

Laporang Pengerjaan Soal Nomor 2

ID Peserta: 01

Nama: Achmad Alif Nasrulloh

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.

```
root@semesta-lab-01:~# ufw allow 22/tcp
Skipping adding existing rule
Skipping adding existing rule (v6)
root@semesta-lab-01:~# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y/n)? y
Firewall is active and enabled on system startup
root@semesta-lab-01:~# ufw status
```



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 sudah benar

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-adm28,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-adm42,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,sevima-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,sevima-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:~#
```

Lalu tambahkan public key di masing folder user .ssh/authorized_keys, untuk mempercepat bisa menggunakan kombinasi looping dan tools sshpass.

```
root@semesta-lab-01:~# for i in {1..100}; do
  sshpass -p "S3m3st4#2025" ssh-copy-id -o StrictHostKeyChecking=no -p2025 -fi /home/semesta/adm.pub sevima-adm$i@localhost
done
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/semesta/adm.pub"

Number of key(s) added: 1

Now try logging into the machine, with: "ssh -p 2025 -o 'StrictHostKeyChecking=no' 'sevima-adm1@localhost'"
and check to make sure that only the key(s) you wanted were added.
```

2. Buat LVM dari block sdb dan pastikan dienkripsi.

Gunakan cryptsetup untuk enkripsi block sdb dengan passphrase 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 terenripsi 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		f3b07333-caf6-4376-8692-19fa0590a39d			
├─lvm1	LVM2_member	LVM2 001		hchq5n-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-30LoHWR73MuNyKTA7xMHgaiTySwUKBhr9zwejb9lfUoRw81x2W2xEe9VVC1Jt18 / 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#
```