TOTAL AMIGA

Issue 16, Autumn 2003

£4.00
8.00Euro

Algor USB

Find out all about this feature-packed Zorro card inside.

AmigaOne-XE G4

We preview the fastest PowerPC motherboard in Eyetech's range.

Photo Editing

Improve your digital photos and scans with our image enhancement tutorial.

Perfect Paint 2.93 Magic Spray

For Amigans, By Amigans, On Amigas!

TOTAL AMIGA
Issue 16
Autumn 2003

Contents

Advertisers

Editorial

Welcome to another bumper 52-page edition of Total Amiga! As I write this the production of this issue has gone very smoothly and it looks like it will be out on time. This has largely been made possible by all the people who contributed to this issue, as you will see there are several different authors and a wide variety of subject matter.

Dave Pitcher's "C" article on page 46 is the first programming tutorial we've had in the magazine. Dave has chosen to start with the basics and plans to build up to more complex topics in future instalments. Thanks to Dave for having the courage to start work on such a big subject.

AmigaOne-XE G4 motherboards started to arrive earlier in the year but it took Eyetech a while to clear the backlog of orders. Mick Sutton received his board just after issue 15 went to press and now brings us a preview of the board. Although it currently only runs Linux, Mick has been able to talk about his choice of the board itself and components with an eye toward future OS 4 compatibility.

On that note, our Amiga OS 4 coverage continues with John Chandler's Amiga OS 4 Update on page 10. This time he reports some interesting developments relating to developing programs for OS 4 and some changes in priority that should mean the AmigaOne version is available earlier than would otherwise have been possible. This should please Mick and AmigaOne owners everywhere!

After our review in issue 15 Genesi released a major upgrade to their MorphOS operating system (which features wide compatibility with 68k and PPC Amiga programs). Version 1.4 fixes many of the issues pointed out in our earlier review and incorporates "Trance", the new JIT 68k emulator so we set Sam Byford to work on an update. The result is a detailed, and to my mind very balanced, look at the new version on page 18.

Another program that has recently received a big upgrade is Hollywood. Vversion 1.5 adds even more flexibility, but not a content creation GUI, to an already impressive application. I summarise the enhancements and give my verdict on the new version in the review on page 26.

While AmiAtlas is not a new application it is the only route finding software currently in development so we thought it would be worth reviewing. Find out what Mick Sutton thought of the latest version in his review on page 22.

We have a winner

In issue 15 we gave you the chance to win a copy of Hyperion's Quake 2 for the Amiga by answering three simple questions. The competition has now been drawn from all the correct entries and the lucky winner is Paul Mellor of Northumberland in the UK who will have his prize by the time you read this. Our thanks go to Hyperion and Foreматt Home Computing who donated the prize.

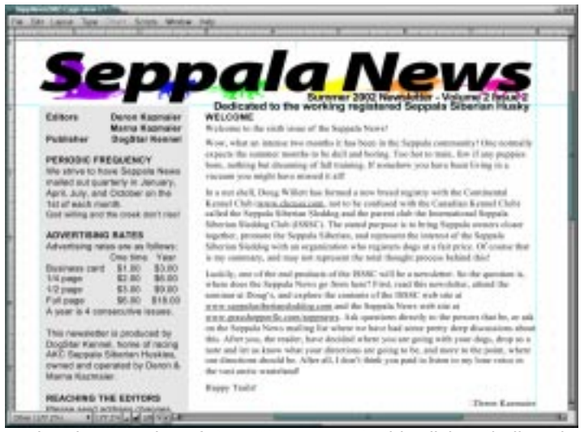
As usual I'm looking forward to reading your comments on this issue and any suggestions you might have for the future. Don't hesitate to email me at the address below.

Enjoy the magazine,
Robert Williams
editor@totalamiga.org

PageStream for Amiga OS 4

Grasshopper LLC has announced that they will support AmigaOS 4 with a new version of their professional DTP package, PageStream 4. As regular readers will know, PageStream is a powerful program and, I think most people will agree, one of best Amiga applications currently in development. Apparently PageStream is running on a beta version of OS 4 already and the developers will continue to update it to take advantage of new OS features.

Other recent PageStream news has included the release of a Linux version that sports a beautiful anti-aliased text display. Hopefully this feature may be added to the new Amiga version too. The standard retail price of the full version of PageStream has been reduced to just $99 (approximately £65) making it much more affordable. There is also a new professional edition which costs $149 (£97), this edition is based on the same program but includes the TextFX, Gary's Effects and Borders1 & 2 plug-ins plus Paper Direct and Home & Office templates which were previously available as extras. An upgrade to the pro version is available for $50 (£33).



The Linux version of PageStream sports this slick anti-aliased display; hopefully Grasshopper will implement it for Amiga OS 4.

An upgrade from Amiga PageStream 4.1 to the OS 4.0 version costs $40 (£26) and the full AmigaOS 4.0 package costs $99 (£65) as mentioned above. If you buy PageStream for OS 4 before it is released the 68k Amiga version will be supplied immediately with a free upgrade when the new OS is available.

For more information and to order on-line visit the Grasshopper site at: www.grasshopperllc.com

AWeb and KHTML

Little visible progress has been made on AWeb since the original developer, Yvon Rozijn, released the source code in 2002. Plans are afoot, however, to kick-start the development by adopting an alternative HTML rendering engine. This approach should help overcome the problems small development teams tend to have in keeping up with the latest web technologies. In a recent announcement the AWeb open source team say they are considering the KHTML engine developed for KDE's Konqurer browser on Linux. KHTML was recently selected by Apple to form the core of their Safari browser for MacOS X so the AWeb team are keeping good company with their choice.

Unlike the current version of AWeb, and indeed the other Amiga browsers, KHTML is fully HTML 4 and XML compliant and supports Cascading Style Sheets and the Document Object Model. By using just the HTML rendering engine it should be possible to retain an Amiga look and feel without porting a complex user interface from another platform.

To read more and to find out how to contribute to the development effort visit: aweb.sunsite.dk

KDE's Konqueror browser uses the KHTML engine.

About Total Amiga

Total Amiga is published quarterly by South Essex Amiga Link.

Editor: Robert Williams
Design: Robert Williams
Contributors: Sam Byford, Markus Castro, John Chandler, Peter Gordon, Jonathan Haddock, Fleecy Moss, David Pitcher, Alan Redhouse, Kelvin Shirley, Mick Sutton
Proofreading: Sean Courtney, Sam Byford, Sharon Sutton

Contact Us

If you have any queries suggestions or want to contact us for any reason please use one of the following:

EMail: editor@totalamiga.org
WWW: http://www.totalamiga.org/
Post: Total Amiga, 26 Wincoat Drive, BENFLEET, Essex, SS7 5AH, UK.
Telephone: +44 (0) 1268 569937 (19:00 - 22:00 UK time only please)

Only Amiga Software Made it Possible

Total Amiga is designed and laid out using:

Hardware:
Home built x86 PC
AMD Athlon XP 2000+
nVidia gForce 2 MX400
256Mb RAM, 40Gb HDD.

Software:

Amithlon by Bernie Meyer et. al.
Amiga OS 3.9 by Amiga
PageStream 4.1 by Softlogik
ImageFX 4.5 by Nova Design
Perfect Paint 2.93 by Georges Halvadjian
Photogenics 5 by Paul Nolan
Final Writer 5 by Softwood
Ghostscript 8.00 from artofcode ported to AmigaOS by Whoosh777.

There are also some essential utilities we couldn't live without: Directory Opus 5, SGrab, MCP, Turbo Print 7, MakeCD.

Our thanks to the creators of this and all the other great Amiga software out there.

Total Amiga is entirely created using Amiga software, no other platforms are used at any stage of the design or layout process.

Fonts

The body text of Total Amiga is set in Triumvirate Normal as supplied with PageStream, the heading typeface is Forgotten Futurist by Ray Larabie. Take a look at Ray's huge range of freeware fonts at http://www.larabiefonts.com and his commercial foundry at http://www.typodermic.com.

Legalese

Bytes...

Goodbye, Petra, we'll miss you!

After five years at the helm Petra Struck has decided to leave the excellent German Amiga news web site amiga-news.de (which also has a good English translation). To help fill her shoes the site are looking for two news editors and other assistants. On a personal note I'd like to thank Petra and the Amiga-news.de team for their dedicated work on the web site and in particular their excellent show coverage.

The announcement (in German) is at:
www.amiga-news.de/de/news/AN-2003-09-00035-DE.html

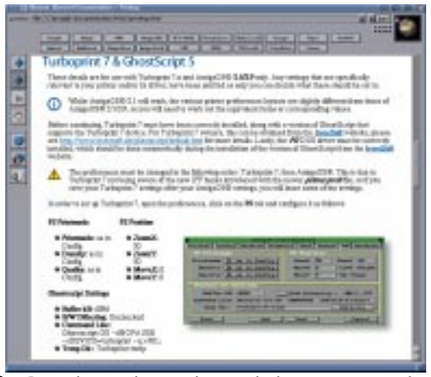
GhostScript 8

A port of GhostScript 8.0 to the Amiga has recently been completed by someone going under the moniker of "whoosh777". This is a considerable improvement over the previous 6.50 release where Amiga development seemed to have stalled. The other important factor is that "whoosh" has incorporated support for TurboPrint which was missing from the 6.50 port. Ghostscript is an open source utility for dealing with Postscript files and the formats based on Postscript including EPS and PDF. GhostScript can convert between formats, display files on screen, print them or generate a bitmap image. As an example here at Total Amiga we use Ghostscript to convert PostScript output from PageStream into a PDF file that we can check on screen and give to our printers.

Download the 8.0 port from:
www.whoosh777.pwp.blueyonder.co.uk/atlast.html

IBrowse gets Documented

Since our review in issue 15, Dave Fisher has completed comprehensive documentation for the new release of IBrowse. Unsurprisingly the documentation is presented in HTML format and includes plenty of illustrations. I have to say that this is the best documentation I have seen for any Amiga product in a long time. It covers all the program's features and has a good balance of reference material with short tutorials and step-by-step instructions. Many less obvious features of the program are pointed out, as are potential pit-falls. The documentation covers complex topics such as Postscript printing and fonts in a detailed and understandable way. Oh, and it has a quote from the Total Amiga review on the front page!



Complex topics such as printing are covered in the new documentation.

The IBrowse documentation is a free download from:
www.iospirit.de

Pegasos II Plans Emerge

Genesi have released some further information regarding the release of their forthcoming Pegasos II motherboard. There will be an initial production run of 600 boards followed by a run of 5000 boards when the boards and MorphOS are considered to be ready for a wider market. 100 G4 Pegasos IIs will be available for Pegasos I owners wanting to upgrade, the cost will be 200Euro plus a 35Euro handling charge which includes the return of the Pegasos I. Upgrades made through a reseller will incur a reduced handling charge of 10Euro.

Pegasos II boards with either a G3 or G4 processor will be available through resellers and the PegasosPPC web site at prices of 299Euro and 499Euro respectively, not including local taxes. Detailed specifications of the Pegasos II such as processor speeds and built-in features had not been released when we went to press, nor had a release date. For the latest details visit:
www.morphos-news.de

Subway Review Update

Johnathan Haddock contacted us with some additional information relating to his review of e3b's Subway USB card for Total Amiga:

"I'm pleased to report that the problems I mentioned in my Subway Review (TA15, page 36) have been overcome. IBrowse now recognises mouse clicks properly; this was solved by installing the new input.device as described in the documentation. The reason for my Keyboard problems is that, unfortunately, my keyboard was dying and has now died completely. This was not a problem caused by Poseidon just by my dodgy hardware."

E3B have also announced that, after selling out the first batch, another production run of Subway cards have been produced. So if you are interested it would be a good idea to order one as soon as possible before they sell out again.

The E3B web site has full details of all their products:
www.e3b.de

MPlayer for MorphOS

"DET Nicolas" has ported the popular open source media player, MPlayer, to MorphOS. The player supports many audio and video formats including MPEG4 (DiVX), DVD and SVCD. Both types of video disc can be played directly from a DVD (or CD-ROM in the case of SVCD) drive.

The port has received many optimisations for use with MorphOS including:

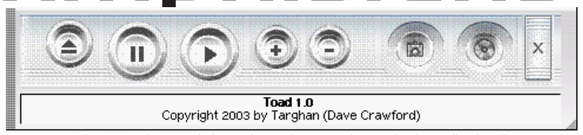
- Use of the asyncio.library
- Native AHI sound driver
- Native CyberGraphX driver (can use overlay, direct vmem access or WPA).
- Native timing routine
- Optimised and fixed YUV -> RGB routine
- Optimised and fixed (when possible) OSD routine
- Patched input routine

The MPlayer port requires MorphOS 1.4 (take a look at our review on page 18 for more details), a ready-to-run binary and its source code are available in the download section of MorphZone:
www.morphzone.org

Video Amphibians

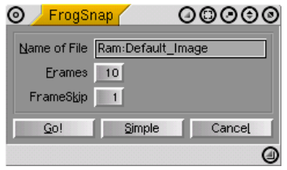
The latest version of Frogger, the movie player for AmigaOS, PowerUp, WarpUP and MorphOS by Sebastian Jedruszkiewicz, adds more features and support for more video codecs. The key changes in the new version include:

- Support for ASV1, ATI VCR1 and ATI VCR2 video codecs.
- More settings can now be saved in the preferences file (so they don't have to be set on the command line).
- New AREXX commands enabling more powerful GUIs to be created.
- Seeking in ASF, WMV and WMA files has been added.
- Improved subtitle-rendering engine.
- Problems with AVI audio synchronisation fixed.
- MPEG 4 decoder optimised.



The Toad GUI (above) and snapshot window (below).

The improved AREXX support in FroggerNG has lead to a new GUI called Toad being released for the program. Unlike earlier interfaces, which just provided a comfortable way of setting command line parameters, Toad provides VCR-like buttons that can be used to control a movie as it is playing. Dave "Targhan" Crawford has written Toad in ARexx using rxMUI; its interface can be customised using graphical skins. The latest release (1.2a) also includes a utility called "Frogger Snap" enabling still frames from a movie to be captured.

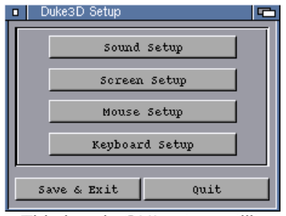


Frogger is shareware and costs 15USD to register. On-line registration is available from the program web site via RegNet. Both Frogger and Toad can be downloaded from:
frogger.rules.pl

Duke Nukem: Bring It On!

3D Realms recently released the source code to their classic 3rd person shooter Duke Nukem 3D and, as with Quake before it, it wasn't long before ports to the Amiga appeared. For those that don't know, Duke Nukem is set in a future Los Angeles that has been invaded by aliens which, of course, have to be blasted to smithereens. Unlike many games in this genre Duke, the player's character, has a strong personality and there is a great deal of humour (some of it of a fairly adult nature) throughout the game.

The graphics may be dated but Duke Nukem is still worth playing for its humour and mindless violence!



This handy GUI set-up utility is supplied with the port.

The port, by Dante and Oxyron, has been extensively optimised for the Amiga and supports graphics cards and audio via AHI. A native MorphOS port is also available. Both versions have a GUI to set-up the game. To run Duke you need AmigaOS 3.x or MorphOS, 32Mb RAM and an installed version of Duke Nukem Atomic edition. The original game is available from 3D Realms; you may also be able to find it on a budget label or second hand.

Download the Amiga and MorphOS ports from:
www.neoscientists.org/~dante/

More information on the game can be found at:
www.3drealms.com/duke3d/index.html

Bytes...

Keyboards for CatWeasel

Individual computer's CatWeasel Mk III flipper interface card has a socket for an Amiga 4000 keyboard (or an A2000/3000 keyboard using a standard adapter), as the card uses a PCI slot this is a handy way to use a classic Amiga keyboard on a computer with PCI slots. Chris Hodges (of Poseidon fame) has released a driver for this CatWeasel port that uses the OpenPCI library. This means the driver can be used with all PCI systems supported by OpenPCI, that is: Amithlon, MorphOS, Prometheus and GRex. The driver also works on Amiga systems with the CatWeasel flipper connected to a Zorro slot. This option is mainly useful for A1200 systems with a Zorro bus board since all Amigas with Zorro slots as standard already have a keyboard socket.

The driver is freeware and can be downloaded from:
www.platon42.de/download.html#tools

More information on the CatWeasel can be found at:
www.ami.ga

Amithlon Update

Bernie Meyer, the main developer of Amithlon, has made available a new upgrade that allows many more sound and network cards (and also those built-in to a motherboard) to be used by accessing them through Linux kernel drivers. The package includes a new utility to load Linux kernel modules while Amithlon is running based on the hardware it finds in the host PC. A selection of kernel modules for popular sound and network cards are supplied. When the modules are loaded network cards can be accessed via a SANA II device, compatible with most networking programs. An AHI driver is supplied for sound cards.

The upgrade is particularly useful for users with laptops that do not have slots to which compatible network and sound cards could be added. The new package of drivers, known as contrib3b, can be downloaded from:
www.amithlon.net/en/amithlon_updates.shtml

Bytes...

Poseidon Spider Support Ends

Chris Hodges, the developer of the Poseidon USB stack, is no longer accepting registrations from buyers of Elbox's Spider USB PCI cards. This means that a newly purchased Spider cannot be used legally outside the short trial period of Poseidon or until Elbox supply alternative USB software. Chris cites differences of opinion with Elbox as the reason for his move and has published a long history of his communications with them on his web site:

www.platon42.de/index2.html

Web Bytes...

http://www.genesi.lu
http://www.pegasosppc.com
http://www.morphos.net

Up until recently Genesi, with their Pegasos and MorphOS products, had rather a mish-mash of web sites, each with its own style. Now all the sites have been given a make-over in the same consistent style which looks clean and modern (my only complaint would be that there is quite a lot of text in graphics). Genesi.lu contains the corporate information such as strategy and marketing along with an overview of Genesi's products. PegasosPPC.com has the full specifications of the Pegasos motherboard, details of the operating systems it supports and the software with which it is supplied. There is also a useful help section and a list of resellers around the world. Finally MorphOS.net goes into detail about Genesi's operating system and has a section called the "MorphOS Developer Connection" for developers.

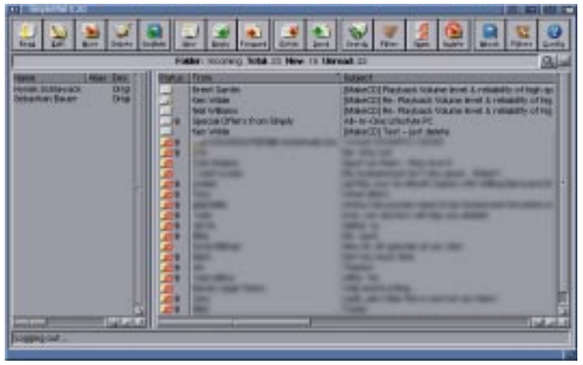
Genesi's new sites are a big improvement and well worth a visit if you are interested in the Pegasos and/or MorphOS.

Simple Mail Fights SPAM

The open source (under the GPL) mailer, Simple Mail, has added yet more strings to its bow with the latest 0.20 release. The major additions in this release are preliminary support for downloading from IMAP mail servers and, most interestingly, a statistical spam filter. As usual there have also been a raft of minor bug fixes and enhancements.

Many people's email boxes are bombarded with unsolicited commercial email, commonly known as spam, often of an unpleasant or offensive nature, so Simple Mail's new spam filter is a welcome addition. Rather than working on a set list of keywords or addresses of known spammers; Simple Mail analyses messages you have marked as spam and those that you mark as ham (genuine messages). From those messages it builds a list of words that characterise spam and another list that characterises ham. Two new buttons have been added to the toolbar, one which analyses the messages in your In box and marks those that look like spam and another that moves the marked messages to a new spam folder. If Simple Mail misses any messages or marks a genuine message as spam you can correct it; this improves the accuracy of the spam detection next time. Further anti-spam options allow you to set a black list of addresses that always send you spam and a white list of your genuine contacts. Because you train Simple Mail with your own messages in theory it should be much more effective in blocking spam than list-based methods.

Download the latest version from:
simplemail.sourceforge.net

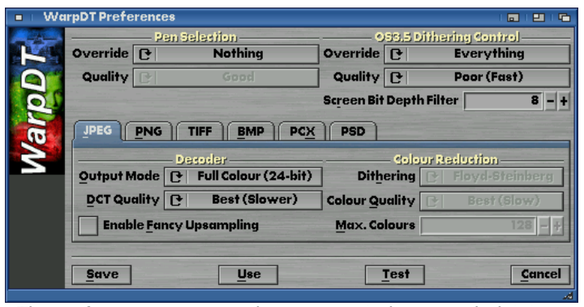


After training with only a few messages the spam filter was surprisingly effective on my heavily spammed account. (The spam subjects have been hidden to protect the innocent!)

Warp Datatypes

Oliver Roberts has expanded his range of "Warp" datatypes to support six file formats: BMP, JPEG, PNG, PSD (Photoshop), TIFF and the latest addition, PCX. Datatypes were one of the most innovative features introduced with AmigaOS 3, enabling applications to load file formats that didn't even exist when the application was designed. In recent years Oliver's datatypes have proven to be among the best offering wide format support, fast decoding, and configuration via a preferences program.

PCX is a bitmap format that originated with PCPaintBrush by ZSoft and is quite common on Windows. The new WarpPCX datatype supports standard PCX files and the more unusual formats that can be exported from Personal Paint on the Amiga. The datatype can decode 1 to 24bit colour and RLE compression.



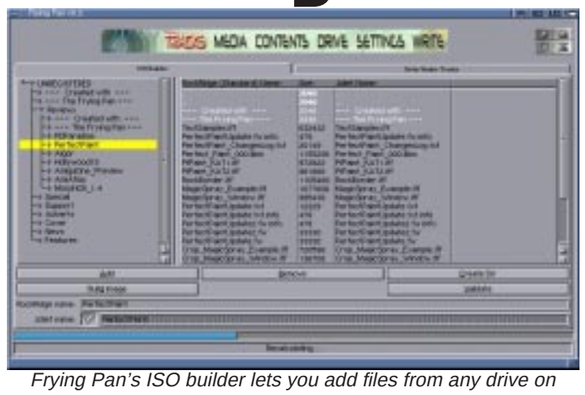
The preferences program gives you control over each datatype.

As with all his datatypes, Oliver supplies native versions of the PCX datatype for 68K Amigas (and emulators), WarpOS PPC and MorphOS. A version for AmigaOS 4.0 is planned when the new OS is released.

After several years as freeware Oliver has now made the Warp datatypes package shareware. There is a single fee which covers all the datatypes and, currently, any added to the range in the future (users already registered got the PCX datatype when it was released for example). One registration covers all the CPU/OS versions too. The datatypes run with no restrictions for a thirty day evaluation period so you can try them out, giving you plenty of time to register if you like them. Registration costs £15 and can be carried out on-line on the new WarpDT web site:
www.warpdt.co.uk

Out of the Burner into the Fryer?

FryingPan is a new shareware CD writing application; early versions have been around for a while but version 0.3, a complete re-write, seems to be the first really usable release. Frying Pan has been designed to be logical to use with each of the steps required to burn a CD represented by a button along the top of the single program window. These stages include selecting files for a data disc, organising the tracks on the CD, settings such as the writing device and speed and finally writing the disc itself. FryingPan can build both audio and data CDs; it is able to read tracks from an existing CD enabling you to make compilations. When making a data CD, Frying Pan has an "ISO Builder" feature; this enables you to add files to the CD from your hard drive without creating the directory structure on disk. This powerful feature is not found in Make CD; the Amiga's only other CD writing software currently in development.



Frying Pan's ISO builder lets you add files from any drive on your system to a CD.

FryingPan should work with most reasonably modern CD recorders and offers a full range of speed settings. Track at once, session at once and disc at once writing are all supported. Data can be written on-the-fly, if your system is fast enough, or you can create an ISO image on disk and then burn it later. Burn Proof and similar technologies can be used on those CD writers that support them.

Frying Pan should work with most CD writers.

Registration is on a per CD-writer basis. The initial registration, including one drive, costs 10Euro and each additional CD writer you wish to use costs another 6Euro. Currently there is no on-line registration, you must contact the author to arrange payment. Further details and step-by-step instructions on writing CDs with FryingPan can be found on the web site:
www.tbs-software.com

A New Look for YAM

Is your YAM looking a bit drab or are you just fed up with your current icon set? If so then Lorraine Design have a treat for your classic Amiga mailer. Their "New YAM" package includes new toolbar icons, MUI graphics and a suggested MUI configuration to give YAM a complete makeover. The end result is a clean modern look in blue-grey shades, a nice change from GlowIcons.
www.lorraine-design.8m.net

Web Bytes...

http://ada.planet-d.net/

The Demo Scene has always been an important part of Amiga "culture". The Amiga Demo Scene Archive aims to collect together some of the best demos along with information about their release and what awards they won. As many Amiga users (or ex-Amigans) no longer have hardware compatible with some or all demos (particularly the older and, ironically, the newer PPC demos can be problematic) ADSA also holds screenshots of most demos. Some even have movie files so you can view the whole demo on any computer capable of playing back a video. For each demo you have the opportunity to submit a comment and read comments left by other users. The ADSA site is very attractive to look at with a dark understated tone that reflects some of the best demo productions.

ADSA is a very impressive site, it'll have you pulling that A500 out of the loft in no time!

http://www.swaug.org.uk

The South Wales Amiga User Group site is very useful even if you will never be able to visit the group. In their support section they have tutorials on several subjects and a version watch panel to keep you up to date with the latest versions of popular software.

The star of the show is the reviews section which is updated regularly. Sometimes SWAUG members review Amiga specific hardware but their speciality is covering the use of standard hardware on the Amiga. They have covered products as diverse as digital cameras, CD-writers and USB pen drives. One interesting review covers a D-Link DWL 810 wireless bridge that can be used to connect any Amiga with an Ethernet card to a wireless network.

SWAUG's site should definitely be in your hot list.

AmigaOne Update

Once again we drag Alan Redhouse, MD of Eyetech, away from international commitments to bring us up-to-date on the AmigaOne.

Looking back at my column in the last Total Amiga (to make sure I'm not repeating – or, worse, contradicting – myself!) I notice that I wrote it just after the IBM PPC Technology Forum in Boston. I'm writing this just before I set off to speak at the next one. This time it's in Beijing on 24th September to an audience of movers and shakers in the Chinese IT sector. The audience comprises representatives of CNITSEC (the Chinese government's 'China Information Technology Security Certification Centre' – catchy isn't it?); the Chinese Academy of Sciences and around 75 major Chinese IT manufacturers. So it's another sweat to get the column out on time – Robert certainly chooses his deadlines well!

So what's all this got to do with the price of peas, I hear you ask. Well China is now embarking on the next stage of its IT industrialisation program, and – surprise, surprise – they aren't too keen to pour a significant proportion of their GDP into Mr. Gates' pockets. They are actively looking for viable alternatives to the Wintel platform. The PPC is such an alternative, and given the relative success of the 'Earlybird' Linux-based AmigaOne, I've been asked to baffle the Chinese at this conference, after apparently successfully baffling the Taiwanese audience with my presentation at the first PPC forum in Taipei last February.

At the Taipei Forum I took my life in my hands and gave a live, on-screen demonstration to an audience of several hundred delegates of the multitasking capabilities of OS3.1 running on a CD32 with SX32, 4Mb of memory, 170MB hard drive, and an '020 CPU at 14MHz. It worked, it impressed, and the technical audience were able to translate, in their own minds, the performance they saw on this minimalist hardware to the expected performance of OS 4 on AmigaOne hardware. Suffice to say that as a result of that presentation there are now several significant Taiwanese companies – plus IBM – who are anxious to evaluate OS4 for commercial applications as soon as it and its SDK are ready. In Beijing – fingers (and other more sensitive parts of my anatomy) crossed – I hope to demonstrate OS4 booting and running on a real AmigaOne.

The forum will largely focus on Linux-PPC as an alternative to Windows – the Chinese have at least heard of Linux – but I will be doing my best to ensure that the compact, near-realtime, ROM-able nature of OS4 comes over as a very cost-effective alternative for the industrial, embedded and STB markets. In parallel IBM will be doing their level best (to a very receptive audience it has to be said) to show that PPC is a better technology than x86 for a new industry with little Wintel legacy baggage. And more PPC acceptance = more OS4 opportunities = the best chance for the rebirth of the Amiga in mass markets. Wish me luck in Beijing!

Buzz Word...

Our under-cover agent is currently busy on a case, he will return in a future issue!

AmigaOne Status

I am pleased to say that we have finally just about caught up with the backlog of AmigaOne orders and are on the point of being able to deliver to dealers ex-stock. This means that board orders should be able to be delivered, Worldwide, within 2 weeks of ordering and bespoke systems in less than 4 weeks. However I am still surprised how strong the market for Earlybird systems continues to be – I guess the reason is that now it is quite widely known that OS4 is booting on the AmigaOne many people are keen to secure the Earlybird offer (with OS4 for free) whilst the offer still lasts (it stops when the release date for OS4 is announced by Hyperion).

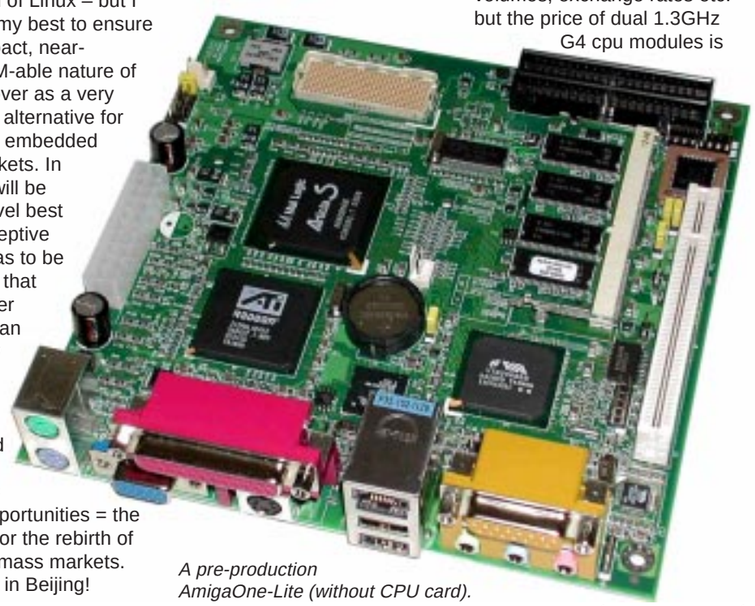
At the time of writing there are still some Linux driver – and VIA south bridge initialisation – issues to sort out, but the objective opinion of the vast majority of Earlybird purchasers is that the AmigaOne is a rock-solid platform and that the nay-sayers and rumour mongers who insisted otherwise before its widespread release now have huge facial omelettes to try and remove.

AmigaOne-Lite

The pre-production AmigaOne-Lite is now up and running and we will be sending samples out to selected developers to port/test drivers for the new hardware (RAID, gigabit Ethernet, IEEE1394 etc.) in early October. If you wish to participate in this program please email us at info@eyetech.co.uk. Sort the driver and keep the board!

High Performance CPU Modules

The 1.3GHz G4 CPUs are expensive, and unsurprisingly dual cpus are twice as much. Exact prices will depend on volumes, exchange rates etc. but the price of dual 1.3GHz G4 cpu modules is unlikely to be under ukp6-700 plus VAT. If there is enough demand (i.e. a minimum of 200 units) we will put these modules into production around December. Please email us at info@eyetech.co.uk if you are interested.



A pre-production AmigaOne-Lite (without CPU card).

OS4 Betatesters Offer

We have reached agreement with Hyperion and most dealers to make AmigaOne Earlybird boards available to registered OS4 beta testers at a 10% discount. If you are eligible and wish to take up this offer please contact an official AmigaOne dealer – see the following page for contact details:
www.eyetech.co.uk/amigaone/dealers.php

Changes at Eyetech

As many Total Amiga readers may know we fell into this Amiga business, several years ago, almost by accident. Our main expertise was, and still is, in providing cost-effective, IT solutions into specialist commercial and industrial markets. In the early 1990's some of the presentation systems we supplied were based on the Amiga platform. Then Commodore went under and we started a retail operation whilst the Amiga operation was sorted out. Its taken nearly 10 years – and a lot more involvement than I ever expected – but the resurrection of the Amiga, hardware and OS, is now all but complete.

However, in bringing the AmigaOne hardware to market we have – in the UK – undertaken a dual, and increasingly conflicting role: that of wholesale supplier and retailer of the AmigaOne. With the increasing sales of the AmigaOne this is no longer a practical proposition – our best added value to the future of the Amiga is to ensure new models are brought on, dealers and user groups are properly supported and peripheral opportunities - such as the Beijing Forum - are fully exploited. The upshot is that from the end of September 2003 we will be concentrating our efforts on industrial markets and dealer suport and will no longer handle retail sales of Amiga products to end users directly. (We will of course satisfy existing orders and handle warranty etc. issues from past sales).

I am delighted, however, to be able to announce that from 1st October retail sales in the UK will be handled by Stellar Dreams. Stellar Dreams is Sven Harvey's (author of the Amiga column in the UK's Micromart magazine and well known Amiga enthusiast) company, they have a web site at www.stellardreams.co.uk. Sven is a long-time and ardent Amiga supporter, and is in my view ideally placed to make a great success in the UK of the Amiga's coming global rebirth. Please give Sven and Stellar Dreams your full support.

Until next issue,
Alan

Fleecy Speaks

Amiga's CTO tells us why he has a positive outlook on the lauch of Amiga OS 4.

Although all issues of Total Amiga are special, this one may be more special than most because, unless we hit an unforeseen pot hole in the road, it should be the last one of the 68k AmigaOS period. I say 'should' because the last three years of being the CTO at Amiga has taught me that nothing is ever certain, which has led to our announcement policy that we will not officially announce a launch date for AmigaOS4.0 until we have the gold master in our hands.

However, as I look around in the bottom of tea cups (damn those athiest teabags) and shift through the entrails (digital) of old computers, the portents indeed look good for the launch of at least the CSPPC version of AmigaOS4.0 between this issue and the next issue of Total Amiga, with the long awaited AmigaOne version itself following not too far behind. Can I share these portents with you? Absolutely.

1. the AmigaOS4.0 CSPPC beta testing team has been working around the clock testing an AmigaOS4.0 build that is now more than 50% pure PPC and that percentage is rising almost every day. Indeed it is so usable now that even the brave and hardy editor of Total Amiga has decided to step out from the dark dungeon of his editing room and join the ranks, to see

> "I hope that the next time you read this (column), you will be next to **YOUR** AmigaOS4.0."

for himself (and hopefully tell all you readers) [I'm currently organsing the loan of the CyberStorm PPC to take Fleecy up on his offer, Ed.] exactly what is going on.

2. AmigaOS4.0 running on an AmigaOne will be shown privately to a very important set of potential OEM customers before the end of September, to be followed by its public debut at various events from October onwards.

3. Internal and third party application developers now have a powerful selection of development tools available to them in one single SDK, including an AmigaOS4.0 native compiler and Linux x86 and MacOS cross compilers, Frank Wille's VBCC development environment and the GDB debugger, which allows for breakpoint, register and memory analysis, source step through and a lot more. The Guru even has a new friend, culled almost straight from the Discworld, the Grim Reaper (cue bass voice and ominous drumbeat) which intercepts and captures miscreant applications, providing the user with a variety of options.

4. A new third party developer forum has been created, allowing for developers new and old to have access to the development environment, to ask questions of the AmigaOS4.0 team and to begin both creating AmigaOS4.0 only versions of their products and to start developing brand new applications.

5. Plans are well under way for the launch event for AmigaOS4.0, to which I hope many of you will come, to be present at the beginning of the new era of the Amiga. This is being planned to happen in 2003, although again, if an errant asteroid hits the homes of some of the key developers, it might be pushed back.

It has been a long time since a new version of the AmigaOS was released. It has been a long time since we said AmigaOS 4.0 would be released. Many have given up and left the platform, others have jumped in to spread rumours and push their own agendas. However, we at Amiga, those in the AmigaOS 4.0 team, developers, dealers, journalists and the users and user groups have never given up. Looking back is a wonderful thing but looking forwards has suddenly gotten a lot better.

I hope that the next time I can write this column, it will be written on AmigaOS4.0. I hope that the next time Robert (The Editor to you) builds Total Amiga, it will be on AmigaOS4.0. Most of all, I hope that the next time you read this, you will be next to **YOUR** AmigaOS4.0.

Amiga OS 4 Update

John Chandler is back with all the latest news on the OS everyone is waiting for.

It's been an interesting time since the last update. AmigaOS 4 has now made many public appearances across Europe and North America. The tour organisers and Hyperion have received numerous requests from people about arranging similar tour demos around the world. The response has been positive and strong, and no doubt has contributed to continued demand for the AmigaOne EarlyBird systems.

Still, the official release of AmigaOS 4 is still very much "when it's ready", with Hyperion keen to stress that after all the time and effort put into it so far, to rush the last few stages would be foolish. However, the public demonstrations have gone a long way towards quashing the rumours and speculations of what state OS 4 is in, and whether the whole project will ever see itself installed on the hard drives of more than the hundred or so developers and testers around the world.

AmiWest 2003

Of course, the big American event at the end of July was the AmiWest 2003 show. Disappointment was initially high due to the news that Bill McEwen would be unable to attend, but the situation was more than made up for with the surprise news that Ben Hermans of Hyperion would be available to discuss AmigaOS 4, as he was in the USA for business meetings with Mai.

As well as the Hyperion presence, AmigaOS 4 was well presented through the hard work of both Mr. Hardware and Dr. Ray Zarling. Ray's name is probably unfamiliar to many in the Amiga community, but he is a strong Amiga fan as well as a professor of Computer Science at California State University. The presentations were well-received and formed an extension to the OS 4 on Tour events that have already made a valuable impression on Amiga users across Europe.

Ben's OS 4 presentation was also well-received, with plenty of positive feedback on clarity of presentation and good technical knowledge. The slides are available from the official OS 4 website (http://os.amiga.com/) as a PDF and well worth a look.

An Amber Light For Blizzard PPC

In the last issue, mention was made that Hyperion were attempting to gauge interest in a port of OS 4 for the Blizzard PPC. It comes as no surprise to find that the response has been good and Ben Hermans confirmed in a recent interview with Amiga.org that the port would appear to have a reasonably viable market. Priority would still be for Cyberstorm PPC and AmigaOne versions, but the Blizzard port could certainly happen - as long as the project doesn't take considerable time and resources away from further development of OS 4 for the main platforms. For those who have invested heavily in their A1200s and aren't quite ready to make the jump to the AmigaOne, this will prove a valuable bridge.

Module Migration

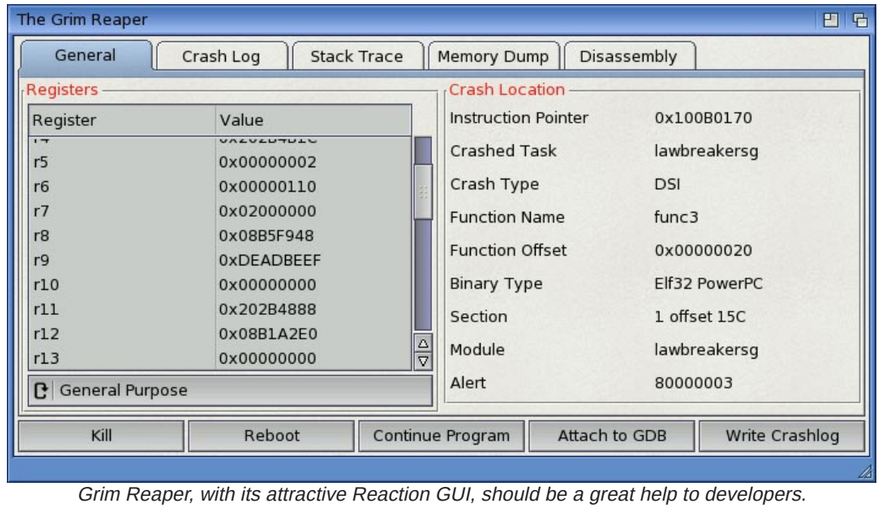
The migration of modules from 68k to PowerPC binaries continues briskly now that code is fully portable and tools are sufficiently mature. The bulk of the remaining work lies with the graphics.library and Picasso96. At the start of August, these were due to have some remaining 68k assembler code converted to either PowerPC assembler or C as appropriate, to allow most, if not all, of the graphics system to be made fully PowerPC native. Later comments suggest the graphics system is proving to be a significant headache, partly due to the lack of improvements seen over the years, but one that will be handled during September.

As system modules have made their way over to being PowerPC native, migration work has shifted towards the less-critical components such as the Roadshow TCP/IP stack, AmiGS and AmiPDF (Postscript and PDF support respectively), and the disk tools Partition Wizard and Media Toolbox.

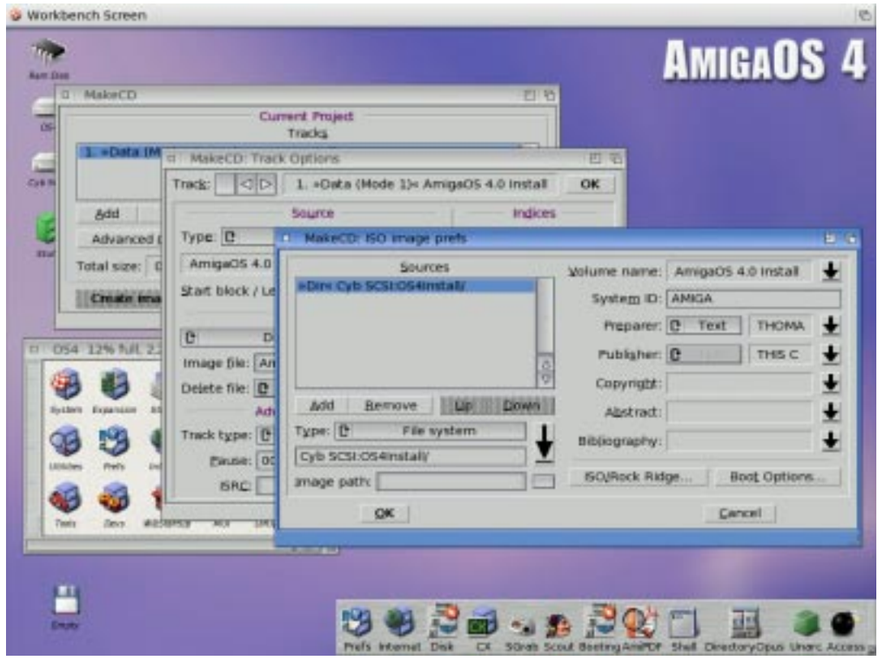
The Grim Reaper

One of the big things to be announced recently is the comprehensive debugging support included with the OS. While the functionality will be of benefit to the everyday user, AmigaOS 4 is shaping up to provide developers with a powerful development platform. No doubt the beta-testers have already enjoyed putting this feature through its paces.

Segtracker-like capabilities have already been incorporated, thanks to the implementation of ELF binary loading as a shared library, giving debuggers the ability to rapidly pinpoint the source of crashes. This is just the first step towards full integration of the GDB debugger, arguably the most powerful debugging tool in use today. GDB allows developers a great degree of control when launching code, stopping code in mid-execution, examining program state and making changes for test and experimentation purposes.



Grim Reaper, with its attractive Reaction GUI, should be a great help to developers.



Some recent screenshots have shown OS 4 running 68k Amiga programs under emulation. Here we see MakeCD; notice how its Triton based GUI has inherited Gadtool's new look.

Compilers Galore

The official port of the ubiquitous GCC compiler has recently been supplemented by the addition of VBCC, a compiler that has already received much praise from the Amiga community. Support for development on non-AmigaOS platforms has also been noted, with complete OS 4 cross-compiler packages now available for Windows as well as Linux and even MacOS X.

68k Emulation

As many are already aware, AmigaOS 4 includes two systems for handling 680x0 legacy code. The ExecSG kernel provides interpretive 68040 emulation, including FPU support but missing the MMU, offering an emulated environment equivalent to a 33 MHz 68040 on a PowerPC 604e@233MHz. The emulation sacrifices speed for a high degree of compatibility, and seems geared towards system modules that have not yet been migrated to PPC. The Petunia JIT emulation system opts for faster emulation at the expense of some compatibility - roughly 50 MHz 68060 performance on a 604e @ 233 MHz.

Hyperion chose to base the emulation around tasks, rather than the more popular idea of sandbox emulation. Initially considered a risky venture, the decision has paid off and older applications gain transparent use of ExecSG functionality.

Font Support

As mentioned in the previous issue of Total Amiga, anti-alised support was publicly unveiled on the OS 4 tour. Font support in OS 4 is via TypeManager, itself based on the latest version of FreeType. TypeManager is fully integrated with the OS, and thus compatible with all applications, and offers support for a rich variety of font systems such as Postscript, CID, TrueType / OpenType, PFR / TrueDoc, BDF, PCF and Windows fonts. Unicode support, which has actually been tucked away in AmigaOS for some time, is also prevalent - a must for any modern OS.

What's Missing?

For the Amiwest presentation, Ben Hermans pointed out what functionality was originally scheduled for AmigaOS 4, but which is still absent. The list is fairly small and, with the exception of some ExecSG functions that are currently unimportant, primarily concerned with high-level aspects. The much-anticipated 3D API, based around OpenGL, is undergoing finalisation with a Warp3D wrapper under evaluation. An OS 4 version of MooVid is under development to fulfil the need for a modern, native media layer. Meanwhile, the excellent ATO are continuing with the essential localisation support for the OS.

Swings and Roundabouts

The order of release was expected to be for Cyberstorm PPC first and AmigaOne second. There's nothing to suggest that this won't still be the case, but it seems Eyetech's partner Mai has been giving a few nudges to the development team to bring the release date of the AmigaOne version forward. Hyperion are anticipating an AmigaOne to be booting into Workbench by either the end of September or early October – though that offers no conclusive indication of when a public release is likely.

The attention the AmigaOne and OS 4 has had from a variety of big names, particularly in the Far East thanks to the tireless work of Alan Redhouse, would seem to suggest some big names are anxious to see OS 4 available – which can only be a good thing for the Amiga community.

Of course, with limited resources something has to give and that would indicate a later release of the Cyberstorm version. Good news for AmigaOne owners, but perhaps not as welcome for those with the Cyberstorm. With no release dates known, it's all relative anyway – as ever, we'll just have to remain patient.

AmigaOne-XE G4 Preview

Mick Sutton gives us some first impressions of his AmigaOne and explains how he built up his system.

I have just recently received my AmigaOne G4 800MHz motherboard. The reason I chose this over any other system goes back a long way... let me explain!

Back in 1991 when I was I looking for my first ever "proper" computer, I was faced with the choices of an Atari ST (very similar to our beloved Amiga), an Amiga 500 plus, a PC (a 386, if I remember correctly), or the dreaded Amstrad PCW. The Amstrad didn't strike me as an "all rounder" machine, and there also seemed to be more Amiga software on the shelves than Atari, so I decided it was down to either a PC or an Amiga.

I remember looking at a PC that cost about £1100 and an Amiga costing about £500. The PC had a 14" monitor (although I can't remember whether it was included in the price) and 20Mb hard drive, but I reasoned that the Amiga could be used with a TV until I could afford a monitor. The decision to buy the Amiga rather than a PC was not all down to cost factors, though to date I wouldn't like to count the amount of money I have spent on my Amiga; it was more down to the fact that the Amiga Workbench looked like a friendlier environment, and the Amiga user interface was a sheer joy after seeing the DOS prompt... choice made! I have used Amigas ever since and never felt the desire to "jump ship" to a different computer as it still does almost everything I want it to do.

As the years have gone by, other systems have gotten faster and prettier operating systems installed on them, but they still lack that certain something that the Amiga has. The Amiga may be lacking in the wealth of software that the likes of PC's and Apple Macs have, but to me it is a far better machine to use even today despite the fact that most of the software running on it is using a 50 MHz (060) processor compared to, say, a 2.4 GHz Athlon. I use PC's on a daily basis at work and am not impressed. My wife had an iMac,

AmigaOne-XE connectors, from left to right: PS/2 keyboard and mouse, USB & Ethernet, parallel & serial, game port, audio I/O.

but I found the Mac OS rather frustrating to use with its oh-so-useful "it's not my fault" messages when things go wrong. My wife now has a 2.4GHz laptop running XP Professional (which is an inappropriately named OS, I can tell you!) that looks very nice but is also frustrating to use as the computer seems to decide for you what's best rather than you telling it. Also, I can't understand how a giant company like Microsoft with all its millions of dollars can create operating systems with so many security holes and bugs! It's not like it is short of development funds, is it?

So I asked myself, "what if the software on my current system was running on a processor with many times more processing power? That would be very nice, wouldn't it?" My way of thinking is that a new, more powerful, machine complete with a new (but very familiar) OS, with more features, may very well attract many new users to the platform, and therefore also more coders and developers. Even if the unthinkable happened (no OS4), I would still be able to use the hardware with Linux, although that would, in my opinion, be the worst case scenario and very unlikely to happen.

So there you are, I shall stay with the Amiga, thank you very much, which means that an AmigaOne was on the top of my shopping list. I saw that Eyetech were offering pre-built "power" systems with a very good "fully loaded" spec, but I decided that I could build myself a machine with the same specifications for less cost, and of course building your own system also makes it a unique machine, which I think is what most people want.

I decided whatever AmigaOne motherboard I bought, it had to have a plug-in CPU so that I would be able to upgrade later on if required, and as the 800 MHz G4 wasn't drastically more expensive than the 600 MHz G3, I thought I would go for that spec machine. Now I had to think about what other items were required to build myself a decent system: some memory, a good size hard drive, a floppy drive, a DVD-ROM, CDRW, graphics card, sound card, and a decent computer case with sufficient power supply were all on my shopping list. There was a lot of discussion about RAM being "picky" with AmigaOne motherboards, so I decided not to take any risks and ordered my 512Mb of RAM from Eyetech. I then discovered that a CPU fan was needed on the 800 MHz G4 (it isn't required on the G3) and also added that to my order to be dispatched at the same time.

My AmigaOne-XE motherboard with G4 CPU module.

The AmigaOne motherboard itself is an ATX form factor sized board with standard power connections that can be mounted in any standard computer case. The main board of the XE G4 system has a socket for a card fitted with a Motorola 7451 PPC CPU. The motherboard has built-in Ethernet (via 3COM 920C chip), on-board USB (two on back plate and two headers on the motherboard), one AGP slot (2x speed) probably best suited to a graphics card, and four PCI slots that can be used for a multitude of devices such as sound cards and the like. The board has two IDE channels that are supposed to run at ATA100 speed (as long as you use the correct 80-way cables), one parallel port, one serial port, and two PS2 sockets for your mouse and keyboard. With regards to AmigaOne memory requirements, it has two memory slots that take 133MHz SDRAM DIMMs (registered RAM being recommended especially if you intend on having multiple DIMMs) for up to a maximum of 2Gb. (I remember the days when 512Kb upgrades were considered showing off.) As you can see, this is all standard off-the-shelf memory that can be upgraded at a later date without costing you a fortune.

With the motherboard ordered and awaiting delivery, I ordered all my other components (from DABS) at the same time: a rather nice (in my opinion) Suntek computer case that is "screwdriver-free" for mounting devices, a Maxtor 80 Gb hard drive, a Plextor CDRW, an NEC DVD-ROM, and a DABS value range floppy drive and PS2 keyboard. I managed to get a second-hand (although unused) Voodoo 3 AGP graphics card (more on this later) and a Soundblaster Live sound card for £15 in total. I chose the Voodoo 3 graphics card because both 2D and 3D drivers are available for it on current Amigas (via the Prometheus PCI board and Picasso96) and therefore I know they will be ready when OS 4 ships. Support within AHI for the Soundblaster has also already been announced.

Like a lot of people, I ordered my AmigaOne motherboard many months before I received it, which gave me plenty of time to get all the other items on my list. Once I received my case, I decided to assemble as much of my system as I could, which gave me something to do whilst waiting for my motherboard. The hard drive, DVD-ROM, and CDRW were all mounted, and I threw in an old PC motherboard at a SEAL meeting to test them out... sad indeed!

My AmigaOne motherboard eventually arrived from Eyetech, complete with the CPU module plugged in and fitted with a cooling fan; the memory DIMM was wrapped up within the packaging. The board itself looks a good build quality with no signs of poor quality soldering or bad tracks, and I can tell you I never knew someone could get so exited holding and looking at a board with a load of electronic components soldered onto it!

Now I had the object of desire in my hot hands (don't even go there), I was at last able to mount it in my case and plug in all my devices. Eyetech supply documentation comprising of 5 A4 sheets with instructions on how to install the motherboard and where everything plugs in. Although 5 sheets of A4 documentation doesn't sound like much in the way of a manual, it is quite detailed and is enough to get your AmigaOne up and running with Linux (which is the OS you will have to suffer, and I do mean suffer, with until Amiga OS 4 is released). The documentation tells you where everything should be connected, what jumper settings to make, and how to check the CPU module is correctly seated. Once all the hardware is put together correctly, it is time to switch on the computer and follow Eyetech's instructions to install a basic Linux system.

The AmigaOne, in my Suntek tower case, at a SEAL meeting.

The first step is to configure U-Boot (the AmigaOne's firmware, the basic software that initially starts the computer and begins booting the selected operating system). The configuration includes setting the date and time, choosing a boot device, and setting a boot delay so you can access U-Boot again if needed. To boot Linux you must set a kernel command line; thankfully, several examples are given depending on the graphics card you have chosen. All these settings are saved into nonvolatile memory so they don't have to be entered every time you boot the machine.

Now it is time to install Linux (if you must), which first involves telling the AmigaOne to boot from the CD-ROM, as detailed within Eyetech's documentation. Once this is done, the supplied Debian CD (3.0r1 official PPC binary) takes you through a range of options based on what elements within Linux you want to run. I won't go into great detail but will try to remember the main parts that have to be installed and configured.

First and foremost is the partitioning and setting up of the hard drive. This consists of selecting your primary master IDE drive and making a PPC PReP Boot partition, a Linux Swap partition, and the main partition where all your programs and files will be stored. Once all this is done, it is time to configure your kernel and driver modules – this is when you tell your machine what hardware you have installed such as graphics card, sound card, network card, etc. During this process you can also set your computer's network address, tell it what type of mouse and keyboard you have, and whether you have a Postscript printer. There are other elements that are configured during the process, one of the important ones for me was the monitor settings. I have a TFT monitor, so I selected that option and had to go into advanced settings to configure the kernel. The advanced settings allow you to set scan rates (a TFT monitor works on a different principle), screen resolutions you will be using (my 15" TFT can only go up to 1024x768), and bit depth. The process doesn't take too long, particularly if you have a friend to read out the documentation whilst you operate the keyboard (recommended if you don't want to make mistakes). Once you have finished selecting all your options, the Debian components you have chosen are all installed on your system. Once all this is done, it is time to log out of the machine and shut it down.

> "Linux is okay to mess around with... but bring on Amiga OS4 and let's have some fun!"

The time you have been waiting for has arrived: it is time to switch on your machine and boot into your Linux OS (shame we will have to wait for Amiga OS 4). A screen appears prompting you to login either as root or another user named by yourself (a user profile); do this and the machine loads up the KDE (or whatever option you chose) desktop environment. I am not going into detail about how Linux and associated programs work, but it looks quite nice (skin deep anyways), and programs run nice and fast on it on my 800 MHz machine. One major problem I did have, though, was having major graphics corruption after only a few minutes use – when I moved windows or opened multiple windows the GUI disappeared, and all the text looked as though it was smeared wherever I moved a window.

After powering down my machine and making sure my graphics card was seated correctly, I was at odds as to what the problem could be. I tried reinstalling and double-checking my settings within the kernel for graphics card settings, but they were correct. I asked for help on the A1g3dev mailing list and found many people with Voodoo 3 graphics cards were experiencing the same problem – unless the screen resolution was set to 800 x 600, that is! I set up my system to run at this setting, and yes, it did stop the graphical glitches happening. But I couldn't stand running my machine at this resolution, so decided to get myself a different graphics card. After consulting with people on the mailing list, I decided the best value for money (cost of £27) card was the AGP Radeon 7000, which is a more powerful card than the Voodoo 3 and has 64Mb of RAM on board. I had to reconfigure my Linux kernel to reflect the change of graphics card and, of course, U-Boot had to be reconfigured as well. With all the changes made I booted into KDE and all worked well, no graphical glitches or screen corruption. My system seems very stable.

With the graphics problem sorted I'm pleased with my AmigaOne. Linux is okay to mess around with for the time being, but bring on Amiga OS4 and let's have some fun!

Kicksoft

If you don't see what you want, just ask!
Our range is always growing!

Graphics

Drawstudio
This excellent Graphics package avaliable one again!! Comes on CD and includes **Texture Studio** & **Image Studio**.
£35.00

Photogenics 5
This excellent Graphics package by Paul Nolan. Comes on CD.
£70.00

Image Engineer
Great Image manipulation program. Add effects to images such as Jigsaw.
£25.00

Candy Factory Pro
Create 3D Text from any standard font and use them on web pages etc.
£35.00

Art Effect 4
Billed as "Photoshop® on the Amiga". Excellent graphic package. Comes on CD.
£39.99

FxPaint NEW
With over 70 effects this is a superb addition to any software collection.
£60.00

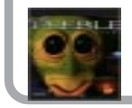
Image FX4 NEW
THE image manipulation package !! 100s of effects.

Games

NEW

PayBack **£35.00**

Freespace **£35.00**



The Feeble Files **£35.00**

Misc

TaskiSMS
Send Text Messages to mobile phones from your Amiga! Comes on CD.
£12.00

FxScan NEW
The only Scanner software that offers **OCR** on the Amiga today!!
£30.00

OS 3.9 NEW
Latest operating system for the Amiga. Comes on CD.
£30.00

Aminet NEW
Latest Aminet disk or the latest series. Gigabytes of Amiga Software.
Single £14.99 **Series £29.99**

VHI STUDIO
Connect digital Cameras to your Amiga and so much more
!£30.00

Amiga Forever 5 NEW
Emulate a AGA based amiga on your PC.
Full Version £40.00 **Upgrade £25.00**

Players

Moovid PPC
PPC version with both WARPUP and POWERUP versions. Comes on CD
£18.00

Moovid
Play AVI, Mov and QT files on your Amiga©. Comes on CD.
£12.00

Frogger PPC
PPC MPEG player. Comes on CDwith example MPEGs.
£18.00

Frogger
68k MPEG player. Comes on CD with example MPEGs.
£12.00

Riva
The fastest 68k MPEG player on the Amiga! Comes on CD with MPEGs.
£9.00

SoftCinema
PPC AVI, QT and Mov player. On CD with example Movies.
£9.00

AMP 2 NEW
PPC Mpeg, CD-i and DVD player. The only way to play DVDs on the AMIGA.
£18.00

Internet

Inet Dial
Home server on your Amiga©., includes Apache and Geek Gadgets.
£40.00

AWeb Upgrade
Excellent web Browser. Upgrade from OS 3.5 or OS 3.9. Comes on Floppy.
£30.00

Utilities

PFS 3
The fastest and safest file system avaliable, up to 300 times faster than FFS.
£35.00

Metaview
The best Clipart viewer on the Amiga©. Comes on CD with clip art images.
£18.00

Diavolo
The best backup program on the Amiga©. Comes on Floppy disk.
£50.00

PhotoFolio V2 NEW
The professional way to view, catolouge and manipulate your images.
£30.00

GoldEd
The best Editor, Program Editor, HTML Generator on the Amiga.
£30.00

Turboprint 7.21 NEW
Use modern printers with 24 bit output!! The quality is astounding.
Full £40.00 **Upgrade £25.00**

Make CD (DAO version) NEW
CD writing software.Compatibale with most CD writers/rewriters.
£50.00

Spitfire 2
If you have a 3com Palm© or compatible then you need this program! Comes on CD.
£25.00

Mediapoint NEW
multimedia presentation tool on your Amiga.
£40.00

www.kicksoft.co.uk

Add £1.00 UK postage per item. Make cheques payable to **Kicksoft Ltd.**

We accept Solo, Switch, Mastercard & Visa

Kicksoft Ltd.,
30 Whitegate Way,
Tadworth,
Surrey, KT20 5NS
Tel/Fax (01737) 219280
sales@kicksoft.co.uk

Divided Loyalties, Historial Similarities

Sam Byford puts into perspective the arguments between MorphOS and Amiga supporters.

Much like the Shakespearian tragedy, Romeo & Juliet, the Amiga household is split into two. On one side there lies the AmigaOne users and on the other the Pegasos users. Both have fundamental differences but at heart both are stunningly similar (I shall explain my reasoning behind that comment later). That which separates the two sides are its users, and for the most part these people are content to let the other side be what they want to be without interference. However, there are those who appear to like making war, and who take every opportunity to name-call, belittle and generally drag the other side down. One thing is for certain: its gradually killing the entire platform.

Over the years battles have raged between various companies; Picasso96 vs CyberGFX; WarpUP vs PowerUP; PC vs Mac, and each has had positive and negative impacts on both parties. Competition is healthy, it forces each side to better itself, to strive to outdo its opponents and therefore gain the upper hand. More often than not though the negative impacts drive themselves to the fore and are what stick in peoples minds. We tend to more easily remember the bad experiences we have rather than the good ones, which by far out weigh the bad. These negative aspects tend to influence us in future life and decisions.

As an example the WarpUP verses PowerUP PPC "war" - two different software solutions both designed to run on the hardware designed by Phase5, one created by Phase5 themselves (PowerUP) and the other created later by Haage & Partner. Initially PUP was the only PPC software layer available so programs were made to run that, but then WUP came along. This soon became very popular and (some would argue) became the more popular software solution, especially amongst commercial developers.

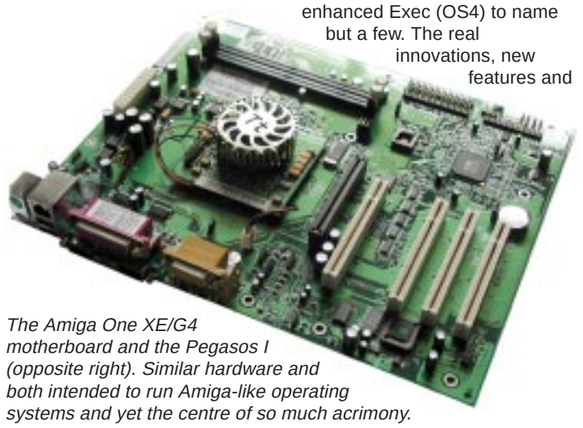
Yet some software houses stuck with PUP because a lot of programmers still preferred it, causing a rift in the user base and helping to put the entire PPC evolution to an early grave. PPC did not take off as it was thought it would, and today the few boards that are still around tend to be under-used, in bad repair or broken. The ironic thing is that the two systems we are now fighting over are actually both derived from the same PPC source which has been a long-standing PPC standard.

> "...born of the same lineage, with the same mother and father..."

I have been informed that if you look into the first 4 bytes of any PPC code you would find the text ".elf" which, as any Pegasos owner or coder (and possibly OS4 coder?) would know is an attribute of a PPC native code piece.

A Shared Heritage

As they stand at the moment the AmigaOne with Amiga OS4 is not all that much different to the Pegasos with MorphOS1.4. People are now screaming at me and saying that I'm talking rubbish, but hear me out: both hardware systems have evolved beyond what we classify as a "Classic Amiga". They have removed the need for dependency on chipsets (Alice, Budgie etc) and instead use generic PCI or AGP cards for things like graphics, 16bit audio and USB, Firewire and digital sound. Some of these innovations have still been added to the boards themselves but each is up-gradable. While these items may have been pioneered by the PC industry both systems have taken them under their wings and made them their own, but each in slightly different ways. So although both boards may use different manufacturers and different chipsets as the initial on-board systems and both run different OS's they are effectively brothers (and not an Amiga at all in some peoples minds).



The Amiga One XE/G4 motherboard and the Pegasos I (opposite right). Similar hardware and both intended to run Amiga-like operating systems and yet the centre of so much acrimony.

Most people out there think of AmigaOS4 and MorphOS1.# as two entirely different beasts. I disagree - they are born of the same lineage, with the same mother and father but both have grown up in totally different situations and surroundings and have therefore diverged. Neither system is as the "Classic" Amiga was but both have their roots firmly embedded in it. As they stand at the current time each is purely a cameleon OS, and by that I mean that the authors are aiming to get the OS to such a level that any and all old Amiga programs will run on their OS. Each side is, of course, trying to out-do the other by adding in new features such as anti-aliased fonts, skins (MorphOS), a new library model (OS4) and enhanced Exec (OS4) to name but a few. The real innovations, new features and that all-needed WOW feature will have to come later when the PPC native OS's come into being. For MorphOS this will appear in the form of the Q Box and the AmigaOS will become the AmigaDE. At the moment both are aiming to make the OS fully PPC native and will run 68k programs in emulation. The future will bring divergence and programs native to those OS's, but until then they are not so different.

The thing which disturbs me is the massive split this is all causing in the Amiga user base.

Naturally each system is somewhat different and therefore not totally compatible with the other but in reality the two systems are remarkably similar and as such the effort needed to make a program run on both machines would be quite a small one, with programs developed for OS4 able to be re-compiled to run on MOS within a fairly small time span (and vice versa). Now normally this slight incompatibility would not be a problem, each side would get on with what they are doing, watching what the opposition is doing and trying to be one step ahead of their game and maybe even playing both sides. However in the Amiga world we seem to have some of the most outspoken, stubborn and opinionated people I've ever seen (Linux users comes a close second with PC users just kind of rolling along on the back of the wave) and because of this they are blindly sticking to one platform over the other.

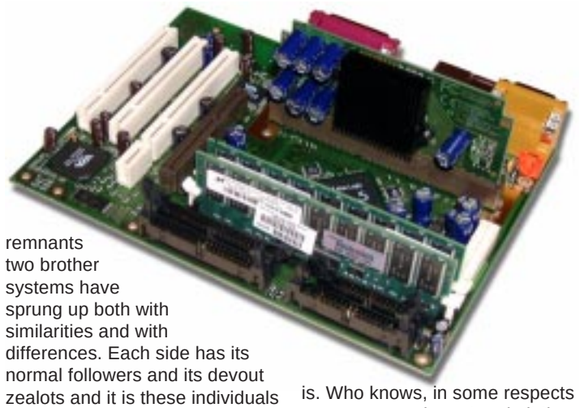
The few spoil it for the many. On both sides!

While most of us are content to choose our platform or OS and to let others have the same rights there are those out there that think all those people who disagree with them are scum, should be beaten up and thrown into a dank, dark dungeon somewhere to rot. I use a Pegasos and recently went into an IRC channel where when it was found that I use a Pegasos and not an AmigaOne I was shouted at, abused and then when I refused to back down and simply stood my ground (without being at all aggressive myself) I was ignored and soon after the user left the channel for a long time, presumably to sulk. Such a reaction was not called for and many users not as hard-shelled as me would have left soon after the abuse started.

I want to make one thing clear here - I am NOT singling out the AmigaOne users here. There are plenty of Pegasos users out there who are just as bad and if anything these guys are actually slightly louder in their ravings. Both sides have their zealots and in both cases these few individuals are making life very hard for both companies to work. To be brutally honest I think that both companies are actually headed up by very strong personalities and because of this cooperation between the two sides is made all the more difficult as neither side likes to stand down on any given subject!

When a user stirs up trouble on a forum by posting insinuations, lies or slander what should the company concerned do? There are two options: stay silent and run the risk of the lie taking hold or hope that it is proved wrong and to only speak when an official announcement is made; or they can stay in the public forums and confirm and deny all rumours that abound. As you've already guessed Amiga Inc. have gone for the former approach while Genesi have gone for the latter. Each has drawbacks, for example Amiga gets an ear bashing for their long silences whereas Genesi get bashed for responding to far too many threads and being too free with their time. One thing is certain both companies harbour their own zealots and both sides need to stop telling lies, or spreading rumours about the other company. It is not at all beneficial to either side and simply puts back development time on their respective work.

The moral of my rant is that the Amiga as we knew it is dead (or as good as), and from its remnants two brother systems have sprung up both with similarities and with differences. Each side has its normal followers and its devout zealots and it is these individuals that need to learn that other people have rights and that their rights entitle them to free thought and that includes what computer system they use and what OS. What right do you have to shout at someone for using a different OS? Thats like owning a BMW and screaming at someone just because they own a Ferrari. By all means politely, kindly and quietly point out what the benefit of your BMW is but do not be surprised if they then tell you what the benefits of their Ferrari is. Who knows, in some respects you may even have to admit they have a point. If people do not stop abusing the other users then we will soon have two very different systems with their individual user bases and neither is likely to prosper and succeed. As long as we can live together as one (we are brothers don't forget!) then the user base stays strong and we can once more emerge as a powerful computer system in the world.



MorphOS 1.4 & Superbundle

Sam Byford loads the latest version of MorphOS on to his Pegasos to give us the low-down on the changes and enhancements.

Last issue I gave my review of MorphOS based on version 1.3 and it got a favourable score. In late July version 1.4 was released along with the "Superbundle", a collection of software made available for free by various companies and individuals. So how does MOS1.4 compare to 1.3? Well, it nudges the entire look and feel of the OS up by several notches but it still remains that it has a long way to go before the outside world would be willing to take it on as a replacement to the dominating might that is Windows.

Installation of MOS 1.4 could not be any simpler. Once you have downloaded the new ISO, un-archived it (it comes in .tar.gz format) and burnt it to CD you boot into the CD rather than the MOS that is on your hard drive. You then have two options: you can either perform an update using the provided install script which does everything for you and is quite easy to follow, or you can do a fresh install. The later is preferable as it means that you don't have any unwanted libraries or conflicting files on your system. Its fairly obvious, but make a backup of the 1.3 system first!

Once you have backed 1.3 up, delete it from the boot partition then install 1.4 by copying the CDs contents to hard drive (which, compared to other OS's is still a stunningly small amount of data) and then over the next few weeks put back any files and libraries that programs require, using SnoopDos if necessary, to work out what is missing.

1.3 had a few fairly major drawbacks, the most noticeable of which was the lack of a few basic programs - that of a text editor and a TCP stack. 1.4 introduces MorphED, a re-implementation of GoldED written specifically for MOS. It was initially intended as a developer tool and has highlighting for most of the developer languages but it soon became clear it would be ideal as the default text editor for MOS. With this now part of the Superbundle it means that users have a means of editing the user-startup file and other scripts (as well as C code and HTML pages etc).

A TCP stack is still missing from 1.4 which means initially setting up your computer to access the outside world or your internal networks is still as much a hassle as it was under 1.3. The good news is that AmiTCP is currently being rewritten for PPC and has had a complete GUI overhaul, and the news on the grapevine is that the transition is almost complete. Therefore AmiTCP should be available in the next MOS upgrade!

Integration.

Some of the core components of any OS have now been integrated into MorphOS. The most noticeable of these programs are JIT, TurboPrint and USB support but there are also smaller integrations which deserve a mention a bit further into the review.

Having TurboPrint integrated directly into the OS is a big bonus as it means that over 200 different printers (both parallel and USB) are supported internally. Currently however TurboPrint does not work on the majority of systems! The amount of emails to the MOS mailing list regarding TP not working has been phenomenal, although in some cases people have managed to get programs such as WordWorth and FinalWriter to print. I myself can print from WordWorth just fine, albiet very slowly, but no other program will yield results, they either lock the machine up or throw out a blank piece of paper. This really does need to be fixed and as soon as possible. The preferences for TurboPrint have been added into the System prefs and it looks rather nice (see screenshot) as well as being quite easy to navigate. A lack of documentation might prove a hindrance to some users not used to dealing with TurboPrint. Any extra printer drivers that Ireesoft bring out (I had to manually copy my Epson C40UX driver over from my own copy of TurboPrint) go into the draw at MOSSYS:TP/Printers/ and are immediately available for use.

By now everyone in the Amiga sphere will have heard of and possibly even used Poseidon by Chris Hodges. This marvellous bit of USB software has now been successfully added into the heart of MOS.

Nothing (except a few minor additions) has changed so setting up the preferences based on your old settings should be quite a quick process. My only gripe when it comes to putting

Utilities familiar to many Amiga users, TurboPrint and Poseidon have been integrated in to MorphOS 1.4.

This screen-shot shows how the preferences editors have been integrated into one central application.

.info

Developer
Genesi
www.genesi.lu

Distributor
www.pegasos-uk.com

Price
Pegasos I motherboard with MorphOS and Linux £377
Discounts may be available for developers.

Also Available from
Kicksoft on CD at £18
www.kicksoft.co.uk

Test System
Pegasos I with April 2
PPC G3 CPU @ 600MHz
512Mb RAM
ATi Radeon 7000LE AGP
ATX Tower Case

MorphOS 1.4

My MorphOS desktop showing a mixture of native and emulated applications. There's Kaya, the new native music player, a real-time zoom window and several Ambient panels.

Among the emulated programs are Mystic View and AmIRC. All MUI programs benefit from the gradient features.

Poseidon's preferences and log into the System prefs window is that it is not immediately available via hotkey for me to play with. It may only be two mouse presses away (RMB menu, Prefs then the USB list member) but I like the ability to have it show up on Ambient as a separate entity with just a press of a key.

Up until this release of MOS all 68k programs have been running on a standard emulation layer. With 1.4, JIT (Just-In-Time) emulation has been introduced by way of Trance. My knowledge of JIT is limited but from what I understand, as 68k code is run it is replaced with PPC native code "on the fly" which it then caches for future use. This means the first time you run a specific bit of code there may not be any noticeable increase in speed, as Trance is having to re-write it as the program wants it. With each subsequent use of that same code Trance can just recall the new version and execute that, speeding up the entire process. So performing actions on individual pixels and mathematical operations would get markedly quicker with the second use, for example. As with other 68K emulations, basic 68000 or 040 code is much easier and quicker to translate than 060 code (which contain instructions only used on 060s) so reinstalling programs and using the 68000 version could improve the JIT emulation.

In issue 15 to test the difference between my 060 Amiga4000 and my G3 Pegasos I ran ArtEffect and did 4 identical procedures on both machines, with both set of test results having similar figures. That proved that the basic 68k emulator ran at roughly the same speed as an 68060/50. Unfortunately ArtEffect does not run correctly under MOS1.4 (more on that later in the article) so I could not re-do the same test with JIT. Instead I used the next best thing to ArtEffect: ImageEngineer, easily my second favourite GFX manipulation package.

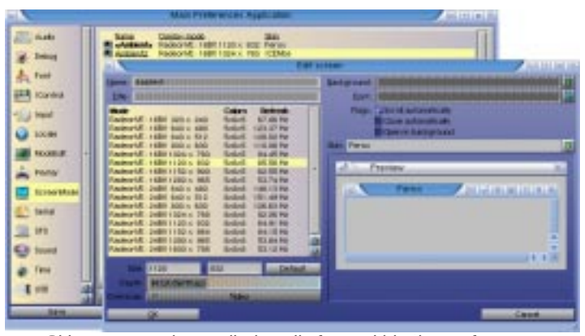
I ran three tests, each one using the same picture, the same convolves and the exact same variables in each case. The table in the "JIT Speed" box-out shows the exact times for each operation but I shall focus on the second process I performed: Oilpaint. I used a fairly high value with which to make IE oilpaint my photograph, this meant that it actually performed two individual oilpaint processes, one after the other to produce an accumulative effect. With both JIT and basic 68k emulation the initial oilpaint took roughly 20 seconds. The second process (which is also the heavier of the two) took substantially longer without JIT, (10 times as long in fact!) proving that having JIT turned on effected the procedure due to it storing the code and re-using it to perform the action the second time.

The interesting thing is that it can sometimes take a while for JIT to kick in. I also ran AmiGod2 and the results were almost identical. Another user has informed me that if I had bothered to run the same tests five or six times with JIT enabled then the results would have sped up dramatically. The reason why AmiGod does not initially show any differences is that it only runs each code one time, meaning that JIT does not alter the results. Run the same test four times and JIT will have cached the test procedure and will improve the feedback, run it five or even six times and the results speed up even more.

New Features & Bug Fixes

MOS1.4 now supports DVI and Overlay for the Radeon series of GFX cards (except 8500) and 3D for the Voodoo3/4 series. Support for graphics tablets has been introduced as has the ability to reboot the machine via keyboard. I find this does not work if a program has hung the machine already, and the Reboot option in the RMB menu works only half of the time so you will still need to reboot via the Tower Case's reset button! One very good change in 1.4 is that it is no longer a requirement to have a PS/2 mouse plugged into the Pegasos on bootup. Until now if there was no PS/2 mouse plugged in bootup would be delayed by up to 40 seconds, this "lag" has now been eliminated leaving us free to use USB mice only.

Several new programs have been introduced to 1.4 including a calculator (with Advanced or Basic setup) and a zoom tool which is a sizeable window that magnifies whatever is underneath the cursor at the time. It has a variety of zoom levels and will prove useful for demonstrations to a large group where being able to see exactly what the demonstrator is doing is a necessity. A music player



Skins can now be applied easily from within the preferences program. A different skin can be defined for each screen.

called Kaya has also been introduced that plays most types of song files including MP3 and OGG. Kaya is skinnable so the look of the GUI can be changed to your own style.

While on the subject of Skins it is now a major plus for MOS that the skins idea has been integrated into the System preferences under the screenmode attribute. Multiple screenmodes can now be defined, similar to MUI, each with a different name, mode and skin for each item and automatic scrolling can be switched on or off. A real-time preview of the chosen skin is also now possible and no reboot is required; the change happens instantly.

> "...the upgrade from 1.3 to 1.4 is quite a big one with many, much needed, new features."

Icon handling has been one of most peoples bug-bears with MOS. Happily several enhancements have been introduced into 1.4 but there's still a long way to go before things are to the same standard as other operating systems. The need for a .backdrop file in the base of partitions has been eliminated, icons can now be left out properly by a simple drag and drop action. Icon scaling has also been introduced with the preferences for the sizes of icons in the Ambient prefs menu. Five different sizes are now available for displaying icons, ranging from Micro up to Huge. My system runs on a 1120x832 screenmode and I find that the jump between most of the sizes is acceptable, except for Medium to Large, which could really do with an intermediate size somewhere between the two.

For those of you who read my report on 1.3 you will remember there were several bugs inherent in the icon system: icon names overlapping; lack of lasso; drag and drop errors; snapshotting of icons not always working. These have now been solved - with the exception of snapshotting, which still has problems. Icons jump when "Snapshot All" is selected and the scrollbar still reports icons where no icons exists. Multiple selection via lasso now works, as does multiple delete, though annoyingly it asks for permission to delete every single item and not a generic "are you sure you want to delete 30 files?". Someone on the MOS development team has also taken it into their head to make all long named files display their names on multiple lines. There needs to be a preference setting for this so the user can choose between single line display or multiple line display.

When multiple icons are selected only one menu item is displayed: Delete. If it is a partition icon you have selected this tends to be a nasty thing to select! More menu items need to be added (copy, cut, snapshot, rename etc) and protection for partitions needs implementing.

Inclusion of more fonts into the package also means a greater choice of system fonts and styles and the bug I reported in Issue 15 regarding font requesters not automatically highlighting the last chosen font and size has been fixed. Also fixed in 1.4 are gadgets, which now display properly and mean programs such as SGrab and SoundProbe are at last properly usable.

Many Amiga users have gotten used to button banks over the years with many different packages available to provide this feature. In 1.4 a system has been introduced called Panel that allows simple drag and dropping of icons onto each bar. Each of these icons acts exactly the same as if you had opened its directory up and double clicked it. Preferences for each Panel are separate from the others so no two need be the same. Panels can be Zipped (folded down to a simple bar), the speed of this zipping set in the "Ambient Settings:Panels" menu item, or fixed in place. Pictures, colours and MUI gradients can be set as backgrounds for each panel as can the size of the icons. About the only limitation I can see is that multiple columns/rows can not be used.

MUI now has the ability to make colour gradients. It uses any two colours that you choose on a colourwheel and these can be set to blend horizontally or vertically. I think this is probably my favourite of all the MUI enhancements that have been made since 3.8. It certainly adds a sophisticated look to my Ambient desktop (as long as the colours chosen are not too bright or overpowering).

Ironically one of the more important new programs added into MOS 1.4 gets left till last: that is the Task Manager. A rather nifty little program, it shows a constantly updating list of all tasks and programs running on the system. It also displays the CPU usage in a graphical bar at the bottom of the window. Five columns are provided showing the Program ID, its name, priority and the CPU time and usage. By clicking on the column headers the items can be sorted according to each of these attributes (e.g. largest CPU usage at the top of the list). If a program becomes locked and you do not have a utility such as Xopa or Scout on your system then it is possible to locate the PID of that task and use Shell to "Break {PID}" - this is especially handy if you wish to turn Trance off for test purposes or for a program that does not run correctly using Trance.

JIT Speed

I conducted some speed tests using Image Engineer (an image processor currently only available as a 68k version) to see the difference between the static emulation and the JIT emulation (Trance) introduced in MorphOS 1.4. Note, times are shown in minutes and seconds.

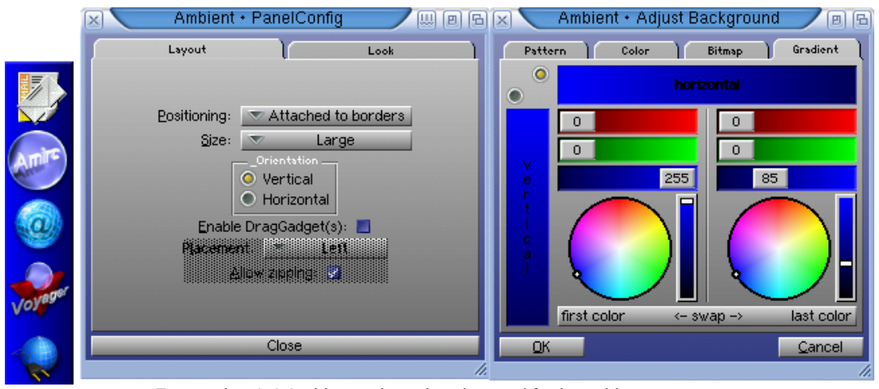
JIT	Static
Visual Border; Scratch	
0:10	0:35
Oilpaint (30)	
01:07	10:37
Bleed; All (10)	
0:11	0:48

Opening the Way for New Bugs

As with any new release a surprisingly large number of new problems are bound to show themselves.

Considering the fact that 1.4 was held back for several weeks in order to squash bugs that the testers found its remarkable just how many basic problems are instantly obvious upon release. It just proves that every system is different and not everything can be checked in one go.

The monitor preferences for Brightness/Contrast/Gamma refuse to keep their settings when you click Save or Use and MUI has introduced a rather nasty bug which will lock the system up if you close its windows and requesters down in the wrong order! Normally if you open a programs preferences, then a file selector window and then close the program each window will cleanly shut down. With 1.4 you can expect the machine to hang if you do that! Close the requestor down first, then the prefs, then the program and you should be alright.



For version 1.4 Ambient gains a handy panel for launching programs. The right-hand window is an example of MUI's new gradient options.

As with 1.3, performing a "snapshot all" action will cause all icons in parent directories to refresh, not just the ones you snapshotted. When playing music and scrolling another program sound clicks can still be heard and the GFX refresh bug is still present. If anything this is actually worse than in 1.3 but that could be because programs are still trying to use Smart Refresh (more on this in a minute). Open a program such as YAM or Simplemail, have the mail-get feature fetch your mails and try to scroll one of the windows behind that last window. The text in the window you scroll will become corrupted until the front-most window disappears and then everything refreshes correctly again. For me this is the biggest problem that MorphOS currently has, it stops me wanting to show the system off to friends as I know exactly what their reaction would be.

Any coders who use MUI as their GUI base should now beware: Smart Refresh has been removed from MUI leaving only Simple Refresh. According to the powers that be this is because Smart Refresh is a nasty hack and any programs that are coded correctly should never have any problems with Simple Refresh. Naturally though this has introduced problems, especially with older programs that used Smart Refresh and are now no longer worked on.

Also quite disturbing is the major slowdown of a couple of programs – ArtEffect and SoundProbe. Both of these now crawl at performing some functions but it does not appear to be as a result of the introduction of JIT. Initially I assumed that it was, but I disabled Trance and the problems remained which means that something in MOS1.4 has broken these two programs. It makes SoundProbe almost impossible to use as the Waveforms take forever to display. ArtEffect suffers but it is a bearable delay, most noticeable when moving a large brush around a picture or performing effects.

This problem may well affect other programs too as I can not see how only these two would be adversely affected.

The Superbundle

For many people the Superbundle is a godsend. At the moment there is only a limited amount of programs available in the package but that number is set to grow. The list at the moment is as follows:

ProStation Audio Titanium (Sound/Music Mixer); MorphED (Text Editor); fxPaint Lite (GFX Program); fxScan Lite (Scanning Program); VHI Studio Lite (TVCard and Webcam Program); BirdieShoot (Fun Shooting Game); Feeble Files (Point and Click Graphical Game); Software Tycoon (Business Emulation Game); MorphOS SDK (Official Software Development Kit for MorphOS).

To get access to the Superbundle you have to register on www.morphos.net then wait for your password which will allow you to access the files via browser or FTP. The Lite versions have certain restrictions but will be able to be upgraded in the near future.

Although not actually part of the Superbundle I feel I should give mention to MPlayer, a DVD and movie player newly released by DET Nicolas and available at the downloads section of MorphZone. Able to play near enough all DVDs and MPGs, AVIs and MOVs this really is a wonderful program. I did a test using one of my MPG movies in both Frogger and MPlayer: Frogger maxed out at 100% CPU usage while MPlayer cruised along at 48%-50% useage. On a G3. On the higher end G4s or G5s this program will really come into its own. Well done DET Nicolas!

Future Advice

The feeling amongst the majority of the MOS users is that 1.4 is a big step in the right direction.

It may still be a beta OS but the foundations are solid. There is one thing almost everyone agrees on however: Genesi need to co-ordinate themselves more when it comes to updates.

Trance is the new JIT 68K emulator.

The zoom window (below) works in real-time.

Firstly the release dates and times. The world consists of numerous timezones and saying that the release will be at such and such a time could mean any time almost a full day either side of when they actually mean! They need to specify GMT, CET or whichever zone they intend to use and a specific time. Strange as it may seem some users took a day off work just so they could download 1.4 first, but were disappointed when it did not come out until the next day in their area!

Then there are the updates. A lot of the bugs reported on the email list are minor and are reported as being fixed almost immediately. Why then is that fix not distributed via the FTP? We have to wait until the next full update (1.5) is out which is usually 4 or 5 months down the line. The complete new update would of course take those bugfixes under its wings but why should we need to wait 5 months just to have the calculator work flawlessly when the fix was done 2 days after 1.4 was released?

Lastly, the bandwidth given over to the website/ftp is tiny. The backlog on downloading the Superbundle and 1.4 update was immense. We need mirror sites and, please guys, hassle your ISPs for more bandwidth!

Conclusion

As you can see, the update from 1.3 to 1.4 is quite a big one with many new, much needed, features.

New bugs show themselves, but that is the way of things with software and Genesi will be bug-hunting for eternity, the same as Microsoft. But they love it, and it would seem the users like nothing better than to point out what's wrong and what can be improved. With the introduction of JIT almost everything flies and, as time goes on, more and more of the system becomes PPC native and that much nicer to use. All I ask now (and I mentioned this in the previous article) is that someone writes a new Installer program than can handle +4Gb and works around old programs that refuse to see that there is actually enough hard drive space for installation.

Results

Pros
+ Printing and USB integration.
+ MUI Gradients.
+ Ambient improvements.
+ Bug fixes.

Cons
- Printing barely works.
- GFX refresh problems.
- Still no TCP/IP stack.

Pretty Good!

AmiAtlas 6

Mick Sutton plots a course through the Amiga's only route planning application and dreams of finding his own private island.

.info

Developer
The AmiAtlas Team
http://www.amiatlas.net

Price
Full version on CD-ROM
.... E39.95
Download version (without travel guides for Germany, Austria and Switzerland)
.... E19.95
Update from an earlier version (on CD-ROM)
.... E29.95

Requires
AmigaOS 3.1
8Mb free RAM
20Mb hard disk space

Recommended
Graphics card

Test Systems
A1200
Blizzard PPC/060
BVision PPC
256Mb RAM

Amithlon
Athlon 2000+
256Mb RAM

Supplied by
The AmiAtlas Team

Whenever you plan a journey to an unfamiliar destination it's usually best to plan your route. Wouldn't it be nice to have some software to do it for you? AmiAtlas is the only route planning software currently available for the Amiga since the demise of GB Route in the early nineties. This software has a graphical map display and is supplied with maps of several European countries including the UK. In this review I will concentrate on the UK map but will also try to give you an idea of what to expect from the other maps.

Installation

AmiAtlas comes packaged in a DVD case with a professionally printed cover and the CD itself is also colour printed. You can run the program from the CD or install it to your hard drive using the standard installer. During installation you select what country maps you would like to install. The program and the UK map needs about 10 Mb, but if you want to install all the maps and data provided you will need nearly 600 Mb of disk space. The first time you run AmiAtlas it will load the German map, if you have it installed, if not a file requester opens for you to select one of the maps you have installed (a .country file). Within the program you can save this as your default map.

Maps

The AmiAtlas window opens showing a map of the whole country, in our case the UK and Republic of Ireland. At this scale only county borders, motorways and a few cities are shown. Along the top of the window is a toolbar made up of icons for the major functions within the program. These include zoom buttons to magnify the map centred on the middle of the window. The view can then be scrolled using the scroll bars or cursor keys. You can also zoom in by dragging a box over the area you want to examine, as you zoom in more detail is revealed, including "B" roads and smaller towns. The UK map does not include street-level mapping of towns and cities. All the roads are shown as straight lines between towns, some motorways are constructed from straight sections to give an approximation of their route. All the towns are in the correct positions and the roads linking them are mostly accurate, unfortunately we did find some major roads missing in our area! While the lack of road detail doesn't inhibit the route planning ability of AmiAtlas the missing roads are a problem! Fortunately it is possible to edit the map and add your own roads (just like the Romans), assuming of course you know where they should be. The authors of AmiAtlas request that you send in any updates so the maps can be improved.

> "...for UK users the limitations of our map really let it down."

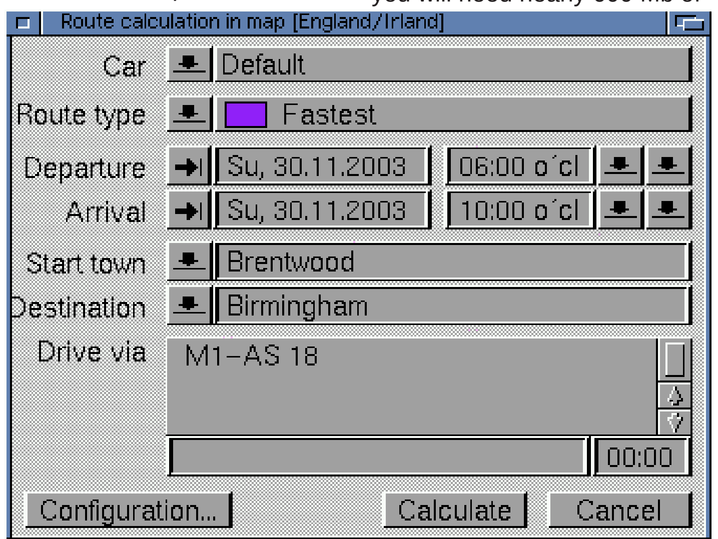
Planning a Route

Before you start planning any routes it is a good idea to configure AmiAtlas to suit your preferences. Depending where you live (or drive) you will need to set your prefered currency, distance measurement unit (kilometers or miles), and the speed limit on different types of road. If you want to calculate your journey costs you need to set the fuel consumption of your cars on each road type.

Lets plan a route then! You click the "start town" icon at the top of the window, then click on a point on the map where you wish to start your journey from. Then select the destination town and, if needed, any towns you wish to pass through on your journey in the same manner. Clicking the "calculate" icon opens a window that shows your chosen towns, you can also select the type of route you want to calculate (fastest, shortest, cheapest and pleasant!), the car you wish to use and the start and arrival times. Once you are happy with your selections click on the "calculate" button which opens the route description window. In this window each stage of the journey is listed with town, road junction and distance. AmiAtlas also calculates the journey time, overall distance, fuel consumption (based on the information you set in preferences) and fuel costs. All this information can be printed or saved to a text file. On my system with an Epson Stylus Photo 790 and Turboprint 7.2X I found the print output was not properly formatted and therefore unusable! Strangely on Roberts Amithlon system with the same Turboprint version but a HP Deskjet 1120C the printout was fine. I could work around the problem by saving the route and printing it from another program.

From the route description window you can show the route on the map display by clicking the "show" button. The roads on the route are highlighted in a colour representing the route type (purple for fastest etc.). The display is zoomed to show the entire route without the need to scroll the window. If, after seeing the route, you wish to change any options, such as choosing a different route type or adding another waypoint, you have to calculate the trip again, there is no way to edit settings on the fly. However you will find the towns you have previously used on routes in this session are listed in drop-down menus for the start and destination town gadgets in the calculation window. This makes setting up another similar journey much quicker. You can show the route description window for any of the routes you have planned this session and any route can be displayed on the map. It is possible to have multiple routes on the map at once so you can compare them.

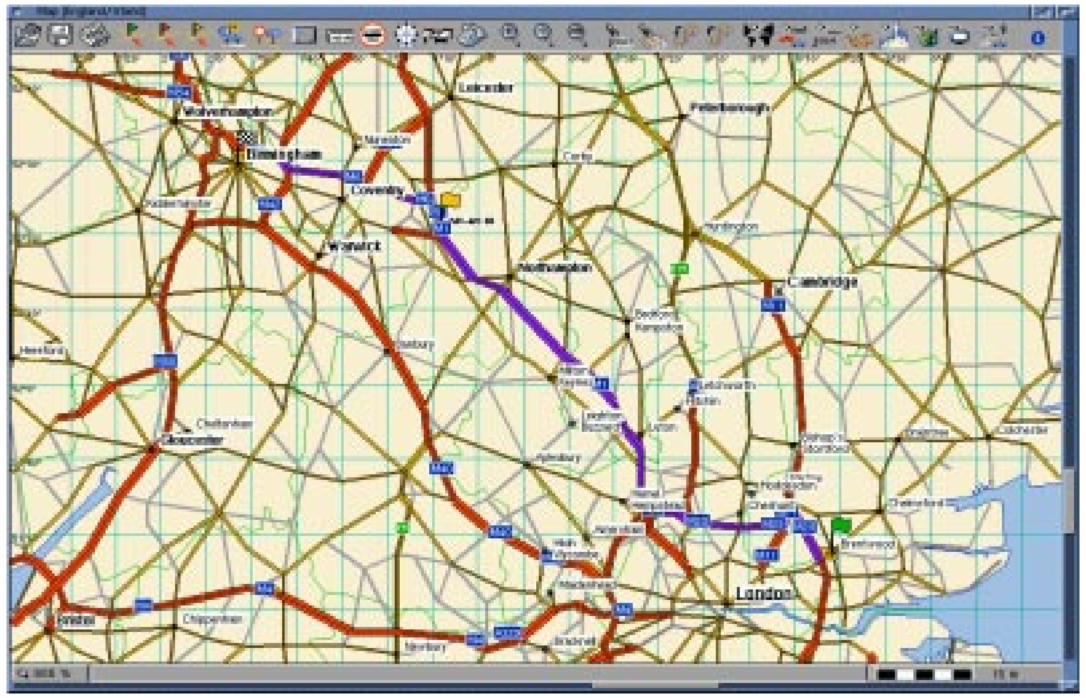
A route can be defined by selecting towns on the map or by entering them directly into this requester.



Amithlon

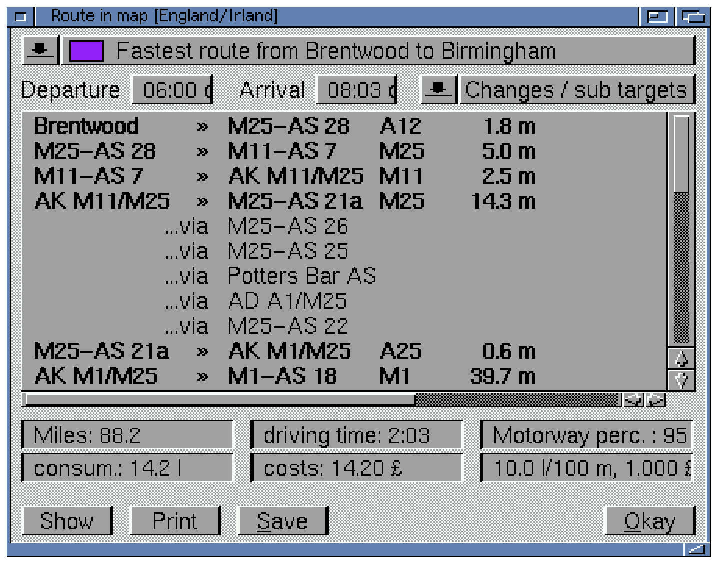
We found AmiAtlas to be quite unstable on our Amithlon test system; the program would often hang the computer, usually during a zoom operation.

We asked the author about this problem and he responded that other Amithlon users had reported similar issues. AmiAtlas ran flawlessly on our "real" Amiga and, apparently, runs well on UAE so this seems to be a problem within the Amithlon emulation.



Once AmiAtlas has planned the route it can be displayed on the map. Notice the plain (green) flag at the start town and the chequered flag at the desination.

Along the top of the window you can see the tool bar which gives quick access to many program functions.



This window shows all the stages of the planned route and some statistics. The information can be printed or saved to a text file.

Editing

Every aspect of an AmiAtlas map can be edited or created from scratch within the program, this includes adding new roads, towns, parks and hotels. It is also possible to edit or add land borders, county borders, rivers and many other geographical features. If you own your own island you can even create a new map in AmiAtlas! Information can be added to the map as notices or entries in a city guide. These are linked to external files that are loaded when you click on their location. No notices, parks, hotels, or city guides are supplied for the UK, other countries are better supported with most information on the German maps.

Conclusion

The basic route-finding engine at the heart of AmiAtlas works well and is flexible with the different route types, however for UK users the limitations of our map really lets it down. It's hard to trust the route selected when your not confident all the roads are there. Although we can't judge the quality of the other maps many look much more detailed than the UK one. Hopefully users will help the developers improve the less detailed maps. Altogether AmiAtlas shows a lot of promise but there are still rough edges to iron out.

Results

Pros
+ Flexible route finding.
+ Easy to navigate around maps.

Cons
- Limited UK map.
- Refining an existing route is long-winded.

Okay

AmigaOne-XE

Above: Dual G4 cpu module for AmigaOne-XE

Left:AmigaOne-SE in Naya Design case

Right: AmigaOne-XE/G4 being tested at Eyetech

At last - a flexible, expandable PPC Amiga is now available

Specifications:

ATX form factor PPC motherboard
Four PCI slots + one 2-speed AGP slot on 2 buses
On board 10/100Mbps ethernet on rear I/O panel
2 x USB connectors on rear I/O panel + 2 more on headers
2 x UDMA 100 channels (4 devices)
UBoot firmware with OS4 extensions in socketed ROM, with non-volatile RAM for parameter storage
PS2 mouse & keyboard connectors
AC'97 sound, gameport and midi header on board
Parallel, serial & floppy (PC FDD controller) connectors
IRDA header, real time clock
Choice of IBM 750FX G4@800MHz or Motorola 7451 cpu modules, with dual G4 modules coming soon.
2 x SDRAM sockets for up to 2 GB of main memory
'Earlybird' boards and systms come with PPC Linux and a free copy of OS4.0 (OEM) when released.

Availability:

From your local dealer (see our web site) or direct from Eyetech.

Earlybird systems are now shipping, and will be available until the official release date of OS4 is announced. Thereafter OS4 will be a separately chargeable, non-optional item. Please see our website for further details.

Please note that no technical support on Linux will be available from us to purchasers of Earlybird systems - only from user group moderated web/mailing list).

Pricing:

AmigaOne-XE motherboard with G4/800 7451(64K L1, 256K L2, 2M L3): **£500 exVAT (£587.50 inc VAT)**
AmigaOne-XE motherboard with G4/800 750FX (64K L1, 512K L2): **£450 exVAT (£528.75 inc VAT)**
Earlybird offer: Buy now for immediate delivery with Linux/UAE and get OS4 FREE when released

UK NEXT DAY* INSURED DELIVERY CHARGES: OS 3.9, SW, Cables, EZCD I/F = £3 ; 2.5" HD's, Accel'tors, Manuals = £7 ; 3.5" HD's, FDDs = £9 ; CDPlus, Scanners, Minitower = £11 ; Towers, Monitors = £15 ; Twr+mon = £23

UK Bank/BS cheques, Visa*, Mastercard*, Switch, Delta, Connect, Solo, Electron. Postal/Money orders accepted. (* 3% clearance charge applies to all credit card orders). Due to space limitations some of the specs given are indicative only - please ring/write for further details. Please check prices, specification and availability before ordering. **If ordering by post, please provide a daytime telephone number**. All goods (excluding opened or used software) may be returned in perfect condition within 7 days of invoice date for a refund (excluding carriage, services and card clearance charges). A1200 items are tested with a Rev 1.D.1 motherboard - other boards may need modification. Items subject to mechanical wear & tear (eg keyboards) are limited to 90 days warranty on those components. E.&O.E. All prices include VAT at 17.5%. Orders sent outside the EC do not incur VAT - divide the prices shown by 1.175 to arrive at ex-VAT prices. All goods are offered subject to availability and our standard terms & conditions, copies of which are available upon request. **TA14**

email: sales@eyetech.co.uk
EYETECH
www.eyetech.co.uk

EYETECH GROUP LTD
The Old Bank, 12 West Green
Stokesley, North Yorkshire, TS9 5BB, UK
TEL: 07000-4-AMIGA 07000-426-442 +44 (0)1642-713185
FAX: +44 (0) 1642-713634
EMAIL: sales@eyetech.co.uk WEB: http://welcome.to/amiga.world

Final Classic Amiga stock clearance sale - Most items at well below our cost price.

Clearance items - 45 days warranty

EZTOWER OPTIONS - *The EZTower-Z4 is the latest state-of-the-art tower specifically designed to take your existing Amiga 1200 as well as either a PCI/Zorro expansion board.*

The EZTower Mk5 is designed to take an existing A1200, accelerator etc and an ATX motherboard such as the AmigaOneG3-SE. Both computers can be networked together within the same case, including the cross mounting of floppy & hard drives, CDROMs etc.

EZTower Mk5 with 250W ATX PSU, 6x 5.25" bays & 3x 3.5" bays, FDD cable & faceplate, LED adapter and full instructions. (62x42x19cm) (DIY) **£45(100)**
EZTower-Z4 with 250W PSU, 3x 5.25" bays & 4x 3.5" bays floppy drive cable & faceplate, LED adapter and full instructions. (48x44x18cm) (DIY) **£45(100)**
Ready assembled versions of EZTowers +£25

VIDEO & GRAPHICS STUFF

CyberVision64-3D ZorroII graphics card **£90(170)**
CV64-3D with fitted **AMON** autoswitcher **£120(210)**
EZ-VGA-SE ext'l scandoubler/flickerfixer **£50(100)**
Prometheus PCI adapter for Z3 systems **£100(200)**
Predator-SE/GRex SxPCI expn board with free SiS 6326 8MB gfx card **£100(175)**

A1200 MAGIC PACKS/SX32

260MB hard disk Magic Pack inc Scala (German PSU & k/b with UK k/b for self fitting) **£120(250)**
SX32 Mk2 RAM, I/O, FPU CD32 expansion **£75(150)**

MICE, MICE ADAPTERS & JOYPADS/JOYSTICKS

Amiga logo'd mouse - pack of 3 **£10(30)**
Logic3 Action amiga joypad **£7(15)**
Logic3 Attack digital joystick **£7(15)**

A1200 ACCELERATORS

Apollo 1240/28MHz/MMU/FPU (21Mips) **£70(100)**

2.5" HARD DRIVES

170MB 2.5" HD, WB3.1 w/inst'd MP s/w **£30(60)**
250MB 2.5" HD, WB3.1 w/inst'd MP s/w **£40(90)**

CLASSIC AMIGA GAMES - NEW (Our selection)

Eye-Play Classic selection 10 games **£10(60)**

Other Classic Amiga Hardware etc

EZ-TOWER ACCESSORIES

Standard Windows PC kbd 5-pin Din plug **£8(15)**
Multimedia kbd for EZKey-XS/EX/IL & adpt **£15(35)**
EZKey-XS Mk2 CIA-fitting PC/A4000 autodetecting keyboard adapter for A1200/A4000 with xMDN control, CDTV remote IR decoding, 4 x PC keyboard mappings, keyboard operated ATX PSU on/off control etc. PC multimedia k/b support. 5pin DIN socket **£30(40)**
CDTV rem cont'l **+ IR-head** for EZKey-XS **£15(40)**
ATX to AT PSU adapter for EZKey-XS **£5(10)**
EZKey-XS workshop u/g to **EZKey-XS Mk2** **£15(n/a)**
EZKey-EX New CIA adapter. Functionality as EZKey-XS Mk2 but without xMon IR or ATX PSU control **£25(n/a)**
6pF->5pM or **5pF->6pM** PCAT-PS2 k/b adpt **£5(n/a)**
ATX to AT PSU adapter for using the EZTower-Z4 with Mediator,GREX etc purch w/EZTower-Z4 **£10(20)**

A1200 TOWER SYSTEMS

BareBones EZTower-Z4 system with fitted fully-fixed A1200 m/b, FDD, EZKeyXS k/b adapter, EZCD 4xbuff'd I/f, Magic Pack s/w & manuals **£200(300)**
As above + 20GB HD, 40xCDROM, PC k/b **£280(430)**
As above + 1240/33MHz, 32MB, OS3.9 **£400(570)**

VIDEO & GRAPHICS STUFF

EZ-VGA-INFF2 int SD/FF for A1200/A4000 **£75(90)**
CyberVisionPPC 8MB for C'stormPPC/Mk3 **£150(200)**

UMON Universal monitor switchers for graphics card/scandoubler flickerfixer or Amiga/PC. Kbd or manual switch (specify). Universal cable set. **£35(60)**
KMON Mk2 Keyboard switcher for PC/Amiga **£20(n/a)**

A1200 ACCELERATORS

Apollo 1240/40MHz/MMU/FPU (28Mips) **£110(150)**

ETHERNET NETWORKING

Surfcard PCMCIA ethernet & EZnet s/w **£35(45)**
CC_Reset GAYLE reset fix adapter (A1200) **£10(15)**

MODEMS & HIGH SPEED SERIAL I/F'S

Silversurfer 460Kb/s clock port ser interface **£20(25)**

CDROMS & DVD ROMS

CDPlus 40x external A1200 CDROM, cables, buffered interface, PSU & instructions **£65(90)**
52 speed ATAPI CDROM mechanism **£30(40)**
EZCD buffered interface - pack of 2 for **£20(30)**

CDREWRITERS & MEDIA

CDReWriter bare ATAPI bumproof 16x10x40 (needs buffered I/f & MakeCD) **£80(150)**
CDReWriter bare ATAPI standard 4x4x24 (needs buffered I/f & MakeCD) **£50(130)**
External case, I/f cables & PSU for above **£30(50)**
10x blank WORM CDR discs jewel cased **£5(10)**
1x blank CDRW disk jewel cased **£3(5)**

2.5" & 3.5" HARD DRIVES (please ring for other sizes)

10GB 2.5" HD, cab, w/inst'd Magic Pk s/w **£90(150)**
40GB 3.5" hard drive (needs OS3.5+) **£75(140)**

SOUND CARDS, MIDI & SAMPLER UNITS

MIDIPlus serial port MIDI I/f - any Amiga **£20(30)**

MICE, MICE ADAPTERS & JOYPADS/JOYSTICKS

EZMouse PS/2 mouse adapter+2-B mouse **£20(30)**
EZMouse mouse adapter+ 4D scroll mouse **£25(35)**
EZMouse + optical scroll mouse **£35(40)**
EZMouse + RF cordless scroll mouse **£35(40)**
EZMouse + optical, RF, rechargeable mouse **£55(65)**
EZLink IR send receive controller for joyport **£25(£30)**

AmigaOne Prebuilt Systems

with Linux/UAE-PPC installed (including free OS4 licence for systems ordered before the OS4 release date is announced)

A1-XE G3@800 starter system **£899.95**
40GB HD, 52x CDROM, 512MB registered memory, cpu cooler, floppy drive, ATI Radeon 7000 gfx card, PS/2 keyboard and mouse, 7-bay Midi ATX tower with PSU & mains lead, cables etc. Linux PPC distribution inc manual, LinuxPPC & UAE preinstalled, OS4-enabled BIOS and OS4.0 licence. On board ethernet and USB. Assembled, tested and burnt-in.

A1-XE G3@800 power system **£1349.95**
2 x 40GB hard drives, DVD ROM, CDRewriter, 512MB registered memory, cpu cooler, floppy drive, Soundblaster Live sound card, ATI Radeon 8500 gfx card, PS/2 multimedia keyboard and optical, RF, rechargeable mouse, 7-bay Midi ATX tower with PSU & mains lead, cables etc. Linux PPC distribution inc manual, LinuxPPC & UAE preinstalled, OS4-enabled BIOS and OS4.0 licence. On board ethernet and USB. Assembled, tested and burnt-in.

Above systems with G4@800MHz cpu **+£50.00**
Other configurations are available - please ring.

Please note: These prices are before SDK and 'Amiga Club' rebates which are being handled directly by Amiga Inc.

CABLES, SPARE PARTS ETC

Comprehensive range in stock - please ring

Classic Amiga Software

APPLICATION & PRODUCTIVITY SOFTWARE

Aladdin-4D 3D modelling/rendering s/w **£30(50)**
ImageFX v4 Image processing s/w **£50(100)**
ImageFX v4.x PPC module **£40(50)**
SCALA MM400 Presentation software **£40(55)**
EMC PhaseX Scala backgrounds and fonts **£10(15)**
TVText Pro 2.0 Video titling software **£20(100)**

DRIVERS AND UTILITIES

Turboprint 7.3 printer driver software **£35(39)**
Turboprint 7.x to 7.3 upgrade **£20(25)**
MakeCD DAO CDROM burning software **£45(50)**
CamControl Amiga serial Digicam software **£15(30)**
Photoscope UMax/Epson/Artec scanner s/w **£20(60)**

COMMUNICATIONS & NETWORKING SOFTWARE

Netconnect 3 full internet software suite **£40(50)**
STfax 4.5 Amiga voicemail & fax software **£35(40)**
Genesis TCP/IP s/w for internet/networking **£20(25)**
EZNet PC-Amiga & Amiga-Amiga 5-click networking software (needs TCP/IP s/w) **£10(15)**

GAMES (carriage charges apply for all mail order purchases)

Eye-Play Gold. See also **www.eye-play.com**

Heretic II **£35(40)**
Wipeout 2097 **£25(30)**
Shogo MAD **£30(35)**
Tales from Heaven **£20(25)**
Hell Squad **£30(35)**
Foundation Gold **£20(25)**
Napalm **£25(30)**
Foundation Missions **£10(15)**
Capital Punishment **£10(15)**
T-Zero **£20(25)**
Earth 2140 **£25(30)**
Wasted Dreams **£15(20)**

AMIGA DE

Amiga DE SDK for Windows **£60(78)**
Amiga DE SDK for Linux **£60(78)**
SuSE Linux w/ manuals, 6 CD's for above **£15(40)**

UK NEXT DAY* INSURED DELIVERY CHARGES: OS 3.9, SW, Cables, EZCD I/F = £3 ; 2.5" HD's, Accel'tors, Manuals = £7 ; 3.5" HD's, FDDs = £9 ; CDPlus, Scanners = £11 ; Systems, Monitors = £15 ; Tower + monitors = £23

UK Bank/BS cheques, Visa*, Mastercard*, Switch, Delta, Connect, Solo, Electron. Postal/Money orders accepted. (* 3% clearance charge applies to all credit card orders). Due to space limitations some of the specs given are indicative only - please ring/write for further details. Please check prices, specification and availability before ordering. **If ordering by post, please provide a daytime telephone number**. All goods (excluding opened or used software) may be returned in perfect condition within 7 days of invoice date for a refund (excluding carriage, services and card clearance charges). A1200 items are tested with a Rev 1.D.1 motherboard - other boards may need modification. Items subject to mechanical wear & tear (eg keyboards) are limited to 90 days warranty on those components. E.&O.E. All prices include VAT at 17.5%. Orders sent outside the EC do not incur VAT - divide the prices shown by 1.175 to arrive at ex-VAT prices. All goods are offered subject to availability and our standard terms & conditions, copies of which are available upon request. **TA14**

email: sales@eyetech.co.uk
EYETECH
www.eyetech.co.uk

Reviews

Hollywood 1.5

Hollywood Version 1.0 was the star of issue 14. What will our critic, Robert Williams, think of the sequel?

.info

Developer
Andreas Falkenhahn

Distributor
Airsoft Softwair
www.airsoftsoftwair.com

Price
Full version on CD..$55.00
..... (approx £35.00)
Upgrade from 1.0 ...$22.00
..... (approx £14.00)
Malibu Plug-in.....$29.00
..... (approx £18.50)

Requirements
AmigaOS 3.0/MorphOS 1.3
68020, 16Mb RAM

Recommended
Graphics card
68040+
MUI 3.8 for GUI

Test Systems
A3000
CyberStorm PPC/060
128Mb RAM
CyberVision PPC

Amithlon
AMD Athlon 2000+
256MB RAM

Pegasos G3 600Mhz
512Mb RAM
MorphOS 1.4

Hollywood was already an impressive program when I reviewed version 1.0 in issue 14. It also fills an important gap in the Amiga's software library; it is the only multimedia program that works properly on a graphics card. An important point is that Hollywood does not have a user interface for designing presentations or multimedia applications – you must write a script with a text editor. Hollywood will then use the script to play a presentation in a Workbench window or on a separate screen. The scripting language is unique to Hollywood and not based on an existing language; however, if you've programmed at all in BASIC or ARexx, you'll soon get the hang of it. The language includes commands to display images and text and to play back sound. There are also functions that enable users to interact with your program, as well as many other features. If you would like a more detailed overview of Hollywood, take a look at my review in issue 14 and tutorial in issue 15. In this review I will cover the major changes in version 1.5.

Hollywood is supplied on CD and installs easily with a standard installer. Version 1.5 is a paid upgrade for users of version 1.0, and it can be received via e-mail. The program currently supports AmigaOS 3.x and MorphOS; it also runs well on Amithlon and, I am told, other Amiga emulators. Along with the new features, version 1.5 introduces some changes to the scripting language, which may mean that existing scripts are not fully compatible. A document included in the package describes the changes necessary to upgrade an existing script.

Hollywood's GUI has been re-vamped and now uses MUI. As before the GUI is used to configure the program and play scripts.

New GUI

Hollywood does have a user interface, but it is only used for running and compiling scripts and making some settings, not for generating the script itself. For version 1.5 the interface has been completely revamped and now uses MUI. If you don't want to use MUI, you can run Hollywood from the command line. The new GUI has a settings window that gives you control over how a script will play. You can choose for the script to run on Workbench or on its own screen in a user-defined resolution. If the script runs on Workbench its window can be normal or borderless. Sound options enable the overall volume to be adjusted or for sound to be disabled altogether. The final set of options can tailor the speed of playback on your system. On slower systems you can set all

The new settings window lets end users configure even compiled scripts.

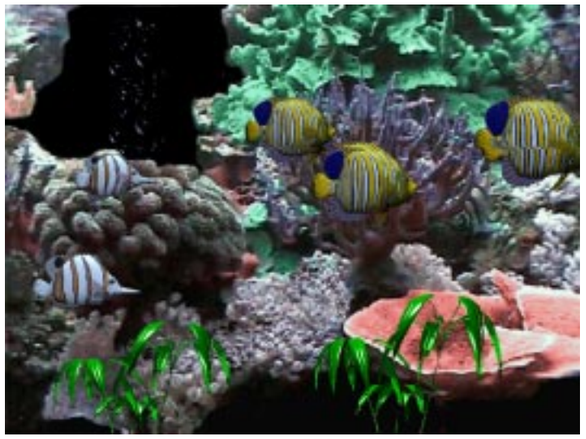
CPU-intensive effects to be precalculated so that they are displayed more smoothly. At the other end of the scale, if you find that a script plays too fast on your system, you can limit the playback speed to a specified number of frames per second. Both of these options were available before, but only to the script author; now the user can modify them to suit his or her system.

The main Hollywood program is commercial software and therefore cannot be distributed. However, if you want to share your work, you can compile it into an executable file that should work on any Amiga. The script can be written so that all the images and sounds used are included in the compiled file for easy distribution. New in 1.5 is the ability to compile a native MorphOS executable on a 68k Amiga and vice versa. There is also a stand-alone settings tool that can be distributed with compiled scripts, enabling users to change the graphics, sound, and speed settings without needing a full copy of Hollywood on hand.

Laying the Foundations

Probably the biggest and most complex feature added to Hollywood 1.5 is its layers system. If you enable layers in your script using the "EnableLayers()" function, every new object (such as an image or brush, piece of text, or animation) created will have its own layer, independent of all other objects. Unlike in some graphics programs, a Hollywood layer can only

The aquarium example script shows off the new animation and layer features. Each fish moves simultaneously and independently from the others.



> "if you've programmed at all in BASIC or ARexx you'll soon get the hang of it"

contain one object – you can't add several objects to a layer and manipulate them together. In version 1.0 if an object was placed over another object and then moved, the lower object would be replaced with the background, which doesn't happen with layers enabled.

The size of the script display is defined by its background image or background parameters. Each background can have its own set of layers. Hollywood remembers each set of layers even when a background is not visible. This means that you can set up a complex display using several objects on one background; move to another display with a different background, and then come back to the first display, and all the layers will still be in place. Through the use of layers, objects can be placed outside the viewable area. This feature can be used to set up a display consisting of a number of objects and then having them all appear in one step rather than individually. Using the "SelectBGPic()" function it is possible to add layers to a background that is not currently displayed enabling a new display to be prepared while another is being shown.

Layer Features

Once you have a number of layers, you can use Hollywood's layer functions to manipulate the layers and their associated objects. All these commands can be used on a single layer without affecting any of the others. Layers can be moved to a new position inside or outside the display. Layers have to be moved using Hollywood 1.5's new "DoMove()" method, which I'll discuss later. If you find it necessary, you can move several layers (and, therefore, objects) together so that it looks like they are grouped to form a single object. You can also change the order in which a layer is displayed. For example, moving a layer down in the stack would make other objects appear in front of it and vice versa. Layers can be hidden at any time and then shown again without recreating their objects. When you have finished with a layer, you can remove it to free up memory; there is also a command to free all layers.

Like many other objects in Hollywood, layers are assigned numbers; you can't give them names that are easier to remember and therefore make the script more readable. The layer numbers always reflect the order of the layers, starting with layer 1 at the bottom ("closest" to the background). If you move a layer in the stack, the layers will be renumbered to take into account their new positions. With a complex script with lots of layers, I can see this getting confusing because you'd have to keep track of the each layer's contents. In a future version of Hollywood, I'd like to see the facility to refer to all objects by user-defined names.

Other layer functions make the system even more powerful and enable some special effects to be generated. Layers can have a transparency set so the background and any objects below can show through the object. There are 256 levels of transparency, so you can vary the level. The transparency command can be used during a move to fade an object in or out. Transparency can be an easy way of making a presentation look more interesting; for example, you can use a simple semi-transparent coloured box to make a tinted area inthe background. The "SetLayerLight()" command enables you to tint a layer with a colour. The colour and intensity of the tint are adjustable, so anything from slight colour cast or correction to full re-colouring is possible. The transparency and layer light effects are processor-intensive, however, so they might slow your presentation down on slower Amigas (68040 and below).

Get Moving

In version 1.0, Hollywood had a simple but limited system for moving objects within the display. You could specify a start point, a finish point, and the movement speed. Then Hollywood would move the object smoothly between the points. This is easy to do, but only one object can be moved at a time, and no other effects can be applied to the object while it moves. Although you can still use the old method in 1.5, a new and much more powerful system has been added with the "DoMove()" function.

With DoMove you can add a number of move commands to what's called the "move

Malibu Plug-in

Hollywood 1.5 supports plug-ins that enable it to load presentations from other multimedia programs. At the time of writing, the first of these plug-ins, Malibu, has been released. Malibu enables Hollywood to load and play presentations from Scala, probably the most popular multimedia program on the Amiga. Malibu supports all versions of Scala up to Info Channel 500, most of the Scala command set has been emulated. Unlike Scala itself, Hollywood can display the presentation on graphics card screens and play the audio via AHI. If you display on a 16- or 24-bit screen, images can be displayed at better quality than the originals because they don't have to be dithered down to a 256-colour palette. Scala presentations can be compiled like any Hollywood presentation and then played back on any AmigaOS or MorphOS computer.

Please note that we have not had a copy of Malibu to review, so the above is based on information from AirsoftSoftwair.

queue." You can use these commands to move several objects if you wish. When you add all the moves you want to the queue, you can then call DoMove, and all the moves will be executed at once. However, each move you add to the queue can only move the object from one point to another; it is not animated like the old Move commands. To smoothly scroll an object from one point to another you must add a loop to your code that adds moves to the queue and executes DoMove for each step of the way. Because you have your own loop generating the moves, it is also possible to add other effects, such as altering transparency, to the objects while they are moving. This system has been implemented in such a way that the objects move without flicker, and the result is smooth and flicker-free on all the systems we tried.

The DoMove function does add a great deal of flexibility to Hollywood's object movement. However, it may require quite a lot of thought to code complex movements, especially if you have several objects moving at once on different trajectories and at different speeds. Some sort of hybrid system that could move several objects at once just by specifying start and end points and speed would come in handy.

This example script shows the transparent window option.

Text

While there have been no major changes to Hollywood's text handling, the addition of layers has had some positive and negative effects on the "Print()" function. Print enables you to display blocks of text between user-defined margins, complete with automatic word wrap and justification. Another advantage was that the text was antialaised if a TrueType font was selected. In version 1.0, text made with the Print function could not be moved or deleted from the display. With the addition of layers the print function now places text onto a layer, meaning move, delete and other layer functions are available. However, the author of Hollywood has had to remove antialaising support due to performance issues with overlapping objects, which is a shame. He hopes to bring it back in a later version.

> "the scale of the improvements easily justifies the modestly priced upgrade"

New Transitions

No update of a presentation program would be complete without the addition of some new display transitions. Hollywood 1.5 does not disappoint in this area. There are more than fifty new transitions in twelve categories. Many mimic classic Scala transitions and were added to support the Malibu plug-in (see box-out). Some of the more interesting new transitions include flows from top, bottom, left or right; opening or closing gates; a random puzzle effect; and wallpaper that rolls the top image down the screen.

Let's Get Graphical

Some of the layer functions I've already mentioned, such as layer light and transparency, enable you to perform some nice effects on images (called brushes in Hollywood). In addition to those options, some new brush-specific options have been added. There are new functions to flip a brush, rotate it, or convert it to grey scale. The "RotateBrush()" function enables you to spin a brush on the display; however, to do this you must generate each frame of the rotation using RotateBrush and then display each frame in turn. In the same way that you can add layers to an alternative background picture using the "SelectBGPic()" function, you can also draw objects on to a brush using "SelectBrush();" however, a brush does not have layers, so all changes are permanent.

If you need to use the same brush several times in your Hollywood project, the new brush link feature is very handy. This creates a read-only copy of a brush that can be used independently of the original. The only limitation is that any changes to the original brush will be reflected in the linked copies. Brush link can also be used to create a linked copy of a single frame of an animation, the background picture (handy if you want multiple displays with separate layer sets but the same background image), or a particular layer.

Pump up the Volume

Hollywood is the first and so far only Amiga presentation program to really support more recent Amiga hardware such as graphics cards. It's nice to see that version 1.5 extends this support to sound cards too. All sound, including playback of samples and music modules, is now passed through AHI, so it should work with any sound card that has an AHI driver. In version 1.5, support for some music module formats has been dropped; modules must now be in the ProTracker format. Hollywood now has a master volume control that enables the user to adjust the overall volume independent of the script being played.

Leading by Example

Version 1.5 adds to Hollywood's already extensive range of example scripts. The existing examples have been adjusted to be 1.5-compatible and to take advantage of the new features. Many of the examples are very impressive and show just what can be achieved with a bit of thought. Some that caught my eye are "Aquarium," which has several randomly moving fish really showing off the DoMove system; "Lens," which maps mouse movement to a magnified image; and "WBSwatch," which demonstrates a non-rectangular window.

Conclusion

If Hollywood 1.0 put you off because it was script-based, then 1.5 isn't going to do anything to change your mind. If anything, some of the new features are more complex to script. However, if you already have 1.0 or are willing to put some effort into learning its language, the new features do add a great deal of flexibility to Hollywood. It is getting to the point where you could program quite complex multimedia-oriented applications as Hollywood scripts. I would say the scale of the improvements easily justifies the modestly priced upgrade. Andreas says he is working on a script creation GUI for version 2.0, so hopefully many more users will be able to join the Hollywood club then.

Results

Pros
+ Powerful layers.
+ Image manipulation.
+ Flexible new animation system.

Cons
- More complex scripting now required.
- No anti-aliased text.

Pretty Good!

Algor USB

Peter Gordon takes a look at E3B's latest addition to their USB range. The Algor also features a flash ROM for quicker loading of OS-resident modules.

The Algor is E3B's followup to their successful Highway USB card. Like the Highway, it is a Zorro II card that allows Amiga users to take advantage of a wide array of USB hardware devices, such as scanners, printers, digital cameras, webcams, and storage devices. Unlike the Highway, it has only three built-in USB ports instead of four, but it has a slightly faster USB chipset and an onboard 512Kb flash ROM.

The Algor allows you to use both USB1.1 and 2.0 devices, although it doesn't support the high-speed mode of USB2.0. Software support is provided by Chris Hodges' excellent Poseidon stack. Poseidon has been covered in detail in previous issues of Total Amiga, so I won't go into too much detail there. Suffice to say, Poseidon is simple to install with the provided installer script, and provides support for USB mass storage devices, mice, and keyboards out of the box. Some digitial cameras and most printers require, or benefit from additional software such as VHI studio or Turboprint, which are available seperately.

The Algor is shipped with 2 backplates providing the 3 USB ports, a very high quality printed manual, a leaflet explaining how to install the drivers, and a registration card. The Algor is not shipped with any disks. This is because the onboard flash ROM contains all the software you need to get the card running. Once your Amiga boots with the Algor attached, a disk appears on workbench that you can copy to a real floppy for backup purposes.

I had a little bit of trouble installing the Algor in my Amiga 4000; with the card installed the Amiga would just display a blue screen and refuse to boot. In my A1500, the card worked first time, and showed a cool "Algor" intro with scrolling starfield and sound effects before the computer booted. It seems the A4000 problem was to do with an incompatibility with this intro, but a couple of e-mails to E3B later and the problem was sorted. Hopefully this problem has since been sorted out by E3B, but if you have any problems they are very quick to respond to e-mails, and very helpful.

The flash ROM is managed by a piece of software called "Luciferin", which is named after a chemical substrate, and not the devil, according the guide. Luciferin allows you to wipe the flash ROM, and put boot modules onto it. The software is fairly straightforward, and within minutes i'd removed the driver disk, and intro modules, and downloaded my OS3.9 and blizkick modules. My computer now boots directly into a blizkick module enhanced OS3.9 without ANY reboots at all from cold!

Poseidon stores its preferences in an executable file called "PsdStackLoader", which may seem an odd thing to do, but it is because it has always been designed with flash ROMs in mind. This allows you to download the stack with your preferences to the Algor, and have USB keyboards, mice and mass storage devices available from cold boot, so you can boot from RDB partitioned USB disks, or use a USB mouse in the early boot menu. Unfortunately I didn't have an RDB partitioned USB disk or USB input device to test this with.

The first thing I tried with my newly installed Algor was a USB2.0 128Mb memory stick. For comparison I also tried it on Windows 98, and Windows 2000. With the Amiga, I simply plugged in the drive and an icon instantly appeared on workbench. Windows 2000 detected the drive immediately, and then had to spend a minute or two configuring drivers before the disk became available, and with Windows 98, it failed to find any drivers, and I had to download some from the manufacturers website, so all in all the Amiga was the quickest and easiest to get going with the memory stick.

E3B report speeds of up to 926kB/s when accessing a LaCie card reader, however with my USB memory stick, copying an MP3 from RAM achieved only 505kB/s, so your mileage may vary depending on the device used.

The second device I used with the Algor was a Fuji Finepix 1300 digital camera. At first the camera was recognised, but I couldn't access the memory card in it. I had to tweak some settings in Trident (Poseidons configuration tool) and eventually I got it to appear as a disk on workbench, and was able to transfer pictures off without trouble.

All in all, the Algor is a well made piece of hardware, and has proven reliable and useful. The flash ROM feature is a nice touch, getting rid of the two reboots I used to have to endure when powering up my system. If you're really not that bothered about the lack of USB2.0 high speed, I wholeheartedly recommend the Algor.

.info

Developer
E3B
http://www.e3b.de

Price
115Euro (80UKP approx.)

Requires
Amiga with Zorro II slot.
AmigaOS 3.1+
68030+

Results

Pros
+ Onboard flash ROM.
+ Good quality manual.
+ Excellent tech. support.

Cons
- No USB 2.0 highspeed mode.
- Teething troubles.

Pretty Good!

Reviews

Perfect Paint 2.93

With so many updates recently we thought it would be worth revisiting this free graphics package. Robert Williams finds out if perfection can be improved upon!

.info

Developer
Georges Halvadjian
http://gothic.fr.free.fr/amiga/

License
Freeware

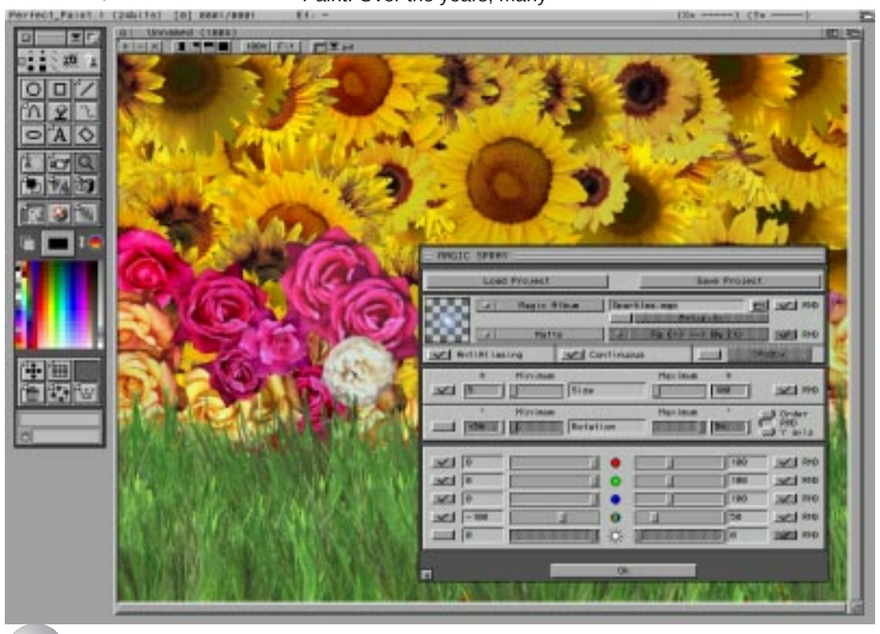
Requirements
68030+ with FPU
AmigaOS 3.0+
Graphics card

Test Systems
A1200
Blizzard PPC/060
BVision
256Mb RAM
AmigaOS 3.9
CyberGraphX 4

Amithlon
Athlon 2000+
256Mb RAM
AmigaOS 3.9
Picasso 96

The toolbox (left of image) gives access to most of Perfect Paint's functionality.

The new Magic Spray tool (right) creates great results instantly and has plenty of options too.



When I last reviewed Perfect Paint (Total Amiga issue 10), it was at version 2.8, so you might be asking, "Why another review?" However, since the last review, Georges Halvadjian has made no fewer than nine upgrade releases, many of which contain major feature enhancements. In fact, many of PerfectPaint's point releases would have been considered a major upgrade to some programs on not only the Amiga but also other platforms.

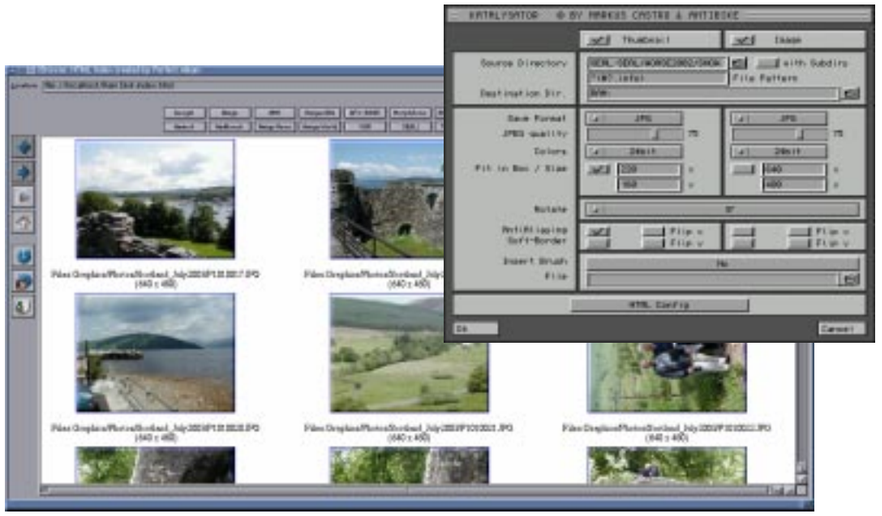
As this is a review of the updated version, I won't dive into too much detail about the basics of PerfectPaint. If you're new to the program, why not take a look at my original review in issue 10 (which is still available as a back issue by the way)? PerfectPaint started life as a freeware paint program in the mould of Deluxe Paint and Personal Paint. Over the years, many features have been added that bring it closer to an image processor. In addition to the basic painting functions, PerfectPaint has a range of image processing effects, painting styles, and animation support. There are several tools to help the less artistically inclined, including automatic text effects and "Alchemy," which applies combinations of image processing operators to achieve certain effects. Later you'll see that the range of "automatic" tools has been expanded since the last review.

> "...your canvas could quickly be covered in bright flowers, iridescent bubbles, or realistic rocks."

Magic Spray

For those of us who don't have an artistic bent, it is great to come across a tool that creates an impressive effect with little or no effort. With Magic Spray you can paint on a variety of brushes following a particular theme so, for example, your canvas could quickly be covered in bright flowers, iridescent bubbles, or realistic rocks. Magic Spray can use up to ten different brushes and numerous randomised parameters to give a unique look each time it is used. Because you spray on the effect, you can cover only certain areas of an image, making it great for borders around photos and the like.

In the Magic Spray preferences window, various parameters can be set that will be varied as each brush is sprayed on to your image. The size and rotation of each brush can vary as can each colour channel (RGB), the brightness, and the colour intensity. Each parameter has a check box that defines whether it will be changed and two sliders that define the range. For example, you could set the size to vary from 50% to 125% of the original. By default, each parameter will be moved gradually as you paint, so in this example the first brush painted would be at 50% and the size would gradually increase. For a more varied effect, you can also set a random option for each parameter; this picks a setting at random within the range you define with the sliders. The rotation parameter has an option to vary with the movement on the "Y" axis that has the effect of the brush orientation following your mouse movements. When you spray on, Magic Spray takes into account any transparent areas of the brush, and it is also possible to vary the overall transparency, although this is not a variable parameter. There is also a shadow option that adds a user-definable shadow to each brush as it is sprayed on.



Katalysator creates thumbnail galleries of all the images in a selected directory. Here, the end result is shown in IBrowse.

The preferences window and HTML templates control the look of the resulting pages.

The Magic Spray feature uses Magic Projects so you can easily load and save different styles. Each project consists of two files: a project that holds the Magic Spray settings, and a Magic Album that contains the brushes used. Several projects can use the same album of brushes, allowing you to save different settings for different looks. The Magic Spray tool itself uses antialiasing so the manipulated brushes still look good. Creating your own album is also easy: just cut each brush from an image into one of PerfectPaint's brush buffers, then save as a Magic Album.

If you don't want to spend time making your own Magic Project with multiple brushes, Magic Spray can still be used with a single brush. All the random variations can make the same brush look quite different. Another option is to set the "Color" mode; this uses the outline of the brush filled with the selected colour rather than the brush image itself. Magic Spray can then vary the colour based on the colours in your palette or a range of colours you have selected. I have found that the "Color" option works particularly well with a text brush to create quick backgrounds; the shadow setting helps to add depth. PerfectPaint is supplied with a few example Magic Projects, and another twenty are available for download from the program's web site. All the samples are of very good quality and produce excellent results. Despite all the processing going on behind the scenes, Magic Spray worked smoothly on all the machines on which we tested it.

A Way with Words

Native TrueType font support means that Perfect Paint can now use the thousands of fonts you find on the Internet without mucking about and without installing any additional software. PerfectPaint implements TrueType support using Grzegorz Kraszewski's ttengine.library. Apart from availability, another advantage of using TrueType fonts is that Perfect Paint antialiases them beautifully, giving excellent quality at both small and large sizes. You can select fonts from any directory, and Perfect Paint keeps a list of the last ten directories you chose for easy access. Another new feature in the "Make Text" window is the "Select Character" button, which opens a window that shows all the characters in the selected font for quick selection of unusual characters. Two new text effects have been added to Perfect Paint's already-wide range: "Water" and "River." As you can probably guess from the names, both give your string a liquid look.

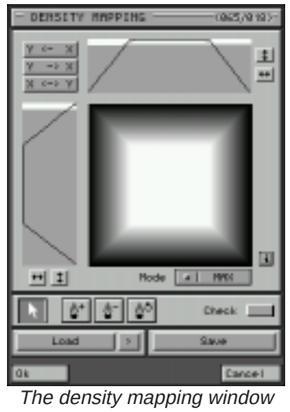
> "...sometimes you just need some fancy text or a nice image processing effect."

New Effects and Density Mapping

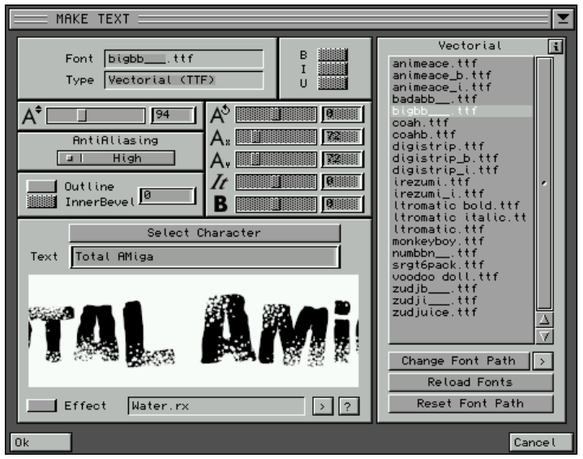
The recent upgrades have added only a few new image processing effects to Perfect Paint's armoury, including "Simple Mosaic" and "TV Interlacing." "FastPaint" is a little like the oilpaint effect you see in many packages but is very quick to apply and gives a more stippled result. An important addition to the effects engine is a density mapping option. This allows the power of the effect to be varied, such as starting strongly in the centre and fading toward the edges or varying from left to right. In earlier versions, density mapping could only be used for composing brushes. (Take a look at my Perfect Paint tutorial in issue 11 for an example.) The density mapping requester has a number of presets, or you can create and save your own maps. The usability of the density mapping requester has been greatly improved over previous versions. Minor changes have been made to many of the program's requesters, generally making them more user-friendly.

Making It Easier

Perfect Paint has several features designed to help make more complex effects easier to achieve. These features are common in graphics packages on other platforms but aren't as common on the Amiga. While it's great to have powerful tools that give you full creative freedom, sometimes you just need some fancy text or a nice image processing effect. In those cases, automated tools are very handy. New since our last review are the border tool and an HTML catalogue generator. The border tool, as the name suggests, will place a defined border of any shape and size around an image. The borders are of a single colour and can use the current



The density mapping window can be used to create subtle composits and effects without complex masking.



The improved "Make Text" window showing an anti-aliased TrueType font. Perfect Paint remembers recently used font paths for easy selection.

This window also demonstrates some of the GUI improvements including the information ("i") button and graphical gadget labels.

drawing colour if you wish. The border can be translucent and can also have a shadow. Nearly thirty border styles are supplied, ranging from simple lines to quite complex water and wood effects.

Perfect Paint's HTML album creator revels in the name "Katalysator." Its task is to create HTML pages containing thumbnails of the images in a directory you select; each thumbnail is then linked to a full-size image. You can set the size of the thumbnails and the "full" size images in the Kat requester; the scaling keeps the images in proportion, so the sizes you set are maximums. Images can be rotated (although the same rotation applies to all images), and a smooth border can also be applied. The "Insert Brush" feature allows you to automatically add a copyright statement, logo, or any other brush to each image; you can select where to position it on the image. In the separate HTML configuration window, the number of thumbnails in each row and column can be defined; Kat will then make multiple pages of thumbnails if necessary. Templates are used for the HTML of the thumbnail and individual image pages so you can customise the catalogue pages to fit in with an existing website.

Interface Improvements

Perfect Paint's main downfall, in my opinion, is its non-standard and rather confusing interface. It is often hard to find what features are available. Even when you know a feature exists, it may be hidden in a cryptic menu accessed by right-clicking on an icon. Although the fundamental interface concept has not changed in any recent releases, a number of features have been added that make Perfect Paint much more pleasant to use.

The new undo/redo window lists each action you take as you modify an image. This action could be drawing, applying an effect, or running an ARexx script. At any point you can click on a step and PerfectPaint will instantly return the image to the state it was in after that action. If you don't perform another action, you can redo all your later steps simply by clicking the last action. The number of undo steps set in your preferences limits the number of actions you can undo in this way.

The history window holds a list of recently loaded images so you can quickly load a recently used image without searching for it in a file requester. This window is a godsend if you're working on a project consisting of several images. It can also help to save memory because you don't need to keep several images open to have them on hand. Buttons in the history window let you show the images as thumbnails and remove images from the list that no longer exist on disk. The history list is saved between Perfect Paint sessions so you can quickly load images you were working on earlier.

Perfect Paint can now show a ruler on the top and left sides of the image window calibrated in centimetres, pixels or inches. The measurements in centimetres and inches are based on the output resolution that can easily be adjusted. If you intend an image for print, this can help you visualise the final output.

Many of Perfect Paint's more complex requesters now have an information ("i") button. This button brings up a requester with a short summary of the requester's function as well as some tips on usage. Again, Perfect Paint has many "hidden" features, so it is well worth taking a look at these requesters when they are available. For example, the info window for the image palette (at the bottom of the screen) informs you that if you hold down the shift key, image icons can be dragged and dropped to perform various operations. You're unlikely to find out that useful feature by chance.

Layerless

The big difference between Perfect Paint and the Amiga's commercial image processing programs is its lack of layers support. While you can achieve many complex effects in Perfect Paint, its lack of layers means you can't go back and alter one part of a composition without undoing (made easier by the new undo/redo window) and then redoing a lot of work. However, I find Perfect Paint ideal for simpler jobs; for example, if you want to create a quick card or flyer, its automated features such as text effects and borders make achieving an attractive result a breeze.

Conclusion

Perfect Paint has an excellent range of features, most of which are very well implemented. Magic Spray is fantastic, great fun to play with, and genuinely useful too. The many other new features in the recent releases are also very welcome, giving more features to play with and, importantly, improving the user experience. Perfect Paint is so powerful and regularly upgraded that it is hard to believe that the program is free and largely developed by one coder.

Download it now and spend a little time getting to grips with the interface – you'll be glad you did.

Results

Pros
+ Magic Spray is great.
+ Improved interface.
+ Free!

Cons
- No layers.
- Interface is still quirky.

Top Notch!

MAS-Player

The powerfull software runs on ALL Amigas.

How many people have tried to play MP3s on their Amiga using Amplifier? How many were less then impressed with the playback quality? The problem with Amplifier is not with the program, it is the Amiga hardware, it just isn't up to the job of decoding an MP3 stream. The minimum needed to decode an MP3 at full quality is an '060 and that doesn't leave much time for the processor to do anything else. Then there is the Amiga audio hardware, Paula. "Back in the day" when Commodore first released the Amiga it had a great sound system, but by today's standards 8-bit just doesn't cut-it. Even with a bit of software jiggery pokery you can get Paula to do 14-bit at about 22KHz, but that's still a far cry from CD quality. You could go for a PPC card and a sound card, but these are expensive just to play MP3s, heck you could buy a second hand PC for the same amount (but who would want to though?!).

Enter the MAS-Player by Dirk Conrad. This is a small bit of hardware based around the MAS3507 MP3 decoder chip that sits on any Amiga's built-in parallel port. The MP3 data is then sent to the chip which does all the hard work of decoding the signal into a 18-bit stereo data stream. This is then passed to a DAC (Digital to Analogue Converter) which converts the 18-bit digital data into a stereo analogue output ready for an amplifier. Also at 59.95 Euro it is a lot cheaper then a PPC and sound card!

.info

Developer
Dirk Conrad
http://home.sanfu.de/dcrmpeg_hardware.html

Distributor
KDH Datentechnik
http://www.kdh-shop24.de

Price
E59.95 (approx £40)

Requirements
Any Amiga
1Mb RAM
Hard disk

Test System
A1200
68030@50MHz
Amiga OS 3.0
4Mb Fast RAM
2Gb 2.5" hard disk (SFS)

In the box

After ordering the MAS-Player from KDH, a package dropped onto my door mat a few days later. Upon opening the plain brown box, there was lots of bubble wrap (yippee! more fun later) that protected the contents from damage. Under the bubble wrap were the two D-type connectors of the MAS-Player, an unlabeled floppy disk and an A4 installation sheet. One little problem I noticed is that the floppy is a high density type formatted to 880K. This is not the most reliable way of formatting a disk, and as such I made an immediate backup on to a DD disk. Small gripes but annoying as they could be so easily rectified. The A4 sheet does an adequate job of explaining the installation processes.

Installing

The hardware installs easily, attaching to the parallel and serial ports. The serial port is used to get the 5V supply it needs. If you need your serial port, then it may be possible to connect it to the disk drive or joystick port, or, for the more adventurous, to construct a pass-through adapter. The hardware must be connected to the motherboard's parallel port not one on an expansion card, as the software directly hits the CIA chips to get maximum speed. This means that Draco owners can't use it at all. Then all that is left is to connect your speakers or amplifier to the standard 3.5mm stereo jack on the back of the unit. It would have been nice if a lead had been provided.

Software

The software comes on a bootable disk that will boot you straight into Dirk Conrad's Amiga MAS-Player. When the player software starts up it plays an irritating little intro sound that you can't stop and have to wait for it to finish before you can play your music. It opens up on a 32 colour 352x272 overscan screen. All Amiga's can display this screen and it is ideal to be used on a TV. The screen is split into five tabs. The first you see on starting the program is the "ABOUT" tab and contains general information about the program. Probably the first tab you will use will be the "PLAYLIST" tab. Here you can access the files on you hard drive and add or remove them to the playlist. There is also a search function to help you find a certain music file on your hard drive. This means you don't have to search through hundreds of files to find the one you want.

The "CONTROL" tab gives you information on the MP3, showing the ID3 tag information as well as bit rate and sample rate. Other controls include the standard playback controls: play; previous/next track; pause etc. Interestingly there is also a bass and treble control along with a volume control, which is great to adjust the music output to reduce clipping or enhance bass/treble response. All this is done with the MAS3507 chip so no processing time is taken away from the Amiga.

At first I didn't understand the purpose of the "CUE EDIT" tab! However what you can do with it is split up large MP3s, say a talking book, into chapters that you can then load back and play as if it were separate MP3 tracks.

Lastly there is the "PREFS" tab. As its name suggests it controls all the general preferences.

One thing I noticed is that if you swap between the device list and play list (on the "PLAY LIST" tab), when you switch back to the play list the program will continue to play the current song, but stop at the end of it rather then continuing on to the next song.

Some things I would like to see added would be a random feature for playback, rather then just playing a playlist in order. Also some way to save the playlist to allow for quick reloading of your favourite tunes.

Other software included on the floppy is the MASMpeg.device, by Chris Hodges, which is a standard Commodore device allowing programs like Amplifier or Frogger to use the hardware for decoding. There is also an MHI driver, by Paul Qureshi and Thomas Wenzel, so AmigaAMP can take advantage of the hardware.

For all those people using some form of RTG display, NewMode is included to allow the promotion of the Mas-Player software to an RTG screen. Remember that the MAS-Player uses an overscan screen, so won't fit into many of the lower resolutions.

I would also suggest that SFS is used instead of FFS, as it allows the use of long file names. I noticed that when I told MAS-Player to only display files with the extension of *.MPx most of my files disappeared. This was due to the truncation of the file names when using FFS. As soon as I updated to SFS the problem disappeared.

Performance

Using the test Amiga A1200 with an 030@50MHz the playback was flawless, even at high 320KBps data rates. It can also handle Variable Bit Rates (VBR) too, meaning you can get the highest quality encodings played back. Even after removing the accelerator, it was able to play high bit rates, although it did drop out on the 320KBps test file.

Overall

Aside from the small niggles with the floppy disk and the sound that is played when the player starts up, this is a good product. It is easy to navigate around and the play-back quality is equal to that of any MP3 player I have listened to. When you add the fact that the Amiga is silent the combination of an old Amiga and MAS-Player makes a great MP3 jukebox.

By Kelvin Shirley

Result

Pretty Good!

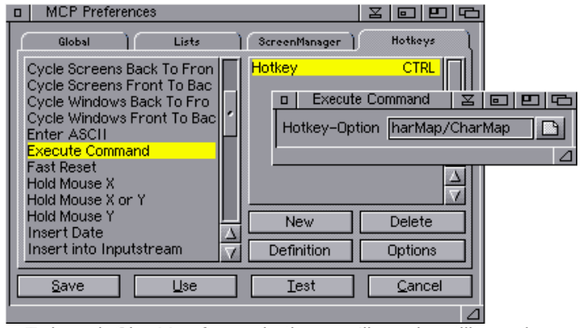
PD Paradise

CharMap 2.0

Developer: T. Pierron **License:** Free software under the GPL
From: Aminet, text/font/CharMap.lha **Reqirements:** AmigaOS 2.0+

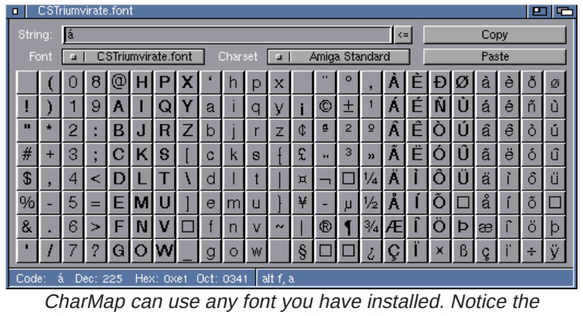
Occasionally we all need to type special characters unavailable on a standard keyboard. Perhaps you want an accented character that doesn't appear in your language, a scientific symbol, or even the copyright sign. While every printable character in the Amiga character set can be typed using a standard keyboard, it can be hard to remember the key combinations, especially for symbols that you don't often use. I regularly find myself trying several combinations before I get the right one by chance.

CharMap is a free utility that gives you easy access to all the characters in any font installed on your system. The program can be launched from its Workbench icon or from the shell. Whichever way you start CharMap, it opens a window on the current public screen so it will open on the public screen of an application if you have one loaded. The bulk of the CharMap window is filled with a grid of buttons, one for each character in the current screen font. You can choose to show all 256 ASCII characters (some of which are unprintable control characters), the 224 ISO Latin 1 characters, or the standard Amiga set, which has 192 characters. The Amiga character set should be available in all Amiga fonts. If you wish, you can select a different font and size, using a standard ASL font requester, for the display so that CharMap can match the font in the program you're using. When you choose a new font, CharMap adds it to the "Font" cycle gadget so you can easily use it again. You can also save the program's settings so it remembers your list of fonts and the default font the next time you open CharMap.



To launch CharMap from a hotkey you'll need a utility such as MCP (above) or FKey.

Clicking on a character in the grid or selecting one using the cursor keys displays some related information at the bottom of the window. On the left is the ASCII value of the character in decimal, hexadecimal, and octal notation (handy for programmers). On the right is the keystroke needed to enter the selected character on the Amiga keyboard. This is very handy, as it helps you learn the required keystrokes for certain symbols. Keystrokes are shown for accented characters that are entered in two stages. For example, "ë" is entered by pressing Alt + K and then pressing E. As you click characters, or select them and press the space bar, they are entered into a string gadget at the top of the window. If you like, you can manually type into the string gadget too, so it is possible to quickly build up a complete word or sentence with several special characters without jumping in and out of CharMap. When you're happy with your string, you can click the "Copy" button or press Ctrl + C to copy the text into the clipboard. Of course, it can then be pasted back into your application. There is also a paste option, which is used to paste the contents of the clipboard into the string gadget. You can use this option to copy text from your application, use CharMap to add characters, and then paste it back.



CharMap can use any font you have installed. Notice the standard keypress is shown at the bottom of the window.

As well as selecting characters using the cursor keys and space bar, all the other CharMap functions can be controlled from the keyboard. If you're working in a text application, with a bit of practice you can select a character, copy it, and paste it into your text without missing a beat. Although CharMap looks like a commodity (it even has a "CX" symbol on its icon), which would run in the background and be popped up by a hot key, it is not. This means you will need to use a separate program to launch CharMap with a key press. I used the HotKey function of MCP, but there are plenty of other options, such as the HotKeys option in Directory Opus 5.x or even the FKey commodity supplied with AmigaOS.

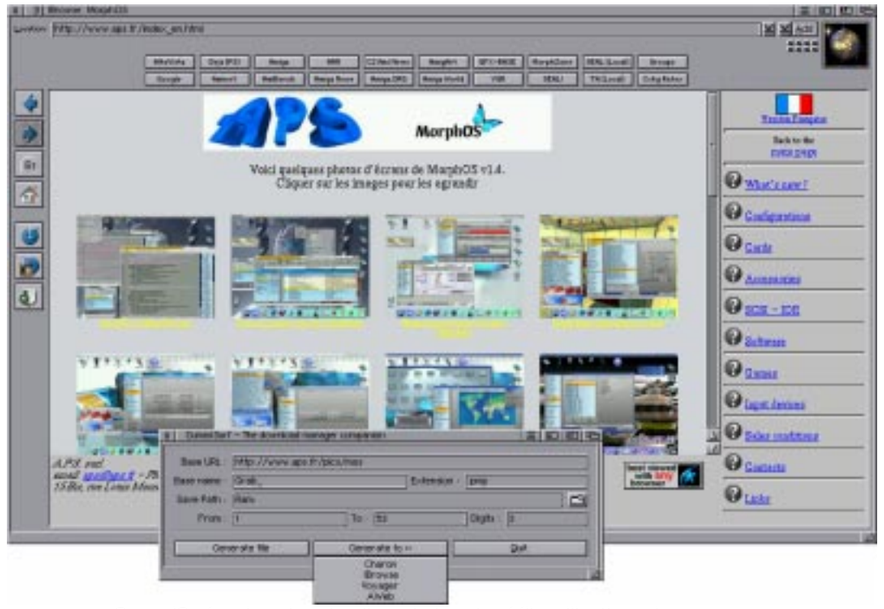
There are several other utilities that do a similar job to CharMap, but in my opinion none have the same number of features. Also, the author has obviously spent time making the program really easy to use with either the mouse or the keyboard. The author has specifically decided not to make the program a commodity (so it doesn't use resources when it's not in use), which means you must arrange your own method of starting it on demand. Once you've done so, CharMap integrates as cleanly as possible with any application that supports the AmigaOS clipboard. It's an essential utility for anyone who works with text.

By Robert Williams

GummiSurf 1.2

Developer: Stefan Blixth **License:** Freeware **From:** http://www.onyxsoft.nu
Reqirements: MUI 3.8, Download utility: Charon, IBrowse, Voyager or AWeb

Albums of photographs and other images are becoming a very popular feature on web sites of all types. In the Amiga world, common examples of such albums are images accompanying show reports, product reviews, and announcements. If you want to download the images, you need to manually download each one and possibly having to visit a separate page for each image. If the images form a numbered series, then GummiSurf can be used to make downloading all the images, or any other file type for that matter, much easier.



GummiSurf makes downloading whole sets of files, like these images, easy.

In the GummiSurf window you enter the URL of the directory containing the files you want to download. Then you can enter the filename in two separate gadgets – one for the name up to the series number and one for any extension (which can contain more than just the file extension if the number is embedded in the filename). You then enter the range of numbers you want to download and the number of digits required. If you enter a number of digits, GummiSurf will pad the generated series number with leading zeroes, like "0003." Finally, you can set the directory into which you would like the downloaded files to be saved.

With the parameters set, a list of files to download can be generated in a number of ways. GummiSurf can send the list to the excellent shareware download manager Charon (reviewed in Total Amiga issue 11), provided it is running. In this case, the required files are added automatically to Charon's download list. If you have a web browser running (IBrowse, AWeb and Voyager are supported), GummiSurf can add the downloads directly into the browser's download queue. IBrowse and Voyager do not support the setting of the download directory via ARexx, so that feature only works with AWeb and Charon.

If you don't want to start downloading straight away, GummiSurf can save the list of downloads to a file in one of three formats: a list to be loaded into Charon, an HTML list that can be viewed in any browser, or a plain text file.

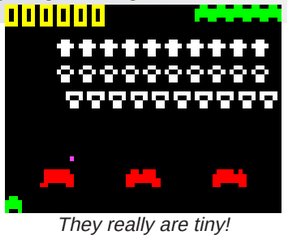
GummiSurf is useful as it is, but a big improvement would be for it to pick up the URL from a web browser and automatically parse the URL working out the series number and number of digits. The author plans improvements along these lines for a future version. In the mean time I have written an ARexx script that runs from a browser; it then runs GummiSurf with the appropriate parameters. I will make the script available for download from the issue 16 page of the Total Amiga site.

By Robert Williams

Tiny Invaders

Developer: Peter Gordon **License:** Freeware
From: http://www.petergordon.org.uk

This little PD game has got to be the most amusing I've ever found, a miniature game of Space Invaders; the aim, as usual, to clear the skies of the horrible little beasties trying to conquer Earth's cities. When you double click on the icon Tiny Invaders boldly appears prepared to take you where such a small space has never taken you before! The title screen displays your hi-score and in order to reach the game all you have to do is press space. You are in control of the green "blob" at the bottom of the "screen" and move by use of the left and right cursor keys and shoot by pressing the space bar. The red bunkers provide shelter but are slowly destroyed by the aliens who are only too pleased to return fire at will (poor guy!). Once the aliens reach the bottom of the screen then that's it, you've failed and the world becomes a sorry place under the rule of white pixels. You can of course prevent this by destroying all of the aliens but then another wave arrives and it all starts again. The game only ends when you loose all of your lives or the aliens reach the bottom. The sound effects are authentic to the arcade game but are somewhat annoying so you may wish to turn off your speakers. Overall, I'd say this game was good fun for the arcade addict!



They really are tiny!

By Jonathan Haddock

Mediator TV Card with SuperTV

Johnathan Haddock gets a TV card for his Mediator and finds an alternative to the Elbox software.

A TV card is a piece of hardware capable of receiving and showing (with the use of TV Software) TV channels. The TV card I am using is the WinTV Go made by Hauppague. This is a PCI card that is compatible with the Mediator 1200 (and in theory all other Mediator models but I haven't tested it on them). Using the TV card you can watch TV on your Amiga or connect other devices (video players, DVD players etc.) via the RF (aerial) or composite (phono) connections.

The inputs on the back of my card are minimal, RF (for the aerial) and composite for any devices equipped with a suitable output (most these days). There is also a sound out 3.5mm jack which is plugged into my SoundBlaster and provides the sound for the TV programme you are viewing. Some TV cards also come with a radio tuner such as the more expensive WinTV Primio FM card.

What programs use the TV card?

The only programs that I have come across are TV which is made by Elbox and SuperTV which is still being developed by Peter Gordon. Both packages allow for the use of my card and support the RF and composite inputs which are both of importance to me as I wish to be able to watch TV and view the output from my CDTV which I connect to the composite input.

With SuperTV you can configure your channels using this easy MUI interface. It also includes ARexx support.

TV

TV is the software Elbox supply to control the TV card and can be launched from the provided channel icons or by command line parameters, something that is a bit long winded in my opinion! To configure TV you must first alter (or copy and alter) one of the standard channel icons. Altering them is easy and can be done with a text editor, as explained below.

First chose an icon (I have chosen CH1) and rename it to something more appropriate (e.g. BBC1); bring up a text editor (for example Editpad) and open the file for editing (in Editpad you can just use drag and drop to open the file). You need to add the relevant switches, such as:

PLL: This is the number for the channel.
Contrast: The contrast setting, I use 100.
Bright: The brightness setting, I use about 160.
video_src: the input on your card. On mine 0 is RF and 3 is composite.

So for my area, to view BBC1 I use the following parameters:
c:tv pll=13307 video_src=0 birght=164 contrast=101

SuperTV

SuperTV provides a nice GUI for setting up and viewing TV and this is a very useful utility as I hated having to double click on a different icon for every channel (as you have to for the Elbox program). SuperTV is launched from the Workbench and presents you with a window (40-100%) on any public screen you like (that is available at the time) and first displays the last channel you were viewing. Set up is easy, especially if you know the channel number for each station in your area, and is performed by use of the GUI.

Channels are setup by clicking "add" and by providing SuperTV with the relevant information for that channel (Name, PLL number, input source, format). The input source for the picture corresponds to the input on the back of the card, in my case 0 being aerial (RF) and 3 being my composite in. Once you have setup the channels in SuperTV, double clicking them in the prefs window displays them (and their properties). Once the picture is up you can, however, press a number on your keyboard to choose a channel and this saves having to open the Prefs program again. The viewing area can be resized using the resize gadget but does not resize proportionally so I would advise use of the Size gadget in the GUI.

Conclusion

I would highly recommend this card but if you have more money then you could buy the TV/FM tuner version or the TV/FM tuner version with remote which Sam Byford tells me works with the Amiga. On the software side both programs can display from every input on my card and at my local Amiga club (AmiSEK) we found that the card and the software worked faultlessly on my setup. I prefer SuperTV as it is much easier to configure and has ARexx support; however, as TV is supplied with the Elbox Mediator multimedia CD needed to use the card and SuperTV is free you give them both a spin!

This is my WinTV card. Many other models are available.

.info

Mediator
www.elbox.com
TV card requires Mediator PCI bus board and multimedia CD.

TV Card
www.hauppauge.com

SuperTV
By Peter Gordon
Freeware
www.petergordon.org.uk

ScummVM

Markus Castro finds a great way to relive classic adventure games on Amiga OS and Morph OS.

Back in the days, Lucas Arts was one of the most famous creators of graphical adventures on the Amiga. Monkey Island is still one of my all-time favourites. Unfortunately, like most of the other companies, they left the Amiga market when things got bad and went for the PC. Top titles like Sam&Max or "Day of the Tentacle" therefore never got released on the Amiga. A Macintosh emulation was the only way to play them for a long time, but then about one and a half years ago someone ported ScummVM to the Amiga.

The built-in GUI lets you configure each game.

Scumm?

Scumm is the name of the scripting engine that Lucas Arts used for most of their adventure games. It stands for "Script Creation Utility for Maniac Mansion" and was originally created in 1987 for the use in that game and later Zak McKracken. Over the years it advanced into more mature versions and was used in more modern games like Monkey Island 3. ScummVM is a virtual machine, capable of running most of the games created with Scumm. It was started about two years ago as an open source project to revive classic adventure games on modern hardware. Since it is released under GPL, Amiga users can also benefit from the great work of the ScummVM Team.

Since ScummVM has been in development for quite some time now, it has evolved into a very usable, stable and compatible state already. Most of the supported games are fully playable without any bugs and there are still new games added to the compatibility list as the work progresses.

There are different flavours of ScummVM available for our machines, supporting 68k, WarpUP and MorphOS. The faster your Amiga the better. You'll also need a graphics Card for the recent ports, as AGA is no longer supported due to its lack of speed.

A Pegasos is about the best choice, not only because it's fast, but also because the MorphOS version of ScummVM is actively maintained by Ruediger Hanke and mostly up-to-date with the PC version of ScummVM, in some areas its even more advanced. Most of the other ports rely on its source code and therefore are updated a bit later. You can download the latest version for your system on the Amiga ScummVM Page at Sebel Interactive.

Getting Started

To try out ScummVM you need some data files of the original games or demos. If you have none of the supported games at hand, you can download some demos from the official ScummVM Website.

> "...it is a very nice tool to drive away the boredom of modern 3D shooters..."

Some of the supported games are also cheaply available at certain PC dealers. For example the collection "10 Adventures", consisting of Monkey Island 1+2, Sam&Max and several others, works just fine with ScummVM and is available for little money on eBay every now and then. Unfortunately, there is one game that can't be purchased. The 256 colours version of Zak McKracken was only released for a Japanese console called FMTowns, to the best of my knowledge it never made it to the PC market. To get these data files you might need to use for example a P2P Client like Kazaa on Windows.

There are different ways to get ScummVM up and running. After unpacking your favourite port you can simply start it in a shell and use the provided GUI to add the games you have on your hard drive to the list. You can then specify some options for each game, i.e. if it should open in full-screen or as a Workbench window. Unfortunately, the GUI seems to have problems with directories that include lots of files, so if you're unlucky, choosing the paths to the games might not work for you. But there is always the second possibility, running ScummVM directly from shell. All you need to specify is the name of the game you want to start and its path. If you're unsure about the name, invoke ScummVM with the argument '-z' and it'll give you a list of the currently supported games. A call of ScummVM to start Indiana Jones IV might look like this:

```
"ScummVM atlantis »
DATAPATH=Games:Indy4/"
```

Luckily this can be simplified by using tooltypes. You just need to take a project icon, assign ScummVM to it and set the Tooltypes STORY and DATAPATH according to the specific game. There are some nice Glowicons and PNG Icons available for this purpose.

.info

Developer
The ScummVM Team
www.scummvm.org

Amiga OS ports by
Uwe Ryssel
www.sebelinteractive.de/scummvm

MorphOS port by
Rüdiger Hanke
www.butterflyvale.de

License
GNU Public License

Virtual Machine

Don't confuse a Virtual Machine with an Emulator. An Emulator simulates a specific piece of Hardware, on which the code for this machine can then be run. A Virtual Machine, on the other hand, can be thought of as a computer implemented in software. ScummVM doesn't need the original executeables of the games, just the corresponding data files. These are interpreted in much the same way as the original games handled them, no single line of code needs to be emulated. This distinguishes ScummVM from emulators such as MAME.

The MorphOS port of ScummVM playing "Indiana Jones and the Last Crusade" on the Ambient desktop.

Once everything is set up, you can start ScummVM and enjoy it. If you are experiencing speed problems however, you might need to deactivate the anti-aliasing. Since most of the original Adventures were played in resolutions of about 320x240, the graphics look rather blocky on big screens. That's why ScummVM has an option to scale it to 640x480 and interpolate the missing pixels. This looks pretty good, but unfortunately it eats up a lot of CPU power on slower machines. Because of this, there are different scalers available, to give best performance on every machine. You can select the different scalers by pressing Alt+[0-4], where -0 gives you unchanged 1x1 pixel size display, and 4 gives you the best available anti-aliasing algorithm.

The following hot-keys are also handy: Shift-[0-9] quick-saves the game in slot 0-9, Ctrl-[0-9] quick-loads the game in slot 0-9, Space pauses the game, F5 pops up the save game requester and Alt-Return toggles between window and full-screen mode. For more information on the hot-keys and Command Line options you might want to read the provided PDF manual.

How's it looking?

Most of the supported games run without problems. The only game that crashed every once in a while during our tests was The Dig, but this will certainly be fixed in future versions. Speech is of course supported, as well as the playback of a CD Soundtrack. Its really fun to play some of the old games like Indy 4 in full 256 colours, since Lucas Arts never made AGA versions of the games. Note that you can also play the games "Simon the Sorcerer 1+2" and "Beneath a steel sky" with ScummVM, it isn't limited to Scumm games any more. BASS can even be downloaded for free.

Sadly the 68k port of ScummVM is somewhat slow, maybe because it uses SDL (Simple Direct media Layer). While Day of the Tentacle was perfectly playable on a 040 with Shapeshifter, its slow as hell with ScummVM on a '060. Overall it is a very nice Tool to drive away the boredom of modern 3D shooters, but you'll need a fast machine to enjoy it.

Results

Pros
+ Many games supported.
+ Ports for 68K, WarpUp and MorphOS.

Cons
- Slow on 68K.

Pretty Good!

Tales of Tamar

. . . UPDATE . . . UPDATE . . . UPDATE . . .

In the final part of this series Sam Byford starts producing some luxury goods.

This is now the fourth update to my original Tales of Tamar article, and the last. If you have been playing the game, even for only a few months, then you will be quite well versed on the whole thing by now, especially if you have been following my guides. For those of you not playing ToT then these updates will be meaningless to you, therefore I think the time has come to hand this space over to some other worthy article. For now though I aim to guide you through a daunting new inclusion into the world that is Tamar: Luxury Goods (LGs).

Luxury Goods

When a new player starts on Tamar land and therefore growth is often limited due to the proximity of other Lords. This makes them disadvantaged compared to the larger land-owners. The more land you own the more food you can produce, the more people you can have and the wealthier you become. When your size is limited so is everything else. If you have wealth however you can buy food, weapons and other items and expand past your original confines.

Luxury goods (LGs) were brought in for just this reason. Only small land-owners can produce them, but every player needs them. Your population needs certain items in order to survive such as grain and weapons. Anything which they don't necessarily need, but which make life easier and more pleasant are classified as LGs, such as oil, silk, jewellery and furs. LGs can be handy for when the popularity bar starts to drop for some reason (famine, war, loosing a town), as giving the people items like jewellery can boost the confidence back up and stop a riot.

The Trade Registry

To find out which luxury goods your population would like go to the Town screen in ToT and click on the Trade Registry (you have to have built this first!). You will see a page split into three parts: a resource meter (top right), showing your stocks of animal, plant and mineral; a set of three tick boxes (right), and the main list showing the 16 available LGs and the 3 resources. Next to the names of the LGs are three columns, the first shows how much of each item you have, the second shows a target figure and the price your population would charge to make that item, and the third shows your allocation figures for the item.

Let's assume you are a large land owner and do not produce any LGs yourself, you have to buy them from other players. You would visit this screen, both the first and third columns would read 0 down the board. Ignore the top three rows which are for the raw materials. The target/price column will have figures such as 242/121 or 91/110 in it. Your population is demanding 242 units of a certain LG. You would then buy this LG at a reasonable price. To provide the people with that item highlight it in the list, then in the

Introduction

Tales of Tamar is a turn based strategy game which is played on-line via EMail (although the workings are hidden by a beautiful hand-drawn interface). For full details take a look at Sam's review in Total Amiga issue 13 or visit the game's web site at www.tamar.net.

box at the bottom of the screen type in how many units you wish to give the people next season. If I had 500 units in storage and they wanted 250 units then I could give them 250 which would keep them content or I could give them anywhere up to 500 making them very happy indeed (you are giving more than they requested). You need to check this screen every turn as the allocated amount will be given every turn until you either run out or you set a LG back to zero.

Your people will want more of one type of LG than another (depending on different factors). If you are smart you will buy plenty of stock of all items because giving the people luxuries will boost confidence and popularity, therefore giving them twice as many units of an item they do not want too many of makes more sense both financially and economically. For example: my people need furs as winters are harsh but they care little for gems or myrrh. Fur traders are hard to find, and expensive but gems are plentiful and cheap. If I needed a confidence boost I could give my people twice the amount of gems that they request and at little cost. They still need furs but at some point in the future the price will drop and I can buy as many units of fur as I need.

Luxury goods have been introduced slowly and carefully, currently they do not have as big an impact on events as they will later as there are not enough Lords producing the full range of goods that are required. Confidence modification is set low and luxuries are not needed as often but when the

Make sure you choose wisely which luxury good you will produce! While making your choice you can admire the beautiful graphics.

modifications are properly introduced confidence levels will raise and fall much more dramatically and LGs will have more effect. Small land owners need to decide whether to stay small and produce luxuries, or try to grow bigger but lose the ability to make luxuries.

Producing the goods

If you are small enough to make LGs (you must have only one town to start making LGs though once started you can have more) you will be presented with a Bardstale with a story therein. A wanderer offers you knowledge of how to produce a LG (only one), you then have to chose which luxury you wish to produce. Chose wisely as the only way to change that item is to expand to such an extent that you can no longer produce that LG, then shrink again and hope to get the Bardstale a second time. Each LG requires different raw materials, most are fairly obvious as to which are needed (ivory requires lots of animal resources) so chose based on your lands production levels. In the Trade Registry screen the top section shows the amount of raw materials you have. To produce weapons and armour instead of keeping the raw materials set the tick-box on the right, labeled Raw Materials, to a cross. All resources will go to the blacksmiths and used by him.

The price figure in the target/price column tells you how much it will cost to buy a unit of the luxury once it is made and you should charge this as a minimum on the market to break even. You must produce a quantity of your luxury every season of a year (not just one in four for example) but you do not have to buy the goods from your people (at the price set) unless you wish to. You buy the luxury as you would weapons, from the market screen (left hand box). Each luxury you have in storage appears in the Trade List the same as all other items so can be sold as with all other goods.

Note that the type of land you own will determine what resources you produce. On the map screen turn on raw materials to show three bars for every land hex you own. You want to have as much land producing the raw material you require as possible. You can of course buy raw materials on the open market, at a price, and usually that price is high!

So, whether you produce or buy luxuries they will soon become a way of life and a necessary part of life on Tamar. Make choices wisely and your people will become very content, choose badly and you might lose your Lordship faster than you can say "overthrown".

That brings to a conclusion my tutorials on Tamar, I know that there are people out there who have not read the first few articles I wrote so I am going to ask Rob (the editor) if it is possible for him to join all of these articles into a PDF file for distribution on the Total Amiga website which should make any future new player's lives a fair bit easier. It has been a pleasure guiding people through the Tales and if anyone needs any help in the future then I am still available via email, IRC or the ToT forums. Enjoy yourselves and prosper!

Yours in the Tales,
Baron Deverry
(Knight of the Round Table)

Use the Trade Registry to find out which luxuries your people desire.

A Bards Tale introduces you to the concept of luxury goods.

Image Enhancement

TUTORIAL

Part One: Dynamic Range

Robert Williams describes an easy technique for improving your digital images from either a digital camera or a scanner.

When you acquire an image, for example using a digital camera, scanner or frame grabber there are often a number of steps you can take to improve the resulting image. Sometimes the content of the image needs editing and sometimes the quality of the image isn't up to scratch. While it isn't always possible to resurrect a bad image you can often make big improvements. On the other hand, if you have an already good image, some adjustments may be able to make it even better.

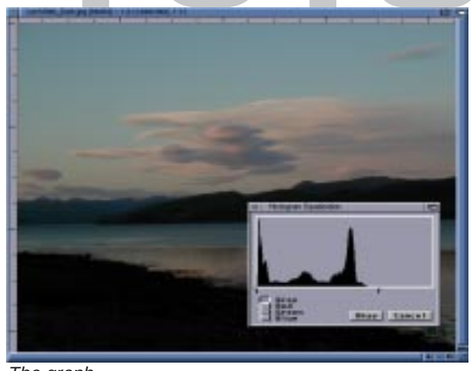
In this tutorial I'm going to cover a technique for improving the contrast of images. The main tutorial will cover ImageFX but at the end of each section I'll explain how similar results can be achieved in other Amiga packages including the freeware Perfect Paint.

Setting the Black and White Points

Any device that captures images has a range of sensitivity called the dynamic range, this stretches from the darkest colour it can discern from black to the brightest colour that is not white. In a 24bit-colour system there are 256 steps between these two points in each colour component. Usually the device has some method to ensure that the image being captured falls within the dynamic range. If we take the example of a digital camera (or any camera for that matter) a short exposure and small aperture letting in less light would be used on a bright subject whereas a darker subject would need a large aperture and a longer exposure. However good these systems the resulting image often does not completely fill the dynamic range.

To use a real world example if you take a photo on a bright day the darkest colour in the image may be lighter than black leading to a washed out look. On the other hand on a dull day the lightest colour might be darker that white giving a dull greyed result.

To correct this problem many graphics programs allow you to set the black and white points of an image. With this procedure you make the brightest colour in the image white and the darkest black



The graph (inset) shows us that this dim photo uses only just over half the available dynamic range.

and then "stretch" the remaining image data between the two points. This gives the image a broader range of shades and therefore more contrast. If you have an image that is washed out or dull this single action can often have a quite magical effect. The best way to understand it is with an example, so here we go:

ImageFX

Load the image file you want to edit by clicking the "Open" button in the main toolbox. I'm using a photo I took of the sky over a Scottish loch while I was on holiday. This photo was taken in the evening and although the sky is quite dramatic the whole image came out rather dull due to the lack of light.

NOTE: As usual you can download all the images used in this tutorial from the issue 16 page of the Total Amiga web site: www.totalamiga.org/issue16.html. I've chosen fairly severe examples so you can clearly see the results. This technique can be used to improve even already well exposed images.

Now click on the "Filter" button in the toolbox (if you can't see it make sure you're in the "Toolbox" section) then choose "Histogram Equalization" in the "Filter" palette that appears. After a few seconds processing, the "Histogram Equalization" window opens; in the top part of the window you'll see a graph with two markers below it on the X-axis. This graph is showing you the number of pixels of each brightness in the image from completely black at the left-hand side to totally white at the right.

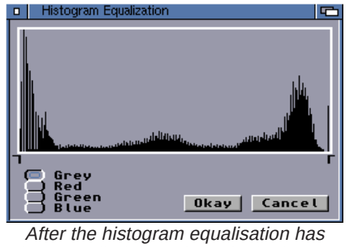
With my photo the graph data stops about two thirds of the way along the X-axis, because there are no bright pixels in this image. If my image had been very bright the graph data would start some way from the left-hand side.

To set the black and white points we use the markers underneath the graph. The left-hand marker sets the black point and the right-hand marker the white point. Any shades to the left of the black point will become black and those to the right of the white point will become white. The overall result is that moving the white point to the left makes the image lighter and moving the black point to the right makes the image darker.

In this example we're just concerned with the white point since we have plenty of black in our image. Click on the white point marker and drag it to the left so its left edge is level with the edge of the graph data. Click "Okay" and ImageFX will process the colours in the image based on the new dynamic range. The end result should be a brighter image with much more contrast.

If you now open the "Filters/Histogram Equalization" window again. You should find that the graph fills almost the whole dynamic range, proving the job has been done.

The interesting fact is that the end result is much more like the real scene. My eyes were able to pick out much more colour detail then was captured by my digital camera (either due to its limitations or the settings I used). In many cases this sort of editing is not "cheating" rather it is getting the best result from the technology available. Don't be afraid to experiment with the Histogram Equalization settings. If you find the end result too harsh undo and



After the histogram equalisation has been applied the colours in the image are "streched" to fill the dynamic range.

try again with less aggressive settings. In some cases you may find it's worth cutting off some tones to get more contrast on the subject of the image. Remember the aim is to get a pleasing image, there are no hard and fast rules.

TIP. In some images there really is no white or no black. For example a close-up of a brightly coloured object might have no white and a photo taken in the snow might have no black. In these cases this method is still useful, just set the points away from the graph data, experiment to get good results.

Other Applications

Perfect Paint - Right click the current colours box in the centre of the main toolbox to open the palette pop-up menu. Choose "Adjust Levels" from the "Effects" submenu to access the equivalent of ImageFX's "Histogram Equalization" window.

Photogenics 5 - This program does not have the direct equivalent of the histogram window, you will need to use combinations of the traditional brightness, contrast and gamma effects found in the "Adjust" paint mode.

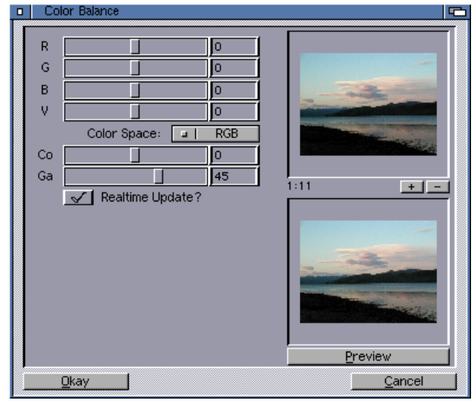
ArtEffect - While ArtEffect doesn't have a histogram window if you have the optional plug-ins collection (reviewed in issue 9) there is an excellent AutoLevel filter that performs a similar job automatically. As usual with automatic tools this can be thrown out by some images and doesn't give as much control as a histogram tool.

Using Gamma Correction

With the dynamic range sorted out you might still feel a particular image is too dark or too light; to help correct this we can use gamma correction. Gamma correction is a sophisticated brightness control. With normal brightness all the tones in the image are made brighter or darker, using this will cause problems with the dynamic range again because increasing brightness will make the black parts of the image grey while darkening will make the white parts grey. Gamma has its strongest effect on the mid-tones of an image and no effect on the very lightest and darkest areas. Concentrating on the mid-tones tends to work on where the detail is in the image. Here's how to use gamma correction:

ImageFX

I'm going to stick with my loch image because, although it is much improved, I think the hills still look rather dark. Click on the "Balance" button in the toolbox, this directly opens the "Colour Balance" window. Before you do anything else



ImageFX's Balance tool (above) contains the control for gamma along with those for the colour channels, brightness ("V") and contrast.

click the "Realtime Update" check box, this will generate a new preview each time you adjust a setting. Click the "-" button between the two previews until you can see the whole image. Although this makes for a small preview, we're interested in the overall look not a detailed area. Now drag the Gamma slider to the right to brighten the mid-tones of the image, examine the preview to see the result. I found a gamma setting of "85" brought out quite a lot more detail. When you're happy apply the gamma change by clicking the "Okay" button. Notice that the darkest areas do not become washed out and using gamma rather than brightness preserves the light details in the clouds.

TIP. If you wish you can zoom in on the preview at any time, just click the "Preview" button to regenerate the preview at the selected zoom level.

Other Applications

Perfect Paint - Like the "Adjust Levels" feature Perfect Paint's Gamma Correction tool is found in the "Effects" sub menu of the palette pop-up menu.

Photogenics 5 - To correct the gamma of an image in Photogenics 5 select the "Adjust" paint mode and fill your paint layer. Then change the Gamma Slider on the "Mode" tab of the toolbox; finally fix the change to the image. Remember that, like any Photogenics paint mode, the "Adjust" effect can be painted on or off any area of the image using all the painting tools.

ArtEffect - Gamma correction can be found in the "Color Correction" filter accessed from the "Filter/Color" menu.

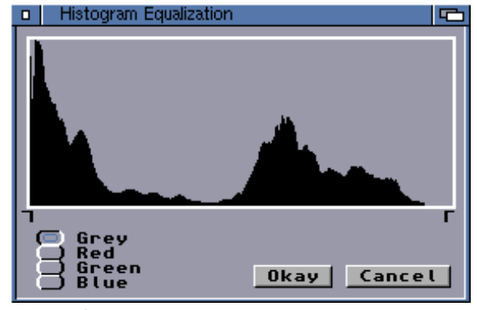
More Complex Correction

Sometimes it is possible to have an image with problems only in one area, for example a dark object in the foreground and a bright background. Often these problems could have been solved using camera settings but if you have an image like this which can't be retaken there is still hope.

TIP. If you need to take a picture like this many cameras include a "fill in" flash setting to illuminate the dark subject in the foreground. Another option is to use spot metering which will make the camera set the exposure by the brightness of the subject (or more accurately the centre of the frame) rather than the whole frame.

ImageFX

In my example Image the sky is fairly bright and quite dramatic while the figures are very dark in the foreground. Let's see whether we can use the "points" technique we used before to correct this photo. Load the image into ImageFX and open the "Histogram Equalization" window. You'll notice that the graph is nearly full of data bars, because of the bright sky and dark foreground this image already uses the full dynamic range. As a comparison let's have a look at the range covered by the two figures. Select "Box" from the



Due to the bright sky the second image already fills the dynamic range.

selection cycle gadget above the "Color" button in the toolbox. This will enable us to select a region of the image for ImageFX to work on. In the image window click and drag to draw a box around the figures, when you release the mouse button notice the marching ants showing the perimeter of the selection (see screen-shot on the next page). Now open the histogram window again; the graph is now calculated for our region. Notice that the figures only use a tiny part of the range, no wonder they're so dark.

Drag the right hand marker left to the edge of the graph data, and then click "Okay". The change is applied to the boxed area and the figures now look much better and more life-like.

NOTE: Because areas of this image are so dark with little contrast we're never going to make this into a great photo. However hopefully we'll be able to go from "should be deleted" to "worth keeping".

Checking the dynamic range of an area by selecing it with the region tool.

Let's see what applying that effect to the whole image would do. Click "Undo" in the toolbox to get the image back to its original state and change the selection cycle gadget to "Full" (effects will now be applied to the whole image again). Now open the histogram window again, this time drag the right hand marker to approximately the same position as you had it for the figures, that's roughly in the middle of the big dip. Click "Okay" to see the result: the bottom half of the image is much improved but, of course, we've completely washed out the sky. Now you could crop off the sky and keep the picture of the people but I want to keep both! So first click "Undo" to remove that effect.

What we'll do now is split the picture into two layers; on the top layer we'll have the sky and on the bottom (background) layer the ground and the figures. Then we will be able to process

Left: Setting the dynamic range correctly for the figures in the fore-ground washes out the bright sky completely.

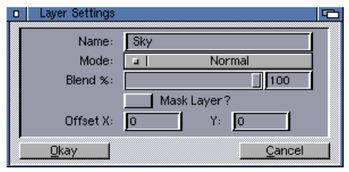
the two distinct parts separately. First lets make the two layers.

Open the "Layer Manager" palette by clicking on its icon in the top row of the toolbox just to the left of the "RGB" buttons. Click and hold on the button to the right of the filename in the "Layer Manager" palette to access the layer pop-up menu, then choose "New Layer". This is necessary before we can do what we really want which is to clone the background. To do this click on the "background" layer in the list to select it and choose "Clone Layer" from the pop-up menu. Now you can delete the first new layer, click on "Layer 1" in the list then choose "Delete Layer" from the pop-up.

You'll notice that the cloned layer is slightly offset from the background, to correct this double click on the layer (it is called " 2" in the list). In the "Layer Settings" requester that opens set the "Name" to "Sky" for easier reference later. Then set both offsets to zero. As you change the offsets you should see the layer move in the image window. Click "Okay" to close the requester.

NOTE: In ImageFX (and many other Amiga programs) you must press Return or Tab after changing the text or number in a gadget otherwise the setting may not be remembered when you exit the requester.

With our new layer in place let's first set the dynamic range of the background layer that will eventually show the



Right: the Layer Settings window is used to name and position layers.

figures and ground. We can hide the sky layer to keep it out of the way by clicking on the eye icon beside the layer name in the "Layer Manager" palette.

Now click on the "background" layer to select it, then open the "Histogram Equalization" window as we did before. As we're not worried about washing out the sky, drag the white point marker to the left as we did before so it is positioned in the middle of the first dip in the graph. Click "Okay" and check the result. The aim is to get the foreground looking as good as possible, ignoring the sky. If you need to, "Undo" the effect and reapply until you get a good result.

Now we want to replace the (washed out) sky with the one from the original photo. To do this turn the sky layer back on by clicking the right-hand end of its line in the layer manager so that the eye appears. Now the sky layer is covering

The completed alpha channel for the "sky" layer. The black part will let the bottom half of the lower layer show through. The gradient gives a smooth transition.

the whole background, we need to blend the two layers together over the hills in the middle of the image. We'll use an alpha channel to make the bottom half of the sky layer transparent. First we need to add an alpha channel to this layer. Make sure "Sky" is the current layer then click the "Alpha" button in the main toolbox, in the "Alpha" palette click "Create" and then "Matte".

NOTE: Each layer in ImageFX can have an alpha channel that controls its transparency. The alpha channel is a greyscale image the same size as the layer. Areas of the layer image that correspond to a black area of the alpha channel are transparent while those that correspond to white areas are solid. Shades of grey correspond to various levels of transparency.

To see the alpha channel click on "Alpha" again then choose "Swap". ImageFX now shows the alpha channel itself as an image. Ignore any black areas on the alpha channel because we will be painting over them anyway. In the colour palette window click on a black swatch (normally in the top left hand corner) then click on the filled box tool in the main toolbox (click in the bottom right hand corner to get a filled box). We're going to draw a black box over the bottom half of the alpha channel that will make the bottom half of the sky layer transparent. So we don't have to guess where to draw click "Alpha" and then "Light Table Alpha" and you should see the image showing through slightly. Now click and drag to draw a box over the bottom half of the alpha channel roughly up to the river in the middle.

The final image with the original inset.

TIP: To draw the box without leaving any borders resize the image window so there is a border to the bottom and right of the image. Then start to draw the box outside of the image itself.

If we leave it at that there will be an obvious join between the two layers. To avoid this we need a gradual fade between the layers; this can be achieved with a gradient filled box over the hill area. For this we'll need a black to white gradient: Click the "Palette" button in the main toolbox, a new toolbox page is shown. Use the cycle gadget above the "Range" button to select range "R1". Make sure the black swatch is selected in the colour palette then click the "Range" button, the pointer shows a "TO" prompt, now click on the white swatch immediately next to the black. Dots indicate that the colours are part of the current range. Now I happen to know that this will make our gradient the wrong way round (black down to white) so click on the white swatch, then click the "Swap" button, then click the "black" swatch to swap them over.

Click on the "Toolbox" button then double click on the filled rectangle tool (bottom right corner again). In the "Drawing Options" window that appears set the "Fill" cycle gadget to "Vertical" and the "Range" to "R1". Draw a box in a strip covering the hills starting in the black and finishing well into the white, when you release the mouse button the box should be filled with a smooth gradient that will give a nice transition between the layers.

TIP: If your gradient looks odd make sure you have selected the right range number (R1 in our case) in the "Drawing Options" palette, otherwise ImageFX will use all the colours in the palette window.

To see the result choose "Light Table Alpha" from the "Alpha" palette again to turn off the light table and then click "Swap", also in the "Alpha" palette. You should see the detailed bright sky married fairly seamlessly with the significantly enhanced figures.

TIP: If you forget to turn off the light table before you swap back you will be able to see the alpha channel slightly behind the image which looks strange.

If you can still see the join or it's not in quite the right place simply "Swap" back to the alpha channel and re-draw your gradient box. If necessary you can also draw on more white or black too. Doing this it's easy to see how flexible the alpha channel system is. If you have an image where an odd shaped area needs to be processed rather than the neat half-and-half scenario of this example you can use any of ImageFX's other drawing tools to select the area on the alpha channel.

When you're happy with the result you can of course save the image. To save the image with layers intact for future editing simply click the "Save" button and select "INGF" from the list of image formats. If you want to save the image for use in another package, on a web site etc. then you need to flatten the layers first. To do this just choose "Flatten Layers" from the "Layer" palette pop-up menu. With that complete you can save as a standard image format such as a JPEG or an IFF24.

Other Applications

Perfect Paint - While Perfect Paint doesn't have layers you can use its masking feature to effect just part of an image, the density mapping option can create the smooth transition for you too. To access this feature, right click on the mask icon and choose "Density Mapping" from the pop-up menu. Select or make up a suitable density map and then click "OK". Notice that the area that will now be effected by the processing is shown in the image bar at the bottom of the screen. Now you can apply the "Adjust Levels" effect to just the area you want.

Photogenics 5 - Simply paint on the effect you require using any of Photogenics' painting tools. A soft airbrush could be used to create a seamless transition.

ArtEffect - Use a method similar to that described for ImageFX creating a separate layer for the unprocessed portion of the image (the sky in this case). Reveal the layer below using the "Erase" tool

Conclusion

That's all for this issue. Using those simple methods (which are a lot harder to describe than to do) I think almost all photos and scans can be improved to some degree especially if, like me, you're not a great photographer. I have plans for a second part of this tutorial for the next issue where I'll cover editing the content of images.

Support

Learn C

The Universal Language

In Total Amiga's first major programming tutorial Dave Pitcher introduces "C", the most common progamming language on the Amiga.

Part 1
- **Storing Information**
- **Variables, Symbols and Types**
- **Arrays**

Part 2
- Decision making
- Loops
- Functions

Part 3
- Exec and DOS
- Reaction
- Game part 1

Part 4
- AHI
- Libraries in OS4
- Game part 2

Some say English is one of the most useful languages of the world, some say French, some say Mandarin Chinese. None are correct, the most useful language of the world is "C", and its descendants. Yes this tutorial is going to be a bit cheeky. Some of you will hate this tutorial for the slow methodical approach, in which case skip to the example code and try to pick it up by playing with the code.

C is used in many environments, from a lowly PDA running EPOC32 (trademark of Symbian) to enterprise code running in commercial systems such as z/OS and products such as CICS, DB2, IMS, WebSphere MQ (trademarks of IBM). More pertinent to us: it is used and supported extensively for the Amiga operating system with the Amiga software development kits for Workbench and AmigaOS versions from 1.3 through to at least 4.0.

C is from the family of compiled languages. These process data written in one format (the C language format - a text file) and translate them into code that can be executed by the computer (so called "machine code"). The other main family of languages is that of interpreted languages and for many years BASIC was the most famous of these. In modern times the boundary between interpreted and compiled languages has been blurred with examples such as Java Virtual Machine, Quake-C and other interesting hybrids. For many years the most relevant of these for Amiga users has been ARexx, which is a traditional interpreter that reads the program line by line when it is run and turns the text into executable instructions.

What you will learn in these pages is that, for the purposes of writing application code, whether the language is interpreted or compiled makes absolutely no difference. Compiled language code will always execute faster than interpreted versions not least because of the overhead of the computers' processor having to read and translate the instructions into a format the computer can understand (the interpretation itself) whereas compiled code is only compiled once.

When writing applications it is wise to start with a design and it is your task to get this design written into a programming language, in this case "C". Once into this language the compiler will take it to a format the processor can use directly.

During the compilation process the compiler will give you feedback on errors (that you must correct), warnings (that you sometimes need to correct) and other useful messages that may or may not need your intervention. If all goes well it produces what is called an "object" file. This is in a partially usable format, and a program called a "linker" combines this object file with other information (stored in what are called libraries and other object files - linking them together like a chain) to produce one of two types of target. These are:

1. Executable file, this is something you can "invoke" (run) from the command line and is in a format that the operating system understands is an executable program.

2. Library, this is something that cannot be run, but can be used by other programs.

In the pages of this serialised tutorial we will learn convenient abstractions (or lies) that allow the program writer to not only write good code whilst understanding what they are doing, but understand the kind of errors that can happen, and how to correct them.

To alleviate the dry parts of the tutorial, examples for a freely downloadable C compiler called "DICE" will be provided. Using and playing with ideas locks in understanding and is a vital process of coming to terms with a powerful language such as C.

Download

Download DCC from Aminet at this location:

http://us.aminet.net/dev/c/dice-3.16.lha

Install it (installation instructions, we know people never follow the readme).

Examples

Some of the examples in this tutorial have lines that are too long to fit in our columns. For those lines we use the following symbol:

»

to indicate that you should continue on the same line in your editor.

The example source code is also available for download from the Total Amiga website:
http://www.totalamiga.org

Relative Addressing

Physical memory location where this is stored (1), also called the "base address".

```
                                                    Address
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

I    a m    a    c a t    c a l l e d    f e l i x .
                                                    Value
```

Relative addresses are measured relative to the base address. Thus relative address 0 for this sentence is "0" (0 elements from the start of the sentence).

Theory

Before starting with C, or programming at all for that matter, it is important to understand a few fundamentals about the architecture that is presented by modern operating systems to the programmer. Sounds complex, but it isn't really. What you need to do is build in your mind a model of how the computer works when dealing with programs written in 'C'. This is a mix of convenient lies and, where we must, a dose of reality. These lies wil help you understand how to write good 'C' and also more importantly help you understand what on earth went wrong when your Amiga GURUd. This will be slower going than you might ordinarily expect, however it will pay off – I promise you.

Programming, at the most basic level, involves the computer following a list of instructions until it concludes. These instructions all manipulate information stored in devices attached to the computer that deal with input/output such as memory modules, hard drives, joysticks, cd-roms and many more diverse hardware items.

This first part is going to be tough going and the best approach is probably to read just to the point that your head starts to spin or you aren't taking in the meaning of the words any more and then flip to a bit of code implementing and come back.

Rest assured, that once you understand how the language and the computer behaves you will understand, in time, what is going wrong when you have a problem. If you skimp this, you will end up writing reams and reams of redundant code merely to avoid using a concept that could solve it in one line - or worse cause the computer to fail and you don't have the knowledge to resolve it.

Mathematic Operators

Operator	Meaning	Example
+	Add the number on the left-hand side to that on the right-hand side.	4+5 (comes to 9)
-	Subtract the number on the right-hand side from that on the left-hand side.	10-13 (comes to -3)
/	Devide the number on the left-hand side by that on the right-hand side.	10/3 (comes to 3 as they are both whole numbers (long)) 10.0/3.0 (comes to 3.333333r as they are both floating point numbers)
%	Show the remainder left over when the whole number on the left is devided by that on the right.	10%3 (comes to 1)
*	Multiply the number on the left by the one on the right. **Warning:** has a special meaning.	10*3 (30) 10.0*3.12 (31.2)

Storing Information (Types)

Information stored in a computer, regardless of physical location, consists of what are known as "addresses" and "values". The "address" identifies a unique position in the computer by an alias which fortunately you rarely see. If I store a sentence like "I am a cat called Felix." in the computer, it will occupy sufficient addresses to store the entire sentence, this includes addresses to store the spaces between words. In one of our convenient lies we will assume that these addresses have a numeric number, from 0 to the maximum "addressable" address in the physical system. It is important to recognise that it is not up to you to decide where memory gets stored, this is the job of the operating system. Each time you run a program, its data might get stored in a completely different location to where it was before!

The addressability of the OS is dependent on the underlying processor architecture. A convenient lie to help us here is that the maximum address value is the result of the mathematical operation 2 to the power of bus width. In an 8 bit addressability system the theoretical maximum is 2 to the power of 8 minus 1 which is a maximum address of 255 (remember addresses start at 0 in the computer). In a 32 bit addressability system the maximum address is 2 to the power of 32 minus 1 which is? Anyone? Suffice to say this is a theoretical maximum which means that it is dependent on a few factors such as the memory that is already in use and what physical memory you have installed in the system. In fact, most of what were commonly termed "8 bit" systems actually had 16 bit addressability. To access areas of memory greater than the theoretical maximum a technique called "paging" can be used (like turning the pages of a book). However that is beyond the scope of this tutorial.

Computers store data as a series of what is called "binary data", that is it is represented as 0s and 1s. Examples of addresses:

Computer form:
00000000 0000000 00000000 00000001
Abstraction:
Address 1

Computer form:
00000000 0000000 00000000 11111111
Abstraction:
Address 255

We will use the abstraction of this, that is the numeric representation in the tutorial.

In the "Relative Addressing" box-out each cell represents one address in the system, normally the computer assigns the starting address (in our case it has given us address '1') through its memory allocation routines, from free available memory.

If the computer decides to store the sentence at position 65335 in physical memory then the base address is 65335 and the relative address is still 0.

At address 21 we have the letter 'l'. Now, why did it take 24 addresses in our example to store a simple sentence? This is because each address refers to a memory area of exactly enough to store one character. Each character is encoded as a byte or 8 bits (which gives us the possibility to differentiate between 2^8 or 256 combinations (0 .. 255)).

Why is it important to understand this? Well, there is a difference between an address of something and the value of something and if this is not clearly understood it is easy to get into a mess with C.

The "base" address of the whole sentence is "1", the value is "I am a cat called Felix" - it occupies addresses 1 through 24. However the value of address 2 is ' '. Yes, the computer needs to store spaces too.

Confused? Well perhaps – at this stage we have leapt onto what are termed "strings"; that is a list of information pulled together to have an alternate meaning. In our case we have a list of characters that we have combined to get something meaningful:

[I]+[ ]+[a]+[m]+[ ]+[a]+[ ]+[c]+[a]+[t]+[ ]+[c]+[a]+[l]+[l]+[e]+[d]+[ ]+[f]+[e]+[l]+[i]+[x]+[.]
is "I am a cat called Felix".

However, whilst this is meaningful to the human eye, it is meaningless to the computer. If you asked the computer to return the value at address 1 it would say (rightly) 'I'. To get it to recognise the entire sentence as one logical entity meaning "I am a cat called Felix" what is called a "data type" has to be defined. Fortunately for everyone most programming languages define these for us, and it is left to us to understand them.

Computers have to know how to store datatypes and how to read them. This

Support

mechanism is best ignored but, what is worth knowing, is the format by which datatypes are encoded in memory.

A character type (char) is encoded as 8 bits of storage, a bit can be '0' or '1' which gives us all the combinations from 00000000 to 11111111. This is exactly 256 combinations (or 2^8). The specific meanings of each binary word is defined by what are called "code pages" and the most widely used one is ASCII (American Standard for Computer Information Interchange). In modern times this has evolved into UNICODE (UTF-8) but this is beyond the scope of this article.

Thus when a computer is told that the 8 bits of storage 01001001 is a character it looks it up in the "code page" ASCII and finds out it is a 'H' and this is what is displayed.

There are two main numeric types, the first is "long" (which stands for long integer). "long" represents whole numbers, it occupies 4 bytes of storage (or 8 bytes of storage on some systems, some systems use "long long" for this - it is worth reading the documentation that comes with your OS) and therefore has combinations from 00000000000000000000000000000000 to 11111111111111111111111111111111 or 2^32 or 4294967296 combinations. However the whole number set includes negative numbers so by default "long" uses one bit of the 32 to indicate if it is positive or negative and the remaining 31 for the actual numeric value which gives + or - (2^31 - 1) for the entire numeric range, or -2147483647 ... 2147483647.

The final type to introduce you to is the "float" type, or to give it its full name "floating point". Floating point numbers are so called because the decimal point '.' moves position. Examples are: -3.1415926536 or 97.2. The encoding the computer uses for the float type is more complex to explain at this stage so will remained unexplained until later in this series. It occupies four bytes of storage.

Take a look at the "Mathematic Operators" box-out for a list of the operators you can use on numeric types.

Example 1:

```
#include <stdio.h>
int main(void)
{
    long x;
    float y;

    x=10*2;
    y=12.0/16.5;
    printf("x==%d and y==%d. \n",x,y);
}
```

Please do not try to understand the parts of code (in any of the examples) except those highlighted in bold; the rest will be explained as the tutorials progress. A "long" number was created called "x" and a floating point number was created called "y". "x" was given the value of 10*2 and "y" was given the value of 12.0/16.5.

Create a file called tutorial1.c and type the above example into it. Now compile it into a file called "tutorial1":

```
Work:Programming/Tutorial> dcc -o »
tutorial1 tutorial1.c
```

Now run this:

```
Work:Programming/Tutorial> tutorial1
```

Check the answers on a calculator, you never know!

Introducing Strings

Common user error 1: It is vital to understand what is coming next as most C bugs in the early stages are through failing to understand strings.

So, we have a new datatype, let us call it "string". Instead of just returning a single value when you request the value of the address [1] it returns the entire sentence that [1] is the "base" address of. There is a problem, how does it know where the sentence ends?

Two solutions have grown up around us in programming, one is called "null terminated strings" (which is what C uses) and the other is called "length encoded strings" (which is what COBOL, Java and a few other languages use under the covers).

The easiest scheme is length encoded strings, this is where the number of characters in the string is stored at the "base address" (starting address in our example 1) and the computer uses this number to find out where it ends.

[24]+[I]+[ ]+[a]+[m]+[ ]+[a]+[ ]+[c]+[a]+[t]+[ ]+[c]+[a]+[l]+[l]+[e]+[d]+[ ]+[f]+[e]+[l]+[i]+[x]+[.]

You have told the computer you want the value of the string stored at address 1, it reads the number 24 and combines the next 24 characters together for you.

There is a limitation here, the maximum number we can store in a byte is 255. If we define the scheme the computer uses as so the first byte is the length of the string, then we are limited to sentences of 255 characters long! We could increase this by making it double byte (16 bit), then when we reach this limit quadruple byte (32 bit) etc.

Null terminated strings are more powerful for the simple reason that they do not require a length specifier. The end of the string type is a special character such that when the computer has found this character it knows it is at the end of the sentence, this is known as the NULL TERMINATOR or '\0':

[I]+[ ]+[a]+[m]+[ ]+[a]+[ ]+[c]+[a]+[t]+[ ]+[c]+[a]+[l]+[l]+[e]+[d]+[ ]+[f]+[e]+[l]+[i]+[x]+[.]+[\0]

So, we request the string stored at address 1 and it runs merrily along through "I am a cat"... and gets to the '\0' character and realises that is the end of the sentence. Pretend you are the computer (no bleeping noises please) and run your finger from the left hand side to the right, you know instinctively where the end of the sentence is, but pretend you only know it's the end of the sentence when you see the '\0'.

At this point, the literal amongst you will say "why not just use the full stop(period) character '.' for the end of the sentence". Well what if you wanted to store a paragraph of text in a string? Then human readable punctuation marks would appear several times and would damage the computer's ability to return a paragraph to the user - better to use a special "machine readable" character for the purpose – one that would rarely be used by a human – these are known as "escape" characters and '\0' is the most common of them.

Variables, Symbols and Types

At this stage you may be thinking, in fear, that in order to get hold of something you store in the computer you need to specify the address to retrieve it. This is not the case. Programming languages provide (and encourage) the use of what are called "variables" which are symbols that you type in that have a meaning that makes sense to you and the programming language handles translation into something that makes sense to the computer at compile time.

Variables are specified (in good programming languages) by defining them with their "type" and their "symbolic name".

A, non-exhaustive, list of C built-in types is shown in the "Variable Types" box-out.

Let's deconstruct an example to show the type definition rules:

```
float balance;
```

This is known as "declaration".

The type is float, so the rules in C are if you want to define a new variable you have to first describe what type it is going to be, then give the variable a name. The ';' character indicates to the programming language that you have finished with this instruction and the next line will be a new instruction.

The computer requires a start value for the declared name in the form of:

The format is:
symbol = value ;

e.g.

```
balance = -2.50;
```

This is known as "assignment".

Common user error 2: The '=' character in C means "assignment" (the symbol "balance" will take on the value of -2.50), for testing equality (equals) the character sequence '==' is used instead.

Example 2 :

```
#include <stdio.h>
int main(void)
{
    long a;
    char b;
    unsigned char fx;
    float hiThereMum;

    a=123456;
    b='X';
    fx='X';
    hiThereMum=-20.44445;

    printf("a==%d \n",a);
    printf("b==%c \n",b);
    printf("fx==%c \n",fx);
    printf("hiThereMum==%f \n"»
,hiThereMum);
}
```

Create a file called tutorial2.c and type the example above into it. Now compile it into a file called "tutorial2":

```
Work:Programming/Tutorial> dcc -o »
tutorial2 tutorial2.c
```

Now run this:

```
Work:Programming/Tutorial> tutorial2
```

But what happens?

The programming language behind the scenes is requesting storage of a certain length (the number of bytes it takes to store the value) from the computer, the computer then returns a "base address" (starting point) to the language and the language binds that starting address to the symbol.

In our case the symbol is defined as "balance", the type is float which the programming language knows takes 4 bytes (32 bits) of storage to hold the value – it asks the computer for 4 bytes of storage, the computer allocates (and marks it as owned by that program for the duration it is running) the storage and returns the address.

The programming language then stores the value "-2.50" in an encoded format into the storage at the address the computer returned. Every time the program refers to the symbol "balance", the language knows it means the address the computer gave it!

So we can find out the address at which the computer stored our data?

Absolutely! This is done using a C operator '&' meaning "address of". The address is usually returned in a form that can be read numerically but be cautioned: This number is very platform dependent. On a 32 bit system it is safe to use "long" as it is 32 bit, the Amiga is currently a 32 bit platform so we can use long without concern.

```
long addressOfBalance = &balance;
```

This instruction says create a new symbol called "addressOfBalance" with type long and store the address of another symbol called "balance" in it.

So, to recap, "balance" the symbol when used will see the value of "balance", using the & operator it is possible to see the address of "balance".

Strings and Characters

Take a deep breath! Remember we talked about C having a string type which uses the null termination technique? This was a total lie. Sorry. It has no string type. What it does have is a series of functions (small programs) that accept the address of the start of a string (such as address 1 which is the start of "I am a cat called Felix.") and will search themselves for the "null termination character" ('\0') in order to find the end of the string. A variable containing the address of something else (such as the start of "I am a cat called Felix") is called a "pointer". Pointers point at other things.

A pointer is simply an address whose value contains the address of something else. It is, in fact, a built in type of C that is designed specifically for this purpose. Pointers refer the computer to another address (like saying, "for pension inquiries, call this number"). The sheer power of this will become evident later on.

We know that "I am a cat called Felix." is stored as a sequence of characters. However if we used the "char" type on its own we could just store "I". Instead we use the "pointer to char" type:

```
char * sentence="I am a cat called »
Felix";
```

This does not mean 'multiply the type char by sentence which must be equal to the string "I am a cat called Felix."'. It is important to throw away mathematical terminology when dealing with anything other than numeric types in C. In fact, the meaning of various short cuts such as "*" changes with the context of where it is used. The instruction stores "I am a cat called Felix" and the computer returns the base address (in fact the address of "I") as normal, in this case our symbol "sentence" is a pointer to something of type "char" (the "*" makes it a pointer). In this pointer is automatically stored the address of the "I" part of the sentence.

However...

```
char sentence="I am a cat called Felix";
```

...would result in an error. because on the left hand side of "=" we are defining the symbol sentence to be tied to an address which accepts values of type character, on the right hand side of "=" we are trying to assign to it a different type - the string type which is enclosed in quotation marks "". For character assignment we need to use single quotation marks '':

```
char sentence='I';
```

There is a function called "printf" (see Tutorial 1 which illustrates it for the first time) that expects a pointer to a char as an argument and will display the data stored in the computer from the address in that pointer to the next occurence of '\0' on screen.

However, we did not put a '\0' in our declaration – how does the computer know when to stop? This is automatically inserted when using what are called "string literals" – such as "I am a cat called Felix." – the '\0' is implicitly appended by the programming language at compile time so that what really gets stored is "I am a cat called Felix.\0".

Therefore, in our program we have the following statements:

```
char * sentence="I am a cat called »
Felix.";
printf(sentence);
```

Referring back to our original example, the computer stores the string literal "I am a cat called Felix." at address 1 through 25 (for the null terminator!).

```
20 21 22 23 34 25
e  l  i  x  .  \0
```

It then allocates storage for the "sentence" symbol, which is of type "pointer to character", in this example the Operating

Variable Types

Type	Description	Example
void	Empty, nothing, this has no specified type.	N/A (for now)
long	32 bit numeric, whole numbers called the "integer" set. From -2^31to 2^31.	long yCoord; yCoord=1024;
char	Character value, printable and unprintable characters with a numeric range of -2^7 to 2^7 but normally represented as alphabetic characters.	char initial='w';
float	Floating point number, e.g. one with a "." in it.	float balance=-2.50;
unsigned [type]	Modifies the type so that it is unsigned, so, for example, instead of character going from -2^7 to 2^7 it ranges from 0 to 2^8.	unsigned long yCoord; unsigned char initial; unsigned float balance;

System stores the “sentence” symbol at address 28. Why? Because it wants to.

```
28
1
```

So when address 28 gets passed to the “printf” function, it knows that this is a type pointer to character, the function has been implemented to deal with “null terminated strings” as implemented in C and so it reads from the address referenced at address 28 (which is address 1) until it finds the “null terminator” (‘\0’) and displays the characters on screen in the sequence it encounters them.

This principle of only passing the address of data to be used by functions (sub programs) is the key to understanding how C works.

Example 3:

```
#include <stdio.h>
int main(void)
{
    char sentence;
    sentence="This is a precious »
diamond, guard it well.";

    printf(sentence);
}
```

Create a file called tutorial3.c and type the example above into it. Now compile it into a file called “tutorial3”:

```
Work:Programming/Tutorial> dcc -o »
tutorial3 tutorial3.c
```

It will fail with a compilation error. Study it hard and correct the error. Once you have eliminated the error run it like this:

```
Work:Programming/Tutorial> tutorial3
```

Fixed Length Storage

We have already discussed the theory of how C interprets declarations (reminder: It requests that the computer allocate enough storage for the type and uses the symbol as an alias for the address) with the format:

<type> <symbol>;

e.g.

```
char * sentence;
long   counter;
float  balance;
```

And we have discussed how assignment works with what are called “literal” values - ones that C automatically allocates storage to hold:

<symbol> = <literal value>;

e.g.

```
sentence = “I am a dog called Rover”;
counter = 14;
balance = 5.01;
```

However, what if the size of storage required (and this is especially important with strings) is not known at the time the program is written? There are two ways to handle this, C provides an array type that allows you to implement the first method, dynamic but bounded storage (fixed length):

The format is:
<type> <symbol>[<size of array>];

```
char sentence[256];
long counter[14];
```

You can define multiple dimensions to your array (like a mathematics matrix or a table):

```
long enemyMap[256][256];
float percentages[20][4][200];
```

Explanation:

The definition for symbol “sentence” causes the computer to allocate 256 elements of storage sufficient to store a character type. The “char” type is 1 byte in size, so that is 256 bytes used.

The definition for symbol “counter” causes the computer to allocate 14 elements of storage sufficient to store a “long” type. The “long” type is 4 bytes in size, so that is 14 multipled by 4 bytes (56 bytes) of storage used.

The definition for symbol “enemyMap” causes the computer to allocate 256 bytes by 256 bytes of storage sufficient for the long type, which is 4 bytes of storage so that is 256 by 256 by 4 which is 262114 bytes of storage.

The definition for symbol “percentages” causes the computer to allocate 20 by 4 by 200 elements of storage sufficient to store a float type. The “float” type is 4 bytes in size, so that is 20 by 4 by 200 by 4 which is 16000 total bytes of storage used.

To show the potential pitfalls we can get in with fixed size allocation let’s look at the definition of an array of characters we will give the symbolic name of “test” to:

```
char test[8];
```

This takes 8 characters. To fill this array with a string we use a function called “strcpy” (string copy) which has two arguments, the first being the destination string and the second being the source string:

```
strcpy(test,"Fido");
```

This is fine, it will copy the literal “Fido” into the 8 bytes like so:

[F][i][d][o][\0][ ][ ][ ]

How about when we want to store a longer string, like “picture8”:

```
strcpy(test,"picture8");
```

This will fail, even though it is 8 characters long and we have assigned space for 8 characters. It fails because we forgot that the null terminator that automatically gets added to the end of string literals by C also needs to be stored. The failure causes what is known as a protection fault, an attempt to write to an area of memory we do not own and the program will cause a guru error on an Amiga.

[p][i][c][t][u][r][e][8] + [\0]

Overrunning the end of storage allocated to your program can have two effects:

1. Protection violation (attempt to write memory you do not own)

2. Instability (you own the storage but it belongs to another variable and you overwrite the contents of it unexpectedly).

Example 4:

```
#include <stdio.h>
int main(void)
{
    char sentence[12];

    strcpy(sentence,"This is a precious »
diamond, guard it well.");

    printf(sentence);
}
```

Create a file called tutorial4.c and type the example above into it. Now compile it into a file called “tutorial4”:

```
Work:Programming/Tutorial> dcc -o »
tutorial4 tutorial4.c
```

It will compile without error. Now ensure that you are not running anything important, because your machine may crash!

```
Work:Programming/Tutorial> tutorial4
```

BANG!

OK now correct the error. To give you a hint, sentence has been defined with insufficient space to store the memory.

Addressing Elements of an Array

The “Array” type is very useful, it can be used for storing images, terrain maps and all sorts of weird applications. You know how to define it...

```
long enemyMap[256][256];
```

...but you don’t know how to assign values!

Each element is addressed through the same means it is defined, so if we wanted to assign something at the first cell in the array (0,0) we would need to do this:

```
enemyMap[0][0]=124;
```

What about the 24th row down, position 0 (0,24)?

```
enemyMap[0][24]=888;
```

What about right at the end (255,255) ?

```
enemyMap[255][255]=31;
```

That is all well and good for a two dimensional array, but what about a three dimensional array:

```
char rubiksCube[3][3][6];
rubiksCube[0][0][0]='r';
rubiksCube[0][0][1]='g';
```

OK, now for the final example of this quarter’s episode:

Example 5:

```
#include <stdio.h>
int main(void)
{
    int plank[2][2];
    plank[0][0]=1;
    plank[1][0]=2;
    plank[0][1]=3;
    plank[1][1]=4;

    printf("Elements: [%d][%d][%d][%d]»
\n",plank[0][0],plank[1][0],plank[0][1]»
,plank[1][1]);
}
```

Create a file called tutorial5.c and type the example above into it. Now compile it into a file called “tutorial5”:

```
Work:Programming/Tutorial> dcc -o »
tutorial5 tutorial5.c
```

It will compile without error.

```
Work:Programming/Tutorial> tutorial5
```

Next Issue

Next quarter we will talk about variable length storage, looping, making decisions, defining sub programs and what all the { } “int main(void)” and “#include” gubbins is all about. We will build a re-usable function library and start to use our new found knowledge to program a small game for the Amiga, don’t miss it!

Next Issue

Coming up in Total Amiga issue 17:

News

- All the latest news on AmigaOS 4 and the AmigaOne.
- Columns by Alan Redhouse and Fleecy Moss.

Reviews

- Amiga OS 4 hands-on preview (we hope!).
- FryingPan (CD mastering application).
- MAS Player.

Support

- “C” programming tutorial part 2.
- Classic Mac emulation part 2.
- Image enhancement tutorial part 2.

Regulars

- PD Paradise
- Top Tips
- Reader’s Letters

Plus much more!

All items in this contents list are subject to change before the magazine goes to print.

Issue 17 is due in:

• January 2004

• **Note:** Total Amiga is produced by volunteers and this means sometimes issues run late. If you’re concerned about the status of the next issue please take a look at http://www.totalamiga.org or contact us by EMail or phone (details inside the front cover).

Mailing Lists

Keep up to date with our progress with new issues of Total Amiga and get news of website updates and previews of the content of new issues by joining the Total Amiga announcements mailing list. This list is only posted to the editor so your mail box won’t be flooded. Expect a maximum of 4 or 5 messages a month, as a minimum we post a monthly update.

To join just send a blank EMail (no subject or body text is required) to:
totalamiga-announce-subscribe
@yahoogroups.com

We also have an open discussion mailing list where you can chat to other readers and talk to members of the total Amiga team. The subscription address for this list is:
totalamiga-subscribe
@yahoogroups.com

Web Site

The Total Amiga web site contains a whole host of features and regularly updated information about the magazine such as:

- Regular updates on the status of the current issue.
- On-line shop for subscriptions, renewals and back issues.
- Details of all the issues published so far including contents list and cover images.
- Out-of-print back issues for download in PDF format.
- Behind the scenes section with details of the magazine’s production.
- Information for potential contributors and advertisers.

So why not pay us a visit at:

http://www.totalamiga.org

Subscribe to Total Amiga

To subscribe to Total Amiga please complete this order form and send it with the appropriate payment to:
(If you don’t want to cut your magazine a photocopy is acceptable or just include the details below on a piece of paper)
Total Amiga, 26 Wincoat Drive, Benfleet, Essex, SS7 5AH. Payment can be by cheque or postal order (in pounds sterling made payable to **South Essex Amiga Link**) or in sterling cash (at your own risk).

Full Name:
Street Address:
Post Code:
Country:
EMail:
Tel.:
User Group:

Please tick what you require:

A four issue subscription to:
United Kingdom (£14) ☐
Europe (£17) ☐
Rest of the World (£20) ☐

Back issues:
Total Amiga 13 (£2.50) ☐
Total Amiga 10 (£2.50) ☐
Clubbed 8 (£2.50) ☐

Start subscription from issue no. ☐
(Leave blank to receive the next issue)

I16

MorphOS 1.4

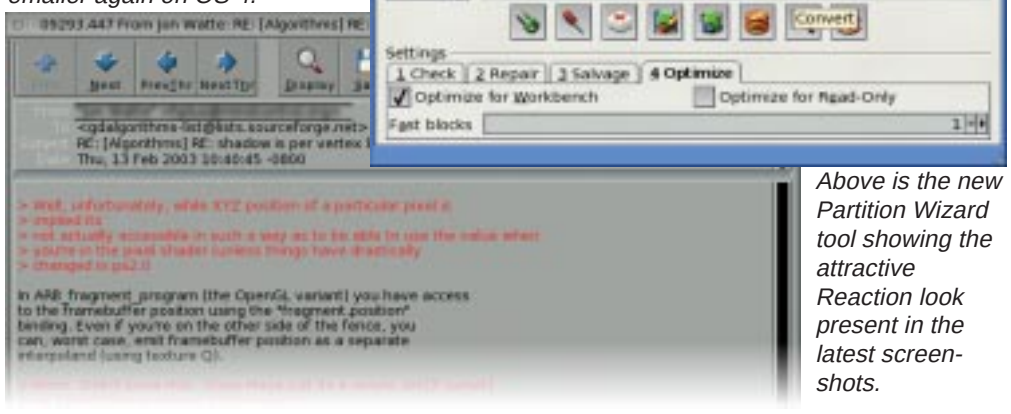
Sam Byford's MorphOS 1.4 desktop (be sure to check out his review on page 18) running IBrowse under emulation, AmIRC and MPlayer (in the borderless window).

Amiga OS 4.0

The screen-shots this issue show Amiga OS 4.0 running a variety of 68K Amiga software under emulation.

In the shot on the left you can see Directory Opus 4.x and SnoopDOS under emulation along with the new OS Notepad and AmiDock utilities.

Below is the MUI based YAM emailer again on OS 4.



Above is the new Partition Wizard tool showing the attractive Reaction look present in the latest screen-shots.

Image Enhancement

Here are some digital photos illustrating our Image Enhancement tutorial on page 42:

Dynamic Range

Above, the original image straight out of the digital camera. The sky is interesting but it's too dark.

The processed image after histogram equalisation and a slight gamma adjustment; this highlights the sky and reveals the detail in the foreground.

A more complex image featuring an unprocessed sky with a heavily brightened foreground.

You can download the images for this tutorial from: http://www.totalamiga.org/issue16.html