



# Configuring SSH File Transfer Protocol

Secure Shell (SSH) includes support for SSH File Transfer Protocol (SFTP), which is a new standard file transfer protocol introduced in SSHv2. This feature provides a secure and authenticated method for copying device configuration or device image files.

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## Prerequisites for SSH File Transfer Protocol

- SSH must be enabled.
- The `ip ssh source-interface interface-type interface-number` command must be configured.

## Restrictions for SSH File Transfer Protocol

- The SFTP server is not supported.
- SFTP boot is not supported.
- The `sftp` option in the `install add` command is not supported.

## Information About SSH Support over IPv6

### SSH File Transfer Protocol Overview

The SFTP client functionality is provided as part of the SSH component and is always enabled on the corresponding device. Therefore, any SFTP server user with the appropriate permission can copy files to and from the device.

An SFTP client is VRF-aware; you can configure the secure FTP client to use the virtual routing and forwarding (VRF) associated with a particular source interface during connection attempts.

# How to Configure SSH File Transfer Protocol

The following sections provide information about the various tasks that comprise an SFTP configuration.

## Configuring SFTP

Perform the following steps:

### Before you begin

To configure a Cisco device for SFTP client-side functionality, the **ip ssh source-interface** *interface-type interface-number* command must be configured first.

### Procedure

|               | Command or Action                                                                                                                                                         | Purpose                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Step 1</b> | <b>enable</b><br><br><b>Example:</b><br>Device> <b>enable</b>                                                                                                             | Enables privileged EXEC mode.<br><br>Enter your password, if prompted. |
| <b>Step 2</b> | <b>configure terminal</b><br><br><b>Example:</b><br>Device# <b>configure terminal</b>                                                                                     | Enters global configuration mode.                                      |
| <b>Step 3</b> | <b>ip ssh source-interface</b> <i>interface-type interface-number</i><br><br><b>Example:</b><br>Device(config)# <b>ip ssh source-interface</b> <b>GigabitEthernet 1/1</b> | Defines the source IP for the SSH session.                             |
| <b>Step 4</b> | <b>exit</b><br><br><b>Example:</b><br>Device(config)# <b>exit</b>                                                                                                         | Exits global configuration mode and returns to privileged EXEC mode.   |
| <b>Step 5</b> | <b>show running-config</b><br><br><b>Example:</b><br>Device# <b>show running-config</b>                                                                                   | (Optional) Displays the SFTP client-side functionality.                |
| <b>Step 6</b> | <b>debug ip sftp</b><br><br><b>Example:</b><br>Device# <b>debug ip sftp</b>                                                                                               | (Optional) Enables SFTP debugging.                                     |

## Configuring SFTP Username Password

To configure a username and password for SFTP, perform the following steps:

### Procedure

|               | Command or Action                                                                                     | Purpose                                                                                                                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | <b>enable</b><br><b>Example:</b><br>Device> <b>enable</b>                                             | Enables privileged EXEC mode. Enter your password, if prompted.                                                                                                                                               |
| <b>Step 2</b> | <b>configure terminal</b><br><b>Example:</b><br>Device# <b>configure terminal</b>                     | Enters global configuration mode.                                                                                                                                                                             |
| <b>Step 3</b> | <b>ip sftp username</b> <i>username</i><br><b>Example:</b><br>Device# <b>ip sftp username cisco</b>   | Defines the username.                                                                                                                                                                                         |
| <b>Step 4</b> | <b>ip sftp password</b> <i>password</i><br><b>Example:</b><br>Device# <b>ip sftp password 0 cisco</b> | Defines the password. Specify the encryption level.<br><ul style="list-style-type: none"> <li>• 0 – Unencrypted password.</li> <li>• 0 – Encrypted password.</li> <li>• Line – Clear text password</li> </ul> |
| <b>Step 5</b> | <b>exit</b><br><b>Example:</b><br>Device(config)# <b>exit</b>                                         | Exits global configuration mode and returns to privileged EXEC mode.                                                                                                                                          |

## Performing an SFTP Copy Operation

SFTP copy takes the IP or hostname of the corresponding server if Domain Name System (DNS) is configured. To perform SFTP copy operations, use the following commands in privileged EXEC mode:

| Command                                                                                                                          | Purpose                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Device# <b>copy ios-file-system:file sftp://user:pwd@server-ip//filepath</b><br>Or<br>Device# <b>copy ios-file-system: sftp:</b> | Copies a file from the local Cisco IOS file system to the server.<br><br>Specify the username, password, IP address, and filepath of the server. |

| Command                                                                           | Purpose                                                                 |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Device# <b>copy sftp://user:pwd@server-ip<br/>//filepath ios-file-system:file</b> | Copies the file from the server to the local Cisco IOS file system.     |
| Or                                                                                | Specify the username, password, IP address, and filepath of the server. |
| Device# <b>copy sftp: ios-file-system:</b>                                        |                                                                         |

## Configuration Examples for SSH Support over IPv6

### Example: Configuring SSH File Transfer Protocol

The following example shows how to configure the client-side functionality of SFTP:

```
Device> enable
Device# configure terminal
Device(config)# ip ssh source-interface gigabitethernet 1/1
Device(config)# exit
```