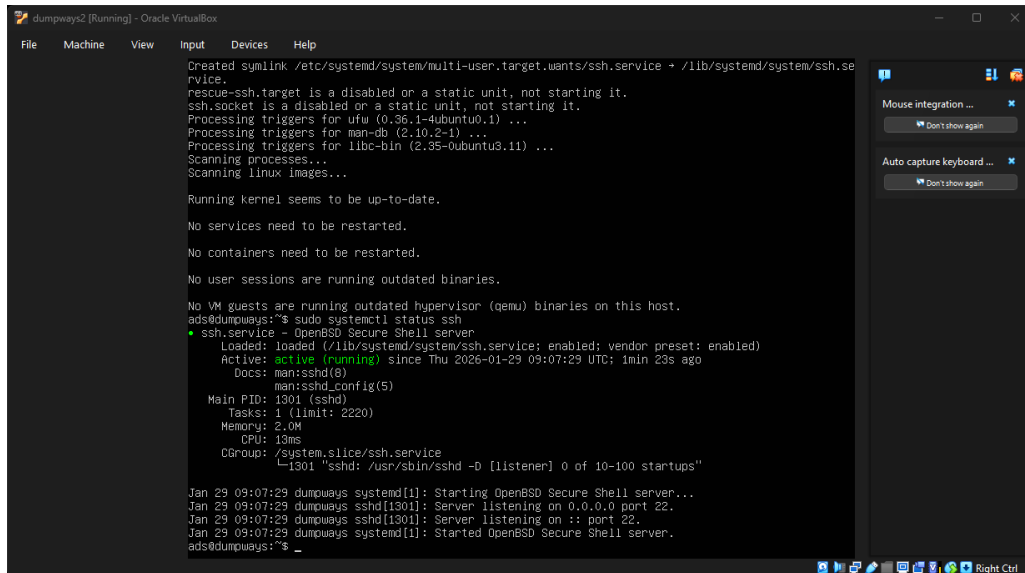


1. Akses server menggunakan terminal (Windows Terminal/PuTTY/etc.)

Jawab :

- Untuk bisa mengakses server dari windows terminal kita harus menginstall sshserver terlebih dahulu (sudo apt install openssh-server)

- Lalu cek status apakah ssh sudah aktif (sudo systemctl status ssh)



```
ads@dumpways:~$ sudo systemctl status ssh
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /lib/systemd/system/ssh.service.
rescue-ssh.target is a disabled or a static unit, not starting it.
ssh.socket is a disabled or a static unit, not starting it.
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.11) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

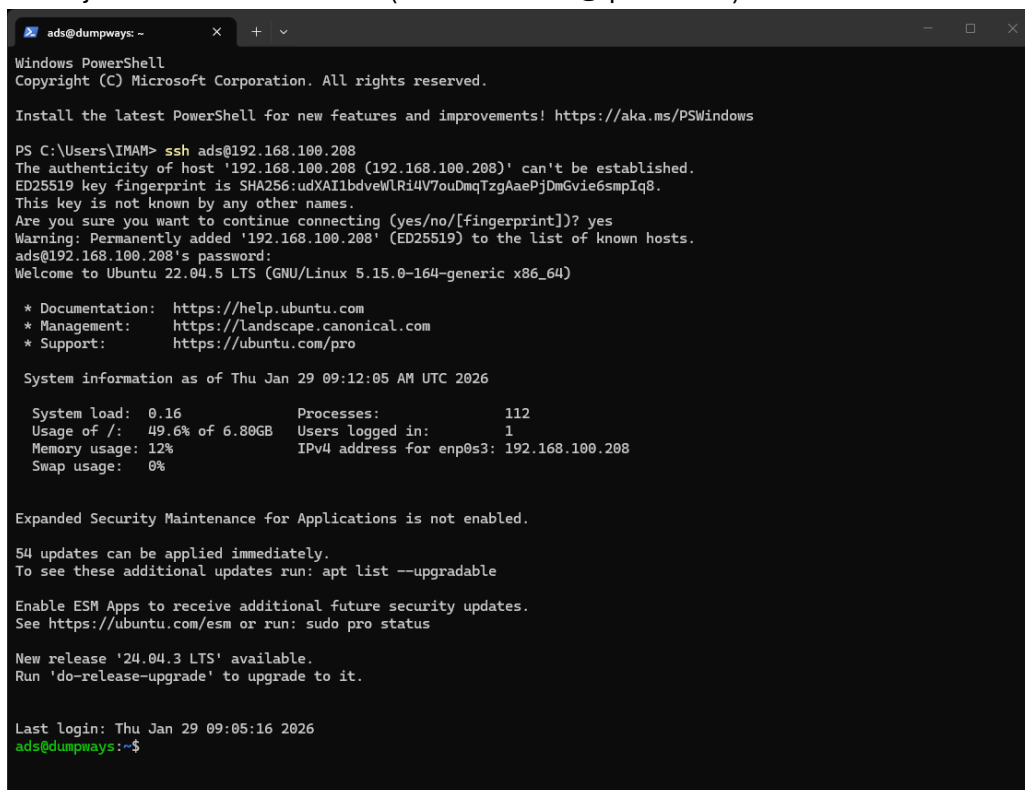
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ads@dumpways:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2026-01-29 09:07:29 UTC; 1min 29s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 1301 (sshd)
     Tasks: 1 (limit: 2220)
    Memory: 2.0M
       CPU: 13ms
   CGroup: /system.slice/ssh.service
           └─1301 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Jan 29 09:07:29 dumpways systemd[1]: Starting OpenBSD Secure Shell server...
Jan 29 09:07:29 dumpways sshd[1301]: Server listening on 0.0.0.0 port 22.
Jan 29 09:07:29 dumpways sshd[1301]: Server listening on :: port 22.
Jan 29 09:07:29 dumpways systemd[1]: Started OpenBSD Secure Shell server.
ads@dumpways:~$
```

- Lalu jalankan ssh di terminal (ssh username@ip address)



```
ads@dumpways: ~
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\IMAM> ssh ads@192.168.100.208
The authenticity of host '192.168.100.208 (192.168.100.208)' can't be established.
ED25519 key fingerprint is SHA256:udXAI1bdvewLRi4V7ouDmqTzgAaePjDmGvie6smpIq8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.100.208' (ED25519) to the list of known hosts.
ads@192.168.100.208's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Jan 29 09:12:05 AM UTC 2026

System load:  0.16           Processes:      112
Usage of /:   49.6% of 6.8GB Users logged in: 1
Memory usage: 12%           IPv4 address for enp0s3: 192.168.100.208
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

54 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Jan 29 09:05:16 2026
ads@dumpways:~$
```

2. Konfigurasi ssh kalian agar bisa di akses *hanya menggunakan publickey* (password opsional, bisa dimatikan)

- Kita juga bisa mengakses menggunakan publickey dengan cara membuat public key terlebih dahulu (ssh-keygen)

- lalu key akan di simpan di direktori ssh , kita juga bisa mengubah nama key (disini saya ubah dengan kunciguweh)

```
ads@dumpways: ~/.ssh
ads@dumpways:~$ exit
logout
Connection to 192.168.100.208 closed.
PS C:\Users\IMAM> ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (C:\Users\IMAM/.ssh/id_ed25519): C:\Users\IMAM/.ssh/kunciguweh
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\IMAM/.ssh/kunciguweh
Your public key has been saved in C:\Users\IMAM/.ssh/kunciguweh.pub
The key fingerprint is:
SHA256:gEge0E0TuwrtLOJJC+gU5DhirQFZtGL0f4EAxjkix+yk imam@MSI
The key's randomart image is:
+--[ED25519 256]--+
|.OB*
|+=B*.*
|==o==+
|=. * o o
|*=+ . S
|X.+ o .
|+E =
|. +
+-----[SHA256]-----+
PS C:\Users\IMAM> ssh ads@192.168.100.208
ads@192.168.100.208's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Jan 29 09:22:22 AM UTC 2026

System load:  0.01          Processes:            110
Usage of /:   50.8% of 6.80GB Users logged in:       1
Memory usage: 12%          IPv4 address for enp0s3: 192.168.100.208
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.
```

- Kita bisa copy isi dari file kunciguweh.pub

- lalu kita akses authorized_key pada direktori ssh, dan paste key yang ada didalam file kunciguweh

```
Last login: Thu Jan 29 09:12:05 2026 from 192.168.100.16
ads@dumpways:~$ cd .ssh
ads@dumpways:~/.ssh$ ls
authorized_keys
ads@dumpways:~/.ssh$ nano authorized_keys
ads@dumpways:~/.ssh$ |

GNU nano 6.2 authorized_keys *
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIJhYR2mRQ+URbjz+qL0/v1ZLLPzn4ycun+N+u9L0j+z+ imam@MSI
```

- lalu kita bisa mengakses server dari terminal menggunakan public key dengan cara
ssh -i .ssh/nama file key username@ip

```
ads@dumpways: ~  
New release '24.04.3 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Thu Jan 29 09:12:05 2026 from 192.168.100.16  
ads@dumpways:~$ cd .ssh  
ads@dumpways:~/.ssh$ ls  
authorized_keys  
  
ads@dumpways:~/.ssh$ exit  
logout  
Connection to 192.168.100.208 closed.  
PS C:\Users\IMAM> ssh -i .ssh/kunciguweh ads@192.168.100.208  
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/pro  
  
System information as of Thu Jan 29 09:27:52 AM UTC 2026  
  
System load:  0.0           Processes:      111  
Usage of /:   50.8% of 6.80GB Users logged in: 1  
Memory usage: 14%          IPv4 address for enp0s3: 192.168.100.208  
Swap usage:   0%  
  
Expanded Security Maintenance for Applications is not enabled.  
  
54 updates can be applied immediately.  
To see these additional updates run: apt list --upgradable  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
New release '24.04.3 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Thu Jan 29 09:22:22 2026 from 192.168.100.16  
ads@dumpways:~$
```

3. Buat step by step penggunaan text manipulation! (grep, sed, cat, echo)

a. cat = membaca isi file

- cat bisa membuat file baru dengan cara (cat > nama file) lalu ketik masukan text
- cat bisa menggabungkan 2 file kedalam file baru (cat file1 file2 > file3)
- cat bisa menambah isi file dengan cara (cat file1 >> file3), pada baris terakhir didalam file 3 akan menambahkan isi file1

```
ads@dumpways:~$ sed -i 's/hello/hai/g' file1
ads@dumpways:~$ cat file1
hai file1
ads@dumpways:~$

ads@dumpways: ~
ads@dumpways:~$ ls
dumpways  file2  file.js
ads@dumpways:~$ hello there > file1
Command 'hello' not found, but can be installed with:
sudo snap install hello          # version 2.10, or
sudo apt install hello          # version 2.10-2ubuntu4
sudo apt install hello-traditional # version 2.10-5
See 'snap info hello' for additional versions.
ads@dumpways:~$ cat > file1
hello file1
^C
ads@dumpways:~$ ls
dumpways  file1  file2  file.js
ads@dumpways:~$ cat file1
hello file1
ads@dumpways:~$ cat file2
hello dumpways di file2
ads@dumpways:~$ cat file1 file2 > file3
ads@dumpways:~$ cat file3
hello file1
hello dumpways di file2
ads@dumpways:~$
```

b. sed = stream editor, bisa mengubah, menghapus text didalam file output

- mengubah kata hello menjadi hai di dalam file1 (sed -i 's/hello/hai/g' file1), -i berguna untuk mengubah file asli, tanpa ada -i hanya yang berubah namun file asli tidak berubah

```
ads@dumpways:~$ sed -i 's/hello/hai/g' file1
ads@dumpways:~$ cat file1
hai file1
ads@dumpways:~$
```

- menghapus baris ke-2 pada file3 (sed -i '2s' file3)

```
ads@dumpways: ~  
ads@dumpways:~$ ls  
dumpways  file1  file2  file3  file.js  sort1  
ads@dumpways:~$ cat file3  
hello file1  
hello dumpways di file2  
ads@dumpways:~$ sed -i '2d' file3  
ads@dumpways:~$ cat file3  
hello file1  
ads@dumpways:~$ |
```

c. grep = Global Regular Expression Print

- mencari kata didalam file (grep hai file1)
- menghitung kata didalam file (grep -c hai file1)
- mencari kata didalam direktori menggunakan '*' (grep hello *)
- menghitung kata didalam direktori menggunakan '*' (grep -c hello *)

```
ads@dumpways: ~  
ads@dumpways:~$ grep hai file1  
hai file1  
ads@dumpways:~$ grep -c hai file1  
1  
ads@dumpways:~$ grep hello *  
grep: dumpways: Is a directory  
file2:hello dumpways di file2  
file3:hello file1  
file3:hello dumpways di file2  
grep: file.js: Permission denied  
ads@dumpways:~$ grep -c hello *  
grep: dumpways: Is a directory  
dumpways:0  
file1:0  
file2:1  
file3:2  
grep: file.js: Permission denied  
ads@dumpways:~$
```

d. sort = mengurutkan kata atau angka

- urut secara asc dengan (sort nama file)

- urut secara des dengan (sort -r nama file)

```
ads@dumpways: ~  
ads@dumpways:~$ nano sort1  
ads@dumpways:~$ cat sort  
cat: sort: No such file or directory  
ads@dumpways:~$ cat sort1  
6  
3  
1  
2  
5  
4  
ads@dumpways:~$ sort sort1  
1  
2  
3  
4  
5  
6  
ads@dumpways:~$ sort -r sort1  
6  
5  
4  
3  
2  
1  
ads@dumpways:~$
```

4. Nyalakan ufw dengan memberikan akses untuk port 22, 80, 443, 3000, 5000 dan 6969!

- ufw = Uncomplicated Firewall

- untuk mengizinkan/memblokir port

- mengizinkan sebuah port (sudo ufw allow port)

```
ads@dumpways: ~  
ads@dumpways:~$ sudo ufw allow 3000  
Rule added  
Rule added (v6)  
ads@dumpways:~$ sudo ufw allow 5000  
Rule added  
Rule added (v6)  
ads@dumpways:~$ sudo ufw allow 6969  
Rule added  
Rule added (v6)  
ads@dumpways:~$ sudo ufw status  
Status: active  
  
To Action From  
--  
OpenSSH ALLOW Anywhere  
22 ALLOW Anywhere  
80 ALLOW Anywhere  
443 ALLOW Anywhere  
3000 ALLOW Anywhere  
5000 ALLOW Anywhere  
6969 ALLOW Anywhere  
OpenSSH (v6) ALLOW Anywhere (v6)  
22 (v6) ALLOW Anywhere (v6)  
80 (v6) ALLOW Anywhere (v6)  
443 (v6) ALLOW Anywhere (v6)  
3000 (v6) ALLOW Anywhere (v6)  
5000 (v6) ALLOW Anywhere (v6)  
6969 (v6) ALLOW Anywhere (v6)  
  
ads@dumpways:~$
```

- memblokir sebuah port (sudo ufw deny port)

```
ads@dumpways: ~  
80 (v6) ALLOW Anywhere (v6)  
443 (v6) ALLOW Anywhere (v6)  
3000 (v6) ALLOW Anywhere (v6)  
5000 (v6) ALLOW Anywhere (v6)  
6969 (v6) ALLOW Anywhere (v6)  
  
ads@dumpways:~$ sudo ufw deny 22  
Rule updated  
Rule updated (v6)  
ads@dumpways:~$ sudo ufw status  
Status: active  
  
To Action From  
--  
OpenSSH ALLOW Anywhere  
22 DENY Anywhere  
80 ALLOW Anywhere  
443 ALLOW Anywhere  
3000 ALLOW Anywhere  
5000 ALLOW Anywhere  
6969 ALLOW Anywhere  
OpenSSH (v6) ALLOW Anywhere (v6)  
22 (v6) DENY Anywhere (v6)  
80 (v6) ALLOW Anywhere (v6)  
443 (v6) ALLOW Anywhere (v6)  
3000 (v6) ALLOW Anywhere (v6)  
5000 (v6) ALLOW Anywhere (v6)  
6969 (v6) ALLOW Anywhere (v6)  
  
ads@dumpways:~$ |
```