



K47922841: Using the Linux client f5fpc to connect to the BIG-IP APM network access for the first time

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Applies to

APM Clients : []

BIG-IP APM : [16.1.3, 16.1.2, 16.1.1, 16.1.0, 16.0.1, 16.0.0, 15.1.8, 15.1.7, 15.1.6, 15.1.5, 15.1.4, 15.1.3, 15.1.2, 15.1.1, 15.1.0, 15.0.1, 15.0.0, 14.1.5, 14.1.4, 14.1.3, 14.1.2, 14.1.0, 14.0.1, 14.0.0, 13.1.5, 13.1.4, 13.1.3, 13.1.1, 13.1.0, 13.0.1, 13.0.0, 12.1.6, 12.1.5, 12.1.4, 12.1.3, 12.1.2, 12.1.1, 12.1.0, 12.0.0, 11.6.5, 11.6.4, 11.6.3, 11.6.2, 11.6.1, 11.6.0, 11.5.10, 11.5.9, 11.5.8, 11.5.7, 11.5.6, 11.5.5, 11.5.4, 11.5.3, 11.5.2, 11.5.1, 11.5.0]

Topic

You should consider using these procedures under the following condition:

- You want to establish a network access connection from a Linux client to the BIG-IP APM system using the command-line interface (CLI).

Description

BIG-IP APM network access supports two Linux clients: a CLI and a network access client components which support web-based access. This article provides the steps to establish a VPN connection using the Linux client **f5fpc**.

Prerequisites

You must meet the following prerequisites to use these procedures:

- You have a client machine running Linux.
- You have root permissions to the Linux client.
- You have configured a virtual server for network access on the BIG-IP APM system.
- You have the appropriate f5fpc installation file. Refer to the **Obtaining the f5fpc installation file** procedure in this article for more information.

Important: The BIG-IP Edge Client Linux CLI, **f5fpc client** does not support all the desktop features that the BIG-IP Edge Client Windows and MAC clients do. For example, the Client endpoint / Anti Virus inspector, Connect through proxy, Split Tunnels, and other features are not supported on the BIG-IP Edge Client Linux CLI client, causing VPN establishment to fail. For information about which features are supported or not supported, refer to [K23653432: BIG-IP APM](#)

[client feature matrix](#). If you are a BIG-IP APM VPN user, you must either refer to your organization's documentation or contact your IT department about whether the BIG-IP Edge Client Linux CLI client is supported to log in to your corporate VPN.

Procedures

With the BIG-IP APM Linux **f5fpc** network access client, you can access and interactively control the Windows BIG-IP Edge Client. To use **f5fpc** to connect to the BIG-IP APM network access for the first time, perform the following procedures:

- [Obtain the f5fpc installation file](#)
- [Download the Linux VPN installation files from the BIG-IP APM virtual server](#)
- [Install the f5fpc network access Linux client](#)
- [Control the Linux client with command options](#)
- [Establish connection with f5fpc without server certificate validation](#)
- [Establish connection with f5fpc with the server certificate validation](#)

Obtain the f5fpc installation file

BIG-IP APM VPN user

If you are a BIG-IP APM VPN user, you cannot download the **f5fpc** installation file from the AskF5 site. Your organization's BIG-IP APM system administrator uses the procedure in this article to download the **f5fpc** installation file from the BIG-IP APM system and distribute it to VPN end users. This requirement is based on the BIG-IP Edge Client configuration objects of the installation package and are specific to the intended access configuration for your organization. You must either refer to your organization's documentation or contact your IT department for details about how to download the BIG-IP Edge Client desktop application from your organization's internal resources.

BIG-IP APM system administrator

If you are a BIG-IP APM administrator, for versions before BIG-IP 14.1.0, download the **linux_sslvpn.tgz** file. In BIG-IP APM 14.1.0 and later, the Linux client is no longer available as a **linux_sslvpn.tgz** file. You can select and download the following Linux clients, as appropriate for your Linux distribution:

- Command-Line Client for Linux (**linux_f5cli.armhf.deb**). Debian-based distribution on ARM architecture used mostly in mobile devices and netbooks. For example Ubuntu ARM, Debian ARM, and so on. Currently 32 bit arm architecture is supported.
- Command-Line Client for Linux (**linux_f5cli.x86_64.deb**). Debian-based distributions. For example, Ubuntu, Debian, and so on.
- Command-Line Client for Linux (**linux_f5cli.x86_64.rpm**). RPM-based distributions. For example, Fedora, CentOS, Redhat, and so on.

To download the **f5fpc** installation file, perform the following procedure:

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

1. Log in to the BIG-IP APM Configuration utility.
2. Go to **Access > Connectivity / VPN > Connectivity > Client Downloads**.

Note: For versions prior to BIG-IP 13.1.0, go to **Access Policy > Secure Connectivity**, and select the **Clients Downloads** tab.

3. Select the appropriate Linux distribution.
4. Save the file to your local client.

Download the Linux VPN installation files from the BIG-IP APM virtual server

BIG-IP APM end users can install the BIG-IP Edge Client software by downloading and installing the BIG-IP Edge Client for Windows directly from the public download URL of a known BIG-IP APM virtual server. From the end user perspective a virtual server would be the stated fully qualified domain name (FQDN) and protocol used for VPN access (for example <https://vpn.example.com> where the **protocol** is **https** and the **FQDN** is **vpn.example.com**). Use the following procedure to download the required files for your version of Linux to install software to allow VPN access to the BIG-IP APM virtual server.

Note: The BIG-IP APM system administrator can allow general access to these files to external users by creating a dedicated virtual server where the BIG-IP APM access policy contains the simple logic of **Start > Allow**. The access policy does not assign any resources and no access to internal resources is granted; however, users can access the listed files hosted on the BIG-IP APM by connecting to the virtual server as described in the procedure. This method does not require users to authenticate unless authentication is specifically configured in the access policy.

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

- In your browser, use the URL syntax:

`https://<big-ip apm virtual server>/public/download/<file name>`

Replace **<big-ip apm virtual server>** with the virtual server host name or IP address.

Replace **<file name>** with each of the file names in the list.

For example:

`https://vpn.example.com/public/download/linux_f5cli.x86_64.deb`

Important: When required by the BIG-IP APM virtual server access policy configuration, successfully authenticate to an Allowed branch of the access policy.

1. Log in to the BIG-IP APM virtual server.
2. Open a second tab in the browser to download files.
3. In the second tab use the following URL syntax:

`https://<big-ip apm virtual server>/public/download/<file name>`

Replace **<big-ip apm virtual server>** with the virtual server host name or IP address.

Replace **<file name>** with each of the file names in the list.

Linux VPN downloadable installation file names

Debian and Ubuntu

ARM architecture

- linux_f5cli.armhf.deb

x86

- linux_f5cli.x86_64.deb
- linux_f5epi.x86_64.deb
- linux_f5vpn.x86_64.deb

Redhat, Fedora, and CentOS

- linux_f5cli.x86_64.rpm
- linux_f5epi.x86_64.rpm
- linux_f5vpn.x86_64.rpm

Important: The URL path and file names are case-sensitive.

Note: F5 recommends that you install all the listed files related to your Linux version.

Install the f5fpc network access Linux client

After you save the **f5fpc** installation file to your local Linux client, perform the following procedure to install the Linux Edge Client program on your Linux client:

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

1. On your local Linux client, change directory to the directory where you saved the **f5fpc** installation file by using the following command syntax:

```
cd <installation_file directory>
```

2. Install the client:

BIG-IP APM 14.1.0 and later

1. For Debian-based distributions, use the following command syntax to install the client:

```
dpkg -i <installer_filename>
```

For example:

```
dpkg -i linux_f5cli.x86_64.deb
```

2. For RPM-based distributions, enter the following command to install the client:

```
rpm -i linux_f5cli.x86_64.rpm
```

Versions prior to BIG-IP APM 14.1.0

1. Extract **linux_sslvpn.tgz** to your local directory using the following command syntax:

```
tar -xzvf <filename of client installer>
```

For example:

```
tar -xzvf linux_sslvpn.tgz
```

2. Using the root account with the required permissions, run the **Install.sh** script by entering the following command:

```
./Install.sh
```

Output appears similar to the following example:

```
Installation completed successfully
--> f5fpc is installed in /usr/local/bin
--> Please check f5fpc --help command to get started
--> Uninstaller located in /usr/local/lib/F5Networks/uninstall_F5.sh
```

3. Verify the **f5fpc** Linux client version by entering the following command:

```
f5fpc -v
```

The output appears similar to the following example:

```
BIG-IP Edge Command Line Client version 7150.2017.0911.1
F5 Networks Inc, (c) 2004-2017
```

Note: In this example, the Linux client version is **7150.2017.0911.1**.

4. Verify that the Linux client version is updated by referring to [K13757: BIG-IP Edge Client version matrix](#).

Note: In the previous example, from the Linux client version, **7150.2017.0911.1**, the BIG-IP APM version should be **13.1.0**. F5 recommends that you always keep the Linux client version up-to-date.

Control the Linux client with command options

The **f5fpc** Linux client provides a list of command options to control network access. To view the list of command options, enter the following command:

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

```
f5fpc --help
```

To display the connection status and statistics of the VPN connection, enter the following command:

```
f5fpc --info
```

For scripting purposes, the **--info** option returns status and error codes.

Note: For more information about the full list of command options and their descriptions and error codes using **--info**, refer to the **Clients for Linux** chapter of the ***BIG-IP Access Policy Manager: Edge Client and Application Configuration*** manual. For information about how to locate F5 product manuals, refer to [K98133564: Tips for searching AskF5 and finding product documentation](#)

Note: The **f5fpc** Linux client does not have the ability to **cache** user **credentials**, this feature is only available in a specifically customized BIG-IP Edge Client installation package for **Windows** or **Mac**.

Establish connection with f5fpc with server certificate validation

To establish network access validating the server certificate, you must import the certificate authority (CA) bundle or certificate and set up the local trust.

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

1. Import the CA bundle or certificate to the local trust store. In Linux, the default location where the system checks to verify certificate trust is in **/etc/ssl/certs**.
2. Change the directory to **/etc/ssl/certs**.
3. In order for **f5fpc** or other programs to locate the imported certificates in Linux, you must create a symbolic link to the certificate named by the hash values. To do that, depending on the Linux distribution you have, you can use the **c_rehash** or **cacertdir_rehash** commands, which can be found in the **openssl-perl** package. Install the package and enter either one of the following commands:
 1. `c_rehash /etc/ssl/certs/`
 2. `cacertdir_rehash /etc/ssl/certs/`
4. Alternatively, you can also use the **ln** command to perform the same operation. To do so, use the following command syntax:

```
ln -s /etc/ssl/certs/<ca_cert_filename> `openssl x509 -hash -noout -in /etc/ssl/certs/<ca_cert_filename>`.0
```

For example:

```
ln -s /etc/ssl/certs/exampleCA.crt `openssl x509 -hash -noout -in /etc/ssl/certs/exampleCA.crt`.0
```

5. Verify the symbolic link is created by entering the following command:

```
ls -al /etc/ssl/certs/
```

The output appears similar to the following, where **a0838767.0** is the hash of the example CA certificate:

```
lrwxrwxrwx. 1 root root 28 Oct 4 22:56 a0838767.0 -> /etc/ssl/certs/exampleCA.crt
```

6. To start the connection to the BIG-IP APM system with server certificate validation, use either one of the following command syntaxes:
 1. `f5fpc --start --host https://<hostname>:<port>`

2. `f5fpc -s -t https://<hostname>:<port>`

For example:

1. `f5fpc --start --host https://example.com`

2. `f5fpc -s -t https://example.com`

7. Verify and view the VPN connection statistics by entering the following command:

```
f5fpc --info
```

8. To terminate the network access session, enter the following command:

```
f5fpc --stop
```

Establish connections with `f5fpc` without server certificate validation

Important: Disabling server certificate validation via the `--nocheck` or `-x` flags may make the connection susceptible to interception via Man-in-the-Middle or other attacks. It is strongly recommended to keep server certificate validation enabled if possible in your environment.

You can use the `--nocheck` or `-x` command option to connect to the BIG-IP APM to establish network access without validating the server's certificate. To do so, perform the following procedure:

Impact of procedure: Performing the following procedure should not have a negative impact on your system.

1. To start the connection to the BIG-IP APM system without server certificate validation, use either one of the following command syntaxes:

1. `f5fpc --start --nocheck --host https://<hostname>:<port>`

2. `f5fpc -s -x -t https://<hostname>:<port>`

3. `f5fpc -s -u <username> -x -t https://<hostname>:<port>`

Note: The `-s` flag specifies **"start"** to start the access session, the `-u` flag specifies the **username** is to follow, the `-x` flag turns off SSL certificate verification (use only when required by your environment), **<hostname>** is the DNS FQDN for the BIG-IP APM virtual server that provides the service, and **<port>** is the virtual server port.

Example:

```
f5fpc -s -u bob -x -t https://vpn.example.com:443
```

Note: A password prompt appears after the connection to the BIG-IP APM virtual server is established.

2. Verify and view the VPN connection statistics by entering the following command:

```
f5fpc --info
```

3. To terminate the network access session, enter the following command:

```
f5fpc --stop
```

Related Content

- [K23653432: BIG-IP APM client feature matrix](#)
- [K92319755: Creating a two factor authentication access policy for use with the Linux f5f5pc command line client](#)
- [K16418: Controlling the Windows BIG-IP Edge Client through a command line interface](#)
- [K12321: Enabling Network Access debugging for Mac OS X and Linux](#)
- [K00984153: Troubleshooting issues with the BIG-IP APM Linux f5fpc client](#)
- [K17421: Troubleshooting BIG-IP APM Client issues on Microsoft Windows systems](#)
- [K54503194: Overview of DNS management on MacOS in BIG-IP APM network access](#)
- [K22612512: How to block remote access to the BIG-IP APM public downloads URL](#)
- The **Clients for Linux** chapter of the ***BIG-IP Access Policy Manager: Edge Client and Application Configuration*** manual.

Note: For information about how to locate F5 product manuals, refer to [K98133564: Tips for searching AskF5 and finding product documentation](#).