Kermit for Microsoft Windows

Program Documentation

Version 0.76

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Overview

Program Features

This is a fairly complete implementation of the KERMIT communications protocol for Microsoft Windows. It includes most extensions to the protocol as well (Long Packets, Windowing, Server Mode, Attribute Packets, and Enhanced Error Checking).

Additionally, a fairly full featured terminal emulation capability is included. The terminal emulations are encapsulated in Dynamic Link Libraries which allow new emulations to be added with ease. A modem dialer is also included.

As do most MS Windows programs, cooperative multitasking is fully supported. You may even have two copies of the program running at one time on different serial ports!

Local Operation:	Yes
Remote Operation:	No
Login Scripts:	No*
Transfer text files:	Yes
Wildcard send:	Yes (plus directory listings)
File transfer interruption:	Yes
Filename collision avoidance:	No*
Can time out:	Yes
Eighth-bit prefixing:	Yes
Repeat count prefixing:	Yes
Alternate block checks:	Yes
Terminal emulation:	VT-100 (ANSI) subset
Communication settings:	Baud, Parity, Flow, etc.
Transmit BREAK:	Yes
Support for dialout modems:	Yes
IBM mainframe communication:	Yes
Transaction logging:	No*
Debug logging:	No*
Session logging:	No*
Raw file transmit:	No*
Act as server:	Yes
Talk to server:	Yes
Advanced server functions:	No*
Local file management:	No (available from Windows)
Command/Init files:	No*
Command macros:	No*
File attribute packets:	Yes
Extended packets:	Yes
Sliding Windows:	Yes

Those entries marked with an asterisk (*) are features which are expected to be available in Release 1.00.

Limitations

The following limitations exist in the current version of Kermit for Windows:

- There is no scripting facility yet.
- There is no ability to direct terminal output to a printer yet.
- File handling options are currently very limited. All received files overlay existing files and files are always downloaded to the current directory.
- No session logging capabilities exist yet.
- There is no online help.

Licensing Agreement

This program is distributed free of charge to anyone who has a use for it. Please note, however, the work is copyrighted. Feel free to distribute the program freely, but please distribute the complete package (preferably as the original .zip file).

Comments and Suggestions

I always appreciate any comments or bug reports you may have. Please send them to me via my CompuServe ID listed above. I have done my best to fix all reported problems and implement requested enhancements.

History

Version 0.76

- Added separate VT-102 terminal emulation with much more support for escape sequences. ANSI emulation is now strictly the subset that is provided by ANSI.SYS for MS-DOS (and therefore very appropriate for bulletin board access).
- The documentation is significantly improved (you are reading it!)
- A variety of relatively minor corrections have been made. the most notable is the fix that allows you to enter a number of up to 1000 for the packet size in the Kermit Protocol configuration dialog (this really helps long packets work correctly!).

Version 0.75

- 2nd Place Winner in MS Windows NT Shareware Contest!!!
- Improved the look of the status and message bar areas (3D).
- Added support for Windowing extension to Kermit Protocol.
- Added user selectable terminal fonts.

- Created WIN32 version.

Version 0.71

- Added support for COM3/4:.

Version 0.70

- Modem autodialing has been added at last.
- Windows clipboard operations have also been added. You must use review mode to use the Copy command.
- A generic teletype terminal emulation was added.
- All terminal emulations now fill the screen with blanks instead of nulls. Nulls caused "some" Windows display drivers to behave quite strangely.
- VT-100 emulation has been enhanced some. Keyboard application mode is now supported. Ensure NumLock is on and use the numeric keypad for application mode keys.

Prerelease Version 0.60

- This version provides full compatibility with Windows Version 3.00.
- Implements a slightly nicer terminal screen with ribbon and information bars.
- A few problems in the Kermit protocol were corrected.
- The terminal emulation function has been moved to a dynamic link library. This allows new terminal emulations to be created easily.
- The speed of scrolling text has been significantly increased.

Prerelease Version 0.50

This version of the program is being released so that any problems with the protocol implementation itself can be ironed out early. The program is fully functional and quite usable as is.

Getting Started

System Requirements

Kermit for Windows requires any of the existing flavors of MS Windows Version 3.1. These flavors include MS Windows, MS Windows for Workgroups, and MS Windows NT. Note that you must use the NT version of the program with Windows NT. Also, only the Intel variation of Windows NT is supported at this time.

At this time, Kermit for Windows supports only an asynchronous connection through the serial ports as handled by the Windows drivers. Support for Hayes style modems is provided. Although not explicitly tested by the author, most aftermarket Windows serial port drivers apparently work OK.
The memory and hard disk requirements of Kermit for Windows are extremely small and should almost never be a problem.

Installation/Setup

No special installation program is provided with this software. Installation is accomplished by simply creating a suitable directory and copying all files to the directory. The original release is distributed as a compressed file. Use PKUNZIP to decompress the files.

An icon can easily be added to the Windows Program Manager to provide a menu entry for invoking Kermit. Follow the instructions provided with Windows for adding a program item.
You may also wish to add a line to the [Extensions] section of your WIN.INI file. The line would look something like the following:

```
[Extensions]
krm=c:\kermit\kermit.exe ^.krm
```

This will allow you to "open" a Kermit Session File from the Windows File Manager. Kermit will automatically be invoked with the selected Session File loaded.

Program Startup

You must start Windows before running Kermit. Once Windows is running you can start Kermit by double clicking on its icon in the Program Manager (if you installed one) or by double clicking on kermit.exe in the Windows File Manager.

Kermit follows all Windows standards. Those familiar with other MS Windows applications should be able to use Kermit without trouble.

Communications Sessions

In order to keep track of different sets of configuration options, Kermit uses the concept of a communications session. When Kermit is first started, an untitled session is automatically initialized. All configuration settings are given their default values.

In most cases, you will need to change some of the configuration options prior to establishing a communications session. See "Setting Configuration Options" for more information.

Starting a New Session

Starting a new communications session is essentially the same thing as returning Kermit to the state it was in when it was first started. All configuration settings are restored to their default values.
To start a new communications session, choose New... from the File Menu. If you have not already saved the settings from the existing session, you will be reminded and given the option of saving them now.

In order to start a new session, any existing connection to a remote system must be terminated. If a connection is active at the time a new session is requested, you will be asked to confirm that you want to disconnect.

As a convenience, Kermit will bring up the Session Settings dialog. This dialog allows you to enter a brief description of the session, choose the appropriate terminal emulation, and indicate if you want to automatically connect to the remote system any time this session is subsequently opened. See Session Settings for more information on this dialog.

Saving a Session

Changes made to a communications session are not saved permanently until they are saved. When you save a session, Kermit will record all of the current configuration settings in a file. You must supply a standard DOS filename to save the settings in. By default the extension of the session save files is ".KRM".

To save the current configuration settings, choose Save or Save As... from the File Menu. Save As... allows you to specify a new file to save your settings in, whereas Save will save your settings to the currently active session save file (as identified on the application title bar). If there is no current session save file (title bar reads "(Untitled)"), then Save will function just like Save As... (it will prompt you for a file name to save the session in).

It is not necessary to disconnect an active connection in order to save your settings.

If a session file name is required, Kermit will display the standard Windows Save As dialog. This dialog functions identically to the Save As dialogs in most Windows applications. You must type in a filename or pick one from the list. If no filename extension is specified, Kermit will automatically supply an extension of ".KRM". It recommended that you do not use a different extension, because the Open function identifies session files by the ".KRM" extension by default. Session save files may be stored in any directory, but the default directory is the save directory that the Kermit program is installed in.

Opening a Saved Session

To recall a session you saved previously, choose Open... from the File Menu. The standard Windows Open dialog will be displayed to allow you to choose the session save file to be opened.
By default, the Open dialog will display all files with an extension of ".KRM" in the directory that the Kermit program is stored in.

After choosing a session file to load, Kermit will check to see if the previous session had a connection active. If so, you will be asked to confirm that you want to disconnect. If you choose not to disconnect, you will be returned to the previous session with the connection still active.

If the session you have chosen to load has the Auto Connect on Open option set in the Session Settings dialog, Kermit will attempt to establish a connection with the remote system immediately.

It is also possible to Open a saved session at the time you invoke the Kermit program. You may specify the name of a session save file on the command line that is used to invoke Kermit. The specified session file will be automatically loaded instead of the default settings that would normally be loaded.

If you have set up Kermit as an Icon in the Program Manager, the command line is one of the entries in the Properties dialog for the Icon. This feature makes it possible to create several Icons in the Program Manager for Kermit and each one could start Kermit with a specific session file.

Setting Configuration Options

Session Settings

Description

You may enter a brief (one line) description of the session. This is primarily useful to help identify what a given session is for.

Emulation

A list box presents all available terminal emulation modules. You should select the terminal emulation which is best suited for the remote system you will be connecting to.

At present there are only two emulation options. KERMTTY provides a line oriented, dumb terminal emulator. KERMANSI provides a VT-102 (ANSI) terminal emulator.

In most cases, the KERMANSI emulator is the best choice.

Auto Connect on Open

You may check this box if you would like Kermit to automatically connect to the remote system when this session is subsequently reopened (see below).

Terminal Emulation Settings

Auto New Line

Normally, a carriage return control character will only move the cursor to the first position on the current line. If this option is selected, a carriage return character will also advance the cursor to the next line.

Local Echo

Normally, characters you type at the keyboard are sent only to the remote system and the remote system "echoes" them back. It the remote system does not echo typed characters, select this option to cause typed characters to be displayed on the terminal screen and sent to the remote system.

Auto Line Wrap

If this option is selected and too many characters are received to fit on the current line, the cursor will automatically advance to the first position of the next line when the last position of a line is used.

Communications Settings

Baud Rate

Enter the baud rate that you wish to use to communicate with the remote system or the speed your modem requires. Although you are allowed to enter any value, only 300, 1200, 2400, 4800, 9600, 19200, 38400, and 57600 should be used. Additionally, Windows will not support the higher baud rates with some types of serial port hardware.

Word Length

Also known as data bits. Usually 8, but occasionally 7. The administrator of the system you are trying to connect with should be able to give you this information.

Parity

Normally none, but again the administrator of the remote system should be able to supply this information. Note that N=None, E=Even, O=Odd, M=Mark, S=Space.

Stop Bits

Number of stops bits required by the remote system. Almost always 1.

Handshake

Kermit for Windows supports two types of "flow control". Xon/Xoff uses control characters to prevent buffer overruns. RTS/CTS uses two specific lines (wires) on the serial port to achieve the same effect. Which option is appropriate depends on your modem configuration and remote system requirements.

Port

Kermit for Windows support COM ports 1 through 4 (if available). Although all 4 selections are always shown, your computer probably doesn't have all four. Be sure to choose a port that exists and is available and properly configured under Windows.

Device Settings

Connection — Type of connection desired. Dial and answer apply to modems. If no modem is in use, you should choose direct. If dial is chosen, a phone number to dial should be supplied.

Dial Init — The sequence of characters that should be send to the modem to initialize it for dial-out usage.. The default is usually OK.

Dial Cmd — The sequence of characters that should be sent to the modem to cause it to dial a phone number. The default is usually OK.

Answer Init — The sequence of characters that should be send to the modem to initialize it for answer usage. The default is usually OK.

Hangup — The sequence of characters that should be send to the modem to cause it to hang up the phone line. The default is usually OK.

Escape — The sequence of characters that should be send to the modem while online prior to sending command strings.

Connect — The message that the modem will send when a connection has been successfully established.

Redial — Number of times to redial a number that fails to connect followed by the number of seconds to wait between attempts.

Wait — Number of seconds to wait from the time a number is dialed to get a successful connection message.

Protocol Settings

Packet Size — Size of data packets in bytes desired for send and receive.

Timeout — Number of seconds to wait before assuming a lost packet for send and receive.

Retry Limit — Maximum number of retries before aborting protocol.

Block Check — Kermit provides three different error detection block check types. Block Check Type 1 is the least reliable and Block Check Type 3 is the most reliable.

Debug — Select debugging options as desired. Packet option will display packets sent/received. State option will show state of protocol engine at various points. Other is undefined.

Options — Check the appropriate boxes for advanced Kermit protocol functions. Attrib will allow file information attributes to be used. L. Pkts will allow packet sizes up to 1000 bytes. Windows will allow the sliding windows extension to be used (Super Kermit).

Packets... — This button invokes a nested dialog that allows special customization of various Kermit packet characters. It is not normally needed.

Options... — Not implemented.

Font Settings

Font — Select from the list of available fonts. Only "fixed-pitch" fonts will be displayed. If a font called "Terminal" is available, it is recommended because it is specifically designed to work with communication programs.

Size — Point size for font. A larger point size means a larger font displayed on the window.

Sample — A sample display of the currently selected font.

Note that after changing the selected font, Kermit will attempt to resize the terminal window to provide a full 80 by 25 display. If the window can not be expanded enough to do this, scroll bars will be displayed.

When a new session is created, Kermit requests a default fixed-pitch font from Windows. In some cases (depending on your display driver and resolution), windows does a poor job of selecting a default font.

General Operation

Connecting/Disconnecting

To initiate a connection, choose Connect from the Session Menu. If you selected "Call" on the Device Dialog, the modem will dial the number you entered.
If you chose Auto Connect, in the Session Dialog, Kermit will automatically attempt to connect when the session is opened.

When you are connected, the online timer in the upper right of the display will increment. A check mark will be placed next to Connect in the File Menu as well.

To disconnect, just choose Connect from the Session Menu again. You will be disconnected and the check mark will be removed.

Clipboard Operations

Standard Windows clipboard functions are provided by Kermit. These functions are found in the Edit Menu. To allow Copy to work, you must first select Review. Review temporarily suspends incoming data to allow you to select the desired area to copy. Be sure to end review mode after performing the copy operation.

When in review mode, you may use the mouse of keyboard to select text. Using the mouse, click and drag the mouse to select an area on the screen. To use the keyboard, hold down the shift key and use the arrow keys to select an area on the screen. Once the area is selected (shown as inverted text), choose Copy from the Edit Menu to copy the selected data to the clipboard.

To paste data from the clipboard to the terminal, choose Paste from the Edit Menu. Note that the Paste command is only available when the clipboard contains text.

Application Window Areas

The Kermit application window is contains a terminal window as well as a status bar and a configuration bar.

The status bar appears at the bottom of the application window and provides an area to display context sensitive, single line help on the left and the current date and time on the right.

The configuration bar appears at the top of the application window and displays various information about the currently selected configuration. From left to right, the following information is shown: connection type, terminal emulation, protocol, communication settings, and time online.

The time online indicator is initialized to 00:00:00 and will start incrementing once a connection is made. When a connection is terminated, the time online for the previous connection is displayed until a new connection is requested. Note that, some of the fields on the configuration bar will not be displayed in the application window is shrunk too small to accommodate all of them.

The middle area of the application window contains the terminal emulation window. If the terminal emulation window is too small to display 80 characters by 24 rows, then scroll bars will be displayed as appropriate to allow scrolling to view data that is off the edge of the window.

When the size of the application window is changed by the user, the terminal emulation window automatically tries to adjust the size of the font being used to continue to show a full 80 columns by 24 rows. Scroll bars will only be displayed if the selected font can't be shrunk enough to fit completely in the size of the window provided.

As characters are received when online, the terminal window will automatically scroll to "follow" the cursor. This ensures that the area of the screen where characters have last been displayed will always be visible.

Terminal Emulation

Kermit currently provides three different types of terminal emulation. These include dumb terminal (teletype), ANSI (like ANSI.SYS), and DEC VT-102 (like a DEC VT-102 CRT Terminal).

Selecting a Terminal Emulation

Because Kermit is designed to allow for terminal emulations to be added as separate modules, it is necessary to select the terminal emulation module. The terminal emulation module is selected from the Session Dialog (NOT from the Terminal Configuration Dialog). The Session Dialog presents a list of the available terminal emulation modules (files with an extension of .TRM).

Teletype Terminal Emulation

Teletype Terminal Emulation is provided as a bare minimum terminal emulation. If simply echoes received characters to the screen as received. Other than carriage return, line feed, and form feed, it does not respond to any special escape sequences. This emulation type is appropriate when the data being received contains no special screen formatting commands.

ANSI Terminal Emulation

ANSI Terminal Emulation implements the same screen formatting commands as the ANSI.SYS device driver that is provided with MS-DOS. This emulation is very popular with dial-up bulletin boards.
If the bulletin board attempts to send IBM graphics, you should be sure to select the "Terminal" font (using the Font Dialog). The Terminal font contains the IBM graphics extended character set. Most other Windows fonts use the ANSI character set which does not include the IBM graphics characters.
This terminal emulation does not support sending escape sequences for any keyboard function keys.
The following escape sequences received from the remote computer are handled:

Function	Escape Sequence
CURSOR POSITION SET	<ESC>[<r>;<c>H
CURSOR POSITION SET	<ESC>[<r>;<c>f
CURSOR MOVE UP	<ESC>[A
CURSOR MOVE DOWN	<ESC>[B
CURSOR MOVE RIGHT	<ESC>[C
CURSOR MOVE LEFT	<ESC>[D
ERASE TO END OF SCREEN	<ESC>[0J
ERASE FROM START OF SCREEN	<ESC>[1J
ERASE ENTIRE SCREEN	<ESC>[2J
ERASE TO END OF LINE	<ESC>[0K
ERASE FROM START OF LINE	<ESC>[1K
ERASE ENTIRE LINE	<ESC>[2K
READ CURSOR POSITION	<ESC>[6n
SAVE CURSOR POSITION	<ESC>[s
RESTORE CURSOR POSITION	<ESC>[u

DEC VT-102 Terminal Emulation

DEC VT-102 Terminal Emulation implements the screen formatting commands found on the ever popular DEC VT-102 terminal. This emulation is frequently used by UNIX dial-up systems and by some bulletin boards.

Due to the character set selection feature of this terminal emulation, it is desirable to select the Windows "terminal" font when using this emulator.

The remote (host) computer controls whether the VT-102 keyboard is in numeric or application mode. Numeric mode is entered at startup. The following escape sequences will be sent for numeric keyboard mode:

VT-102 Keyboard	IBM PC Keyboard	Escape Sequence
PF1	F1	<ESC>OP
PF2	F2	<ESC>OQ
PF3	F3	<ESC>OR
PF4	F4	<ESC>OS
UP ARROW	UP ARROW	<ESC>[A
DOWN ARROW	DOWN ARROW	<ESC>[B
RIGHT ARROW	RIGHT ARROW	<ESC>[C
LEFT ARROW	LEFT ARROW	<ESC>[D

The following escape sequences will be send for application keyboard mode:

VT-102 Keyboard	IBM PC Keyboard	Escape Sequence
PF1	F1	<ESC>OP
PF2	F2	<ESC>OQ
PF3	F3	<ESC>OR
PF4	F4	<ESC>OS
UP ARROW	UP ARROW	<ESC>OA
DOWN ARROW	DOWN ARROW	<ESC>OB
RIGHT ARROW	RIGHT ARROW	<ESC>OC
LEFT ARROW	LEFT ARROW	<ESC>OD
KEYPAD 0	KEYPAD 0	<ESC>Op
KEYPAD 1	KEYPAD 1	<ESC>Oq
KEYPAD 2	KEYPAD 2	<ESC>Or
KEYPAD 3	KEYPAD 3	<ESC>Os
KEYPAD 4	KEYPAD 4	<ESC>Ot
KEYPAD 5	KEYPAD 5	<ESC>Ou
KEYPAD 6	KEYPAD 6	<ESC>Ov
KEYPAD 7	KEYPAD 7	<ESC>Ow
KEYPAD 8	KEYPAD 8	<ESC>Ox
KEYPAD 9	KEYPAD 9	<ESC>Oy
KEYPAD -	KEYPAD -	<ESC>Om
KEYPAD ,	KEYPAD *	<ESC>Ol
KEYPAD .	KEYPAD .	<ESC>On
KEYPAD ENTER	KEYPAD +	<ESC>OM

The following escape sequences received from the remote computer are handled:

Function	Escape Sequence
ANSWER SEQUENCE TO REQUEST	<ESC>[<l>;<c>R
BACKSPACE	^H
CARRIAGE RETURN	^M
CHARACTER DELETE	<ESC>[<n>P
CHARACTER INSERT	<ESC>[<n>@
CURSOR MOVE DOWN	<ESC>[B
CURSOR MOVE LEFT	<ESC>[D
CURSOR MOVE RIGHT	<ESC>[C
CURSOR MOVE UP	<ESC>[A
CURSOR POSITION SET	<ESC>[<l>;<c>H
CURSOR POSITION SET (ABSOLUTE)	<ESC>[<l>;<c>f
CURSOR RESET	<ESC>[8
CURSOR SAVE	<ESC>[7
ERASE ENTIRE LINE	<ESC>[2K
ERASE ENTIRE SCREEN	<ESC>[2J
ERASE FROM START OF LINE	<ESC>[1K
ERASE FROM START OF SCREEN	<ESC>[1J
ERASE TO END OF LINE	<ESC>[0K
ERASE TO END OF SCREEN	<ESC>[0J
ESCAPE	<ESC>
IDENTIFY	<ESC>Z
INDEX	<ESC>D
INDEX REVERSE	<ESC>M
KEYPAD APPLICATION	<ESC>=
KEYPAD NUMERIC	<ESC>>
LINE DELETE	<ESC>[<n>M
LINEFEED	^J
LINE INSERT	<ESC>[<n>L
NEXT LINE	<ESC>E
READ CURSOR POSITION	<ESC>[6n
READ STATUS	<ESC>[5n
RING BELL	^G
APPLICATION KEYBOARD MODE	<ESC>[h1
CURSOR KEYBOARD MODE	<ESC>[l1
SET SCROLLING REGION	<ESC>[<t>;<b>r
TRANSMIT DEVICE ATTRIBUTES	<ESC>[c
CHANGE G0 CHAR SET UK	<ESC>[A
CHANGE G0 CHAR SET US ASCII	<ESC>[B
CHANGE G0 CHAR SET TO GRAPHICS	<ESC>[0
CHANGE G0 CHAR SET (ALT CHAR)	<ESC>[1
CHANGE G0 CHAR SET (ALT GRAPHICS)	<ESC>[2
CHANGE G1 CHAR SET UK	<ESC>[A
CHANGE G1 CHAR SET US ASCII	<ESC>[B
CHANGE G1 CHAR SET TO GRAPHICS	<ESC>[0
CHANGE G1 CHAR SET (ALT CHAR)	<ESC>[1
CHANGE G1 CHAR SET (ALT GRAPHICS)	<ESC>[2
SELECT G0 CHAR SET	^O
SELECT G1 CHAR SET	^N

Kermit Protocol Operation

To initiate a Kermit operation, you must first be connected (see above). A variety of Kermit commands is available from the Protocol Menu. Send and receive are the most common. They are used to send and receive files. Choosing send displays a dialog to choose files to be sent -- multiple files may be chosen to send in one operation. Choosing receive immediately attempts to begin receiving a file (the partner computer should begin sending).

Several advanced Kermit protocol operations are supported as well. Each of the various Kermit functions is invoked from the Kermit Menu:

Send... Send a file or group of files to the remote computer.

Receive Receive file(s) from the remote computer.

Server Initiate Kermit Server mode on the local computer to allow the remote computer to make requests.

Get... Request specific file(s) from the remote computer.

Host... Invoke a command on the remote computer.

Generic Invoke standard Kermit commands on the remote computer.

Note that both the Host and Generic commands require that the partner computer be in server mode. While any Kermit operation is in progress, the items in the Kermit Menu change to the following:

Cancel File Terminates the sending or receiving of the current file cleanly. A partially received file will be erased. A partially sent file will be handled by the remote computer depending on its settings.

Note that this function terminates the sending/receiving of only the current file. Kermit will continue to send/receive any additional files that are part of the batch.

Cancel Batch Terminates the sending or receiving of the entire batch of files being processed.

Stop Attempts to terminate any Kermit protocol operation cleanly.

Abort Terminates any Kermit protocol operation immediately. The remote computer may be left in a "funny" state.

Retry	Requests that the current packet be resent immediately. Normally a packet will be resent after the specified timeout period has expired.

Prior to invoking a Kermit operation, you must be connected to a remote computer. You must also ensure that your Protocol Settings are correct for the remote computer you are connected to (see the section on Setting Configuration Options).

Like this one, most Kermit programs have a wide variety of configuration options. Although Kermit will generally "negotiate" a mutually acceptable set of working options with the remote computer, there are some settings which you may need to make on both computers.

The most critical option is generally referred to as the "File Type" by most Kermit programs. Be sure to set the file type on the remote computer to text or binary based on the type of files you will be transferring. Note that Kermit for Windows does NOT have a setting for this because MS-DOS text files do NOT need special handling as they do under other operating system. If your files appear garbled after a file transfer, check the file type setting on the remote computer.

Despite popular belief, Kermit can usually transfer text or binary files FASTER than any other protocol (including ZModem)! However, you must enable certain extended features on both the local and remote Kermit program (Kermit defaults to a set of options that almost guarantee a transfer will work, but very slowly). The most important options to enable are Sliding Windows (use about 4 slots) and long packets (packet size of 1000 or so). Use the Protocol Settings Dialog in Kermit for Windows to configure these options. Setting these options on the remote computer will depend on the version of Kermit being used. Unfortunately, many popular off-the-shelf communications programs don't bother to implement all these extensions (just enable the ones that are available).

Sending Files

Prior to initiating the send operation from Kermit for Windows, you must tell the remote computer to prepare to receive the files you send. With Kermit, this can be done two ways. Either invoke the Receive or Server function on the remote computer.

Choose Send... from the Kermit Menu. The Send Files Dialog will appear. The Send Files Dialog is somewhat more complex than the ones in other communications programs because Kermit has the ability to send arbitrary batches of files using a list of file specifications (specifications may include wild cards).

In the File Selection area of the dialog, enter or select a file you wish to send and choose Add. The selected file will be added to the Send Queue at the top of the dialog box. You may also enter a file specification that includes wild cards (* and ?).

You may also use a wild card specification to specify a group of files to be DISPLAYED in the selection window by entering a wild card specification and choosing list. You may then choose the specific files you want to add.

Additionally, it is possible to select multiple individual files from the selection window by holding down the control or shift key as you click on the files you want to select. Be sure to choose Add after selecting the desired files to add them to the Send queue. If you hold down the control key and click, you will select just the files you actually click on. If you hold down the shift key and click, you will select all files between the currently selected file and the file you click on.

If you wish to remove files from the Send Queue, you may select the files to be removed in the Send Queue Window and choose Delete.

When you have added all the desired file specifications to the Send Queue, choose Send. The standard Kermit Protocol Status Window will display the progress of your transfer.

Receiving Files

Prior to initiating the Receive operation, you must tell the remote computer to send the desired files. This is accomplished differently depending on the version of Kermit being used by the remote computer. After initiating a Send operation on the remote computer, choose Receive from the Kermit Menu. The standard Kermit Protocol status Window will display the progress of your transfer.

Unfortunately, the current version of Kermit for Windows still isn't very smart about handling received files. It will overwrite any file with the identical name as it is received. Also, no checking is done for available disk space. When Kermit runs out of disk space for files being received, the protocol will abort in an ugly way with a cryptic error message.

Server Operation

Server operation can be invoked by choosing Server from the Kermit Menu. Kermit will display the standard Kermit Protocol Status Window and wait for commands from the remote computer (like send, get, etc.)

At this time, Kermit for Windows supports only a few server functions (although they are the most important ones: get, send, and type. This list will be significantly expanded in the near future.

Requesting Files from a Remote Kermit Server

You may request files from a remote computer funning Kermit in Server Mode by choosing Get from the Kermit Menu. A dialog is displayed requesting the names of the files to be requested from the remote computer. You may enter multiple file specifications separated by a apace character. Each file specification may be a single file or a wild card specification.

Invoking Commands on Remote Kermit Host

Some Kermit programs allow you to request the execution of commands on the remote computer. The remote computer must first be running Kermit in Server Mode. Then choose Host... from the Kermit Menu. A dialog will be displayed to allow you to enter the text of the command to be executed on the remote computer.

If the command string entered can be executed on the remote computer. then the results of the command will be displayed on the local Kermit for Windows terminal window.

Requesting Generic Functions on Remote Kermit Host

If a remote computer is running Kermit in Server Mode, then it may support various predefined generic functions. The remote computer must first be running Kermit in Server Mode.

Choose Generic... from the Kermit Menu. A dialog will be displayed that allows you to select the generic function you wish to perform on the remote computer (such as a directory listing, who is on, etc.). There are three lines to enter supplemental information for the generic command request. Fro example, if you selected the dir function, you could specify name of the directory in the first text box. Unfortunately, this version of Kermit is not very user friendly about showing you what each of the text boxes can be used for with each of the generic functions.

Choose OK to invoke the generic function. If the remote computer is able to handle the requested

function, the output of the function will displayed on the Terminal Window of the local Kermit for Windows.