

Office Extend FTP

Technical Reference Manual

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Office Extend FTP

FTP Overview

Office Extend FTP is an FTP client/server system for Hewlett-Packard 3000 computers running MPE/V or MPE/iX. FTP implements the File Transfer Protocol defined in Internet RFC 959, designed to facilitate the transfer of files between computer systems.

As stated in the RFC:

"The objectives of FTP are 1) to promote sharing of files (computer programs and/or data), 2) to encourage indirect or implicit (via programs) use of remote computers, 3) to shield a user from variations in file storage systems among hosts, and 4) to transfer data reliably and efficiently. ..."

FTP is widely implemented across many different types of computer systems. Implementations exist for Unix, PC's, Mac's, IBM mainframes, and many other platforms. It is utilized to transfer data for use on the target system, or in store-and-forward arrangements.

Users (or programs) create a connection using an FTP "client" program to a "control port" on the server machine which responds to commands to send files between the client system and the server. Although the FTP protocol itself has many options and modes, the user (or program) is normally shielded from these internals and instead interacts with the client FTP program to issue simple commands to perform file transfers as well as utility operations such as logging in, moving among file "directories" (groups and accounts on the 3000), and displaying lists of files available for transmission.

Office Extend FTP can be used as easily between two HP3000's or a local PC and your HP3000 as across the far-flung reaches of the Internet. It can operate as a very cost-effective alternative to NS/3000 for many of that product's functions as well as providing access to Novell network data and other "foreign" systems.

HP3000 Implementation

Although the FTP protocol itself is well-defined (in RFC 959, available on the Internet or from 3k Associates), it is a function of each particular FTP implementation to translate these standard requests in terms of the underlying operating system and file structures. For the HP3000, implementation issues include login security, file structure translation, and hardware/software requirements.

The Office Extend FTP server is implemented as a background !JOB which "listens" for FTP connection requests from remote systems. A separate process is created to handle each connection. An FTP "login" is required which identifies the MPE user/group/account to which the remote wishes to gain access.

The Office Extend FTP client is implemented as a stand-alone MPE program which connects to a remote machine and then responds to commands from a user or "script" file to transfer data from or to the remote system.

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Installation

Please follow these instructions in installing FTP

From the Internet

If you downloaded the product via the Internet, then

- Place the exe file in a directory on your hard disk (we recommend a directory with no other files in it already)
- Execute the exe file; it will create several dozen other files
- Log onto the HP 3000 using Reflection (from WRQ*) as MANAGER.SYS
- Open the script window (hit ALT-y in R1)
- Open INSTALL.RCL file in the directory where you extracted the files
- RUN the script
- As one of the final steps of the script, a setup job will be streamed on the 3000; check the \$STDLIST of this job to make sure there are no problems
- Proceed with the instructions later in the manual (to configure and start the server)

*At this time, the Internet-downloaded version of the product requires the Reflection terminal emulator from WRQ to install.

From Tape

If you received the product via tape, then

- :RESTORE *TAPE;THREEKLD.PUB.SYS
- Modify the !JOB line to reflect your MANAGER.SYS password
- :STREAM THREEKLD
- Proceed with the instructions later in the manual (to configure and start the server)

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FTP SERVER MODE

This chapter details the installation, operation, and configuration of Office Extend FTP when operating as a "server".

Introduction

Office Extend FTP can operate as an FTP server. In this mode, the system responds to requests from remote FTP clients to perform file transfers from and to the HP3000. It normally operates in a background !JOB which can service multiple FTP sessions simultaneously.

The system normally generates console messages which, much like normal LOGON/LOGOFF messages, can be reviewed for system activity or analyzed later from an MPE log file.

Installation/Getting Started

- Follow the instructions in the previous installation section to get FTP installed.
- Modify the FTPSERV.JOB.THREEK job, supplying necessary passwords.
- Modify the FTPCFG.DATA.THREEK file to specify your system's IP address in the appropriate line (the line that starts with IPADDR)
- :STREAM FTPSERV.JOB.THREEK
- Try out your favorite FTP client. Use a PC client from Walker Richer & Quinn or other vendor, FTP from a Unix system, or use Office Extend FTP in *client* mode from this or another HP3000.

Configuration (FTPCFG)

The FTPCFG file is an unnumbered ASCII file which resides in the MPE group and account DATA.THREEK.

The commands within FTPCFG are executed by FTP in server mode whenever a new logon is requested, either at the start of a new connection or as a result of an explicit USER command sent from the client. FTPCFG controls the behavior of the FTP server. Depending upon their position within the file, FTPCFG statements become either globally applicable or are made specific to a particular MPE logon.

FTPCFG statements are available which can limit access to particular files, groups, and/or accounts by specific logons. These limitations are *in addition* to normal MPE security which always applies.

Other FTPCFG statements change the behavior of the system in various ways. The FTP manager can make the system appear as if it is a Unix system, for example, or automatically add and delete line numbers in ASCII files, change timeouts, communication and other parameters -- all either globally or for specific logons.

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Sample FTPCFG File _____

```
% This is a sample FTPCFG file.
% All text following a '%' are comments and do not affect
% the operation of the system.
IPADDR 192.1.1.1

SET MPESTYLE DETAILLOG BELL a global command setting various parameters
WELCOME "Welcome to ACME's FTP SERVER" displayed to new users

USER @.FINANCE Specific to FINANCE account logons.
  INCLUDE PUB.FINANCE These users can access these files
  EXCLUDE @.@ but cannot access anything else.

USER @.EXTEND Following statements apply only to EXTEND logons.
  SET UNIXSTYLE These users will operate in this 'style'

ELSEUSER Operates if no USER matches -
  DISCONNECT No access allowed, disconnect.
```

In the example above, all the statements before the first USER line (here the first SET and the WELCOME commands) apply to all logons. As each USER line is encountered in FTPCFG, the system matches the pattern specified with the actual logon being attempted. If they match, then the statements following that USER line are "enabled"; i.e., they are executed. If the pattern does not match, then interpretation of the statements following is "disabled" (not executed) until another USER (or ELSEUSER) line is encountered.

Starting and Stopping the Server _____

To start the FTP server:

- STREAM FTPSERV.JOB.THREEK

This job will run in the background and must remain running as long as you choose to have the FTP server available for users (clients) to log into it or send and receive files. This job will execute in the "CS" queue by default, and unless your dispatcher queues are radically changed from defaults, should always be run in this queue. The processes it creates are "asleep" unless they are actively responding to a client session; and since the remote clients are typically interactive users, interactive-level response from the server is called for.

To shut down the FTP server:

- RUN SHUTDOWN.SYS.THREEK

You must be logged onto a user with SM, OP, or PM capability, or logged on as MGR.THREEK to be able to run this program. Once run, the background job will log off as soon as it finishes serving any outstanding requests. This may take some time if there are users in the middle of long uploads or downloads. If immediate shutdown is required (and there are no other 3k products running under the same job; like NetMail/3000, DeskLink, or Pop Server/3000) then aborting the job is allowable.

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Security

As each client connects to the server, a child process is spawned to handle that session. The user.account,group and user for that session.

FTP also supports the notion of a "current working directory" which is initially set to the MPE group and account of the logon. FTP clients may utilize the CD (CWD) command to change this current working directory to some other MPE group or account. Note that this does not change the MPE logon group and account.

All requests for file transfers are interpreted for security purposes in terms of the MPE logon, not the current working directory. This is similar to the normal capability to do a LISTF command on files in some other account without necessarily having access those files for read/write. FTP will allow a client to CD to another location if there exists an INCLUDE specifying that location with READ, DIR, *or* WRITE access (note the "or" here) and as long as there is not an EXCLUDE which prevents the operation.

Once "there", however, that user is still constrained by applicable INCLUDEs as well as MPE security in what sort of access can be obtained of the files in that group and account. One good example of this is in the following "anonymous" implementation:

```
ALIAS ANONYMOUS ANON/UPASS.ANONMOUS/APASS,PUB/GPASS ; ANON

USER ANON.ANONMOUS
  INCLUDE UPLOAD.ANONMOUS DIR WRITE
  INCLUDE @.ANONMOUS READ DIR
  EXCLUDE @.@
  ROOT "/ANONMOUS"
```

Here we've sent the ALIAS called "anonymous" to an MPE logon ANON.ANONMOUS in the PUB group (*see the ALIAS command description for details*). Since we have UNIXSTYLE set (see UNIX EMULATION), a DIR here will display the files in PUB.ANONMOUS and will display all of the groups (@.ANONMOUS) as "subdirectories". Note that we've specified that /ANONMOUS is the implied root for this user. So from this client's perspective the root directory contains the files in PUB.ANONMOUS and the top-level directories are the @.ANONMOUS groups.

For most access within ANONMOUS, we've INCLUDED only READ and DIR capabilities. For the group UPLOAD.ANONMOUS, though, we've done something special ...

By specifying only WRITE and DIR capabilities to UPLOAD.ANONMOUS, we've allowed anonymous logins to upload files to this group and to list the names of these files (and other files which have been uploaded) using a DIR command but NOT to download or purge them.

Also, since PURGE capability was NOT specified, anonymous users may not overwrite files which already exist, but only upload files with names not already listed.

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ALIAS <i>ftpname equivalent</i> [;ANON]

The ALIAS command is used to simplify the client logon process by allowing short one-word names to be made equivalent to a full MPE logon.

Parameters

ftpname This is the name entered by the client during USER logon..

equivalent This is the MPE equivalent for ftpname. It may be as simple as USER.ACCT or as complicated as:

[sessionname,] user[/upass].acct[/apass] [,group[/gpass]]

ANON Specification of this optional parameter causes the password prompt to change to "Please enter your e-mail address ...". Since no MPE passwords will be requested on an ANON-type alias, it is imperative that all applicable MPE passwords be fully specified in the MPE equivalent.

Examples

```
ALIAS ANONYMOUS USER.ANONMOUS/APASS ; ANON
ALIAS JOE JOE,MGR.FINANCE
```

Discussion

ALIAS commands must appear in FTPCFG before the first USER line. Barring specification of an MPE session name in the alias equivalent, the alias itself becomes the MPE session name.

See Also

USER

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DISCONNECT

Used in FTPCFG to abruptly disconnect the current logon request.

Parameters _____

(none)

Examples _____

```
SET UNIXSTYLE
USER @.FINANCE          allow these users
USER @.CORP             allow these users
ELSEUSER
  DISCONNECT            disconnect all others
```

Office Extend FTP

EXCLUDE <i>groupspec</i>

Specifies a set of files which are inaccessible.

Parameters

groupspec..... parameter of the form <group>.<account> where:

<group>MPE group name or expression containing wildcard characters.

<account>MPE account name or expression containing wildcard characters.

Discussion

Used in FTPCFG to exclude access to the specified group(s). If placed before any USER line, then the exclusion applies to all FTP sessions. If placed after a USER line, then the exclusion applies only to that userset.

During FTP client logon, all applicable INCLUDEs and EXCLUDEs are recorded based upon the USER specified. Attempts to access files are then checked against this list with each INCLUDE/EXCLUDE specification being processed in order. The first specification which matches the request determines the result; i.e., if an applicable INCLUDE is discovered, then access is allowed under the restrictions specified in that INCLUDE. If an applicable EXCLUDE is discovered, then access is denied.

In any case, MPE security is respected and overrides any INCLUDE.

If no INCLUDE/EXCLUDE applies then the access attempt proceeds under MPE security.

Examples

INCLUDE PUB.DOC READ DIR	applies globally
USER @.FINANCE	for these users only
INCLUDE @.FINANCE	all modes
INCLUDE @.CORP	all modes
EXCLUDE @.@	excludes all other access

See Also

INCLUDE

Office Extend FTP

INCLUDE <i>groupspec</i> [READ] [WRITE] [DIR] [PURGE]

Specifies a set of files which are accessible.

Parameters _____

- groupspec**..... parameter of the form <group>.<account> where:
- <group>MPE group name or expression containing wildcard characters.
 - <account>MPE account name or expression containing wildcard characters.
- APPEND**..... Allow appending of data to the end of existing files.
- READ**..... Read access is enabled.
- WRITE** Write access is enabled.
- DIR** Directory (LISTF) access is enabled.
- PURGE**..... Purge access is enabled. This applies to the deletion of files as well as to PUTs which overwrite an existing file.

Discussion _____

Used in FTPCFG to explicitly include access to the specified group(s). If placed before any USER line, then the inclusion applies to all FTP sessions. If placed after a USER line, then the inclusion applies only to that user set.

During FTP client logon, all applicable INCLUDEs and EXCLUDEs are recorded based upon the USER specified. Attempts to access files are then checked against this list with each INCLUDE/EXCLUDE specification being processed in order. The first specification which matches the request determines the result; i.e., if an applicable INCLUDE is discovered, then access is allowed under the restrictions specified in that INCLUDE. If an applicable EXCLUDE is discovered, then access is denied.

In any case, MPE security is respected and overrides any INCLUDE.

If no INCLUDE/EXCLUDE applies then the access attempt proceeds under MPE security.

Examples _____

INCLUDE PUB.DOC READ DIR	applies globally
USER @.FINANCE	for these users only
INCLUDE @.FINANCE	all modes
INCLUDE @.CORP	all modes
EXCLUDE @.@	excludes all other access

See Also _____

EXCLUDE

Office Extend FTP

IPADDR	<i>ipaddr</i>
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Sets the local HP3000 IP address into the FTP system.

Parameters _____

ipaddr.....the IP address of the local HP3000 computer of the form nnn.nnn.nnn.nnn.

Discussion _____

Used by the HP system manager to set the local IP address into FTP for this host. This address is used automatically by FTP in client mode when specifying the FTP PORT command to the remote.

Office Extend FTP

MAXRECS	<i>maxrecs</i>
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Sets the default file size (in records) for PUTs.

Parameters _____

maxrecs..... Sets the default filelimit for PUT requests
(Default: 100000).

Discussion _____

When presented with a PUT request which does not explicitly specify the maximum number of records (via the ;*DISC=* parameter), the FTP server uses *maxrecs* when creating the file.

When the transfer has completed, FTP sets the limit back to the EOF.

Maxrecs also applies to APPEND requests which produce a new file (i.e., specify a file which does not yet exist). In this case, FTP does not set the limit to the EOF but rather leaves it as specified by *maxrecs* or the limit specified in a *DISC=* parameter.

Office Extend FTP

MAXWRITE	<i>maxtcpwrite</i>
-----------------	---------------------------

Sets the maximum TCP write request which will be issued in response to any request for data or file transfer.

Parameters _____

maxtcpwrite..... Maximum TCP/IP write request size
(Default and maximum: 4096).

Discussion _____

Some TCP/IP pathways, notably those through slow routers or complicated networks such as the Internet, may have trouble handling large TCP write requests.

This parameter can be used to reduce the maximum size that the FTP server will attempt to send. In most situations this parameter need not be specified.

Recommended minimum: 256.

Office Extend FTP

ROOT	<i>dirspec</i>
-------------	-----------------------

When operating in UNIXSTYLE (see SET UNIXSTYLE), sets the apparent root directory.

Parameters _____

dirspec..... of the form /<account>[/<group>]

Discussion _____

It is sometimes desired to not only limit particular users via MPE and INCLUDE /EXCLUDE security to access into a particular account and, possibly, group, but to actually make the rest of the system "invisible" to those users.

When specified, the *dirspec* is affixed to CD (CWD) requests as well as GETs and PUTs and any path displayed via PWD. The result is that the Unix root apparent to users operating under control of a *ROOT* specification becomes the *dirspec* supplied.

This is often used in ANONYMOUS implementations.

Examples _____

```
ALIAS anonymous anon/upass.anonmous/apass,pub/gpass
USER anon.anonmous
  ROOT /anonmous
```

Office Extend FTP

SET/RESET [ALLOWSTREAM] [DETAILLOG] [FILELOG] [FTPNAMES] [MPEPASSREQ] [MPESTYLE] [UNIXSTYLE] [NOSITE]

The SET command (and its counterpart RESET) is used to set (or reset) the state of various FTP operational flags.

Parameters _____

- ALLOWSTREAM**..... Allows the use of the \$STREAM destination pseudofile.
- DETAILLOG** Causes more detail to be displayed on the FTP server's \$STDLIST. All DIR (LIST), PUT (STOR), and GET (RETR) activity is displayed. This is in addition to the normal display of logons/offers, invalid passwords, etc.
- FILELOG**..... Causes log output (such as that produced using *DETAILLOG*) to appear on the system console in addition to normal FTP logon/logoffs.
- FTPNAMES** With this switch on, FTP will accept nonMPE- compliant names for storage and retrieval. An MPE name is generated on PUTs which consists of four characters of the requested name followed by four random hex characters. FTP assigns these files a filecode of 31839 (7C5Fh) and writes the actual filename in a user label. With FTPNAMES active, DIR requests are limited to the current working directory (CWD). During FTP operation from the client side, these "ftp names" are displayed (and searched) in lieu of the MPE filenames. The FTP program run in "client" mode (without the PARM=1) implements an LDIR <fileset> command which can be used to view a fileset in the same way it would appear to a remote FTP client.
- MPEPASSREQ** Requires that an actual MPE password be present.
- MPESTYLE** Causes the server to operate in normal "MPE" mode.
- UNIXSTYLE**..... Operation in this mode is detailed in a later section.
- NOSITE** Prevents execution of any SITE command from the remote client.

Discussion _____

Used in FTPCFG to set various FTP parameters for this session. If placed before any USER line, then the setting applies to all FTP sessions. If placed after a USER line, then the setting applies only to that user's session.

Office Extend FTP

TIMEOUT <i>timeout</i> [SECONDS MINUTES HOURS]

Sets the amount of time FTP will wait for a new command before aborting an FTP client session.

Parameters _____

timeout..... The timeout in seconds/minutes/hours
(Default: 5 minutes).

Discussion _____

It may be desirable to automatically disconnect users which have not performed any activity for some period of time.

Office Extend FTP

WELCOME <i>filename - or - "message"</i>

Specifies text which will appear as new clients log on to the system.

Parameters _____

filename..... The name of an unnumbered ASCII file containing text to be displayed as a welcome message.

"message" Text to be displayed as a welcome message.

Discussion _____

All welcome text specified either using a filename or string is concatenated and displayed as a single message. Welcome text collected via statements in the "global" section of FTPCFG (before the first USER line) is displayed before the user is prompted for a logon. Welcome text collected via statements within USER blocks (if any) is displayed following the logon as part of the "system ready" message.

Examples _____

```
WELCOME "Welcome to ACME Mfg's FTP Server"  
WELCOME "The system will be down FRIDAY"  
WELCOME MYWELC.PUB.FTP  
  
USER @.FINANCE  
    WELCOME "Annual Finance Meeting will be held"  
    WELCOME "Friday, October 12 at 8:00 PM"
```

Office Extend FTP

XEQ	<i>filename</i>
------------	------------------------

Specifies that an unnumbered MPE ASCII file should be executed.

Parameters _____

filename..... The name of an unnumbered ASCII file containing commands to be processed.

Discussion _____

In complicated FTPCFG situations, this command allows commands to be segregated into subfiles.

Office Extend FTP

FTP CLIENT MODE

This chapter documents the operation of Office Extend FTP in "client" mode.

Running FTP in Client Mode

Office Extend FTP also includes a client component. In this mode FTP connects to any remote FTP server (including Office Extend FTP running in server mode). Commands issued to the client cause files to be transferred from and to the remote. In order to operate correctly, you must first ensure that the "IPADDR" line in FTPCFG.DATA.THREEK has been initialized to the IP address of your HP3000 system. Once this has been done (by the administrator), then FTP can be run in client mode by issuing the following MPE command:

MPE/iX

```
:FTP [serverspec^[xeqfilename]]
```

MPE/V or MPE/iX

```
:RUN FTP [;INFO="serverspec^[xeqfilename]]"]
```

Parameters

- serverspec** either a name of the form *name.domain.org* or an explicit IP address of the form *nnn.nnn.nnn.nnn*.
- xeqfilename** the name of an unnumbered ASCII file which contains FTP client commands. If this file is not terminated by a QUIT command, then commands will be read from \$STDIN following completion of the XEQ file.

Examples

```
:FTP ftp.wrq.com^ftpsetup.pub.finance
:FTP ftp.wrq.com
:FTP ^ftpsetup.pub.finance
:FTP 192.9.7.101
:FTP

:RUN FTP INFO="ftp.wrq.com^ftpsetup.pub.finance"
:RUN FTP INFO="ftp.wrq.com"
:RUN FTP INFO="^ftpsetup.pub.finance"
:RUN FTP INFO="192.9.7.101"
:RUN FTP
```

Office Extend FTP

`:mpecmd`

Execute the specified MPE command.

Parameters _____

mpecmd..... Any programmatically-executable MPE command.

Discussion _____

Provides a way to issue MPE commands from the ftp> prompt as well as from XEQ files.

Office Extend FTP

APPEND	<i>hostfilename FROM localfilename</i>
	- or -
APPEND	<i>localfilename TO hostfilename</i>

Sends the specified file to the remote, appending the data if the file already exists or creating the file if it does not.

Parameters _____

hostfilename The name (in host format) of the target of the transfer.

localfilename The name of the source file.

Discussion _____

Transfers a file from the client to the host. If no *hostfilename* is specified (e.g., APPEND MYFILE), then the client filename and the target filename are assumed to be the same.

Office Extend FTP

ASCII

Causes both the local client and remote server FTP systems to interpret further file transfer data as ASCII.

Parameters _____

(none)

Discussion _____

FTP file transfers occur in one of three different modes, two of which are supported by Office Extend FTP: BINARY and ASCII. In BINARY mode (also known as IMAGE), files are transferred on an exact byte-for-byte basis. ASCII mode transfers cause CR/LF pairs to be added to records for transfers to the host (PUT) and similarly break inbound records at CR/LF boundaries when writing to a local file (GET).

See Also _____

BINARY

Office Extend FTP

BINARY

*Causes both the local client and remote server FTP systems to interpret further file transfer data as **BINARY**.*

Parameters _____

(none)

Discussion _____

FTP file transfers occur in one of three different modes, two of which are supported by Office Extend FTP: **BINARY** and **ASCII**. In **BINARY** mode (also known as **IMAGE**), files are transferred on an exact byte-for-byte basis. **ASCII** mode transfers cause **CR/LF** pairs to be added to records for transfers to the host (**PUT**) and similarly break inbound records at **CR/LF** boundaries when writing to a local file (**GET**).

See Also _____

ASCII

Office Extend FTP

CD <i>path</i>

Changes the current working directory on the host.

Parameters _____

path..... The name of a directory on the host server.

Discussion _____

Transfers (GET, PUT, etc.) and request for directory listing (DIR) use the current directory to interpret filenames. If a path is not specified on a GET, for example, then the current working directory is assumed.

This command changes the current working directory on the host only and does not affect the local current directory.

Examples _____

```
CD /usr/bin
CD pub.extend
```

Office Extend FTP

CDUP

Move "up" one directory level on server.

Parameters _____

(none)

Discussion _____

Transfers (GET, PUT, etc.) and request for directory listing (DIR) use the current directory to interpret filenames. If a path is not specified on a GET, for example, then the current working directory is assumed.

This command changes the current working directory on the host only and does not affect the local current directory.

Office Extend FTP

CLOSE

Closes the current connection (if open), but continues to process commands (see Quit).

Parameters _____

(none)

Discussion _____

This command can be used to close an existing connection to an FTP host without terminating the FTP program or an XEQ file.

See Also _____

OPEN, QUIT

Office Extend FTP

DELETE <i>filename</i>

Deletes a host filename.

Parameters _____

filename..... The name of the host filename to delete.

Office Extend FTP

DIR <i>hostfilespec</i> [[TO] localfilename]

Displays a list of host files matching the given filespec.

Parameters _____

hostfilespec Specifies a directory, file, or group of files on the host. If no **hostfilespec** is entered, the contents of the current host directory are displayed.

Discussion _____

Issues an FTP LIST command to the remote including the **hostfilespec** specification (if any). The results are either displayed on \$STDLIST or, if a TO <localfilename> specification is included, the results are written to that local filename.

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GET	<i>filename</i> [FROM <i>hostfilename</i>]
	- or -
GET	<i>hostfilename</i> [{TO AS} <i>localfilename</i>]

Retrieves the specified file from the remote.

Parameters _____

hostfilename The name (in host format) of the source of the transfer.

localfilename The name of the local target file. The format of this name is file[.group] (in MPESTYLE) or [path/]filename (in UNIXSTYLE).

"Build" parameters may also be append to the name if in MPESTYLE:

[;DEV=device]

[;DISC=[numrec][,[numextents][,initalloc]]]

[;REC=[recsize][,blockfactor][,[F|U|V][,ASCII|BINARY]]]

[;CCTL|NOCCTL]

[;CODE=filecode]

Discussion _____

Transfers a file from the host to the client machine. If no *hostfilename* is specified (e.g., GET MYFILE), then the client filename and the host filename are assumed to be the same.

The transfer occurs in the current mode set by ASCII/BINARY.

See Also _____

ASCII, BINARY

Office Extend FTP

```
IF [NOT] {condition | jcwname} relop value
statements
[ELSE
statements]
ENDIF
```

Controls the execution sequence of commands in an XEQ file.

Parameters

condition A defined FTP variable. One of:
CONNECTED Currently connected to remote.

jcwname The name of an existing MPE JCW. FTP maintains the value of several JCW's to reflect the status of its operations:
FTPFILESIN Incremented on each successful GET (or MGET).
FTPFILESOUT Incremented on each successful PUT (or MPUT).
FTPRESULT A single-digit integer containing the major result code of the previous FTP operation.
FTPRESULTDETAIL An integer containing the entire result code of the previous FTP operation.

relop One of: =, <>, <, >, <=, >=.

value An integer value to be tested against the JCW value.

Discussion

If the expression is true, the block of statements following the IF is executed up to a matching ELSE or ENDIF statement. If the expression is false, then the ELSE block (if specified) is executed.

Examples

```
OPEN 192.9.7.101
IF CONNECTED
:TELOP Connected!
:SETJCW FTPFILESIN, 0
GET MYFILE
IF FTPFILESIN = 1
:STREAM MYJOB
ENDIF
ELSE
:TELOP Not connected.
ENDIF
```

Office Extend FTP

LCD	<i>pathspec</i>
------------	------------------------

Change the local working directory.

Parameters _____

pathspec..... *Group[.account]* if in MPESTYLE or *path* if in UNIXSTYLE.

Discussion _____

Changes the "local working directory" to the specified MPE group and account. Note that this does NOT affect your actual MPE logon nor supercede any MPE file access security in force.

Office Extend FTP

LDIR	<i>fileset</i>
-------------	-----------------------

Displays a list of local files matching the specified fileset.

Parameters _____

fileset Specifies a directory, file, or a group of files on the client. If no *filespec* is entered, then the contents of the current client directory are displayed.

Discussion _____

If operating in MPESTYLE, displays the specified fileset in a format including the FTPNAME of the files, maximum size, and access date in addition to MPE LISTF,2 information.

If operating in UNIXSTYLE, displays the list in LS -l format.

See Also _____

LLS, LCD

Office Extend FTP

LLS	<i>fileset</i>
------------	-----------------------

Displays a list of local files matching the specified fileset.

Parameters _____

fileset Specifies a directory, file, or a group of files on the client. If no *filespec* is entered, then the contents of the current client directory are displayed.

Discussion _____

Displays a list of local files matching the given filespec. Unlike LDR, LLS displays only the filenames.

See Also _____

LDIR, LCD

Office Extend FTP

LPWD

Displays the current local working directory.

Parameters _____

(none)

Office Extend FTP

LS <i>hostfilespec</i> [[TO] localfilename]

Displays a list of host files matching the given filespec.

Parameters _____

hostfilespec Specifies a directory, file, or group of files on the host. If no **hostfilespec** is entered, the contents of the current host directory are displayed.

Discussion _____

Issues an FTP NLST command to the remote including the **hostfilespec** specification (if any). The results are either displayed on \$STDLIST or, if a TO <localfilename> specification is included, the results are written to that local filename.

Unlike DIR, LS displays only filenames.

Office Extend FTP

MGET	<i>filespec</i>
-------------	------------------------

Retrieves a group of files from the host.

Parameters _____

filespec Specifies a directory, file, or group of files on the client. If no filespec is entered, then all files in the current host directory are transferred.

Discussion _____

Operates by issuing an LS with the given filespec to a temporary file and then issuing a GET using each of the files listed.

Examples _____

MGET /finance/pub/dat*

Office Extend FTP

MKD	<i>directory</i>
------------	-------------------------

Creates a new directory on the host server.

Parameters _____

directory The name of the host directory to create.

Office Extend FTP

MPUT	<i>filespec</i>
-------------	------------------------

Sends a group of files to the host.

Parameters _____

filespec Specifies a directory, file, or group of files on the client. If no filespec is entered, then all the files in the current client directory (MPE group) are transferred.

Discussion _____

Operates by issuing an LLS with the given filespec to a temporary file and then issuing a PUT using each of the files listed.

Examples _____

MPUT DAT@

Office Extend FTP

OPEN <i>serverspec</i>

Closes the existing server connection (if any) and then attempts to establish a connection to the specified server.

Parameters _____

serverspec Can be either of the form *n.n.n.n* (e.g., 192.9.7.101) or *name.domain.org* (e.g., FTP.WRQ.COM).

Examples _____

OPEN BAMBAM
OPEN 192.9.7.101

See Also _____

CLOSE, QUIT

Office Extend FTP

PASS	<i>passspec</i>
-------------	-----------------

Sends an FTP PASS command to remote.

Parameters _____

passspec..... password string to send to remote host.

Discussion _____

After an explicit or implicit OPEN, FTP will normally prompt for a USER and PASS, if required. When operating in an XEQ file, however, FTP does not prompt and any host password required must be provided using the PASS command when requested.

Office Extend FTP

PUT	<i>hostfilename</i> [FROM <i>localfilename</i>]
	- or -
PUT	<i>localfilename</i> [TO <i>hostfilename</i>]

Sends the specified file to the remote.

Parameters _____

hostfilename The name (in host format) of the target of the transfer.

localfilename The name of the source file.

Discussion _____

Transfers a file from the client to the host. If no *hostfilename* is specified (e.g., PUT MYFILE), then the client filename and the target filename are assumed to be the same.

If operating to an HP3000 host running Office Extend FTP, the *hostfilename* may also include "build" parameters:

```
[;DEV=device]
[;DISC=[numrec][,[numextents][,initalloc]]]
[;REC=[reclsize][,blockfactor][,[F|U|V][,ASCII|BINARY]]]
[;CCTL|NOCCTL]
[;CODE=filecode]
```

Office Extend FTP

PWD

Prints the current host working directory.

Parameters _____

(none)

Office Extend FTP

QUIT

Closes the current connection (if open) and terminates the FTP program.

Parameters _____

(none)

Office Extend FTP

QUOTE <i>command</i>

Sends the specified command to the remote. Expects a single FTP reply in return. Used to send arbitrary commands to a remote which implements nonstandard FTP features (also see the SITE command).

Parameters _____

command Command to be sent to remote host.

Office Extend FTP

RMD	<i>directory</i>
------------	-------------------------

Deletes the specified remote host directory.

Parameters _____

directory Directory to be removed.

Office Extend FTP

RENAME <i>fromfilename tofilename</i>

Renames from the specified file .

Parameters _____

fromfilename The current filename.

tofilename The new filename.

Office Extend FTP

SET/RESET [FTPNames] [MPEStyle] [UNIXStyle] [NOSite]

The SET command (and its counterpart RESET) is used to set (or reset) the state of various FTP operational flags.

Parameters

- FTPNames** With this switch on, FTP will accept nonMPE-compliant names for storage and retrieval. An MPE name is generated on PUTs which consists of four characters of the requested name followed by four random hex characters. FTP assigns these files a filecode of 31839 (7C5Fh) and writes the actual filename in a user label. With FTPNames active, DIR requests are limited to the current working directory (CWD). During FTP operation from the client side, these "ftp names" are displayed (and searched) in lieu of the MPE filenames. The FTP program run in "client" mode (without the PARM=1) implements an LDIR <fileset> command which can be used to view a fileset in the same way it would appear to a remote FTP client.
- MPEStyle** Causes the server to operate in normal "MPE" mode.
- UNIXStyle**..... Operation in this mode is detailed in a later section.
- VERBOSE** Causes extra information to be displayed during FTP client operation. This includes actual MPE file characteristics for files created on the local HP host.

Office Extend FTP

[NO]TRACE

Causes FTP to open the formal file designator FTPTRACE (defaults to \$STDLIST) and begin tracing its activities.

Parameters _____

(none)

Office Extend FTP

USER	<i>userspec</i>
-------------	------------------------

Sends an FTP USER command to remote.

Parameters _____

userspec..... String to send to remote host as USER logon.

Discussion _____

After an explicit or implicit OPEN, FTP will normally prompt for a USER and PASS, if required. When operating in an XEQ file, however, FTP does not prompt and the USER and any host password required must be provided using the USER and PASS commands when requested.

Office Extend FTP

XEQ	<i>filename</i>
------------	------------------------

Causes FTP to begin reading its commands from the specified unnumbered ascii file. XEQ's may be nested to any reasonable level.

Parameters _____

filename..... The name of an unnumbered MPE ASCII file.

Discussion _____

Provides a means to automate FTP operations. See Operating FTP in Client Mode earlier in this chapter.

See Also _____

IF

Office Extend FTP can operate in a UNIXSTYLE. This describes its operation.

UNIXSTYLE

Many FTP clients automatically detect the type of server to which they attach. If they find a type with which they are familiar, they are able to provide the user with enhanced capabilities of various kinds--sometimes including point & click directory navigation or drag & drop file transfers.

Office Extend FTP's UNIXSTYLE allows these FTP clients to utilize any advanced features which have been included to access Unix systems.

When operating in UNIXSTYLE (via a SET UNIXSTYLE) in either FTPCFG (for server mode) or from an XEQ file or ftp> command, filenames and directory paths are automatically translated from a Unix-like */path/filename* format to the MPE *file.group.account* format.

UNIXSTYLE also affects the format for DIR listings. FTP will display output much like that of an "ls -l" in Unix systems.

Office Extend FTP maps the MPE accounting structure into a path:

/account/group/filename

In addition, FTP automatically displays appropriate directory entries as appropriate in the context. For example, issuing a "dir /" will display the contents of a virtual root directory containing the names of all the accounts on the system.

The PUB group of each account is considered the next level in the hierarchy. Issuing a "dir /finance" for the FINANCE account will display all the files in PUB.FINANCE and directory entries for all groups in the FINANCE account.

Coupled with the SET FTPNAMES command (see the SET command for details), UNIXSTYLE closely approximates an FTP server running on a Unix system.