

# WinQVT/Net

TCP/IP Services for Microsoft Windows  
Version 2.6

QPC Software is pleased to announce the release of version 2.6 of WinQVT/Net, a suite of TCP/IP client applications for Windows 3.x.

WinQVT/Net will support up to 15 simultaneous virtual terminal (Telnet) sessions on a variety of host systems. Each session resides in its own window, which can be moved, sized, and iconified according to standard Windows procedures. If you have a color display, you can use color (both foreground and background) to help differentiate visually between sessions (Fonts can also be used to distinguish sessions).

You can select sessions quickly using either the mouse or the keyboard (with a single keystroke).

Like all QPC emulation products, the present one offers exceptionally complete and accurate emulation of the DEC 'VT' series of terminals, including the VT220, VT102, and VT52. The graphical capabilities of the Windows environment are used to provide support for features such as 132 columns and double-size characters.

WinQVT/Net supports only the IBM 'Enhanced' keyboard; the four DEC 'PF' keys are mapped to the top row of the numeric keypad. Alternatively, you may use a DEC LK250 keyboard with full compatibility.

Support for FTP client sessions is available in the form of an FTP window that you can run concurrently with your terminal sessions. Using the FTP window, you can transfer files over the network to and from your PC.

Also provided is an FTP 'server', which allows remote access to your PC for the purpose of transferring files. There is a simple password facility provided to prevent unauthorized access. The FTP server also supports 'anonymous' logins, with access restricted to a single specified directory (and its subdirectories).

Electronic mail is supported in the form of a POP3 client module, which allows you to receive and send mail directly from the PC.

For those with access to an NNTP server, WinQVT/Net includes a news reading and posting facility.

Finally, an 'lpr' module is provided which allows you to print PC files on printers which are attached to network hosts.

## Run-time Environment

WinQVT/Net will run only under Windows 3.0 or higher, Standard or 386-enhanced mode. It will NOT run under real mode! 386-enhanced mode is strongly recommended where available.

The packet driver and protected-mode interface program should be loaded before starting Windows.

**Note:** *the FTP Software packet driver specification (v1.09) allows only one client at a time to use a given protocol. This means that WinQVT/Net cannot share the packet driver with other TCP/IP applications, such as PC-NFS or PC/TCP.*

The help avoid UAE's, your FILE= and BUFFERS= (in CONFIG.SYS) should be set to at least 30. Also, your DOS environment should be set to at least 1K bytes. This is done using a line such as the following in CONFIG.SYS:

```
SHELL=C:\DOS\COMMAND.COM /P /E:1024
```

## Installation

To install WinQVT/Net, perform the following steps:

1. Create a directory for WinQVT/Net on your hard drive (e.g., WNQVTNET).
2. Copy all files except VT220.FON and PKTINT.COM to that directory.
3. Copy the file VT220.FON to the \WINDOWS\SYSTEM directory.
4. Copy PKTINT.COM to your root directory, or to the same directory in which your packet driver is located. This is the TSR program which interfaces between WinQVT/Net and the packet driver.
5. Modify your AUTOEXEC.BAT. Include lines that will load the packet driver and the protected-mode interface module (PKTINT.COM) at boot time, in that order.

## The Clarkson Packet Drivers

WinQVT/Net does not contain built-in support for any Ethernet adapters. Instead, it relies on an external driver from the Clarkson Packet Driver library, or any packet driver which adheres to the FTP Software Packet Driver Specification. Before you can run WinQVT/Net, you will have to install the correct packet driver for your system.

If you don't have a packet driver for your Ethernet card, first check with the manufacturer. They may be able to provide one for you free of charge. If you would like a copy of the entire Clarkson library, it is available as a free download from many bulletin board systems (e.g., Channel One BBS, (617) 354-8873) and anonymous FTP archive sites (e.g., Simtel-20). See the file HOWTOGET.IT for a full discussion on where the Clarkson Packet Drivers can be obtained.

Since the packet drivers are TSR's, running in real mode, they cannot communicate directly with WinQVT/Net, which is executing in protected mode under Windows 3.0.

In order to effect this communication, a small interface program is provided.

This program, PKTINT.COM, should be installed immediately following the packet driver. It has no command-line arguments.

**Note:** *PKTINT.COM pre-empts software interrupt 80h for its own use. This means that you cannot use this interrupt for your packet driver!*

### Documentation

This file is one of three sources of information on how to set up and use WinQVT/Net. The other two are the RELNOTES.WRI file, which contains a list of recent changes and enhancements, and the QVT\_TCP.RC file, which includes capsule descriptions of each of WinQVT/Net's setup parameters. We recommend that you print out and read both of those files, in addition to this file, before you attempt to run WinQVT/Net.

A full 50+ page user manual is provided to registered users of WinQVT/Net.

### Terminology

WinQVT/Net has a three-level configuration structure that should be understood before you try to use the program. The three levels are:

- \* host
- \* configuration
- \* session

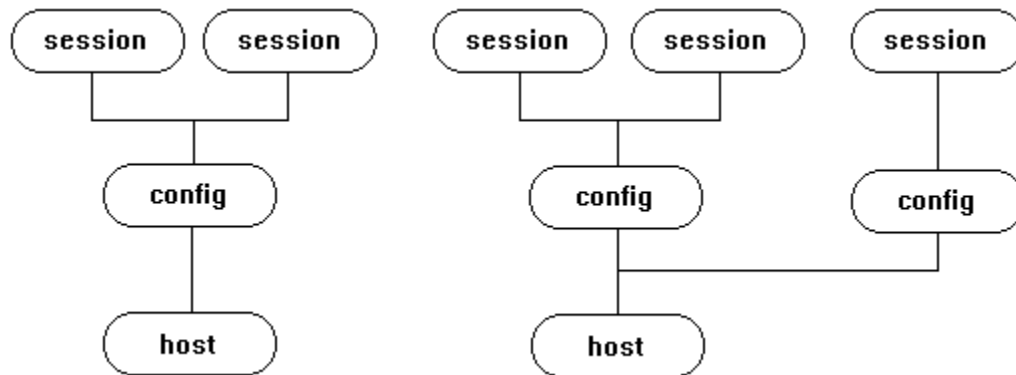
A 'host' is the node name of a remote system on the TCP/IP network; each host is given a name by its own system manager.

A 'configuration' is a WinQVT/Net term which relates a host on the network with a set of WinQVT/Net setup parameters. Like hosts, configurations also have names, except that they are names which you create yourself. Each configuration must be associated with a host, and there can be more than one configuration for any given host. Each configuration begins with a 'name=' statement in the QVT\_TCP.RC file; make sure that all of your configuration names are unique!

A 'session', unlike a host or a configuration, is purely a run-time entity. A session is created when you select a configuration and initiate a network connection to the host named in that configuration. Under WinQVT/Net, each session is contained in its own window.

Since a given configuration may be used to start more than one session, there must be a method for distinguishing between sessions. This means is provided in the form of the 'session number'. The number for each session is displayed in angle brackets as part of the window title.

A diagram of a typical WinQVT/Net runtime environment would look something like this:



This diagram shows five runtime sessions. The first two are different instances of the same configuration, which in turn relates to a host. The next two sessions also employ the same configuration, which is however associated with a different host from the first. The last session uses a third configuration, this one associated with the same host as sessions three and four. Thus we have five sessions, three configurations, and two hosts.

You may ask, why should I have more than one configuration for a host? The answer is simple: while it is often desirable to have multiple sessions on a single host, distinguishing between them easily can be a problem. The solution is to use different colors in the various configurations.

### The QVT\_TCP.RC File

WinQVT/Net reads its setup information from a file named 'QVT\_TCP.RC'.

The construction of a valid QVT\_TCP.RC file is critical to the proper functioning of WinQVT/Net. See the sample file for an explanation of the required setup parameters, as well as the optional ones that you can use to customize your environment.

The QVT\_TCP.RC file is structured in three sections.

First is the 'global' section. This contains master setup information which defines your basic WinQVT/Net environment. The settings in this section will apply to all of the sessions that you initiate at runtime.

Next is the 'default configuration' section. This is a configuration entry which is not related to any particular host, but which instead is used as a template for setting up your actual host configurations.

Lastly is the 'user configuration' section. Here is where you will place the actual configuration entries which will allow you to initiate sessions with hosts on the network. The present version of WinQVT/Net allows you to place up to 20 configurations into the QVT\_TCP.RC file. The 'default' configuration does not count against this total.

### **Warning!**

*Any optional setup parameters to which you do not wish to assign a value MUST be commented out! This is done by placing a '#' character at the beginning of the line. Do not leave a setup directive with nothing to the right of the equal sign, as this will almost certainly cause WinQVT/Net to abort at startup with a 'Network Initialization Error'.*

## Getting Started Quickly

A sample QVT\_TCP.RC file is provided for your use.

*We recommend that you print out and read the sample QVT\_TCP.RC file. This file contains useful information on each of the various setup parameters.*

As delivered, the sample QVT\_TCP.RC is nearly complete, but it is missing some vital information that you will have to add in order to begin using WinQVT/Net.

First, in the 'global' section, you will have to insert a value for the 'packet\_vector' parameter. This should be the same number that you use as the first argument when loading the packet driver, except that the leading '0x' is dropped.

Also in the global section, you must add a value for the 'pc\_ip' parameter. This will be the IP address of your PC; it can be obtained from your system manager or network manager. If your network supports the Reverse ARP protocol, you can use the keyword 'RARP' as the argument to 'pc\_ip', and WinQVT/Net will employ Reverse ARP to determine the actual IP address to use.

Second, go to the last section, and insert values for 'name=', 'host=', and 'host\_ip='. These will be the configuration name, host name, and host IP address, respectively. The configuration name can be anything that is meaningful to you as an identifier. For 'host=', you should enter the full name of the target machine as it is known on the network. If the host name contains periods, it should be enclosed in double quotes ("").

Note the use here of the 'same\_as' directive; what this means is that you want WinQVT/Net to use the values from the 'default' configuration for all the rest of the setup parameters.

If you have a nameserver on your network, you can omit the 'host\_ip' directive. However, you must add a configuration entry for the nameserver machine itself. See the section below on 'Nameservers and Gateways' for more information. Make sure that you comment out the unused 'host\_ip=' directive!

You can define additional configurations simply by creating more 'name=' sections following the first one. The reason for two different directives - 'name' and 'host' - is to support the definition of different configurations on the same host. For example, you may want one session for editing and one session for compiling and testing, both on the same host.

**NOTE:** do not add 'host=' or 'host\_ip=' directives to the 'name=default' section. This section of the setup file is strictly used as a template to make it easier to set up other sessions without a lot of repetition. Your first configuration should have its own 'name=' directive at the beginning, followed by 'host=', 'host\_ip=', and so on.

The QVT\_TCP.RC file should be kept in the same directory as the executable file WNQVTNET.EXE.

## Starting WinQVT/Net

In order to run WinQVT/Net, you must have started both the packet driver and the interface program PKTINT.COM before starting Windows. If you have not done so, and attempt to run WinQVT/Net, you will crash Windows! We recommend that you include the appropriate lines in your AUTOEXEC.BAT to load the packet driver and the PD interface module at system startup.

Once you have gotten into the Windows 3.x environment, WinQVT/Net is started in the normal manner, by creating a program icon using the 'New' option on the Program Manager menu. Start the program as usual by double-clicking on the icon.

The first window opened by WinQVT/Net will be a small 12-line 'console' window. It is from the menu on this window that all sessions are launched. To begin a virtual terminal session, select 'Telnet' from the 'Services' menu; a list box containing a list of all of the configurations that you have defined in your QVT\_TCP.RC file will be displayed. You should select the one you want to start with, then click on the 'Ok' button. You can also type the name or address of the system directly into the edit field which is located above the list box.

WinQVT/Net will then connect to the selected host and open a standard 80x24 window for the first session. The window title bar will contain 1) the name of the configuration; and 2) the session number (inside angle brackets).

## Opening a New Session

You can open new sessions by returning to the console window and using the 'Services' menu again. This will bring up the same list of configurations that was presented previously. As before, simply select the configuration that you want and click on 'Ok' to start the new session.

Note that there is nothing preventing you from starting another session using the same configuration as your first session. Should you do this, you can still distinguish between the first and second session by referring to the session number, which is displayed in the window title bar.

## Cycling Between Sessions

If you have a mouse, you can activate a session by moving the mouse cursor to any part of that session's window, then clicking the left mouse button once.

Using the keyboard, you can move from the current session to the next by pressing <Alt-N>. This will cause the next session in WinQVT/Net's list to become the current session. The screen image and all operational characteristics of that session will be restored (including the state of the CapsLock key).

If you press <Alt-N> while currently working with the last session in the list, WinQVT/Net will 'wrap around' to the first session.

Also with the keyboard, you can jump directly to a specific session if you know the session number. This is done by pressing the <Alt> key together with the digit key

that corresponds to the session number. This method will work only for sessions numbered zero through nine.

Lastly, you can use the 'Session' menuitem (Console window) to select a session using the keyboard or mouse. Note that this menuitem will not be enabled unless there are at least two sessions running.

Standard Windows methods for switching the foreground window will also work, such as pressing <Alt-Tab> or <Alt-Esc>.

### Changing the Terminal Setup

The 'Setup' menu contains items that you can use to change a session's operating characteristics 'on the fly'. The first item, 'Terminal', provides a dialog box that allows you to change values relating to the keyboard and display.

The 'Colors' dialog allows you to select new foreground and/or background colors for a session.

The 'Font' and 'Window' menuitems allow you to change the font size and window size, respectively.

Note that, although you can use these dialogs to change the behavior of a running session, you cannot save any of these changes. To make a permanent change in your setup values, you must edit the QVT\_TCP.RC file.

### FTP

WinQVT/Net allows you to have one FTP session in addition to your terminal sessions. To start an FTP session, go to the Console window and select 'FTP' from the **Services** menu. This will bring up a list box containing the names of the hosts which are defined in your QVT\_TCP.RC file. Note that this is a list of hosts, not a list of configurations; if you have used the same host more than once, it will appear only once on this list.

Now, use the mouse to select the host that you want, then click on the 'Ok' button. A new window will be opened for the FTP session, and an FTP login prompt will be displayed. You may now proceed with your FTP session.

Note that there is an input field situated above the list of hosts. You can use this field to type in the name of the host you want; if you have a nameserver on your network, you can connect to hosts which are not listed in QVT\_TCP.RC (as long as the nameserver itself is defined in QVT\_TCP.RC). Also, by leaving the input field blank, and by not selecting a host from the list, you can open an FTP window without having to establish a session on any of the listed hosts. You can then use the 'open' command from within FTP to begin a session.

When you are ready to close the FTP session, enter the command 'bye' or 'quit' at the 'ftp>' prompt. This will terminate the FTP connection and close the window. You can terminate an FTP session without closing the window by using the 'close' command.



Note that you need not log out of FTP in order to switch back to one of your terminal sessions. Any open terminal sessions remain available during FTP.

### FTP Server

WinQVT/Net provides a background FTP server facility. This feature allows you to access the PC remotely using FTP.

There are several QVT\_TCP.RC configuration directives which are associated with the FTP server. These are:

- passfile**        the file which contains the list of authorized users and their passwords
- ftp\_logfile**    the file to which FTP login and logout messages will be written
- anonftp\_dir**    the directory to which 'anonymous' users will be connected. These users will not be able to log to any other directories, except for subdirectories within the specified directory.

A small utility program, PASSWD.EXE, is provided for the maintenance of the password file. It uses a simple TTY interface which should be self-explanatory.

NOTE: if you intend to use the password file to provide security on your PC, make sure you include the appropriate 'passfile=' directive in your QVT\_TCP.RC. Otherwise, all users will be allowed into your system with full privileges!

### News Reader

If there is an NNTP server running on your network, you can use WinQVT/Net to read Usenet articles directly from the server. There are two setup steps you must perform in order to enable the news reading facility:

1. Find the line 'nntp\_host=' in QVT\_TCP.RC, un-comment it (delete the leading '#'), and type in the name of the host machine on which the NNTP server is located. If the host name contains periods, enclose it in double quotes. If you do not have a nameserver on your network, you will have to add a configuration entry (name=) to QVT\_TCP.RC for this machine, including the IP address of the machine.
2. Using the Windows Notepad, create a text file named NEWS.RC in the same directory with WNQVTNET.EXE and QVT\_TCP.RC. The contents of NEWS.RC should be a list of the newsgroups that you want to read, one per line. Do not append colons or any other punctuation characters to the newsgroup names!
3. Contact your system administrator, and have your PC added to the 'nntp\_access' list.

If these steps are performed correctly prior to starting WinQVT/Net, you should be able to use the news reader at any time during your WinQVT/Net session.

See the accompanying file, RELNOTES.WRI, for more information on using the news reader.

## Mail

If there is a POP3 server available on your network, you can use WinQVT/Net to receive, and possibly send, electronic mail from your PC. You will be able to send mail only if your POP3 server supports the XTND XMIT command, as do the POP3 servers from Berkeley (version 1.83 and above).

You do not need any setup directive in QVT\_TCP.RC to use mail. However, if you will almost always be connecting to a single POP3 server, you can include the lines 'pop\_host=' and 'pop\_user=' in the global section of QVT\_TCP.RC; this will cause a logon sequence to be initiated on the specified machine as soon as the mail window comes up. If the host name contains periods, it must be enclosed in double quotes.

Note that if you use the 'pop\_host=' directive, the specified machine should have a configuration entry in the user section of QVT\_TCP.RC. If the POP3 host is not defined in QVT\_TCP.RC, you must have a nameserver available on your network (and defined in QVT\_TCP.RC).

You can also use the 'pop\_forecolor=' and 'pop\_backcolor' directives to customize the mail window's screen colors.

## Network printing with lpr

WinQVT/Net includes a module - the 'lpr' service - that allows you to submit files which reside on your PC for printing on a remote printer (i.e., a printer which is attached to a host elsewhere on the network). The 'lpr' module is fairly simply to use. However, it does require some setup in QVT\_TCP.RC (in the global section).

First, you must assign a value for the 'my\_name=' directive. This should be the network node name of your PC, as given to you by your network administrator.

Second, you must assign a value to the 'lpr\_username' directive. This should be your login name on the machine that you usually use for printing.

The lpr client won't run unless these directives have been set up correctly.

There are two optional setup directives that you can use to make lpr a little easier to use (by removing two selection steps). They are:

lpr\_hostname=<default lpr host>

and

lpr\_qname=<default print queue>

The 'lpr\_hostname' is the machine that you want to use as your default system for printing. If the name includes periods, it must be enclosed in double quotes.

In addition to local setup, you must ask your system administrator to add your PC to the list of hosts which are allowed to communicate with the line printer daemon, 'lpd'. If your PC is not on this list, the daemon will reject your request to establish a TCP connection. There may be separate lists for each host, so you should make sure to contact the administrator of each system that you want to use for printing.

To use lpr, you start by selecting 'lpr' from the **Services** menu. This brings up a dialog box, which contains the following elements:

- \* A list of files in the current directory.
- \* An input field where a filename or file selection mask may be entered.
- \* An input field for entering the print queue name. The default queue, as specified by the 'lpr\_qname' directive, will already be present in this field.
- \* A list box containing a list of all the hosts which are defined in your QVT\_TCP.RC file. If you have included a 'lpr\_hostname=' directive, that host will already be selected when the lpr window is initially displayed.

To print a file, you begin by selecting or entering the name of the file that you want to print. Then, make sure that the other fields contain the appropriate values. Every field must contain a value. When all fields are properly filled in, click on the 'Ok' button to print the file. The dialog will then suspend while the file is transmitted to the designated host for printing, after which the dialog will resume its prior state. You can then print another file, or click on 'Close' to terminate lpr.

### Gateways and Nameservers

Gateways and nameservers provide useful services, but you must provide some setup information in order for WinQVT/Net to make use of those services.

If there is a gateway on your network, and you wish to connect to systems which are on the 'other side' of the gateway, you must include a configuration for the gateway in QVT\_TCP.RC. To indicate that the configuration refers to a gateway, include the line 'gateway=<n>', where <n> is a positive integer. The first gateway should be given the number '1', the second, '2', and so on.

(Note: by 'configuration' is meant a series of entries in the 'user' section of QVT\_TCP.RC, beginning with 'name=', and additionally including at least the entries for 'host=' and 'host\_ip=').

If there is a nameserver on your network, you should include a configuration for that machine in QVT\_TCP.RC. To indicate that the configuration refers to a nameserver, include the line 'nameserver=<n>', where <n> is a positive integer. As with gateways, the first nameserver should be given the number '1', and second, '2', and so on. Nameservers will be queried according to this sequence; i.e., nameserver '1' will be queried first, nameserver '2', second, etc. Also, make sure that you supply an IP address for each nameserver!



## Keyboard Mapping

As a VT220 emulator, WinQVT/Net employs a keyboard mapping that is closely tied to the DEC VT keyboard:

<b>DEC</b>	<b>IBM</b>
PF1	NumLock
PF2	'/' on keypad
PF3	'*' on keypad
PF4	'-' on keypad
- (minus)	<Ctrl> + '+' on keypad
, (comma)	'+' (on keypad)
Enter	Enter (on keypad)
HoldScreen	Pause
PrintScreen	<Alt-F2>
Data/Talk	Not Supported
F6 - F10	F6 - F10
F11 - F20	Shift-F1 - F10
Help	F11
Do	F12

The numeric keypad is forced into 'NumLock' mode by WinQVT/Net. As a result, only the cursor keys on the separate inverted-T keypad will work as cursor-control keys.

The following keys are located on the separate 'Editing' keypad. Each key is mapped to its physical equivalent on the DEC keyboard:

Find	Insert
InsertHere	Home
Remove	PageUp
Select	Delete
PrevScreen	End
NextScreen	PageDown

The mapping of these keys may be changed to editing the 'keypad=' line in QVT\_TCP.RC to read 'keypad=IBM'. This will create a 'logical' instead of a 'physical' mapping.

The DEC user-defined keys (DECUDK) are accessed by pressing <Ctrl-F6> through <Ctrl-F10> for the first five, and <Ctrl-Shift-F1> through <Ctrl-Shift-F10> for the last ten.

### A Note on Fonts

WinQVT/Net allows you to use one of three distinct fonts: DEC, IBM, and ANSI. The 'DEC' font is an exact emulation of the DEC Multinational Character Set, as found in the VT2xx terminals.

The DEC font included in this package (VT220.FON) is designed for use with VGA display adapters. It will work on displays whose resolution exceeds the VGA-standard 640x480, but the character size will be somewhat smaller than the optimum for those displays. Registered users will receive a complete set of fonts for all PC display systems, including EGA (640x350), Hercules (720x350), Super-VGA (800x600), and 8514/A (1024x768).

The 'IBM' and 'ANSI' fonts are simply the 'OEM' and 'ANSI' fonts which are supplied with Windows. They should be used only in situations where exact DEC emulation is not required. Note that the 132-column and 'small font' modes are available only when the 'DEC' character set is selected.

### Registration Information

WinQVT/Net is a shareware product. Should you find it satisfactory and suitable for your needs, we ask that you remit your registration fee to:

QPC Software  
P.O. Box 226  
Penfield, NY 14526  
(USA)

For individual users (i.e., those paying out of personal funds), the registration fee is \$10; for institutional (e.g., corporation, university, etc.) customers, registration is \$40. For shipment outside of North America, please add \$5.

Institutional customers: purchase orders are welcome!

Registered users receive a printed user manual, a complete set of fonts, and free access to upgrades for a period of one year.

If you upload this program to another BBS, please do so in .ZIP or .ARC format (whichever is supported), and be sure to include ALL of the original files that are in this package, without modification.

### Other QPC Products

QPC Software offers a complete line of DEC emulation products for most major personal computing environments, including MS-DOS, Microsoft Windows, Apple Macintosh, and OS/2. All are of high quality and provide exceptional value. Please write to us for a complete price list, including information on discounts and site licenses.

### Contacting QPC

You can contact QPC electronically via Internet mail. Our email address is:

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### Acknowledgement

WinQVT/Net employs TCP/IP libraries which have been placed in the public domain by the National Center for Supercomputing Applications.

Thank you for your interest in WinQVT/Net!!