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Obviously, we cannot guarantee to answer every query we receive, but we will do our best! Where we have been unable to answer the queries, we may print the help request as an open request in the newsletter to ask if any of the readers can come up with a solution. And, of course, if readers feel that they have a better solution than we came up with, or would like to correct any errors we make, please write to us!

I apologise for not being able to take telephone help requests these days as the queries are too general, verbal information too vague and the calls too long at inconvenient times while I am working such long hours as I currently am.

I am devoting this issue's helpline to questions about QemuLator. For anyone who hasn't heard of it before, this is a QDOS emulator which comes in two flavours, one for Windows PCs and the other for Mac OS X computers. The article is a mix of questions from members and questions derived from my own use of this emulator. My experience of QemuLator is restricted to the Windows version, whereas our esteemed Editor uses the Mac version, so you may find he adds his own answers where differences exist between Mac and Windows versions.

Q. I can't get Q-emuLator to read QXL.WIN files. What's wrong with it?

A. Depends on whether or not the emulator is a registered version or not. The unregistered version cannot handle QXL.WIN files.

If you have never heard of a QXL.WIN before it is a method of storing QL files within one massive file on the host filing system. On a Windows computer a QXL.WIN is a single large Windows file containing all of your QL files for the emulator, a kind of 'container' if you like. A QXL.WIN usually has the filename QXL.WIN, although some emulators can vary the name.

The other possible problem, as I found to my own cost some time ago, is the size of a QXL.WIN file. If over about 800MB (as mine was) QXL.WIN files cannot be handled by Q-emuLator. This is a bit extreme, though, as most QXL.WIN files won't be this large – the emulator allows for QXL.WIN large

enough to fill a CD-ROM, which is useful as most QL CD-ROMs are published as QXL.WIN types.

Q. What is the difference between a QXL>WIN and a QXL.WIN

A. None whatsoever! Note that on most English keyboards the '>' symbol is on the same key as the '.' Key, so it is simply a mis-typed filename! In theory, on a Windows system the '>' symbol is an illegal character in a filename, so if you do actually come across a QXL>WIN you ought to be quite proud as you have managed to achieve something quite hard to do! It should work perfectly fine if you use Windows to rename it to a conventional QXL.WIN.

Q. My QemuLator is set up to save its files in a Windows folder, but it would be useful to be able to make it handle QXL.WIN files as well – how do I do this?

A. Simply attach it to one of the eight drive slots available to QemuLator. Click on a drive slot and when the menu appears click on the “QXL hard disk file...” option, then browse the hard disk to find the QXL.WIN which was probably created by a QXL card or QPC2 emulator, although uQLx can access QXL.WINs as well). Note that QemuLator can neither create QXL.WIN files nor create directories within them. The QemuLator manual states:

“You can read and modify existing QXL.WIN files, but creating new ones is not supported, yet. However, some free tools (wxqt2 and qxltools) are available on the Internet (<http://www.daria.co.uk/>) that will provide you with that capability.”

Q. How do I transfer my QL software from microdrive cartridge to QemuLator?

A. The easiest way is via floppy disc. On a QL, copy the files from the microdrives to the floppy disc in the usual way, then take the floppy disc over to the PC (if the PC doesn't have a floppy disc drive, you can always get fairly cheap USB drives for PCs which work just like the floppy disc drives built into older PCs) and use it in the usual way.

Where the microdrive cartridges have a copy-protection mechanism, a program called mdump\_exe (available to download from the QemuLator website at <http://www.terdina.net/ql/software.html> according to the manual, although I wasn't able to find it there when I looked) can be used – see paragraph 4.6 of the QemuLator manual.

Another useful tool is a program called MdvToWin\_exe supplied with QemuLator in the Software\FileUtil folder. According to the QemuLator manual it “can be used on a QL to copy a file from a copy-protected

microdrive to floppy disk and attach to it special microdrive information used by some QL programs to verify the authenticity of the microdrive.”

Q. I have heard talk of QLPK files. What are these and how do I use them?

A. Essentially, these are like ZIP files, where all the QL files for a particular program are packed into one archive. The QLPK file contains a QL program together with the emulator settings needed to run it. You can see how powerful the facility is by going to the QemuLator website’s software page and scroll down to find a QLPK program such as the Psion Chess example on the page. Click on the link to Psion Chess 1.0 and after a short pause while it downloads, Windows will ask if you want to save or run the file. Choose Run and Windows will then start QemuLator and shortly you’ll see the familiar F1/F2 choice QL screen. Press one of these and Psion Chess starts up. It will ask you to put the master cartridge in one of the QL drives, but ignore this prompt and press SPACE and the chess program should start. In effect, what you have done is run QL software direct from a website – no other QL emulator can do this as far as I know (apart from the Mac version of QemuLator).

Q. Zip and Unzip don’t work on QemuLator.

A. Oh yes they do, but only as long as there is enough free memory available. Zip and Unzip may need to create temporary files in a ramdisc as well as copies of the zipped and unzipped files, so memory required can be pretty large and may be beyond what is possible with the limited memory available on the unregistered version of QemuLator unless the zip files are pretty small in size. Do bear in mind that on the registered QemuLator, it is possible to directly mount a zipped file as a drive in itself and copy files from the zip file as though it were a drive in its own right (in essence QemuLator has zipfile compatibility built in, although it only works on the registered emulator).

Q. Is it possible for software to tell if it’s running on QemuLator?

A. Since the SMSQ/E extensions such as MACHINE and PROCESSOR don’t directly identify QemuLator, it is necessary to test directly using a trap call specific to QemuLator according to the author. This has to be done by machine code unless someone is willing to write a BASIC extension to do this! Call Trap #1 with D0.L = -26 to get emulator information. In systems where the trap is not implemented you will get a negative error value in D0, or on QemuLator it’ll be a value of 0.

If called with D1.L = 1, the trap returns information in D1.L with information about the host operating system:

D1.L = \$00aabbcc

aa = host operating system:

0=Windows, 1=Mac OS

bb = host operating system variant, currently always 0 but  
in future might allow Unix flavour to be specified

cc = emulator ID (1=Qemulator)

Returns in D2.L the version of the emulator:

D2.L = \$xyyzzww, where

xx = major version number

yy = middle version number

zz = minor version number

ww was supposed to be a global incremental number, but a 0-255 range is probably too little, so you can just ignore it.

D3.L = type of build

0 = alpha

1 = beta

2 = release

For example,

D2.L = \$02010005 and D3.L = 2 means version 2.1

D2.L = \$01030218 and D3.L = 1 means version 1.3.2b

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D1.L = 2

A1.L = pointer to memory buffer

D2.L = length of buffer

Fills the buffer with a short QL string identifying the emulator  
(for example "Q-emuLator 2.2").

Returns a buffer full error in D0 if the buffer is smaller than the  
string (and the buffer content is not valid in this case).

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Now all we need is for someone to write a small set of extensions to perform  
the above from BASIC (any volunteers?).

Q. I am having difficulty getting the 256 colour mode working. It says to use  
the Gold Card version of SMSQ/E, which I have for my QL and Gold Card, but  
no matter what I try I can't get it to work.

A. To support the 256 colour mode you need a special version of the Gold Card SMSQ/E with inbuilt drivers for the Aurora card's 256 colour display mode. The standard QL+Gold Card version doesn't support the extra colours. The Aurora version has never really been advertised – it was developed by Marcel Kilgus specially for the Aurora card and to get hold of it you will need to contact him direct (or possibly Jochen Merz).

Once you have this version, put it in one of QemuLator's drives and enable the 256 colour mode in the QL configuration part of QemuLator – go into the 'QL' menu, then the 'QL Configuration' option, 'Graphics' tab and in the Additional Video Card selection, choose 'Aurora' option.

Not all possible resolutions will work – experiment a little to find the best for your systems. Sometimes you may find that it will only run in full screen, not windowed mode. Some resolutions will be 'scaled' meaning it doesn't look very pretty on the PC display.

You will notice that this drop-down menu has a Q60 option. Don't be fooled into thinking you can get Q60 displays by running Q60 SMSQ/E – it is not intended for that. It was included to allow Peter Graf to develop his QLPUI operating system, a taster of which is available as a QLPK file from the QemuLator website's Software page.

Q. When I tried to download the Windows version of QemuLator, it asked if I wanted to run a file called qemulator.msi . I expected a zipped file or possibly an executable. Is it safe to accept this.

A. An MSI file is a Microsoft Installer or Windows installer file. It contains the information needed to install QemuLator. It is as safe to run and install this file as any other Windows file!

Q. I'd like to have an unregistered copy of QemuLator on my PC system for testing programs I write as well as the registered version for everyday use. Is it possible? If I try to install a second copy both seem to be the same version.

A. QemuLator puts registration information in the Windows system registry. So both copies will find the same status information. Rather than try to work around this it is easier to make sure you have your registration information to hand and use the Unregister option from the 'Q-emuLator' menu when you want to test something on an unregistered emulator. Using 'Unregister' does not invalidate your registration code – it can be reused later to 're-register' your copy when you want to return to the registered version.

Q. I'd like to put a copy of QemuLator on a CD or pen drive to use on other computers – is this possible?

A. There are two or three issues to consider when doing this, none of which are insurmountable.

Firstly, beware of trying to run it from a read-only medium such as a CD. You may run into problems if the emulator tries to write to the medium from which it ran.

The second issue is the registration code. This is held in the Windows Registry on the computer on which the emulator runs. This means that if you copy the installed files onto a CD and then try to run it on a second computer, you'll need the registration code to re-register it on that second PC, otherwise it'll appear to be an unregistered version. After you have finished running the emulator on that second PC remember to Unregister it to remove the registration information from that PC

Thirdly, you will not be able to predict which drive letter a second PC will assign to the CD drive and USB pen drives. QemuLator stores the filenames in its configuration files as absolute path names, so you may need to manually edit the .QCF file (usually called default.qcf) and change any absolute path names into relative ones. Most plain text editors, including Windows Notepad, can be used to edit a '.qcf' file although you need to be very careful not to damage the content of any line in the file as it may cause unpredictable side effects.

For example, if your drive 1 slot is assigned to a QXL.WIN the .qcf file might have a line like this:

```
Slot1=QXL:D:\QXL.WIN
```

This means that drive slot 1 is a QXL type of file, with path and filename D:\QXL.WIN

Assuming you have a copy of QXL.WIN on the same CD or USB pen drive (called thumb drives in some countries) you may not be able to predict if the CD drive is drive D: or drive E: or whatever on the second PC. The solution is to leave out the path name, so QemuLator will look for it on the same drive as it ran from, so we need to change that line to:

```
Slot1=QXL:QXL.WIN
```

And of course do the same for anything else where the absolute path names are used.

Q. I copied some program files from QemuLator via Windows to run them on my QL. They would not run and gave error messages. Why?

A. As Windows filing systems do not understand executable QL program file headers, it strips them from QL program files and so these become missing when transferred to a QL and executed, hence the error messages when you try to run them on a QL.

In order to preserve file headers, QemuLator adds information to some QL files to allow the headers to be preserved, despite the worst efforts of Windows. This can sometimes get in the way since this extra information in a file can now be preserved when copied in Windows, and may get in the way if the file is transferred to a QL via Windows. The answer is to copy it within QemuLator to a floppy disc, for example, where the copying adds or removes this extra information automatically and invisibly to the user depending on whether the medium concerned requires it. This means that if you copy files from a QemuLator Windows directory to QDOS floppy disc, for example, the extra information is stripped and it reverts to a normal QL format file. Two programs are supplied for manually converting files, called QLToWin\_exe and WinToQL\_exe. If you have a look at Appendix 2 of the QemuLator manual, it documents the information added there (an extra 30 or 44 bytes added to a file).

Q. BEEP doesn't work on the emulator.

A. There is an option to turn it off or on in the 'QL' menu. Select the QL menu, then in the drop down menu, ensure there is a tick against SOUND.

There is an enhanced sound option in more recent versions of QemuLator, compatible with the QLSSS (QL Sampled Sound System) available for other QL emulators. Simon Goodwin's sound device drivers let you play back (System) available for other QL emulators and Q40/Q60 computers. Simon Goodwin's sound device drivers let you play back 20kHz sound sample files. The basic files required are included with QemuLator – look in the QL Software folder of the emulator installation, then in the QLSSS folder where you will find a binary file with the required drivers and a text file describing it. The QLSSS also needs to be enabled in the Devices tab of the QL Configuration window.

The full version of the QLSSS system can be downloaded from several QL websites, including the Sound page of my website at <http://www.dilwyn.me.uk/sound/index.html> .

Q. QemuLator is supplied with versions JS and Minerva ROMs. Can it use other versions of the QL ROMs? That would be handy for testing that programs I write can run on all these ROM versions.

A. Yes indeed it can and this is a very useful facility for software authors. It can even run many enhanced and non-standard ROMs. Plenty of ROM versions are available to download from <http://www.dilwyn.me.uk/qlrom/index.html> - just unzip them and add them to the QL ROMs folder within the QemuLator installation directory. There is a list in Appendix 4 of the QemuLator manual of which versions of the QL ROM are supported.

Q. QemuLator runs some games way too fast on my PC.

A. On a modern computer, QemuLator can run much faster than an original QL and older QL games in particular have no speed control built in, they just run as fast as the hardware allows them to (running too fast was never a problem with an original Sinclair QL!).

There is an option in the Speed menu to allow the emulator to run at standard QL speed, Gold Card speed or full speed. Just go to the Speed menu and select 'Original QL' In most cases this will slow down the emulator enough for the game to be playable.

Q. The settings in my configuration file are ignored. I saved it as untitled.qcf as it offered by default.

A. In fact, the default configuration file loaded at startup is called default.qcf so you should change the filename untitled.qcf to default.qcf. Other filenames can be manually loaded if you need different settings for different tasks using the options in the File menu to 'Open Configuration'.

Q. I can't get the mouse to work – I'm using QemuLator on Windows and a JS ROM, and have installed the pointer environment yet it still won't allow the mouse to be used.

A. The Windows version of the emulator may need a file called MacMouse to be installed by your boot program. It's supplied with the emulator in the QL Software folder – just copy that to your QDOS folders and have your boot program install it JUST AFTER it installs the ptr\_gen, wman and hot\_rext files. Note that if you are running Gold Card SMSQ/E you do not need to install the MacMouse driver since QemuLator automatically adds equivalent drivers to SMSQ/E.

Q. QemuLator forgets any date/time settings I apply when I restart QemuLator.



A. In fact, every time it starts, QemuLator reads the PC clock. Any changes made to the QL clock don't extend to the PC clock, so any QL clock changes made apply only to the current emulation session and are 'forgotten' once the emulator stops.

Q. When printing, the last page doesn't get printed.

A. I used to have an old dot matrix printer which did this – it would not print a page until the end of the page had been reached. Usually, this meant adding a form feed at the end of the file, e.g. in the Postamble part of the Quill printer drivers. You can easily check if this is the case using a command such as this (change SER1 to PAR if using a parallel port to the printer):

```
OPEN #3,SER1 : PRINT #3,"Hello" : CLOSE #3
```

If this fails to print anything, try:

```
OPEN #3,SER1 : PRINT #3,"Hello"&CHR$(12); : CLOSE #3
```

If this cures the problem, you know that all printouts should be terminated with a formfeed (CHR\$ 12)

If you have a modern printer which does not support traditional printer control codes, you may need to enable the virtual printer mechanism in the QL Configuration window – instead of mapping the serial ports to the traditional PC COM1 to COM4 ports, map the serial port to 'Printer' instead, which will allow traditional Epson-style control codes to be converted automatically to print via the Windows printer driver instead. There are some additional options for print quality and page fitting in the Printer Emulation option on the 'QL' menu. This also has an option to force printing of the last page (the 'End Current Page' option) where the print buffer contains an incomplete page, although incomplete pages should be printed automatically when the port is closed or the emulation is stopped.