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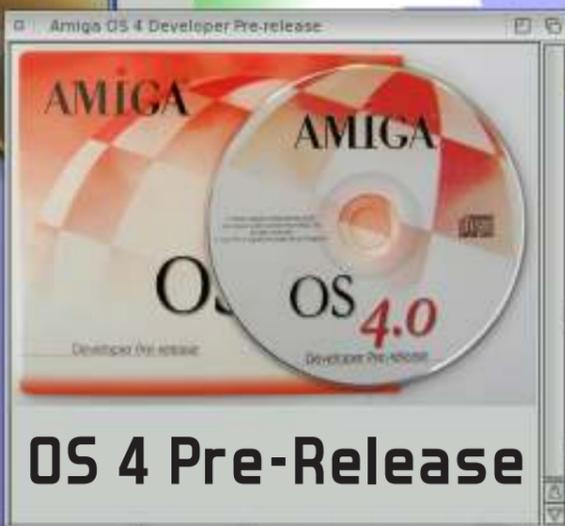
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OS 4 Pre-Release

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TOTAL AMIGA
Issue 18
Summer 2004

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Editorial

Welcome to another issue of Total Amiga which, as usual, is packed with items from a wide range of contributors.

This issue we finally have some concrete news on OS 4 to report with the release to early-bird customers of the Developer Pre-Release on CD. These long-awaited discs let AmigaOne owners finally use their machines with the OS for which they were built and try out some of the features we've been talking about in our OS 4 features for the last few issues. Whether you're an AmigaOne owner and have your CD or haven't yet taken the plunge we hope you'll find our special edition of OS 4 Update interesting. For AmigaOne owners we have included details of how to update your flash-ROM as required to run OS 4 and some tips on how to get the most from the pre-release. For others we cover some of the new features that have been included on the pre-release CD. OS 4 development did not stop with the pre-release so we also look at some of the features still under development that will be included in the final version.

On the other side of the pond that is the Amiga community, we have a review of Genesi's latest hardware release, the Pegasos II PPC motherboard with G4 1GHz CPU card. Paul Rezendes reviews the board for us, approaching it as a new user coming from a "classic" Amiga background.

Sometimes it's good to hear a different point of view, so I was interested to receive an article from new contributor Mark Smith stating his strong opinions on the Amiga market place. It certainly gives some food for thought for companies and organisations that would see Amigas and Amiga-compatibles as successful products in the wider market. As usual if you have any comments on anything published in the magazine then please send them in, I will include a selection of responses in a letters section.

In the current Amiga market, a brand new application is a pretty rare beast, but AirsoftSoftware's new Hollywood Designer definitely qualifies as a member of that elusive species. Designer is a graphical multimedia application that can be used to create presentations, slideshows and even simple programs with a whole host of impressive graphical effects. Find out what Designer can do and how well it does it in my review on page 18!

Cloanto's neat Amiga emulation package, Amiga Forever, has been updated to version 6, which you can find reviewed on page 28. Version 6 is available in an on-line (downloaded) or CD edition. Interestingly the CD has a number of extras including the ability to boot a PC directly from the disc without needing Windows. Unfortunately our copy of the CD didn't arrive in time for the CD features to be included in my review so I will publish an addendum covering that functionality in the next issue. I should express my thanks to Cloanto for supplying us with a review copy.

In a strong support section this month Dave Pitcher has come up trumps with another part of his in-depth "C" tutorial. In my PDF tutorial you can find out how to create output that can be viewed on almost any operating system from most Amiga applications. Finally Sam Byford has contributed a handy tutorial on playing DVDs and other movies with the MorphOS port of mPlayer.

You may notice in the "next issue" box inside the back cover that we're expecting issue 19 to take four months to complete (meaning it should be published in early November) instead of the three we normally plan. This is because I will be away on holiday (in Canada) for just over three weeks during the production period so I don't think we'll make the normal production schedule.

I hope you enjoy the magazine and look forward to hearing any comments or suggestions you send in.

Robert Williams
editor@totalamiga.org

(Contact Us continued)
and nothing more, we don't make a profit from it.

If you wish to contact a contributor send your message to one of the addresses in this section.

Please Note: Total Amiga is produced by the editor and contributors in their spare time. While we always strive to produce the magazine on time and include all the advertised contents this is not always possible due to other commitments. The price you pay for Total Amiga covers our costs

Everybody was Demo Writin'

Karate Fighter (K-Fighter from now on) is a new utility that enables you to create demos with complex graphic and sound effects using a straightforward scripting language. A finished script is saved into a text file and can be distributed with the with the K-Fighter executable and any images and sound files used. Unlike many classic demos, K-Fighter supports a wide range of Amiga hardware from a 68030 AGA machine with no FPU right up to an '060 with a graphics card. It also works well on emulators such as UAE and Amithlon, and works under emulation on OS4 and MorphOS too. The demos you create can be run on a variety of screenmodes (K-Fighter either picks the closest mode to the size you specify or it can show a screenmode requester) for maximum compatibility.

A wide range of special effects are supported, including a real-time 3D engine that was added in the last release (0.99). New effects can be added as plug-ins so even hardcore demo coders could use KFighter as a framework on which to build their own unique effects and routines.

The KFighter package includes a tutorial and example scripts to get you started. The program is freeware and can be downloaded from: www.k-fighter.net

Amiga OS Sold

In a surprise announcement, made just after the last issue of Total Amiga hit the door mats, Amiga Inc. said that they had sold the "Classic Amiga Operating System" including AmigaOS 4.0 and all subsequent releases to KMOS Inc., a company previously unknown in the Amiga community. Even more surprising was the disclosure in Amiga Inc's press release that the agreement had actually been entered into with Itec LLC on April the 23rd, 2003 and had not been announced at the time. Itec was later acquired by KMOS leading to the end result we report today.

It seems that the acquisition will have little or no effect on the forthcoming release of Amiga OS 4 for consumers. Hyperion

have welcomed the acquisition and reassured their customers that the new OS will be released. Gary Hare, the CEO of KMOS, has said that they will honour the agreement signed by Amiga Inc., Hyperion and Eyetech at the World of Amiga South East show in November 2001.

Amiga Inc. stated that the reason for the sale was to allow them to concentrate their activities on the AmigaDE and Amiga Anywhere products which they will retain along with the Amiga name itself (which we assume will be licensed for use by KMOS).

Since the announcement in March we haven't heard much more from KMOS, although we understand they are active behind the scenes. AmigaWorld.net did conduct an

interesting interview with Gary Hare which gives a bit more information about him and his company (see the link at the end of this news item).

Every sign is that Amiga OS 4 development is going ahead full steam with the release of the pre-release in June and many other elements in the very active development. Take a look at our major AmigaOS 4 update feature on page 12 for further details.

Read the official press release at:
www.amiga.com/corporate/150304-amigaos_sale.shtml

The Gary Hare interview:
http://amigaworld.net/modules/features/index.php?op=r&rev_id=50&cat_id=3

PageStream Hits the Big 5.0

The Amiga's premier desktop publishing application is about to receive a boost as Grasshopper has announced PageStream version 5 and 5 Professional. PageStream is the fully featured DTP program used to produce Total Amiga.

New features in PageStream 5 include:

- Alpha Blending for Text and Objects
- Picture Transparency
- Text Widow and Orphan Control
- Definable Printer Marks
- Path Reverse, Flatten and Smooth
- Hanging Bullets, DropCaps and Number
- New Duplicate Objects Method

The Pro version (introduced at release 4.1) includes plug-ins that were previously available at extra cost (TextFX, Gary's Effects and Borders) and a PDF document filter. This filter enables PDF documents to be loaded into PageStream for editing, a feature not previously available on the Amiga and usually requiring expensive specialist software on other platforms. The PDF filter has two modes, one of which tries to

import the PDF as accurately as possible which results in some editing limitations and the second that groups text into easily editable blocks but may change the format somewhat.

In version 5 the Pro edition is further differentiated with the following new features (amongst others):

- Place PDF Objects
- Automatically Adjust Text Width to Justify
- Gradient/Radial Blend Masks for Pictures, EPS, PDF and Drawings
- Path Math: Union, Add, Unique and Subtract

PageStream 5.0 releases for AmigaOS 68K and MorphOS are expected to be available by the time you read this. Grasshopper are also committed to producing an AmigaOS 4 native version but at the time of writing a release schedule was not available.

A full copy of PageStream 5.0 costs $99 (£55 approx.) and the Pro version is $149 (£85), various upgrade and crossgrade (between platforms) deals are also available. For full details and to order on-line visit the Grasshopper website:
www.grasshopperllc.com

SongPlayer it Again

SongPlayer is a name familiar to many Amiga users who found it the best MP3 player for systems without a PPC accelerator or a sound card. However a few years ago development dried up when Stéphane Tavenard left the Amiga scene. Last year the development was taken up by Mathias Parnaudeau Nicolas Det and a MorphOS native PPC version was released. This version has been regularly updated and with the latest release (1.62 at the time of writing) there are now versions for MorphOS, AmigaOS and Amithlon.

Changes since Stéphane's last release include:

- MorphOS native version (uses AHI only).
- Ogg Vorbis file support (MorphOS only).

SongPlayer 1.62 running on MorphOS.

- Compact disc title editor.
- Reduced CPU usage with 68K decoder.
- Many bug fixes.

SongPlayer is freeware, download the latest version for your platform from:
http://amigadev.free.fr/songplayer

Peeking Through the Papyrus

Titan have released some new screenshots (some of which you can see on this page) of their forthcoming port of ROM Logicware's office suite, Papyrus office. Papyrus features a powerful word processor with many modern features including

MS Word import and export. The program's table features also enable it to be used as a spreadsheet. Also in the package is a database program.

Previously only announced for MorphOS, Titan will now be making an AmigaOS 3.5/3.9

version of the suite, the system requirements for the two versions are: MorphOS 1.4.2, 128 MB RAM or Amiga OS3.5 or 3.9, Mui 3.8, 48MB RAM, Graphicsboard running Cybergfx or 100% compatible, 68040 CPU or higher.

StatLine

We all like to see our system specs on show to the world and some information like memory usage and CPU load can actually be useful! Now MorphOS users have a way to show off with the release of StatLine. As the name implies this tiny utility displays system statistics in a slim MUI window on the Ambient desktop. The format of the information is highly configurable with a wide range of variables available including the following types:

- Memory
- Tasks
- CPU load
- Versions
- CPU type
- Computer type

StatLine is freeware and can be downloaded from:
www.christianrosentreter.com/releases/tools.php

For more details of Papyrus office, visit Titan:
www.titan-computer.com/ami/papyrus/index.html

or ROM Logicware:
www.rom-logicware.com
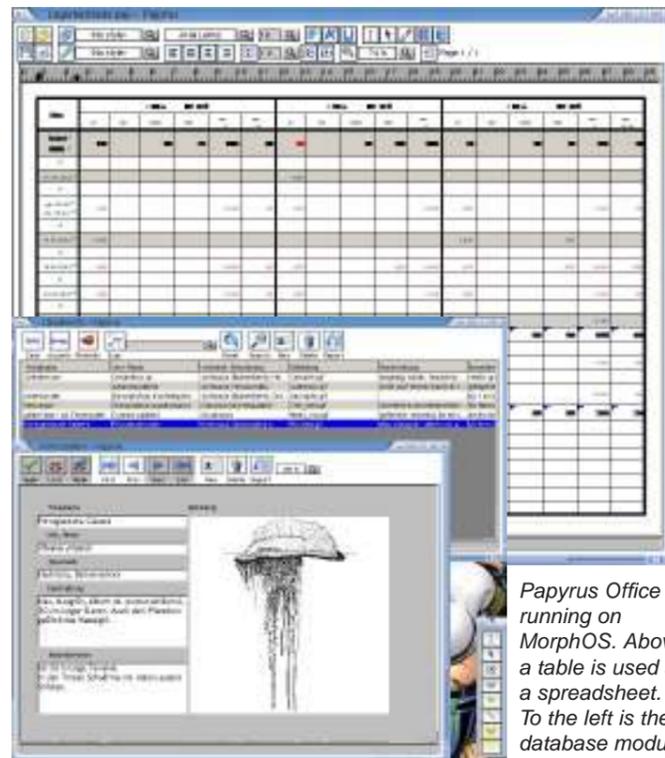
Papyrus Office running on MorphOS. Above a table is used as a spreadsheet. To the left is the database module. Right is a MS Word document imported into the wordprocessor.
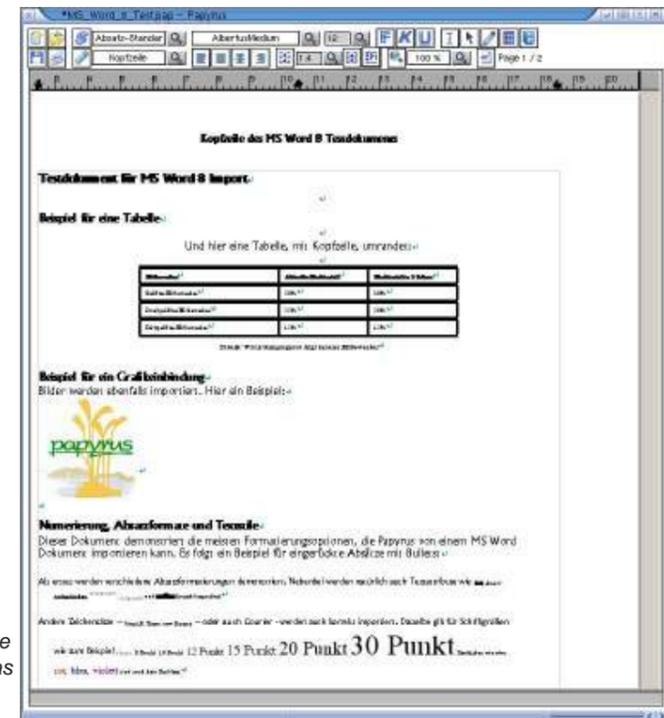
OS4 Depot is a file repository specifically for PPC native AmigaOS 4 software. The catalogue of software available is organised into categories (such as graphics) and then into subcategories (convert, for example) so it will be easy to find all the available native software in a particular field. Also available is a simple search engine which allows you to search for words or phrases in the software description. More powerful search options are in development. Each file in a category is listed with its version, file size and a description; clicking on the description shows an Aminet-style readme file. Currently there are no screenshots or facilities to comment on or rate a file; hopefully advanced features like these will be added in the future.

Anyone can upload their OS 4 native programs to OS4 Depot using a form on the site. The form has fields for many additional pieces of information that are currently shown against each file hinting at enhanced functionality to come. One particularly nice feature of the submission form is a "submit to Aminet" check box which enables an author to submit his upload to the Amiga's largest software repository as well.

Once OS4 Depot has built up a base of files I'm sure it will be a valuable resource to AmigaOne owners, it's nice to see the developers trying to work along side Aminet which, of course, caters for all Amiga compatible platforms.

Video Present and Future

Stephen Fellner has released several updates for Riva, his highly optimised MPEG video player for 68K Amigas, taking the program up to version 0.50 at the time of writing. The new version includes AHI support so a video's audio track can be heard using a 16bit sound card. Riva can now display its output in a Window on all systems, previously this was limited to Amigas with a graphics card that supported Picture in Picture such as the Picasso IV. Further optimisations are also included to make Riva even faster and several bugs have been fixed in the new version too.

Stephen claims that Riva the fastest 68K MPEG video player, you can try it out for yourself by downloading the demo (which plays back in black and white only) from his website: http://amigos.amiga.hu/cobra

Riva is shareware, the registration fee is $15 (£9 approx.) and you can order on-line through the RegNet service.

DVPlayer

In addition to his work on Riva, Stephen has also revealed that he is developing a new video player for AmigaOS 4. DVPlayer will be PPC native and is mainly intended for MPEG derived formats such as MPEG1/2, VideoCD, SVCD and DVD; other formats may be supported in the future. With the power of the PowerPC G3 and G4 processors, AmigaOnes should be able to comfortably play back DVD movies in real time, this will be assisted by support for the Altivec vector unit of the G4 processor which has recently been added to OS4 and will be utilised by DVPlayer.

DVPlayer is a new development, not based on Riva. As you can see from the screenshot, the program has an attractive custom interface with the standard play controls and a position bar to allow seeking within the movie. We hope to bring you further details on this interesting looking program in a future edition of Total Amiga.

"Just" A Sequencer

The first public beta version of this new MIDI sequencer has just been released for public testing and comment. Aseq (which simply stands for "A Sequencer") is an "x0x" style sequencer where the sequence is represented by a row of buttons (usually 16 or 32) which are selected to represent a "hit" (usually a note or sound of some kind). This sequencing method was made popular by various Roland machines such as the 303, 606, 808 and 909.

The features of Aseq include:

• OS friendly design throughout.
• Font sensitive interface that supports multiple screenmodes.
• Reasonably fast.
• Step sequencing and real-time sequencing.
• Number of patterns, songs and song length limited only by available resources.
• Semi-flexible pattern lengths.
• Adjust data such as volume, pitch, speed etc. on every step.
• MIDI monitor.
• Can be master (sends timing, play start etc.) or slave (receives timing, play start etc.) MIDI device or none.

• MIDI event editor (ability to change MIDI data for each note).
• Additional features for MIDI experts.
Saving is disabled in the public beta, but otherwise it is fully functional. To use the program you will need an Amiga (or compatible) with AmigaOS 3.1 or above. A MIDI interface and some MIDI devices are recommended but Aseq can also play back through AHI.

When it is complete, Aseq will be a commercial product. If you like the look of the program, the author offers you the option to make a donation via PayPal to help fund his development. If you donate more than 5 Euro he will give you a 45% discount on the finished product. For more details and to download the public beta visit:

www.aseq.de

Aseq has an OS compliant GUI that should work on all Amiga systems. In the foreground is the powerful MIDI event editor.

Work Those Disks

We're always on the look out for software that brings new features to the Amiga and with URD (Universal RAID Device) Rupert Hausberger gives our platform software RAID support. RAID stands for "Redundant Array of Inexpensive Disks") and is a method of improving the performance and sometimes the reliability of hard disk storage. There are various RAID levels which use multiple hard disks in various ways. URD supports RAID levels 0, 1 and a combination of the two. Level 0 treats multiple drives as one, spreading the data across drives in a process called striping. This means you could make several smaller disks appear as one larger one, because the data is striped performance can be enhanced as the data is streamed from several sources. Level 1 mirrors data across two hard disks so if one fails, or becomes corrupted, the information is still available. In the current URD implementation, level 1 does not improve drive performance. RAID levels 0 and

1 require at least two hard disks. URD also supports a combination of levels 0 and 1, this requires 4 hard disks and mirrors data between striped sets of disks.

URD creates a RAID device using the disks you select which can then be formatted with any existing Amiga file system. The system has a neat MUI configuration program which lists all the arrays you have

configured. A "wizard" similar to MiamiInit is used to configure a new array, each step of the process is explained including the selection of a file system for the array. In addition to the three RAID levels you can also choose to have your array encrypted if it is to hold sensitive data.

URD is freeware and can be downloaded from the author's site:
http://member.ycn.com/~hausrup
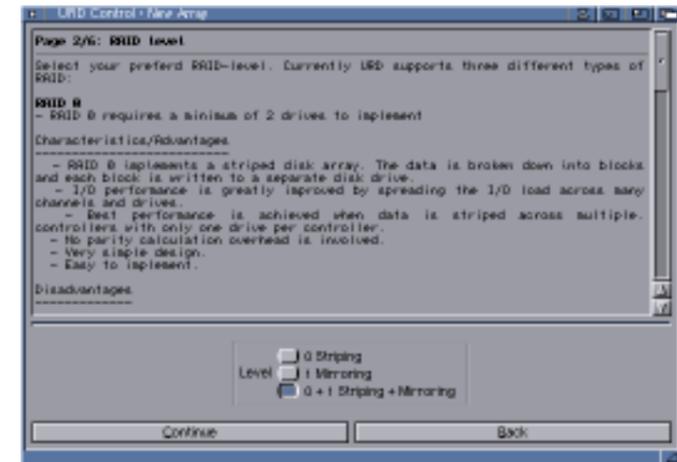
A Double Helping of Strategy

You wait ages for a strategy game to be ported to the Amiga and then...

Recent weeks have seen the release of ports of two open source strategy games, Open Transport Tycoon Deluxe which is an enhanced clone of the popular Transport Tycoon Deluxe and LGeneral which is a turn-based military game based on Panzer General. For both games, a port is available for AmigaOS 68K and AmigaOS 4, and a separate port has been completed for MorphOS. Let's take at the two games in a bit more detail:

OpenTTD

Your aim in Transport Tycoon Deluxe (as in most "Tycoon" games) is to make as much money as possible. You do this by building various transport links such as road, railways and air routes. Once your infrastructure is complete you don't have an easy ride, you must deal with breakdowns, natural disasters, local

authorities and there are also computer controlled opponents. OpenTTD adds many enhancements to the basic game including an experimental multi-player feature. You need a copy of the Windows release of TTD to use this version.
Information: www.openttd.com
AOS: http://home.arcor.de/f_menzel/downl.html
**MOS:** http://sourceforge.net/projects/openttd

LGeneral

In this game you play the part of a general guiding your forces turn by turn against a computer or human enemy. At your command are a number of units including tanks, aircraft, artillery and troops. When planning your strategy you must take into account the weather, unit supply, defences, entrenchment and many other factors making this a complex and involving game. LGeneral has been inspired by a commercial game from the early '90s called Panzer General, although files from this title are

required they can be downloaded from the LGames site below.
Information:
http://lgames.sourceforge.net/index.php?project=LGeneral
AOS: http://home.arcor.de/f_menzel/downl.html
MOS and WarpUp:
http://www.tbs-software.com/stefkos/LinuxPorts.html

Intuition Base is a new site developed by Darren "Ryu" Glenn who will be familiar to visitors of most of the Amiga forums on the 'net. The site includes information on various aspects of the AmigaOne computers and AmigaOS 4 and it seems to me that it will particularly interest those new to the platform or Amiga users who've been away for a while. The AmigaOS section features an introduction, screenshots, tips, FAQs and a list of available software (including pre-OS4 titles that are compatible). In the AmigaOne section you'll again find an introduction and FAQ. Amongst other information there are also pictures and details of the AmigaOne XE and Micro boards, a list of available operating systems and a list of compatible hardware.

The site is completed by a selection of feature articles, links to other useful sites and a shop where you can by a very nice Amiga/IntuitionBase case badge.

Intuition Base is already a very useful site and it is in an excellent position to grow as OS 4 gets into the hands of eager users across the world.

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A Better Browser!
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AmiGBG
A Punter's Eye View

Matt Treasure caved in to Total Amiga's demands to bring us his impressions of Sweden's biggest Amiga show.

My first trip to an Amiga event since the demise of Commodore also turned out to also be my first trip to Sweden. Having read about AmiGBG on the official website and seeing it promoted on AmigaWorld, I thought "what the hell, let's go", so I did!

I arrived into Gothenburg City Airport early on the Saturday morning, and after getting a taxi into the city to my hotel where I dumped my belongings, I got a taxi over to the Lindholmen Science Park where AmiGBG was being held. It was an impressive venue, the whole science park looked almost brand new, great choice! After admiring the Volvo sitting in the foyer I made my way up-stairs. Upon reaching the check-in desk, I provided my name and was given an AmiGBG sticker that had my name printed on it, but I went simply by my name on this occasion, not the nick-name I go by on AmigaWorld, just in case I ran into someone who I had annoyed with one of my posts! I took a deep breath and walked through the door.

The main hall where the event took place was pretty busy by the time I got there, with tables lined up along one whole side of the room, with more in adjoining rooms. After grabbing a floor plan, I quickly wandered round to check out what was happening. There were quite a few AmigaOnes running Amiga OS4.0, I felt like I had died and gone to heaven! It's been a long time coming but I was now properly able to see this "mythical" OS for real, I just had to have a play. I had no idea who owned the system I was messing around with, and as no-one came over and questioned me, so I carried on exploring Workbench. It felt new, but at the same time, it felt just like it always did, different but the same; what a relief! All the old utilities were where I remember them and the addition of a few new ones made me think "I want this". Everything ran nice and smoothly, the system was extremely responsive, I felt quite at home. At that point someone came across to me and said they had to move the computer, so I left them to it and wandered on to the next stand where I was greeted with a Micro A1 board; I hadn't realised they were so tiny.

There were various other goodies for sale there, so I loitered for a while. By the time I had plucked up enough courage

One of the many machines running OS 4.

to purchase the Catweasel they had, some little toad had already bought it! I wandered into the next hall where some of the presentations were about to commence. I sat in on a couple presentations, one was by a member of staff from IBM who was talking about the current status of the PPC project and what developments they were making to their line-up. He also provided us with a display of some amusing TV adverts during the break which were quite memorable.

The second presentation I watched was about Amiga Forever 6.0, which was being officially launched at the show. We were treated to a demo of the new program which had gone through a major overhaul and was running very nicely. There was also a brief showing of the video footage from Commodore's launch of the Amiga held at New York's Lincoln Center back in 1985... So Commodore could do some things right it would seem!

Unfortunately, due to problems with his airline, Alan Redhouse of Eyetech fame could not be in attendance, so he kindly held a Q&A session via a mobile phone. He discussed the on-going progress of the Micro A1 which is something that many people are interested in knowing more about. Ben Hermans from Hyperion was also there, and for me personally, it was good to be able to put a face to the name. Having heard so much both from him and about him, it was great to finally find out who this person really was. Ben updated us all on the progress of the Amiga OS4.0 project discussing their plans for the pre-release distribution and how it should actually be happening. I had to restrain myself at that point, this was the first time that I actually thought to myself, "this is actually happening"! There was then a presentation session where the winners to the various competitions were announced

and one lucky individual actually won an AmigaOne system! I came away with an AROS T-shirt, my luck was obviously in that day! I also managed to say hello to Michael Carrillo (aka Mikey_C) who was there and was actually broadcasting on AmigaWorld radio from the event, another face matched to a name! I was also fortunate enough to meet a few of the people I have been chatting with in various Amiga related chats.

Simon "Rigo" Archer demonstrating OS 4 and helping MikeyC sell Total Amiga!

Andreas Loong (aka Reflect) managed to syphon a few Knoner out of me in the process on his stand at the show, good to meet you at last Reflect!

Early evening approached and I decided I really had to go and get some food. I ended up in McDonalds, not very exciting, but at least I knew the menu! I flew home Sunday evening, and although I was exhausted after a three and a half hour drive home from the airport, I felt really pleased that I had attended the event. It was good to meet some of the people I had spent time chatting with in the various forums etc and in particular to actually get to see and test drive Amiga OS4.0. Well done to the organisers, you did yourselves proud, perhaps I'll see you there next year!

Comment

A View from Outside

At Total Amiga we try to take a positive view on all things Amiga related but sometimes it's useful to hear another point of view. As an ex-Amiga user, Mark Smith explains what lead him to leave the community and talks about what it might take to bring users like him back.

I got interested in Amigas quite late in the game, Amiga Inc had already been passed around like an old bike in a large family and was just settling in with its latest owners and we were all hoping they wouldn't kick it too much. I was looking for a computer that just plain didn't annoy me ... and I found it, AmigaOS was nice - an elegant system that didn't need a billion MIPs to do anything. Perfect, a system based on commonsense.

Overall I quite enjoyed my Amiga times, I started off with a little A1200 030, got hold of a couple of Blizzard 060's, then went to an 060 A4000 and finally pumped some steroids into it and put in a CyberstormPPC/060 with every bell and whistle possible... quite a respectable setup really... now at this point all sorts of promises were flying from various camps about how the future Amiga should look, what hardware it should be based on, and who should write the new OS.

New hardware! New Software! New Amiga - good exciting stuff!

Then confusion begins, the new saviors were having trouble delivering the old promises, new promises were made and companies suddenly pop up with new products. All looked good but for the average person it was information overload... which way should I go? Should I go with the "official" solution? Or go with one of these other tasty looking Amiga-like systems? Decisions, decisions!

Now to the badness ... Why oh why must a 'computer' of all things attract such a rabid bunch of fanatics? You guys and girls do realise that it's just plastic: fused sand and metal, don't you? The majority of Amigans are quite nice people, on the whole quite intelligent and level headed, but... there are the "frothing at the mouth" zealots! I think that maybe the only reason why the Amiga community is straddled with them is that they can't afford an Apple! It's so tempting to name names here, but I'm pretty sure that most of you who've managed to read this far know some names to fill these blanks: _____, _____,

_____, _____! And just to make matters worse some of the companies and people who are making all the wonderful new toys have no idea at all on how to run a business! Technical skills abound by the bucket full, but business and social skills? They must have been sick and off school the day those things were taught. Personally I find it so very annoying when the so called 'Elite' look down on and sneer at all the poor mortals who would really really REALLY like to play with their nice shiny new toys, but can't because of shoddy practices by the manufacturer. Hands up who has had this happen? (except you guys who fit into the blank name spaces). These same companies wonder why they have short life spans and why the world glossed over the Amiga when it was such a good machine!

The Amiga community has a huge festering zit, full to bursting with egos the size of houses.

Companies who think it's perfectly fine to release products that don't work, and a whole gaggle of headless chickens

running around. Such a pity. Sadly not much will change, Amiga will just keep swapping hands and getting more and more tarnished as time goes by.

One thing I do think the various Amiga and Amiga-like companies could do with doing is trying to adhere to some form of work ethics ... it's really not hard! You just look up the meaning of commonsense and then try to follow it!

So where do I stand in regards to Amiga ownership? Easy - I don't have one anymore, I don't intend to get one either until I see promises being kept, products being released that actually do what they say they do on the box. A decrease in the amount of rabid zealots might be a bit much to ask but I can dream I suppose.

Ah well, I'm just a mere mortal what do I know...

Buzz Word...

Alas poor Buzz, we knew him well.

It is with great sadness that we inform our readers about the early enforced retirement of the Buzz Word Column. With the sudden demise of Amiga as the company that owns AmigaOS, Buzz has decided to retire to a secret bunker in the centre of Baghdad which he brought for a very cheap price from the previous owner who had to go into hiding leaving his spokesman once declare that "There are only two American tanks in the city."

Looking back at the time, Buzz Word spent lots of energy sending us his information snippets to publish, he often got it mostly right, but he did once

get it wrong in spectacular fashion when he announced that Jim Collas would be returning as CEO of Amiga Inc. A debate that raged and raged for ages on Amiga Internet website and forums for weeks on end. Still he did get the odd rumour right too, unfortunately, we can't remember which ones either!

Before leaving Buzz left us these parting words...

"I enjoyed my time as an Amiga espionage agent, but I have decided to move on to pastures new, with KMOS at the helm, the chances of getting anyone to speak, are next to impossible. As a matter of fact, Garry Hare

and his staff walk around with both cheeks firmly zipped up. The chances of getting any information out of that lot, is about as likely as getting a politician to be honest with you"

Buzz, went on to add..

"I wish every Amiga user all the best in the future, I hope Amiga OS4 is everything they hope it to be. As to myself, I am writing an autobiography of Muhammed Saeed al-Sahaf (former Iraqi Information Minister) with the working title of "Pass the Buck please". Rumours that the front cover will feature a Blue Morpho Butterfly being run over by a Boingus Ballitus is strictly untrue and very cruel as Morpho's are

a rare minority and quite endangered, but then, so is the butterfly"

With that, the line went strangely dead. We don't know when or indeed if we will hear from Buzz again. In the meantime, to fill the space left over in the next issue, we shall be featuring a new regular "Knit yourself an Amiga Tea Cosy" column for you to impress all your friends with!

Alternatively, if you can't bear the thought of Knitting tea cosy's please send us an E-Mail with your suggestions for what we can fill this space with from the next issue.

Amiga OS 4 Update:
Developer Pre-Release

Mick Sutton and Robert Williams continue our regular series on OS 4 with a look at the recently shipped pre-release, some handy tips for early-birders who've just received it and news of the latest OS 4 developments.

Just as we completed work on this article we heard that the first AmigaOne early bird owners had received their Amiga OS 4 developer pre-release CDs, the announcement of which we reported in the last issue. Being lucky enough to have access to development versions of OS 4 we've been able to watch the pre-release as it developed. In this article we aim to provide some useful information for those who've just received their CD and to report on the features of the pre-release for those who've not purchased an AmigaOne. If you are thinking of buying an AmigaOne, we understand that the pre-release will now be supplied with all boards sold, although you should confirm this with your retailer. Since the pre-release CDs went

to press, OS 4 development has been continuing so we also have news of the latest developments which should be of interest to all! So, let's start with what you do when your CD arrives:

Pre-release Installation

The installation process is quite painless and it's obvious that a lot of thought has gone into making it as easy as possible. Without doubt the most tricky part of installing Amiga OS 4 is the updating of your AmigaOne's firmware, U-Boot. With previous Amiga models the Kickstart ROMs contained the software needed to initialise the hardware and some parts of the operating system. U-Boot is designed to work with several different operating systems (notably Linux and of course OS 4) and

therefore needs to be configured to boot into OS 4. Existing AmigaOne owners will also need to update the version of U-Boot that they have on their machines before installing the OS 4 pre-release. When OS 4 is officially released we assume AmigaOnes will be supplied with the latest firmware installed and therefore there will be no need to perform this procedure. In the "Updating your AmigaOne's Firmware" boxout below, the full firmware update procedure is described for AmigaOne owners who will find it useful to have it in print and for anyone who is interested in the procedure.

With the firmware updated and set up ready for OS 4 you can boot the AmigaOne from the AmigaOS 4.0 Developer pre-release CD. After a minute or so

a familiar looking screen will open with a requester "Welcome to AmigaOS 4.0 Install CD", you are then prompted to set your language, country and time zone. The next step is to set the keyboard map and any input preferences (mouse speed etc.).

Within seconds of accepting the preferences the OS 4 Workbench appears on your AmigaOne's monitor for the first time and mighty fine it looks too! There's a great looking backdrop that reminds you that you've booted from CD and an AmiDock bar populated with some of the utilities you may need during installation. In the middle of the screen is a standard Amiga installer window asking "Do you want to install AmigaOS 4 Now?", with the continue button labelled "Yes, of course."!

The first step of the installation is to partition your hard drive and install the AmigaOne "booter". Installing this file (supplied on the CD) enables booting of OS 4 from this hard drive. The installation automatically launches the new MediaToolbox utility (the replacement for HDToolbox) where you can first read the configuration from the drive (to get its size etc.) and then install the booter (slb_V2). Then it's on to "Edit partitions and filesystems" to create some partitions on your drive. You need to create at least one bootable partition for Workbench (between 100 Mb and 400 Mb is recommended) and you can use the new "Fast Filesystem / Long Filenames (DOS\07)" option. When your partitions are all set up you are prompted to reboot; the system boots from the CD again. When you get to the Workbench screen the format command is used to prepare the new partitions, then you are ready to continue the installation.

From this point on the installation proceeds automatically, copying the files needed onto your boot partition. Once this is all done you can reboot and see OS 4 running from your hard disk for the first time... congratulations!

If you think all this is a bit complicated, don't worry, there is an excellent guide to the whole process written by Carl Moppett aka JurassicC. Once you've

"At last the patient early bird AmigaOne owners have something... more interesting than Linux!"

booted to Workbench the guide can be viewed in IBrowse on the AmigaOne while you complete the installation.

Kickstart

On "classic" Amigas, the parts of the operating system required to boot the computer, along with some other essential components, are stored in the Kickstart ROM on the motherboard. New releases of the OS had to either supply a new ROM, or patch the old one using the SetPatch command in the startup-sequence. On OS 3.5 and 3.9 it is this process that requires an additional reset when the Amiga is started. The AmigaOne has only the generic UBoot bootloader installed in ROM, this contains no AmigaOS components so these must all be stored on the hard disk.

AmigaOS 4 stores all the modules that would have been located in ROM, plus some new ones, in a new drawer in the System partition called

"Kickstart". Each module is contained in a separate file with a .kmod extension, examples include picasso96 (enabling graphics cards to be accessed from start-up), graphics.library and the OS kernel. This arrangement enables existing modules to be updated and new modules to be installed simply by copying them into the Kickstart directory using Workbench.

Now Kickstart consists of a set of files on disk it can be managed in a much more flexible way. In the Kickstart directory is a file called "kicklayout", this defines which modules should be loaded. Multiple configurations can be defined in the kicklayout file, for example you could have a test configuration to test a new module and a fallback one to use if the new module causes problems. The configuration to boot can be selected in U-Boot so it can be changed even if the OS won't boot. In the final release a KickLayout editor will be supplied, this neat GUI program enables you to define new configurations and edit existing ones without needing a text editor.
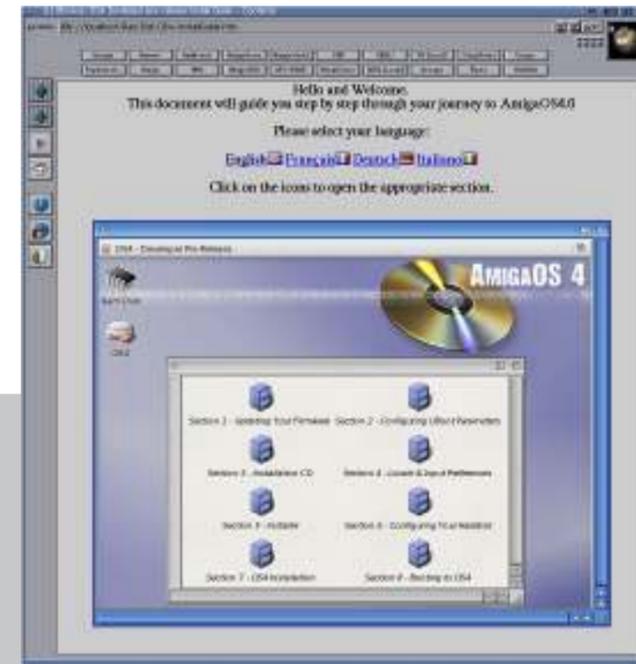
The OS 4 Developer pre-release CD is supplied with a comprehensive on-line install guide.

Updating your AmigaOne's Firmware

In order to install this Developer pre-release of OS4 on your AmigaOne you must update its firmware (U-Boot) to V1.0.0, dated 12th April, 2004 (or later). If you know that your firmware ROM is write protected, then please contact your Amiga dealer to arrange for it to be replaced with an unprotected ROM before proceeding. The update process should be able to detect if your firmware ROM is write protected and should halt if it cannot be updated.

Located on the AmigaOS4.0 Developer pre-release CD, in the Firmware directory, are the required images to update your U-Boot firmware. There are two versions available. One is for updating from U-Boot version 0.0.1 (10th September, 2003), the other is for updating from version 1.0.0 (December, 2003 or later). Please ensure you use the correct version.

For example, for updating from "10th September, 2003" U-Boot, use the "From 0.1" image, for updating from "22nd December, 2003" or later U-Boot, use the "From 1.0" image.

If you are unsure what version of U-Boot you have then perform the following:

Press any key when the "Press any key to interrupt autoboot:" message appears on screen. The U-Boot preferences count down will then start - allow this to complete without interrupting. You should now see the U-Boot command prompt "]". Type `ver` and press Enter.

You should now have identified which firmware update to use. If you are ready to proceed then use the procedure outlined above to interrupt the U-Boot sequence. Insert the Firmware update CD and then at the U-Boot "]" prompt type:

```
ide reset
diskboot 500000 X:0 ; bootm
```

Where X is either 0, 1, 2 or 3 depending on your CDROM config as shown below.

CD as Primary Master type:
```
diskboot 500000 0:0 ; bootm
```

CD as Primary Slave type:
```
diskboot 500000 1:0 ; bootm
```

CD as Secondary Master type:
```
diskboot 500000 2:0 ; bootm
```

CD as Secondary Slave type:
```
diskboot 500000 3: ; bootm
```

If you are unsure about what diskboot command to use then take a look at the "–Disk Summary–" output, which is displayed when you first power on your AmigaOne. This will show you which Device number your CD-ROM is attached to. The Device number is the same number you should use in the diskboot command. From the example below you can see that the CD-ROM is on Device 2, so you would use the "`diskboot 500000 2:0 ; bootm`" command.

The Firmware update will then

load from CD and after a few seconds you will be presented with a message headed "Attention!! Please read this notice carefully!". Press any key to continue. Then you must type the letters "o" & "k" in that order to confirm you wish to proceed.

The update will go through an erasing process and then through an update process. Once completed there will be a count down of 5 seconds, after which your AmigaOne will be rebooted. Please **DO NOT** turn off your AmigaOne during this update as it could render your firmware unusable and your AmigaOne unbootable.

Important: If you are not completely confident about doing a U-Boot flash update then contact your Amiga dealer, who will advise you.

Configuration

Your AmigaOne firmware will now be at the correct version for

booting the AmigaOS4.0 Developer pre-release CD. But first you need to make a few environment and preference changes. Interrupt the boot sequence, as described in Section 1. Or, if you are already at the U-Boot "]" prompt, type menu and press Enter. Again the U-Boot preferences countdown will start, please interrupt it by pressing any key, except Enter.

The U-Boot menu should then appear. Use the cursor keys to navigate to PCI/AGP and then press Enter.

The PCI/AGP submenu will then appear. Use the cursor and Enter keys to change the "Trigger By" settings to "Level". Press Esc to return to the main menu.

Use the cursor keys to navigate to "Boot Sequence" and press Enter. The Boot Sequence submenu will appear. Use the cursor and Enter keys to

change the "Boot Devices" to the following:
Boot Device 1: IDE DISK
Boot Device 2: IDE CDROM
Boot Device 3: Floppy
Press the Esc key to return to the main menu.

Use the cursor keys to navigate to "Integrated Peripherals" and press Enter. The "Integrated Peripherals" submenu will appear. Use the cursor and Enter keys to change the "PAR Port Mode" to "ECP". Press Esc to return to the main menu.

Press the Esc key to exit the main menu. Use the cursor keys to navigate to "Save Settings and Exit" and press Enter.

Once you have saved the changes you need to change some U-Boot env parameters. You will be returned to the U-Boot "]" Prompt. At the "]" U-Boot prompt type (in lower case only):

```
setenv stdout vga
```

```
setenv autostart yes
setenv preboot
setenv bootcmd "menu; run >
menuboot_cmd"
saveenv
```

DO NOT reset your AmigaOne at this point.

Starting Installation

Insert the AmigaOS4.0 Developer pre-release CD in your CDROM drive. At the UBoot "]" prompt type:
```
ide reset
setenv boot1 cdrom
boota
```

You will notice the AmigaOS4.0 kernel modules begin to load from the pre-release CD. Once the kernel has loaded, your screen will go blank and your monitor may go onto standby.

The CD drive is still being accessed at this point, after about one minute you will be presented with a welcome message on a white background... AmigaOS 4 Developer pre-release is about to be installed, you can now follow the prompts and use the on-line documentation... Enjoy!

Hardware Support

USB

Amiga OS 4 will be the first version of our beloved operating system to include support for USB, unfortunately this will not be included on the pre-release CD, but we have been able to try a development version and it's coming on nicely. At the time of writing the USB 1.1 controller with four ports on the AmigaOne motherboard is supported, as are the Thylacine and Highway Zorro boards on "classic" Amigas. The OS 4 USB stack is based on Sirion, the stack supplied with the Thylacine. Since our Thylacine review in issue 13 the stack has been greatly improved and ported to PPC. Classes of USB device supported in the current development version are Human Interface, which supports USB keyboards and mice and MassStorage, for devices such as flash drives, card readers and some digital cameras. We have tried several multi-slot card readers on the A1 and they work perfectly, cards are automatically mounted and displayed as volumes on Workbench; no configuration is needed.

Radeon

Last issue we reported that drivers for ATI Radeon based
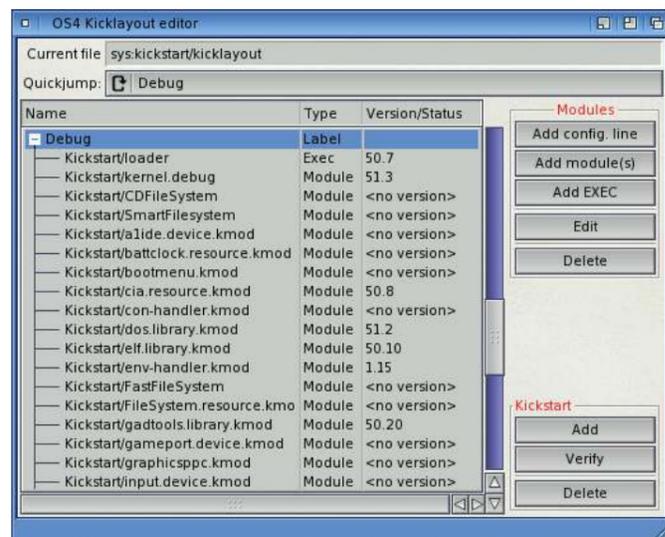
Kickstart has never been so flexible! The new Kicklayout editor allows you to define just what kickstart modules are loaded.

graphics cards were in development. These drivers have now been completed and are in the pre-release. Radeon support is an important advance because cards based on this chipset are plentiful and affordable. At this stage the drivers are for Picasso 96 and 2D only but for the final release they will be replaced by the SNAP 2D graphics system, which provides support for hundreds of graphics chipsets. We understand that 3D drivers are also planned.

One of the last parts of Amiga OS to be ported to native PPC

The Workbench title string can now show your own text and variables without hacks and patches.

code for OS 4 is the graphics.library, as we write this we have heard that the PPC version is being tested on "classic" Amigas with PPC cards. This is very good news indeed, one of the last hurdles before release has been cleared!

Audio

When an audio CD is inserted into the CD or DVD drive of an OS 4 machine a default CD icon appears on Workbench. Opening the icon and showing all files reveals a normal Workbench window with an icon for each track on the CD. To extract the audio data for a track you simply need to drag its icon onto a hard drive partition, the track can then be used to make an MP3 or part of a compilation CD.

Included in the "Tools" directory is a new incarnation of "PlayCD" with a Reaction user interface rather than the skinable interface of the OS 3.9 version. PlayCD is used to play your audio CDs in your CD/DVD drive, the audio is output directly to the soundcard for minimal CPU load. Unlike "classic" Amigas, all AmigaOne compatible soundcards have a built in mixer allowing AHI sound, CD audio and other outputs to be heard using one set of speakers. A mixer utility is supplied as a contribution with the OS 4 pre-release, this enables the soundcard's mixer so the CD audio can be heard (without starting AHI) and can set the relative levels of each output so, for example, you could equalise a loud CD to quieter AHI output.

System

Context Menus

Users of Directory Opus 5 and some other operating systems will be used to pop-up menus that offer options appropriate to the object under the mouse pointer. The new Context menus commodity (formerly known as PowerMenus) brings these to the Amiga OS 4 Workbench, once it has been run (for example put in WBStartup) windows, icons and the Workbench background each have unique pop-up menus which appears when you click the right mouse button. The context menus contain most of the commands from the standard menus plus some new options. The screen context menu allows you to run a selection of tools, utilities and preferences programs without opening their sub-directories. The new copy and cut items in the file context menu can be used to copy and move files using a two step process where you first copy or cut the file and then paste it into a new drawer using the paste option in the window context menu. We noticed that the file menu changed depending on the type of file, for example a text file has the "Multiview" and "Edit" options whereas a program has a version string option (which shows the version number in a small window). According to the Context Menus documentation the DefIcons preferences program will be enhanced with the option to add custom context menu entries for each file type.

Click to Front

The ClickToFront commodity has been enhanced with several new options configured by tooltypes. You can now use any mouse button (we tried a three button mouse) to bring a window to front and activate it. An optional qualifier key that has to be held down while clicking can be specified as can the number of clicks. Ignore borders and/or contents tooltypes allow you to choose which areas of a window can be used to bring it to front.

Depth to Front

Another new commodity is DepthToFront, this adds a pop-up menu to the depth gadget of screens and windows. This

shows a list of all windows and screens that are open and to quickly swap to the required one even if it's buried under many others. Tooltype options can be used to select which mouse button brings up the menu and if a qualifier key is needed.

Preferences

Since our last issue we've discovered some more new features have been added to the OS 4 preferences programs. In Font preferences there is now a new tab where you can select which directories in your Fonts: assign will be cached, this makes the list of fonts appear much more quickly in applications. The font used for Workbench icon text can now have a shadow or an outline in a selectable colour, this helps icon text to stand out on differing background shades.

Without additional hardware the AmigaOne uses standard PC PS/2 keyboards, to support this, PC keyboard keymaps (such as British_PC) are supplied and appear in Input preferences. If you have a Catweasel Flipper with a "real" Amiga keyboard then you can select the "Amiga keyboard" option.

Several new options have been added to the Workbench preferences, the screen title format can be customised with your own text and information items such as memory usage, Kickstart information, CPU type (both native and emulated) and what graphics board you have installed. "Live Drag Select"

AmiPDF has an excellent antialiased display and a wide range of navigation options. Here it is showing the German on-line magazine "Amiga Insider" but it works equally well with Total Amiga back issues!

causes icons to be highlighted as soon as you drag the selection box over them so you can see which icons will be selected when you release the mouse button. "Column Dragging" is a new, purely aesthetic, option that arranges file and drawer icons in a column while they are dragged (it doesn't change their position in the destination drawer).

Like an old adversary (especially to 1438 and 1942 monitor owners) "Overscan" preferences is still included but will only be useful for people running OS 4 on "classic" Amigas who for

some reason still use chipset screenmodes... sad!

Amiga Input

An all-new preferences program has been added to configure input devices such as keyboards, mice and joysticks, largely for use in games and perhaps multimedia applications. Beneath the surface, we understand that AmigaInput is a new method for developers to add controller support to their games as it replaces the lowlevel.library which is limited to the number of buttons on a CD32 joypad and doesn't support advanced controls such as throttles and hat switches. On the first page of AmigaInput prefs all the devices attached are listed, grouped into types such as mice, keyboards and joysticks. Multiple devices of each type are supported and there is an option to test and/or calibrate the selected device (useful for analogue joysticks). The features of the second page make AmigaInput useful even while there is no software that supports the new standard. Here you can map the buttons and movement axes of one of the listed devices onto one of the CD32 controller functions supported by the lowlevel.library. This means you can use any AmigaInput supported device to play any game that uses the lowlevel.library and runs on the

Context Menus adds handy pop-up menus to Workbench. This shot shows the options available for a drawer icon.

AmigaOne. Apart from keyboards and mice (which are currently displayed in the AmigaInput preferences) we are currently unsure what other input devices are supported. When we find out we'll give them a try and let you know how well it works.

Quick Updates

In addition to the greatly enhanced Reaction GUI system, the OS 4 pre-release is also supplied with a 68K version of MUI 3.9 to support the many existing MUI programs (including such vital applications as IBrowse, YAM and SimpleMail). A PPC native version of MUI is currently being tested. In a similar vein, the version of the a1ide.device (the device driver for the AmigaOne's on board UDMA 66 IDE controller) supplied with the pre-release does not support UDMA (Ultra Direct Memory Access). These are IDE modes which are both faster and less CPU intensive than the existing PIO (polled IO) modes. A version that supports UDMA is currently being tested and both of these updates will be included in the final release.

Utilities

AmiPDF

PDF (Portable Document Format) files are commonly

found for download on the Internet. They allow organisations to distribute documents on-line while retaining their original layout and formatting. The PDF format is based on PostScript, used by many high-end printers and desktop publishing programs. The AmigaOS 4 pre-release is supplied with a new PDF viewer called AmiPDF, this is a slick program with an attractive Reaction interface. AmiPDF can be called from a web browser, as the default tool of PDF files or you can select a file from within the program. When the PDF has loaded you can use navigation buttons in the toolbar to move through the document. There are three viewing modes, "pan" where you use the mouse to scroll the document, "zoom" which magnifies a selected portion of the document, or "select", where blocks of text can be selected and then copied to the clipboard. Also in the toolbar is a "find" box where you can enter a search term and AmiPDF will find and highlight each occurrence in the document in turn.

The quality of the PDF display is exceptionally good with antialiased text and vector graphics. All the PDFs we tried displayed very cleanly and looked as their authors intended. If necessary, pages within the PDF can be rotated and there are handy zoom options to show the whole page or its full width. Web links within PDF files are supported and you can select the browser (or OpenURL if you have it) you want to display the link. There is also an option to specify a movie player but we didn't have any PDFs with embedded movies to try it with. Although it seemed to be disabled in the version we tried, AmiPDF will have printing support using GhostScript. This gives support for a wide range of printers using built-in drivers, normal Workbench printer drivers, Turboprint drivers and the print can also be sent to a JPEG or PNG graphics file.

AmiGS

AmiGS is a front end for the popular open source GhostScript utility. The interface is similar to AmiPDF but handles Postscript and EPS files in addition to PDF. Although the AmiGS display is
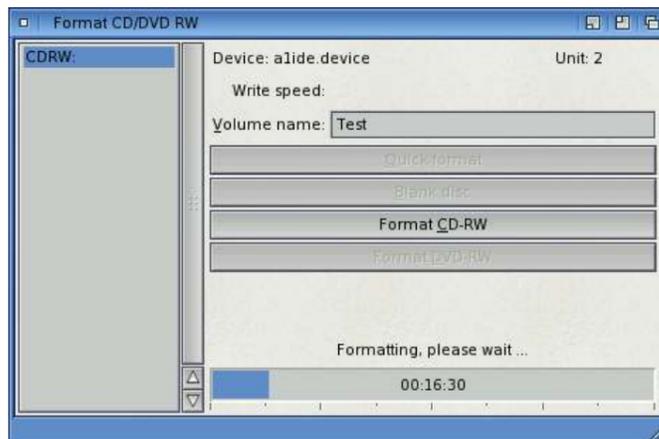
This new utility is used to prepare CDs and DVDs for on-the-fly reading and writing. Once a disc has been prepared it can be used just like a giant floppy!

antialiased it is not as good in quality as AmiPDF so you will want to use the dedicated utility for PDF files. AmiGS has most of the navigation and viewing features of AmiPDF but it does lack the find and copy options.

Format CD/DVD RW

One of the coolest new features included with OS 4 is the facility to write to a CD-RW or (even more excitingly) a DVD-RW disc on-the-fly as if it were a giant floppy disk. Before you can use this facility your DVD or CD writer must be mounted using one of the supplied DOSDrivers (found in the Storage directory), there are mount files for CD-RW, DVD-RW and DVD+RW discs. Once the disc is mounted it appears in a list in the new FormatCD/DVD utility (located in the System drawer) which shows all of the currently mounted re-writeable drives. You could set up multiple DOSDrivers to use more than one drive or one drive that takes several types of disc. Format CD/DVD then lives up to its name by formatting the disc ready for use, discs are formatted with an Amiga file system (such as FFS or SFS) so currently you can only use them in an AmigaOne. It may also be possible to configure other Amigas to read these discs. Formatting took about 15 minutes for the 4X CD-RW we tried, however once the disc has been formatted you can subsequently use the "Quick Format" option, there is also an erase feature which clears any information previously written to the disc and allows you to format discs that have been written by another application.

Once the disc is formatted it appears as an icon on Workbench with the volume name entered in Format CD/DVD. From that point on the CD or DVD can be used like any other disk, files can be dragged into its window to write them, then deleted or renamed at will. The disc has a normal volume name so it can be accessed for loading and saving directly from applications and file managers. Once writing is complete the CD can be removed and replaced at any time without using any special commands. This feature is ideal for making backups and moving data between AmigaOne systems. It also allows OS 4 users to use a DVD writer and RW discs to store up to 4.7Gb of data per disc which (outside an experimental port of dvdrtools) has not been possible on the Amiga before!

Useful Tips

When you get your OS 4 pre-release CD there are a few steps you may want to take straight away to make your life easier and to put some of the cool new features into effect!

AmiGS

The AmiGS utility requires an assign which does not exist in the default OS 4 installation. To add it, start "Notepad" (found in the Utilities drawer) and open the s:user-startup script and add the following lines to the end:

```
;BEGIN Ghostscript
assign ghostscript: »
sys:Utilities/Ghostscript
;END Ghostscript
```

Now save the file and reboot

your AmigaOne. You should now find the AmiGS program runs without an error requesting the Ghostscript: volume.

WBStartup

There are a number of useful utilities supplied with OS 4 that you'll probably want to put in your WBStartup drawer. We've explained what these do earlier in this article: PowerMenus, ClickToFront, Blanker and DepthToFront.

DepthToFront and PowerMenus both use the right mouse button to bring up their menus by default. To make them work together open the information window for "DepthToFront" and select the "Icon" tab. In the "Tooltypes" area change the "CX_PRIORITY" tooltype to "1" ("0" is the default) and click "Save". When you reboot all these handy tools will be loaded and will work together.

Installing the mixer

Find the Mixer program in the "Contrib/Tools/Mixer" directory on your OS 4 Pre-release CD and copy it to "Tools" on your Workbench partition. Run the program and use the sliders to set the volume of each output, then click save. If you would like to initialise the mixer at startup add the following line to your s:user-startup.

```
sys:tools/mixer setlevels
```

This will let you hear the output from PlayCD at any time.

Conclusion

At last the patient early bird AmigaOne owners have something to play with on their new machines which should be more interesting than Linux! This pre-release marks a major achievement for the OS 4 development team and is a tangible product from all the great work that has been going on over the past two years. OS 4 development is still proceeding apace and we expect the final shipping version to be another great step on from this release.

Mini or Micro?

They say good things come in small packages, Simon Archer endeavours to find out if it's true!

F or the first time in a very long time the Amiga has caught up with fashion!

"What?", I hear you ask. Well, if you have been keeping up with what's hot in the computing world you will know that MiniITX form factor is the latest 'Big Thing' to hit the domestic scene, and the Amiga is right there with it.

The aptly named MicroA1 is a miniITX form factor motherboard which measures a minuscule 170mm square, but has all the functionality (and more) of it's bigger brother, the AmigaOne XE.

The final design has yet to be cast into stone, but the projected specification is looking cool enough to keep even the most ardent hardware junky happy for ages. Here at Total Amiga we managed to get our grubby hands on a pre-production MicroA1 which is the Mk2 version. This board boasts a G3 750FX-2 PPC processor running at 800Mhz, a 256MB SODIMM running at

The microA1 packs all the power and devices you need into a tiny desktop case.

133MHZ, a Radeon 7000 graphics controller, a CMI8738 6 channel audio controller and a 10/100 3COM Ethernet

> ## "For the first time in a very long time the Amiga has caught up with fashion!"

controller all running through the VIA686B southbridge chip. I/O is generous enough with 44way (2.5 inch drives) and 40way (standard 3.5 inch hard drives, CD-ROMs etc.) IDE headers supplied giving UDMA

hard disk access, 4 USB1.1 ports, parallel, game, PS/2 keyboard and mouse. If you really feel the need for some extra expansion, the board is

also furnished with PCI slot that can happily accept a 3 slot riser card.

So, it sounds all very well and good, but what is it like in use? Well our board already had the latest version of 1.0.0 UBOOT, so we installed the new AmigaOS 4 (developer version) onto it to see how she drives!

As we have said elsewhere, the installation of OS4 went without a hitch, with the

machine booting from the CD. Apart from the physical size of the board, and the tiny Morex case which was supplied, it feels just like an XE. Luckily here at 'Total Amiga towers' we have a couple of G4 XE machines running the same OS so we were in an ideal situation for comparison, and considering the slower clock speed of the micro, the results were quite reasonable. Workbench is, in use, as quick and reactive as on the bigger brother! This board will make an ideal solution for those with space restrictions on their desks and we're sure many other novel uses will be devised when it is available to the general public.

The motherboard as it arrived. Notice the SODIMM memory module (with the white label) and the CPU module (with the fan).

The micro A1 installed in a Morex miniITX desktop case. The smaller board to the right is the power supply.

Hollywood 1.9 & Designer

Hollywood worked hard behind the scenes but now it's been to the plastic surgeon for a new "face" and is ready to play a starring role in the Amiga's revival. Robert Williams was there on opening night!

.info

If you've read my reviews of earlier versions in issues 14 and 16, you'll know that Hollywood is a multimedia program that enables users to create presentations, kiosk-type applications and even simple games using its own BASIC-like scripting language. The first version of Hollywood was already a useful program and showed a lot of promise, and with the second release (version 1.5) the author (Andreas Falkenhahn) had implemented a powerful feature set. However, despite its power, the script based development system was always going to limit Hollywood's appeal, because only a small number of potential users are willing to learn a new scripting language. It also has to be said that even for users who are willing to break out their text editors (and that includes this reviewer) creating a graphical presentation as a text script could be somewhat mind bending as it involved juggling pixel positions and multiple layers all in the mind's eye.

I'm pleased to say that, with the release of Hollywood Designer, Andreas now brings us a presentation creation GUI for Hollywood. Designer 1.0 is accompanied by a new version of Hollywood, 1.9, which can be purchased separately if you don't need the GUI component, however you must buy Hollywood 1.9 to use Designer.

Installation

Hollywood 1.9 and Designer 1.0 are each supplied on a CD-R which has been customised for the buyer, during the installation process your name and address are displayed. In both cases installation is carried out using the standard installer, with a few options such as where to install and which processor version should be used. Hollywood is supplied in optimised versions

for AmigaOS 68K, WarpUp and MorphOS and needs about 17Mb of hard drive space. Designer is available for AmigaOS and MorphOS, takes up 14Mb of space and cannot be installed unless Hollywood 1.9 is present on your system.

New Features in 1.9

Before we look at the new Designer package, let's find out what has been added in Hollywood version 1.9.

Generally it's a fairly minor upgrade with some features obviously added to facilitate the development of the GUI. However there are some new features and bug fixes that will be useful to current Hollywood users and the upgrade is reasonably priced, reflecting the modest number of new features.

Hollywood now supports PowerPC cards in "classic" Amigas using the WarpOS system. A PPC native version of the program itself is supplied and all versions have the ability to compile scripts into WarpOS native applications that can be run PPC native on a suitable Amiga. If you don't have a graphics card, or plan to distribute your presentations to someone who doesn't, then you'll be pleased to hear that Hollywood now works with FBlit to keep much more of its data in Fast RAM. This speeds up graphics output on the Amiga's native display and helps prevent Chip RAM running out on large presentations.

Installation
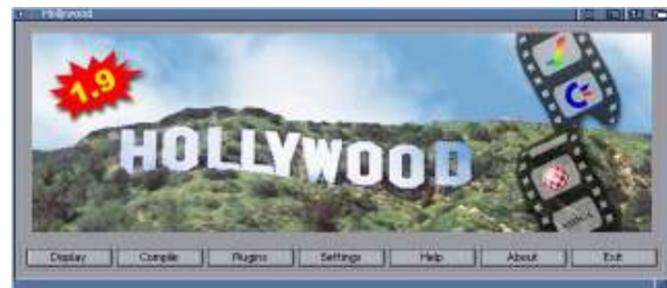
Hollywood 1.9 has its own GUI for running and compiling scripts.

Once again a host of new transition effects have been added in this upgrade, there are 46 new transitions in total comprising 23 different types and some variations on a theme. Scroll-in transitions are one of the new types available and are particularly useful to scroll an object onto the screen in one command without using Hollywood's move system. Six of the transition effects have been categorised as very processor intensive and are likely to be slow on 68K Amigas, thoughtfully these effects have been excluded from the random effect selection on 68K machines. The pre-calculation option, which enabled slower effects to be processed before display on slower machines has been removed from this version. It tended to cause an unexplained delay in a presentation or application, so I don't think it will be much missed! You can now take even more advantage of all these fab transitions because layers can be shown and hidden within your script using a transition effect. This option is ideal for interactive scripts where you want different elements to appear and disappear multiple times during a presentation.

When moving objects across the page using the appropriate "Move" command or scroll transition, Hollywood now has several special effect modes that change how the movement is carried out. For example, "damping" slows the object's movement at end as if the object gently comes
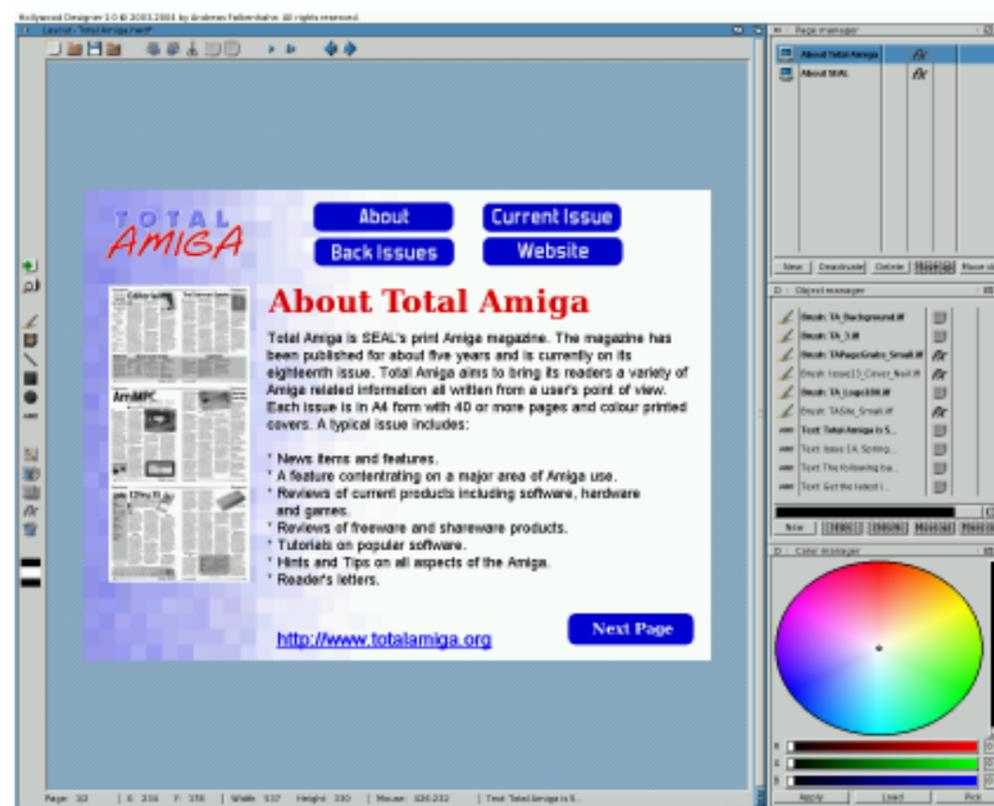
to rest and "curve" (which can only be used on horizontal moves) moves the object along a curved, rather than straight, path. When you undo an object that has been displayed using a scroll effect, the opposite effect is automatically used to scroll it neatly off the display.

Among the many other minor enhancements, a few caught my eye. Font styles such as bold and underline can now be used for all font types including TrueType and Intellifonts, not just for Amiga bitmap fonts as in earlier versions. The shape drawing options have been enhanced, polygons with an unlimited number of sides can be created and boxes have a "rounded corners" option. Finally when you set up your presentation, Hollywood can select the best fitting screenmode available for the size of your presentation, ideal if you want to distribute a full-screen presentation.

As we've come to expect from Andreas, Hollywood 1.9 comes with a selection of new and enhanced demo scripts which show off the new features to great effect and provide working examples when developing your

own scripts. Particularly impressive among the new demos are BoingAttack which displays balls which seem to bounce with their own inertia accompanied by demo-style scrolling text and WavyLogo which demonstrates how an image can be manipulated within Hollywood.

Designer

As good as Hollywood 1.9 undoubtedly is, I'm sure that what you're most interested in is the new kid on the block, Designer! So let's dive in now and take a look at something which is rather rare in the Amiga world at the moment, a brand new commercial application!

Basics

Hollywood Designer is primarily aimed at making presentations and in that way it compliments Hollywood scripts rather than replacing them. If you're creating a multimedia application or game then you might expect to do some coding and for that a custom script may still be best. However if you just want to put together a presentation for work or school then you probably don't

Designer sports an all-new MUI interface. The palette windows on the right-hand side stay open to give a quick over-view of the current presentation and let you make changes without opening requesters all the time. The status bar at the bottom of the main window shows information about the project and the object under the pointer.

Designer can be used to make the basis of a more complex script, although that may not be necessary given its ability to embed custom Hollywood code in projects.

GUI

When you launch Designer by clicking on its icon, a new screen opens at the same resolution as Workbench (you can select a different screenmode through a menu option later). The screen is dominated by the main layout window which shows your presentation and contains two tool bars. The bar along the top contains operations that affect the whole presentation such as load, save and preview. The bar on the left contains tools to insert pages and objects and to edit them. Along the bottom of the layout window is the status bar which shows the page number, position and size of the current object, pointer co-ordinates and the name of the object or button under the pointer.

Also on the screen are three smaller palette windows which remain open as you work in Designer. The first lists the pages in the current project, the second the objects on the current page and the third is a colour picker which uses the familiar AmigaOS colour wheel. Although Designer is a MUI application some of the options we've come to expect from such applications seem to be missing. There is no option to run MUI prefs and no additional gadgets in the window title bars. Although the windows can be moved around on the screen I could find no way to snapshot them in place. While Designer's GUI respects your default MUI set-

want to get your hands "dirty" with the nitty-gritty of code. As you'll see Designer also has a number of interactive options that make it more than just a fancy slide-show generator.

When you start a new project in Designer a new directory is created, in which all the files used in your project will be stored. This includes the presentation file itself, images and even executable files that are called from the execute command option. When you select a file from elsewhere on your system, Designer displays a message explaining that it will be copied to your project directory (the message can be switched off once you understand what's going on) but this rule cannot be overridden. You can set some information about your project such as its name, version and a description. The name is used to name the project directory and the data file. Hollywood Designer saves its data in a .hwd file, this is not a Hollywood script file and Designer cannot load existing Hollywood scripts. However you can generate a Hollywood script from your Designer project at any time. So if you wish,

Various page types are available, each one has a different background type. This requester is typical of the colourful icons found throughout Designer.

tings (except the title bar buttons) I couldn't set specific preferences. Also if you change your MUI prefs while Designer is open it displays a warning that it may be unstable and advises you to restart the program. I asked the author about these limitations and he plans to implement at least a "snapshot" facility in a future upgrade.

Pages

Designer is based on a concept of pages and objects, your presentation consists of one or more pages on which objects such as images (called brushes), animations and blocks of text can be displayed. Various types of page are available, a blank page has a plain coloured background, pattern has a tiled image, picture is filled with an image that is scaled to fit the page size and a gradient page is filled with a smooth horizontal or vertical fill between two colours. Each page you add is displayed in the Pages palette, you can move between pages by clicking on a page in the "Page" palette list or by clicking the next or previous page buttons in the toolbar. Pages can be reordered using the move up and down buttons in the palette. When the presentation is played back each page is displayed in order, however you can make a button that jumps to any page when it is clicked (more about these interactive features later). Pages of different types and sizes can be mixed within a presentation. If you want several pages to have a common background you must select the same settings for each page you add. There is no option for a "master page" or to copy an existing page.
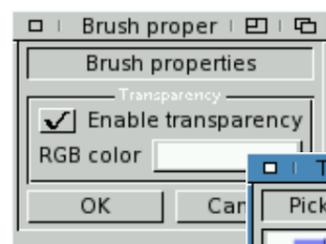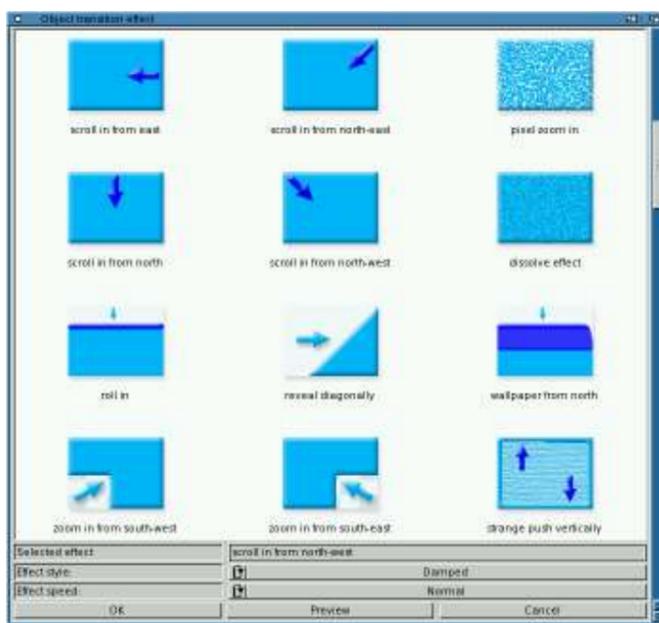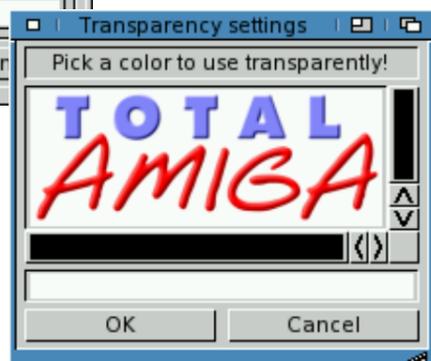
A wide range of transitions are included for both objects and pages. Some transitions, such as the one selected here, have a "style" option which gives even more flexibility.

A large number of settings are available for each page, these are spread across several settings requesters which can be accessed from the "Page" menu, from a context menu (right click on the page background) or by double clicking in the appropriate column in the "Page" palette. "Page Properties" contains the options associated with the type of the selected page, so for a picture page you can change the background image and for a blank page you can change the fill colour. The page type can be changed at any time without losing the objects on the page. The "Dimensions" option lets you change the size of the page, if the page has a background picture it is scaled to fit.

With the "Delay" setting you can make the presentation pause before the selected page's objects are displayed or make it wait until the left mouse button, right mouse button or space key are pressed. I found this slightly confusing as I expected the delay either to be before the page was displayed at all or after all the objects had loaded (effectively to make a delay between pages). If you want to do this you must add the delay to the last

"creating a graphical presentation as a text script could be somewhat mind bending"

object on the page, rather than to the page itself.

A sound can be played as the page is displayed. The sound can be either a sample for which a datatype is installed or a ProTracker music module. All sound output is via AHI so sound cards and systems without a Paula sound chip (such as Amithlon, the AmigaOne and Pegasos) are fully supported. Sounds can be set to play while other events continue and can continue across pages so background music can start early in a presentation and continue to the end. The sound can be looped a set number of times or infinitely and the volume and stereo panning can be adjusted.

About 80 of Hollywood's transition effects can be used in Designer to make the change between pages in the presentation more interesting. Selecting "Use Transition Effect" from the menu opens the transitions window, here each transition effect is listed along with a large icon illustrating its result. When you select an effect, an option at the bottom of the window allows you to change its speed. Some effects also have a style gadget for even more control. Each effect has three speeds: slow, normal and fast. I found that for many effects this offered too little control, a wider range of speeds would be a useful addition. A preview button allows you to see the selected effect and options in action, however this uses a generic set of graphics rather than your actual presentation. The range of effects offered by Hollywood and therefore Designer is quite awesome, you're bound to find some you like. They range from simple wipes and dissolves to ripple effects which are stunning to see rendered in real time.

The final page option is to add custom Hollywood code that will be executed when a page is displayed. This facility allows you to add more complex features to your presentation than are possible through the GUI. The "Code editor" window has standard editor controls such as cut, copy and paste and a button to check the code for syntax errors. Code can be loaded and saved in case you already have it in an external file or want to use a different editor. A nice idea for a future version would be a stand alone version of this editor for working on Hollywood projects that are not using Designer.

Objects

Six different types of object can be displayed on a page in a Designer presentation: brushes (images), animations, lines, boxes, circles and text. Each of these object types has an icon on the vertical tool bar, to insert an object you click on its icon, set any options and then click on the page to place it. Each object inserted has its own properties window unique to its type and there are many more options common to all types.

When you insert an image or animation, a requester appears allowing you to select the file you wish to add (which is then copied to your project directory). The selected image or animation is then displayed on the page and can be moved by dragging it with

Selecting the transparent colour of a brush (image) is as easy as clicking on the correct area of the image.

Text is entered into the "Text properties" requester (left). The range of controls is good but you must wrap the text manually.

Font support is excellent and there are many options to get the text looking just how you want it. On the right you can see I've selected both an outline and a shadow! The exact look can be tweaked even more using the fontstyle options (accessed by clicking "?").

the mouse. In the properties window for both types you can set a transparent colour. Any area of the image or animation in the exact colour you select will not be rendered by Designer allowing the background to show through. To help you select the transparent colour, Designer shows a copy of the image so you can click on the correct area.

After the box, circle or line icons have been selected you can drag out the shape required on the page. In the properties window for these objects you can add a border (even to the line) with a set width in pixels, and a shadow with a user-defined direction and size. Line objects have the additional option of setting a line width and box objects can have rounded corners with the radius you choose. A slight visual niggle is that the border applied to boxes seems to be thicker at the sides than the top and bottom, as if Designer is correcting for a non-interlaced native screenmode even though I have a graphics card. The colour of the fill, border and shadow can be set independently by first clicking on one of the colour swatches in the vertical tool bar and then selecting a new colour in the colour palette and clicking Apply. The colours of the current object are used when you add a new object so it's easy to create several in the same style.

The text icon opens a new window where you can enter the text you want to add to the page. Text can be loaded from an external file and the system clipboard is fully supported. Useful undo and redo buttons enable you to correct mistakes, every time I tried it was possible to undo right back to a blank window! When entering text you have to look after line breaks as Designer will not automatically wrap into the available space. It would be nice to have an alternative text object where you define an area for text and Designer takes care of the wrapping. On the plus side there are left, right and centre justification options.

The "Change font" icon opens a new window where you can choose from any of the fonts installed on your system, Amiga bitmap, TrueType and Intellifonts are supported. The font window shows a preview at the bottom of the screen which uses the default text "The quick brown fox..." rather than the text you've entered. Bold, italic, underline, outline and shadow styles can be applied either independently or in combination and the colour of the text, outline and shadow can

be set. By clicking on the "?" button below the font styles you can adjust the shadow position and outline width. The outline effect is particularly nice as it outlines the text as a whole, for example if a letter crosses an underline the outline does not cross the underline. Unfortunately the antialiaised font support of Hollywood 1.0 has not returned in this version - hopefully it will be re-implemented in the future, especially as faster machines and emulations are now available. Under MorphOS we found that lines of text could be truncated when system TrueType fonts were used. If the .ttf files are stored outside the Fonts: directory and accessed via a .font and .otag files, Designer would only display the first part of the sentance. The current solution is to copy the .ttf files into Fonts: and select those within Designer. Andreas says that a future version of Designer will allow external TrueType fonts to be used correctly under MorphOS.

There are a number of other options available for most object types. Dimensions and position are used to set the size and placement of all objects accurately by entering pixel values into a requester. Existing objects can also be moved around the page using the mouse, but if you want to re-size a box, circle, line or brush you must do so using the dimensions window, there is

no edit mode where you can drag handles with the mouse as commonly found in vector graphics programs. Animation objects can be moved but their dimensions cannot be changed.

As with pages, a sound can be attached to an object so it plays when the object appears. Similarly a block of Hollywood code can be added to an object so it is executed when the object appears. Each object can have a delay set that either causes it to wait for a number of milliseconds or for a mouse or key press, however as with pages this delay actually applies to the appearance of the next object, or page if this is the last object on the current page (based on the object palette order).

Objects are displayed on the page in the order in which they appear in the object palette list, this list also controls how overlapping objects are displayed. An object lower down in the list will be displayed above a higher one (this isn't actually as confusing as it sounds!). If you wish, each object can be displayed and/or removed using one of the transition effects. Most of those which can be used on pages can also be used for objects and the requester works in the same way with the same options. When you select that an object should be removed from the page before the page itself changes (all objects are automatically

"Events" can be attached to any object to make the presentation interactive. Objects can be hidden and shown (left) and external programs can be run (below).
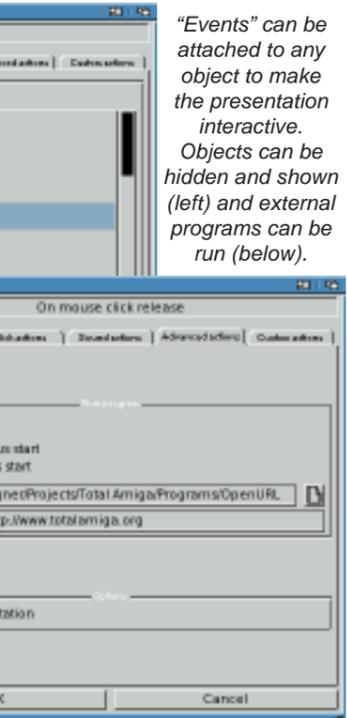
removed when you move to the next page anyway) either simply or with a transition, Designer actually creates a new object in the palette which refers to the object's removal. This object does not actually appear on the page, it just refers to the point in the page display when its parent object should be removed. You can move the removal object in the list independently from its parent as long as it takes place after its parent was created!

Interactivity

From what I've written so far, I'm sure you can see that Designer can be used to create a fine presentation quite easily, however that isn't the end of its talents. Each object can be made to react to a number of mouse actions, so suddenly your static presentation becomes an interactive multimedia experience (perhaps I should go to work in the Microsoft marketing department)! Actions can be triggered by the mouse moving over or out of the object or by right or left mouse clicks.

A wide range of actions are available and multiple actions can be executed from one event, making the interactive feature quite powerful, here are some examples: One or more items on the page can be displayed or hidden, linked with the mouse over and out option this can be used to show information about an object, or with the click options you could have several sets of information on the same page. The presentation can be moved on to any page so you could give your initial page a menu to jump to a specified page rather than viewing the presentation in order. A sound can be played, or the action can stop all currently playing sounds. External programs can be run offering a world of possibilities, one of my favourites is using OpenURL to open a web page in the user's configured browser. Here again, custom Hollywood code can be inserted if the built-in features don't meet your
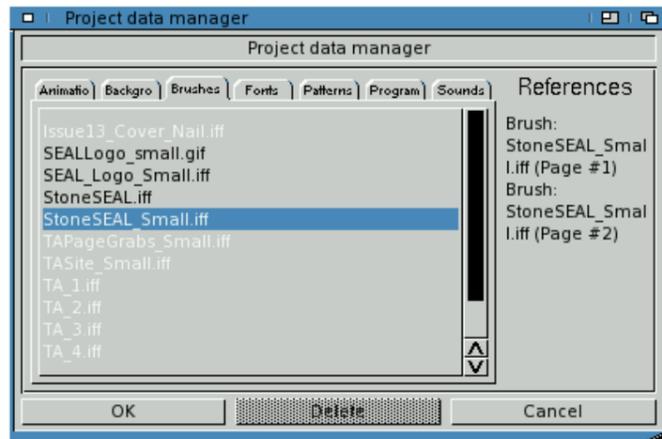
The project directory can be managed within Designer.

needs. Constants are provided so you can refer to objects and pages in the current presentation within your custom code. There is also an option to close the presentation so you can make a "quit" button.

Preview

While working on a project you can preview the current page or the whole presentation at any time. This opens a separate window with your presentation as it will appear to users, interactive elements and custom code can be tested within the preview.

Manage That Data

As I mentioned earlier, Designer insists that you store all your presentation data in a project directory. The "Project data manager" window helps you keep this organised. Each type of data (animations, brushes, externale programs etc.) has its own tab and, incidentally, its own subdirectory in the project directory. On each tab is a list of files, clicking on a file shows a list of all the pages on which it is used. If a file is not in use it can be deleted from the project directory. The data manager is especially useful for clearing up a project for distribution.

Export

When your project is finished you can export it as an executable for

one of three different platforms, AmigaOS 3.x (for "classic" Amigas and compatibles, will also work on OS 4 pre-release under 68K emulation), MorphOS and WarpOS (for Amigas with PPC cards). The executable file is then saved into the project directory. Whichever format you choose, the program file is called *projectname*.exe so, if several versions are needed, you'll need to rename each file as it is created. The executables do not require Hollywood or Designer to be installed on the target user's machine but they don't contain the external files used (images etc.) so you'll need to distribute the project directory with your executable (the Designer project file (.hwd) itself is not needed).

Stability

During my testing on my Amithlon system I found Hollywood 1.9 and Designer to be reliable programs, which is especially gratifying as Designer is brand new and, as far as I'm aware, the first program of this type by Andreas. On Amithlon I did experience some graphical corruption on the colour wheel and with filled objects but I think this is an Amithlon problem as I have noticed it in other programs too. I did have a couple of crashes and one project that seemed to have become corrupt

because it would not re-load. I have reported these problems to the author so hopefully they'll be sorted out. On OS 4 (developer release) on my AmigaOne the program performed well but was slightly less stable than on Amithlon, I'm sure this will improve as the OS matures and Hollywood is [further] tested on it. Sam Byford reports that Hollywood and Designer run well on MorphOS, apart from the font glitch which can be easily worked around.

Docs and Examples

If you've used a presentation program or even a drawing or DTP program before you'll soon get the hang of Designer, but just in case you have problems or have a question about a particular operation an extensive AmigaGuide document is supplied. This covers how Designer presentations work, what each window does and how to distribute your completed work. There are five example presentations which cover most of Designer's features so you can see exactly how an effect or operation is implemented.

Conclusion

While the Hollywood 1.9 upgrade is welcome, the crux of this review has to be Designer, and I'm pleased to say that it has made an excellent first impression with me. It's great to see that the success of Hollywood has motivated Andeas to take such a huge step and in the process made Hollywood accessible to many more users! With Designer 1.0 you have all the tools needed to make excellent presentations and interactive multimedia applications with minimum fuss. As I've mentioned there are a few areas that could be improved or made quicker to use but nothing that is a "show stopper". I have no hesitation in recommending that you go out and buy this now!

Designer running on one operating system can compile for another.

Results

Pros
+ Easy interface
+ Multi-platform
+ Interactive options
+ Hardware support

Cons
- Inflexible object order
- Limited text layout
- Delays confusing

Top Notch!

TOTAL *AMIGA*

Pegasos II G4 1GHz

Paul Rezendes gives us his impressions of Genesi's latest PPC motherboard and OS.

Paul's full size ATX tower (opposite page) shows just how small the Pegasos II board is.

Several familiar Amiga applications including GoldEd and SimpleMail running on MorphOS's Ambient desktop (below).

As a long time Amiga user I had some serious interest in the Pegasos and MorphOS when it was announced quite a bit back. The speed and compatibility of MorphOS running on a G4 native platform was an exciting feature that I've wanted from an Amiga for as long as I can remember.

This review will focus mainly on the Pegasos II hardware with some mention of the additions and fixed bugs found in the 1.4.2 release of MorphOS. I've covered some of the new bugs, as well as some nice new features. Since I haven't been a MorphOS user for long, and my first use of it on the Pegasos was from 1.4.2 it will be a brief overview of the still new OS. I ordered my motherboard from the online store at www.pegasosppc.com since none of the US retailers had any G4 boards left in stock. I paid $618.00 (US funds) which included shipping to the US distributor in Nevada. From there it was sent overnight to me. Total shipping time was only ten days from the day I ordered it online.

While many will think this a bit high of a price I'd also like to point out the G3 version is available for just over $300 as well. My complete system cost a little over $900 which included a tower, RAM, CD-ROM, Video card and hard drive.

It's Here!

When my system arrived in the mail I was a bit upset that it didn't include the Superbundle CD and the Debian Linux CD as stated on the web site. However I was able to download them with a simple online registration process. It did however include the latest 1.4.2 release of MorphOS, a printed manual in several languages and a separate manual in German. There was of course the Pegasos II motherboard, the G4 CPU card itself and a blanking plate for the ports that fit my tower perfectly.

The motherboard is very nicely made. It's put together as well as, and possibly even better than, many of the PC motherboards I have installed in the past. Like the Pegasos I it is very small considering all the things it includes and measures just 236mm x 172mm! This will let you choose a wide selection of ATX towers or desktop cases. The Pegasos II has switched to using the MV64361 Discovery II System Controller from Marvell. One big advantage of this change is the addition of a Gigabit Ethernet Port. Sadly this isn't taken advantage of in MorphOS yet, but it does work in current Linux builds and is a planned addition in the release of MorphOS 1.5. Don't fear though, there is also a VIA Rhine 10/100 Ethernet controller that works just fine. Another nice new feature is the addition of DDR RAM slots. Other ports on the board include two USB 1.1 ports, optical audio (again not yet supported), a AC97 sound subsystem with microphone input, line in/out and headset connector, all provided by the Sigmatel STAC 9766 codec. Two PS/2 connectors for mouse and keyboard, a standard serial, parallel, a game port that works with PC game pads and two firewire ports (not yet supported) finish the specification.

On the Motherboard itself are internal audio ports for CD, an internal firewire port, and a front panel port that also includes connections for a third USB port and IRDA. The same three PCI and one AGP slots as the Pegasos I are included, so there isn't anything new to mention about those. I will add that the drivers for the Radeon cards up to the 9200 are working great, but still don't support 3D. This is also expected in the upcoming 1.5 release of MorphOS.

Putting it Together

Installation of the motherboard is explained in the manual with very good step by step instructions. It tells you how to insert the CPU card and all the cables and even tells you the recommended order to do all of this. A good note to remember that is not mentioned in the manual is you are to use the ATA100 type of IDE cables. I hear this is one of the most common problems people have with the system which causes failures. The IDE headers have the same locking plastic clips as the Pegasos I which hold the cables in place. I don't like these, but the cables went in with little fuss and are held tight by them. Another weird port is the front panel connector that the cases front lights and switches plug into. This is a floppy header and just feels weird putting the pins into. You may need to cut the connector on your towers power LED from a three pin plug and make it into a two pin plug which is what I had to do on mine. All the locations on the header are clearly marked though and I had no problems putting the connectors on it.

The next step was the installation of my video card. I decided to use a Radeon 7000 DDR AGP card. I asked a lot of users which card worked best and the majority told me to get this card. At only $25 new from an online reseller it was a good buy. After cleaning up all the cables I then closed up the tower and connected a PS2 Keyboard and USB optical mouse and hooked up my monitor.

The system came on with no problems and I was greeted with the Open Firmware (OF) screen. To my surprise my board shipped with the newest version pre-flashed into it. This new OF fixes many bugs and lets more memory brands and types be used. As previously mention, the Pegasos II now uses DDR modules and I chose a 512MB module and it works perfectly.

Installing MorphOS

Setting up the hard drives for installation of MorphOS is still the same as in the past. You need to boot from the included MorphOS CD and run the SCSI config application. I've heard past versions were a bit buggy and didn't work well with larger drives. I am using a 60GB Western Digital 600AB drive with no problems. It partitioned just fine and all the space shows up. One point I need to address here is that the boot command used in the Open Firmware is still not correct in the manual. It tells you to type "boot /pci/ide/cd boot.img" to start MorphOS. This only gives an error telling you no such device is found. After getting help from the MorphZone.org forum I found the correct command is "boot /pci/ide/cdrom boot.img". Notice that it is "cdrom" and NOT "cd" as stated in the manual. Once I typed the correct command MorphOS came up without a problem. I ran the install script and a simple, easy to follow, guide walked me through the hard drive installation process.

Once MorphOS was installed I chose to set it as auto-boot in the Open Firmware. This was explained well in the manual and does not need to be covered. If you decide to install multiple operating systems it may be easier to choose to boot manually and type out the string of commands each time.

Impressions

Once my system was up and running I noticed just how silent it was. The G4 does use a fan, but it's not at all loud in any way. I had to put my ear up to the side of the tower to hear it. The Radeon 7000 card only uses a heat sink so it too was silent. It also runs very cool with the fan from the PSU and my case fans outputting only cool air. I've been running the Pegasos constantly and have yet to see it get hot.

It was time to play with this new MorphOS and see just how Amiga like it was. Being a long time Amiga owner I wanted to see if it could replace the A3000 I sold to get it. My A3000 was equipped with a Mediator and CSPPC card so this was a natural choice for me. I wanted to see how many of the bugs I had heard about were still here. Reading the Article Sam Byford wrote in issue 16 I went to work.

The first thing I noticed was that the USB stack, Poseidon, is now fully integrated into MorphOS. My Microsoft Inteli optical mouse worked right from the start with no problems. The wheel on it even worked in windows and applications with no setup required. Fantastic! I decided to test out the few other USB devices I had, to see how they would get treated. My Logitech game pad worked great, even in classic games running on a MorphOS native version of UAE. It also worked in a few other games I tested. Next I tried my Olympus digital camera and that showed up just fine. My Brother HL-1440 laser printer also showed up and printed perfectly using an HP LaserJet III driver.

Getting On-line

One missing item still not native in MorphOS is a TCP/IP stack. Lucky for me I have a registered copy of MiamiDX. Getting it installed was not easy at first and I had to do it by hand. It would show an error telling me MUI wasn't installed. Since it's built into the OS, I knew this was wrong. Help from the MorphZone users again got me online. It now works perfectly in every way. I have it setup using DHCP with my cable modem service and it never times out. I now have it set to start hidden and have put it in the workbench startup folder so that it comes online without me having to launch it manually each time. It's as if it's installed in the system like on any Windows machine now.

With my system online I tried out my registered IBrowse 2.3 and it worked perfectly! Fast loading pages and smooth scrolling are all welcome, it's as if it was native to the OS. I had to install it by hand as neither installer (from Aminet), or InstallerNG, would work (they're okay for a lot of apps but some just don't install quite yet). It's not hard to do with practice and gives you more control over the install.

As mentioned already, the Radeon card drivers are much improved in this version of MorphOS. The screens were all crisp and looked great. They are about as perfect as you can get in 2D. There is still no support for 3D modes, but they are due to be released with 1.5. People with Voodoo cards can take advantage of the 3D drivers and use a Warp3D wrapper already.

The Ambient icon snapshot function still could use some work. I had trouble with my windows and icons keeping where I saved them. Sometimes it seems to work and other times it doesn't. The problem with the system loosing track of them is gone however. When an icon is moved it no longer makes the screen act like its still on the left if you move it to the right side. Windows drag nicely as well.

In general almost all of the apps I tried that don't hit the Amiga custom chips worked well.

The Pegasos II is a perfect choice for anyone looking to get a super fast Amiga. It feels like one, works like one, and runs many of the great applications and games we all love. Even Quake I and II, Simon the Sorcerer II, Wipeout, Hexen and Dynamite all work great. I don't miss my Amiga at all.

This has been the perfect replacement for me and a great step up to the modern age. I say "look out Amiga One and OS4!".

micro GoldEd

Is your editor feeling bloated and a over-complex? Robert Williams tries out a new version of GoldEd which has been on a strict diet to loose the bloat and quite a few pounds from the price tag too.

Dietmar Eilert's GoldEd Studio AIX is arguably the best editor on the Amiga, it certainly has the largest range of plug-ins with a complete web editing environment (web world) and C developer environment included in the package. If you're a seasoned web developer or programmer, all these add-ons more than justify the asking price of 69.90 Euro but for the casual user this might seem a bit steep for a text editor. Even for GoldEd studio users, the more complex editor has the disadvantage that it needs installation, an assign and some custom libraries, which means you can't quickly use it on a freshly built system or from early startup.

For those users who want something more than Memacs, Editpad and Ed included with AmigaOS but don't need all the features of GoldEdStudio AIX and for those Studio users who need a smaller stand-alone editor Dietmar has released microGoldEd. This version is available free to existing GoldEd Studio AIX users, and at exactly one tenth of the price of the full package, it should be affordable by almost everyone else too!

When I first read about microGoldEd, and the fact that it could run without any support files, I thought it would be so simple and stripped of features that it wouldn't be much of an improvement over the editors included with AmigaOS, how wrong I was! For readers familiar with GoldEd Studio, microGoldEd is basically the same program with the multiple configuration support, development environments (Web World, C etc.) and plug-ins (spell checking etc.) removed. Apart from those it has all the features of the full package. For users not familiar with GoldEd, I'll use the rest of this review to discuss some of the neat features available.

So What Does it Do?

microGoldEd (mGED from now on) doesn't need installing, you can just decrunch the supplied archive into an appropriate drawer on your hard disk; about half a megabyte of space is required. In the mGED drawer you'll find the program file, an icon, the readme and a few example display configuration files, that's it! The first thing I tried was to reboot my Amiga to early-startup (holding down both mouse buttons) and run mGED from the boot shell, it worked a treat, the display degraded gracefully to the four colours screenmode and the full range of functions were still available!

When the program is loaded, as you would expect from a text editor, a window with a large area for entering text opens. You can open as many windows as you like to edit multiple files within one session. Unfortunately the great feature of AIX which shows all the open files as tabs across the top of the text area is missing in mGED. At the top of each editor window is a toolbar with a selection of icons for common operations such as load, save, undo and redo.

A variety of features are built in to make handling plain text files as easy as possible. All the standard features such as cut, copy and paste are present and correct. In GED the cursor is separate from the selected (highlighted) text block, this means a block can be left selected while you edit in another area, a command is available to duplicate the selected block at the cursor, essentially doing a copy and paste in one operation. If you prefer, the mouse can be used to move or copy blocks of text, simply click and hold down the left mouse button inside a text block until the cursor changes and then drag it to the position you want (hold down the "Ctrl" key to copy). If you're writing a document such as an e-mail, readme or AmigaGuide in GoldEd you can set the right margin and have the editor word wrap as you type. Selected paragraphs can be wrapped to the margin you have set with a range of justifications: left, right, centre and full. If you're writing code, mGED can be set to maintain the indent of the current line when you start a new one, keeping nested loops or HTML tags tidy.

One criticism of older versions of GED was that they did not support true tabs, when you pressed the tab key a number of spaces were inserted and when a file was loaded containing tabs they were converted into spaces. Like all recent versions of GED Studio (since 6.0, I think) mGED supports tabs in files and inserting a tab character when the "Tab" key is pressed, but you must enable this option in the "Tabs" section of preferences.

When working on longer files, mGED has a range of options to help. Folding allows you to hide sections of your document, so you can concentrate on a particular area. To use folding, you define a sequence of characters which will mark the start and end of a fold ("///" is the default) and then enter that sequence above and below the section you want to hide, the first fold marker can be followed by a description of the section. Pressing the "HELP" key inside the section will then hide it and just show the description, pressing "HELP" again with the cursor on the description reveals the section. A variety of navigation commands allow you to move easily though the file, for example page by page or to one end, either using key presses or menu entries.

When working with web pages, code or scripts the last thing you want to do is loose your work, or accidentally overwrite a good version with a bad change. mGED can be set to make backup copies of the current file in a user definable backup directory when you save so an older version is always available; the number of backup generations to keep is also definable. If you tend to forget to save regularly, the program can save automatically, at an interval selected, while you work

Find and Replace

When you want to make quick changes to a file or files the find and replace command of an editor can be invaluable, mGED doesn't skimp in this area with its three different find commands. Search and Replace enables you to find and optionally change words or phrases in the current document, it has a wild card option which allows you to have more complex search conditions than just a specific word. "Find in files" can be used to search for a word or phrase across multiple files, you can either select particular files to search or include all the files in a directory or even all the files within a volume. It is even possible to find and replace across multiple files. Finally "Locate this file" lets you search a definable set of drives for a particular file name.

mGED is extremely configurable, right down to the look of its requesters.

The page of the display preferences shown below enables you to set the colour of each display element, there is even a gradient option. The window-look has been defined using one of the examples supplied with the package.

standard.display
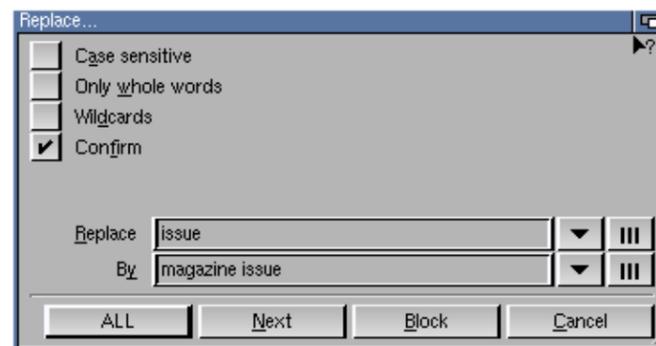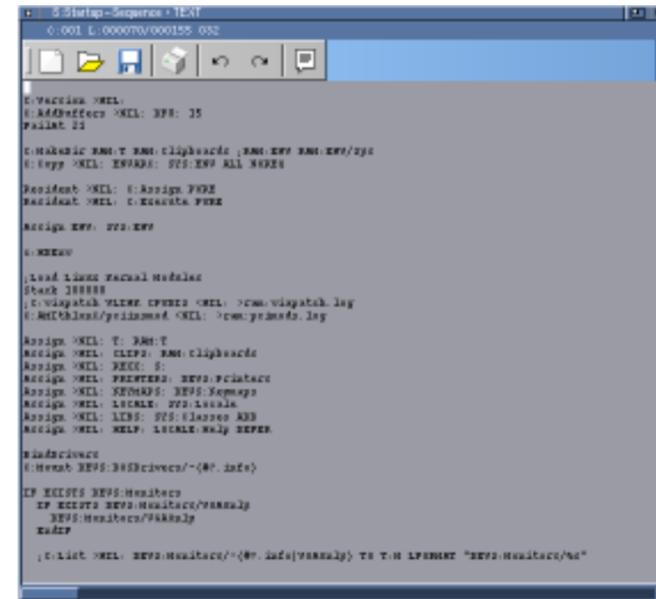
This is mGED in its element, editing a DOS script. Notice the handy status line and toolbar at the top of the window.

Configuration

Despite being a cut-down version of GoldEd Studio AIX, mGED still has a wide range of configuration options so you can make it work exactly how you want it to. The menu entries, keyboard shortcuts, mouse actions and toolbar buttons can be fully configured to run any internal command, AREXX script or external program. The options are so powerful that the user interface of the editor could be almost completely re-defined if you wished to do so. To give an example of this, a special version of mGED is available which is configured to mimic the popular CED editor.

The look of the requesters can be configured to a great degree, a recent release has even added the option to fill user interface elements such as buttons and sliders with a neat 24bit gradient effect. A number of example visual configurations are supplied with mGED, these can be loaded by going to the "Colors" tab of the "Display and Fonts" preferences and clicking the "Load color table" icon in the lower left of the window.

Macros

A record function is provided that causes mGED to memorise a set of actions, which can be typing text, editing existing text or issuing commands. When recording is finished the set of recorded actions can be played back at any time, speeding up repetitive tasks. There is also an option to play back the same sequence multiple times if needed. If you want to keep the sequence you can save it as an AREXX macro and play it back at any time. A recorded and saved sequence can form the basis of a more complex AREXX macro, you could also write your own macros from scratch or download macros written by others from the Internet (Aminet would be a good place to look).

The one limitation of mGED that I can see causing a problem for some users is that it's not possible to save more than one configuration (the default one).

This means if you edit different types of file that need different settings (for example e-mails would want word wrap on while shell scripts would need it off) the configuration would need to be manually amended.

What's up Doc?

All programs have their weak point, and in my opinion mGED's is its documentation. The program is supplied with a brief readme file which covers installation and little else. On-line help is available in each program requester, clicking on the "?" icon in the upper right and then on a gadget brings up a tooltip explaining its function but, by their nature, these are short notes and often don't fully explain the function of a gadget or how the requester as a whole works. With some experimentation and exploration of the menus and requesters I'm sure most people will get the hang of the program but I'm left with a nagging feeling that there are less obvious features I've missed because they are not documented.

Conclusion

MicroGoldEd is an excellent text editor in its own right with all the features and configurability you could wish for when editing simple text files and short programs or web pages. It is based on a proven foundation (it was faultlessly reliable in my testing) and is sold at an extremely reasonable price. If you want to work on longer projects (where syntax highlighting and IDE functionality would be handy) or you regularly work on different file types which need a change in configuration then the extra investment in GoldEd Studio AIX will be worth while. mGED seems to be pitched at an ideal level for many hobbyist Amiga users and deserves to do well, recommended!

mGED' has powerful find and replace options.
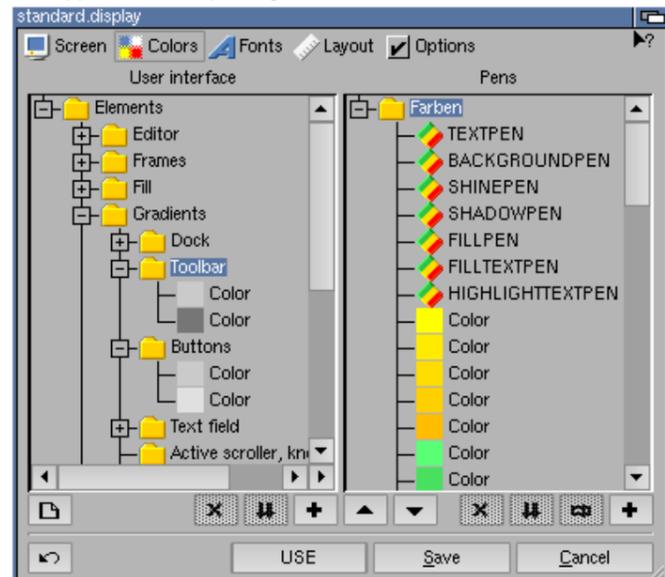
Results

Pros
+ Powerful editor.
+ Many options
+ Low price

Cons
- No way to save multiple configs.
- Poor documentation.

Top Notch!

Amiga Forever

Robert Williams suspends his disbelief and is actually quite impressed by a piece of Windows software!

Maybe I'm getting old, but it doesn't seem long ago to me that the thought of a workable Amiga Emulation running on a standard PC was laughable. But here we are in 2004 and Cloanto have just made the 6th major release of their Amiga Emulation package that runs on, you've guessed it, any reasonably recent PC with Windows and a variety of other operating systems and platforms too. At the core of the package are a variety of Amiga emulators, the ROMs needed to get them running and hard files containing pre-installed Amiga OS 1.3 and 3.x systems. In adition to the emulators, Amiga Explorer (which easily connects an Amiga to a Windows PC for file transfer) and a variety of nostalgic material is included. While the Amiga emulators supplied with Amiga Forever are open source or freeware, what you are paying for is a fully licensed set of ROMs and software, and a fully set-up solution which can be easily installed and used. Let's find out if version 6 provides the seamless emulation experience we expect.

Installation

While much of the Amiga Forever package can be used on other operating systems (Linux, MacOS and MacOS X are specifically listed on the Cloanto website) it is clear that the package is primarily aimed at Windows users, as this is the only platform for which an automated installer, launcher GUI, software updater and the Amiga Explorer utility are available. In this review I will primarily concentrate on using Amiga Forever on Windows 98SE as I did not have any other platforms to test.

AF6 can be ordered either on-line or as a CD. The online editon contains all the emulation software, utilities and Amiga Explorer, it does not include the new CD-boot option or much of the additional "nostalgic" material for space reasons. The on-line editon is available either as an executable Windows installer file or as a ZIP for users of other platforms. On Windows, installation is very straight forward and uses a "Wizard" style interface. A few choices have to be made such as where the program will be installed and which PC drives will be available to the Amiga within the emulation. Once complete the installation of the on-line version we tried took about 40Mb of hard drive space, this requirement will grow as you populate the drives on your "virtual" Amiga.

With the package installed starting the launcher utility gives easy access to a variety of Amiga configurations and viewing the additional content of the CD version, all from a point and click tabbed window. Pre-set configurations are included for Amiga OS 1.3 and Amiga OS 3.x, other options in the launcher open the configuration screens of WinUAE or WinFellow (the two included Windows Amiga emulators) allowing you to set up a custom session. The CD edition includes Kickstart ROM versions 1.0, 1.1, 1.2 and 2.04 plus the Amiga 1000 boot ROM, CDTV extended ROM and CD32 ROM enabling you to emulate almost any classic Amiga ever made, these additional ROMs (along with three Jay Miner interviews in MP3 format) are also available in a downloadable $14.95 "plus pack" for Online edition purchasers.

What's New since AF 5

As you would hope, a number of changes and improvements have been made in version 6, here are some of the ones I noticed.

In the OS3.x set-up many of the updated files from OS3.5 and 3.9 have now been included. Unfortunately, due to the complex licensing arrangements surrounding the OS, version 3.9 could not be included wholesale which is why Cloanto refer to OS 3.x. Most noticeable of these new features are an updated Workbench with progress gauges etc. and the Reaction based preferences programs. However some files are missing including utilities like AmiDock, Find, UnArc and AsyncWb.

A big improvement in version 6 is that CD-ROM drives are now properly supported using CacheCDFS within the emulation. In previous versions CD-ROM driver were mapped through Windows which gave problems with Amiga file permissions and could not cope with disc changes automatically. Both these problems are now resolved.

If you have Windows configured to connect to the Internet, the OS3.x Amiga emulation will be on-line as soon as it is loaded, no TCP/IP stack is needed. AWeb 3.4 is pre-installed allowing you to browse the web straight away. This is a great feature and means you can download additional software to get the emulation working just as you want it with no hassles.

In both the OS 1.3 and 3.x environments, a wide range of applications have been installed ready for use. In 3.x many of these can be accessed from a neat Tool Manager dock at the bottom of the screen. Applications that caught my eye on were a full version of
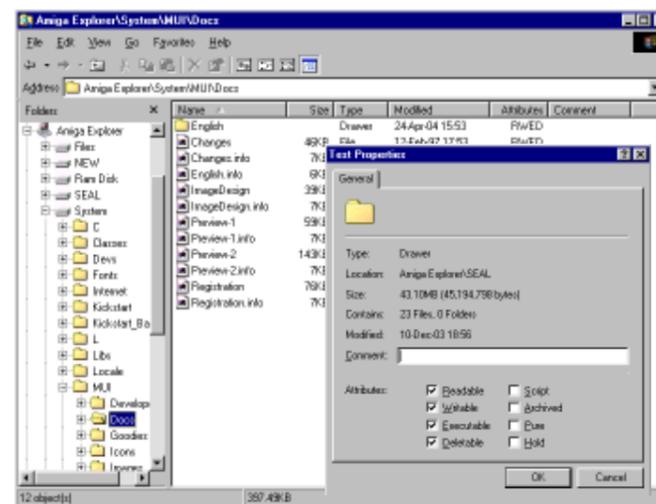
Accessing an Amiga (in this case an AmigaOne with OS4) from the PC using AmigaExplorer.

Directory Opus 5.5 (although sadly not the latest Magellan release that supports "Glow" icons), AmigaAmp, Turbo Text (a powerful text editor), Perfect Paint (as you might expect from Cloanto) and Simple Find (a useful replacement for the missing OS3.9 utility). Altogether the 3.x environment looks clean and well laid out but is perhaps a bit old fashioned without some of the GUI enhancements which grace many Amigas nowadays. On the other hand it does provide a solid base to add your own favourite applications, utilities and hacks.

When you boot Amiga OS 1.3, an additional disk is displayed alongside Workbench on the desktop, this contains ten early demos that were used to tempt customers to buy the first Amiga systems including the Boing ball and Juggler. If you purchase the CD edition, five full games (Deluxe Galaga, Hilt2, Mindwalker, Ports of Call and Tower of Souls) are also included to get you started.

JIT and Graphics Card Support

Since Amiga Forever 5, the version of UAE supplied has included JIT (Just in Time) 68K processor emulation, this caches emulated code that is repeatedly used, greatly enhancing performance. This performance allows the emulated Amiga to be used for "serious" tasks such as image processing, DTP and 3D graphics as well as playing those classic games. The Amiga OCS, ECS or AGA graphics chipsets can be emulated but UAE can also make full use of the PC's graphics card via a special Picasso 96 driver (a registered copy of Picasso 96 is supplied). In a similar way paula sound is emulated and the PC's sound card can be accessed through AHI, although this is not set-up by default. Overall the 3.x environment of Amiga Forever is very like an expanded classic Amiga, with a speed boost.

Amiga Explorer

If you have an existing Amiga system, it can be very useful to connect it to your PC so files can be copied between the machines. While there are several free utilities out there to do this job, Amiga Explorer makes it very simple. The program can communicate with the Amiga either over the serial port or a TCP/IP network so it is useful with any Amiga system from a basic A500 or a more powerful classic Amiga set-up with an Ethernet card. A small server utility is provided that runs on the Amiga, for serial connections it is also possible to connect to an Amiga without copying the software across as long as the machine has been booted with a Workbench disk. The final connection option is to access the Amiga emulation while it is running, this can prove an easy way of copying files between Windows and the emulator. Once it has connected, Amiga Explorer opens a standard Windows Explorer window showing all the drives on the Amiga. For each drive, an hdf (hard drive image file) or an adf (floppy drive image file) is listed, these allow you to create

image files which can be used with the Amiga emulators by simply dragging them onto a Windows drive. In the same way, individual files can be moved, copied, renamed or deleted just as if the Amiga disks were directly connected to the PC. The full range of Amiga protection bits can be viewed and changed, as can file comments; you can even format one of the Amiga's drives from the PC. When you double click on a file within Amiga Explorer, it copies the file to a temporary folder and then opens it in the appropriate application, it does not mount the Amiga as a Windows drive letter. Amiga Explorer is by far the slickest Amiga to Windows connection utility I have used and is an excellent addition to the emulation package.

CD Edition

Unfortunately, we were not able to obtain a copy of the CD Edition (which has been in great demand) for this review, however I should mention some of the extras included. On the CD are a number of images and videos of historical interest, these include the first Amiga article to appear in Byte magazine, Dave Haynie's death-bed vigil video about the end of Commodore, a video from the original Amiga launch with Andy Warhol and Debbie Harry, and two videos featuring Jay Miner the "father" of the Amiga. Although these nostalgic files sound great, probably the most exciting aspect of the CD edition is that it allows you to boot a PC into Amiga emulation from the CD without the need for Windows to be installed. This is acheived through the use of a customised version of the Knoppix CD-based Linux distribution. In the future, Cloanto plan to provide instructions on how to install this system onto a PC hard drive so you can have the system boot straight into a usable emulation

without the need for Windows on the PC. Needless to say this is pretty exciting stuff and we hope to get a copy of the CD editon so we can cover it in a future issue.

Documentation

With the inclusion of AWeb, Cloanto are now able to supply extensive documentation in HTML format that can be read both on Windows and the Amiga (emulated or otherwise). As in previous versions the docs seem very comprehensive and should help even someone who hasn't used an Amiga for a long time get going. In the 1.3 OS installation, where the HTML help is not accessible, a readme file is provided to get you started.

Conclusion

During my testing, Amiga Forever never failed to feel like a quality product, from the well designed Cloanto website, through the professional programs, to the friendly documentation. The flexible emulators provided along with a selection of ROMs provided give a level of compatibility that is hard to find in one classic Amiga system. WinUAE seems a little slower than Amithlon on the same hardware and, of course, Windows is always running in the background but this package is much easier to setup and more importantly readily available without legal worries. It doesn't seem that emulations are ever going to be supported by OS 4 or MorphOS so Amiga Forever will be "stuck" at OS 3.9; the slightly old-fashioned feeling default setup reflects this. But if you want a painless way to run your Amiga software on a Windows PC or a way of running all those classic games you miss then Amiga Forever is an excellent choice.

.info

Developer
Cloanto
www.amigaforever.com

Price
On-line editon $29.95
CD Edition $59.95
Amiga Explorer $19.95
On-line upgrade........$19.95
CD upgrade $39.95

Test System
AMD Athlon XP 2500+
512Mb DDR RAM
nVidia gForce 2 MX400
Windows 98SE
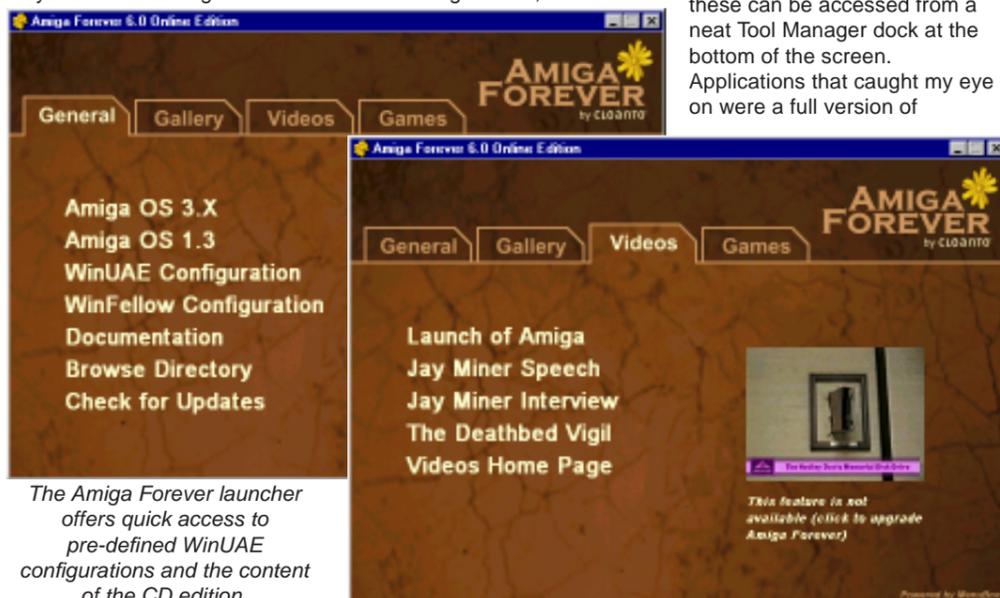
The Amiga Forever launcher offers quick access to pre-defined WinUAE configurations and the content of the CD edition.

Results

Pros
+ Easy to install.
+ Lots of pre-installed software.
+ Wide compatibility.
+ Great documentation and support.

Cons
- Old fashioned defaults.

Pretty ☺
Good!

Cross Fire

Tony Aknes grabs his joystick to try a new game that combines many elements of classic Amiga titles while taking advantage of graphics and sound cards.

First of all I must mention that this game has 3 ways of installing to hard disk, small, medium or large. I chose the large installation which copied all 640Mb from the game CD on to my hard disk. The installation is good and fast (compared to a Hyperion install) and it shows you stuff from the game while it installs (great feature).

Preferences

The older versions had some niggles here when you wanted to use AGA etc., but this is fixed in 1.03, beyond that the GUI is good and does what you expect it to do! I selected AHI (8 channels) and ChunckyPPC Wb Window mode and pressed Save (those were all the settings I needed to change!).

It's About to Begin

This is where it all became very good and professional looking, unlike the demo version the full game boosts great animations all the way through from intro., main menu (which has a nice asteroid field effect) and cut

"the special effects and weapons will make you go "WOOOOOAAAAAH"!"

scenes throughout the game. Here in the main menu you have the needed settings (like in the demo version), a huge tip here is that you might want to turn off or halve the flash screen option, as later in the game it will more or less turn the screen white due to the intense action!

The Start

First thing you will notice is that if you play a single player game there is a training screen

with tutorial missions, it is important that you complete these, because, and I am not kidding here, if you don't you won't understand the basics of the game, like "hide" or "escape" etc. Then after this you are presented with the story. Sadly the story has

obviously been translated to English from German and the English isn't exactly good (like mine), but it is understandable enough to explain the point of the game (I noticed plenty of spelling mistakes throughout the game too). I also think that the story is too long (there's just so much text), I skipped many of the story screens after looking at the great pictures!

About the Game

Crossfire seems to be inspired by Stardust/Super Stardust and many other games, but mainly I think of this game as Freespace (ported to the Amiga by Hyperion) but with a

Although low resolution, CrossFire II's pre-rendered 3D graphics look great and there's always plenty of them on-screen.

Top left: cut scenes like this one draw the story together.
Above: Action is frantic and accompanied by excellent graphics and sound effects.

3rd person 2D view and nice raytraced graphics. Unlike games like Stardust here the point is not always the just to kill all enemies, sometimes you must hide, develop a turret gun setup etc. and later on you have ground missions (which involve driving vehicles such as tanks). There are bucket loads of weapons to choose from, the game is based on credits (money) to buy weapons. Later on in the game you get a lot of money but no storage place on your ship to hold more than 3 weapons, so tactics are involved in choosing the correct weapon for the missions. There are missions where you won't get weapons at all and even a mission where you get weapons free of charge (that mission is superb!). In total there is 26 levels in this game, I must admit that this was too little for me and my hard-core shooter dreams as I completed the game in less than 10 hours, but for the normal gamer I think it will last a bit longer!

The Other Part

There is a multiplayer mode

here as well, but since I have no one to play it with it won't be used too much by me! The multiplayer will remind you a lot of Rocketz and such games (dog-fighting etc.), it looks neat and plays great. There is also a team mode where the human players gang up against the computer. Since there is no TCP/IP or other network play option these features require you to have a lot (or at least 1) of friends nearby who would like to play the game with you.

The Up's and Down's

As I said earlier, for me this game is too small and too easy but I still love it and I know I will play it again. It's a pity there is no network play option as finding new opponents on the Internet can make a game like this last much longer.

Some people may find this game hard and give up after 10 minutes, if you find this is the case it's really worth playing through the tutorials and making sure you understand the options available. Another niggle I had was that the end of game sequence and last mission were just a bit too weird for my taste, but you'll have to beat the game to find out if you agree!

The graphics are excellent but are only in 320x256 16bit

resolution however even at this low resolution the special effects and weapons will make you go "WOOOOOAAAAAH"! I really like the music which accompanies the game but sadly it hogs the CPU a bit on my current setup (see the ".info" boxout for my specs). In addition to the music there are also sound effects that will blow you away!

Last Note

This is a game many will love and I think more will hate, for the normal shoot-em-up king this game would be too easy. Due to its lack of TCP/IP I can't give this game as high a score as I would like and think it deserves. Never the less, I recommend this game to everyone, and I wish the developers the best of luck with their sales numbers!

Variety is provided by fighting in space and on the surface of planets like the one above.

Results

Pros
+ Excellent graphics.
+ Great sound.
+ Exciting game-play.

Cons
- Low resolution.
- Long-winded story.
- No network play.

Pretty ☺ Good!

SoundFX 4.3

Sean Courtney finds out what's changed in the latest version of Sonic Pulse's sample editor.

.info

I didn't care much for the default font settings, so I set them to something a bit more legible. Next to go is the orchid-coloured title bar! Just about any aspect of the GUI is user-configurable.
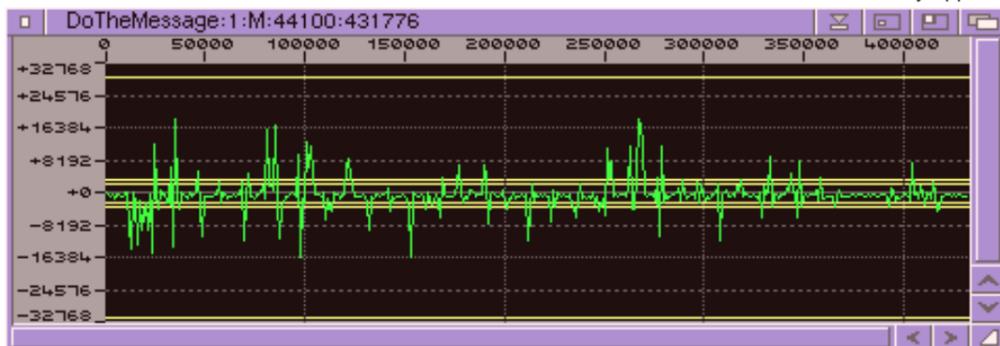
It seems as if it were just yesterday when I was reviewing SoundFX 4.2 for Total Amiga. After all the positive comments I had about the program and how handy I've found it, I was thrilled when I recently heard that 4.3 was available.

What it is and What it Ain't

Stefan Kost's SoundFX is basically a jack-of-all-trades for Amiga sound software. It's a sound converter that can handle almost all of the major sound formats, including some you might not expect an Amiga program to handle directly such as MP3, CDDA, and even Studio16 files from the old AD516 sound card. (Still no support for RealAudio, but from what I understand it's nearly impossible for Amiga developers to get their hands on the necessary code.) SoundFX is also a sound recorder, great for recording your own little sound bytes for e-mail alerts and whatnot as well as recording full-length songs to burn to CD. What many might not realize is that SoundFX is also a sound synthesizer with which you can actually create your own sounds from scratch. And most importantly, SoundFX is a sound processor with which you can add echo, chorus, tremolo, and a plethora of other built-in effects – plus virtually limitless of your own self-designed effects – to any recorded sound.

What SoundFX is not is an all-in-one sound studio. That is, it doesn't burn CDs. It also doesn't have multitrack recording capabilities, although with some clever channel-splitting and joining, a user can record some sounds individually and combine them later. SoundFX is also not a real-time effects generator; it can only deal with sounds that are already recorded. (Besides, few people would disagree that for best results, one should invest some money in a stand-alone effects unit rather than rely on a computer to handle it.)

Fixin' Some Holes

When we last visited the land of SoundFX, overall the verdict was that this is a great package for anybody who likes to experiment with sounds. I had a few problems with it; mind you, these problems were definitely not enough to sway me from paying the registration fee, which was low enough that even I could afford it after being unemployed for a couple of years.

First and foremost, the GUI was a tad cryptic. At the bottom of the SoundFX screen was a series of unlabeled text boxes that had some pretty intense-looking numbers in them, each representing mouse position, sample length, and other data that some users may find helpful. Knowing which box was representing what figure required several Amiga-M keystrokes to read the docs. Users of older versions of SoundFX will be happy to see that these mystery boxes are now labeled. Since 4.2, Stefan has also made some other seemingly minor GUI enhancements, but users will find that as trivial as they appear,

they really do help tremendously, including a button to click to switch between single- and multi-window mode.

Another issue I had with SoundFX was its MP3 handling. While it was amazingly fast at importing MP3 files, the resulting sound files had very audible clicks at certain points. I found out I wasn't the only user with this problem. Stefan asked for help from the user base in tracking this bug, and as a result of these users telling Stefan about what their configurations were, the specs of the MP3s, and some other pertinent details, Stefan was able to identify what was causing the clicks and has since solved the problem.

One of my biggest peeves with Amiga sound programs in general is that there isn't really an all-in-one package for people like me who like to use the Amiga to experiment with sound, record it, add some snazzy effects, burn it to a CD, and whatever else have you. For years I used separate programs for each. For a while I was using SoundFX to record if I wanted to, say, transfer vinyl to cassette, and then use an OEM version of Samplitude Opus to edit the sound or brighten it. Why not use SoundFX for all three of those functions? Well, because it tended to crash if I attempted to do any kind of editing or processing with large samples – it was apparent to me that the program was really designed for handling just small sound bytes. I'm happy to report that I've literally been trying to crash version 4.3 by overprocessing some song-length files ripped from CDs, and I just have not been able to crash the program!

Using the Program

To be able to use SoundFX 4.3, a 68020 processor is the absolute minimum required to run the program. As with any other program, the faster the processor and the more RAM present, the better the results. To take full advantage of what SoundFX can offer, version 13.0

or higher of identify.library (available from www.shredzone.net) is recommended. Also, downloading ALL the files available for your system on sonicpulse.de - the docs in your preferred language, the binary, the data, and "goodies" files – will ensure that your installation of SoundFX 4.3 will be as complete as possible.

The program's documentation is included in several formats, including PDF and PostScript. As with earlier versions of SoundFX, a quick way to check the documentation is to hit the "Help" key during run time, IBrowse opens the HTML documentation to the part that describes what's on your SoundFX screen. It appears, however, that Stefan has not completed the English documentation, so details on a lot of features, including the sound synthesizer functions, are missing. Does that mean you'll be missing out? Of course not – read on, and you'll understand why it's okay, and important, to experiment with the program!

At run time, the first screen is pretty basic – just a blank screen with a control panel on top and a row of text boxes on the bottom. A "Tip of the Day" window, which you can disable in preferences, then pops up. From this point on, I recommend simply changing the file loader dropdown box on the upper left to "Universal," loading any sound file, and just playing around with the file and get an idea what kind of effects you can apply to it.

That third point is very important - the program's documentation goes through great pains to assure you that you cannot possibly screw anything up by experimenting, which I think is one of the great selling points of SoundFX. Unlike with many other sound processing programs, SoundFX doesn't actually apply the effect directly to the file that's open, but rather it opens a copy of that file and applies the effect to the copy. That way, if you don't like the effect, no problem – just close the new file.

Some of the effects are pretty basic, such as delay and chorus. However, many require some deeper-level knowledge about how sounds work, mainly in the
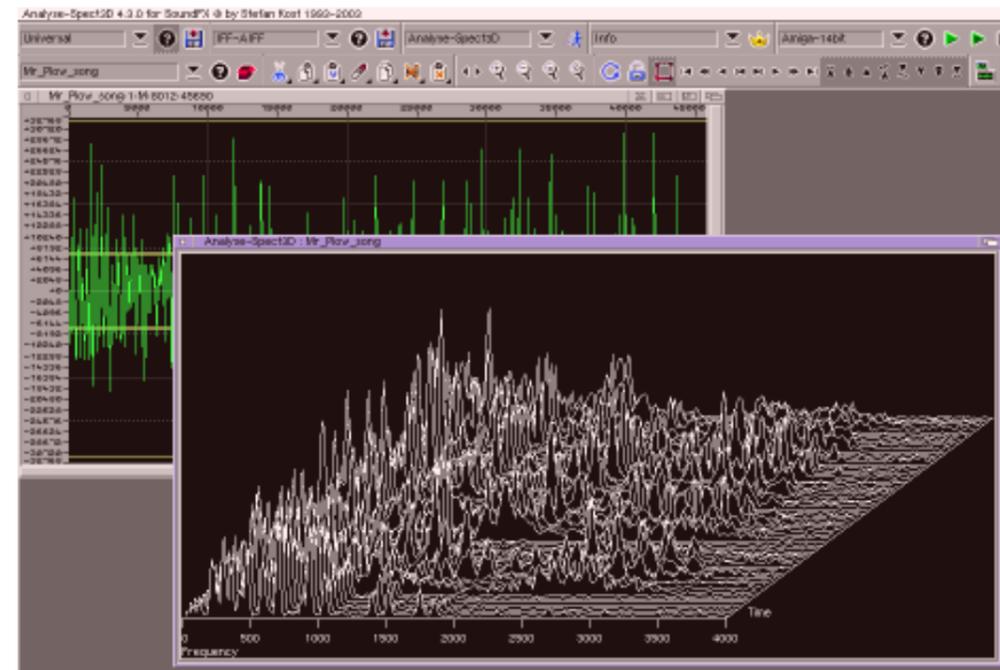
Ever wonder what Homer Simpson's voice looks like in 3D? The "Analyse-Spect3D" operator makes it possible!

filter and equalizer operators. Others just plain require some trial, error, and patience – mainly the "DeCrackle" operator recommended for removing scratches and pops when transferring from vinyl. But just to give you an idea of what SoundFX can do, here's a partial list of the operators that come with the program: Amplify, Convolve, Detune, Distortion, Echo, Hall (a form of reverb, really), PitchShift, Reverse (great for finding those satanic messages in Led Zeppelin songs), SurroundEncoder, Timestretch... and the list goes on. And remember, these are OPERATORS – each operator has several effects, and most of these operators can have user-added effects.

My Own Experimentation

I feel that a review of SoundFX would be incomplete without elaborating on a few of the things I've done with the program. Unfortunately, a print magazine cannot allow someone to appreciate fully the results of the audio experimentation, so if you would like to hear some of my results, please go online to www.banana-and-louie.org/soundfx. While with my previous review I found that 4.2 would only work with small sounds, the stability of 4.3 has allowed me to conduct some long-desired

experiments with much larger, song-length files.

Knowing that Stefan had fixed the MP3 import bug, the first thing I did was test an MP3. The MP3 I imported was a 44.1khz stereo file encoded at 192kbps to a size of 2,914,637 bytes. I wanted to see if indeed SoundFX is one of the fastest programs at importing MP3 files. Using the integer version of MPEGA and mpega.library version 2.4, I found that MakeCD version 3.2D public beta 10 decompressed the MP3 in about one minute and fifteen seconds. The command-line MPEGA took nearly a minute and a half to decompress into an AIFF file. SoundFX took about the same time as MakeCD, but the difference is that once the MP3 is loaded into SoundFX, it's ready to be worked on, while with MakeCD one has to import the resulting decompressed file into another program. My test results may also have to do with my using real memory as opposed to virtual memory; as a hard drive is much slower than RAM, using virtual memory will often slow operations down to a crawl. (On a personal note, I strongly recommend against working with MP3 files for the reason that MP3 is a lossy compression format. A lossless

format, such as WAV or AIFF, will always produce better results than any MP3, regardless of the quality of the MP3, especially if you intend others to hear your results. Just to give you an idea of what I'm talking about, the industry generally considers a

"I just have not been able to crash the program!"

compression rate of 128kbps to be "CD quality." However, I can easily recognize an MP3 when I hear one at rates up to 192kbps, and a friend of mine can actually tell it's an MP3 at rates up to 224kbps.)

The next tidbit may actually have to do with my ignorance in that a feature may have been available in SoundFX 4.2, but honestly I didn't notice it until 4.3. (I no longer have 4.2 to check this with, as Stefan strongly recommends when upgrading to do a complete reinstall.) In my last review, I commented that I just could not get the "MaxVol" effect in the "Amplify" operator to do what it's supposed to do – normalize, which is to find the peak volume in the sound and boost the volume of the entire sound such that the peak does not overload, giving you the loudest possible sound without distortion. (This is not to be confused with compressing, in which every part of the sound – not just the peak – is boosted to

Reviews
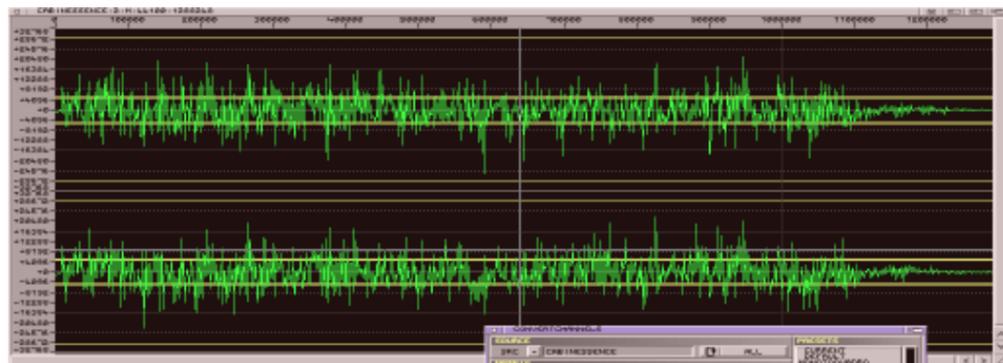
SoundFX saves me many grueling steps in my phase cancellation experiments. Note the matrix provided to demonstrate the mathematics behind channel converting.

its maximum volume.) Frustratingly, I found in both 4.2 and 4.3 that the "MaxVol" effect had absolutely ZERO effect on any sounds I tried – until I noticed that when selecting "Amplify," the window that pops up has its own "Maximize" button, which if you click makes SoundFX analyze the sound file and do a few calculations, and clicking "Proceed" will actually do the dirty work. Sure enough, that did it!

OOPS, I Did It Again

Another feature that may have existed longer than I realized is one that has been saving me a lot of frustration over the past few weeks. Now, this one requires some explanation.

I often get quite obsessed with my favorite music. Years ago I read about a process called "OOPS," which stands for "out-of-phase stereo." If you take a true stereo recording and invert one of the two channels, then combine the resulting inverted channel and the other uninverted channel into one mono channel, all the sounds that are panned to the center of the stereo cancel out. This is basically how karaoke machines work. To do such a thing at home required connecting one speaker to the positive ports of both the left and right speaker output on your home receiver, a trick that could result in blowing a speaker. Depending on how the original song was mixed, you'd get one of at least three possible results. If the vocals are panned to the center of the mix, the resulting OOPSed sound would cancel out the vocals, giving you an instrumental or karaoke song. I found that many Beach Boys songs recorded between 1963

and 1969 (and a few Beatles songs) were recorded such that the vocals are panned hard right and hard right while the instrumental track was panned dead-center, which meant that OOPSing would result in some unbelievable a capella music. Other times, the really interesting results of OOPSing wouldn't be so much that the vocals cancel out but that enough sounds cancel out that you'll hear something you never knew existed; for example, in a harpsichord-driven power-pop song, I noticed that applying OOPS to it resulted in a sound file that contained nothing but tambourine and a fascinating guitar track that had been buried under several layers of music.

When I got my Amiga 4000, I figured out how to do this process digitally so I wouldn't have to risk damaging any equipment. I would rip a stereo song from a CD and load it into Samplitude Opus or SoundFX. I would then split the file into two individual mono files. Then I'd invert one of the channels, then combine the inverted channel and the untouched channel back into one file. Next, I'd convert the rejoined channels into a single mono file. And because I intended to burn the result to a CD, I'd convert the mono file back into a stereo file. This was a royal pain in the bum.

Guess what – SoundFX can actually do this with just a couple of clicks of the mouse! There's an operator called "ConvertChannels," which allows you to convert from mono to stereo, stereo to mono, stereo to quadrophonic, and several other combinations. One of these combinations is "StereoDiff." While following Stefan's advice

and playing around with some of the effects, I found out that "StereoDiff" does the entire OOPS process I described with just one simple little option. In seconds my OOPSed songs are ready, although I usually have to normalize the results. I've included some of my OOPS examples on my web page.

Parting Words

First, I have a confession to make. Remember how I said I literally tried to make the program crash and it wouldn't? Well, that may have been an equivocation. You see, I was having a blast with SoundFX 4.3, and at one point I couldn't have as many samples opened as I wanted to because I was running out of RAM. (And at 144 megabytes, I've maxed out all my motherboard and accelerator RAM!) So I tried the virtual memory option, but unfortunately I found that virtual memory means that samples take forever and a day to load. So I switched back to real memory, only to find that SoundFX would never again load a sample into memory, no matter how small, even after reboots and turning the computer off for the night. No problem, I'll just settle for slower virtual memory. So I tried my little OOPS trick on some files, and... got an error message I couldn't catch thanks to my trigger-happy

mouse-click fingers. Well, the program's still running, I'll just cut part of the sound... uh-oh, the resulting cut only edited one of the channels, so now it's completely out of sync. And the computer has locked up! So I completely uninstalled SoundFX, deleted all the SFX files from ENV: and ENVARC:, and reinstalled from scratch, and the problem disappeared. (The moral of the story: keep the LHA/LZX files you download in case you need to reinstall! Especially if you're on a dialup connection!)

Honestly, though, that's the only real problem I have been able to produce with the program itself, although some other users have found bugs with version 4.3. I have found that the window mode button may end up hiding sound samples, but doing a flush and reloading the samples solved this relatively minor foible. Also, I did get a pop-up message that was partially in German. Many previous bugs have been fixed, and the GUI has been significantly improved. Overall, this seems to be the most stable version of SoundFX to date.

There's a very nice presence of support online not only on the sonicpulse.de web site but also in the form of a Yahoo! Groups mailing list. Should you decide to become a SoundFX user, I strongly advise you to subscribe to the mailing list. It's pretty active, but not to the point that your mailbox will be clogged. When a new version of SoundFX comes out or when a major bug gets fixed, that will be the first place where Stefan will make the announcement.

SoundFX 4.3 can be used to a limited extent for free. Registration is 20 Euros, while US residents need to pay $30, a few bucks more than before but easily worth every cent for such a powerful program that would undoubtedly cost about twice as much on other platforms.

Pros
+ Very inexpensive
+ Virtually limitless effects.
+ Excellent user support.

Cons
- Incomplete documentation.

Results

Top Notch!

TOTAL *AMIGA*

KVM Switch

With an AmigaOne and Amithlon PC vying for space on his desk, Mick Sutton finds an inexpensive solution to make them share a monitor, keyboard and mouse.

After many years of using one computer (in my case a classic Amiga) exclusively, some people find that they are now running multiple systems (for example a PC and an AmigaOne). This can give you a bit of a dilemma regarding space and functionality. If you have only one monitor you could try using a manual switch for the input to the monitor and having two sets of keyboards and mice on your desk, this is not a good solution for several reasons. The first problem you will notice with a manual switch box is the quality of the image on the screen will have substantial reduction of quality, this is due to the nature of the switching method (copper contacts) and the second problem will be getting confused with what keyboard and what mouse belonged to what system... what a nightmare!

We found an ideal solution to this problem was a KVM (Keyboard Video Mouse) switch, in this review we are looking at a two port model (K-12-E) but the

same company also produce a four port model (K-14-E). So let's have a look at this little box of tricks. It is quite small measuring 12CM x 8CM x 5CM, it's quite solid and has a metal finish. Looking at it from the front it has two PS2 ports (one for mouse and the other for keyboard), two buttons and below each of them a multi coloured LED labelled "on line" and "selected" on its upper and lower sections (more on this later). Looking from the back, it has a DC power in socket, a monitor socket on it's own (labelled console) and two more monitor sockets each with two adjacent PS2 sockets. All of the PS2 sockets on this little box of tricks are colour coded, green for mice and blue for keyboards. The KVM comes with a pair of leads, both these leads identical in form, but curiously different lengths and have all the relevant plugs (monitor, ps/2 mouse and ps/2 keyboard) on the ends to plug into your computers. The power for this device is taken from the computers it is attached to, but in some cases it is worth noting that a 9v DC power supply may be required, we found no such need when attached to a PC running Amithlon and an AmigaOne. A separate power supply (DC9V 300mA) is available but is not included with the switch.

After plugging both leads into your two computers and into the KVM switch (making sure you don't cross over any leads from system one to two or vice versa), plug in your keyboard and mouse into the front sockets. Now switch on the first computer attached to the switch, you will notice a tiny beep sound and initially the upper green "on line" section and lower red "selected" sections of each LED light up. After a moment the LED on the side with no computer switched on extinguishes itself and the side with a computer switched on remains lit. You will find that using the keyboard and mouse is no different to when it's plugged directly into the computer and the video quality on your monitor is also the same as when it's plugged directly into the

computer, no degradation whatsoever. The reason for this is that the switch is a solid state switch that does not have mechanical contact areas where signal loss (due to no shielding and contact resistance) can happen.

Switch on the second attached computer and the green "on line" portion of the second LED lights up but nothing changes with regard to the computer you are currently using. To use the other computer all you have to do is push the corresponding button on the KVM switch (for manual mode operation), a beep will be heard (this feature can be turned off) and the monitor, keyboard and mouse are now on that system... cool! To switch between computers just hit the corresponding button and it switches over with the red LED showing which is selected. The beep that is heard every time the switch is operated can be turned off by hitting the right shift key twice. The switching of computers can also be done remotely via the keyboard by pressing the "Print Screen" key twice and then the cursor left or cursor right keys.

You will realise from this that an Amiga keyboard will not work with this switch, in fact we couldn't get it to work properly with a "classic" Amiga at all. We tried it with an Amiga 1200 fitted with an Eyetech "EZMouse" adapter that has a PS2 connector on it but it had some strange inconsistent effects on the KVM switch such as displaying the screen but no mouse control whatsoever, it is worth bearing in mind that we couldn't attach the Amiga keyboard either so it's a bit of a lost cause anyhow. It does seem

to work faultlessly (from what we can tell) with PC's running Windows, AmigaOnes running Linux or Amiga OS4 and Pegasos systems. Initially I did experience some strange effects using this KVM with my PC running Amithlon, the problems seemed to be caused by the switch using "Print Screen" to change its setting and Amithlon using the same key (with "H" or "R") to reset the emulator. Fortunately Bernie Meyer (Amithlon's author) came to the rescue with a patch that remaps this function to the "Scroll Lock" key. If you need it you can download the patch from http://www.amithlon.net/updates/special_patch.lzh.

All in all this switch is a dream to use, keeps the clutter on the desk to a minimum but it's a shame it doesn't work with "classic" Amigas. Having said that if you have multiple systems such as PCs, Pegasos or AmigaOnes or any combination of those it's the ideal solution. The best part is that this little gem costs just £18.79 including VAT from the likes of EBuyer (http://www.ebuyer.com) and when you consider that includes the two leads it's a bargain!

.info

Available From
Ebuyer
www.ebuyer.co.uk
Code no. 46424

Price
£18.79

Requirements
2 computers with PS/2 keyboard and mouse ports and 15pin SVGA style graphics ports.

Test Systems
AmigaOne XE-G4 800MHz
AmigaOS 4 Pre-release
Linux PPC

PC, AMD Athlon XP 2500+
Amithlon
Windows 98SE

Result

Pretty Good!

☹ ☹ ☺ 😊 ☺

TOTAL *AMIGA*

Going to the movies with

MPlayer

Who needs a DVD player when we've got Sam Byford to explain the ins and outs of the MorphOS port of MPlayer.

MPlayer is a video player for MorphOS that can run almost all of the different codecs and formats that are available at the moment. It has its origins on Linux but has become so popular that it has been ported to many different operating systems. Due to its open source nature there is nothing to stop this program being ported to AmigaOS4+ either, so while this tutorial is written on a Pegasos machine running MorphOS sometime in the near future I expect it to also become relevant to AmigaOS4 users.

The official homepage for MPlayer is located at http://www.mplayerhq.hu/ while MPlayer for MorphOS (ported by DET Nicolas) can be downloaded from MorphZone (unless you are a programmer make sure you download the binary distribution, not the source files). Installation is quite simple, you can either use the provided installer or just copy the entire directory to a place of your choice. The benefit of using the installation script is that it will ask you to set a default directory where the majority of your movie files are located, this directory will then be shown when you start the program.

Most of you will have seen other video/DVD players in action: FroggerNG, SoftCinema or MooVid. What makes MPlayer stand out from the crowd is its speed and usability. Its drawback is that it does not use external codecs and therefore is quite a large program. Frogger on the other hand is small and uses external codecs but is not as fast or as reliable. A brief explanation of codecs is in order here. Support for new technology and for creating video files constantly changes and becomes better, improved data compression algorithms create smaller file sizes and new dithering routines mean better picture quality in the same file size. To save authors time and headaches, media players are often written to use codecs - external files that explain to the program how to handle a file encoded in a particular format. This means that support for each format does not need to be written into a program, which keeps its size down and

means the author is not having to constantly update a player: download the new codec, place it in the appropriate directory and your player should now be able to use that format.

MPlayer has its codecs built into the program and as such is almost seven times the size of Frogger!

Any codecs brought out in the future will need to be written directly into MPlayer and a new version released. Things are not that much better for programs that use external codecs however, as they still have to be written or converted by someone, so time is still being spent on updating the files.

All of the common codecs are supported internally by MPlayer: MPEG, VOB, AVI, OGG/OGM, QT, MOV, MP4, VCDs, SVCDs, DVD, DivX 3/4 (and possibly 5, I have not tested this yet). There are many others and while the Linux version has a full list on its website there is no real website for the MorphOS version and as such no comprehensive list of codecs for it either.

Depending on the size and complexity of the file you want to play (and your processor's capabilities) some programs would struggle with playback, and more importantly struggle to keep the sound in sync with the picture. Pausing, fast-forwarding or reversing the data stream meant the sound often ended up out of sync, words would be heard in the audio stream and then half a second later the characters would mouth them! Not good with longer films where you want to be able to stop/start whenever you need more popcorn! MPlayer does not suffer this problem and has almost no loss of synchronisation when pausing or playing with the data stream. The picture may skip a few frames in order to keep up with the sound but that is not a great loss and it should not happen too often.

Getting MPlayer

Download MPlayer from:
http://www.morphzone.org/modules/mydownloads/viewcat.php?cid=13

Download MPlayer GUI & Argue from http://lordfpx.free.fr/

When trying to play DVDs MPlayer can actually be confusing as you cannot simply use the file requester to select a film's .VOB file (the file on a DVD disc that contains the video data) - this will not play and will show a nasty requester proclaiming that your DVD disk has a read/write error. This is not the case but is the system's way of telling you that you are trying to play a protected/copyrighted DVD. There are also DVD drives which MPlayer quite simply does not like, but from all reports any LG drive should work perfectly and my cheap and cheerful Artec 16x DVD drive works flawlessly too. In part this is probably down to the Pegasos and its current dislike for certain drives and configurations but having the DVD as master on the second IDE channel should help.

MPlayer

As with many programs there are two main ways to use MPlayer, from its icon or from shell. Using the icon is the simplest way to do things but does have drawbacks when it comes to playing DVDs or any other CD based media (such as VCDs). Playing animation files or videos from your hard-drive is simplicity itself and should work using the icon's default settings. Double clicking the icon will bring up a requester where you select and play your file. If you do wish to tailor MPlayer's output to your own preferences then there are only three icon tooltypes that you should ever need to change when playing hard drive based files:

IWANTMYBORDER – As its name suggests you can turn the border off for the movies you play. When this is enclosed by brackets the border will disappear from your video whenever the mouse moves away from the window.

This is great for making the video blend seamlessly with your desktop.

FRAMEDROP – This will let MPlayer drop video frames when it needs to keep the sound/video synchronisation in place. Useful when multitasking and on slower machines and recommended for use with DVDs.

CGX_MODE=AUTO|OVERLAY|VMEM| WPA – These are the different forms of display for the files. If you run a Voodoo or Radeon card on your system then Overlay is a great benefit, it means that the video output can be scaled to any size you wish without slow down which is excellent for fullscreen playback.

The main drawback with Overlay is that screengrabs are not possible and where the video was being played you will get a nice pink rectangle! Use VMEM or WPA when screengrabbing. VMEM will use the graphics card memory to buffer and play the file so this option improves with the graphics card, but is still slower than Overlay as colour conversions have to be performed. WPA, which stands for WritePixelArray is another form of this but is slower again because the video is converted via a CGX function and then output, but without any buffering.

There are a few other tooltypes that can be applied to MPlayer but they are all in the documentation and easy enough to get to grips with. Each of the tooltypes can also be used via shell and the format is the same as with most programs: "MPlayer {file} {commands}". To play Bus_Dodger.mpg I could use the following line in shell (CD to MPlayer's directory first):

Playing a DVD movie (Shrek) in a borderless window.

```
MPlayer Movies:Bus_Dodger.mpg ⇒
CGX_MODE=OVERLAY VERBOSE
```

which would use overlay as the display mode if it was available. This particular example is actually pointless however as MPlayer will automatically use Overlay if it can, and if that fails Vmem and then WPA. The tooltype VERBOSE however, is one I use a lot because it provides an output of everything that MPlayer is doing - handy for bragging about frame rates to other Amiga users and to work out why something is not playing.

DVD Playback

I have already mentioned that if you use the basic icon-run MPlayer to select a .vob file from a DVD then MPlayer will return a read/write error on your disk. This is because the .vob file does not contain all of the information that is needed to run a DVD film, or rather, the information is there but is read incorrectly and so does not work. In order for MPlayer to successfully play your DVD titles it has to know some basic information. This can get complicated if your DVD is not one long film but a series of shorter items like a TV Series. I recommend that you have the verbose option somewhere in your command lines as this will help you track down any problems.

My test bed for writing this was the movie Shrek, which has as its base an English main track with Spanish, Portuguese and Catalonian dubs as well as an English Commentary track. It also has three subtitle languages. All the usual Bonus material is included on the one DVD. I also used a Futurama DVD

and a few others from my massive collection to test with.

There are three basic command parameters needed when playing a DVD and these are: -dvd - Indicates the title, or track, that you want to play.

-dvd-device – Where to find the DVD player.

-framedrop – Highly recommended when playing DVDs.

For example:

```
MPlayer -dvd 1 -dvd-device ⇒
ide.device:2 -framedrop verbose
```

In reverse order these things do the following: -framedrop drops occasional picture frames to keep up with the sound. While not a requirement with DVDs, I strongly recommend you use this command because otherwise MPlayer quite simply can not keep the sound and pictures synchronised. Even with a G3 Pegasos, MPlayer fails without the -framedrop option.

"-dvd-device ide.device:2" is the setting I must use on my system. This shows MPlayer that my IDE DVD drive is run by ide.device and is at location 2. Change this as required by your system's setup.

The overlay display mode allows movies to be played smoothly even when enlarged but it can't be screen-grabbed!

"-dvd 1" The main film is not always situated at track 1. If you have a DVD that has multiple episodes on it (like my Futurama sets) then you will need to use -dvd 2, -dvd 3 etc. to select the track you want. Unfortunately this
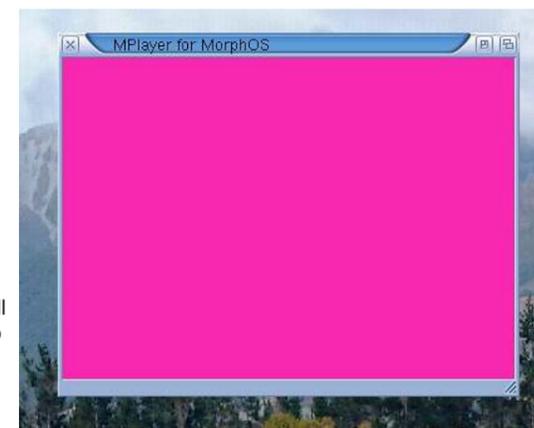
always comes down to pot-luck. From what I can tell there is no foolproof way to work out which track number the main film(s) will be on. If 1 doesn't work, try 2 and so on.

When you first start MPlayer (using the above line) it will bring up a few lines of text, then pause, then bring up some useful information, then pause again, and finally will reel off a whole load of information before finally starting the playback of the track. It is the information displayed in the middle of that operation that we want to read. Hitting "Esc" or using the close gadget will exit the film. Something similar to the following will be displayed near the start of the Shell output:

Reading disc structure, please wait...
There are 16 titles on this DVD.
There are 21 chapters in this DVD title.
There are 3 angles in this DVD title.

We can safely ignore the last line as MPlayer does not seem to be able to show different angles yet.

The 16 titles part tells us that there are 16 main tracks on this DVD. In Shrek's case track 1 is the film, track 2 is the sponsors animation (Dreamworks), 3 is the first item of the Bonus Material and so on. The 21 chapters tell me that the main film has 21 sections and MPlayer can actually jump straight to any of those with a different command, "-chapter":

```
MPlayer -dvd 1 -dvd-device »
ide.device:2 -chapter 10 »
-framedrop verbose
```

Jumps near to the middle of the film.

If you have a film like that has several spoken languages and several subtitle tracks you may find that English is not the native language (with a French film

for example). In this case there are two handy commands to know: "-alang" and "-slang". Both use two character location codes to tell MPlayer what to play. "-alang en" uses the English audio track while "-slang pt" would display subtitles in Portuguese. There are two places to find out what audio and subtitle tracks are available, the easiest to find is the back of the DVD case and the second is buried somewhere in the verbose output of MPlayer when you have either -alang or -slang set. Adding "-alang en" to the command line adds extra output to the Shell, and if you scroll up, somewhere in there will be a line(s) such as:

"[open] audio stream: 0 audio format: ac3 (5.1) language: en : 128"

Shrek has 5 lines like this with "en" "es" "pt" "ca" and "en aid" in them. One major drawback I have found is that there is no way to turn the English Commentary track on. MPlayer will only accept a 2 figure code so "en aid" does not work, which is a real shame as you still need a PC/Mac or DVD player to listen to the commentaries. A similar problem exists with the subtitle tracks. Shrek has 8 of them: "0 en" "1 es" "2 pt" "3 en" "4 es" "5 pt" "6 es" "7 pt". The reason for each language having two tracks is that there are subtitles for the film itself and subtitles for the commentary track. MPlayer however will always use the first "en" it comes to and has no way to select the commentary subtitles. Whether this is a drawback of version 0.91 or MPlayer as a whole I'm not sure.

So, the longest your Shell line should ever really get will be as follows:

```
MPlayer -dvd 1 -chapter 2 »
-dvd-device ide.device:2 -alang »
en -slang pt cgx_mode=overlay »
-framedrop -v
```

You will notice that earlier I had "verbose" in the line but now I have "-v". The reason for this is simple continuity. "-verbose" will not work and neither will "v" without the dash. Generally speaking Shell commands should use the "-" while icon tooltypes use the full words. This does however make me wonder why you can not shorten "-framedrop" to "-fd" or similar and why the cgx_mode command does not use "-".

If you wish to save yourself from having to use the Shell every time it is easy enough to set up an icon to do the same thing. Make an exact copy of MPlayer and its icon in the same directory but called DVDPlayer. The basic format of the commands are the same as in Shell but Device and Title must have "DVD_" before them, thus they become "DVD_Device" and "DVD_TITLE". Instead of spaces between the command and the setting you must use a equal sign "=". My DVDPlayer tooltypes are as follows:

(IWANTMYBORDER)
CGX_MODE=OVERLAY
DVD_DEVICE=ide.device:2
DVD_TITLE=1
FRAMEDROP

Please note that once you have double clicked the icon to start a DVD film you will still have a wait while MPlayer digests all the information it finds on the DVD, so be patient - your system has not crashed!

Video CD

In most respects playing a VCD (VideoCD) is identical to playing DVDs. The only difference is that instead of DVD_ you use VCD_ (VCD_DEVICE=ide.device:2). The other tooltypes or commands stay the same.

Controlling MPlayer

Controlling MPlayer while it is running is fairly simple. The Left/Right Arrows will seek forward or backwards 10 seconds, Up/Down will jump 1 minute forwards/back and PgUp/PgDown jumps 10minutes. "P" will pause the movie while "Q" or "Esc" quits MPlayer. "F" toggles fullscreen on or off and "V" turns subtitles on or off. If you have a mouse with a wheel then try rotating it up or down, you may find (depending on your setup) that it acts the same as the Up/Down arrow keys.

While there are other control options (for sound sync adjustments and similar) most users will never have to touch them so it is pointless for me to go into them here. Everything is documented in the .pdf file in the MPlayer archive, which also explains how to set up a configuration file that MPlayer will load as default when it starts. Personally I prefer using the icon tooltypes or playing in Shell, and when it comes to loading different Titles for DVDs these two media are necessary anyway.

I hope this tutorial has made things a little easier for you, and as a final note, there is a GUI available for MPlayer. I found that it doesn't work all that great at the moment, but your welcome to give it a try, the web link is in the information panel.

Here are the tooltypes for the second MPlayer icon I created for playing DVD movies.

Ambient • Info: DVDPlayer (Tool)

Type: Tool
Blocks: 6940
Bytes: 3553068
Stack: 4096

Script: ☐
Archived: ☐
Readable: ☑
Writable: ☑
Executable: ☑
Deletable: ☑

Version:
MD5:
Last changed: 04-Nov-03, 09:39:30
Comment:

ToolTypes:
(IWANTMYBORDER)
(CGX_MODE=AUTO|OVERLAY|VMEM|WPA)
CGX_MODE=vmem
DVD_DEVICE=ide.device:2
DVD_TITLE=1
FRAMEDROP
(NO_MULTIBUFFERING)
(AUDIOID=0)
(VCD_TRACK=1)
(VCD_DEVICE=ide.Device:2)

New | Del
Save | Cancel

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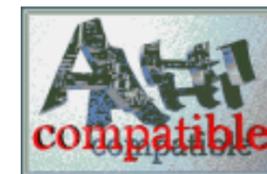
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Creating PDFs Using Ghostscript

Robert Williams creates cross-platform documents on his Amiga.

Portable Document Format files are a common sight on the Internet, where they are often used to provide product and technical information as manuals and reports. PDF is popular because, to a large degree, it retains the format created by the designer whichever platform it is viewed on and free viewing programs are widely available for most operating systems, making it widely accessible. On mainstream platforms, such as Mac OS and Windows, commercial software is available which will create a PDF file from any application that can print. Fortunately for us Amiga users there is also a powerful open source package called "Ghostscript" that can be used to create PDF files. For several years the Amiga port of Ghostscript lagged several releases behind the latest on other platforms. Recently, a coder going by the nick of "whoosh777" ported version 8 and has been keeping it up to date. Version 8.13 his most recent release.

Ghostscript's role in life is to manipulate Postscript files that can be produced from many applications and printed on high-end printers. Ghostscript can take a Postscript file and output it in a number of alternative formats, including direct to many (non-postscript) printers, to encapsulated postscript (for insertion into another document), to view on screen, to a bitmap file on disk or to a PDF file. The last option is what we're interested in here. There are a couple of downsides to this cunning plan, one is that Ghostscript is a large program controlled from the command line, so it does take a while to get the hang of it, but that is what this tutorial is all about!

The second problem is that PDFs produced from Ghostscript don't work properly (their images are not displayed) in the current version of APDF (the Amiga's best PDF viewer), ironically they do work very well in other PDF viewers on other platforms such as Adobe Acrobat! However all is not lost, you can view your PDFs within Ghostscript to make sure they are correct before sending them to a user on another platform. Even better news is that the updated version of APDF included with MorphOS and the new AmiPDF viewer that comes with Amiga OS 4 will perfectly display files created by Ghostscript. These new viewers are also PPC native on their respective platforms so they give much better performance than APDF on 68K Amigas.

Downloading and Installing Ghostscript

The first task is to download and install Ghostscript on your hard drive; you will need about 20Mb of space. Open your web browser and go to Whoosh777's web site at:

www.whoosh777.pwp.blueyonder.co.uk

This isn't the easiest site in the world to navigate as all the information is presented on one page. The section we want is "Installation" linked in the table of contents at the top. Below installation, find the "download" section and download the following files onto your hard disk:

gs813release020fpu.lha (or the no FPU version)
gs813fonts.lha
gs813resource.lha
gs813lib.lha
gs813doc.lha (not essential, but recommended as it contains the non-platform specific documentation)

Make a new drawer on your hard disk where you want the program installed and name it "GS813". If you already have an older version installed you should make a new installation as some of the support files have changed; you can happily run this version alongside your old one. Open a shell and assign "GS813:" to the drawer you have just created, like this:
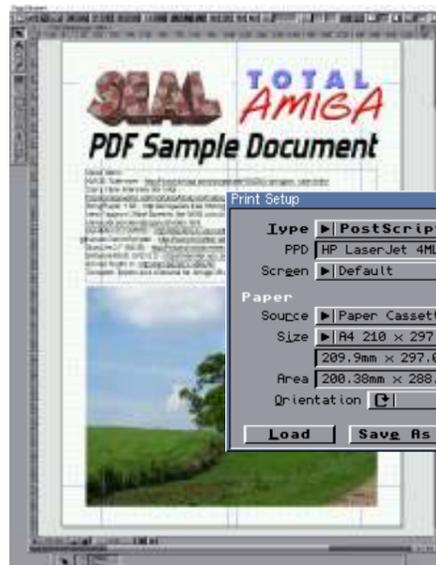
```
assign GS813: volume:path/gs813
```

Now change directory into the drawer containing the files you've downloaded ("Temp:Downloads" in my example, and unarchive the lha files into the new Ghostscript drawer:

```
cd Temp:Downloads
lha x gs813#?.lha GS813:
```

Finally we need to make some more assigns so Ghostscript knows where its support files are located, enter these lines in your shell:

```
assign GS813: volume:path/gs813
assign GS813Data: GS813:lib
assign GS813Fonts: GS813:fonts
assign GS813Resource: GS813:Resource
```

If you want to run Ghostscript regularly you can copy is block of assigns into your user-startup file so they are created every time you boot up your Amiga.

Generating a Postscript Input File

Before we can try making a PDF we need a postscript file for Ghostscript to convert, fortunately most Amiga applications that enable you to create documents for printing can produce postscript output. This is usually achieved by selecting print, then choosing a Postscript printer and then redirecting the output to a file. To give you an idea of how to go about it I will explain the procedure for three popular programs; other applications are likely to be very similar.

Final Writer

Open the document you want to output as a PDF and choose "Print" from the "Project" menu. In the "Print document" window, select "Postscript file" from the "Print to:" pop-up
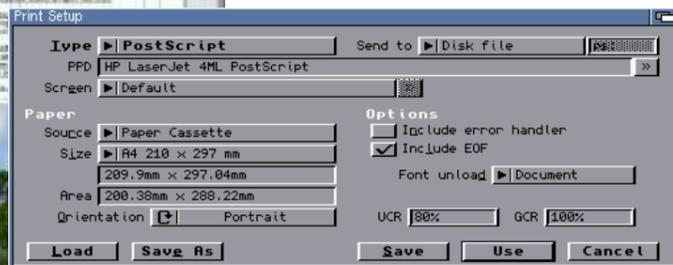
*Left: My sample PDF document in PageStream 4.
Above: The print settings used to output it as a postscript file.*

menu. Click the "Postscript" "Settings" button and check the "Page size" setting is correct, change any other options you need to and then click "OK". Check the other print options are correct (remembering that the PDF file will reflect the output (such as page order) as if it had been printed. Click the "Print" button and Final Writer prompts you for a filename, select a path and enter a filename; it's a good idea to use a .ps extension so you know this is a postscript file.

PageStream

After opening the document, select "Print" from the "File" menu, and then click the "Setup" button. In the "Print Setup" window select "Postscript" from the "Type" pop-up and "Disk file" from the "Output to" pop-up. Use the ">>" button next to the PPD box and select the "HPLaserJet4ML" file then check the page size selected is correct for the document you're exporting. If you wish you could save these settings for re-use with the "SaveAs" button; use "Load" to recall them at any time. Click "Use" to return to the "Print" window without overriding your default print settings. Set your print options so the document will be output as you would like it to appear in the PDF, click the "Save" button, then select a path and filename (with .ps extension) for the postscript output in the file requester.

TIP. Although PageStream can save PDFs directly (using the "File/Save as PDF" menu option) generating them using Ghostscript has the advantage of embedding the fonts used. This means the document will look correct even if the viewer does not have the fonts you used installed on their system.

Wordworth

Open the document to be converted to a PDF, then select "Print setup" from the "Project" menu. In the "Print Method" section select the "Postscript" radio button and then click the "Postscript" button at the bottom of the window. In the "Postscript Setup" window click the "File" radio button and then "Select" a path and file name for the output file. "OK" the two setup requesters to return to your document, then select "Print" from the "File" menu, make any adjustments needed in the "Print" window and click "Print" to save the document to the file you selected.
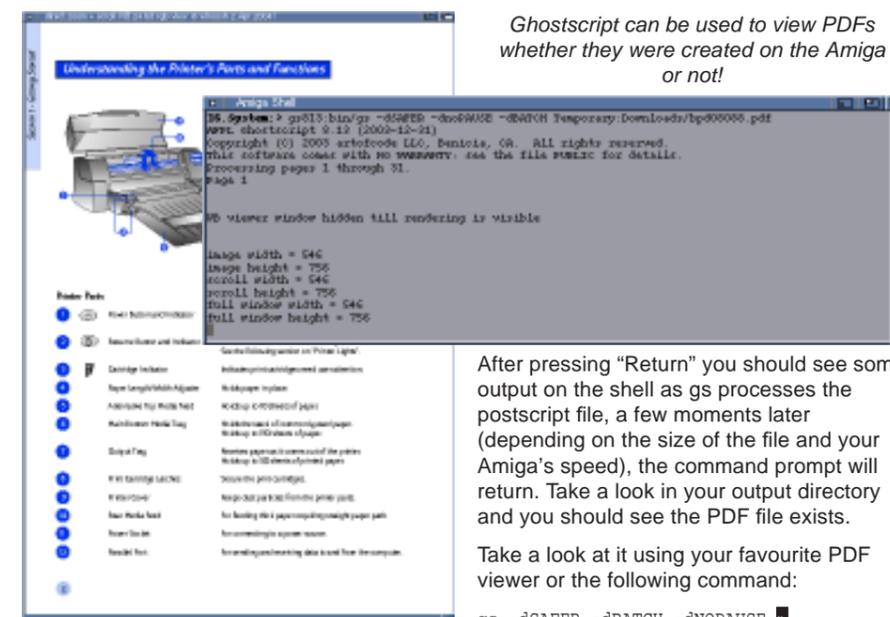
Creating a PDF

With Ghostscript installed and a postscript file on-hand we're ready to create our first PDF. I have saved my postscript output as a file called "Sample.ps" in a drawer named "PS" on my "Temp:" partition. In the examples below I will be using that file path, replace it with the path and filename of the output file you want to convert. Now open a shell and enter the following:

```
stack 150000
```

Like many programs ported from Unix-like systems, Ghostscript needs lots of stack, if you forget this command the program may well hang or even crash your Amiga! Ghostscript is supplied with a handy script called ps2pdf, which simplifies the process of creating PDF files, unfortunately this script has not been ported to an Amiga shell script of AREXX macro. When I needed to produce PDFs of Total Amiga, I reverse engineered the script and worked out which command-line arguments the gs program (the main ghostscript executable) required to produce PDFs. In these examples I'll explain how it works so you can decide which options suit your documents and then, later on, we can build a script to run it more easily.

First we'll create a PDF file using the default options, in your shell change to the bin drawer inside your "GS813:" assign and then execute the "gs" command as follows:

```
cd GS813:bin

gs -dSAFER -dNOPAUSE -dBATCH »
-sDEVICE=pdfwrite »
-sOutputFile=Temp:PDF/Sample.pdf »
-c .setpdfwrite -f Temp:/PS/Sample.ps
```

TIP. The gs command options are case sensitive, you must enter the command exactly as it is listed here.

After pressing "Return" you should see some output on the shell as gs processes the postscript file, a few moments later (depending on the size of the file and your Amiga's speed), the command prompt will return. Take a look in your output directory and you should see the PDF file exists.

Take a look at it using your favourite PDF viewer or the following command:

```
gs -dSAFER -dBATCH -dNOPAUSE »
Temp:PDF/Sample.pdf
```

If you use the above command, close the window showing the PDF file to move to the next page, when you close the last page you'll be returned to the command prompt.

TIP. A dedicated PDF viewer is normally better than Ghostscript because you can easily move back and forth between pages. Most viewers also have an antialiased font display that makes the document look much more attractive on screen.

Before things get any more complex, let's break down that monster command line and see if we can figure out what it's doing:

gs – The main Ghostscript program.

-dSAFER – This option secures ghostscript against potential attacks (very unlikely from an input file you have generated yourself) and should always be used.

-dNOPAUSE – Prevents gs from asking you to press return after each page has been processed.

-dBATCH – This option makes gs quit back to the command prompt after processing.

-sDEVICE=pdfwrite – Tells gs to use the "pdfwrite" output device which is used to create PDF files.

-sOutputFile=Temp:PDF/Sample.pdf – The path and filename where the PDF output should be saved.

-c .setpdfwrite – "-c" inserts a postscript command, in this case ".setpdfwrite" which configures Ghostscript to write PDF files.

-f Temp:/PS/Sample.ps – The path and filename of the input postscript file.

Advanced Options

PDF files don't just have to be for viewing on-screen, for example, we send each issue of Total Amiga to our printers as a PDF. Depending on the intended usage you'll

require different things from the file you generate, for distribution on the Internet you'll probably want the minimum file size (for a quick download) and good enough quality to view on-screen. On the other hand, for printing, the highest quality will be needed, regardless of file size.

There are two ways to set options when creating a PDF with gs, the first, and simplest, is to choose a pre-defined setting to suit the usage you expect. The size of the output PDF file tends to be the factor that decides which option to use, and in most documents largest component is the images they contain (if any). For these reasons the main factor that varies with the settings options below is the resolution of the images that are included. The available options are:

/screen – Any images in the file a reduced to a resolution suitable for on-screen viewing. (the smallest file size).

/ebook – More detail in graphics is retained than the screen setting.

/default – The default setting is designed to be suitable for screen viewing and reasonable print quality, it usually produces a larger file size than the two options above.

/printer – The resolution of the file is tuned for home printing.

/prepress – Similar to "/printer" but additional information is retained in the file that may be useful for professional printing.

As an example let's create a PDF suitable for home printing. To select that option we

need to add the -dPDFSETTINGS option to our command line as follows:

```
cd GS813:bin
```

```
gs -q -dSAFER -dNOPAUSE -dBATCH »
-dPDFSETTINGS=/printer »
-sDEVICE=pdfwrite »
-sOutputFile=Temp:PDF/Sample_Print.pdf »
-c .setpdfwrite -f Temp:/PS/Sample.ps
```

Assuming your sample document has at least one image in it you should see that the new "Sample_Print.pdf" file is larger than the first PDF we created, indicating that the image is included at a higher resolution. To give you an idea of the difference in file size these settings can make, I created several PDF from the same postscript file using each of the different parameters, you can see the file sizes that resulted in the PDFSETTINGS boxout.

In some circumstances you might want more detailed control over gs's PDF output, if this is the case there are a large number of options which can be changed. A full list of the available options is available from the Ghostscript website:

www.ghostscript.com/doc/AFPL/8.00/» Ps2pdf.htm

To change an option add the following to your command line -dOptionName=value where "OptionName" is the name of the option exactly as it is listed in the documentation (remember that it is case sensitive) and "value" is one of the acceptable values listed. Some of the options I have found useful are:

PDFSETTINGS

Starting with a 29Mb PDF file (including a 4 megapixel digital camera image), I used Ghostscript to create a PDF with each of the pre-defined PDF settings, here are the sizes of the resulting files:

PDFSETTINGS Option	Size (Kb)
/screen	159
/ebook	688
/default	953
/printer	1273
/prepress	1731

CompatibilityLevel=[1.2-1.4] – Over the years the PDF standard has evolved over various versions, this option sets the version of the standard to use. APDF gives an error if you try to use 1.4.

DownsampleColorImages=[true|false] – If you don't want gs to reduce the resolution of the colour images in your document set this option to "false". This is useful if you want the very highest quality for printing.

DownsampleGrayImages=[true|false] – As above but for greyscale images.

ColorImageResolution=[nnnn] – Allows you to manually set the resolution of colour images in the PDF, set the parameter to a number of dots (pixels) per inch, e.g. "150".

GrayImageResolution=[nnnn] – as above but for greyscale images.

MonoImageResolution=[nnnn] – as above but for mono (black and white) images, it is wise to set this to a higher resolution than

```
[ ] Amiga Shell                                    [ ][ ][ ]
21.System:> gs_screen Temp:PS/PDFSample.ps Temp:PSF/PDFSample.pdf

Creating a script to launch Ghostscript makes the command line much easier!
```
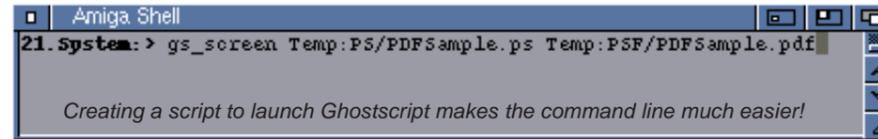
grey or colour images and mono images will look pixelised at low resolutions.

As an example, let's create a PDF using the default settings but without compressing the colour images within the file. In your shell, enter the following commands:

```
cd GS813:bin
```

```
gs -q -dSAFER -dNOPAUSE -dBATCH »
-dDownsampleColorImages=false »
-sDEVICE=pdfwrite »
-sOutputFile=Temp:PDF/Sample_Thumbs.pdf »
-c .setpdfwrite -f Temp:/PS/Sample.ps
```

Test the PDF file in a viewer that supports thumbnails to see the effect. There are many other options available, so if you want more control, be sure to have a look through the the documentation at the web page mentioned above.

Automating the Process

Even if you're comfortable with issuing shell commands, these long gs command lines are no fun! So let's make a simple script that will run a chosen gs command, with all the

options you need, just by specifying the input and output files. For this example I'm going to create a script that produces a PDF suitable for screen output, you can change the command line to include any other options you need. If you want several variations, just create a differently named script for each set of options.

Open a text editor (such as GoldEd, Editpad or even ed) and enter the following lines:

```
.bra {
.ket }
.key infile,outfile
stack 150000

GS813:bin/gs -q -dSAFER -dNOPAUSE »
-dBATCH -dPDFSETTINGS=/screen »
-dDoThumbnails=true -sDEVICE=pdfwrite »
-sOutputFile={outfile} -c .setpdfwrite »
-f {infile}
```

Save this to a file in your "S:" directory and name the it gs_screen (or a name that suits the setting you have chosen), then close your editor.

Next we need to tell AmigaDOS that this file is a script, to do this return to your shell and enter the following:

```
protect s:gs_screen +s
```

With the "s" protection bit set and the file in the S: directory (which is on the default search path) we can run the script like any other shell command. The script needs just two arguments, the path and filename of the input postscript file and the path and filename of the output PDF, let's try it out:

```
gs_screen Temp:PS/Sample.ps »
Temp:PDF/Sample_Auto.pdf
```

After a few moments the prompt should return and the PDF has been created, that's much easier!

Conclusion

PDF files are an excellent way to exchange information with friends and colleagues whatever computer or operating system they use, especially now that a PDF reader is part of the default installation on most systems. I hope this tutorial has shown you that although Ghostscript can be a bit daunting it's really quite straightforward to create PDFs on AmigaOS!
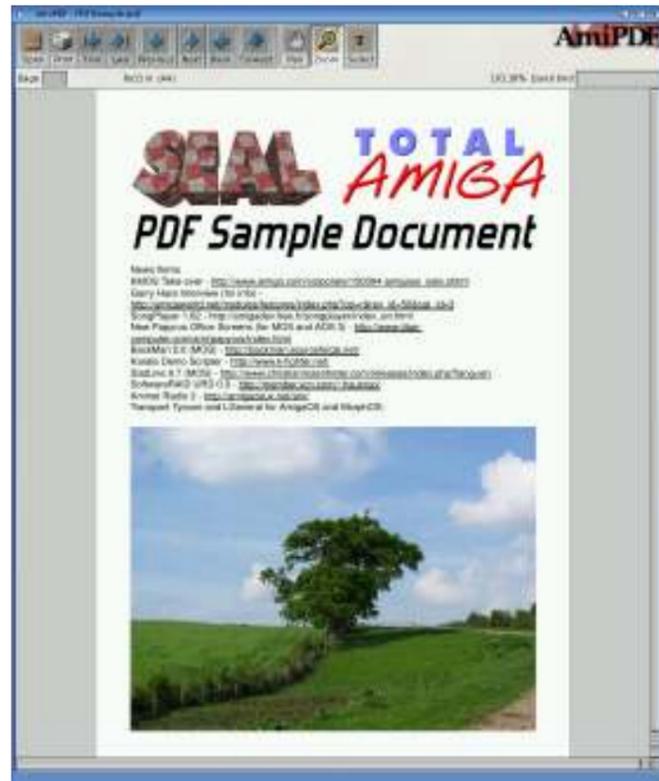
My sample PDF file displayed in the new Amiga OS 4 PDF viewer, AmiPDF and the ubiquitos Adobe Acrobat Reader. Whatever the viewer's platform a PDF looks nearly identical to the original, notice that the custom font for the title has been retained.

Learn C
The Universal Language

In the third part of our series, Dave Pitcher continues his introduction to "C",
the most common progamming language on the Amiga.

Welcome to part 3 of the tutorial for C. In this edition you will get the chance to finally understand printf, structured data, how the Amiga operating system runs your programs without stopping everything else and about how the operating system handles communication between programs. Once you have read through all that you will be delighted to hear we get onto a brief look at the Tetris game design. We have moved the libraries, BOOPSI and Reaction sections to next issue as a comprehensive introduction to OS4.0 programming, as this issues tutorial is already very long!

Printf

Virtually every example in the series so far has used the mysterious "printf" command. What does it do?

Printf displays to the output console used by your program (e.g. the shell window) whatever the formatted text you provide it with. There are special character sequences which indicate different things that you can provide in the text string it uses. Character sequences that begin with the character '\' expect the character succeeding it to have some meaning - known as "escape" sequences (because it "escapes" from the normal text printing mode into a special mode).

Examples of escape sequences are shown in the "Escape Sequences" boxout.

So a string, passed to printf that contained "Hi\n there \n" would display like so:

Hi
 there

If you passed the following string to printf: "Hi\n\tthere\n" it would display like so:

Hi
        there

Download

Download DCC from Aminet at this location:

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

Install it following the installation instructions in the readme file.

If you passed the following string to printf: "Hi\0 there folks" it would display like so:

Hi

Part of the problem with escape sequences is that it uses a printable character '\' to move into the new mode. What if you really did want to type a '\' to the screen? Well in that case you would use the escape sequence '\\' which goes into escape mode, and is followed by another special escape instruction to print '\' which is conveniently called '\'.

If you passed the following string to printf: "Hi \\ there folks" it would display like so:

Hi \ there folks

Because printf does not automatically do a carriage return at the end of each line (unlike say PRINT in BASIC) you need to add '\n' to the end of your printf statements if you want them to write a newline each time.

In this example we will print out to the screen different text strings, and see how they work out:

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. If the symbol is preceeded by a space, you must include the space when typing the code.

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

Enter the following into printfa.c:

```
#include <stdio.h>
int main(int argc, char * [] argv)

{
    printf("This string will run »
together ");
    printf(" with the one after it.\n");

    printf("This string\n will take\n »
one line \n every time \n we use \n»
\\n\n");

    return 0;
}
```

Save it in printfa.c and compile it like so:
Work:> dcc -o printfa printfa.c

Now run it:
Work:> printfa

Escape Sequences

Escape Sequence	Meaning
\n	New line and carriage return at this point in the string.
\t	Move along to the next tab stop (equivalent of pressing "Tab" on the keyboard).
\0	The string end here (remember NULL terminator).
\\	Display a "\" character.

Printf and Printing Values

Printf also allows you to position other values within the text string: floats, strings, characters and more. The '%' character indicates a special instruction to printf, whatever follows it indicates the type of data that will be put at the position in the string. For example purposes %d prints a decimal integer value at a position in the string: "abc%ddef"

This will print a decimal between abc and def in the string. Now we need to tell printf what value that decimal should take. This can either be a literal value (such as '4') or a variable name that contains the value. We tell printf what value to place by putting the values (or variables) in a comma seperated list after the string:
printf("I am %d years old today\n",12);

This will display as:
I am 12 years old today

When printf looks at the string and encounters the first %d it looks at the first entry in our list, the next time it encounters a %d it looks for a second entry and so on.

```
printf("I am %d years old today and I »
was born in %d\n",12,1932);
```

This will display as:
I am 12 years old today and I was born in 1932

Of course we could easily just have typed these values in the list but the power of printf is that it allows you to use variable names instead:

```
int hiscore;
    hiscore=2043;
    printf("The current hi-score is »
%d\n",hiscore);
```

This will print:
The current hiscore is 2043

Examples of formatting characters to position values are shown in the "Position" boxout.

You can also place advanced formatting properties in, to pad numbers with leading or trailing zeros and strings with leading blanks.

The printf function also has a family of similar functions that operate using the same methodology but offer different functionality, the most useful of which are:

sprintf – Puts the formatted string to a target variable instead of the screen.
fprintf – Puts the formatted string to a file descriptor instead of the screen.

Position

Formatting Sequence	Meaning
%d	Display the next value available from the value list as a decimal integer.
%s	Display the next value available from the value list as a string.
%f	Display the next value available from the value list as a floating point number.
%c	Display the next value available from the value list as a character.

Enter the following into printfb.c:

```
#include <stdio.h>
int main(int argc, char * [] argv)

{
    char targetstring[256];
    int hiscore;

    hiscore=12;
    sprintf(targetstring,"This »
information [%s] has been printed to a »
string first\n","hi");
    printf(targetstring);
    printf("This sentence >> %s << comes »
from a variable as does this value %d\n",
    targetstring,
    hiscore);

    return 0;
}
```

Save it in printfb.c and compile it like so:
Work:> dcc -o printfb printfb.c

Now run it:
Work:> printfb

Structures

Structures allow you to create new types with complex content, useful for describing data that you would normally, in real life, put on a form. The means for doing this is the keyword "struct" (lit:structure) which you name, then within its scope you define the variables with their type and their subname.

For example:

```
struct BankAccount
{
    long accountnumber;
    char surname[32];
    char forenames[64];
    long current_balance;
};
```

To define a variable as part of your new type "BankAccount" you do it like this:

```
struct BankAccount myaccount;
```

This will declare myaccount as being of type "struct BankAccount". You can then access the fields within it using the "." seperator, an example of setting data:

```
myaccount.accountnumber=492949294929;
strcpy(myaccount.surname,"Wibble");
strcpy(myaccount.forenames,"Johnny R");
myaccount.current_balance=-400;
```

Now an example of getting data:

```
printf("The account is held by Mr %s »
and its balance is\n",
```

```
myaccount.surname,
myaccount.current_balance);
```

That is how it is done if you declare your variable as a value type struct BankAccount, but in order to pass it to functions it is going to have to be a pointer type (address of) so given the following function:

```
void printaccountnumber(struct »
BankAccount * myaccount)
{
    printf("a/c no:%d\n",myaccount»
->accountnumber);
}
```

Notice the different way of accessing fields? In the case of something that is a pointer to a structure you must use "->" to access a field. This is often the cause of many a coding error.

Structs are enormously powerful, you can declare structures that contain other structures:

```
struct InterestBearingAccount
{
    struct BankAccount account;
    float interestrate;
};
```

Then, to access the fields within the new type you must access it with '.' or '->' (depending on the rules explained about pointers vs value types):

```
struct InterestBearingAccount myaccount;
myaccount.interestrate=0.05;
myaccount.account.accountnumber=666;
```

This principle of structures will be used all over AmigaOS programming, it is important to know what it means when it is used. Structures within structures are used also, usually for extending types already provided by AmigaOS so that your data works with their existing functions.

AmigaOS Programming

To use this part of the tutorial either you need to have access to your own NDK or you can download NDK3.9 from the internet (you need AmigaOS3.9):

Download NDK3.9 from:
www.amiga.com/3.9/download/NDK3.9.lha

To make this work with DICE you need to be adept at using the Shell. Open a new shell window and decompress the archive:

```
lha x NDK3.9.lha
```

Go to where you installed DCC and add some directories:

```
cd dcc:include
makedir amiga39
```

Now copy in the includes from the NDK:

```
copy [placewhereNDKis]/include/»
include_h/#? dcc:include/amiga39/ ALL
```

Now copy in the amiga.lib library from the NDK:

```
copy [placewhereNDKis]/include/»
linker_libs/amiga.lib »
dcc:dlib/amiga39s.lib
```

Now when you use dcc you need to provide the argument -3.9 to get it to use the AmigaOS3.9 NDK.

Running from Workbench

In part 1 we discussed the "main" entrypoint that the loader looks for in order to run your programs, this does not work when you want to launch it from Workbench. Workbench looks for one called "wbmain" instead. The simplest way to make sure your Amiga programs can be launched by double clicking on them in Workbench is to add the following lines of code:

```
#include <workbench/startup.h>
int wbmain(struct WBStartup *wbstartup)
{
    return main();
}
```

The "include" directive looks for the Workbench startup definition (which we will explore more in part 4), the wbmain() function we define as calling our main function. Arguments are not passed in the same way (int argc, char * argv[]) as with non Workbench C programs (how would you type in the arguments?). Instead we get a pointer to a WBStartup structure which contains a lot of useful information about how Workbench started the program. We will go into this in depth in part 4.

When a program is launched from Workbench we cannot guarantee it has its own console window, so to handle this we need to use some functions in dos.library (DOS library) to open a console and write to it using DOS functions (note: this problem is not there in SAS/C it opens its own window when you use printf). The exact calls will be shown in an example below (signalling).

Multitasking

You will have noticed by now that the Amiga is able to continue to run other programs and tasks (even moving the cursor around following your mouse) whilst doing many other things at once, this is known as "multitasking". When you compile and run a program from this tutorial it is being executed as a new "task" concurrently with other programs.

The part of the Amiga Operating System that ensures that more than one task can be running at once is known as "Exec" and it deals with what is known as "task scheduling". Each task that the Amiga is running has to be able to have a bit of the processors time in order to keep running and Exec runs a number of instructions from a given task, and then switches to another and runs a few more instructions from another task based on its own internal decision making algorithm.

Signaling

Task A

Find Task B.
Send the signal.

TaskB

Allocate a signal (tells Exec that we are waiting for a signal of this type).
Wait for that signal.
When a signal is received, do something.

This task switching happens so fast that you (in theory) are not aware that your program is freezing and continuing several hundred times before it completes.

Communicating Between Tasks

Tasks need to communicate with each other, Intuition for example (which is the architecture used by windows, icons, menus and your pointer) needs to be able to tell tasks when the user has clicked on the "close" button. The Amiga uses an exceptionally fast method of communication which has its own risks (and indeed is one of the root causes for instability in novice Amiga programming) in that it does not pass copies of data around between tasks - it passes a pointer to the data.

This means that essentially all tasks can, once they have been given a pointer, access all the memory available in each others tasks. It has a second side effect in that unless self discipline is maintained by the Amiga programmer two tasks could modify each others data erroneously.

Before we look at ways of alleviating these potential problems, take a look at the two main ways of communicating between tasks:

Signals

A simple way of communicating between two people (A and B) in the dark is for one of them to be issued with a torch (flashlight). Person A stands a few hundred metres away from person B and they face each other.

Person B waits for the signal from person A, which is a single flash from the torch. Person A then is ready, and signals person B by turning the light on and off. Person B has received the signal and then can go and do whatever they want.

Exec provides a "signalling" mechanism only a little more advanced than this, you can vary the signal that is sent from any of 16 possible combinations (16 through 31 - below 16 is used by the system).

In order for Task A to signal Task B it needs to find Task B in Exec. This is the equivalent of turning to face Task B. It can then just signal Task B. Unlike with the torches Task B gets the signal once it is ready too! The activities of tasks A and B are shown in the "Signalling" boxout.

To allow us to use this signalling mechanism the NDK3.9 provides us with a C interface to Exec.

The functions we need to use are:

FindTask – Gives you a pointer to a task if it has found it.
Signal – Sends the signal you specify to the target task.
AllocSignal – Indicate to Exec we wish to receive signals of this type.
Wait – Wait for one or more signal type(s).
FreeSignal – Indicate to Exec we no longer wish to receive signals of this type.

Now of course if A cannot find B in the first place, then it would be foolish to start signalling B, so FindTask returns a pointer set to NULL if the task cannot be found.

For our next example program we will send 11 different signals from A to B, to give our signals some useful names we will use #define (that we met in the last tutorial):

```
#define SEND_HI 16
#define SEND_THE 17
#define SEND_ENEMY 18
#define SEND_IS 19
#define SEND_AT 20
#define SEND_OUR 21
#define SEND_GATES 22
#define SEND_LEG 23
#define SEND_IT 24
#define SEND_NOW 25
#define SEND_MESSAGE_ENDS 26
```

Save the following into a file called TaskA.c:

```
#include <stdio.h>
#include <exec/types.h>
#include <proto/exec.h>
#include <workbench/startup.h>
#define SEND_HI           16
#define SEND_THE          17
#define SEND_ENEMY        18
#define SEND_IS           19
#define SEND_AT           20
#define SEND_OUR          21
#define SEND_GATES        22
#define SEND_LEG          23
#define SEND_IT           24
#define SEND_NOW          25
#define SEND_MESSAGE_ENDS 26

int wbmain(struct WBStartup *wbstartup)
{
    return main();
}

int main()
{
    struct Task *  TaskB;
    if (TaskB=FindTask("TaskB"))
    {
        printf("General, have located »
company B and am signalling them.\n");
        Signal(TaskB,(1L<<SEND_HI));
```

```
        Signal(TaskB,(1L<<SEND_THE));
        Signal(TaskB,(1L<<SEND_ENEMY));
        Signal(TaskB,(1L<<SEND_IS));
        Signal(TaskB,(1L<<SEND_AT));
        Signal(TaskB,(1L<<SEND_OUR));
        Signal(TaskB,(1L<<SEND_GATES));
        Signal(TaskB,(1L<<SEND_LEG));
        Signal(TaskB,(1L<<SEND_IT));
        Signal(TaskB,(1L<<SEND_NOW));
        Signal(TaskB,(1L<<»
SEND_MESSAGE_ENDS));

        printf("Done sending my »
messages.\n");
    }
    else
    {
        printf("Sorry general, I could »
not find company B! I guess they bought »
it.\n");
    }
}
```

Now compile it:
```
Work:> dcc -o TaskA -3.9 TaskA.c
```

Now run it:
```
Work:> TaskA
```

Sorry general, I could not find company B! I guess they bought it.

Oh no! Well, that is as we should have expected, we have not written the instructions for TaskB yet and it is not running.

Enter this into a file called TaskB.c:

```
#include <stdio.h>
#include <exec/types.h>
#include <proto/exec.h>
#include <proto/dos.h>
#include <workbench/startup.h>

#define SEND_HI           16
#define SEND_THE          17
#define SEND_ENEMY        18
#define SEND_IS           19
#define SEND_AT           20
#define SEND_OUR          21
#define SEND_GATES        22
#define SEND_LEG          23
#define SEND_IT           24
#define SEND_NOW          25
#define SEND_MESSAGE_ENDS 26

int AllocateSignals();
int FreeSignals();

int wbmain(struct WBStartup *wbstartup)
{
    return main();
}

BPTR OpenConsole();
void CloseConsole(BPTR console);

int main()
{
    int exitplease=0;
    BPTR display;

    display=OpenConsole();

    FPuts(display,"TASK B Message »
Recieved Window.\n");
    Flush(display);
    /* First allocate our signals */
```


The signalling example in action, you must to run TaskB from its icon.

```
    if (AllocateSignals()!=0)
    {
        FPuts(display,"Unable to allocate »
all our signals, oops!\n");
        FreeSignals();
        CloseConsole(display);
        return 1;
    }

    /* Now report waiting for signals */
    FPutS(display,"Waiting for incoming »
signals.");
    while (exitplease==0)
    {
        unsigned long lInboundMessage;
        /* Wait for the specified signals */

        lInboundMessage=Wait(
            (1L<<SEND_HI) |
            (1L<<SEND_THE) |
            (1L<<SEND_ENEMY) |
            (1L<<SEND_IS) |
            (1L<<SEND_AT) |
            (1L<<SEND_OUR) |
            (1L<<SEND_GATES) |
            (1L<<SEND_LEG) |
            (1L<<SEND_IT) |
            (1L<<SEND_NOW) |
            (1L<<SEND_MESSAGE_ENDS));

        /* operate on what we got */
        if (lInboundMessage&(1L<<SEND_HI))
            FPuts(display,"hi ");

        if (lInboundMessage&»
(1L<<SEND_THE))
            FPuts(display,"the ");

        if (lInboundMessage&»
(1L<<SEND_ENEMY))
            FPuts(display,"enemy ");
        if (lInboundMessage&(1L<<SEND_IS))
            FPuts(display,"is ");
        if (lInboundMessage&(1L<<SEND_AT))
            FPuts(display,"at ");
        if (lInboundMessage&(1L<<SEND_OUR))
            FPuts(display,"our ");
        if (lInboundMessage&»
(1L<<SEND_GATES))
            FPuts(display,"gates ");
        if (lInboundMessage&(1L<<SEND_LEG))
            FPuts(display,"leg ");
        if (lInboundMessage&(1L<<SEND_IT))
            FPuts(display,"it ");
        if (lInboundMessage&(1L<<SEND_NOW))
            FPuts(display,"now ");
        if (lInboundMessage&»
(1L<<SEND_MESSAGE_ENDS))
        {
            FPuts(display,"\n");
            exitplease=1;
        }
    }
    FreeSignals();
    CloseConsole(display);
```

```
    return 0;
}
int AllocateSignals()
{
    if (AllocSignal(SEND_HI)!=SEND_HI)
        return -1;
    if (
AllocSignal(SEND_THE)!=SEND_THE)
        return -1;
    if
(AllocSignal(SEND_ENEMY)!=SEND_ENEMY)
        return -1;

    if (AllocSignal(SEND_IS)!=SEND_IS)
        return -1;
    if (AllocSignal(SEND_AT)!=SEND_AT)
        return -1;
    if (AllocSignal(SEND_OUR)!=SEND_OUR)
        return -1;
    if (AllocSignal(SEND_GATES)»
!=SEND_GATES)
        return -1;
    if (AllocSignal(SEND_LEG)!=SEND_LEG)
        return -1;
    if (AllocSignal(SEND_IT)!=SEND_IT)
        return -1;
    if (AllocSignal(SEND_NOW)!=SEND_NOW)
        return -1;
    if (AllocSignal(SEND_MESSAGE_ENDS)»
!=SEND_MESSAGE_ENDS)
        return -1;

    return 0;
}
int FreeSignals()
{
    FreeSignal(SEND_HI);
    FreeSignal(SEND_THE);
    FreeSignal(SEND_ENEMY);
    FreeSignal(SEND_IS);
    FreeSignal(SEND_AT);
    FreeSignal(SEND_OUR);
    FreeSignal(SEND_GATES);
    FreeSignal(SEND_LEG);
    FreeSignal(SEND_IT);
    FreeSignal(SEND_NOW);
    FreeSignal(SEND_MESSAGE_ENDS);
    return 0;
}
BPTR OpenConsole()
{
    BPTR display=Open("CON:"»
,MODE_NEWFILE);
    return display;
}
void CloseConsole(BPTR console)
{
    char key;
    FPuts(console,"\nHit return to »
exit.");
    Flush(console);
    key=FGetC(console);
    Close(console);}
```

Now compile it:

```
Work:> dcc -o TaskB -3.9 TaskB.c
```

Now run it, but there is an issue here, if we run it from the AmigaDOS shell it is not discoverable using FindTask. So copy the default tool for "Tools" from envarc to make a new icon for TaskB, we will launch it from the Workbench instead:

```
Work:> copy ENVARC:sys/def_tool.info »
TaskB.info
```

Go to the drawer where you have been writing your programs (mine is Work:tutorial) and double click on TaskB. This should now be running happily in the background and have opened a new console window on the workbench.

Now run TaskA:

```
Work:> TaskA
```

Press return to get rid of the TaskB output.

The example above illustrates the limitations of signals, whilst they may be useful for a limited amount of information being transferred between two programs (it would be hard to extend the example to send useful sentences without resorting to numeric or hex encoding of characters and character sequences) they are not usable for sharing data or for sharing more complex information like shared addresses.

That is why Exec also provides another facility, Exec Messaging.

Messaging

Exec messaging requires that the sender and receiver both are able to communicate with each other with what are known as "message ports". Back to the scenario where TaskA wants to send some information to TaskB. TaskB needs to set up a message port (using CreateMsgPort) and then register this message port so that it can be found by other tasks (using AddPort) (which is akin to allowing your telephone number to be visible in the telephone directory). Once TaskB has set this up it waits on it for new messages to come in (using WaitPort), then retrieves whatever message has arrived (using GetMsg), copy what it needs from it and as soon as possible reply to this message (so the task that sent the message can move onto other things without being concerned that TaskB might be about to access areas of memory which it has got rid of).

TaskA, who wishes to send the message has an easier task, it has to find the port that TaskB has made available (using FindPort), create a reply port for any replies that TaskB makes to arrive at using CreateMsgPort, construct the message (putting a link to the reply port we created in the message), send it and WaitPort on our reply port. Once we have waited, retrieve the reply and dispose of it.

The jobs performed by tasks A and B are shown in the "Messaging" boxout.

Above is the sequence required for TaskA and TaskB. Now for the programs, type in the program below and save it in TaskMessage.h, this defines the message structure we will use for communication. Note that any message structure you define MUST have struct Message as its first item, this allows Exec to recognise the message and be able to route it correctly.

```
#define TASKB_PORTNAME "Mr Bananas"
struct TutorialMessage
{
    struct Message iExecHeader;
    char * iText;
};
```

Save the following into file TaskAMsg.c

```
#include <stdio.h>
#include <exec/types.h>
#include <proto/exec.h>
#include <TaskMessage.h>
#include <workbench/startup.h>

int wbmain(struct WBStartup *wbstartup)
{
    return main();
}

int main()
{
    struct MsgPort * replyport;
    struct MsgPort * transmissionport;
    struct TutorialMessage message;
    char messagetext[32];

    /* Create the reply port */
    printf("Creating reply port.");
    replyport=CreateMsgPort();
    if (replyport==NULL)
    {
        printf("Error, could not create a »
message port.\n");
        return 1;
```

```
    }
    printf("Finding TaskB's port »
%s\n",TASKB_PORTNAME);
    /* Find the public port for Task B */
    transmissionport=»
FindPort(TASKB_PORTNAME);
    if (transmissionport==NULL)
    {
        printf("Sorry, I could not connect »
you to TaskB.\n");

        /* Now clean up the message port »
we created */
        DeleteMsgPort(replyport);
        return 2;
    }

    printf("Setting up message\n");
    /* Define the message */
    strcpy(messagetext,"Hi TaskB!");
    message.iText=messagetext;

    /* Tell exec how big the message is */
    message.iExecHeader.mn_Length=»
sizeof(struct TutorialMessage);

    /* Set the reply port for the »
message */
    message.iExecHeader.mn_ReplyPort=»
replyport;

    printf("Sending message\n");
    /* Send the message */
    PutMsg(transmissionport,(struct »
Message*)&message);

    printf("Waiting for reply\n");
    /* Wait for the reply */
    WaitPort(replyport);

    printf("Processing reply\n");
    /* Get the message from the reply »
port, but ignore it */
    GetMsg(replyport);

    DeleteMsgPort(replyport);

    printf("Done!\n");
    return 0;
}
```

Compile it using:

```
dcc -o TaskAMsg -3.9 TaskAMsg.c
```

Enter the following into file TaskBMsg.c:

```
#include <stdio.h>
#include <exec/types.h>
#include <proto/exec.h>
#include <TaskMessage.h>
#include <workbench/startup.h>

int wbmain(struct WBStartup *wbstartup)
{
    return main();
}

int main()
{
    struct MsgPort * inboundport;
    struct TutorialMessage
*incomingmessage;
    char           messagetext[32];

    /* Create the inbound port */
    printf("Creating inbound port.");
    inboundport=CreateMsgPort();
    if (inboundport==NULL)
    {
```

```
        printf("Error, could not create a »
message port.\n");
        return 1;
    }

    /* Mark it public */
    printf("Making it public using name »
%s\n",TASKB_PORTNAME);

    inboundport->»
mp_Node.ln_Name=TASKB_PORTNAME;
    AddPort(inboundport);

    /* Wait for the message */
    WaitPort(inboundport);

    printf("Message arrived!\n");
    /* Get the message */
    incomingmessage=(struct »
TutorialMessage*)GetMsg(inboundport);

    /* Copy the contents, the message »
structure is a pointer »
so we use -> instead of . to access »
its elements */
    strcpy(messagetext,»
incomingmessage->iText);

    printf("Replying");
    ReplyMsg((struct »
Message*)incomingmessage);

    printf("Looking at the message, it »
contained %s \n", messagetext);

    /* Now clean up the port, remove »
it from the public list */
    RemPort(inboundport);
    DeleteMsgPort(inboundport);

    printf("Done!\n");
    return 0;
}
```

Compile it using:

```
dcc -o TaskBMsg -3.9 TaskBMsg.c
```

Now run TaskBMsg in one shell and then TaskAMsg in another shell.

This will give you a grounding in how BOOPSI, Reaction and Intuition work, which you need for next issue, the clue is that when you click a mouse on a window, a message gets sent to the task that is responsible for maintaining that window. Regardless of what we go onto do, inter-task messaging is a GREAT facility and will help you create all sorts of useful applications, games and utilities that would be nigh on impossible without it.

Tetris

I assume you are all familiar with the Tetris game, whereby random blocks are placed one by one at the top of a screen and you are expected to navigate them as they make their way down the screen rotating each block until it lands on the already assembled blocks below, to try to make complete lines?

There are three main elements to the game:

1. **The internal representation:**
a. The current amount of lines completed.
b. The current level (dictating speed).
c. The current score and how to compute score updates.
d. The position of the current block, which state of rotation it is in and its type.
e. The stopping condition and collision detection of the game.
f. Line completion detection.
2. **The graphical user interface.**
a. Handles events from Intuition (mouse clicks, drags) for the window it is running in.
b. Displays from the internal representation of the game how the game currently looks in a visual manner.
3. **Displays additional controls.**
a. The input cycle to the game.
b. Handles keypresses and input.
c. Handles the timer that waits for a given time before signalling that a block has to be moved down.

Each block in the game is made up of 4 items and has a vertical layout and a horizontal layout that it flips between whenever you press to rotate the piece:
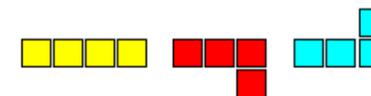
Or
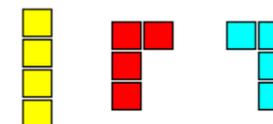
We will represent each section of the code as a seperate module (see the "Modules" box-out for a diagram):

Modules
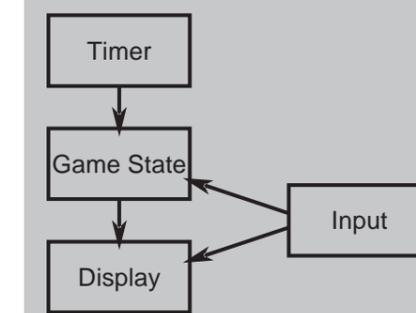
Game State Module will represent the tetris game as a set of structures and functions designed to handle each potential input to the game, will keep score and allow it to be interrogated on various bits of information (like block positions, scores). It will wait for incoming signals telling it what to do next. It will send signals to the Display Module (below) to re-draw the screen. This encapsulates all of point 1 above.

Timer Module will go to sleep for a period of time and send a signal to the Game State to update if it has not already done so. This covers 3.a.

Input Module will monitor the display window for input and the keyboard for key presses and signal the Game State to update whenever the user does something relevant to Tetris. It will also keep a look out for signals from the Workbench that it should redraw, and if necessary pass them onto the Display Module. This covers 2.a and 3.a.

Display Module will wait for a signal from the Game State Module or the Input Module to redraw and interrogate the Game State module for information to help it decide what to put where. This covers 2.b and 2.c.

Clearly each one of these modules could be represented as a Task and we can use signalling and messaging between them. The reason to seperate them into tasks is to create with a few extra modules a networked game later on!

Messaging

Task A

Create a reply port (CreateMsgPort).
Find the Task B public message port (FindPort).
Create a message.
Set the reply port on the message.
Send the message (PutMsg).
Wait on our reply port (WaitPort)...

Reply arrives, get it (GetMsg).
Clean up and exit.

Task B

Create a message port (CreateMsgPort).
Make it public and give it a name (AddPort).
Wait for messages (WaitPort)...

Message arrives, get it (GetMsg).
Extract the information we need.
Reply to the message (ReplyMsg).
Do something with the data.
Clean up and exit.

Web Site

The Total Amiga web site contains a whole host of features and regularly updated information about the magazine including back issues for free download in PDF format.

So why not pay us a visit at:

http://www.totalamiga.org

Here's a taster of what we're planning for the next issue of Total Amiga!

Features
• Internet annoyances (and how to avoid them).

Reviews
• PageStream 5.0 Pro
• Canon A80 Digital Camera

Support
• "C" tutorial part 4

• Image enhancement tutorial part 3 - colour manipulation.

Issue 19 is due in:

November 2004

Note: Total Amiga is produced by volunteers and this means sometimes issues run late and planned contents change. If you're concerned about the status of the next issue please look at http://www.totalamiga.org or contact us (contact details inside front cover).

AmigaOS 4 Pre-Release

Right: AmigaOS 4 Pre-release ready to install.

The screen-shot below shows OS 4 running the new AmiPDF viewer, you may be able to see the excellent antialiased display. On the left is USBInspector showing a memory card reader, also shown is a listing of the contents of the compact flash card in the reader. Photoalbum is displaying the images on the card. Note: USB support is not included in the pre-release.

micro GoldEd

microGoldEd (reviewed on page 26) offers a flexible user interface design. Some of the pre-sets supplied are shown below, they range from...
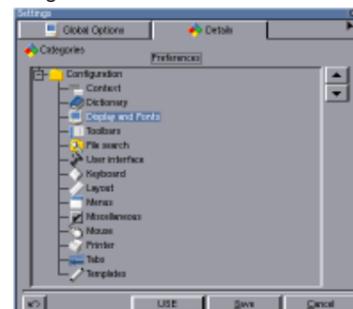

A rather plain OS 3.x look to...
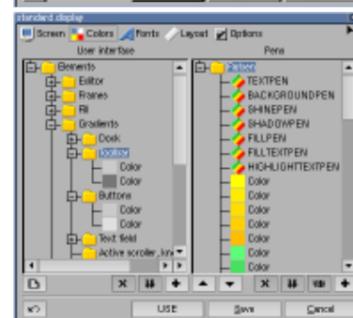

some rather snazzy gradients!

Hollywood Designer
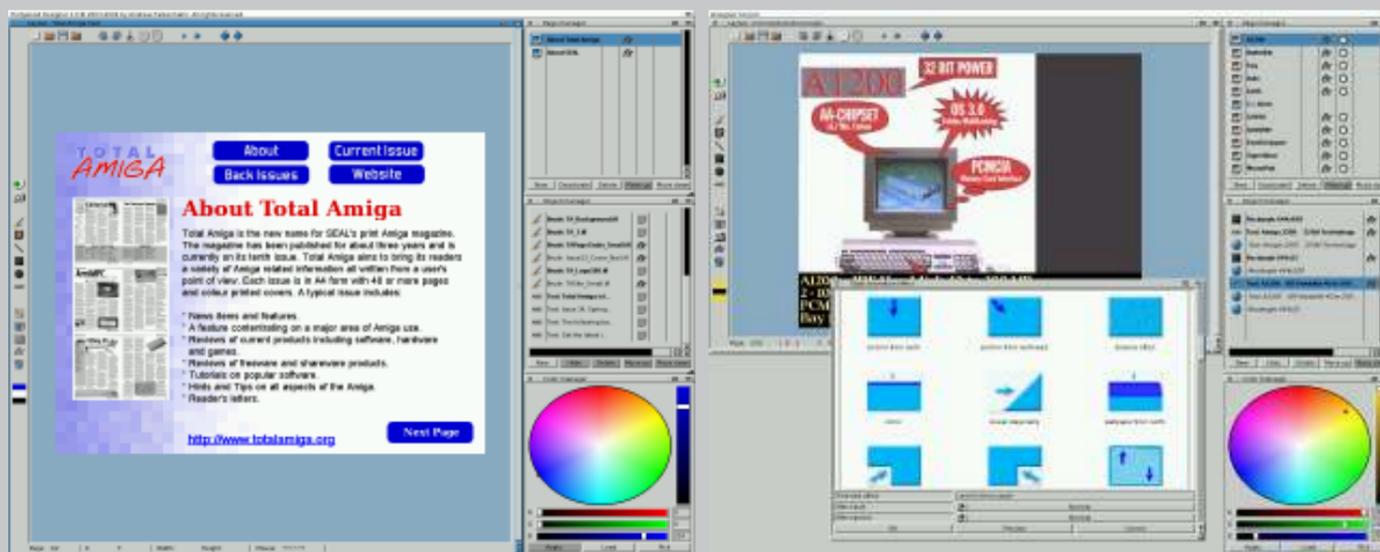
Left: An interactive project in Hollywood Designer (reviewed on page 20), the buttons on the page are active and can be used to control the presentation. Right: One of the example projects supplied. The window in the foreground shows some of the transition effects available.