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AIM :- Implement FTP server for given scenario.

FTP -
A file transfer protocol (FTP) is a method of downloading, uploading, and transferring files from one computer to another on the internet. FTP, short for File Transfer Protocol, is a network protocol that was once widely used for moving files between a client and server. It has since been replaced by faster, more secure, and more convenient ways of delivering files. Many casual Internet users expect to download directly from their web browser with https, and command-line users are more likely to use secure protocols such as the scp or SFTP.

The objectives of FTP are

1) **to promote sharing of files (computer programs and/or data)**,
2) to encourage indirect or implicit (via programs) use of remote computers,
3) to shield a user from variations in file storage systems among hosts, and
4) to transfer data reliably and efficiently.

Update system :-
sudo apt update

```
cnlab404@cnlab404-Veriton-M200-H110: ~
File  Edit  View  Search  Terminal  Help
cnlab404@cnlab404-Veriton-M200-H110:~$ sudo apt update
[sudo] password for cnlab404:
Hit:1 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:3 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Hit:5 http://ppa.launchpad.net/wireshark-dev/stable/ubuntu bionic InRelease
Hit:6 http://in.archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:7 http://in.archive.ubuntu.com/ubuntu bionic-backports InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
```

Installing vsftpd

sudo apt install -yftpd

When the installation is complete, copy the configuration file so we can start with a blank configuration, saving the original as a backup:

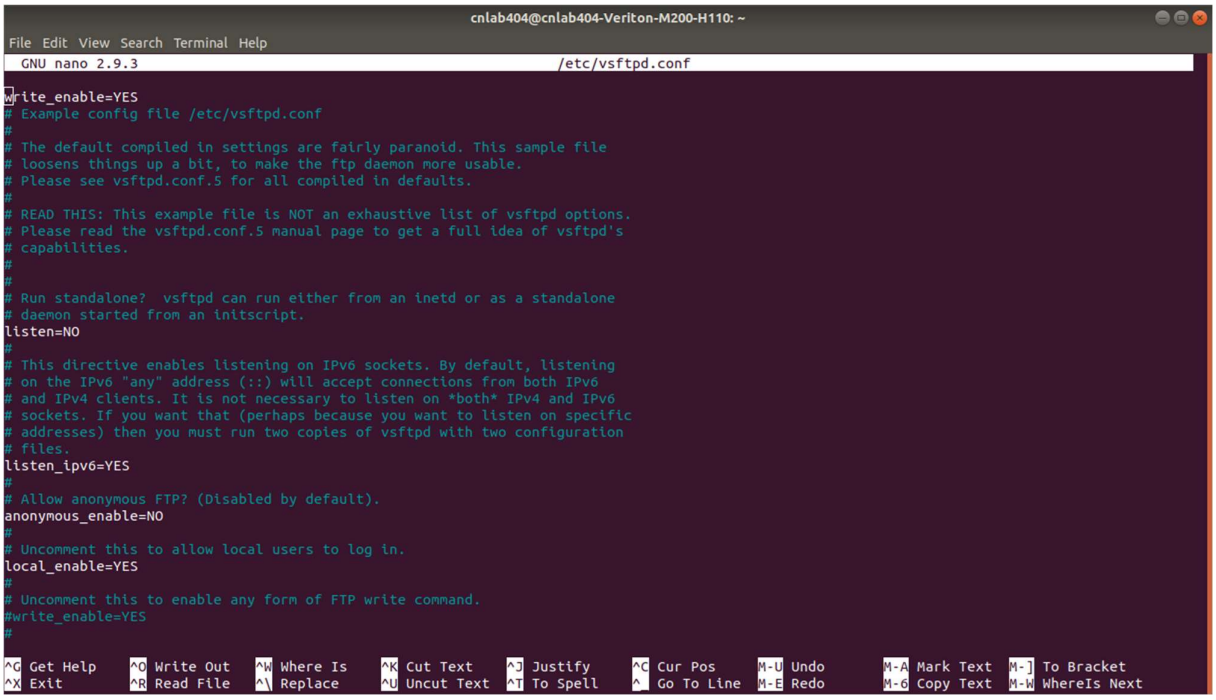
```
cnlab404@cnlab404-Veriton-M200-H110:~$ sudo apt install -y vsftpd
Reading package lists... Done
Building dependency tree
Reading state information... Done
vsftpd is already the newest version (3.0.3-9build1).
The following packages were automatically installed and are no longer required:
  libllvm9 linux-hwe-5.4-headers-5.4.0-113 linux-hwe-5.4-headers-5.4.0-117 linux-hwe-5.4-headers-5.4.0-120 linux-hwe-5.4-headers-5.4.0-121
  linux-hwe-5.4-headers-5.4.0-122 linux-hwe-5.4-headers-5.4.0-124 linux-hwe-5.4-headers-5.4.0-125 linux-hwe-5.4-headers-5.4.0-126
  linux-hwe-5.4-headers-5.4.0-131 linux-hwe-5.4-headers-5.4.0-132 linux-hwe-5.4-headers-5.4.0-135 linux-hwe-5.4-headers-5.4.0-136
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

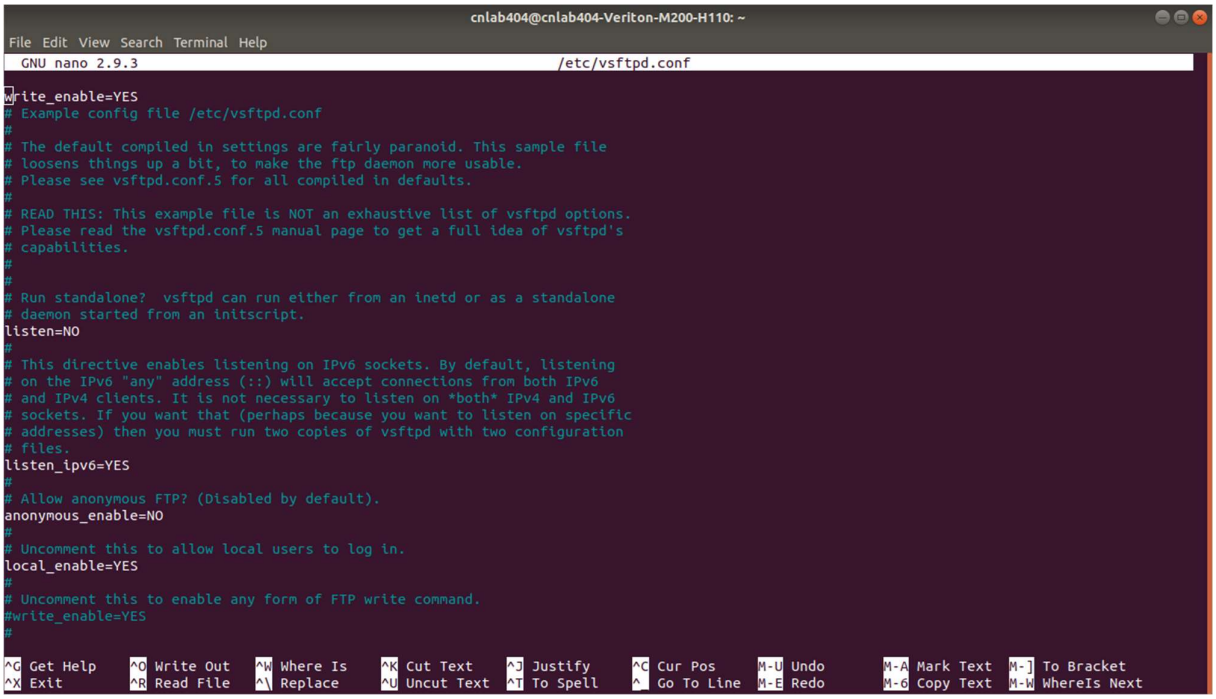
sudo nano /etc/vsftpd.conf

With a backup of the configuration in place, we're ready to configure the firewall.

```
cnlab404@cnlab404-Veriton-M200-H110:~$ sudo nano /etc/vsftpd.conf
```

```
listen=NO
anonymous_enable=NO
local_enable=YES
write_enable=YES
local_umask=022
dirmessage_enable=YES
use_localtime=YES
xferlog_enable=YES
connect_from_port_20=YES
chroot_local_user=YES
secure_chroot_dir=/var/run/vsftpd/empty
pam_service_name=vsftpd
rsa_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
rsa_private_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
ssl_enable=Yes
pasv_enable=Yes
pasv_min_port=10000
pasv_max_port=10100
allow_writeable_chroot=YES
ssl_tlsv1=YES
ssl_sslv2=NO
ssl_sslv3=NO
```





sudo ufw allow 20/tcp
sudo ufw allow 21/tcp

sudo systemctl enable vsftpd.service

sudo systemctl start vsftpd.service

sudo systemctl status vsftpd.service

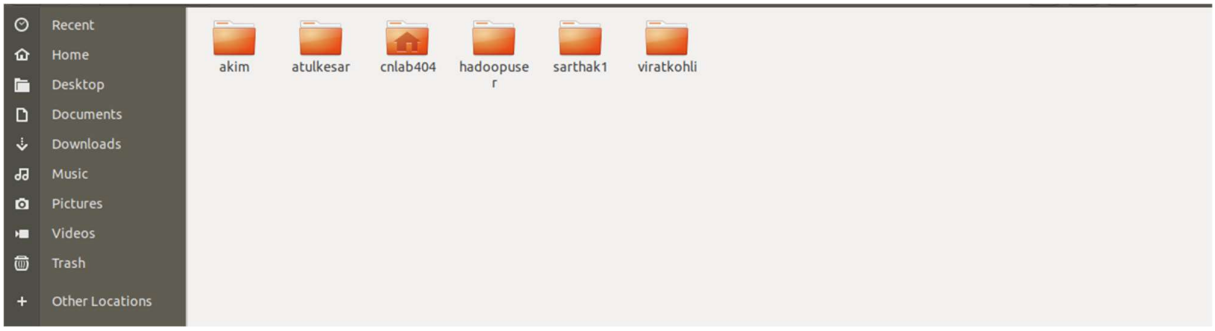
Ifconfig
Create ftp user :-
Preparing the User Directory

sudo add atulkesar

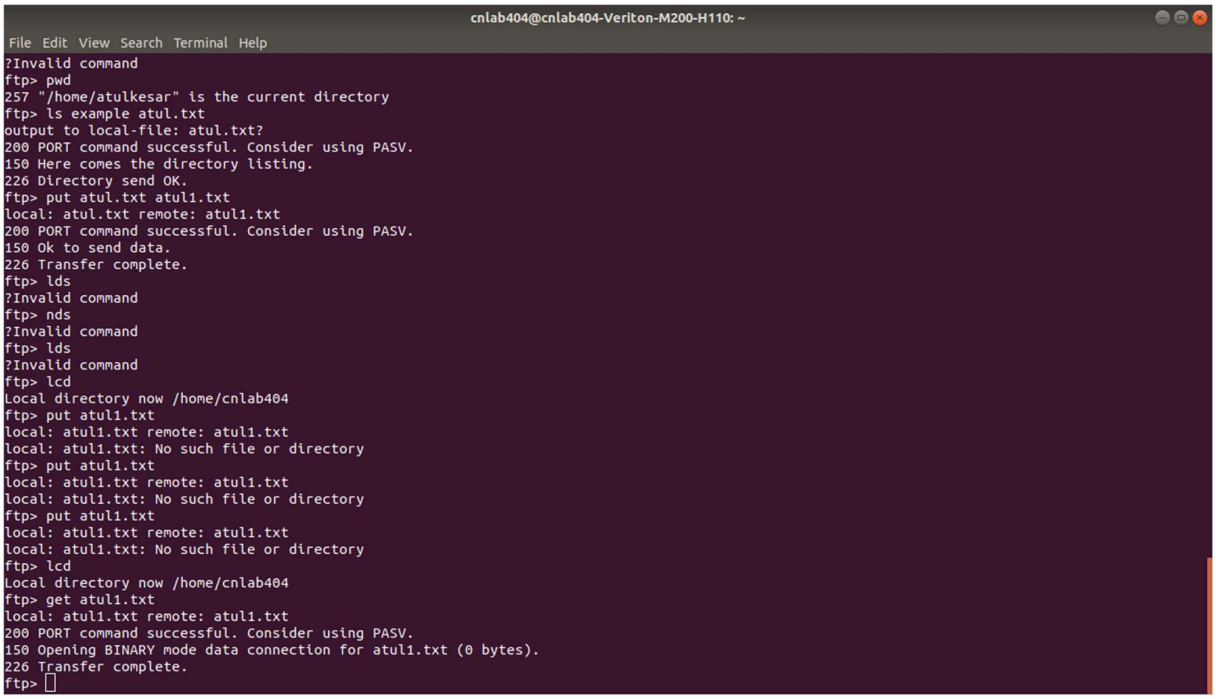
```
cnlab404@cnlab404-Veriton-M200-H110: ~
File  Edit  View  Search  Terminal  Help
Try: sudo apt install <deb name>

cnlab404@cnlab404-Veriton-M200-H110:~$ ifconfig
enp1s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.16.41.36  netmask 255.255.255.0  broadcast 172.16.41.255
        inet6 fe80::2f60:cef6:2155:fe93  prefixlen 64  scopeid 0x20<link>
        ether f4:4d:30:4e:d6:62  txqueuelen 1000  (Ethernet)
        RX packets 163965  bytes 188104339 (188.1 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 6885  bytes 517092 (517.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 324  bytes 29880 (29.8 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 324  bytes 29880 (29.8 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

cnlab404@cnlab404-Veriton-M200-H110:~$ sudo adduser atulkesar
Adding user `atulkesar' ...
Adding new group `atulkesar' (1010) ...
Adding new user `atulkesar' (1008) with group `atulkesar' ...
Creating home directory `/home/atulkesar' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for atulkesar
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] Y
```

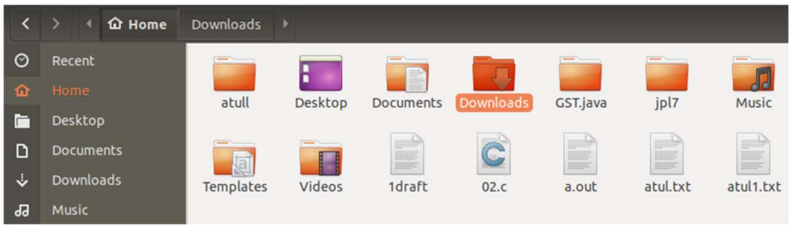
Connect FTP server on different machine

```
cnlab404@cnlab404-Veriton-M200-H110:~$ ftp 172.16.41.36
Connected to 172.16.41.36.
220 (vsFTPd 3.0.3)
Name (172.16.41.36:cnlab404): atulkesar
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rw-r--r--    1 1008     1010         8980 Feb 17 09:59 examples.desktop
226 Directory send OK.
ftp> pwd
257 "/home/atulkesar" is the current directory
ftp>
```




```
cnlab404@cnlab404-Veriton-M200-H110: ~
File  Edit  View  Search  Terminal  Help
[1]+  Stopped                 ftp 172.16.41.36
cnlab404@cnlab404-Veriton-M200-H110:~$ ftp 172.16.41.36
Connected to 172.16.41.36.
220 (vsFTPd 3.0.3)
Name (172.16.41.36:cnlab404): atulkesar
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rw-r--r--    1 1008     1010         8980 Feb 17 09:59 examples.desktop
226 Directory send OK.
ftp> cp 3atulccn.odt atulkesar
?Invalid command
ftp> pwd
257 "/home/atulkesar" is the current directory
ftp> ls example atul.txt
output to local-file: atul.txt?
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
226 Directory send OK.
ftp> put atul.txt atul1.txt
local: atul.txt remote: atul1.txt
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 Transfer complete.
ftp> lds
?Invalid command
ftp> nds
?Invalid command
ftp> lds
?Invalid command
ftp> lcd
Local directory now /home/cnlab404
ftp> put atul1.txt
```





Conclusion -

In this experiment we used some commands to perform ftp . first we installed vsftpd and then we created ftp user and transferred one file from one computer to another.