

System Admin2 Lab3

Lab objectives:

- Install ftpd service on your laptop.

- sudo apt install vsftpd

```
donia@donia-VirtualBox:~$ sudo apt install vsftpd
[sudo] password for donia:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
vsftpd is already the newest version (3.0.5-0ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
donia@donia-VirtualBox:~$
```

- Enable port 21 and 20 (tcp) using iptables command using INPUT chain.

- sudo iptables -A INPUT -p tcp --dport 21 -j ACCEPT

- sudo iptables -A INPUT -p tcp --dport 20 -j ACCEPT

```
donia@donia-VirtualBox:~$ sudo iptables -A INPUT -p tcp --dport 20 -j ACCEPT
donia@donia-VirtualBox:~$ sudo iptables -A INPUT -p tcp --dport 21 -j ACCEPT
donia@donia-VirtualBox:~$ sudo iptables -L
Chain INPUT (policy ACCEPT)
target     prot opt source                destination            tcp dpt:http
ACCEPT     tcp  --  anywhere              anywhere               tcp dpt:ftp-data
ACCEPT     tcp  --  anywhere              anywhere               tcp dpt:ftp
ACCEPT     tcp  --  anywhere              anywhere               tcp dpt:ftp-data
ACCEPT     tcp  --  anywhere              anywhere               tcp dpt:ftp

Chain FORWARD (policy ACCEPT)
target     prot opt source                destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source                destination
donia@donia-VirtualBox:~$
```

- Connect to ftp server (e.g: localhost) and browse the current directory.

- ftp localhost

```
donia@donia-VirtualBox:~$ ftp localhost
Connected to localhost.
220 (vsFTPd 3.0.5)
Name (localhost:donia): donia
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||64875|)
150 Here comes the directory listing.
drwxr-xr-x  2 1000    1000        4096 Apr 01 12:16 Desktop
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Documents
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Downloads
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Music
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Pictures
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Public
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Templates
drwxr-xr-x  2 1000    1000        4096 Mar 28 15:45 Videos
drwxrwxr-x  2 1000    1000        4096 Mar 28 15:45 Warpinator
-rw-rw-r--  1 1000    1000         12 Mar 30 10:49 bts
-rw-rw-r--  1 1000    1000         3 Mar 30 10:49 bts2
226 Directory send OK.
ftp> █
```

- Enable ufw service.

- sudo ufw enable

```
donia@donia-VirtualBox:~$ sudo ufw enable
[sudo] password for donia:
Firewall is active and enabled on system startup
donia@donia-VirtualBox:~$
```

- Block port 20 and 21 (tcp) using ufw.

- sudo ufw deny 20/tcp

- sudo ufw deny 21/tcp

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

- Try to connect to ftp service.

- ftp localhost

```
donia@donia-VirtualBox:~$ ftp localhost
Connected to localhost.
220 (vsFTPd 3.0.5)
Name (localhost:donia): donia
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> exit
221 Goodbye.
donia@donia-VirtualBox:~$
```

- Capture the ufw log to detect the blocked operation.

- sudo tail /var/log/kern.log

```
donia@donia-VirtualBox:~$ sudo tail /var/log/kern.log
[sudo] password for donia:
Apr  5 14:38:28 donia-VirtualBox kernel: [17782.894959] usb 2-1: USB disconnect, device number 2
Apr  5 14:38:29 donia-VirtualBox kernel: [17783.409947] usb 2-1: new full-speed USB device numbe
r 3 using ohci-pci
Apr  5 14:38:30 donia-VirtualBox kernel: [17784.533567] usb 2-1: New USB device found, idVendor=
80ee, idProduct=0021, bcdDevice= 1.00
Apr  5 14:38:30 donia-VirtualBox kernel: [17784.533587] usb 2-1: New USB device strings: Mfr=1,
Product=3, SerialNumber=0
Apr  5 14:38:30 donia-VirtualBox kernel: [17784.533595] usb 2-1: Product: USB Tablet
Apr  5 14:38:30 donia-VirtualBox kernel: [17784.533602] usb 2-1: Manufacturer: VirtualBox
Apr  5 14:38:30 donia-VirtualBox kernel: [17785.066250] input: VirtualBox USB Tablet as /devices
/pci0000:00/0000:00:06.0/usb2/2-1/2-1:1.0/0003:80EE:0021.0002/input/input8
Apr  5 14:38:30 donia-VirtualBox kernel: [17785.193858] hid-generic 0003:80EE:0021.0002: input,h
idraw0: USB HID v1.10 Mouse [VirtualBox USB Tablet] on usb-0000:00:06.0-1/input0
Apr  6 00:52:27 donia-VirtualBox kernel: [19751.931013] audit: type=1400 audit(1680735147.419:63
): apparmor="DENIED" operation="capable" profile="/usr/sbin/cupsd" pid=54087 comm="cupsd" capabi
lity=12 capname="net_admin"
Apr  6 00:52:27 donia-VirtualBox kernel: [19752.132777] audit: type=1400 audit(1680735147.619:64
): apparmor="DENIED" operation="capable" profile="/usr/sbin/cups-browsed" pid=54100 comm="cups-b
rowsed" capability=23 capname="sys_nice"
donia@donia-VirtualBox:~$
```


- Install nfs service on your system.

- ftp localhost

```
donia@donia-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:
  libevent-core-2.1-7 libnfsidmap1 nfs-common rpcbind
Suggested packages:
  open-iscsi watchdog
The following NEW packages will be installed:
  libevent-core-2.1-7 libnfsidmap1 nfs-common nfs-kernel-server rpcbind
0 upgraded, 5 newly installed, 0 to remove and 8 not upgraded.
Need to get 522 kB/565 kB of archives.
After this operation, 2,073 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libevent-core-2.1-7 amd64 2.1.12-stable-1build3 [93.9 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 rpcbind amd64 1.2.6-2build1 [46.6 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 nfs-common amd64 1:2.6.1-1ubuntu1.2 [241 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 nfs-kernel-server amd64 1:2.6.1-1ubuntu1.2 [140 kB]
Fetched 522 kB in 8s (69.2 kB/s)
Selecting previously unselected package libevent-core-2.1-7:amd64.
(Reading database ... 575406 files and directories currently installed.)
Preparing to unpack .../libevent-core-2.1-7_2.1.12-stable-1build3_amd64.deb ...
Unpacking libevent-core-2.1-7:amd64 (2.1.12-stable-1build3) ...
Selecting previously unselected package libnfsidmap1:amd64.
Preparing to unpack .../libnfsidmap1_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
```

- Enable nfs service on the firewall.

- sudo ufw allow 2049/tcp

- sudo ufw allow 2049/udp

```
donia@donia-VirtualBox:~$ sudo ufw allow 2049/tcp
Rule added
Rule added (v6)
donia@donia-VirtualBox:~$ sudo ufw allow 2049/udp
Rule added
Rule added (v6)
donia@donia-VirtualBox:~$
```

- Create and share /tmp/shares folder using exportfs command and /etc/exports file.

```
- mkdir /tmp/shares  
- sudo echo "/tmp/shares *(rw)" | sudo tee -a /etc/exports  
- sudo exportfs -a
```

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

- Mount the remote share on /mnt folder (you can using localhost as well).

```
- sudo mount -t nfs localhost:/tmp/shares /mnt
```

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

- Copy some files to the remote share.

```
- scp file.txt /mnt
```

```
donia@donia-VirtualBox:~/Desktop$ nano file.txt  
donia@donia-VirtualBox:~/Desktop$ scp file.txt /mnt  
donia@donia-VirtualBox:~/Desktop$
```

- Enable nfs service on the firewall.

```
- sudo iptables-save > /tmp/iptables-backup
```

```
donia@donia-VirtualBox:~/Desktop$ sudo iptables-save > /tmp/iptables-backup  
[sudo] password for donia:  
donia@donia-VirtualBox:~/Desktop$
```