Laporang Pengerjaan Soal Nomor 2

ID Peserta: 01

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1. Disable root login untuk service ssh.

Edit file /etc/ssh/sshd_config, dan ubah konfigurasi **PermitRootLogin no**.

```
root@semesta-lab-01:~# cat /etc/ssh/sshd_config | grep PermitRootLogin
PermitRootLogin no
# the setting of "PermitRootLogin prohibit-password".
```

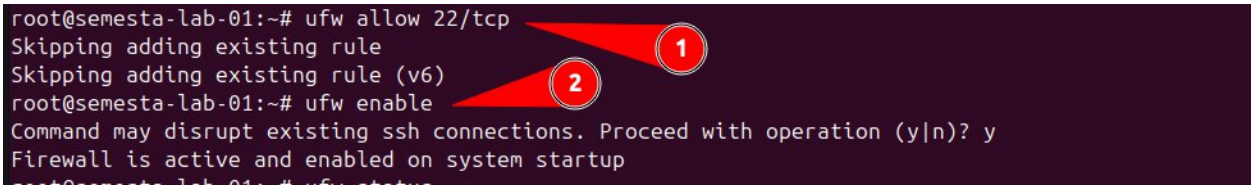
Setelah itu restart service ssh.

```
root@semesta-lab-01:~# systemctl restart ssh
root@semesta-lab-01:~# systemctl daemon-reload
```

2. Pembatasan login gagal ketika lewat local maupun ssh

3. Konfigurasi firewall.

Allow port ssh default 22/tcp terlebih dahulu, lalu aktifkan ufw.



Verifikasi status, untuk saat ini hanya port 22 saja yang di allow, namun nanti di soal nomor 3 ada beberapa port yang harus ditambahkan yaitu 2025/tcp (ssh), 8001/tcp (apache2), 8101/tcp (nginx), 8443/tcp (nginx https), 80/tcp dan 443/tcp untuk haproxy.

```
root@semesta-lab-01:~# ufw status
Status: active

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW       Anywhere
22/tcp (v6)                ALLOW       Anywhere (v6)

root@semesta-lab-01:~#
```

Ini adalah hasil akhir port yang di allow.

```
root@semesta-lab-01:~# sudo ufw status | grep -v v6
Status: active

To                         Action      From
--                         ------      ----
2025/tcp                   ALLOW       Anywhere
8001/tcp                   ALLOW       Anywhere
8101/tcp                   ALLOW       Anywhere
8443/tcp                   ALLOW       Anywhere
80/tcp                     ALLOW       Anywhere
443/tcp                    ALLOW       Anywhere

root@semesta-lab-01:~#
```

4. Disable service yang tidak perlu

Untuk service yang tidak perlu saya menemukan ada mysql.

```
root@semesta-lab-01:~# ss -tulpn | grep mysqld
tcp   LISTEN 0      151        127.0.0.1:3306       0.0.0.0:*    users:(("mysqld",pid=870,fd=23))

tcp   LISTEN 0      70         127.0.0.1:33060      0.0.0.0:*    users:(("mysqld",pid=870,fd=21))
```

Saya disable dan stop menggunakan systemctl.

```
root@semesta-lab-01:~# systemctl disable --now mysql
Synchronizing state of mysql.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install disable mysql
Removed "/etc/systemd/system/multi-user.target.wants/mysql.service".
```

5. Konfigurasi log

6. Konfigurasi nfs

7. Pembatasan penggunaan sumber daya

Tugas:

1. Buat user dengan akses sudo, login menggunakan kata sandi dan menggunakan pubkey.

Copy public key ke /etc/skel agar saat pembuatan user sudah otomatis ada file adm.pub.

```
root@semesta-lab-01:~# cp /home/semesta/adm.pub /etc/skel/
root@semesta-lab-01:~# ls /etc/skel/
adm.pub
```

Gunakan bash script looping untuk menambahkan banyak user.

```
root@semesta-lab-01:~# for i in {1..100}; do useradd sevima-adm$i -s /bin
/bash -m; passwd sevima-adm$i <<< "S3m3st4#2025"$'\n'"S3m3st4#2025"; done
New password: Retype new password: passwd: password updated successfully
New password: Retype new password: passwd: password updated successfully
New password: Retype new password: passwd: password updated successfully
```

Verifikasi jumlah user yang dibuat.

```
root@semesta-lab-01:~# cat /etc/passwd | grep sevima-adm* | wc -l
100
root@semesta-lab-01:~#
```

Gunakan bash script looping untuk menambahkan banyak user kedalam group sudo.

```
root@semesta-lab-01:~# for i in {1..100}; do usermod -a -G sudo sevima-adm$i; done
root@semesta-lab-01:~#
```

Verifikasi jumlah user yang masuk kedalam group sudo.

```
root@semesta-lab-01:~# cat /etc/group | grep sudo
sudo:x:27:sevima,sevima-adm1,sevima-adm2,sevima-adm3,sevima-adm4,sevima-adm5,sevima-adm6,sevima-adm7,sevima-adm8,sevima-adm9,sevima-adm10,sevima-adm11,sevima-adm12,sevima-adm13,sevima-
adm14,sevima-adm15,sevima-adm16,sevima-adm17,sevima-adm18,sevima-adm19,sevima-adm20,sevima-adm21,sevima-adm22,sevima-adm23,sevima-adm24,sevima-adm25,sevima-adm26,sevima-adm27,sevima-ad
m28,sevima-adm29,sevima-adm30,sevima-adm31,sevima-adm32,sevima-adm33,sevima-adm34,sevima-adm35,sevima-adm36,sevima-adm37,sevima-adm38,sevima-adm39,sevima-adm40,sevima-adm41,sevima-adm4
2,sevima-adm43,sevima-adm44,sevima-adm45,sevima-adm46,sevima-adm47,sevima-adm48,sevima-adm49,sevima-adm50,sevima-adm51,sevima-adm52,sevima-adm53,sevima-adm54,sevima-adm55,sevima-adm56,
sevima-adm57,sevima-adm58,sevima-adm59,sevima-adm60,sevima-adm61,sevima-adm62,sevima-adm63,sevima-adm64,sevima-adm65,sevima-adm66,sevima-adm67,sevima-adm68,sevima-adm69,sevima-adm70,se
vima-adm71,sevima-adm72,sevima-adm73,sevima-adm74,sevima-adm75,sevima-adm76,sevima-adm77,sevima-adm78,sevima-adm79,sevima-adm80,sevima-adm81,sevima-adm82,sevima-adm83,sevima-adm84,sevi
ma-adm85,sevima-adm86,sevima-adm87,sevima-adm88,sevima-adm89,sevima-adm90,sevima-adm91,sevima-adm92,sevima-adm93,sevima-adm94,sevima-adm95,sevima-adm96,sevima-adm97,sevima-adm98,sevima
-adm99,sevima-adm100
root@semesta-lab-01:~#
```

2. Buat LVM dari block sdb dan pastikan dienkripsi.

Gunakan cryptsetup untuk enkripsi block sdb dengan passpharse 123.

```
root@semesta-lab-01:~# cryptsetup luksFormat /dev/sdb

WARNING!
========
This will overwrite data on /dev/sdb irrevocably.

Are you sure? (Type 'yes' in capital letters): YES
Enter passphrase for /dev/sdb:
Verify passphrase:
root@semesta-lab-01:~#
```

Lalu open disk yang terenkripsi dengan nama lvm1.

```
root@semesta-lab-01:~# cryptsetup luksOpen /dev/sdb lvm1
Enter passphrase for /dev/sdb:
```

Buat physical volume, lalu volume group hackathon-syadm7 dan logical volume.

```
root@semesta-lab-01:~# pvcreate /dev/mapper/lvm1
  Physical volume "/dev/mapper/lvm1" successfully created.
root@semesta-lab-01:~# vgcreate hackathon-syadm7 /dev/mapper/lvm1
  Volume group "hackathon-syadm7" successfully created
root@semesta-lab-01:~# lvcreate -n data_lv -l 100%FREE hackathon-syadm7
  Logical volume "data_lv" created.
```

Verifikasi pembuatan lvm.

```
root@semesta-lab-01:~# lsblk -f
NAME                      FSTYPE      FSVER    LABEL UUID                                   FSAVAIL FSUSE% MOUNTPOINTS
sda
├─sda1
├─sda2                    ext4        1.0            25942eb5-8be7-432d-9fe4-9af6b9e9a248      1.7G     5% /boot
└─sda3                    LVM2_member LVM2 001       8TsxeF-IQJm-Kd47-iLH1-W8tY-NbTb-UX9CYp
  └─ubuntu--vg-ubuntu--lv ext4        1.0            1a036a05-86e8-4e00-a6fc-ead1bb73fcf9     15.2G    30% /
sdb                       crypto_LUKS 2              f3b87333-caf6-4376-8692-19fa0590a39d
└─lvm1                    LVM2_member LVM2 001       hchqSn-vDd5-i1Tl-rn7g-fCWJ-gAVQ-s1Tyax
  └─hackathon--syadm7-data_lv
```

3. Konfigurasi NFS agar mount otomatis setelah server restart.

Install nfs client terlebih dahulu.

```
root@semesta-lab-01:~# apt install nfs-client -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'nfs-common' instead of 'nfs-client'
nfs-common is already the newest version (1:2.6.4-3ubuntu5.1).
The following packages were automatically installed and are no longer required:
  apache2-data apache2-utils ssl-cert
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 89 not upgraded.
root@semesta-lab-01:~#
```

Buat folder /mnt/nfs1 untuk sebagai tempat mounting. Mount menggunakan perintah mount.

```
root@semesta-lab-01:~# mkdir /mnt/nfs1
root@semesta-lab-01:~# mount -t nfs 192.168.99.3:/nfs-semesta7 /mnt/nfs1
```

Agar konfigurasi persistent, tambahkan output dari isi file /proc/mounts pada bagian nfs kedalam /etc/fstab.

```
root@semesta-lab-01:~# cat /proc/mounts  | grep 192.168.99.3
192.168.99.3:/nfs-semesta7 /mnt/nfs1 nfs4 rw,relatime,vers=4.2,rsize=524288,wsize=524288,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.99.11,local_lock=none,
addr=192.168.99.3 0 0
root@semesta-lab-01:~#
```

```
root@semesta-lab-01:~# cat /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point>   <type>  <options>       <dump>  <pass>
# / was on /dev/ubuntu-vg/ubuntu-lv during curtin installation
/dev/disk/by-id/dm-uuid-LVM-3OLoHWR73WuNyKTA7xWHgaITySwUKBhr9zwejb9lfUoRwB1x2W2xTEe9VVC1Jt18 / ext4 defaults 0 1
# /boot was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/25942eb5-8be7-432d-9fe4-9af6b9e9a248 /boot ext4 defaults 0 1
/swap.img       none    swap    sw      0       0
192.168.99.3:/nfs-semesta7 /mnt/nfs1 nfs4 rw,relatime,vers=4.2,rsize=524288,wsize=524288,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.99.11,local_lock=none,
addr=192.168.99.3 0 0
root@semesta-lab-01:~#
```

4. Buat folder pada NFS yang sudah dikonfigurasi.

Masuk ke folder /mnt/nfs1 dan buat folder dengan mkdir.

```
root@semesta-lab-01:~# cd /mnt/nfs1/
root@semesta-lab-01:/mnt/nfs1# mkdir achmadalifnasrulloh-192.168.99.11
root@semesta-lab-01:/mnt/nfs1# ls
achmadalifnasrulloh-192.168.99.11
root@semesta-lab-01:/mnt/nfs1#
```

```
root@semesta-lab-01:/mnt/nfs2# df -hT
Filesystem                         Type   Size  Used Avail Use% Mounted on
tmpfs                              tmpfs  392M  1.1M  391M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv ext4    24G  7.0G   16G  32% /
tmpfs                              tmpfs  2.0G  4.0K  2.0G   1% /dev/shm
tmpfs                              tmpfs  5.0M     0  5.0M   0% /run/lock
/dev/sda2                          ext4   2.0G  100M  1.7G   6% /boot
tmpfs                              tmpfs  392M   12K  392M   1% /run/user/1000
192.168.99.3:/nfs-semesta7         nfs4    24G  6.4G   16G  29% /mnt/nfs1
tmpfs                              tmpfs  392M   12K  392M   1% /run/user/1102
192.168.99.3:/nfs-semesta7-web     nfs4    24G  6.4G   16G  29% /mnt/nfs2
root@semesta-lab-01:/mnt/nfs2#
```