

**Intern Name**----- **AMIT MAURYA**

**TASK** ---- **Firewall Setup and Configuration on Linux (UFW)**

### **Objective:**

To configure and test basic firewall rules using **UFW (Uncomplicated Firewall)** on Linux to allow or block traffic on specific ports.

### **Tools Used:**

- **Operating System: Ubuntu 20.04 (or any Linux with UFW)**
- **Firewall Tool: UFW (Uncomplicated Firewall)**
- **Terminal**
- **Kali operating system**
- **Virtual box**

### **Steps Performed:**

1. Check UFW Status

***sudo ufw status***

2. Enable UFW

***sudo ufw enable***

3. List Current Rules

***sudo ufw status numbered***

4. Block Inbound Traffic on Port 23 (Telnet)

***sudo ufw deny 23***

5. Allow SSH on Port 22 (to prevent being locked out)

***sudo ufw allow 22***

6. Test the Telnet Block

Attempt to connect to port 23 using:

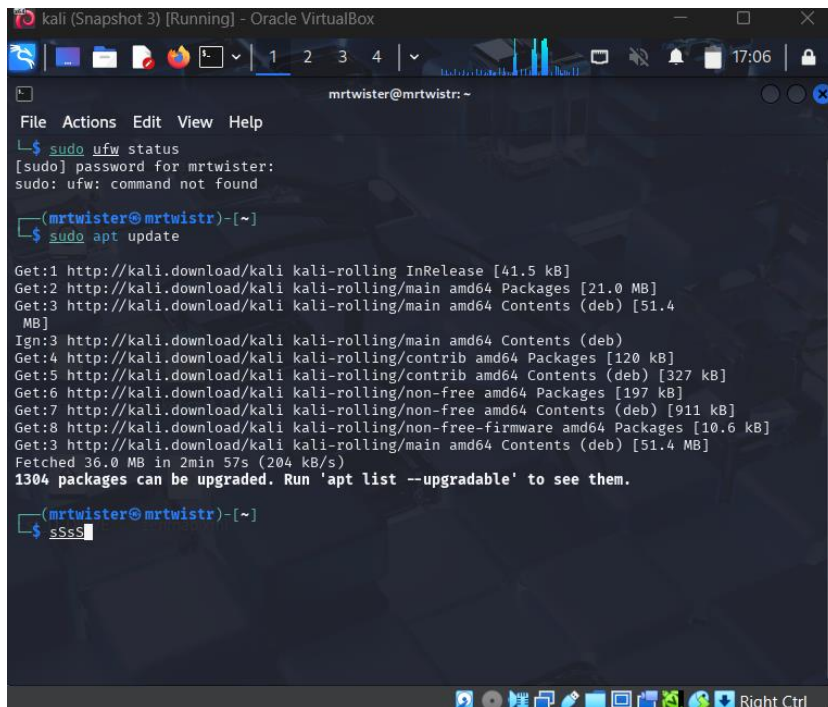
***telnet localhost 23***

Expected: Connection should fail.

7. Remove Telnet Block Rule (Restore State)

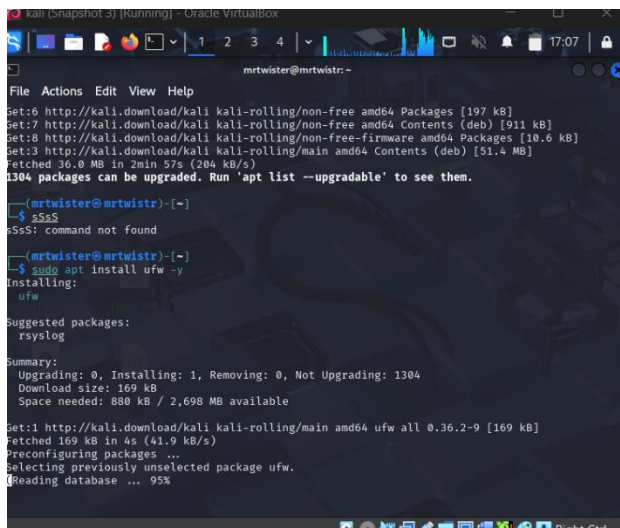
## sudo ufw delete deny 23

### Screenshots:



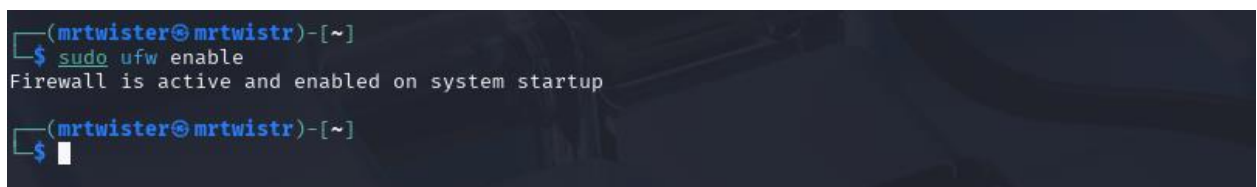
```
mrtwister@mrtwistr: ~  
File Actions Edit View Help  
└─$ sudo ufw status  
[sudo] password for mrtwister:  
sudo: ufw: command not found  
  
└─(mrtwister@mrtwistr)-[~]  
└─$ sudo apt update  
  
Get:1 http://kali.download/kali kali-rolling InRelease [41.5 kB]  
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [21.0 MB]  
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [51.4 MB]  
Ign:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb)  
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [120 kB]  
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [327 kB]  
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [197 kB]  
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [911 kB]  
Get:8 http://kali.download/kali kali-rolling/non-free-firmware amd64 Packages [10.6 kB]  
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [51.4 MB]  
Fetched 36.0 MB in 2min 57s (204 kB/s)  
1304 packages can be upgraded. Run 'apt list --upgradable' to see them.  
  
└─(mrtwister@mrtwistr)-[~]  
└─$ sSsS
```

### Updating machine



```
mrtwister@mrtwistr: ~  
File Actions Edit View Help  
Set:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [197 kB]  
Set:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [911 kB]  
Set:8 http://kali.download/kali kali-rolling/non-free-firmware amd64 Packages [10.6 kB]  
Set:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [51.4 MB]  
Fetched 36.0 MB in 2min 57s (204 kB/s)  
1304 packages can be upgraded. Run 'apt list --upgradable' to see them.  
  
└─(mrtwister@mrtwistr)-[~]  
└─$ sSsS  
sSsS: command not found  
  
└─(mrtwister@mrtwistr)-[~]  
└─$ sudo apt install ufw -y  
Installing:  
ufw  
  
Suggested packages:  
rsyslog  
  
Summary:  
Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 1304  
Download size: 169 kB  
Space needed: 880 kB / 2,698 MB available  
  
Get:1 http://kali.download/kali kali-rolling/main amd64 ufw all 0.36.2-9 [169 kB]  
Fetched 169 kB in 4s (41.9 kB/s)  
Preconfiguring packages ...  
Selecting previously unselected package ufw.  
Reading database ... 95%
```

### Installing UFW



```
└─(mrtwister@mrtwistr)-[~]  
└─$ sudo ufw enable  
Firewall is active and enabled on system startup  
  
└─(mrtwister@mrtwistr)-[~]  
└─$
```

### Enabling firewall

```
The Account Edit View Help
(mrtwister@mrtwistr)-[~]
$ sudo ufw status
[sudo] password for mrtwister:
Status: active

To Action From
--
22 ALLOW Anywhere
22 (v6) ALLOW Anywhere (v6)

(mrtwister@mrtwistr)-[~]
$ sudo ufw status numbered
Status: active

To Action From
--
[ 1] 22 ALLOW IN Anywhere
[ 2] 22 (v6) ALLOW IN Anywhere (v6)
```

Checking status

```
The Account Edit View Help
(mrtwister@mrtwistr)-[~]
$ sudo ufw status
[sudo] password for mrtwister:
Status: active

To Action From
--
22 ALLOW Anywhere
22 (v6) ALLOW Anywhere (v6)

(mrtwister@mrtwistr)-[~]
$ sudo ufw status numbered
Status: active

To Action From
--
[ 1] 22 ALLOW IN Anywhere
[ 2] 22 (v6) ALLOW IN Anywhere (v6)
```

List current rules

```
(mrtwister@mrtwistr)-[~]
$ sudo ufw deny 23
Rule added
Rule added (v6)
```

Adding rule

```
(mrtwister@mrtwistr)-[~]
$ sudo ufw allow 22
Skipping adding existing rule
Skipping adding existing rule (v6)

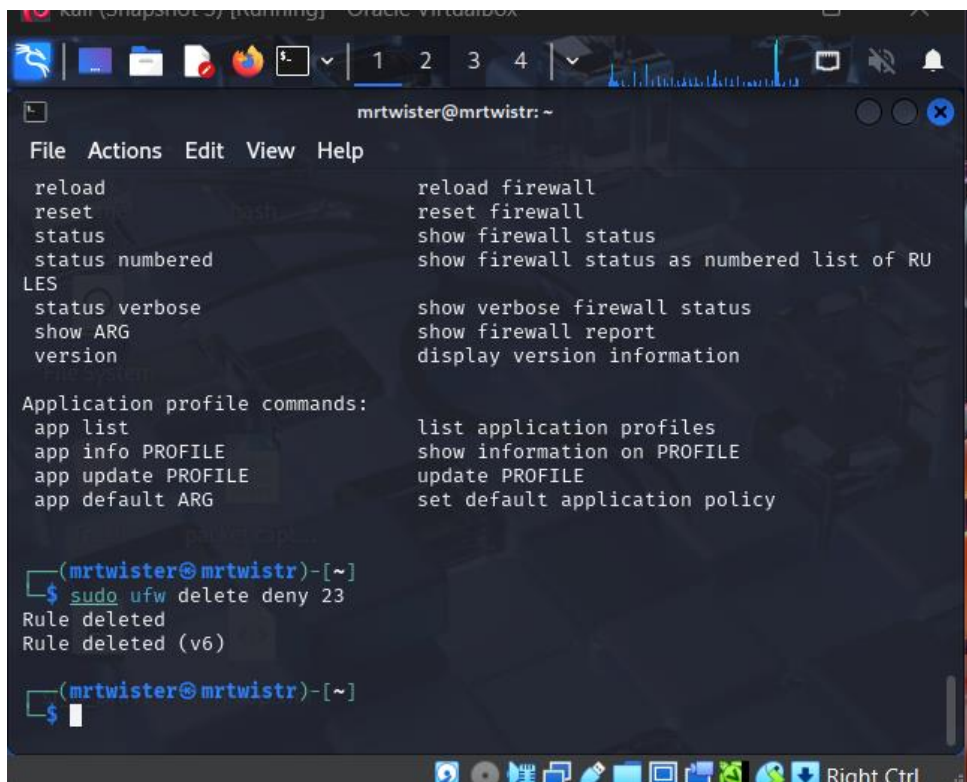
(mrtwister@mrtwistr)-[~]
$ telnet local host 23
```

Adding rule for 22

```
(mrtwister@mrtwistr)-[~]
$ telnet localhost 23
Trying ::1...
Connection failed: Connection refused
Trying 127.0.0.1...
telnet: Unable to connect to remote host: Connection refused

(mrtwister@mrtwistr)-[~]
$ sudo ufw delete deny 23
```

Testing the rule , attempting to connect to port 23



The screenshot shows a terminal window titled 'mrtwister@mrtwistr: ~'. It displays the output of the 'ufw' command, which lists various firewall actions and their descriptions. Below this, the output of 'sudo ufw delete deny 23' is shown, indicating that the rule was successfully deleted. The terminal window is running on a Linux system, as evidenced by the prompt and the use of 'sudo'.

```
mrtwister@mrtwistr: ~
File Actions Edit View Help
reload                reload firewall
reset                reset firewall
status              show firewall status
status numbered     show firewall status as numbered list of RU
LES
status verbose      show verbose firewall status
show ARG            show firewall report
version             display version information

Application profile commands:
app list            list application profiles
app info PROFILE    show information on PROFILE
app update PROFILE  update PROFILE
app default ARG     set default application policy

(mrtwister@mrtwistr)-[~]
$ sudo ufw delete deny 23
Rule deleted
Rule deleted (v6)

(mrtwister@mrtwistr)-[~]
$
```

Restoring the rule

### Concepts Learned:

- **Firewall:** A system that filters network traffic based on rules.
- **Inbound/Outbound Rules:** Controls traffic entering/leaving the system.
- **UFW:** Simplifies firewall management compared to iptables.
- **Port Blocking:** Used to prevent access to insecure services (e.g., Telnet).