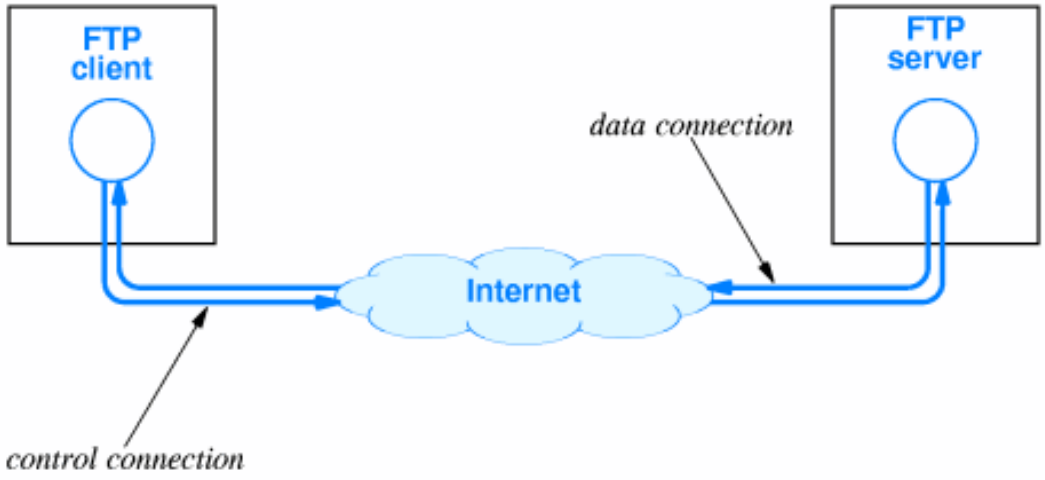
Hands-on Session - II

File Transfer Protocol (FTP)

- It is a simple network protocol used to transfer files from one host computer to another host computer over a network such as the Internet.
- Very Secure File Transfer Protocol Daemon(VSFTPD)



Dynamics

•FTP is built on a client-server architecture and uses separate control and data connections between the client and the server.

•To transfer files using FTP, you use a program called the *client* and a server component called FTP *daemon*.

•The FTP client initiates a connection to a remote computer running FTP server software.

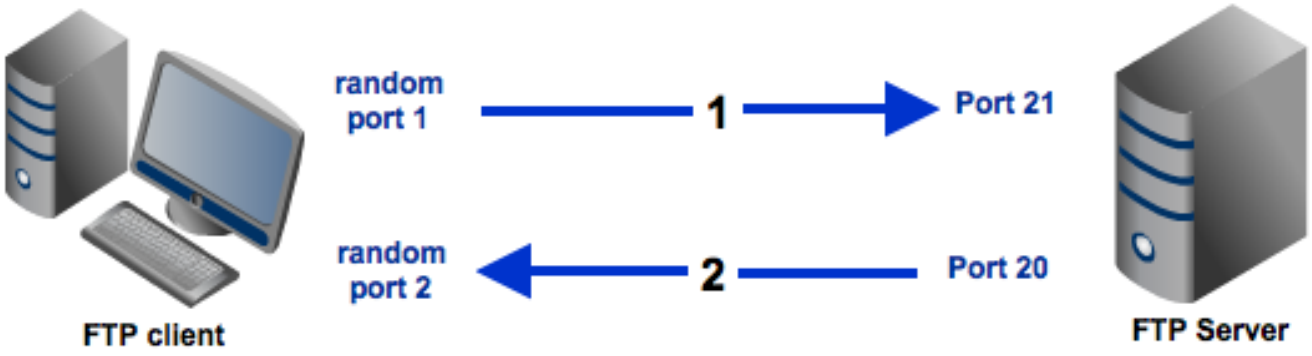
• After the connection is established, the client can choose to send and/or receive copies of files, singly or in groups.

•The FTP users may authenticate themselves in the form of an username and password set by the administrator of the server, or can also connect anonymously if the server is configured to allow it.

Modes of FTP-Active Mode

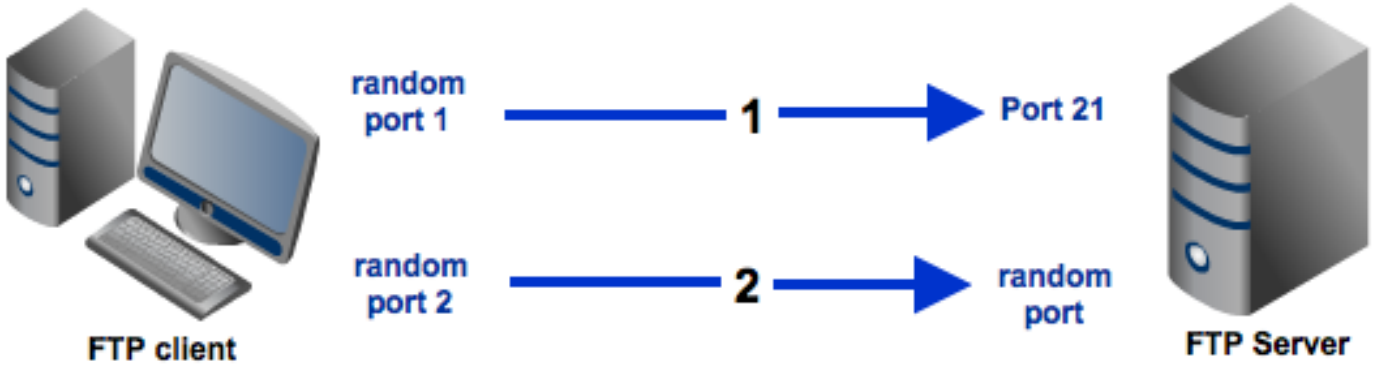
A user connects from a random port on a file transfer client to port 21 on the server. It sends the PORT command, specifying what client-side port the server should connect to.

The server initiates the TCP connection from port 20 to the client port designated for the data channel. Once connection is established, file transfers are then made through these client and server ports.



Modes of FTP-Passive Mode

1.The client connects from a random port to port 21 on the server and issues the PASV command. The server replies, indicating which (random) port it has opened for data transfer.
2.The client connects from another random port to the random port specified in the server's response. Once connection is established, data transfers are made through these client and server ports.



Setup of FTP Server via Shell

1.Enter the **terminal**
2.Type **ftp ip_address**
3.A prompt for username and password appears. Use **anonymous** if user name is not known. Else enter the username
4.Enter appropriate password. If the user is **anonymous,** do not enter any password.
5.Type **passive** to enter the passive mode.
6.Then type **ls** to view the folder contents.
7.The command **get** and **put** can be used to download or upload files to and from the server. But this depends on configuration settings and user access.
8.For e.g. **anonymous** users cannot upload unless the FTP is configured for that.
9.Use **help** view and use other commands.

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```
ubuntu@pppp: ~                                                    5:06 PM  Harry Potter
iNoah logo.png
INOAH.pptx
keystone.sh
my_keypair.pem
openstack(1).docx
openstack.docx
OpenStack Grizzly Architecture | Solinea_files
OpenStack Grizzly Architecture | Solinea.html
openstack.odt
pp_cirros.pem
pppp.pem
pp_ubuntu1.pem
pp_ubuntu.pem
snaps.zip
Terminologies.docx
Terminologies.odt
root@harrypotter:/home/harrypotter/Downloads# ssh -i pppp.pem ubuntu@192.168.3.19
Welcome to Ubuntu 12.04.2 LTS (GNU/Linux 3.2.0-48-virtual x86_64)

 * Documentation:  https://help.ubuntu.com/

  System information as of Thu Aug 22 06:08:09 UTC 2013

  System load:  0.0               Processes:           70
  Usage of /:   38.8% of 1.96GB   Users logged in:     1
  Memory usage: 13%               IP address for eth0: 10.5.5.19
  Swap usage:   0%

  Graph this data and manage this system at https://landscape.canonical.com/

  Get cloud support with Ubuntu Advantage Cloud Guest:
    http://www.ubuntu.com/business/services/cloud

  Use Juju to deploy your cloud instances and workloads:
    https://juju.ubuntu.com/#cloud-precise

0 packages can be updated.
0 updates are security updates.

Last login: Thu Aug 22 06:03:47 2013 from 192.168.3.83
ubuntu@pppp:~$
```

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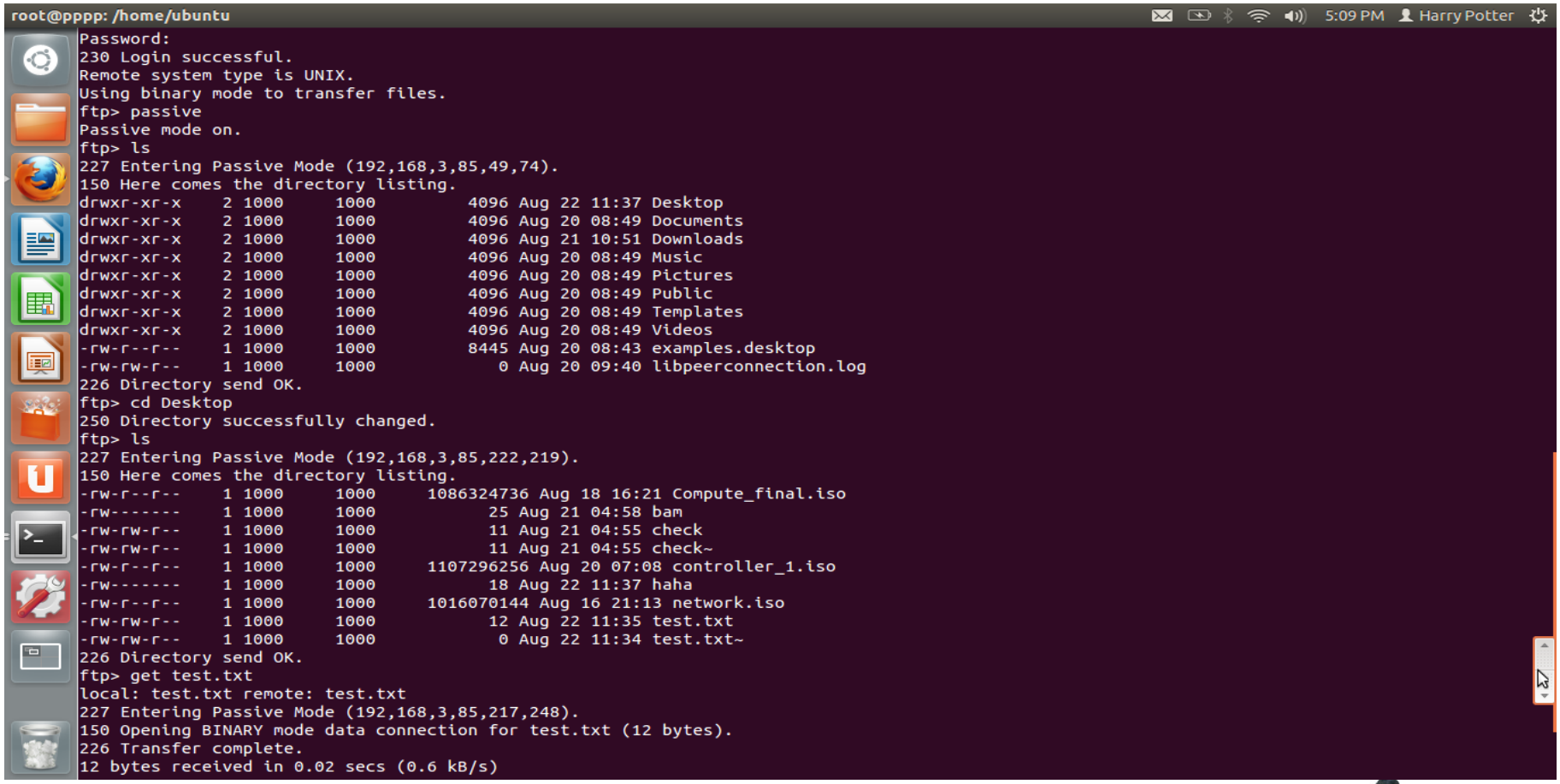
```
root@pppp: /home/ubuntu                                  5:10 PM  Harry Potter
root@pppp:/home/ubuntu# ftp 192.168.3.85
Connected to 192.168.3.85.
220 Welcome to iNoah!! FTP service.
Name (192.168.3.85:ubuntu): controller
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> passive
Passive mode on.
ftp> ls
227 Entering Passive Mode (192,168,3,85,49,74).
150 Here comes the directory listing.
drwxr-xr-x    2 1000     1000         4096 Aug 22 11:37 Desktop
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Documents
drwxr-xr-x    2 1000     1000         4096 Aug 21 10:51 Downloads
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Music
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Pictures
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Public
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Templates
drwxr-xr-x    2 1000     1000         4096 Aug 20 08:49 Videos
-rw-r--r--    1 1000     1000         8445 Aug 20 08:43 examples.desktop
-rw-rw-r--    1 1000     1000            0 Aug 20 09:40 libpeerconnection.log
226 Directory send OK.
ftp> cd Desktop
250 Directory successfully changed.
ftp> ls
227 Entering Passive Mode (192,168,3,85,222,219).
150 Here comes the directory listing.
-rw-r--r--    1 1000     1000     1086324736 Aug 18 16:21 Compute_final.iso
-rw-------    1 1000     1000           25 Aug 21 04:58 bam
-rw-rw-r--    1 1000     1000           11 Aug 21 04:55 check
-rw-rw-r--    1 1000     1000           11 Aug 21 04:55 check~
-rw-r--r--    1 1000     1000     1107296256 Aug 20 07:08 controller_1.iso
-rw-------    1 1000     1000           18 Aug 22 11:37 haha
-rw-r--r--    1 1000     1000     1016070144 Aug 16 21:13 network.iso
-rw-rw-r--    1 1000     1000           12 Aug 22 11:35 test.txt
-rw-rw-r--    1 1000     1000            0 Aug 22 11:34 test.txt~
226 Directory send OK.
ftp> get test.txt
```


root@pppp: /home/ubuntu
5:09 PM
Harry Potter
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> passive
Passive mode on.
ftp> ls
227 Entering Passive Mode (192,168,3,85,49,74).
150 Here comes the directory listing.
drwxr-xr-x 2 1000 1000 4096 Aug 22 11:37 Desktop
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Documents
drwxr-xr-x 2 1000 1000 4096 Aug 21 10:51 Downloads
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Music
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Pictures
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Public
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Templates
drwxr-xr-x 2 1000 1000 4096 Aug 20 08:49 Videos
-rw-r--r-- 1 1000 1000 8445 Aug 20 08:43 examples.desktop
-rw-rw-r-- 1 1000 1000 0 Aug 20 09:40 libpeerconnection.log
226 Directory send OK.
ftp> cd Desktop
250 Directory successfully changed.
ftp> ls
227 Entering Passive Mode (192,168,3,85,222,219).
150 Here comes the directory listing.
-rw-r--r-- 1 1000 1000 1086324736 Aug 18 16:21 Compute_final.iso
-rw------- 1 1000 1000 25 Aug 21 04:58 bam
-rw-rw-r-- 1 1000 1000 11 Aug 21 04:55 check
-rw-rw-r-- 1 1000 1000 11 Aug 21 04:55 check~
-rw-r--r-- 1 1000 1000 1107296256 Aug 20 07:08 controller_1.iso
-rw------- 1 1000 1000 18 Aug 22 11:37 haha
-rw-r--r-- 1 1000 1000 1016070144 Aug 16 21:13 network.iso
-rw-rw-r-- 1 1000 1000 12 Aug 22 11:35 test.txt
-rw-rw-r-- 1 1000 1000 0 Aug 22 11:34 test.txt~
226 Directory send OK.
ftp> get test.txt
local: test.txt remote: test.txt
227 Entering Passive Mode (192,168,3,85,217,248).
150 Opening BINARY mode data connection for test.txt (12 bytes).
226 Transfer complete.
12 bytes received in 0.02 secs (0.6 kB/s)


iNoah