

Benefits of membership

The national club for all users of 32 bit Acorn computers and Pocket Books

- The Club's magazine, 'Eureka', written by members, is published and sent free of charge four times a year.
- Free software to accompany articles in Eureka is available on the Club's FTP site or can be sent to members on disc.
- Free Technical Help Service. We will do our best to solve any problems which you may have, by email, letter, telephone or fax.
- Special discounts for Club members from well-known companies.
- Regional open days and shows are regularly organised by the Club. Other events can be arranged on request.
- Special offers at shows and open days.
- Regional contact lists of other members, available on request.
- Opportunities to get involved in the running of the Club itself.
- School and Affiliate Membership available on request.
- Joining pack includes an extra copy of a recent issue of the magazine and software.

Annual membership £15

Europe £19 and rest of the world £22

The ARM Club, Merton Court, 38 Knoll Road, Sidcup, Kent DA14 4QU

Email: info@armclub.org.uk Tel: 07010 709849 (Flexitel)

The magazine for members of

The ARM Club

Fractals

Webcams on RISC OS

Wakefield pictures



Issue 64 - 2008 No. 2

EUREKA

Editorial

The Editor's comments on the world of RISC OS

At the moment the best value for money if you want a good laugh must be comp.acorn.misc on the news groups. For about the last month there have been very heated discussions about the merits of RISC OS and other operating systems especially one beginning with W. By the time you get this magazine the thread may still be alive and is fantastic bedtime reading. This sort of argument can run and run with the flow of entertainment getting better and better as more and more people accuse more and more people of spreading lies and falsehoods....

As you can tell I enjoy reading the news groups. They can be a source of knowledge on all things RISC OS but much better is the entertainment value of reading the accusations of trolling, the threats of leaving the RISC OS scene forever, the twisting of meanings to suit, the misunderstandings, the poster saying this will be their last post and then jumping back in about two posts later, the kill file threats, incorrect snippings deliberate or otherwise, coming into a thread not having read all the previous posts, etc. etc. Any of these can start a new thread which spurs another avalanche of replies. What fun, better than any soap.

Its all rather like the article we have on fractals in the magazine, will this thread take over the whole band width of the web, will life on this planet become extinct as whole populations turn on each other in the OS Wars of the 21th century? Only by following comp.acorn.misc will you know the answer.

Its amazing how much time some of these people have to generate this rubbish instead of producing magazines or writing useful software for RISC OS. By the time this particular thread ends (if ever) I reckon that someone could have rewritten RISC OS to work on Intel processors. Then ASUS buys the rights to RISC OS and includes it on their new sub note books, these sell by the millions, RISC OS becomes the dominant OS of choice in the Galaxy. Soon parallel universes adapt RISC OS

All opinions expressed in Eureka are those of the authors and not necessarily those of the Club or its committee members and officers.

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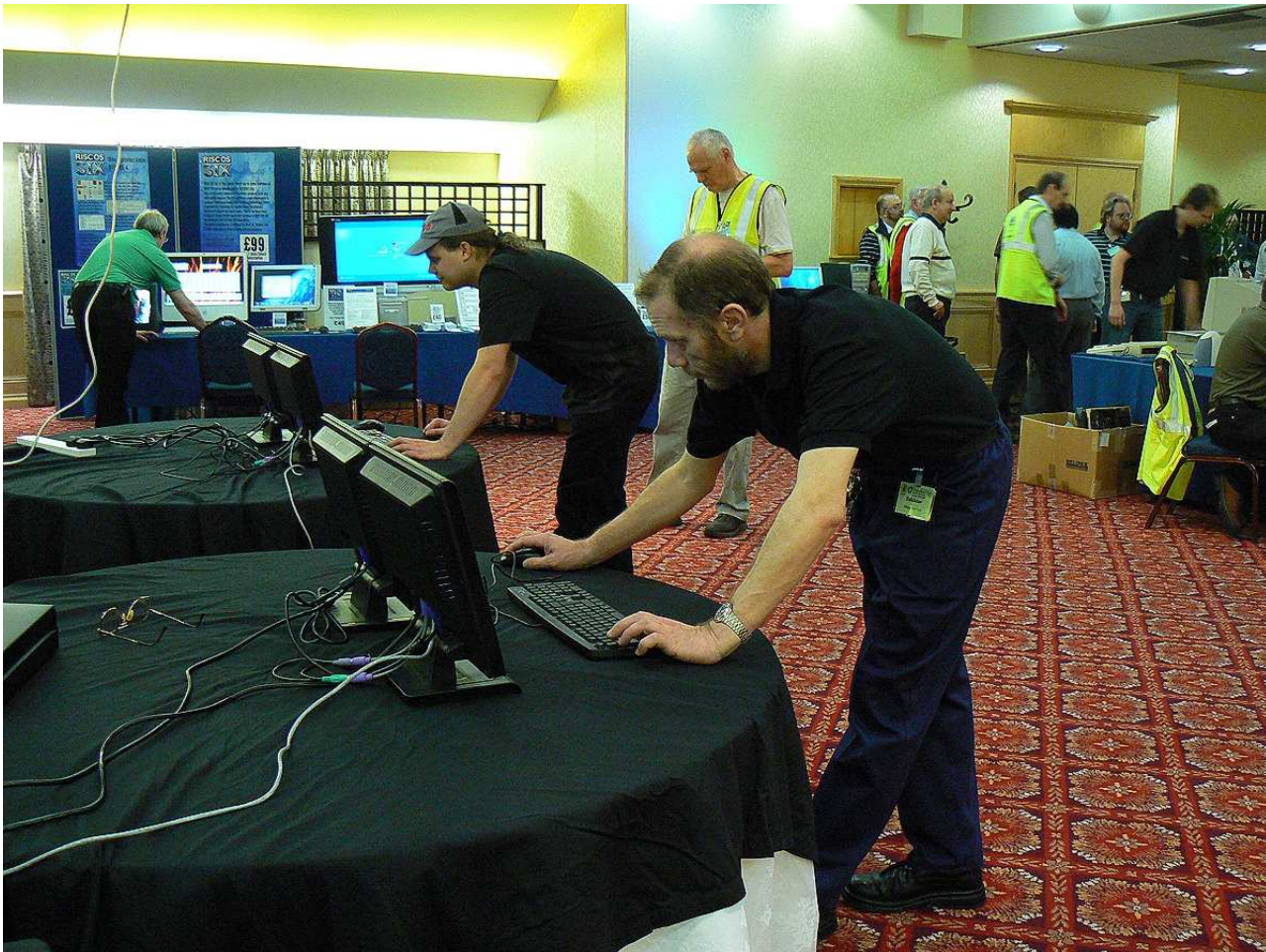
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Who you need and where to send



On your marks! Get set! Go!

The Thoughts of Chairman Druck

A new regular column featuring Dave's musings on the current RISC OS scene

Our esteemed editor has suggested the Chairman might like to have a column to say something. Well as luck would have it, I have some news.

We were extremely pleased with the reaction to the request for a new membership secretary in the last issue of Eureka, I didn't expect one response never mind four, its good to know that people are still enthusiastic enough to volunteer their free time to help the club. It did mean I had to disappoint three people, but I'd like to thank them again for their kind offers.

That leaves me to welcome Victor Normal on to the committee as the new membership secretary, who some of you may know as a member of MUG (the Midlands RISC OS User Group). Fellow members include our products manager Ralph and regular columnist Ron Briscoe.

Victor is the first new committee member since... well, me. I didn't actually volunteer to join the committee but was instead press ganged at the 1996 Acorn World Show at Olympia, which I'd turned up to for one day, but was offered a hotel room and a fresh change of clothes by some kindly looking folk, and ended up staying for all three days. The change of clothes turn out to be an ARM Club t-shirt and the next thing I know I was enrolled on to the committee and serving on the stand! I then went on to take over the technical help service and eventually took my turn as chairman.

One other role I picked up was membership secretary, which hasn't been my favourite as it required real work, such as printing things out, buying stamps and posting stuff. Rather than firing off a quick email with a solution to a problem, or the chairman's speciality of delegating work to someone else!

Therefore I was very happy to hand over the sacred shoebox of membership forms and Eureka back issues to Victor and wish him many happy database updates.

Another piece of club news is the frequency of Eureka issues, I'm sorry to say we've only managed three in the last calendar year due to the difficulty in commissioning enough articles. Rest assured though that your subscription period lasts for four issues, so even if they are less frequent, you'll still get what you've paid for before getting a renewal form. For those of you that pay at the same time each year, when you get a form or at a show, you'll find it will be due on the next magazine or show.

We would like to return to four a year, so we can publish just before the major shows, so following the success of our appeal for a membership secretary I'd like to harness your enthusiasm in the writing department. A few words on anything RISC OS related would be appreciated, a review of software or hardware, helpful hints or tips, interesting stories from the Acorn past, or even a grumble if you've got something you want to get off your chest.



And if you hit this key you can delete the whole of the membership data base - oops!



RISC Bytes

RISC OS news over the last couple of months

SELECT4i4 featuring RISC OS 6.10 released at Wakefield Show

RISCOS Ltd launched the latest version of RISC OS 6 at the Wakefield Show.

RISC OS 6 is available to members of the RISC OS Select scheme and this release is the fourth in the series. Currently RISC OS 6 is suitable for A7000, A7000+, RiscPC, Kinetic and VirtualRPC products.

Visitors to the Wakefield show saw the new version of the OS being demonstrated on a range of machines, including Risc PC with Viewfinder running on 22" LCD monitor at 1680 x 1050 x 16M. Virtual Risc PC running on PC with output to 32" LCD via HDMI at 1360 x 768 x 16M. Virtual Risc PC running on Apple Intel Duo-Core 24" iMac at 1920 x 1200 x 16M and Virtual Risc PC running on Apple Intel Mac-Mini at 1440 x 900 x 16M.

Existing Select subscribers who visited the show were able to take home a Select 4i4 CD at no charge.

New subscribers were able to take home a copy of Select 4i4 on CD.

A downloadable version of Select4i4 will be available as soon as possible after the show.

The RISC OS developers have made over three thousand changes and improvements since the RISC OS 6.06 ROM was released at Wakefield 2007. The key improvements and changes in this release are:-

Select 4i4 Key Features

Tunable automatic switching between standard and thumbnail filer views.

Support for 8MB of VRAM when running on VirtualRPC.

New filer layout options: vertical display and reverse sort order.

A number of WIMP optimisations to speed up the desktop.

Faster filer thumbnailing with optimised image generation.

Improved bandwidth for the RISC OS video system.

Enhanced keyboard shortcut support in Filer windows.

Improved Filer configuration options.

Support for DrawWorks XL and DrawWorks Select.

Search filer windows using the keyboard.

Option to enable Filer view inheritance.

Massive speed improvements to Pinboard.

Powerful new rename/copy/move features in Filer.

Optional and configurable 'lazy' thumbnailing.

Improved and configurable focus handling in Filer.

Many bug fixes to FontEd.

Image number indicators on thumbnail icon display for files with more than one image.

Updated FontEd user interface.

Filer user interface update, e.g. new filetype menu.

Thumbnail cache now configurable.

Improved support for font file variants and preserving additional data such as kerning.

New state indicators on thumbnail icon display (processing etc.) User selectable font for the Alarm iconbar time display.

Updated User Guide.

Improved 'working week' handling within Alarm.

Iconbar, Filer and Pinboard cooperate on exchanging pinned items. Video Welcome Guide to Select 4i4.

Faster filer viewer redraws and improved formatting.

Pinboard includes support for removable media.

Improved alpha-sprite support in thumbnails.

Mouse scroll support in filer viewers has been improved.

Configurable drag onto sub-directories to copy/move/save.
Alarm notification position now configurable.
Dynamic selections on Pinboard.
Filer status (sort order etc.) indicated in title bars.
Improved multi-user support in Alarm.
Updated configuration plugins to support all these new features.
Improved SVG export from Draw.
Increased accuracy when scaling objects in Draw.
Smoother mouse scroll wheel.
Updated Toolbox components.
Numerous other improvements to the Application suite (Paint, Draw...)

A years subscription to the Select scheme costs from £99.
Full details can be found on the RISC OS Select website at:

<http://select.riscos.com/>

Details on RISC OS Six itself can be found on the RISC OS Six website at:

<http://www.riscos6.com/>

Note new phone numbers for ROL from 1st April 2008* Tel +44 (0)29 2061 9942 Direct, Fax +44 (0)29 2063 3151

RISC OS Connect

RISC OS Connect is a web based initiative to connect the as yet un-exploited people of the RISC OS community to each other. The people they are hoping to attract are both programmers and non- programmers. People who want to contribute to the ongoing developments in some way.

Initially the main focus of the website will be around the Skills Database. This is a collection of people who have added themselves and described what function they are able to perform. The main site can be found here: <http://www.riscos-connect.org>. From here you will find more information about RISC OS Connect, related news, links and the Skills Database.

Whether or not this is a success depends on you.

The Skills database is open to all. From here, if you wish, you can create an account and input the areas you feel you are best suited to be able to render your services. Or you can simply view the database to see who is available and what they can do.

A mailing list(<http://groups.google.com/group/riscos-connect>)

is also available. This is open for anyone to join and to be used to discuss related matters. This is also the place to submit your ideas for further development of both the site and the RISC OS Connect initiative.

The basic idea behind the RISC OS Connect website is to indicate what resources are still available within the community. Knowing what resources are available is very useful to developers, who perhaps have time to do the programming, but not time write user manuals and other non-programming related activities. The developer would then be able to use the RISC OS Connect site to locate people who are able/willing to write user guides or other tasks they need performing, thus allowing the developer to concentrate on their program.

Alternatively the Skills Database could be used to put together a small programming team with people who have a varying skill set. The opportunities are there. You just have to take them.

As alluded to above this is a new initiative to connect resources within the RISC OS Community.

RISC OS Connect does not seek to replace various other on-line efforts such as riscos.info and RISC OS Open. We aim to coexist and provide a service that neither site currently offer.

Their aim is to provide a connection point for disparate parts of the RISC OS community and bring them together in a useful and constructive manner.

Initial release of Kerberos for RISC OS

Kerberos is an authentication protocol used to prove your identity to remote services over a network. It is capable of providing:

- a single authentication realm, whereby you use the same credentials to access any service; – single sign-on, whereby you need only present those credentials once when you first log on instead of separately for each service.

GNU Shishi is a Kerberos implementation which has now been (partially) ported to RISC OS. It will shortly be followed by ! Logon, a program for obtaining Kerberos credentials when logging on to a RISC OS machine, and ! RiscTerm, a Telnet client with support for Kerberos authentication.

For further information please visit the Kerberos for RISC OS home page:

<http://www.riscpkg.org/~gdshaw/kerberos>

Graham Shaw **<http://www.riscpkg.org/~gdshaw/>**
The RISC OS Packaging Project **<http://www.riscpkg.org/>**
The RISC OS Toolkit **<http://rtk.riscos.org.uk/>**

VirtualRPC-AdjustSA for Mac OS X

The first beta version was made available at Wakefield 2007 and in the 11 months since then we have been hard at work improving the product with the valuable assistance of all the beta testers. The feedback offered has been excellent and has greatly improve the product. In addition a number of features

that hadn't previously considered have been added.

All beta testers are encouraged to take up the offer of a free upgrade to the full version of VirtualRPC for the Mac. In order to obtain this upgrade beta testers need to return their Beta2/3/4 CDs to Virtual Acorn (Just the CD not the rest of the packaging) .

VirtualRPC for the Mac is supplied as a universal binary suitable for Intel, G5 and some G4 Macs. VirtualRPC allows the user to run RISC OS and RISC OS applications either in a window or in full screen mode. More details can be found on the VirtualAcorn website at:

<http://www.virtualacorn.co.uk>

7backup

7backup is now up to version 1.08 and has a clean and simple graphical user interface. There is also an add-on application by Chris Johnson called 7bupstats which handily tells you what 7backup is doing at any given moment even when it's backing up in the background.

7backup's features include:

- Incremental backup of files and directories, including whole disc images
- Fast backups or smooth multitasking for backing up in the background
- You can run multiple backups at the same time
- Copes with a lot of problems often seen with network filing systems
- "Paranoid" mode which checks contents of files match
- Can print useful statistics about the backup, including how long it took

The point of an incremental backup is that when you first run it, a complete copy of the source is placed in the destination. Any subsequent backups from the same source to the same destination will only need to update the things which have changed since the last backup, which usually takes far less time than the first backup.

7backup can be driven from the command line, or from programs like Alarm or Organizer so that you can automate the backup process. It also has a graphical user interface for

those who don't like to mess around on the command line. It includes a number of specialised options which help to address various problems found in other RISC OS backup programs, for example problems with image files (like zip archives) or problems when trying to backup to or from network file systems like ShareFS, NFS, LAN Manager, Sunfish and Samba, etc.

<http://www.7thsoftware.com/software.htm>

Blogs

Orpheus have announced a deal to exclusively use the ElectricType blog system for all dialup and broadband subscribers.

ElectricType is an alternative to mainstream blogging systems such as MovableType, Wordpress, Blogger etc but designed exclusively with RISC OS users in mind. ALL facilities are controllable and navigable using RISC OS browsers and as no Javascript is used, fully compatible with NetSurf.

ElectricType allows people who don't want to learn HTML to edit and manage their own website easily from their favourite web browser.

ElectricType provides a quick and easy way for users to setup and manage their own blog. It offers the following features: –

- * Fully W3C validated HTML and CSS on every page
- * Automatic RSS feed (also W3C validated)
- * Automatic ' Archives' links
- * Integrated calendar for easy navigation
- * Full comment management with spam protection, IP address and profanity filtering
- * Automatic link/trackback generation
- * Automatic ' last 10 comments' index
- * Integrated search engine
- * Selectable colour schemes and user- customisable layout/design
- * free RISC OS support
- * Support for inline images.

ElectricType will be available free to all Orpheus subscribers, but initially they are looking for a limited number of beta testers who would like a blog in order to test the system out prior to official launch.

They are only looking for about 5 people so it's first come, first served, so please contact me if you are interested.

I will be able to give people live demonstrations at the RISC OS Southwest Show next weekend.

For more information, please visit

http: //www. electrictype. com/ or email *nospam@vigay. com*

Disc Commander

Digital Phenomena Ltd are pleased to announce a new version of Disc Commander available to download now.

Disc Commander is a comprehensive disc recovery application and sector editor, allowing you to manually recover data from corrupted discs and deleted files. It's the only disc sector editor which is fully 32- bit compatible and works on all versions of RISC OS (from 3. 1 onwards).

v2. 54 implements additional scanning for deleted files of known filetypes, as well as making the disc search multi-tasking (although I wouldn't recommend actually using the disc you're repairing/searching at the same time – but at least the machine is still usable).

It will also recover data from USB pendrives and other types of removable device.

You can download Disc Commander, as well as view a complete list of changes between versions, from **http:**

//www. vigay. com/software/commander.html

Disc Commander is Shareware, and a printed manual is now available to registered users.

EnsureScan

As a part of the joint co- operation between RISC OS Open and RISCOS Ltd, we are please to announce the availability of a tool which we hope will help to make life a little bit easier for developers. It is aimed at gathering some specific statistics from a wide range of RISC OS users in order for us to better identify where the main problem areas lie with respect to the differences between the RISCOS Ltd RISC OS branch and the Castle Technology RISC OS branch.

The EnsureScan program will search for applications in a specific location on your computer, for example in a specified directory (defaulting to \$. Apps) or all of a specified hard disc. During the scanning process, it will look for applications and when it finds one, it will look at any ! Boot or ! Run file inside the application to build a list of all of the modules which are required by that application.

It does this by looking for RMEnsure commands in those files, hence the name of this program, as those commands indicate that the application requires that a certain module of at least a certain version number in order to function correctly.

The reason for doing this scan is simply to gather information from a large cross- section of the community about which modules are required by applications. We aren' t tracking what applications each user has or what modules each application requires.

The data collected is simply: how many times during the scan was a given module seen in an RMEnsure command and what version numbers of modules are being asked for? This is useful because it will indicate which modules are important to developers and that in itself helps to focus attention on solving problems where separate streams of development of those modules means that a simple version number check (as per RMEnsure) is no longer sufficient.

If we want to find ways to make it simpler for developers to ensure that their applications have access to versions of a

module which provide specific features and/or bug fixes, then gathering this information is an important first step.

Just install and run ! EnsureScn, then e- mail the results from it back to us at scan@riscosopen.org Download your copy of ! EnsureScn from:

www.riscosopen.org/binaries/ensurescan.zip

GnuPG 1. 4. 9 for RISC OS

Since the last release of GnuPG 1. 4. 1 for RISC OS more than three years ago, this is the first update.

News

- * Easier key management (updated key fetchers and keyring management commands) .
- * Fixed a few security issues.
- * Removed internationalisation from the RISC OS version (It is doubted anybody has used GnuPG with another language than English in the past anyway) .

Apart from those issues, it' s mainly a maintenance release. If you are keen to know the exact changes, please refer to the NEWS file inside the distribution or linked to from the web page.

Overview

GnuPG is a complete and free replacement for PGP. Because it does not use the patented IDEA algorithm, it can be used without any restrictions. GnuPG is a RFC2440 and RFC4880 (OpenPGP) compliant application.

GnuPG itself is a commandline tool without any graphical stuff. It is the real crypto engine which can be used directly from a command prompt, from obey scripts or by other programs. Therefore it can be considered as a backend for other applications.

Features

- * Full replacement of PGP.
 - * Does not use any patented algorithms.
 - * GPLed, written from scratch.
 - * Full OpenPGP implementation.
 - * Better functionality than PGP and some security enhancements over PGP 2.
 - * Decrypts and verifies PGP 5, 6, 7 and 8 messages.
 - * Supports ElGamal (signature and encryption) , DSA, RSA, AES, 3DES, Blowfish, Twofish, CAST5, MD5, SHA1, SHA224, SHA256, SHA384 , SHA512, and RIPEMD160 (and optionally – – not GNU anymore – – you can use IDEA as well)
 - * Supports key and signature expiration dates.
 - * Integrated support for HKP and LDAP keyservers and directly fetching keys from URIs.
 - * Support for photo IDs.
 - * And many more things. . . .
- Messenger Pro and Pluto support GnuPG.

Download

You can download it from the homepage at

<http://www.sbellon.de/>

There are four different archives:

- * The normal GPLed GnuPG for RISC OS binary (without IDEA) .

If you' re not worried about backwards compatibility to PGP 2. x, then you' ll want only this archive.

- * The IDEA archive, which is not GNU anymore.

You are only allowed to use this for non- commercial purposes legally!

- * The partially linked GnuPG for RISC OS archive.

You need the two above and this in order to build yourself a version which supports IDEA. You don' t need any compiler or programming experience in order to create this version.

But you only need it for backwards compatibility and are only allowed to use it non- commercially!

- * The GPLed source code archive.

This is the source code without IDEA. If you want to compile yourself an IDEA- aware version, you' ll need the IDEA archive

as well. You'll need Norcroft C and UnixLib in order to compile GnuPG for RISC OS.

MoreDesk version 1. 17

is now available to try or buy from the 7th software site.

<http://www.7thsoftware.com/moredesk/>

The latest version includes some significant new features and a number of bug fixes and other improvements. Here are the highlights:

- * Added the auto- load events to desktop automation. These events can be used to run files when a desktop is entered or load files into an editor (and position the window) .
- * Implemented a work- around for a really annoying bit of filer window behaviour which meant that sometimes they would stick to the edge of the screen when you change desktop instead of moving off- screen.
- * Modified main window redraw code to include an indication of the iconbar location in all desktops, not just the current one.
- * Added an option “ User” for possible positions to open the main window at.

This new option simply means open at the same position as last time – useful if you have a specific position and size for the main window that you like to use.

- * Main window opening position was calculated slightly incorrectly (it didn't always take into account the window furniture) . This could lead to bits of the window furniture being unreachable – depending upon the configured opening position.

The full details of the changes in version 1. 17 are available here:

<http://www.7thsoftware.com/moredesk/html/history.html>

MoreDesk allows you to organise your windows on over a space which is larger than the normal desktop. It does this by creating a grid of desktop spaces and by allowing you to select

which of these is the one you are currently looking at.

You can easily move windows between desktops and get a view of the entire desktop space. You can even have different sets of pinboard icons and a different backdrop image for each of the desktops. Events such as opening filer windows or launching applications can be associated with desktops.

MoreDesk costs just GBP 14. 99 (plus VAT) and can be purchased on- line or by sending an order form to 7th software.

NetSurf 1. 2.

This is a bug fix and security release to NetSurf 1. 1. It is available for download from **[http: //www. netsurf–browser. org/](http://www.netsurf-browser.org/)** Here is a change log detailing the important changes in this release:

Core / All

- * Overhaul documentation in line with new website
- * Many improvements to cookie handling
- * Minimum font size option is now obeyed by form elements
- * Add support for periodic reflow during fetching
- * Fixes for positioning of floated elements – NetSurf now passes Acid1
- * Bring support for < center and align= in line with specification
- * Updated SSL root certificate bundle
- * Various fixes for form element default styling and interaction with CSS
- * Rewritten, more tolerant, HTTP redirect handling
- * Fix crash when tabbing into hidden form fields
- * Fix background handling on < body and < html
- * Permit < style in < body
- * Relax restriction on location of @import rules
- * Improve CSS colour handling
- * Fix positioning of horizontal scrollbars within page
- * Fixes for inline- block boxes
- * Minor fixes to CSS parsing
- * NetBSD support
- * Fix GIF decoding to work correctly on big- endian processors
- * New build system and many compiler warnings fixed

RISC OS- specific

* Fix crashes on images. google. com * Fix intermittent crashing when clicking in URL- completion menu * Fix search when input is '*' * Fix Shift+Adjust clicks * Permit disabling of interactive help

GTK- specific

* Improve form widget support * Improve support for core configuration options (memory cache size, proxy, etc) * Fix unsightly flickering to white * Fix non- ASCII text input handling * Fix for caret positioning when clicking after the end of text in form inputs Also included are many and various smaller bug fixes, documentation enhancements and updated translations.

PDFsuite

R Comp is launching PDFsuite – an affordable CD containing everything you need to view, print and create PDF files on RISC OS machines (OS 3. 5+) .

PDF files have become the standard for cross- platform “ DTP- style” documents (ie. with all your fonts, pictures and formatting retained) .

They are ideal for sending to colleagues or friends running on different platforms, and for distributing documents on the web.

PDF is, in many ways, essential for RISC OS users, because we use programs like Ovation Pro or Impression, which have their own file formats, not recognised in the world at large. If you could go directly from Impression, Ovation, Draw, FireWorkz, or any number of other programs, straight into PDF, then your documents would be accessible on any other platform.

Enter PDFmaker, a major part of the Suite, developed in-house at R-Comp. This software allows you to create PDF files from almost any application in just a couple of clicks. PDFmaker lets you drag a PDF straight out to your hard disc, or fine tune quality settings if you wish.

The Suite also includes PDF viewing software, capable of running on all machines 3.5+ without the need for updated C libraries or any other hassles. You can quickly proof your PDF files, or view/print downloaded documents.

PDFsuite (including PDFmaker) can be installed in just four clicks. . .

PDFsuite combines software developed in-house at R- Comp with products from Colin Granville (author of the popular Messenger Pro) and Martin Wuerthner, with permission.

The software costs just 19ukp on CD including a printed instruction booklet. Screenshots and a sample at **<http://www.rcomp.co.uk/r-comp/pdf>**

In Brief

!add/eml – for RISC OS

Once installed, dropping a file on this file's icon-bar icon will add /eml to the file's leafname.

This may be useful to users of email providers who ask for spam to be returned to them as a MIME attachment with an .eml suffix. The attachment's contents can normally be plain text.

<http://www.timil.com/riscos/>

Postscript 2 printer definition file for Brother duplex printers.

It allows automatic double sided printing flipping the paper on either the long or short sides, from both the main paper tray and the multi- purpose tray.

It can be downloaded from the website at

<http://www.rjdarby.co.uk/riscos/>

My First Non-RISC OS Computer

David J. Ruck

While most RISC OS users these days have got more than one type of computer, I've only ever had RISC OS machines at home, it's the system I support so I'm practising what I preach, or using a term popular in IT circles over the pond, eating my own dog food. I've always resisted the temptation of what often seems the easy path of giving in and getting a Windows box, and am happy to say I've still managed that, but I have now bought a non RISC OS machine.

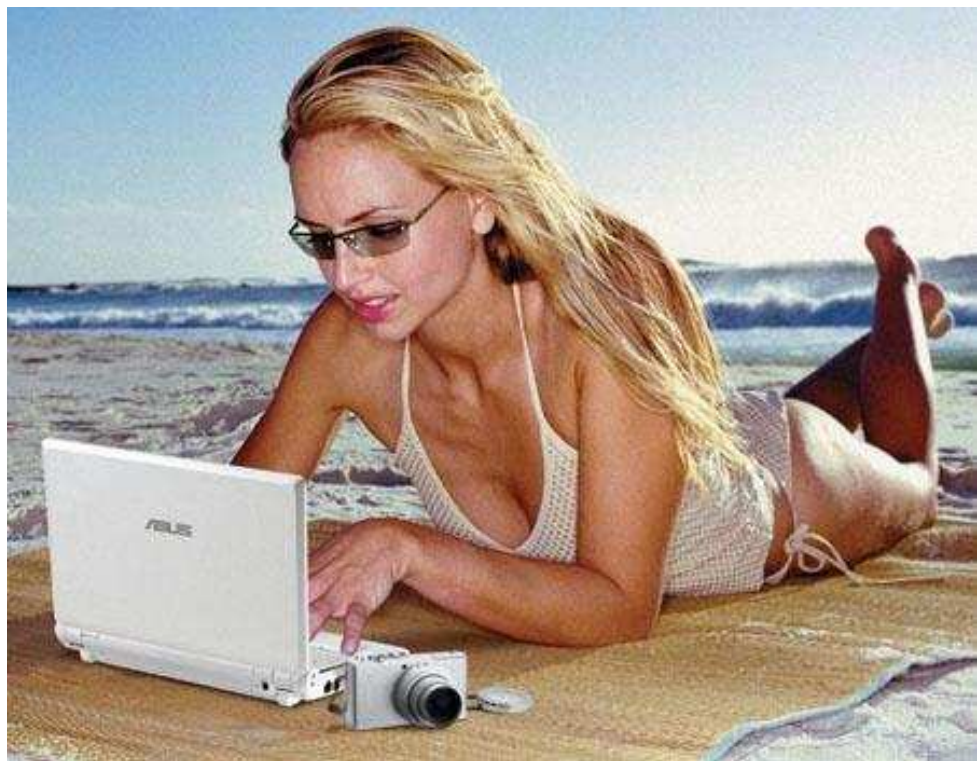
My decision to purchase wasn't an intention to replace a RISC OS computer with something else, but more out of laziness; I wanted something I could just pick up from the coffee table and browse the internet while watching the TV, instead of having to sit in front of a desktop computer. So for example, from the armchair I could look up the synopsis of a film and full cast as easily as picking up the Radio Times, which used to suffice but with ever more channels there is ever less detail that can be squeezed on the page.

You may recall I tried out a Jas-Jar PDA as a portable web browser a couple of years ago, and for a few months I'd been doing the same thing with a Dell PDA which was surplus to requirements at work after the USB cradle connector broke preventing it being used for debugging, although the PDA worked fine and can communicate via wireless. The Dell had a very crisp 640x480 display and had been updated through various versions of Windows Mobile up to the latest 6.0. The Pocket IE browser seemed to become more hopelessly slow with every new release despite the 624MHz XScale processor in the PDA, so I bought a copy of Opera browser to put on it (unfortunately only the desktop version is free, but with the favourable US exchange rate it was only £14). That proved to be a lot faster, and scaled the page well in the full screen landscape mode that I had it set to. However, while it worked fine as a portable web access system when out and

about, it was less than ideal in the coffee table role. The 3¾ inch screen was a bit too small causing eye strain if you looked back and forth to the TV, and the touch screen control with a stylus was too fiddly at the end of a long day when you were trying to relax.

I then started looking out for alternatives, such as the Nokia web tablet, which was a scaled up version of the PDA, larger screen but still no keyboard and typing a URL in without tapping the screen was a definite requirement. The new breed of Ultra Mobile PC's have a keyboard and a larger screen, but are hideously expensive having to squeeze all that processor power in to a small space in order to run a full copy of Windows, and as a side effect soon start making a noise like an electric drill and get so hot you have drop them or suffer burnt fingers. So it looked like it might have to be a laptop, the cheap 15" ones were too big for what I wanted; you can't see round them to the TV, the smaller 12" ones would be better but sell at quite a premium price in comparison. Then there's the spec game, with a confusing number of processors, memory and drive option. Starting from the base model ticking a few extras that might come in useful can add 50% to the final price, and its all obsolete by next week anyway.

So while keeping these thoughts on the back burner, the machine I was destined to buy slipped under my radar for months. The Register IT news website (www.the-register.co.uk) which I read at work had run a number of articles on the Asus EEE PC, mainly it seems so they could show the very popular publicity shot of a girl using it on the beach.



I must admit to failing to notice the presence of a laptop in the picture at all to begin with, but eventually wondered what the fuss was about and looked in to it further. It is a very small and

light laptop, although I wasn't quite sure how small from the picture, it used solid state memory instead of a hard drive, had a very modest 900Mhz x86 processor, and ran Linux by default. The best bit was it very cheap at around the £200 to £220 mark, making it cheaper than a lot of PDAs and half the price of a reasonable laptop. Of course by the time I realised it was the sort of machine I was after, every other geek on the planet had too, and the EEE PC had become as rare as hens teeth in the run up to Christmas.

There were two models available at the time, the 2G and the 4G referring to the size of the solid state drive, the 4G had a bit more software installed, upgradeable memory and a slightly bigger battery, so that was the model I decided on, and ordered. As a few weeks went past I heard there might be some in PC World, so despite reservations about ever setting foot in that scurrilous den of Microsoft promoting know-nothings, I went in for a look. I started walking down the aisle of laptops, past the ridiculously large 17" ones (stick a set of legs on them and they would be the coffee table itself) past the normal sized 15" ones, and the very small by comparison 12" ultra lights. Then I saw the EEE PC, which was tiny, half the size again of the 12". It looked pretty good, with a clear screen and usable keyboard, although it was only the 2G model, so I didn't have to contemplate giving PC World any money.

In to the new year the machines were still proving impossible to get hold of. Eventually it became a bit of a game at work, with my colleagues finding sites that claimed to have stocks, and I'd put an order down in the hope they would have any. Eventually this paid off, and I found a site which did actually have them, although by now I'd dispensed with the original orders at the average £220 price, and was willing to pay £249 just to get hold of it. I didn't believe the retailer (**www.efficientpc.co.uk**) until I received a courier tracking code two days later, and eagerly watched its progress from the supplier to the depot on Friday afternoon, where it would stay for the weekend – typical! But it was delivered early on Monday morning, and in part two I'll reveal if the machine lived up to its hype, and hope it fits in alongside my RISC OS computers.

RISCOS South West Show 2008

Matt Cook

The 11th South West show took place on the 23rd February this year at the Webbington Hotel. After ten years with the experienced show organiser John Stonier at the helm, this show fell into the hands of RISCOS Ltd.

I must have been to over 50 Acorn/RISC OS shows in my life, the South West show being one of the most enjoyable, unfortunately this year the tide changed. For those still procrastinating over the future of the market, this is going to be a difficult read.

Early in January, Drobe (my regular source of RISC OS news) announced that RISCOS Ltd was taking on the organisation of the event. The venue was booked and organisers charged £135 for three tables. The ARM Club committee took very little time in making the decision to book a stand at the event as we had done for the last ten years. Looking forward to the event, we started the planning.

Arriving on the Friday evening the hall was relatively empty: RISCOS Ltd, R-Comp, APDL and Castle were setting up to the sounds of a wedding reception disco in the adjoining room. The guests must have requested the cheesy Things can only get better by D:Ream to humour the Bride and Groom, although how true the irony would become wasn't realised until later and its not a parallel drawn with the Labour government!

As with most shows in the community, it is an excellent opportunity to catch up with old friends, acquaintances and colleagues. In mid conversation we suddenly realised that the show had been open for 15 minutes and we struggled to identify one visitor in the hall. Visitors to shows have been

trailing off since black Thursday, however counting the number of people in the hall on several occasions; no more than 30 visitors were seen at any one time. All but a small handful remained in the show when the theatre was running and it seemed less than 40 maximum attended the event overall.

The exhibitors had made a concerted effort to bring new materials, R-Comp had upgrades for NetFetch, Messenger Pro, Datapower and there were no less than four new editions of magazines available from RISC OS Now, Archive, Qercus and our own ARM Club Eureka.

The show had a theatre at the rear of the hall treating visitors to presentations by: RISC OS Open Ltd, Martin Wuerthner, RISCOS Ltd, Qercus, Orpheus Internet/RISC OS Now and R-Comp. This was well received, however some presentations were re-hashed excuses and hollow promises seen many times before.

Looking round the show, it was apparent that there were several main types of exhibitors: Magazines, Retro sales, Not for profit and those trying to still make a living out of RISC OS. There were still people spending their money, but not on the scale of previous years, and typically more money is being spent on second hand hardware and on upgrades from the couple of software houses still producing. Even with the slowing down market, I still think it is inexcusable some of the high prices being charged at the show. One item available widely for 50p was being sold for £14 by an dealer, that markup is counter productive in the long term.

Many members of the club stopped by for a chat, mainly to ask questions of the well renowned expert on all things RISC OS, David Ruck. I'm still amazed how Dave has grown to celebrity like status within the community, however considering the time he spends on the USENET News Groups and mailing lists providing technical support, the queues of thankful members kept coming. This is the nicest part of the job and why I still continue on the ARM Club committee.

It was obvious that there was a divide in attendance, those that religiously attend every show and those that attended as this

was regionally the closest to them. Shows in disparate regional areas are essentials for users to keep in touch with the community even with the ubiquitous use of the Internet, however I suspect we can no longer support four shows a year.

The most important aspect of the show for The ARM Club, is the loss we made at the show. We have reached a plateau in membership, everyone who wants to join the club, seems to have done so. The club received only four renewals, one new membership and sold a couple of CDROMS. This did not cover the stand or expenses for attending the show; again it is time to start looking seriously if we can maintain four shows. The club has enough money to continue into the future; however we may only be able to attend the main shows of the year.

There will be those holding onto the memories of the last 25 years of Acorn, however holding on to these too tightly will be our downfall. It is time to move on, to be realistic and rationalise the number of shows before the community disappears prematurely. We have reached the end of software development, except in a few small niche areas, it is no longer commercially viable to develop new software and people, especially within the club, have very little spare time.

I'll leave you with some final thoughts, it is time to be realistic, or no-one will be at shows in the future. Its time to meet in the church hall, the school; not a hotel or a large venue.

Matthew Cook (Club and committee member for 14 years!)

Wakefield 2008



Simon of The Arm Club with Paul Beverly ex Archive



Can't wait to get in



Vince Hudd -
Softrock
Software



Paul Beverly and Jim
Nagel - old and new
Archive



Crawfords -
your RISC OS
friendly
printers

A very
portable
RISC OS
computer - an
EeePC
running
Virtual Acorn



A slightly less
portable home
made RISC OS
computer



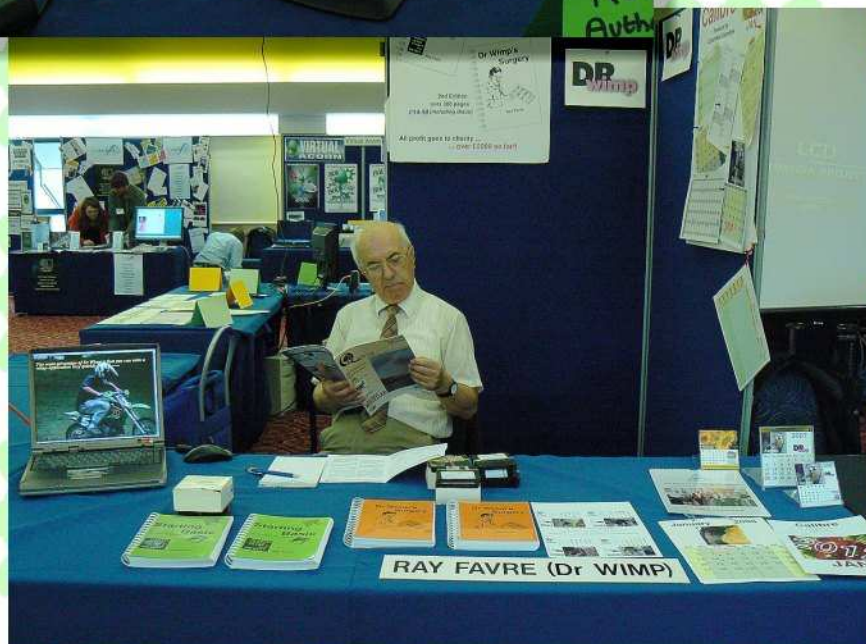
A9 in a screen in dual screen mode



The NetSurf Team



A new view of
RISC OS.
Graham
Shaw's
Kerberos



Ray Favre of
DR Wimp
fame

The Ron Briscoe Column

Just as you thought it was safe to read again.

Having just received an email from our esteemed editor asking me if I had anything for the magazine and wanting to read another copy of Eureka before I die, I am busy tippy typing this very article.

Why has the editor, a sensitive and erudite soul, had to ask me for some more of my drivel? The answer is you lot! If you were to write an article or two for the magazine then he could consign my drivel to the rubbish bin.

If you want ideas for articles, how about?

A). Advice on writing a picture CD/DVD for insertion into a DVD player connected to a television. Needed because viewing series of old digital images on my Iyo with Christine ties up too much time better spent trying out my new software. Also one of those new fangled digital picture frames is expensive and the money would be better spent on RISC OS products.

B). Innovative uses of old RISC OS hardware. For instance, connecting an old BBC computer to the front door bell, which when activated says (via a speaker obviously) things like “Tradesmen round the back please!” and “I have phoned the police and they are on their way, probably to the local chip shop, but they’ll be here eventually!” We look forward to your ideas on this theme.

C). Your usage and experiences with RISC OS software. Now as you know I have an extensive collection of both commercial and shareware software and these often have mailing lists

where much useful information can be gleaned. However I like most of you have also got lots of extremely useful free software. I use free in the term of not having to pay for it. Not by what form of you don't have to pay licence it carries.

Now I don't mind using mailing lists and contacting the writers of shareware if I have a problem, that is a part of the price, but apart from a thank you I like to leave PD software writers alone. Having said that all of the writers to who I reported a problem regarding their work have always been more than helpful and understanding. I think that what I am trying to say is that I miss the old days of magazine articles where someone would write of their experiences with new software and pass on helpful tips and possible pitfalls to be avoided. Instead you get my drivel as a space filler.

As we have missed two editions of Eureka, well I have, there is much in the life of yours truly to catch up on. The first is that we MUG members along with the ARM Club ran the Christmas Show at the Motor Heritage Centre at Gaydon. I say that, but most of the organising was done by John Rickman, Doug Webb and Ralph Sillett and most of the hard work setting up the venue was done by the rest of the MUG members and the exhibitors themselves. Me? After a bit of lugging I was sent out in the cold along with some more fools to show people the way to the show as the venue was in one of the conference rooms situated towards the rear of the museum building. Rather interestingly I noticed that John and Doug had their own reserved parking places.

Mid-morning the show was graced by the attendance of Baz and Michelle Lago who had travelled by train and bus from Stafford. Now the once an hour bus stop to the railway station was situated at the top of a long drive and was exposed to a severely cold wind. After a short consultation up stepped John McCartney who volunteered to drive Baz and Michelle back to the station after they had finished spending copious amounts of money with RComp et al. John's reward for this good deed, apart from thanks, was the walking stick belonging to Baz which he left in John's car. Now passed on to me for unsafe return. Personally I don't think that Baz needs it as he only uses it to beat up would be muggers.

The ARM Club were responsible for collecting the entrance fee and Druck was so busy shifting unsold copies of Qercus onto people that at least one person got in free. Bad boy Druck. Although the exhibitors and visitors liked the venue we MUGs decided that if possible we would like to hold this year's show at a much more accessible site. The result is that this year's show is being held at a top secret venue close to Birmingham City centre and is extremely accessible to car and users of public transport alike.

Thanks to the generosity of my daughter I purchased PhotoDesk and because CJE did not at that time have any suitable graphics tablets in stock, (I know! The world has not been the same since they stopped hanging and flogging,.) I decided to get one from Ebay. Well, not me personally, having found a suitable item I got our den's resident PC expert, whose proud boast was that he had only ever lost one ebay auction, to bid for it. He was successful and for less money than I expected to pay so I am the proud owner of a PaintPal graphics tablet which previously belonged to Gary Locock. Small world eh?

The den's PC expert was so pleased that he had at last impressed me with his knowledge and expertise that he gave me a bonus comprising of a double DVD containing every music CD on sale over Christmas or so he said. It must be said here, that said expert's knowledge and expertise on every subject under the sun, is second only to that of our own John Cartmell.

Also at the Christmas Show the safe delivery of the WROCCs old projector which I won in a sealed auction on behalf of the MUG Club. I did say that I was a long distance member of the WROCC didn't I. The projector was carried down to us by Steve Potts and Steve Fryatt, What nice people they are up North. The bargain price of £70 was found out of the MUG Club's share of the show profits.

After the show closed a careful check was carried out to make sure that no one had left any valuables behind and guess what? Yes two of our members left something behind, fortunately one of the articles was rescued and the others easily replaced. MUGs by name and nature eh?

After Christmas it was time to start plans of a cunning nature with regards to the Weston Show purchases. These put into action and Doug agreeing to put up with me on the journey down we set off and after an uneventful journey we arrived at the venue just after opening time.

Doug found a good parking spot, or so he thought till he went to open his car boot, we had to move the car forwards away from the stingy weeds and crumbling edge. This done and having partaken of tea and bacon butties in the bar we go into the show.

I do my usual tour around the hall eyeing up possible purchases and watching Druck attempting to sell his old camera to all and sundry. He was eventually successful and a satisfied buyer went away bent double under the weight of the camera, gadgets, lenses and memory cards.

I harangue the ARM Club Committee for not having anything new to sell and Druck for neglecting his duty and letting people in for nothing at the Christmas Show. He pleaded innocence, saying that the person concerned must have sneaked in whilst the ARM Club committee were grabbing a bite to eat.

I purchase DataPower Home and a printed manual from RComp whilst noting that there is very little of their software that I now do not own. They must have took my comments on board because as I type this they have announced three new software titles to their impressive stable. I then purchase the Draw2PDF application from David Snell as he only attends the Weston Show.

After due consideration I purchase a removable hard drive caddy and a hard drive from APDL exchanging pleasantries with Dave Holden whilst at it. You might know that shortly after leaving the APDL stand I found a removable hard drive caddy going for a quid on the ARM Club stand. Naturally I purchased it.

Meanwhile Doug, between show presentations, has accumulated an impressive load of goodies of his own and is

walking about carrying plastic bags like a woman fresh from the January sales. We see many of our fellow MUGs around and about the show enjoying themselves.

At the end of the show I am outside talking to Druck and company whilst waiting for Doug, who is always one of the last to leave, when I spot a new addition to the hotel entertainments. A crocodile pool! Fed from the waste water from the en-suite showers in the hotel by the looks of it. I have taken a picture of the crocodile as proof. So there!

Fond Regards Ron.



The croc!

Simple Fractal Generation.

Alan Wickham

Introduction.

A fractal may be described as an image that is built up out of smaller and yet smaller versions of itself. There are, of course, other more technical definitions, but many of these are only comprehensible to mathematicians. A rhyme that is often quoted in connection with Differential Calculus may be appropriate here:-

“So naturalists observe, the flea
Hath smaller fleas that on him prey.
And these have smaller fleas to bite ‘em.
And so proceed ad infinitum.”

Fractals are of interest to computer users simply because computers make generating them possible. There are methods of generating some “classical” fractals using pencil and paper but it takes rather a long time and a lot of work. Nevertheless some were defined in the early 20th century, mainly by the Polish mathematician Waclaw Sierpinsky.

Fractals are collections of “points”. These points have no inherent colour and are usually rendered as black on a white ground ie. Black represents a “Point” and white “No Point”. This can, of course, be changed to any other pair of colours but there is no colour in the fractal itself. Colours seen in some well known fractal are artifacts of the generating program.

I first got interested when I acquired a copy of the program “FractalIt3” by the late Robert Christmas. I’m afraid I don’t know where I got it from or how old it is. Robert’s program is based on information given in the book “Fractals Everywhere”(1) by Michael Barnsley, an acknowledged authority on the subject. I got hold of a copy of this book but found it rather heavy going since,

although I have a somewhat mathematical background, it explained everything in terms of the Theory of Sets, a branch of maths I never had reason to study. I did, however, discover that there were two basic methods (algorithms) for generating fractals, the Deterministic Algorithm and the Random Algorithm. Robert's program used the latter. In this the image is gradually built up from the addition of more and more points until such time as there are no further observable changes. The program allows the user to stop the process at any time, leaving a partially developed fractal on the screen. This can produce some very interesting results such as the partially developed fractal "Poodles within Poodles" shown in Fig.1. As will be seen later, when this is allowed to fully develop or is generated by the Deterministic Algorithm, it is nowhere near as interesting.

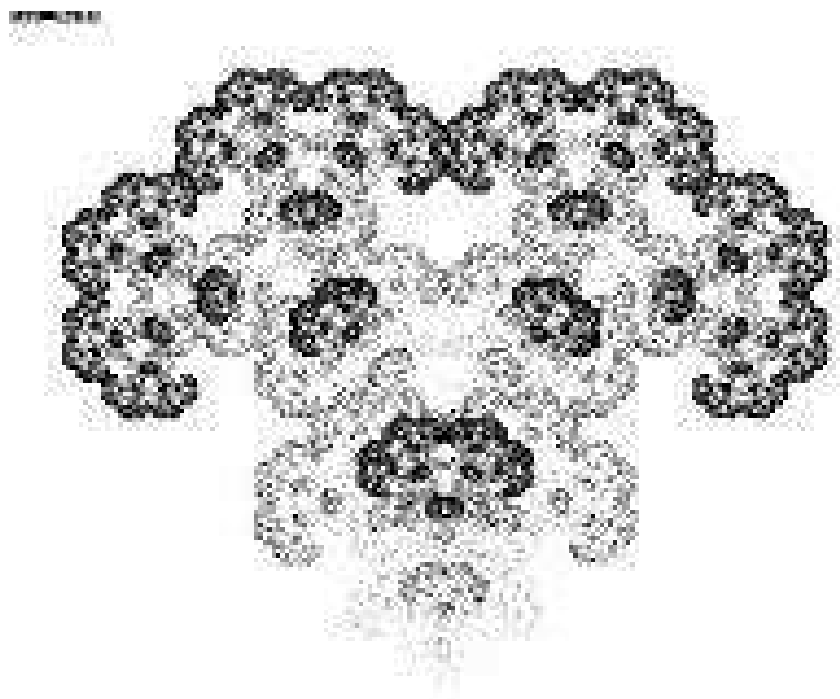


Fig. 1

The documentation that comes with FractalIt3 gives a very clear description of the fundamentals of fractal generation. Unfortunately, I only had a printed version of this but have re-typed it and can supply it, along with the BASIC Code, to anyone who is interested. [See Note 3] I made some small changes to Robert's (BASIC) program in order to be able to save the results and made a number of these "Designer Fractals" (Robert's words) and saved them for a rainy day. (I have since used some in cards etc.) However, I thought it would be interesting to repeat these

and others using the Deterministic Algorithm but couldn't really understand Michael Barnsley's text. I then came across a copy of a book called "Fractals for the Classroom"(2). This book is also very technical but introduces the concept of the "Multiple Reduction Copying Machine" (MRCM). This was a bit more comprehensible in terms of graphical computing techniques and I decided to use this concept to write a fractal generator using the Deterministic Algorithm.

Multiple Reduction Copying Machine (MRCM).

This is a hypothetical photo copier that has more than one lens system, each of which reduces the size of the image being copied and also distorts and/ or shifts its position on the copy. The basic idea is shown in Fig.2 where there is only size reduction (x0.5) and position shift. Fig.2a shows the original image, which can be anything, and fig.2 b shows the first copy (known as the "Blue Print"). It will be seen that one copy has been displaced upwards by half the height of the original and another to the right by the same amount. The third has not been displaced.

In the next iteration the "Blue Print" is copied by the same process giving the image shown in Fig.2c and this again copied to give Fig.2d. After a number of iterations the "final" image of Fig.2g (10th iteration) will be generated. In theory, of course, there never is a "final" image but, since digital images are made up of finite pixels, there comes a point where each successive image is indistinguishable from the last. This is a classical fractal known as Sierpinsky's Gasket (or Triangle).

Computer Emulation of the MRCM.

To emulate the MRCM on a computer it is first necessary to allocate somewhere to hold the copies. Two images need to be stored and the simplest solution is to use the Screen (actually the V-RAM) as one (this not only stores the image but, of course, also displays it) and a Byte Array as the other. My first programs were, therefore, in BASIC and single tasking using the above arrangement.

The general idea, after setting up the screen mode and the byte array, is to load the "Source" image to the screen. This is a Sprite containing a black & white "image" (Not Grey Scale). The size I used was 480 x 480 pixels, which is large enough to give reasonable

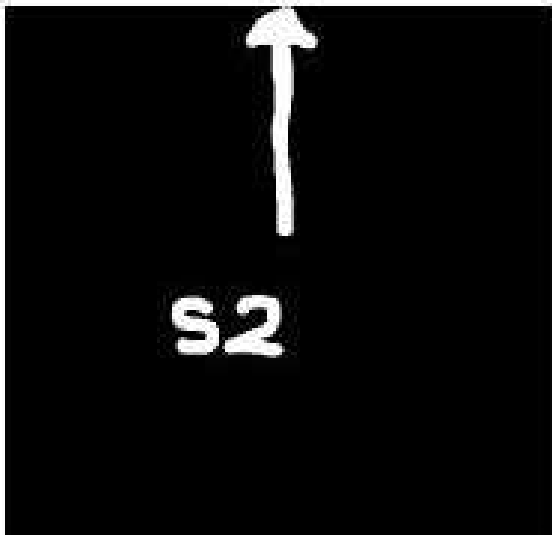


Fig. 2a

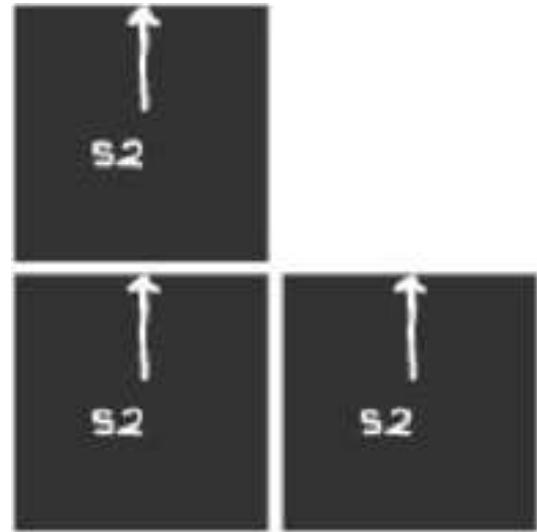


Fig. 2b

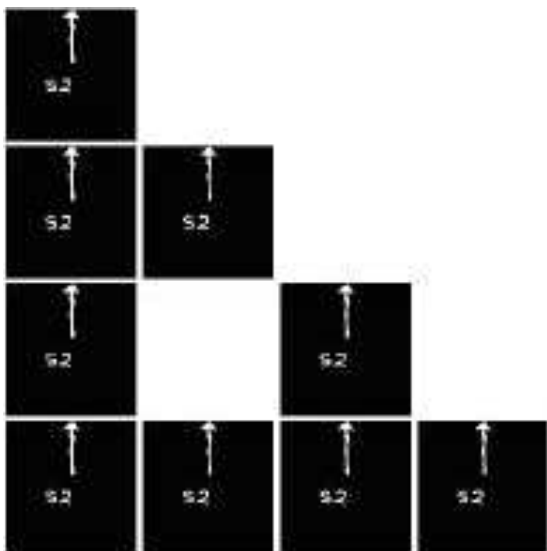


Fig. 2c

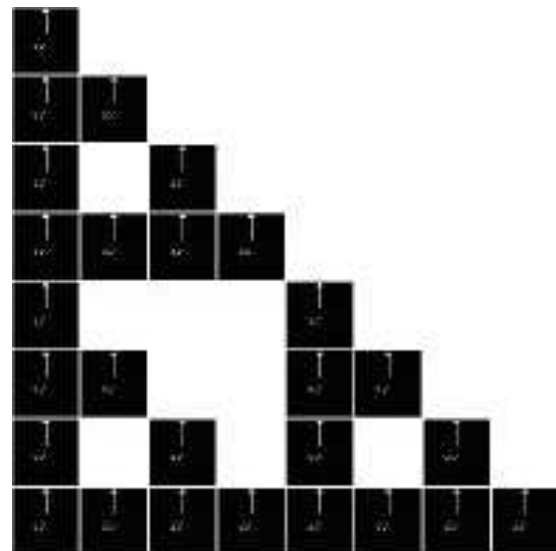


Fig. 2d

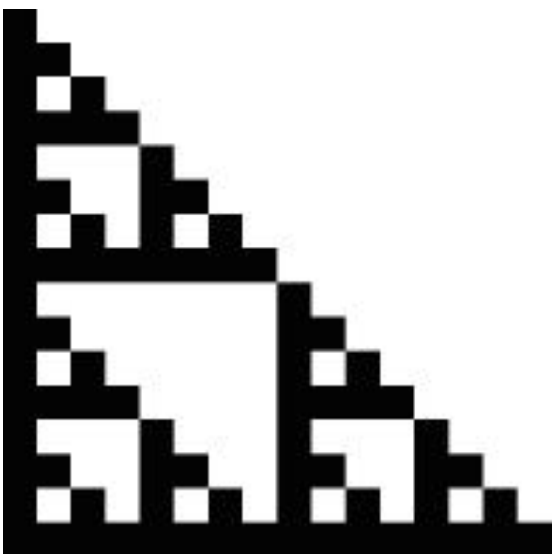


Fig. 2e

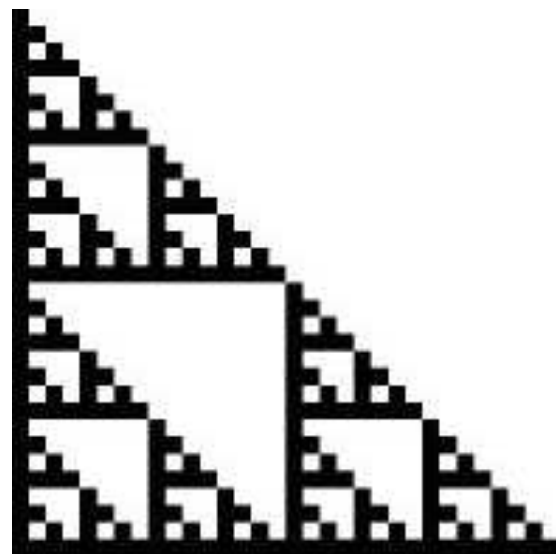


Fig. 2f

fractals but not make the program too slow. This “image” is then scanned, using the POINT(x,y) command and the data transferred to the byte array, one byte per pixel. The next step is to clear the screen to a 480 x 480 pixel white square and then scan the byte array and check if each byte (ie.pixel) contains zero (black) or 255 (white). If white the scan moves on to the next byte, if black a procedure called Transform is called which contains all of the necessary transforms representing the “lenses” of the MRCM (in practice up to about 10). Following the execution of each transform the new point is plotted to the screen using the POINT x,y command. When the scan of the byte array is complete the “Blue Print” will be displayed on the screen.

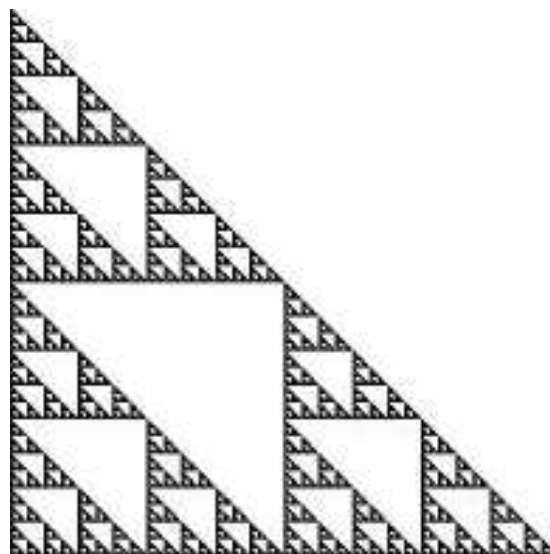


Fig. 2g

The next iteration is exactly the same as the first, except that the “source” is the “Blue Print”. The third iteration is again identical, except that the “source” is the result of the second. Other iterations follow in the same way until there is no observable difference between two successive ones.

How many are required ? This depends on the nature and number of transforms involved. There are methods of measuring the “difference” between two images but these are complex. Since computer generated fractals have finite resolution it would be fairly simple to compare the new screen pixels with their counterparts in the byte array. However, this would have to be done during each iteration which would slow things down quite a bit so I have not included such a facility. In the early programs the number of iterations was set within the program. For most fractals, 10 iterations are sufficient.

Arrangements were made to save the final and intermediate images as Sprites – Fig.2 was made this way. These programs worked OK and the user could watch the “new” image of each iteration build up as it was scanned. However they were a bit “clumsy” from the point of view of the user. The program itself had to be modified to change to a new fractal – it would be better if the transform sets could be called from a separate (text) file, compiled by the user to a standard format. There were also problems with

setting the screen mode and most of the “background” colours seem to be other than white. I decided, therefore, to convert this into a proper relocatable Application by means of DrWimp.

Application !FracGen. !FracGen uses an image size of 768 x 768 pixels, although it is displayed at a reduced scale (5:7). The output Sprites are, however, 768 x 768 pixels. The number of iterations may be entered by the user – the default being 10. The user may select from 3 “Source” images and 9 “parameter Sets”. These are located in files in the same directory as the application and may be replaced by the user – but care must be taken to ensure that the formats are correct. The resulting Fractal may be saved to a Sprite File within the same directory that holds the application.

A viewable (and usable) version of the RunImage file is provided [!RunImage(Eyes)] for information and modification by the user if desired. Availability.

!FracGen and !FractalIt4 (FractalIt3 converted to an Application) are available on my Web Site :- <http://www.stan4d.plus.com> Both were made using DrWimp.

Notes.

- (1) Fractals Everywhere by Michael Barnsley, Academic Press, 1988.
- (2) Fractals for the Classroom (Part 1). [Heinz-Otto Peitgen, Hartmut Jürgens, Dieter Saupe et al. – Springer Verlag] See:- Chapter 5 -- Encoding Images by Simple Transformations -- Pages 255 to 318.
- (3) Robert was slightly over optimistic about application of the Collage Theorem. The use of !Draw is certainly one way, although manipulation of the shape is limited (shere is not possible). I have used !Draw myself and it works. However, it is necessary to be able to record the scaling, rotation and displacement of each derived image used to cover the original. I worked out a way of doing this but it was rather tedious. [Can supply details]. Recently I have been working on an application whereby the user can adjust the constants of a transform which automaticall generates a collage section superimposed on the original image. These constants can then be saved. This seems to work but is much too slow for practical use.

Preliminary Experience of Using a Network Camera with RiscOS

R. J. Wilks

This article has resulted partly from a recent plea by the editor of Eureka for more articles and partly from my attendance at the SW RISCOS show in February 2007, when I saw a working network colour camera on the CJE Micro's stand. This was of special interest to me, as I have been anxious to upgrade from a defunct video digitiser (Irlam 24i16) for a number of years, and to use an Iyonix or A9 instead of a RiscPC. A network camera offers a more hardware-independent solution to this problem, with the processing being performed on the camera rather than on specialist computer hardware.

Oregano2 was being used on the CJE stand to acquire images from the camera: one just types in 'http://<ip address>' and presses Return, whereupon an image appears after about 0.5 seconds. Following discussions with a very helpful member of the CJE staff (Andrew Conroy), it transpired that it would be possible to use the module 'WGET' in one's own software to control the acquisition. Andrew copied WGET from another stand (ARM Club, I think) while I went for a short break to rest the brain, and when I returned he had got it working as a demo for me, acquiring and displaying one image. Very impressive service, I call that.

Accordingly, next day I ordered the same camera which CJE had been using (a SOHO Internet Camera) for £80 + VAT and downloaded WGET and the Shared Unix Library Module from the RISC OS website. The latter uncompresses to a !System file, which is then integrated with the existing !System in the normal manner. It transpired that WGET was of type 'absolute', was quite large (356K) and was frighteningly complex, with a multiplicity of Unix-style switches to be declared when it was called. However, as far as I was concerned, Andrew advised me that I just needed the following

command (to be invoked from inside a task):
SYS "Wimp_StartTask, wget -q " + ip\$ +"image.jp -O "+file\$

where: -q stops return messages from WGET
ip\$ is the camera's ip address
-O stores the output to the named file file\$

Camera Setup

As you may have concluded by now, I am no software guru, and I unpacked the camera with some trepidation fearing that I would be caught between having to set the camera up on a PC and then switching over to RiscOS to see the effects. I even loaded the 'Wizard' from the supplied CD onto the PC before deciding to try to use RiscOS only. This turned out to be a good decision, as all the setting-up can be done easily by Oregano2, which is present in the 'Apps' directory on the Iyonix. Presumably other web browsers will do the same job.

The first thing to do was to change the camera's default internet address (192.168.0.20) to something suitable for my own network (Iyonix, RiscPC, A9 and VA). The ip address of the Iyonix was changed to something to which the camera would respond (eg 192.168.0.21), and Oregano2 was run from the Icon Bar. The writable icon at the top of the window was overwritten with: 'http://192.168.0.20/' and Return was pressed, and Lo! an image was displayed in Oregano's window, above

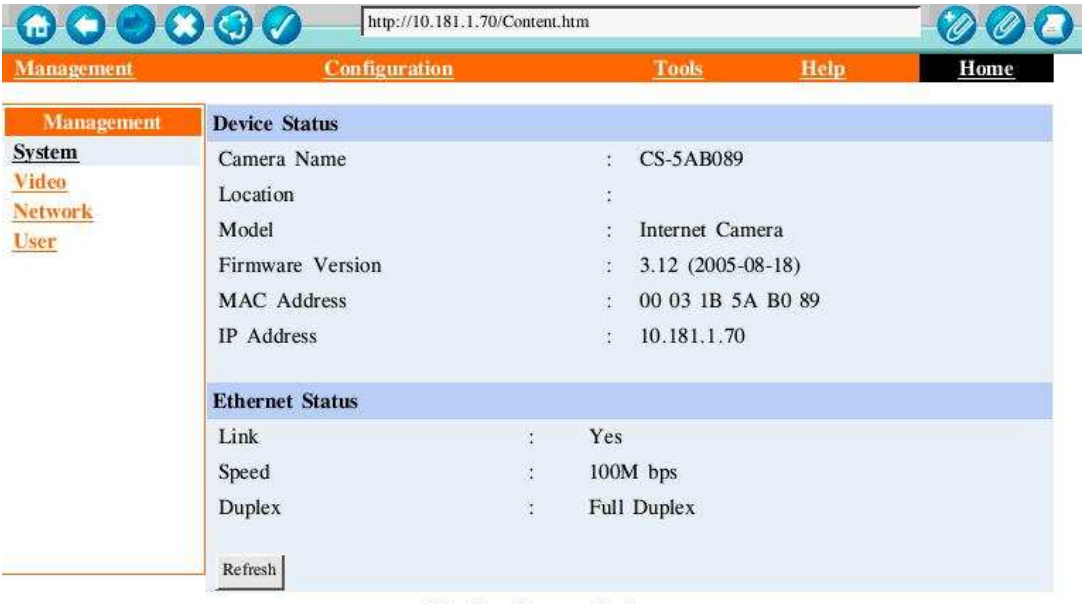


Fig. 1 Camera status

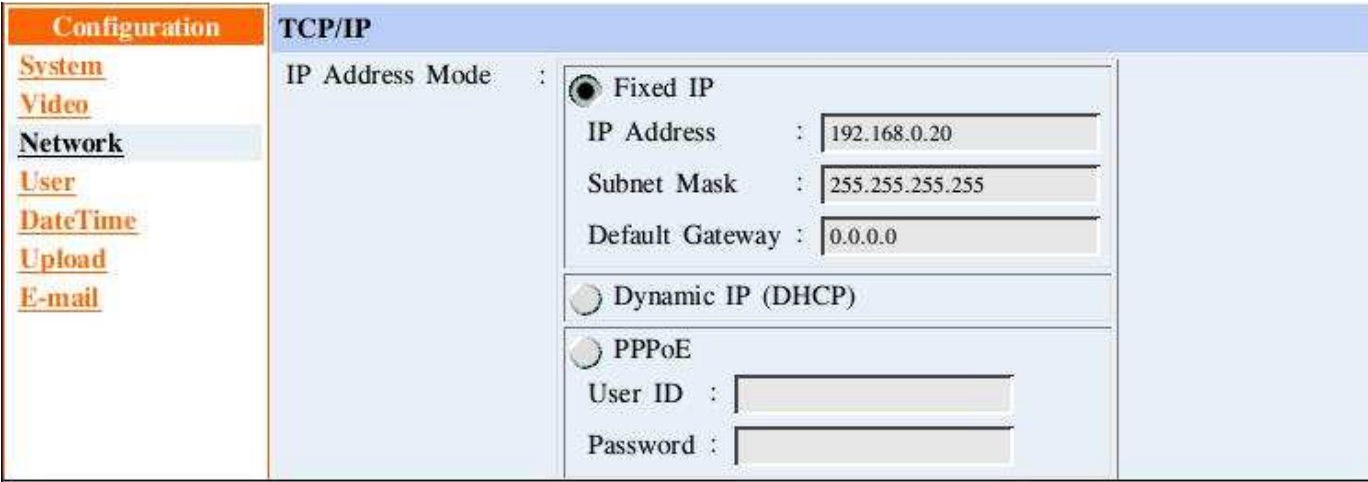


Fig. 2 Changing the network address

which were three options, one of which was 'System Administration'. Selecting this option opened another window with four further options: 'Management', 'Configuration', 'Tools' and 'Help'.

The 'Management' screen is shown as Fig 1, with the final ip address. In order to change the ip address from its default value, 'Configuration' was selected, followed by 'Network'. Fig 2 shows the top part of the resulting displayed window together with the default ip address in the writable icon. This, and the netmask, were changed to the values I required, and the 'Save' box at the bottom of the screen was clicked on. Of course, this makes the Iyonix unable to communicate any more, so the ip address on that needs to be put back to its

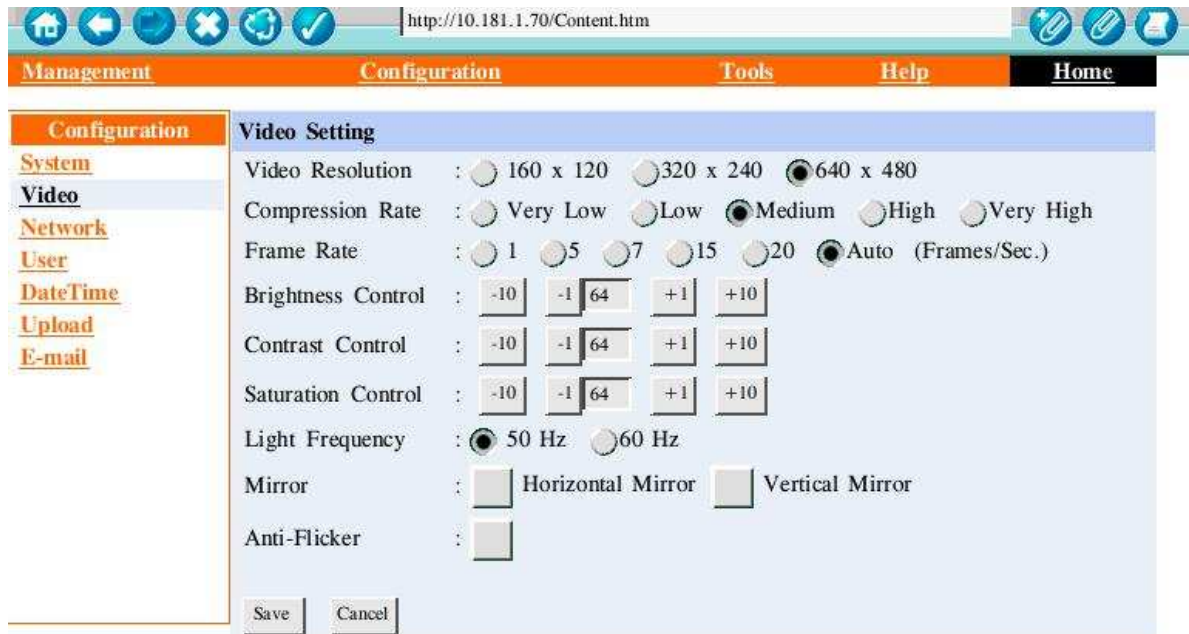


Fig. 3 Changing the video parameters

original value (in my case, 10.181.1.50) to re-establish contact. It is possible to choose a variety of factors governing the image quality sent by the camera. These are shown in Fig 3, and is chosen via the 'Configure' screen, with 'Video' selected from the sub-menu. The default Resolution was 320 x 240, with 'Medium' Compression. The figure shows the values currently selected: '640 x 480' and 'Medium' Compression. Also selectable are brightness, contrast and saturation, but I have left these at their default values of 64 as their adjustment obviously depends on the use to which the cameras are put.

Performance Measurements

Ideally one would like to have a camera system which can record images in real-time with good image quality. The rest of this article describes the preliminary measurements I have made on the speed of the system and the sort of image quality to be expected, although the latter is assessed somewhat qualitatively. I used all four of the RiscOS systems available to me for a variety of image resolutions and compressions, for exactly the same view seen by the camera (from my study window).

The software listing used for these measurements is shown in Fig 4. This is the simplest and shortest program which will both acquire and display the JPeg images. It would be better to make the whole thing multi-tasking (eg by using DrWimp), but this more 'linear' program clearly shows the method used.

The first image was discarded, since a lot of negotiating goes on between the camera and the computer to establish an initial link. Timing measurements were thus taken from the second image. It was clear that there was quite a variation in timing values for the same camera looking at the same image (up to about 0.1sec), so I acquired and stored 100 images and calculated the average value of the acquisition time for one image. It is estimated that the calculated average value has an error of not more than about ± 0.05 sec. The network was 'quiet' in that only the Iyonix and the computer being evaluated were switched on, and all applications terminated (the Iyonix was needed to run Oregano2 to change the measurement parameters). Both WGET and the stored images were situated on the RAMDisk, as this made the image storage slightly faster

```

REM netcam
REM R.J.Wilks
:
MODE "X1024 Y768 C16M":CLS:CLG
ON ERROR VDU4:PRINTTAB(1,2)"ERR,ERL="ERR" "ERL" ":REPORT:STOP
REM define some variables and paths
wgpth$="RAM::RamDisc0.$" :REM WGET must be in RAMDisk
ramdisk$="RAM::RamDisc0.$" :REM Images stored in RAMDisk
ip$="http://10.181.1.70/" :REM IP address of camera
REM arrays for Jpeg image display (scale 100%)
DIM buffer% 100<<10
DIM buff% 1024
buff%!0=1
buff%!4=1
buff%!8=1
buff%!12=1
:
REM launch this prog as an application
SYS "Wimp_Initialise",350,&4B534154,"netcams"
REM focus image before acquisition
PROCdo_focus
PROctiming
END
:
REM display in loop until a key press
DEF PROCdo_focus
LOCAL i%,file$,f
OSCLI("DIR "+ramdisk$)
i%=1
REPEAT
file$="im"+STR$(i%)+".jpg"
SYS "Wimp_StartTask",wgpth$+".wget -q "+ip$ +"image.jpg -O "+file$
file$=ramdisk$+"im"+STR$(i%)+"/jpg"
f=OPENIN(file$):jpsize%=EXT#f:CLOSE#f
SYS "XOS_File",16,file$,buffer%,0
SYS "JPEG_PlotScaled",buffer%,100,100,buff%,jpsize%
UNTIL INKEY(10)<>-1
ENDPROC
:
REM acquire nim% images and calculate mean acquisition time
REM (ignore first image)
DEF PROctiming
LOCAL i%,file$,nim%
nim%=100
OSCLI("DIR "+ramdisk$)
file$="im1.jpg"
SYS "Wimp_StartTask",wgpth$+".wget -q "+ip$ +"image.jpg -O "+file$
REM timing loop starts here
TIME=0
FOR i%=1 TO nim%
SYS "Wimp_StartTask",wgpth$+".wget -q "+ip$ +"image.jpg -O "+file$
NEXT
VDU4:PRINTTAB(0,1)TIME/(100*nim%) :REM display time/frame in sec
REPEAT UNTIL GET
ENDPROC
:

```

Fig 4 - BASIC program to control network camera using WGET

and prevented the hard disk being thrashed each time WGET was invoked. (Note: if the -O option is not used, storage takes place anyway, but this is slower as WGET has to decide what name to call the file). The RiscPC was running at 10MB/s and the others were at 100MB/s on the network.

Results

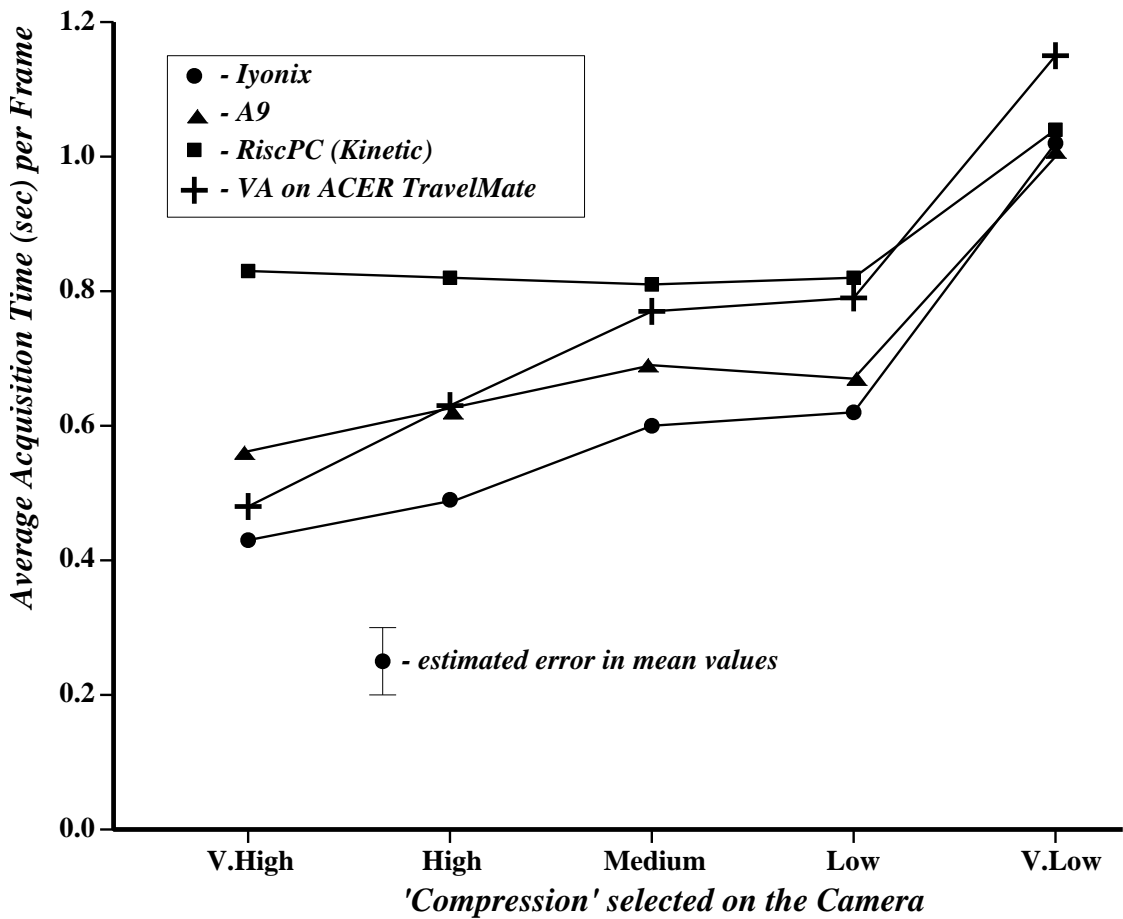
Table 1 - Mean Frame Acquisition Times and File Sizes

Resolution (pixels)	Compression Name	Mean Frame Time (sec)				Mean File Size (bytes)
		Iyon	A9	RPC	VA	
640 x 480	Very High	0.43	0.57	0.83	0.44	30,205
	High	0.49	0.62	0.81	0.64	40,564
	Medium	0.60	0.69	0.81	0.77	52,544
	Low	0.62	0.67	0.81	0.79	60,992
	Very Low	1.12	1.08	1.18	1.15	62,894
320 x 240	Very High	0.44	0.43	0.65	---	8,129
	High	0.43	---	---	---	10,963
	Medium	0.43	0.43	0.70	---	13,514
	Low	0.43	---	---	---	16,562
	Very Low	0.43	0.51	0.77	---	24,796
160 x 120	Very High	0.50	0.43	0.81	---	2,896
	High	---	---	---	---	---
	Medium	0.43	0.43	0.63	---	4,475
	Low	---	---	---	---	---
	Very Low	0.43	0.43	0.65	---	8,907

Table 1 shows a summary of all the results on the speed of the systems, including the file sizes of the images. It became clear very quickly that I would require the highest resolution available for my intended application, which utilises an image size of just less than the screen size. Hence, Table 1 is fully completed for the resolution of 640 x 480, and only representative values for the two lower resolution options are shown, as these do not change very much with the compression chosen.

It is clear from the data that the Iyonix is the fastest system overall, as expected, but all systems show an unexpected effect (to me) for the 'Low' compression values. To make this clearer, the values have been plotted on a graph on Fig 5, where it is shown that there is little change in the speed of transfer from 'Medium' to 'Low' compression, even though the file size has increased by about 16%. I assume that this is due to the sum of the time required to calculate the JPeg values plus the time taken in sending the compressed file being fairly constant in this region. Hence, there seems to be no advantage in using 'Medium' rather than 'Low', particularly if the image quality is significantly superior for the latter.

Fig 5 - Timing Values for 1 frame for 640 x 480 Resolution



There is even less variation of the acquisition speed for the two lower resolution values, so that image quality considerations (and perhaps file sizes) would appear to dominate which value of compression is chosen for a given application for these resolutions.

The image quality is determined mainly by the screen resolution chosen, as expected, with the choice of image compression having a smaller effect, particularly at the higher resolutions. It would not be possible to notice any significant difference in image quality on a printed black and white image, so two extremes are shown in Fig 6 and Fig 7. Both are for 'Medium' compression, while the former is for the resolution of 640x480 and the latter's resolution is 160x120 (scaled up to be the same size).

Fig. 6



Fig. 7



Discussion

It is quite feasible to use WGET from user software to control image acquisition from a network camera. The colour image produced by the camera looks quite good and would be adequate for a wide range of applications, except for those requiring high spatial resolutions.

The measured frame frequency of about 2 per second is usable, if a little disappointing. However, there is obviously more performance available if a suitable specific module were to be written for this application (eg a relocatable module with various star commands), so I hope that someone clever will write it soon, as I believe that it could prove to be quite popular in the RiscOS market. I understand that Andrew Conroy, without whose help I would not have been able to make these measurements, has already made some progress in this area, and I look forward to seeing the final result.

NEW EUREKA EDITOR REQUIRED

A knowledge of desktop publishing would be useful and the ability to source articles from the ever shrinking RISC OS world an asset.

Please apply to The ARM Club
Chairman David Ruck.

Letters to the editor

Dear Andrew,

I am reminded of the ARM club and the original Acorn's open ethos every time I use an ARM chip these days – and that's a lot. There was something very special about an operating system with user-writable modules, networking that was eco-friendly, watching small companies write their own software, and the sheer joy of choosing a language that fitted the job. Small wonder that so many learners of the early '80s are now at ease in an open source world.

Which is why I write. Retired from physics and computing teaching, I think about why so many across the nation that built the first 32-bit desktop machine into it's schooling have so little time for and less love of mathematics. Cures are better than whinges, so a friendly ex-APL programmer and I are developing a set of maths ideas intended to help people switch back onto the joys of the subject. Candidly, to get the serotonin flowing legally. In a free-libre way, as in FLOSS or creative commons. Like computer science was before it was ICT.

I would love to offer a small series of articles, (*yes please, Ed.*) for feedback if useful. One reason for this that I owe the ARM Club a lot for your support over too many years to list. The other is that your community attracts the sort of people whose own feet do their running.

I will be trying our ideas out in a primary school soon, and will of course share ideas from that. For now, we are listing the probable topics, and developing mini-sessions for each, hopefully for some kind of trialling day with real children, largely those struggling with both the national maths tests and

the national language.

The topics we are looking at are :-

- Mental maths (I found to my surprise having been profoundly bored by it at school that I last week multiplied two five-figure numbers in my head, not bad for the confidence but shocking for the hubris)
- Tangram patterns for the creative thinking
- Sudoku, via the Tesco booklet that starts with a 2x2 square. For the discipline of logic and checking. This IS Year 5 of primary school.
- MathBase software, patterns that got me fascinated for hours (At 63!)
- Wolfram Demonstrations, they do for maths what unix did for computing.

None of these are stand-alone of course; much depends on interaction, which we are seeking ways of encouraging.

You might like to publish this letter, to test reader interest. Do ask if you would like to get progress reports, or anything else in this line.

Warmly

Bruce Dickson, ARM Club active from early eighties to late nineties.

The editor is always grateful to receive letters related to RISC OS. Please keep them coming.

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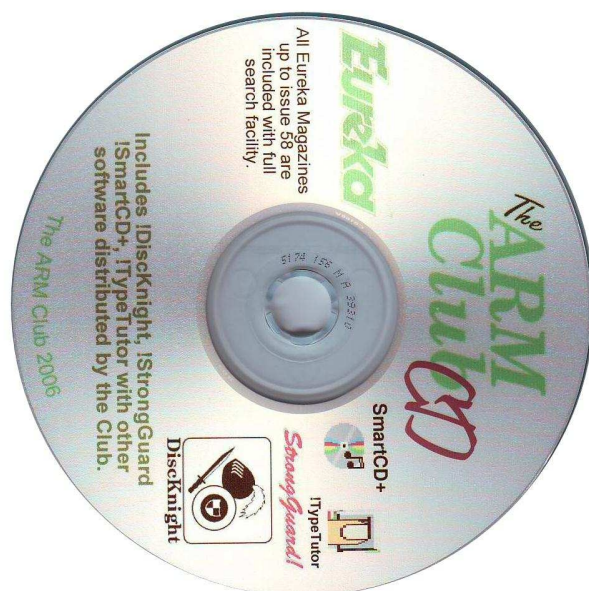
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Due to restraints on time of committee members who give their time voluntarily club renewal processing is now taking up to 8 weeks. All renewals should go to Chris Price at the club address of The ARM Club, Merton Court, 38 Knoll Road, Sidcup, Kent DA14 4QU

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The ARM Club, Merton Court, 38 Knoll Road
Sidcup, Kent DA14 4QU

Telephone (higher rates):

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Fax: 07020 954018

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