WinQVT/Net

TCP/IP Services for Microsoft Windows
Version 3.96

QPC Software is pleased to announce the release of version 3.96 of WinQVT/Net, a suite of TCP/IP client and server applications for Windows 3.1. This package contains the 'packet-driver' version of WinQVT/Net, which includes a proprietary TCP/IP transport. Other versions of WinQVT/Net will run over a third-party Windows Sockets transport, or under the Windows NT operating system.

Services provided include:

Network Virtual Terminal

WinQVT/Net will support up to 15 simultaneous virtual terminal (telnet or rlogin) sessions. 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, multi-national characters, and double-size characters.

WinQVT/Net has built-in support for the industry-standard 101-key PC keyboard, and for the DEC LK250 keyboard. Non-standard keyboards, such as those found on many laptop PC's, can also be used, with proper configuration.

FTP

With WinQVT/Net's FTP client application, you can transfer files to and from your PC. The FTP application runs in its own window, concurrently with any terminal sessions that may be running. Commands can be entered from the keyboard in the traditional manner, or by using the mouse.

Electronic Mail

Electronic mail is supported in the form of a POP3 client module, which allows you to send and receive Internet mail from the PC keyboard. For installations whose POP3 servers don't support the sending of mail, WinQVT/Net allows mail to be sent using the SMTP protocol.

Usenet News

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

Network Printing

Using WinQVT/Net's `lpr` module, you can print PC files (text and binary) on printers and plotters which are attached to remote network hosts.

Servers

WinQVT/Net includes two server applications, support FTP and `rcp`. The FTP server allows remote users to log on to your PC and transfer files, using the FTP protocol. The `rcp` server allows files to be copied to and from the PC from the remote user's Unix command line.

Packing List

This shareware distribution for Windows 3.1 contains the following files which are active parts of the WinQVT/Net package:

WNQVTNET.EXE	The program executable
WNNETDLL.DLL	The TCP/IP transport library
DLLTASK.EXE	The DLL transport task driver
WNQVTNET.SYM	Symbol files for use by Dr. Watson
WNNETDLL.SYM	
QVTNET.INI	The main configuration file
PKTINT.COM	The protected-mode driver interface
VT220.FON	The DEC 'VT' fonts
WNQVTNET.HLP	The on-line Help file
WNSETUP.HLP	The setup Help file
PASSWD.EXE	FTP login security database maintenance
TNSTART.EXE	Remote application launcher
TERMCAP	A sample 'termcap' entry
VTFKEYS.TXT	A list of the DEC function key sequences
README.WRI	This file
FAQ.WRI	Frequently-asked questions & answers
RELNOTES.WRI	Notes on recent changes
SETUPS.TXT	Setup tips for heterogeneous environments

Documentation

This file is one of six sources of information on how to set up and use WinQVT/Net. The other five (all in this distribution) are:

* RELNOTES.WRI, which contains a list of recent changes and enhancements

* FAQ.WRI, a list of frequently-asked questions and answers

* SETUPS.TXT, a set of instructions on how to set up WinQVT/Net in various heterogeneous environments.

* The sample QVTNET.INI file, which includes capsule descriptions of each of WinQVT/Net's setup parameters

* The on-line help file WNQVTNET.HLP, which can be accessed from the WinQVT/Net Console, or from any of the interactive applications.

We recommend that you print out and read RELNOTES.WRI, FAQ.WRI, SETUPS.TXT, and QVTNET.INI, in addition to this file, before you attempt to run WinQVT/Net.

A full 70+ page user manual is provided to registered users of WinQVT/Net.

Hardware and Software Requirements

WinQVT/Net 3.96 requires a machine with:

* A 386 processor (or higher)
* A minimum of 4MB of memory
* An Ethernet card
* Windows 3.1 or Windows for Workgroups 3.1

Environments in which WinQVT/Net will not run

* Windows 3.0
* Machines with 80286 processors

Environments in which a different version of WinQVT/Net is needed

* Windows for Workgroups 3.11

If you are running Windows for Workgroups 3.11 (or higher), you cannot use this version of WinQVT/Net. Instead, you should install Microsoft TCP/IP, and use the Windows Sockets version of WinQVT/Net.

* Windows Sockets

If you have a Windows Sockets transport installed on your PC, you cannot use this version of WinQVT/Net. Instead, you should use the Windows Sockets version, which is distributed in the archive 'qvtws396.zip'.

* Windows NT

If you are running Windows NT, you should use the 32-bit version of WinQVT/Net, which is distributed in the archive 'qvtnt396.zip'.

Packet Driver Interface

WinQVT/Net does not have built-in support for any particular network hardware. Instead, it uses the software interface defined by FTP Software's Packet Driver Specification. Therefore, WinQVT/Net can operate over any hardware for which a PDS-compatible packet driver is available (with some exceptions).

Many manufacturers of Ethernet cards and adapters bundle packet drivers in with their hardware. In addition, public-domain packet drivers are available for many Ethernet (and non-Ethernet) cards. For example, see the Crynwr Packet Driver Library, which includes dozens of Ethernet packet drivers, as well as drivers for Token Ring, SLIP, and other non-Ethernet hardware platforms. You can get the Crynwr packet driver library via anonymous FTP from sun.soe.clarkson.edu.

WinQVT/Net will not run over LocalTalk cards. Nor will it run over Token Ring cards, except when using the Crynwr packet driver `IBMTOKEN.COM`, which presents an Ethernet-like interface to the software.

Windows for Workgroups and DIS_PKT.DOS

If you plan to run WinQVT/Net under Windows for Workgroups 3.1 (which uses an NDIS driver) you can do so by using the public-domain device driver `DIS_PKT.DOS` instead of a packet driver. `DIS_PKT.DOS` converts packet-driver calls to NDIS calls.

`DIS_PKT.DOS` is an unsupported product of FTP Software, Inc. (subsequently enhanced by Joe Doupnik, Dan Lanciani, and others), which has been placed in the public domain, and can be obtained as a free download from many BBS systems and FTP sites. Most `DIS_PKT.DOS` packages include information on how to install the driver in your system. The installation involves minor changes to `CONFIG.SYS` and `PROTOCOL.INI`. For more information, see the file `SETUPS.TXT` (included in this archive).

You can get `DIS_PKT.DOS`, as well as other network-related TSR's, via anonymous FTP from biochemistry.cwru.edu. Look in directory /pub/qvtnet.

Note: Though `DIS_PKT.DOS` allows WinQVT/Net to use the NDIS driver, there may be some concurrency problems. WinQVT/Net will tend to 'take over' the NDIS driver, and if this happens you may lose WfWG functionality as long as WinQVT/Net is active. A solution would be to install Microsoft's TCP/IP, and use the Windows Sockets version of WinQVT/Net.

Novell NetWare and ODIPKT

If you are running Novell Netware, you already have an Ethernet driver installed on your PC, probably an ODI driver. In this case, you will not use a packet driver for WinQVT/Net. Instead, you will use the TSR `ODIPKT.COM`, which allows packet-driver clients (like WinQVT/Net) to run over an ODI driver. For more information, see the file `SETUPS.TXT` (included in this archive).

`ODIPKT.COM` is a product of Dan Lanciani, and is available as a free download from many sources (BBS's and FTP sites), including biochemistry.cwru.edu.

Installing WinQVT/Net

WinQVT/Net must be installed from the DOS prompt, with Windows not running. This is because changes must be made to the runtime environment (i.e., AUTOEXEC.BAT) before WinQVT/Net can operate.

1. Create a 'home' directory for WinQVT/Net

The very first thing you should do is create a 'home' directory for WinQVT/Net on your hard drive:

```
C>mkdir qvtnet
```

Next, make sure that all files are in their proper locations. Basically everything should go into the WinQVT/Net 'home' directory except for VT220.FON, which should be moved to \WINDOWS\SYSTEM:

```
C>move vt220.fon \windows\system
```

2. Modify your AUTOEXEC.BAT.

You must add statements to your AUTOEXEC.BAT that will load the packet driver and the protected-mode interface module (PKTINT.COM) at boot time (usually in that order). These changes to AUTOEXEC.BAT will look something like this:

```
...
<load packet driver>
c:\qvtnet\pktint.com
...
```

If you are using a packet driver from the Crynwr library, make sure to include the '-w' command-line switch. This will prevent the driver from being swapped out by Windows, which, should it occur, will result in all of your WinQVT/Net sessions being dropped.

Note: If you are trying to run the packet-driver version of WinQVT/Net on a machine that is already running other network software, we recommend that you study the file SETUPS.TXT for information on running WinQVT/Net in various heterogeneous environments (e.g., Novell Netware).

3. Edit `QVTNET.INI`.

WinQVT/Net cannot run unless certain items are present in `QVTNET.INI`:

For the packet driver version, these items are 'name', 'ip', and 'packet_vector'. Entries should be made directly in `QVTNET.INI`, using any standard ASCII text editor, such as the MS-DOS editor. As shipped, `QVTNET.INI` has no default values for 'name' or 'ip'; a default is provided for 'packet_vector', but it may not be valid. Note that, even though the Packet Driver Specification allows vectors from 0x60 through 0x80 to be used by the packet driver, WinQVT/Net preempts vector 0x80, so you cannot use that value as your packet vector. The packet vector should be entered in C-style format, with a leading '0x'.

Here is what a typical set of entries would look like:

```
[net]
name=<your PC's node name>
ip=<your PC's IP address>
packet_vector=<packet driver interrupt vector>
...
```

In addition to these three items, you should determine the correct subnet mask value for your installation, and type that into `QVTNET.INI` as well:

```
[net]
...
netmask=<your subnet mask>
...
```

A default value is already provided, but it may not be valid in your environment. If you're not sure, ask your network administrator.

If you plan to use a domain nameserver and/or router, entries should be placed in `QVTNET.INI` to represent these as well:

```
[net]
...
router=<machine name of router or gateway>
...
[domain]
domain=<your default domain>
nameserver=<machine name of nameserver>
```

Warning: Nameservers and routers <u>must</u> also be listed in QVTHOST.RC (see next section).

4. Prepare a `QVTHOST.RC` File

WinQVT/Net needs to know which hosts it will be used to connect to, and optionally the IP addresses of those hosts. This information is kept in a text file named `QVTHOST.RC`. Each entry in `QVTHOST.RC` is a single line of text, with the following format:

```
<IP Address> <host name> [<alias>]
```

We recommend that you start by creating entries for only the most frequently-used hosts. You can always add more later. Also, if your are using a router and/or nameserver, there must be entries for these machines in `QVTHOST.RC`.

5. Reboot the PC

Rebooting now will cause the edited `AUTOEXEC.BAT` to run, and the packet-driver and `PKTINT.COM` will be installed.

If you are trying to run WinQVT/Net for the first time, we recommend that you temporarily disable any other network software that may be running on your machine. WinQVT/Net can be made to cooperate with most other network software, but it is best to leave these integration tasks for later, after you have established that WinQVT/Net is running correctly in a 'clean' environment.

6. Start Windows

If your `AUTOEXEC.BAT` doesn't automatically start Windows, you should do so now.

7. Create a Program Manager icon

Once Windows is up and running, you should choose or create a Program Group for the WinQVT/Net icon. Having done this, you should now use the Program Manager 'New' menuitem to create an icon for WinQVT/Net.

The two critical fields that you must fill in are 'command line' and 'working directory'. The 'command line' field should be filled in with the complete pathname of the WinQVT/Net executable:

```
c:\qvtnet\wnqvtnet.exe
```

The 'working directory' field should be filled in with the name of the WinQVT/Net 'home' directory:

```
c:\qvtnet
```

Note: If the 'Working Directory' field is left blank, it's possible that WinQVT/Net will not be able to find its support files, in which case it probably won't run.

8. Start WinQVT/Net

In order to run WinQVT/Net, you must have started both the packet driver and the interface program `PKTINT.COM` <u>before</u> starting Windows. If you have not done so, and attempt to run WinQVT/Net, you will probably crash your system! We recommend that you include the appropriate lines in your `AUTOEXEC.BAT` to load the packet driver and the PD interface module (PKTINT) at system startup. This procedure is described in step 1 above.

If you have edited your `QVTNET.INI` file as described in step 2, and typed in a PC node name and address, WinQVT/Net will start by presenting a small 'Console' window in the upper-right corner of the screen. All of the various application modules are started from the console.

If you have left your `QVTNET.INI` in its initial (incomplete) state, the console window will not come up. Instead, you will see a 'configuration' dialog box, which will allow you to enter values for the three critical items: node name, IP address, and packet vector. You should now enter your values into these fields, then press 'Ok'. If you cancel, or fail to provide all three values, WinQVT/Net will terminate gracefully. If all three are present and valid, the console window will be displayed, and you can proceed.

WinQVT/Net Support Files

WinQVT/Net uses an assortment of external configuration files:

    QVTNET.INI   Main configuration for all applications
    QVTNET.RC   Alternate 'Terminal' configurations
    QVTALIAS.RC   List of aliases for mail recipients
    QVTMAIL.SIG   Default 'signature' file for mail messages
    NEWS.RC   List of subscribed Usenet newsgroups
    QVTNEWS.KIL   Killfile for news reader
    QVTNEWS.SIG   Default 'signature' for news articles
    QVTNET.ACL   Access control lists for FTP and rcp servers
    FTPSERV.HLO   Welcome message for FTP server

The QVTNET.INI file is represented by a sample file in this distribution. The others contain local data which will be unique to each installation. With the exception of NEWS.RC, which is created and maintained by the News Reader application, all of these files will be created by you, using an ASCII text editor.

The main database file is QVTHOST.RC, which lists the names and addresses of hosts on your network. Other database files of slightly lesser importance are QVTALIAS.RC (list of aliases for mail recipients), NEWS.RC (list of subscribed Usenet newsgroups), and QVTNET.ACL (access control lists for FTP and rcp servers).

All configuration and database files should reside in the same directory. This should be the 'Working Directory', as specified by the Program Manager 'Properties' dialog. Exceptions to this will be discussed below, in the section on 'Sharing WinQVT/Net'.

QVTNET.INI

WinQVT/Net reads its basic setup information from the QVTNET.INI file. This is a standard ASCII text file that can be read and modified using any ASCII text editor.

The construction of a valid QVTNET.INI 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 most critical lines in QVTNET.INI are 'name=' (for all versions), plus 'ip=' and 'packet_vector=' for the packet-driver version. All of these statements are found in the [net] section of QVTNET.INI.

Here is an example:

```
[net]
name=mypc
ip=28.1.13.75
;
; packet_vector is required by the PD version only!
:
packet_vector=0x60
router=router1
...
```

We strongly recommend that you place these key values in QVTNET.INI using a text editor <u>before</u> attempting to run WinQVT/Net! You can, however, modify many of these values interactively during a WinQVT/Net session, by using the various dialogs presented on the Console 'Setup' menu.

Note: in many network environments, the assignment of node names and IP addresses is reserved to the network administrator. We therefore suggest that you consult with your local network authorities before attempting to run WinQVT/Net. The consequences of an addressing error of some kind, such as address duplication, can be very unpleasant!

Optional Startup Protocols

WinQVT/Net also supports the RARP and BOOTP protocols, which will change the appearance of this section of QVTNET.INI.

To use RARP (Reverse Address Resolution Protocol):

```
[net]
name=<your PC's node name>
ip=RARP
...
```

To use BOOTP (Bootstrap Protocol)

```
[net]
name=BOOT
ip=BOOT
...
```

The next two sections of QVTNET.INI, [console] and [localio], contain statements which refer to the WinQVT/Net 'Console' window, and to the locally-connected I/O devices (keyboard and printer).

The remaining sections are for each of the main application modules, including [terminal], [ftp], [nntp], [pop], [lpr], and [servers]. These sections provide critical information to the applications. For example, the [nntp] and [pop] sections contain a 'host=' directive, which specifies the name of the host machine on which the news server and mail server are running. Much of the information in `QVTNET.INI` can be entered from within WinQVT/Net, using the various dialogs which are accessed from the 'Setup' menu.

For more detailed information on each of the `QVTNET.INI` directives, see the sample file included in this package. Each statement is accompanied by a brief description of its meaning and uses.

QVTHOST.RC

In addition to the general setup in `QVTNET.INI`, you will also need to create documentation for the hosts on your network that you intend to communicate with. This documentation will be placed in a file named `QVTHOST.RC`. This file is organized as a series of host entries, with one line per entry. Each line is structured as follows:

```
<IP address> <host name> [<alias> <alias> ... ]
```

This is basically the same format employed by the `hosts` file in a Unix environment.

Nameservers and Routers

<u>Nameservers</u>

If you plan on using a domain nameserver to acquire addresses for most of the machines that you will connect to, you do not need to list them in `QVTHOST.RC`. However, the nameserver itself <u>must</u> be listed! In addition, you must edit `QVTNET.INI`, and enter the name of the nameserver machine as the argument to the 'nameserver=' directive ([domain] section).

Even though the nameserver makes it unnecessary to list host addresses in `QVTHOST.RC`, it is still desirable to do so, since hosts listed there will be presented as 'selectable' hosts at various user-interface points in the operation of WinQVT/Net. To include a host in `QVTHOST.RC` without specifying an address, simply use all zeros for the address:

```
0.0.0.0 <host name>
```

WinQVT/Net will use domain nameserver queries to acquire the address for any machine whose address is given this way in `QVTHOST.RC`.

<u>Routers</u>

In order to access machines outside your local net, you will need the services of a router or gateway. Like nameservers, routers are documented in two locations: first, there must be a complete `QVTHOST.RC` entry for the router; second, the name of the router must be given as the argument to the 'router=' statement in `QVTNET.INI`.

QVTNET.RC

Setup instructions for a 'default' terminal configuration are contained in the [terminal] section of `QVTNET.INI.` You can, however, greatly increase the convenience of using the Terminal module by creating additional configurations. These will be placed in the file `QVTNET.RC.`

Each `QVTNET.RC` configuration entry consists of a number of lines of text. The first line must be structured as follows:

```
name=<configuration name>
```

Configuration names can include embedded spaces, as long as the entire name is enclosed in double quotes. For example,

```
name="White on Blue 24x80"
```

might refer to a configuration which uses white characters on a blue background, in a 24x80 window. Configuration names can be up to 80 characters long.

The remaining lines will be of the form `<item>=<value>`, where `<item>` is one of the configurable items listed in the [terminal] section of `QVTNET.INI`, and `<value>` is the value that should be assigned to that item in the current configuration. All of the items contained in the [terminal] section of `QVTNET.INI` can be used in `QVTNET.RC` as well.

There is one additional item that you can use in `QVTNET.RC` that is not found in `QVTNET.INI.` This is the 'host=' directive. By using this directive, you can associate a configuration with a host. The effect of this association is to reduce the number of mouse-clicks (or keystrokes) needed to start a terminal session. You won't have to select both a host and a configuration. Instead, just select the configuration, and the associated host will automatically be selected. Note that this is only a default; you can still select a different host for any particular session.

A configuration entry in `QVTNET.RC` does not have to include specifications for all of the items found in `QVTNET.INI.` The idea is to assign new values only when you want values different from those given in `QVTNET.INI.` In all other cases, the configuration will 'inherit' the values from `QVTNET.INI.` This feature allows you to quickly set up a series of configurations that are visually quite different from the default, without having to repeatedly set values which already have acceptable defaults.

QVTALIAS.RC

WinQVT/Net's email module will use this file as a list of aliases for mail recipients. When sending a mail message, you can select one of these aliases instead of the recipient's actual email address. In addition, the alias can be used to represent not just one person, but a list of people, all of whom will receive the message.

The format of `QVTALIAS.RC` entries is:

```
<alias>: <address>[,<address>,...]
```

The <alias> portion of the entry may contain blanks, but it <u>must</u> be terminated by a colon, followed by a single blank space. If multiple addresses are listed, they should be separated by commas, <u>without</u> blanks.

NEWS.RC

The `NEWS.RC` file contains the list of subscribed newsgroups. This information is used by the News Reader application. Each line of text in `NEWS.RC` is of this form:

<newsgroup name> [<number of last 'read' article>]

`NEWS.RC` is created and maintained by the News Reader.

QVTNET.ACL

WinQVT/Net's FTP and RCP servers allow remote users on the network to access your PC for the purpose of transferring files. The QVTNET.ACL file is used to <u>restrict</u> this access; it allows you to keep certain directories hidden from all but a few authorized users, or from all users. This ACL security is above and beyond the basic logon security, which is managed by the PASSWD.EXE utility.

Sharing WinQVT/Net

In order for WinQVT/Net to use the various configuration and support files, it must be able to find them on the disk. Normally, in a simple single-user installation, all of the support files will be placed in the same directory with the executable files. This directory - the <u>home</u> directory - will be specified as the 'Working Directory' when setting up the Program Manager icon for WinQVT/Net.

This may not be the optimum approach, however, if you want to share a single copy of WinQVT/Net among several users. You will be able share the executable, the on-line help file, and the hosts database file `QVTHOST.RC`. All of the other support files will have to be private to each user.

To share WinQVT/Net on a file server, you should first identify the directory which will contain the program executable files. This directory can also contain the master copy of `QVTHOST.RC`, and the on-line help file.

Each user's `AUTOEXEC.BAT` should contain 'set' statements that will point to this directory:

> set QVTHOST_DIR=<directory which contains QVTHOST.RC>
> set QVTHELP_DIR=<directory which contains WNQVTNET.HLP>

Each user should then create their own personal directory for storing private copies of the other support files. This directory that should be given as the 'Working Directory' in Program Manager (the 'New' or 'Properties' dialog). It will be treated by WinQVT/Net as the 'home' directory.

Terminal Application

To open a terminal (telnet/rlogin) session, simply press the 'Terminal' button, and wait for the 'Start Terminal Session' dialog to appear. All of the hostnames which are defined in `QVTHOST.RC` will be shown in the left-hand listbox. The right-hand listbox should contain the single entry, 'Default' (unless you have already created a `QVTNET.RC` file, with some additional configurations).

To start the session, select a host from the 'Hosts' list, and (optionally) a configuration from the 'Configurations' list, then press 'Ok'. WinQVT/Net will dismiss the dialog, and attempt to start a Telnet session on the selected host. As soon as a connection is made, a 24x80 Terminal window will be displayed, containing the remote system 'login' prompt. You can now proceed with your Telnet session.

Opening a New Session

New sessions can be started by returning to the console window and pressing the 'Terminal' button again. This will bring up the same dialog that was presented previously. As before, simply select the host/configuration that you want and click on 'Ok' to start the new session.

A tip: you can quickly 'hot-key' from a 'Terminal' session back to the Console window by pressing **<Alt-C>**.

Note that there is nothing preventing you from starting another session using the same host and/or 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.

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

Changing the Terminal Operating Characteristics

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 QVTNET.RC file (or use the Console's 'Configuration' dialog).

Fonts

WinQVT/Net's terminal module allows you to use one of five distinct fonts: DEC, IBM, ANSI, 'Terminal', and 'Custom'. The 'DEC' font is provided by QPC, and is an exact emulation of the DEC Multinational Character Set, as found in the VT2xx terminals. The next three are standard Windows fixed-pitch fonts, and are used as found in the Windows environment.

You can also use the 'Custom Font' menu option to select from among all of the fixed-pitch fonts in your Windows installation.

If you are running a host application that uses the DEC line-drawing characters, you must use WinQVT/Net's DEC font. Otherwise, the line-drawing characters will not appear.

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), and Super-VGA (800x600, 1024x768).

Keyboard Mapping

WinQVT/Net employs a keyboard mapping that is closely tied to the DEC LK201 keyboard:

DEC	IBM
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 QVTNET.INI 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.

WinQVT/Net also supports the DEC LK250 keyboard. If you are using an LK250, you should set 'keyboard=lk250' in the '[localio]' section of QVTNET.INI.

Key Redefinition

WinQVT/Net's terminal module allows you to arbitrarily redefine almost any key on the keyboard. The exceptions are the modifier keys: <Shift>, <Ctrl>, <Alt>, and <CapsLock>.

The key-redefinition capability is accessed through the 'Keymaps' menu option. Two separate dialogs are presented: one for the 'main' keyboard, and one for the smaller keypads which are located on the right-hand portion of the IBM 101-key keyboard.

To redefine a key, you should:

* Bring up the appropriate keymap (the one that contains the right key)
* Click on the button which represents the key that you want to redefine
* Type in the string that you want to be transmitted when that key is pressed.

Key-redefinition strings may be up to 80 characters in length (in total).

Each key can have up to four separate redefinitions:

* one for when the key is pressed in its unmodified, or 'base' state
* one for when the key is pressed together with the <Shift> key
* one for when the key is pressed together with the <Ctrl> key.
* one for when the key is pressed together with both <Shift> and <Ctrl>

These strings should be entered into to the input field as one continuous string, with each of the substrings separated by the '|' (pipe) character. For example:

```
test|TEST|Test|tEST
```

is a key-redefinition string containing four parts, one each for the base state, the shift state, the <Ctrl> state, and the <Ctrl+Shift> state. If you omit one or more of the four states, the default behavior for the key will be used (if one exists).

The caret ('^') character can be used to specify a control character; this notation for the first 32 control characters is supported by WinQVT/Net. For example, the <Esc> character (0x1b) could be notated as '^['.

Another, more versatile notation for non-printing characters is also available: this is the C-style 'backslash' notation. For example, '\033' could be used to represent the <Esc> character. If you use this type of notation, you must supply <u>exactly three</u> octal digits, including leading zeros if required.

Key redefinitions will be saved to disk after you exit from the keymap by pressing the 'OK' button.

FTP Client

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 press the 'FTP' button (or select 'FTP' from the Services menu). Once the FTP window has come up, you can use the 'Open' menuitem to begin an FTP session. The FTP 'login' dialog box contains a drop-down list box showing the names of the hosts which are defined in your `QVTHOST.RC` file, and also provides input fields for your login name and password. All three must be filled in before you can begin the FTP session.

If you cancel the dialog, the login window will disappear, but the FTP window will remain, in a 'closed' state.

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 <u>without</u> closing the window by using the 'close' command. All of these commands are also available from the menu bar.

Note that FTP runs concurrently with any terminal sessions that you may have started. You can switch back to one of them at any time.

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 [nntp] section in `QVTNET.INI`, find the 'host=' entry, and type in the name of the host machine on which the NNTP server is running. If you do not have a nameserver on your network, you will have to create an entry in `QVTHOST.RC` for this machine, including the IP address of the machine. Alternatively, you can provide the IP address of the NNTP host directly as the value of the 'host=' configuration entry.

You should also fill in values for the three 'posthdr' statements:

> posthdr_from=<your name and email address>
> posthdr_org=<your organizational affiliation>
> posthdr_distrib=<default distribution for your articles>

This step can be performed either by editing `QVTNET.INI` directly, or by invoking the 'News' configuration dialog from the Console menu. If there is no NNTP host defined in `QVTNET.INI`, the news reader will be disabled!

2. Contact your system administrator, and have your PC added to the 'nntp_access' list. Make sure you ask for posting privileges, or you will not be allowed to post articles!

Note: the name of this access control file may be different for different news servers.

The News Reader will, at startup time, immediately attempt to open a connection to the NNTP server. If successful, a 'connected' message will appear in the text window. You should now proceed to select one or more newsgroups to read, using the 'Subscribe'

menu option. This procedure allows you to filter the newsgroup list by proving the first few letters of the newsgroup name, such as 'rec' or 'comp'; a filtered list is much easier to deal with when attempting to find a particular newsgroup.

Once you have subscribed to a few newsgroups, you can read articles from them by selecting the newsgroup from the listbox, then pressing the 'Load Articles' button. Double-clicking on the newsgroup name will accomplish the same thing.

Email

If there is a POP3 server available on your network, you can use WinQVT/Net to receive and send electronic mail from your PC. If you do not have a POP3 server, you will <u>not</u> be able to use WinQVT/Net to read mail. You can still send mail, however, using SMTP.

The only configuration that is required to use the Mail application is the 'host=' entry in `QVTNET.INI`. As with the News reader, this entry can be either a host name or IP address. If you supply a name, the host must either be documented in `QVTHOST.RC`, or you must have a nameserver on your LAN provide an address for that machine.

WinQVT/Net's mail module is capable of both sending and receiving mail. However, the details of sending mail may vary, depending on the POP3 server which is installed at your site. The POP3 protocol itself doesn't specify any particular mechanism for sending mail. However, the Berkeley POP3 server - 'popper' - supports an extension to the protocol which allows you to send mail through the server. This extension - the 'XTND XMIT' command - is not supported by all POP3 servers.

If your POP3 server doesn't support XTND XMIT, you will have to use the SMTP protocol for sending mail. In order to do so, you should find the 'protocol=' line in the [pop] section of `QVTNET.INI`, and change the value from POP3 to SMTP. Also, you should enter an appropriate email address, <u>not containing your PC's node name</u>, as the value of the 'smtp_return=' directive in the same section (there is no default).

Network printing using `lpr`

WinQVT/Net includes a small application 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. The only setup requirement is that you must have assigned a node name to your PC, and placed it in `QVTNET.INI`. Of course, WinQVT/Net will not run at all without a node name, so there are effectively no special setup requirements for `lpr`. All of the remaining required data items can be supplied at runtime.

Host setup: you must ask your system adminstrator 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. Normally, this list is kept in the file `/etc/hosts.lpd`.

Note: WinQVT/Net's lpr client is compatible with BSD-derived lpr daemons. It will not work with the System V printer daemon.

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 box containing a list of all the hosts which are defined in your `QVTHOST.RC` file. If you have included a 'hostname=' directive in the [lpr] section of `QVTNET.INI`, that host will already be selected when the lpr window is initially displayed.

* An input field for entering the print queue name. The default queue, as specified by the 'qname' directive, will already be present in this field.

* An input field for entering the username under which your print job will be submitted.

* A set of radio buttons for selecting the file type (text or binary)

* An input field for entering the name of the file to be printed.

* A pushbutton labelled 'Files', that you can use to activate a file-selection dialog.

All of these fields are required in order to start a print job. Only then will the 'Print' button be enabled. After you press 'Print', a series of messages will track the progress of the job, until completion.

Server Applications

WinQVT/Net includes two server applications, FTP and `rcp`. These applications allow remote users on other systems to access your PC's file system.

FTP Server

WinQVT/Net provides a background FTP server facility. This feature allows remote users to access your PC remotely using FTP. Only one logged-in user at a time is allowed.

There are several `QVTNET.INI` configuration directives which are associated with the FTP server. These are:

passfile the file which contains the list of authorized users and their passwords

login_dir the directory to which authorized users will be attached at login time

anonftp_dir the directory to which 'anonymous' users will be attached. These users will not be able to log to any other directories, except for subdirectories within the same tree.

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

FTP server security depends on whether or not you have implemented a password file. If there is no password file, users can login at will; no passwords are required, and there are no access restrictions (other than those indicated in `QVTNET.ACL`). If you do create a password file, then only users whose names are included in this file will be allowed to log in.

If you provide a value for the 'anonftp_dir' directive, WinQVT/Net will allow 'anonymous' logins. Anonymous users operate under some restrictions:

* Access is restricted to a single directory tree (as specified by 'anonftp_dir')
* Anonymous users are not allowed to delete files, or overwrite existing files.

Note: unless you specify an anonymous login directory in QVTNET.INI, anonymous logins will not be permitted!

Authorized users have fewer restrictions, but access control lists can be used to protect certain files and directories from authorized users also. The set of access control lists is stored in the `QVTNET.ACL` file, which should be placed in the WinQVT/Net home directory. Each access control list occupies a single line in `QVTNET.ACL`, and is of the form:

```
<directory name> [<username>,<username>,...]
```

The <directory name> is mandatory, and gives the name of the directory to which the ACL applies. The optional <username> entries give the names of the users who are authorized to access the named directory. Each username should be the name of a valid FTP user as created by PASSWD.EXE. If <username> entries are present in an ACL, they should be separated from the <directory name> by a single blank space. The <username>'s themselves should be separated by comma's, and there should be no blanks anywhere in the list.

You can completely cut off access to a directory by creating an ACL with an empty list of usernames. The inverse - a directory with no access control - will occur if no ACL is created for a directory; any valid user will be able to access it (possible exception: anonymous users).

In the present release, there is no attempt to distinguish different classes of access (e.g., read-only vs. read/write). This sort of refinement may be added in a future release.

rcp **Server**

WinQVT/Net also provides a server that allows remote users to copy files to and from the PC using the BSD rcp command. This server makes use of the same security features as does the FTP server, particularly the user-validation facility. Unlike FTP, however, there is no provision for 'anonymous' users; only documented users will be admitted.

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)

The registration fee for WinQVT/Net is $40, except for students, who can register for $20. For shipment outside of North America, please add $5.

Institutional customers: purchase orders are welcome! Please be sure to provide the name of an end-user contact for the purpose of receiving updates.

Registered users receive a printed user manual, a complete set of fonts, and free access to upgrades for a period of one year. Please allow one to two weeks for delivery; longer if shipping outside the USA is required.

If possible, please include the name and Internet (or Compuserve) address of a contact person to whom correspondence and updates can be addressed.

If you upload this program to another bulletin board or ftp site, please do so in .ZIP or .LZH 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 asynchronous 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:

>`djpk@troi.cc.rochester.edu`

Our account is set up to provide an automatic response to all received messages. The content of this response will vary, but it will usually contain the version numbers and locations of the most recent releases of WinQVT/Net. If you don't receive this automatic reply, it probably means that we would be unable to respond to your message by using the return address information in the message header. To help us in these situations, please send your message again, and include a reliable return address at which you can

be reached.

Also, before sending us mail asking about setup or configuration, please read all of the documentation in this distribution first, including the release notes, the FAQ, and SETUPS.TXT. Most of the information that we have on setting up WinQVT/Net is included in these documents.

We can also be contacted via fax:

(716) 377-8305

Thank you for your interest in WinQVT/Net!