

Obligatorio Taller de Servidores Linux

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```

#####
@    WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!    @
#####
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle attack)!
It is also possible that a host key has just been changed.
The fingerprint for the ECDSA key sent by the remote host is
4e:10:42:39:53:85:7f:89:81:dc:d7:84:8d:79:e7:6d.
Please contact your system administrator.
Add correct host key in /root/.ssh/known_hosts to get rid of this message.
Offending ECDSA key in /root/.ssh/known_hosts:44
  remove with: ssh-keygen -f "/root/.ssh/known_hosts" -R 10.86.115.66
ECDSA host key for 10.86.115.66 has changed and you have requested strict checking.
Host key verification failed.
```

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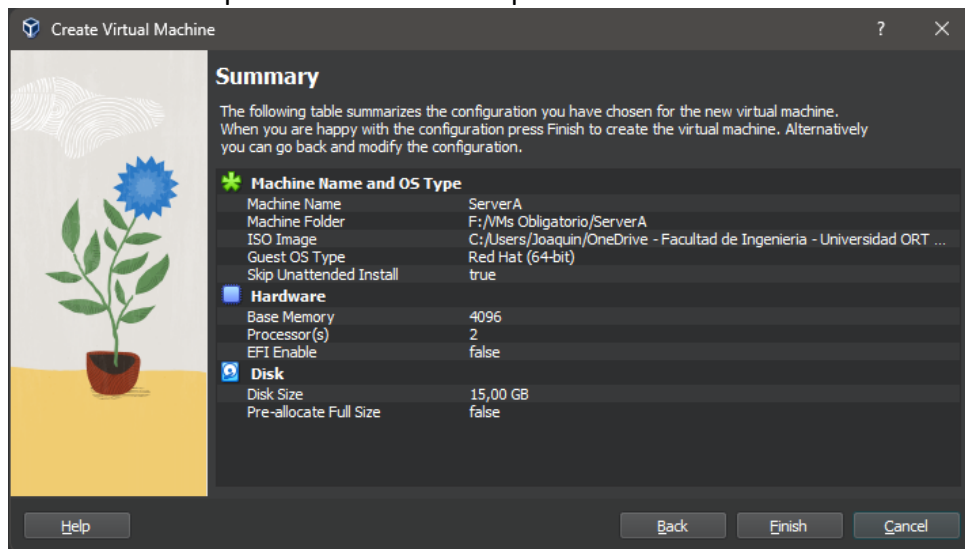
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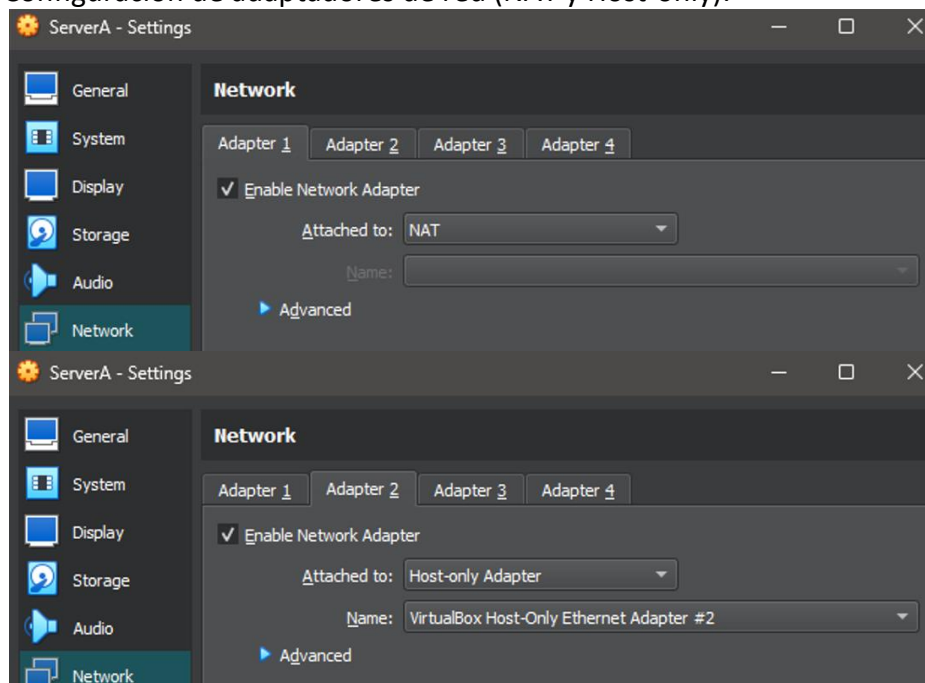
Instalación de Linux en servidores

Instalación Rocky – ServerA

- Creamos la máquina virtual con las especificaciones de hardware solicitadas:



- Configuración de adaptadores de red (NAT y Host-only):



- Se utilizó “Minimal Install” en la selección de software.
- Elegimos Americas/Montevideo como zona horaria.
- Configuración de adaptadores de red:
 - Enp0s8:
 - IPv4 Settings:
 - Method: Manual
 - Address: 192.168.56.10
 - Netmask: 24
 - Sin Gateway
 - Connect automatically with priority: Habilitado
 - Enp0s3:
 - IPv4 Settings:
 - Method: DHCP Automático
 - Connect automatically with priority: Habilitado
- Seteamos la contraseña de root.
- Creamos al usuario sysadmin, le asignamos una contraseña y lo hicimos administrador.

Esquema de particiones:

MANUAL PARTITIONING ROCKY LINUX 8 INSTALLATION

Done us Help!

▼ New Rocky Linux 8 Installation

DATA

/home 2 GiB >
rLobligatorio-home

SYSTEM

/ 5 GiB
rLobligatorio-root

/var 3 GiB
rLobligatorio-var

/boot 1024 MiB
sda1

swap 2 GiB
rLobligatorio-swap

+ - ↺

AVAILABLE SPACE: 2 GiB

TOTAL SPACE: 15 GiB

rLobligatorio-home

Mount Point: /home

Desired Capacity: 2 GiB

Device Type: LVM ☐ Encrypt

File System: xfs ☒ Reformat

Label:

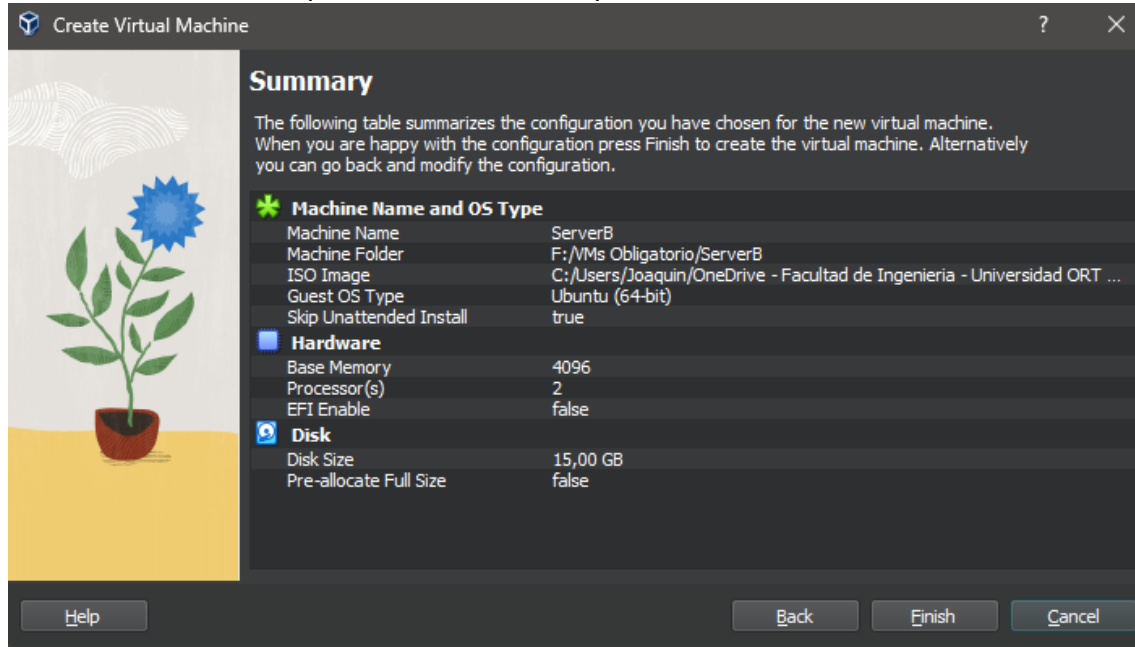
Device(s): ATA VBOX HARDDISK (sda)

Volume Group: rLob...torio (4 MiB free)

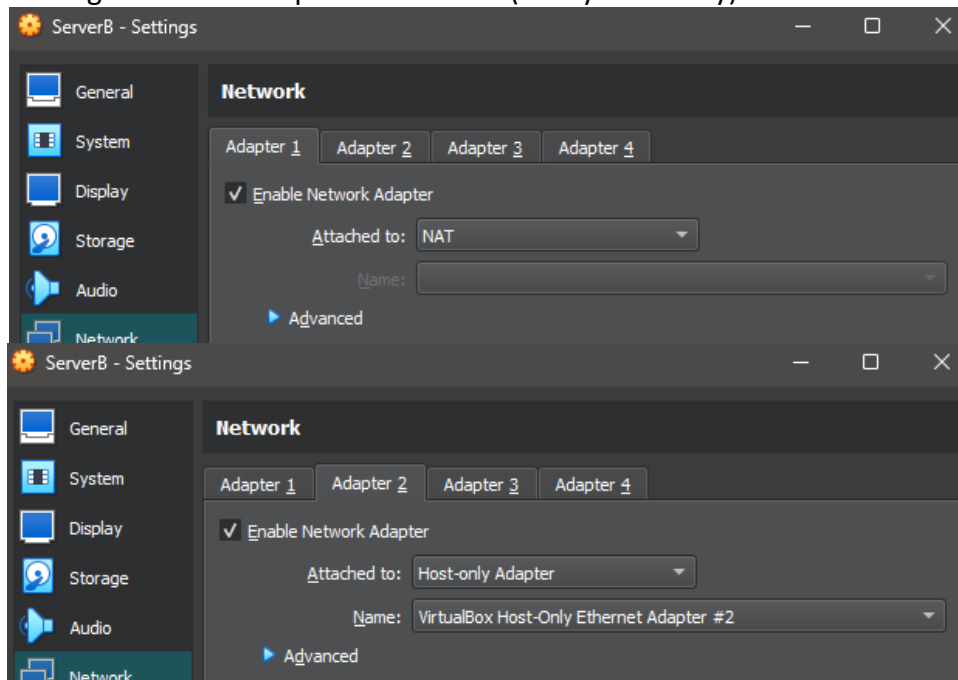
Name: home

Instalación Ubuntu – ServerB

- Creamos la máquina virtual con las especificaciones de hardware solicitadas:



- Configuración de adaptadores de red (NAT y Host-only):



- Se utilizó “Ubuntu Server (minimized)” para el tipo de instalación.
- Configuración de adaptadores de red:
 - Enp0s8:
 - IPv4 Settings:
 - Method: Manual
 - Subnet: 192.168.56.0/24
 - Address: 192.168.56.20
 - Sin Gateway
 - Sin Name Servers
 - Sin Search Domains
 - Enp0s3:
 - Dejamos la configuración por defecto.
- En Profile Setup creamos al usuario “sysadmin”, le asignamos una contraseña y asignamos “serverb” como el nombre del servidor.
- En SSH Setup seleccionamos la opción “Install OpenSSH server” y elegimos no importar claves SSH.

Esquema de particiones:

```
Storage configuration [ Help ]

FILE SYSTEM SUMMARY

MOUNT POINT  SIZE  TYPE  DEVICE TYPE
[ /           5.000G new xfs new LVM logical volume ► ]
[ /boot       1.000G new xfs new partition of local disk ► ]
[ /home       2.000G new xfs new LVM logical volume ► ]
[ /var        3.000G new xfs new LVM logical volume ► ]
[ SWAP        2.000G new swap new LVM logical volume ► ]

AVAILABLE DEVICES

DEVICE                                TYPE                                SIZE
[ vg-obligatorio (new)                LVM volume group                  13.996G ► ]
free space                            1.996G ►

[ Create software RAID (md) ► ]
[ Create volume group (LVM) ► ]

USED DEVICES

DEVICE                                TYPE                                SIZE
[ vg-obligatorio (new)                LVM volume group                  13.996G ► ]
lv-root                               new, to be formatted as xfs,      5.000G ►
mounted at /
lv-var                                new, to be formatted as xfs,      3.000G ►
mounted at /var
lv-home                               new, to be formatted as xfs,      2.000G ►
mounted at /home
lv-swap                               new, to be formatted as swap      2.000G ►

[ Done ]
[ Reset ]
[ Back ]
```

Ejecución de playbooks

A continuación detallamos la ejecución de cada playbook en el orden en que deben ser ejecutados.

Initial.yml

Ejecutamos el playbook:

```

**Ejecutando initial.yml como sysadmin para configuración inicial de los servidores remotos**
BECOME password:

PLAY [linux] *****

TASK [Gathering Facts] *****
ok: [serverB]
ok: [serverA]

TASK [Create ansible group] *****
changed: [serverB]
changed: [serverA]

TASK [Create ansible user] *****
changed: [serverB]
changed: [serverA]

TASK [Set authorized key for user ansible] *****
changed: [serverA]
changed: [serverB]

TASK [Give ansible user SUDO privileges without password (DEBIAN)] *****
skipping: [serverA]
changed: [serverB]

TASK [Give ansible user SUDO privileges without password (DEBIAN)] *****
skipping: [serverB]
changed: [serverA]

TASK [Disable SSH RootLogin on RHEL servers] *****
skipping: [serverB]
changed: [serverA]

TASK [Disable SSH Password Authentication on RHEL servers] *****
skipping: [serverB]
changed: [serverA]

TASK [Disable SSH RootLogin on Debian servers] *****
skipping: [serverA]
changed: [serverB]

TASK [Disable SSH Password Authentication on Debian servers (default config file)] *****
skipping: [serverA]
changed: [serverB]

TASK [Check if 50-cloud-init.conf exists on Debian] *****
skipping: [serverA]
ok: [serverB]

TASK [Disable SSH Password Authentication on Debian servers (file under /etc/ssh/sshd_config.d/)] *****
skipping: [serverA]
changed: [serverB]

RUNNING HANDLER [Restart SSH Service] *****
changed: [serverB]
changed: [serverA]

PLAY RECAP *****
serverA : ok=8 changed=7 unreachable=0 failed=0 skipped=5 rescued=0 ignored=0
serverB : ok=10 changed=8 unreachable=0 failed=0 skipped=3 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$

```

Para confirmar que el playbook se ejecutó correctamente, lo volvemos a ejecutar y chequeamos que no se hizo ningún cambio:

```

PLAY RECAP *****
serverA : ok=7 changed=0 unreachable=0 failed=0 skipped=5 rescued=0 ignored=0
serverB : ok=9 changed=0 unreachable=0 failed=0 skipped=3 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$

```

update_servers.yml

Ejecutamos el playbook:

```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/update_servers.yml

PLAY [Update Servers] *****

TASK [Gathering Facts] *****
ok: [serverB]
ok: [serverA]

TASK [Update Rocky Server] *****
skipping: [serverB]
changed: [serverA]

TASK [Update Ubuntu Server] *****
skipping: [serverA]
changed: [serverB]

RUNNING HANDLER [Reboot Server] *****
changed: [serverA]
changed: [serverB]

PLAY RECAP *****
serverA      : ok=3    changed=2    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0
serverB      : ok=3    changed=2    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0

[ansible@bastion tallerfebrero2024]$
```

Para corroborar que los cambios se efectuaron adecuadamente, lo volvemos a ejecutar y vemos que no se realizó ningún cambio:

```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/update_servers.yml

PLAY [Update Servers] *****

TASK [Gathering Facts] *****
ok: [serverB]
ok: [serverA]

TASK [Update Rocky Server] *****
skipping: [serverB]
ok: [serverA]

TASK [Update Ubuntu Server] *****
skipping: [serverA]
ok: [serverB]

PLAY RECAP *****
serverA      : ok=2    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0
serverB      : ok=2    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0

[ansible@bastion tallerfebrero2024]$
```


appserver_ubuntu.yml

Ejecutamos el playbook:

```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/update_servers.yml

PLAY [Update Servers] *****

TASK [Gathering Facts] *****
ok: [serverB]
ok: [serverA]

TASK [Update Rocky Server] *****
skipping: [serverB]
ok: [serverA]

TASK [Update Ubuntu Server] *****
skipping: [serverA]
ok: [serverB]

PLAY RECAP *****
serverA : ok=2 changed=0 unreachable=0 failed=0 skipped=1 rescued=0 ignored=0
serverB : ok=2 changed=0 unreachable=0 failed=0 skipped=1 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/appserver_ubuntu.yml

PLAY [Configure App Server] *****

TASK [Gathering Facts] *****
ok: [serverB]

TASK [Install OpenJDK] *****
changed: [serverB]

TASK [Install UFW] *****
changed: [serverB]
```

Nuevamente corroboramos que los cambios se efectuaron adecuadamente ejecutando el playbook otra vez, y confirmando que no hay cambios realizados, mas que la descarga de tomcat y la remoción del directorio de descarga:

```

[ansible@bastion:~/tallerfebrero2024]
File Edit View Search Terminal Help
ok: [serverB]

TASK [Enable UFW] *****
ok: [serverB]

TASK [Create Tomcat group] *****
ok: [serverB]

TASK [Create Tomcat user] *****
ok: [serverB]

TASK [Create Tomcat directory] *****
ok: [serverB]

TASK [Download Tomcat] *****
changed: [serverB]

TASK [Copy downloaded Tomcat to /opt/tomcat] *****
changed: [serverB]

TASK [Clean Tomcat download] *****
changed: [serverB]

TASK [Copy sample.war] *****
ok: [serverB]

TASK [Copy tomcat.service] *****
ok: [serverB]

TASK [Reload systemd] *****
ok: [serverB]

TASK [Enable the tomcat service and start] *****
ok: [serverB]

PLAY RECAP *****
serverB : ok=16 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$
```

proxy_rocky.yml

Ejecutamos el playbook:

```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/proxy_rocky.yml

PLAY [Configure Proxy Server] *****

TASK [Gathering Facts] *****
ok: [serverA]

TASK [Install apache] *****
changed: [serverA]

TASK [Enable apache] *****
changed: [serverA]

TASK [Enable firewall ports] *****
changed: [serverA] => (item=80/tcp)
changed: [serverA] => (item=443/tcp)
changed: [serverA] => (item=8080/tcp)

TASK [Allow httpd scripts and modules to connect to the network using TCP] *****
changed: [serverA]

TASK [Allow httpd to act as a relay] *****
changed: [serverA]

TASK [Copy proxy conf] *****
changed: [serverA]

TASK [Listen on ports 80, 8080 & 443] *****
changed: [serverA]

TASK [Load Proxy Modules] *****
changed: [serverA]

RUNNING HANDLER [Restart httpd service] *****
changed: [serverA]

RUNNING HANDLER [Restart httpd service] *****
changed: [serverA]

PLAY RECAP *****
serverA : ok=10 changed=9 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$
```

Nuevamente, corroboramos que el playbook se ejecutó correctamente:

```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/proxy_rocky.yml

PLAY [Configure Proxy Server] *****

TASK [Gathering Facts] *****
ok: [serverA]

TASK [Install apache] *****
ok: [serverA]

TASK [Enable apache] *****
ok: [serverA]

TASK [Enable firewall ports] *****
ok: [serverA] => (item=80/tcp)
ok: [serverA] => (item=443/tcp)
ok: [serverA] => (item=8080/tcp)

TASK [Allow httpd scripts and modules to connect to the network using TCP] *****
changed: [serverA]

TASK [Allow httpd to act as a relay] *****
changed: [serverA]

TASK [Copy proxy conf] *****
ok: [serverA]

TASK [Listen on ports 80, 8080 & 443] *****
ok: [serverA]

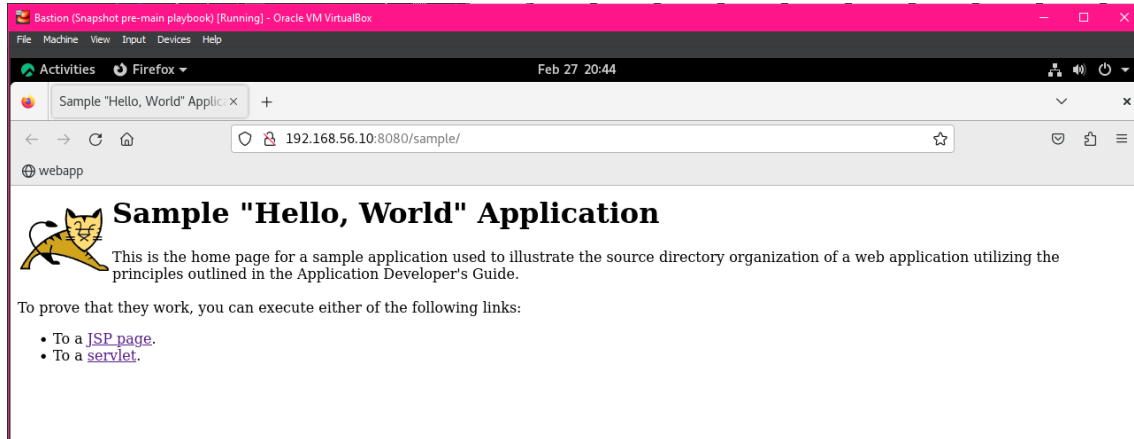
TASK [Load Proxy Modules] *****
ok: [serverA]

PLAY RECAP *****
serverA : ok=9 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[ansible@bastion tallerfebrero2024]$
```

Resultado final – Webapp

Por último, nos conectamos al sitio web que fue creado a partir de la ejecución de los playbooks, y corroboramos que la redirección a 192.168.56.10:8080/sample funciona adecuadamente:



Repositorio de playbooks – GitHub

- <https://github.com/Joaquino/tallerfebrero2024>