ufw Simple Linux firewall

Packet in direction + port → `built-in rules` → **ufw rules** top to bottom → `no match` → **Default policy** incoming: deny → `verdict` → **Allow / deny** optional log

Packet check: first matching rule wins, else the default policy

CONCEPTS

Do not lock yourself out
Over SSH, allow ssh (or your custom port) before 'ufw enable'. Enabling flushes the chains and may drop your session.

Defaults after install: incoming deny, outgoing allow, firewall disabled. Rules are added for IPv4 and IPv6 together.

Rule order matters. Put narrow exceptions (insert 1) above broad denies.

FIREWALL STATE

`sudo ufw enable`
Enable now and at boot

`sudo ufw disable`
Stop the firewall

`sudo ufw status`
Active or inactive, plus rules

`sudo ufw status verbose`
Also defaults and logging

`sudo ufw status numbered`
Rules with index numbers

`sudo ufw reload`
Reapply the rules

`sudo ufw reset`
Disable and wipe all rules

FIREWALL STATE (cont.)

`sudo ufw --force enable`
Enable without the SSH prompt

`sudo ufw --dry-run <command>`
Preview changes, apply nothing

DEFAULT POLICY

`sudo ufw default deny incoming`
Block unsolicited inbound

`sudo ufw default allow outgoing`
Allow all outbound

`sudo ufw default deny outgoing`
Whitelist outbound only

SIMPLE RULES

`sudo ufw allow <port>`
Allow a port, tcp and udp

`sudo ufw allow <port>/tcp`
Allow one protocol

`sudo ufw allow <service>`
Allow by name from /etc/services

`sudo ufw deny <port>/tcp`
Silently drop a port

SIMPLE RULES (cont.)

`sudo ufw reject <port>/tcp`
Refuse with a reply

`sudo ufw limit ssh`
Allow but throttle repeats

`sudo ufw allow 6000:6007/tcp`
Allow a port range

`sudo ufw allow 22,80,443/tcp`
Several ports in one rule

`sudo ufw allow out <port>/tcp`
Allow outbound only

`sudo ufw allow <port>/tcp comment '<text>'`
Annotate a rule

FULL SYNTAX

`sudo ufw allow from <ip>`
Allow all from one host

`sudo ufw deny from <ip>`
Block one host

`sudo ufw allow from <cidr> to any port <port>`
Allow a subnet to a port

`sudo ufw allow from <ip> to any port <port> proto tcp`
Host, port and protocol

FULL SYNTAX (cont.)

`sudo ufw allow in on <iface> to any port <port>`
Limit to an interface

`sudo ufw allow from <ip> to <dest-ip> port <port>`
Match destination address

`sudo ufw allow from <ip> to any app <profile>`
Host to an app profile

MANAGE RULES

`sudo ufw delete <num>`
Delete by rule number

`sudo ufw delete allow <port>/tcp`
Delete by repeating the rule

`sudo ufw insert <num> deny from <ip>`
Insert at a position

APPLICATION PROFILES

`sudo ufw app list`
Available profiles

`sudo ufw app info '<profile>'`
Ports a profile opens

`sudo ufw allow '<profile>'`
Allow by profile name

LOGGING AND REPORTS

`sudo ufw logging on`
Enable logging

`sudo ufw logging off`
Disable logging

`sudo ufw logging medium`
Set the log level

`sudo ufw show added`
Rules as you typed them

`sudo ufw show raw`
Full underlying ruleset

Blocked packets are logged as [UFW BLOCK] in the kernel log; search with journalctl -k or /var/log/ufw.log.

RECIPES

Lock down a new server

```
sudo ufw default deny
incoming
sudo ufw default allow
outgoing
sudo ufw limit ssh
sudo ufw allow 80,443/tcp
sudo ufw enable
```

Allow a service only from the LAN

```
sudo ufw allow from
192.168.1.0/24 to any port
5432 proto tcp
# nothing else can reach it
sudo ufw status numbered
```