Setup and Use a Firewall on Windows/Linux

Objective: Configure and test basic firewall rules to allow or block traffic.

Tools: Windows Firewall / UFW (Uncomplicated Firewall) on Linux.

Deliverables: Screenshot/configuration file showing firewall rules applied.

STEP 01- Open firewall configuration tool (Terminal for UFW).

STEP 02 - List current firewall rules

ACTIVE

STEP 03 - Add a rule to block inbound traffic on a specific port (e.g., 23 for Telnet).

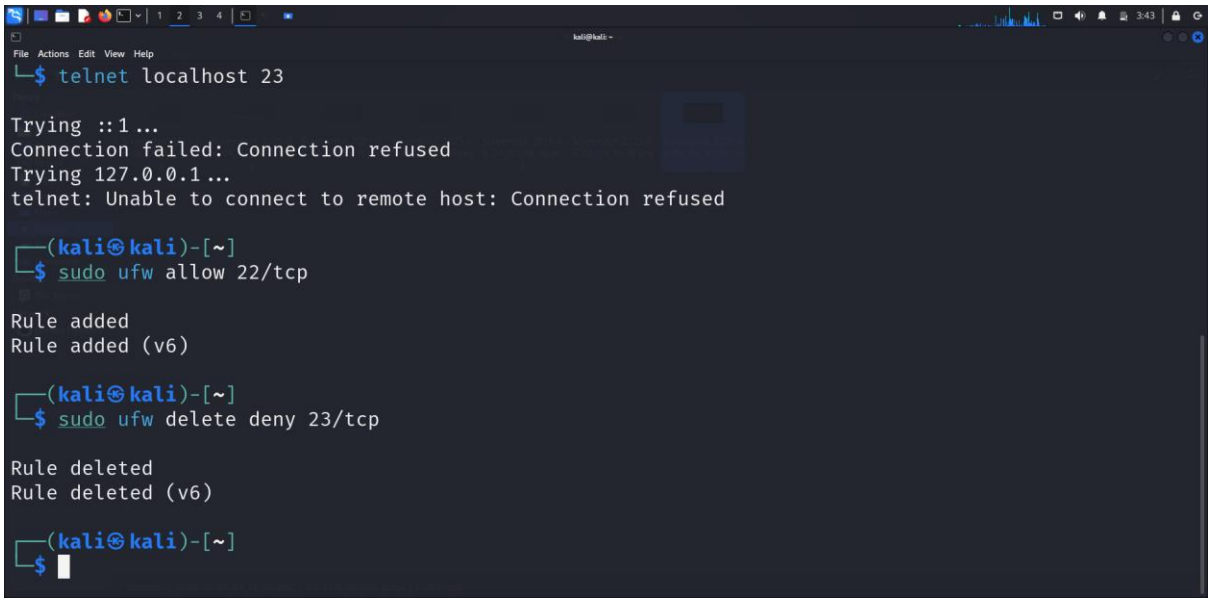
STEP 04 - Test the rule by attempting to connect to that port locally or remotely.

```
┌──(kali㉿kali)-[~]
└─$ sudo ufw status numbered

Status: active

┌──(kali㉿kali)-[~]
└─$ sudo ufw deny 23/tcp

Rule added
Rule added (v6)

┌──(kali㉿kali)-[~]
└─$ telnet localhost 23

Trying ::1 ...
Connection failed: Connection refused
Trying 127.0.0.1 ...
telnet: Unable to connect to remote host: Connection refused

┌──(kali㉿kali)-[~]
└─$
```

STEP 05 - Add rule to allow SSH (port 22) if on Linux

```
└─$ sudo ufw deny 23/tcp

Rule added
Rule added (v6)

┌──(kali㉿kali)-[~]
└─$ telnet localhost 23

Trying ::1 ...
Connection failed: Connection refused
Trying 127.0.0.1 ...
telnet: Unable to connect to remote host: Connection refused

┌──(kali㉿kali)-[~]
└─$ sudo ufw allow 22/tcp

Rule added
Rule added (v6)

┌──(kali㉿kali)-[~]
└─$
```

STEP 06 – Remove the test block rule to restore original state.



STEP 07 - Document commands or GUI steps used.

- **sudo ufw status numbered**

Explanation:
This command shows the current list of firewall rules in an ordered format (numbered).
This is useful when you want to delete a specific rule by its number later.

- **sudo ufw deny 23/tcp**

Explanation:
This rule blocks all TCP traffic on port 23, which is used for Telnet .Telnet is insecure and often blocked in secure environments**.**

Why it's done:
You're simulating a security measure — preventing remote access via an outdated protocol.

- **telnet localhost 23**

Explanation:
This command tries to connect to the Telnet service on your own machine (port 23)

- **sudo ufw allow 22/tcp**

Explanation:
Allows inbound TCP connections on port 22, which is used for SSH (Secure Shell).
This ensures you can still remotely access your system securely.

Why it's done:
To prevent accidentally locking yourself out of the system (especially on remote servers).

- **sudo ufw delete deny 23/tcp**

Explanation:
This command removes the previously added rule that blocked Telnet (port 23).

STEP 08 - Summarize how firewall filters traffic.

A firewall acts as a barrier between a trusted network (like your computer or internal network) and untrusted networks (like the internet). It filters incoming and outgoing traffic based on a set of rules.

Key Functions of a Firewall:

1. **Packet Inspection**:
   It examines each data packet's source, destination IP, port number, and protocol.
2. **Rule-Based Filtering**:
   Based on configured rules (like allow/deny on specific ports), it either:
   - **Allows** (accepts) the packet, or
   - **Blocks** (drops/denies) it.
3. **Port Control**:
   Only open (allowed) ports can receive traffic. For example:
   - Allow SSH on port 22
   - Block Telnet on port 23
4. **Direction Control**:
   Rules can apply to:
   - **Inbound traffic** (from outside to your system)
   - **Outbound traffic** (from your system to outside)