Perforce 2002.1
FTP Plug-in User's Guide

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Preface # 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. 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. (If you use versions lower than 2000.2, P4FTP does not display files size when you issue the FTP `ls` command.)

- Perforce client: enables you to perform Perforce tasks directly. The most commonly-used Perforce clients are P4Win, 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 client files.

Computer	Description	System requirements
Client computer	The computer where you work on files.	FTP client Network access to the FTP server Perforce client (recommended)

Computer	Description	System requirements
FTP server	The computer where you run P4FTP.	P4FTP Network access to the Perforce server computer Perforce client (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:
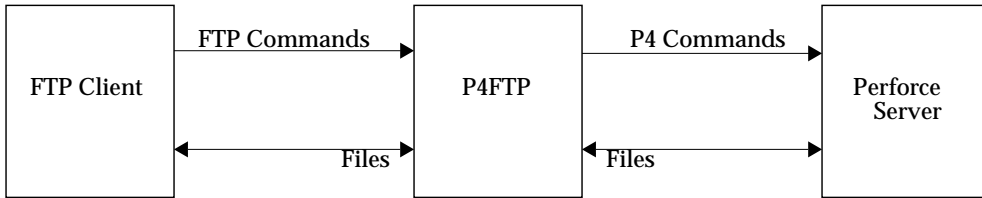
There are some important differences in behavior between P4FTP and a normal FTP server. For details about these differences, refer to "Perforce and FTP Differences" on page 31.

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 client 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 22 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/loadprog.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 `-p` 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 10.

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 `p4ftp` 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 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
    ```

    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 specifications

For each user who intends to access Perforce depots using P4FTP, you must create a Perforce user and a client specification on the P4FTP server computer. Perforce uses the client specification to determine the location of its client workspace, where it stores files on your client computer.
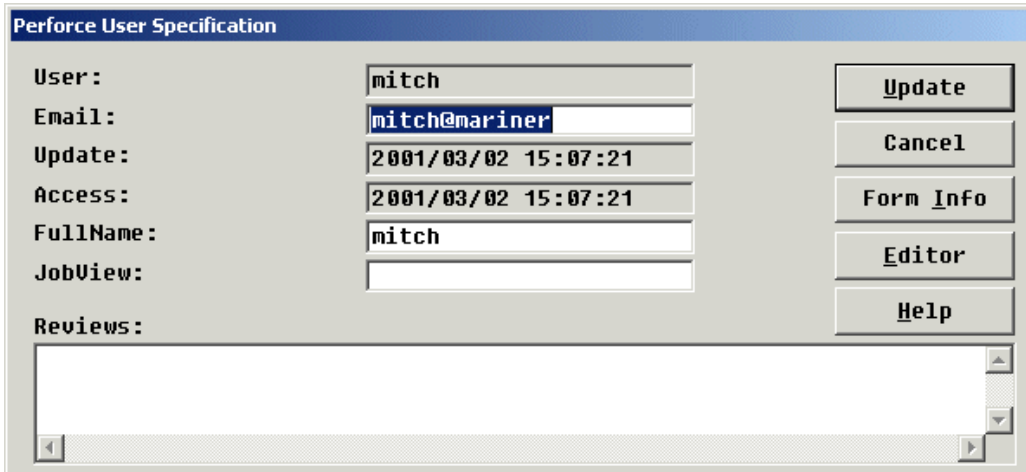
The following sections tell you how to create a Perforce users and client specification. Perform these steps from a computer where P4Win or the Perforce command-line interface (`p4`) is installed. You can direct P4FTP to create a client specification using a template, when a user that has not P4FTP client specification connects for the first time. For details, see "Specifying a template for undefined client specifications" on page 16.

Using P4Win (Windows only)

To create a Perforce user and client specification using P4Win, perform the following steps.

1. Launch P4Win.

2. Choose **User>New...** The **Create New User** dialog is displayed.

3. Enter the name of the user you want to create and click OK. The following **Perforce User Specification** form is displayed.

4. Enter the required information and click Update. For details about form fields, click Form Info.

5. Choose **ClientSpec>New...** The **Create New Client** dialog is displayed.

6. Enter "`ftp-`" followed by the name of the user you created in the preceding steps. The following **Perforce Client Specification** form is displayed.

Perforce Client Specification

Client:	`Ftp-mitch`
Update:	
Access:	
Owner:	`mitch`
Host:	`mycomputer`

Buttons: **Update**, **Cancel**, **Form Info**, *Editor*, **Help**

Description: `Created by mitch`

Root: `c:\`

Options: `noallwrite noclobber nocompress crlf unlocked nomodtime n`

View: `//depot/... //ftp-mitch/depot/...`

7. Enter the required information. For details about form fields, click Form Info.

    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.

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.

8.   Click Update to save your changes.

Using the P4 command-line interface (Windows or UNIX)

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.
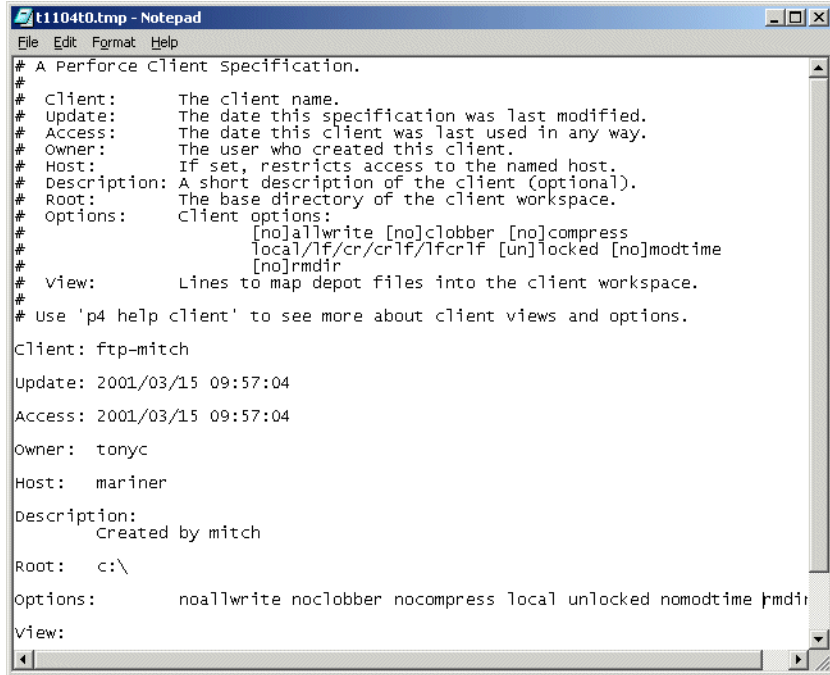
```
t1128t0.tmp - Notepad                                              _ □ ×
File  Edit  Format  Help
# A Perforce User Specification.
#
#   User:        The user's user name.
#   Email:       The user's email address; for email review.
#   Update:      The date this specification was last modified.
#   Access:      The date this user was last active.  Read only.
#   FullName:    The user's real name.
#   JobView:     Selects jobs for inclusion during changelist creation.
#   Password:    If set, user must have matching $P4PASSWD on client.
#   Reviews:     Listing of depot files to be reviewed by user.

User:    mitch

Email:  mitch@mycomputer

Update: 2001/02/22 12:12:56

Access: 2001/03/02 15:58:33

FullName:        mitch

Password:        ******
```

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:


```
# A Perforce Client Specification.
#
#  Client:      The client name.
#  Update:      The date this specification was last modified.
#  Access:      The date this client was last used in any way.
#  Owner:       The user who created this client.
#  Host:        If set, restricts access to the named host.
#  Description: A short description of the client (optional).
#  Root:        The base directory of the client workspace.
#  Options:     Client options:
#                       [no]allwrite [no]clobber [no]compress
#                       local/lf/cr/crlf/lfcrlf [un]locked [no]modtime
#                       [no]rmdir
#  View:        Lines to map depot files into the client workspace.
#
# Use 'p4 help client' to see more about client views and options.

Client: ftp-mitch

Update: 2001/03/15 09:57:04

Access: 2001/03/15 09:57:04

Owner:  tonyc

Host:   mariner

Description:
        Created by mitch

Root:   c:\

Options:        noallwrite noclobber nocompress local unlocked nomodtime rmdir

View:
```

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 specifications" on page 11. 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/%c
    View:

                //depot/main/... //%client%/main/...
                //depot/user/%user%/... //%client%/%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 16)

For details about these settings, see "P4FTP configuration options" on page 20. 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:
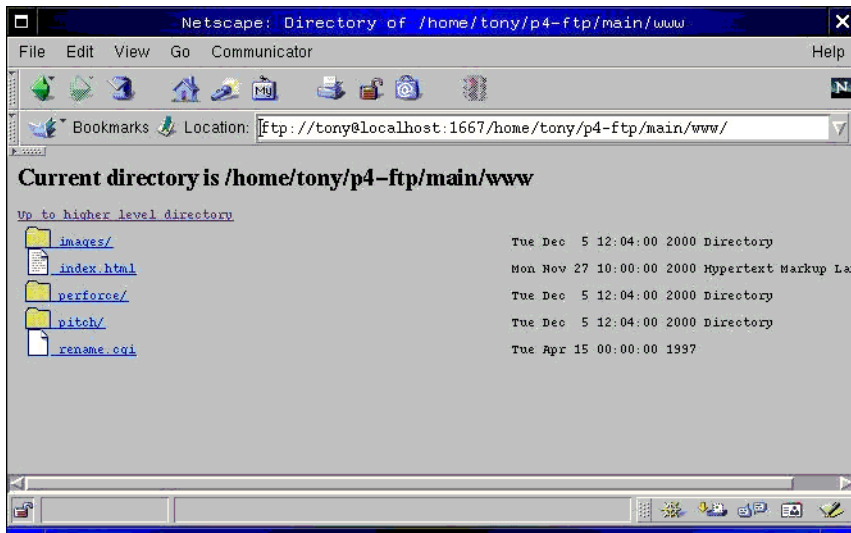
    ```
    ftp://mitch@mycomputer:1850
    ```

    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

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 how Perforce determines workspace settings, refer to the *Perforce User's Guide.* 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.

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. 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	Enables automatic syncing of the current workspace and, optionally specifies how often to check for submitted changelists and which files to sync.
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.
-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`: Use Dreamweaver file locking to ensure that Perforce and Dreamweaver each observe the other's locks. `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.
-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 16.
-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.
-v *level*	Set verbosity level for debugging purposes.
-V	Print version information and exit.

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:

```
$ p4ftp -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: the depot location of your web site files. The remote host directory must be the path to your Perforce "ftp-" client workspace plus any additional directories that you need to get you to the files you're working on.

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: `/usr/team/mitch/main/marketing99/`

After you configure Dreamweaver and Perforce, you use Dreamweaver's "put" and "get" commands 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. Choose **Site**>**New Site...** The **Site Definition** dialog is displayed.

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

3.   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 root.
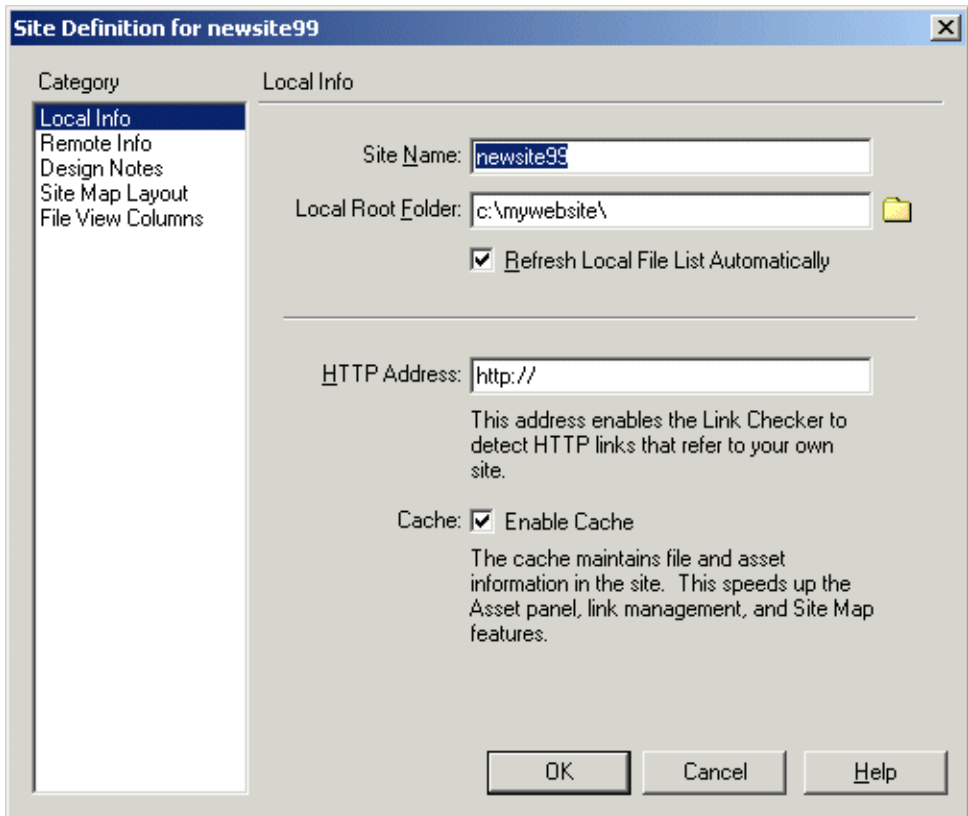
4.   In the Category pane, click Remote Info. The Remote Info pane is displayed.

5. From the Access list, choose FTP. The following fields are displayed.

6. 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 location in the depot to which you "put" (and from which you "get") your web site files.
	Specify this directory using the operating system convention of the computer where you run P4FTP.
	Important: this depot directory must exist before you attempt to "put" files to it using Dreamweaver. If the directory does not exist, you must create it by using Perforce or a command-line FTP client to add a file (any file) that resides in the directory.
Login	Enter your Perforce user name.
Password	Enter your Perforce password, if you have one.

Do not check Check in/Out.

7. Click OK to save your entries.

After configuring Dreamweaver, you must create the depot location for your web site files before you can access the depot using Dreamweaver. One suggested approach is as follows:

1. Using Dreamweaver, create your web site on your computer.

2. Using operating system commands, copy the web site files to the location in your client workspace that corresponds to the depot location where you intend to store the files. (To display the mapping of your client workspace to the depot, use the `p4 client` command or P4Win.)

3. Using Perforce (the `p4 add` command or P4Win), or an FTP command-line client, add the files to the depot.

You can now use Dreamweaver's "get" and "put" 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`

Configuring file locking

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, check the **Enable File Check In and Check Out** box in the Dreamweaver **Site Definition Remote Info** pane. (Note that, when Dreamweaver locks a file, it creates a corresponding `.LCK` file.)

Perforce also offers file locking, to enable users to open files for edit exclusively. To configure P4FTP to enforce Dreamweaver and Perforce file locking, specify the `-O dwlocking` flag when you start p4ftpd.

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.

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.

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 P4Win.

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 P4Win.

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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