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| **Title:** Installation and configuration of FTP server **(Remote Administration with FTP) .** |

**Objective:** To install and configure FTP Server and handle remote operation.

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**Expected Outcome of Experiment:**

CO3 : Manage the configuration by using network administration tools.

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**Books/ Journals/ Websites referred:**

1. *Linux Lab - Open source Technology : Ambavade –Dreamtech*
2. [*https://help.ubuntu.com/lts/serverguide/ftp.html*](https://help.ubuntu.com/lts/serverguide/ftp.html)
3. <http://www.krizna.com/ubuntu/setup-ftp-server-on-ubuntu-14-04-vsftpd/>
4. https://www.cyberciti.biz/faq/linux-unix-ftp-commands/

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**Pre Lab/ Prior Concepts:** Computer Network, Web Technologies

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**New Concepts to be learned:** Installation of ftp, configurations for ftp, vsftpd,SSHD

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FTP is used to transfer files from one host to another over TCP network. This article explains how to setup FTP server on ubuntu 14.04 . There are 3 popular FTP server packages available PureFTPD, VsFTPD and ProFTPD. Consider VsFTPD which is lightweight and less Vulnerability.

*vsftpd* is an FTP daemon available in Ubuntu. It is easy to install, set up, and maintain.

**Installation of FTP:**

To installFTP server on Ubuntu 14.04(*vsftpd* ),need to run the following command:

**Step 1 »** Update repositories .

sudo apt-get update

**Step 2 »** Install VsFTPD package using the below command.

sudo apt-get install vsftpd

**Step 3 »** After installation open **/etc/vsftpd.conf** file and make changes as follows.  
 Uncomment the below lines (line no:29 and 33).

write\_enable=YES  
local\_umask=022» Uncomment the below line (line no: 120 ) to prevent access to the other folders outside the Home directory.  
chroot\_local\_user=YESand add the following line at the end.  
allow\_writeable\_chroot=YES» Add the following lines to enable passive mode.  
pasv\_enable=Yes  
pasv\_min\_port=40000  
pasv\_max\_port=40100

**Step 4 »**  Restart vsftpd service using the below command.

sudo service vsftpd restart

**Step 5 »**  Create user with the below command. Ftp server will listen on port 21.

Use shell to prevent access to the bash shell for the ftp users .

**/usr/sbin/nologin**

sudo useradd -m john -s /usr/sbin/nologin  
sudo passwd john

**Step 6 »** Allow login access for nologin shell .

Open **/etc/shells** and add the following line at the end.  
 /usr/sbin/nologin  
SFTP is called as “Secure FTP” which generally use SSH File Transfer Protocol . so we need openssh-server package installed , Issue the below command if it’s not already installed.

sudo apt-get install openssh-server

**Step 7 »** Create a new group **ftpaccess** for FTP users.

sudo groupadd ftpaccess

**Step 8 »** Now make changes in this **/etc/ssh/sshd\_config** file.

» Find and comment the below line  
 Subsystem sftp /usr/lib/openssh/sftp-serverand

Add these lines at the end of the file.

Subsystem sftp internal-sftp  
Match group ftpaccess  
ChrootDirectory %h  
X11Forwarding no  
AllowTcpForwarding no  
ForceCommand internal-sftp

**Step 9 »** Restart sshd service.  
 sudo service ssh restart

**Step 10 »**  creating Users for sftp access.

Create user **john** with **ftpaccess** group and **/usr/bin/nologin** shell.  
sudo usermod -m john -g ftpaccess -s /usr/sbin/nologin  
sudo passwd john

Change ownership for the home directory.  
sudo chown root /home/john

Create a folder inside home directory for writing and change ownership of that folder.  
sudo mkdir /home/john/www  
sudo chown john:ftpaccess /home/john/www

sudo usermod john -g ftpaccess -s /usr/sbin/nologin  
sudo chown root /home/john  
sudo mkdir /home/john/www  
sudo chown john:ftpaccess /home/john/www

Now john can able to upload files to www folder using FTP as well as SFTP.

**Testing FTP:**

To Test FTP server on Ubuntu 14.04(vsftpd ),need to run the following command:

1. **Internet File Transfer Program:**

It does connect to transfer files to and from a remote network ftp site. One must aware ftp username and password for user-based password authentication or with anonymous user access .

* 1. ftp ftp.example.com
  2. ftp 1.2.3.4
  3. ftp [user@ftp.example.com](mailto:user@ftp.example.com)
  4. ftp [ftp.freebsd.org](ftp://ftp.freebsd.org)

### List Current File:

### This command list the names of the files in the current remote directory

### ftp> ls

### Change Directory:

### To change directory on the remote machine use cd command:

### ftp> cd dirName

### Example : To change to pub directory, enter:

### ftp> cd pub

### Download / Copy file:

* 1. Download / Copy file o copy one file at a time from the remote ftp server to the local system use get command:
     1. get fileName
     2. get fileName newFileName
  2. In this example, download file resume.pdf in the current remote directory to (or on top of) a file with the same name, resume.pdf, in your current local directory:
     1. ftp> get resume.pdf

### Change Local Directory:

* + - * 1. To change directory on your local system:

ftp> lcd /path/to/new/dir

ftp> lcd /tmp

* + - * 1. Print local directory:

The lpwd command prints current download directory for local systems

ftp> lpwd

* + - * 1. pwd: To find out the pathname of the current directory on the remote ftp server, enter:

ftp> pwd

### Download Multiple Files:

* + 1. To copy multiple files from the remote ftp server to the local system.

ftp> mget \*

* + 1. To download all perl files (ending with .pl extension)

ftp> mget \*.pl

### Turn On / Off Interactive Prompting:

### The ftp command prompt sets interactive prompting; “on” which enables prompting so that you can verify of each step of the multiple commands, “off” allows the commands to act unimpeded.

### ftp> prompt on ftp> mput \*.php ftp> prompt off  ftp> mget \*.py

### Delete File:

### To delete a file in the current remote directory use delete command.

### ftp> delete fileName ftp> delete output.jpg

### Upload One File:

### To copy one file at a time from the local systems to the remote ftp server.

### ftp> put filename

### Upload Image file

### ftp> put logo.jpg

### Upload Multiple Files:

### To copy multiple files from the local system to the remote ftp server use mput command. Again, you may be prompted for a yes/no (y/n) answer before transferring each file.

### ftp> mput \* ftp> mput \*.pl

### Above example, upload all files from the current system.

### Create a Directory:

### To make a new directory.

### ftp> mkdir dirName ftp> mkdir scripts ftp> cd scripts ftp> pwd

### Delete a Directory:

### Purpose is to remove or delete a directory.

### ftp> rmdir dirName ftp> rmdir images

### Set The Mode Of File Transfer:

### The binary mode is recommended for almost all sort of files including images, zip files and much more. The binary mode provides less chance of a transmission error. The command are as follows:

### To set the mode of file transfer to ASCII ftp> ascii

### To set the mode of file transfer to binary. ftp> binary

### Connect To Another FTP Server:

### To open a connection with another ftp server.

### ftp> open [ftp.nixcraft.net.in](ftp://ftp.nixcraft.net.in)

### ftp> open 172.17.15.86

### Exit the FTP Session:

### Type quit or bye.

### ftp> quit OR ftp> bye

**Implementation details:**

**Conclusion:**

**Post Lab Questions:**

1. Explain Types of FTP Servers?
2. How a FTP ,SSH Works ?
3. What is active FTP and Passive FTP? State and explain difference between them.