How to Enable FTP Passive Mode

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Overview

This document explains how to use the active or passive mode to connect to a File Transfer Protocol (FTP) server.

Important:
In cPanel & WHM version 60 and later, the system enables passive ports `49152` through `65534` for Pure-FTPd servers and ProFTPd servers by default. If you use the CSF firewall plugin, the system **also** adds passive port ranges to your server's firewall by default.

- If you use the `IPTABLES` or `firewalld` applications for your firewall, you **must** enable firewall settings for the passive ports manually. For more information about firewalls, read our How to Configure Your Firewall for cPanel Services documentation.

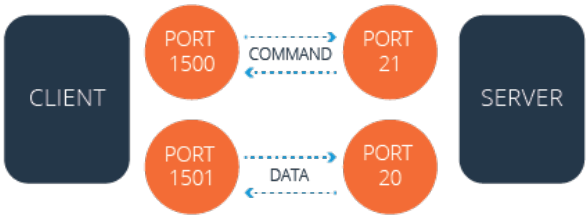
Active and passive mode sessions

FTP uses a data port and a command port to transfer information between a client and a server. During a typical active mode session, the command port uses port `21` and the data port uses port `20`. When you use a passive mode session, however, the data port does not always use port `20`.

Active

In active mode, the FTP server responds to the connection attempt and returns a connection request from a different port to the FTP client. Network Address Translation (NAT) configurations **block** this connection request.

ACTIVE FTP



ACTIVE FTP (With Firewall)

The firewall blocks the server's attempt to communicate with the client because the server uses a different port than the first connection.

Passive

In passive mode, the FTP client initiates **both** connection attempts. NAT configurations **do not** block this connection request.

PASSIVE FTP (With Firewall)

The firewall does **not** block the server's attempt to communicate with the client because the client initiated the communication both times.

Note:
If FTP users exist on the private network side of a NAT configuration, you **must** enable FTP's passive mode, and open the passive port range in your FTP server's configuration file. You may also need to open the passive port range on your firewall.

Configure FTP servers

To configure your FTP server, select the tab that corresponds to your cPanel & WHM version:

cPanel & WHM version 60 and later | For cPanel & WHM version 58 and earlier

The sections below explain how to edit the default configurations for a Pure-FTPd server and a ProFTPd server.

Notes:

- A local file contains your desired settings which **overwrite** any default settings from the main file.
- The system enables passive ports `49152` through `65534` for Pure-FTPd servers and ProFTPd servers by default.

Pure-FTPd servers

To edit the FTP configuration for a PureFTP server, perform the following steps:

1. Log in to the server as the `root` user via SSH.
2. Open the `/var/cpanel/conf/pureftpd/local` file, if it already exists, with a text editor. If it does not already exist, create the `/var/cpanel/conf/pureftpd/local` file.
3. Add the desired changes to the file. If your FTP server exists behind a NAT configuration, set the `ForcePassiveIP` option to the FTP server's public IP address, as in the following example:

   ```
   ForcePassiveIP: 203.0.113.0
   ```

   If your server **does not** exist in a NAT configuration, set the `ForcePassiveIP` option to the following entry:

   ```
   ForcePassiveIP: ~
   ```

   Important:
   Only **one** `ForcePassiveIP` entry can exist in a configuration file.

4. If you want to change your server's default passive port range, run the following commands:

   ```
   echo "PassivePortRange: 49152 65534" >>
   /var/cpanel/conf/pureftpd/local
   /usr/local/cpanel/scripts/setupftpserver pure-ftpd --force
   ```

5. Configure your server to allow the passive port range to pass through the firewall. To do this, follow the directions in the Configure the firewall section below.
6. Restart the PureFTP service with the following command:

   ```
   /usr/local/cpanel/scripts/setupftpserver pure-ftpd --force
   ```

ProFTPd servers

To edit the FTP configuration for a ProFTPd server, perform the following steps:

1. Log in to the server as the `root` user via SSH.
2. Open the `/var/cpanel/conf/proftpd/local` file, if it already exists, with a text editor. If it does not already exist, create the `/var/cpanel/conf/proftpd/local` file.
3. Add the desired changes to the file. If your FTP server exists behind a NAT configuration, set the `MasqueradeAddress` option to the FTP server's public IP address, as in the following example:

```
MasqueradeAddress: 203.0.113.0
```

If your server **does not** exist in a NAT configuration, set the `MasqueradeAddress` option to the following entry:

```
MasqueradeAddress: ~
```

> **Important:**
> Only **one** `MasqueradeAddress` entry can exist in a configuration file.

4. If you want to change your server's default passive port range, run the following commands:

```
echo "PassivePorts: 49152 65534" >> /var/cpanel/conf/proftpd/local
/usr/local/cpanel/scripts/setupftpserver proftpd --force
```

5. Configure your server to allow the passive port range to pass through the firewall. To do this, follow the directions in the Configure the firewall section below.
6. Restart the ProFTP service with the following command:

```
/usr/local/cpanel/scripts/setupftpserver proftpd --force
```

Configure the firewall

> **Note:**
> The system enables passive ports `49152` through `65534` for Pure-FTPd servers and ProFTPd servers by default.

You may need to add your FTP server's passive port range to the firewall manually.

CSF

If you use the CSF plugin to manage your server's firewall, open the `/etc/csf/csf.conf` file, and confirm that the passive port range exists at the end of the `TCP_IN` line. The system adds your FTP server's passive port range to the firewall by default. For more information about how to install and use CSF, visit the CSF website.

IPTABLES

If you use the `IPTABLES` application for your FTP server's firewall, perform the following steps to add the passive port range to your server's firewall:

1. Open the `/etc/sysconfig/iptables` file with a text editor.
2. After you add an `IPTABLES` entry to the `/etc/sysconfig/iptables` file, run the following commands:

```
iptables -I INPUT -p tcp --dport 49152:65534 -j ACCEPT
service iptables save
```

`firewalld`

If you use the `firewalld` application for your CentOS 7, CloudLinux™ 7, or Red Hat® Enterprise Linux (RHEL) 7 server, run the following commands to add the passive port range to your server's firewall:

```
firewall-cmd --permanent --zone=public --add-service=ftp
firewall-cmd --permanent --add-port=49152-65534/tcp
firewall-cmd --reload
```

Warning:
This section contains information for End of Life versions of cPanel & WHM. We no longer update the information in this section. For assistance, update your version of cPanel & WHM to a supported version. For more information, read our cPanel Long Term Support documentation.

Enable the passive port range for Pure-FTPd

To enable the passive port range on a server that uses Pure-FTPd, perform the following steps as the `root` user in the command line:

1. Open the `/etc/pure-ftpd.conf` configuration file with a text editor.
2. Remove the comment (#) from the beginning of the line that contains the `PassivePortRange` option.
3. Set the `PassivePortRange` option to a port range that is **greater than or equal** to `1024`.

   In the following example, `49152 65534` represents the `PassivePortRange` option:

   ```
   PassivePortRange 49152 65534
   ```

   If your server **does not** exist in a NAT configuration, comment out the `ForcePassiveIP` option, as in the following following:

   ```
   #ForcePassiveIP 203.0.113.0
   ```

   Important:
   We **strongly** recommend that you configure a large port range so the server can process many simultaneous passive connections. For example, the Internet Assigned Numbers Authority (IANA) recommends the `49152:65534` port range.

4. Save your changes to the configuration file.
5. If your FTP server exists behind a NAT configuration, open the `/var/cpanel/conf/pureftpd/main` file with a text editor set the `ForcePassiveIP` option to the FTP server's public IP address.

   Warning:
   - We **strongly** recommend that you **only** perform this action if your server exists behind a NAT configuration. This option prevents connections to other IP addresses on the server and connections via domains that resolve to other IP addresses. If you set an IP address for the `ForcePassiveIP` option, you can **only** connect to the FTP server via that IP address.
   - Only **one** `ForcePassiveIP` entry can exist in a configuration file.

6. Run the following commands to allow connections through the passive port range of your server's firewall:

```
iptables -I INPUT 2 -p tcp --dport 49152:65534 -j ACCEPT
service iptables save
```

Important:
If your FTP server exists on a CentOS 7, CloudLinux™ 7, or Red Hat® Enterprise Linux (RHEL) 7 server, run the following commands to allow connections through the passive port range that you set:

```
firewall-cmd --permanent --zone=public --add-service=ftp
firewall-cmd --permanent --add-port=49152-65534/tcp
firewall-cmd --reload
```

7. Run the `/usr/local/cpanel/scripts/restartsrv_ftpserver` command to restart the FTP server.
8. To make these changes permanent, you **must** append the passive ports to the configuration file. To do this, run the following commands as the `root` user:

```
echo "PassivePortRange: 49152 65534" >>
/var/cpanel/conf/pureftpd/main
/usr/local/cpanel/scripts/setupftpserver pure-ftpd --force
```

For more information about how to edit your Pure-FTPd configuration, read our FTP FAQ documentation.

Enable the passive port range for ProFTPd

To enable the passive port range on a server that uses ProFTPd, perform the following steps via the command line as the `root` user:

1. Open the `/etc/proftpd.conf` configuration file with a text editor.
2. Add the following line to the first section of the configuration file, where `49152 65534` represents the `PassivePorts` option:

```
PassivePorts 49152 65534
```

3. If your FTP server exists behind a NAT configuration, add the hostname and FTP server's public IP address to the `proftpd.conf` configuration file, as in the following example:

```
MasqueradeAddress: example.com
MasqueradeAddress: 203.0.113.0
```

Note:
The `MasqueradeAddress` lines specify the FTP server's public IP address.

If your server **does not** exist behind a NAT configuration, set the `MasqueradeAddress` option to the following:

```
MasqueradeAddress: ~
```

4. Save the changes to the configuration file.
5. Run the following commands to allow connections through the passive port range of your server's firewall:

```
iptables -I INPUT 2 -p tcp --dport 49152:65534 -j ACCEPT
service iptables save
```

Important:
If your FTP server exists on a CentOS 7, CloudLinux 7, or RHEL 7 server, run the following commands to allow connections through the passive port range that you set:

```
firewall-cmd --permanent --zone=public --add-service=ftp
firewall-cmd --permanent --add-port=49152-65534/tcp
firewall-cmd --reload
```

6. Run the `/usr/local/cpanel/scripts/restartsrv_ftpserver` command to restart the FTP server.
7. System updates may overwrite these configuration changes. To make these changes permanent, you **must** append the passive ports to the configuration file. To do this, run the following commands as the `root` user:

```
echo "PassivePorts: 49152 65534" >> /var/cpanel/conf/proftpd/main
/usr/local/cpanel/scripts/setupftpserver proftpd --force
```

For more information about how to edit your Pro-FTPd configuration, read our How to Enable FTP Passive Mode documentation.

SolusVM and Xen

If you use SolusVM and Xen® on a CloudLinux™ server, you may experience problems with passive FTP. These problems may resemble a firewall or other connection issue, even when no firewall exists.

To resolve these issues, perform the following steps:

1. Replace the `IPTABLES_MODULES=ip_conntrack_netbios_ns` line in the `/etc/sysconfig/iptables-config` file on the VPS node with the following line:

```
IPTABLES_MODULES=ipt_REJECT ipt_tos ipt_TOS ipt_LOG ip_conntrack
ipt_limit ipt_multiport iptable_filter iptable_mangle ipt_TCPMSS
ipt_tcpmss ipt_ttl ipt_length ipt_state iptable_nat ip_nat_ftp
ipt_owner ipt_REDIRECT
```

2. Run the `service iptables restart` command to restart the `iptables` service.

Troubleshoot FTP passive mode

If your NAT-configured server cannot execute Passive FTP connections to other IP addresses on the server, perform either of the following actions:

- In cPanel & WHM version 66 and later, set the `ForcePassiveIP` option with a tilde (~) character. The system interprets this character as an undefined directive and prevents automatic changes to the `/etc/pure-ftpd.conf` or `/etc/proftpd.conf` files.
- In cPanel & WHM version 64 and earlier, follow the directions in our Passive FTP and NAT Configuration Temporary Workaround documentation.

Additional documentation

Suggested documentationFor cPanel usersFor WHM usersFor developers

- How to Enable FTP Passive Mode
- LiteSpeed Web Server
- FTP
- How to Configure Your SFTP Client
- How to Restore Missing FTP Interfaces in cPanel

Content by label

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Error rendering macro 'contentbylabel' : parameters should not be empty

- cPanel API 2 Modules - FTP
- UAPI Modules - Ftp
- cPanel API 2 Functions - Ftp::addftp
- cPanel API 1 Functions - Ftp::delftp
- cPanel API 1 Functions - Ftp::addftp