

Obligatorio

Taller

de servidores

Linux

Octavio Rodriguez - 259028

Micaela Conde – 340696

Fecha: 12/08/2025










Índice

Tarea 1	3
Instalación de servidores.....	3
Tarea 2	7
Configurar un archivo de inventario de Ansible	7
Tarea 3	8
Ejecutar comandos ad-hoc.....	8
Listado de usuarios en el servidor Ubuntu:	8
Uso de memoria en todos los servidores:	8
Verificar servicio de chrony instalado y configurado en servidor Centos	9
Tarea 4:	9
Creación y ejecución de playbooks en Ansible	9
Ejecución de playbook nfs_setup.yml	10
Ejecución de playbook hardening.yml.....	10
Bibliografía	11

Tarea 1

Instalación de servidores

CentOS

	General
Nombre:	Centos
Sistema operativo:	Red Hat (64-bit)
	Sistema
Memoria base:	2048 MB
Orden de arranque:	Disquete, Óptica, Disco duro
Aceleración:	Paginación anidada, PAE/NX, Paravirtualización KVM
	Pantalla
Memoria de vídeo:	16 MB
Controlador gráfico:	VMSVGA
Servidor de escritorio remoto:	Inhabilitado
Grabación:	Inhabilitado
	Almacenamiento
Controlador:	IDE
Dispositivo IDE secundario 0:	[Unidad óptica] Vacío
Controlador:	SATA
Puerto SATA 0:	Centos.vdi (Normal, 20,00 GB)
	Audio
Controlador de anfitrión:	Predeterminado
Controlador:	ICH AC97
	Red
Adaptador 1:	Intel PRO/1000 MT Desktop (NAT)
Adaptador 2:	Intel PRO/1000 MT Desktop (Red interna, «intnet»)
	USB
Controlador USB:	OHCI, EHCI
Filtros de dispositivos:	0 (0 activo)
	Carpetas compartidas
	Ninguno
	Descripción
	Ninguno









Almacenamiento

New CentOS Stream 9 Installation		
SYSTEM		
/	cs_vbox-root	10 GiB
/var	cs_vbox-var	5 GiB >
/boot	sda1	1024 MiB
swap	cs_vbox-swap	4 GiB

Configuración de red – (192.168.1.10/24)

```
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:73:fb:2a brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86398sec preferred_lft 86398sec
    inet6 fd00::a00:27ff:fe73:fb2a/64 scope global dynamic noprefixroute
        valid_lft 86400sec preferred_lft 14400sec
    inet6 fe80::a00:27ff:fe73:fb2a/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:bb:99:c7 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.10/24 brd 192.168.1.255 scope global noprefixroute enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:febb:99c7/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
```

Ubuntu

	General
Nombre:	Ubuntu
Sistema operativo:	Ubuntu (64-bit)
	Sistema
Memoria base:	2048 MB
Orden de arranque:	Disquete, Óptica, Disco duro
Aceleración:	Paginación anidada, Paravirtualización KVM
	Pantalla
Memoria de vídeo:	16 MB
Controlador gráfico:	VMSVGA
Servidor de escritorio remoto:	Inhabilitado
Grabación:	Inhabilitado
	Almacenamiento
Controlador:	IDE
Dispositivo IDE secundario 0:	[Unidad óptica] ubuntu-24.04.1-live-server-amd64.iso (2,58 GB)
Controlador:	SATA
Puerto SATA 0:	Ubuntu.vdi (Normal, 21,00 GB)
	Audio
Controlador de anfitrión:	Predeterminado
Controlador:	ICH AC97
	Red
Adaptador 1:	Intel PRO/1000 MT Desktop (NAT)
Adaptador 2:	Intel PRO/1000 MT Desktop (No conectado)
	USB
Controlador USB:	OHCI, EHCI
Filtros de dispositivos:	0 (0 activo)
	Carpetas compartidas
	Ninguno
	Descripción
	Ninguno

Almacenamiento

MOUNT POINT	SIZE	TYPE	DEVICE TYPE
[/	10.000G	new ext4	new LVM logical volume ▶]
[/boot	1.860G	new ext4	new partition of local disk ▶]
[/var	5.000G	new ext4	new LVM logical volume ▶]
[SWAP	4.000G	new swap	new LVM logical volume ▶]

Configuración de red – (192.168.1.11/24)

```
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:f5:53:a1 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 metric 100 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86357sec preferred_lft 86357sec
    inet6 fd00::a00:27ff:fe5:53a1/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 86359sec preferred_lft 14359sec
    inet6 fe80::a00:27ff:fe5:53a1/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:95:4e:d6 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.11/24 brd 192.168.1.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe95:4ed6/64 scope link
        valid_lft forever preferred_lft forever
```

Copiamos la clave publica desde el bastión

CentOS

```
ssh-copy-id 192.168.1.10
```

```
Number of key(s) added: 1

Now try logging into the machine, with:  "ssh '192.168.1.10'"
and check to make sure that only the key(s) you wanted were added.

[sysadmin@bastion01 ~]$
```

Ubuntu

```
ssh-copy-id 192.168.1.11
```

```
Number of key(s) added: 1

Now try logging into the machine, with:  "ssh '192.168.1.11'"
and check to make sure that only the key(s) you wanted were added.

[sysadmin@bastion01 ~]$
```

Tarea 2

Configurar un archivo de inventario de Ansible

```
ansible-inventory -i Obligatorio2025/inventories/inventory.ini --list
```

```
[sysadmin@bastion01 ~]$ ansible-inventory -i Obligatorio2025/inventories/inventory.ini --list
{
  "_meta": {
    "hostvars": {
      "Centos": {
        "ansible_host": "192.168.1.10",
        "ansible_user": "sysadmin"
      },
      "Ubuntu": {
        "ansible_host": "192.168.1.11",
        "ansible_user": "sysadmin"
      }
    }
  },
  "all": {
    "children": [
      "ungrouped",
      "linux",
      "webserver"
    ]
  },
  "centos": {
    "hosts": [
      "Centos"
    ]
  },
  "linux": {
    "children": [
      "centos",
      "ubuntu"
    ]
  },
  "ubuntu": {
    "hosts": [
      "Ubuntu"
    ]
  },
  "webserver": {
    "hosts": [
      "Centos"
    ]
  }
}
```

```
ansible all -i Obligatorio2025/inventories/inventory.ini -m ping
```

```
[sysadmin@bastion01 ~]$ ansible all -i Obligatorio2025/inventories/inventory.ini -m ping
Ubuntu | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
Centos | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
```

Tarea 3

Ejecutar comandos ad-hoc

Listado de usuarios en el servidor Ubuntu:

```
ansible Ubuntu -i Obligatorio2025/inventories/inventory.ini -m  
command -a "cut -d: -f1 /etc/passwd"
```

```
[sysadmin@bastion01 ~]$ ansible ubuntu -i Obligatorio2025/inventories/inventory.ini -m command -a "cut -d: -f1 /etc/passwd"
Ubuntu | CHANGED | rc=0 >>
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
_apt
nobody
systemd-network
systemd-timesync
dhcpcd
messagebus
systemd-resolve
pollinate
polkitd
usbmux
sysadmin
syslog
uuid
tcpdump
sshd
_rpc
statd
```

Uso de memoria en todos los servidores:

```
ansible all -i Obligatorio2025/inventories/inventory.ini -m  
command -a "free -h"
```

```
[sysadmin@bastion01 ~]$ ansible all -i Obligatorio2025/inventories/inventory.ini -m command -a "free -h"
Ubuntu | CHANGED | rc=0 >>
      total        used        free      shared  buff/cache   available
Mem:    1.9Gi        331Mi        1.2Gi        848Ki        513Mi        1.6Gi
Swap:   4.0Gi           0B        4.0Gi
Centos | CHANGED | rc=0 >>
      total        used        free      shared  buff/cache   available
Mem:    1.7Gi        352Mi        1.2Gi        4.0Mi        306Mi        1.3Gi
Swap:   4.0Gi           0B        4.0Gi
```


Verificar servicio de chrony instalado y configurado en servidor Centos

```
ansible Centos -i Obligatorio2025/inventories/inventory.ini -m  
shell -a "rpm -q chrony && systemctl is-active chronyd &&  
systemctl is-enabled chronyd"
```

```
[sysadmin@bastion01 ~]$ ansible Centos -i Obligatorio2025/inventories/inventory.ini -m shell -a "rpm -q chrony && systemctl is-active chronyd && systemctl is-enabled chronyd"  
Centos | CHANGED | rc=0 >>  
chrony-4.6.1-2.el9.x86_64  
active  
enabled  
[sysadmin@bastion01 ~]$
```

Tarea 4:

Creación y ejecución de playbooks en Ansible

Se crea directorio *collections* y dentro del mismo el archivo **requirements.yaml**

Se edita **requirements.yaml** con la siguiente información:

```
--  
collections:  
  - name: ansible.posix  
    version: 1.5.4  
  
  - name: community.general  
    version: 9.5.10
```

Se instala “ansible.posix collection” y “community general” necesario para el uso del módulo posix y community en las versiones soportadas para Ansible v 2.14.18

```
ansible-galaxy install -r  
Obligatorio2025/collections/requirements.yaml
```

```
[sysadmin@bastion01 ~]$ ansible-galaxy install -r Obligatorio2025/collections/requirements.yaml  
Starting galaxy collection install process  
Process install dependency map  
Starting collection install process  
Downloading https://galaxy.ansible.com/api/v3/plugin/ansible/content/published/collections/artifacts/ansible-posix-1.5.4.tar.gz to /home/sysadmin/.ansible/tmp/ansible-local-2722p9zh01hn/tmp3ucu_rgo/ansible-posix-1.5.4-k87hddwb  
Installing 'ansible.posix:1.5.4' to '/home/sysadmin/.ansible/collections/ansible_collections/ansible/posix'  
ansible.posix:1.5.4 was installed successfully  
Downloading https://galaxy.ansible.com/api/v3/plugin/ansible/content/published/collections/artifacts/community-general-9.5.10.tar.gz to /home/sysadmin/.ansible/tmp/ansible-local-2722p9zh01hn/tmp3ucu_rgo/community-general-9.5.10-egu0b0ym  
Installing 'community.general:9.5.10' to '/home/sysadmin/.ansible/collections/ansible_collections/community/general'  
community.general:9.5.10 was installed successfully
```

Se crea archivo **ansible.cfg** con la ruta del inventario:

```
[defaults]  
inventory = ./inventories/inventory.ini
```

Ejecución de playbook nfs_setup.yml

ansible-playbook playbooks/nfs_setup.yml -K

```
[sysadmin@bastion01 Obligatorio2025]$ ansible-playbook playbooks/nfs_setup.yml -K
BECOME password:

PLAY [Playbook para configurar servidor NFS en CentOS] *****

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

TASK [Instalacion paquete NFS] *****
ok: [Centos]

TASK [Verificar servicio NFS habilitado e iniciado] *****
ok: [Centos]

TASK [Habilitar puerto 2049 en firewall] *****
ok: [Centos]

TASK [Carpeta compartida] *****
ok: [Centos]

TASK [Garantiza que la linea de exportacion exista en el archivo] *****
ok: [Centos]

PLAY RECAP *****
Centos                : ok=6   changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Ejecución de playbook hardening.yml

ansible-playbook playbooks/hardening.yml -K

```
[sysadmin@bastion01 Obligatorio2025]$ ansible-playbook playbooks/hardening.yml -K
BECOME password:

PLAY [Playbook para hardening en servidor Ubuntu] *****

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

TASK [Actualizacion de paquetes] *****
ok: [Ubuntu]

TASK [Instalacion de paquetes] *****
ok: [Ubuntu]

TASK [Verificar ufw instalado] *****
ok: [Ubuntu]

TASK [Bloqueo trafico entrante] *****
ok: [Ubuntu]

TASK [Permitir SSH] *****
ok: [Ubuntu]

TASK [No permitir login como root] *****
ok: [Ubuntu]

TASK [Forzar autenticacion solo por clave publica] *****
ok: [Ubuntu]

TASK [Instalar fail2ban] *****
ok: [Ubuntu]

TASK [Habilitar y activar fail2ban] *****
ok: [Ubuntu]

TASK [Configurar fail2ban para SSH] *****
ok: [Ubuntu]

PLAY RECAP *****
Ubuntu                : ok=11  changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Bibliografía

- https://docs.ansible.com/ansible/latest/collections/ansible/posix/firewalld_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/dnf_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/systemd_service_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/file_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/lineinfile_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/apt_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/reboot_module.html
- https://docs.ansible.com/ansible/latest/collections/community/general/ufw_module.html
- <https://galaxy.ansible.com/ui/repo/published/community/general/?version=9.5.10>
- https://docs.ansible.com/ansible/latest/getting_started/introduction.html
- Chat GPT :
 - Handler para actualizar archivo /etc/export
 - Tarea de playbook para forzar login ssh con clave publica
 - Tarea de playbook para bloquear intentos fallidos de login por ssh