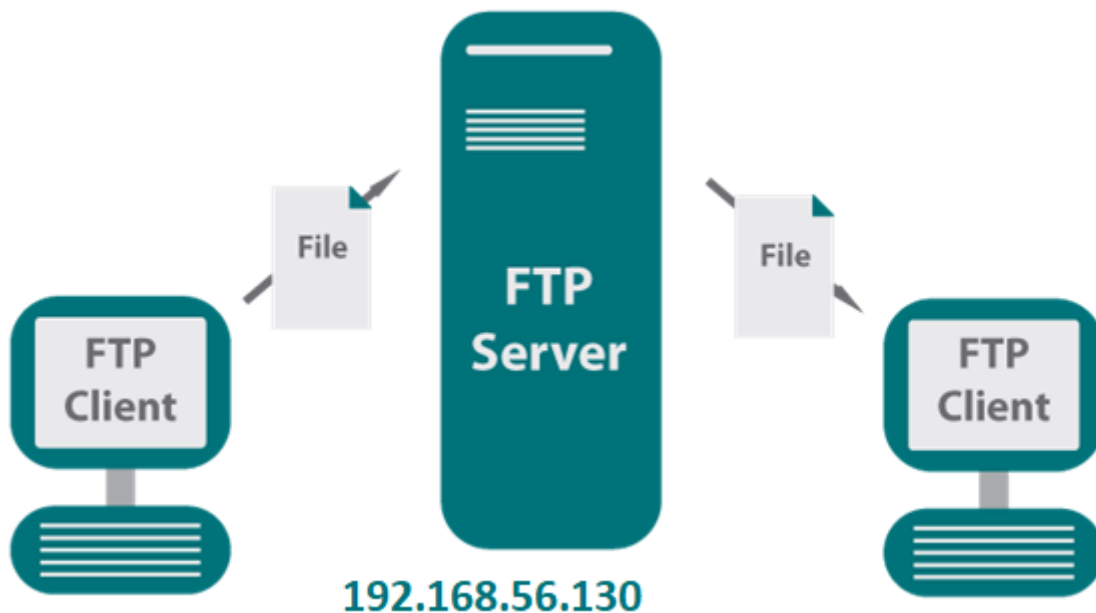




01-30-2021  
<https://youtu.be/cEL7MmeOSic>

02-13-2021  
<https://youtu.be/4LTNixANuoU>

### VSFTP – Very Secure File Transfer Protocol



Directory:  
Config file: /etc/vsftpd/user\_list, /etc/vsftpd/vsftpd.conf,  
Port #: 20, 21, 30000- 31000,  
Package: vsftpd, openssl  
Services: vsftpd, firewalld  
Protocol: tcp, udp  
Command: yum, systemctl, lvm, openssl, firewall-cmd, selinux,  
URL:

Rhel 8

Installed the package

```
[root@vsftp01 ~]# yum install vsftpd
```



### Start vsftpd

```
[root@rhel08 ~]# systemctl start vsftpd
[root@rhel08 ~]# systemctl enable vsftpd
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service →
/usr/lib/systemd/system/vsftpd.service.
```

```
[root@rhel08 ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.se>
   Active: active (running) since Sat 2021-02-13 14:>
 Main PID: 25275 (vsftpd)
    Tasks: 1 (limit: 11251)
   Memory: 576.0K
    CGroup: /system.slice/vsftpd.service
            └─25275 /usr/sbin/vsftpd /etc/vsftpd/vsft>

Feb 13 14:33:07 rhel08.zmpt.com systemd[1]: Starting>
Feb 13 14:33:07 rhel08.zmpt.com systemd[1]: Started >
```

### Create the user for FTP

```
[root@rhel08 ~]# id zafar
uid=1000(zafar) gid=1000(zafar) groups=1000(zafar)
```

### Create LVM for ftp users

```
[root@rhel08 ~]# pvcreate /dev/sdb
Physical volume "/dev/sdb" successfully created.
[root@rhel08 ~]# vgcreate FTP_Volume /dev/sdb
Volume group "FTP_Volume" successfully created
[root@rhel08 ~]# lvcreate -n FTP-DATA -L 10G FTP_Volume
Logical volume "FTP-DATA" created.

[root@rhel08 ~]# mkdir /FTP-USER-DATA

[root@rhel08 ~]# mkfs.xfs /dev/FTP_Volume/FTP-DATA

[root@rhel08 ~]# mount /dev/FTP_Volume/FTP-DATA /FTP-USER-DATA

[root@rhel08 ~]# df -h
```



```
/dev/mapper/FTP_Volume-FTP--DATA 10G 104M 9.9G 2% /FTP-USER-DATA
```

```
[root@rhel08 ~]# vi /etc/fstab
```

```
[root@rhel08 ~]# /dev/mapper/FTP_Volume-FTP--DATA /FTP-USER-DATA xfs defaults 0 0
```

#### Set the permissions and ownership

```
[root@rhel08 ~]# ls -ld /FTP-USER-DATA/
drwxr-xr-x. 2 root root 6 Feb 13 14:42 /FTP-USER-DATA/
[root@rhel08 ~]# chmod -R 750 /FTP-USER-DATA/
[root@rhel08 ~]# ls -ld /FTP-USER-DATA/
drwxr-x---. 2 root root 6 Feb 13 14:42 /FTP-USER-DATA/
[root@rhel08 ~]# chown -R zafar: /FTP-USER-DATA
[root@rhel08 ~]# ls -ld /FTP-USER-DATA
drwxr-x---. 2 zafar zafar 6 Feb 13 14:42 /FTP-USER-DATA
```

#### Change FTP user default directory

```
[root@rhel08 ~]# vi /etc/passwd
zafar:x:1000:1000:zafar:/FTP-USER-DATA:/bin/bash

[zafar@rhel08 ~]$ pwd
/FTP-USER-DATA
```

#### Add user to allow list

```
[root@rhel08 ~]# vi /etc/vsftpd/user_list

# vsftpd userlist
# If userlist_deny=NO, only allow users in this file
# If userlist_deny=YES (default), never allow users in this file, and
# do not even prompt for a password.
# Note that the default vsftpd pam config also checks /etc/vsftpd/ftpusers
# for users that are denied.
root
bin
daemon
adm
lp
sync
shutdown
halt
mail
```



news  
uucp  
operator  
games  
nobody  
zafar

#### Create the .pem key – encryption keys

```
[root@rhel08 ~]# openssl req -x509 -nodes -days 99999 -newkey rsa:2048 -keyout /etc/vsftpd.pem -
out /etc/vsftpd/vsftpd.pem
Generating a RSA private key
.....+++++
.....+++++
writing new private key to '/etc/vsftpd.pem'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [XX]:US
State or Province Name (full name) []:IL
Locality Name (eg, city) [Default City]:SKOKIE
Organization Name (eg, company) [Default Company Ltd]:ZMPT
Organizational Unit Name (eg, section) []:IT
Common Name (eg, your name or your server's hostname) []:FTP-SERVER
Email Address []:linux@zmprotech.com
```

#### Open firewall for the ports

Port 20 – to allow FTP traffic  
Port 21 – to allow DATA transfer

Port 30000 – 31000 – vairable port that is used ramdomly each time

```
[root@rhel08 ~]# firewall-cmd --permanent --add-port=20-21/tcp
success
[root@rhel08 ~]# firewall-cmd --permanent --add-port=30000-31000/tcp
```

```
success
[root@rhel08 ~]# firewall-cmd --reload
success
[root@rhel08 ~]# firewall-cmd --list-port
20-21/tcp 30000-31000/tcp
```

#### Enable through SELinux

```
[root@FTP-SERVER ~]# setsebool -P allow_ftp_full_access on
```

#### Configure VSFTPD config file – add or edit as needed - /etc/vsftpd/vsftpd.conf

```
anonymous_enable=NO
local_enable=YES

write_enable=YES

chroot_local_user=YES

listen_ipv6=YES

pam_service_name=vsftpd
userlist_enable=YES
userlist_file=/etc/vsftpd/user_list
userlist_deny=NO

allow_writeable_chroot=YES

pasv_min_port=30000
pasv_max_port=31000

rsa_cert_file=/etc/vsftpd/vsftpd.pem
rsa_private_key_file=/etc/vsftpd.pem
ssl_enable=YES
```

```
[root@rhel08 ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; vendor >
   Active: active (running) since Sat 2021-02-13 15:26:39 EST; 13s ago
   Process: 32347 ExecStart=/usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf (code=e>
   Main PID: 32348 (vsftpd)
```



Tasks: 1 (limit: 11251)  
Memory: 780.0K  
CGroup: /system.slice/vsftpd.service  
└─32348 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Feb 13 15:26:39 rhel08.zmpt.com systemd[1]: Starting Vsftpd ftp daemon...  
Feb 13 15:26:39 rhel08.zmpt.com systemd[1]: Started Vsftpd ftp daemon.

## Connect using File-Zilla

The screenshot displays the FileZilla application interface. In the foreground, the 'Site Manager' dialog box is open, showing the configuration for a new site. The 'General' tab is selected, and the following settings are visible:

- Protocol:** FTP - File Transfer Protocol
- Host:** 192.168.56.134
- Port:** (empty)
- Encryption:** Use explicit FTP over TLS if available
- Logon Type:** Normal
- User:** zafar
- Password:** (masked with dots)
- Background color:** None
- Comments:** (empty text area)

Buttons at the bottom of the dialog include 'New site', 'New folder', 'New Bookmark', 'Rename', 'Delete', 'Duplicate', 'Connect', 'OK', and 'Cancel'. The background shows the FileZilla main window with a local site list on the left and a file list on the right. The status bar at the bottom indicates 'Not connected.'



**Unknown certificate**

The server's certificate is unknown. Please carefully examine the certificate to make sure the server can be trusted.

Compare the displayed fingerprint with the certificate fingerprint you have received from your server administrator or server hosting provider.

**Certificate Overview**

Fingerprint (SHA-256): a4:b2:d3:1f:3c:a5:35:1a:0c:81:d3:bd:f8:f6:11:02:f8:53:5d:36:7f:01:d8:4b:04:d9:88:43:31:b6:f9:c8  
 Fingerprint (SHA-1): 5c:66:57:01:4b:61:bf:c9:17:1c:75:09:bc:56:b7:6a:cb:83:95:ad  
 Validity period: From 2/13/2021 2:09:34 PM to 11/28/2294 2:09:34 PM

**Subject**

Common name: FTP-SERVER  
 Organization: ZMPT  
 Unit: IT  
 Country: US  
 State or province: IL  
 Locality: SKOKIE  
 E-Mail: linux@zmprotech.com

**Issuer**

Same as subject, certificate is self-signed

**Details**

Serial: 25:15:a3:f5:3a:c3:1c:29:caf7:c3:dfef8:0f:6a:7eb5:ca:5b:be  
 Public key algorithm: RSA with 2048 bits

**Session details**

Host: 192.168.56.134:21  
 Protocol: TLS1.3  
 Cipher: AES-256-GCM  
 Key exchange: ECDHE-SECP256R1-RSA-PSS-RSAE-SHA384 Mac: AEAD

Trust the server certificate and carry on connecting?  
☒ Always trust this certificate in future sessions.  
☐ Trust this certificate on the listed alternative hostnames.

OK Cancel

**Local site:** C:\Users\Newname01\Documents

**Remote site:** /

Filename	Size	Filetype	Local	Remote
Application Data		File folder	✓	✓
Contacts		File folder	✓	✓
Cookies		File folder	✓	✓
Desktop		File folder	✓	✓
Documents		File folder	✓	✓
Custom Office Templates		File folder	✓	✓
My Music		File folder	✓	✓
My Pictures		File folder	✓	✓
My Videos		File folder	✓	✓
Download		File folder	✓	✓
..		File folder	✓	✓
New Microsoft Access Database.accdb	495,616	Microsoft Access Database	✓	✓
New Microsoft Excel Worksheet (2).xlsx	6,166	Microsoft Excel Worksheet	✓	✓
New Microsoft Word Document.docx	0	Microsoft Word Document	✓	✓
desktop.ini	402	Configuration settings	✓	✓
Default.rdp	2,254	Remote Desktop Connection	✓	✓
New Microsoft Excel Worksheet.xlsx	6,166	Microsoft Excel Worksheet	✓	✓

Selected 3 files. Total size: 501,782 bytes

4 files. Total size: 507,948 bytes

Queued files: Failed transfers: Successful transfers (4)

[root@FTP-SERVER FTP-USER-DATA]# pwd



/FTP-USER-DATA

[root@FTP-SERVER FTP-USER-DATA]# ls

'New Microsoft Access Database.accdb'

'New Microsoft Excel Worksheet (2).xlsx'

'New Microsoft Excel Worksheet.xlsx'

'New Microsoft Word Document.docx'