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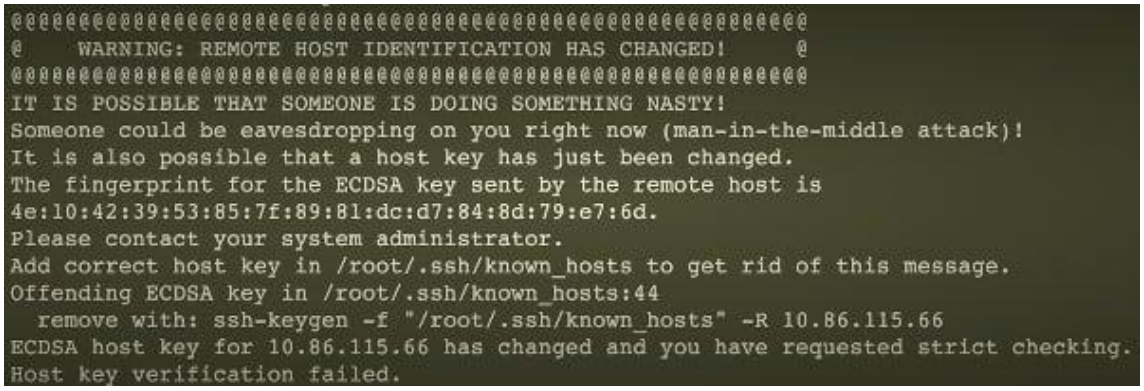
Obligatorio Taller de Servidores Linux

Docentes: Enrique Verdes

Universidad ORT Uruguay



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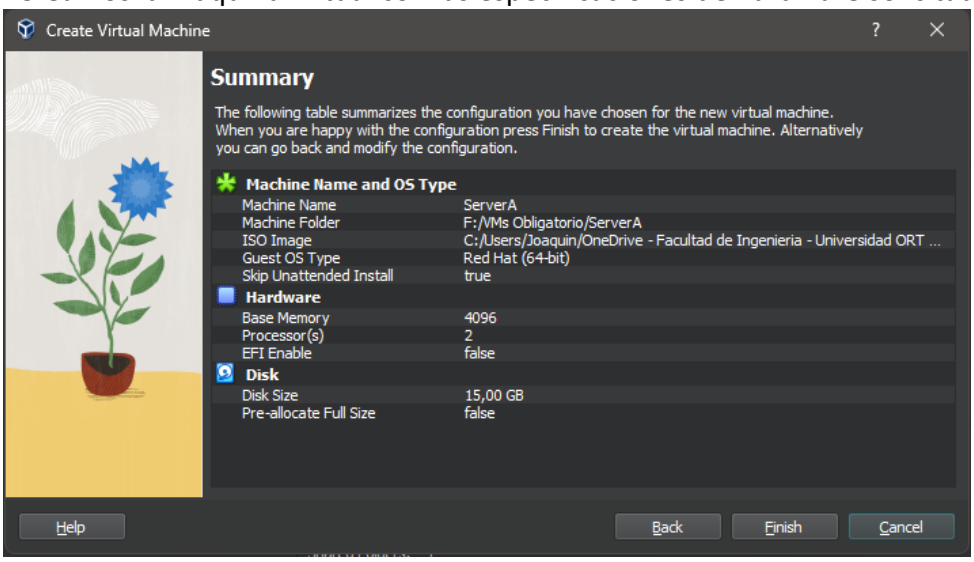
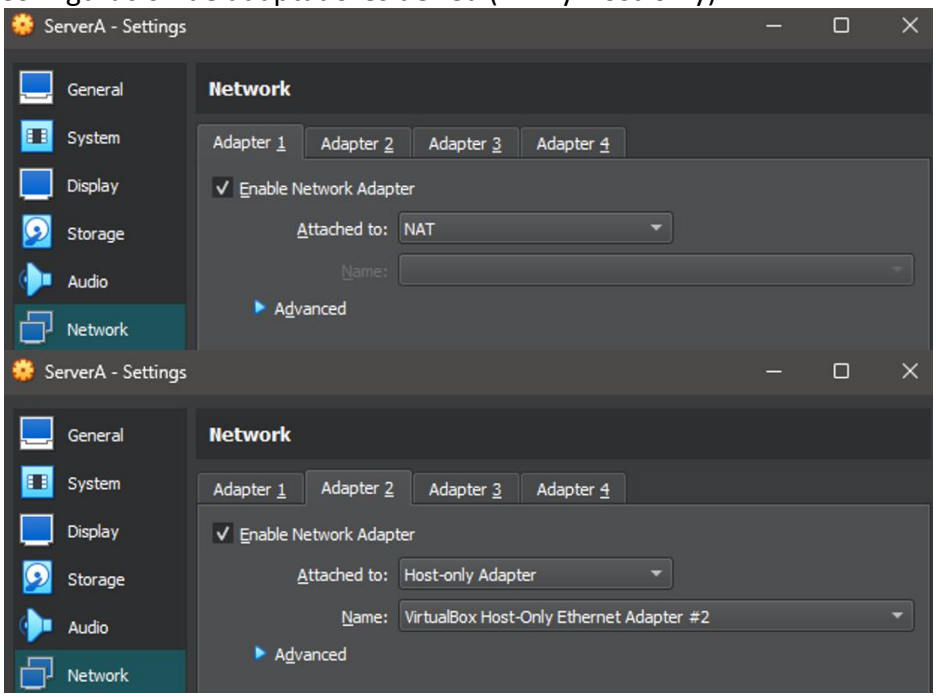
Instalación de Linux en servidores

Instalación Rocky – ServerA

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

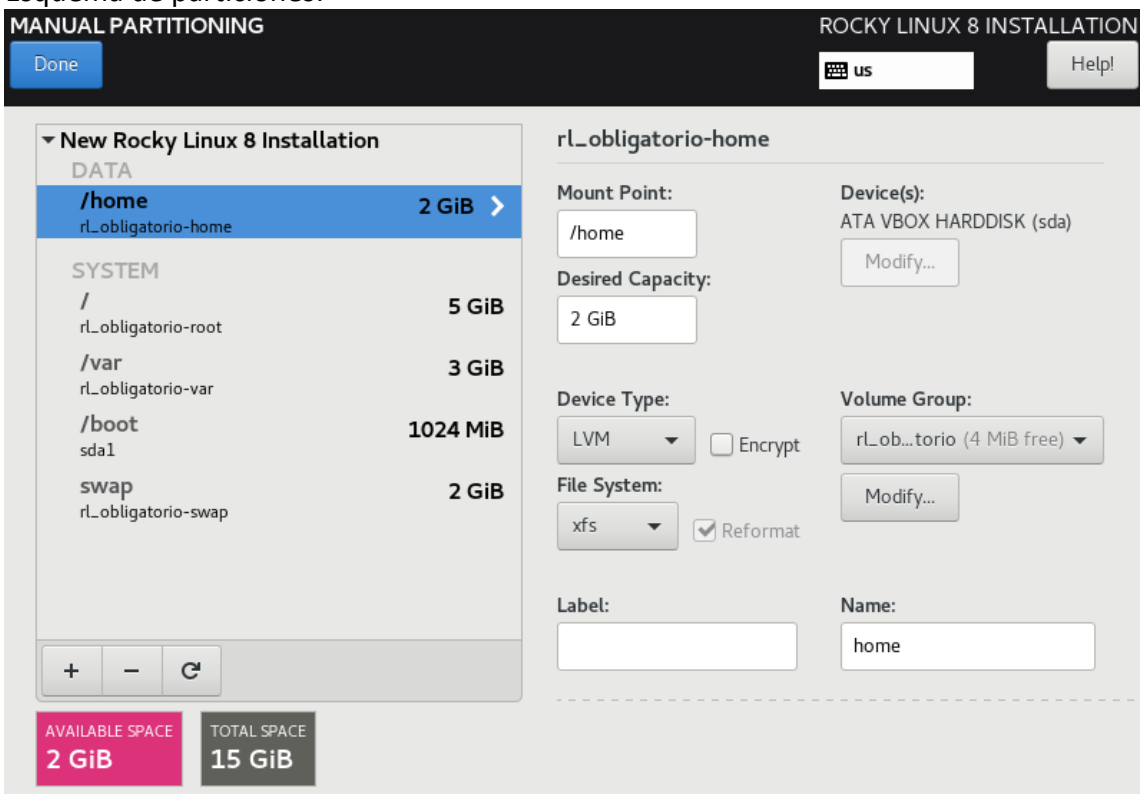


- Configuración de adaptadores de red (NAT y Host-only):



- 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:



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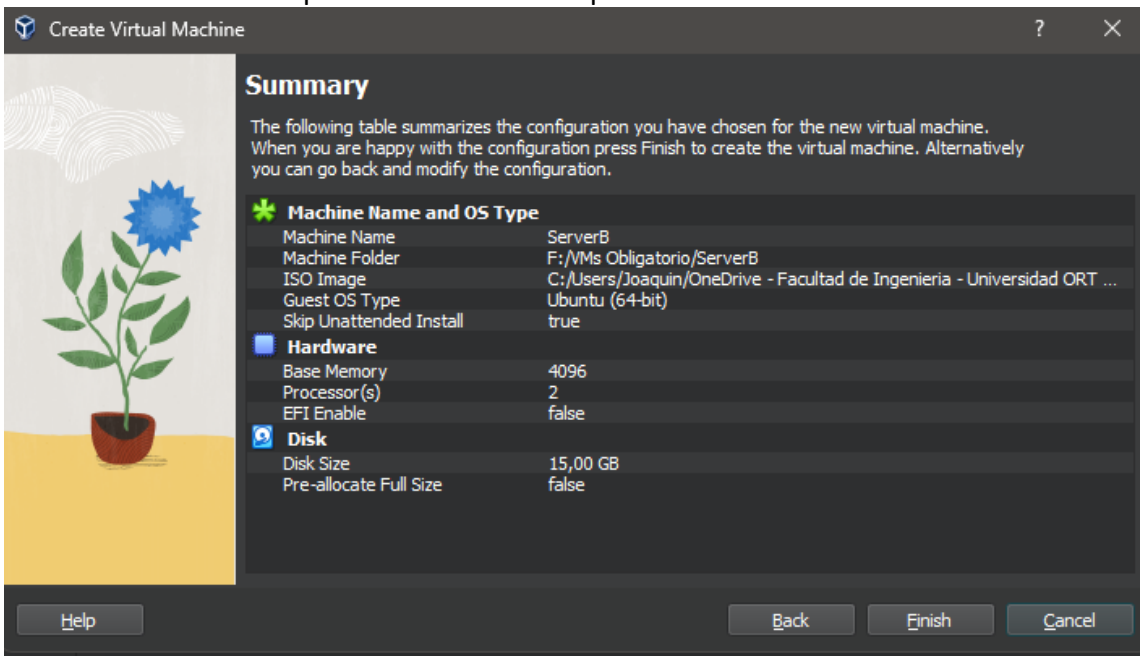
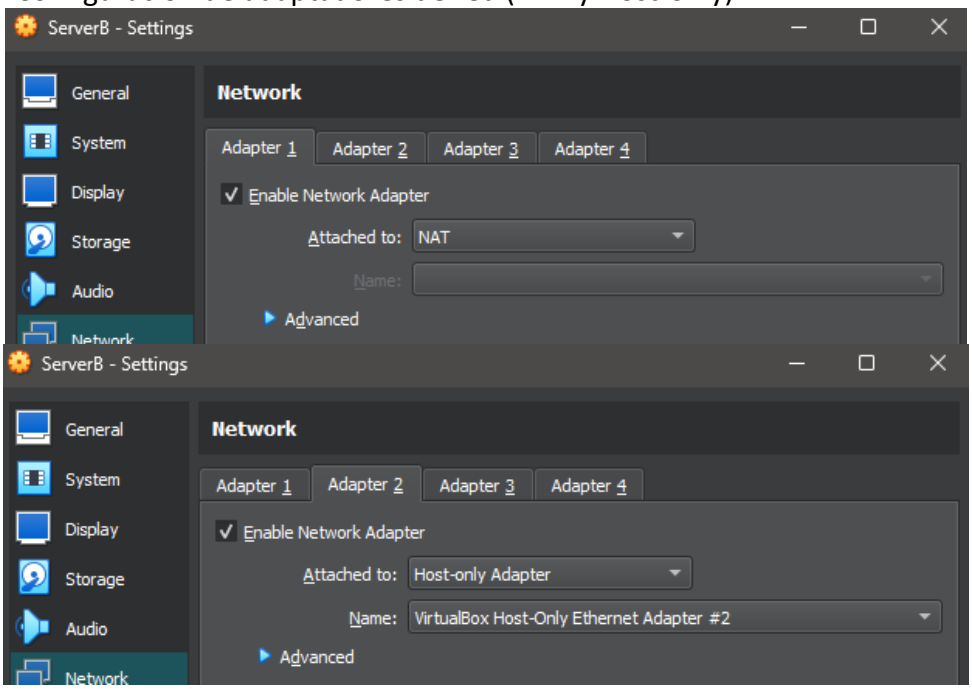
Instalación Ubuntu – ServerB

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

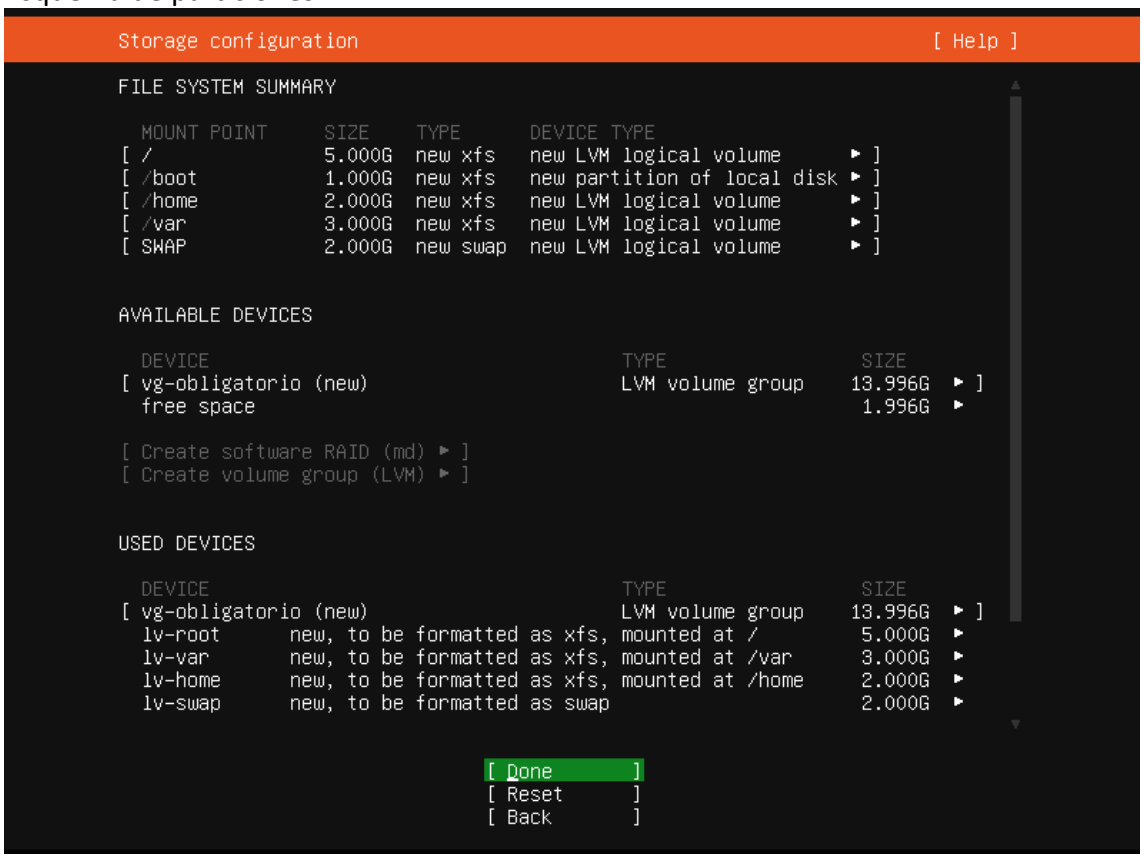


- Configuración de adaptadores de red (NAT y Host-only):



- 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:



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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:

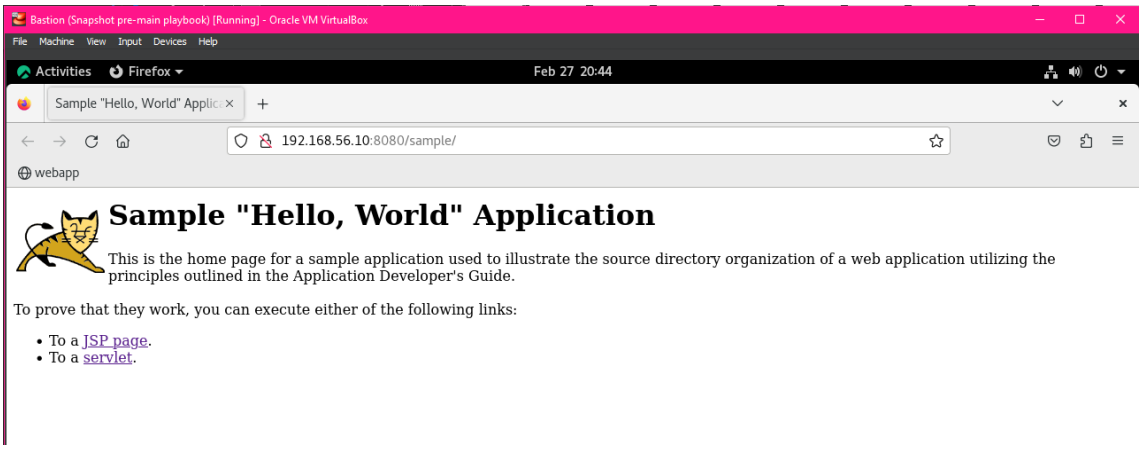
```
[ansible@bastion tallerfebrero2024]$ ansible-playbook -i inventories/hosts playbooks/proxy_rocky.yml

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/Joaquinoo/tallerfebrero2024