Experiment No:5

Aim: Perform File Transfer and Access using FTP

Theory:

Configuration of ftp server

File Transfer Protocol (FTP) is a TCP protocol for uploading and downloading files between computers. FTP works on a client/server model. The server component is called an *FTP daemon*. It continuously listens for FTP requests from remote clients. When a request is received, it manages the login and sets up the connection. For the duration of the session it executes any of commands sent by the FTP client.

Access to an FTP server can be managed in two ways:
- Anonymous
- Authenticated

In the Anonymous mode, remote clients can access the FTP server by using the default user account called "anonymous" or "ftp" and sending an email address as the password.

In the Authenticated mode a user must have an account and a password. User access to the FTP server directories and files is dependent on the permissions defined for the account used at login. As a general rule, the FTP daemon will hide the root directory of the FTP server and change it to the FTP Home directory. This hides the rest of the file system from remote sessions.

Steps

1. vsftpd is an FTP daemon available in Ubuntu. To install **vsftpd** we can run the following command in root mode:

```
student@lab307-02:~$ sudo su
[sudo] password for student:
root@lab307-02:/home/student# sudo apt-get install vsftpd
```

2. User authenticated FTP Configuration

To configure **vsftpd** to authenticate system users and allow them to upload files. To make a copy of the original config file, we use cp command. Configure vsftpd using gedit.

```
root@lab307-02:~# cp /etc/vsftpd.conf /etc/vsftpd.conforiginal
root@lab307-02:~# gedit /etc/vsftpd.conf

(gedit:4067): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedeskto
p.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided
by any .service files

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p.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided
by any .service files
```

Uncomment the following lines in "vsftpd.conf" configuration file

```
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
write_enable=YES
#
```

3. Now restart vsftpd

```
root@lab307-02:~# /etc/init.d restart
-bash: /etc/init.d: Is a directory
root@lab307-02:~# █
```

To start or stop the service use command:

#service vsftpd start

#service vsftpd stop

4. add new user

```
root@lab307-02:~# adduser mukesh
Adding user `mukesh' ...
Adding new group `mukesh' (1004) ...
Adding new user `mukesh' (1004) with group `mukesh' ...
Creating home directory `/home/mukesh' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for mukesh
Enter the new value, or press ENTER for the default
        Full Name []: Mukesh Yadav
        Room Number []: 301
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@lab307-02:~#
```

5.   In your browser type: ftp://localhost and enter login username and password.
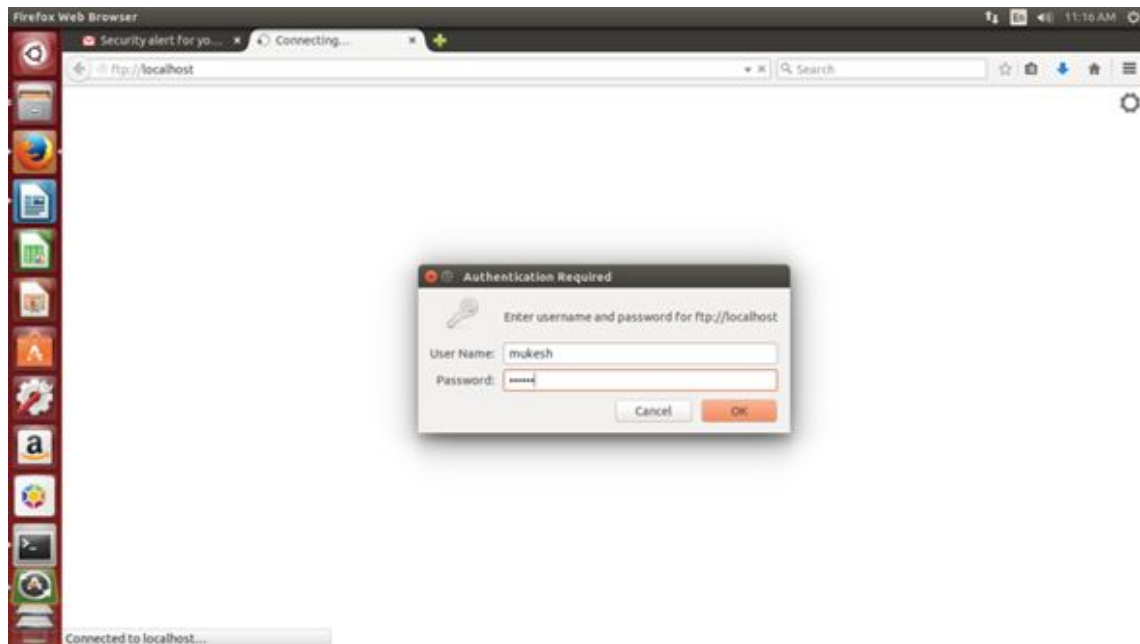
6. After authentication, we can transfer and access files using ftp
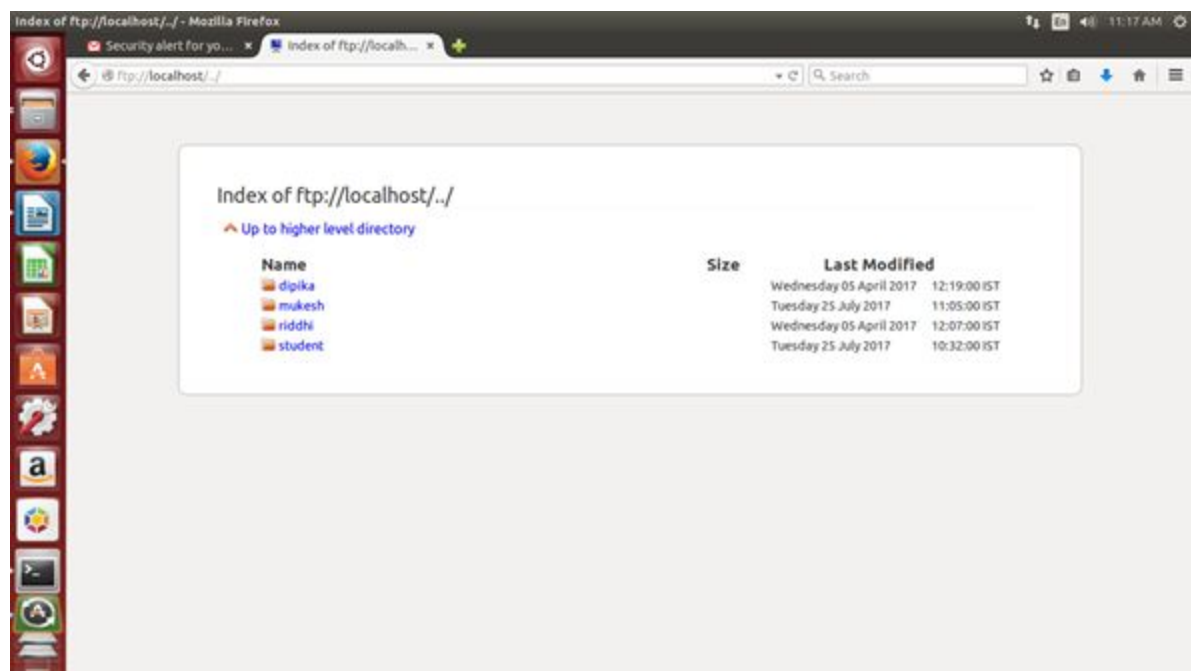
Some common ftp commands:

?	to request help or information about the FTP commands
ascii	to set the mode of file transfer to ASCII

binary	to set the mode of file transfer to binary
bye	to exit the FTP environment (same as quit)
cd	to change directory on the remote machine
close	to terminate a connection with another computer
delete	to delete (remove) a file in the current remote directory (same as rm in UNIX)
get	to copy one file from the remote machine to the local machine **get ABC DEF** This copies file ABC in the current remote directory to (or on top of) a file named DEF in your current local directory. **get ABC** This copies file ABC in the current remote directory to (or on top of) a file with the same name, ABC, in your current local directory.
help	to request a list of all available FTP commands
lcd	to change directory on your local machine (same as UNIX cd)
ls	to list the names of the files in the current remote directory
mkdir	to make a new directory within the current remote directory
mget	to copy multiple files from the remote machine to the local machine; you are prompted for a y/n answer before transferring each file **mget *** This copies all the files in the current remote directory to your current local directory, using the same filenames. Notice the use of the wild card character, *.
mput	to copy multiple files from the local machine to the remote machine; you are prompted for a y/n answer before transferring each file
open	to open a connection with another computer
put	to copy one file from the local machine to the remote machine

pwd	to find out the pathname of the current directory on the remote machine
quit	to exit the FTP environment (same as bye)
rmdir	to to remove (delete) a directory in the current remote directory

Output:

```
administrator@ubuntu:~$ ftp
ftp> exit
administrator@ubuntu:~$ ftp metalab.unc.edu
Connected to www.ibiblio.org.
220 ProFTPD Server
Name (metalab.unc.edu:administrator): anonymous
331 Anonymous login ok, send your complete email address as your password
Password:
230-
   Welcome to ftp.ibiblio.org, the public ftp server of ibiblio.org.  We
   hope you find what you're looking for.

   If you have any problems or questions, please see

   http://www.ibiblio.org/help/

   Thanks!

230 Anonymous access granted, restrictions apply
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
200 PORT command successful
150 Opening BINARY mode data connection for file list
-rw-r--r--    1 root     root         2897 Jan 26  2006 HEADER.html
drwxr-xr-x    2 root     root         4096 Jan 26  2006 HEADER.images
drwxr-xr-x    4 root     root         4096 Jan 18  2013 incoming
drwxr-xr-x   14 root     root         4096 Apr 14  2011 pub
-rw-r--r--    1 root     root          212 Apr  6  2011 README
drwxr-xr-x    4 root     root         4096 Dec  1  2004 unc
226 Transfer complete
ftp> cd pub
250 CWD command successful
ftp> ls
200 PORT command successful
150 Opening BINARY mode data connection for file list
drwxr-xr-x   31 root     root         4096 Feb  6  2004 academic
drwxr-xr-x    8 root     bin          4096 Feb 23  2012 archives
drwxr-xr-x   29 root     root         4096 May 24  2011 docs
drwxr-xr-x   12 root     bin          4096 Mar 23  2011 electronic-publications
drwxr-xr-x    5 root     root         4096 Apr 30  2012 historic-linux
drwxr-xr-x    7 root     root         4096 Feb 13  2006 languages
```

```
-rw-r--r--    1 root      root        104328 Apr 21  1992 gao-report
-rw-r--r--    1 root      root         16307 Apr 21  1992 inet.worm
-rw-r--r--    1 root      bin          52202 Feb 22  1993 pkt_filtering.ps.Z
-rw-r--r--    1 root      root         58441 Apr 21  1992 security-doc.tar.Z
-rw-r--r--    1 root      root        249218 Apr 21  1992 security-draft-26nov.txt
226 Transfer complete
ftp> cd security
550 security: No such file or directory
ftp> ls
200 PORT command successful
150 Opening BINARY mode data connection for file list
-rw-r--r--    1 root      root        104328 Apr 21  1992 gao-report
-rw-r--r--    1 root      root         16307 Apr 21  1992 inet.worm
-rw-r--r--    1 root      bin          52202 Feb 22  1993 pkt_filtering.ps.Z
-rw-r--r--    1 root      root         58441 Apr 21  1992 security-doc.tar.Z
-rw-r--r--    1 root      root        249218 Apr 21  1992 security-draft-26nov.txt
226 Transfer complete
ftp> bin
200 Type set to I
ftp> get security-draft-26nov.txt
local: security-draft-26nov.txt remote: security-draft-26nov.txt
200 PORT command successful
150 Opening BINARY mode data connection for security-draft-26nov.txt (249218 byt
es)
226 Transfer complete
249218 bytes received in 1.43 secs (169.9 kB/s)
ftp> exit
221 Goodbye.
administrator@ubuntu:~$ ls
1.tcl                f3                   out1.tr
2.tcl                f4                   out2.tr
3.tcl                f5                   out.nam
Aalhad2              f6                   Pictures
ACKNOWLEDGEMENT.doc  f8                   project report index page.doc
ASort.sh             gayathri             Public
be                   graph1.tr            RandomTx.nam
certificate.doc      graph2.tcl           RandomTx.tr
chapter.doc          graph.tcl            run.tcl
cover.doc            graph.tcl~           security-draft-26nov.txt
Desktop              graph.tr             Sort.sh
Documents            guidelines.doc       Sort.sht
Downloads            inside cover.doc     tcp4.nam
drop1.nam            kavita               tcp4.tcl
drop1.tcl            kavita17             tcp4.tr
drop1.tcl~           mul                  tcpred5.tcl
drop1.tr             Mul                  tcpred5.tcl~
drop2.nam            mul.sh               Tcpred.nam
```

```
ftp> cd docs
250 CWD command successful
ftp> ls
200 PORT command successful
150 Opening BINARY mode data connection for file list
drwxr-xr-x  13 root     root       4096 Jan 26  2005 about-the-net
drwxr-xr-x   2 root     bin        4096 Dec  9  1993 ACCESS-bus
drwxr-xr-x   8 root     bin        4096 Jan 31  2005 books
drwxr-xr-x   2 root     root       4096 Jan 31  2005 concert
drwxrwxr-x   2 523      bin        4096 Aug 21  1998 exploris
drwxr-xr-x   2 root     bin        4096 Mar 13  1996 faqs
drwxr-xr-x  14 893      bin        4096 Dec 10  1999 filesystems
drwxr-xr-x   2 942      bin        4096 Dec  9  1999 freefilm
drwxr-xr-x   6 root     bin        4096 Jan 31  2005 humor
drwxr-xr-x   2 root     bin        4096 Jan 31  2005 iafa
drwxr-xr-x   2 root     root       4096 Jan 31  2005 ietf
-rw-r--r--   1 root     bin        1208 Mar 25  1994 INDEX
drwxr-xr-x   2 root     root       4096 Jan 31  2005 lib-catalogs.online
drwxr-xr-x   2 root     bin        4096 Jan 31  2005 local-area-networks
drwxr-xr-x   2 root     bin        4096 Jan 31  2005 mail-directories
drwxr-xr-x   3 root     root       4096 Jan 31  2005 misc
drwxr-xr-x  41 root     root       4096 Jan 30  1995 nc-supreme-court
drwxr-xr-x   2 root     root      20480 Jan 31  2005 nih-nsf
-rw-r--r--   1 root     root        595 Jan  8  1993 README
drwxr-xr-x   2 237      bin        4096 Aug 14  2000 recipes
drwxr-xr-x   4 2358     users      4096 Nov 15  2007 resource.org
drwxr-xr-x  66 root     bin       45056 Jan 26  1996 rfc
drwxr-xr-x   2 root     root       4096 Jan 31  2005 security
drwxr-xr-x   2 root     bin        4096 Jan 31  2005 services
drwxr-xr-x   2 704      root       4096 May 13  2003 typing-injury
drwxr-xr-x   2 root     root       4096 Jan 31  2005 UNC-bbs
drwxr-xr-x   3 root     root       4096 Jan 31  2005 unix-tutorials
drwxr-xr-x   2 root     bin        4096 Jan 31  2005 vms-tutorials
226 Transfer complete
ftp> cd security
250 CWD command successful
ftp> ls
200 PORT command successful
150 Opening BINARY mode data connection for file list
-rw-r--r--   1 root     root     104328 Apr 21  1992 gao-report
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-rw-r--r--   1 root     bin       52202 Feb 22  1993 pkt_filtering.ps.Z
-rw-r--r--   1 root     root      58441 Apr 21  1992 security-doc.tar.Z
-rw-r--r--   1 root     root     249218 Apr 21  1992 security-draft-26nov.txt
226 Transfer complete
ftp> cd security
```

Conclusion: Hence we successfully studied the program of FTP.

Date:

Sign: **Grade:**