Perforce 2006.2
FTP Plug-in User's Guide

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About This Manual

This guide tells you how to install, configure and run the Perforce FTP Plug-in (P4FTP). For details about how to use or administer Perforce, see the documentation at `http://www.perforce.com`.

Why an FTP server?

P4FTP enables an FTP client to access files in Perforce depots. For example, you might store shareware in a Perforce depot and use P4FTP to enable non-Perforce users to download the files.

Many development tools commonly used in web development environments are not integrated with software configuration management (SCM) software. The majority of these tools have a built in FTP client for publishing developed works. The Perforce FTP Plug-in uses this built-in FTP client to enable you to use SCM software in conjunction with your web development tools. When you use P4FTP in place of standard FTP, your files are kept in a Perforce depot under version control.

Feedback on this guide

Please send any comments or corrections to `manual@perforce.com`.

Chapter 1 Installing and Configuring P4FTP

P4FTP is both an FTP server and a Perforce client application. Files that are downloaded from the FTP server are retrieved from the depot, and files that are uploaded are put into the depot. For details, see "Product architecture" on page 8.

This chapter tells system administrators how to install and configure P4FTP.

System requirements

There are four components you need to install and configure to use FTP to access files in Perforce depots:

- FTP client: a command-line client or a web authoring tool such as Dreamweaver, which has an FTP client embedded in it. The FTP client communicates with P4FTP.

- P4FTP: accepts requests from an FTP client and communicates with a Perforce server.

- Perforce server: manages files in central repositories called depots. (Note: if you use versions lower than 2000.2, P4FTP does not display files size when you issue the FTP `ls` command.)

- Perforce client application: enables you to perform Perforce tasks directly. The most commonly-used Perforce client applications are P4V, the P4 command-line interface, and P4Web.

For details about installing Perforce, refer to the *Perforce System Administrator's Guide*.

The following table shows you where the components are installed. Note that you can install two or more components on the same computer. However, the Perforce server is typically a remote computer, because there is no advantage to be gained by locating your depot on the same computer as the workspace files.

Computer	Description	System requirements
Client computer	The computer where you work on files.	FTP client
		Network access to the FTP server
		Perforce client application (recommended)
FTP server	The computer where you run P4FTP.	P4FTP
		Network access to the Perforce server computer
		Perforce client application (required)
Perforce server	The computer where the Perforce server runs and where your file repository resides.	Perforce server

Product architecture

The following figure shows a high level view of the architecture of P4FTP:
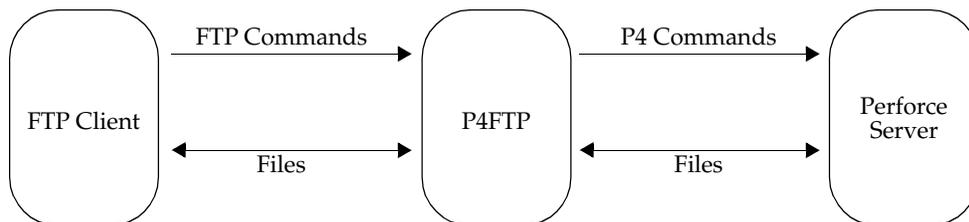
There are some important differences in behavior between P4FTP and a normal FTP server. For details about these differences, refer to Chapter 3, Perforce and FTP Differences.

Installation and configuration

To install P4FTP, perform the following steps:

1. Download P4FTP.

2. Choose a port number.

3. Start P4FTP.

4. Optionally, configure P4FTP to start automatically when you reboot the computer on which it runs.

5. Create Perforce users and workspace specifications.

After you perform these procedures, you can configure web authoring tools such as Macromedia Dreamweaver to use Perforce to store and retrieve your web site files. See "Configuring Macromedia Dreamweaver with P4FTP" on page 24 for details. The following sections tell you how to install P4FTP.

Downloading P4FTP

To download P4FTP:

1. Launch a web browser and go to:

   `http://www.perforce.com/perforce/products/p4ftp.html`

2. On the Perforce product download web page, find the version of P4FTP that is compatible with the platform where you intend to run it.

3. Download the file to the directory where you intend to run it.

   | Note | Recommended installation directories are:
   | | • Windows: `C:\Program Files\Perforce\`
   | | • UNIX*: `/usr/bin/` or `/usr/local/bin/`

Choosing a port number

P4FTP is a modified FTP server. Its default port number is 21, which is also the default port number for standard FTP servers. To avoid port conflicts, you can assign a different port number to P4FTP when you start it, as follows:

- Command line: specify the `-l` flag when you start P4FTP.

- Windows service: use the `p4 set -S` command option to set the `P4FTPORT` environment variable for the service. For details, see "(Optional) Configuring P4FTP to start automatically" on page 11.

Starting P4FTP manually

To start P4FTP manually (that is, from the command line), perform the following steps:

1. Login as the user that you want to run P4FTP.

   > **UNIX** If you want to run `p4ftpd` on a privileged port (a port number lower than 1024), login as root. The default port for standard FTP servers is port 21. To enable P4FTP to listen on a privileged port while running as a user other than root, specify the `-u username` flag when you start `p4ftpd`.

2. Windows users: open a DOS window.

3. Run `p4ftpd`.

   When starting `p4ftpd`, you can specify the host and port number of the Perforce server you want to access, and optionally the port on which P4FTP accepts FTP commands.

   For example, to start `p4ftpd` with its default port (21) on the same computer (named `perforce`) where the Perforce server is running on its default port (1666), issue the following command:

   ```
   p4ftpd
   ```

   To start `p4ftpd` on port 1232 communicating with a Perforce server running on port 2343 on a remote computer named `bigcomputer`, issue the following command:

   ```
   p4ftpd -p perforce.bigcomputer.com:2343 -l 1232
   ```

By default, `p4ftpd` submits changelists with the following description:

```
[P4FTPD] Automatic changelist for uploaded files
```

When you start `p4ftpd`, you can override the default description using the `-t` flag. In the description, you can specify the following macros, which are expanded when the changelist is submitted

Macro	Expands to
`%user%`	user name
`%client%`	client workspace name
`%ftphost%`	host name (`p4ftpd` host)
`%time%`	timestamp

For example:

```
p4ftpd -t "[P4FTP(%ftphost%)] submit by %user% from %client% at %time%"
```

(Optional) Configuring P4FTP to start automatically

You can configure P4FTP to start automatically when its host computer is rebooted.

UNIX computers

Edit the startup scripts according to the convention for your UNIX platform. If you intend to run P4FTP on a port other than the default, be sure to set the `P4FTPPORT` environment variable in the startup script.

Windows computers

To configure P4FTP to start automatically when its host computer is rebooted, create a service as follows:

1. At the DOS command prompt, change to the directory where the file `p4ftpd.exe` is located. (This file is the one you downloaded from the Perforce web site.

2. Create a copy of `p4ftpd.exe` named `p4ftps.exe` by issuing the following command:

   ```
   cp p4ftpd.exe p4ftps.exe
   ```

3. Create a service by issuing the following command:

   ```
   svcinst CREATE -n "Perforce FTP Server" -e "fullpath/p4ftps.exe" -a
   ```

   where *fullpath* indicates that you must specify the full location of the `p4ftps.exe` file. Windows displays the following results:

   ```
   Creating Service
           ServiceName=Perforce FTP Server
           ExeName=c:\Program Files\perforce\p4ftps.exe
           Autostart requested
   ```

   (To verify the service has been successfully created, use the Services control panel.)

   > **Note** The `svcinst` utility is installed when you install the Perforce server on Windows NT, in the same directory as the server. For more details, refer to `http://www.perforce.com/perforce/technotes/note035.html`

4. To specify a host and port for the service, issue the `p4 set` command. For example, to ensure that P4FTP listens on port 1892, issue the following command:

   ```
   p4 set -S "Perforce FTP Server" P4FTPPORT=1892
   ```

   You can also configure the user and client workspace name for the P4FTP service, for example:

   ```
   p4 set -S "Perforce FTP Server" P4USER=bruno
   p4 set -S "Perforce FTP Server" P4CLIENT=bruno
   ```

To start the service manually, use the Services control panel. The service starts automatically when you reboot your computer. To view settings, use `regedit` to display `\\HKEY_SYSTEM\CurrentControlSet\Services\`*SERVICENAME*`\Parameters` where *SERVICENAME* is the name you gave the service when you created it.

Creating Perforce users and client workspace specifications

For each user who intends to access Perforce depots using P4FTP, you must create a Perforce user and a client workspace specification on the P4FTP server computer. Perforce uses the client workspace specification to determine the location of its client workspace, where it stores files on your client computer.

The following sections tell you how to create a Perforce users and client specification. Perform these steps from a computer where P4V or the Perforce command-line interface (p4) is installed. You can direct P4FTP to create a client specification using a template, when a user that has not P4FTP client specification connects for the first time. For details, see "Specifying a template for undefined client specifications" on page 17.

Using P4V

To create a Perforce user and client specification using P4V, perform the following steps.

1.   Launch P4V. The **Open Connection** dialog is displayed.
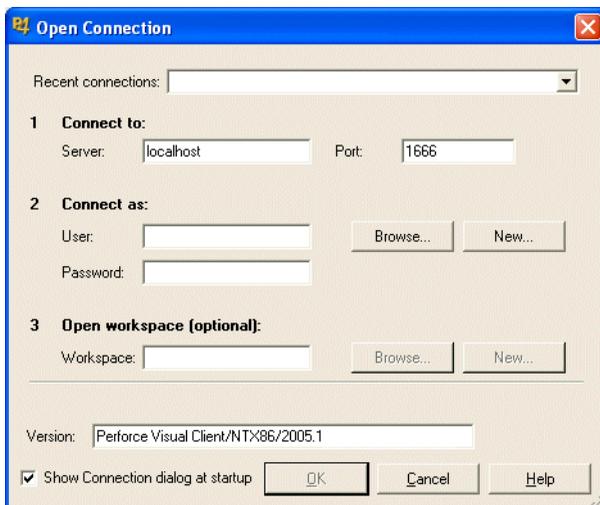
2.   Click the **New...** button next to the **User** field. The **New User** dialog is displayed.
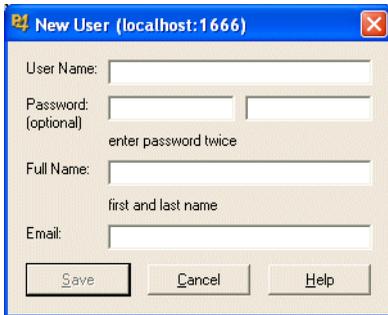
3.   Enter the information for the user you want to create and click **Save** to dismiss the dialog.

4.   Click the **New...** button next to the **Workspace** field. When prompted, enter "ftp-" followed by the name of the user you created in the preceding steps. The **New Workspace** dialog is displayed.
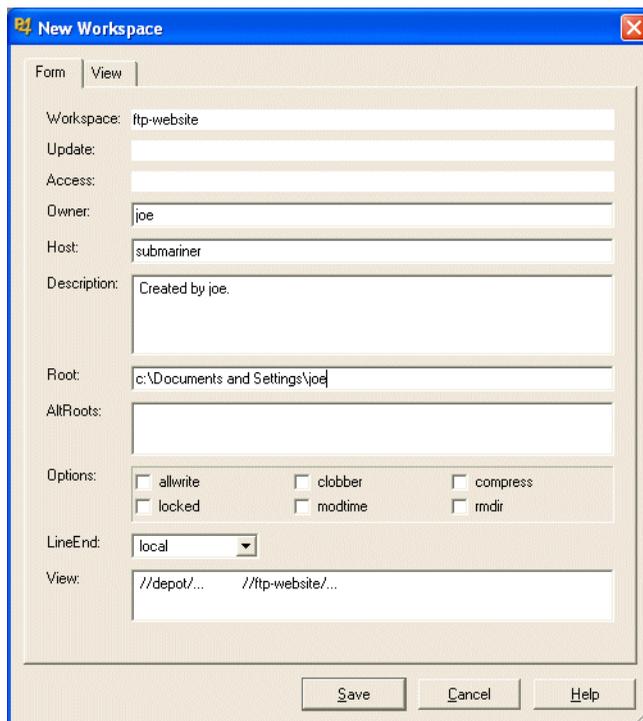
5.   Enter the required information. Note that, because you define the client workspace on the computer where P4FTP runs, you only need to correct the `normdir` option. Check the following entries:

Field	Description
Host name	Specify the name of the computer where P4FTP runs. For example: `mycomputer.mycompany.com`.
Root	Specify the directory on your FTP server computer where you want the Perforce client workspace to be located. P4FTP uses the client workspace as temporary local storage.
	Specify a location below the root directory, such as `C:\p4client`. To avoid cluttering the root directory of your client computer, do not use the root directory as the root of your client workspace. Choose a directory that is not used by another program or process.
Options	Check `rmdir`. If your Perforce depot is located on a UNIX computer and your FTP client is located on a Windows computer, set the **LineEnd** option to `win`.
View	Specifies the mapping of the Perforce depot to your client workspace, to determine which files in the depot are visible to your client computer. Do not change this entry unless you understand Perforce client views and want to alter the mapping.

6.   Click **Save** to save your changes.

The user and workspace are created. You do not need to connect to the server using P4V for your entries to take effect.

Using the P4 command-line interface

To create a Perforce user and client specification using the Perforce command-line interface, perform the following steps.

1. At the command line, issue the p4 user command. Perforce launches a text editor and displays the **Perforce User Specification** form as follows.

2. Enter the information for the new user in the **User**, **Email**, **FullName**, and (optionally) **Password** fields.

3. Save and close the file.

4. At the command line, issue the `p4 client` command. Perforce display the **Perforce Client Specification** form as follows:
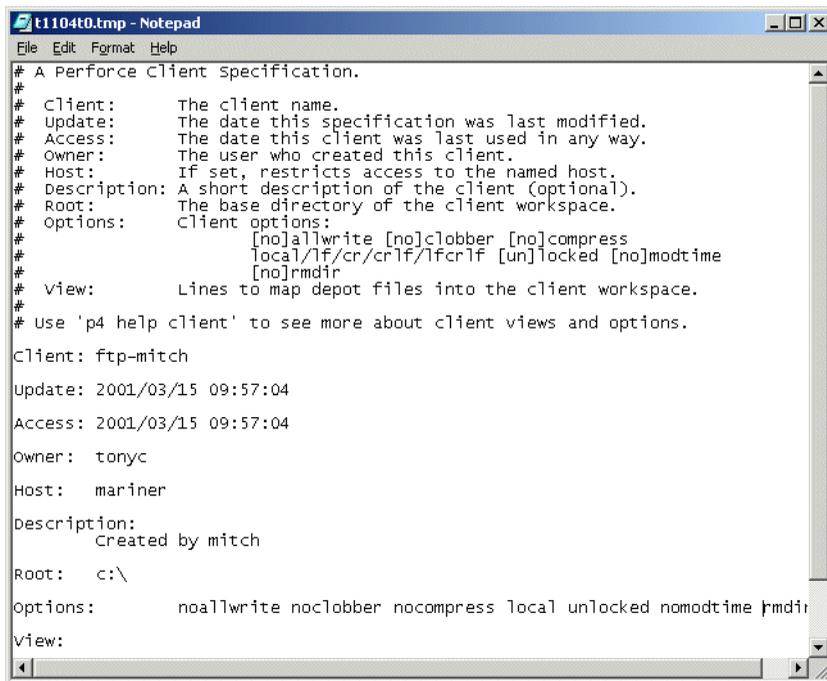
5. Change the entries in the following fields:

Field	Description
Client	Specify "`ftp-`" followed by the Perforce user name.
Host	Specify the name of the computer where P4FTP runs. For example: `mycomputer.mycompany.com`.
Root	Specify the directory on your FTP client computer where you want the Perforce client workspace to be located. Recommendation: specify a location below the root directory, such as `C:\p4client`. To avoid cluttering the root directory of your client computer, do not use the root directory as the root of your client workspace.

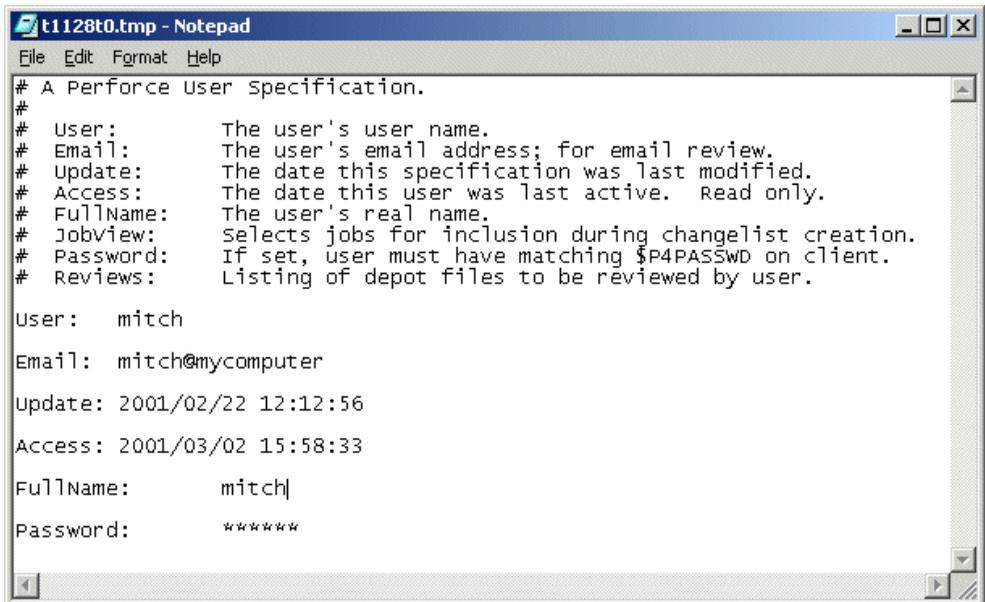| Field	Description
Client options	Change normdir to rmdir. If your Perforce depot is located on a UNIX computer and your FTP client is located on a Windows computer, set the **LineEnd** option to win.
View	Specifies the mapping of the Perforce depot to your client workspace, to determine which files in the depot are visible to your client computer. Do not change this entry unless you understand Perforce client views and want to alter the mapping.

6. Save and close the file.

Specifying a template for undefined client specifications

To enable P4FTP to create an "ftp-" client specification for users that lack one, you can specify a template client specification. The first time a user that lacks an "ftp-" client specification connects, p4ftpd creates an "ftp-" client specification based on the client template. If you do not specify a template, P4FTP requires all "ftp-" client specifications to exist when it attempts to connect to the Perforce server.

The client template is an existing Perforce client specification. You define the client template as described in "Creating Perforce users and client workspace specifications" on page 12. To ensure that client roots do not conflict, you can use macros in the client root field of the template. For example, the following client root definition directs P4FTP to create a client root directory using the format /data/*host*/*user*:

```
Root: /data/%ftphost%/%user%
```

To ensure that client roots do not conflict, and to tailor the client view to meet your needs, you can use macros in both the client root field and the view field of the template. For example:.

```
Root:   /data/%user%
View:
//depot/main/... //ftp-template/main/...
//depot/user/%user%/... //ftp-template/%user%/...
```

These definitions ensure that each user's client root is unique and map a user-specific depot path into their client view, along with files in the //depot/main/... path.

To specify the client template that you want P4FTP to use, specify the -T flag when you start p4ftpd. For example:

```
p4ftpd -T ftp-myclient-template
```

Using config files

You can use Perforce config files to specify client options for `p4ftpd`. A *config file* is a text file containing specifications for Perforce client settings. (For detailed information about config files, see the *Perforce Command Reference*.) In addition to the standard Perforce client settings, you can specify the following P4FTP settings:

- `P4FTPPORT`
- `P4FTPPREFIX`
- `P4FTPLOG`
- `P4FTPSYSLOG` (UNIX only)
- `P4FTPCHANGE`
- `P4FTPTEMPLATE` (template client specification; see "Specifying a template for undefined client specifications" on page 17)

For details about these settings, see "P4FTP configuration options" on page 21. Note that `p4ftpd` obtains settings for `P4USER`, `P4PASSWD` and `P4CLIENT` from its FTP client and therefore ignores any config file entries for these settings. Any settings that you specify on the command line when you start `p4ftpd` override corresponding config file settings.

Verifying your installation

The following sections tell you how to verify that P4FTP is up and running. Note that, to perform these procedures, your Perforce server must be running and you must have started P4FTP as described in the previous sections.

Using the command line

To verify that you have successfully installed and configured P4FTP, issue the following commands to start an FTP client and connect with P4FTP:

1. At the operating system prompt, start FTP by issuing the `ftp` command.

2. At the `ftp>` prompt, issue the open command to connect to the host where P4FTP is running; for example, to connect to a host named "myhost" listening on port 1234:

   `FTP> open myhost 1234`

   The message "`220 Perforce P4FTP FTP Server ready`" is displayed.

3. If prompted, log in.

4. Display the contents of the Perforce depot by issuing the FTP `ls` command. To browse the depot and transfer files, use other standard FTP commands.

5. To display information about commands supported by P4FTP, issue the `help` command.

Using a Web browser

To verify that you have successfully installed and configured P4FTP, perform the following steps to use a browser to connect with P4FTP:

1. Launch a Web browser.

2. In the URL window, enter a URL that specifies FTP protocol, the Perforce user, and the P4FTP host name and port.

    For example, if P4FTP is running on mycomputer and listening on port 1850, enter:
    ```
    ftp://mitch@mycomputer:1850
    ```

    If you are using Internet Explorer, you must specify the user password (if any) in the URL in the following format:
    ```
    ftp://username:password@hostname:portnumber
    ```

3. If prompted, enter your password and click OK.

    The browser displays the contents of the depot. The following figure shows a browser displaying a depot.
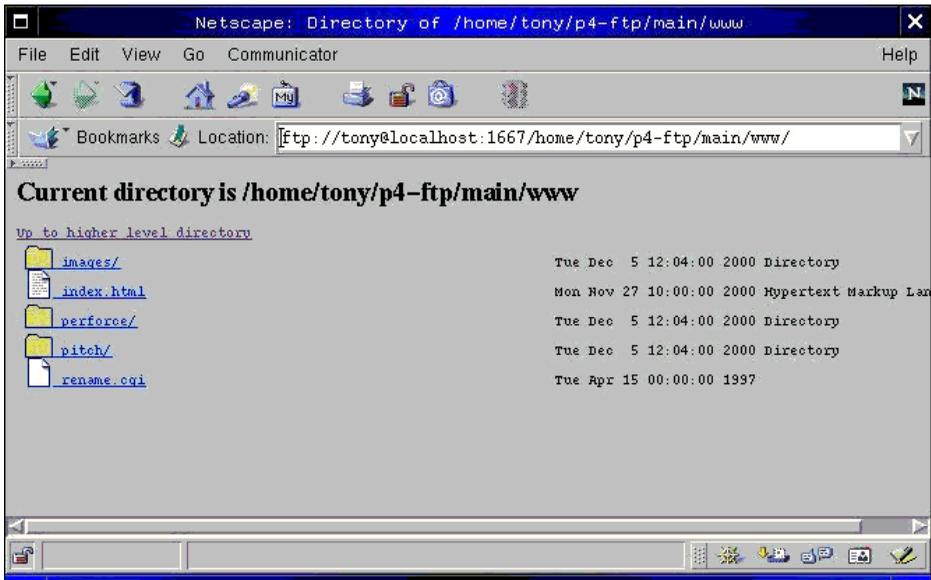
Automatically syncing a Perforce client workspace

To configure P4FTP to automatically sync files to a specified workspace, you can specify the following options when you start `p4ftpd`. You cannot start `p4ftpd` in single-threaded mode (using the `-f` flag) if you want to use its automatic sync feature.

Valid options are as follows:

- `-O autosync`: Sync the entire client view every 300 seconds (five minutes).

- `-O syncdelay=n`: Sync every *n* seconds. The default interval is 300 seconds. If you specify this option, omit the `-O autosync` option.

- `-O syncspec=valid_sync_specification`: Sync only the specified files. *valid_sync_specification* can be any file specification you can use with the p4 sync command, including wildcards, labels or changelist numbers. By default, the entire client view is synced. If you specify this option, omit the `-O autosync` option.

The workspace that is automatically synced is taken from the environment of the `p4ftpd` process when it is started, including Perforce config files. (For details about configuring workspace settings, refer to the *Introducing Perforce*. For details about using config files, refer to the *Perforce Command Reference*.)

You can specify these settings:

- when you start `p4ftpd`, or

- by setting the `P4FTPOPTIONS` environment variable before you start `p4ftpd`, or

- in a Perforce config file in or above the directory from which `p4ftpd` was started.

If you run `p4ftpd` as a Windows NT service, you must use the `P4FTPOPTIONS` environment variable to set options.

Example: *The following example sets* `p4ftpd` *to sync the entire client view every five minutes:*

```
p4ftpd -O autosync
```

Example: *The following example sets* `p4ftpd` *to sync the files in the* `external_web` *directory every hour:*

```
p4ftpd -O syncdelay=3600 -O syncspec=//external_web...
```

Example: *The following example shows how to specify the preceding settings in a config file.*

```
P4FTPOPTIONS="syncdelay=3600,syncspec=//external_web..."
```

P4FTP configuration options

You can use the following environment variables to configure P4FTP.

Environment variable	Description
P4FTPPORT	Specifies the TCP port to listen on. The default port is 21.
P4FTPPREFIX	Specifies the prefix to be prepended to the user's login to determine the corresponding Perforce client workspace. The default prefix is "ftp-".
P4FTPCHANGE	Specifies the description to be included when P4FTP submits changelists. Overrides the default description.
P4FTPLOG	Specifies the file where P4FTP logs errors. By default, errors are sent to stderr.
P4FTPOPTIONS	Set multiple options, including automatic syncing of the current workspace, how often to check for submitted changelists and which files to sync. Use commas to separate multiple options. For example: `P4FTPOPTIONS=dwlocking,autosync,syncdelay=10` For details about the options you can specify, see "P4FTP startup options" on page 22.
P4FTPSYSLOG	UNIX only: If set, enables logging using `syslog()`.

P4FTP startup options

You can specify the following options when you start `p4ftpd`.

Command Line Flag	Description
`-c prefix`	Prefix applied to the username in order to derive the name of the Perforce client to use. Defaults to "`ftp-`" if not specified.
`-C charset`	Do not set unless your Perforce server is running in international mode (ask your Perforce administrator, and consult the description of P4CHARSET in the *Perforce Command Reference* for details.)
	Valid settings:
	• `utf8`
	• `iso8859-1`
	• `shiftjis`
	• `eucjp`
	• `iso8859-15`
	• `macosroman`
`-d`	Run as a daemon process (UNIX only), meaning that `p4ftpd` does not shut down when the user that started it logs off.
`-f`	Run in single threaded mode. `p4ftpd` will service one request at a time in this mode.
`-h`	Print the command line syntax and exit.
`-i`	Started from `inetd` (UNIX only). Implies `-f`, because `inetd` creates a dedicated P4FTP for each request.
`-l port`	Specify the TCP port number on which `p4ftpd` listens for incoming connections. By default, `p4ftpd` listens on port 21, which is standard for FTP servers. On UNIX machines, only processes started by root can listen on ports below 1024.
`-L logfile`	Redirect all log messages to the specified file. If not specified, error messages are directed to stderr

Command Line Flag	Description
`-O p4ftp_option`	Specifies various P4FTP settings. Specify each option separately; for example: `-O dwlocking -O autosync` Valid options are: `dwlocking`: uses Dreamweaver file locking to ensure that Perforce and Dreamweaver each observe the other's locks. `dw4locking`: same as dwlocking for version of Dreamweaver prior to version 2004. `autosync`: enables automatic syncing of the entire client view every five minutes. `syncdelay n`: specifies how often to sync automatically. You can omit `autosync` if you specify this option. `syncspec=valid_sync_arg`: specifies the portion of the client view to be automatically synced. Specify `valid_sync_arg` using any valid specification for the `p4 sync` command, including changelists and wildcards. You can omit `autosync` if you specify this option. `keepfiles`: prevents P4FTP from deleting files from its workspace after syncing them. By default, files are deleted, but if you are using P4FTP for anonymous FTP, this option prevents race conditions that can occur if two people request the same file at almost the same time.
`-p address`	Address of the Perforce server that serves the depot. Defaults to `perforce:1666` if not specified
`-s`	Redirect all log messages to the syslog daemon (UNIX only).
`-T client-template`	Specify a Perforce client to be used as a template for clients lacking a corresponding "`ftp-`" client specification. For details, refer to "Specifying a template for undefined client specifications" on page 17.
`-t description`	Specify the description to be attached to all changelists created by P4FTP. Defaults to: `[P4FTP] Automatic changelist for uploaded files`
`-u username`	UNIX only: Specify the username with which the `p4ftpd` process runs. Enables you to assign a privileged port (a port number lower than 1024) to `p4ftpd` without assigning root privileges to the process.

For example, to start `p4ftpd` on the local machine on port 21, running with a non-root user and communicating with the Perforce server running on `perforce.myorg.com` on port 1666, issue the following command:

```
$ p4ftpd -p myftphost:1666 -l 21 -u p4ftpadministrator
```

Configuring Macromedia Dreamweaver with P4FTP

The following sections tell you how to configure Dreamweaver and Perforce with P4FTP so you can store your web site files in Perforce depots and access them in Dreamweaver exactly as you access remote sites using normal FTP.

Overview

The areas you must configure to use Dreamweaver with Perforce are as follows:

- Client workspace: an area of working storage on the computer where P4FTP runs. Must not overlap the local root.

- Local root: the directory where Dreamweaver stores its working copies of the web site files for editing.

- Host directory: a path relative to the root of your Perforce workspace, where Dreamweaver publishes the site's files.

For example, if you're running Dreamweaver on a Windows computer, P4FTP on a UNIX computer named `ftpserver` and the Perforce server on a UNIX computer named `perforceserver`, configure as follows:

- Client specification for "`ftp-mitch`"

  - Host: `ftpserver`

  - Client root: `/usr/team/mitch`

  - Client view: `//depot/... //ftp-mitch/...`

- Dreamweaver configuration for a Web site named "`marketing99`"

  - Local root: `c:\dwroot\marketing99`

  - Host Directory: `/main/marketing99/`

After you configure Dreamweaver and Perforce, you use Dreamweaver's **Get**, **Put**, **Check In** and **Check Out** menu options to store and retrieve web site files.

Creating web sites

To use Dreamweaver to create a web site that resides in a Perforce depot, perform the following steps:

1. Create a folder on your computer where you want Dreamweaver to store the local copies of your web site files. (Example: `C:\mywebsite`).

2. In Dreamweaver, choose **Site>Manage Sites...** The **Manage Sites** dialog is displayed.
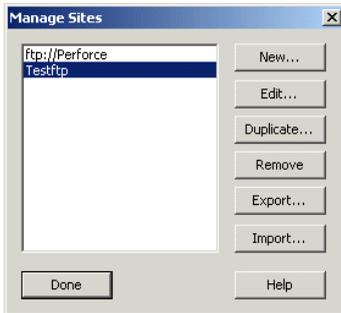
3. Click **New...**

4. Enter the local settings for the new site, as illustrated in the following figure.

    Important: in the **Local Root Folder** field, specify an existing directory that does not reside in your client workspace root.
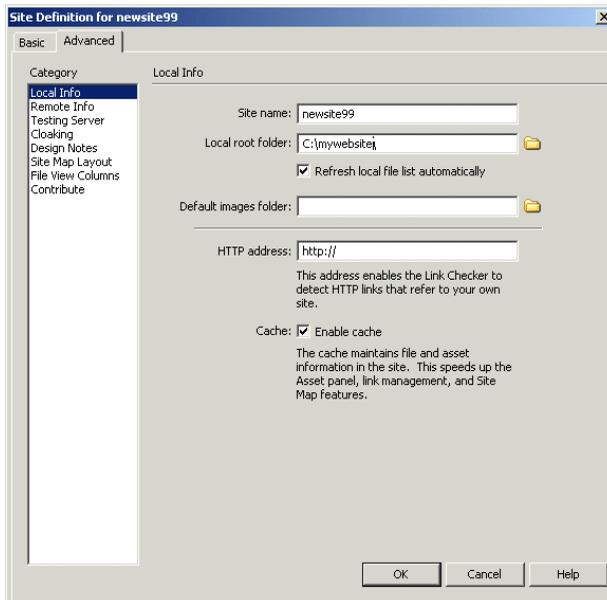
5. In the Category pane, click **Remote Info**. The **Remote Info** pane is displayed.

6. From the Access list, choose FTP. The following fields are displayed.
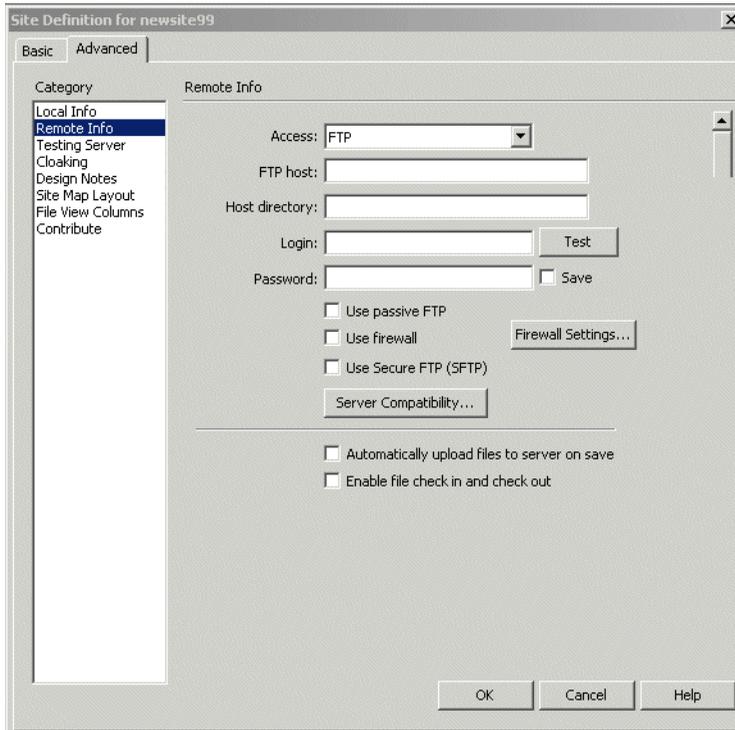
7. Make the following entries.

Field	Description
FTP Host	Enter the name of the computer where P4FTP is running and the port on which it is listening for FTP requests. For example: `myftphost:1234`
Host Directory	The folder in the depot where you want to store your web site files. Specify this directory as a relative path (in other words, omit the client root directory) using the operating system convention of the computer where you run P4FTP.
Login	Enter your Perforce user name.
Password	Enter your Perforce password, if you have one.

Check **Enable file check in and check out** only if you are working in a team environment, with locking enabled. See "Working in a team environment" on page 27 for details.

8.   Click OK to save your entries.

You can now use Dreamweaver's **Get**, **Put**, **Check In and Check Out** menu options to store and retrieve web site files in the depot.

Sample configuration

The following example provides Perforce and Dreamweaver settings for a web site stored in a Perforce depot in `//depot/websites/site001`.

Perforce settings for client workspace

• "`ftp-`" client root: `C:\ftproot`

• "`ftp-`" client view: `//depot/...  //ftp-myuser/depot/...`

Dreamweaver remote settings for site001

• Host directory: `depot/websites/site001`

Working in a team environment

If you are the only person working on Dreamweaver files, you can use the **Put** and **Get** commands to transfer files between your machine and your web site. However, in team development environments, you can configure Dreamweaver to lock files when you check them out, to prevent other users from overwriting your changes. To enable file locking:

• Start `p4ftpd` with the `-O dwlocking` option enabled. Note that `dwlocking` only works for Dreamweaver 2004 MX. For older releases use `dw4locking`.

• Choose **Manage Sites>Remote Info** and check **Enable File Check In and Check Out**. (Note that, when Dreamweaver locks a file, it creates a corresponding `.LCK` file.)

• Use **Check In** and **Check Out**, not **Put** and **Get**, when editing files.

Note that the email address you specify when you enable locking must match the email address defined for the corresponding Perforce user.

Must match Perforce user's email address
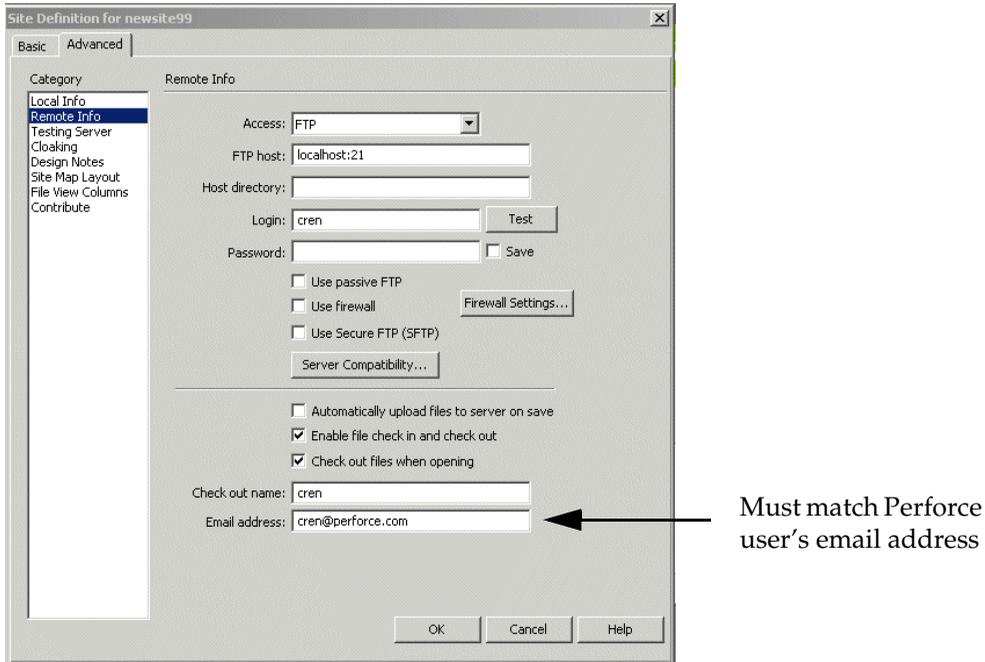
(For details about defining Perforce users, see the *Perforce Command Reference* or use `p4 help` to display information about the `p4 user` command.)

After you enable locking for P4FTP, Dreamweaver and Perforce respect each other's file locks as follows:

- When you check out a file in Dreamweaver, it is opened for edit and locked in Perforce.

- When you open a file for edit and lock it in Perforce, Dreamweaver treats the file as checked out.

Updating a live web site

You can configure Dreamweaver and P4FTP so that, when you check a file in using Dreamweaver, a live Web site is automatically updated. To set up automatic updating, you use the autosync option to sync files from a depot to a Web server root. As you check in files using Dreamweaver, they are synced to the Web site and become live.

To set up a Web site so that, when you check files in using DreamWeaver, your live Web site is automatically refreshed, perform the following steps. This procedure assumes you already have a Web site created.

To configure automatic update, perform the following steps:

1. Create an `ftp-` client workspace for your Perforce user (example: `ftp-tonyz`).

    This workspace can be rooted anywhere on your machine -- it's a scratch area for P4FTP.

2. Create a web site client workspace, rooted in the content area of your web server.

    Example: if your web server is Microsoft IIS and you are creating a web site for Compass Adventures, create a workspace named `compass-website.`, specifying the workspace root as `C:\Inetpub\wwwroot`

3. In the web server root, set up the web site files and verify that you can view them using a browser.

4. Using P4V or the p4 command-line client, add the files to the depot (using the web site client workspace you created in step 2).

    For example, add the files to the depot so they reside in `//depot/Compass_WebSite/...`

5. On the Web server machine, set P4CLIENT to the web site client workspace and start `p4ftpd`. For example, if your Perforce server is running on `myserver:1999`, issue the following command:

    ```
    p4ftpd -O dwlocking -O syncspec=//depot/Compass_WebSite/... -p myserver:1999
    ```

    By default, `p4ftpd` autosyncs every hour. To specify a different interval, use the `-O syncdelay` option.

6. Copy the web site files to a location on your machine where you intend to edit them using Dreamweaver (not in a client workspace). For example, copy the files to:
    `C:\Program Files\Macromedia\Dreamweaver 4\Compass_WebSite`

7. In Dreamweaver, define a web site (choose **Manage Sites>New Site...**) using the following settings:

   - Local info:

     Local root folder: the location where you want to edit files with Dreamweaver. For example: `C:\Program Files\Macromedia\Dreamweaver 4\Compass_WebSite`

   - Remote info:

     Access: FTP

     FTP host: machine and port where `p4ftpd` is running.; for example `mywebserver:21`

     Host directory: relative path to website files in depot, specified using local syntax. Leave blank if your web site files are located in a folder at the top level of the depot.

     Login: your Perforce user name.

     Enable check-in/check-out and fill in name and email.

8. Save your settings.

9. Right-click the top-level folder in the right pane and choose **Put**. Dreamweaver populates the left (Remote Site) pane.

Your web site is now configured so that, when you check a file in using Dreamweaver, it is also synced to the website root and therefore live.

The preceding approach uses a single instance of `p4ftpd` to support Dreamweaver check-in and to sync the web site. Alternately, you can use separate instances of `p4ftpd` for each purpose. Again, the instance that syncs the web site must reside on the machine where the web site files reside.

Troubleshooting notes: adding files

If you check new files into a directory that does not exist in your Perforce depot, Dreamweaver displays the following error dialog.

Click OK to dismiss the dialog. The depot directory is created (typically when you exit Dreamweaver).

Configuring HoTMetal PRO 6.0

To configure SoftQuad's HotMetal Pro to access web site files in a Perforce depot, perform the following steps. (P4FTP must be running.)

1. Choose **Tools>Sites...**

2. Specify the name for your new site.

3. On the Choose Connection Method dialog, click the **I connect to my site via FTP radio button** and click Next.

4. On the FTP settings dialog specify the following:

   • **Host Name**: the computer where P4FTP runs

   • **User ID**: your Perforce user ID

5. If you intend to run P4FTP on a port other than the default (21), click **Advanced FTP Settings...** and specify the port on the **Advanced FTP Settings** dialog.

6. On the **Choose FTP Default Folder** dialog, specify the depot location for your web site. Example: depot/websites. The depot location must already exist. Note that, if P4FTP is running, you can click the browse button and browse the depot to specify the location.

After you finish configuring the site, you can create projects and transfer files between your computer and the Perforce depot.

Configuring Hot Dog Professional 6

To obtain access to files in a Perforce depot using Hot Dog Professional 6, define a remote site as follows. (P4FTP must be running.)

1. Choose **Open Remote...** The Open dialog is displayed.

2. Double-click **Add Internet Site**. The Internet Site Wizard is launched.

3. In the **What is your Server Address?** field, specify the computer where P4FTP is running.

4. In the **What is your Login Name?** field, specify your Perforce user name. (If you have a password, specify it in the **What is your Password?** field.). Click **Advanced**.

5. In the **Advanced Server Details** dialog, specify the port number on which P4FTP is configured to listen (the value specified with the p4ftpd -l flag).

After you configure the remote site, you can access the files in the depot by choosing **Open Remote** and double-clicking the site.

Configuring AceHTML

To use P4FTP with AceHTML, you must install AceFTP. To configure access to a Perforce depot, run AceFTP and configure a remote site as follows. (P4FTP must be running.)

1. Choose **File>Connect**. The **Session Properties** dialog is displayed.

2. On the **General** tab, make the following entries:

    - **Host Name**: the name you want to assign to the host

    - **Host Address**: the fully-qualified domain name of the computer where P4FTP is running

    - **User ID**: your Perforce user name.

3. Click the **Additional** tab and enter the port number on which P4FTP is configured to listen (the value specified with the `p4ftpd -l` flag).

4. Click **Connect**.

5. If prompted, enter your Perforce password.

AceHTML displays the depot contents in its right pane. Use the **Edit** menu **Upload files** and **Download files** commands to transfer files between the depot and your client computer.

Chapter 2   Troubleshooting P4FTP

This chapter provides information to help you determine what to do if a P4FTP does not succeed or you do not understand the results of an operation.

Error messages

Cannot make connection to host

Make sure:

- P4FTP is running.

- You are connected to the FTP server (Dreamweaver)

- You entered your Perforce user name in the web site's remote configuration (Dreamweaver).

Cannot open remote folder

(Dreamweaver) The folder specified as the Host directory in a site's remote configuration does not exist, or the Perforce client specification Host field specifies a computer other than the one where P4FTP is running.

Can't clobber writable file

(Dreamweaver) Verify that your client workspace directory does not reside in your web site's local root, or vice versa.

Error opening local file

You are attempting to get a file when a read-only copy already resides on your computer. (Perforce sets a file's protection to read-only when you do not have the file open for edit.)

Other questions

Why aren't my Dreamweaver files visible in Perforce?

When you use P4FTP to connect Dreamweaver to a Perforce depot, your changes are made when you disconnect from the remote site (choose **Site>Disconnect**). If you are monitoring changes to the depot using P4Win, for example, refresh its display after you disconnect and your Dreamweaver changes are displayed.

I created a directory using FTP and it disappeared - why?

If you connect to P4FTP using a command-line FTP client and use the `MKDIR` command to create a directory in a Perforce depot, Perforce removes that directory when you disconnect unless the directory contains files. To ensure that the directory remains, you can use the FTP "put" command to upload a file to it. Note that the file you upload is added to the Perforce depot when your FTP client disconnects from `p4ftpd`.

My command-line FTP client/Dreamweaver froze after connecting/prompting for P4FTP - why?

Windows computers: if you started P4FTP from a DOS window, check whether characters have been selected in the startup window. To unselect the characters (and unfreeze the FTP client), click in the window where you started P4FTP and press Enter.

Why do I have .lck files in my workspace/depot?

If you enable Checkin/Checkout, Dreamweaver creates `.lck` files in your workspace when you check files out and deletes the `.lck` files when you check files in. However, for Dreamweaver locking to work correctly with P4FTP, you must also enable Dreamweaver locking (specify the `-O dwlocking` option) when you start `p4ftpd`. If you do not enable Dreamweaver locking, P4FTP automatically checks in the `.lck` files along with the associated HTML files.

Fix: restart `p4ftpd`, specifying the `-O dwlocking` option. To remove all `.lck` files from your depot, you can use the `p4 obliterate` command, but before doing so, be sure to observe all the precaution described in the *Perforce System Administrator's Guide*.

Using a command-line FTP client

You can use an FTP command-line client to interact with a Perforce depot through P4FTP. P4FTP also supports Perforce-related commands. To display a list of Perforce-related commands, issue one of the following commands:

- UNIX: `rhelp`
- Windows: `remotehelp`

The following Perforce-related command is supported.

Command	Description
SITE REVERT <*full_file_path*>	Manually revert a file open for edit

Chapter 3 — Perforce and FTP Differences

This chapter describes how P4FTP differs from standard FTP and from Perforce.

FTP differences

This section describes how P4FTP differs from standard FTP.

How files are managed on the client computer

In a standard FTP site, all users share access to an area of storage and, depending upon the permissions in place, they might overwrite each others' work. P4FTP uses a Perforce approach, in which each P4FTP user has a private workspace that is mapped to shared areas of the Perforce depot. When a file is uploaded, it is opened for add or edit as appropriate, and locked. When the file is submitted, it becomes the new head revision. Another user who has the same depot path in their FTP client workspace can then download the updated version of the file.

P4FTP uses its client workspaces as temporary storage. Operations such as directory listings are performed by querying the Perforce server, and are always up-to-date.

How files are transferred

Standard FTP transfers files one at a time, and there is no facility for grouping changes. One of the key benefits of Perforce is that related changes are grouped together into changelists. P4FTP groups all changes (adds, edits and deletes) made in a single FTP session into one changelist that is submitted at the end of the session.

The following sections describe how your files are transferred between your client computer and a Perforce depot.

Saving files

When you use the `put` command from an FTP client, your files are added to a Perforce changelist in preparation for submission to the depot. When you close your connection, the changelist is submitted and the files are saved to the depot.

When you use the Save or Publish feature of your web authoring tool, your files are added to a Perforce changelist in preparation for submission to the depot. When you disconnect from P4FTP, the changelist is submitted and the files are saved to the depot. Note that a newly uploaded file is not visible to other P4FTP or Perforce users until the submitting user closes its FTP connection.

Getting files

When you use the `get` command from an FTP client, the Open feature of your web authoring tool, or download a file using a Web browser, the files are synced from the depot to your client computer and are immediately visible on the client computer.

The pwd command

The FTP command `pwd` (print working directory) normally displays the current directory on the remote computer. When you use P4FTP, the `pwd` command displays the Perforce depot directory but uses the client operating system convention.

For example, if you are connecting from a Windows computer to a depot on a UNIX computer, when you issue the `pwd` command, the working directory might be displayed as `c:\p4client-test\depot`.

Supported FTP commands

The following FTP commands are supported by P4FTP. The names in braces are the commands used by common FTP clients, and the uppercase names represent the actual protocol commands.

- `ACCT` (`account`)
- `CDUP` (`cdup`)
- `CWD` (`cd`)
- `DELE` (`delete / rm`)
- `HELP` (`rhelp/remotehelp`)
- `LIST` (`ls / dir`)
- `MDTM` (`modtime`)
- `MKD` (`mkdir / md`)
- `NLST` (`nlist`)
- `NOOP`
- `PASS`
- `PASV` (`passive`)
- `PORT`
- `PWD` (`pwd`)
- `QUIT` (`quit / bye`)
- `RETR` (`get`)

- `RNFR` (rename)

- `RNTO` (rename)

- `SIZE` (size)

- `STAT` (rstat)

- `STOR` (put)

- `STRU` (stru)

- `SYST` (system)

- `TYPE` (ascii / binary)

- `USER` (user)

- `XCDUP` (cdup)

- `XCWD` (cd)

- `XMKD` (mkdir / md)

- `XPWD` (pwd)

Perforce differences

This section documents the differences in behavior between P4FTP and a normal Perforce client interface. Due to the nature of the FTP protocol, users of P4FTP do not have access to the full functionality provided by Perforce.

Changelist numbering

P4FTP uses only the default changelist. If a submit fails for any reason, Perforce turns the default changelist into a numbered changelist. To ensure that files opened under numbered changelists do not become abandoned, P4FTP consolidates all files opened on a client into the default changelist. Users can resolve most problems by simply retrying, without the assistance of an administrator.

Changelist descriptions

Due to the design of the FTP protocol, P4FTP cannot prompt the user for a description when a changelist is submitted, so a default description is used. If the ability to describe changelists is important to you, use the P4 command line client or P4V.

To override the default change description, specifying the desired description using the `-t` command line flag when you start P4FTP.

Filetypes

For new files being uploaded to the server, P4FTP uses the Perforce filetype detection mechanism to determine whether a file is a text file or a binary file. For files that already exist on the server but are being updated, P4FTP uses the filetype of the previous revision so that files marked as `ktext` or `binary+S`, for example, retain this type of information.

Workspace management

A standard Perforce client workspace is populated with revisions of files in the depot, and is periodically synced to the head revision to obtain changes made by other users. Because P4FTP uses its client workspace only for temporary storage, users do not need to sync to keep the workspace up to date.

P4FTP stores the following types of files in client workspaces:

- Files uploaded by the user and open for `add` or `edit`

- Files being downloaded to the user and synced to the head revision

The client workspace used by P4FTP provides:

- An isolated area of temporary storage.

- An identifier for Perforce to use to track open files and submissions.

- A workspace that an administrator can use to correct errors.

After every successful submission, all files in the submitted changelist are removed from the client workspace using `p4 sync filename#none`. When a user requests a file from P4FTP using the FTP `get` command, P4FTP retrieves the head revision of the file from the depot, transfers it to the user and then removes it from its workspace by syncing it to `#none`. This feature enables large areas of the depot to be mapped without wasting disk space.

The only files that are typically present in the client workspace are files that the user is actively using. To prevent empty directories from cluttering the client workspace, you enable the `rmdir` option when you create clients specifications.

To diagnose client workspace problems, use the `p4` command or P4V.

Concurrency

All files opened for `add` or `edit` and `delete` are locked by P4FTP to prevent other users from submitting their change first and thereby denying P4FTP access to the head revision. If a file is locked when a user tries to upload it using P4FTP, permission is denied until the lock is released.

Standards compliance and limitations

P4FTP is broadly compliant with the requirements of RFC 959 and RFC 1123. RFC 959 specifies that, though the `telnet` protocol is used on the FTP control channel, it is not the intention that the entire telnet protocol be implemented on this channel. RFC 1123 clarifies this requirement by stating that FTP servers must support the telnet `IP` and `SYNCH` commands and, although they are not required to support telnet option negotiation, they should be capable of refusing option requests (that is, responding with `DONT`/`WONT`).

P4FTP does not currently recognize any telnet option negotiation. (Few, if any FTP clients use this option negotiation.)

Note the following limitations:

• P4FTP contains no support for restarting FTP transfers. All transfers must transfer the entire file.

• P4FTP contains no support for appending to files as specified in the RFCs.

• Symbolic links appear in directory listings, but attempts to download linked files result in an error.

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