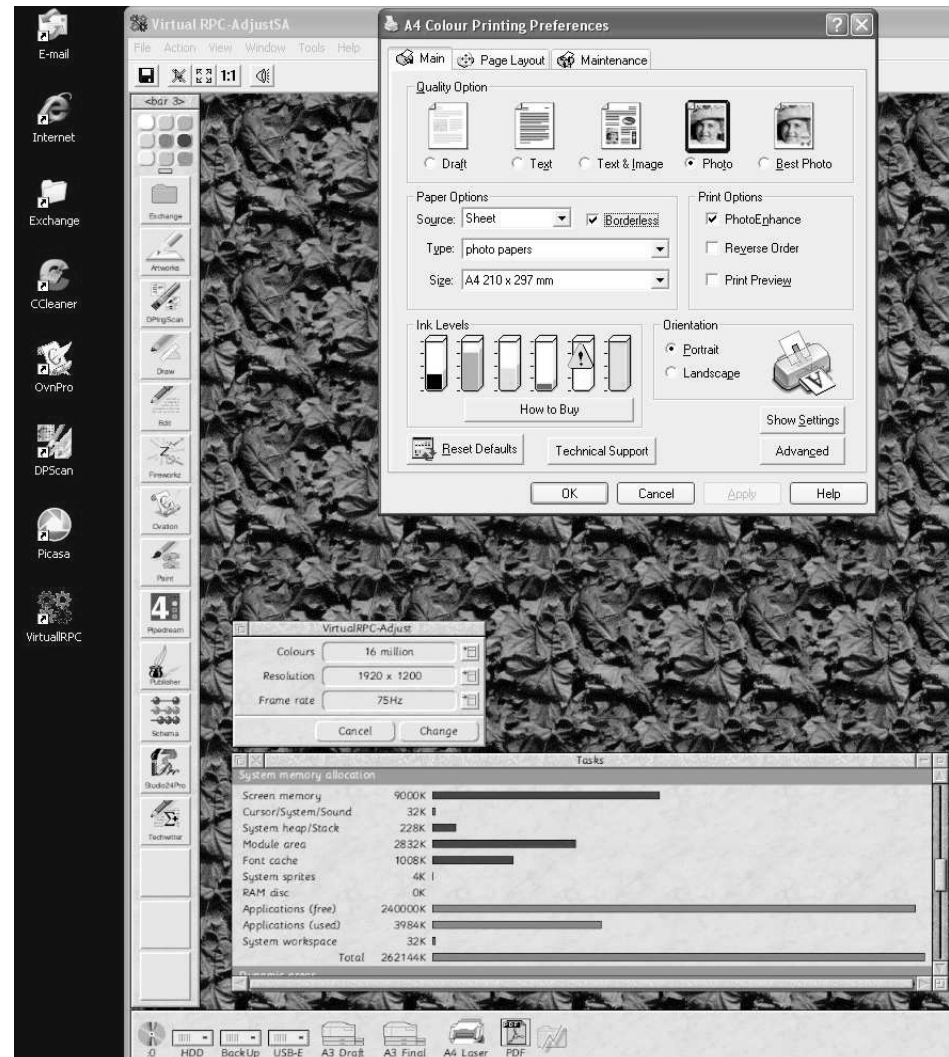


# VirtualRPC In Use

## Supplements 1-13

Third Edition – December 2018



# VirtualRPC In Use – Supplements

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# VirtualRPC In Use – Supplements

## Introduction

With the publication of the updated **Third Edition** of the main 'VirtualRPC In Use' booklet in September 2018, timed to celebrate the 15<sup>th</sup> anniversary of VirtualRPC, your scribes (the 2 leftovers from T.O.M.S which recently took a much-delayed retirement) have turned our attention to the **Supplements** booklet which was also showing signs of becoming somewhat outdated.

This edition has been given the same treatment: namely to bring the content up-to-date as need be; and to re-visit several sections which are not directly related to VirtualRPC but were included with a view to optimising the joint use of both RISC OS and Windows applications, hopefully to achieve 'the best of both worlds'.

It is slightly unfortunate that, in the way the monthly, supplementary articles revisited several topics already in Edition 2 of the main booklet, and also went on to add several new topics, their overall content became rather higgledy-piggledy. That was inevitable and there's not much we can do about that at this stage, but our overall intent is to observe the following guidelines:

- Unlike the original articles, compromising 4 pages per month, this retread will be more free-flowing and take up as many pages per section as required.
- Where some of the original 2011-13 content has now been incorporated into the Third Edition of the main booklet, repetition will be avoided. But for convenience, cross-references to the main booklet will be given, in the format '(pp.xx-yy)'.
- Where some of the topics in the original 2011-13 articles ran over into more than one monthly supplement, the split content will now be combined under the one section.

- This updated Supplements booklet will contain several new topics which have come to light since 2013, often related to Windows 10.

## The RISCOS Ltd website

Although we certainly don't wish this sub-section to be seen in any way as an advertisement, we feel it worthwhile covering the topic as there have been several instances where some unfortunate oversights turned out to be due to unfamiliarity with what's available.

Specifically, there were two notable developments in RISC OS-land after the Second Edition was published which don't appear to be generally known: namely that 3QD Developments Ltd had taken over the reins of RISC OS Ltd in early 2013; also that they had stepped in when, in May 2014, David Holden of APDL had sadly died.

So in practice, 3QD Developments Ltd now provide us with a composite and *much*-extended service, making APDL's range of hardware and PD software catalogue titles available, supporting all aspects of RISC OS versions 4 and 6, plus of course continuing to run our favourite RISC OS emulator, namely VirtualRPC.

Furthermore, they have combined the previously separate [APDL](#) and [RISCOS.com](#) corporate websites into one and which is very well worth visiting. And of particular note is a *very* much-expanded set of [documentation for RISC OS 4.39](#) which, frankly, really ought to have been made available (*under previous management*) on its release in the days of yore. So if this is somewhat new to you, please do fill your boots; there's some really good stuff in there for all Fans of RISC OS.

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## Supp. 1 (originally Jan 2011)

### Filetypes revisited

The general topic of how to retain RISC OS filetypes during a transfer from Windows to RISC OS is covered in Section 7 of the booklet (pp42-44). A few related queries later came up in the forums, so it's time to bring these into play.

### • Windows → RISC OS

First, the VirtualRPC *Extensions* file containing all the RISC OS filetype data has reportedly (but for unexplained reasons) dumped its contents on occasions. And in a couple of instances, the file itself has gone AWOL which, if that happens, triggers a nasty-looking error message at VirtualRPC startup saying An essential file has not been found.

But if it's just the *Extensions* file contents which are missing, the clue then is that most objects will arrive in RISC OS with a text or 'unknown' filetype, and mostly full of scribble.

In all cases, the Tools > Options > Hostfs Extensions window will be empty, but this is easily fixed. Download a replacement, default *Extensions* file from [www.virtualacorn.co.uk/downloadpage/betautil.htm](http://www.virtualacorn.co.uk/downloadpage/betautil.htm) and install it where detailed in its associated *ReadMe* file.

Note that this replacement file already has extensions for RISC OS sprites and drawfiles built in, so that saves you the job of entering them manually (p43). But if you add further extensions on a DIY basis, making a back-up copy is a sensible precaution (p25).

### • RISC OS → Windows

The second point concerns going in the opposite direction, i.e. from RISC OS to Windows; specifically, how do you stop

RISC OS adding a spurious ,fff text or ,ffd data 'extension' (in each case with a comma) to various filenames when they reach Windows?

This is an unavoidable 'feature' related to the use of the proprietary HostFS filing system and will happen if, for example, you routinely download emails under RISC OS but where attachments happen to be objects which do not have an equivalent RISC OS filetype, so you can't enter their details into the *Extensions* file. A couple of examples are *PowerPoint* files and those in the *FLAC* audio format.

In these cases, a reasonably convenient workaround is to have a compressed ('zipped') folder handy (p42) which is easily accessible to both RISC OS and Windows. For instance, it could be kept in the common *Exchange* folder which we suggested (pp31-32 and pp38-39).

Having downloaded the parent emails under RISC OS, copy the attachments into the zipped folder, nip across to Windows, open the compressed folder – and there are the attachments *without* the unwanted ,fff suffix.

### Audio/video codecs

The *FLAC* files mentioned in the previous topic are a good example of how we can be left stranded when yet another format is devised for **compressing** and **decompressing** audio/video files. Hence the term 'codec' which can refer either to the compression/decompression format itself, or to the programme required to read such files. And Sod's Law dictates the new format will arrive before the programme...

Under RISC OS, we're very well served by such titles as *AMPlayer* and *DigitalCD* for replaying audio files but, inevitably, they take a while to catch up with new formats. The same thing happens under Windows and

Mac OS of course, in which case they're also affected by the ever-expanding range of video formats. So occasionally, *Windows Media Player* and Apple's *QuickTime* etc can't hack it and we have to look for a new codec to resolve it.

For Windows users, there's a freebie solution in the *K-Lite Codec Pack* which is available from [www.filehippo.com](http://www.filehippo.com) and elsewhere.

*(General health warning – a very sensible safety point was made to us: To minimise the risk of picking up a 'hacked' version of a freeware programme, containing spyware, etc, try to avoid using a simple Google search. Whenever possible, download the programmes either direct from the authors or from trusted sources such as FileHippo.com)*

Don't be put off by the size of the *K-Lite codec pack* which weighs in at 14MB for the full version. Installation is simple although, during the set-up process, you're presented with a very extensive repertoire of video and audio codecs to choose from – but you can simply install the lot.

The package is frequently updated and invariably does the trick (FOC). Unfortunately, most audio/video editing suites such as *VideoStudio* may need to be updated – at some cost – to bring new codecs into play.

*Hint:* If you find you can't replay an audio file with a new codec under RISC OS, try getting it to run under Windows. If that works, you can then listen to it whilst using RISC OS running under VirtualRPC. Multitasking rules OK...

### Microsoft Word and OpenOffice

An input from Paul Beverley announced that he'd used his experiences with *Wordwise Plus* to produce a raft of editing macros for use with MS *Word*. These are available FOC from [www.archivepub.co.uk/book.html](http://www.archivepub.co.uk/book.html)

Paul has double-checked whether or not the macros are compatible with the *Writer* elements within the *OpenOffice* and *LibreOffice* suites of applications for Windows (p73) but, regrettably, they aren't as the language structure is quite different.

We discussed using *OpenOffice* and *LibreOffice* as opensource alternatives to battling with Microsoft's *Word* but noticed that both programmes seem to take a long time to fire up. However a reader noted that, once you've loaded a particular document into either application, reloading it sometime in the future will take you straight to the place where you previously left off. With a heavy tome, that can be a big time-saver.

He also remarked that installing an additional element of the *OpenOffice* suite, e.g. adding the *Draw* bit to the basic *Writer* feature, does not then slow things down significantly.

### Handling 'Scan to Word' files

Some years ago, we started to receive far more 'Word' files than usual from the Great Outside World.

The reason was that, without the option, some Windows support software for scanners embed the scanned image(s) straight into a *Word* document (or to be precise, with the file extension either .doc or occasionally .rtf).

Although to RISC OS users this may seem a somewhat clunky and inconvenient process, it's by no means unique in Windows-land and, for instance, David Pilling's splendid *OPW* allows us to drive a scanner from within its Scan applet and auto-paste the image directly into a selected frame in the *OPW* document (pp65-66).

However, if the 'Word' document doesn't contain any text, at first sight it may not be clear what's going on unless the sender has the nous to include an explanatory covering note.



But even if you don't use *Word* itself, it isn't a problem to extract the embedded image(s). Drag-and-drop the source document into *OpenOffice-Writer* or *LibreOffice*; find an image and select it; press <Ctrl-C> to save it onto the Windows clipboard; open a suitable bitmap-handling programme and press <Ctrl-V> to paste the image into it.

David P's *DPScan* works a treat for this as you can then massage each image (often a BMP) as desired, before saving it out as, say, a sprite or drawfile to pass directly to RISC OS (pp66-69).

*Hint:* If a document arrives in Rich Text Format (.rtf) but won't load into, say, *Wordpad* other than to display a seemingly empty frame, or if it throws up one or more error messages complaining that it can't display the image(s) in a document, each 'empty' frame could be hiding an image! In that event, use *OpenOffice-Writer* or *LibreOffice*, as above.

### Thumbnails, Picasa and PDFs

The discussion in the booklet about the increasing problems with viewing thumbnails under RISC OS (pp74-75) was quite a common theme in your feedback and the suggested alternative of using *Picasa* under Windows went down well.

However, another reader said he had a very extensive document as a PDF file, containing primarily pages of photographs, and ideally he wanted some way of thumbnailing them so that he could quickly find a particular pikky. He was hoping that *Picasa* might be able to display the photos, in the normal way, but discovered that it wouldn't respond to the PDF format, so asked if there was any other method for doing it.

Fortunately, the solution is straightforward. Provided you view the document using a Windows (and probably Mac OS) PDF reader, it will very likely already have a built-in thumbnail facility.

For example, with the *Foxit* PDF reader we suggested (p71), if you click on the **Pages** icon to the left of the display (ringed), that quickly generates and displays a series of thumbnails of pages in the document.

Note that the thumbnail numbers do not necessarily correlate with the page numbers in the source document (typically if the cover page is not numbered) but, if you scroll up or down as necessary to identify the desired pikky, and then click on its thumbnail, the main display will jump straight to the relevant page.

With the *Adobe Acrobat Reader DC* PDF reader for Windows (and presumably Mac OS), clicking on the single **Pages** icon (below the File menu option and the printer icon) will do a near-identical job, with a very similar display.

### OCR for Windows

A thread on one of the forums asked whether there was any optical character recognition (OCR) software for RISC OS, other than *Sleuth*, and naturally this triggered an interest in whether any equivalent applications were available for Windows users.

Although we really do like *Sleuth*, to be honest there are times where it's more convenient and (it has to be said) far quicker to do OCR work



under Windows and, of the various alternatives, we find that *FreeOCR* is arguably the best.

It's virtually self-explanatory to use and you can either load in a file from disc or, more likely, hit the **Scan** icon. You can choose between the TWAIN or WIA drivers (from your scanner installation CD) and other features are quite similar to those we detailed for David Pilling's *DPScan* in the booklet (pp 66-68).

However, this is one of the applications where, if the scanner hasn't been used for a while and is having a nap (p67), you do not get a displayed error message.

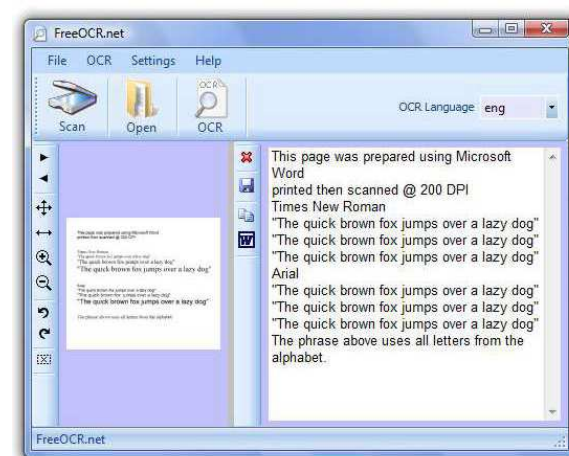
(Arguably you do, but only in the sense that the normal Transferring data window appears, momentarily, but then disappears PDQ and no scan occurs. So give the scanner a little while to awake from its slumbers.)

A significant difference is that *FreeOCR* does not have the valuable 'Ignore' feature of *Sleuth*, where you can select-drag a frame round an unwanted object, such as a diagram containing text, and which will then be ignored during the OCR process.

But this situation is almost as easy to deal with when using *FreeOCR*. Having loaded in a document to be OCR'd or, as is more usual, scanned a page, the procedure is simply to select-drag a frame around the first area of text to be massaged, and click on the OCR icon.

The plain-text readout will appear in the righthand pane – very quickly and very accurately. If desired, it's simply a case of dragging a further frame over more text, clicking on the OCR icon, the new text will be added to the pre-existing text, and so on.


To put numbers to that, we scanned a double-page spread of the booklet, rotated it through




90° to OCR it, then massaged the text in a total of 7 frames, in the order we wanted the final copy, and avoiding the illustrations.

Including the scanning, the whole thing was done in under 1 minute, with near-100% accuracy, ready to save and use. The only tweaking the plain text required was a global S&R to sort out repetitive oddities such as short-dashes (Alt-151) coming out of the OCR process as extra—long—ones (Alt—152).

Despite all this, not everyone is entirely happy with *FreeOCR* however, and one of you asked if it was possible to configure it so that the explanatory text which annoyingly appears in the processed text window by default at start-up (above) could be omitted.

This doesn't seem to be possible – but clicking on the  icon on the mini button bar before you start the OCR job does conveniently empty the processed text window.

The  button (Remove line breaks) can also be very handy, depending on the destination application. If, for example, you pass the OCR'd plain text to *Impression*, as-is, you will get double-line spacing and this can be a pain to remove within *Impression* itself.



But if you first click on *FreeOCR*'s Remove line breaks button, that will delete all the new line and carriage return characters before you export the plain text to *Impression* and which can then be much easier to reformat.

## Supp. 2 (originally Feb 2011)

### 'Photo-real' printing

The routine for connecting a printer to the host computer and then driving it from within RISC OS was covered in Section 9 of the booklet (p49).

In general, this seems to be proving trouble-free for most users, but a failure to achieve the enormously impressive 'photo-real' quality from many contemporary inkjet printers does occasionally come up in feedback.

In one case, the user hadn't appreciated that, while his multifunction printer/scanner/copier allowed for different print quality settings, this wasn't up to what today is considered 'photo-quality'.

The clue was that the composite ink cartridge contained only 4 colours (CMYK), rather than the 6 typically needed to produce the higher-quality 'photo' prints.

Interestingly, he decided that the ongoing loss-leader multifunction printer prices were too good to miss and replaced it, albeit somewhat reluctantly. But because the new one has 6 separate ink cartridges which can be replaced individually, as and when required, he later remarked that running costs were noticeably much lower and expected the new printer would pay for itself in a year or so.

Two other users, both of whom are running R-Comp's excellent *UniScan* as a method of talking to a high-spec printer from within RISC OS, fell into the trap of assuming that *UniScan* controlled all the printer's features.

There's no need to do this with *Ovation Pro*, however, as the processed text from *FreeOCR* is then largely ready to use, as-is, without the added complication of having to reformat it.

Specifically, they believed that selecting the highest resolution setting of 1440x1440 dpi within *UniScan* (p52) would automatically result in top-notch, photo-real printing.

A brief recap on the need to set not only an appropriate image resolution in *UniScan*, but also the printer driver settings – in this case print quality and paper type (p50) – did the trick for them both.

Something we've found with our own colour inkjet printers is that a bit of trial and error can pay dividends. Provided we use the printer manufacturer's own-brand media, making the appropriate paper type setting routinely produces super 'photo-real' results.

However, that's an expensive solution, so we do tend to use other brands of posh photo paper as a general rule, purely on the grounds of cost.

But then we find that selecting the 'Premium' paper settings in the printer driver – although seemingly appropriate – actually degrades the results on branded papers other than the manufacturer's own-brand.

Indeed, often we find that using the general 'Photo Quality' paper setting – in conjunction with significantly cheaper photo papers – produces noticeably better results than the printer manufacturer's own-brand 'premium glossy' paper with the related Premium driver setting. Clearly this phenomenon could well vary between your own make of printer and the paper brand and type, but it's worth a try.


### Optimising the print image

To get best photo-real print results, you may also need to tweak the original image(s) quite a bit before printing. This is a topic in itself but the main problem of course is that what you see on the 'backlit' monitor display is not necessarily what you will finally see on the reflective printed page.

We're well supported by RISC OS image-processing applications (in our view especially *Variations*), but establishing the best settings for posh printing inevitably requires yet more trial and error.

This is where we find the Windows application discussed in the booklet – *Picasa* – can also assist. As well as generating the much-improved thumbnails (p74), it has some excellent image-processing facilities (p75). So if *Variations* doesn't do it for you, do have a go with *Picasa* as some of its semi-automated process options can produce excellent and near-immediate results.



Double-click on the image thumbnail to expand it, select the  (Commonly needed fixes) tab and click on Auto Contrast, Auto Colour – or perhaps even I'm Feeling Lucky (!).

They can be used in combination and there's a handy Undo... button if any one throws up a result you don't like. But if you're happy with the outcome, right-click in the viewer and select Save to store the modified image.

As an added precaution, the original image is automatically moved into a sub-folder called *.picasaoriginals* in the parent folder; recalling that your images can be stored in one or more directories on the VirtualRPC *HardDisc4* (p74).

So even if you change your mind at any later date, you can still reverse the whole process by clicking on Undo Save etc.

### Accessing the printer driver

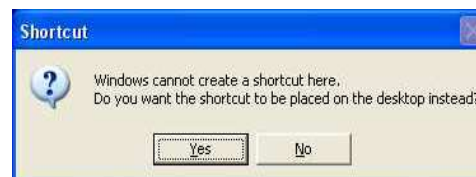
Depending on your host machine and the frequency with which you need to change the printer driver settings for different jobs, repeatedly getting at the printer control panel can become a pain.

With Windows 10 for example, you'll need to wade through Start > Control Panel > Devices and Printers, find and right-click on the relevant printer icon and, finally, select Printing Preferences. Phew.

However, there's an easy, once-only procedure to simplify things: put a shortcut to the printer on the Windows desktop for much more convenient access. This is equivalent to having the printer icon on the RISC OS icon bar.

To do that, select Start > Control Panel > Devices and Printers, find and right-click over the relevant printer icon, all as before – but this time select Create Shortcut.

Normally, Windows would create a shortcut icon in the same directory viewer but, in this instance, it pops up a message:





Click on **Yes** and an icon entitled **Shortcut to <printer name>** will appear on the desktop. It can then be renamed and repositioned by drag-and-drop as you wish.

This shortcut to the printer can be used far more conveniently, in various ways, including:

- Double-click on it to display the print queue.
- Right-click on it and select **Printing Preferences** to display the printer control panel. (The content will depend upon the printer; e.g. for an Epson panel, see p50 in the booklet.)

### A Windows iconbar?

A VirtualRPC user quite understandably once lamented that the Windows taskbar on his host PC is by no means as elegant and practical as the RISC OS iconbar.

Two of the shortcomings he mentioned as examples were how inconvenient it is to access his DVD/CD player, or even to open the root directory of the hard disc drive when, under RISC OS, all drives, printers, etc, are immediately accessible on the iconbar.

Agreed – but this is another example of how the same sort of features can be set up very easily in Windows, again requiring a once-only reconfiguration. Indeed, following on directly from the previous topic, you can use exactly the same handy method for generating shortcuts:

- Double-click on **This PC** (or whatever name it is given on your machine) to display the icons for the various disc drive(s), card reader, optical drive, and so on, depending on your PC.
- (Alternatively, drag the **This PC** icon over the **File Explorer** icon on the taskbar. This adds it to the list of **Frequent Folders** when **File Explorer** is opened.)
- Right-click on the main (C:) hard disc drive icon and select the **Create Shortcut** option.
- Windows will pop up the same message as before. So once again, click on **Yes** and, in this

case, an icon labelled **Windows (C) - Shortcut** or similar appears on the desktop. This can be repositioned and renamed as you prefer, e.g. **Drive C**.

- Double-clicking on this shortcut icon will now open the root folder viewer for drive C: for all practical purposes providing exactly the same RISC OS iconbar facility which we're used to, but on the Windows desktop.

The same procedure can be used to generate further Windows desktop shortcuts for, say, a backup hard drive D; a USB device such as a card reader; an optical DVD/CD drive; a scanner; one or more printers; and indeed any other device used with the PC.

By default the new shortcut icons will be auto-arranged, vertically, on the left side of the desktop. But they can then be re-arranged as you prefer, perhaps into a neat, logical group, simply by drag-and-drop.

So in the example group illustrated, we have shortcuts to start up VirtualRPC; open the **Exchange** folder (pp 31-32); access the various internal drives; ditto the printer as discussed in the previous topic; plus David Pilling's **DPScan** for controlling a scanner (pp 66-69).

Note the small arrow in the bottom-left corner of each icon, denoting that they are convenient shortcuts, in this example to access a mix of internal and peripheral hardware devices, as well as the more usual application software titles such as VirtualRPC.

*Health Warning:* This type of arrangement is totally flexible and can



be rehashed at any time to suit your preferences. Once set up, it will stay as it is – *provided* you do not select **Arrange Icons By ...** on the desktop – as that will re-arrange all the icons into, say, name order and seriously spoil your day!

### Save and restore the Windows desktop

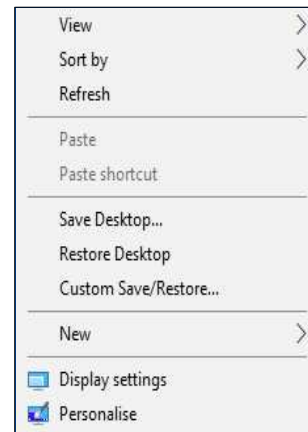
The *Health Warning* just mentioned is not the only time that the arrangement of desktop icons can be scrambled; for example, it can sometimes happen if you change the display resolution (or, more commonly, an application does it – often without asking).

This can be a real pain with Windows 7 & 8 although, with Windows 10, the desktop icons *may* revert to the preferred arrangement once the previous screen resolution is re-selected.

Whatever the cause and effect(s), fortunately one Jamie O'Connell has written a neat utility called *DeskInst* which, once we've set up the Windows desktop exactly as we want it, allows us to save the icon arrangement and – if and when necessary – to restore it.

Once the utility is downloaded and installed (there's a choice of 32- and 64-bit versions), this adds a couple of extra line items to the usual desktop sub-menu.

To use them, all you have to do is to arrange the DIY and other desktop icons as you want



them, right-click anywhere over the desktop and click on **Save Desktop Icon Layout**.

Then if things go awry at any time, right-click again and select **Restore Desktop** to fix it. Nice one.

### Handling plug-in USB media

Several words of warning regarding plug-in USB media: If the computer has a multi-format card reader, the chances are that each socket will by default be tied to a specific 'device' letter, even if no storage media are installed. So you can have multiple, named icons (including shortcuts) for, say, separate CF and SD sockets – whether cards are inserted or not – and the arrangement should work OK under both Windows and RISC OS.

However, if you plug two or more different media into conventional USB sockets, the first to be plugged in will 'claim' the next-available (Windows) device letter, and so on, so that can screw up the RISC OS 'mounts' and cause considerable confusion.

So as a general rule, if you unplug a USB medium and insert another, it is most important to 'dismount' the medium to be removed before physically doing so and, perhaps, replacing it with another.

Similarly, if you then unplug the media and later re-insert them in a different order, the (Windows) device letters will change – and it's very easy to lose track of which USB icon relates to which type of medium, especially under RISC OS!

(Reminder from VirtualAcorn: to access a USB medium via a HostFS mount, it must have *at least* one object on it, otherwise a message will pop up saying **Error when reading HostFS:<drive name>.\$ – not found**. The object may be a file or even an [empty] directory.)

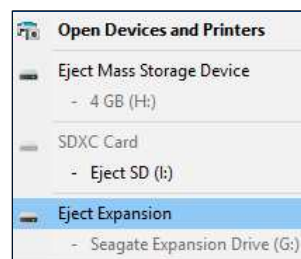
Noting that VirtualRPC does not provide a facility to dismount media via the RISC OS icon bar, if you plan to swap USB media for use under RISC OS, the dismounting needs to be done via Windows.

There are 2 main ways of achieving this but the procedures vary slightly with the type of medium and the installed version of Windows. For Windows 10, for example, here's the choice:



• Double-click over the This PC icon, then right-click over the relevant USB drive and click on Eject [*sic*] \*. This is a bit of a misnomer – don't expect the USB medium to be physically ejected as if it was a DVD/CD disc! However, clicking on Eject will 'dismount' the medium, a message will appear saying it is Safe to remove hardware and the device will be removed from the This PC display. You can now swap over the media and (if desired) revert to using RISC OS. (All this takes only a few seconds and nothing like the time to read the above.)

• The rather more convenient option is to right-click over the Safely Remove Hardware and Eject Media mini-icon at the right end of the Windows taskbar and, in the



displayed list of media, click on the relevant medium to be dismounted. The Safe to Remove Hardware message pops up as before.

## Supp. 3 (originally Mar 2011)

For the sake of the next discussion, we'll assume that you have now made the move to (say) Windows 10, and will cover how Microsoft Windows updates are handled, either automatically or (if you prefer) with user-intervention.

However, for those of you still soldiering on with Windows XP for the present – and *provided* you have embodied the registry tweak covered in [Support article 147](#) to make the PC think it is a 'Point of Sale' device – the discussion previously included in the Second Edition will be tacked on at the end.

\* Note that plug-in USB *hard disc drives* do not have an Eject line-item in the first procedure listed at left. So to dismount them (e.g. to move a portable drive between computers), use the second procedure and select the Eject Expansion option illustrated at left, in this example to dismount the Seagate Expansion Drive (G:).

*Health warning!* On some Windows PCs with a multi-format card reader, using the taskbar feature to dismount a medium as explained in the second procedure dismounts the card *reader* rather than the medium! And to recover (re-mount) the card reader, you will then need to restart the computer. If that is the case on your machine, use the first procedure option instead.

### Windows updates (Windows 10)

If you are now running Windows 10 on a relatively powerful host PC (compared with a less-powerful PC running Windows XP), an invaluable bonus is that Windows updates can be downloaded and installed – automatically and in the background – usually *without* the previous tendencies to interfere with your work by (for example) dropping VirtualRPC into a window at inopportune moments.

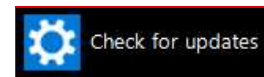
In our experience, this now seems to be the case with even a relatively modest PC, e.g. with an i3 processor running at, say, 2.4GHz.

So in practice, you can most likely accept the default Windows 10 settings which download and install Windows updates automatically.

However, a Windows update will invariably require the PC to be restarted on completion and there have been grumbles that this also happens automatically – sometimes when you don't want it to... (Sod's Law).

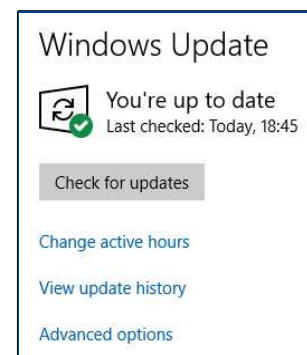
So if you wish to double-check whether the PC is up-to-date, or if you wish to ensure that computer restarts are performed only under your control, then the procedure to access the update facility is as follows:

• Click on Start and type Windows Updates into the text box (no need to press <Enter>); or alternatively type Windows Updates into the Cortana box on the taskbar. Doing this will list several optional actions in the top-left pane, with Check for updates at the top.



• Click on the Windows Check for updates option which will open the Windows Update window. (*Beware clicking on the Java 'coffee cup' Check for Updates option in error.*)

Clicking on Check for updates will allow you to confirm that the latest Microsoft updates are installed or, if a new one has recently become available, to install it.



And if you wish to defer the post-update PC restart until a time convenient to you, clicking on Advanced options will allow you to set the relevant slider to On and give you a prompt (illustrated above-right).

### Advanced options

#### Update Options

Give me updates for other Microsoft products when available



Automatically download updates, even over metered connections



We'll show a reminder when we're going to restart.



### Window updates (Windows XP)

(This topic is largely taken from the same content in the Second Edition.)

There are various ways to keep your Windows XP host PC up to date without it becoming in any way a significant chore and, especially, without VirtualRPC being dropped into a window – or worse – at inconvenient moments.

So although the following are only suggestions, determined through much trial and error, they do seem to be a reasonable compromise which worked well for us from 2003 to the point where the time to upgrade our host PCs to Windows 10 became pressing.

To bypass most of the reported problems, it's advisable to configure the system so as not to download and install the routine Microsoft updates automatically, as they become available.

So in the first instance, select Start > Control Panel > Security Centre and click on the Automatic Updates link at the bottom which opens the associated window (illustrated overleaf). Although we don't want to have the automatic downloads and installation turned on, it's most certainly *not* a good idea to turn them off altogether.



But in general, the first of the two intermediate options, as selected in the illustration, seems to be the best compromise.

This downloads the updates automatically as they become available but allows us to install them when we decide. Invariably that avoids clashes with other applications or activities.

When Microsoft updates do become available, their update site interrogates your computer – automatically and in the background – sorts out which ones it deems are relevant to your PC (which, in turn, depends upon the version of Windows and which related Microsoft applications are installed) and downloads them.

But for that to work, *ActiveX* must be installed on the computer. It already will be if, for example, *Internet Explorer* is installed. But if it isn't, a window pops up, prompting you to Install ActiveX Control.



When that's done (if necessary), the interrogation and downloading of updates can proceed automatically.

On completion, this is notified by the appearance of the yellow shield icon in the system tray.



We can now click on the shield and, in the Review and Install Updates window, view details of all the downloaded updates being offered for installation. Logically, the display will also state:

Download size (total): 0 KB\*  
(\*Downloaded; ready to install)

In all cases, an option is offered to untick any update(s) if you don't feel they're applicable, and even to select Don't show this update again. We strongly advise you not to rise to the bait! In general, no lasting harm will be done if you simply install the lot.

But if (for example) you opt to disable and hide any update(s) which appear to be superfluous at the time – but which do become relevant sometime in the future – Windows will not then prompt you to install them (because you told it not to...).

So all we need to do now, when it's convenient (ideally in the same session and preferably when we don't need to use VirtualRPC for a little while), is to click on Install to embody all the downloaded updates.

Some can be quite sizeable and, if there's a number of them, installation can take 10-15 mins or so in total. On completion, it's not unusual for the computer to require a restart for the updates to take effect, so allow for this when deciding when to install them.

So far so good, but there may be circumstances where you find that allowing updates to be downloaded automatically still causes operating problems, for example

dragging down the performance of a relatively low-power machine such as a notebook or, unusually, still interfering with VirtualRPC.

In that event we suggest selecting the remaining, alternative configuration option in the Automatic Updates panel, i.e. Notify me but don't automatically download or install them.

The yellow shield will still appear in the system tray whenever the relevant updates are now offered for both downloading and installation, so you can click on it to open the Updates window and continue as before.

In this case, the display will also state (for example):

Download size (total): 27 MB Estimated  
time [to download]: 2 mins

### • Manual updates (Windows XP)

Note that in all cases, these partly-automated routines will alert you only to the more important, 'Express' updates which in general are security-related to both Windows XP itself and to other, installed Microsoft applications, typically *Internet Explorer*.

So from time to time, it's worth checking to see if non-urgent, 'Custom' updates are available and which sometimes can also apply to non-Microsoft kit, e.g. NVIDIA graphics cards.

To do the check, go to the [Microsoft Updates](http://www.microsoft.com/downloads) site and click on the Custom option which covers *all* the available updates and not just the more urgent 'Express' items.

### • If things don't work...

Occasionally, an update may fail to install – and the techie reasons given will defy understanding by we ordinary mortals.

Don't panic: in our experience, nothing bad happens and it usually sorts itself out during the next routine update, typically in the following

month. But on extremely rare occasions, you may also find that either an urgent or custom update gives adverse, knock-on effects.

Other very occasional hiccups seem to involve bits of recently-installed hardware where, at the next manual Custom check, an update is offered for it which then causes problems.

### • Uninstalling updates (Windows XP)

Occasionally, you might be concerned to see a message on an update saying: "after you have installed this software it cannot be removed".

But although that's technically correct, and if you hit problems with that particular update, there's nothing to stop us *uninstalling* the offender. Although the update files are not physically removed from your computer, they just sit there and don't actually do anything.

But if you find that an update causes problems which even uninstalling it doesn't resolve the issue, fear not, this is where the wonderful System Restore feature explained in the booklet (p80) can do it for us.

Invoking System Restore allows us to roll back to the point immediately before we installed the Microsoft updates (usually the line-item termed Software Distribution Service) and continuing with the Restore function.

### • Summarising so far... (all variants)

To summarise this important topic, the Microsoft update routine for variants of Windows and associated applications is rarely triggered more often than on a monthly basis and invariably is trouble-free.

Where Windows probably gets its rather bad name for needing [quote] "*constant updating*" is that, on top of the underlying OS updates – plus routine security updates for its 'bundled' applications – it's any other Microsoft application software installed which is often updated at the same time, e.g. *Word*.



But the knockers do rather tend to lump it all together – and grumble about ‘Windows’. Whether this is fair is a moot point...

### Windows ‘bundled’ applications

With the coming of Windows 8, and especially 10, several features and built-in applications were changed significantly. Whether you like the new offerings is subjective but, if not, invariably they can be reconfigured or even replaced, and here’s a few thoughts on what is feasible.

#### • Start menu (tiles)

If you simply don’t like the ‘tiles’ system introduced by Windows 8, and which is still part of *Start* in Windows 10, there are several options and third-party programmes available which can restore the ‘classic’ look of Windows XP or W7.

Our preferred freeware alternative is [Start Menu X](#) which, although taking a little getting used to, does everything we need, with some nice added-extras.

## Supp. 4 (originally Apr 2011)

This supplement’s theme is triggered by an input from a couple of you asking how we managed to insert live links throughout the e-booklet and in these supplements. So the general topic is how to add ‘smart’ enhancements to files in the Portable Document Format (PDF).

### Going back a bit

PDF was created by Adobe Systems in 1993 as a new, common standard for information interchange, irrespective of hardware, operating system and application software.



The Acrobat PDF reader was released as a freebie shortly afterwards so at least we could then view and print documents displayed by a Mac or PC.

However, Acrobat always was and still is a heavyweight, but now there are various ‘lite’ alternatives such as Foxit (p71).

#### • Email client

*Outlook Express* is replaced by *Mail* which is a competent programme. However, for us, it doesn’t have the familiarity of *OE*, so we installed the freeware *OE Classic* instead. This also has some especially welcome user-configuration features.

#### • Browser (and PDF reader)

The popular *Internet Explorer* is replaced by a new browser, *Edge*, which – by default – also imports PDF files into its browser display. However, this is very short on features; nothing like the *Acrobat* and especially *Foxit* PDF readers for example (p71). Furthermore, it has been known even to prevent you from changing the default application from other than *Edge*!

So to avoid these frustrations, we suggest disabling *Edge* and using your own choice of browser such as *Chrome* (p73), along with one or more dedicated PDF readers (p71).

RISC OS has a good selection of PDF file readers, plus a good range of commercial and freeware PDF writers (pp55-57), including the application-specific PDF export and import functions of, say, *Artworks*.

Initially, PDF files were in effect read-only in that what you saw on screen (setting aside colour) was pretty much what you would see on a printed page. But over time, added-extras started to become available on some Windows and RISC OS PDF readers and writers: for example the valuable ability to insert live links, either to other parts of the same document, or to websites, external documents and so on.

So in this offering, we’ll review how these ‘smart’ features can be generated and used, under both RISC OS and Windows (with read-across to Macs).

### Subsequent upgrades

The previously-proprietary Adobe PDF format was released as open-source in 2008 and, from the RISC OS users’ point of view, 2008-10 saw some extremely useful upgrades becoming available:

- v0.60 of Steve Fryatt’s [PrintPDF](#) (p56) introduced a super, ‘Queue’ feature, whilst v0.80 enabled the generation of bookmarks.
- The [PostScript3](#) driver from the Tygat/Würthner stable was released, enhancing the underlying quality of PostScript and thus, in turn, the output of RISC OS PDF writers.
- The long-standing [!PDF](#) viewer was upgraded by Chris Gransden and Peter Naulls and considerably improved the chances of getting documents generated by later versions of PDF to open up.
- Although [Foxit](#) for Windows (p71) is primarily a PDF reader, it now has the ability to generate various smart extras, including hyperlinks.

#### PrintPDF’s ‘Queue’ feature

Picture the scene: You wish to produce a heavyweight document in, say, *Impression* or *Ovation Pro* to send out as a PDF file, either for commercial printing or for uploading or linking to a website. It may be packed with lots of bitmap illustrations (most of ours are) and would be very unwieldy to author as a single, unavoidably large file.

So wouldn’t it be nice to be able to split the document into two or more parts, purely for improved ease of authoring and handling, but without the bother of having to re-combine it in Imp/OPro before conversion to PDF?

Maybe it also has a number of appendices which are not the same orientation or page size as the main document. (Our A4/portrait tomes routinely include foldout, A3/landscape appendices.)

These may well be produced in quite different applications, e.g. *Artworks* or *TechWriter*. In principle they can again be brought together with the main body of the document at a late stage, before conversion to PDF. But frankly, messing about with different chapters, whose page guidelines are quite different to those of the main document, and are probably from different applications, can be problematical.

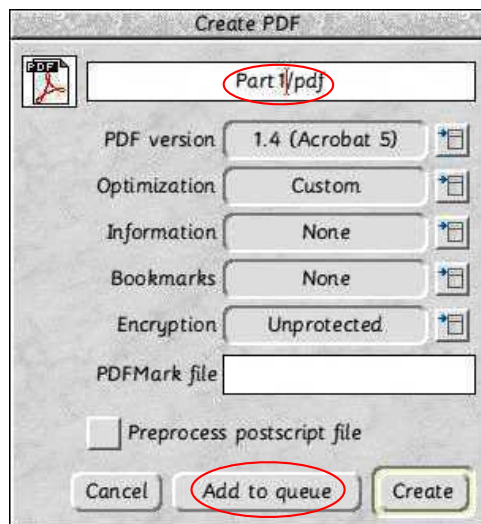
Furthermore (and perhaps something you’ve never come up against) what happens if the composite document is so large that it hits the buffers, namely the 26-bit limit of RISC OS 4? Never heard of it? Those among you who produce ever-so-large bitmaps using *Photodesk* or *Studio 24* very likely have.

That doesn’t mean to say you can’t author such large documents but, if you then try to convert them to PDF, using any of the available PDF writers for RISC OS, the practical limit in RISC OS 4 is usually around 30MB – regardless of how much RAM you have available to RISC OS, under ARM-power or VirtualRPC.

Typically what will happen is that the PDF writer will fall over, with a post-mortem window. Or if there’s a very large sprite in an *Artworks* file, you may get a Not enough memory to create sprite error.

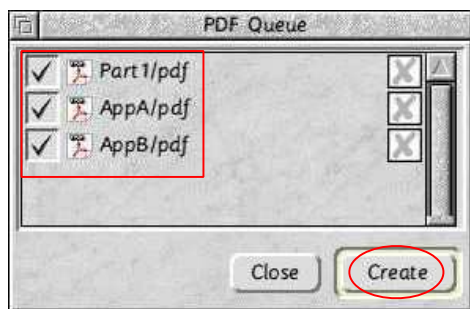
With one bound, *PrintPDF*’s Queue feature solves all those problems, without fuss and in a very user-friendly manner. All we need to do is to first author the document, in as many parts as we wish for ease of handling, using different applications where applicable, but with a working maximum file size for each separate element of (say) 25-28MB.

The simple procedure then is to ‘print’ the first element to *PrintPDF* in the normal way but, instead of clicking on *Create*, click on the *Add to queue* button (ringed in the illustration overleaf) which starts the document queue.



Repeat the 'print' procedure for all the other elements of the overall document to add them to the queue, the only extra point to note being the need to change the Paper size in the PS2/PS3 PostScript driver from (say) A4 to A3 before printing any big bits such as A3 appendices.

Once that's done, select Queue from the iconbar menu to open the PDF Queue window. The illustration (intentionally squashed) is an example of a main body file, followed by two appendices.



Confirm that all sub-elements of the document are showing correctly in the queue, and are in the right order. (If the order is wrong, simply

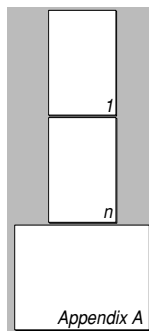
rearrange them by drag-and-drop.) Finally, click on Create (ringed) to set in motion converting the complete document to PDF.

The output should be a single, composite PDF file made up of all the separate elements, and in the correct order, but without the inconvenience of handling a very large and unwieldy document – or the hassle of trying to put together the different elements into a single *Imp* or *OPro* file before converting it to PDF – and only then to find it all falls over...

This very straightforward procedure seems to bypass the memory limit imposed by using the 26-bit RISC OS 4. Indeed, we routinely and successfully produce tomes in *Ovation Pro* running to 40-60MB, and convert them to PDF, without any complaint from either *PrintPDF* itself or – far more importantly – the print bureau.

Even the different page sizes and orientation of the disparate elements of the document result in an elegant display on screen.

For example, the illustration shows what you will see on a monitor with an A4/portrait body text (pages 1-n), followed by an A3/landscape *Appendix A*, all very neatly arranged.



### PrintPDF's 'Bookmark' feature

It isn't necessary to go into much detail on what the bookmark feature in *PrintPDF* will do as it simply generates an easily-understood presentation of a list of live bookmark links to help you navigate around a parent document.

Links can easily be nested so the bookmark display can appear much like an index, with chapter headings and indented subheadings, whilst clicking on any one will take you direct to the relevant page in the document.

It can be as simple or as complex as you like. For example, a fully-detailed bookmark list for the VirtualRPC In Use e-booklet might start something like this:

Introduction	1
Contents	2
Part 1 Performance tests – 2003-2007	3
Testing, testing	3
The 'test schedule'	3
Performance comparisons	3

The related page numbers also need to be entered against each line item, before the *Bookmarks* file is saved. However, the page numbers are those in the final *PDF* file, *not* necessarily those in the source file.

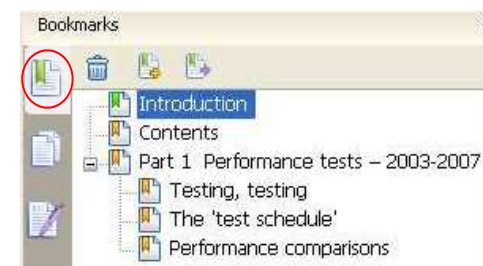
A bit of trial and error may be needed if, say, the document has a cover page, but the body text starts at page 1.

Having saved the *Bookmarks* file, all we then need to do at the PDF creation stage is to drag this file into the Create PDF (or PDF Queue) window, immediately before clicking on Create, and it will be linked to the document.

Then when the document is displayed in any PDF reader, on any platform (excluding *GhostView*), the reader can open the Bookmarks display and click on any line-item to take them direct to the relevant page.

Here's what the display will look like in *Foxit*, noting that you need to click on the Bookmarks icon (ringed) to open it.

Note also that toggling between the – and + icon alongside each main heading will toggle between the sub-headings being shown or hidden. The display in *IPDF* is very similar.



### Foxit's 'Links' feature

Some years ago, Foxit Software sneaked in some extremely valuable 'write' features on top of its PDF reader and these have been expanded with time. Some (but by no means the full repertoire) are illustrated in *Foxit*'s button bar below:



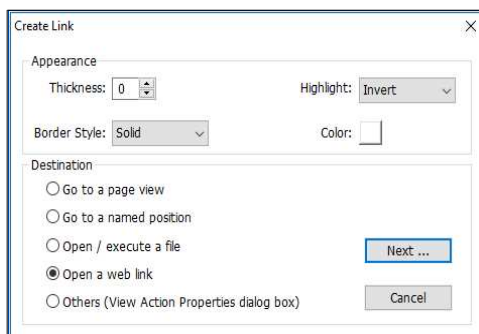
The Link feature (ringed) is especially useful as it enables live hyperlinks to be inserted anywhere in a pre-existing PDF file and which can then be re-saved for further use.

There are various ways of using it so the following are only ideas. We prefer to pre-designate the eventual PDF hyperlinks within the source file – the *Impression* document in the case of these supplements – simply by putting the relevant text in a *blue* colour (for preference not underlined). Then the *Imp* file is converted to PDF in the normal way.

With the PDF file now displayed in *Foxit*, to illustrate the procedure we can generate a link to (say) the download page for the *Foxit* PDF reader. Perhaps the easiest way is to call up Foxit Software's website, find the download page, highlight the *full* URL address in your browser header <https://www.foxitsoftware.com> and press <Ctrl-C> to copy it onto the Windows clipboard.



Click on the *Foxit's* Link icon which changes the pointer into a cross and allows you to drag a select box round the (blue) word *Foxit* – this opens the Create Link choices window.



We prefer not to have a visible select box so the simplest way is to make the Colour = white (invisible on a white background; the Thickness and Border Style are then irrelevant). But pre-selecting Highlight: Invert puts the link rather neatly into inverse video – *Foxit* – when you click on it.

Leave Destination set to the default Open a web link and click on Next. That opens the URL Edit window.

Click in the writable box and press <Ctrl-V> to paste the full URL address into it and, finally, click on OK to complete the link process.



To confirm that it works, click on the splayed hand on the button bar to return to the usual pointer icon; point at *Foxit* (the select box should be invisible); check that the hand changes to a pointy-finger; click and hold on the link and check that it changes to *inverse video*; release the select button and – if all goes well – the *Foxit* download page should open up in your browser.

If it does, repeat the process for other links and, occasionally, re-save the modified PDF file which now includes the activated hyperlinks. (If you forget and try to close the file, a nag box will pop up).

We can use almost exactly the same procedure to provide a *Contact* hyperlink on the page which will open a blank email with the contact email address already entered.

To do that, repeat the Create Link procedure but, in the Edit URL writable box, type in *mailto:* followed by a space and the relevant email address, e.g. *mailto: admin@toms12.plus.com*

### Summarising so far...

Before we complete the topic of producing 'smart' PDF files, in the next supplement, here's a review of how far we've come to date.

Whether the Queue feature in Steve Fryatt's *PrintPDF* helps you depends on how large and complex your documents are. To take a straightforward example, the 'busy' cover for the VirtualRPC In Use booklet was done as an entirely separate A4/landscape *Artworks* file.

Then – without any need to incorporate it within the main *Impression* document – the two elements were combined simply by adding them to the Queue during the *PrintPDF* conversion to PDF. *Print PDF* then created a composite PDF file consisting of the booklet cover, followed by the body text, all in A4/landscape format.

Similarly, this third edition of the Supplements booklet contains rather more illustrations than previously – and which (to some surprise) caused *Impression* to complain. No problem: the booklet was sub-divided into 2 separate chapters and which, with the separate cover, were re-combined into the single PDF file, again by using *PrintPDF's* Queue feature.

## Supp. 5 (originally May 2011)

The general subject of producing and handling 'smart' PDF files is extensive and we need to cover a few more sub-topics in this supplement.

### Viewing Bookmarks in !PDF

There's a nice bonus when using bookmarks (say, produced by *PrintPDF*) and viewing them using *!PDF*. If you click on a line item in the Bookmarks display using the <Adjust> button, it opens an extra window, displaying the relevant page in the PDF file.

This is very handy as you can view the extra page, then refer back to the previous window (which remains open), without having to go back via the Contents line item in the Bookmark display. Neat.

### Hyperlinks (revisited)

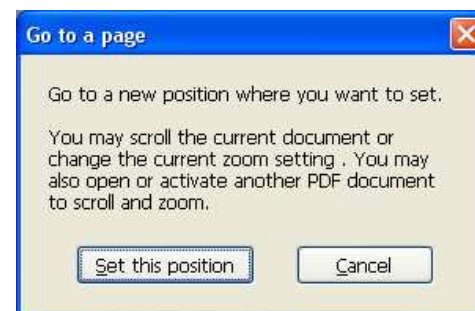
In Supplement 4, we looked at how to use *Foxit* for creating hyperlinks to external URLs and contact/email addresses. But there are various other options in the Create Link window which can also be useful.

For example, the Go to a page view is the one we used when activating all the hyperlinks in the *Contents* pages. These allow you to step directly to the relevant page, and then return.

This is very easy to set up. Select Go to a page view and click on the Next button, when the related window will open (illustrated above right). Scroll down to the relevant page in the PDF file, position it exactly as you want, and finally click on Set this position.



To check it, click on the splayed hand pointer icon on the button bar as before; move the hand over the hyperlink; check that it then changes to a pointy-finger; click on the link and check that the display jumps directly to the relevant, hyperlinked page.



If previously activated, clicking on the *Return to Contents* page link at the bottom will also return you direct to the *Contents* page. If all is well, save the result and repeat as required for all the other page links.

### Handling the select-drag boxes

To set up all hyperlinks, of whatever type, we first need to select-drag a (rectangular) box over the item to be linked. In its simplest form, this could be a single 'alias' word such as *Foxit* or a short phrase such as *Click here*

Accuracy isn't particularly important as the box merely earmarks the area within which the hyperlink will eventually become active. But in general, avoid overrunning onto adjacent text – unless you do it deliberately. For example, 'T.O.M.S.' was often included within our contact link *T.O.M.S. admin@toms12.plus.com*

If you have a long hyperlink name or URL which runs onto multiple lines, e.g. *serif.com. panoramaplus*, you might be tempted to drag a

single, rectangular box over two or more lines.

Unfortunately, as in the example, the box will unavoidably run over the adjacent plain text and give a very messy effect in the PDF file. But that is easy to fix by drawing multiple boxes instead – in this example one for *serif.com* and the other for *panoramaplus* – and give both of



them the *identical* target address in the URL Edit window. That will give a much neater end result.

Although the rectangular drag-boxes are normally horizontal, they can just as easily be drawn in the vertical. To illustrate that with the e-booklet, thankfully it isn't necessary to have 86 separate hyperlinks in the *Contents* pages as – more often than not – multiple line entries will apply to the same pair of facing pages in the document.

4 So for instance, if pages 6-7 in a sample  
5 *Contents* listing were to contain a total of  
6 five sub headings – all appearing on the same  
6 pair of facing pages – you can drag a single,  
7 common box over all five in the page listing.  
7 This time, make the box invisible – so do *not*  
9 turn it into inverse video when selected – and  
9 your readers will be none the wiser!

If you're not happy with the final position or sizing of any drag box, it can easily be tweaked later by clicking on the *Foxit* Links icon, click on the relevant box to select it, and then either reposition it or drag the tabs to resize it, as normal. Don't forget to double-check it and then re-save the result.

Finally, we can use exactly the same methods to create a hyperlink over, say, an icon or illustration, simply by dragging a rectangular box over it and, for example, selecting the *Open / execute a file* option in the *Create Link* box to link it to an external file.

If the object to be hyperlinked is not rectangular, then we can draw multiple boxes over it – again accuracy isn't critical – and link them all to a common target address.

### Further Foxit features

As well as the valuable *Links* feature, *Foxit* has other added-extras which you might like to investigate. For example, the text 'highlighter pen' is self-explanatory but, sadly, presently it has unpredictable results when viewed in *!PDF*, so beware odd effects.

Alternatively, clicking on the *Comments* tab in *Foxit*'s header menu reveals many other user-friendly goodies, including *Area Highlight*, *Text box*, *Callout box* and several simple drawing features such as arrows.

Once again, although the 'sticky notes' feature is in principle excellent, it can also cause problems with both *Acrobat* and *!PDF*. However, you can generate broadly similar effects by using the more basic *Text Box* and *Line* features, in conjunction with each other.

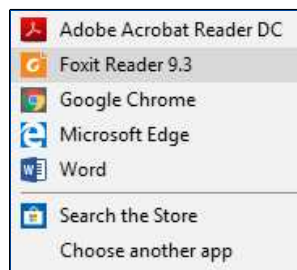
In all cases, hyperlink text, lines, arrows, colours, opacity, etc, are configurable by right-clicking on each selected box and picking the *Properties* option.

### Using Acrobat and/or Foxit

A slightly unfortunate, (un)'helpful' feature of Windows may cause the occasional problem. If you use (say) *Acrobat* as your favoured PDF reader, double-clicking on a PDF File will normally load the file into *Acrobat* by default.

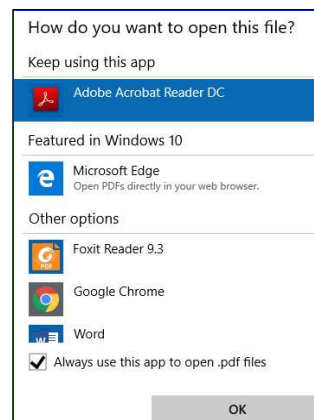
However, if you wish to load a particular PDF file into *Foxit* instead (perhaps to insert hyperlinks using the procedures covered in the previous pages), the easy way to do that is to right-click over the relevant PDF file, select the *Open with >* option and, in the sub-menu, select *Foxit Reader*.

This will open the PDF file in *Foxit* and away you go. The potential problem is that, if you load several PDF files into *Foxit* – maybe to introduce hyperlinks into multiple PDF files, Windows rather unhelpfully tends to presume that you wish to use *Foxit* as your default PDF reader – and then stores the (unintentional) changeover from *Acrobat* to *Foxit*. Drat.



That's OK for the time you might wish to spend doing all the hyperlinks but, when you get back to normal usage, double-clicking on PDF files will continue to load them into *Foxit* – by default. Double-drat.

You can of course right-click on the wanted PDF file and select *Open with > Adobe Acrobat Reader*. But as you will have to do that every time you want to load a PDF file, it soon becomes a pain.



So another option would be to select the last line-item in the sub-menu instead (*Open with > Choose another app*) which opens another sub-menu with all sorts of apps for displaying PDF files.

In this case, click on *Adobe Acrobat Reader*, tick the *Always use this app to open .pdf files* box and click on *OK*.

Still not very user-friendly though is it? And all because Windows is trying to be 'helpful'. So there are 2 more suggestions:

- First, if you have desktop icons for either or both *Acrobat* and *Foxit*, drag-and-dropping a PDF file over either icon will open the file in the relevant PDF reader.
- Second, if you'd rather not have the 2 icons on the desktop, you can right-click over each one and select *Pin to taskbar* from the sub-menu. This will add mini-icons for both *Acrobat* and *Foxit* at the left end of the taskbar. Then if desired, you can re-arrange the order of icons by drag-and-drop and then delete the 2 desktop icons.



Drag-and-dropping a PDF file over either of the 2 optional icons will then open the file in the desired PDF reader. You *may* still be hindered if Windows is again (un)'helpful' – but nothing like as often.

### Alternative application software

All these extra *PrintPDF* and *Foxit* goodies described in Supplements 4 and 5 to date are non-chargeable. There are many other features available for smartening up PDF files, but you may have to fork out for a commercial solution to get them all.

Not surprisingly, the top model is Adobe's *Acrobat X Pro* which will do almost anything you'll ever need – but at a cost of hundreds.

However, if you rummage through open-source or free software, the chances are you will find something to do what you want.

### Splitting and merging PDF files (etc, etc)

For us, a typical example is where we might need to edit the contents of one or more pages in a PDF file but (as far as we can tell) no programme exists to do all that for free.

We could of course go back to the source document (the *Impression* file in the case of the e-booklet), edit that and then re-convert the whole thing back into a PDF file. But, at the very least, this would require all the multiple hyperlinks to be re-done from scratch. So we'd like to avoid that!

However, there is a simpler workaround, and that is first to split the existing PDF file into segments, re-author only those pages that need editing, convert them back into PDF, and finally merge all the sub-components back into a single (edited) PDF file.

By this means, all the PDF pages which do not require editing are left untouched, without the need to repeat any proof-reading, setting up hyperlinks, and so on.

To do the splitting and merging, we suggest using something like [PDFill PDF Tools](#) which is the freeware bit of the larger [PDFill](#) application. So for this illustration, say we wish to edit p12 in the e-booklet.

Because it consists of pairs of (A5) facing pages, it's first necessary to correlate the page numbers in the e-booklet with those in the PDF file. In this instance, pp12-13 in the booklet work out as being (A4) page 8 of 45 in the PDF file (the cover being page 1).

### • Splitting the PDF file

Using [PDFill PDF Tools](#), we now need to split the 45-page PDF file (actually 86xA5 facing pages), intentionally retaining pp1-7 and pp9-45 in the file, as two separate sub-files.

#### 2. Split or Reorder Pages

Select the Split or Reorder Pages

tool, then type the relevant A4 PDF file page numbers 1 to 7 into the Split Pages From window.



#### ☒ Open the Extracted PDF

Leave the Open the Extracted PDF

button ticked (which it is by default), click on Save as, give the sub-file a unique name (e.g. 'pp1-7'), and finally click on Save. The PDF sub-file consisting of pp1-7 will now open for double-checking the page numbers.

In this illustration, repeat the process for pages 9 to 45 in the original PDF file, again giving the second sub-file a unique name such as 'pp9-45' and double-check the page numbers.

(There's no need to split out p8 from the PDF file as we shall edit that under RISC OS.)

### • Editing the page(s)

We can now go back to the source document in RISC OS, make the desired edits to p12, reconvert the two facing A5 pages pp12-13

back into a PDF sub-file (in this case giving it the logical name 'p8', that being the relevant A4 page number in the PDF file, *not* in the e-booklet), and pass this third element back to Windows.

### • Merging the PDF file

Finally, we need to re-combine the three sub-elements back into a composite PDF file.

So select the

Merge PDF Files

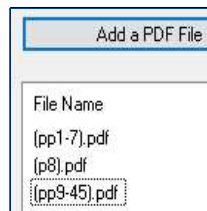
1. Merge PDF Files

tool, drag-and-drop

the 3 sub-elements of the PDF file into the

window, in the correct order, double-check that they're all present and correct, click on

Save As, give the file a suitable name and click on Save.



In this example, the edited page 8 in the PDF file (i.e. pp12-13 in the booklet) will now be 'dumb', and we'll have to re-activate the 7 hyperlinks in the text, plus the '[Return to Contents Page](#)' at the bottom – but this is a small fraction of the effort required if we were to re-edit the whole file under RISC OS.

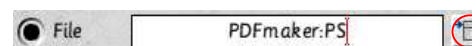
## Supp. 6 (originally Jun 2011)

### Using R-Comp's PDF Maker

An additional sub-topic linking to the discussion in Supplement 4 regarding the Queue and Bookmark features in Steven Fryatt's [PrintPDF](#) needs to be mentioned.

Fans of R-Comp's [PDFmaker](#) should not feel left out. If you also wish to benefit from the Queue and Bookmarks features, you can easily divert the output from [PDFmaker](#) to [PrintPDF](#) and tap into the latter's added-extra functions.

To do that, install [PDFmaker](#) as normal but, temporarily, also load [PrintPDF](#) onto the icon bar (there's no need to install the PS2/PS3 'printer'). Click <Menu> over [PDFmaker](#)'s icon, open its Printer Control window, then its Connections window, and click on the submenu box at the right end of the File entry (ringed).



Now drag-and-drop the Printout box over the [PrintPDF](#) icon on the icon bar. This re-routes the output of [PDFmaker](#) to the equivalent [PrintPDF](#) address (...PrintPDF.printout/ps).



This will work for the current session but, if you wish to re-use it in future, click <Menu> over your default printer icon and select Save choices to store the change in [!Printers](#).

Now when you 'print' a file via [PDFmaker](#), the Create PDF and PDF Queue control windows will be as shown in Supp. 4.

Presently you may lose some [PDFmaker](#) functions but we understand arrangements are in hand to further blend [PDFmaker](#) and [PrintPDF](#) so that we can tap into features of both applications.

### Anti-malware for Macs?

Not surprisingly, a number of Mac-users have asked whether they can safely risk ignoring all the blurb about PC malware issues in Section 4 of the booklet. Or should they also be concerned about (as someone neatly put it) "[Nasties for Macs](#)"?

Not having experience of Macs ourselves, here's what someone posted to Rick Maybury (a knowledgeable computer journalist who used to run a Q&A column in the Telegraph):

*"Do I need to install anti-virus software given the [Mac] platform's reputation for being largely virus-free?"*

To which Rick sayeth:

*"Conventional wisdom has it that Macs are virtually bullet-proof, though Mac operating systems and Mac software have their fair share of security loopholes.*

*Heavyweight paid-for antivirus protection is probably unnecessary but if it makes you feel safer, go for a free virus checker for emails and web downloads called [ClamXav](#) (download v3 from [www.clamxav.com](#)).*

*Don't get complacent though; Mac users are still vulnerable to malware, Trojans and phishing attacks, so stay alert."*

So if you take this good advice, there are several, freeware versions of the usual Windows anti-malware programmes available for Macs, with a [top 10 list of recommended applications](#) including [Avast](#) and [AVG](#).

### Window handling (under Windows)

With any computer display, it's very easy to finish up with multiple, overlapping windows on the screen, and different operating systems have different ways of organising them.

Some (many?) RISC OS users curse Windows for the action that, if you click anywhere in a window, it is automatically brought to the front. Others – ourselves included – find that generally very convenient.

Windows is also often cursed for the difficulty in bringing a wanted window to the top if it's entirely hidden by other windows, especially as there's no easy way to move the window(s) on top to the back.

One way round it is to click on the related window tab icon on the taskbar. However, that can often be tricky where the tab title is truncated.

Another is to minimise one or more windows, leaving a smaller and more manageable number open on the desktop. For instance, we routinely minimise VirtualRPC when doing anything under Windows, but others say they find this doesn't work conveniently for them.

So perhaps the best, overall alternative is to use the Windows “Alt-Tab” function. Hold down the <Alt> key, then tap and release the <Tab> key. In Windows XP, this opens a small display showing the parent application icons for all active windows (whether open or minimised). Keep tapping the <Tab> key until the window icon you want is selected (boxed), release <Tab> and the hidden window is brought to the front.



Invariably, the icon type is sufficient to identify the parent application (e.g. the VirtualRPC

‘cogs’) but, if you have multiple active windows for the same application (e.g. the three browser windows in the illustration below-left), the selected window title is also displayed below the row of icons, and is much less likely to be truncated.


In Windows 10, the display of active windows is in effect a series of large thumbnails (illustrated below), so recognising and selecting the window to be brought to the front is much easier.




This is yet another of those useful Windows facilities which take far longer to explain than to get to grips with. The “Alt-Tab” function is not particularly well known but, once you try it, you'll find it a fast and very handy method.

### Closing multiple windows

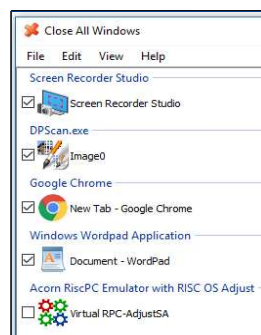
Having spent a complex session, perhaps swapping back and forth between various Windows applications (including VirtualRPC), it's not unusual to finish a job with a screen and taskbar full of assorted windows and icons.

Under RISC OS, you can close multiple windows, with one bound, by pressing <Ctrl-Shift> and clicking on the Close icon  of any one window. This single click closes *all* open windows that have a Close icon.

Windows 10 seems not to have an equivalent shortcut, but an extremely handy utility called *CloseAll* does the same sort of job. Once on hard disc, it doesn't even need to be installed as you can drag a shortcut from it either onto the desktop or, rather neatly, onto the taskbar where a red  icon sits alongside the Start icon.



A single click on the *CloseAll* icon will then open the Close All Windows display, listing all active



(open) windows and applications (plus any running on the taskbar, including VirtualRPC). In this case, *UN*tick the box for VirtualRPC (to leave it running) and click on OK to clear the other 4 windows from the desktop.

### Keystroke for Windows?

Continuing with the theme of Windows alternatives for RISC OS applications and utilities, a query that occasionally comes up is whether there's a Windows equivalent of Quantum Software's *Keystroke*, released in 1993.

Ironically, our own need to use *Keystroke* has reduced significantly over the years, primarily because many application software titles now have the same functions already built-in.

Prime examples are the numerous keystroke macros we knocked up for use with the original *Ovation* but which were then replaced by the superbly flexible button bar in *Ovation Pro*.

The same applies to *OPW* of course (pp65-66) and, indeed, Windows itself and many other application software titles have multiple built-in macros, often controlled by hot-keys, so the need for an all-embracing Keystroke-like programme is arguably much less than it was.

However, a common area where we can certainly benefit from hotkey shortcuts is to simplify entering lengthy, alphanumeric strings. For example, a need to enter a 13-digit number for an electricity account – and another 13-digit number for a gas account – both with the same supplier – badly needs automating!

For that sort of thing, we've had complete satisfaction from *Phrase Express* which is very flexible, easy to set up and does precisely what we want. However, just like *Keystroke*, you need to be canny when selecting combinations of hot keys to avoid clashing with other applications already using the same keys.

For example, choosing a combination of <Ctrl-Shift-E> and <Ctrl-Shift-G> for the electricity and gas account numbers will interfere with *OPW*'s macros for Edit style and Grid lock.

But on a PC keyboard, we might instead use the ‘Win logo’ key next to <Ctrl> and set up, say, <Ctrl-Win-E> and <Ctrl-Win-G>, which are much less likely to result in a clash.

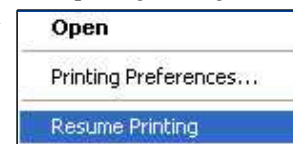
### Printing problems fixed

A couple of users' printing hiccups are worth mentioning. One took some pinning down as it was due to unwitting but repeated finger trouble. After some months printing successfully, the user found all attempts to print then failed, although documents appeared correctly in the queue and without any ‘Error when printing’ messages.

He tried deleting and reinstalling the printer driver, which seemed to clear the unexplained problem, but the same thing happened again a while later. And again. And yet again...

The cause turned out to be that, when clicking on the printer driver's Printing Preferences option

(Supp. 2), he was inadvertently selecting the line below instead – Pause Printing – hence all printing was, er, pausing. Having later realised what he'd done, he selected Resume Printing – and the printer leapt into life!





The second problem did involve a print job with an ‘Error when printing’ message which, in the booklet (p52), we suggested could be cancelled, allowing subsequent print jobs to proceed successfully.

Unfortunately, the next print job in the queue then picked up the same error message – and so on, and so on (repeatable). However, the user found that, by closing down and re-starting the computer – simply re-starting was not enough – the problem went away.

## Supp. 7 (originally Jul 2011)

The July 2011 Supplement 7’s topic was ‘Running VirtualRPC on a netbook PC’, covering the features of a typical product, installing and configuring VirtualRPC and RISC OS, and comparative performance.

Seven years on, this supplement follows the same general path, but considers the current crop of stand-alone and (more commonly) ‘2-in-1’ tablets, the majority now running Windows 10. As before, no particular product is specified as it might be better to stick to generic points.

### Netbooks/Tablets Vs laptops

After dabbling with *VirtualA5000*, our second foray into the Wonderful World of RISC OS emulation was back in 2003, with VirtualRPC running on a then-powerful laptop (Pentium 4 clocked at 2.66GHz). At the time, we were simply delighted by the resulting outperformance of RISC OS. This and subsequent purchases are recorded in detail in Section 1 of the booklet (pp4-6).

However, the laptop’s physical screen size and resolution naturally limited what one could do with it on the move. Complex DTP and graphics work for example were impractical. Less-demanding tasks were always highly satisfactory – but then they didn’t require the relative power of a P4 processor.

Furthermore, in practice, the laptop proved not to be a fully-portable device; “transportable” would be a more accurate description. It was heavy and, with the Pentium 4 quickly soaking up the power, running time was very limited.

Lugging that lot around (along with a spare battery...) was certainly not user-friendly, so it was later swapped for a netbook – and more recently a tablet – in both cases the lesser performance offset by the reduced weight and *much* longer battery life.

As it happens, there have been few significant developments in netbook- and tablet-land since then, other than the valuable ‘2-in-1’ options of the latter. So the subject tablet of this supplement is pretty much representative of what you will see in today’s widening range of offerings running Windows 10.

And although you would need to check the specifications of particular makes and models, the following notes should give you a good idea of what to expect.

### Typical tablet features

Most mid-sized tablets will have a screen size of around 9-12 inches, measured diagonally, but the screen aspect ratio may vary widely, from 4:3 right up to widescreen of 1.6:1 or even 1.77:1. That said, the display resolution is likely to be far higher than the earlier netbooks and some will even match the standards of larger laptops.

In general, the more pixels displayed, the higher the product price. So selecting the screen aspect ratio may be a compromise between your all-important budget and intended use. If this is to be mainly ‘computer’ oriented, then maybe a 4:3 display would be adequate.

But if you expect to be running videos, then perhaps a widescreen display would be better to avoid significant ‘letterbox’ effects top and bottom.

Furthermore, most if not all tablets can be rotated from landscape into portrait format, the display orientation responding automatically. So that greatly helps typically for websites where, with a landscape display turned through 90°, far less scrolling is required in the vertical axis.

Under the lid, a tablet is likely to be running an Atom or Pentium 44xx processor or better, clocked at 1.6GHz or higher. But don’t expect them to be power-machines unless you go up the range to a tablet running, say, a Core M3 processor at up to 2.6GHz.

Graphics will come typically courtesy of an Intel chipset. The display clarity on the subject 10-inch tablet is absolutely splendid, with good contrast and even the smallest text being perfectly readable under Windows or RISC OS.

There’s little more to say about tablet features as they’re all pretty much the same.

### Peripheral hardware

Depending on the product, internal storage is likely to be either an eMMC or much faster SSD with a capacity of at least 128GB (of which several GB is required by Windows 10). But often there will also be a micro-SDXC socket supporting up to a 256GB card, so storage is unlikely to be a problem.

Although netbooks routinely came with a built-in keyboard and trackpad, ‘2-in-1’ tablets are far more flexible in that the tablet can be removed from its keyboard (which may also double as a cover) for use as a stand-alone unit.

In some cases, buying a tablet *without* the proprietary keyboard can be much less expensive than the full ‘2-in-1’ unit, especially if an equally-expensive stylus pen is also dispensed with. (Alternative input devices are discussed below.)

Under Windows, ‘driving’ the stand-alone tablet via the touchscreen can involve using the on-screen keypad and the usual mix of finger gestures. However, this applies *only* to Windows as RISC OS will not interact with the touchscreen. So, unless the unit’s own keyboard and trackpad are used, this will entail using some sort of external control facility.

Indeed, a far more user-friendly alternative for died-in-the-wool RISC OS users is to add a plug-in or wireless keyboard/trackpad combo such as an ‘[Air Mouse](#)’ mentioned in the booklet on p11.

Alternatively, if space permits, a standard, full-size keyboard and separate mouse work fine in conjunction with the tablet, under both Windows *and* RISC OS (not so handy on the train however).

But where to plug in these peripherals? As discussed on pp10-11 of the booklet, many tablets will have only one or possibly two mini-USB ‘Type C’ sockets.

But using an adaptor as also described will neatly solve the problem by providing (typically) 3× standard-size

USB2 or USB3 sockets, as well as a full-size HDMI socket for connecting to an external monitor (alternatively an ADSL socket).

We’ve tried 2 different adaptors and are most impressed by their 100% compatibility with all manner of plug-in devices; also the speed with which ‘plug-and-play’ responds to a newly-inserted peripheral (typically no more than 2-3 seconds). Even plugging in an external monitor (or TV) requires zero user-input; it simply comes online, without needing to be configured, and with a perfectly-positioned display.



In this present context, using a wired, plug-in keyboard and mouse takes up 2 of the 3 USB sockets on an adaptor, but swapping over to a wireless keyboard and mouse works perfectly, with the mini-receiver in one USB socket and leaving 2 sockets free; a much tidier result.

### VirtualRPC installation on Windows 10

Before even installing VirtualRPC on a tablet running Windows 10, it may be necessary to prepare the setup by working through the procedures set out in the booklet; namely for pre-2014 master CDs, set the User Account Control to 'Never notify' (p20).

And as a tablet will almost certainly have an in-built audio system and speakers, it is unlikely that the faulting module 'VirtualRPC-xxx.exe' will be triggered. But, if need be, check that the speakers are working (p21).

As a tablet will almost surely not have a DVD/CD drive installed either, it is unlikely that the Faulting module 'Atapi.cd.dll' will be triggered (p21).

But if problems starting up VirtualRPC are encountered, check for the Faulting module 'ntll.dll' and, if need be, set VirtualRPC to work in 'Compatibility' mode (p21).

### Installing VirtualRPC & RISC OS

A fundamental limitation of a tablet is the near-certain lack of an internal DVD/CD player. So if you're installing VirtualRPC from scratch, using the master CD will most likely not be possible, although installing from some sort of copy is perfectly feasible.

#### Installation path (Important!)

Although in principle it is possible to install VirtualRPC in the root of Drive C:, or within a folder called Program Files, or indeed elsewhere, **it is most important** that you now first generate a folder in the root of Drive C: called *VirtualAcorn*, and that you install VirtualRPC into this *VirtualAcorn* folder. No ifs or buts please...

In other words, in all VirtualRPC installations, the working location of VirtualRPC should now be *C:\VirtualAcorn\VirtualRPC-xxx*.

(Explanation from VirtualAcorn: this is because, if VirtualRPC is located in the root of Drive C:, it can be corrupted by the 'Windows VirtualStore'. No, we don't understand that either – but we are happy to do what VirtualAcorn tell us...)

To doubly-stress the point, the 'old' installation path for silver CDs (pre-early 2014) was *C:\Program Files\VirtualAcorn\VirtualRPC-xxx* and, if need be, this must now be amended manually, to read as above ([Support article 133](#)).

**Important!** These notes override the sub-section on pages 20-21 of the main booklet headed **• VirtualRPC installation path(s)**.

In the event, the inherent flexibility of VirtualRPC provides all sorts of optional install solutions, so take your pick from the following.

#### • Installing from plug-in CD drive

If you have a plug-in CD drive available, or are otherwise able to beg, borrow, steal or even purchase one, the simple procedure would be to plug the CD drive into the tablet adaptor, insert the VirtualRPC master disc and proceed as normal, ensuring that, if necessary, the default location for VirtualRPC is as detailed above.

If you have a choice, try to get a mains-powered CD drive but, failing that, it may be possible to power it from a USB socket on the tablet adaptor, although some may require a 'Y' adaptor to provide sufficient power from two adjacent sockets. (This did not produce reliable results on the subject tablet adaptor.)



#### • Installing from 'master' USB device

If a plug-in CD drive is not available, or will not run reliably on the tablet adaptor – but you do have access to another PC with a CD drive – we can then achieve the same ends.

Put the master VirtualRPC disc in the CD drive, wait for the Installer menu to open – and then close it. Right-click over the CD drive icon and select **Open**, which displays the CD contents.

Then copy *all* the files on the master CD onto, say, a USB memory stick, plug it into a USB socket on the tablet adaptor, open the root



directory and double-click on the **CDStarter.exe** file. This will initiate the standard VirtualRPC

installation procedure, albeit from the USB device, but just as if it were from the master CD.

#### • Installing a full VirtualRPC copy

Finally, if you have access to a PC which is already running your 'master' copy of VirtualRPC-xxx, *plus* all your RISC OS application software and datafiles, you might like to consider putting a straight copy of the full VirtualRPC installation onto a suitable medium, taking that to the tablet, and copying across the complete VirtualRPC installation.

Any suitably-sized medium can be used, bearing in mind that a very 'busy' installation might consume several GB of data.

In principle – and provided it works! – there are at least a couple of potential advantages to installing a working copy:

– First, the *extensions* file, located in the *Plugins > HostFS2* folder and used to enable VirtualRPC to recognise all the RISC OS filetypes at start-up (pp42-43), will contain the important extensions for sprites and drawfiles (p69) *plus* all those applicable to your collection of application software. This will avoid some filetypes not being recognised and minimise the time taken in having to update the *extensions* file post-installation.

– Second, the RISC OS installation *and* your collection of application software will be fully pre-configured and should enable you to start up VirtualRPC and use it, hopefully without hiccups.

The two main caveats to this play are that:

- First the version of VirtualRPC to be run on the tablet *must* be the same as on the 'host' PC containing the working copy
- Second, if you intend to run VirtualRPC on both the host PC *and* the tablet, you must purchase or already have a 'spare' additional licence to run both copies. (For example, we had recently uninstalled VirtualRPC from another PC being sold on and used that licence for the 'new' installation on the tablet.)

#### Starting up VirtualRPC on the tablet

When installing VirtualRPC from a master CD in the conventional manner, a shortcut to VirtualRPC-xxx is placed on the desktop, and this should happen even if you've copied the contents of the master CD onto a plug-in medium and then run the installer.

However, if you've copied a full installation from another PC as described in the previous sub-section, there will be no start-up shortcut.

To fix that, open the main *VirtualRPC-xxx* folder on the tablet, right-click over the *VirtualRPC-xxx.exe* file (with a RISC OS icon) and select **Create shortcut**.



This will create a shortcut file named *VirtualRPC-xxx.exe - Shortcut* in the same folder. You can now drag-and-drop the shortcut file to where you want it on the tablet desktop (Supp. 2) and rename it as you wish.

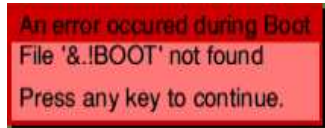
Hopefully, double-clicking on this desktop shortcut will now start up VirtualRPC without complaint and, if all goes well, display the RISC OS desktop. But if all does not go well, there are several possible problems which can be dealt with and cleared, as follows:

### • The ‘spinning wheel’

VirtualRPC does not start up (the disc ‘wheel’ spins for a second or two but then stops). Provided you’ve done the other Windows 10 checks prior to installation, this may well be the Faulting module ‘ntli.dll’ which needs dealing with (p21).

### • Corrupt CMOS file

For some reason, it’s not at all uncommon for RISC OS start-up to stall, with a ‘green screen’ and showing a menu of start-up options, superimposed by an error message.



Selecting the X. Exit to Desktop menu option results in a low-resolution RISC OS display but, as the main *!Boot* file has not been run, RISC OS cannot be reconfigured. The cause of all this is that the *CMOS* file is either incompatible with the tablet installation, or has been corrupted, but fortunately this can be fixed.

Perhaps the simplest method is to find the *CMOS* folder on a backup copy of VirtualRPC and replace the corrupt folder with it. Navigate down to the *Models* folder for whichever *ARM core emulation* you are using (p25), open it and double-click on the relevant folder, and the *CMOS* file will be found alongside the related *Model.cfg* file.

(*Health warning!* If you are running VirtualRPC-SA or -AdjustSA, do make sure you select the appropriate *Models* folder from ARM7, ARM 7500 and StrongARM, otherwise selecting the ‘wrong’ folder will almost certainly screw things up.)

If that doesn’t work out, you can instead run the *CMOS restore* utility from a copy on the master CD, or on the VirtualAcorn [website](#). But then all the default settings (screen resolution, etc) will need to be reconfigured to suit.

### • ‘Broken’ *!Boot* file

In the worst case, RISC OS will start up – but you may finish up with a desktop display with the ‘wrong’ parameters (compared with what you are expecting), and which cannot be reconfigured (which means *!Boot* has not been run), or error message(s), or other problems.

The difficulty here is “Where to start?” From experience, we deduce that, for some explained reason, VirtualRPC running on the tablet (or indeed on any new installation) does not like one or perhaps more settings or contents in the copy of the main *!Boot* file. We’ve certainly seen several tales of woe from punters who have come up against this stopper and have spent many, many fruitless hours trying unsuccessfully to find the culprit(s).

So on balance – and again from experience – we’re inclined to disable the suspect *!Boot* file and replace it with a paint-fresh, unadulterated copy, at least to get this ‘default’ version of RISC OS working, before proceeding further.

To do that, we suggest renaming the main *!Boot* file on the tablet to read (say) *Boot(disabled)* – without the *!* (‘pling’) – so that RISC OS will not ‘see’ it at start-up.

Then locate a ‘default’ (unmodified) copy of the *!Boot* file from another source (e.g. the master CD or a *copy of same*), and copy that into the main *!Harddisc4* directory. Then when you start up VirtualRPC and RISC OS, you should finish up with a default installation. This confirms that RISC OS is working satisfactorily – so far.

But then you can start to build up a fully-working copy of *!Boot* by re-configuring it and gradually introducing additional features, in slow time.

Inevitably, this can be a very time-consuming process, but do resist the temptation to cut corners by making 2 or more changes at a time.

Yet again from experience, we very strongly recommend making only a *single* change at a time, before closing down and re-starting VirtualRPC/RISC OS to ensure it is still working OK.

Indeed, although this may sound long-winded, if you hit a problem while doing this, this may very well identify the culprit.

(Useful hint from VirtualAcorn: Another potentially valuable helpmeet is to run Martin Avison’s debugging [Reporter](#) which generates a log of where the errors occur and what they are.)

Although the above discussion applies to setting up a tablet, exactly the same content will of course apply to setting up a new installation on any other ‘host’ PC, of whatever category. But hopefully this also underlines the value of making one or more copies of the contents of the master CD, *and* a copy of a fully-working ‘default’ copy of VirtualRPC for recovery use if need be.

### Configuring VirtualRPC & RISC OS

With one important exception, configuring VirtualRPC and RISC OS on a tablet is pretty much the same as on any other host PC (pp24-40). However, a tablet’s relatively small and perhaps oddly-shaped aspect ratio display (4:3 to 1.7:1) may well need some attention.

For starters, if you’ve taken the suggested shortcut by copying across a complete VirtualRPC installation from another PC, RISC OS will start up in whatever screen mode the source copy is set to. That could be for a high-resolution monitor display – so a screen mode of, say, 2540x1440 pixels isn’t going to suit the tablet!

To fix that, you may need to take one or possibly two knock-on actions. First, if only a part of the RISC OS display is showing, either full-screen or in a window, this means that the VirtualRPC Hardware Scale is switched off. So drop the VirtualRPC display into a window (if necessary),

then select Tools > Options > Display, tick the Hardware Scale box and click on Apply and OK. This scales the RISC OS presentation to fit the VirtualRPC display, whether in the window or full-screen.

Second, click on the Display Manager on the icon bar and, in the existing list of available screen modes, select something more sensible (say 800 x 600 for starters), and click on Change.

Resolution
1280 x 480
1600 x 600
480 x 352
640 x 480
640 x 512
800 x 600
1024 x 768

Now you can configure the display resolution at RISC OS start-up via Configuration > Display > Monitor to whatever you select to fit your preferences. If you’re lucky, there may already be a built-in screen resolution to exactly match that of the PC display. But if not, you may find the nearest option may work OK for you – provided the aspect ratio is not too far off the tablet’s display.

However, if you need or wish to prepare some other screen resolution and/or aspect ratio to suit you – *and* are running RISC OS v4.39 – you can double-click on *!Boot* and select Configuration > Display > AutoMode, set the desired resolution and add it to the *Monitors* file by clicking on Save Updated MDF. This new screen resolution can now be set as the default for RISC OS start-up.

(If you are running RISC OS v4.0x and are unable to sort out a suitable display, feel free to [email](#) us with the desired screen resolution and we’ll send a suitable MDF for you to interleave in the monitors file (*VRPC-SE*). *But do make a safety back-up copy of the VRPC-SE file before adding the extra MDF.*)

A point to bear in mind is that the RISC OS display is emulated, so the more the pixels to be displayed, the more it will draw increasing oomph from the tablets’s relatively limited processor power.



However, unless the tablet display happens to have an extremely high resolution, it is arguably unlikely that you will see any discernible ‘hesitation’ in screen redraw.

A further point: Is it still worthwhile selecting the ARM7500 core emulation to support screen resolutions gobbling up more than 8MB screen memory? Perhaps not on a tablet display – but don’t forget that the ARM7500 emulation *also* supports scrolling using a standard mouse. So unless you happen to have any StrongARM-*only* software (p13), you may as well leave things as they are.

### Odds and ends

Before moving onto the final and important question of performance, we can usefully tack on a few odds and ends.

The “much longer battery life“ compared with typical laptops mentioned earlier wasn’t quantified as that will of course depend on different laptop and tablet models. But from reviews and our own experience of the subject tablet, a practical figure of 7-10 hours is probably in the right ballpark, although ‘screening’ a long film does cut down the endurance by 10-25% or so.

What came as a very pleasant surprise is that (as with the discussion on netbooks in 2011) putting the subject tablet into hibernate mode has an almost negligible effect on battery life.

In practice, the percentage remaining seems to drop by only 1% or so every 24 hours. Wake-up from hibernation to a fully-operational condition, with the same applications running and windows open (including VirtualRPC and RISC OS), takes typically only 8-10 secs.

(On the subject tablet, facial-recognition adds only a second or so to the wake-up time, but security is retained without the risks inherent in removing password protection.)

Back home or in an office, a tablet’s functionality can also very usefully be extended by plugging in various peripherals such as the full-size wireless keyboard and mouse, a monitor, printer or scanner. The subject tablet even runs perfectly in dual-monitor mode (pp58-59).

A particularly convenient use for a tablet is to connect the HDMI output socket on an adaptor directly to, say, a domestic full HD TV. Then if you set up *Picasa* to ‘look at’ your collection of digital camera images (pp74-75), you can run slide shows, or display graphics, etc, all from the comfort of your armchair.

A tablet’s built-in keyboard or plug-in equivalent may well not have indicators for the Caps Lock, Num Lock and Scroll Lock keys, which can be a bit of a pain. But for Windows, a fully-configurable utility called [Keyboard LEDs](#) provides pop-up captions which can be positioned anywhere on the desktop to suit, and/or an active icon at the right end of the taskbar.

For RISC OS, there’s the shareware [KeyLEDs](#) (part of *HID* by Paul Reuvers), which puts traffic lights on the icon bar to ‘illuminate’ the three keys.

### Performance tests

Here comes the usual question: “How fast does she go, mister?” Clearly, an Atom or Pentium 44xx-series processor running at 1.6GHz doesn’t have anything like the sheer power of, say, an i3, i5 or an i7 processor running at 2.4GHz or more.

So is a tablet’s performance adequate for real-life usage under RISC OS? And how does it compare with ARM-powered machines?

To answer this, we set out to repeat all the representative performance tests as reported in detail in Section 1 of the booklet (pp4-8).



Having done that, we planned to tabulate the data in the same format as that shown in pp6-7 of the booklet, interleaved for comparison between those of a neighbouring, comparable range of ARM-powered computers.

Unfortunately, this proved not to be as straightforward as hoped. For some unknown reason, the underlying application software on a couple of the tests declined to work (test 3 *Dhrystones* and test 17 using *Sleuth3*), so there are a couple of gaps in the data.

Furthermore, although the later, more practical tests (19-27) gave very satisfactory results, we felt these were not activities which might realistically be undertaken on a 9-12 inch tablet, so arguably were rather meaningless.

Nevertheless, it is possible to make several generalisations when comparing the test data with the other 18 computers already tested:

- In the relatively ‘academic’ tests 1-8 and 11-12, the tablet performance was frankly rather dismal and exceeded those of, say, the 3 Iyonixes by little more than 25-50%. However, in the knowledge that the use of *Basic* programmes to conduct the tests was most likely restricting the tablet performance (as with other VirtualRPC solutions), this might reasonably be discounted.
- All tests measuring disc speeds were very much as expected and on a par with the 3 ARMinis, so contributing to overall performance.
- In general, in all the later, practical tests, the tablet performance was for some reason rather uneven. In some cases, test results lagged behind (for example) the 3 ARMinis by some 10-25%. But in others, the tablet outperformed against the ARMinis, typically by some 50-75%.
- It isn’t at all clear why there should be such relatively wide variations in these later tests, although it was very apparent that the pure ‘number-crunching’ events (e.g. document

rendering and format conversions) gave the best comparative results. Perhaps those also involving the display (e.g. tests 18 and 24) were being held back by the processor’s need to ‘drive’ the inbuilt graphics, compared with the graphics cards plus their dedicated 2-4GB RAM in the 3 desktop Mac and PCs.

Nevertheless, bearing in mind that the subject tablet is well down the list in the potential performance stakes – and thus price – its general achievements, user-friendliness and overall excellence is still very, very pleasing. So if the budget might run to it, a more powerful product is more likely to compare well with, say, the 3 ARMX6s.

## Supp. 8 (originally Aug 2011)

(This supplement has been markedly pruned from the 2011 original as some sub-topics were brought into play in Edition 3 of the main booklet – e.g. *Multiple Monitors* – or in earlier supplements. Any late-inputs will be tacked on to fill the space.)

### RISC OS v4.0x Vs v4.39

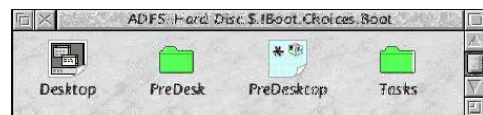
Although we contrasted the basics of RISC OS v4.0x and v4.39 (Adjust) in the booklet (p13), that purposely didn't go into the detailed operating differences as this is purely a RISC OS thing and doesn't affect VirtualRPC directly.

With hindsight, that proved to be a tad unfair on those of you who subsequently made a double leap of faith by jumping directly from (say) a RiscPC running RISC OS v4.0x to VirtualRPC-AdjustSA running RISC OS v4.39.

The *original* Adjust documentation was, to say the least, underwhelming, so perhaps not surprisingly some of you hit problems when setting up the 'new' kit. (But please see the more recent, *much-improved Adjust documentation*.) So here's a bit of guidance for anyone planning on doing the same double-leap to VirtualRPC-AdjustSA.

It all boils down to the fact that RISC OS v4.39 supports multiple users and, even where in practice there may be only one of you, the differences do still need to be taken into account. As it happens, we can render it down further by comparing the main *!Boot* file for each version of RISC OS.

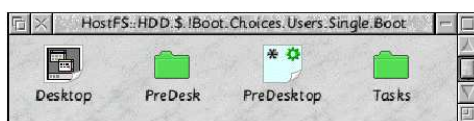
Starting with the contents of the RISC OS v4.0x *Boot* sub-directory, these are probably familiar to everyone:



Note that the leafname for this sub-directory is *!Boot.Choices.Boot*

We might never need to open the *Desktop* file but, instead, make changes via the *!Boot > Configuration* facility. However, it's not unusual to have to rummage inside the *PreDesk* and *Tasks* sub-directories, perhaps to install an application manually or to tweak a configuration file.

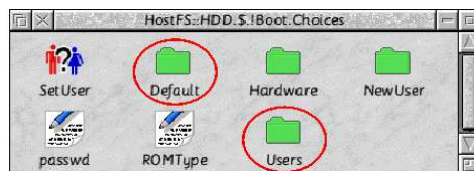
Under RISC OS v4.39, i.e. Adjust, here's what the equivalent sub-directory looks like:



At first glance there's no difference – and for all practical purposes the contents are the same – but note that the leafname is rather longer: *!Boot.Choices.Users.Single.Boot*

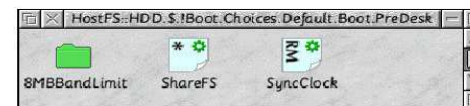
In other words, even as a 'single user', you need to go further down the directory tree via two additional layers – *Users* followed by *Single* – to access exactly the same *Boot* sub-directory contents in RISC OS 4.39.

A second point to be aware of is that, if you look inside the RISC OS v4.39 *!Boot.Choices* directory, as well as the new *Users* sub-directory already mentioned, there's also a *Default* sub-directory.



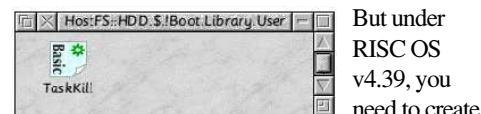
And if you open it, this rather confusingly also contains its own (default) set of *Desktop*, *PreDesk*, *PreDesktop* and *Tasks* files/folders. But don't worry about this *Default* sub-directory.

VirtualAcorn recommend leaving it well alone, and (as far as we know), the only time you're ever likely to need to open it is to access the *ShareFS* file in *Default > Boot > PreDesk*, as part of the suggested workaround for disabling or re-enabling the Share filing system (p38).



Finally, in addition to the changes within *!Boot > Choices*, the *!Boot > Library* directory also caters for multi-users and some software may need to be installed within a *User* sub-directory.

Here's a typical example for, say, Steve Fryatt's valuable *TaskKill* utility which, under RISC OS v4.0x, would be installed within the *!Boot > Library* directory:



But under RISC OS v4.39, you need to create

a new sub-directory called *User* in the *Library* directory, and then move the *TaskKill* utility into it. Geddit?

(If there are to be multiple users, life gets rather more complicated. So as in all probability that won't apply to many of you, to keep these notes simple we won't go into further detail.)

### Dismounting plug-in media (revisited)

Under ARM power, you're probably well used to the need to dismount CDs and other media from their associated drive before removing them. This avoids confusion when either another medium is inserted, or the contents of the original have been altered on another machine and it is re-inserted.

Under Windows, the same sort of rules apply and, if we ignore them, similar problems can arise (as some of you have reported). Also, the term "dismount" is not used in exactly the same way in Windows-land, but the effects are the same. So to clarify, here are the procedures.

- First, before removing a CD or DVD from an optical drive, you need to find the drive icon which is found in the *Start > This PC* viewer and, if you've set up a handy shortcut to it (Supp. 2), also on the desktop. Right-clicking over the icon and selecting *Eject* has the convenient double-action of dismounting and ejecting the disc.

- Similarly, with most removable media either plugged into a USB socket, or slotted into an internal or plug-in card reader, again we need to find the relevant 'drive' icon in the *This PC* viewer, right-click over it and select *Eject*.

(Note that this does *not* apply to plug-in hard disc drives which, rather oddly, do not have an *Eject* menu option. See Supp. 2.)

The icon caption may previously have indicated the CD/DVD disc name, or the type of medium inserted. A memory stick or card will not be physically ejected of course but, on being dismounted, will be removed from the display. At this point, it is safe to remove the dismounted medium.



(Advice from Microsoft: If you are writing data onto a removable medium, do ensure the write process is finished – and give it a few more seconds to make sure – before dismounting it.)

### Compressed folders (revisited)

An alert reader queried why we recommended putting programmes etc into compressed folders before transferring them to a new RISC OS installation (p42), but made no mention of that when burning a backup DVD (pp76-77).

The answer boils down primarily to the important HostFS *Extensions* file which ensures that RISC OS filetypes are retained when moving objects from Windows to RISCOS (p43-46).

When first setting up a new installation, the default *Extensions* file may well not include all the filetypes for your own application software, etc. So the recommendation to use compressed folders is made to avoid problems in the transfer.

However, by the time you come to burn a backup DVD, arguably the *Extensions* file will by then contain a full set of filetypes applicable to your own RISC OS applications and, indeed, any transfer of objects from Windows to RISC OS, e.g. from *DPScan* (p69). So on that basis it's unlikely that problems will arise.

There are other potential pitfalls, too many to list now but, on balance, we recommend you do not compress the VirtualRPC-xxx folder.

### Use of CCleaner (revisited)

**Important:** For several years, we've suggested the use of *CCleaner* for keeping your browser footprint clean, for keeping an eye on and dealing with the host PC registry, retaining wanted cookies while dumping the rest, and so on (pp17-19).

However, following recent discussions with VirtualAcorn, we've become aware of several potential problems which have come to light using *CCleaner*, particularly where important files have been 'cleaned', by default, *without* a back-up copy being stored automatically.

So as that rather defeats the object of ensuring 'safe browsing', VirtualAcorn firmly advise using an alternative – *Eusing Cleaner* – instead; the advantage of this programme being that its actions are limited to the Windows folders, so minimising the risk of user-programmes – *especially VirtualRPC* – being damaged or even broken.

### Paul Vigay's software

Finally a piece of good news, albeit tinged with sadness, is that the late Paul Vigay's excellent software catalogue, include those titles which were shareware and require unlock codes, is still available for download in the original place ([www.vigay.com/software/](http://www.vigay.com/software/)). Furthermore, if it is classed as shareware, you can register the title(s) with [Digital Phenomena Ltd](http://DigitalPhenomena.Ltd).

Details are given in a pop-up window when you start up an unregistered title and, after registering, you receive a personalised file which, once installed, kills both the nag box and the start-up delay.

## Supp. 9 (originally Sep 2011)

### Windows & RISC OS for genealogy

The notional case history in this supplement is loosely linked to the popular topic of genealogy in that one of us is heavily into his family tree and associated local area history. He's used a combination of Windows and RISC OS applications to produce some complex, large-scale graphics which would have been impossible to generate under RISC OS alone, and quite difficult under Windows.

The same mix of software and procedures can be used in similar ways to suit other needs, so it's back to our favourite VirtualRPC theme of 'The Best of Both Worlds'. A simplistic example is: how can you best scan A3 or even much larger documents with an A4 scanner?

### Scanning (revisited)

Before going into detail, we can usefully revisit the topic of scanning to set the scene. We've already looked at using David Pilling's *DPScan* for Windows in the booklet (pp66-69), but we can of course use R-Comp's *UniScan* (part of *UniPrint v4*) to do the scanning under RISC OS and produce exactly the same high-quality results, very conveniently.

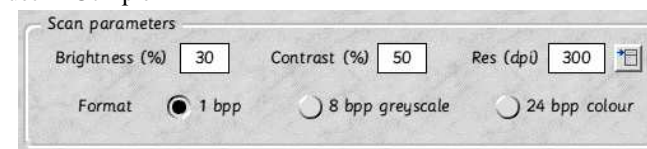
The principles and use of *DPScan* and *UniScan* are so similar that there's no need to go into full detail on the latter, so here are just a few pointers:

- To reiterate the answer to a query on a forum, *UniScan* does work very well in a VirtualRPC installation as it will happily drive a scanner attached to the host PC, noting that *UniScan* requires the installation of the Windows Imaging Architecture (WIA) drivers. Normally this is achieved by running the scanner support CD under Windows.

- When running an initial Preview scan in *UniScan*, don't panic if an error message pops up saying: Operation failed – Scanner failed to scan. You've simply caught the scanner having a nap, as can also happen with *DPScan* (p67). Give it a while to wake up and try again.

- And also as with *DPScan*, we find a Res (dpi) setting of 300 is fine for routine jobs like photocopying and OCR. However, with both applications, that often generates the dreaded moiré fringes if scanning, say, a photo from a printed book. This is due to an interaction between the scanner and the dot patterns in the printed photograph. Although counter-intuitive, using a lower-res setting of, say, 150 (dpi) usually reduces the interference patterns very significantly, to the point that they may no longer be troublesome.

- If you're not familiar with R-Comp's use of bits per pixel for Format, 1 bpp represents monochrome, 8 bpp greyscale is 256 shades of grey and 24 bpp colour is glorious 16M colours.



The two scanning applications are otherwise very similar and follow-on image processing can easily be done using either *DPScan* under Windows, or (say) *Variations* under RISC OS.

### Panorama software for Windows

The other programme we'll use in this exercise is a panorama application such as Serif's one-time commercial offering *PanoramaPlus*. Serif also released a freebie 'lite' *Starter Edition*, based on a previous version of *Panorama*, and which we suggest you try out.



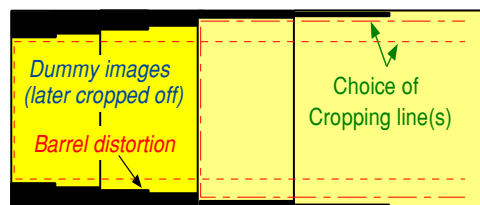
Alternatively, the freeware [Autostitch](#) was a third-party development programme for *Panorama* and is well worth a look. It doesn't have many of the bells and whistles of the full application but nevertheless is perfectly usable for our purposes.

In all cases, the applications automatically 'stitch' together a series of overlapping pikkies such as images from a digital camera to produce a single, panoramic image in either the horizontal, the vertical, or as an X/Y matrix. But as we shall see, they can also be used to do just as good a job with any other suitable, overlapping bitmaps.

Using *Panorama* (or *Autostitch*) for best results with digital cameras is a significant topic in itself and we did a series of articles for the AVLine CD some years ago. If you're interested in more detail on that, please [contact](#) us. However, here's a couple of significant factors, the second of which also becomes relevant later in this article:

- For anything other than a relatively narrow panorama (up to, say, 60° in the horizontal), it becomes increasingly important to use a tripod to ensure the camera is panned along a true, horizontal line. Otherwise, it's almost inevitable that you'll wander off-line at some point and risk spoiling the result.
- For some unexplained reason, the stitching software doesn't produce perfectly linear results, typically with what appears to be a tad of barrel distortion at the extremities of the panorama. Although this can easily be cropped off later, it does mean you may have to crop quite a chunk off the final image; from the width, or the height, or both.

A cunning ruse to work round the problem of barrel distortion is to expose at least a couple of additional 'dummy' images at both ends of the planned panorama, with the intention of cropping them off later without adversely affecting the finished result.



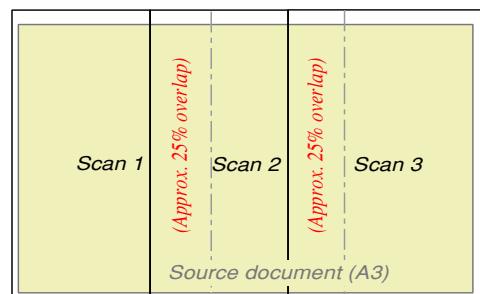
### Large-page scanning

A conventional scanner will happily accept an A4-sized page (approx. 210mm × 297mm) and, with careful positioning, will just about handle the slightly wider US Letter size prevalent in the USA and Canada (just under 216mm × 280mm).

However, the foolscap and other page sizes in common use in the UK up to 1959 cannot be handled by today's A4 scanners. And going back further, older documents such as family wills were routinely hand-written onto much larger sheets and which, as it happens, an A3 photocopier will often handle quite nicely.

But what if we wish to scan such papers and have only our trusty A4 scanner? On with the lateral-thinking caps; here's how it's done:

- Taking an A3 portrait page as an example, turn it through 90°, position it on the A4 scanner bed and scan the left, middle and right-hand portions, in succession, but otherwise in the normal way.



- Note that the 3 scanned images overlap by roughly 25% which, in the event, is adequate for *Panorama* to work with.

- Images to be imported into *Panorama* (or *Autostitch*) need to be in either TIF or JPEG format. So if you scan the source document using *DPScan*, we recommend you save them out as TIFFs (discussed later). With *UniScan*, you'll need to convert the output sprites to TIFFs before passing them to *Panorama*.

- Fire up *Panorama* and import the 3 scanned TIFFs into the left-hand Source Images pane. Drag-and-drop works fine and there's no need to arrange them in the correct order.

- Click on the **Stitch** icon and, in a few moments, a composite image of the A3 source document will be displayed. Impressed huh?



- If the original document format is, say, A3 landscape, no correction is needed. But if it's A3 portrait, you can rotate the image back through 90° in-situ, using one of the two **Rotate** buttons to regain the upright format.



- Save the resultant composite image by clicking on the **Save** icon. With the *Starter Edition* and *Autostitch*, the output format is limited to JPEG and you'll need to crop off any barrel distortion and unwanted areas.



- Note that with, say, an A3 source page, the resulting image can easily run into multiple MBs, even in JPEG format.

### Improving the image

If you scan the original at 300dpi, the output image resolution will be adequate for your purposes, even if printing on a large-format printer. However, if the quality of the source document isn't up to scratch (especially so if it's a dodgy photocopy of an ancient work), there are a couple of things you can try to enhance the output.

- Although you could tweak the scan brightness and contrast in *DPScan* or

*UniScan*, frankly this can be a bit hit-and-miss. In our experience, simply drag-and-dropping the output file over the *Picasa* icon (pp74-75) and then trying the latter's process options – **Auto Contrast** or even **I'm Feeling Lucky** (!) – can often work wonders (Supp. 2). Whilst you're there, you can also use *Picasa*'s **Crop** and **Straighten** fixes to finish off the job.

- With the freebie *Starter Edition* and *Autostitch*'s output format limited to JPEG, you may find particularly with old manuscript documents that the clarity of the text in the output image is degraded by JPEG artefacts. In that event, we suggest you might consider obtaining the commercial *PanoramaPlus* package which gives a choice of non-lossy output formats, plus many other goodies. (If you have trouble locating a copy, please [contact](#) us.)

### Extra-large-format documents

Having set up the principles of using an A4 scanner to scan larger source documents, and then using *Panorama* to blend the overlapping segments into a single image, in principle there is no limit to the size of the original document which can be handled, in exactly the same way. The natural constraint is the physical difficulty of arranging a huge document on the A4 scanner bed.

However, to show just what can be achieved reasonably easily, a good example is our amateur genealogist's wholly successful reproduction of a large, hand-draughted, 1783 Enclosure map of his ancestors' home parish – complete with dimensions in acres, roods and perches...

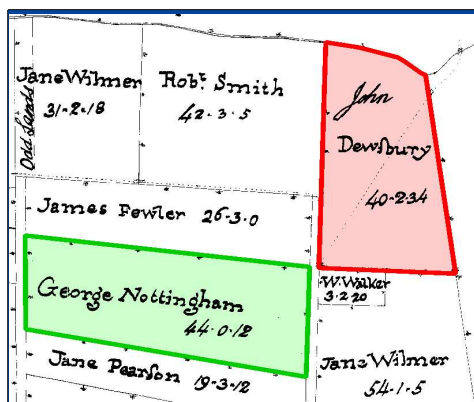
In this case the source document located at one of the very helpful archives was an A1-sized original chart, rolled up and stored. So as you'll imagine, it was certainly showing its great age. Our man bought in a second-generation photocopy of the map which arrived on six A3 sheets, rather tatty but with good overlap.

The first task was to take the six A3 sheets and scan them with his A4 scanner, each one in three separate passes as previously described. It was then simply a case of dropping all 18 TIFF bitmaps into the *Panorama* application (no need to sort them), hit the *Stitch* button and leave the application to do the huge number-crunching exercise. To his great pleasure, 4 mins later it spat out a perfectly-rendered, composite image – all 18MB of it.

Not surprisingly however, the final image clarity was very messy, reflecting the age of the original document and the need to scan iffy photocopies. But dropping the output file into *Picasa* and clicking on the I'm Feeling Lucky icon produced a quite extraordinary, near-instantaneous improvement; it really is that good.

The much-enhanced copy of the ancient, rolled-up and wrinkled map was converted to drawfile format using *DPScan* (p69) and moved to RISC OS to let the likes of *Draw* and *Artworks* loose on it. That could of course be done using Windows applications – but why do it the hard way?

Here's a very small section (say 2%) of the resulting composite image, bearing in mind the draughting and manuscript on the original A1-sized map dates back to 1783. No prizes for guessing correctly who our in-house genealogist is ...

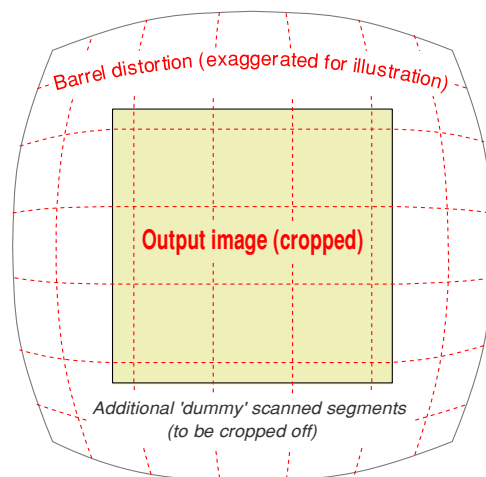


## Scanning maps

In almost exactly the same way, large Ordnance Survey (OS) and other maps can be scanned in overlapping sections, or taken as a series of overlapping screen-grabs from, say, [Bing Maps](#), and reconstituted. The same goes for screen-grabs of satellite imagery. (Take care to avoid breaches of copyright.)

There are a couple of extra points to bear in mind:

- To give *Panorama* sufficient to work with, it's best to aim for a minimum of 25% overlap between adjacent segments, preferably more. But if the stitching process fails to produce a single, composite image, all is not lost – it's easy to interleave one or more fill-in segments from additional scans or screen-grabs to complete the job; a bit of trial-and-error works fine.
- Because of the barrel distortion discussed earlier, a problem with OS and other maps is that grid lines on the composite image can display a modicum of curvature towards the scan limits, potentially marring the end result. But adding at least one additional 'dummy' scanned area, in all four directions, and later cropping them off, will remove the problem. If it doesn't completely eradicate it, simply add further dummy extensions as necessary.



## Supp. 10 (originally Oct 2011)

There was a worrying item on a forum several years ago where a punter admitted to reinstalling VirtualRPC, no less than 3 times, to resolve problems. On the same tack, if you read PC forums, you'll get the distinct impression that at the first hint of a problem with Windows, the solution is to reinstall it.

Whilst freely admitting that this isn't exactly an attention-grabbing topic, please bear with us while we try to put resolving Windows and VirtualRPC problems into better perspective, and ideally avoiding any need for reinstallation.

(This may ring a faint bell with Archive readers as we discussed it in the mag many moons ago. However, the following notes are updated and extended.)

### Re-installing Windows

Our rock-solid response to the notion of reinstalling Windows is: **Don't do it!** Only if absolutely everything else fails should you even think of reinstalling it from scratch.

Invariably there is no need to do it but, if you do, there remains a *very* considerable amount of follow-on recovery work: reinstalling all the extra drivers; VirtualRPC; your PC and RISC OS application software (all of which will need to be configured for your purposes); plus all your datafiles.

If you don't believe that, have a look at what VirtualAcorn have to say about it in [Support article 105](#). Convinced?

But what if you do hit problems under Windows? We suggest you refer to the section in the booklet dealing with uninstalling problem applications and, in particular, using the invaluable *System Restore* feature (p80-81).

In our experience, the latter has never failed to get us back to a fully-working condition, even

if Windows will not start up properly. And to underline the point, neither of us have ever had to re-install Windows on any of our PCs in our previous business at T.O.M.S. or at home over the last (say) 20 years of use. Others say they've had to do it only following a main hard disc drive failure and replacement.

### Safe start-up (Windows)

But as one of you queried: if Windows hits problems starting up, how can we then get at and use *System Restore*? Answer: by starting up Windows 10 in 'Safe' mode. To do that, when you power up the host PC, or re-start Windows, press and hold down the <Shift> function key (or the <F8> key under Windows XP).

After a while, the Windows 10 start-up process will take you to a [series of menus](#) allowing you to work through a choice of several options, including 'Advanced', before Windows 10 goes into 'Repair' mode and, hopefully will identify and fix the problem(s).

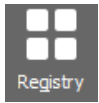
(Note that the actual start-up screens displayed have changed with recent Windows 10 updates, so may change again in future.)

### Backing up Windows

Having said all that, the handy availability of *System Restore* doesn't mean there is no mileage in backing up Windows, or its contents, and we've already recommended doing a data DVD for VirtualRPC and all your RISC OS goodies, typically at monthly intervals (pp76-77).

In the same way, you can usefully make a safety backup copy of, say, your Windows application software and datafiles, perhaps simply by manually copying them across from Drive C: to another hard disc drive, either installed in the computer or a plug-in medium.

Unfortunately you can't simply copy the complete Windows operating system manually as it won't let you copy the files which are 'in use', but an important sub-item – the Registry



(pp18-19) – can be copied easily by clicking on *CCleaner's* Registry icon and, when prompted, save the file to a backup medium.

However, dedicated software is available to enable us to make a complete back-up copy of the main hard disc Drive C: contents and there's a choice of applications to do it. Unfortunately most of them cost money so, being tight-fisted Yorkies, naturally we prefer to use freebies instead, our favourite being AOMEI's cunningly-titled *Backupper*.

This does everything we need, in a very user-friendly manner, including making a Backup of one or more of the main drive(s), allowing you to Restore a drive from the backup copy, or to produce a simple Clone. An important feature in the Utilities menu is the ability to create a bootable medium (USB or DVD), in either Linux or Windows format, which will get things re-started following (for example) a main drive failure and replacement.

Be aware that the backing up and cloning, both in a compressed format, entails a huge amount of number-crunching which, although performed in the background, takes a lot of grunt from the host PC, and is very time-consuming, so it may be best to set time aside for this to be a stand-alone operation.

But in principle, even if (say) the computer's main hard disc drive fails and has to be replaced, you can fire up the recovery USB or DVD medium, initialise the new drive and decompress/copy the contents of the backup device onto the new one. Compared with doing it all from scratch, it's relatively painless (not that we've ever had to do it in anger).

## Selective back-up (Windows & RISC OS)

Although making simple back-up copies of selected Windows folders, manually, is very straightforward, keeping them up-to-date on a regular basis can be a pain, but once again dedicated software is available to greatly simplify the task.

We particularly like a freebie application recommended by VirtualAcorn – *Karen's Replicator* – discussed in the booklet (p77).

Further back-up jobs can be set up for other folders on Drive C: so two prime contenders might be your *Documents & Settings* folder and the *VirtualAcorn* folder containing all your RISC OS goodies.

The really clever bits are that each job can also be set up separately to re-run at user-selected intervals, say daily, weekly or monthly at a set time, and that only files which have been updated or changed will be overwritten in future operations. This can be filtered by date stamp or file size. Updating is a background operation so may not impact on other usage.

## Backing up VirtualRPC and RISC OS

The booklet also deals with the topic of making a separate backup copy of VirtualRPC and all the RISC OS stuff, ranging from just the main VirtualRPC configuration files (p25), to routinely and very easily making a backup data DVD of your complete *VirtualRPC-xxx* folder, containing VirtualRPC itself, RISC OS, your application software (all three fully preconfigured), plus all your datafiles (pp76-77).

(*Health warning:* If your installation is relatively modest and the *VirtualRPC-xxx* folder size amounts to less than 700MB, do resist the temptation to save a few pence and burn it onto a data CD instead of a DVD. The ISO structure for CDs doesn't allow for a sufficiently deep sub-directory tree to cater for the complexity of the main *!Boot* file, so there will be omissions.)

Even if VirtualRPC and its contents become a major disaster area, for whatever reason, near-total recovery can be achieved from the backup DVD in only 10-20 mins, leaving just the most recent datafile changes needing to be updated, perhaps from a backup hard disc or USB medium.

Although the backup DVD will greatly simplify near-total recovery, if at the other end of the scale you have even a single directory or file which has become corrupt, you can just as easily access the backup medium, find the required object and overwrite the culprit. This can be done either under Windows, or RISCOS running under VirtualRPC, so there's huge flexibility.

## The VirtualRPC-xxx folder size

A standard 4.7GB data DVD will very likely hold your complete *VirtualRPC-xxx* folder, including RISC OS etc (pp76-77). But having updated the DVDs for our most heavily-used machines for a couple of years, to some surprise the disc limits were exceeded before re-burning them. Why should that happen?

A quick scan of the folder (viewed within *DeepBurner*) soon pinned down a couple of areas where, unexpectedly, some very large files were pushing the total contents over the 4.7GB limit. So if you get the same symptoms, here are a couple of the likely offenders and you may wish to prune out the culprits:

### • The 'Exchange' folder

If you've set up the *Exchange* folder (or something similar) which we suggested for ease of swapping objects between Windows and RISC OS (pp31-32 and pp38-39), there's a temptation to use the folder as a handy, temporary repository for whatever you're working on (Windows or RISC OS) and, over time, the contents can build up very significantly. It could be nothing to do with RISC OS; for example a 0.5GB video file (pp75-76).

But bearing in mind the parent *Exchange* directory will be located somewhere in the RISC OS *HardDisc4*, then the culprit file will also show up within the VirtualRPC-xxx folder. However, if you delete it from *DeepBurner's* window, that will significantly reduce the total size of *VirtualRPC-xxx* to be burnt onto DVD.

### • !Scrap

Frankly, we have very little idea what *!Scrap* is for... But in practice, we do know that over time the contents can build up and become enormous. So if you've already removed any superfluous objects in the *Exchange* folder from *DeepBurner's* window, but the *VirtualRPC-xxx* folder still exceeds 4.7GB, it's worth rummaging within *!Scrap* to see if anything can also be removed safely.

Note the operative word "safely"; unfortunately some older RISC OS applications unavoidably store important files in *!Scrap*, so you do need to be very selective.

It isn't possible to specify which are the likely culprits as this will depend on your own system and usage but, for example, our own daily use of *PrintPDF* and *UniPrint* does tend to leave behind the residue of temporary (but very large) *PostScript* and data files, each typically 10-75MB in size.



Note that when removing (deleting) a file from *DeepBurner's* window, you are *not* deleting the source file which will remain in place on hard disc. If it's a Windows object file, that won't matter – but if it's a RISC OS object file, it won't then appear on the backup DVD. So before deleting it in *DeepBurner*, do make sure you have a permanent copy of RISC OS objects elsewhere on *HardDisc4* so that they are still available on hard disc.



This discussion on burning a safety back-up copy of an existing *VirtualRPC-xxx* folder onto a data DVD will apply equally to putting a copy onto another medium such as an 8-16GB SDHC card, either as an alternative safety back-up, or perhaps for initial transfer to a new VirtualRPC installation (e.g. Supp. 7).

### Re-Installing VirtualRPC

To summarise the blether in the last two topics, in principle it should never be necessary to reinstall VirtualRPC from the master CD.

Provided you've made a back-up copy of (at the very least) the various VirtualRPC configuration files (p25) or, better still, the complete *VirtualRPC-xxx* folder, on either a data DVD (p76) or onto another medium

such as an SDHC card, then there should never be a need to take the master CD out of its case again.

That said, we do accept that if you're wrestling with some deep-seated hiccup within the main *!Boot* file, it's quite easy to lose sight of what's going on and what to do next. So in that circumstance, it may be quicker all round to re-install VirtualRPC from the master CD.

First, rename the suspect *!Boot* file to something like *OldBoot* – without the *!* (pling) – re-install VirtualRPC and then build up and reconfigure the fresh *!Boot* file in slow time, testing the installation at each stage.

## Supp. 11 (originally Nov 2011)

The plan in this supplement is to bring together a number of threads from your feedback and sundry forums, all with the same overall theme of Vector Graphics.

First, a posting on *c.s.a.misc* asked for ideas on Mac application software to enable a pal to get to grips with producing drawings. Ideally it should be simple and easy to use – like *Draw* for RISC OS – and preferably free. Within the various responses, there was some discussion on *Inkscape for Macs*.

Not being Mac-users ourselves, we can't comment on *Inkscape*'s suitability. However, the discussion set us thinking about what *Draw*-like, freeware applications are available to Windows-users, bearing in mind there's also a Windows version of *Inkscape* which we'll look at later.

Second, a number of you have a related problem. Presently you author parish magazines and the like, using RISC OS applications such as *Draw* and *Artworks* to produce vector graphic illustrations, but you

realise that at some stage you'll need to hand over the reins to lesser mortals who don't possess and enjoy the perks of RISC OS apps.

So you need to sort out how best to export your existing vector graphic images from RISC OS to Windows, not only for use as-is, but perhaps for further editing before use by the next generation. We'll also look at potential solutions for those requirements.

### Draw for RISC OS

To set the bar, we need to look at the standard achieved by *Draw* for RISC OS. For us, it would be difficult to over-state its very many benefits, especially in our previous business, from the early days of RISC OS up to the present.

Its many fans know it is extremely proficient, whilst still being fairly user-friendly, and covered the simplest drawings right up to highly complex 2D graphics, many years before the dedicated *ProCad* became available.

In our view, the fact that it has received relatively little development in 30+ years is testament to its 'right-first-time' status. Even where it could (arguably) be improved, the standard drawfile format permits the likes of *DrawWorks* and *Vector* to step in and extend its capabilities, add a button bar for better ease of use, and so on.

In short, *Draw* for RISC OS always was and still is a hard act to follow.

### Oak Draw for Windows

Setting aside any software which costs money, a clear contender as a *Draw*-like programme for Windows used to be the semi-clone *Oak Draw*. Originally a commercial offering, it is now freely available from Dial Solutions.

We had a good look at it in the Second Edition of this supplement and concluded that the couple of small limitations were offset particularly by the user-friendly sub-menu arrangement.

However... *Oak Draw* is only 32-bit and will not be upgraded, so sadly will not run on 64-bit PCs. A great shame.

### Inkscape for Windows

*Oak Draw* certainly covers the simplest vector graphic images and, with its *Draw*-like ability to select and group together multiple objects or sub-groups, will support increasingly complex 2D graphics.

However, what about something more capable such as *Inkscape* for Windows? This is quite a heavyweight, standalone application, but download and installation is straightforward. At first sight, it is very much an *Artworks*-like package, so initially we had high hopes for it.

Sadly, these hopes quickly faded as it soon became apparent that the application was running very slowly, even in full-screen mode. Screen refresh on complex graphics for example was so slow as to make it a pain to use.

Assuming there was a problem with the installation (years ago), we recently tried a fresh download on 2 more PCs, including our most powerful beastie, with the same phenomenon showing up. [Forum reports](#) also say the same sort of thing, and which the authors do not seem intent on fixing, so on this showing we'll have to leave *Inkscape* on the back burner.

### OpenOffice and LibreOffice 'Draw'

Both these heavyweight, open-source Windows programmes consist of a multi-title suite of sub-applications, including 'Draw'. And if you investigate the latter, both of them are very similar in principle to RISC OS *Draw*; not quite as user-friendly but, with a bit of application, for all practical purposes you can exactly replicate what you might produce using RISC OS *Draw*. For example, the method for selecting object(s), and grouping and ungrouping them, is identical.

So bearing in mind that the Windows extension for this 'Draw' filetype is .aff – and if you export a RISC OS drawfile to Windows, that is automatically given the same extension .aff (with the same full-stop) – we wondered if there was any compatibility between the 2 programmes?

Evidently not. Although in each case the RISC OS drawfile is seemingly imported into the *OpenOffice* and *LibreOffice* 'draw' facility, all that results is that text is rendered perfectly – but that all vector graphics result in lots of alphanumeric 'scribble'.

However, we tried out all sorts of other vector graphic formats and – referring back to the Second Edition of these supplements, where *OakDraw* was able to import files in the Windows Metafile Format (WMF) – we tried that out with *OpenOffice* and *LibreOffice*.

Preparation for this involved loading a copy of the *Draw->WMF* converter (included in the Shareware section of the VirtualRPC master CD) onto the iconbar, drag-and-dropping some

representative drawfiles over the *Draw*->*WMF* icon and saving the output files.

These were then passed to Windows and each file extension ,412 (with a comma) changed to .wmf (with the full-stop). Windows popped up the usual warning that, if we changed the filetype, it could make the files unusable, but for the sake of this assessment, that was ignored.

Next came the test to see if this workaround would indeed work. Drag-and-dropping each file into a *LibreOffice* 'draw' window seemed at first to work – but the end result was a blank window (repeatable), so clearly this is not an option.

However... Drag-and-dropping each file into an *OpenOffice* 'draw' window produced the goods!! At least to some extent... With simple (RISC OS) drawfiles, the rendering to *WMF* format and import into *OpenOffice* gave 100% perfect results. But, as the complexity of each drawfile was increased, so the accuracy of the resulting *OpenOffice* 'drawing' became less and less reliable. That said, in no case were the results so bad that they could not be edited within *OpenOffice* to render them as being satisfactory.

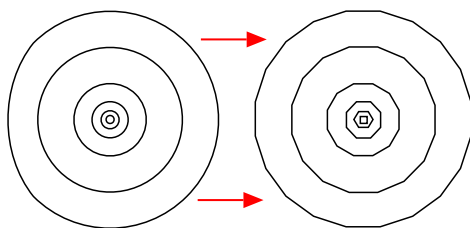
To give the most extreme example, any sprite within the original RISC OS drawfile (perhaps not surprisingly) is simply omitted. Whether this is a factor within the *WMF* converter (the *Help* file does not mention it), or elsewhere in the chain, is unknown, but is not germane.

Nevertheless, this is not a unique event and we have always found it a reasonable task to convert the sprite(s) in a RISC OS drawfile to a format which Windows can understand (e.g. *TIF* or *JPEG*), pass to Windows, import into the target application and re-combine with the underlying vector graphics. Normally this is a case of tweaking the size and position of each sprite until an exact fit is achieved; this can be time-consuming but is quite feasible.

## Windows Metafiles

To clarify, we ought to mention that there are two metafile standards and the difference needs to be appreciated. The more recent is called Enhanced Metafiles (*EMF*). Like RISC OS applications such as *Draw* and *Artworks*, *EMF* supports the ultra-smooth Bézier curves.

However, the older *WMF* format does *not* support Bézier curves. Instead, it replaces any curve with a series of joined-up straight lines. The smaller the radius, the yuckier the result, both on-screen and – more importantly – in print. (Zoom in on the illustration to see the circles-to-polygons-to-square effect!)



But although *OpenOffice* will import *WMF* files, it also appears to convert the resulting polygons into the high-quality *EMF* Bézier curves. Nice one!

## DrawPlus for Windows

In the Second Edition of these supplements, we looked at a freeware 'lite' version of Serif's *DrawPlus* which was very much like *Artworks* in operation. Furthermore, it was feasible to import RISC OS drawfiles into it.

Unfortunately, Serif appear to have left the market and, although *DrawPlus* is available commercially, the current price is £19.99, so we will leave that out of this discussion of freeware solutions.

## Exporting drawfiles in SVG format

Also in the Second Edition of the supplements booklet, we described in detail how drawfiles could be exported as Scalable Vector Graphics (*SVG*). But as several users report finding them relatively complex to work with, we'll again leave them out.

# Supp. 12 (originally Dec 2011)

## Handling large documents (revisited)

Some of the very welcome feedback from several of you was on the general topic of handling large documents (Supp. 9), mainly due to your evident interest in either genealogy or local area history. So in this section we'll again look at how RISC OS and Mac/Windows application software can be used, separately or together, and in particular to help display researches into your family histories.

One area where most if not all computer-based genealogy programmes can hit problems is in displaying a complex family tree, in its entirety. *Ancestor+* for RISC OS, for example, used to make an extremely competent attempt to do so.

But the illustrative example provided with the programme – the Royal Family – which, although a quite straightforward dynasty, nevertheless filled an A1/landscape page. In more typical families, add in (say) a couple of kids of a second marriage, and the whole thing very quickly overflows into A0+ territory, becoming increasingly unwieldy and difficult to decipher.

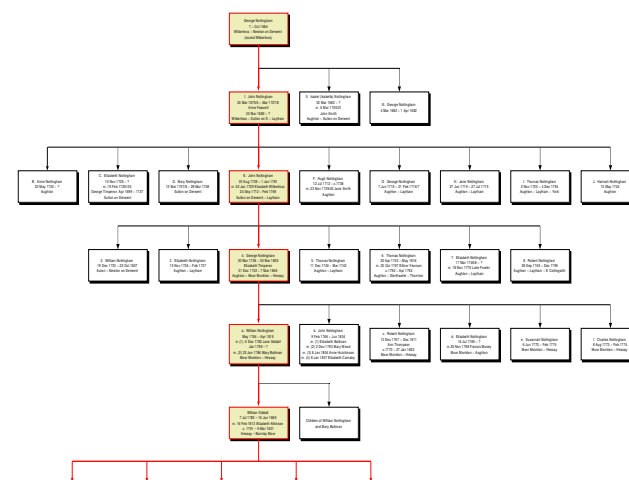
All this is due primarily to the routine use of separate boxes for both partners in a marriage, further complicated in the case of a remarriage of either partner.

Our in-house amateur genealogist gets round all that simply by using a general-purpose vector graphics programme. Rectangular boxes are drawn in a logical branching arrangement, as before, but the outline details of each married couple in the family are contained within a *single* box.

This has the immediate effect of halving the space taken up by any one couple which, in practice, not only greatly reduces the overall spread of a complex family tree but, at the same time, considerably improves readability.

This can all be done quite easily under RISC OS and, for a relatively simple graphic, *Draw* is perfectly adequate. However, a complex tree needs a more capable application and the obvious contender for RISC OS is *DiagramIt* (pp46-47). Whichever programme you use, they're far more flexible than dedicated genealogy programmes and can easily incorporate and depict all the complexities within a real-life family.

In all probability a complete tree cannot be displayed in its entirety on a monitor and still be read in any detail. But reducing the scale to view it as a whole allows you at least to locate the branch you wish to go down, then you can zoom in on the branch to view or edit the graphic or text. To illustrate that, try expanding this sample tree:



To read the data in a tree – in its entirety – an easy option is to export it from programmes such as *Ancestor+* or *DiagramIt*, as a drawfile, then print it onto multiple sheets using *DrawPrint* which is ideal for the job.

Our man recommends also converting the drawfile into PDF so that it can be better and more conveniently read on any Mac or PC display (now with antialiasing).

Furthermore, you can then play many flexible tunes with the PDF file. For instance, hyperlinks can be set from each box to open up a related file such as a photograph, more detailed data or a sub-branch. (See Supps. 4 & 5 on how to set up hyperlinks using the *Foxit* PDF reader.)

Send a copy to computer-owning relatives and they can't fail to be impressed!

### Large maps and satellite imagery

The notes in Supp. 9 discussed scanning and reconstituting large maps. For historical research, firms such as *Old Maps* can supply early Ordnance Survey maps in a range of scales, from 1:10,560 (the old 6 inch to 1 mile series) right down to 1:500 in the larger towns, and dating from the 1850s to the late-1990s.

The maps are supplied in A3/landscape sections and the precise area covered by each one can be user-specified. Delivery is either by email as a PDF file (normally within minutes of placing an order) or by post for hard copy. The *National Library of Scotland* map collection is another invaluable resource.

Recent satellite imagery (c. 2016) can be accessed via *Google Maps* and *Bing Maps*. Although it's not possible to save the imagery directly, you can grab a screenshot (<Print Scr> on a PC), paste it into, say, *DPScan* (pp68-69) and crop off the extraneous browser furniture. However, the resulting image resolution from the cropped screenshot will be limited by your monitor screen resolution.

So depending on the area captured, the image detail may not be adequate for your purposes, particularly when viewed in close-up or for large-format printing.

No problem: in principal you can use *Panorama* to blend a series of higher-resolution screenshots into a single image (Supp. 9), as follows:

- Zoom in on the overall area you're interested in and, starting at one corner, grab a screenshot and copy it onto the clipboard (<Ctrl-C>).
- Paste the screenshot into a *DPScan* window (<Ctrl-V>), crop it and save it in TIF format.
- Select-drag on the satellite imagery (east-west or north-south) and grab further screenshots in an X-Y matrix to cover the area of interest. Ensure a *minimum* overlap of 25% between adjacent screenshots.
- Finally, drop all the resulting cropped images into *Panorama* and let it blend them together.

The end result will be a single, composite image of the area of interest, but in *much* higher resolution than grabbing a single screenshot of the whole area. Depending on the number of screenshots to be blended, the sheer scale of the necessary number-crunching may require at least 2-4GB of installed RAM (pp83-84).

*Copyright issues:* Do note that, if you read the fine print in the Google and Bing Maps *Terms of Service*, in principal you're not allowed to do any of the above... However, our man gets the clear impression from speaking to Google that, provided there is no profit motive (e.g. it's for personal research, or not-for-profit display by a local history society), then this would be tacitly allowed.

By the same token, in his experience, an email to (say) Old Maps, asking for permission to use their products for similar purposes, will routinely result in the go-ahead. But he stresses all this is entirely your responsibility.

For the amateur genealogist or local historian, these suggested procedures and application software can greatly contribute towards illustrating historical research, bearing in mind the satellite imagery – and *Panorama* – were simply not available until a few years ago.

For illustration, the 3 small sections below (taken from much larger graphics, with lots of extra detail added using *Draw*) allow a direct comparison between an ancestor's 44-acre enclosure allotment shown on a hand-drafted 1783 map (Supp. 9), the associated field ('close') boundaries on an old OS map (1892), and how the satellite now sees it (c. 2016).



### Anti-virus/anti-spyware (revisited)

One of you became dissatisfied with the anti-virus programme on the host PC and changed to another offering, configured it as advocated in the booklet (pp15-17), and did an initial anti-malware scan with nothing untoward showing up. So far so good.

However, the next time he did a full anti-malware scan, he was dismayed when it threw up over 20 'threats'! He sought advice on what was happening and an exchange of emails soon pinned down the cause and solution.

First, he hadn't appreciated that, unlike his previous anti-virus programme, the replacement not only protected against viruses, but also spyware. (Reminder: To avoid clashes, the previous anti-*virus* programme should be disabled or uninstalled; but there's no need to bin the existing anti-*spyware* programme as that can be used in parallel with the spyware element of an anti-virus programme.

Second, these reported nasties turned out to be 'tracking cookies'. Until relatively recently, conventional wisdom had it that, as threats, they were not particularly worrisome so could reasonably be disregarded.

However, the increasing popularity of social networking and so on means that, potentially, they are becoming rather more damaging. Facebook users for example are now finding their personal details popping up on third-party sites such as *EBuyer*. So for this reason, tracking cookies do now need to be handled with more care.

Perhaps the most advisable ploy for PC-users is to flush the *Cookies* file, on a regular basis, and an easy way to do the job is to use something like *CCleaner*, especially as with that you can pre-select and move any cookies you particularly wish to retain into a separate store, before flushing the remainder (pp17-18).

To summarise, running *CCleaner* at regular intervals (perhaps even daily), first clicking on *Analyse* and then in turn on *Run Cleaner*, will also flush the *Cookies* file.

Another punter mentioned in passing that his hard disc drive activity LED seemed to be much busier than usual, often with the modem data transfer LED also active for no apparent reason.



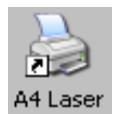
Once again, the 'culprit' turned out to be the anti-virus programme in that the uncommanded activity started following a routine programme update and which, as does occasionally happen, had reconfigured all the scan Schedules settings back to their default values.

To fix this, select the Scheduled scan and Program update schedule line items for the anti-virus programme, in turn, and in both cases, *untick* the Enable this task box or equivalent. This will reduce the uncommanded hard disc drive and modem activity.

*Health warning: Checks for anti-malware signature file updates must still be performed on at least a daily basis*, so select the Definitions update schedule line item and do ensure the Enable this task box is still ticked.

### Printer properties (revisited)

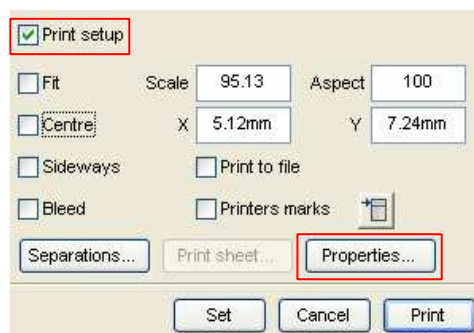
We've already discussed how, before printing something under RISC OS, it's advisable to first optimise the selected Windows printer driver settings to suit the print job (Supp. 2).



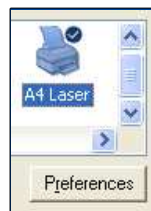
This is much simplified by having the handy shortcut to the printer on the Windows desktop which we suggested. Right-clicking over the icon and selecting Printing Preferences takes you straight to the printer settings dialogue box (e.g. p50).

It's also worth mentioning that, when you go to print something under Windows (usually by pressing <Ctrl-P>), more often than not the application's print dialogue box will also provide quick access to the printer driver.

Invariably the icon to click on is called either Properties or Preferences. So for example, if you tick the Print setup box in *OPW* (pp65-66), that opens up the extended print dialogue box which (unlike *OPro*) adds the Properties icon to access the printer driver.



Similarly, if you scan something using *DPScan* (pp66-68) and then print it, the Print dialogue box will pop up showing the selected printer plus the Preferences icon to allow you to tweak the driver settings.



### Monochrome printing (revisited)

If you're printing a document and using a monochrome printer with a RISC OS printer definition file, you may find that the print quality of the greyscales is less than satisfactory, especially on graduated areas from, say, *Artworks*. With *UniPrint*, a significant improvement can be achieved by selecting a *colour* print option! (This is discussed in more detail on p54).

But if you're printing to a monochrome printer direct from Windows, it's worthwhile having a rummage in the Print dialogue box and, if present, ticking the Print as Grayscale [*sic*] box before printing. We suspect this has the effect of increasing the number of greyscales and can result in a marked improvement on monochrome print quality involving graduated areas.

## 10th Anniversary Supplement (originally Sep 2013)

*(After the 12 articles supplementing the VirtualRPC In Use booklet were published in 2011, the intention was to issue further articles, periodically, from Jan 2013.*

*Personnel changes at T.O.M.S. put paid to that however and, in the meantime, the topic list become rather lengthy. So with the heart-warming realisation that the 10th anniversary of the launch of VirtualRPC was fast approaching, that was a timely moment for a bumper bonus supplement to the main booklet.*

*In general, we revisited earlier topics and it ran to 8 pages. However, this update omits several sub-topics which have been moved either into the main booklet, or to earlier supplements, so it may seem a tad shorter, although we'll tack on a few new ideas.)*

### Anti-virus protection (revisited)

The booklet stresses the importance of installing an anti-malware suite for Windows and – just as important – to configure it to update the virus signatures file, either automatically when the regular updates become available, or failing that to do manual updates on *at least* a daily basis (pp15-16).

A reminder: the same applies if you opt to use the built-in Windows *Defender* (p16).

### Windows updates (revisited)

We mentioned that, on occasions, one or more of the routine Windows updates which typically come in on the second Tuesday of each month (or more likely Wednesday by the time they arrive across the pond) would fail to be installed, but that things usually came good the following month (Supp 3).

Some time ago we had a rather more extreme example of that which is worth mentioning as an added confidence-builder. The particular host PC (running Windows XP) had been unused for about 8 months, so when it was fired up after this long rest, the first steps were to ensure the anti-malware suite was brought up-to-date and to perform a full anti-malware scan.

A check was made for Windows updates and, perhaps not surprisingly, no less than 43 updates were offered for download and installation, although the majority were small files. However, having been accepted, downloaded and installed, a very worrying 19 updates had failed... Oh dear.

All we could think of doing was to attempt to reinstall these 19 files (already downloaded) – and Windows then promptly sailed through the updates, with zero failures at the second attempt! Muted cheers.

Similarly, shortly after recently setting up a new PC (running Windows 10), that did the same thing when closing down. It seems it's not unusual for Windows 10 to go into automatic update mode *before* closing down, with an on-screen message to the effect of "Configuring the computer – do not switch off."

Unfortunately, the PC was (apparently) still configuring itself some 30 mins later, so presumably had hit one or more problems and hung up. On that basis, we could only risk the computer's wrath and close it down.

However, when next started, it went straight back into the "Configuring the computer" routine and, after only another 3-4 mins, started up normally and a check on the Updates page suggested the PC was now fully up to date.

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So from all that it would appear that, if one or more updates fail to be installed at the first attempt, then try again. But if the failures are repeatable – especially if they've come in on a routine, monthly check – live with it until the next routine update when (in our experience) the problem usually resolves itself.

### RAM settings & problems (revisited)

The additional thoughts on customising the VirtualRPC RAM settings, over and above the content of the user-guide, appear to be appreciated (pp25-27).

However, there have been occasional reports of hiccups even when configuring the maximum-allowable RAM which, oddly, occasionally seems also to affect VirtualRPC-AdjustSA as well as the earlier variants. Nevertheless, regardless of the variant of VirtualRPC, reducing the value a tad has reportedly always cleared the problems.

But do appreciate that neither VirtualRPC-SE nor -SA support more than 128MB RAM (64MB for -DL), so setting a higher figure for VirtualRPC-DL, -SE and -SE, or more than 128MB for -AdjustSA running the ARM 7500 core, is *not* approved!

*Health warning: VirtualAcorn stress that setting RAM to a higher figure may work, perhaps for a while, but is a ticking time bomb. So **don't risk it!***

### Snoozing scanners (revisited)

If when you go to scan something, using either David Pilling's *DPScan* for Windows (pp66-68), or R-Comp's *UniScan* (Supp. 9) – and if you get a failure to scan and an error message – the advice is to wait a while and try again as you may have caught the scanner having a nap!

This seems to affect Epson scanners in particular but there may well be others. It seems that, depending on the time since the scanner was originally switched on from cold (not the PC), you may have to wait up to 30 secs for it to warm up and play ball.

Similarly, if you use any other application to control the scanner (e.g. the Microsoft *Scanner & Camera Wizard*), you might well hit the same symptoms – but the error message may not make much sense. Some scanner applications might not even display *any* error message, so don't be thrown by that.

But in all cases, wait for the scanner to warm up, then try again, and it should come good.

### Scanning photos and text

If you get poor results when scanning a printed photograph, this could be due to visible moiré fringes, caused by an interaction between the scanner and the dot pattern in the printed photo. Counter-intuitively, reducing the scan resolution from the usual 300dpi to, say, 150dpi can often improve the results quite considerably (Supp. 9).

Some time ago, a post on *c.s.a.misc* described a situation where using a scanner to produce a copy of printed text also gave poor results. In this case, the culprit turned out to be that the text on the source document was not clearly printed, with a vertical white bar running through each printed (black) text character.

This also generated some moiré fringes on the scanned image and, once again, reducing the scanning resolution improved the result. But be aware that using a relatively low scan resolution will reduce the 'sharpness' of the text in the scanned image, so a spot of trial-and-error may be needed to produce an optimum result, either for printing or as a basis for OCR.

### Optical character recognition software

For OCR work, *FreeOCR* for Windows is still our favourite, primarily for its impressive accuracy and high processing speed (Supp. 1). Ironically, this is where you may *not* get a warning from the scanner if you attempt to use it immediately after switch-on so, as before, give it a while to wake up and it will play ball.

### 'Smart' PDF files (revisited)

We had a look at adding 'smart' features to PDF files by introducing all manner of live hyperlinks (Supps. 4 and 5). There's little more to add to the morass of detail described.

As far as we can tell, all PDF readers for Windows will display the 'smart' annotations and markups correctly, regardless of the application used to introduce them, but we cannot speak for Mac OS. Most work OK when reading PDF files under RISC OS using *!PDF* – but only in the Bitmap mode (being worked on).

### Setting RISC OS colour depth

This topic (from user-feedback) came as a bit of a surprise and may be of relevance if you hit the same problem. One of you recently bought a laptop PC and installed VirtualRPC on it. However, under RISC OS, the display refresh rate was abysmal, in practice rendering things unusable for use with VirtualRPC.

The initial suspect was the underlying laptop processor which did not impress on PC benchmarks. However, when he repeated some of the basic VirtualRPC performance tests listed for a representative tablet (Supp. 7), his laptop performance proved to be very respectable.

With the display now being suspect\*, he then tried reducing the RISC OS screen mode and colour depth (from his habitual use of 32K colours) to the lowest practicable which, although there was some small improvement, still didn't produce the goods.

(\* If you hit any problems affecting the display, then in the first instance it's always a Good Thing to check that you have the latest drivers installed for the graphics card.)

To cut a long story short – and running out of ideas – he tried all available screen mode combinations, including (albeit counter-intuitively) selecting 16M colours.

At that point the display refresh rate improved beyond all expectations! Subjectively, he thinks it gave at least a 5-fold improvement but, more importantly, this rendered the laptop entirely usable under RISC OS. Sorted.

But why did increasing the colour depth to 16M result in such an improvement? We can only surmise that a RISC OS colour depth of 32K – being 15-bit – was completely 'foreign' to the underlying PC graphics card, and thus perhaps the latter was having to work extra-hard to emulate the 32K colour RISC OS display.

The corollary being that 16M colours (= 24-bit) is a fairly standard colour depth for PC displays. This is pure conjecture, but seems to fit the observations.

### Windows 'Safe start' (revisited)

If you suffer a nasty situation where Windows will not start up properly in the normal manner, in principle you should instead be able to start up or re-start Windows in 'Safe' mode, invoke *System Restore* and hopefully be able to step back in time to a fully-working condition (Supp. 10).

However, a couple of you reported that, when you tried to start up in Safe mode by pressing and holding down the <Shift> key (Windows 10), or the <F8> function key (Windows XP), only the splash screen – often introduced by the PC manufacturer so not part of Windows – was displayed.

Seemingly, nothing else happened and, on the face of it, the safe start-up process had hung up and never even got underway. In fact, the start-up *was* proceeding, satisfactorily, but in the background, and unseen because it was hidden by the splash display...

So if you've got a PC that has an initial splash screen, all you need to do to initiate start-up in Safe mode is to press the <Shift> (or <F8>) function key as normal, but now hold it down for a nominal 30 secs or so.

Then when you release it, the underlying Windows Advanced Options Menu should be displayed and you can continue with the safe start procedure.

### Giveaway of the day

The potentially valuable *Giveaway of the Day* (GAOTD) offerings continue to be available (p79). Regrettably the more substantial – and expensive – applications no longer seem to make it onto the site and, noticeably, there tend to be many ‘more-of-the-same’ utilities on offer, e.g. at least one video format plus one audio ditto conversion package per week.

To balance that, upgrades or later versions of some long-standing GAOTD favourites (e.g. *InPaint*) continue to come up at intervals.

Another somewhat unfortunate ‘feature’ is that, whereas much of the (commercial) software is being offered for free, there is now a tendency for it come with a time-limit on its use, albeit up to 1 year.

This policy comes in for some flak from dedicated Fans of Freeware ‘customers’, although it doesn’t detract from the overall principle, so do keep an eye on the daily offers.

### Windows freeware applications

As no doubt you’ll have gathered by now, we’re very keen on the wide range of freeware for Windows and which enables so much good work to be done, particularly when used in conjunction with RISC OS applications (p70 *et seq*).

There isn’t room even in this bumper bundle to go through our full collection but, having mentioned GAOTD’s near-weekly audio-video reformatting offerings, the following is yet another of our favourites – *ConverterLite* – and which we think is superb. Indeed, it seems to be able to cross-convert from virtually any AV format to anything else (main control panel illustrated below).



Just one example of its use is that, although the video in the 1,000s of clips on YouTube is invariably low-res – or worse – the soundtracks are very often of high quality. So it’s a treat to be able to strip out just the audio files as an extensive but entirely free source of good musak, in many genres.

The process is extraordinarily user-friendly: drag-and-drop any mix of video clips (e.g. MP4s and FLVs) and audio files (e.g. WAVs) into the right-hand pane; select the MP3 output format and desired quality (up to 320KB/sec); click on Convert; wait a while – and enjoy listening to the results.

### Complex graphics (revisited)

Until recently, it has been frustrating that it hasn’t been possible to illustrate examples of the complex graphics discussed in Supps. 9 and 12. This was for copyright reasons.

However, permission has now been granted to do so, and with ‘pictures being worth thousands of words’ in mind, you might like to inspect a couple of examples, both courtesy of the [Pocklington & District Local History Group](#) website:

#### • An 1839 ‘tithes’ map

This local village ‘*Tithes map*’ started life with our tame historian taking multiple (40!) overlapping screengrabs from the satellite imagery on Bing Maps, with all the browser furniture removed and generally tidied up.

The screengrabs were dragged-and-dropped into *Panorama* which – after an enormous amount of number-crunching (probably employing most of the 16GB of installed RAM...) – produced a perfectly-stitched, 24-bit composite bitmap. This was cropped as required (filesize now 18MB) and passed to RISC OS via the *Exchange* folder.

All the additional vector graphic overlays (including the ‘village’ inset) were produced using a mix of *Artworks*, *Draw* and *Paint*.

The resulting 21MB file was converted to a PDF file (within *Artworks*) in 2 levels of resolution: 300 dpi for large-scale printing for A1-size display; and 96 dpi for the History Group website.

#### • A local-area ‘Iron Age’ map

That part of the East Riding of Yorkshire around Pocklington is bristling with Iron Age artefacts, including [chariot burials with horse skeletons](#), many of which literally come to light when the archaeologists are let loose on the foundations being dug for 21<sup>st</sup> century housing estates.

With so many turning up in and around Pocklington, this [Iron Age map](#) was produced to illustrate where the local finds are located.

Once again, the map was produced by taking numerous (50!) overlapping screengrabs of Bing Maps’ contemporary Ordnance Survey mapping used as the base, ‘stitched’ into a single, composite bitmap by *Panorama*, cropped and sent to RISC OS.

In this case, all the vector graphic overlays were produced using a combination of *DiagramIt* and *Draw*, the result being converted to a PDF file using *PrintPDF*.

The resulting (A1) ‘big map’ is on display in the British Museum. You know it makes sense...

### Happy 15th Birthday!

There we go folks, no less than **15** truly excellent years already under the belt, and hopefully with very many more to come.

What is especially encouraging is the knowledge of just how many users, including one-time doubters – and even knockers – now say they couldn’t manage without VirtualRPC. That speaks for itself.

So once again, very many thanks to Graeme Barnes and Aaron Timbrell of VirtualAcom for such a splendid application.

*That’s all folks!*