

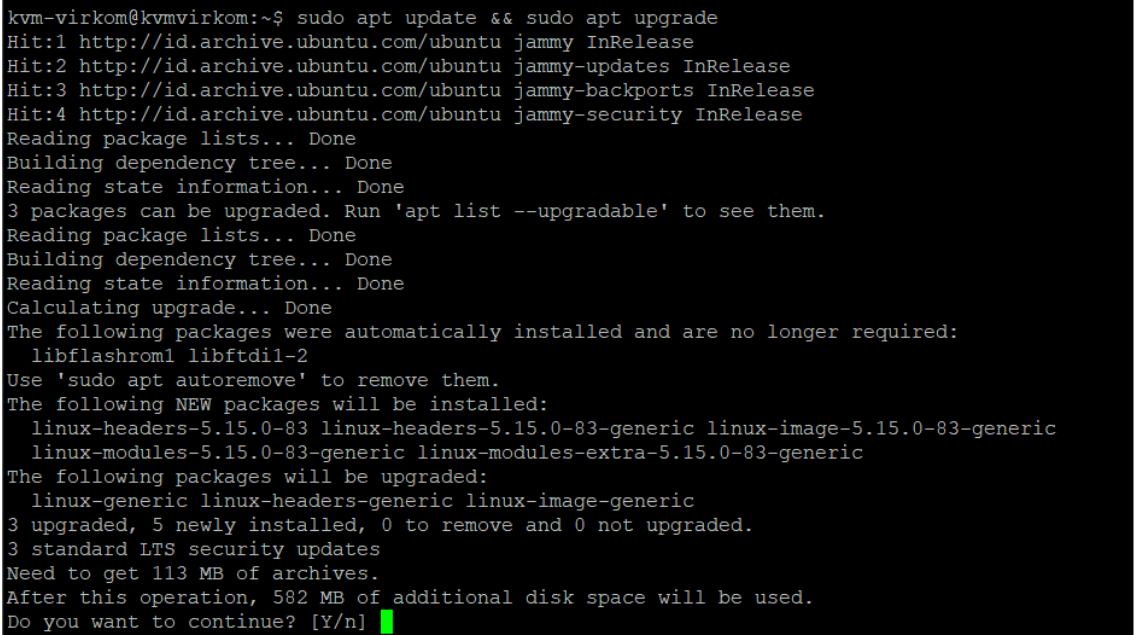


|                             |  |
|-----------------------------|--|
| <b>Session Date</b>         | : Jumat, 06 September 2024   |
| <b>Semester</b>             | : 3  |
| <b>Courses</b>              | : Virtualisasi Komputer  |
| <b>Week/Session</b>         | : 2/3  |
| <b>Key Topics</b>           | : Konfigurasi VM pada KVM di Ubuntu Server 22.04                           |
| <b>Duration</b>             | : Sesi Praktikum   |
| <b>Delivery</b>             | : Laporan (Softcopy)   |
| <b>Deadline of delivery</b> | : Selasa, 10 September 2024  |
| <b>Place of Delivery</b>    | : Ecourse  |
| <b>Purpose</b>              | : Mahasiswa mampu melakukan konfigurasi VM pada KVM di Ubuntu Server 22.04 |

### **Praktikum**

1. Setelah instalasi KVM sudah dilakukan, Anda akan melakukan konfigurasi *virtual machine* pada KVM Hypervisor. Sebelum itu, Anda terlebih dahulu untuk selalu melakukan update pada system operasi dengan mengetikkan *command* berikut.

```
sudo apt update && sudo apt upgrade
```



2. Kemudian Anda bisa menginstal utility yang berfungsi untuk membuat *virtual machine* dengan *command* terminal dengan *command* berikut.

```
sudo apt install virtinst

kvm-virkom@kvmvirkom: ~
kvm-virkom@kvmvirkom:~$ sudo apt install virtinst
[sudo] password for kvm-virkom:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libflashrom1 libftdi1-2
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  gir1.2-freedesktop gir1.2-libosinfo-1.0 i965-v-a-driver intel-media-v-a-driver libburn4
  libgovirt-common libgovirt2 libgtk-vnc-2.0-0 libgvnc-1.0-0 libigdgmm12 libisoburn1
  libisofs6 libjte2 libosinfo-1.0-0 libphodav-2.0-0 libphodav-2.0-common librest-0.7-0
  libsoup-gnome2.4-1 libspice-client-glib-2.0-8 libspice-client-gtk-3.0-5 libusbredirhost1
  libva-x11-2 libva2 libvirt-glib-1.0-0 libvirt-glib-1.0-data mesa-v-a-drivers osinfo-db
  python3-libvirt python3-libxml2 spice-client-glib-usb-acl-helper va-driver-all
  virt-viewer xorriso
Suggested packages:
  i965-v-a-driver-shaders libosinfo-1.10n gstreamer1.0-libav gstreamer1.0-plugins-bad
  python3-argcomplete xorriso-tcltk jigit cdck
The following NEW packages will be installed:
  gir1.2-freedesktop gir1.2-libosinfo-1.0 i965-v-a-driver intel-media-v-a-driver libburn4
  libgovirt-common libgovirt2 libgtk-vnc-2.0-0 libgvnc-1.0-0 libigdgmm12 libisoburn1
  libisofs6 libjte2 libosinfo-1.0-0 libphodav-2.0-0 libphodav-2.0-common librest-0.7-0
  libsoup-gnome2.4-1 libspice-client-glib-2.0-8 libspice-client-gtk-3.0-5 libusbredirhost1
  libva-x11-2 libva2 libvirt-glib-1.0-0 libvirt-glib-1.0-data mesa-v-a-drivers osinfo-db
  python3-libvirt python3-libxml2 spice-client-glib-usb-acl-helper va-driver-all
  virt-viewer virtinst xorriso
0 upgraded, 34 newly installed, 0 to remove and 0 not upgraded.
Need to get 10.0 MB of archives.
After this operation, 42.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

3. Lalu, kita download lagi file iso CentOS 7 pada Ubuntu Server untuk OS *virtual machine* di KVMnya dengan menggunakan *command* berikut.

```
wget https://archive.kernel.org/centos-vault/7.3.1611/isos/x86_64/CentOS-7-x86_64-Minimal-1611.iso

kvm-virkom@kvmvirkom: ~
kvm-virkom@kvmvirkom:~$ wget https://archive.kernel.org/centos-vault/7.3.1611/isos/x86_64/Cen
tOS-7-x86_64-Minimal-1611.iso
--2023-09-05 14:12:48-- https://archive.kernel.org/centos-vault/7.3.1611/isos/x86_64/CentOS-
7-x86_64-Minimal-1611.iso
Resolving archive.kernel.org (archive.kernel.org)... 199.204.44.194
Connecting to archive.kernel.org (archive.kernel.org)|199.204.44.194|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 713031680 (680M) [application/octet-stream]
Saving to: 'CentOS-7-x86_64-Minimal-1611.iso'

CentOS-7-x86_64-Minimal 100%[=====>] 680.00M 1.05MB/s in 26m 10s

2023-09-05 14:39:00 (444 KB/s) - 'CentOS-7-x86_64-Minimal-1611.iso' saved [713031680/71303168
0]

kvm-virkom@kvmvirkom:~$
```

4. Opsi lain, jika Anda sudah memiliki file .iso CentOS 7 adalah Anda dapat memindahkan file .iso tersebut melalui aplikasi WinSCP dan letakkan pada path folder yang Anda inginkan dan Anda dapat menyesuaikan letak file .iso ketika instalasi guest OS tersebut pada langkah.
5. Setelah filenya sudah terdownload, maka jalankan *command* berikut agar folder lokasi CentOS nya dapat diakses.

```
sudo chmod +x /home/kvm-virkom/
```

```
kvm-virkom@kvmvirkom: ~
```

```
kvm-virkom@kvmvirkom:~$ sudo chmod +x /home/kvm-virkom/  
kvm-virkom@kvmvirkom:~$
```

6. Selanjutnya untuk menjalankan instalasi VM CentOS pada KVM, dapat dilakukan dengan menggunakan *command* berikut.

```
sudo virt-install --name=centos_virkom_1 --ram=1024 --vcpus=1 --location=/home/kvm-virkom/CentOS-7-x86_64-Minimal-1611.iso --network bridge=virbr0 --nographics --disk path=/var/lib/libvirt/images/centos_virkom_1.img,size=8 --extra-args=console=ttyS0
```

```
kvm-virkom@kvmvirkom: ~
```

```
kvm-virkom@kvmvirkom:~$ sudo virt-install --name=centos_virkom_1 --ram=1024 --vcpus=1 --location=/home/kvm-virkom/CentOS-7-x86_64-Minimal-1611.iso --network bridge=virbr0 --nographics --disk path=/var/lib/libvirt/images/centos_virkom_1.img,size=8 --extra-args=console=ttyS0  
  
Starting install...  
Retrieving 'vmlinuz' | 0 B 00:00:00 ...  
Retrieving 'initrd.img' | 0 B 00:00:00 ...  
Allocating 'centos_virkom_1.img' | 0 B 00:00:00 ...  
Creating domain... | 0 B 00:00:00  
Running text console command: virsh --connect qemu:///system console centos_virkom_1  
Connected to domain 'centos_virkom_1'  
Escape character is ^] (Ctrl + )  
[ 0.607699] Freeing SMP alternatives: 28k freed  
[ 0.635970] ACPI: Core revision 20130517  
[ 0.638018] ACPI: All ACPI Tables successfully acquired  
[ 0.639957] ftrace: allocating 25811 entries in 101 pages  
[ 0.806549] smpboot: Max logical packages: 1  
[ 0.807927] smpboot: APIC(0) Converting physical 0 to logical package 0  
[ 0.810691] Enabling x2apic  
[ 0.811612] Enabled x2apic  
[ 0.813218] Switched APIC routing to physical x2apic.  
[ 0.818789] ..TIMER: vector=0x30 apic1=0 pin1=2 apic2=-1 pin2=-1  
[ 0.820708] smpboot: CPU0: AMD Ryzen 7 4800H with Radeon Graphics (fam: 17, model: 60, stepping: 01)
```

#### Keterangan:

- a. **--name** : Nama untuk *virtual machine*
- b. **--ram** : Ukuran RAM untuk *virtual machine*
- c. **--vcpus** : Jumlah virtual CPU untuk *virtual machine*
- d. **--location** : Lokasi dari file ISO yang akan digunakan sebagai sumber instalasi *virtual machine*
- e. **--network** : Menentukan jaringan mana yang Anda gunakan untuk *virtual machine*
- f. **--nographic** : Menjalankan instalasi dalam mode CLI atau tanpa grafis
- g. **--disk** : Lokasi penyimpanan dari *virtual machine*
- h. **size** : Ukuran penyimpanan dari *virtual machine*

7. Tunggu proses persiapan instalasi hingga menampilkan tampilan seperti ini.

```
kvm-virkom@kvmvirkom: ~
Starting installer, one moment...
anaconda 21.48.22.93-1 for CentOS Linux 7 started.
* installation log files are stored in /tmp during the installation
* shell is available on TTY2
* when reporting a bug add logs from /tmp as separate text/plain attachments
04:18:12 Not asking for VNC because we don't have a network
=====
Installation

1) [x] Language settings                2) [!] Time settings
   (English (United States))           (Timezone is not set.)
3) [!] Installation source              4) [!] Software selection
   (Processing...)                     (Processing...)
5) [!] Installation Destination         6) [x] Kdump
   (No disks selected)                 (Kdump is enabled)
7) [ ] Network configuration            8) [!] Root password
   (Not connected)                     (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: █

[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

8. Apabila kota diberi tanda **x** artinya sudah dikonfigurasi namun apabila terdapat tanda **!** artinya belum dikonfigurasi.
9. Anda mulai konfigurasi pada nomor 2, yaitu **Time settings**, ketikkan angka **2** pada terminal dan tekan Enter.

```
kvm-virkom@kvmvirkom: ~
Starting installer, one moment...
anaconda 21.48.22.93-1 for CentOS Linux 7 started.
* installation log files are stored in /tmp during the installation
* shell is available on TTY2
* when reporting a bug add logs from /tmp as separate text/plain attachments
04:18:12 Not asking for VNC because we don't have a network
=====
Installation

1) [x] Language settings                2) [!] Time settings
   (English (United States))           (Timezone is not set.)
3) [!] Installation source              4) [!] Software selection
   (Processing...)                     (Processing...)
5) [!] Installation Destination         6) [x] Kdump
   (No disks selected)                 (Kdump is enabled)
7) [ ] Network configuration            8) [!] Root password
   (Not connected)                     (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 2 █
                                     ↗
```

10. Kemudian ketikkan angka **1** untuk **Set timezone**, lalu Enter.

```

=====
Time settings

Timezone: not set

NTP servers: not configured

1) Set timezone
2) Configure NTP servers
Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: 1
[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1

```

11. Pilih **Asia** dengan mengetikkan angka **5**, lalu Enter.

```

=====
Timezone settings

Available regions
1) Africa          6) Atlantic        10) Pacific
2) America         7) Australia       11) US
3) Antarctica      8) Europe          12) Etc
4) Arctic          9) Indian
5) Asia
Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 5
=====

```

12. Kemudian pilih **Jakarta** dengan mengetikkan angka **30**, lalu Enter.

```

=====
Timezone settings

Available timezones in region Asia
1) Aden            28) Hovd           54) Pontianak
2) Almaty          29) Irkutsk        55) Pyongyang
3) Amman           30) Jakarta        56) Qatar
4) Anadyr          31) Jayapura       57) Qyzylorda
5) Aqtau           32) Jerusalem      58) Riyadh
6) Aqtobe          33) Kabul          59) Sakhalin
7) Ashgabat        34) Kamchatka      60) Samarkand
8) Baghdad         35) Karachi        61) Seoul
9) Bahrain         36) Kathmandu      62) Shanghai
10) Baku            37) Khandyga       63) Singapore
11) Bangkok        38) Kolkata        64) Srednekolymsk
12) Barnaul        39) Krasnoyarsk    65) Taipei
13) Beirut         40) Kuala Lumpur   66) Tashkent
14) Bishkek        41) Kuching        67) Tbilisi
15) Brunei         42) Kuwait         68) Tehran
16) Chita          43) Macau          69) Thimphu
17) Choibalsan     44) Magadan        70) Tokyo
18) Colombo        45) Makassar       71) Tomsk
19) Damascus       46) Manila         72) Ulaanbaatar
20) Dhaka          47) Muscat         73) Urumqi
21) Dili           48) Nicosia        74) Ust-Nera
22) Dubai          49) Novokuznetsk 75) Vientiane
Press ENTER to continue
23) Dushanbe       50) Novosibirsk    76) Vladivostok
24) Gaza           51) Omsk           77) Yakutsk
25) Hebron         52) Oral           78) Yangon
26) Ho_Chi_Minh    53) Phnom_Penh     79) Yekaterinburg
27) Hong_Kong      54) Yerevan        80) Yerevan
Please select the timezone.
Use numbers or type names directly [b to region list, q to quit]: 30
[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1

```

13. Jika bagian **Time settings** sudah Anda konfigurasi, maka Anda akan kembali kedalam menu utama.

```
=====
Installation

1) [x] Language settings                2) [x] Time settings
   (English (United States))           (Asia/Jakarta timezone)
3) [x] Installation source              4) [!] Software selection
   (Local media)                       (Minimal Install)
5) [!] Installation Destination         6) [x] Kdump
   (No disks selected)                 (Kdump is enabled)
7) [ ] Network configuration           8) [!] Root password
   (Not connected)                     (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: █

[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

14. Terlihat bahwa nomor 4 belum dikonfigurasi, maka Anda masuk kedalam nomor 4 untuk mengkonfigurasi **Software selection**.

```
=====
Installation

1) [x] Language settings                2) [x] Time settings
   (English (United States))           (Asia/Jakarta timezone)
3) [x] Installation source              4) [!] Software selection
   (Local media)                       (Minimal Install)
5) [!] Installation Destination         6) [x] Kdump
   (No disks selected)                 (Kdump is enabled)
7) [ ] Network configuration           8) [!] Root password
   (Not connected)                     (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: 4 █
                                     ↖
[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

15. Lalu ketikkan huruf **c** untuk melanjutkan karena sudah terpilih **Minimal Install**.

```
=====
Base environment
Software selection

Base environment

1) [x] Minimal Install
Please make your choice from above ['q' to quit | 'c' to continue |
'r' to refresh]: c █
                                     ↖
[anaconda] 1:main* 2:shell 3:log 4:storage-lo> Switch tab: Alt+Tab | Help: F1
```

16. Lalu, jika tampilannya terdapat tulisan (**Processing...**) seperti pada gambar dibawah ini, Anda bisa mengetikkan huruf **r** untuk melihat perubahan yang terbaru.

```
=====
Installation

1) [x] Language settings                2) [x] Time settings
   (English (United States))           (Asia/Jakarta timezone)
3) [!] Installation source              4) [!] Software selection
   (Processing...)                     (Processing...)
5) [!] Installation Destination         6) [x] Kdump
   (No disks selected)                 (Kdump is enabled)
7) [ ] Network configuration           8) [!] Root password
   (Not connected)                     (Password is not set.)
9) [!] User creation
   (No user will be created)

Please make your choice from above ['q' to quit | 'b' to begin installation |
'r' to refresh]: r █
                                     ↖
=====
```

17. Namun jika tidak, Anda bisa melanjutkan konfigurasi pada nomor yang masih belum dikonfigurasi, yaitu pada nomor 5. Anda ketikkan angka **5** untuk mengkonfigurasi **Installation Destination**.
18. Lalu ketikkan huruf **c** untuk melanjutkan karena sudah terpilih otomatis **8192 MiB (vda)**. Lalu pilihlah **continue** terus sampai ke tampilan pilihan **Installation**.
19. Kemudian konfigurasi nomor 7, bagian **Network configuration** dengan mengetikkan angka **7**.
20. Lalu pilih bagian **Configure device eth0**.
21. Kemudian pilih **Connect automatically after reboot**, lalu **continue**.
22. Kemudian konfigurasi bagian **Root password**, dengan mengetikkan angka **8**.
23. Lalu ketikkan password yang Anda inginkan dan konfirmasi password, kemudian ketikkan **yes** untuk konfirmasi.
24. Opsi nomor 9 diabaikan saja karena bersifat tidak wajib dikonfigurasi. Sehingga ketika Anda login Anda dapat menggunakan username default CentOS 7, yaitu: **root** dan password sesuai dengan yang Anda setting pada nomor **8**.
25. Setelah semua sudah dikonfigurasi, maka Anda bisa memulai instalasi CentOS dengan mengetikkan huruf **b**.
26. Tunggu proses instalasinya selesai, jangan diganggu selama instalasi.
27. Apabila berhasil instalasi, maka **centos\_virkom\_1** akan otomatis berjalan dan Anda bisa login sesuai dengan username **root** dan password yang sudah Anda setting sebelumnya.
28. Untuk keluar dari VM, Anda bisa menekan **Ctrl + ]**.
29. Silahkan eksplorasi dan pelajari **virsh command** untuk memahami konsep guest kvm.
30. Selesai!