Lab3

1) Install ftpd service on your laptop

```
Terminal neen-VirtualBox:~$ sudo apt install ftpd
[sudo] password for raneen:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  openbsd-inetd tcpd
The following NEW packages will be installed:
  ftpd openbsd-inetd tcpd
0 upgraded, 3 newly installed, 0 to remove and 197 not upgraded.
Need to get 99.0 kB of archives.
After this operation, 339 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://eg.archive.ubuntu.com/ubuntu jammy/universe amd64 tcpd amd64 7.6.q
-31build2 [25.2 kB]
Get:2 http://eg.archive.ubuntu.com/ubuntu jammy/universe amd64 openbsd-inetd am
d64 0.20160825-5 [26.3 kB]
Get:3 http://eg.archive.ubuntu.com/ubuntu jammy/universe amd64 ftpd amd64 0.17-
```

2) enable port 21 and 20 (tcp) using iptables command using INPUT chain

```
raneen@raneen-VirtualBox:~$ sudo iptables -A INPUT -p tcp --dport 20 -j ACCEPT
raneen@raneen-VirtualBox:~$ sudo iptables -A INPUT -p tcp --dport 21 -j ACCEPT
```

3) connect to ftp server (e.g: localhost) and browse the current directory

```
raneen@raneen-VirtualBox:~$ ftp localhost
Connected to localhost.
220 raneen-VirtualBox FTP server (Version 6.4/OpenBSD/Linux-ftpd-0.17) ready.
Name (localhost:raneen): raneen
331 Password required for raneen.
Password:
230 User raneen logged in.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Extended Passive Mode OK (|||34871|)
150 Opening ASCII mode data connection for '/bin/ls'.
total 104
drwxrwxr-x  2 raneen raneen  4096 22:29 28 فبر udo
-rw-------  1 raneen raneen  9369 11:42 1 ابر .bash_history
-rw-r--r--  1 raneen raneen   220 10:45 22 فبر .bash_logout
-rw-r--r--  1 raneen raneen  3771 10:45 22 فبر .bashrc
drwx------ 10 raneen raneen  4096 22:39 28 فبر .cache
drwx------ 13 raneen raneen  4096 22:56 28 فبر .config
drwxr-xr-x  2 raneen raneen  4096 11:10 22 فبر Desktop
drwxr-xr-x  2 raneen raneen  4096 11:10 22 فبر Documents
drwxr-xr-x  2 raneen raneen  4096 11:10 22 فبر Downloads
-rw-rw-r--  1 raneen raneen     0 11:26 1 ابر fil.zip
drwxrwxr-x  2 raneen raneen  4096 22:29 28 فبر groupadd
drwxrwxr-x  3 raneen raneen  4096 21:16 9 مار Labs-iti-Sys-Admin1
-rw-------  1 raneen raneen    20 00:23 1 مار .lesshst
drwx------  3 raneen raneen  4096 11:10 22 فبر .local
```

4) enable ufw service.

```
raneen@raneen-VirtualBox:~$ sudo ufw enable
Firewall is active and enabled on system startup
raneen@raneen-VirtualBox:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
2049/tcp                   ALLOW       Anywhere
2049/udp                   ALLOW       Anywhere
2049/tcp (v6)              ALLOW       Anywhere (v6)
2049/udp (v6)              ALLOW       Anywhere (v6)

raneen@raneen-VirtualBox:~$
```

5) block port 20 and 21 (tcp) using ufw

```
raneen@raneen-VirtualBox:~$ sudo ufw deny 20/tcp
Rule added
Rule added (v6)
raneen@raneen-VirtualBox:~$ sudo ufw deny 21/tcp
Rule added
Rule added (v6)
raneen@raneen-VirtualBox:~$
```

6) try to connect to ftp service.

```
raneen@raneen-VirtualBox:~$ ftp localhost
Connected to localhost.
220 raneen-VirtualBox FTP server (Version 6.4/OpenBSD/Linux-ftpd-0.17) ready.
Name (localhost:raneen): raneen
331 Password required for raneen.
Password:
230 User raneen logged in.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Extended Passive Mode OK (|||41753|)
150 Opening ASCII mode data connection for '/bin/ls'.
total 104
drwxrwxr-x  2 raneen raneen  4096 22:29 28 فبر udo
-rw-------  1 raneen raneen  9369 11:42 1  أبر .bash_history
-rw-r--r--  1 raneen raneen   220 10:45 22 فبر .bash_logout
-rw-r--r--  1 raneen raneen  3771 10:45 22 فبر .bashrc
drwx------ 10 raneen raneen  4096 22:39 28 فبر .cache
```

7) capture the ufw log to detect the blocked operation

```
raneen@raneen-VirtualBox:~$ tail /var/log/kern.log
Apr 11 16:09:13 raneen-VirtualBox kernel: [ 112.368810] rfkill: input handler
disabled
Apr 11 16:09:31 raneen-VirtualBox kernel: [ 131.155397] audit: type=1326 audit
(1681222171.973:55): auid=1000 uid=1000 gid=1000 ses=3 subj=snap.snapd-desktop-
integration.snapd-desktop-integration pid=1991 comm="snapd-desktop-i" exe="/sna
p/snapd-desktop-integration/57/usr/bin/snapd-desktop-integration" sig=0 arch=c0
00003e syscall=314 compat=0 ip=0x7f4a8f41ba3d code=0x50000
Apr 11 16:22:54 raneen-VirtualBox kernel: [ 933.563161] RPC: Registered named
UNIX socket transport module.
Apr 11 16:22:54 raneen-VirtualBox kernel: [ 933.563170] RPC: Registered udp tr
ansport module.
Apr 11 16:22:54 raneen-VirtualBox kernel: [ 933.563172] RPC: Registered tcp tr
ansport module.
```

8) install nfs service on your system

```
raneen@raneen-VirtualBox:~$ sudo apt install nfs-kernel-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  keyutils libevent-core-2.1-7 libnfsidmap1 nfs-common rpcbind
Suggested packages:
  open-iscsi watchdog
The following NEW packages will be installed:
  keyutils libevent-core-2.1-7 libnfsidmap1 nfs-common nfs-kernel-server
  rpcbind
0 upgraded, 6 newly installed, 0 to remove and 197 not upgraded.
Need to get 615 kB of archives.
```

9) enable nfs service on the firewall.

```
raneen@raneen-VirtualBox:~$ sudo ufw allow 2049/tcp
Rules updated
Rules updated (v6)
```

10) create and share /tmp/shares folder using exportfs command and /etc/exports file.

```
raneen@raneen-VirtualBox:~$ echo '/tmp/shares *(rw)' | sudo tee -a /etc/exports
/tmp/shares *(rw)
raneen@raneen-VirtualBox:~$ sudo exportfs -a
exportfs: /etc/exports [1]: Neither 'subtree_check' or 'no_subtree_check' speci
fied for export "*:/tmp/shares".
  Assuming default behaviour ('no_subtree_check').
  NOTE: this default has changed since nfs-utils version 1.0.x
```

11) mount the remote share on /mnt folder (you can using localhost as well)

```
raneen@raneen-VirtualBox:~$ sudo mount -t nfs localhost:/tmp/shares /mnt
```

12) copy some files to the remote share

```
raneen@raneen-VirtualBox:~$ scp /tmp/file.txt /mnt
```

13) save iptables rules to /tmp/iptables-backup file

```
raneen@raneen-VirtualBox:~$ sudo iptables-save > tmp/iptables-backup
```