

## **WinQVT/Net Help**

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## Configuration Files

WinQVT/Net uses a number of configuration files and database files in the course of normal operations. These files should be located together in the same directory. That will usually be either the 'Working Directory', as specified by the Program Manager 'Properties' dialog, or the directory pointed to by the optional environment variable QVTNET\_DIR. We recommend that you use 'Working Directory' to specify the config-file location, since QVTNET\_DIR may not be supported in all future releases.

It is important that these configuration files not be marked as read-only, or placed in a read-only directory (in a LAN environment). The files QVTNET.INI and NEWS.RC are routinely updated by WinQVT/Net in its normal functioning. In addition, users will probably want to create Telnet screen images and logfiles, which requires that the home directory not be read-only.

The principle configuration and database files used by WinQVT/Net are:

### QVTNET.INI

This is the principal configuration file for WinQVT/Net. It includes configuration settings for the program as a whole, such as connectivity information, as well as settings for each of the client applications (Terminal, FTP, etc.).

The sections of QVTNET.INI are as follows:

[net]	basic network connectivity information
[localio]	Local I/O ports and devices
[console]	Console window setup and operation
[servers]	FTP and RCP server configuration
[terminal]	Terminal application setup
[ftp]	FTP application setup
[pop]	Mail application setup
[nntp]	News application setup
[lpr]	lpr application setup

Most entries in QVTNET.INI are optional, with the exception of the 'hostdir=' statement.

### QVTNET.RC

This file is used to store alternate configurations for the Terminal application (the default configuration is stored in QVTNET.INI). Each configuration consists of a series of text lines. The first line will always be a line of the form:

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

If the name includes embedded blanks, it must be enclosed in double quotes.

The remainder of the configuration consists of a series of lines of the form:

```
<item>=<value>
```

where <item> is a configurable item, and <value> is the value being assigned to that item. Available configurable items are those found in the [terminal] section of QVTNET.INI.

One important item that is available only in QVTNET.RC is the 'host=' directive, which allows you to specify a default host to associate with a configuration. The argument to this directive should be the name of a host as found in QVTHOST.RC.

In QVTNET.RC, the comment character is the '#'. Comment characters can appear either at the beginning of the line, or in-line. Everything to the right of the '#' will be ignored. Make sure that you do not have any lines in QVTNET.RC with nothing to the right of the '='; all lines must have both a keyword and a value.

## **QVTALIAS.RC**

This file is used to store a list of mail 'aliases' in Unix format:

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

## **QVTNET.ACL**

This is the access-control-list file used by the FTP and RCP servers, in order to verify that a logged-in user has access to a filesystem object. This facility can be used to keep unauthorized users out of various areas on your disk. A security check is made every time a user tries to access a directory or file, either for reading or writing.

Each entry in QVTNET.ACL has the following format:

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

where <directory name> is the name of a restricted directory, and the <username>'s are the names of the users who are authorized to access that directory. If the username list is empty, no one will be allowed access to the restricted directory.

## **NEWS.RC**

This file stores a list of subscribed newsgroups for use by the News Reader application. The format of lines in NEWS.RC is:

```
<newsgroup name> <article list>
```

The <article list> will be managed by the News Reader; it consists of a list of previously-read articles, beginning with the lowest-numbered 'read' article. Articles which appear in this list are excluded from the set of articles presented for reading by the application.

## **CONSOLE.LOG**

This file is created and extended by WinQVT/Net as a by-product of normal operations. Unless disabled, all console messages are also written to CONSOLE.LOG, so that a non-volatile record of application events can be maintained.

## Console Commands

All application activity in WinQVT/Net begins with the Console. All of WinQVT/Net's functionality is accessible from the Console Menu. In addition to the menu, a row of pushbuttons has been provided as an accelerated method for accessing client applications.

## System Menu

A number of custom items are present in WinQVT/Net's system menu. These are:

Restore All	Restores all iconified WinQVT/Net application windows
Minimize All	Iconifies all WinQVT/Net application windows
Terminate All	Terminate all WinQVT/Net clients, but leave the Console running
Clear Console	Erase the Console window's message area

## File Menu

The 'Open' menuitem can be used to re-load the contents of QVTNET.RC from disk. This is usually only necessary if changes to this file has been made outside the WinQVT/Net environment.

The final item on this menu is a toggle, which is used to enable and disable the copying of Console messages to a disk file. By default, console logging is enabled.

## View Menu

This command is a toggle, which you can use to hide or expose the Console window's message area.

## Services Menu

This menu is the point from which WinQVT/Net's client applications can be launched. Of the five available applications, the 'Terminal' application is multiple-instance; the others are single-instance.

The 'Servers' menuitem is used to start and stop WinQVT/Net's three server applications.

## Configuration Menu

The first submenu - 'Printer' - can be used to select a default printer and printer font for use by WinQVT/Net applications.

The remaining menuitems provide access to the dialogs which are used to configure WinQVT/Net's interactive client applications. Though these dialogs can be accessed at any time, you will be allowed to save changes only if the application being configured isn't actually running at the time.

When you click on the 'Ok' button, changes will be applied to the current session and also written to QVTNET.INI, so that they will be employed by future WinQVT/Net sessions.



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## **lpr**

The lpr application is used to send files which reside on your PC to printers elsewhere on the network. In order to print a file on a remote printer, you must first arrange for your PC's node name to be added to the 'hosts.lpd' database on the host machine to which the printer is attached. If your PC is not in this database, the lpr daemon will not accept connections from the PC.

The procedure for remotely printing a file is as follows:

1. Select a host to print on.
2. Type in the name of the print queue to use on the selected host.
3. Type in or select (using the 'Files' dialog) the name of the local file that you want to print.
4. Press the 'Print' button.

Note that you have a few options which you can apply to print jobs:

**Text/Binary option:** Most print files are text files. However, if you want to send a local file to a device such as a plotter, this data is sometimes in binary format.

**Print Banner:** Allows you to specify whether or not a banner page should be prepended to your print file on the remote printer.

**Delete After:** Allows you to specify that you want the print file deleted once it has been successfully transmitted to the remote printer.

## **Servers**

WinQVT/Net includes three server applications, in addition to the various client modules. These are the FTP, SMTP, and rcp servers. The FTP server allows a remote user to log in to the PC using the FTP protocol, and transfer files to and from the PC. The SMTP server receives mail messages and stores them on the PC's local disk. The rcp server allows remote users to copy files to and from the PC using the Berkeley 'rcp' command (where available).

There are some security restrictions which apply to users of the FTP and rcp servers. In the case of the FTP server, users must be given usernames and passwords. This is done using the PASSWD.EXE utility. Other than authorized users, only 'anonymous' logins will be permitted.

Users of the rcp server are not subject to login security, but they are subject to any access restrictions which are defined in the QVTNET.ACL file. If a directory is listed as a protected directory in QVTNET.ACL, only users listed in the ACL can copy files from or to that directory.

Access-control restrictions apply to FTP users as well. Access to protected directories, for any purpose, will be given only to users who are listed in the ACL for that directory.

The three servers can be started up selectively at the time that WinQVT/Net is started, by making the appropriate settings in QVTNET.INI. The servers can also be stopped and started interactively from the console.

## Starting a Session

A Terminal session is started either by selecting the 'Terminal' menuitem from the 'Services' menu, or by pressing the 'Terminal' button.

In either case, a dialog box will be presented from which the new Terminal session can be launched. This dialog presents you with the following choices:

### Host

There are two ways to specify a host for the new session. The first way is to select a host from the 'Hosts' listbox. This listbox contains all of the host names which are listed in your hosts database. The second way is to type a host name or IP address into the input field that is located just above the listbox. This method allows you to connect to hosts which are not presently documented in hosts.

### Configuration

Each Terminal session must be configured with respect to font, colors, and so on. The default Terminal configuration is stored in QVTNET.INI, and is provided here as the first item in the Configuration listbox (i.e., default). If additional configurations have been defined in QVTNET.RC, they are also available for selection.

### IP Port

There are two ports which are typically used for interactive Terminal sessions: Telnet (23) and rlogin (513). One of these ports can be chosen by means of the radio buttons. However, if you need to use a non-standard port, you can type it in directly.

### Username

This entry is required (and available) only if you are using the rlogin protocol. Under rlogin, the username must be presented to the host as part of the initial negotiation.

## Menu Options

### File Menu

Screen Image	Save the current screen to a disk file
Logfile	Toggle; turns logging on or off
Script File	Execute a <u>script file</u> .
Exit	Terminate the session

### Edit Menu

Copy	Copies selected text to the Windows clipboard
Paste	Transmits Clipboard text data to the host
Clear	Removes text data from the Clipboard

### Setup Menu

Terminal	Set terminal operating characteristics
Printer	Select a printer and/or a printer font
Color	Set the foreground, background, and bold colors. You can use one of the predefined colors, or build your own colors using the RGB notation <nnn,nnn,nnn>, where each <nnn> is a decimal number between 0 and 255.
Font	Select one of the five available fonts.
Window	Choose a normal (i.e., 24-line) window, or a 'Tall' window (full-screen height).

### Keymaps Menu

The key-redefinition process is performed via a pair of dialog boxes which are accessed through the 'Keymaps' menu. The first dialog is used to redefine keys which are located in the main alphanumeric portion of the keyboard; the second dialog is used to work with keys which are part of one of the three small keypads which are located to the right of the main keyboard.

To redefine a key:

- \* Choose the keymap dialog that contains the key you want to redefine.
- \* Press the button that corresponds to that key.
- \* Type in the redefinition string
- \* Press the 'OK' button

\* Exit the keymap dialog by pressing the 'OK' button. All changes will be saved, though you may be asked to supply a filename if one is not already present in QVTNET.INI (or QVTNET.RC).

## Menu Commands

### Session Menu

Open	Initiates an FTP login procedure. FTP security usually requires both a username and password; sometimes the password can be omitted.
Close	Terminates the current session, leaves window
Exit	Terminates the current session, if any, and closes the FTP window

### Configure Menu

Allows you to set or clear a number of the standard FTP toggles. The current state of each flag is shown when the menu is first displayed.

The first toggle specifies the mode under which files will be transferred between your PC and the remote machine. For text files, you should select 'ASCII' mode; for binary files (.EXE, .COM, .ZIP, .LZH, etc.), use 'Binary'.

Bell	Specifies whether or not the PC's bell will be sounded at the completion of a file transfer
Globbering	Specifies whether or not filespec expansion will be performed on user-supplied filenames. If globbing is enabled, wildcard expansion will be performed before any file operations are started.
Hash	Specifies whether file transfers will be accompanied by a hash-mark display to mark the progress of the transfer.
Prompting	Specifies whether prompts will be presented which allow the user to confirm each file in a batch operation (i.e., mput, mget, mdelete).
Verbose	Specifies whether or not server responses will be displayed in full as commands are executed.

### Commands - Remote

Command within this menu apply to the remote filesystem:

Short Listing	List current directory in short format
Long Listing	List current directory in long format
Change Directory	Switch to another directory
Create Directory	Create a subdirectory within the current

working directory

Remove Directory Remove a subdirectory from the current working directory

Delete File(s) Delete one or more files from the current working directory

### **Commands - Local**

Commands within this menu apply to the local filesystem:

List Directory Display the contents of the current local working directory

Change Directory Log to another directory

Create Directory Create a new subdirectory within the current local working directory

Remove Directory Remove a subdirectory from within the current local working directory

Delete File(s) Delete one or more files from the current local working directory

### **Transfer**

Send File(s) Transfer one or more files from the PC to the remote machine. A dialog box can be used to build a list of files.

Receive File(s) Transfer one or more files from the remote machine to the PC. A dialog box can be used to build a list of files.



## The Command Line

The FTP application also provides a command-line interface, which supports the following commands:

ascii	set file type to 'text'
bell	enable/disable the warning bell
bget	download a binary file
binary	set file type to binary
bput	upload a binary file
bye	logoff and terminate FTP
cd	change directory (on the host)
close	logoff, but leave FTP running
delete	delete a file on the host
dir	displays a host directory listing in long form
get	download a file using the current file type
glob	enable/disable wildcard expansion
hash	enable/disable display of '#' symbols during a transfer to mark each block
help	display a list of supported commands
interactive	enables/disables user prompting during batch operations (mget/mput/mdelete)
lcd	change the local working directory
lls	list the contents of the local directory. Will accept an argument which includes one or more wildcards, when a restricted listing is desired
logto	capture all FTP screen output to a disk file
lpwd	print the name of the current local working directory
mkdir	create a directory on the local disk
rmdir	remove a directory on the local disk
ls	list host directory
mdelete	delete all files in the current host

	directory whose names match a specified template.
mdir	display host directory listings, in long format, for all directories whose names match a specified template.
mget	download all files whose names match a specified template.
mkdir	create a new directory on the host
mls	display host directory listings, in short format, for all directories whose names match a specified template.
mput	upload all files whose names match a specified template
noninteractive	do not prompt user during batch transfers
open	open a session on a specified host
prompt	enable/disable prompting during batch operations. See 'interactive' and 'noninteractive'.
put	upload a file using the current file type
pwd	display the name of the current host working directory
quit	same as 'bye'
recv	download a file using the current file type
remotehelp	display a list of commands supported by the host
rename	give a new name to a file on the host
rm	remove a file on the host
rmdir	remove a directory on the host
send	upload a file using the current file type
status	display the current status of FTP
struct	set file transfer structure
take	run a script file containing FTP commands
type	set file type, 'ascii' or 'binary'
user	initiate a host login procedure

verbose

toggle verbose mode

## **Menu Options**

### **File Menu**

#### Open

Initiates a mail session. If a remote mailbox is selected, a POP3 login procedure is initiated. Otherwise, the messages in the selected local mailbox will be loaded and displayed.

#### Close

Terminates the current mail session. If you are connected to a remote mailbox, there are two ways to close the session. Using the first option, the current session will be terminated, and a background process will be launched which will periodically check the server for the arrival of new mail messages. The second 'Close' option terminates the current session without starting the background new-mail check. For local mailboxes, only the second option is available.

#### Exit

Terminates the current mail session, if any, and closes the Mail window.

#### Reset

This option is available only while a mail session is under way. It allows you to reset the mailbox to its state prior to the current session. Most importantly, any messages you may have deleted are restored. Any messages which have been read but not deleted are marked as unread.

#### Start/Stop Background Mail Check

These two options are available only when there is no mail session under way. They allow you to initiate or terminate the background mail-check process. If you invoke 'Start Background Mail Check', and you have not previously logged on to the server interactively, the standard login dialog will be executed, so that you can enter your login name and password for use by the background process.

#### Add Alias

Use this dialog to add a new entry to your QVTALIAS.RC file.

#### Download New Mail

Use this menuitem to download any and all new messages from a users remote mailbox to the same users local new mail mailbox.

### **Setup Menu**

#### Font

The Mail application can use any installed Windows font. This menuitem brings up the standard Windows font selection dialog. The selected font will immediately be applied to the current session, and will also be saved in QVTNET.INI for use by future Mail sessions.

#### Printer - Select Printer

When printing articles locally, the Mail application will normally use the default Windows printer. This menu option allows you to choose a different printer for the current session.

#### Printer - Select Font

The Mail application, by default, uses a reasonably-sized Courier font for local printing. This menu option allows you to choose a different printer font for the current session.

### **Send Mail**

This menu item allows you to create and send a new mail message. Its availability depends on the following conditions:

\* If you have selected SMTP as your 'send mail' protocol (the default), this option will be available at all times.

\* If you have selected POP3 as your 'send mail' protocol, this option is available only when there is an active POP3 session.

In order to send mail, you must carry out a number of steps. First, you must make sure that all of the input fields in the dialog are filled in. Note that, if you have created an 'alias' database, your aliases are made available for selection at this time.

Secondly, you must compose the message itself, using the input area provided. All standard Windows editing techniques are applicable.

After the message has been composed, and the 'Subject' and 'Send to' fields have been filled in, you can send the message by pressing the 'Send' button.

## **Button Commands**

Once a Mail session has been started, your principal means of control will be the row of pushbuttons which is located just below the listbox. These buttons are associated with the following functions:

### **Read/Next**

If there is no message currently displayed in the message area, then pressing this button will load and display the currently 'selected' message (i.e., the message whose entry is highlighted in the listbox). Once a message has been loaded, pressing this button again will load the next consecutive message from the mailbox.

### **Save**

Pressing this button will save the currently displayed message (or selected message, if no message is currently displayed) to a disk file. The default save directory is given by the 'savedir' entry in QVTNET.INI.

### **Reply**

Allows you to compose and transmit a reply to the sender of the currently displayed message. The contents of the original message will be included in the reply, where it can be edited.

### **Delete**

Deletes the currently displayed (or selected) message. Once a POP3 session has been closed, deleted messages cannot be recovered. During a session, however, you can recover deleted messages by using the 'Reset' menu option.

### **Print**

Prints the currently displayed message to the local printer.

### **Forward**

Presents the current message in the Send Mail dialog so that it can be forwarded to another recipient.

## Menu Options

### File Menu

This menu provides functions which operate at the file and session level.

#### Open

Opens a News Reader session. There are four different options, as provided by a dialog box. The first two - Read Articles and Download Articles - are the most important. The first option is used when you want to read the news articles that are currently in storage on the PC. The second option downloads articles from the news server to the PC, where they can be accessed later (by 'Read Articles').

#### Close

Saves an updated copy of NEWS.RC and terminates the current News session. The News window is not closed.

#### Save

Writes an updated version of NEWS.RC. The status of the current session is unaffected.

#### Exit

If there is an active News session, this command will close that session and write an updated NEWS.RC. The News window will then be closed.

### Setup Menu

Provides for the selection of custom fonts, for both the screen and printer.

#### Font

The News Reader can use any installed Windows font. This menuitem brings up the standard Windows font selection dialog. The selected font will immediately be applied to the current session, and will also be saved in QVTNET.INI for use by future News sessions.

#### Printer - Select Printer

When printing articles locally, the News Reader will normally use the default Windows printer. This menu option allows you to choose a different printer for the current session.

#### Printer - Select Font

The News Reader, by default, uses a reasonably-sized Courier font for local printing. This menu option allows you to choose a different printer font for the current session.

## **Newsgroups Menu**

This menu provides a set of functions which operate on newsgroups.

### Show Newsgroups

This item is available only when a newsgroup has been selected for reading, and the listbox is currently showing a list of articles from that newsgroup. The 'Display' command will unselect the newsgroup and return the listbox to showing the list of subscribed newsgroups.

### Reset Newsgroup

This menuitem can be used to restore a newsgroup to its state at the beginning of a session. Articles which had been junked are made available again. A newsgroup can be reset any time during a session, as long as it hasn't been purged (see below).

### Subscribe

Invokes the dialog which allows you to subscribe to one or more newsgroups.

### Unsubscribe

Allows you to remove a newsgroup from the list of currently subscribed newsgroups.

### Purge - All

Has the effect of marking all of the articles in the currently selected newsgroup as 'read'. Effects become permanent only when the session is closed. A newsgroup that has been purged cannot be reset.

### Purge - Partial

Allows you to mark only the first <n> articles in the newsgroup as 'read', leaving a set of articles at the end still available. This is useful if you fall behind in a newsgroup, but you still want a chance to see the most recent articles.

### Edit Killfile

Displays a dialog box that can be used to edit the contents of the killfile, as it pertains to the selected newsgroup. Functions available include: add subject; delete subject; add user; delete user. All news articles whose subject and/or originating user appear in the killfile will be eliminated from the article list.

## **Articles Menu**

This menu provides a set of functions which operate at the article level.



#### Show Articles

Load and display articles from the selected newsgroup.

#### Show Threads

Present, in a separate window, a list of all unread threads in the currently-selected newsgroup.

#### Undelete Last

Restore to the article list the most-recently deleted article.

#### Undelete All

Restore all deleted articles.

#### Article Search

Present, in a separate window, a list of all articles which have been written by the author of the currently-selected article.

#### Post Article

Presents a dialog box which is used to prepare and post a new article to the net. The currently-selected newsgroup, if any, is given as the default, but you can type in a different newsgroup if you like. Note that your article may be rejected if the news server doesn't support the selected newsgroup.

## Button Commands

The principal user interface for the News Reader is implemented as two sets of pushbuttons, located below the listbox in which newsgroups and articles are displayed. The left-hand button set contains buttons which operate at the newsgroup level, while the right-hand button set operates at the article level.

Buttons will be enabled for use only when their use is appropriate. For example, the 'Read' button will be enabled only when the listbox is showing articles, not newsgroups.

Many of the buttons operate in multiple 'modes', in that they function one way if they are pressed 'alone', and a different way if they are pressed in conjunction with a modifier key, such as the <Ctrl> key or the right mouse button.

### Newsgroup-level Buttons

There are four buttons which operate on newsgroups: Load Articles, Subscribe, Purge, and Post.

#### Show Articles/Show Threads

When in 'Newsgroup Mode', pushing this button will load and display the available unread articles from the selected newsgroup. Once this action is taken, and the listbox is filled with articles, the label (and function) of this button changes to Show Threads, an operation which is documented elsewhere in this document.

#### Show Newsgroups

This button is enabled after you have selected a newsgroup and have placed the News Reader in 'Article Mode'. It returns you to the previous mode, in which the newsgroup list is displayed.

#### Purge Newsgroup

Brings up the 'Partial Purge' dialog, which you can use to delete all but the last few articles from the selected newsgroup.

If you hold down the right mouse button while clicking the 'Purge' button, the 'Purge All' function will be invoked. This function will delete the entire contents of the selected newsgroup.

#### Post

Post an article to the net. The current newsgroup, if any, will be the default newsgroup for the new article..

### Article-level Buttons

Once a newsgroup has been selected for reading, the articles from that newsgroup will begin to appear in the listbox, replacing the list of subscribed newsgroups. Your principal means of control will now become the row of buttons which is located below the listbox.

## Read/Next

Loads the currently selected article (the article which is highlighted in the listbox) and displays it in the text area. If there is already an article present, this button's label will change to 'Next', and pressing it will load the next sequential article.

## Delete

Marks the currently selected article as 'read', and removes it from the listbox. Note that this button can be used to junk not only the currently displayed article (if there is one), but any article in the list.

The 'Delete' button has a number of modes, as determined by these modifier keys:

- <Ctrl> All articles up to and including the currently highlighted article will be junked.
- <Shift> All 'read' articles will be junked.
- <Alt> All articles up to and including the bottommost visible article will be junked.
- <Ctrl+Alt> All articles in the listbox will be junked.

## Unmark

This button marks the currently selected article as 'unread', which makes it available to future News sessions. Note that this button can act on any 'read' article, not just the currently displayed article.

By holding down the <Shift> key and simultaneously clicking the 'Unmark' button, all 'read' articles in the listbox will be unmarked.

## Save

Writes the contents of the currently displayed (or selected) article to a disk file. The default save directory will be given by the 'savedir=' entry in QVTNET.INI.

## Followup

This command allows you to compose and post a 'followup' to the currently displayed article. The contents of the current article will be written to a file, and that file will be loaded into the default editor, which you can then use to edit your reply. Both the article header and body are prepared by this process. After you have saved your followup article, you can either post it to the net, or email it directly to the original poster (if a valid email address can be extracted from the article).

Note that, in order for the 'Email' option to work, you must have selected SMTP as your 'send mail' protocol, not POP3.

## Print

Prints the contents of the currently displayed article on the local printer. If you press and hold the right mouse button while simultaneously clicking the 'Print' button, the article will be printed through the 'lpr' module on the default network printer.



## Script Files

WinQVT/Net provides a tiny 'script language' that you can use to perform automatic logins and other routine tasks. The language consists of these statements:

```
wait <secs> ["<string>"]
    sync <secs>

type "<string>"

if_err_goto <label>
if_noerr_goto <label>
```

The 'wait' command allows you to wait for a specific text string to be received from the host. The <secs> argument allows you to set a timeout value; if the wait period expires before the looked-for string is seen, the script will abort. String comparisons are case-insensitive.

The 'sync' command receives and displays incoming data until a 'silence' of <secs> seconds has elapsed.

The 'type' command allows you to transmit data to the host. All data must be enclosed in double quotes. Non-printing characters can be transmitted by notating them in one of the two ways described previously in the section on [key redefinition](#).

The two flavors of 'goto' allow you to jump to an arbitrary point in the script, based on the outcome of a preceding 'wait' statement. The destination labels must have a colon (':') as the first character, and they must be the first and only token on the lines in which they appear.

Here is a sample script:

```
wait 5 "login:"
if_err_goto exit
/* this is a comment
type "myuser^M"
wait 5 "password:"
type "mypass^M"
:exit
```

## Key Redefinition

With a few exceptions, all of the keys on the PC keyboard can be programmed to transmit strings of your choosing. Each key can be set up to transmit one string when pressed by itself, a second string when pressed together with the <Shift> key, and a third string when the key is pressed together with the <Ctrl> key. All three strings are stored concatenated together into a single string, whose total length cannot exceed 80 characters. The three sub-strings are separated by the pipe character ('|', ASCII 0174).

Both printable and non-printable characters can be including in key definition strings. There are two ways to notate non-printing characters. For characters whose values are between 000 and 037 (octal), the easiest way is to take the printable 'equivalent' of the character and prefix with the caret (^). For example, the character <Ctrl-C> (ASCII 003) could be notated as '^C'.

Characters which lie in the high half of the character set, with values higher than 0177, can be notated using C-style octal notation. For example, the character 0201 would be notated as '\201'. This type of notation can also be used for lower-order non-printing characters. For example, the <Escape> character would be notated as '\033'. When the C-style octal notation is used, the following rules apply:

- \* The first character must be a backslash
- \* Exactly three octal digits must be used

Here is an example of both methods. This example shows how the <Enter> key can be programmed to transmit the string <CR><LF>:

First method:                ^M^J  
Second method:             \015\012

The next example shows how the <Backspace> key can be programmed to transmit a DEL character when pressed along, and the BS character when pressed together with the <Ctrl> key>

\177||\010

Note the use of the pipe character to separate the three sub-strings which correspond to the three key states. Note also that the middle string (the one associated with the <Shift> key) is left empty. If a substring is left blank, the key will revert to its default behavior.

## **Environment Variables**

### **QVTNET\_DIR**

This optional environment variable can be used to specify a location for WinQVT/Net's support files other than the default 'working directory'.

QVTNET\_DIR is created in the usual manner of DOS environment variables; i.e., by use of the SET command:

```
set QVTNET_DIR=c:\qvtnet
```

The use of this variable allows a number of users on a LAN to share a single copy of WinQVT/Net, yet each user can have his or her own set of support files.

### **TZ**

This environment variable is used by the Mail and News applications so that they can properly format message dates in accordance with RFC822. The syntax of this variable is as follows:

```
set TZ=EST5EDT  
set TZ=PST8EDT
```

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