

## COMET OVERVIEW

COMET: The Cornell Macintosh Terminal Emulator.  
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Cornell's Comet terminal communication package allows you to connect to the two major types of host computer using either serial/modem lines or a Telnet network to make the physical connection; Comet requires Apple's MacTCP TCP/IP driver to make Telnet TCP/IP connections. The Info menus offer some background information, along with descriptions of the menu items; Comet allows you to dump the Info menu text into the top session's edit window by holding down the Option key as you select the menu item. You can then bring up the window using the Window menu "Toggle .edit window" command to review and print the help text.

Using Comet, you can connect to either an IBM mainframe running an operating system such as VM/CMS or MVS, which uses the EBCDIC character set, or other hosts, which almost invariably use the ASCII character set.

## COMET SESSION DOCUMENTS

Comet uses Comet documents to retain session configuration information between launches. If you create macros after launching from a document or saving a configuration, they are automatically saved in the document. The "Comet Default" document is a special document which is automatically created in your System Folder when you first launch Comet; in addition to ordinary session configuration data which is used as a default when Comet is launched directly or a "New..." command is used to make a new document, it also saves Global Configuration data which applies to all sessions. If you create a new document by choosing "Reconfigure Session" and changing the name, the new document will have the same attributes as the source document (other than key macros). Each new Comet session requires about 50K of memory.

## COMET MACROS

Comet offers macros which can allow the user to create scripts to execute routine operations automatically. These can be stored as text in the .edit window, or associated with a keystroke or other program states... see USING MACROS for more information.

## COMET SCROLLBACK BUFFERING

Comet 3.0 supports scrollbar buffers for both 3270 and ASCII emulations which preserve screen character attributes (e.g., inverted or boldface text). Each buffer will grow until memory grows short, at which point the top page of the buffer will be deleted so that new lines can be added. If you want more room for scrollbar, use the Finder's "Get Info..." command to increase the size allocated for Comet. The "Clear" menu command clears the text from the buffer. The "Find" and "Find same" commands allow you to search the buffer, and the "Print" command prints either the selection range or the current screen if no selection has been made. To avoid running into situations where you run out of memory to copy or print, you need to set the scrollbar buffer size in the "Control Session..." dialog. Each line scrolled takes twice as much space to store as the length of the line, so 100 lines of an 80-column session takes 16K of memory. To help make sure you don't run out of memory, try to allocate Comet's memory size in the Finder's "Get Info..." dialog so that when you're running all the sessions you want you have as much memory remaining as the largest buffer you've allocated.

## THE .edit WINDOW

Each session has a ".edit" window in addition to the window containing the emulator screen. The session name is used as the first part of the window name, with ".edit" added as a suffix. This window is provided for use as a handy text scratchpad and/or scrollbar buffer which can be viewed at the same time as the emulator screen; the file contents are loaded automatically when the document is opened. The .edit window can also execute macros; the current line or selection range is interpreted and executed as a macro when the Enter key is pressed. The .edit window is a TextEdit window, and can hold up to 32K of text. See TRANSFERRING PROGRAMS AND TEXT and USING THE EDIT MENU for more information on the .edit window.

## TRANSFERRING PROGRAMS AND TEXT

Comet supports three different techniques for transferring files: TFTP, FT3270, and session logging. Comet is capable of functioning as a Trivial File Transfer Protocol (TFTP) server, so you can run TFTP on the host to connect to your workstation and transfer files. A special protocol, "FT3270," was also developed for transferring files over 7-bit connections (such as Sytek). This protocol allows the use of the same user interface for file transfer when the user's computer is connected by either the serial port or a network interface (the current Macintosh version functions only with IBM mainframes). Session logging, which you enable in the File menu, allows you to save screens from your session in a file as they are cleared.

The folder in which the session document is located is the default folder for up- and down-loading, unless "Comet Default" is the document being used, in which case the default download folder is the application's home directory. You can use the "Type file name at cursor" command in the File menu to switch folders and insert a file name at the cursor position. This command uses the standard file interface. When you create a new file by saving text or downloading a file, the file is set by default to be a TeachText document; you can cause files to be saved with a different document type by using the "Set default file type..." dialog before you save or download the file.

When files are downloaded, Comet checks the file name, and processes filenames with certain suffixes preceded by a '.' in special ways. These suffixes are:

- \* ".print": Print the file after it is downloaded, presenting the standard Print dialog.
- \* ".print.nodialog": Print the file without presenting the dialog.
- \* ".print.delete": Print the file and delete it after printing.
- \* ".print.nodialog.delete": Print the file without a dialog and delete it after printing.
- \* ".rename": Offers the user a chance to rename the file.
- \* ".edit": When you do a file download to a file with the same name as a session's .edit window, the downloaded text will be automatically appended to the window. Likewise, an upload using a session's .edit window name will cause Comet to save the .edit window before the upload is performed. (E.g., this is performed when a session is named "theory", and you download a file named "theory.edit") You can automatically add or delete carriage returns in your text using options in the "Control Session..." dialog, so that you can more conveniently use the TextEdit text wrapping on your Mac and have the paragraphs reformatted properly for your host.

## FILE TRANSFER USING TFTP

Comet includes a TFTP file transfer server, so the TFTP file transfer protocol can also be used to transfer files with any host which runs the TCP/IP protocols.

To use TFTP (the Trivial File Transfer Protocol) to exchange files with a UNIX (or other) host while running Comet, you must connect to the host and run TFTP on the host. First, however, you must enable Comet TFTP transfers by turning on the "TFTP Server on" item in the "Global..." dialog under the "Control" menu. PLEASE NOTE that if you turn off server asking, you are exposing your files to other users on the network, and that hostile users could delete or replace crucial files on your system, so use

this option with care.

While connected to the host, enter the command "tftp" and type Return to execute the host's TFTP application. When the host TFTP responds with a prompt, type "connect ", and use the "Type my address at cursor" command in the "Telnet" menu to enter your address on the command line. Now you are ready to transfer a file.

To transfer text files you will need to put the host TFTP into "netascii" mode by giving the host TFTP the command "mode ascii", which will guarantee that newlines are interpreted properly. (The "mode binary" command can be used to transfer files literally--"image", or "octet" modes may also be available; these are just different names for binary mode) You can then use the "put" and "get" commands to transfer files from your current directory (one at a time only, e.g. "put myfile hd/download/myfile"--the slashes will be translated into colons for the Macintosh on the Mac end.) If you want to disable the Alert box that asks you whether a file transfer is OK, you can turn off the "Request approval of TFTP transfers" item in the "Global" dialog in the Control menu. You can also disable the TFTP server, for security's sake, by using the "TFTP server on" menu item.

When you're finished, typing "quit" and a Return will exit TFTP.

#### USING FT3270 FOR FILE TRANSFER WITH IBM HOSTS

The FT3270 file transfer protocol can also be used to transfer files between the Macintosh (or PC) and an IBM mainframe. To perform a file download, log on to the IBM host, and use the command "exec download". To upload, use "exec upload". If you try these commands without file names, you will be shown a help screen. The file name needs to be surrounded by quotation marks to handle the case where the filename contains blanks. (Note that if you have not set TERMINAL ESC OFF or otherwise changed your escape character from "", the up- or down-load program will not receive the command-line correctly.)

Files may be transferred in either "text" or "binary" mode. In "text" mode characters are translated between IBM's EBCDIC character encoding and ASCII character encoding using the same translate tables as KERMIT, and translation of Carriage Returns is handled as appropriate for the Macintosh. In binary mode bytes are transferred without translation.

Syntax:

```
DOWNLOAD filename filetype <vol <filename | "file name">> <(<REPlace><BINary>>
UPLOAD <filename | "file name"> <filename <filetype <vol>>> <(<REPlace> <BINary>>
```

The default volume on the host is your A disk. The default directory on the microcomputer is the directory from which the application was launched. The default microcomputer target filename for downloading is "filename.filetype"; uploading reverses this default name mapping, so "filename.type" becomes "filename filetype a". Slashes in the microcomputer filename are interpreted at the Macintosh end as colons, so they function as directory path specifiers. On the Macintosh file system, you need to place a colon before a path name to specify the current directory; additional leading colons specify parent directories. If a Macintosh file name has spaces in it, enclose the name in quotation marks.