the Emplant wins through sheer

---

brute force and effectiveness, but the option to selectively do it is nice.

A PowerPC sandwich, anyone?

-----  
I've been picking up some rather interesting pieces of news about the PowerPC. Ronny G. Nordvik (nordvik@edb.uib.no) has this to say:  
"An Amiga 4000/040 with Emplant (Without X-calibur accelerator) is by 12 of 18 tests results better than an Power Macintosh (PowerPC 8100/80).

SoftWindows sucks, Ok you can run small programs, but with 1.2 MB free RAM you cannot run bigger ones. Total memory for the PowerPC was 16MB.

My suggestion is WAIT WAIT WAIT, do not buy PowerMacintosh....."

How does he back it up? (can anybody feel the benchmark coming on?)

Speedometer Report for Ronny. Prepared March 2, 1994.

Machine Record Version #: 4  
User Comment:  
A4000/040 18MB RAM  
Emplant V4.0  
System Information:  
Computer: Macintosh Quadra 900  
CPU: MC68040  
FPU: Integral FPU  
MMU: Mac II AMU  
Bit Depth: 4  
Horizontal DPI: 64  
Vertical DPI: 64  
Primary Screen Size: 640 x 480  
Physical RAM: 13568K  
Logical RAM: 13568K

P.R. Results (Uses Mac Classic as 1.0):  
CPU: 14.016  
Graphics: 8.050  
Disk: 1.510      Name of Hard Disk tested: Tassen  
Math: 223.071  
Performance Rating (PR): 30.630

Benchmark Results (Uses Mac Classic as 1.0):  
KWhetstones: 1578.947      218.872  
Dhrystones: 15000.000      16.375  
Towers: 17.081  
QuickSort: 13.025  
Bubble Sort: 16.360  
Queens: 17.925  
Puzzle: 14.952  
Permutations: 19.310  
Fast Fourier: 153.311  
F.P. Matrix Multiply: 106.901  
Integer Matrix Multiply: 13.019  
Sieve: 12.147  
Benchmark Average: 51.606  
-----

---

Speedometer Report for PowerPC 8100/80. Prepared March 22, 1994.  
Machine Record Version #: 4

User Comment:

PowerPC Macintosh 8100/80

System Information:

Computer: Power Macintosh 8100/80

CPU: MC68020

FPU: No FPU

MMU: Integral MMU

Physical RAM: 16384K

Logical RAM: 16384K

P.R. Results (Uses Mac Classic as 1.0):

CPU: 11.018

Graphics: 9.029

Disk: 3.348      Name of Hard Disk tested: Tassen

Math: 247.692

Performance Rating (PR): 32.555

Benchmark Results (Uses Mac Classic as 1.0):

KWhetstones: 1666.666      231.032

Dhrystones: 12295.081      13.422

Towers: 15.048 (0.700)

QuickSort: 11.326 (0.767)

Bubble Sort: 9.402 (1.450)

Queens: 12.410 (0.650)

Puzzle: 11.418 (0.917)

Permutations: 18.065 (1.033)

Fast Fourier: 124.263 (1.583)

F.P. Matrix Multiply: 127.863 (0.850)

Integer Matrix Multiply: 13.833 (0.800)

Sieve: 10.355 (3.050)

Benchmark Average: 49.869

-----  
[Sorry, no screenmarks were given for the PPC, as well as no FPU routines, but that's because the PPC doesn't HAVE one.]

So where does the end-all be-all in emulation computing, the PowerPC, lose? Right off the bat, it loses in CPU rating, 14 to 11. It loses Towers, Queens, etc. I count 10 of 16 ratings (I don't believe in the Speedometer average benchmarks) the Emplant wins in. Which computer is offering the cross-platforming here again?

Another interesting PPC comment: the theory behind "Will my software be compatible, and do I HAVE to get a new machine or upgrade?" is, "Oh, well, we'll package both a PowerPC and a 680x0 version in every piece of software for the next x years!" Are these the same software companies that sell separate DOS and Windows programs? Not to mention paying for extra re-compilings and disks along the line, PowerPC could easy out-manuever itself into being unwieldly and distracting, making running an Emplant or A-Max IV look easy. One can only hope.

One last thing: I don't have enough new material for a continuation of my Apple2000 review this week, but I

---

will re-print the author's net address. Contact him with any questions or comments, particularly if you have hardware specs for old computer peripherals (like 64s, Apple IIs, etc). He's Kevin\_Kralian@sacbbx.com. 64 information is of particular interest, as the popular demand is leading him to that emulator next. Anything you could provide him would be useful. He's also always on the lookout for Atari 400/800, TI, or Atari VCS specs and information (I, personally, am pulling for the VCS emulator, but that's just me.)

I thought that, in all fairness, I would clear a few things up. Apple2000 does NOT, at present, support parallel or serial. It does not support 80-column mode. Kralian has told me he will put these things in if people can send him the specifications for the hardware used to obtain these things on the Apple. No Apple floppy support, either.

That does it for this week. Enjoy the picture and keep the emulators warm.

## 1.13 Motorola MC68060 Information

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%Motorola MC68060 Information                                     thanks to: Panu Ervamaa %%
%%                                                                panu@mits.mdata.fi %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

[ED's NOTE: This article needs to extend beyond the right portion of ]  
the screen. I don't like doing this as a rule, but it is needed here. ]

MOTOROLA SEMICONDUCTOR PRODUCT INFORMATION on the MC68060

Product Brief

Forth-Generation 32-Bit Microprocessor

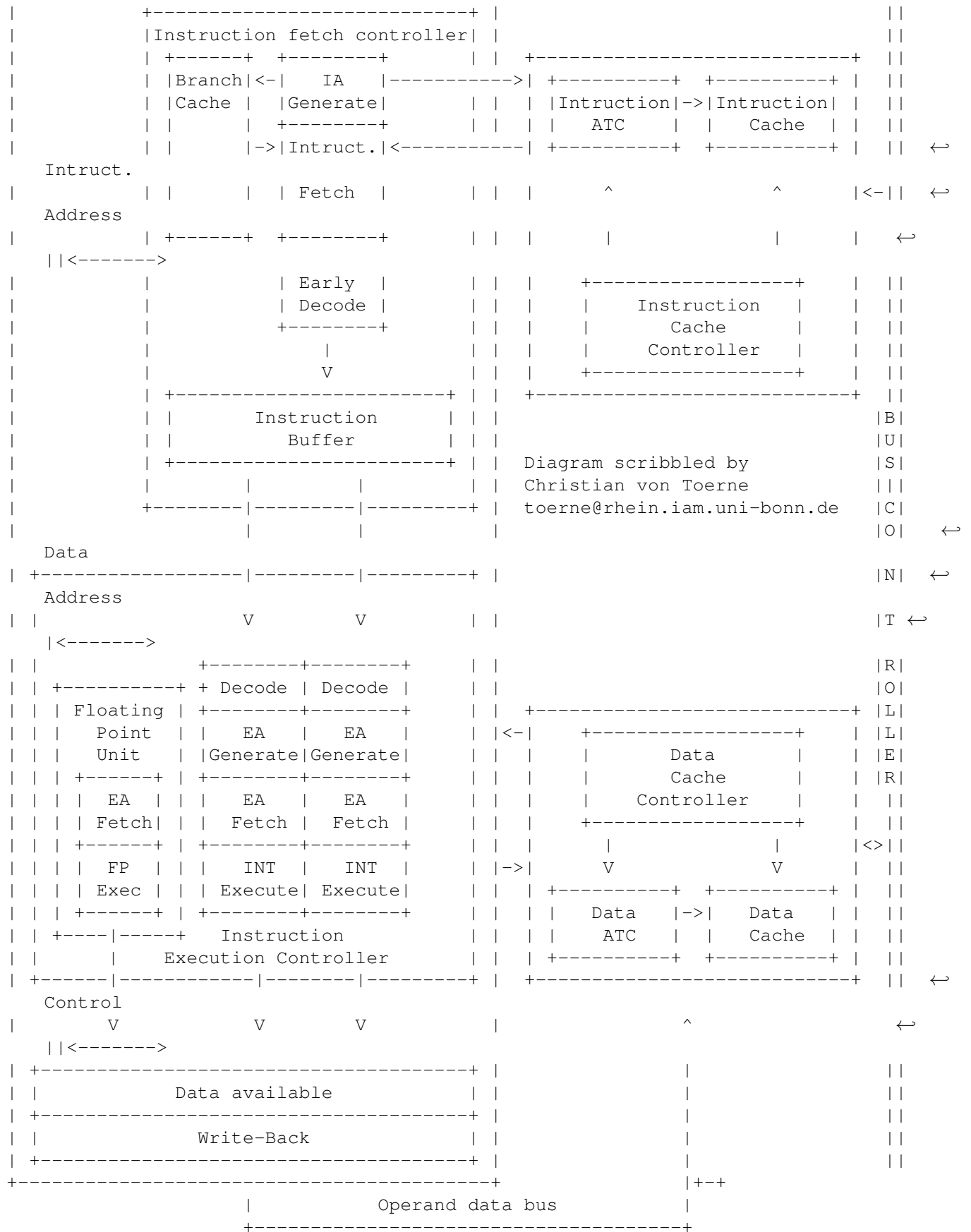
The MC 68060 is a superscalar, high-performance, 32-bit microprocessor providing a low-power mode of operation. The MC68060 is fully compatible with all previous members of the M68000 family. The MC68060 features dual on-chip caches, fully independent demand-paged memory management units (MMUs) for both instructions and data, dual integer execution pipelines, on-chip floating-point unit (FPU), and branch target cache. A high degree of instruction execution parallelism is achieved through the use of a full internal Harvard architecture, multiple internal buses, independent execution units, and dual instruction issue within the instruction execution controller. Power management is also a key part of the MC68060 architecture. The MC68060 offers a low-power mode of operation that is accessed through the LPSTOP instruction, allowing for full power-down capability. The MC68060 design is fully static so that when circuits are not in use, they do not draw power. Each unit can be disabled so that the power is used only when the unit is enabled and executing an instruction. Figure 1 illustrates a block diagram of the MC68060.

```

+-----+-----+-----+-----+-----+-----+-----+-----+
|Integer unit                                     |

```

||





(This document contains information on a product under development. Motorola reserves the right to change or discontinue this product without notice.)

-----

Complete code compatibility with the M68000 family allows the designer to draw on existing code and past experience to bring products to market quickly. There is also a broad base of established development tools, including real-time kernels, operating systems, languages, and applications, to assist in product design. The functionality provided by the MC68060 makes it the ideal choice for a range of high-performance computing applications as well as many portable applications that require low power and high performance. The MC68060's high level of integration results in high performance while reducing overall system power consumption.

The following is a list of primary features for the MC68060:

- 100% User-Mode Compatible with MC68040
  - Three Times the Performance of a 25-MHz MC68040
  - Superscalar Implementation of M68000 Architecture
  - Dual Integer Instruction Execution Improves Performance
  - IEEE-Compatible On-Chip FPU
  - Branch Target Cache Minimizes Branch Latency
  - Independent Instruction and Data MMUs
  - Dual 8-Kbyte On-Chip Caches
    - Separate Data and Instruction Caches
    - Simultaneous Access
  - Bus Snooping
  - Full 32-Bit Nonmultiplexed Address and Data Bus
    - 32-Bit Bus Maximizes Data Throughput
    - Nonmultiplexed Bus Simplifies Design
    - Four-Deep Write Buffer to Maximize Write Bandwidth
    - MC68040-Compatible Bus Provides Simple Hardware Migration Path
  - Concurrent Operation of Integer Unit, MMUs, Caches, Bus Controller, Integer Pipelines, an FPU Provides High Performance
  - Power Consumption Control
-

- Static HCMOS Technology Reduces Power in Normal Operation
- Low-Voltage Operation at 3.3 V
- LPSTOP Provides an Idle State for Lowest Standby Current
- 50 MHz and 66 MHz
- Packaging
  - Ceramic Pin Grid Array (PGA)
  - Ceramic Quad Flat Pack (CQFP)

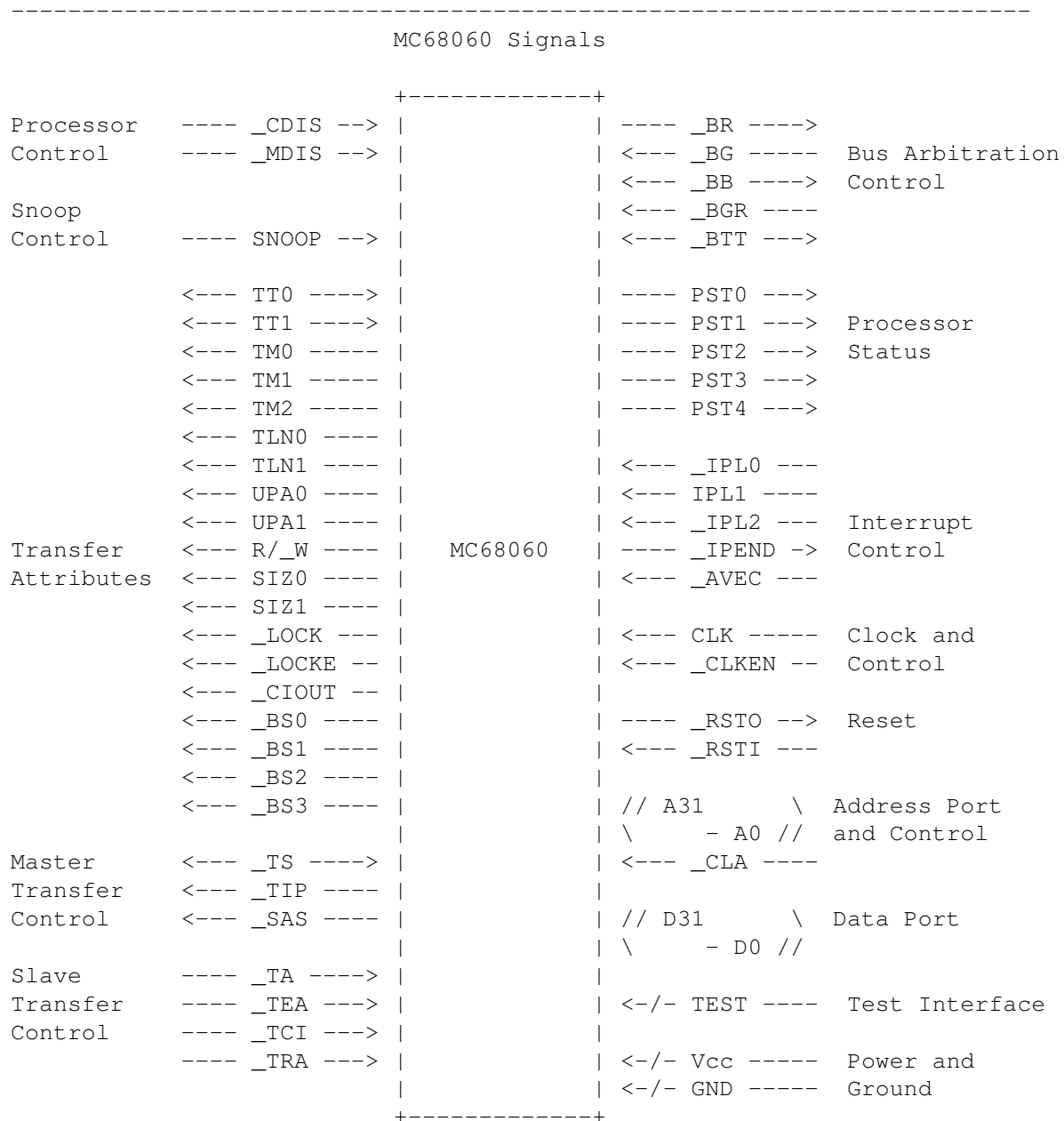


Figure 2. Funtional Signal Groups

## INTEGER UNIT

The MC68060's integer unit carries out logical and arithmetic operations. The integer unit contains an instruction fetch controller, an execution controller, and a branch target cache. The superscalar design of the MC68060 provides dual execution pipelines in the instruction execution controller, providing simultaneous execution.

The superscalar operation of the integer unit can be disabled in software, turning off the second execution pipeline for debugging. Disabling the superscalar operation also lowers power consumption.

---

### INSTRUCTION FETCH CONTROLLER

The instruction fetch controller contains an instruction fetch pipeline and the logic that interfaces to the branch target cache. The instruction fetch pipeline consists of four stages, providing the ability to prefetch instructions in advance of their actual use in the instruction cache controller. The continuous fetching of instructions keeps the instruction execution controller busy for the greatest possible performance. Every instruction passes through each of the four stages before entering the instruction execution controller. The four stages in the instruction fetch pipeline are:

1. Instruction Address Calculation -- The virtual address of the instruction is determined.
2. Instruction Fetch -- The instruction is fetched from memory.
3. Early Decode -- The instruction is pre-decoded for pipeline control information.
4. Instruction Buffer -- The instruction and its pipeline control information are buffered until the integer execution pipeline is ready to process the instruction.

### BRANCH TARGET CACHE

The branch target cache plays the major role in achieving the performance levels of the MC68060. The concept of the branch target cache is to provide a mechanism that allows the instruction fetch pipeline to detect and change the instruction stream before the change of flow affects the instruction execution controller.

The branch target cache is examined for a valid branch entry after each instruction fetch address is generated in the instruction fetch pipeline. If a hit does not occur in the branch target cache, the instruction fetch pipeline continues to fetch instructions sequentially. If a hit occurs in the branch target cache, indicating a branch taken instruction, the current instruction stream is discarded and a new instruction stream is fetched starting at the location indicated by the branch target cache.

### INSTRUCTION EXECUTION CONTROLLER

---

The instruction execution controller contains dual integer execution pipelines, interface logic to the FPU, and control logic for data written to the data cache and MMU. The superscalar design of the dual integer execution pipeline provide for simultaneous instruction execution, which allows the processing more than one instruction during each machine clock cycle. The net effect of this is a software invisible pipeline capable of sustained execution rates of less than one machine clock cycle per instruction for the MC68060 instruction set.

The instruction execution controller's control logic pulls an instruction pair from the instruction buffer every machine clock cycle, stopping only if the instruction information is not available or if an integer execution hold condition exists. The six stages in the dual integer execution pipelines are:

1. Instruction decode -- The instruction is fully decoded.
2. Effective address calculation -- If the instruction calls for data from memory, the location of the data is calculated.
3. Effective address fetch -- Data is fetched from the memory location.
4. Integer execution -- The data is manipulated during the execution.
5. Data available -- The result is available.
6. Write-Back -- The resulting data is written back to on-chip caches or external memory.

The MC68060 is optimized for most integer instructions to execute in one machine clock cycle. If during the instruction decode stage, the instruction is determined to be a floating-point instruction, it will be passed to the FPU after the effective address fetch stage. If data is to be written to either the on-chip caches or external memory after instruction

execution, the write-back stage holds the data until memory is ready to receive it. Temporarily holding data in the write-back stage adds to the overall performance of the MC68060 by not slowing down pipeline operations.

#### FLOATING-POINT UNIT

Floating-point is distinguished from integer math, which deals only with whole numbers and fixed decimal point locations. The IEEE-compatible MC68060's FPU computes numeric calculations with a variable decimal point location. The MC68060 features a built-in FPU that is MC68040 and MC68881/82 compatible. Consolidating this important function on-chip speeds up overall processing and eliminates interfacing overhead associated with external accelerators. The MC68060's FPU operates in parallel with the integer unit. The FPU performs numeric calculations while the integer unit continues integer processing.

The FPU has been optimized for the most frequently used instructions and data types to provide the highest possible performance. The FPU can also

be disabled in software to reduce system power consumption.

#### FLOATING POINT EMULATION

The MC68060 implements the most frequently M68000 family floating-point instructions, data-types, and data formats in hardware for the highest performance. The remaining instructions are emulated in software with the M68060FPSP to provide complete IEEE compatibility. The MC68060FPSP provides the following features:

- Arithmetic and Transcendental Instructions
- IEEE-Compliant Exception Handlers
- Unimplemented Data Type and Data Format Handlers

#### MEMORY MANAGEMENT UNITS

The MC68060 contains independent instruction and data MMUs. Each MMU contains a cache memory called the address translation cache (ATC). The full addressing range of the MC68060 is 4 Gbytes (4,294,967,296 bytes). Even though most MC68060 systems implement a much smaller physical memory, by using virtual memory techniques, the system can appear to have a full 4 Gbytes of physical memory available to each user program. Each MMU fully supports demand-paged virtual-memory systems with either 4- or 8-Kbyte page sizes. Each MMU protects supervisor areas from accesses by user programs and provides write-protection on a page-by-page basis. For maximum efficiency, each MMU operates in parallel with other processor activities. The MMUs can be disabled for emulator and debugging support.

#### ADDRESS TRANSLATION

The 64-entry, four-way, set-associative ATCs store recently used logical-to-physical address translation information as page descriptors for instruction and data accesses. Each MMU initiates address translation by searching for a descriptor containing the address translation information in the ATC. If the descriptor does not reside in the ATC, the MMU performs external bus cycles through the bus controller to search the translation tables in physical memory. After being located, the page descriptor is loaded into the ATC, and the address is correctly translated for the access.

---

#### INSTRUCTION AND DATA CACHES

Studies have shown that typical programs spend much of their execution time in a few main routines of tight loops. Earlier members of the M68000 family took advantage of this locality-of-reference phenomenon to varying degrees. The MC68060 takes further advantage of cache technology with its two, independent, on-chip physical caches, one for instruction and one for data. The caches reduce the processor's external bus activity and increase CPU throughput by lowering the effective memory access time. For a typical system design the large caches of the MC68060 yield a very high hit rate, providing a substantial increase in system performance.

---

The autonomous nature of the caches allows instruction-stream fetches, data-stream fetches, and external accesses to occur simultaneously with instruction execution. For example, if the MC68060 requires both an instruction access and an external peripheral access and if the instruction is resident in the in-chip cache, the peripheral access proceeds unimpeded rather than being queued behind the instruction fetch. If a data operand is also required and it is resident in the data cache, it can be accessed without hindering either the instruction access or the external peripheral access. The parallelism inherent on the MC68060 also allows multiple instructions that do not require any external accesses to execute concurrently while the processor is performing an external access for a previous instruction.

Each MC68060 cache is 8 Kbytes, accessed by physical addresses. The data can be configured as write-through or deferred copyback on a page-basis. This choice allows for optimizing the system design for the high performance if deferred copyback is used.

Cachability of data in each memory page is controlled by two bits in the page descriptor. Cachable pages can be either write-through or copyback, with no write-allocate for misses to write-through pages.

The MC68060 implements a four-entry write buffer that maximizes system performance by decoupling the integer pipeline from the external system bus. When needed, the write buffer allows the pipeline to generate writes every clock cycle, even if the system bus runs at a slower speed than the processor.

#### CACHE ORGANIZATION

The instruction and data caches are each organized as 4-way set associative, with 16-bite lines. Each line of data has associated with it an address tag and state information that shows the line's validity. In the data cache, the state information indicates whether the line is invalid, valid, or dirty.

#### CACHE COHERENCY

The MC68060 has the ability to watch or snoop the external bus during accesses by other bus masters, maintaining coherency between the MC68060's caches and external memory systems. External bus cycles can be flagged on the bus as snoopable or nonsnoopable. When an external cycle is marked as snopable, the bus snoopers check the caches and invalidate the matching data. Although the integer execution units and the bus snoopers circuit have access to the on-chip caches, the snoopers has priority over the execution units.

#### BUS CONTROLLER

The bus is implemented as a nonmultiplexed, fully synchronous protocol that is clocked off the rising edge of the input clock. The bus controller operates concurrently with all other functional units of the MC68060 to maximize system throughput. The timing of the bus is fully configurable to match external memory requirements.

-----

IEEE 1149.1 TEST

To aid the system diagnostics, the MC68060 includes dedicated user-accessible test logic that is fully compliant with the IEEE 1149.1 standard for boundary scan testability, often referred to as Joint Test Action Group (JTAG).

POWER CONSUMPTION MANAGEMENT

The MC68060 is very power efficient due to the static logic and power management designed into the basic architecture. Each stage of the integer unit pipelines and the FPU pipeline draws power only when an instruction is executing, and the cache arrays draw power only when an access is made. The FPU, secondary integer execution pipeline, branch target cache, and instruction and data caches can be disabled to reduce overall power usage. The 3.3-V power supply reduces current consumption by 40-60% over that of microprocessors using a 5-V power supply.

The MC68060 has additional methods for dynamically controlling power consumption during operation. Running a special LPSTOP instruction shuts down the active circuits in the processor, halting instruction execution. Power consumption in this standby mode is greatly reduced. Processing and power consumption can be resumed by resetting the processor or by generating an interrupt. The frequency of operation can be lowered to reduce current consumption while the device is in LPSTOP mode.

PHYSICAL

The MC68060 will be available as 50 MHz and 66 MHz versions, with 3.3-V supply voltage, in ceramic PGA and CQFP packaging configurations.

The documents listed in the following table contain detailed information on the MC68060. These documents may be obtained from the Literature Distribution Centers at the addresses listed on the back page.

Documentation

| Document title                              | Order Number  | Contents                                                             |
|---------------------------------------------|---------------|----------------------------------------------------------------------|
| MC68060 User's manual                       | MC68060UM/AD* | Detailed information for Design                                      |
| M68000 Family Programmer's Reference Manual | M68000PM/AD   | M68000 Family Instruction Set                                        |
| The 68K source                              | BR729/D       | Independent Vendor Listing Supporting Software and Development Tools |

\* Estimated availability is 3Q93.

| Motorola reserves the right to make changes without further notice to |  
 | any products herein. Motorola makes no warranty, representation or |  
 | guarantee regarding the suitability of its products for any particular |  
 | purpose, nor does Motorola assume any liability arising out of the ap- |  
 | plication or use of any product or circuit, and specially disclaims |  
 | any and all liability, including without limitation consequential or |  
 | incidental damages. "Typical" parameters can and do vary in different |  
 | applications. All operating parameters, including "Typicals" must be |  
 | validated for each customer application by customer's technical ex- |  
 | perts. Motorola does not convey any license under its patent rights |  
 | nor the rights of others. Motorola products are not designed, in- |  
 | tended, or authorized for use as components in systems intended for |  
 | surgical implant into the body, or other applications intended to sup- |  
 | port or sustain life, or for any other application in which the fail- |  
 | ure of the Motorola product could create a situation where personal |  
 | injury or death may occur. Should Buyer purchase or use Motorola pro- |  
 | ducts for any such unintended or unauthorized application, buyer shall |  
 | indemnify and hold Motorola and its officers, employees, subsidiaries, |  
 | affiliates, and distributors harmless against all claims, costs, dam- |  
 | ages, and expenses, and reasonable attorney fees arising out of, di- |  
 | rectly or indirectly, any claim of personal injury or death associated |  
 | with such unintended or unauthorized use, even if such claim alleges |  
 | the Motorola was negligent regarding the design or manufacture of the |  
 | part. Motorola and \_\_\_\_\_ are registered trademarks of Motorola, Inc. |  
 | Motorola, Inc. is an Equal Opportunity / Affirmative Action Employer. |  
 +-----+

#### Literature Distribution Centers:

USA: Motorola Literature Distribution; P.O. Box 20912, Arizona 85036.

EUROPE: Motorola LTD.; European Literature Center; 88 Tanners Drive,  
 Blakelands, Milton Keynes, MK14 5BP, England.

JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo  
 141 Japan.

ASIA-PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center,  
 No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po,  
 N.T., Hong Kong.

-----  
 Information sheets hacked in on 23rd of May, 1993 by Christian von Toerne.  
 -----

## 1.14 The Futurist

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  
 %% The Futurist by Brad Hansen %%  
 %% 100024.3556@compuserve.com %%  
 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

The other night my wife and I were watching TV in our living room, we  
 live in a little village outside of Zurich Switzerland, we were watching  
 the American news program "Dateline" on NBC SuperChannel, a Pan European



station that was recently bought by NBC the American Network. At the close of the program the presenters asked that the viewers to Phone in their opinion, voting yes or no on a certain story. They gave out the phone numbers to call and then they gave an Internet address. This was a phenomenal thing,

The program was inviting us sitting halfway around the world to participate. In that instant the program went Global. The world became a little smaller, a little more alike, a little less different.

Now I know that for more than a few years a lot of you have been using Internet E-mail much like your regular mail and not giving it a second thought.

The reality is a little different though. For you Internet E-mailers are experiencing the future. You are living on the edge of the technology. You are pushing the envelope. Just the like the person from "Dateline" who had the idea to include an Internet address.

It is often said on the Internet nobody is any color or sex or nationality.

The Internet life is truly an singular experience. Seeing that Internet address on that TV show made me think of a line in a song which goes "Imagine there's no countries, it isn't hard to do." Because in an instant there weren't any. Maybe because we all sit alone at our Keyboards we don't always see. In a way we are living the dream of our Utopian futures?

You could think of it like this. It's 1840 in the Old West and your mud hut of a town just happens to be one that is part of the Pony Express route, so you get mail delivered to you once every three days but all the towns that lay to the east and to the south have to wait weeks for any mail. You know there's a beacon of light hanging on your porch because your house is on the river bank and that's where all the boats come by.

Because you went to a University or worked for a company which offered a service, the Internet, you thought was Unique and now is common place. But I'm here to tell you, it's still Unique. The beacon on your porch might be bright, bright bright. But the rest of the world is still dark. Most of the people aren't on the route. You can sit there and say, "Someday everybody will get there mail like this." The rest of the world hardly even knows it exists.

But it's only a matter of time. So when you send E-mail, for every important reason or trivial little thing you can think of, consider yourself "a futurist."

## 1.15 Portal

[illegible]

## Portal Communications' Amiga Zone

The AFFORDABLE alternative for online Amiga information

-----

The Portal Online System is the home of acclaimed Amiga Zone, which was formerly on the People/Link System. Plink went out of business in May, 1991 and The Amiga Zone's staff moved to Portal the next day. The Zone has just celebrated its second anniversary on Portal. The Amiga press raves about The Amiga Zone, when compared to its competition.

If you live in the San Jose, CA area, then you can dial Portal directly. If you live elsewhere, you can reach Portal through any SprintNet (formerly Telenet) indial anywhere in the USA. If you have an account on another Internet-connected system, you can connect to Portal using the UNIX Telnet programs, from anywhere in the industrialized world. Delphi and BIX users can now Telnet into Portal for a flat \$19.95 a month, with \*unlimited\* use.

Some of Portal/Amiga Zone's amazing features include:

Over 1.5 GIGabytes of Amiga-specific files

The \*entire\* Fred Fish collection of freely distributable software, online.

Fast, Batch Zmodem file transfer protocol. Download up to 100 files at once, of any size, with one command.

Twenty Amiga vendor areas with participants like AmigaWorld, ASDG, Soft-Logik, Black Belt, Apex Publishing, Stylus, Prolific, NES.

35 "regular" Amiga libraries with thousands of files. Hot new stuff arrives daily.

No upload/download "ratios" EVER. Download as much as you want, as often as you want, and never feel pressured doing it.

Live, interactive nightly chats with Amiga folks whose names you will recognize. Special conferences. Random chance prize contests. Famous Amiga folks aren't the exception on Portal, they're the norm.

Vast Message bases where you can ask questions about \*anything\* Amiga related and get quick replies from the experts.

Amiga Internet mailing lists for Imagine, DCTV, LightWave, HyperAmi, Director and Landscapes are fed right into the Zone message bases. Read months worth of postings. They don't scroll off, ever! No need to clutter your mailbox with them.

FREE unlimited Internet Email. Your Portal account gets you a mailbox that's connected to the world. Send letters of any length to computer users in the entire industrialized world. No limits. No extra charges. No kidding!

Portal has the Usenet. Thousands of "newsgroups" in which you can read and post articles about virtually any subject you can possibly imagine.

---

Other Portal SIGs (Special Interest Groups) online for Mac, IBM, Sun, NeXT, UNIX, Science Fiction, Writers, amateur radio, and a graphics SIG with thousands of GIF files to name just a few. ALL Portal SIGs are accessible to ALL Portal customers with NO surcharges ever.

The entire UPI/Clarinet/Newsbytes news hierarchy (\$4/month extra)  
An entire general interest newspaper and computer news magazine.

Portal features an exciting package of Internet features: IRC, FTP, TELNET, MUDDS, LIBS. Free to all Portal customers with your account. Internet Services is a menu driven version of the same kinds of utilities you can also use from your Portal UNIX shell account.

All the files you can FTP. All the chatting you can stand on the IRC. And on IRC (Internet Relay Chat) you can talk live, in real time with Amiga users in the U.K., Europe, Australia, the Far East, 24 hours a day.

Our exclusive PortalX by Steve Tibbett, the graphical "front end" for Portal which will let you automatically click'n'download your waiting email, messages, Usenet groups and binary files! Reply to mail and messages offline using your favorite editor and your replies are sent automatically the next time you log into Portal.  
(PortalX requires Workbench 2.04 or higher)

And Portal does NOT stick it to high speed modem users. Whether you log in at 1200 or 2400 or 9600 or 14.4K you pay the same low price.

How does all that sound? Probably too good to be true. Well, it IS true.

Portal Signup or for more information:

408-973-9111 (voice) 9a.m.-5p.m. Mon-Fri, Pacific Time  
408-725-0561 (modem 3/12/2400) 24 hours every day  
408-973-8091 (modem 9600/14400) 24 hours every day

or enter "C PORTAL" from any Sprintnet dial-in in the USA,  
or telnet to "portal.com" from anywhere.

#### PORTAL'S CURRENT RATES:

All prices shown are in U.S. Dollars

|                                    |                |                | Fee         | Total<br>Cost         | Total<br>Cost          | Total<br>Cost           | Total<br>Cost           |
|------------------------------------|----------------|----------------|-------------|-----------------------|------------------------|-------------------------|-------------------------|
|                                    | Startup<br>Fee | Monthly<br>Fee | Per<br>Hour | 1 hr.<br>Per<br>month | 5 hrs.<br>per<br>month | 10 hrs.<br>per<br>month | 30 hrs.<br>per<br>month |
|                                    | \$             | \$             | \$          | \$                    | \$                     | \$                      | \$                      |
| Portal                             | 19.95          | 19.95          |             |                       |                        |                         |                         |
| 2400/9600/14.4Kbps, *direct 24 hrs |                |                | 0.00        | 19.95                 | 19.95                  | 19.95                   | 19.95                   |
| 2400/9600bps nonprime Sprint       |                |                | 2.50        | 22.95                 | 32.45                  | 44.95                   | 94.95                   |
| 2400/9600bps prime Sprint +%       |                |                | 5.50-10     | 29.95                 | 69.95                  | 119.95                  | varies                  |
| 2400/9600bps non prime # PCPursuit |                |                | 1.00        | 20.95                 | 24.95                  | 29.95                   | 49.95                   |

\* plus cost of phone call if out of Portal's local dialing area

Direct rates also apply to connections made to Portal using the UNIX "telnet" program from an account you may already have on an Internet-connected system.

% 9600 bps Sprintnet in over 300 cities areas

+ \$10 rate prevails at smaller US Cities

# PCPursuit is a service of US Sprint. Portal is a PCPursuit "Direct Access Facility" thus connection to Portal with a PCP account is simply a matter of entering C PORTAL,PCP-ID,PCP-PASSWORD at the SprintNet login prompt instead of C PORTAL.

#### Note:

Portal Direct 9600/14400 bps service is available for both USR HST modems, and any V32/V32.bis modems. There are dozens of direct-dial high speed lines into Portal. No busy signals!

SprintNet 9600bps service is V.32 modem protocol only.  
Again, Portal does NOT surcharge high speed modem users!

Portal subscribers who already have an account on an Internet-capable system elsewhere, can use that system's "telnet" program to connect to Portal for \$0.00 an hour. That's right ZERO. From anywhere in the world. If you're in this category, be sure to ask the Portal reps, when you signup, how to login to Portal from your existing Internet account.

Call and join today. Tell the friendly Portal Customer Service representative, "The Amiga Zone and Amiga Report sent me!"

[Editor's Note: Be sure to tell them that you are an Amiga user, so they can notify the AmigaZone sysops to send their Welcome Letter and other information!]

That number again: 408-973-9111.

Portal Communications accepts MasterCard, Visa, or you can pre-pay any amount by personal check or money order. The Portal Online System is a trademark of Portal Communications.

## 1.16 Dealer Directory

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%                               Dealer Directory                               %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Almathera Systems Ltd  
Southerton House  
Boundary Business Court  
92-94 Church Road  
Mitcham, Surrey  
CR4 3TD England  
VOICE: (UK) 081 687 0040

FAX: (UK) 081 687 0490  
Internet: (Sales) almathera@cix.compulink.co.uk  
(Technical) jralph@cix.compulink.co.uk

Amigability Computers  
P.O. Box 572  
Plantsville, CT 06479  
VOICE: 203-276-8175  
Internet: amiga@phantm.UUCP  
BIX: jbasile  
(Send E-mail to subscribe to our mailing list)

Apogee Technologies  
1851 University Parkway  
Sarasota, FL 34243  
VOICE: 813-355-6121  
Portal: Apogee  
Internet: Apogee@cup.portal.com

Armadillo Brothers  
753 East 3300 South  
Salt Lake City, Utah  
VOICE: 801-484-2791  
Internet: B.GRAY@genie.geis.com

Atlantis Kobetek Inc.  
1496 Lower Water St.  
Halifax, NS, Canada, B3J 1R9  
Phone: (902)-422-6556  
Fax: (902)-423-9339  
BBS: (902)-492-1544  
Internet: aperusse@fox.nstn.ns.ca

Brian Fowler Computers Ltd  
11 North St  
Exeter  
Devon  
EX4 3QS  
United Kingdom  
Voice: (0392) 499 755  
Fax: (0392) 423 480  
Internet: brian\_fowler@cix.compulink.co.uk

CLICK! Amiga Specialists N.V.  
Boomsesteenweg 468  
B-2610 Wilrijk - Antwerpen  
Belgium - Europe  
VOICE: 03 / 828.18.15  
FAX: 03 / 828.67.36  
USENET: vanhoutv@click.augfl.be  
FIDO: 2:292/603.9

---

AmigaNet: 39:120/102.9

Comspec Communications Inc  
Serving your computing needs since 1976  
74 Wingold Ave  
Toronto, Ontario  
Canada M6B 1P5  
Computer Centre: (416) 785-8348  
Service, Corporate & Educational Sales: (416) 785-3553  
Fax: 416-785-3668  
Internet: bryanf@comcorp.comspec.com  
bryanf@accesspt.north.net

Computers International, Inc.  
5415 Hixson Pike  
Chattanooga, TN 37343  
VOICE: 615-843-0630

DataKompaniet ANS  
Pb 3187 Munkvoll  
N-7002 Trondheim  
Norway - Europe  
VOICE/FAX: 72 555 149  
Internet: torrunes@idt.unit.no

Digital Arts  
122 West 6th Street  
Bloomington, IN 47404  
VOICE: (812) 330-0124  
FAX: (812) 330-0126  
BIX: msars

Finetastic Computers  
721 Washington Street  
Norwood, MA 02062  
VOICE: 617-762-4166  
BBS: 617-769-3172  
Fido: 1:101/322  
Portal: FinetasticComputers  
Internet: FinetasticComputers@cup.portal.com

HT Electronics  
275 North Mathilda Avenue  
Sunnyvale, CA 94086  
VOICE: 408-737-0900  
FAX: 408-245-3109  
Portal: HT Electronics  
Internet: HT Electronics@cup.portal.com

Industrial Video, Inc.

---

1601 North Ridge Rd.  
Lorain, OH 44055  
VOICE: 800-362-6150  
216-233-4000  
Internet: af741@cleveland.freenet.edu  
Contact: John Gray

MicroSearch  
9000 US 59 South, Suite 330  
Houston, Texas  
VOICE: 713-988-2818  
FAX: 713-995-4994

Mr. Hardware Computers  
P.O. Box 148  
59 Storey Ave.  
Central Islip, NY 11722  
VOICE: 516-234-8110  
FAX: 516-234-8110  
A.M.U.G. BBS: 516-234-6046

MusicMart: Media Sound & Vision  
71 Wellington Road  
London, Ontario, Canada  
VOICE: 519-434-4162  
FAX: 519-663-8074  
BBS: 519-457-2986  
FIDO: 1:221/125  
AmigaNet: 40:550/1  
MaxNet: 90:204/1  
iNET: koops@gaul.csd.uwo.ca

PSI Animations  
17924 SW Pilkington Road  
Lake Oswego, OR 97035  
VOICE: 503-624-8185  
Internet: PSIANIM@agora.rain.com

Software Plus Chicago  
3100 W Peterson Avenue  
Chicago, Illinois  
VOICE: 312-338-6100

Wonder Computers Inc.  
1315 Richmond Rd.  
Ottawa, Ontario, Canada K2B 8J7  
Voice: 613-596-2542  
Fax: 613-596-9349  
BBS: 613-829-0909

---

CYNOSTIC  
Office 01,  
Little Heath Industrial Estate,  
Old Church Road,  
Coventry.  
CV6 7NB  
UNITED KINGDOM  
Tel: +44 (0)203 681687  
Fax: +44 (0)203 638508  
David Cassidy email: bsupa@csv.warwick.ac.uk

DataService Oy  
P.O. Box 50  
Kuurinniityntie 30  
02771 ESPOO  
Findland, Europe  
Voice: +358 (9) 400 438 301  
Fax: +358 (9) 0505 0037

PROTONIC INC.  
Amiga RuleZ!  
4-3-11 Shinbashi  
Yanagi Bldg 4F  
Minato-ku, Tokyo 105  
Japan  
Tel: +81 (0)3 5402-7425  
Fax: +81 (0)3 5402-7427  
and of course the BEST Amiga BBS in Japan  
BBS: Grey Matter BBS +81 (0)3 5709-1907 (8N1 V32bis 24H )  
Email: nighty@gmatter.twics.com

Amiga Video Solutions  
1568 Randolph Avenue  
St. Paul, MN 55105  
Voice: 612-698-1175  
BBS: 612-698-1918  
Fax: 612-224-3823  
Net: wohno001@maroon.tc.umn.edu

Magic Page  
3043 Luther Street  
Winston-Salem, NC 27127  
910-785-3695 voice/fax  
Spiff@cup.portal.com

Keizer Tech  
3881 River Rd N  
Keizer, OR 97303  
USA  
Voice: 393-5472

(Dealers: To have your name added, please send Email!)



## 1.17 BIX

/// BIX - Byte Information Exchange  
-----

Lots of information!

BIX is the premier online service for computing professionals and enthusiasts. While other online services cater to computer novices, BIX is the place for knowledgeable people to go for answers to tough questions. You're likely to find many others in similar situations who can offer advice, give technical assistance, or point you in the right direction.

\*\*\* FULL INTERNET ACCESS! \*\*\*

BIX features access to the Internet - you can use FTP to transfer files from sites all over the world, telnet to log on to other online services, schools, and research sites, and send Internet mail to millions of people at services like DELPHI, CompuServe, America Online, MCI Mail, and other sites and services. Services like "WHOIS" and "Finger" are also available, with more features on the way (like USENET newsgroups; our newsreader is currently being tested and should be available very soon!) There are no usage fees or special charges for Internet access - it's all part of your BIX subscription.

=====  
Rates and Connect Information:  
=====

BIX membership costs \$13 per month, plus connect time. There are several different ways to connect:

|            |                            |                   |
|------------|----------------------------|-------------------|
| SprintNet* | \$3/hour evenings/weekends | \$9/hour weekdays |
| Tymnet:**  | \$3/hour evenings/weekends | \$9/hour weekdays |

(SprintNet and Tymnet rates shown are for 48 contiguous US states only.)

|                       |                                            |                    |
|-----------------------|--------------------------------------------|--------------------|
| Tymnet Canada:        | \$4/hr eves/wkends                         | \$9/hour weekdays  |
| Tymnet Hawaii:        | \$10/hr eves/wkends                        | \$20/hour weekdays |
| Telnet(via Internet): | \$1/hour, round the clock                  |                    |
| Direct dial (Boston): | \$2/hour, round the clock (up to 9600 bps) |                    |

\* SprintNet daytime hours are from 6am to 7pm, M-F, ET.  
\*\* Tymnet daytime hours are from 7am to 6pm, M-F, ET.

20/20 PLAN OPTION (for USA-48 users only):

Volume users can choose the 20/20 Advantage Plan, which is \$20 per month and includes the first 20 hours of access by any combination of methods from the contiguous United States. Additional use is \$1.80 per hour (additional use for telnet access is \$1 an hour). The 20/20 Plan's cost is in addition to the \$13 monthly fee.

## INTERNATIONAL USERS:

If you wish to connect internationally through Tymnet or SprintNet, please contact your local PTT. BIX accepts prepaid international calls, direct dial, or telnet connections. In order to make a "collect" (not prepaid) call to BIX, your account must be verified before the charges are accepted. When you complete the registration, we'll mail you a BIX Membership Agreement by regular US Mail. When you receive it, sign it and return it to us by mail. When we receive it here, we'll authorize your account to make reverse charged calls.

If you want to access BIX right away, contact your local PTT to set up a prepaid account. You'll pay your local carrier for your calls to BIX in advance, so there's no waiting period or verification needed. Or, connect at BIX via telnet to x25.bix.com.

SprintNet international calls from most locations are \$24 an hour.  
Tymnet international charges vary, but are generally between \$20-\$30 an hour.

=====  
Billing Information:  
=====

You can charge your monthly BIX membership fees to your Visa, Mastercard, Discover, or American Express card.

You may have your company invoiced for one or more BIX memberships with a BIX Corporate Account.

=====  
To Sign Up For BIX:  
=====

Dial by modem 1-800-695-4882 or 617-491-5410 \*  
(use 8 data bits, no parity, full duplex)

Press a few carriage returns until you see the Login:(enter "bix")  
prompt, then type bix

At the Name? prompt, type bix.amrpt

- \* Users already on the internet can telnet to x25.bix.com instead.
- At the USERNAME: prompt enter bix, then bix.net at the Name? prompt.
- Once your account is registered, you can connect the same way, except at the Name? prompt you'll enter your BIXname and then your password.

Using the above procedure will allow users in the 48 contiguous United States to take advantage of our special "5 for \$5" offer. This offer lets you use up to 5 hours of evening/weekend time on BIX during the current calendar month (whatever month you sign up in), for \$5. Additional time is \$1.80 per hour (\$1 per hour for telnet). At the end of the calendar month, you will be placed into our standard rate plan, at \$13 monthly plus connect charges. You may also join the 20/20 Plan at this time.

---

If you have other questions, please contact BIX Member Services at (800) 695-4775; send a fax to BIX at (617) 491-6642; or send Internet mail to [info@bix.com](mailto:info@bix.com).

BIX Member Services hours are 12pm - 11pm, Monday through Friday, ET.

## 1.18 HWGRCS v5.6.0.1pl8

### TITLE

HWGRCS

### VERSION

HWGRCS 5.6.0.1 at Amiga Patch Level \_8\_

### AUTHOR

Ported, enhanced, and maintained by

Heinz Wrobel  
Karlstr. 16  
82131 Gauting  
Germany

<[heinz@hwg.muc.de](mailto:heinz@hwg.muc.de)>  
<[heinz@edohwg.adsp.sub.org](mailto:heinz@edohwg.adsp.sub.org)>

FAX +49 89 850 51 25, I prefer email.

### DESCRIPTION

HWGRCS is a port of GNU RCS 5.6.0.1 done with SAS/C 6.51.

The Revision Control System (RCS) manages multiple revisions of files. RCS automates the storing, retrieval, logging, identification, and merging of revisions. RCS is useful for text that is revised frequently, for example programs, documentation, graphics, papers, and form letters.

For upgraders from the old RCS 4.x on Fish 281/282:

- HWGRCS supports the RCS\_link feature
- No problems with non-ASCII characters

Special features:

- File pattern and response file expansion in all RCS commands.
  - Support for .a, .ag, .asm, .fd, .guide, .i, .ps extensions.
  - GNU DIFF 2.6, GNU patch 2.1 and a N\*rtion like LP utility.
  - AmigaGuide. docs.
  - I try to \_support\_ HWGRCS.
-

## NEW FEATURES

New since patch level 7:

- DIFF/PATCH AmigaGuide. docs.
- Reference directory support.
- New Amiga keywords.
- Local environment variables are checked.
- Directory/Process specific configuration options.
- Filename patterns to ignore are configurable.
- .ag AmigaGuide. extension recognized.

Bugs fixed since level 7:

- RCS\_link is always ignored as filename now with pattern expansion.

## SPECIAL REQUIREMENTS

>=V37, >1MB suggested, HD required.

## HOST NAME

Any Aminet site, e.g. ftp.uni-paderborn.de (131.234.2.32) for users in germany. Please use the site that is closest to you.

## DIRECTORY

/pub/aminet/dev/misc

## FILE NAMES

|                  |                                               |
|------------------|-----------------------------------------------|
| HWGRCSp8f.lha    | Binaries and full AmigaGuide. docs            |
| HWGRCSsrcp8f.lha | The sources                                   |
| HWGRCSmanp7f.lha | The ASCII unix man pages for RCS (Note: _7_!) |

## PRICE

I don't declare it shareware as it is Gnu SW, but donations/gifts for my support are quite welcome! Donations in physical form preferred. Support ~ Gifts, especially for commercial users.

## DISTRIBUTABILITY

RCS is distributable under the Gnu Public License.

For my support of HWGRCS I won't bill you, but I ask for donations (Hear me, commercial users? :-).

## 1.19 C-Shell v5.37

---

## TITLE

C-Shell (csh)

## VERSION

5.37

## AUTHOR

Andreas M. Kirchwitz (csh 5.20+),  
based on csh 5.19 by Urban D. Mueller

E-Mail: csh-fan@zikzak.in-berlin.de

## DESCRIPTION

C-Shell is a replacement for the AmigaDOS command line interface. Many builtin Unix-like commands, very fast script language, file-name completion, command-name completion, comfortable command line editing, pattern matching, AUX: mode, object oriented file classes, abbreviation of internal and external commands. Supports multiple users.

C-Shell is easy to install and to use. Online help for all commands, functions and various subjects. ARP-free!

## NEW FEATURES

Changes since version 5.35 (summary):

- Supports MultiUser (shows current user in titlebar).
- Builtin command "chmod" (protect) allows setting of user/group/others bits in a UNIX-like fashion.
- New builtin commands "chgrp" and "chown".
- Fixed bugs in builtin commands "path", "rm", "rehash".
- Builtin command "diskchange" allows multiple drive names.
- New builtin function @age\_mins(), modifications to @age().
- Now requesters appear on same screen as CSH's window.
- New meaning for builtin variable "\_abbrev", now ALL commands (even those in the DOS search path) can be abbreviated -- not only builtin commands.
- Fixed layout bug in "dir -k" and "dir -i" (classes).
- Builtin command "dir" supports UID/GID and group/others bits.
- No requester "please insert volume ..." when you press return and your current directory is on an "unmounted" volume (eg, a removed floppy disk).
- New meaning for "dir -z" and builtin variable "\_dirformat".
- Source code now "indent" clean.  
(some warnings on first run, but no errors)
- Builtin command "qsort" allows case-sensitive sorting.
- Various changes/enhancements to existing commands.
- Miscellaneous bug fixes.

See file "HISTORY" in archive csh537.lha for complete listing of changes and new features.

---

## SPECIAL REQUIREMENTS

AmigaOS 2.0 (or higher)

## HOST NAME

FTP/Internet: AmiNet and mirrors

For example, ftp.wustl.edu [128.252.135.4].

UUCP/E-Mail : mail-server@cs.tu-berlin.de

Send mail to the address above and put the line "send /pub/aminet/util/shell/csh537.lha" in the body.

## DIRECTORY

/pub/aminet/util/shell

## FILE NAMES

csh537.lha           (binary and documentation)  
csh537src.lha       (source code for SAS/C 6)

## DISTRIBUTABILITY

Freely distributable, Copyright by the individual authors.

## 1.20 IconPack v1.0

## TITLE

IconPack

## VERSION

1.0

## AUTHOR

Tom Ekstr|m (litoek@kielo.uta.fi)

## DESCRIPTION

IconPack is a complete collection of replacement icons for Workbench 2 and 3. They are designed to look good on a standard four-colour, high resolution, non-interlaced screen. They are of the same shape and size and use the same colour scheme of gray, black, white and blue as the original icons. IconPack contains icons for all standard Workbench files, plus icons for some popular PD/shareware programs, hard-disk related tools, and all usual datafiles (such as pictures,

---

textfiles, music etc.)

IconPack also includes the Iconizer utility to make the installation of images from one icon to another as effortless as possible. Iconizer changes only the imagery of icons, not affecting the tool types, position, etc.

Source and destination icons can be selected either according to a script, or manually with appwindow/file requester support. Sporting a font-sensitive, graphical user-interface, Iconizer lets you see the new image and the original image side-by-side, before the installation, and lets you install or reject icons on an icon-by-icon basis.

A script for Iconizer is provided that installs the icons from IconPack to you workbench.

#### SPECIAL REQUIREMENTS

AmigaDOS version 2 or later. The installer requires at least version 2.04.

#### HOST NAME

Aminet - (wuarchive.wustl.edu, ftp.luth.se etc.)

#### DIRECTORY

util/wb

#### FILE NAMES

IconPack1\_0.lha

#### PRICE

IconPack is FreeWare. See the documentation for more details.

#### DITRIBUTABILITY

IconPack is freely distributable as long as all files are included in the distribution, without deletions, additions or modifications of any kind.

## 1.21 CLExchange v1.4

#### TITLE

CLExchange -- a CLI replacement for Exchange

#### VERSION

1.4

#### AUTHORS

Gael Marziou and Reza Elghazi

---

E-mail address: gael@gnlab030.grenoble.hp.com

#### DESCRIPTION

CLIEExchange is a CLI replacement for standard CBM utility called Exchange which is used to manage commodities. The only difference is that Exchange has a graphical user interface while CLIEExchange has been designed to be called from scripts, ToolManager menus or docks, hotkeys, BrowserII and whatever you want. Due to this, CLIEExchange code is ten times smaller than Exchange one, it is currently 592 bytes. C Source is included.

#### FEATURES

All Exchange features.

#### SPECIAL REQUIREMENTS

OS release 2.04 or newer is required.  
Distribution is archived with lha so program to un-archive them is needed.

#### HOST NAME

Software has been uploaded to the Aminet Site:  
  
ftp.wustl.edu        128.252.135.4    pub/aminet/  
  
and will be readily available on other Aminet sites.

#### DIRECTORY

/pub/aminet/os20/cli

#### FILE NAME

CLIEExchange\_1.4.lha        : main archive.

#### PRICE

There is no charge for use of this software.

#### DISTRIBUTABILITY

Totally freeware (no copyright), I just want the contents of the archive to be kept intact.

#### OTHER

E-mail address for bug reports and fixes:  
gael@gnlab030.grenoble.hp.com

---



## 1.22 Tagline Ripper v.1.3

### TITLE

TTR - The Tagline Ripper v.1.3 (release 1)

### AUTHOR

James W Savage  
Internet: bryce@gothic.demon.co.uk  
Fidonet: 2:2501/307.13 @ Centronics BBS

### DESCRIPTION

You're into email, you've seen those amusing little lines tagged onto the end of messages. Isn't it tedious editing by hand and putting them into a file line by line? Well, now you don't need to. TTR rips taglines from every message in your message base, removes the lines that looked like tags but weren't, and leaves you with a file purely of amusing quotes. All you need to do is remove the boring ones.

TTR is fully GUI driven and uses the 2.xx+ ASL file requester. Even my cat can do it.

### NEW FEATURES

They're all new, it hasn't been released before!

### HARD- AND SOFTWARE-REQUIREMENTS

Kickstart/Workbench 2.0+  
asl.library  
A Ram Disk device called RAM:  
The CLI command Search

### DOWNLOAD

Any Aminet site, e.g.

Switzerland  
litamiga.epfl.ch 128.178.151.32 pub/aminet/  
Scandinavia  
ftp.luth.se 130.240.18.2 pub/aminet/  
Germany  
ftp.cs.tu-berlin.de 130.149.17.7 pub/aminet/  
USA  
ftp.wustl.edu 128.252.135.4 pub/aminet/  
UK  
sunsite.doc.ic.ac.uk aminet/

### DIRECTORY

comm/fido

### FILE NAMES

---

TTR\_v1-3.lha

#### FURTHER SOURCES

##### FIDO:

Centronics BBS +44 (0)473 273246 [2400 - 21.1k] 2:2501/307

File area: Amiga Comms      Filename: TTR\_v1-3.lha

#### PRICE

Gothware. Send me something black and gothic.

#### DISTRIBUTABILITY

Freely distributable but copyrighted.

## 1.23 April v1.0

#### TITLE

April V1.0

#### AUTHOR

Nick de Jong  
FidoNet 2:285/404.31

#### DESCRIPTION

April is a new FidoNet-compatible tosser and editor for the Commodore Amiga line of personal computers, specifically aimed at points. A lot of time was used to make April as user-friendly as possible, without making her too slow or too inflexible. Together with a mailer like Trapdoor or Welmat it's now simple to set up a good working pointsystem...

Some of the features of April are a new format of the messagebase, a well thought-out userinterface, the speed and the enormous amount of options to configure April the way YOU want. There are quite some alternatives for April at the moment like GCCHost, Pointmanager, Foozle and Chameleon combined with TrapToss, Confmail or another tosser. But April beats them all in speed, features and ease of use. You can use the newest FidoNet-technology like 4d addressing, multibossing, linking of messages based on the MSGID and REPLY kludges. 4D-filenames like those that are supported by TrapDoor can be used, and the configuration can be done completely with a very comprehensive GUI. There is a very complete and easy to use random system available. The memory that April is allowed to use and the disk space the messagebase is allowed to use is fully configurable, and April works in all kinds of display formats like Interlace, Pal, NTSC, Overscan and 4 or 8 colors.

#### NEW FEATURES

---

- Finally no longer beta
- Some graphics enhancements
- Some new archive options
- BrowseFlags are showed in title
- A re-export added
- Import info added
- New tree graphics
- Tree is configurable
- About 70 ARexx commands added
- Option 'go to lastread at start'
- Event commands
- Clipboard for messages (eg for multiquotes)
- Archive flag added for messages that are archived
- External cli now is of type 'AUTO/WAIT'
- To next Subject chain when at the end of current chain
- Aprils install option now adds some example external menu items
- Receipt flag added
- 'del = del + next' option added
- Pulldown menus now ghosted when not selectable
- YEmpty for some space at the bottom of the April screen for a dock or something similar.
- Numerous bug fixes

#### HARD- AND SOFTWARE-REQUIREMENTS

April runs on all members of the Commodore-Amiga family, independant of the Kickstart version they use. She supports PAL as well as NTSC and has been tested on all processors, from 68000 to 68040.

She works as well in interlace as in non-interlace. 1MB is necessary, more is recommended to make proper use of April. 1 diskdrive is necessary, a hard-disk is recommended.

To get a working pointsystem, you need the following programs:

| Program       | Example                            |
|---------------|------------------------------------|
| 1) Tosser     | April                              |
| 2) Editor     | April                              |
| 3) Mailer     | Trapdoor, Welmat                   |
| 4) Arcer      | LHA, LZ, Zoo, Lharc, ARJ, ARC, Zip |
| 5) Texteditor | DME, Qed, CygnusEDPro, TurboText   |

#### DOWNLOAD

Any Aminet site, e.g.

ftp.wustl.edu 128.252.135.4

#### DIRECTORY

comm/fido

#### FILE NAMES

April\_1-0.lha

---

April\_1-0.readme

#### FURTHER SOURCES

##### FIDO:

|                |            |                |         |
|----------------|------------|----------------|---------|
| Digital Desert | 2:285/404  | 01184-63843    | HST/V32 |
|                |            | 01184-72217    | V32Bis  |
| Focus BBS      | 2:282/706  | 05157-6209     | V32Bis  |
| Enigma BBS     | 2:282/307  | 05107-1403     | V32Bis  |
| Centronics BBS | 2:2501/307 | +44 473-273246 | V32Ter  |

File Area: Amiga Comms      Filename : April\_1-0.lha  
FREQ name: APRIL

#### PRICE

|                   |    |                    |
|-------------------|----|--------------------|
| 30 Dutch Guilders |    | N. de Jong         |
| 30 Deutsch Marks  |    | Aggemastate 109    |
| 20 US \$          | to | 8926 PB Leeuwarden |
| 25 Swiss Francs   |    | The Netherlands    |
| 15 English Pounds |    |                    |

You may use April for an evaluation period of up to 4 weeks. After that, you have to register.

##### NOTE TO UK USERS:

You can register April for 15 pounds through James Savage.

FIDO: 2:2501/307.13

UUCP: bryce@gothic.demon.co.uk

#### DISTRIBUTABILITY

You may only copy and distribute the complete April package, without removing or adding files to the archive. You may not charge any more than the cost of a diskette plus a small fee for copying the April package.

With the "April Package" we mean the executables and the documentation.

## 1.24 DVI & DVILW v3.62

#### TITLE

DVI & DVILW

#### RELEASE

3.62

#### AUTHORS

|                  |   |                                   |
|------------------|---|-----------------------------------|
| Ingo Eichenseher | - | Ieichens@Appl-Math.TU-Muenchen.DE |
| Gerhard Wilhelms | - | Wilhelms@Uni-Augsburg.DE          |
| Markus Zahn      | - | Zahn@Uni-Augsburg.DE              |

## SHORT

Previewer / Printer Driver / PostScript Driver for TeX

## DESCRIPTION

DVI is a TeX previewer with integrated printer drivers.  
Supported printers are  
HP PCL compatible printers ( HP Laser- / Deskjets etc. ),  
NEC P6 compatible printers ( NEC P6, EPSON LQ, etc. )  
FX-80 compatible printers ( Epson FX-80, Star LC-10, etc. ) and  
Canon BJ-300 compatible printers.

DVILW is a PostScript converter for dvi files.

Both programs support

- o virtual fonts
- o 2D and 3D graphics based on \special commands.

The driver source codes are included. There are existing  
implementations for Amiga computers, Atari ST computers,  
Apollo workstations, workstations with X11/Motif and  
IBM PC compatibles.

## NEW FEATURES

- o This is the first public Amiga release.

## SPECIAL REQUIREMENTS

AmigaOS Release 2.04 (V37+) or higher.  
Best: 2MB Memory or more, ECS Agnus.

## HOST NAME

wuarchive.wustl.edu (128.252.135.4) [AmiNet]  
ftp.rz.Uni-Augsburg.DE (137.250.113.20)

## DIRECTORY

/pub/aminet/text/tex [AmiNet]  
/pub/amiga/tex/uniaug\_driver

## FILENAME

dvi362.lha

## PRICE

Your fee is to report all occuring errors to the authors!

## DISTRIBUTABILITY

(C) Ingo Eichenseher, Gerhard Wilhelms, Markus Zahn

---

DVI & DVILW must not be included in a commercial public domain distribution without the written permission of the authors.

## 1.25 JForth Professional 3.x Demo

### TITLE

JForth Professional 3.x Demo

### VERSION

3.1

### COMPANY

Delta Research  
P.O. Box 151051  
San Rafael, CA 94915-1051

(415) 453-4320

### AUTHOR

Mike Haas (mikeh@starnine.com)  
- Also author of Textra and LCD Calculator

Phil Burk (phil@ntg.com)  
- Also author of HMSL, FindWindow and HeadClean

### DESCRIPTION

Forth is an interactive software development environment, normally tailored for embedded controller and machine control applications. With JForth's comprehensive Amiga system interface, Forth now excels at platform software development. Originally created to provide precise control of observatory telescopes, Forth contains both an interpreter AND a compiler, combining the best features of both systems. The interpreter affords interactive access to all language features; programs are compiled into native 68K code. JForth programs are compatible with all AMiga models and OS versions. AGA support (3.1) is currently in beta test.

This is a demo version of the JForth Professional 3.x software development system. It includes a complete JForth interpreter/compiler which is fully-functional but limited in the size of executable code it will produce. Also, the demo will NOT create standalone programs (the commercial package will). This demo version also offers an "Introduction" which can be optionally viewed at startup.

The demo interpreter/compiler includes a disassembler, assembler, as well as a source-level debugger. While

---

the demo package does not provide the JForth "include" files (similar to C's ".h" files, JForth calls them ".j"), MANY are pre-compiled and accessible in the demo program. Similarly, the demo can also call many Amiga shared-library functions, as they have been pre-compiled for you (the demo package does NOT support adding more... the commercial package can call any Amiga library function, even custom libraries).

Additionally, there is a compiled example program which demonstrates the JForth interface into graphics, menus, HAM mode, gadgets, etc.

There are several source files provided, including an IFF file viewer, word/line counter and others (all will compile within the working space limitations imposed by the demo). Additionally, several tutorials are provided for users new to Forth and/or JForth.

Also provided is V1.11 of Textra, the user-friendly Amiga GUI-based text editor. This is the same editor which accompanies the JForth package and can be integrated with JForth (even the demo) via ARexx. (Later versions of Textra are available and are completely backward-compatible with JForth).

Finally, as an example of a JForth standalone, graphics-based productivity application, Mike Haas' 1993 "LCD Calculator II" is included.

#### NEW FEATURES OF JFORTH PROFESSIONAL 3.x

- Amiga DOS 2.0 includes and library support, 68040-compatible
- ASL file requester
- ANIM and ANIMBRUSH IFF extensions to the Picture system
- ARexx support toolbox simplifies writing command driven host applications
- Mike Haas' Textra editor (v1.11) integrated with JForth via ARexx
- Faster and smarter Clone
- Profile - code performance analyser
- ARP and Requester library support
- New error handling tools,
- Optional global register-based optimizing compiler
- Index for manual
- Improved local variables
- Tools for Double Buffered graphic displays
- Numerous other improvements and (gasp) bug fixes
- Now comes on 3 disks
- Improved manual with Index

#### SPECIAL REQUIREMENTS

1 Meg required

#### PRICE

---

JForth Professional 3.x MSRP is \$179.95

#### DISTRIBUTABILITY

The J4thDemo.lha package is freely-distributable as long as it is unmodified.

#### FILE NAME/LOCATION

Uploaded to aminet, specifically...

wuarchive.wustl.edu:/pub/aminet/dev/lang/J4thDemo.lha  
(IP address of wuarchive.wustl.edu: 128.252.135.4)

Also uploaded to Genie, Amiga, Pro/Ami Library, file #1204

#### OTHER

Later shareware versions of Textra are available on the net, and are compatible with JForth professional. (The enclosed v1.11 was the last Freeware version)

## 1.26 Taulcons v1.6

#### TITLE

TauIcons

#### VERSION

1.6

#### AUTHOR

Osma Ahvenlampi  
email: oahvenla@snakemail.hut.fi

#### DESCRIPTION

TauIcons is a collection of additional icons designed in MagicWB style, to enhance the look of the Workbench.

#### NEW FEATURES

New icons, as could be expected :)

As a major new feature, TauIcons now includes Dockicons for use with ToolManager 2.1 or similar tools.

#### SPECIAL REQUIREMENTS

Workbench 2.0 or later.

While TauIcons does not require an installed MagicWB, it is highly recommended, as that's what it is designed for.

---



## AVAILABILITY

TauIcons has been uploaded to ftp.wustl.edu (128.252.135.4), and will be on all Aminet sites shortly, with the directory and filename:  
/pub/aminet/util/wb/TauIcons16.lha

## PRICE

TauIcons is freely distributable and Giftware. If you like it, send a small gift (like a copy of your own program) to the author.

## 1.27 In Closing

```
%%%%%%%%%%%%%%
%                                                    %
%              _      _      _      _      _      %
%             / \    | \    /|   ||   //    \   / \    -   %
%            /  \   |  \   /||  ||  (<  _   /  \   %
%           /---\  \|   \ /  ||  ||  \_|| /---\  \   %
%          /-----\                                     \%
%         /-----\                                     \%
%               Amiga Report International Online Magazine        %
%                   April 15, 1994 ~ Issue No. 2.14             %
%                   Copyright 1994 SkyNet Publications           %
%                           All Rights Reserved                  %
%%%%%%%%%%%%%%
```

Views, Opinions and Articles presented herein are not necessarily those of the editors and staff of Amiga Report International Online Magazine or of STR Publications. Permission to reprint articles is hereby granted, unless otherwise noted. Reprints must, without exception, include the name of the publication, date, issue number and the author's name. Amiga Report and/or portions therein may not be edited in any way without prior written permission. However, translation into a language other than English is acceptable, provided the original meaning is not altered. Amiga Report may be distributed on privately owned not-for-profit bulletin board systems (fees to cover cost of operation are acceptable), and major online services such as (but not limited to) Delphi and Portal. Distribution on public domain disks is acceptable provided proceeds are only to cover the cost of the disk (e.g. no more than \$5 US). Distribution on for-profit magazine cover disks requires written permission from the editor or publisher. Amiga Report is a not-for-profit publication. Amiga Report, at the time of publication, is believed reasonably accurate. Amiga Report, its staff and contributors are not and cannot be held responsible for the use or misuse of information contained herein or the results obtained there from. Amiga Report is not affiliated with Commodore-Amiga, Inc., Commodore Business Machines, Ltd., or any other Amiga publication in any way. All items quoted in whole or in part are done so under the Fair Use Provision of the Copyright Laws of the United States Penal Code. Any Electronic Mail sent to the editors may be reprinted, in whole or in part, without any previous permission of the author, unless said electronic mail specifically requests not to be reprinted.

## 1.28 Columns and Features

|                        |                                            |
|------------------------|--------------------------------------------|
| From the Editor's Desk | Saying it like it is!                      |
| Amiga News             | News and Announcements                     |
| compt.sys.amiga        | Where's my games!????                      |
| Positive Thinking      | Educate those about the Amiga              |
| AR Contest!            | Enter and WIN!                             |
| Reader Mail            | The readers speak!                         |
| Emulation Rambler      | All the emulation I can find               |
| Motorola MC68060       | 060 specs and information                  |
| The Futurist           | Looking at now...thinking about the future |

## 1.29 About Amiga Report

|              |                               |
|--------------|-------------------------------|
| For Starters | Where to get AMIGA REPORT     |
| AR Staff     | The Editors, and Contributors |
| In Closing   | Copyright Information         |

### 1.30 Commercial Online Services

|          |                                        |
|----------|----------------------------------------|
| Delphi   | Getting better all the time!           |
| Portal   | A great place for Amiga users...       |
| InterNet | Subscribe to the AR Mailing List       |
| BIX      | For Serious Programmers and Developers |

### 1.31 Files Available for FTP

|                     |                                      |
|---------------------|--------------------------------------|
| HWGRCS v5.6.0.1pl8  | Revision Control System              |
| C-Shell v5.37       | Replacement for the AmigaDOS CLI     |
| IconPack v1.0       | Package of icons for OS2.x, OS3.x    |
| CLIEExchange v1.4   | A CLI replacement for Exchange       |
| TTR v.1.3           | Remove email tag lines               |
| April v1.0          | Fidonet compatable tosser and editor |
| DVI and DVILW v3.62 | TeX previewer w/ printer drivers     |
| JForth Pro 3.x Demo | Forth programming for the Amiga      |
| TauIcons v1.6       | Collection of icons FUW MagicWB      |

~~~~~

The most downloaded files from wustl.edu during the week until 11-Apr-94  
Updated weekly. Most popular file on top.

File	Dir	Size	Description
-----	---	----	-----
MaxonMAGIC.lha	util/misc	406K+	Animated Screen Blanker/Sample Player
wolf3d.lha	dev/misc	50K+	My Wolf3D

```

ViewTEK21.lha      gfx/show    425K+ViewTEK v2.1
ar212.lha          docs/mags   52K+Amiga Report 2.12, 01-Apr-94
GBlanker3.0.020.lha util/blank 143K+Modular screen blanker. (020+ version)
Imperial.lha       game/think 149K+Board game like Shanghai
gzip124x1.lha      util/pack   61K+gzip-1.2.4 RESPIN 1, GNU archiving util
PowerPlayer.lha    mus/play   156K+User/System friendly module player
woman-cards.lha    game/think 563K+New card set for Klondike AGA
AOA.Sequential.dms demo/mega  832K+#1 demo at The Gathering 94.

```

~~~~~

## 1.32 NOVA

```

          * NOVA BBS *
Official Amiga Report Distribution Site
Support BBS of The Chattanooga Amiga Users Group
          * Running MEBBSNet BBS *
          Wayne Stonecipher, Sysop
AmigaNet 40:210/10.0 40:210/1.0 40:210/0.0
          FidoNet 1:362/508.0
An Amiga Software Distribution Site (ADS)
615-472-9748 USR DS 16.8 24hrs - 7 days
          Cleveland, Tennessee

```

All AR back issues are kept online.  
 All new users receive access to the AR on the first call.  
 Any AR issue may be file requested with proper name.  
 To obtain the current issue you may FReq  
 Proper name, AR.LHA or simply AR

## 1.33 In The MeanTime

```

          * IN THE MEANTIME BBS *
Official Amiga Report Distribution Site
          * Running AXShell *
          Robert Niles, Sysop
          rniles@imtired.itm.com
509-248-5645 Supra V.32bis 24hrs - 7 days
          Yakima, Washington

```

\*\*\*\*\* Notice \*\*\*\*\*

After 13 September 1993, In The MeanTime will no longer be on FidoNet, thus we will no longer be accepting File REquests (FREQs). We WILL be still accepting calls and will have the latest edition of Amiga Report online. Downloads to first time callers are still accepted.

Those who call for the latest edition of Amiga Report, and who do not wish to establish an account, at the first login: prompt type "bbs", at the second login: prompt type "guest".

Once in type "ARMAG" (without the quotes) at any prompt.

### 1.34 PIONEERS BBS

```

      * PIONEERS BBS *
      ** A PREMIER GENEALOGY BBS **
** WEST COAST - Amiga Virus Busters Support BBS **
      ** CD32 REVIEW Support BBS **
      AND NOW
Official Amiga Report Distribution Site
      * Running EXCELSIOR! BBS *
      Michael & Marthe Arends, Sysops
      FidoNet: 1:343/54.0
206-775-7983 Supra 14.4k v32.bis 24hrs - 7 days
      EDMONDS, Washington

```

New users can call and get ANY copy of Amiga Report. Just call using the Name "Long Distance" and the password "Longdistance" (without the quotes of course). Users using this account will have full access to ALL past and present issues of AMIGA REPORT starting with the premier issue. The latest issue of Amiga Report can be Freq'ed (FileREQusted) from here as "AR.LHA", Freq's are valid at ANY time.

### 1.35 Biosmatica

```

      * BIOSMATICA BBS *
Official Amiga Report Distribution Site -- Portugal
      * Running Excelsior/Trapdoor/UUCP *
      Celso Martinho, Sysop
      FidoNet 2:361/9
+351-34-382320 V.32bis 24hrs - 7 days

```

### 1.36 Amiga Junction 9

```

      * AMIGA JUNCTION 9 *
Official Amiga Report Distribution Site -- United Kingdom
      * Running DLG Professional *
      Stephen Anderson, Sysop
      Sysop Email: sysadmin@junct9.royle.org

Line 1 +44 (0)372 271000 14400 V.32bis/HST FidoNet 2:440/20
Line 2 +44 (0)372 278000 14400 V.32bis only FidoNet 2:440/21
Line 3 +44 (0)372 279000 2400 V.42bis/MNP

Internet: user_name@junct9.royle.org

```

## 1.37 BitStream BBS

```

* BITSTREAM BBS *
The BBS of the Nelson (NZ) Amiga Users Group
Official Amiga Report Distribution Site
* Running Xenolink 1.0 Z.3 *
Glen Roberts, Sysop
FidoNet 3:771/850
+64 3 5485321 Supra V.32bis 24hrs - 7 days
Nelson, New Zealand

```

## 1.38 Realm of Twilight

```

* REALM OF TWILIGHT BBS *
Official Amiga Report Distribution Site -- Canada
* Running Excelsior! BBS *
Thorsten Schiller, Sysop
Usenet: realm.tdkcs.waterloo.on.ca
UUCP: ...!uunet.ca!tdkcs!realm
FIDO: 1:221/302
Fish: 33:33/8
24hrs - 7 days
519-748-9365 (2400 baud)
519-748-9026 (v.32bis)
Ontario, Canada

```

Hardware: Amiga 3000, 105 Meg Quantum, 213 Meg Maxtor, 5 megs RAM

## 1.39 Metnet Triangle

```

METNET TRIANGLE SYSTEM
Official Amiga Report Distribution Site
UK Support for Mebbsnet
* Running Mebbsnet and Starnet 1.02a *
Jon Witty, Sysop
FIDO: 2:252/129.0
24 hrs - 7 days
Line 1: 44-482-473871 16.8 DS HST
Lines 2-7: 44-482-442251 2400 (6 lines)
Line 8: 44-482-491744 2400
Line 9: 44-482-449028 2400
Voice helpline 44-482-491752 (anytime)

Fully animated menus + normal menu sets.
500 megs HD - Usual software/messages
Most doors online - Many Sigs - AMIGA AND PC SUPPORT
Very active userbase and busy conference
Precious days and MUD online. AMUL support site.

```

## 1.40 Omaha Amiganet

```
* OMAHA AMIGANET *
Official Amiga Report Distribution Site
* Running DLG Professional *
  Andy Wasserman, Sysop
    24 hrs - 7 days
    FidoNet: 1:285/11
    AmigaNet: 40:200/10
Line 1: 402-333-5110 V.32bis
Line 2: 402-691-0104 USR DS
      Omaha, Nebraska
```

## 1.41 Amiga-Night-System

```
* AMIGA-NIGHT-SYSTEM *
Official Amiga Report Distribution Site - Finland
* Running DLG Professional *
  Janne Saarme, Sysop
    24 hrs - 7 days
InterNet: luumu@fenix.fipnet.fi
  FidoNet: 2:220/550.0
  +358-0-675840 V.32bis
    Helsinki, Finland
```

## 1.42 Ramses Amiga Flying

```
* RAMSES THE AMIGA FLYING *
Official Amiga Report Distribution Site -- France
* Running DLG Professional *
  Eric Delord, Sysop
  Philippe Brand, Co-Sysop
  Stephane Legrand, Co-Sysop
InterNet: user.name@ramses.gna.org
  Fidonet: 2:320/104
  +33-1-60037015 USR DS 16.8
  +33-1-60037713 V.32bis
  +33-1-60037716 1200-2400
```

Ramses The Amiga Flying BBS is an Amiga-dedicated BBS running DLG-Pro on a Amiga 3000, 16MB RAM, 2GB Disk space, 3 lines.

We keep a dayly Aminet site mirroring, NetBSD-Amiga complete mirror site from ftp.eunet.ch (main site), Amiga Report, GNU Amiga, Ramses is the SAN/ADS/Amiganet French coordinator.

## 1.43 Gateway BBS

\* THE GATEWAY BBS \*  
Official Amiga Report Distribution Site  
\* Running Excelsior! BBS \*  
Stace Cunningham, Sysop  
Dan Butler, CoSysop  
24 hrs - 7 days  
InterNet: stace@tecnet1.jcte.jcs.mil  
FidoNet: 1:3604/60.0  
601-374-2697 Hayes Optina 28.8 V.FC  
Biloxi, Mississippi

## 1.44 Talk City

\* TALK CITY \*  
Official Amiga Report Distribution Site  
708-372-0190 - 2400bps  
708-372-0268 - V32 14.4K  
708-372-0283 USR DS 14.4K  
Fido Net 1:115/372,0 Phantom Net 11:2115/2.0 Clink Net 911:6080/4.0  
UUCP tcity.com

Over 3 Gig of Files Online | More and More things everyday.

With Three IBM CD-ROMs online, 10 lines, support for all platforms,  
and a REALLY dedicated sysop (The Mayor).

## 1.45 Amiga BBS

\* Amiga BBS \*  
Official Amiga Report Distribution Site  
\* Running Excelsior! BBS \*  
Alejandro Kurczyn, Sysop  
FidoNet 4:975/7  
First Amiga BBS in Mexico  
(5) 887-3080 9600 V32,MNP  
Estado de Mexico, Mexico

## 1.46 The Stygian Abyss

\* THE STYGIAN ABYSS BBS \*  
312-384-0616 14.4 USR Courier HST  
312-384-6250 14.4 Supra V.32 bis (FREQ line)  
312-384-0716 2400 USR Courier

FIDONet-1:115/384.0      CLink-911:6200/2.0    NWNet-206:310/0.0--206:310/1.0  
PhantomNet Central States Coordinator-11:2115/0.0--11:2115/1.0  
FaithNet Central States Coordinator-700:6000/0.0--700:6000/1.0  
          AMINet Chicagoland HUB-559:2/5.0  
          Chicago, Illinois

Over 4 GIGS of files    I    Over 3700 MODS    I    Over 120 On-Line Games  
Tons of digitized sounds    I    Over 15,000 GIFS  
Supporting: Amiga    I    IBM    I    Macintosh    I    C=64/128  
SIR SAMMY-SysOp      Enter.....If you dare!!

## 1.47 Amiga Do PC BBS

          \* AMIGA DO PC BBS \*  
Official Amiga Report Distribution Site - Brazil  
          \* Running Excelsior! v 1.18 \*

          +55-192-33-2260  
Weekdays: 19-07 (-3 GMT)  
Weekends: 24 hours  
Fidonet: 4:801/44  
RBT: 12:1212/1  
Virinet: 70:101/17

Internet: fimoraes@dcc.unicamp.br  
Francisco Moraes, sysop  
Campinas, SP

Freq AREPORT for the newest issue available.

## 1.48 Comm-Link BBS

          \* COMM-LINK BBS \*  
Official Amiga Report Distribution Site  
          \* Running Excelsior Pro \*  
604-945-6192    USR DS 16.8  
          24 hrs - 7 days  
Fido: 1:153/210.0  
AmigaNet 40:800/9100.0  
InterSports: 102:540/305.0  
PussNet: 169:1000/305.0  
InterNet: steve\_hooper@comm.tfbbs.wimsey.com  
          Steve Hooper, Sysop  
Port Coquitlam, B.C. Canada

## 1.49 Phantom's Lair

---



\* PHANTOM'S LAIR \*

Official Amiga Report Distribution Site

\* Running CNET 3.0 \*

FidoNet: 1:115/469.0

Phantom Net Coordinator: 11:1115/0.0-11:1115/1.0

708-469-9510

708-469-9520

CD ROMS, Over 15511 Files Online @ 2586 meg

Peter Gawron, Sysop

Glendale Heights, Illinois

## 1.50 Tierra-Miga BBS

Tierra-Miga BBS

Software: CNet

Gib Gilbertson

24 hours - 7 days

FidoNet: 1:202/638.0

AmigaNet: 40:406/3.0

Internet: torment.cts.com

Line #1: 619.292.0754 V32.bis

City: San Diego, CA.

## 1.51 Freeland Mainframe

\* FREELAND MAINFRAME \*

Offical Amiga Report Distribution Site

\* Running DLG Progeessional \*

John Freeland, SysOp

206-438-1670 Supra 2400zi

206-438-2273 Telebit WorldBlazer (v.32bis)

206-456-6013 Supra v.32bis

24hrs - 7 days

Internet - freemf.eskimo.com

Olympia, Washington

## 1.52 LAHO

\* LAHO BBS \*

Official Amiga Report Distribution Site -- Finland

\* Running MBBS \*

Lenni Uitti, SysOp

Juha Mäkinen, SysOp (Amiga-areas)

Tero Manninen, SysOp (PC-areas)

+358-64-414 1516, V.32bis/HST

+358-64-414 0400, V.32bis/HST

+358-64-414 6800, V.32/HST

+358-64-423 1300, V.32bis

Seinäjäki, Finland

Our host machine is a 386/33 with 20MB of memory, 1GB harddisk and a CD-ROM drive running in a Novell network. The BBS software is a Norwegian origin MBBS running in a DesqView windows.

We have now (26th March 1994) over 10000 files online (mostly for the Commodore Amiga line of the personal computers.)

Every user has an access to download filelist (LAHOFIL.ZIP), list of the Finnish 24-hour BBS's (BBSLIST.ZIP or BBSLIST.LHA) and every issue of the Amiga Report Magazine (AR101.LHA-AR???.LHA) even on their first call.

The system has been running since 1989 and is sponsored by the local telephone company, Vaasan Läänin Puhelin Oy.

BTW, LAHO stands for "LAtomeren Höyrylaiva Oy" = "Barnsea Steamship Co."

Welcome on board!

## 1.53 Falling BBS

\* FALLING BBS \*  
Official Amiga Report Distribution Site -- Norway  
\* Running ABBS \*  
Christopher Naas, Sysop  
+47 69 256117 V.32bis 24hrs - 7 days  
EMail: naasc@cnaas.adsp.sub.org

## 1.54 Command Line BBS

\* COMMAND LINE BBS \*  
Official Amiga Report Distribution Site -- Canada  
Canada's Amiga Graphics & Animation Source  
\* Running AmiExpress BBS \*  
Nick Poliwko, Sysop  
416-533-8321 V.32 24hrs - 7 days  
Toronto, Canada

## 1.55 Leguans Byte Channel

\* LEGUANS BYTE CHANNEL \*  
Official Amiga Report Distribution Site -- Germany  
\* Running EazyBBS V2.11 \*  
Andreas Geist, Sysop  
Usenet: andreas@lbcmbx.in-berlin.de  
24 hrs - 7 days  
Line 1: 49-30-8110060 USR DS 16.8  
Line 2: 49-30-8122442 USR DS 16.8

---

Login as User: "amiga", Passwd: "report"

## 1.56 Stingray Database BBS

```
* STINGRAY DATABASE *
Official Amiga Report Distribution Site -- Germany
* Running FastCall *
Bernd Mienert, Sysop
EMail: sysop@sting-db.zer.sub.org.dbp.de
+49 208 496807 HST-Dual 24hrs - 7 days
Muelheim/Ruhr, Germany
```

## 1.57 T.B.P. Video Slate

```
* T.B.P. VIDEO SLATE *
Official Amiga Report Distribution Site
An Amiga dedicated BBS for All
* Running Skyline 1.3.2 *
Mark E Davidson, Sysop
24 hrs - 7 days
201-586-3623 USR 14.4 HST
Rockaway, New Jersey
```

Full Skypix menus + normal and ansi menu sets.  
Instant Access to all. Download on the first call.

Hardware: Amiga 500 Tower custom at 14 MHz, 350 Meg maxtor,  
125 Meg SCSI Maxtor, 125 Meg IDE Maxtor, Double Speed CD rom,  
9 meg RAM

## 1.58 Amiga Central

```
* AMIGA CENTRAL! *
Official Amiga Report Distribution Site
CNet Amiga Support Site
* Running CNet Amiga BBS *
Carl Tashian, Sysop
Internet mail: root@amicent.raider.net
615-383-9679 1200-14.4Kbps V.32bis
24 hours - 7 days
Nashville, Tennessee
```

Hardware: Amiga 3000 Tower 68030+882@25MHz, 105 meg Quantum, 225 meg Seagate,  
Zoom 14.4k modem

---

### 1.59 Continental Drift

```
+-----+
|      /\      |
|     /  \    _  |
|    /    \  /   |
| ::/      \ \::: |
| :|\      /\ \:: |
| :::\     \/ \:: |
|::::\    /  \::  |
|      \  /    /  |
|       \/    \/  |
|              |
+-----+
```

```
C O N T I N E N T A L   D R I F T   B B S

Official Amiga Report Distribution Site
Running *DLG Pro* BB/OS Software
Supporting the Amiga 100% Only!


Sysops: Murray Chaffer & Andre Lackmann
FIDO: 3:714/911          PH: +612 949 4256
                          (Sydney, Aust.)
```

## 1.60 Guru Meditation

```

      * GURU MEDITATION *
Official Amiga Report Distribution Site -- Spain
      * Running Remote Access *
      Javier Frias, SysOp
      +34-1-383-1317  V.32bis
      24 hours - 7days
      Spain

```

### 1.61 Moonlight Sonata DLG

M O O N L I G H T   S O N A T A   D L G

\* Amiga Report Official Distribution Site \*

    \* DAS ModPlayer Support \*

2 Nodes \*FREE PUBLIC\* Amiga BBS

MIDI-tunes, MIDI-utils, Modules, Amiga-files

    Messages, Door-games, MUD...

    Also patches for several synths!

    (About 100MB of ProTracker Modules!)

Node #1 - +358-18-161763 - ZyXEL V32b 19200

Node #2 - +358-18-161862 - HST DS V32 14400

    Fidonet: 2:221/112.0

Keyboards: Erno Tuomainen

Amiga3000 25MHz - 1.3Gigs HD

BBS Software: Dialog Pro BB/OS

## 1.62 LINKSystem LINK-CH1

LINKSystem LINK-CH1  
 Official Amiga Report Distribution Site - Switzerland  
 in local newsgroup link-ch1.ml.amiga-report

Mails and News from/to UseNet

contact: rleemann@link-ch1.aworld.de

+41 61 3215643            V32bis/Zyx16800  
 +41 61 3832007            ISDN X75/V110  
 +41 61 3832008            ISDN X75/V110

## 1.63 Doom of Darkness

\* Doom of Darkness \*  
 \* Home of AmBoS \*

Official Amiga Report Distribution Site -- Germany

Marc Doerre (Marc\_Doerre), Sysop (BBS-Owner/AmBoS-Support)  
 Bernd Petersen (TGM), Sysop (Amiga-Software-Support)  
 Gerhard Luehning (Klaro), Co-Sysop (Aminet-Support)  
 Kai Szymanski (Kai), Co-Sysop (AR-Support/AmBoS-Support)

Usenet: user\_name@doom.platinum.werries.de  
 Line 1 +49 (0)4223 8355 19200 V.42bis/Zyx  
 Line 2 +49 (0)4223 3256 16800 V.42bis/Zyx  
 Line 3 +49 (0)4223 3313 16800 V.42bis/Zyx  
 Sysop Email: marc\_doerre@doom.platinum.werries.de

## 1.64 RedEye BBS

REDEYE BBS  
 \* Running EXCELSIOR/UUCP/AFAX \*  
 "Official Amiga Report Distribution Site Germany/Europe"  
 Sysop: Thorsten Meyer  
 Internet: sysop@redeye.greenie.muc.de  
 Line 1: +49-89-5460535 (V.32b, Zyxel EG +)  
 Line 2: +49-89-5460071 (USR Courier V32b terbo)  
 24hrs - 7 days  
 Munich, Germany

Areas for Amiga, PCs, Lotus Notes Group,  
 Amiga Report, Game Byte, Graphic Stuff,  
 3D-Exchange, 3D-tools, 3D-objects,  
 McAfee, GUS, PAS, DOOM, WINDOWS-NT, OS/2  
 Online CD, Online Games, USENET, INTERNET,  
 FIDO ECHOS, Developer

## 1.65 Virtual Palace BBS

\* Virtual Palace BBS \*

\* Official Amiga Report Distribution Site \*

916-343-7420

300-14400 Baud V.42bis  
AmiExpress 2.40 700 Mbytes

P.O. Box 5518  
Chico, California 95927

Tibor G. Balogh (Tibor), Sysop  
Sysop Email: tibor@ecst.csuchico.edu

Leland Whitlock (Leland), Co-Sysop

## 1.66 Where to find Amiga Report

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%                               Where to find Amiga Report           %%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

Click on the button of the BBS nearest you for information on that system.

FidoNet Systems

-----

FREQ the filename "AR.LHA" for the most current issue of Amiga Report!

|                         |                                  |
|-------------------------|----------------------------------|
| OMAHA AMIGANET          | .....Omaha, Nebraska             |
| NOVA                    | .....Cleveland, Tennessee        |
| PIONEER'S BBS           | .....Edmonds, Washington         |
| BIOSMATICA              | .....Portugal                    |
| AMIGA JUNCTION 9        | .....United Kingdom              |
| BITSTREAM BBS           | .....Nelson, New Zealand         |
| REALM OF TWILIGHT       | .....Ontario, Canada             |
| METNET TRIANGLE         | .....Kingston Upon Hull, England |
| AMIGA-NIGHT-SYSTEM      | .....Helsinki, Finland           |
| RAMSES THE AMIGA FLYING | .....France                      |
| GATEWAY BBS             | .....Biloxi, Mississippi         |
| TALK CITY               | .....Waukegan, Illinois          |
| AMIGA BBS               | .....Estado de Mexico, Mexico    |
| THE STYGIAN ABYSS       | .....Chicago, Illinois           |
| AMIGA DO PC BSS         | .....Campinas, Brazil            |
| COMM-LINK BBS           | .....Port Coquitlam, BC, Canada  |
| PHANTOM'S LAIR          | .....Glendale Heights, Illinois  |
| Tierra-Miga BBS         | .....SanDeigo, Ca                |
| MOONLIGHT SONATA DLG    | .....Finland                     |

Non-FidoNet Systems

-----

|                    |                          |
|--------------------|--------------------------|
| IN THE MEANTIME    | .....Yakima, Washington  |
| FREELAND MAINFRAME | .....Olympia, Washington |

---

|                      |                             |
|----------------------|-----------------------------|
| LAHO                 | .....Seinajoki, Finland     |
| FALLING              | .....Norway                 |
| COMMAND LINE         | .....Toronto, Canada        |
| LEGUANS BYTE CHANNEL | .....Germany                |
| STINGRAY DATABASE    | .....Muelheim/Ruhr, Germany |
| T.B.P. VIDEO SLATE   | .....Rockaway, New Jersey   |
| AMIGA CENTRAL        | .....Nashville, Tennessee   |
| CONTINENTAL DRIFT    | .....Sydney, Australia      |
| GURU MEDITATION      | .....Spain                  |
| LINKSystem LINK-CH1  | .....Basel, Switzerland     |
| DOOM OF DARKNESS     | .....Bremen, Germany        |
| REDEYE BBS           | .....Munich, Germany        |
| Virtual Palace BBS   | .....Chico, Ca              |

---