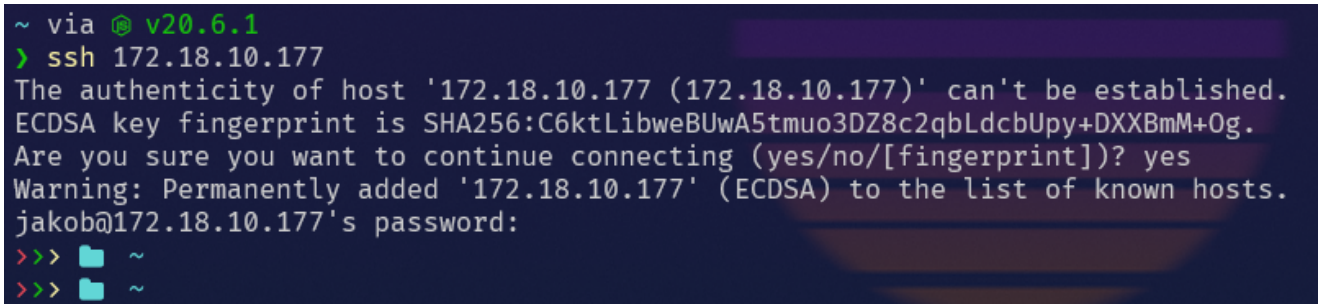
Firewall connection

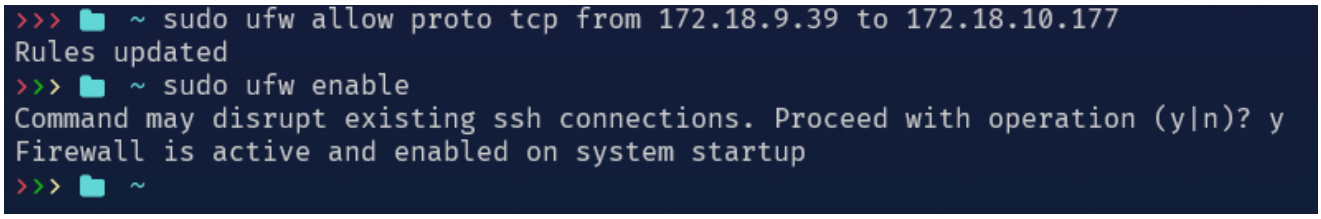
ssh connection to system




```bash
ssh 172.18.10.177
```

setup firewall

add a rule to allow tcp a tcp connection from host system

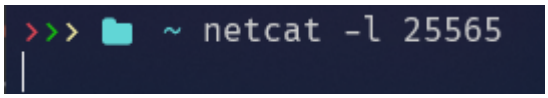



```
sudo ufw allow proto tcp from 172.18.9.39 to 192.168.56.103
```

applications

netcat

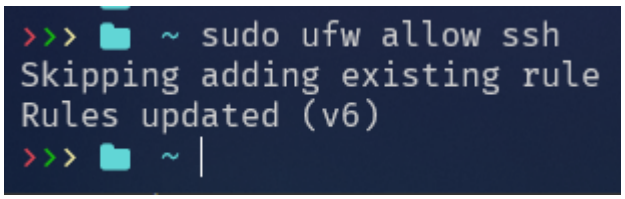
simulate a server on port 25565 using netcat




```
netcat -l 25565
```

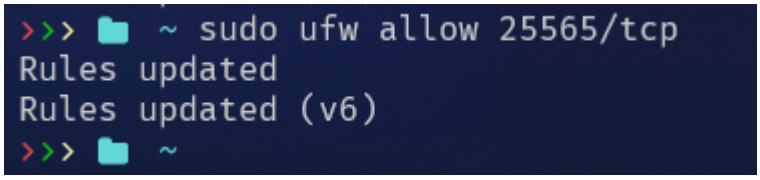
rules

set a rule to allow ssh connections (will skip if rule already exists)



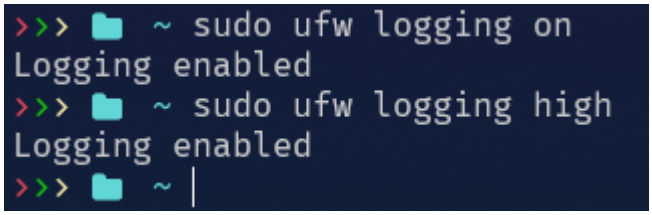

```
sudo sfw allow ssh
```

set a rule to allow tcp connections on port 25565



```
sudo ufw allow 25565/tcp
```

enable logging




```
sudo ufw logging on
```

```
sudo ufw logging high
```

enable the ufw

```
sudo ufw enable
```

nmap

send nmap command to test all ports on the server

```
PS C:\Users\jakob> nmap -p- -Pn 192.168.56.103
Starting Nmap 7.94 ( https://nmap.org ) at 2023-12-19 11:32 W. Europe Standard Time
Nmap scan report for 192.168.56.103
Host is up (0.0034s latency).
Not shown: 65531 closed tcp ports (reset)
PORT      STATE SERVICE
22/tcp    open  ssh
5355/tcp  open  llmnr
5432/tcp  open  postgresql
25565/tcp open  minecraft
MAC Address: 08:00:27:B9:97:E4 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 17.93 seconds
PS C:\Users\jakob>
```

```
nmap -p- -Pn 192.168.56.103
```

logs

```
>>> ~ journalctl | grep -i ufw
Dez 19 12:02:39 jakob-archcraft dbus-daemon[344]: [system] Activating via systemd: service name='org.freedesktop.home1' unit='dbus-org.freedesktop.home1.service' requested by ':1.45' (uid=0 pid=1900 comm="sudo ufw logging on")
Dez 19 12:02:42 jakob-archcraft sudo[1900]:    jakob : TTY=pts/2 ; PWD=/home/jakob ; USER=root ; COMMAND=/usr/bin/ufw logging on
Dez 19 12:03:19 jakob-archcraft dbus-daemon[344]: [system] Activating via systemd: service name='org.freedesktop.home1' unit='dbus-org.freedesktop.home1.service' requested by ':1.46' (uid=0 pid=1943 comm="sudo ufw disable")
Dez 19 12:03:19 jakob-archcraft sudo[1943]:    jakob : TTY=pts/2 ; PWD=/home/jakob ; USER=root ; COMMAND=/usr/bin/ufw disable
Dez 19 12:03:24 jakob-archcraft dbus-daemon[344]: [system] Activating via systemd: service name='org.freedesktop.home1' unit='dbus-org.freedesktop.home1.service' requested by ':1.47' (uid=0 pid=2119 comm="sudo ufw logging on")
Dez 19 12:03:24 jakob-archcraft sudo[2119]:    jakob : TTY=pts/2 ; PWD=/home/jakob ; USER=root ; COMMAND=/usr/bin/ufw logging on
Dez 19 12:03:39 jakob-archcraft dbus-daemon[344]: [system] Activating via systemd: service name='org.freedesktop.home1' unit='dbus-org.freedesktop.home1.service' requested by ':1.48' (uid=0 pid=2141 comm="sudo ufw logging high")
Dez 19 12:03:39 jakob-archcraft sudo[2141]:    jakob : TTY=pts/2 ; PWD=/home/jakob ; USER=root ; COMMAND=/usr/bin/ufw logging high
>>> ~
```

Bonus

go to sshd_config

```
sudo nano /etc/ssh/sshd_config
```

disable root login

change PermitRootLogin to no

```
# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
```

enable PubkeyAuthentication

```
# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10

PubkeyAuthentication yes
```

disable PasswordAuthentication

```
# To disable tunneled clear text passwords, change to no here!
PasswordAuthentication no
#PermitEmptyPasswords no
```

make connection over ssh keys

generate key on host

```
PS C:\Users\jakob> ssh-keygen.exe
Generating public/private rsa key pair.
Enter file in which to save the key (C:\Users\jakob/.ssh/id_rsa):
C:\Users\jakob/.ssh/id_rsa already exists.
Overwrite (y/n)? n
PS C:\Users\jakob>
```

```
ssh-keygen.exe
```

copy key to server

```
PS C:\Users\jakob> cat C:\Users\jakob\.ssh\id_rsa.pub | ssh 192.168.56.103 "mkdir -p ~/.ssh && cat >> ~/.ssh/authorized_keys"
jakob@192.168.56.103's password:
PS C:\Users\jakob>
```

```
cat C:\Users\jakob\.ssh\id_rsa.pub |
ssh 192.168.56.103 "mkdir -p ~/.ssh
&& cat >> ~/.ssh/authorized_keys"
```

change port of ssh

in sshd_config

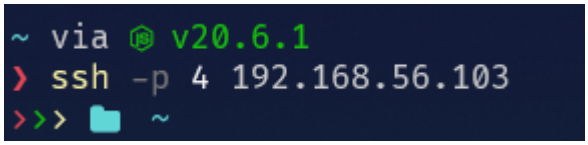
```
# default value.

Port 4
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::
```

restart ssh

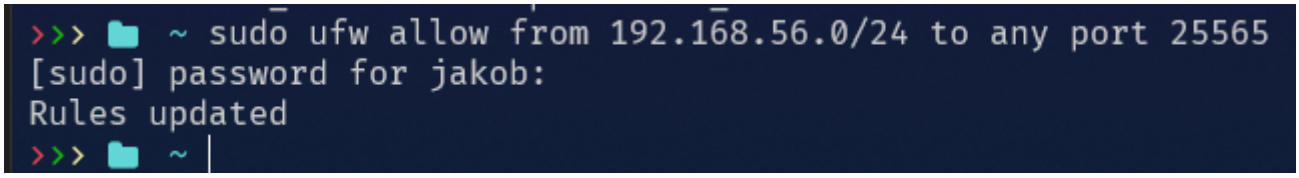
```
systemctl reboot ssh
```

connect




```
ssh -p 4 192.168.56.103
```

only allow internal connection to port 25565




```
sudo ufw allow from 192.168.56.0/24
to any port 25565
```

server with port 25565 running on special user

```
sudo useradd -s /usr/sbin/nologin server25565
```

```
sudo -u server25565 nc -l 25565
```