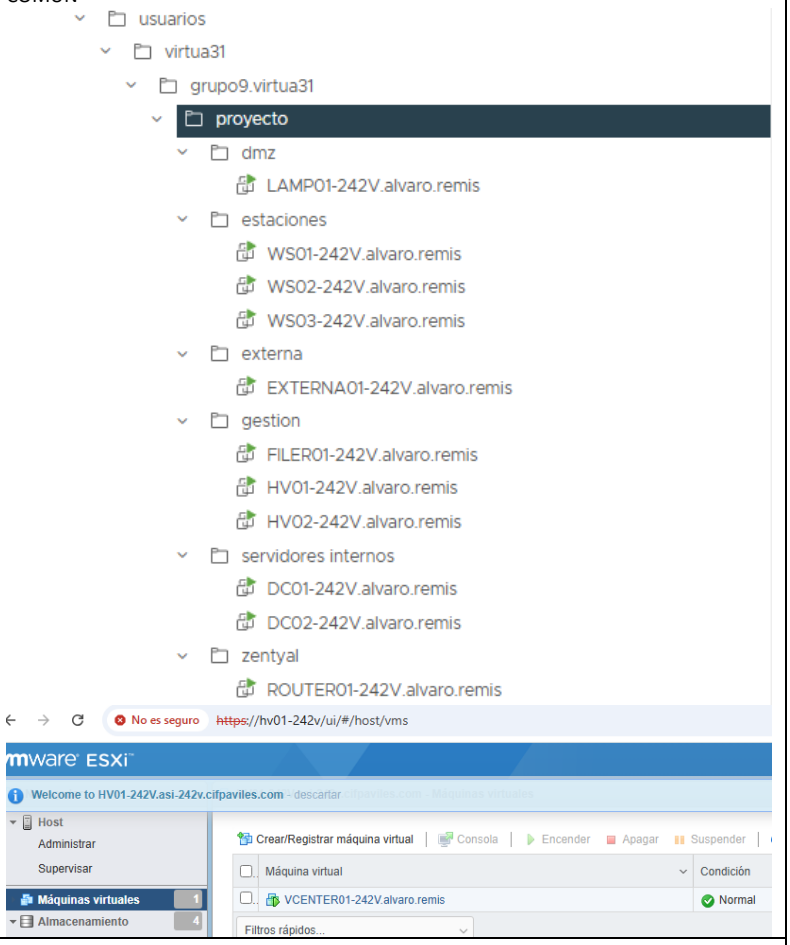
Informe proyecto intermodular 2ASIR	*Fecha:*	
ALUMNO: Álvaro Remis Busto	*Host de virtualización: 31*	*Grupo en el host: 9*
Nota:	*Puesto de trabajo en el aula: 24*	

Instrucciones: Copiar en la columna vacía el texto o la imagen o imágenes indicadas.
Para archivos grandes preferiblemente copiar texto en vez de imágenes.
En los puntos en los que se pida la imagen de una url, usar FQDN en lugar de dirección IP.

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
1.	**Nombrado** de máquinas virtuales	Inventario de máquinas en vmware vcenter, carpeta "**proyecto**", mostrando **nombre** de todas las máquinas	COMUN 
2.	**Anotaciones** de máquinas virtuales	**Summary/Annotations** de todas las máquinas virtuales creadas: para cada máquina, mostrar: • **Imagen** de los **atributos** • **Texto** de las **notas**	COMUN **LAMP01-242V** Atributos personalizados Atributo / Valor DHCP / TRUE DOMINIO / asi-242V.cifpaviles.com HOSTNAME / LAMP01-242V.asi-242V.cifpaviles.com IP / 172.16.24.77/24 MAC / 00:50:56:be:d1:eb Servidor web en zona DMZ con IP 172.16.24.77/24. Ubuntu Server 24.04 LTS. Apache2, PHP, MySQL, phpMyAdmin, vsftpd y SSH. Aplicaciones dockerizadas (Nginx Proxy Manager, Wordpress y Moodle) y base de datos Oracle para inventario. administrador : Moreniko$hikitico **WS01-242V**

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

Atributos personalizados

Atributo	Valor
DHCP	TRUE
DOMINIO	asi-242V.cifpaviles.com
HOSTNAME	WS01-242V.asi-242V.cifpaviles.com
IP	172.28.24.10/24
MAC	00:50:56:be:fd:d1

Editar...

Estación de trabajo en red Estaciones con IP 172.28.24.10/24. Windows 10 Enterprise LTSC 2019 (Versión 1809).
RDP (Escritorio remoto) y VMware Tools.
admin : Moreniko$hikitico

WS02-242V

Atributos personalizados

Atributo	Valor
DHCP	TRUE
DOMINIO	asi-242V.cifpaviles.com
HOSTNAME	WS02-242V.asi-242V.cifpaviles.com
IP	172.28.24.11/24
MAC	00:50:56:be:e8:1c

5 Items

Estación de trabajo en red Estaciones con IP 172.28.24.11/24. Windows 11 Pro N (Versión 22H2 / Mayo 2022).
RDP (Escritorio remoto) y VMware Tools
admin : Moreniko$hikitico

WS03-242V

Atributos personalizados

Atributo	Valor
DHCP	TRUE
DOMINIO	asi-242V.cifpaviles.com
HOSTNAME	WS03-242V.asi-242V.cifpaviles.com
IP	172.28.24.24/24
MAC	00:50:56:be:ad:cf

5 Items

Editar...

Estación de trabajo en red Estaciones con IP 172.28.24.24/24. Ubuntu Desktop 24.
SSH (openssh-server), xrdp, editor joe, antivirus clamav y cifrado del directorio home en la partición sdb1.
administrador : Moreniko$hikitico

EXTERNA01-242V

Atributos personalizados

Atributo	Valor
DHCP	FALSE
DOMINIO	WORKGROUP
HOSTNAME	EXTERNA01-242V
IP	10.31.9.253/24
MAC	00:50:56:be:ae:4c

5 Items

EXTERNA01-242V: Estación de trabajo en red Estaciones con IP 172.28.24.10/24 (basada en plantilla WS01). Windows 10 Enterprise N (Versión 1809).
Escritorio remoto (RDP), VMware Tools, servicio VPN, SQL Developer de Oracle y acceso SSH configurado mediante claves pública/privada a las demás máquinas.
admin : Moreniko$hikitico
Vault Maestra (KeePass) : Moreniko$hikitico

FILER01-242V

Atributos personalizados

Atributo	Valor
DHCP	TRUE
DOMINIO	asi-242V.cifpaviles.com
HOSTNAME	FILER01-242V.asi-242V.cifpaviles.com
IP	172.24.24.11/24
MAC	00:50:56:be:4f:e8

5 Items

Servidor de archivos producción en red Gestión con IP 172.24.24.11/24. TrueNAS.

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			SMB, NFS y gestión de snapshots. Contiene recursos compartidos en red: instaladores, vaults de KeePass, perfiles móviles, unidades Z y datastores NFS para ESXi. root : Moreniko$hikitico **HV01-242V** Atributos personalizados Atributo / Valor DHCP / TRUE DOMINIO / asi-242v.cifpaviles.com HOSTNAME / HV01-242V.asi-242v.cifpaviles.com IP / 172.24.24.201/24 MAC / 00:50:56:be:37:89 5 items Hipervisor en red Gestión con IP 172.24.24.201/24. VMware ESXi 6.7. SSH y vSphere Agent, actuando como host para máquinas virtuales y **VCENTER01-242V**. root : Moreniko$hikitico2026 vcenter : Tr0p!cal#26 Administrator@vsphere.local : Tr0p!cal#26 **HV02-242V** Atributos personalizados Atributo / Valor DHCP / TRUE DOMINIO / asi-242v.cifpaviles.com HOSTNAME / HV02-242V.asi-242v.cifpaviles.com IP / 172.24.24.202/24 MAC / 00:50:56:be:2a:6f Hipervisor en red Gestión con IP 172.24.24.202/24. VMware ESXi 6.7. SSH y vSphere Agent, actuando como segundo host para alta disponibilidad y pruebas. root : Moreniko$hikitico2026 **DC01-242V** Atributos personalizados Atributo / Valor DHCP / FALSE DOMINIO / asi-242V.cifpaviles.com HOSTNAME / DC01-242V.asi-242V.cifpaviles.com IP / 172.20.24.19/24 MAC / 00:50:56:be:6c:3d 5 items Servidor de dominio en red Servidores Internos con IP 172.20.24.10/24. Windows Server 2019 Standard (Experiencia de escritorio ENG). AD DS, DNS, Escritorio remoto (RDP), VMware Tools y apuntado al servidor de actualizaciones WSUS y NTP (time.informatica.cifpaviles.pa). Cortafuegos activado permitiendo ICMP. Administrator : Moreniko$hikitico DSRM pass : E3@7xJ7a)89] **DC02-242V** Atributos personalizados Atributo / Valor DHCP / TRUE DOMINIO / asi-242V.cifpaviles.com HOSTNAME / DC02-242V.asi-242V.cifpaviles.com IP / 172.20.24.20/24 MAC / 00:50:56:be:c5:59 5 items Servidor de dominio secundario en red Servidores Internos con IP 172.20.24.11/24. Windows Server 2022 Standard (Experiencia de escritorio ENG). AD DS, DNS, Escritorio remoto (RDP), VMware Tools y apuntado al servidor de actualizaciones WSUS y NTP (time.informatica.cifpaviles.pa). Cortafuegos activado permitiendo ICMP. Administrator : Moreniko$hikitico DSRM pass : E3@7xJ7a)89] **ROUTER01-242V**

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			Atributos personalizados Router con IPs 10.31.9.254/24, 172.16.24.1/24, 172.20.24.1/24, 172.28.24.1/24, 172.24.24.1/24, 172.31.24.1/24. Zentyal 6.2. NAT, Firewall, OpenVPN, DHCP, DNS y CA. administrador : Moreniko$hikitico
3.	**Router Zentyal ROUTER01-ID**, configuración básica	a) Comando **hostnamectl** b) Comando **lsb_release –a** c) Archivo **hostname** d) Archivo **hosts** e) Archivo **interfaces/netplan** f) Archivo **resolv.conf** g) Comando **ip address**	ASO/SREIN/SADIS

Atributo	Valor
DHCP	FALSE
DOMINIO	asi-242V.cifpaviles.com
HOSTNAME	ROUTER01-242V.asi-242v.cifpaviles.com
IP	10.31.9.254/24
MAC	00:50:56:be:74:90

5 items

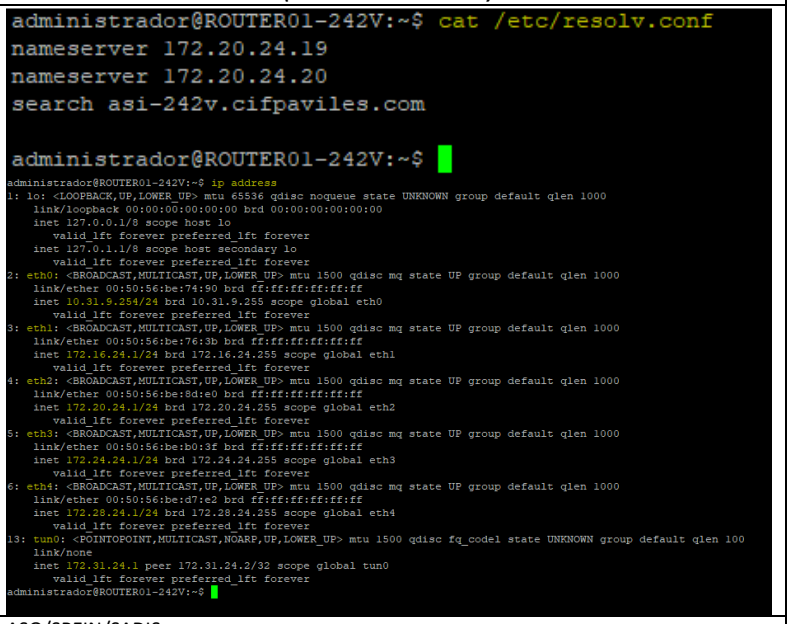
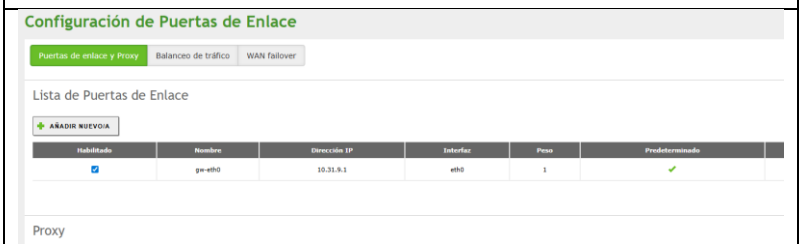
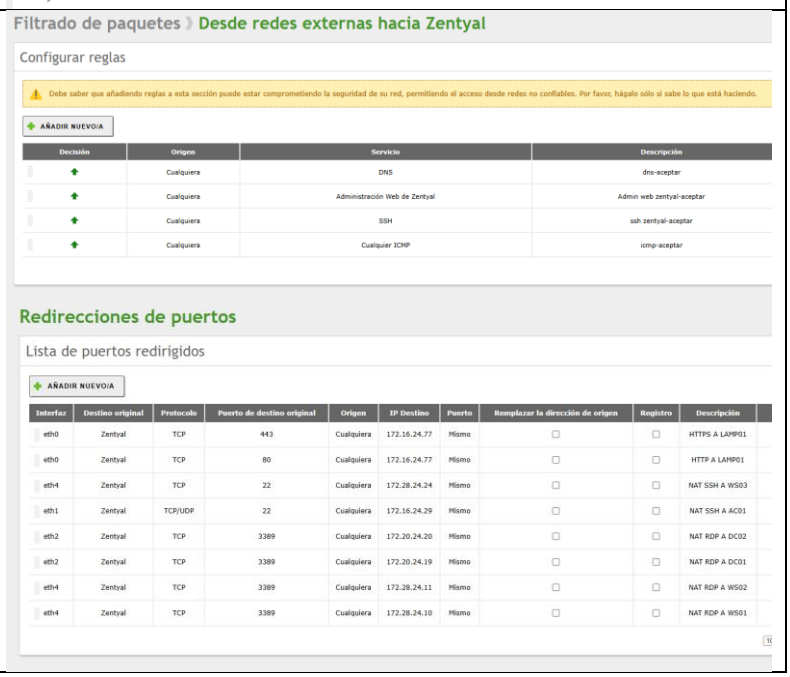
```
administrador@ROUTER01-242V:~$ hostnamectl
   Static hostname: ROUTER01-242V
         Icon name: computer-vm
           Chassis: vm
        Machine ID: 2886602dd52046f792457212c47ca8cb
           Boot ID: f49b4f623e8346d0807e0586bbc30612
    Virtualization: vmware
  Operating System: Ubuntu 18.04.6 LTS
            Kernel: Linux 4.15.0-213-generic
      Architecture: x86-64
administrador@ROUTER01-242V:~$
```

```
administrador@ROUTER01-242V:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 18.04.6 LTS
Release:        18.04
Codename:       bionic
administrador@ROUTER01-242V:~$
```

```
administrador@ROUTER01-242V:~$ cat /etc/hostname
ROUTER01-242V
administrador@ROUTER01-242V:~$
```

```
administrador@ROUTER01-242V:~$ cat /etc/hosts
127.0.0.1       localhost.localdomain localhost
127.0.1.1       ROUTER01-242V.asi-242V.cifpaviles.com router01-242v

# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
administrador@ROUTER01-242V:~$
```

```
administrador@ROUTER01-242V:/etc/netplan$ cat 01-netcfg.yaml
# This file describes the network interfaces available on your system
# For more information, see netplan(5).
network:
  version: 2
  renderer: networkd
administrador@ROUTER01-242V:/etc/netplan$
```

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			 administrador@ROUTER01-242V:~$ cat /etc/resolv.conf nameserver 172.20.24.19 nameserver 172.20.24.20 search asi-242v.cifpaviles.com administrador@ROUTER01-242V:~$ administrador@ROUTER01-242V:~$ ip address 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000 link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00 inet 127.0.0.1/8 scope host lo valid_lft forever preferred_lft forever inet 127.0.1.1/8 scope host secondary lo valid_lft forever preferred_lft forever 2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:be:74:90 brd ff:ff:ff:ff:ff:ff inet 10.31.9.254/24 brd 10.31.9.255 scope global eth0 valid_lft forever preferred_lft forever 3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:be:76:3b brd ff:ff:ff:ff:ff:ff inet 172.16.24.1/24 brd 172.16.24.255 scope global eth1 valid_lft forever preferred_lft forever 4: eth2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:be:8d:e0 brd ff:ff:ff:ff:ff:ff inet 172.20.24.1/24 brd 172.20.24.255 scope global eth2 valid_lft forever preferred_lft forever 5: eth3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:be:b0:3f brd ff:ff:ff:ff:ff:ff inet 172.24.24.1/24 brd 172.24.24.255 scope global eth3 valid_lft forever preferred_lft forever 6: eth4: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:be:d7:e2 brd ff:ff:ff:ff:ff:ff inet 172.28.24.1/24 brd 172.28.24.255 scope global eth4 valid_lft forever preferred_lft forever 13: tun0: <POINTOPOINT,MULTICAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UNKNOWN group default qlen 100 link/none inet 172.31.24.1 peer 172.31.24.2/32 scope global tun0 valid_lft forever preferred_lft forever administrador@ROUTER01-242V:~$
4.	**Router Zentyal ROUTER01-ID,** enrutamiento, cortafuegos y NAT	a) Zentyal/ Red/ Puertas de enlace b) Zentyal/ Cortafuegos/ Filtrado de paquetes/ Desde redes externas hacia Zentyal c) Zentyal/ Cortafuegos/ Redirecciones de puertos	ASO/SREIN/SADIS  

5.	**Router ZentyaL ROUTER01-ID**, servicio DHCP	a) Zentyal/ Red/ Objetos/ Listas de objetos/Miembros (IP-MAC) b) Archivo **/etc/dhcp/dhcpd.conf** (**texto** del archivo completo).	SREIN

Objetos 〉 objetos de red de estaciones

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
WS01-242V	172.28.24.10/32	00:50:56:be:fd:d1
WS02-242V	172.28.24.11/32	00:50:56:be:e8:1c
WS03-242V	172.28.24.24/32	00:50:56:be:ad:cf

Objetos 〉 objetos de red de gestion

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
FILER01-242V	172.24.24.11/32	00:50:56:be:4f:e8
HV01-242V	172.24.24.201/32	00:50:56:be:37:89
HV02-242V	172.24.24.202/32	00:50:56:be:2a:6f
VCENTER01-242V	172.24.24.211/32	00:0c:29:51:d9:25

Objetos 〉 objetos de red de servidores

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
DC01-242V	172.20.24.19/32	00:50:56:be:6c:3d
DC02-242V	172.20.24.20/32	00:50:56:be:c5:59

Objetos 〉 objetos de red dmz

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
LAMP01-242V	172.16.24.77/32	00:50:56:be:d1:eb

Objetos 〉 openVPN-eth0-10.31.9.0-24

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
10.31.9.0-24	10.31.9.0/24	--

Objetos 〉 openVPN-eth1-172.16.24.0-24

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
172.16.24.0-24	172.16.24.0/24	--

Objetos 〉 openVPN-eth2-172.20.24.0-24

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
172.20.24.0-24	172.20.24.0/24	--

Objetos 〉 openVPN-eth3-172.24.24.0-24

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
172.24.24.0-24	172.24.24.0/24	--

Objetos 〉 openVPN-eth4-172.28.24.0-24

Miembros

AÑADIR NUEVO/A

Nombre	Dirección IP	Dirección MAC
172.28.24.0-24	172.28.24.0/24	--

AZURE BACKEND

Objetos 〉 red-192-168-2

Miembros

AÑADIR NUEVO/A

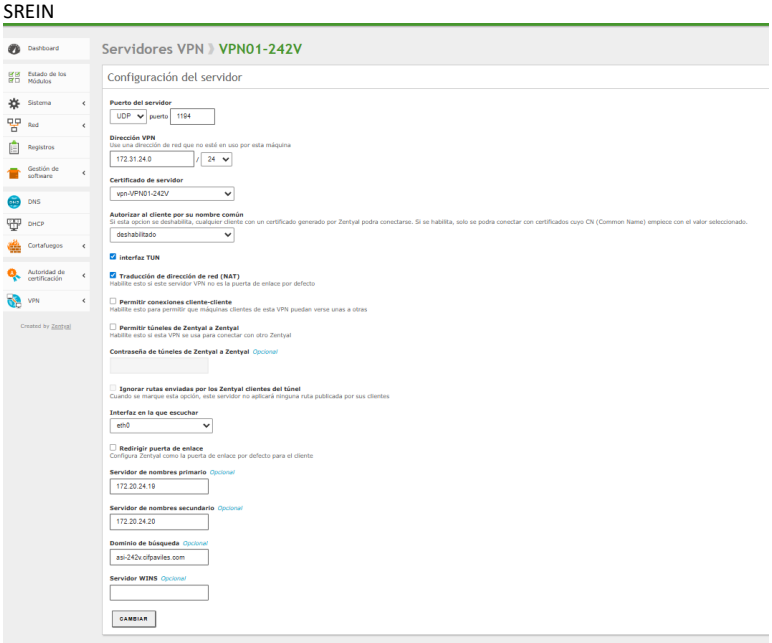
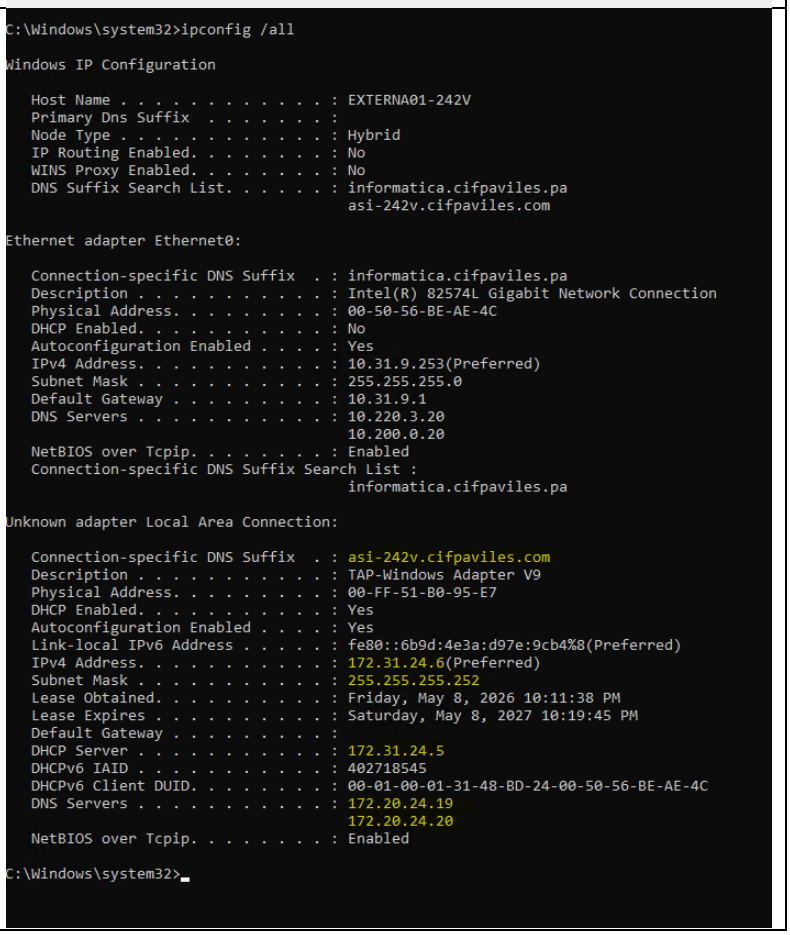
Nombre	Dirección IP	Dirección MAC
azure	192.168.2.0/24	--

```
administrador@ROUTER01-242V:~$ cat /etc/dhcp/dhcpd.conf
# DHCP server is authoritative for all networks
authoritative;

# extra options
# RFC3442 routes
option rfc3442-classless-static-routes code 121 = array of integer 8;
# MS routes
option ms-classless-static-routes code 249 = array of integer 8;
# Cisco IP phones
option voip-tftp-servers code 150 = array of ip-address;
option shoretel-director-server code 155 = ip-address;

pid-file-name "/var/run/dhcp-server/dhcpd.pid";

ddns-update-style none;

option domain-name-servers 10.220.3.20, 10.200.0.20;

allow booting;
allow bootp;

default-lease-time 1800;
max-lease-time 7200;


shared-network eth3 {

    subnet 172.24.24.0 netmask 255.255.255.0 {

        option routers 172.24.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        pool {



            next-server 172.24.24.1;

            range 172.24.24.100 172.24.24.199;
        }
    }


    group {
        option routers 172.24.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;
```

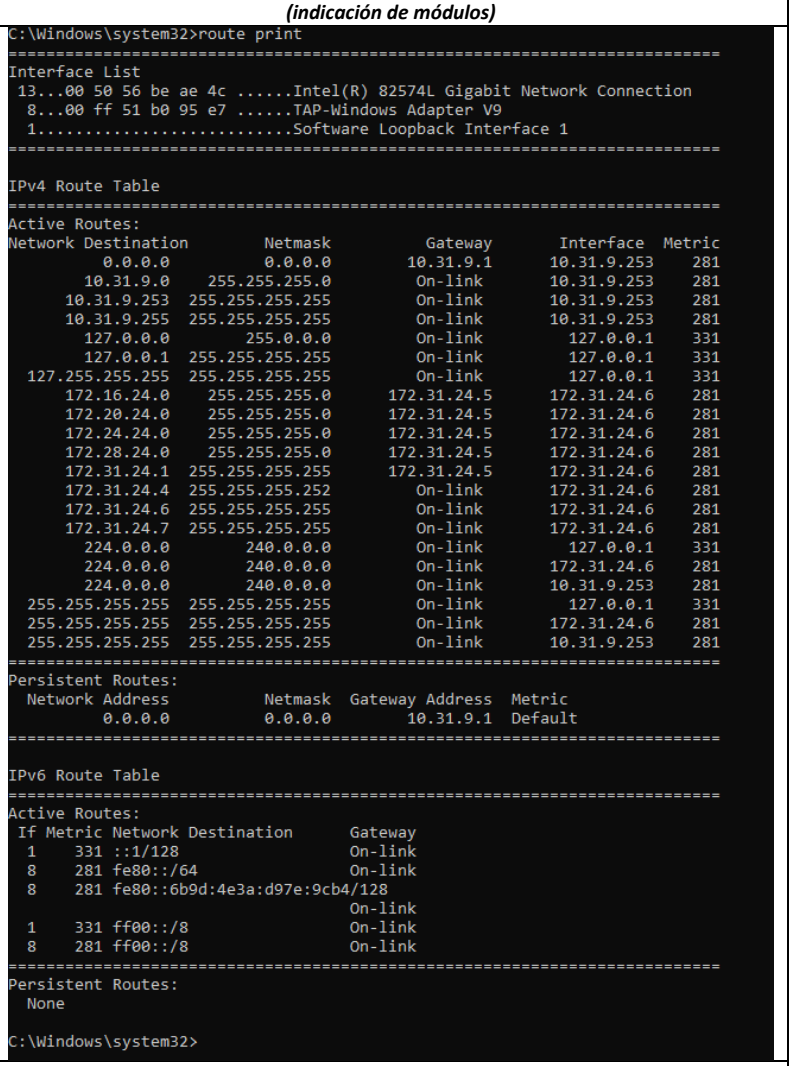
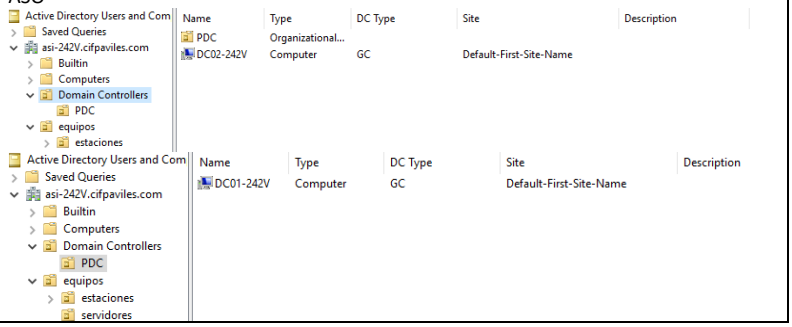
```
        group {
            next-server 172.24.24.1;

            host FILER01-242V {
                hardware ethernet 00:50:56:BE:4F:E8;
                fixed-address 172.24.24.11;


            }
            host HV01-242V {
                hardware ethernet 00:50:56:BE:37:89;
                fixed-address 172.24.24.201;


            }
            host HV02-242V {
                hardware ethernet 00:50:56:BE:2A:6F;
                fixed-address 172.24.24.202;


            }
            host VCENTER01-242V {
                hardware ethernet 00:0C:29:51:D9:25;
                fixed-address 172.24.24.211;


            }
        }
    }

}

shared-network eth1 {

    subnet 172.16.24.0 netmask 255.255.255.0 {

        option routers 172.16.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        pool {



            next-server 172.16.24.1;

            range 172.16.24.100 172.16.24.199;
        }
    }


    group {
        option routers 172.16.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        group {
            next-server 172.16.24.1;

            host LAMP01-242V {
                hardware ethernet 00:50:56:BE:D1:EB;
                fixed-address 172.16.24.77;


            }
        }
    }

}

shared-network eth2 {

    subnet 172.20.24.0 netmask 255.255.255.0 {

        option routers 172.20.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        pool {



            next-server 172.20.24.1;

            range 172.20.24.100 172.20.24.199;
        }
    }
```

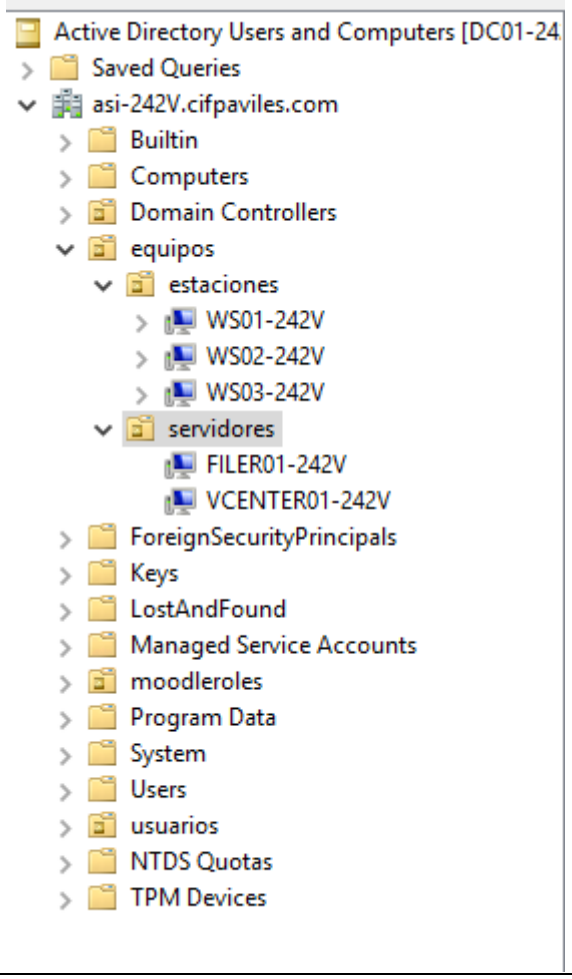
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

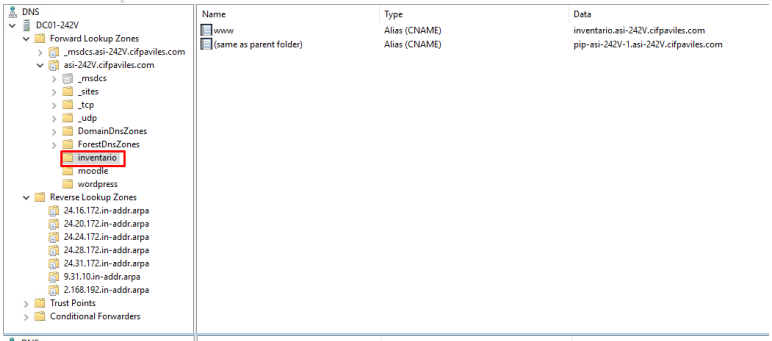
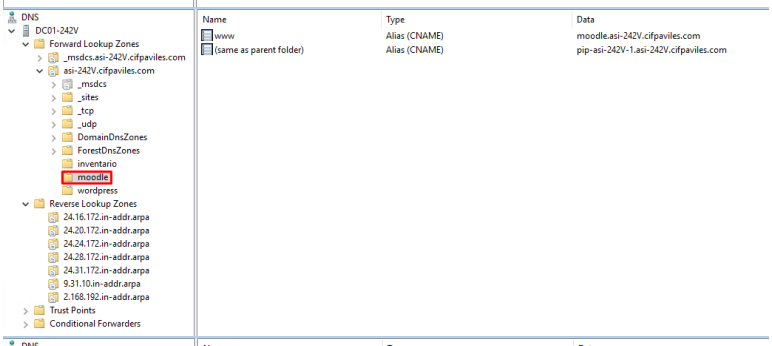
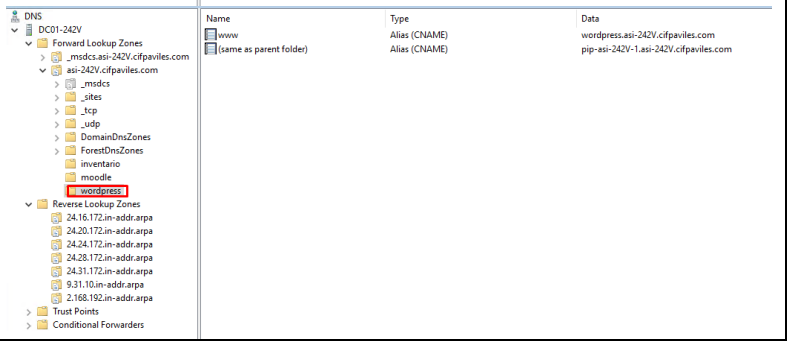
```
    group {
        option routers 172.20.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        group {
            next-server 172.20.24.1;

            host DC01-242V {
                hardware ethernet 00:50:56:BE:6C:3D;
                fixed-address 172.20.24.19;


            }
            host DC02-242V {
                hardware ethernet 00:50:56:BE:C5:59;
                fixed-address 172.20.24.20;


            }
        }
    }

}

shared-network eth4 {

    subnet 172.28.24.0 netmask 255.255.255.0 {

        option routers 172.28.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        pool {



            next-server 172.28.24.1;

            range 172.28.24.100 172.28.24.199;
        }
    }

    group {
        option routers 172.28.24.1;
        option domain-name "asi-242v.cifpaviles.com";
        option domain-name-servers 172.20.24.19, 172.20.24.20;
        default-lease-time 1800;
        max-lease-time 7200;


        group {
            next-server 172.28.24.1;

            host WS01-242V {
                hardware ethernet 00:50:56:BE:FD:D1;
                fixed-address 172.28.24.10;


            }
            host WS02-242V {
                hardware ethernet 00:50:56:BE:E8:1C;
                fixed-address 172.28.24.11;


            }
            host WS03-242V {
                hardware ethernet 00:50:56:BE:AD:CF;
                fixed-address 172.28.24.24;


            }
        }
    }

}


# Add option 150 (0x96) and 155 (0x9b)
if exists dhcp-parameter-request-list {
option dhcp-parameter-request-list=concat(option dhcp-parameter-request-list,96,9b);
}
```

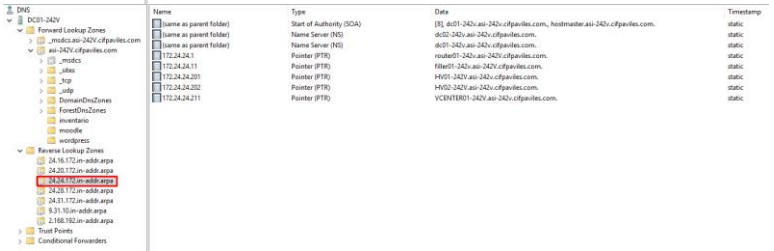
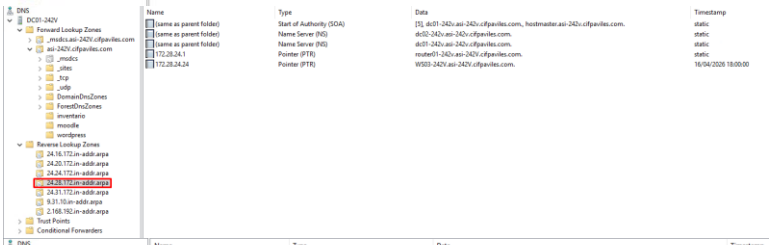
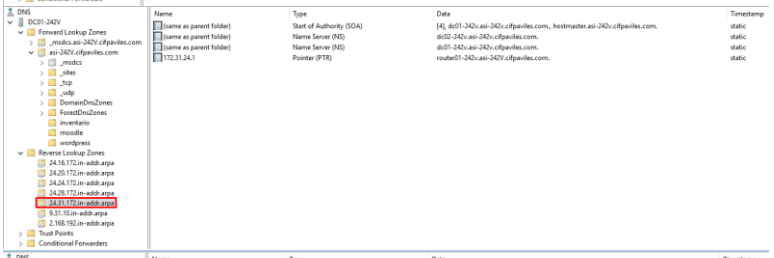
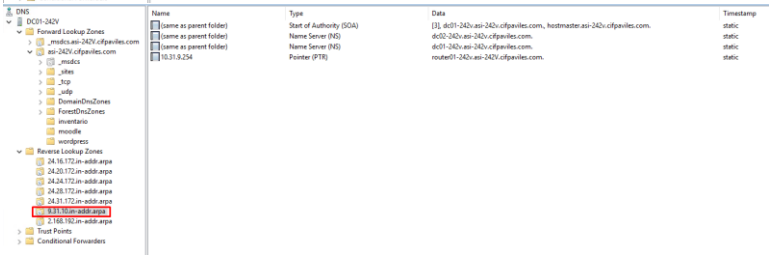
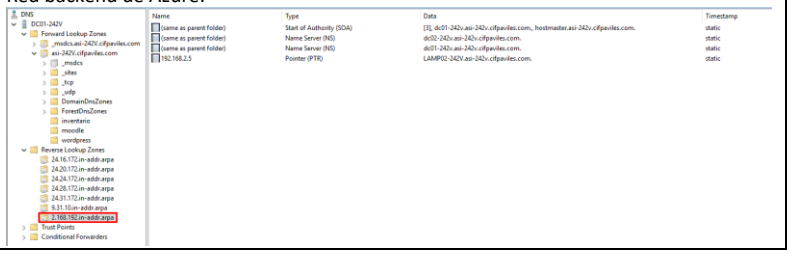
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
6.	**Router ZentyaL ROUTER01-ID**, servicio VPN de acceso remoto Cliente VPN	a) Zentyal/ VPN/ Servidores/ Configuración/ Configuración del servidor (página completa mostrando desde Puerto del servidor hasta Dominio de búsqueda). b) Cliente vpn Windows (ej: EXTERNA01-ID) con conexión vpn establecida: comando **ipconfig /all** mostrando configuración IP en la red vpn. c) Cliente vpn Windows (ej: EXTERNA01-ID) con conexión vpn establecida: comando **route print** mostrando rutas a redes remotas.	SREIN  

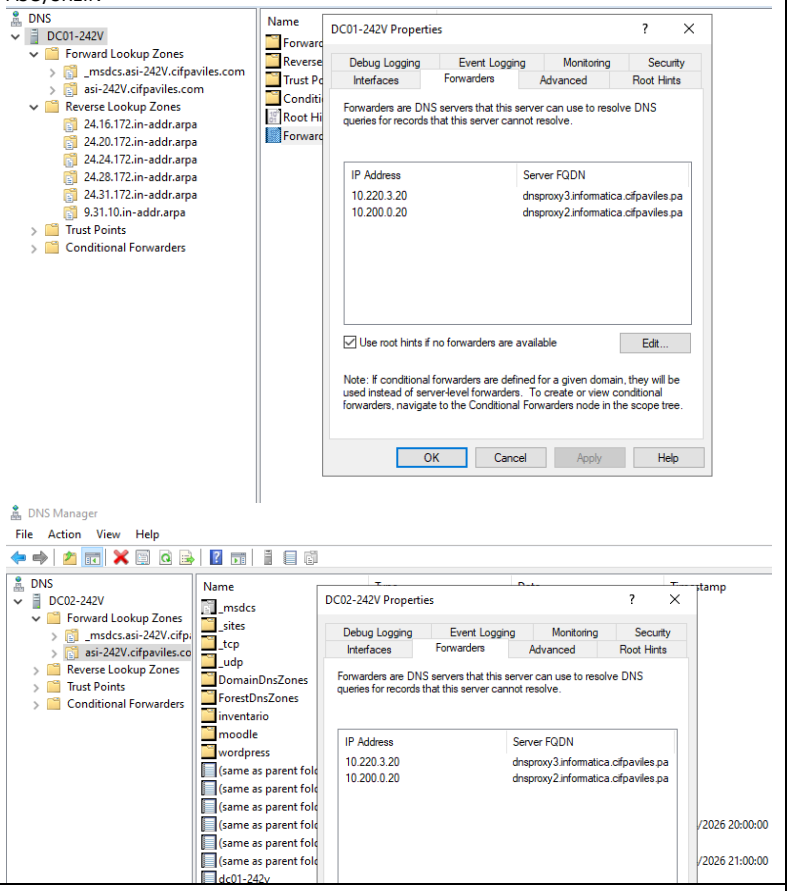
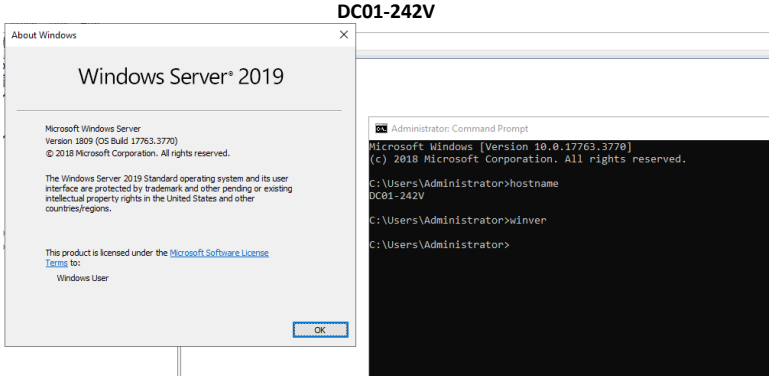
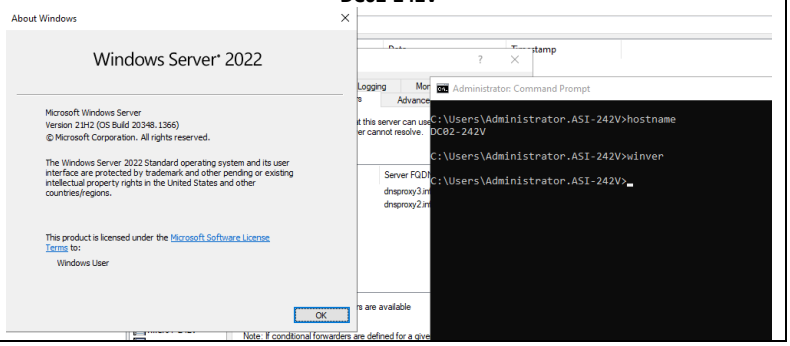

```
C:\Windows\system32>ipconfig /all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : EXTERNA01-242V
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : informatica.cifpaviles.pa
                                       asi-242v.cifpaviles.com

Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . : informatica.cifpaviles.pa
   Description . . . . . . . . . . . : Intel(R) 82574L Gigabit Network Connection
   Physical Address. . . . . . . . . : 00-50-56-BE-AE-4C
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 10.31.9.253(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 10.31.9.1
   DNS Servers . . . . . . . . . . . : 10.220.3.20
                                       10.200.0.20
   NetBIOS over Tcpip. . . . . . . . : Enabled
   Connection-specific DNS Suffix Search List :
                                       informatica.cifpaviles.pa

Unknown adapter Local Area Connection:

   Connection-specific DNS Suffix  . : asi-242v.cifpaviles.com
   Description . . . . . . . . . . . : TAP-Windows Adapter V9
   Physical Address. . . . . . . . . : 00-FF-51-B0-95-E7
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::6b9d:4e3a:d97e:9cb4%8(Preferred)
   IPv4 Address. . . . . . . . . . . : 172.31.24.6(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.252
   Lease Obtained. . . . . . . . . . : Friday, May 8, 2026 10:11:38 PM
   Lease Expires . . . . . . . . . . : Saturday, May 8, 2027 10:19:45 PM
   Default Gateway . . . . . . . . . :
   DHCP Server . . . . . . . . . . . : 172.31.24.5
   DHCPv6 IAID . . . . . . . . . . . : 402718545
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-31-48-BD-24-00-50-56-BE-AE-4C
   DNS Servers . . . . . . . . . . . : 172.20.24.19
                                       172.20.24.20
   NetBIOS over Tcpip. . . . . . . . : Enabled

C:\Windows\system32>_
```

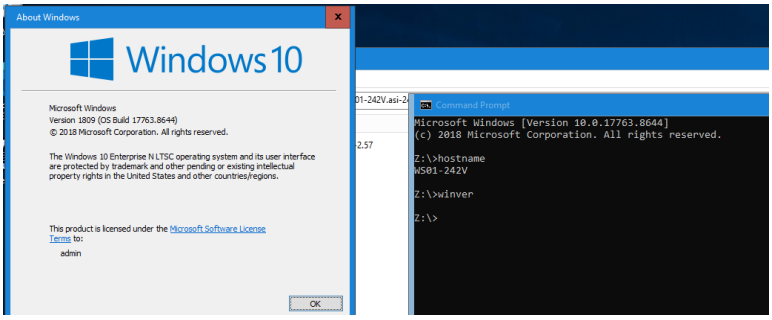
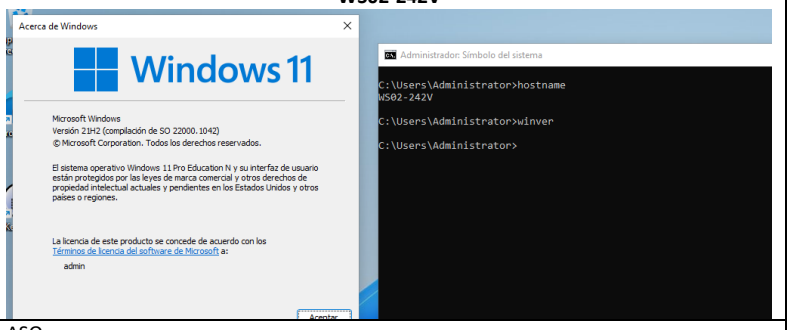
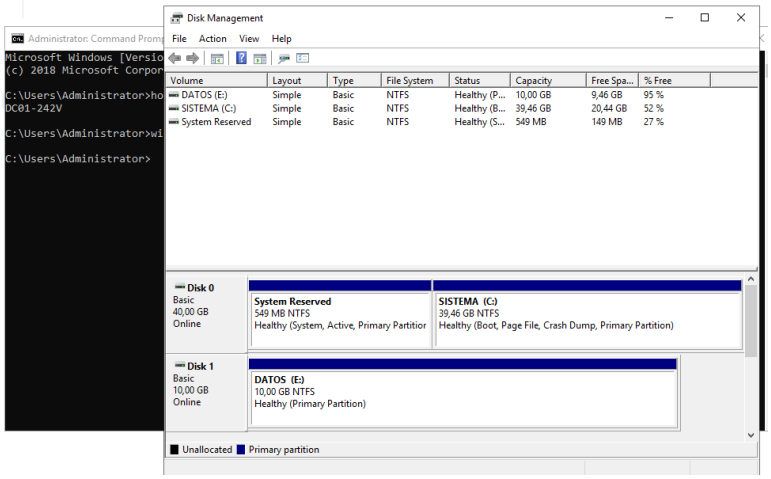
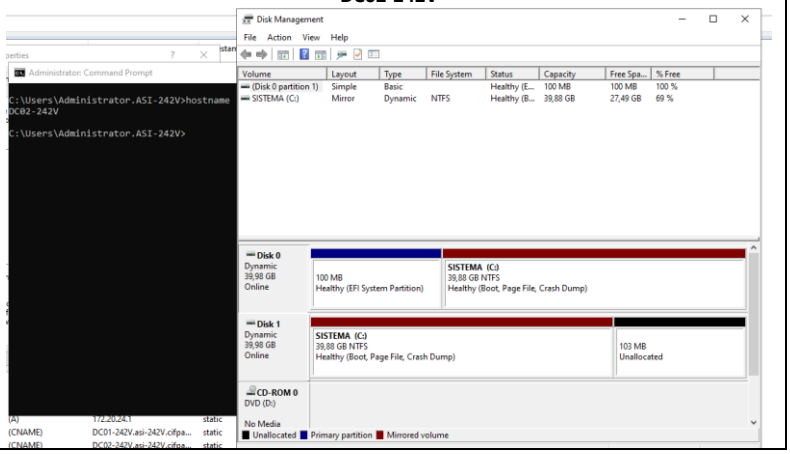
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			 C:\Windows\system32>route print ========== Interface List 13...00 50 56 be ae 4c .....Intel(R) 82574L Gigabit Network Connection 8...00 ff 51 b0 95 e7 .....TAP-Windows Adapter V9 1.....Software Loopback Interface 1 ========== IPv4 Route Table ========== Active Routes: Network Destination Netmask Gateway Interface Metric 0.0.0.0 0.0.0.0 10.31.9.1 10.31.9.253 281 10.31.9.0 255.255.255.0 On-link 10.31.9.253 281 10.31.9.253 255.255.255.255 On-link 10.31.9.253 281 10.31.9.255 255.255.255.255 On-link 10.31.9.253 281 127.0.0.0 255.0.0.0 On-link 127.0.0.1 331 127.0.0.1 255.255.255.255 On-link 127.0.0.1 331 127.255.255.255 255.255.255.255 On-link 127.0.0.1 331 172.16.24.0 255.255.255.0 172.31.24.5 172.31.24.6 281 172.20.24.0 255.255.255.0 172.31.24.5 172.31.24.6 281 172.24.24.0 255.255.255.0 172.31.24.5 172.31.24.6 281 172.28.24.0 255.255.255.0 172.31.24.5 172.31.24.6 281 172.31.24.1 255.255.255.255 172.31.24.5 172.31.24.6 281 172.31.24.4 255.255.255.252 On-link 172.31.24.6 281 172.31.24.6 255.255.255.255 On-link 172.31.24.6 281 172.31.24.7 255.255.255.255 On-link 172.31.24.6 281 224.0.0.0 240.0.0.0 On-link 127.0.0.1 331 224.0.0.0 240.0.0.0 On-link 172.31.24.6 281 224.0.0.0 240.0.0.0 On-link 10.31.9.253 281 255.255.255.255 255.255.255.255 On-link 127.0.0.1 331 255.255.255.255 255.255.255.255 On-link 172.31.24.6 281 255.255.255.255 255.255.255.255 On-link 10.31.9.253 281 ========== Persistent Routes: Network Address Netmask Gateway Address Metric 0.0.0.0 0.0.0.0 10.31.9.1 Default ========== IPv6 Route Table ========== Active Routes: If Metric Network Destination Gateway 1 331 ::1/128 On-link 8 281 fe80::/64 On-link 8 281 fe80::6b9d:4e3a:d97e:9cb4/128 On-link 1 331 ff00::/8 On-link 8 281 ff00::/8 On-link ========== Persistent Routes: None C:\Windows\system32>
7.	**Controladores** de dominio	Active Directory Users and Computers /Unidad organizativa **Domain Controllers**	ASO  Active Directory Users and Com Saved Queries asi-242V.cifpaviles.com Builtin Computers Domain Controllers PDC equipos estaciones Name Type DC Type Site Description PDC Organizational... DC02-242V Computer GC Default-First-Site-Name Active Directory Users and Com Saved Queries asi-242V.cifpaviles.com Builtin Computers Domain Controllers PDC equipos estaciones servidores Name Type DC Type Site Description DC01-242V Computer GC Default-First-Site-Name

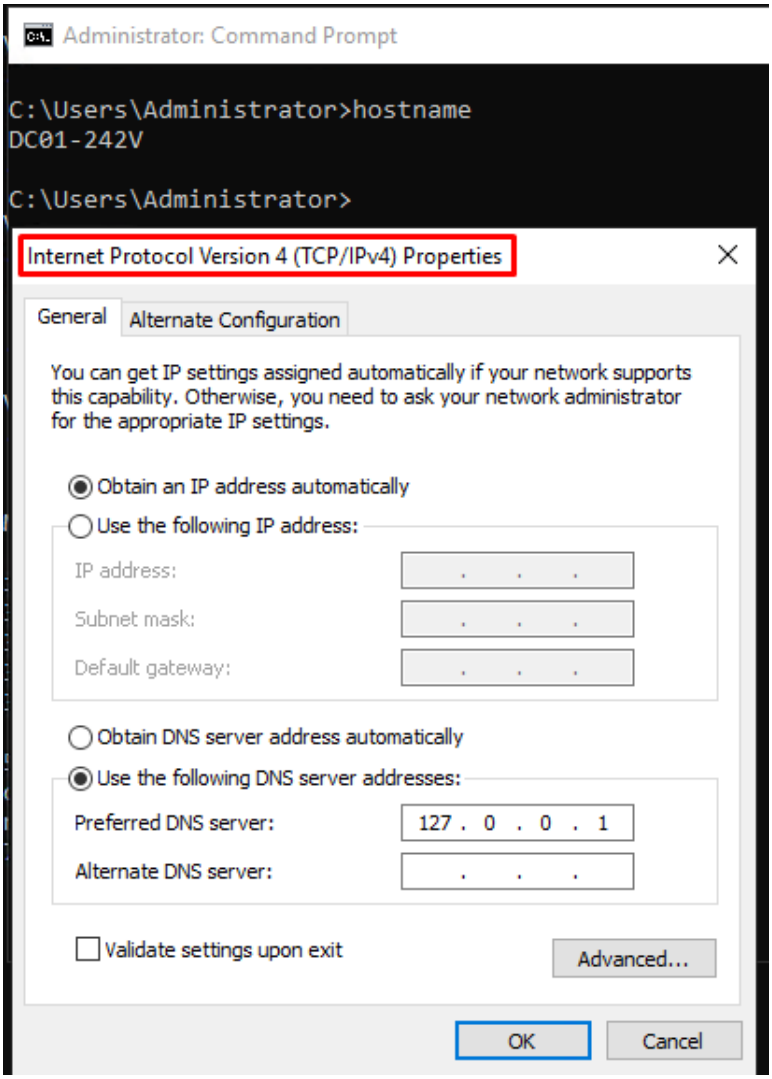
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
8.	UO **equipos**, unidades organizativas y equipos contenidos en ella	Active Directory Users and Computers/ Unidad organizativa **equipos.** En la consola, activar la opción View/Users, Contacts, Groups and Computers as containers. Desplegar por completo el contenido almacenado en equipos para que la imagen muestre todos los objetos. La imagen ha de mostrar también el nombre del dominio en la raíz del árbol.	ASO 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
9.	Servicio **DNS interno**: **Zona** DNS de búsqueda **directa** para el dominio	En un servidor DNS interno: Consola DNS/Seleccionar la **zona de búsqueda directa** con el mismo nombre que el dominio (de forma que se vean los registros que almacena la zona, con los nombres y las direcciones IP).	ASO/SREIN Capturas tomadas tras la migración de aplicaciones web a Azure   

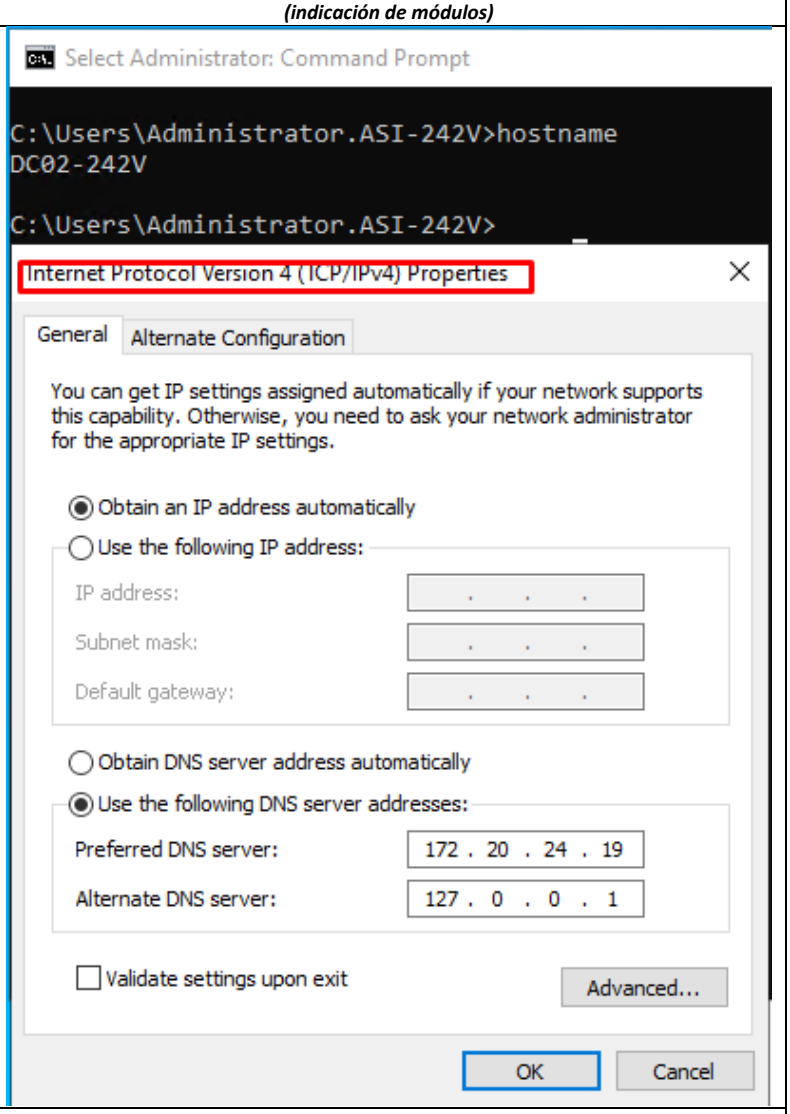
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
10.	Servicio **DNS interno**: **Zonas** DNS de búsqueda **inversa** para el dominio	En un servidor DNS interno: Consola DNS/Seleccionar **zonas de búsqueda inversa** (de forma que se vean los registros que almacenan las zonas).	ASO/SREIN     Red backend de Azure: 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
11.	Servicio DNS interno: **Reenviadores**	Para **cada servidor** DNS interno: Consola DNS/Propiedades del servidor/**Reenviadores**	ASO/SREIN 
12.	Controladores de dominio: **versión** del sistema operativo	Para cada DC: Comando **winver**	ASO **DC01-242V**  **DC02-242V** 

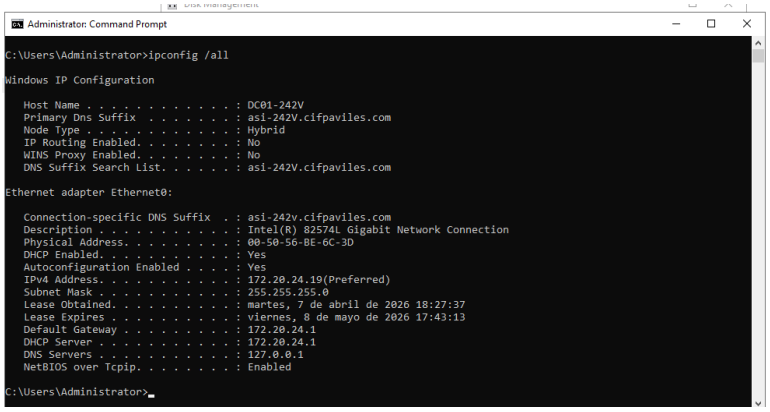
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
13.	Estaciones de trabajo Windows: **versión** del sistema operativo	Para cada estación Windows: Comando **winver**	ASO **WS01-242V**  **WS02-242V** 
14.	**Particionamiento** de controladores de dominio	Para cada DC: **Consola de Administración de discos.** La imagen tiene que mostrar los **discos**, **volúmenes** y las **etiquetas de volumen**.	ASO **DC01-242V**  **DC02-242V** 

15.	**Configuración IP** de controladores de dominio	Para cada DC: a) TCP-IP/Propiedades b) Comando **ipconfig /all**	ASO **DC01-242V**  **DC02-242V**

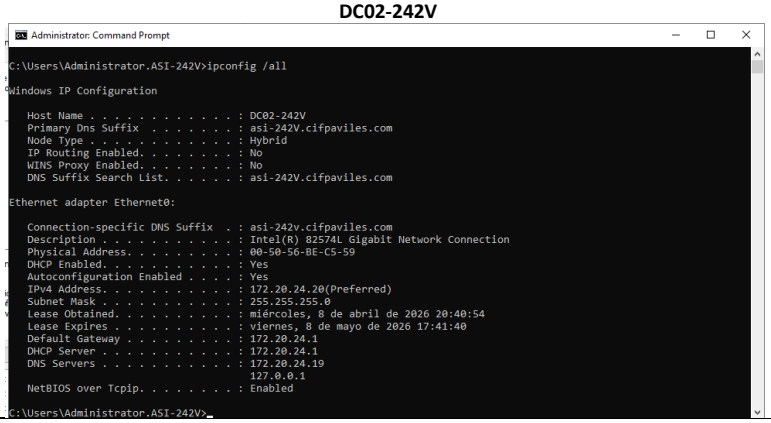
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

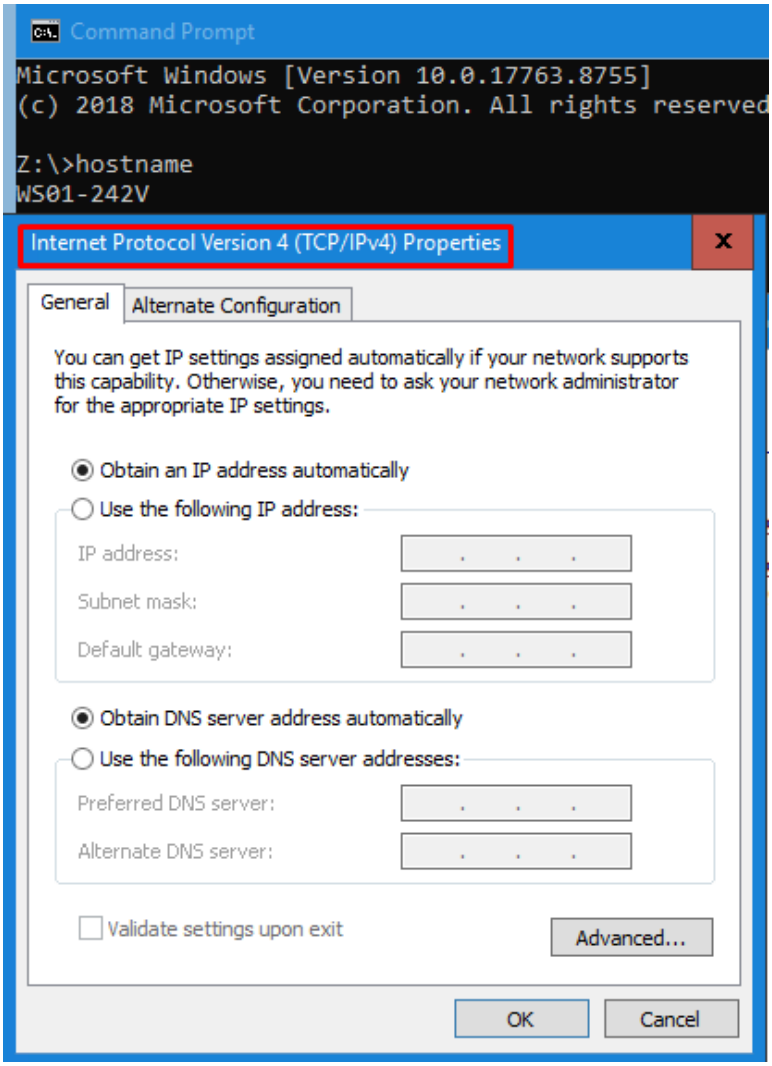


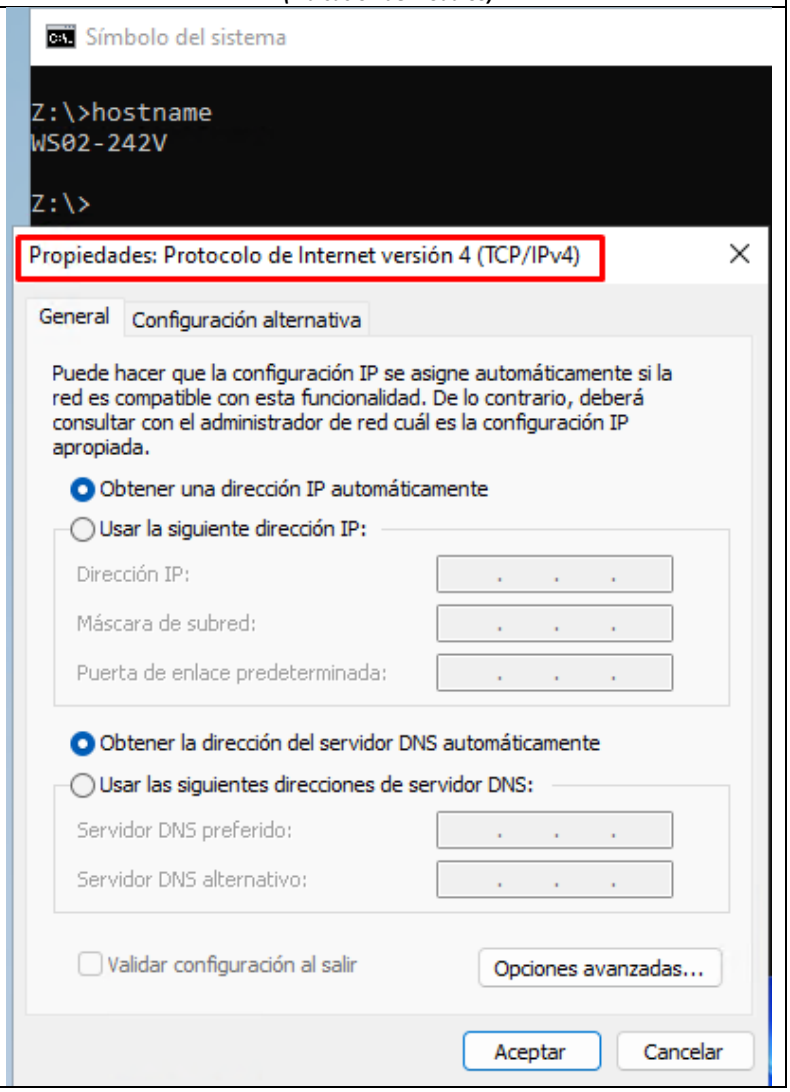
DC01-242V



DC02-242V



16.	**Configuración IP** de estaciones de trabajo Windows	Para cada estación Windows: a) TCP-IP/Propiedades b) Comando **ipconfig /all**	ASO **WS01-242V**  **WS02-242V**

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			WS01-242V
			`Z:\>ipconfig /all`
			
			`Windows IP Configuration`
			
			`Host Name . . . . . : WS01-242V`
			`Primary Dns Suffix . . . . . : asi-242V.cifpaviles.com`
			`Node Type . . . . . : Hybrid`
			`IP Routing Enabled. . . . . : No`
			`WINS Proxy Enabled. . . . . : No`
			`DNS Suffix Search List. . . . . : asi-242V.cifpaviles.com`
			
			`Ethernet adapter Ethernet0:`
			
			`Connection-specific DNS Suffix . : asi-242v.cifpaviles.com`
			`Description . . . . . : Intel(R) 82574L Gigabit Network Connection`
			`Physical Address. . . . . : 00-50-56-BE-FD-D1`
			`DHCP Enabled. . . . . : Yes`
			`Autoconfiguration Enabled . . . . : Yes`
			`IPv4 Address. . . . . : 172.28.24.10(Preferred)`
			`Subnet Mask . . . . . : 255.255.255.0`
			`Lease Obtained. . . . . : Wednesday, April 15, 2026 7:36:55 PM`
			`Lease Expires . . . . . : Friday, May 8, 2026 5:54:42 PM`
			`Default Gateway . . . . . : 172.28.24.1`
			`DHCP Server . . . . . : 172.28.24.1`
			`DNS Servers . . . . . : 172.20.24.19`
			`172.20.24.20`
			`NetBIOS over Tcpip. . . . . : Enabled`
			
			`Z:\>_`
			WS02-242V
			`C:\Users\Administrator>ipconfig /all`
			
			`Configuración IP de Windows`
			
			`Nombre de host. . . . . : WS02-242V`
			`Sufijo DNS principal . . . . . : asi-242V.cifpaviles.com`
			`Tipo de nodo. . . . . : híbrido`
			`Enrutamiento IP habilitado. . . : no`
			`Proxy WINS habilitado . . . . . : no`
			`Lista de búsqueda de sufijos DNS: asi-242V.cifpaviles.com`
			
			`Adaptador de Ethernet Ethernet0:`
			
			`Sufijo DNS específico para la conexión. . : asi-242v.cifpaviles.com`
			`Descripción . . . . . : Intel(R) 82574L Gigabit Network Connection`
			`Dirección física. . . . . : 00-50-56-BE-E8-1C`
			`DHCP habilitado . . . . . : sí`
			`Configuración automática habilitada . . . : sí`
			`Vínculo: dirección IPv6 local. . . : fe80::b4de:a23e:8957:ffc0%4(Preferido)`
			`Dirección IPv4. . . . . : 172.28.24.11(Preferido)`
			`Máscara de subred . . . . . : 255.255.255.0`
			`Concesión obtenida. . . . . : martes, 28 de abril de 2026 11:25:57`
			`La concesión expira . . . . . : viernes, 8 de mayo de 2026 17:41:11`
			`Puerta de enlace predeterminada . . . . . : 172.28.24.1`
			`Servidor DHCP . . . . . : 172.28.24.1`
			`IAID DHCPv6 . . . . . : 100683862`
			`DUID de cliente DHCPv6. . . . . : 00-01-00-01-30-C3-6A-04-00-50-56-BE-E8-1C`
			`Servidores DNS. . . . . : 172.20.24.19`
			`172.20.24.20`
			`NetBIOS sobre TCP/IP. . . . . : habilitado`

17.	Particionamiento de servidor LAMP01-ID	a) Archivo **/proc/mdstat**
		b) Archivo **/etc/mdadm/mdadm.conf**
		c) Archivo **/etc/fstab**
		d) Comando **ls -al /mnt/raid5/** (mostrar punto de montaje del raid 5)
		e) Para cada servicio ubicado en el volumen raid 5, mostrar directorio enlazado a raid: **ls -al enlace_simbolico_a_raid**
			SADIS
			`administrador@lamp01-242v:~$ cat /proc/mdstat`
			`Personalities : [raid1] [raid6] [raid5] [raid4] [raid0] [raid10]`
			`md1 : active raid5 sdd1[1] sde1[3] sdc1[0]`
			`20958208 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/3] [UUU]`
			
			`md0 : active raid1 sda3[1] sdb[0]`
			`54455279 blocks super 1.2 [2/2] [UU]`
			
			`unused devices: <none>`
			`administrador@lamp01-242v:~$`
			
			`administrador@lamp01-242v:~$ cat /etc/mdadm/mdadm.conf`
			`ARRAY /dev/md0 metadata=1.2 UUID=2851b4d7:e216076e:8b8e621f:fa309075`
			`MAILADDR root`
			`ARRAY /dev/md1 metadata=1.2 UUID=097f7a61:82b13273:984f20e7:64363a5e`
			`administrador@lamp01-242v:~$`
			
			`administrador@lamp01-242v:/mnt/raid5/infra$ 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/md0p1 during curtin installation`
			`/dev/disk/by-id/md-uuid-2851b4d7:e216076e:8b8e621f:fa309075-part1 / ext4 defaults 0 1`
			`# /boot was on /dev/sda2 during curtin installation`
			`/dev/disk/by-uuid/5d1c37b0-3911-4e9e-826c-c035da3868e7 /boot ext4 defaults 0 1`
			`# /boot/efi was on /dev/sda1 during curtin installation`
			`/dev/disk/by-uuid/A6F2-4AE3 /boot/efi vfat defaults 0 1`
			`/swap.img none swap sw 0 0`
			`UUID="a241bcc1-c626-43ab-8483-350a2ba7808a" /mnt/raid5 ext4 defaults 0 0`
			`administrador@lamp01-242v:/mnt/raid5/infra$ A`
			
			`administrador@lamp01-242v:/mnt/raid5/infra$ ls -al /mnt/raid5/`
			`total 32`
			`drwxr-xr-x 5 root root 4096 may 8 15:36 .`
			`drwxr-xr-x 3 root root 4096 abr 9 18:37 ..`
			`drwx--x--- 12 root root 4096 may 8 15:37 docker_internal`
			`drwxrwxr-x 5 administrador docker 4096 may 7 09:08 infra`
			`drwx------ 2 root root 16384 abr 9 18:36 lost+found`
			`administrador@lamp01-242v:/mnt/raid5/infra$`

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			Solo se ubica Docker en raid 5 ya que el resto de servicios van dentro de Docker. El fichero se llamó docker_internal en lugar de dockerroot:
			`administrador@lamp01-242v:/mnt/raid5/infra$ ls -al /var/lib/docker`
			`lrwxrwxrwx 1 root root 26 may  8 15:35 /var/lib/docker -> /mnt/raid5/docker_internal`
			`administrador@lamp01-242v:/mnt/raid5/infra$ ^C`
			`administrador@lamp01-242v:/mnt/raid5/infra$`

18.	Configuración de servidor **LAMP01-ID**	a) Comando **hostnamectl**
		b) Comando **lsb_release –a**
		c) Archivo **hostname**
		d) Archivo **hosts**
		e) Archivo **netplan**
		f) Archivo **resolv.conf**
		g) Comando **resolvectl status | tail -n 5**
		h) Comando **ip address**
			ASO/SREIN
			LAMP01-242V
			`administrador@lamp01-242v:/mnt/raid5/infra$ hostnamectl`
			`Static hostname: lamp01-242v`
			`Icon name: computer-vm`
			`Chassis: vm`
			`Machine ID: 6467901b1c2d4ee292bd480b94fdd67d`
			`Boot ID: 5573cc3b3d16461c9a50078c591f03ba`
			`Virtualization: vmware`
			`Operating System: Ubuntu 24.04.4 LTS`
			`Kernel: Linux 6.8.0-110-generic`
			`Architecture: x86-64`
			`Hardware Vendor: VMware, Inc.`
			`Hardware Model: VMware7,1`
			`Firmware Version: VMW71.00V.21100432.B64.2301110304`
			`Firmware Date: Wed 2023-01-11`
			`Firmware Age: 3y 3month 3w 5d`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			
			`administrador@lamp01-242v:/mnt/raid5/infra$ lsb_release -a`
			`No LSB modules are available.`
			`Distributor ID: Ubuntu`
			`Description: Ubuntu 24.04.4 LTS`
			`Release: 24.04`
			`Codename: noble`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			
			`administrador@lamp01-242v:/mnt/raid5/infra$ cat /etc/hostname`
			`lamp01-242v`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			
			`administrador@lamp01-242v:/mnt/raid5/infra$ cat /etc/hosts`
			`127.0.0.1 localhost`
			`127.0.1.1 lamp01-242v.asi-242v.cifpaviles.com lamp01-242v`
			
			`# The following lines are desirable for IPv6 capable hosts`
			`::1 ip6-localhost ip6-loopback`
			`fe00::0 ip6-localnet`
			`ff00::0 ip6-mcastprefix`
			`ff02::1 ip6-allnodes`
			`ff02::2 ip6-allrouters`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			
			`administrador@lamp01-242v:/etc/netplan$ sudo cat 50-cloud-init.yaml`
			`network:`
			`version: 2`
			`ethernets:`
			`ens192:`
			`dhcp4: true`
			`administrador@lamp01-242v:/etc/netplan$`
			
			`administrador@lamp01-242v:/etc/netplan$ cat /etc/resolv.conf`
			`# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).`
			`# Do not edit.`
			`#`
			`# This file might be symlinked as /etc/resolv.conf. If you're looking at`
			`# /etc/resolv.conf and seeing this text, you have followed the symlink.`
			`#`
			`# This is a dynamic resolv.conf file for connecting local clients to the`
			`# internal DNS stub resolver of systemd-resolved. This file lists all`
			`# configured search domains.`
			`#`
			`# Run "resolvectl status" to see details about the uplink DNS servers`
			`# currently in use.`
			`#`
			`# Third party programs should typically not access this file directly, but only`
			`# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a`
			`# different way, replace this symlink by a static file or a different symlink.`
			`#`
			`# See man:systemd-resolved.service(8) for details about the supported modes of`
			`# operation for /etc/resolv.conf.`
			
			`nameserver 127.0.0.53`
			`options edns0 trust-ad`
			`search asi-242v.cifpaviles.com`
			`administrador@lamp01-242v:/etc/netplan$`

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			Con tail -n 5 vemos información sobre Docker.
			`administrador@lamp01-242v:/etc/netplan$ resolvectl status | tail -n 5`
			`Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			
			`Link 146 (vethc80550d)`
			`Current Scopes: none`
			`Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`administrador@lamp01-242v:/etc/netplan$`
			
			`administrador@lamp01-242v:/etc/netplan$ resolvectl status`
			`Global`
			`Protocols: -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`resolv.conf mode: stub`
			
			`Link 2 (ens192)`
			`Current Scopes: DNS`
			`Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`Current DNS Server: 172.20.24.19`
			`DNS Servers: 172.20.24.19 172.20.24.20`
			`DNS Domain: asi-242v.cifpaviles.com`
			
			Vemos muchas interfaces por las redes internas de Docker.
			`administrador@lamp01-242v:/etc/netplan$ ip address`
			`1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000`
			`link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00`
			`inet 127.0.0.1/8 scope host lo`
			`valid_lft forever preferred_lft forever`
			`inet6 ::1/128 scope host noprefixroute`
			`valid_lft forever preferred_lft forever`
			`2: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000`
			`link/ether 00:50:56:be:d1:eb brd ff:ff:ff:ff:ff:ff`
			`altname enp11s0`
			`inet 172.16.24.77/24 metric 100 brd 172.16.24.255 scope global dynamic ens192`
			`valid_lft 1204sec preferred_lft 1204sec`
			`inet6 fe80::250:56ff:febe:d1eb/64 scope link`
			`valid_lft forever preferred_lft forever`
			`3: br-3178b7acbd92: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default`
			`link/ether 16:8d:fa:dc:66:a9 brd ff:ff:ff:ff:ff:ff`
			`inet 192.168.103.1/24 brd 192.168.103.255 scope global br-3178b7acbd92`
			`valid_lft forever preferred_lft forever`
			`inet6 fe80::148d:faff:fedc:66a9/64 scope link`
			`valid_lft forever preferred_lft forever`
			`4: br-32b0dc85a34e: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default`
			`link/ether 8a:21:e0:28:6d:35 brd ff:ff:ff:ff:ff:ff`
			`inet 192.168.101.1/24 brd 192.168.101.255 scope global br-32b0dc85a34e`
			`valid_lft forever preferred_lft forever`
			`inet6 fe80::8821:e0ff:fe28:6d35/64 scope link`
			`valid_lft forever preferred_lft forever`
			`5: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default`
			`link/ether 76:15:83:e4:1a:fc brd ff:ff:ff:ff:ff:ff`
			`inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0`
			`valid_lft forever preferred_lft forever`
			`6: br-b9dd666bd285: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default`
			`link/ether 8a:36:92:6f:5e:ef brd ff:ff:ff:ff:ff:ff`
			`inet 192.168.100.1/24 brd 192.168.100.255 scope global br-b9dd666bd285`
			`valid_lft forever preferred_lft forever`
			`inet6 fe80::8836:92ff:fe6f:5eef/64 scope link`
			`valid_lft forever preferred_lft forever`
			`7: br-d4cbb53f9c07: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default`
			`link/ether 7a:65:d5:87:18:39 brd ff:ff:ff:ff:ff:ff`
			`inet 192.168.102.1/24 brd 192.168.102.255 scope global br-d4cbb53f9c07`
			`valid_lft forever preferred_lft forever`
			`inet6 fe80::7865:d5ff:fe87:1839/64 scope link`
			`valid_lft forever preferred_lft forever`
			`136: veth9370332@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master br-b9dd666bd285 state UP group default`
			`link/ether fa:83:06:81:65:80 brd ff:ff:ff:ff:ff:ff link-netnsid 0`
			`inet6 fe80::f883:6ff:fe81:6580/64 scope link`
			`valid_lft forever preferred_lft forever`
			`137: veth781f301@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master br-32b0dc85a34e state UP group default`
			`link/ether 36:7c:70:01:27:4f brd ff:ff:ff:ff:ff:ff link-netnsid 1`
			`inet6 fe80::347c:70ff:fe01:274f/64 scope link`

19.	Configuración de estación de trabajo Linux	a) Comando **hostnamectl**
		b) Comando **lsb_release –a**
		c) Archivo **hostname**
		d) Archivo **hosts**
		e) Archivo **netplan**
		f) Archivo **resolv.conf**
		g) Comando
		resolvectl status | tail -n 5
		h) Comando **ip address**
			ASO
			WS03-242V
			`administrador@WS03-242V:~$ hostnamectl`
			`Static hostname: WS03-242V.asi-242V.cifpaviles.com`
			`Icon name: computer-vm`
			`Chassis: vm`
			`Machine ID: 8c4766bf2c4c4f0090553388c05067a4`
			`Boot ID: 2add0786c546454c8bf598d8c5c17d3b`
			`Virtualization: vmware`
			`Operating System: Ubuntu 24.04.3 LTS`
			`Kernel: Linux 6.17.0-20-generic`
			`Architecture: x86-64`
			`Hardware Vendor: VMware, Inc.`
			`Hardware Model: VMware Virtual Platform`
			`Firmware Version: 6.00`
			`Firmware Date: Thu 2020-11-12`
			`Firmware Age: 5y 5month 3w 4d`
			`administrador@WS03-242V:~$`
			
			`administrador@WS03-242V:~$ lsb_release -a`
			`No LSB modules are available.`
			`Distributor ID: Ubuntu`
			`Description: Ubuntu 24.04.3 LTS`
			`Release: 24.04`
			`Codename: noble`
			`administrador@WS03-242V:~$`
			
			`administrador@WS03-242V:~$ cat /etc/hostname`
			`WS03-242V.asi-242V.cifpaviles.com`
			`administrador@WS03-242V:~$`

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

```
administrador@WS03-242V:~$ cat /etc/hosts
127.0.0.1 localhost
127.0.1.1 WS03-242V.ASI-242V.cifpaviles.com

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
administrador@WS03-242V:~$
```

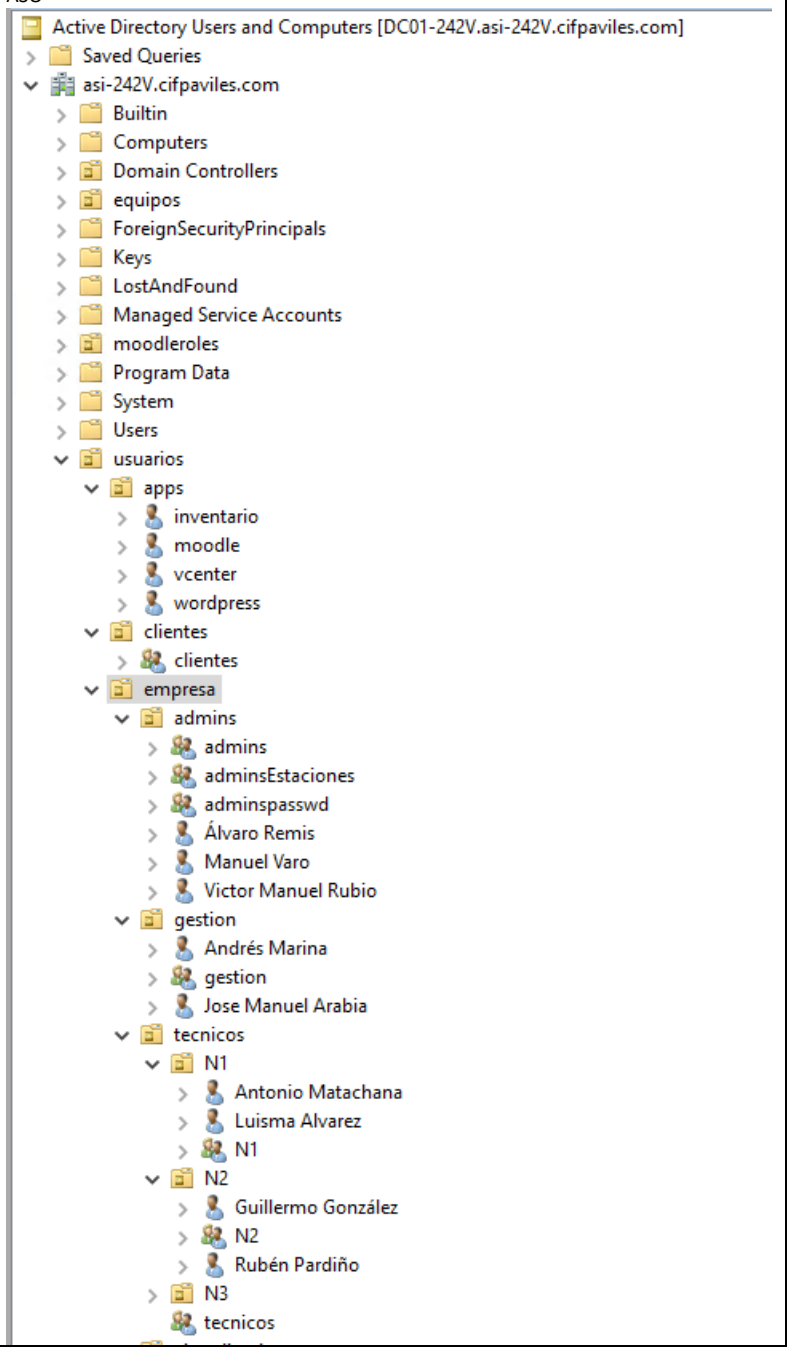
```
administrador@WS03-242V:/etc/netplan$ sudo cat 50-cloud-init.yaml
network:
  version: 2
  ethernets:
    ens192:
      dhcp4: true
administrador@WS03-242V:/etc/netplan$
```

```
administrador@WS03-242V:/etc/netplan$ cat /etc/resolv.conf
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 127.0.0.53
options edns0 trust-ad
search asi-242v.cifpaviles.com
administrador@WS03-242V:/etc/netplan$
```

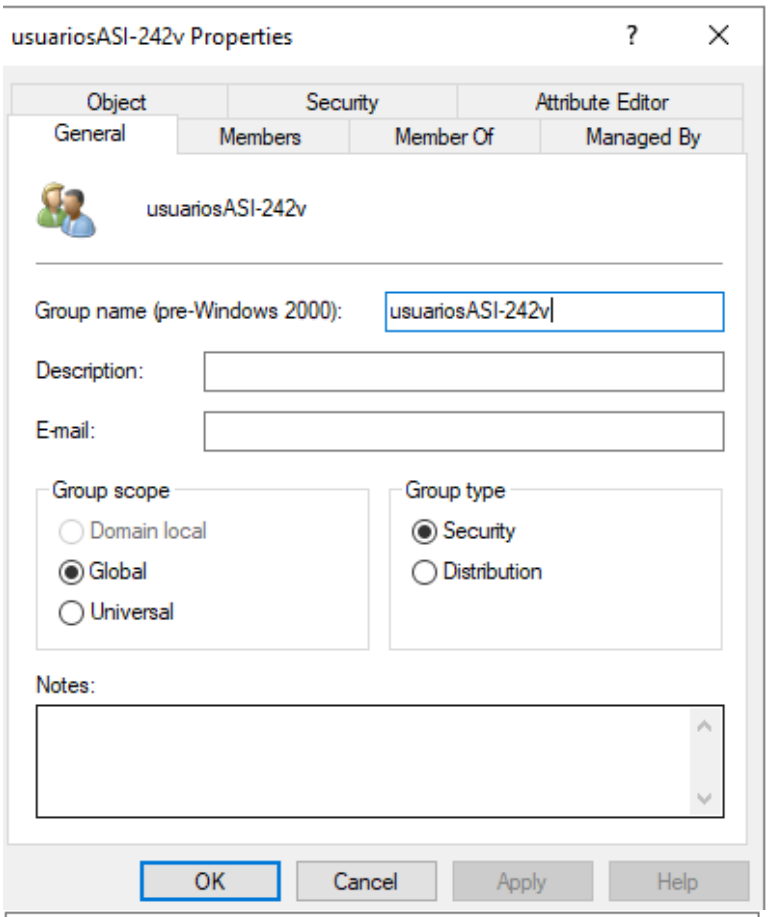
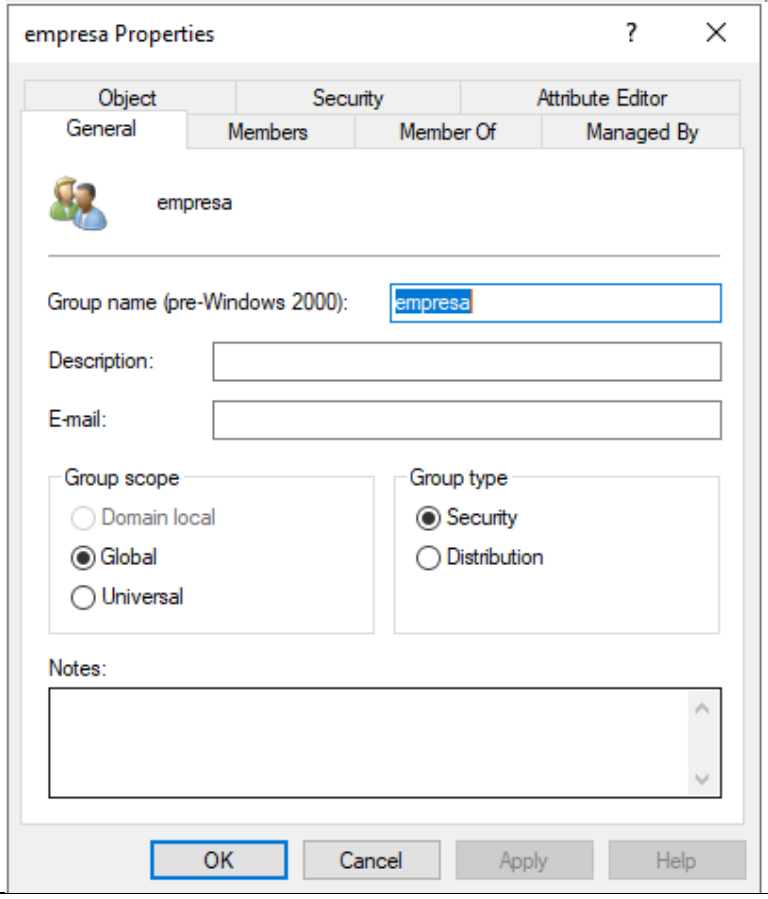
```
administrador@WS03-242V:/etc/netplan$ resolvectl status | tail -n 5
    Current Scopes: DNS
         Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
Current DNS Server: 172.20.24.20
       DNS Servers: 172.20.24.19 172.20.24.20
        DNS Domain: asi-242v.cifpaviles.com
administrador@WS03-242V:/etc/netplan$
```

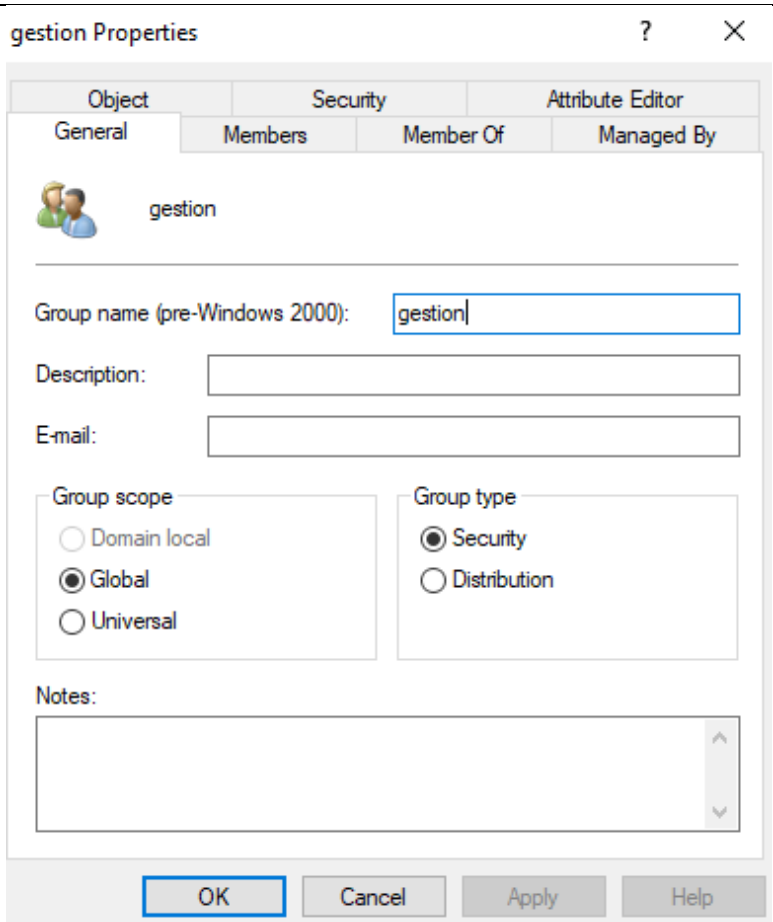
```
administrador@WS03-242V:/etc/netplan$ ip address
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:50:56:be:ad:cf brd ff:ff:ff:ff:ff:ff
    altname enp11s0
    inet 172.28.24.24/24 brd 172.28.24.255 scope global dynamic noprefixroute ens192
       valid_lft 1711sec preferred_lft 1711sec
    inet6 fe80::250:56ff:febe:adcf/64 scope link
       valid_lft forever preferred_lft forever
administrador@WS03-242V:/etc/netplan$
```

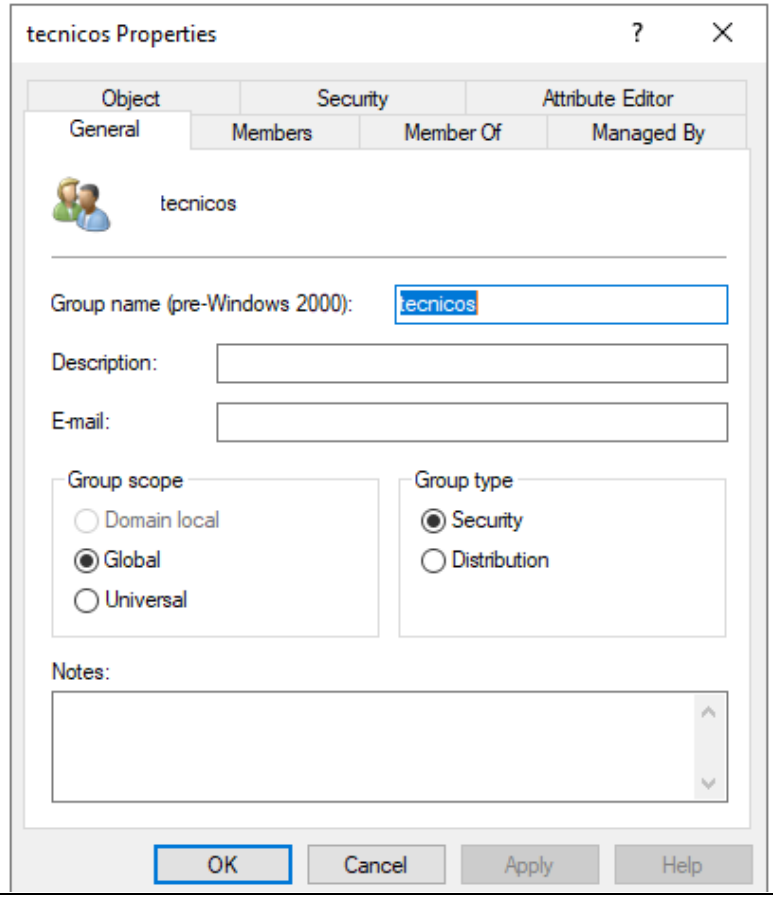
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
20.	Cifrado de datos de usuarios en estación de trabajo Linux	a) Archivo **/etc/fstab** b) Comando **lsblk -f** c) Comando **blkid /dev/sdb1**	SADIS **WS03-242V** administrador@WS03-242V:~$ cat /etc/fstab # /etc/fstab: static 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/sda2 during curtin installation /dev/disk/by-uuid/b97e1e6e-8581-47d5-990c-0cebd76d4bc3 / ext4 defaults 0 1 /swap.img none swap sw 0 0 /dev/mapper/home_encrypted /home ext4 defaults 0 2 administrador@WS03-242V:~$ administrador@WS03-242V:~$ lsblk -f NAME FSTYPE FSVER LABEL UUID FSAVAIL FSUSE% MOUNTPOINTS loop0 squashfs 4.0 0 100% /snap/bare/5 loop1 squashfs 4.0 0 100% /snap/core22/2292 loop2 squashfs 4.0 0 100% /snap/core22/2411 loop3 squashfs 4.0 0 100% /snap/core24/1499 loop4 squashfs 4.0 0 100% /snap/core24/1587 loop5 squashfs 4.0 0 100% /snap/firefox/8191 loop6 squashfs 4.0 0 100% /snap/firefox/8247 loop7 squashfs 4.0 0 100% /snap/firmware-updater/224 loop8 squashfs 4.0 0 100% /snap/firmware-updater/226 loop9 squashfs 4.0 0 100% /snap/gnome-42-2204/226 loop10 squashfs 4.0 0 100% /snap/gnome-42-2204/247 loop11 squashfs 4.0 0 100% /snap/gnome-46-2404/153 loop12 squashfs 4.0 0 100% /snap/gtk-common-themes/1535 loop13 squashfs 4.0 0 100% /snap/mesa-2404/1165 loop14 squashfs 4.0 0 100% /snap/snap-store/1338 loop15 squashfs 4.0 0 100% /snap/snap-store/1367 loop16 squashfs 4.0 0 100% /snap/snapd/26382 loop17 squashfs 4.0 0 100% /snap/snapd-desktop-integration/343 loop18 squashfs 4.0 0 100% /snap/snapd/26865 loop19 squashfs 4.0 0 100% /snap/snapd-desktop-integration/361 sda ├─sda1 └─sda2 ext4 1.0 b97e1e6e-8581-47d5-990c-0cebd76d4bc3 32,2G 29% / sdb └─sdb1 crypto_LUKS 2 ec75aa7c-9055-4eba-a438-a571e141f56e └─home_encrypted ext4 1.0 a1082f80-8e93-4a12-98f5-b2a302602e94 9,1G 1% /home sr0 administrador@WS03-242V:~$ administrador@WS03-242V:~$ sudo blkid /dev/sdb1 /dev/sdb1: UUID="ec75aa7c-9055-4eba-a438-a571e141f56e" TYPE="crypto_LUKS" PARTUUID="b0c2d348-2375-4dfe-bd03-2586fd56b60d" administrador@WS03-242V:~$

21.	UO **usuarios**, unidades organizativas, usuarios y grupos contenidos en ella	Active Directory Users and Computers/ Unidad organizativa **usuarios.** En la consola, activar la opción View/Users, Contacts, Groups and Computers as containers. Desplegar por completo el contenido almacenado en usuarios para que la imagen muestre todos los objetos. La imagen ha de mostrar también el nombre del dominio en la raíz del árbol.	ASO 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			virtualizacion admins de vcenter usuarios de vcenter usuariosHV01-242V usuariosHV01-242V.usu1 usuariosHV01-242V.usu2 usuariosHV01-242V.usu3 usuariosHV01-242V.usu4 usuariosHV01-242V.usu5 usuariosHV01-242V.usu6 usuariosHV02-242V usuariosHV02-242V.usu1 usuariosHV02-242V.usu2 usuariosHV02-242V.usu3 usuariosHV02-242V.usu4 usuariosHV02-242V.usu5 usuariosHV02-242V.usu6 empresa usuariosASI-242v

22.	**Grupos** de usuarios: usuariosASI-ID empresa gestion tecnicos N1 N2 N3 admins clientes	**Para cada grupo** indicado, mostrar: a) Usuarios y equipos de AD/ Seleccionar grupo/ Propiedades del grupo/ **General** b) Usuarios y equipos de AD/ Seleccionar grupo/ Propiedades del grupo/ **Miembros** c) Usuarios y equipos de AD/ Seleccionar grupo/ Propiedades del grupo/ **Miembro de**	ASO **GENERAL**  


gestion Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
gestion
Group name (pre-Windows 2000):
gestion
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help


tecnicos Properties
Object
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Group name (pre-Windows 2000):
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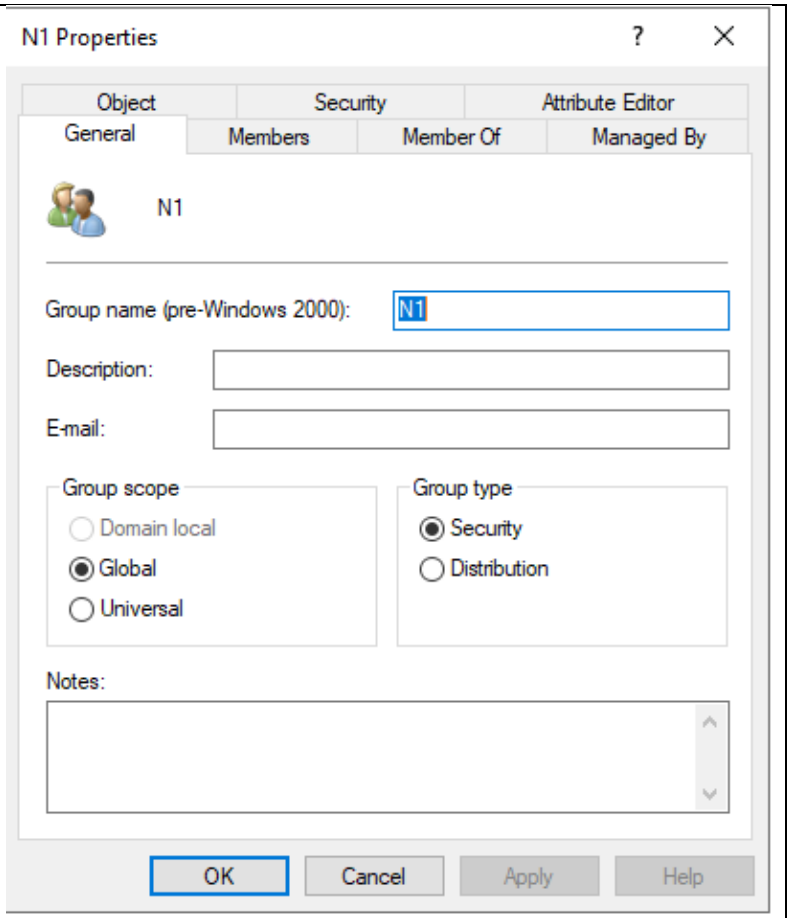
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help


N1 Properties
Object
Security
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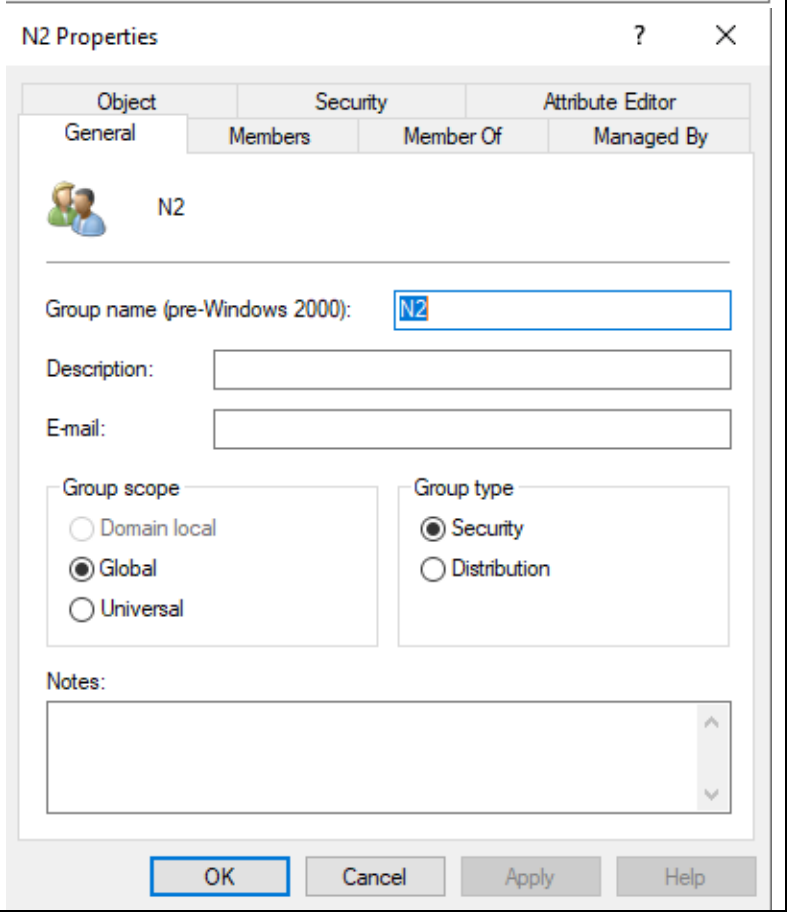
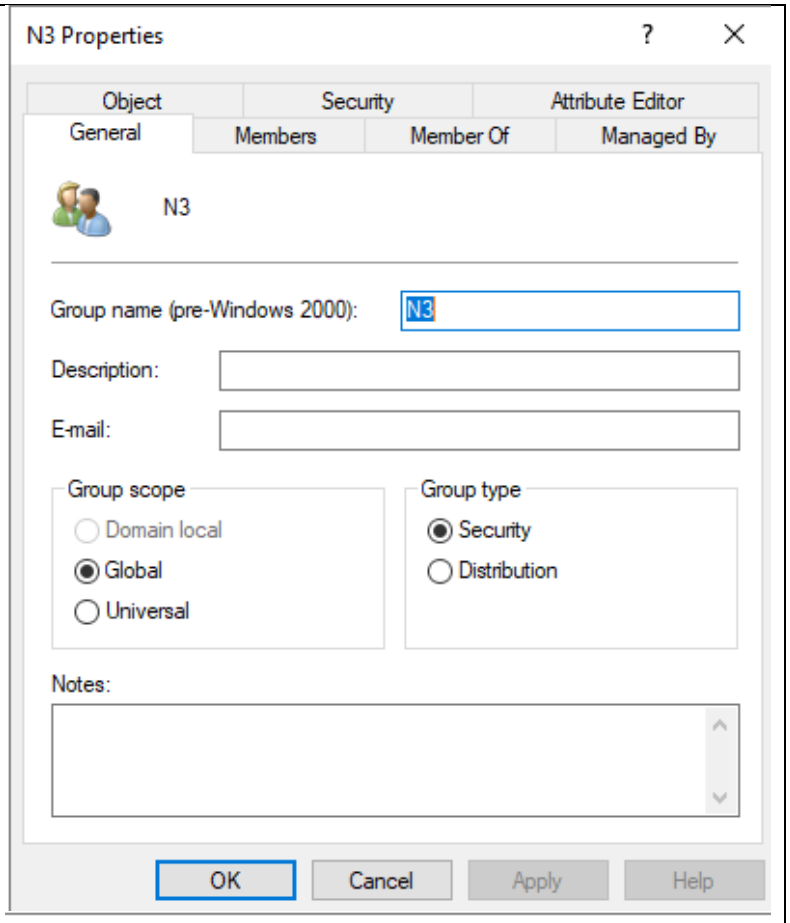
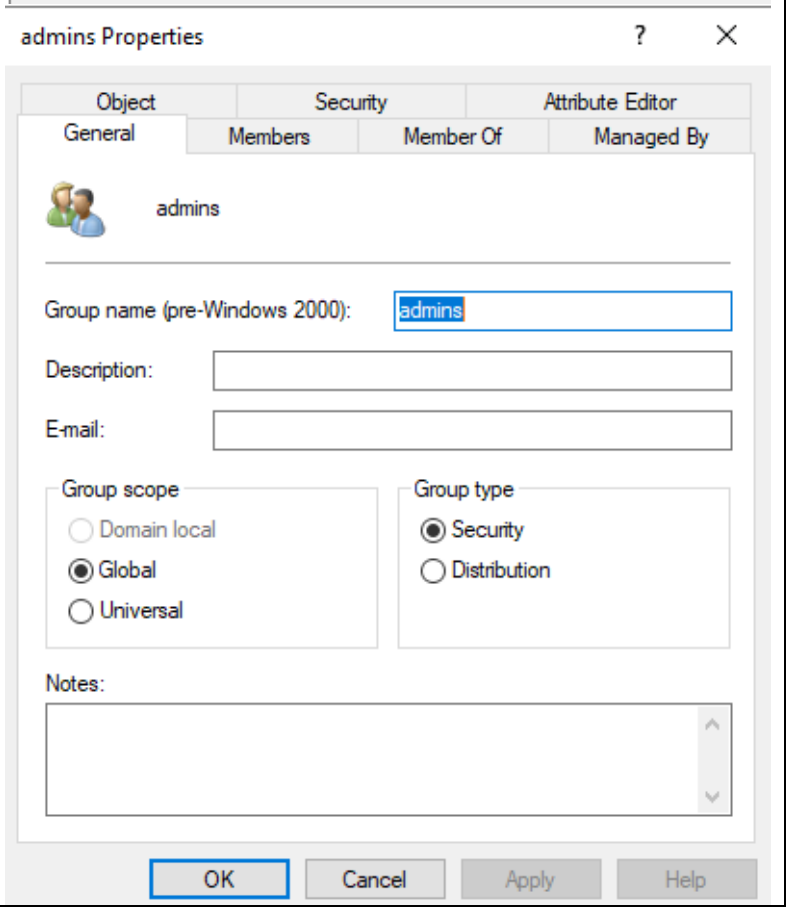
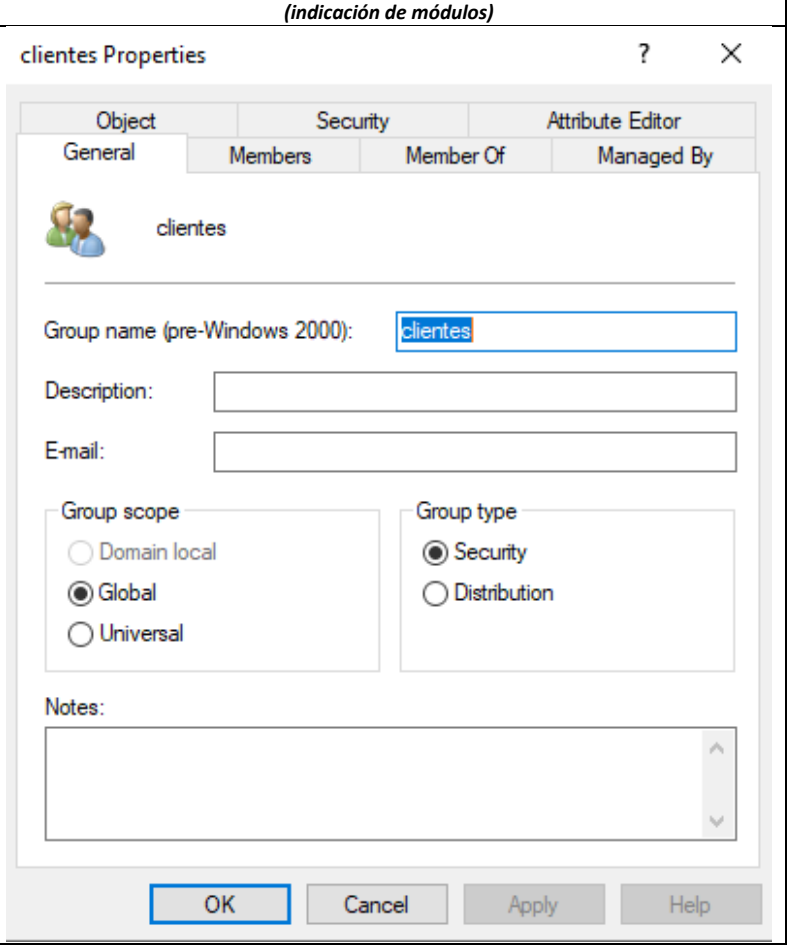
N1
Group name (pre-Windows 2000):
N1
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

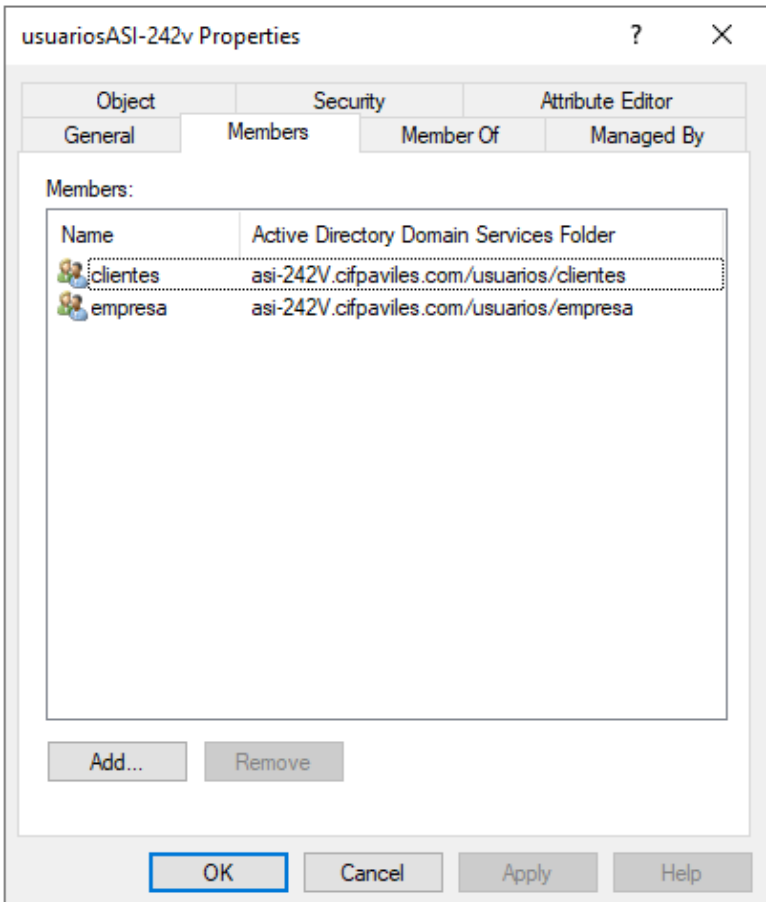

N2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
N2
Group name (pre-Windows 2000):
N2
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

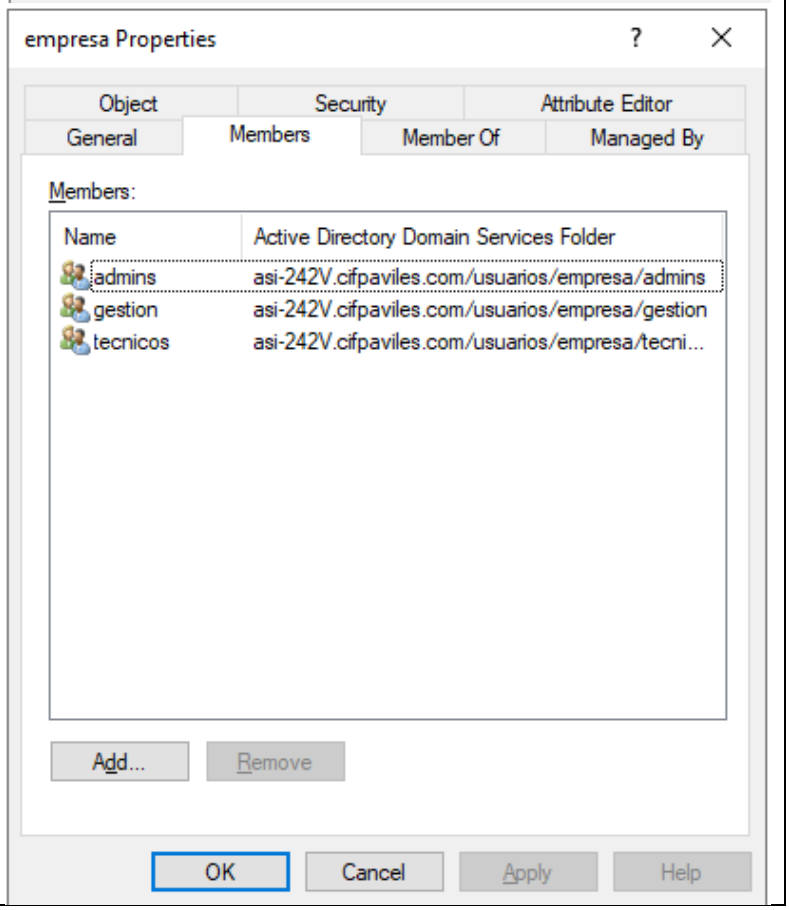

N3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
N3
Group name (pre-Windows 2000):
N3
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

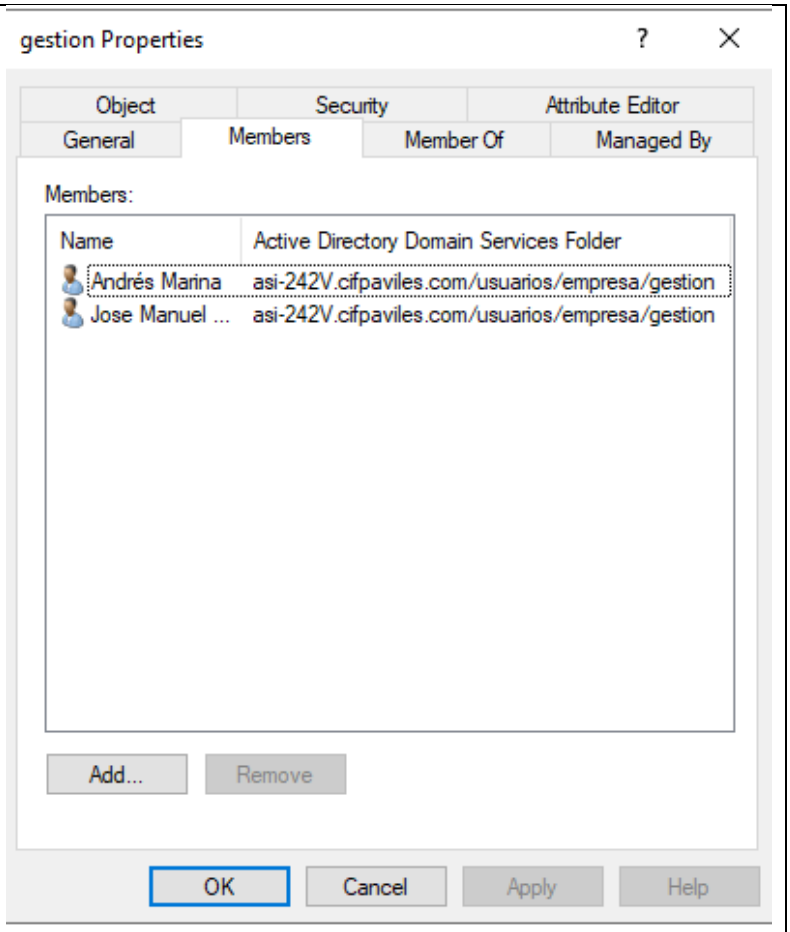

admins Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
admins
Group name (pre-Windows 2000):
admins
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

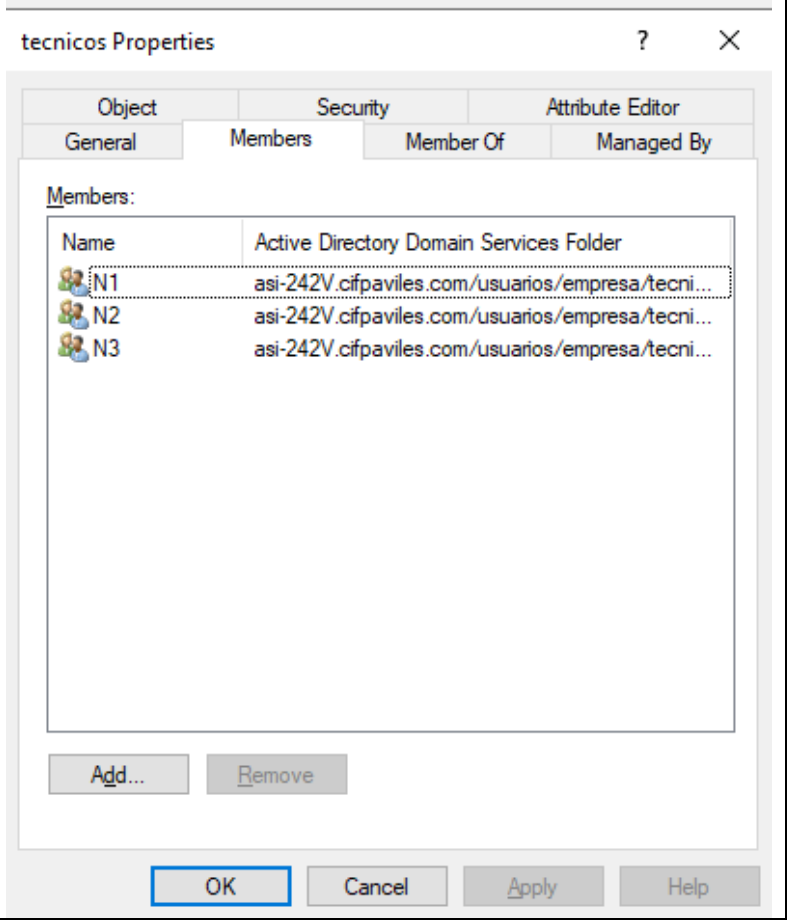
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			

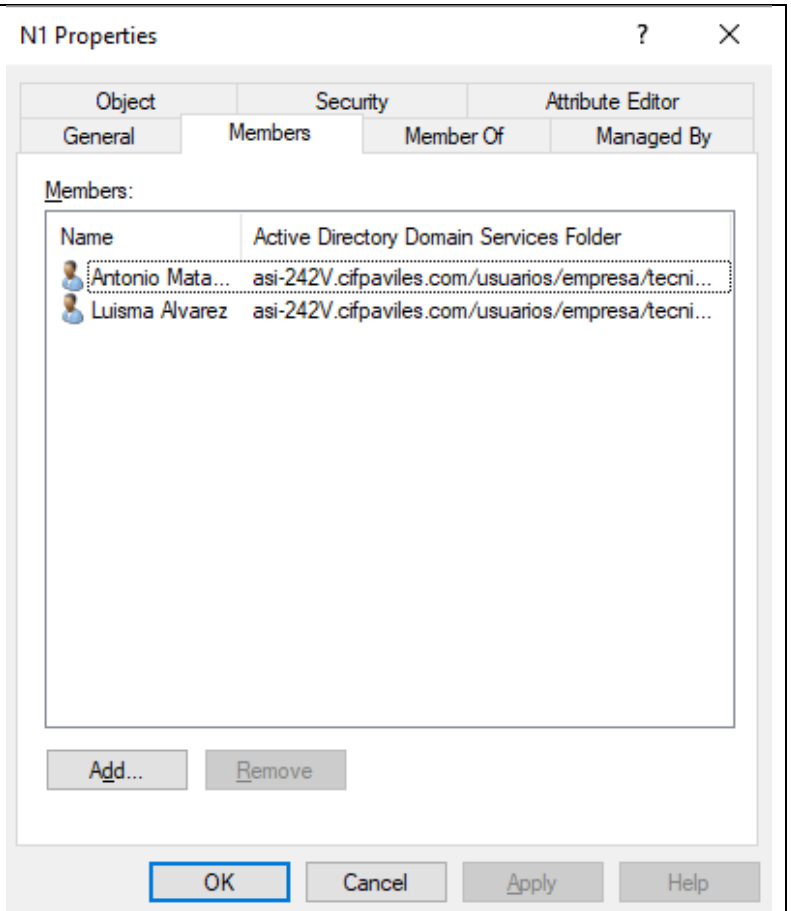
MIEMBROS

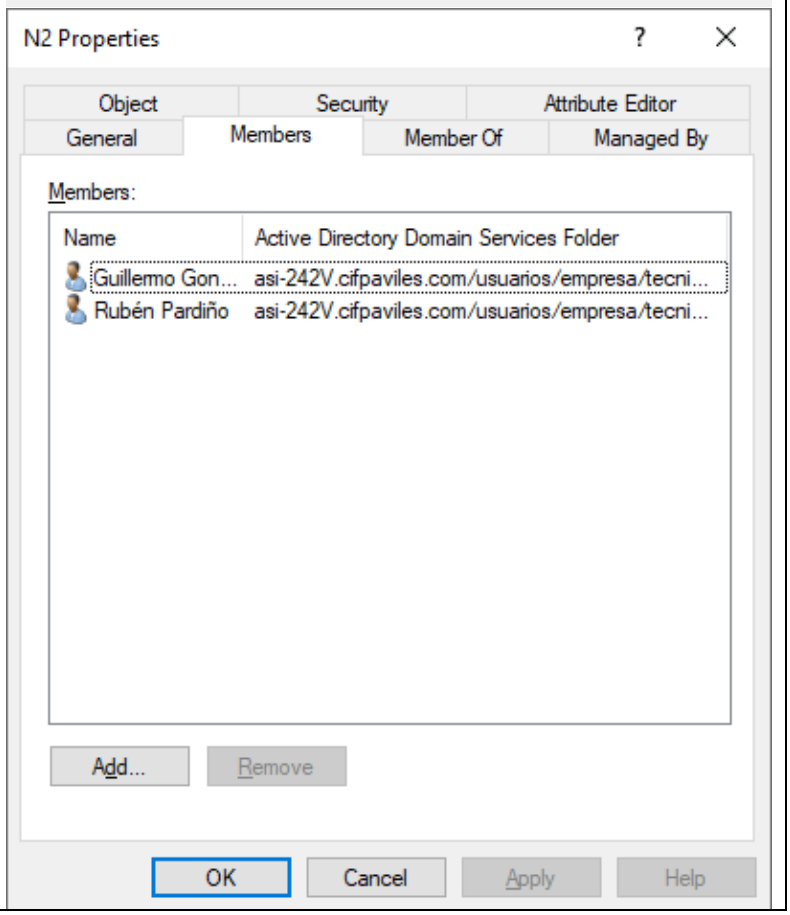

usuariosASI-242v Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
clientes
asi-242V.cifpaviles.com/usuarios/clientes
empresa
asi-242V.cifpaviles.com/usuarios/empresa
Add...
Remove
OK
Cancel
Apply
Help

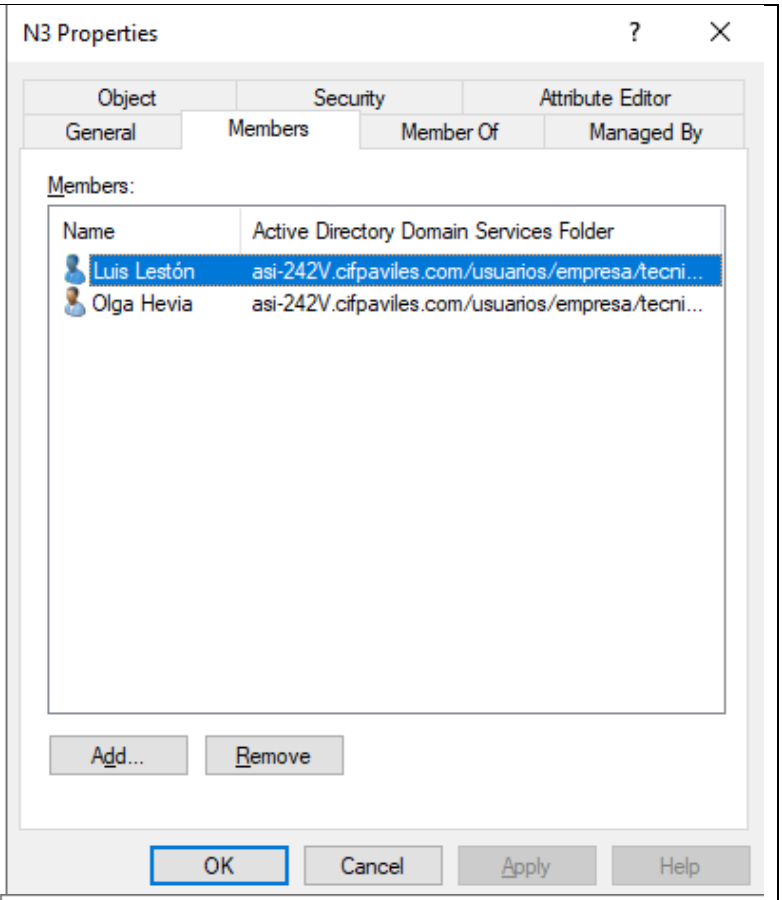

empresa Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
admins
asi-242V.cifpaviles.com/usuarios/empresa/admins
gestion
asi-242V.cifpaviles.com/usuarios/empresa/gestion
tecnicos
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

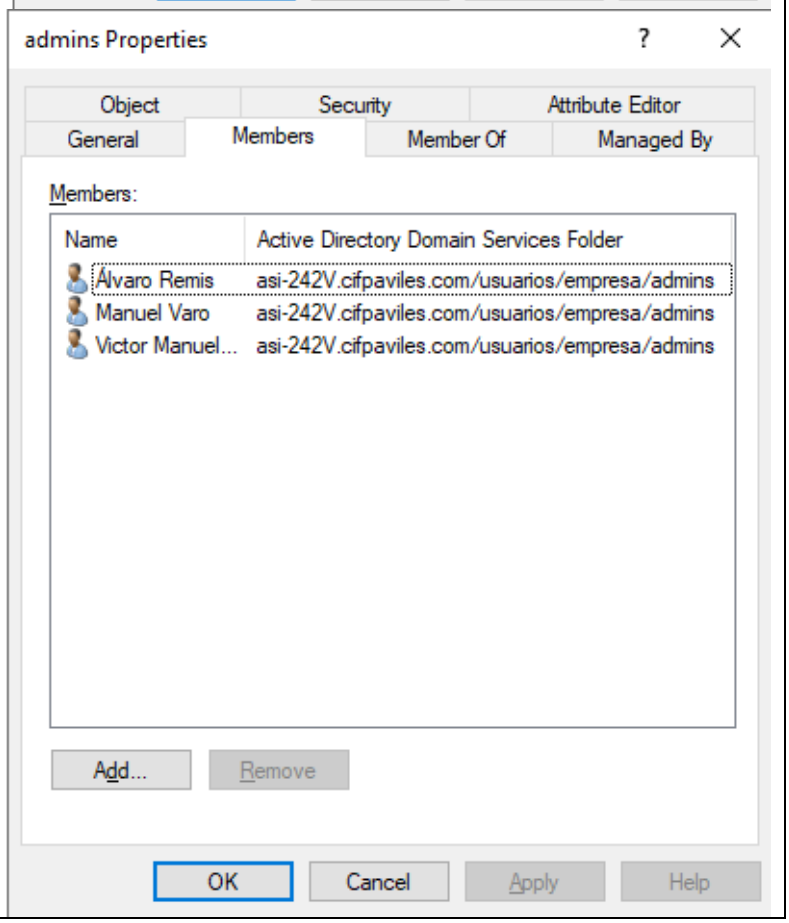

gestion Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Andrés Marina
asi-242V.cifpaviles.com/usuarios/empresa/gestion
Jose Manuel ...
asi-242V.cifpaviles.com/usuarios/empresa/gestion
Add...
Remove
OK
Cancel
Apply
Help

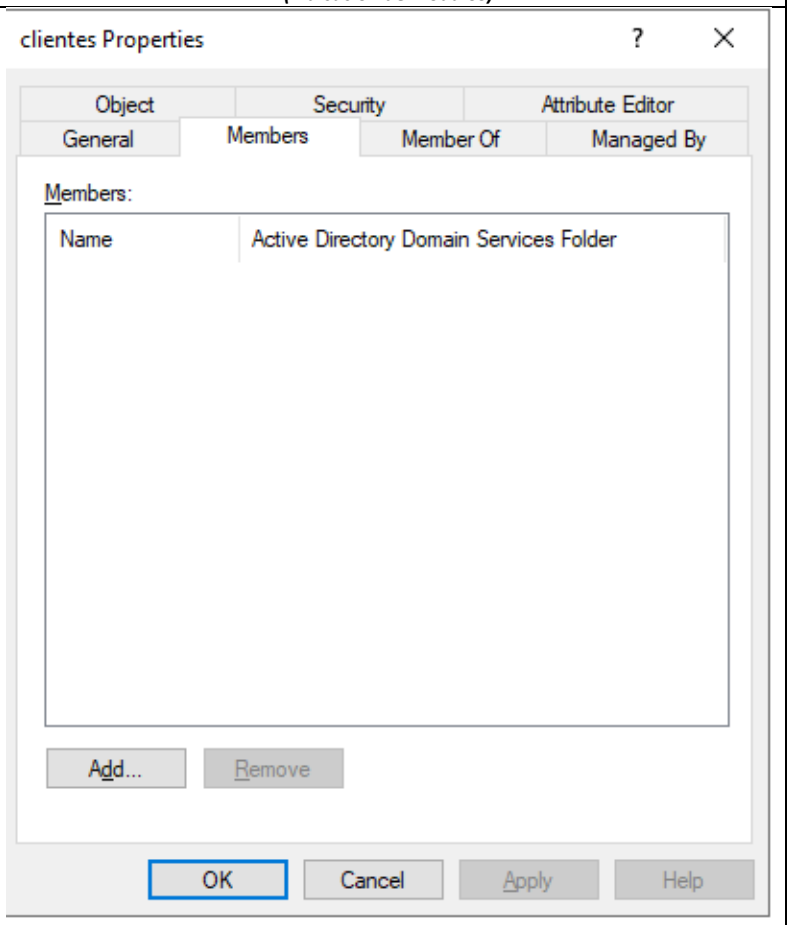

tecnicos Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
N1
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
N2
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
N3
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

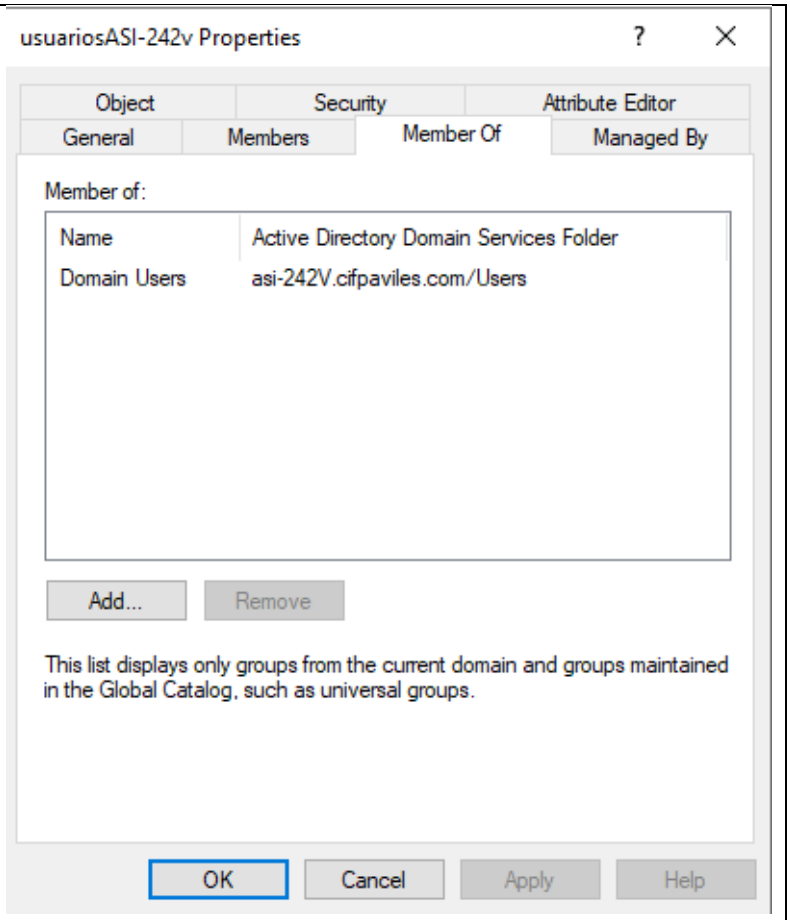

N1 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Antonio Mata...
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Luisma Alvarez
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

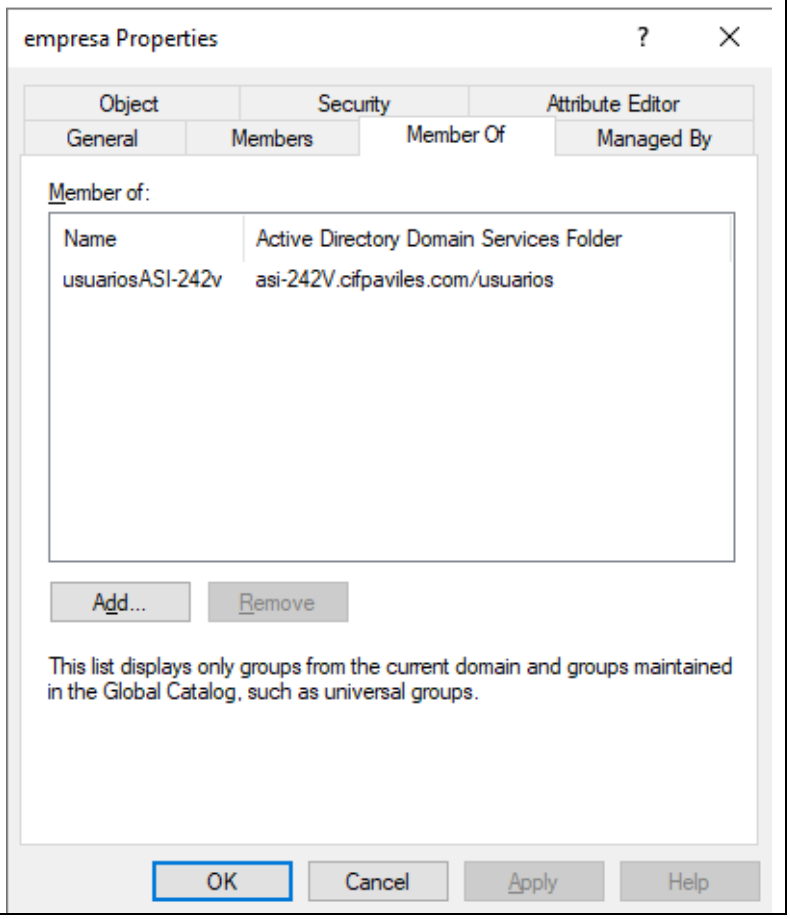

N2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Guillermo Gon...
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Rubén Pardiño
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

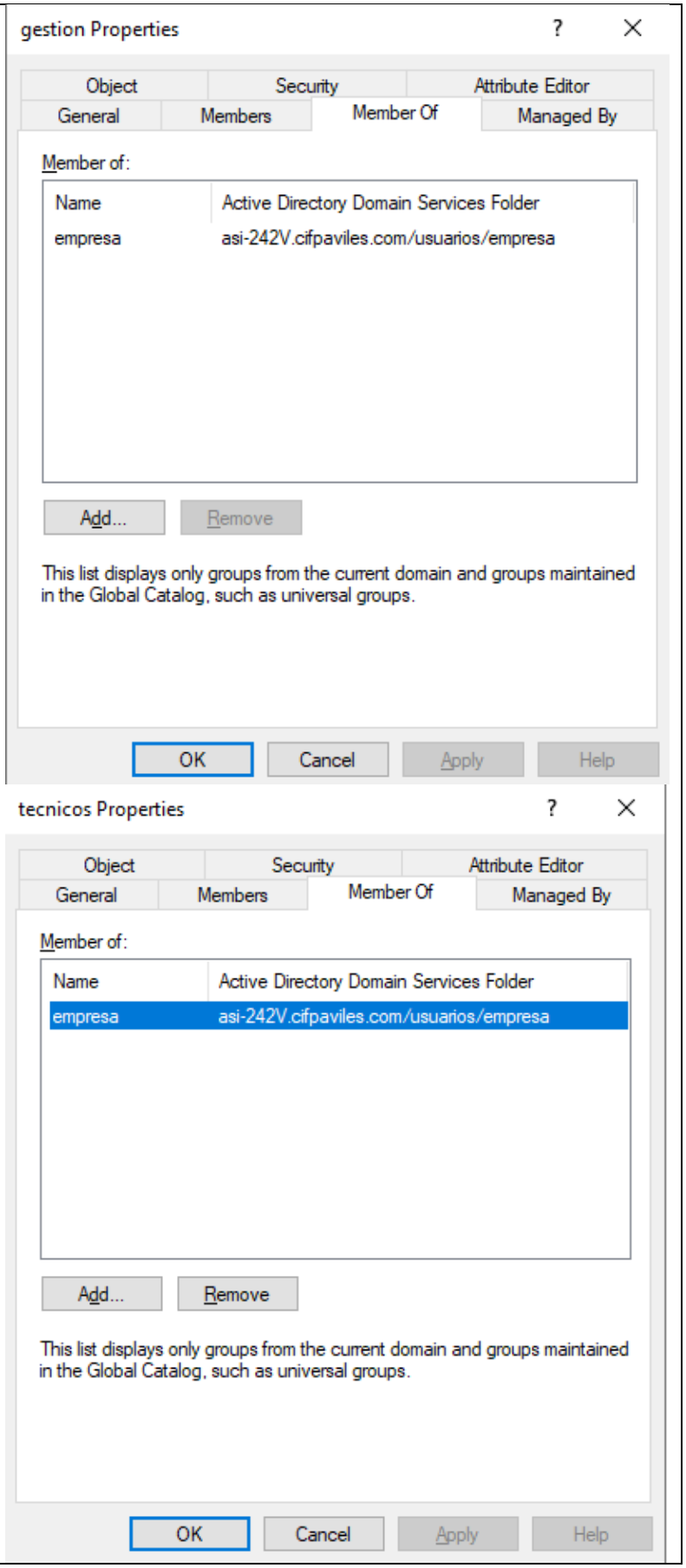

N3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Luis Lestón
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Olga Hevia
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

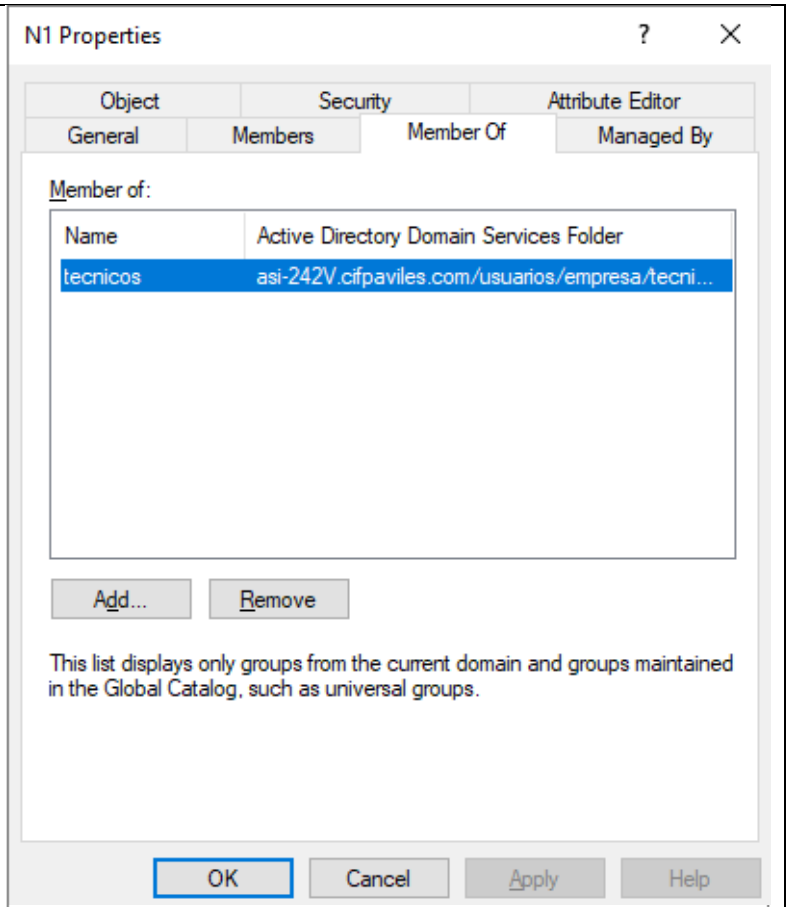

admins Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Álvaro Remis
asi-242V.cifpaviles.com/usuarios/empresa/admins
Manuel Varo
asi-242V.cifpaviles.com/usuarios/empresa/admins
Victor Manuel...
asi-242V.cifpaviles.com/usuarios/empresa/admins
Add...
Remove
OK
Cancel
Apply
Help

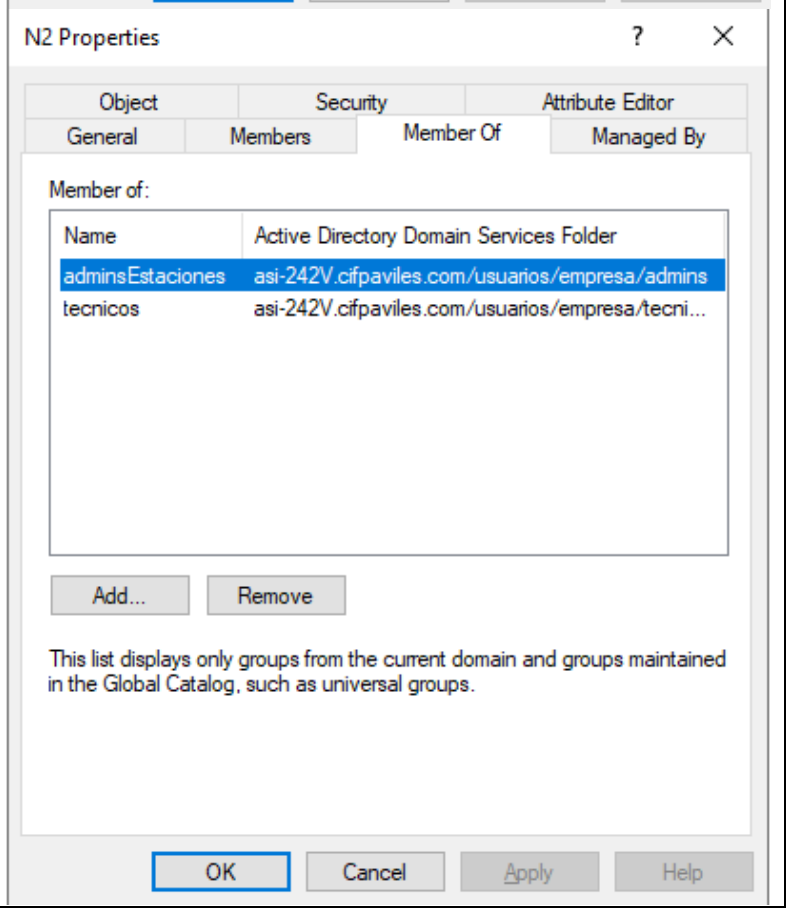
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			 **MIEMBRO DE**

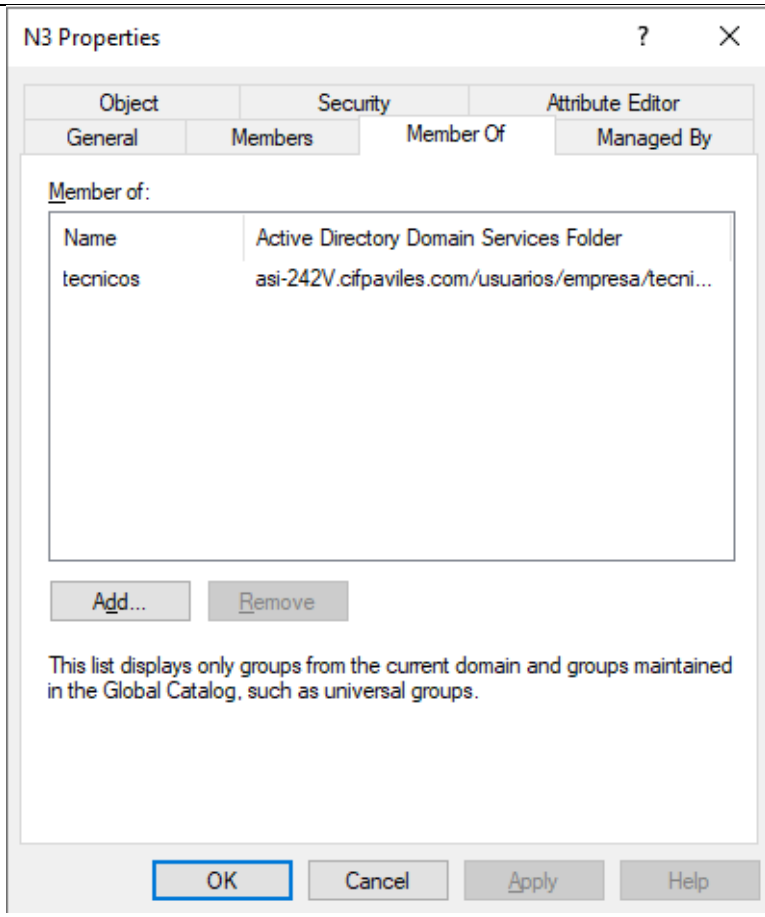

usuariosASI-242v Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
Domain Users
asi-242V.cifpaviles.com/Users
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

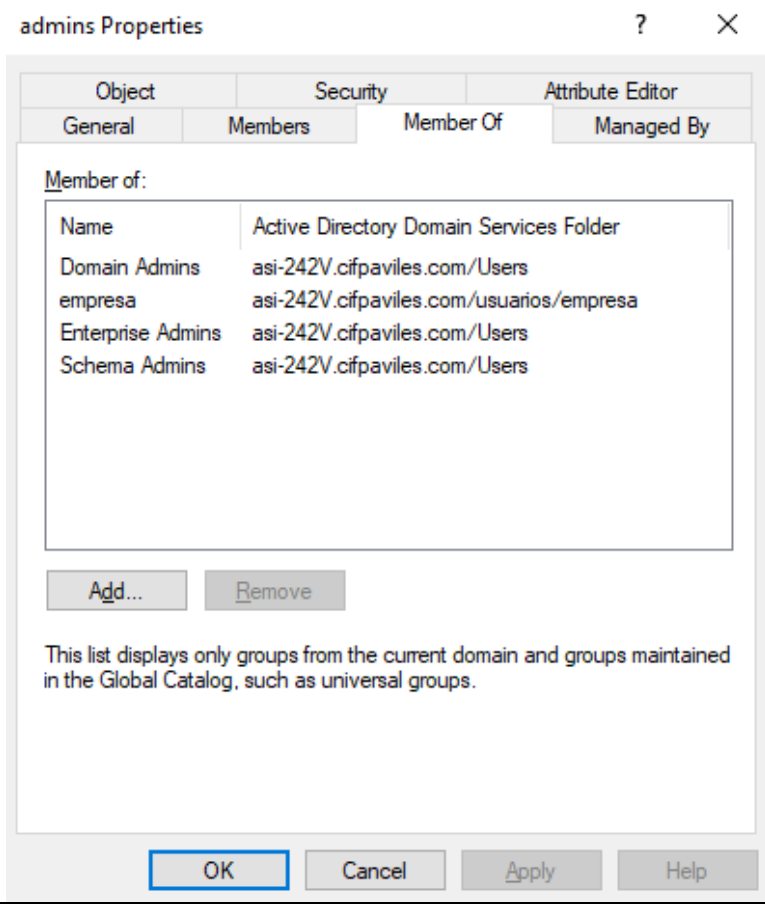

empresa Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
usuariosASI-242v
asi-242V.cifpaviles.com/usuarios
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help


gestion Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
empresa
asi-242V.cifpaviles.com/usuarios/empresa
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help
tecnicos Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
empresa
asi-242V.cifpaviles.com/usuarios/empresa
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

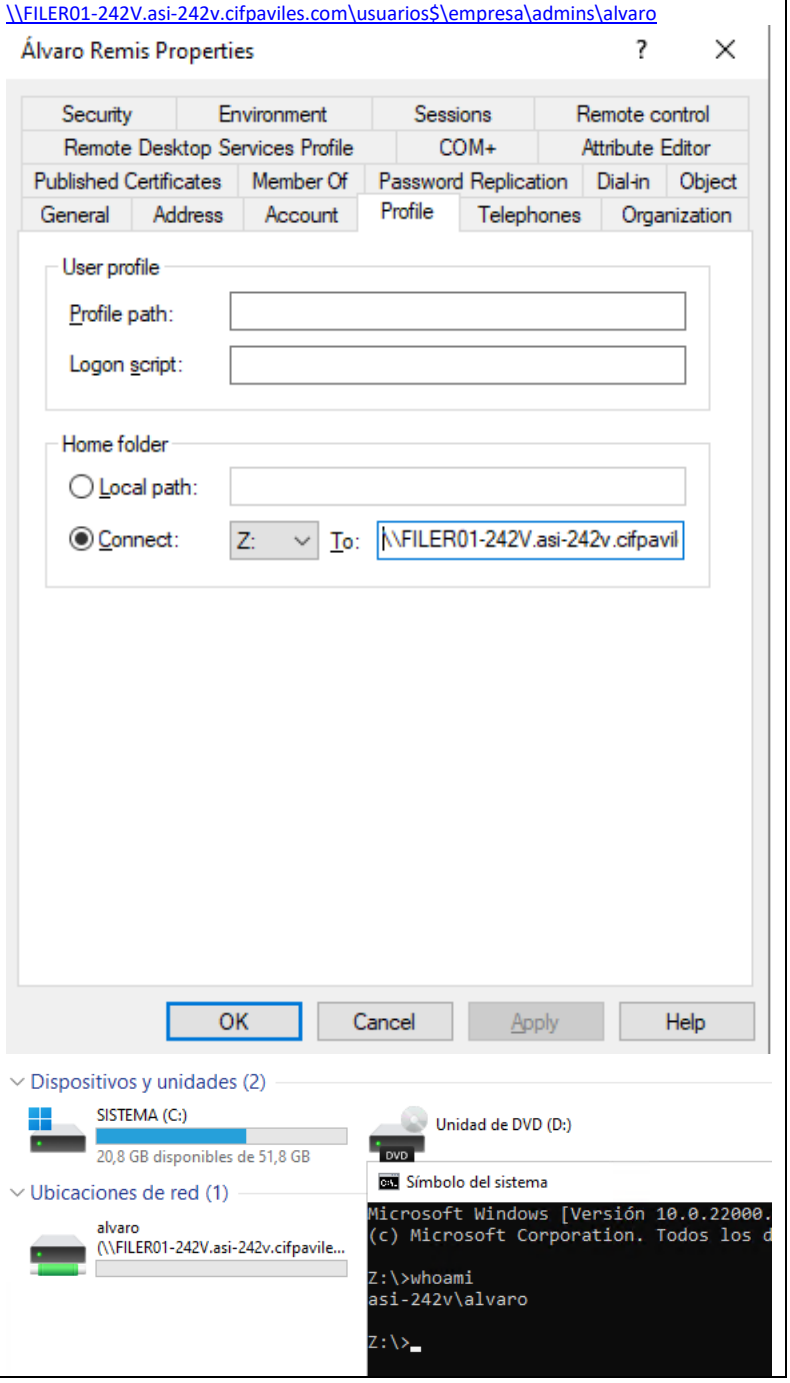

N1 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
tecnicos
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

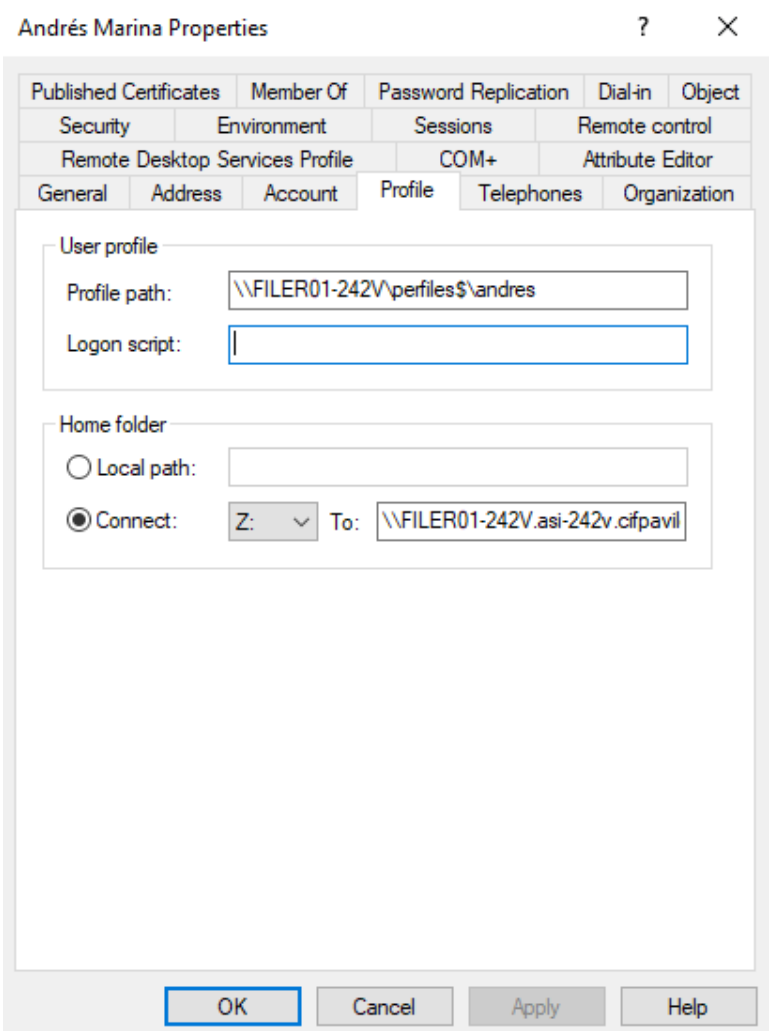
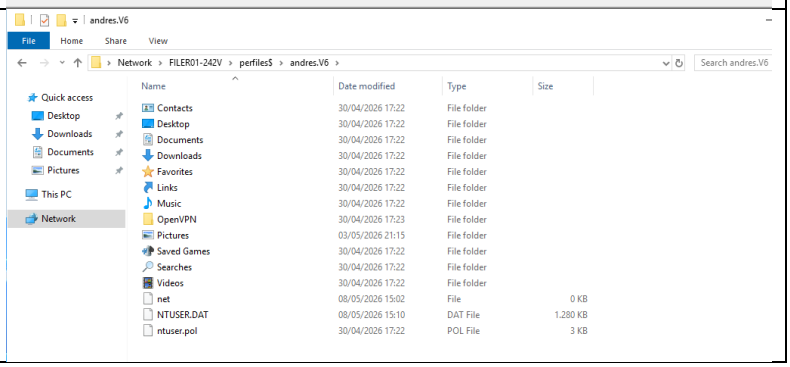

N2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
adminsEstaciones
asi-242V.cifpaviles.com/usuarios/empresa/admins
tecnicos
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

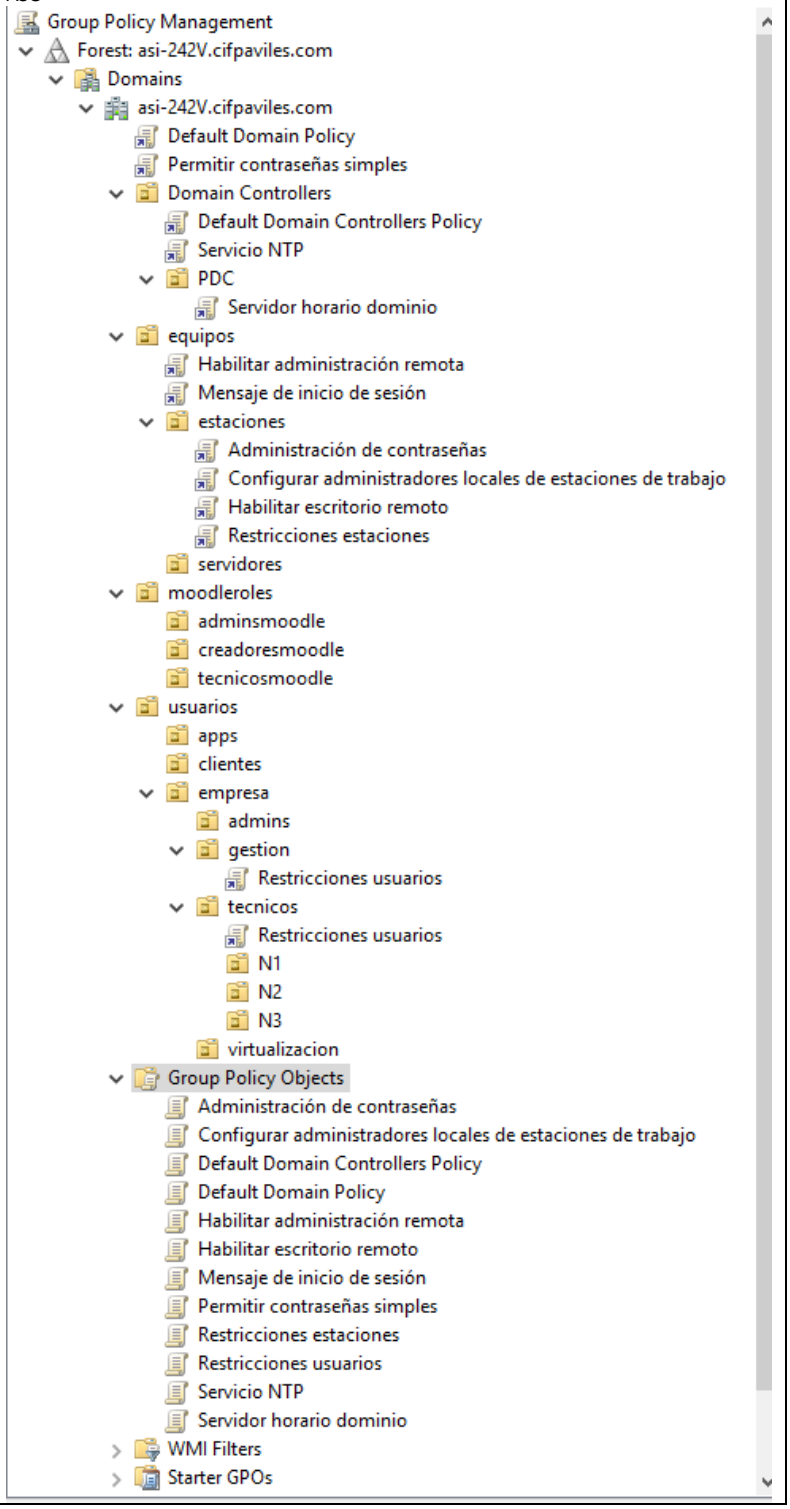

N3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
tecnicos
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

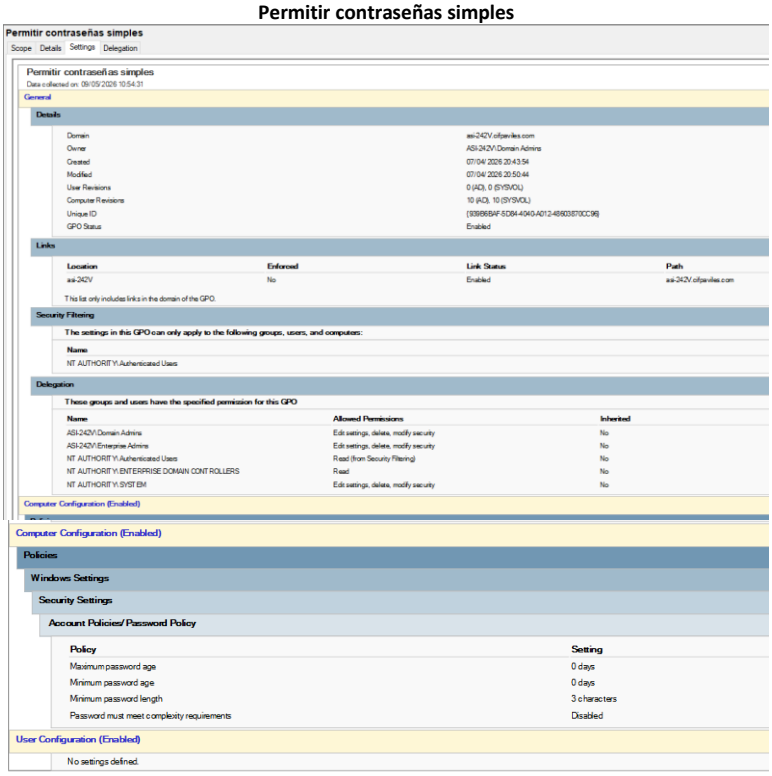
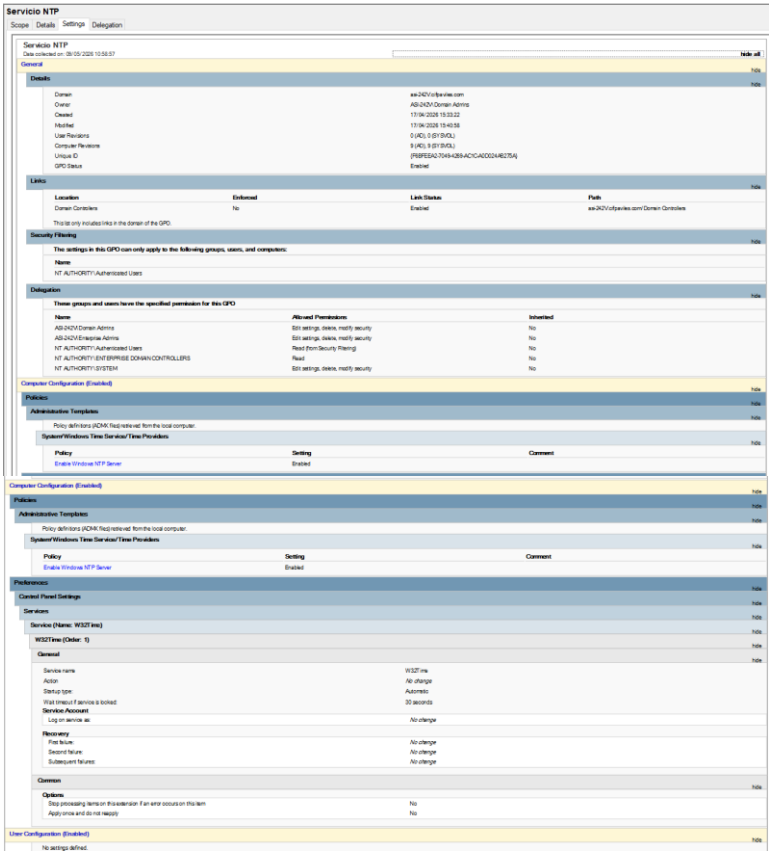

admins Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Member of:
Name
Active Directory Domain Services Folder
Domain Admins
asi-242V.cifpaviles.com/Users
empresa
asi-242V.cifpaviles.com/usuarios/empresa
Enterprise Admins
asi-242V.cifpaviles.com/Users
Schema Admins
asi-242V.cifpaviles.com/Users
Add...
Remove
This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups.
OK
Cancel
Apply
Help

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			clientes Properties Object / Security / Attribute Editor General / Members / Member Of / Managed By Member of: Name: usuariosASI-242v Active Directory Domain Services Folder: asi-242V.cifpaviles.com/usuarios Add... / Remove This list displays only groups from the current domain and groups maintained in the Global Catalog, such as universal groups. OK / Cancel / Apply / Help
23.	Usuario personal	Usuarios y equipos de AD/Seleccionar usuario personal/Propiedades de usuario/**Miembro de**	ASO Álvaro Remis Properties Security / Environment / Sessions / Remote control Remote Desktop Services Profile / COM+ / Attribute Editor General / Address / Account / Profile / Telephones / Organization Published Certificates / Member Of / Password Replication / Dial-in / Object Member of: Name / Active Directory Domain Services Folder admins / asi-242V.cifpaviles.com/usuarios/empresa/ adminspasswd / asi-242V.cifpaviles.com/usuarios/empresa/ creadoresmoodle / asi-242V.cifpaviles.com/moodleroles/creac DOCSN1 / asi-242V.cifpaviles.com/moodleroles/admir DOCSN2 / asi-242V.cifpaviles.com/moodleroles/admir DOCSN3 / asi-242V.cifpaviles.com/moodleroles/admir Domain Users / asi-242V.cifpaviles.com/Users usuariosHV02-242V.usu1 / asi-242V.cifpaviles.com/usuarios/empresa/ Add... / Remove Primary group: Domain Users Set Primary Group There is no need to change Primary group unless you have Macintosh clients or POSIX-compliant applications. OK / Cancel / Apply / Help

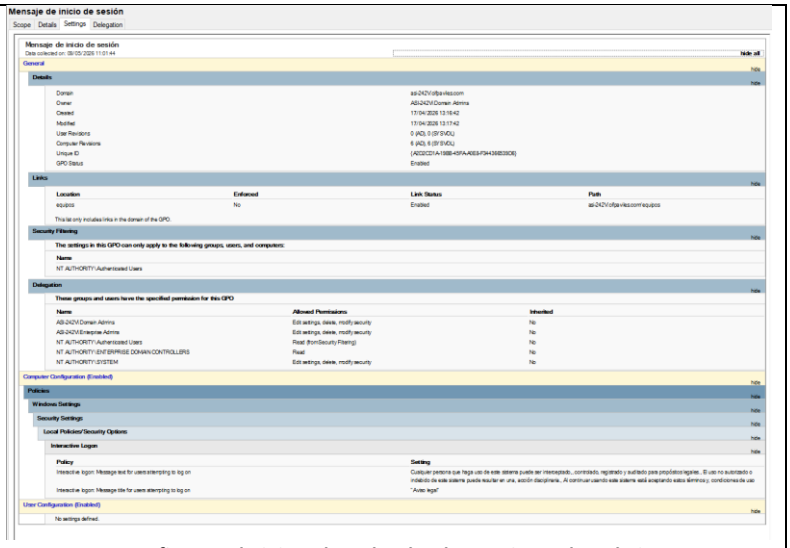
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
24.	Unidad de red de usuarios (Z:)	Con un usuario con unidad de red configurada: Usuarios y equipos de AD/ Seleccionar usuario/ Propiedades de usuario/ Perfil/ **Carpeta particular** (mostrar ruta completa))	ASO \\FILER01-242V.asi-242v.cifpaviles.com\usuarios$\empresa\admins\alvaro 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
25.	Perfil móvil de usuario (miembros del grupo gestion)	a) Usuarios y equipos de AD/Seleccionar usuario (gestion)/ Propiedades de usuario/Perfil/**Perfil de usuario** b) Ventana del explorador que muestre el contenido de la **carpeta de perfil de usuario**	ASO  

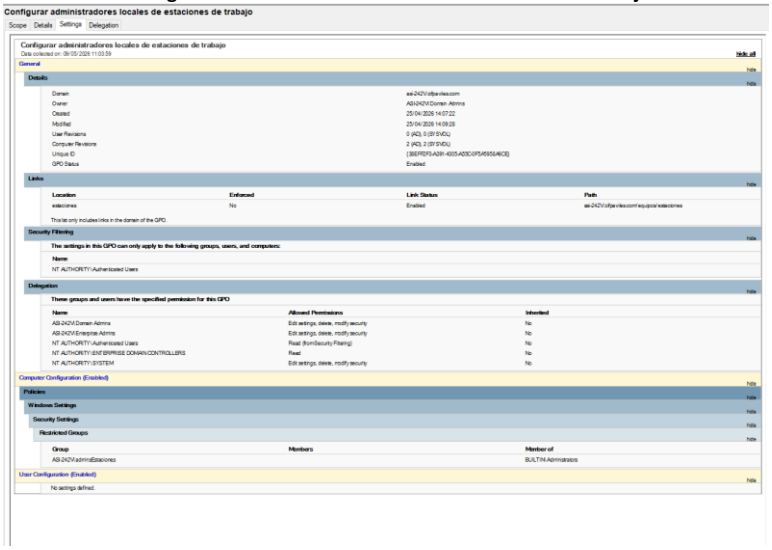
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
26.	Directivas de dominio (GPO) creadas y contenedores donde se aplican	Consola GPMC/Imagen del árbol del panel izquierdo donde se vea bosque, dominio, unidades organizativas, vínculos de las GPO y Objetos de directiva de grupo.	ASO 

27.	Directivas de dominio (GPO): definición de directivas creadas	Para cada GPO creada: Consola GPMC/Seleccionar directiva/Pestaña Configuración/Mostrar todo	ASO **Permitir contraseñas simples**  **Servicio NTP**  **Servidor horario dominio**

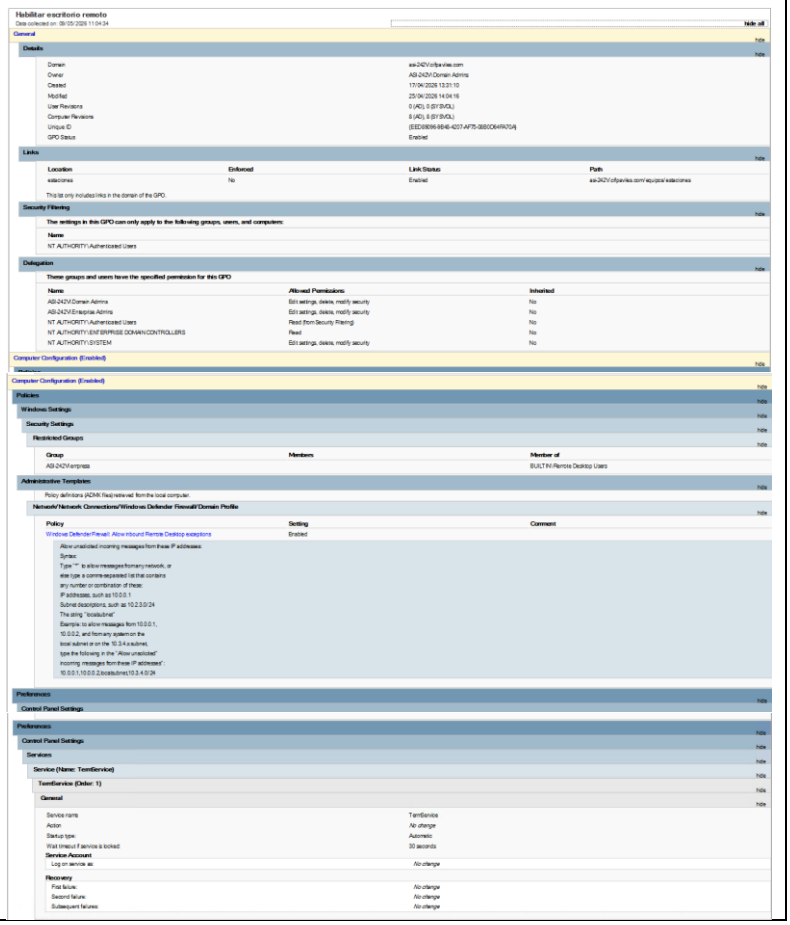
			Servidor horario dominio Scope Details Settings Delegation **Servidor horario dominio** Data collected on: 09/05/2026 10:59:50 hide all **General** hide **Details** hide Domain: aa-242V.cifpavilas.com Owner: AB-242V\Domain Admins Created: 17/04/2026 15:20:44 Modified: 17/04/2026 15:37:56 User Revisions: 0 (AD), 0 (SYSVOL) Computer Revisions: 18 (AD), 18 (SYSVOL) Unique ID: {918B3D0A-A1F6-4152-B87A-B1D3FF254E7E} GPO Status: Enabled **Links** hide Location: FDC — Enforced: No — Link Status: Enabled — Path: aa-242V.cifpavilas.com/Domain Controllers/FDC This list only includes links in the domain of the GPO. **Security Filtering** hide The settings in this GPO can only apply to the following groups, users, and computers: Name: NT AUTHORITY\Authenticated Users **Delegation** hide These groups and users have the specified permission for this GPO Name / Allowed Permissions / Inherited AB-242V\Domain Admins / Edit settings, delete, modify security / No AB-242V\Enterprise Admins / Edit settings, delete, modify security / No NT AUTHORITY\Authenticated Users / Read (from Security Filtering) / No NT AUTHORITY\ENTERPRISE DOMAIN CONTROLLERS / Read / No NT AUTHORITY\SYSTEM / Edit settings, delete, modify security / No **Computer Configuration (Enabled)** hide **Policies** hide **Administrative Templates** hide Computer Configuration (Enabled) **Policies** **Administrative Templates** Policy definitions (ADMX files) retrieved from the local computer. **System/Windows Time Service/Time Providers** Policy / Setting / Comment Configure Windows NTP Client — Enabled NtpServer: time.informatica.cifpavilas.pa.0x9 Type: NTP CrossSiteSyncFlags: 2 ResolvePeerBackoffMinutes: 15 ResolvePeerBackoffMaxTimes: 7 SpecialPollInterval: 1024 EventLogFlags: 0 Policy / Setting / Comment Enable Windows NTP Client — Enabled Enable Windows NTP Server — Enabled **Preferences** **Control Panel Settings** **Services** **Service (Name: W32Time)** **W32Time (Order: 1)** **General** Service name: W32Time Action: *No change* Startup type: Automatic Wait timeout if service is locked: 30 seconds **Service Account** Log on service as: *No change* **Recovery** First failure: *No change* Second failure: *No change* Subsequent failures: *No change* **Common** **Habilitar administración remota**
			Habilitar administración remota Data collected on: 09/05/2026 11:00:53 hide all **General** hide **Details** hide Domain: aa-242V.cifpavilas.com Owner: AB-242V\Domain Admins Created: 20/04/2026 21:27:20 Modified: 20/04/2026 21:31:08 User Revisions: 0 (AD), 0 (SYSVOL) Computer Revisions: 3 (AD), 3 (SYSVOL) Unique ID: {R6BBFAC0-FE5D-4DA4-8A6D-4E5C2A171C78} GPO Status: Enabled **Links** hide Location: equipos — Enforced: No — Link Status: Enabled — Path: aa-242V.cifpavilas.com/equipos This list only includes links in the domain of the GPO. **Security Filtering** hide The settings in this GPO can only apply to the following groups, users, and computers: Name: NT AUTHORITY\Authenticated Users **Delegation** hide These groups and users have the specified permission for this GPO Name / Allowed Permissions / Inherited AB-242V\Domain Admins / Edit settings, delete, modify security / No AB-242V\Enterprise Admins / Edit settings, delete, modify security / No NT AUTHORITY\Authenticated Users / Read (from Security Filtering) / No NT AUTHORITY\ENTERPRISE DOMAIN CONTROLLERS / Read / No NT AUTHORITY\SYSTEM / Edit settings, delete, modify security / No **Computer Configuration (Enabled)** hide **Policies** hide Computer Configuration (Enabled) **Policies** **Administrative Templates** Policy definitions (ADMX files) retrieved from the local computer. **Network/Network Connections/Windows Defender Firewall/Domain Profile** Policy / Setting / Comment Windows Defender Firewall: Allow inbound file and printer sharing exception — Enabled Allow unsolicited incoming messages from these IP addresses: Syntax: Type "*" to allow messages from any network, or else type a comma-separated list that contains any number or combination of these: IP addresses, such as 10.0.0.1 Subnet descriptions, such as 10.2.3.0/24 The string "localsubnet" Example: to allow messages from 10.0.0.1, 10.0.0.2, and from any system on the local subnet or on the 10.3.4.x subnet, type the following in the "Allow unsolicited" incoming messages from these IP addresses": 10.0.0.1,10.0.0.2,localsubnet,10.3.4.0/24 Policy / Setting / Comment Windows Defender Firewall: Allow inbound remote administration exception — Enabled Allow unsolicited incoming messages from these IP addresses: Syntax: Type "*" to allow messages from any network, or else type a comma-separated list that contains any number or combination of these: IP addresses, such as 10.0.0.1 Subnet descriptions, such as 10.2.3.0/24 The string "localsubnet" Example: to allow messages from 10.0.0.1, 10.0.0.2, and from any system on the local subnet or on the 10.3.4.x subnet, type the following in the "Allow unsolicited" incoming messages from these IP addresses": 10.0.0.1,10.0.0.2,localsubnet,10.3.4.0/24 User Configuration (Enabled) **Mensaje de inicio de sesión**



Configurar administradores locales de estaciones de trabajo



Habilitar escritorio remoto



	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			Restricciones estaciones **Restricciones estaciones** Scope Details Settings Delegation Restricciones estaciones Data collected on: 09/05/2026 11:05:39 **General** **Details** Domain: as-242V.cofpavilas.com Owner: AS-242V.Domain Admins Created: 16/04/2026 17:20:54 Modified: 17/04/2026 13:28:30 User Revisions: 0 (AD), 0 (SYSVOL) Computer Revisions: 9 (AD), 9 (SYSVOL) Unique ID: {7BA0C3C-54B4-48FB-827E-B93C3DBE7D4} GPO Status: Enabled **Links** Location: estaciones; Enforced: No; Link Status: Enabled; Path: as-242V.cofpavilas.com/equipos/estaciones This list only includes links in the domain of the GPO. **Security Filtering** The settings in this GPO can only apply to the following groups, users, and computers: Name: NT AUTHORITY\Authenticated Users **Delegation** These groups and users have the specified permission for this GPO Name / Allowed Permissions / Inherited AS-242V.Domain Admins / Edit settings, delete, modify security / No AS-242V.Enterprise Admins / Edit settings, delete, modify security / No NT AUTHORITY\Authenticated Users / Read (from Security Filtering) / No NT AUTHORITY\ENTERPRISE DOMAIN CONTROLLERS / Read / No NT AUTHORITY\SYSTEM / Edit settings, delete, modify security / No **Computer Configuration (Enabled)** **Policies** **Administrative Templates** Policy definitions (ADMX files) retrieved from the local computer. **System/Logon** Policy / Setting / Comment Always use classic logon / Enabled **Windows Components/Windows Messenger** Policy / Setting / Comment Do not allow Windows Messenger to be run / Enabled Do not automatically start Windows Messenger initially / Enabled **User Configuration (Enabled)** No settings defined. **Restricciones usuarios** **Restricciones usuarios** Data collected on: 09/05/2026 11:06:39 hide all **General** hide **Details** hide Domain: as-242V.cofpavilas.com Owner: AS-242V.Domain Admins Created: 21/04/2026 8:24:28 Modified: 21/04/2026 9:00:10 User Revisions: 10 (AD), 10 (SYSVOL) Computer Revisions: 4 (AD), 4 (SYSVOL) Unique ID: {7C6BC0B1-6E10-4F0F-B61A-C2561DF6EE79} GPO Status: Enabled **Links** hide Location: gestion; Enforced: No; Link Status: Enabled; Path: as-242V.cofpavilas.com/usuarios/empresa/gestion Location: tecnicos; Enforced: No; Link Status: Enabled; Path: as-242V.cofpavilas.com/usuarios/empresa/tecnicos This list only includes links in the domain of the GPO. **Security Filtering** hide The settings in this GPO can only apply to the following groups, users, and computers: Name: NT AUTHORITY\Authenticated Users **Delegation** hide These groups and users have the specified permission for this GPO Name / Allowed Permissions / Inherited AS-242V.Domain Admins / Edit settings, delete, modify security / No AS-242V.Enterprise Admins / Edit settings, delete, modify security / No NT AUTHORITY\Authenticated Users / Read (from Security Filtering) / No NT AUTHORITY\ENTERPRISE DOMAIN CONTROLLERS / Read / No NT AUTHORITY\SYSTEM / Edit settings, delete, modify security / No **User Configuration (Enabled)** **Policies** **Administrative Templates** Policy definitions (ADMX files) retrieved from the local computer. **Control Panel** Policy / Setting / Comment Always open All Control Panel Items when opening Control Panel / Enabled **Control Panel/Display** Policy / Setting / Comment Disable the Display Control Panel / Enabled Hide Settings tab / Enabled **Control Panel/Personalization** Policy / Setting / Comment Prevent changing desktop background / Enabled **Desktop** Policy / Setting / Comment Remove My Documents icon on the desktop / Enabled **Start Menu and Taskbar** Policy / Setting / Comment Lock the Taskbar / Enabled Prevent changes to Taskbar and Start Menu Settings / Enabled **System** Policy / Setting / Comment Don't run specified Windows applications / Enabled List of disallowed applications net.exe msg.exe **Windows Components/Windows Messenger** Policy / Setting / Comment Do not allow Windows Messenger to be run / Enabled Do not automatically start Windows Messenger initially / Enabled

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
28.	Servidor **LAMP01-ID**: Instalación de servicios y aplicaciones	Ventana de terminal con el resultado de ejecutar el comando: **dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin**	ASO/SREIN Comando ejecutado en diferentes contenedores. Al haber distintos servicios alojados en cada contenedor, nos resultados serán distintos: **moodle_frontend** **wordpress_frontend** **moodle_backend (contiene mariadb)** **wordpress_backend (basado en Oracle Linux. El comando dpkg no funciona. Solo contiene mysql)** **inventario_frontend** **inventario_backend (basado en Oracle Linux. El comando dpkg no funciona. Contiene base de datos Oracle)** **contenedor_default** **servidor_proxy**

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it moodle_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
dpkg-query: no packages found matching mysql-server
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version          Architecture Description
+++-==============-================-============-===============================================================================
ii  apache2        2.4.58-1ubuntu8.11 amd64        Apache HTTP Server
ii  libapache2-mod-php 2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (Apache 2 module) (default)
ii  php            2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (default)
ii  php-mysql      2:8.3+93ubuntu2   all          MySQL module for PHP [default]
ii  phpmyadmin     4:5.2.1+dfsg-3    all          MySQL web administration tool
administrador@lamp01-242v:/mnt/raid5/infra$
```

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it wordpress_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
dpkg-query: no packages found matching mysql-server
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version          Architecture Description
+++-==============-================-============-===============================================================================
ii  apache2        2.4.58-1ubuntu8.11 amd64        Apache HTTP Server
ii  libapache2-mod-php 2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (Apache 2 module) (default)
ii  php            2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (default)
ii  php-mysql      2:8.3+93ubuntu2   all          MySQL module for PHP [default]
ii  phpmyadmin     4:5.2.1+dfsg-3    all          MySQL web administration tool
administrador@lamp01-242v:/mnt/raid5/infra$
```

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it moodle_backend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
dpkg-query: no packages found matching apache2
dpkg-query: no packages found matching php
dpkg-query: no packages found matching libapache2-mod-php
dpkg-query: no packages found matching php-mysql
dpkg-query: no packages found matching phpmyadmin
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version      Architecture Description
+++-==============-============-============-===================================
un  mysql-server   <none>       <none>       (no description available)
administrador@lamp01-242v:/mnt/raid5/infra$
```

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it moodle_backend mariadb --version
mariadb  Ver 15.1 Distrib 10.11.16-MariaDB, for debian-linux-gnu (x86_64) using  EditLine wrapper
administrador@lamp01-242v:/mnt/raid5/infra$
```

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it wordpress_backend mysql --version
mysql  Ver 8.0.46 for Linux on x86_64 (MySQL Community Server - GPL)
administrador@lamp01-242v:/mnt/raid5/infra$
```

```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it inventario_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
dpkg-query: no packages found matching php-mysql
dpkg-query: no packages found matching mysql-server
dpkg-query: no packages found matching phpmyadmin
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version          Architecture Description
+++-==============-================-============-===============================================================================
ii  apache2        2.4.58-1ubuntu8.12 amd64        Apache HTTP Server
ii  libapache2-mod-php 2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (Apache 2 module) (default)
ii  php            2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (default)
administrador@lamp01-242v:/mnt/raid5/infra$
```

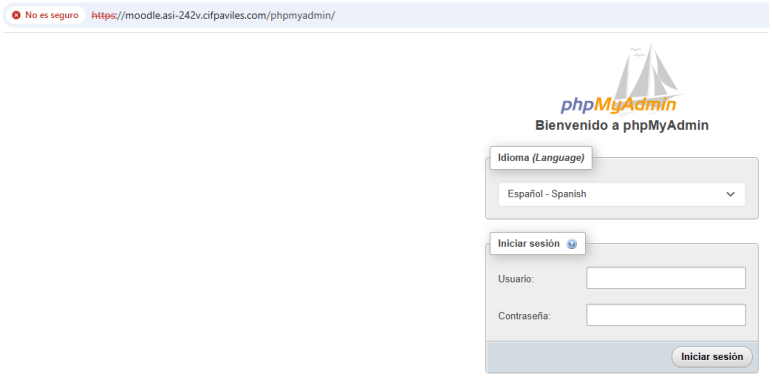
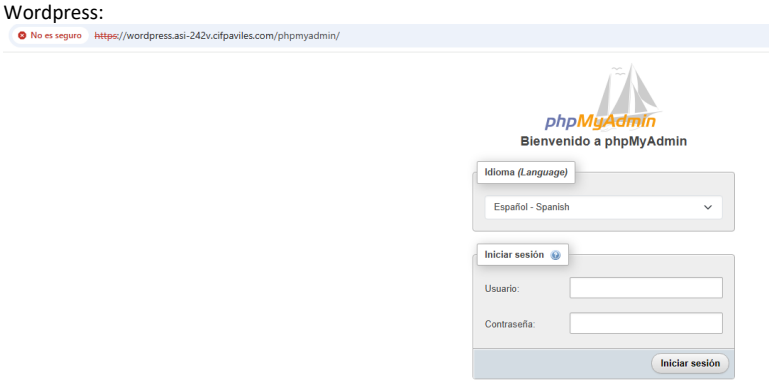
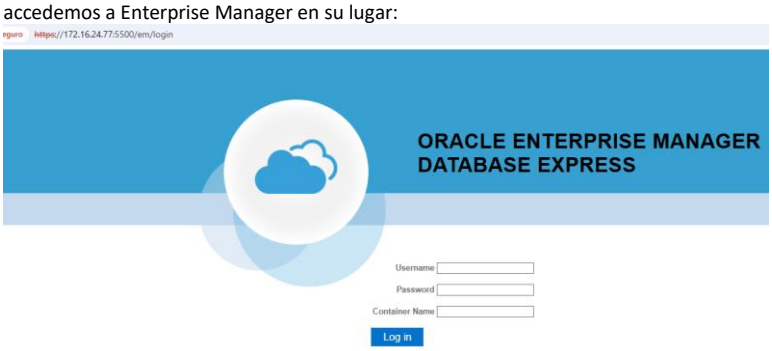
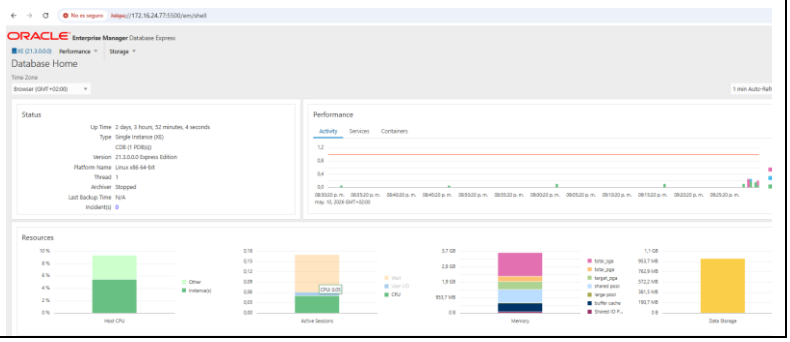
```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it inventario_backend rpm -qa | grep -E "oracle|instantclient"
oraclelinux-release-8.10-1.0.7.el8.x86_64
oraclelinux-release-el8-1.0-38.el8.x86_64
oracle-database-xe-21c-1.0-1.x86_64
administrador@lamp01-242v:/mnt/raid5/infra$
```

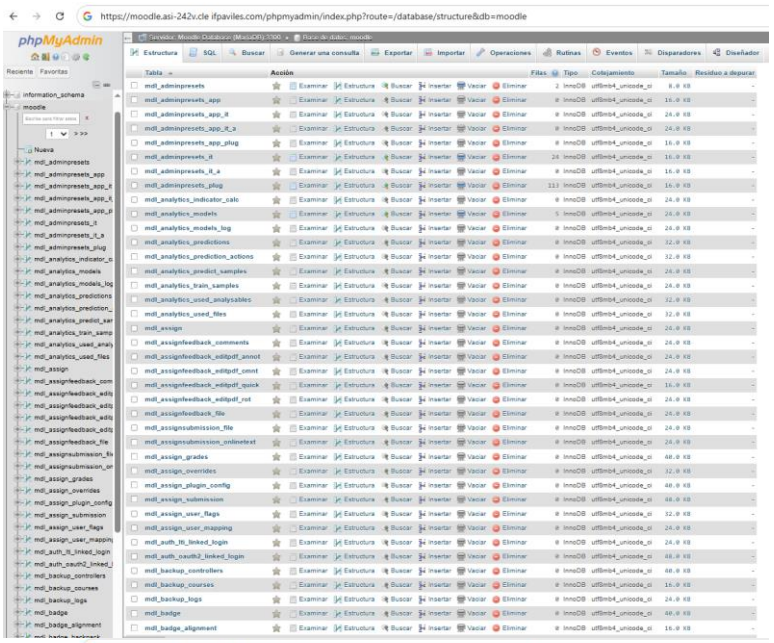
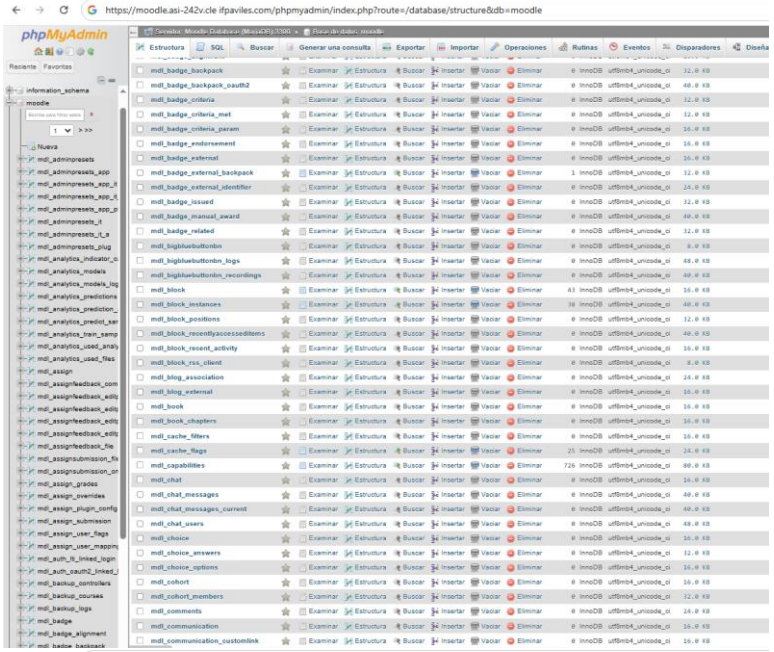
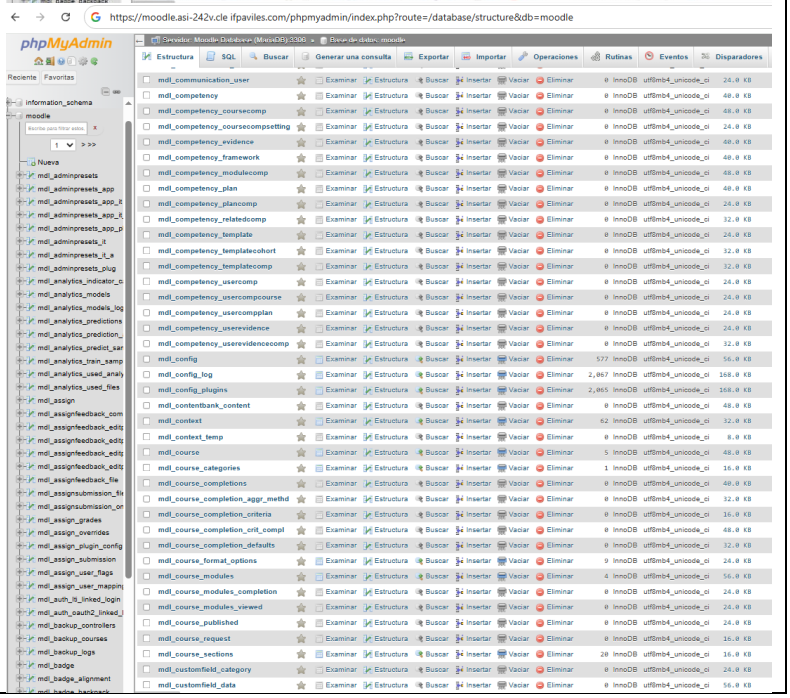
```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it contenedor_default dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
dpkg-query: no packages found matching php-mysql
dpkg-query: no packages found matching mysql-server
dpkg-query: no packages found matching phpmyadmin
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version          Architecture Description
+++-==============-================-============-===============================================================================
ii  apache2        2.4.58-1ubuntu8.11 amd64        Apache HTTP Server
ii  libapache2-mod-php 2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (Apache 2 module) (default)
ii  php            2:8.3+93ubuntu2   all          server-side, HTML-embedded scripting language (default)
administrador@lamp01-242v:/mnt/raid5/infra$
```

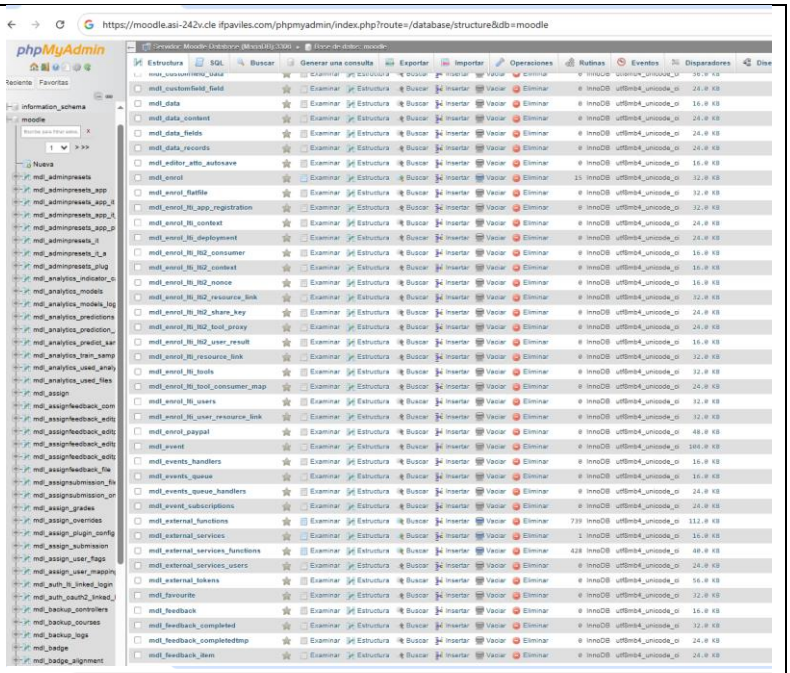
```
administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it servidor_proxy nginx -v && docker exec -it servidor_proxy node -v
nginx version: openresty/1.27.1.2
v22.22.0
administrador@lamp01-242v:/mnt/raid5/infra$
```

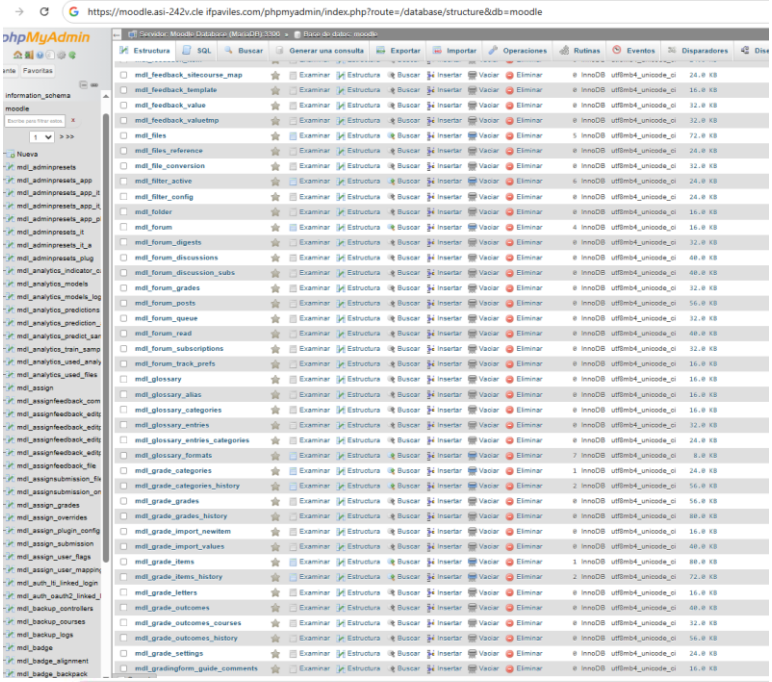
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

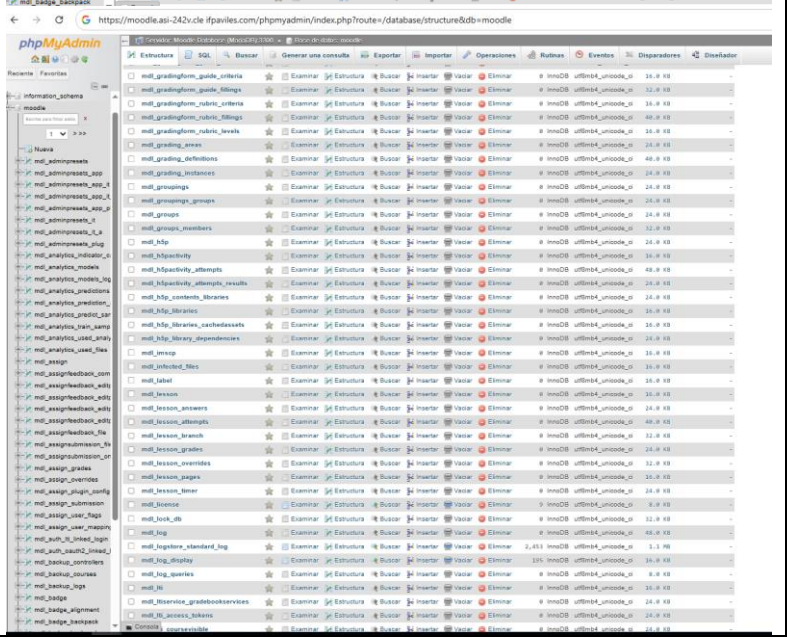
29.	Servidor **LAMP01-ID**: Instalación de extensiones php	**dpkg -l php-intl php-xmlrpc php-soap php-ldap**	ASO/SREIN
			Solo se lanzan los comandos en los contenedores frontend, que son las que tienen php instalado.
			moodle_frontend
			`administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it moodle_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend`
			`|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`||/ Name Version Architecture Description`
			`+++-==========-==========-============-==========================================`
			`ii  php-intl 2:8.3+93ubuntu2 all Internationalisation module for PHP [default]`
			`ii  php-ldap 2:8.3+93ubuntu2 all LDAP module for PHP [default]`
			`ii  php-soap 2:8.3+93ubuntu2 all SOAP module for PHP [default]`
			`un  php-xmlrpc <none> <none> (no description available)`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			wordpress_frontend
			`administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it wordpress_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap`
			`dpkg-query: no packages found matching php-intl`
			`dpkg-query: no packages found matching php-soap`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend`
			`|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`||/ Name Version Architecture Description`
			`+++-==========-==========-============-==================================`
			`un  php-ldap <none> <none> (no description available)`
			`un  php-xmlrpc <none> <none> (no description available)`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			inventario_frontend
			`administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it inventario_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap`
			`dpkg-query: no packages found matching php-intl`
			`dpkg-query: no packages found matching php-soap`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend`
			`|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`||/ Name Version Architecture Description`
			`+++-==========-==========-============-==================================`
			`ii  php-ldap 2:8.3+93ubuntu2 all LDAP module for PHP [default]`
			`un  php-xmlrpc <none> <none> (no description available)`
			`administrador@lamp01-242v:/mnt/raid5/infra$`
			contenedor_default
			`administrador@lamp01-242v:/mnt/raid5/infra$ docker exec -it contenedor_default dpkg -l php-intl php-xmlrpc php-soap php-ldap`
			`dpkg-query: no packages found matching php-intl`
			`dpkg-query: no packages found matching php-soap`
			`dpkg-query: no packages found matching php-ldap`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend`
			`|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`||/ Name Version Architecture Description`
			`+++-==========-==========-============-==================================`
			`un  php-xmlrpc <none> <none> (no description available)`
			`administrador@lamp01-242v:/mnt/raid5/infra$`

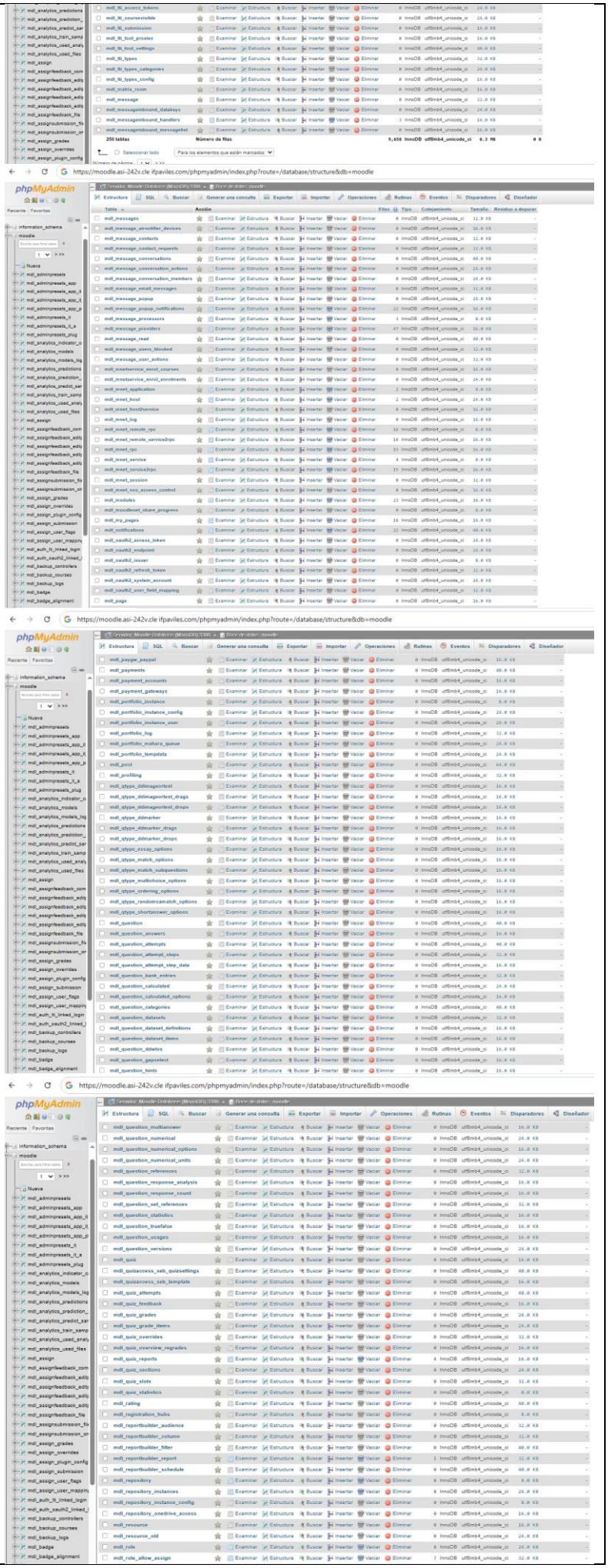
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
30.	Servidor **LAMP01-ID**: Acceso a aplicación phpmyadmin	a) Ventana de explorador de internet con la url de acceso a la aplicación phpmyadmin, tras validarse en la pantalla de entrada a la aplicación, mostrando **bases de datos**. b) Para cada aplicación: mostrar **tablas** de la base de datos de la aplicación.	ASO/SREIN/ASGBD Moodle:  Wordpress:  Para inventario se utilizo una base de datos Oracle. Como no utiliza phpmyadmin accedemos a Enterprise Manager en su lugar:  

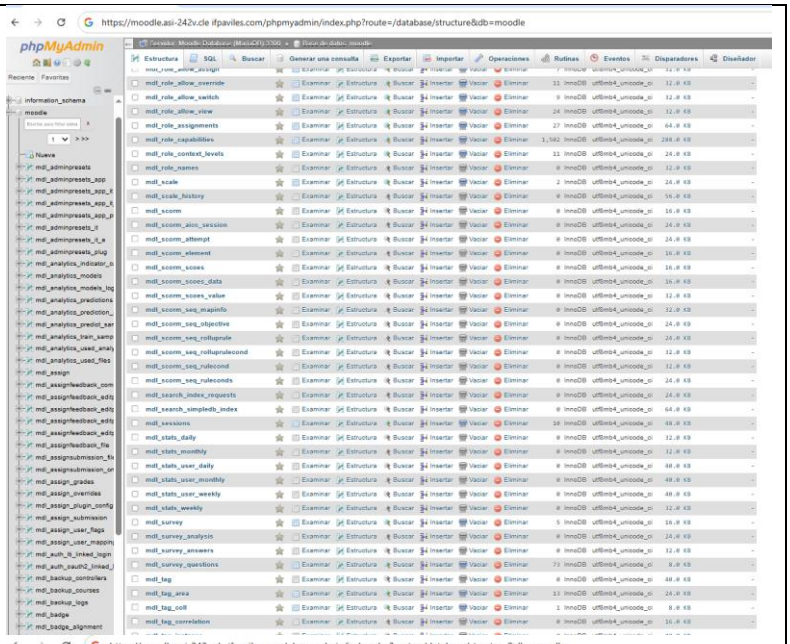
			Moodle   

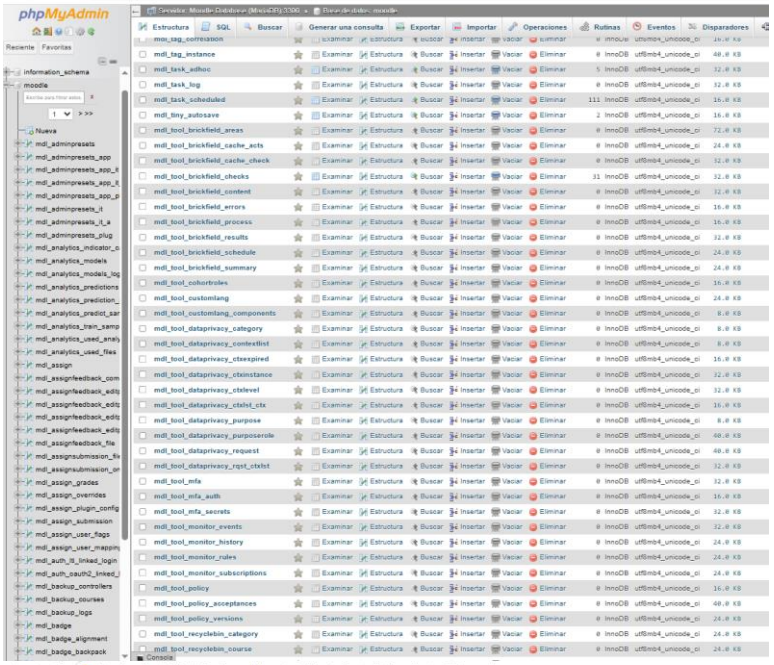

https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Rutinas
Eventos
Disparadores
mdl_customfield_field
mdl_data
mdl_data_content
mdl_data_fields
mdl_data_records
mdl_editor_atto_autosave
mdl_enrol
mdl_enrol_flatfile
mdl_enrol_lti_app_registration
mdl_enrol_lti_context
mdl_enrol_lti_deployment
mdl_enrol_lti_lti2_consumer
mdl_enrol_lti_lti2_context
mdl_enrol_lti_lti2_nonce
mdl_enrol_lti_lti2_resource_link
mdl_enrol_lti_lti2_share_key
mdl_enrol_lti_lti2_tool_proxy
mdl_enrol_lti_lti2_user_result
mdl_enrol_lti_resource_link
mdl_enrol_lti_tools
mdl_enrol_lti_tool_consumer_map
mdl_enrol_lti_users
mdl_enrol_lti_user_resource_link
mdl_enrol_paypal
mdl_event
mdl_events_handlers
mdl_events_queue
mdl_events_queue_handlers
mdl_event_subscriptions
mdl_external_functions
mdl_external_services
mdl_external_services_functions
mdl_external_services_users
mdl_external_tokens
mdl_favourite
mdl_feedback
mdl_feedback_completed
mdl_feedback_completedtmp
mdl_feedback_item

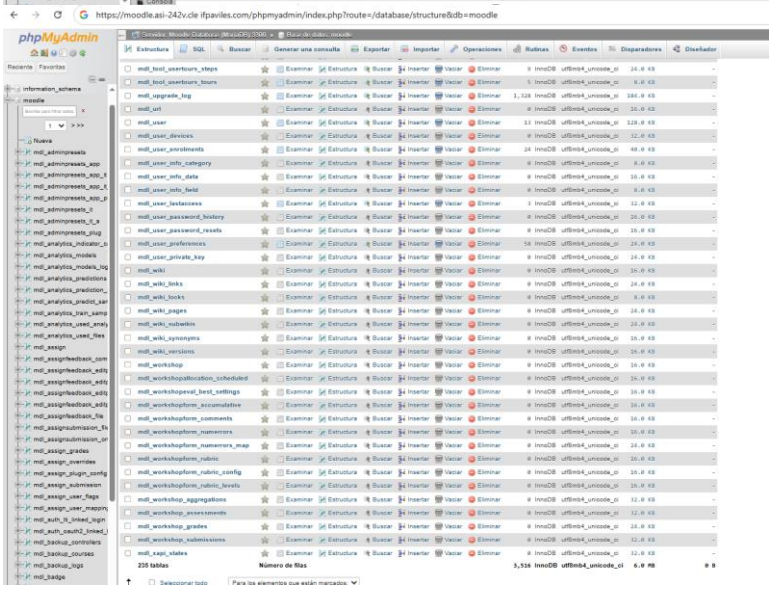

https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Rutinas
Eventos
Disparadores
mdl_feedback_sitecourse_map
mdl_feedback_template
mdl_feedback_value
mdl_feedback_valuetmp
mdl_files
mdl_files_reference
mdl_file_conversion
mdl_filter_active
mdl_filter_config
mdl_folder
mdl_forum
mdl_forum_digests
mdl_forum_discussions
mdl_forum_discussion_subs
mdl_forum_grades
mdl_forum_posts
mdl_forum_queue
mdl_forum_read
mdl_forum_subscriptions
mdl_forum_track_prefs
mdl_glossary
mdl_glossary_alias
mdl_glossary_categories
mdl_glossary_entries
mdl_glossary_entries_categories
mdl_glossary_formats
mdl_grade_categories
mdl_grade_categories_history
mdl_grade_grades
mdl_grade_grades_history
mdl_grade_import_newitem
mdl_grade_import_values
mdl_grade_items
mdl_grade_items_history
mdl_grade_letters
mdl_grade_outcomes
mdl_grade_outcomes_courses
mdl_grade_outcomes_history
mdl_grade_settings
mdl_gradingform_guide_comments


https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Rutinas
Eventos
Disparadores
Diseñador
mdl_gradingform_guide_criteria
mdl_gradingform_guide_fillings
mdl_gradingform_rubric_criteria
mdl_gradingform_rubric_fillings
mdl_gradingform_rubric_levels
mdl_grading_areas
mdl_grading_definitions
mdl_grading_instances
mdl_groupings
mdl_groupings_groups
mdl_groups
mdl_groups_members
mdl_h5p
mdl_h5pactivity
mdl_h5pactivity_attempts
mdl_h5pactivity_attempts_results
mdl_h5p_contents_libraries
mdl_h5p_libraries
mdl_h5p_libraries_cachedassets
mdl_h5p_library_dependencies
mdl_imscp
mdl_infected_files
mdl_label
mdl_lesson
mdl_lesson_answers
mdl_lesson_attempts
mdl_lesson_branch
mdl_lesson_grades
mdl_lesson_overrides
mdl_lesson_pages
mdl_lesson_timer
mdl_license
mdl_lock_db
mdl_log
mdl_logstore_standard_log
mdl_log_display
mdl_log_queries
mdl_lti
mdl_ltiservice_gradebookservices
mdl_lti_access_tokens
mdl_lti_coursevisible

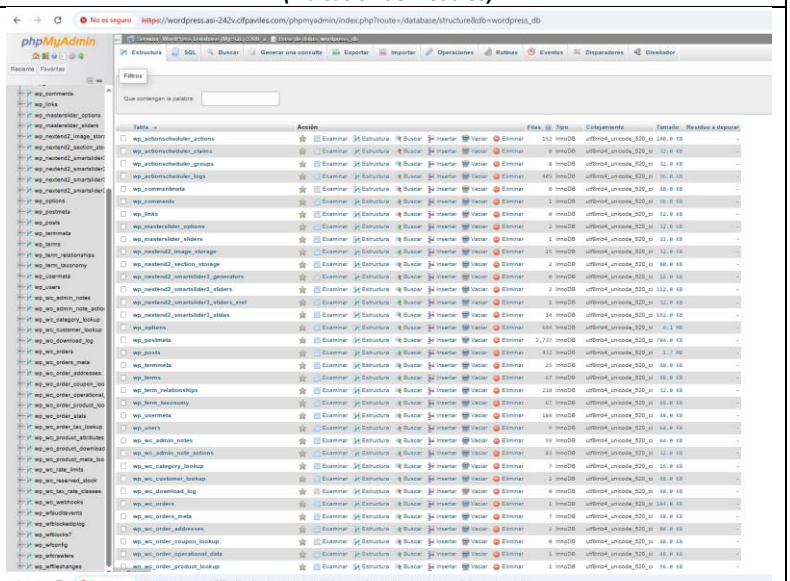
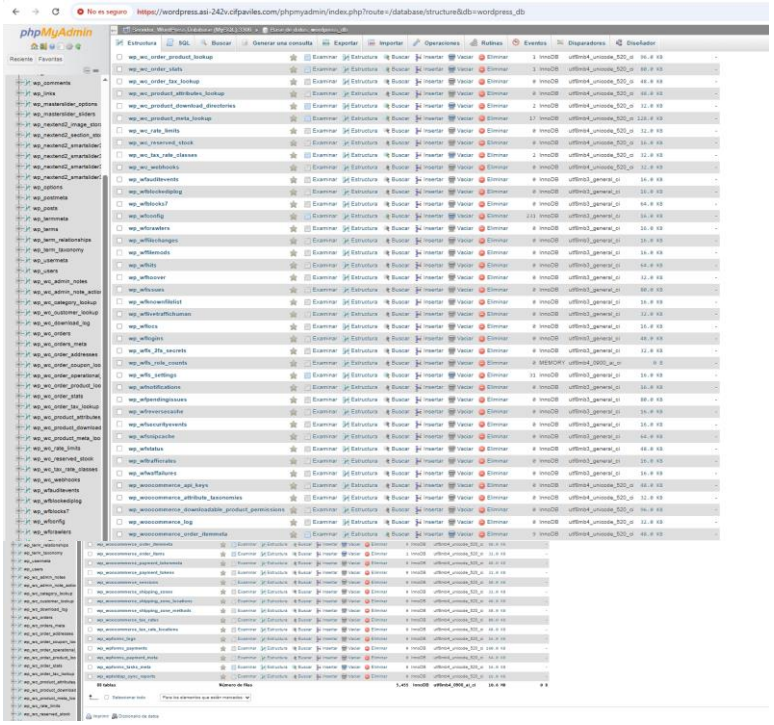
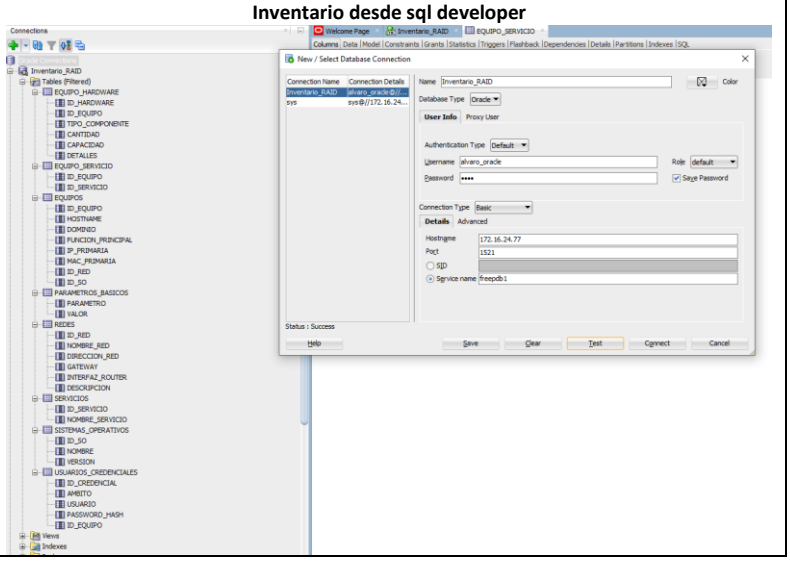

https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Rutinas
Eventos
Disparadores
Diseñador

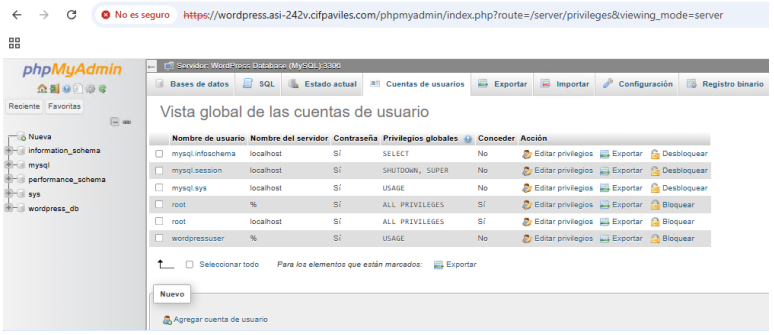
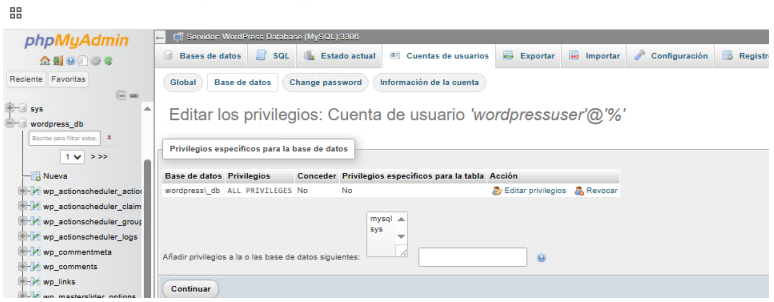
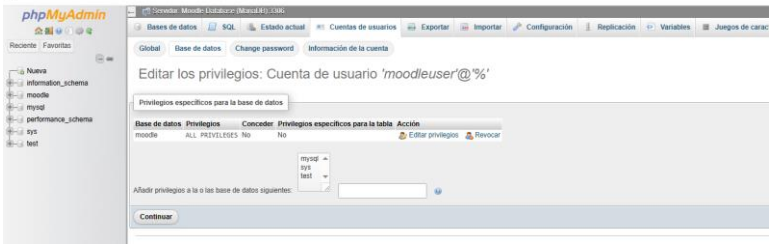
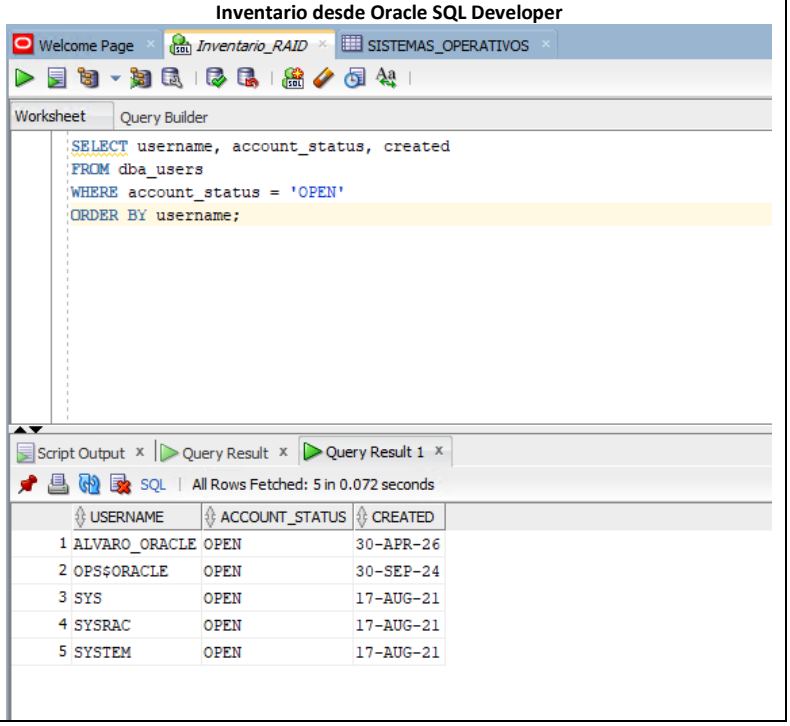

https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin


https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin


https://moodle.asi-242v.cle ifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin

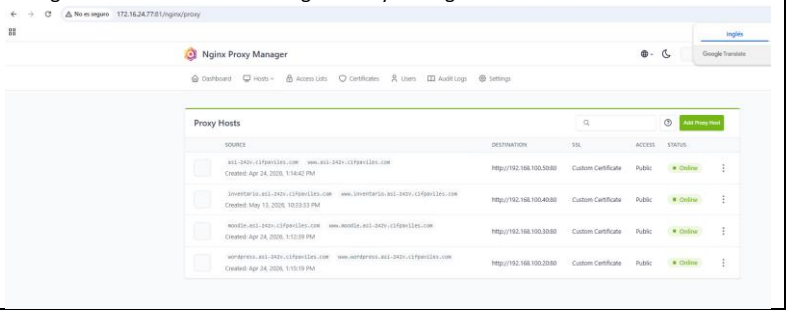
Wordpress

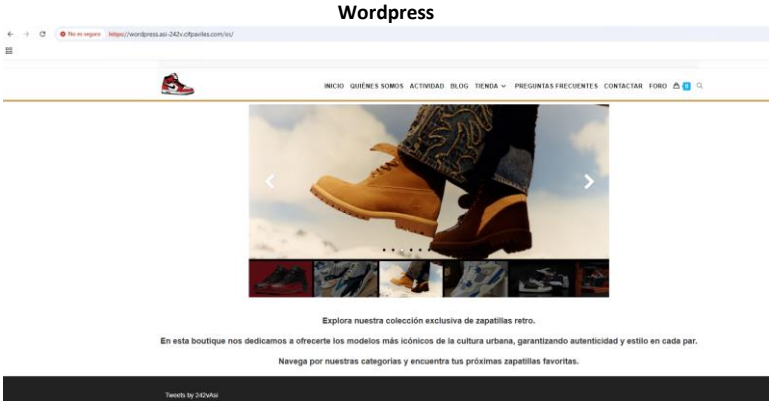
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			  **Inventario desde sql developer** 

31.	Servidor **LAMP01-ID**: cuentas de usuarios en mysql	a) phpmyadmin/ Cuentas de usuarios/ Vista global de las cuentas de usuario b) Para cada aplicación configurada: Seleccionar usuario específico de la aplicación/ privilegios específicos para la base de datos	ASGBD **Wordpress**   **Moodle**  **Inventario desde Oracle SQL Developer** 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			Welcome Page · *Inventario_RAID* · SISTEMAS_OPERATIVOS
			Worksheet · Query Builder
			`SELECT granted_role, admin_option, default_role`
			`FROM dba_role_privs`
			`WHERE grantee = 'ALVARO_ORACLE';`
			Script Output · Query Result · Query Result 1
			SQL · All Rows Fetched: 3 in 0.028 seconds
			GRANTED_ROLE / ADMIN_OPTION / DEFAULT_ROLE
			1 CONNECT NO YES
			2 RESOURCE NO YES
			3 DBA NO YES
			
			Welcome Page · *Inventario_RAID* · SISTEMAS_OPERATIVOS
			Worksheet · Query Builder
			`SELECT privilege, admin_option`
			`FROM dba_sys_privs`
			`WHERE grantee = 'ALVARO_ORACLE'`
			`ORDER BY privilege;`
			Script Output · Query Result · Query Result 1
			SQL · All Rows Fetched: 4 in 0.012 seconds
			PRIVILEGE / ADMIN_OPTION
			1 CREATE MATERIALIZED VIEW NO
			2 CREATE SYNONYM NO
			3 CREATE VIEW NO
			4 UNLIMITED TABLESPACE NO

32.	Servidor **LAMP01-ID**: Definición de sitios virtuales	Archivos de sitios definidos en **/etc/apache2/sites-available/**	ASO/SREIN Configuración hecha a través de Nginx Proxy Manager 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
33.	Servidor **LAMP01-ID**: Acceso a aplicaciones web por nombre dns.	Para cada aplicación web configurada: Ventana de navegador de internet mostrando la url de acceso a la aplicación, por nombre dns.	ASO/SREIN **Default** **Wordpress**  **Inventario** **Moodle**

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

34.	Servicio **DNS externo**: reenviadores	Archivo **/etc/bind/named.conf.options**	SREIN
			administrador@ROUTER01-242V:~$ cat /etc/bind/named.conf.options
			
			options {
			sortlist {
			172.16.24.0/24;
			172.20.24.0/24;
			172.24.24.0/24;
			172.28.24.0/24;
			};
			directory "/var/cache/bind";
			
			// If there is a firewall between you and nameservers you want
			// to talk to, you might need to uncomment the query-source
			// directive below. Previous versions of BIND always asked
			// questions using port 53, but BIND 8.1 and later use an unprivileged
			// port by default.
			
			//query-source address * port 53;
			//transfer-source * port 53;
			//notify-source * port 53;
			
			// If your ISP provided one or more IP addresses for stable
			// nameservers, you probably want to use them as forwarders.
			forward first;
			forwarders {
			10.220.3.20;
			10.200.0.20;
			};
			
			auth-nxdomain no; # conform to RFC1035
			
			allow-query { any; };
			allow-recursion { trusted; };
			allow-query-cache { trusted; };
			allow-transfer { internal-local-nets; };
			};
			
			logging { category lame-servers { null; }; };
			administrador@ROUTER01-242V:~$

35.	Servicio **DNS externo**: definición de zonas	Archivo **/etc/bind/named.conf.local**	SREIN

```
administrador@ROUTER01-242V:~$ cat /etc/bind/named.conf.local
// Generated by Zentyal

acl "trusted" {
    localhost;
    localnets;
};

acl "internal-local-nets" {
    172.16.24.0/24;
    172.20.24.0/24;
    172.24.24.0/24;
    172.28.24.0/24;
};


zone "asi-242v.cifpaviles.com." IN {
    type master;
    file "/etc/bind/db.asi-242v.cifpaviles.com";
};


zone "76.223.9.in-addr.arpa" {
    type master;
    file "/etc/bind/db.76.223.9";
    update-policy {
        // The only allowed dynamic updates are PTR records
        grant asi-242v.cifpaviles.com. subdomain 76.223.9.in-addr.arpa. PTR TXT;
        // Grant from localhost
        grant local-ddns zonesub any;
    };
};

zone "9.31.10.in-addr.arpa" {
    type master;
    file "/etc/bind/db.9.31.10";
    update-policy {
        // The only allowed dynamic updates are PTR records
        grant asi-242v.cifpaviles.com. subdomain 9.31.10.in-addr.arpa. PTR TXT;
        // Grant from localhost
        grant local-ddns zonesub any;
    };
};

zone "10.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "16.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "17.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "18.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "19.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
```

	Parámetro/configuración	Texto o imagen demostrativa	(indicación de módulos)

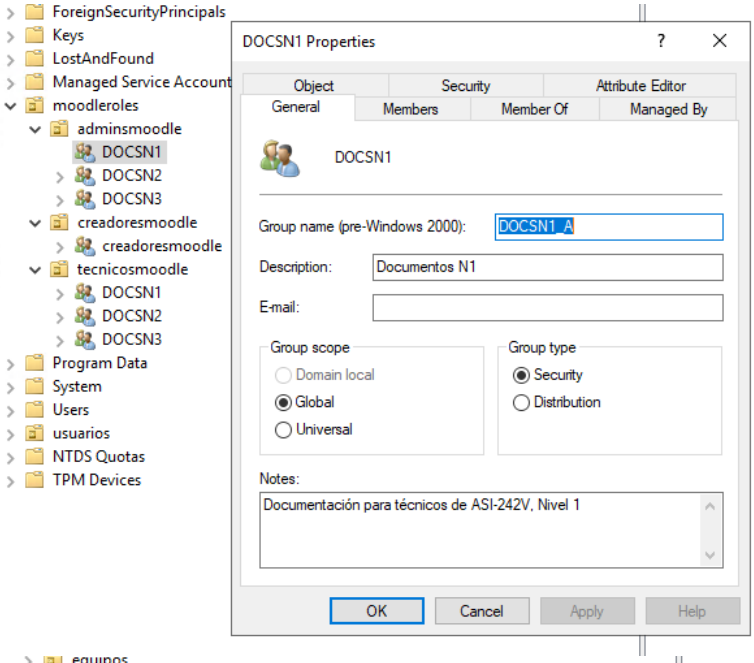
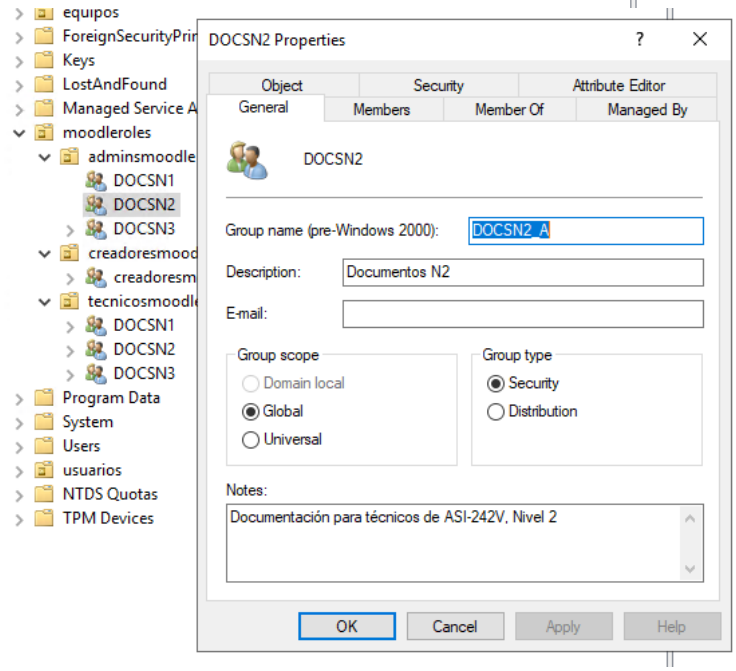
```
};
zone "20.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "21.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "22.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "23.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "24.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "25.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "26.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "27.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "28.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "29.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "30.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "31.172.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
zone "168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.empty";
};
administrador@ROUTER01-242V:~$
```

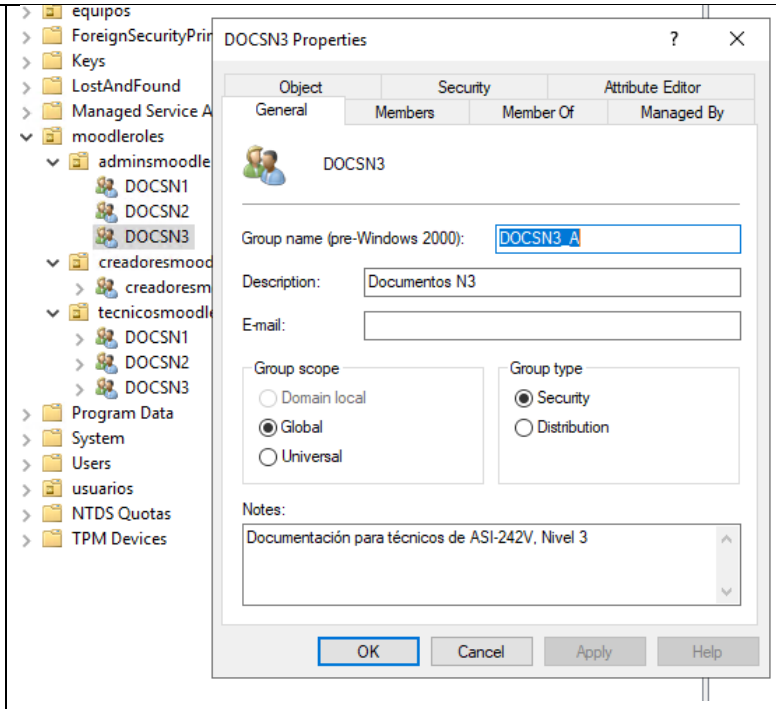
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

36.	Servicio **DNS externo**: zona directa	Archivo **/etc/bind/db.asi-ID.cifpaviles.com**	SREIN
			Captura tomada tras migrar aplicaciones web a Azure
			`administrador@ROUTER01-242V:~$ cat /etc/bind/db.asi-242v.cifpaviles.com`
			`$ORIGIN asi-242v.cifpaviles.com.`
			`$TTL 3D`
			`@ IN SOA router01-242v hostmaster (`
			`2026051820 ;serial number`
			`8H ;refresh`
			`2H ;retry`
			`4W ;expiration`
			`1D ) ;minimum`
			`;`
			`@ IN NS router01-242v`
			`@ IN A 10.31.9.254`
			`;`
			`router01-242v IN A 10.31.9.254`
			`pip-asi-242v-1 IN A 9.223.76.108`
			`inventario IN CNAME pip-asi-242v-1`
			`moodle IN CNAME pip-asi-242v-1`
			`wordpress IN CNAME pip-asi-242v-1`
			`www.inventario IN CNAME pip-asi-242v-1`
			`www.moodle IN CNAME pip-asi-242v-1`
			`www.wordpress IN CNAME pip-asi-242v-1`
			`administrador@ROUTER01-242V:~$`

37.	Servicio **DNS externo**: zona inversa	Archivo **/etc/bind/db.GRUPO.SERVIDOR.10**	SREIN
			`administrador@ROUTER01-242V:/etc/bind$ cat db.9.31.10`
			`$TTL 3D`
			`$ORIGIN 9.31.10.in-addr.arpa.`
			`@ IN SOA router01-242v.asi-242v.cifpaviles.com. hostmaster.asi-242v.cifpaviles.com. (`
			`2026051820 ;serial number`
			`8H ;refresh`
			`2H ;retry`
			`4W ;expiration`
			`1D ) ;`
			`;`
			`NS router01-242v.asi-242v.cifpaviles.com.`
			`;`
			`254 PTR router01-242v.asi-242v.cifpaviles.com.`
			`administrador@ROUTER01-242V:/etc/bind$`

38.	UO **moodleroles**, unidades organizativas y grupos contenidos en ella	Active Directory Users and Computers/ Unidad organizativa moodleroles. En la consola, activar la opción View/Users, Contacts, Groups and Computers as containers. Desplegar por completo el contenido almacenado en moodleroles para que la imagen muestre todos los objetos. La imagen ha de mostrar también el nombre del dominio en la raíz del árbol.	ASO Active Directory Users and Computers [DC01-242V.asi-242V.cifpaviles.com] Saved Queries asi-242V.cifpaviles.com Builtin Computers Domain Controllers equipos ForeignSecurityPrincipals Keys LostAndFound Managed Service Accounts moodleroles adminsmoodle DOCSN1 DOCSN2 DOCSN3 creadoresmoodle creadoresmoodle tecnicosmoodle DOCSN1 DOCSN2 DOCSN3 Program Data System Users usuarios NTDS Quotas TPM Devices

39.	Grupos de usuarios en **moodleroles**	Para cada grupo definido en moodleroles, mostrar: a) Usuarios y equipos de AD/Seleccionar grupo/ Propiedades del grupo/General b) Usuarios y equipos de AD/Seleccionar grupo/ Propiedades del grupo/Miembros	ASO **GENERAL**  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Members
Member Of
Managed By
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Group name (pre-Windows 2000):
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Description:
Documentos N3
E-mail:
Group scope
Domain local
Global
Universal
Group type
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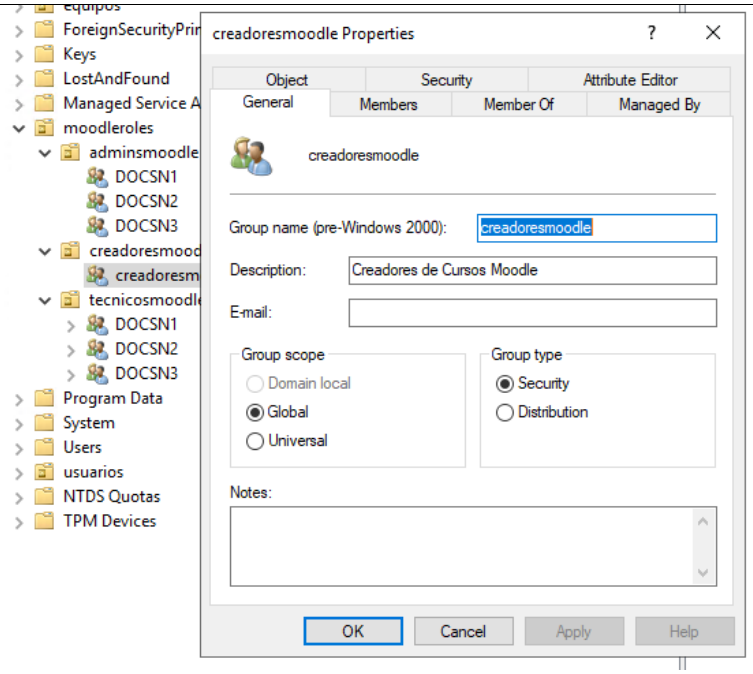
Distribution
Notes:
Documentación para técnicos de ASI-242V, Nivel 3
OK
Cancel
Apply
Help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Managed By
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Group name (pre-Windows 2000):
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Group scope
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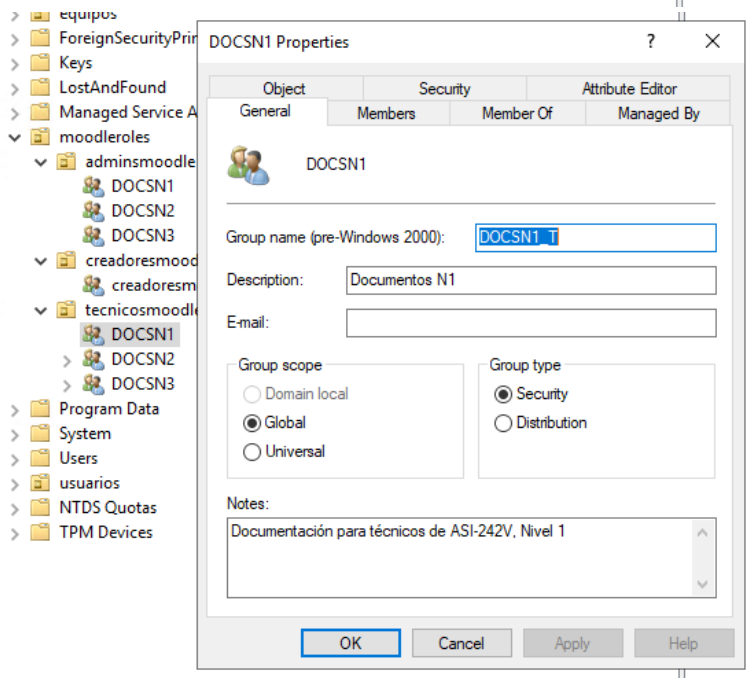
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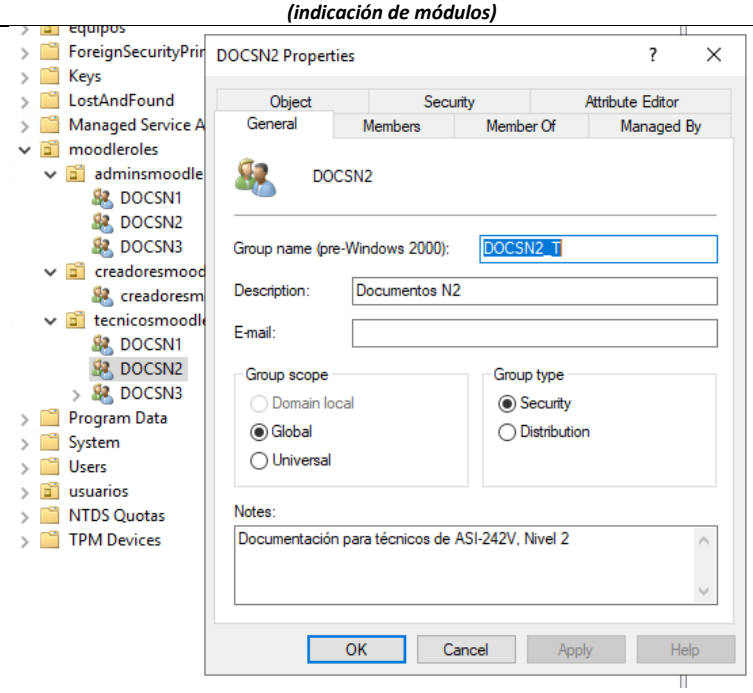
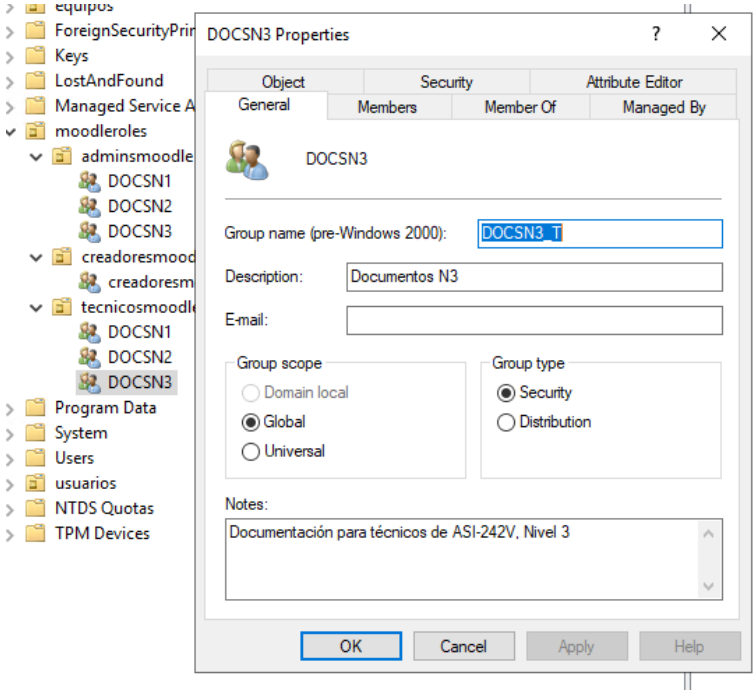
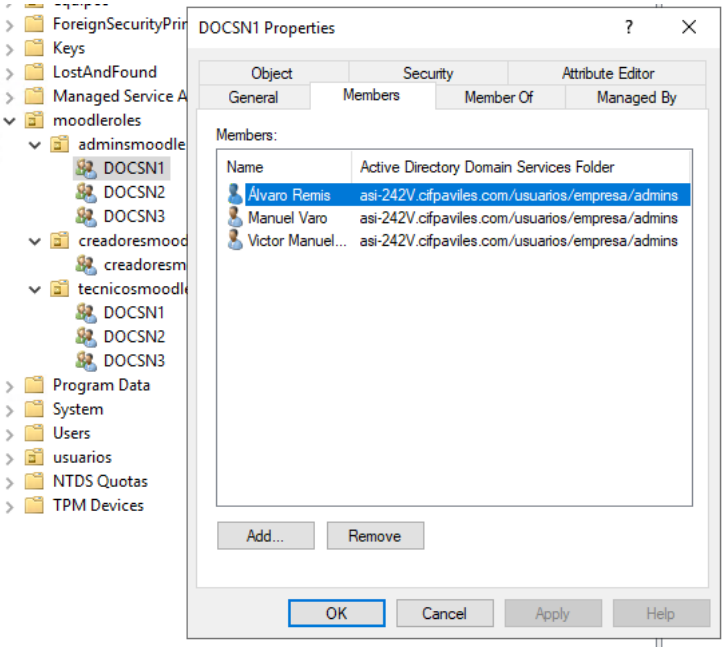
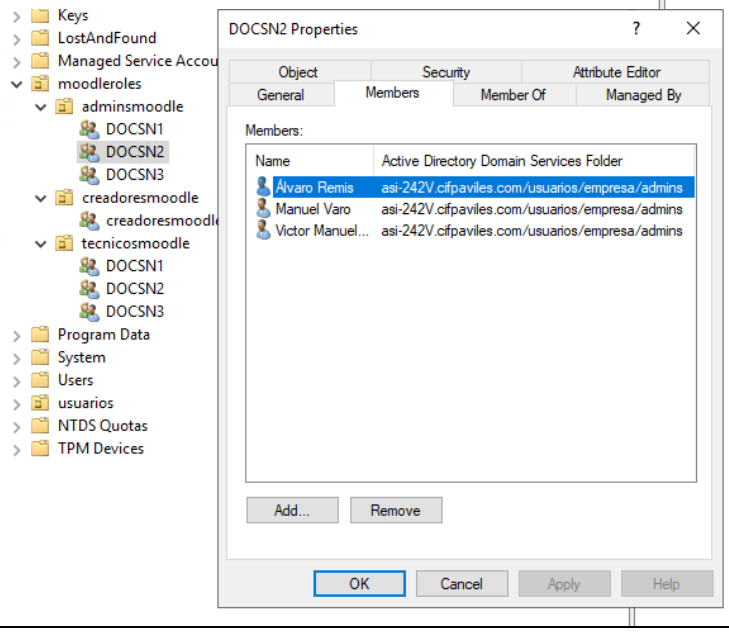
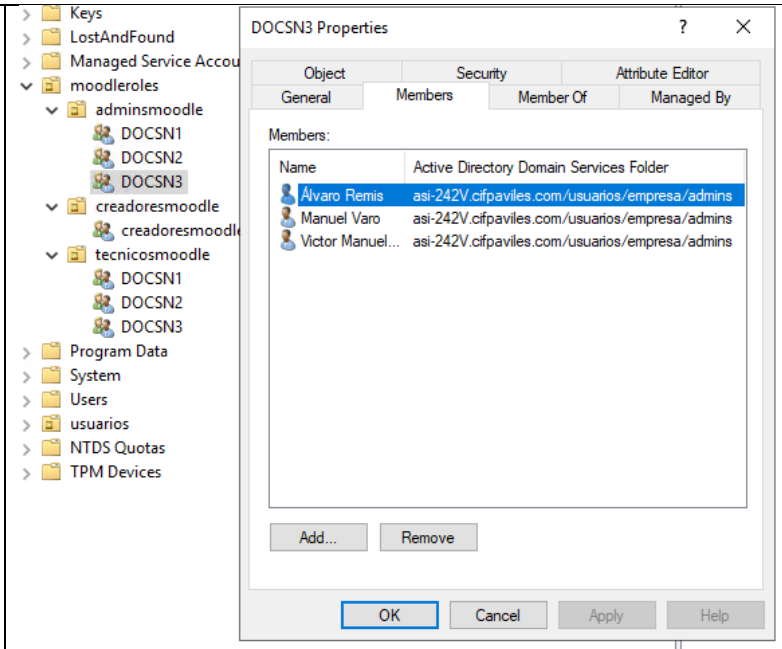
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			 

			MIEMBROS  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asi-242V.cifpaviles.com/usuarios/empresa/admins
Manuel Varo
asi-242V.cifpaviles.com/usuarios/empresa/admins
Victor Manuel...
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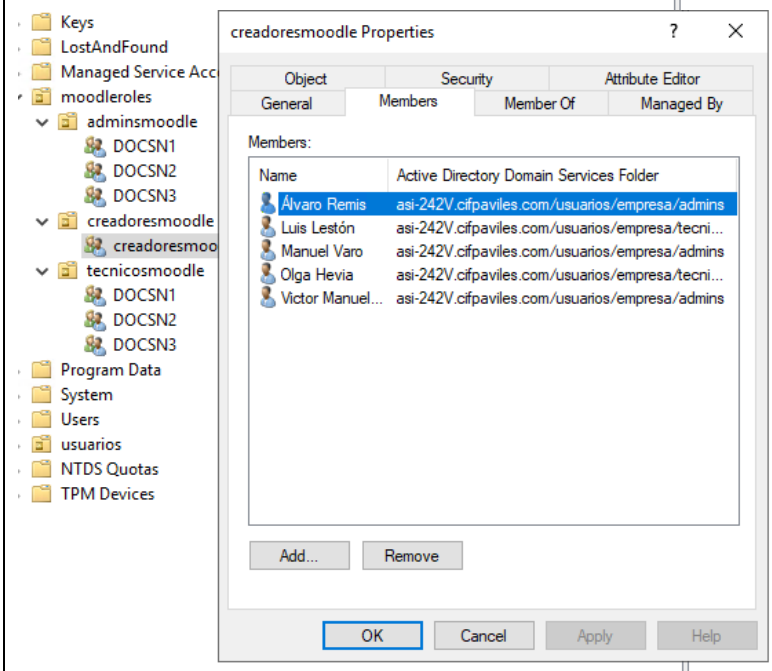
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Luis Lestón
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Manuel Varo
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Olga Hevia
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Victor Manuel...
asi-242V.cifpaviles.com/usuarios/empresa/admins
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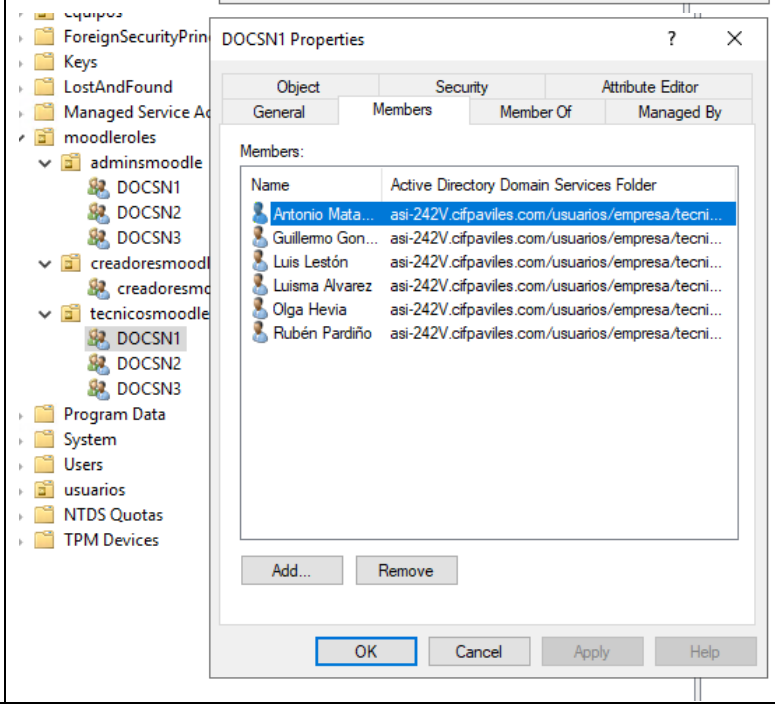
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Antonio Mata...
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Guillermo Gon...
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Luis Lestón
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Luisma Alvarez
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Olga Hevia
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Rubén Pardiño
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
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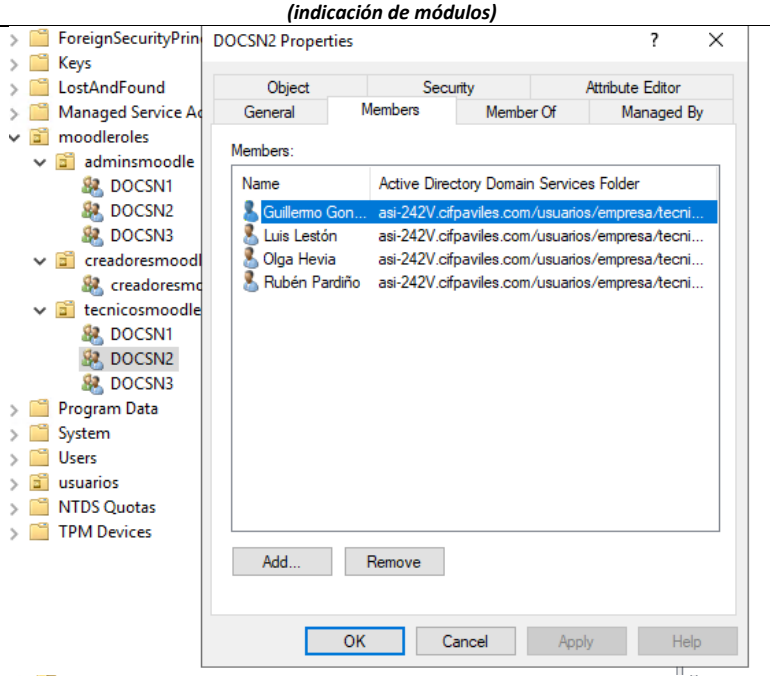
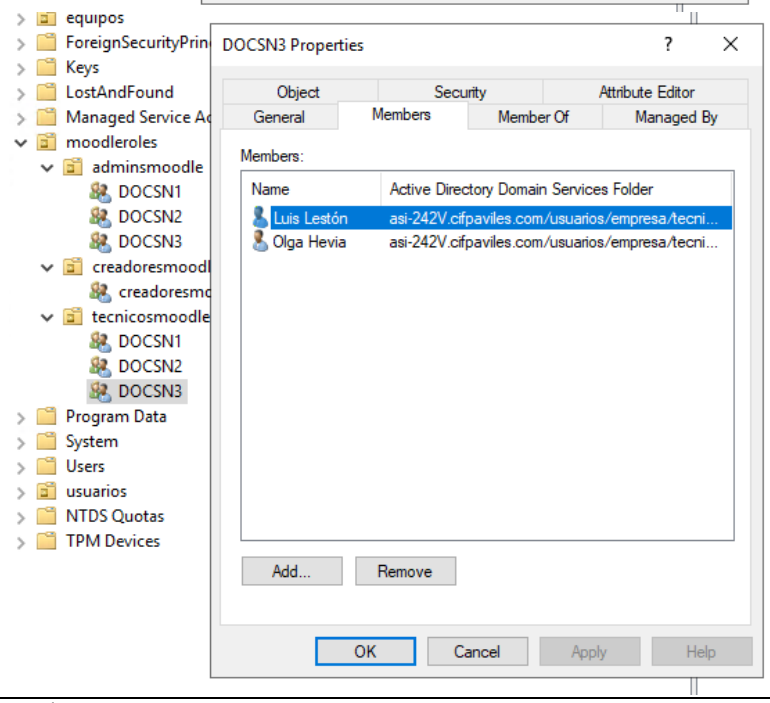
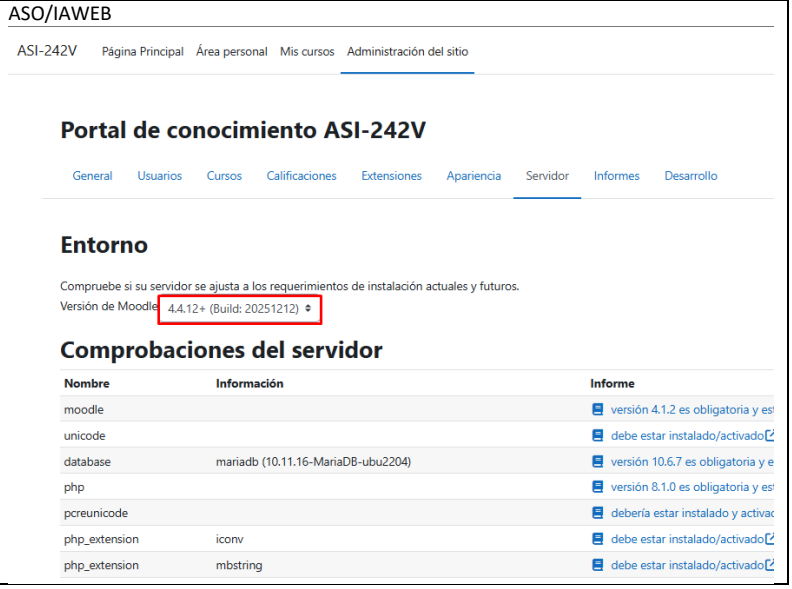
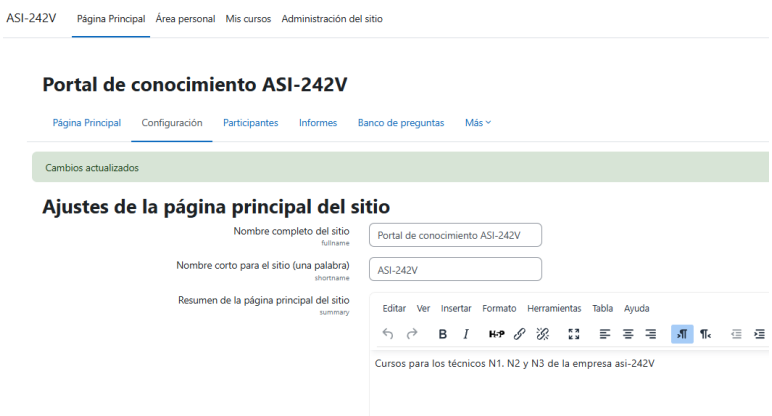
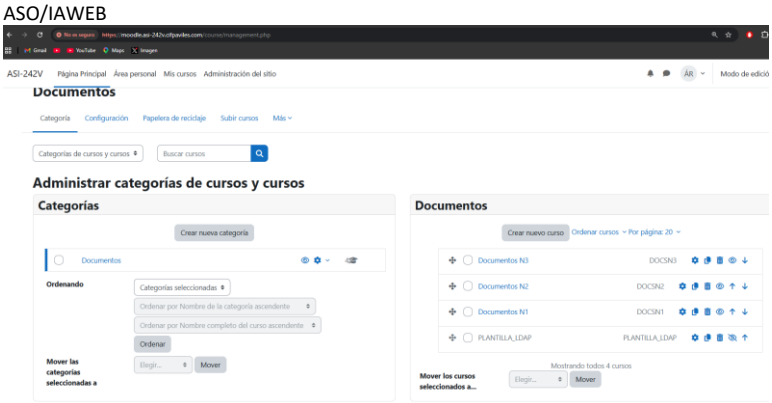
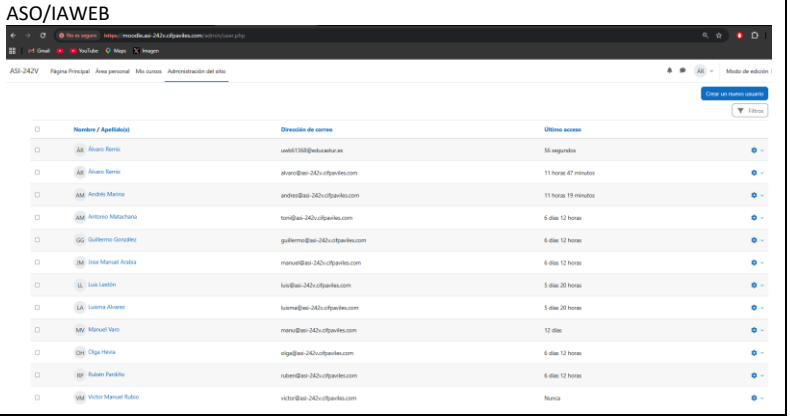
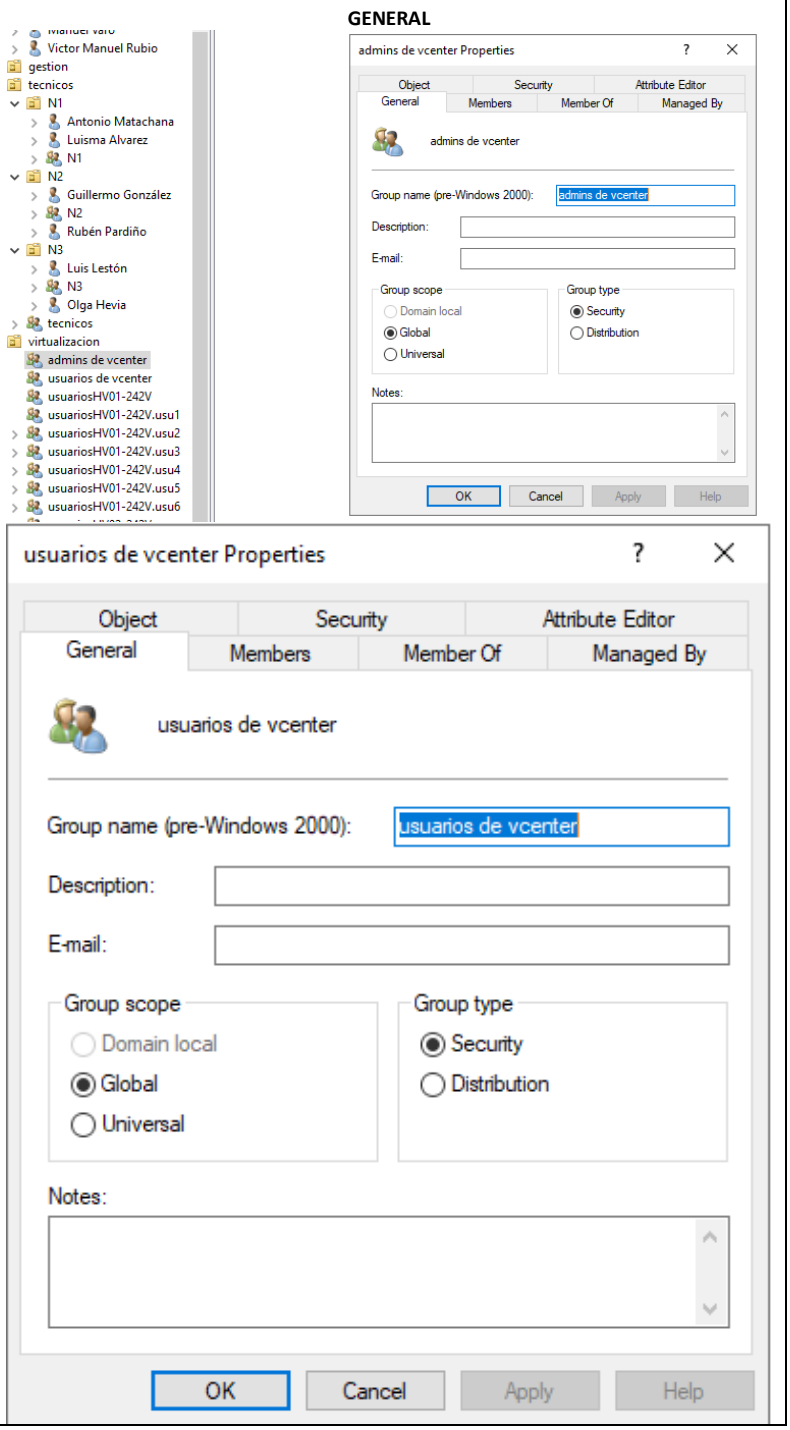
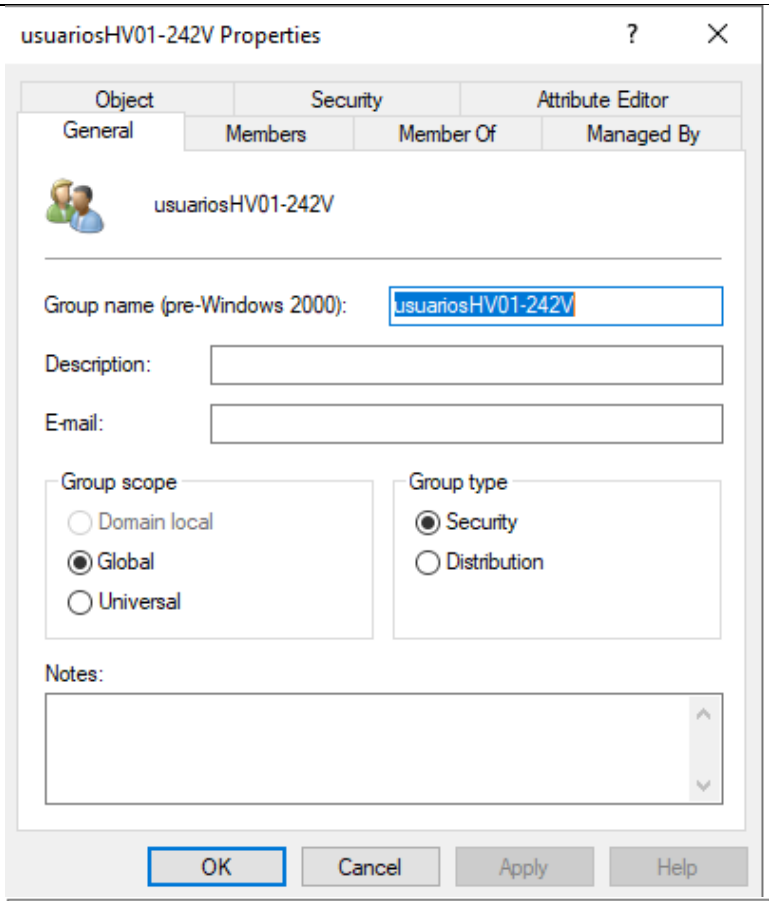
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			 
40.	Aplicación **Moodle**: versión instalada	Administración del sitio/ Servidor/ Entorno	ASO/IAWEB 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
41.	Aplicación **Moodle**: ajustes de la página principal	Administración del sitio/ Ajustes de la página principal La imagen ha de mostrar: • Nombre completo del sitio • Nombre corto del sitio • Descripción de la página principal	ASO/IAWEB 
42.	Aplicación **Moodle**: identificación LDAP	Administración del sitio/ Extensiones/ Identificación/ Usar un servidor LDAP Copiar como **texto** (no imagen) los siguientes valores: • URL del host • Nombre distinguido • Contextos • Atributo de usuario • Atributo de miembro • Clase de objetos • Data mapping (nombre) • Data mapping (apellido) • Data mapping (dirección de correo) • Data mapping (ciudad) • Data mapping (país)	ASO/IAWEB ldap://DC01-242V.asi-242V.cifpaviles.com ldap://DC02-242V.asi-242V.cifpaviles.com CN=moodle,OU=apps,OU=usuarios,DC=asi-242v,DC=cifpaviles,DC=com ou=empresa,ou=usuarios,dc=asi-242v,dc=cifpaviles,dc=com samaccountname member objectclass=user givenName sn userPrincipalName l c Nota: el rol de creador de curso se mapea desde este menú de configuración. OU=creadoresmoodle,OU=moodleroles,DC=asi-242v,DC=cifpaviles,DC=com
43.	Aplicación **Moodle**: matriculaciones LDAP	Administración del sitio/ Extensiones/ Matriculaciones/ Inscripciones LDAP Copiar como texto (no imagen) los siguientes valores: • URL del servidor • Enlazar nombre completo del usuario • Mapeo de roles: Gestor • Mapeo de roles: Creador de curso • Mapeo de roles: Profesor • Mapeo de roles: Profesor sin permiso de edición • Mapeo de roles: Estudiante • Mapeo de roles: Invitado • Atributo de miembro LDAP • Contextos • Numero ID de atributo • Clase de objeto • Número ID • Nombre corto • Nombre completo • Resumen • Ajustes para la creación automática de cursos: Plantilla	ASO/IAWEB ldap://DC01-242V.asi-242V.cifpaviles.com ldap://DC02-242V.asi-242V.cifpaviles.com CN=moodle,OU=apps,OU=usuarios,DC=asi-242v,DC=cifpaviles,DC=com (Solo se incluyen los roles administrador y técnico solicitados en el enunciado en ese orden) OU=adminsmoodle,OU=moodleroles,DC=asi-242v,DC=cifpaviles,DC=com OU=tecnicosmoodle,OU=moodleroles,DC=asi-242v,DC=cifpaviles,DC=com member OU=moodleroles,DC=asi-242v,DC=cifpaviles,DC=com samaccountname (&(objectClass=group)(cn=DOCSN*)) cn cn description info PLANTILLA_LDAP

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
44.	Aplicación **Moodle**: Listado de cursos en categoría Documentos	Administración del sitio/ Cursos/ Administrar cursos y categorías/ seleccionar categoría Documentos La imagen ha de mostrar la url de acceso a la aplicación en el navegador, y el listado de cursos presentes en el sistema.	ASO/IAWEB 
45.	Aplicación **Moodle**: usuarios	Administración del sitio/ Usuarios/ Cuentas/ Examinar lista de usuarios La imagen ha de mostrar la url de acceso a la aplicación en el navegador, y el listado de usuarios presentes en el sistema.	ASO/IAWEB 

46.	**Grupos** de usuarios: admins de vcenter usuarios de vcenter usuariosHV01-ID usuariosHV02-ID usuariosHV01-ID.usu1 usuariosHV01-ID.usu2 usuariosHV01-ID.usu3 usuariosHV01-ID.usu4 usuariosHV02-ID.usu1 usuariosHV02-ID.usu2 usuariosHV02-ID.usu3 usuariosHV02-ID.usu4	**Para cada grupo** indicado, mostrar: a) Usuarios y equipos de AD/ Seleccionar grupo/ Propiedades del grupo/ **General** b) Usuarios y equipos de AD/ Seleccionar grupo/ Propiedades del grupo/ **Miembros**	ASO 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Attribute Editor
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Members
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Managed By
usuariosHV01-242V
Group name (pre-Windows 2000):
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Global
Universal
Group type
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Distribution
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OK
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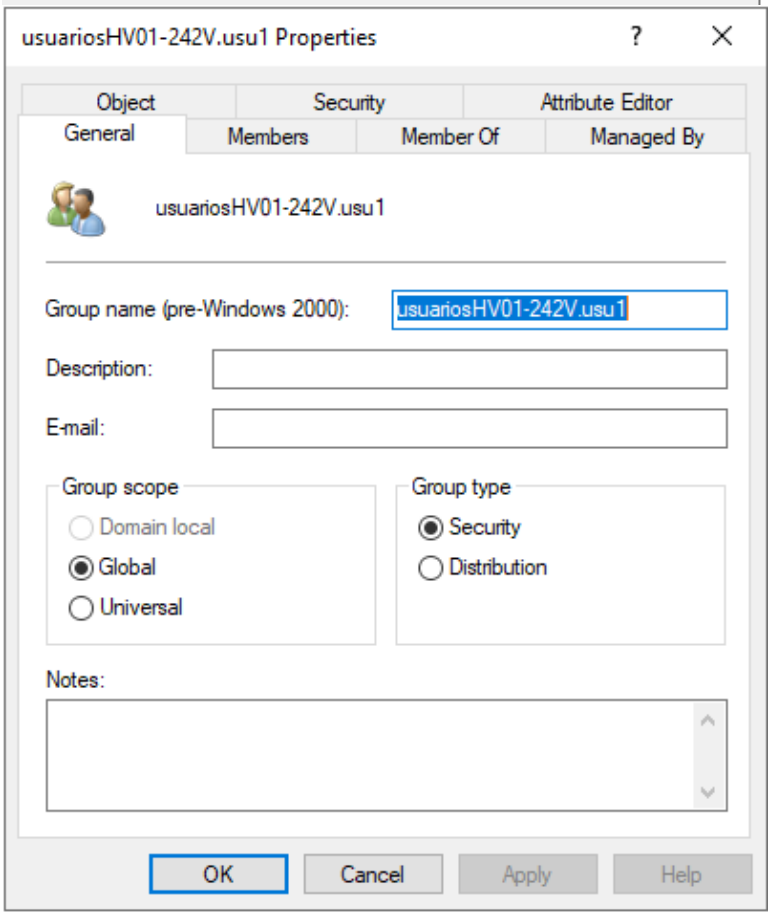
Apply
Help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Group name (pre-Windows 2000):
usuariosHV01-242V.usu1
Description:
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Group scope
Domain local
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Notes:
OK
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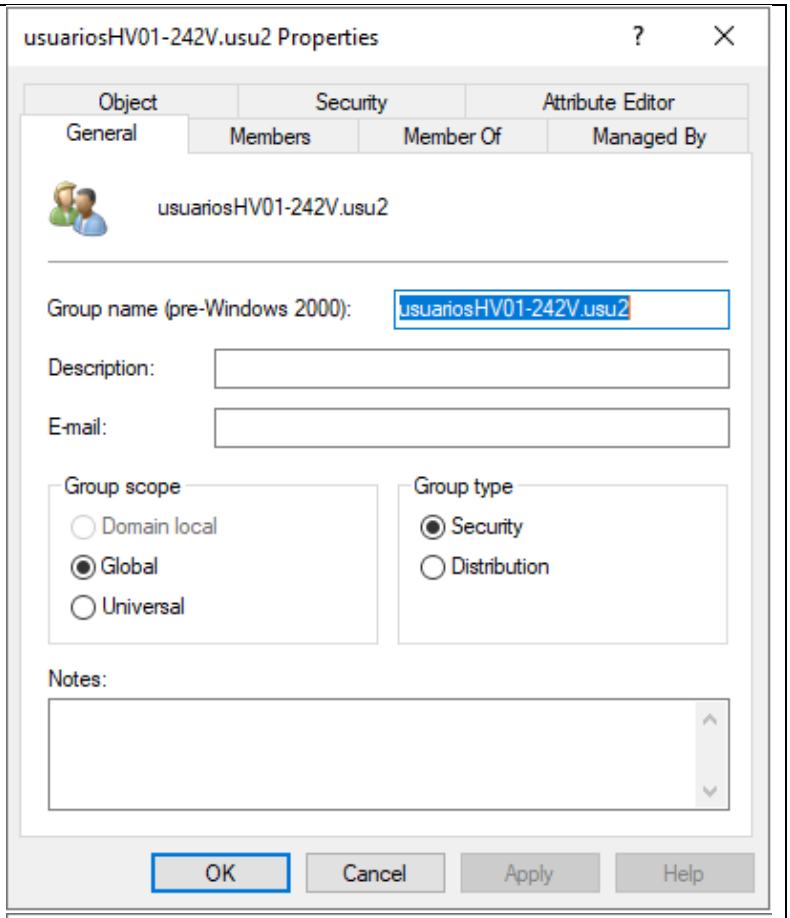
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usuariosHV01-242V.usu2
Group name (pre-Windows 2000):
usuariosHV01-242V.usu2
Description:
E-mail:
Group scope
Domain local
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Group type
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Distribution
Notes:
OK
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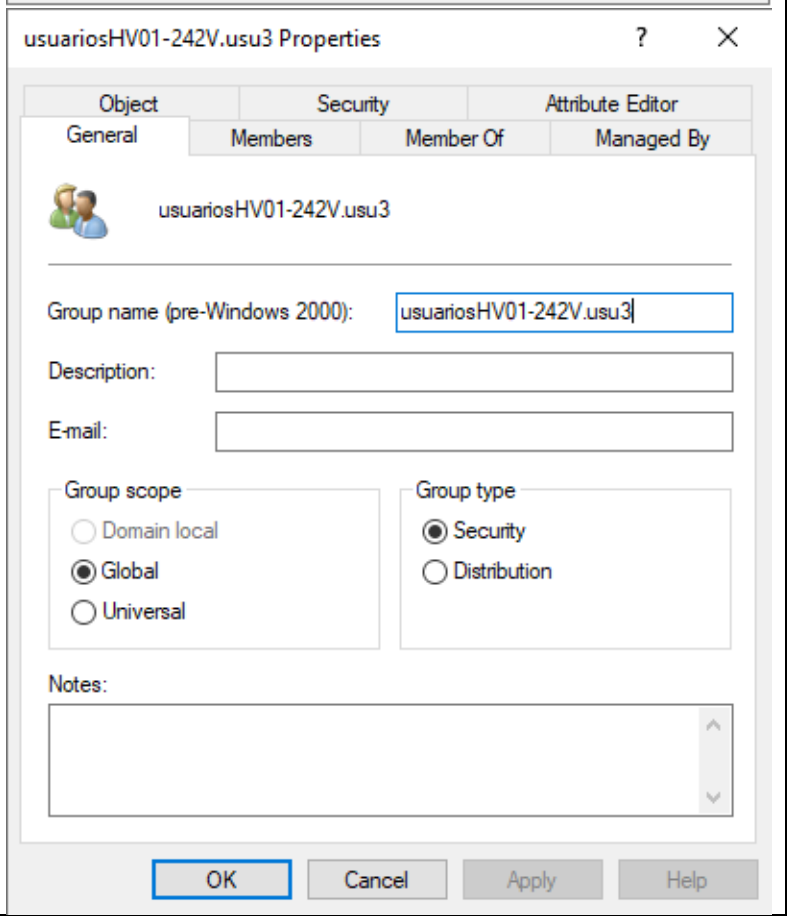
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Group name (pre-Windows 2000):
usuariosHV01-242V.usu3
Description:
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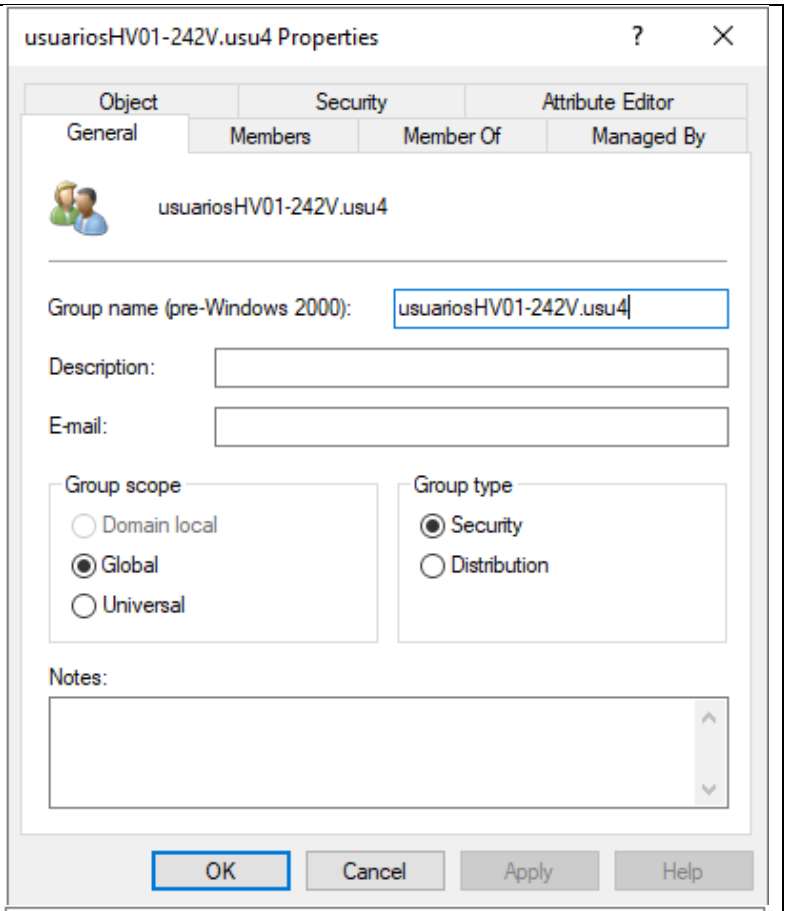
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help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Group name (pre-Windows 2000):
usuariosHV01-242V.usu4
Description:
E-mail:
Group scope
Domain local
Global
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Group type
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Distribution
Notes:
OK
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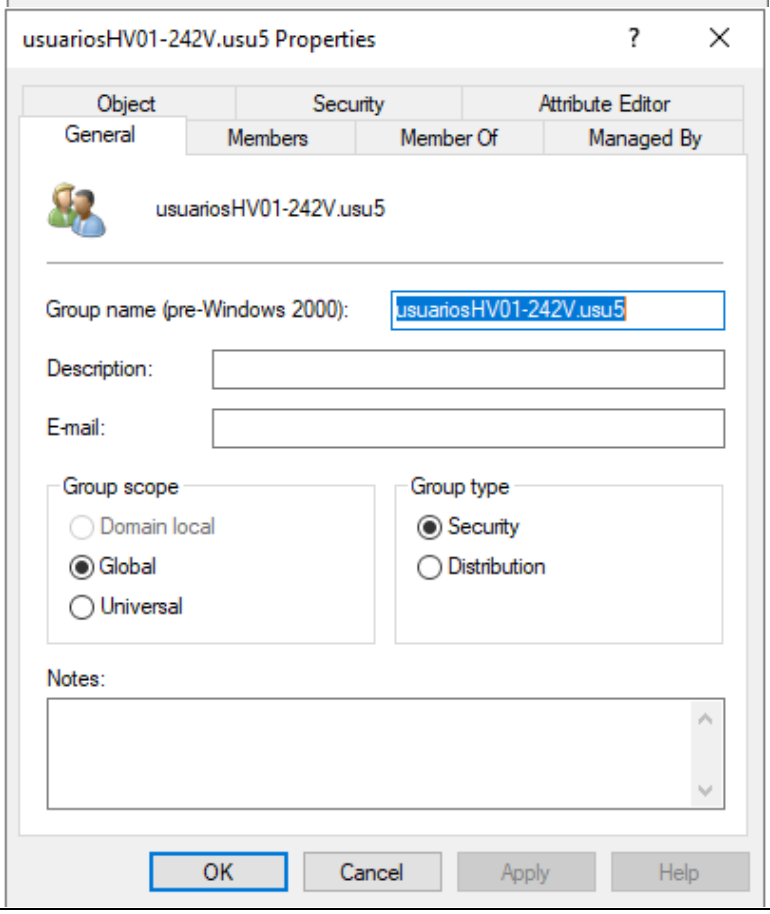
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Members
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Managed By
usuariosHV01-242V.usu5
Group name (pre-Windows 2000):
usuariosHV01-242V.usu5
Description:
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OK
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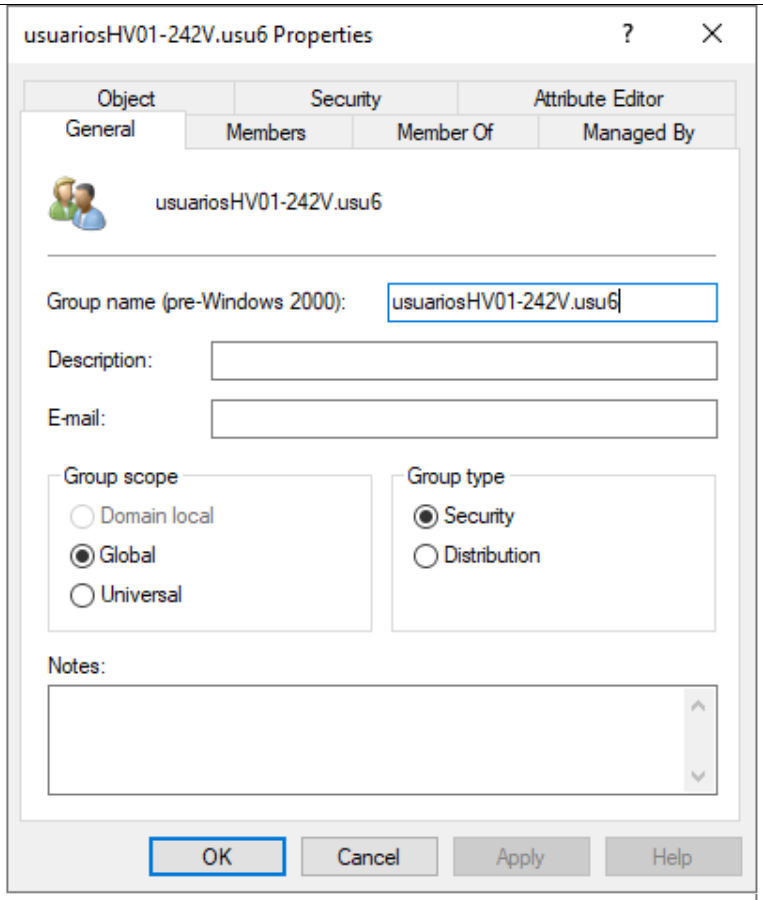
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Group name (pre-Windows 2000):
usuariosHV01-242V.usu6
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
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Apply
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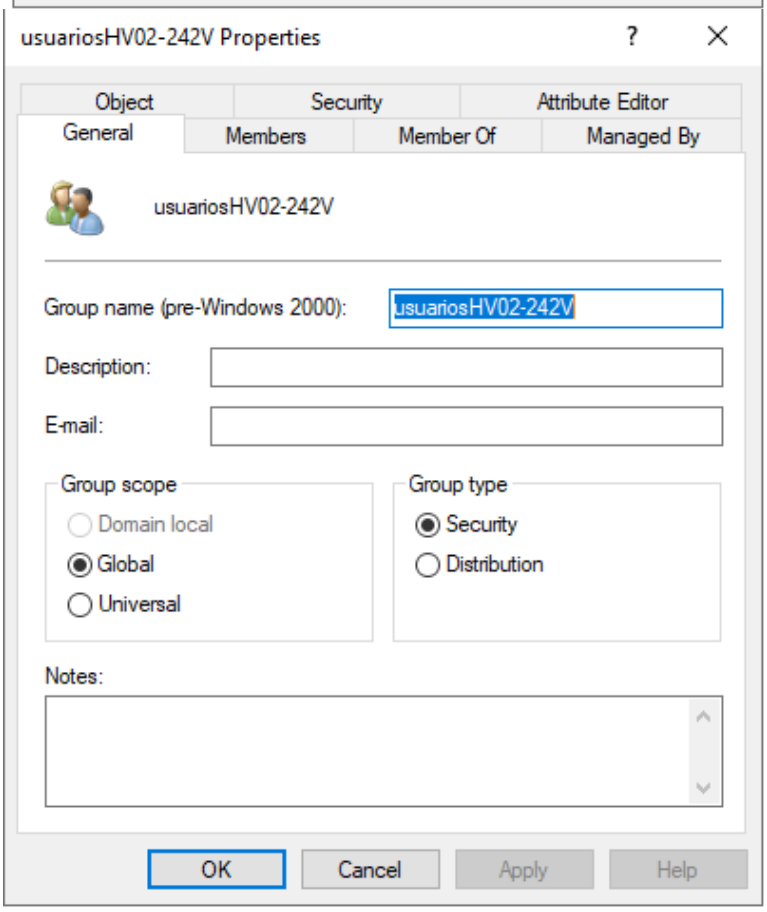
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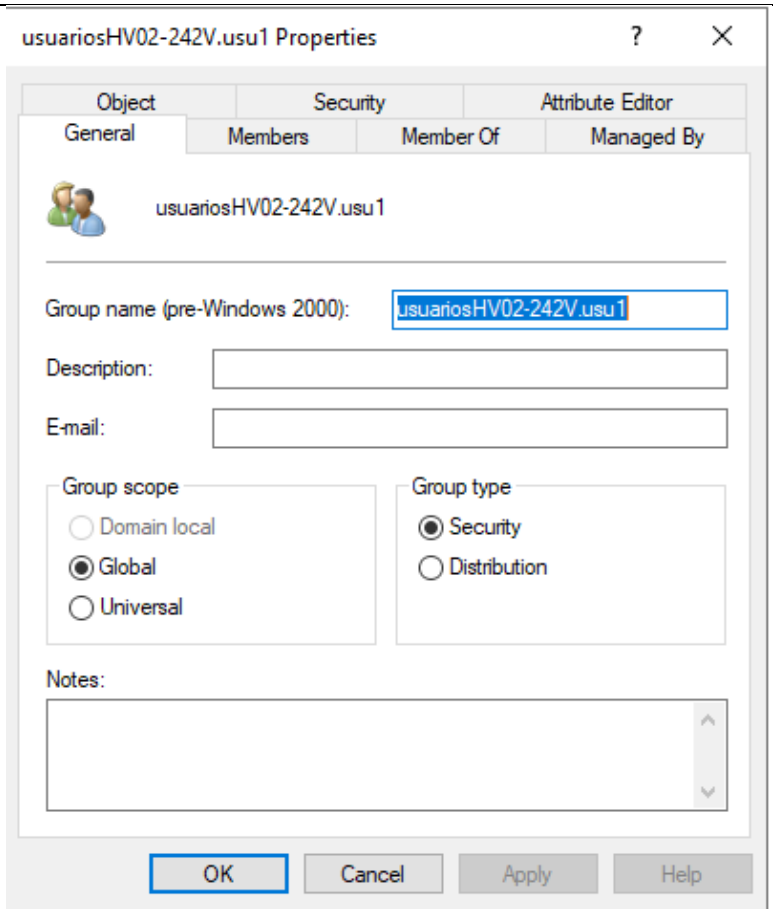
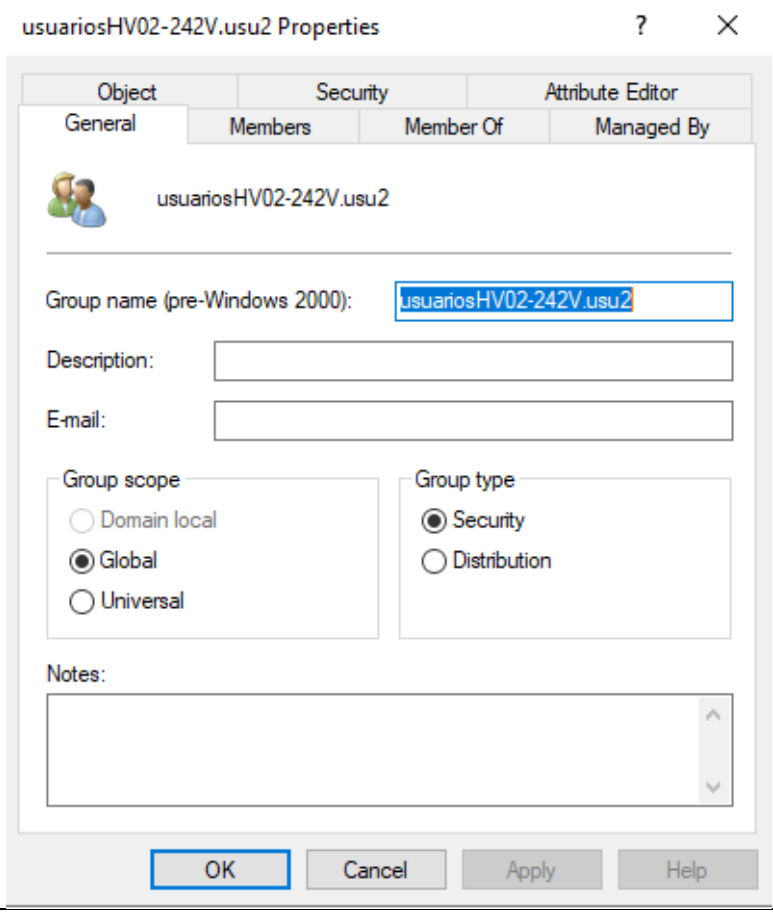
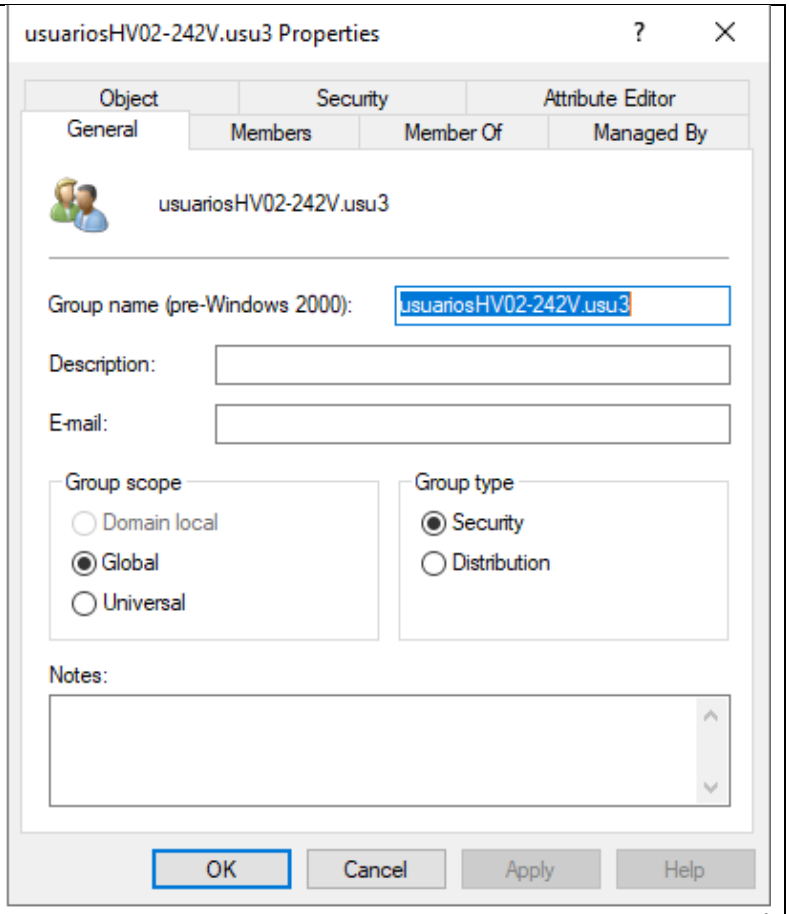
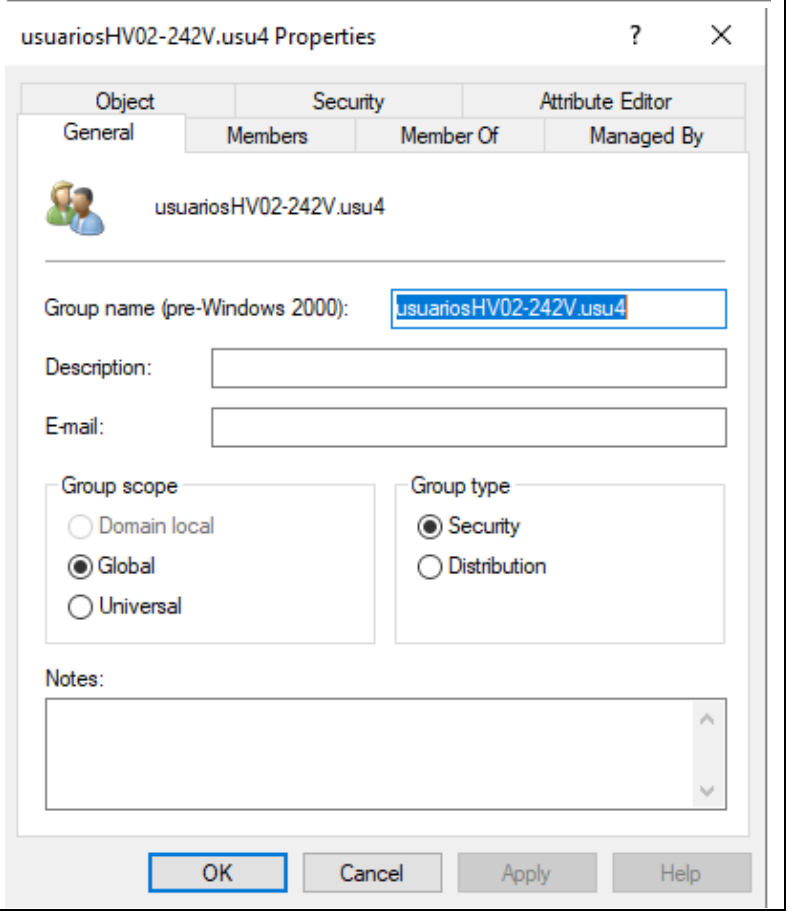
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
usuariosHV02-242V
Group name (pre-Windows 2000):
usuariosHV02-242V
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help


usuariosHV02-242V.usu1 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
usuariosHV02-242V.usu1
Group name (pre-Windows 2000):
usuariosHV02-242V.usu1
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help


usuariosHV02-242V.usu2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
usuariosHV02-242V.usu2
Group name (pre-Windows 2000):
usuariosHV02-242V.usu2
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

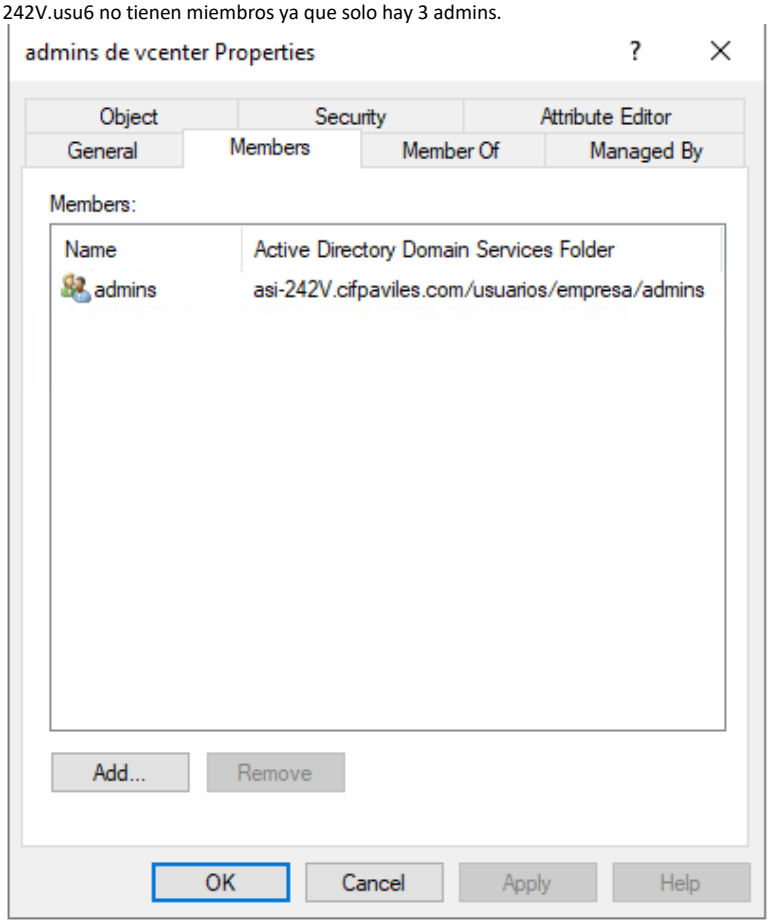

usuariosHV02-242V.usu3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
usuariosHV02-242V.usu3
Group name (pre-Windows 2000):
usuariosHV02-242V.usu3
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

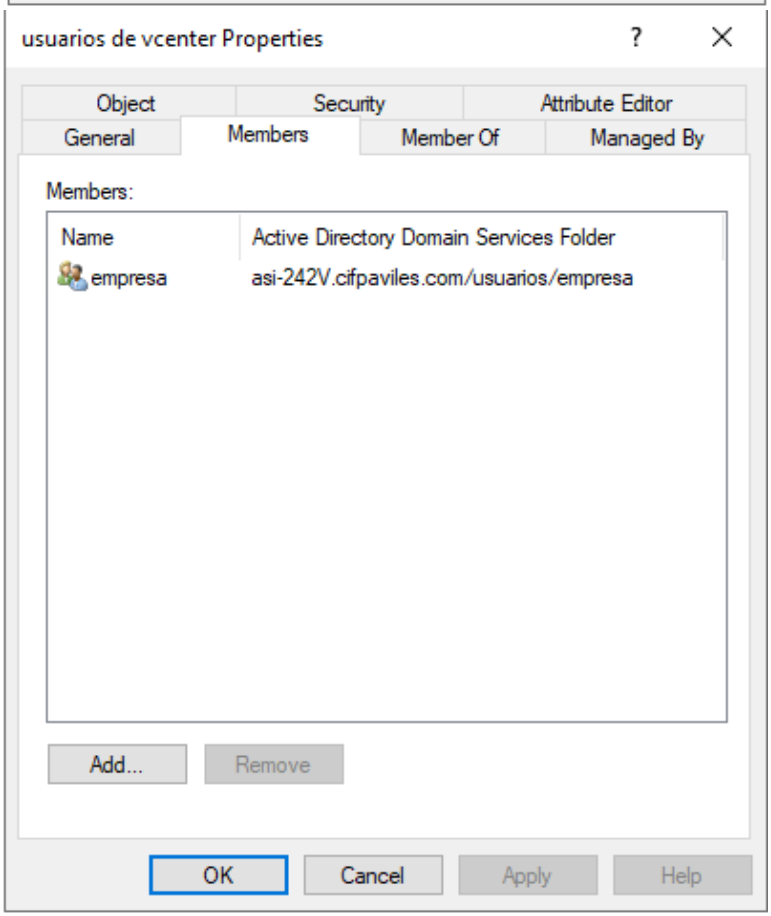

usuariosHV02-242V.usu4 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
usuariosHV02-242V.usu4
Group name (pre-Windows 2000):
usuariosHV02-242V.usu4
Description:
E-mail:
Group scope
Domain local
Global
Universal
Group type
Security
Distribution
Notes:
OK
Cancel
Apply
Help

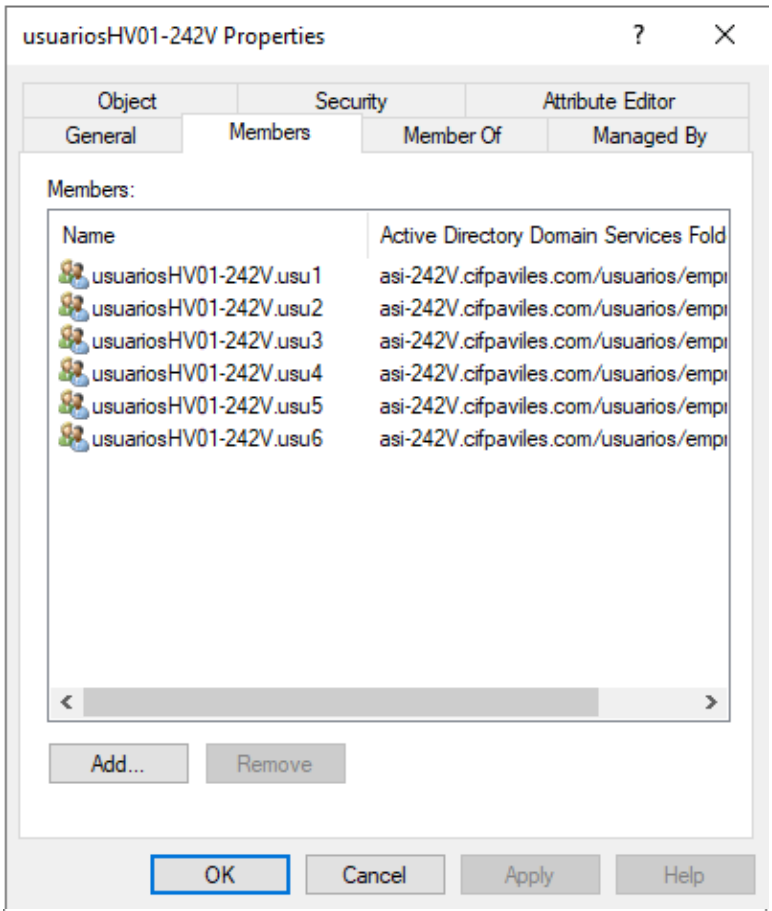
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			usuariosHV02-242V.usu5 Properties Object / Security / Attribute Editor General / Members / Member Of / Managed By usuariosHV02-242V.usu5 Group name (pre-Windows 2000): usuariosHV02-242V.usu5 Description: E-mail: Group scope: Domain local / Global / Universal Group type: Security / Distribution Notes: OK / Cancel / Apply / Help usuariosHV02-242V.usu6 Properties Object / Security / Attribute Editor General / Members / Member Of / Managed By usuariosHV02-242V.usu6 Group name (pre-Windows 2000): usuariosHV02-242V.usu6 Description: E-mail: Group scope: Domain local / Global / Universal Group type: Security / Distribution Notes: OK / Cancel / Apply / Help

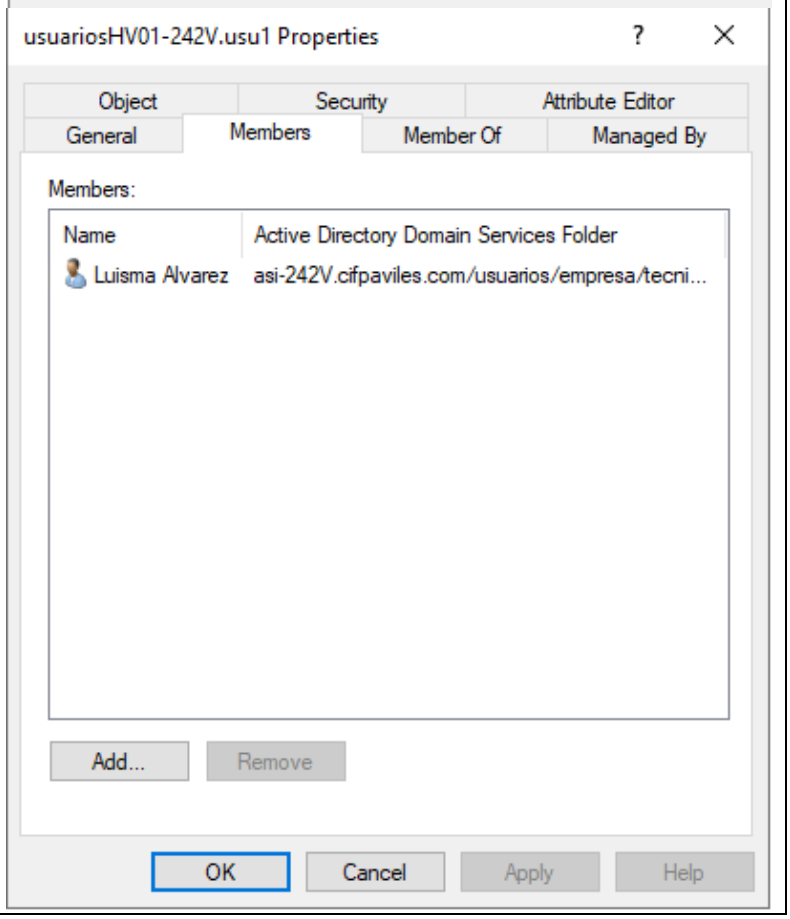
MIEMBROS

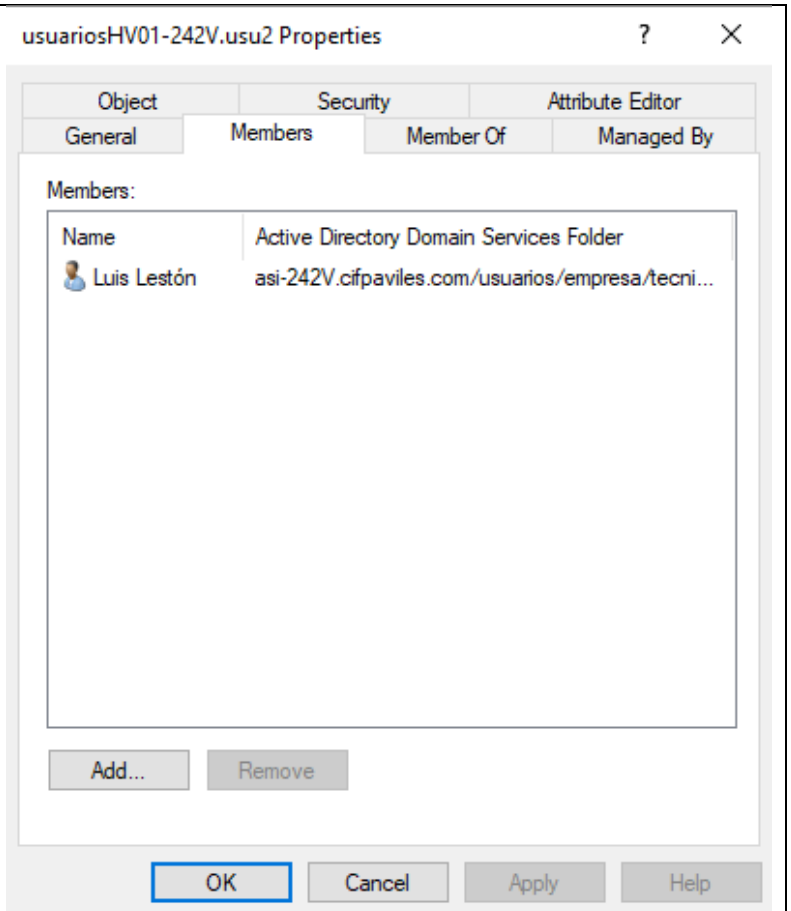
Nota: los grupos usuariosHV02-242V.usu4, usuariosHV02-242V.usu5 y usuariosHV02-242V.usu6 no tienen miembros ya que solo hay 3 admins.

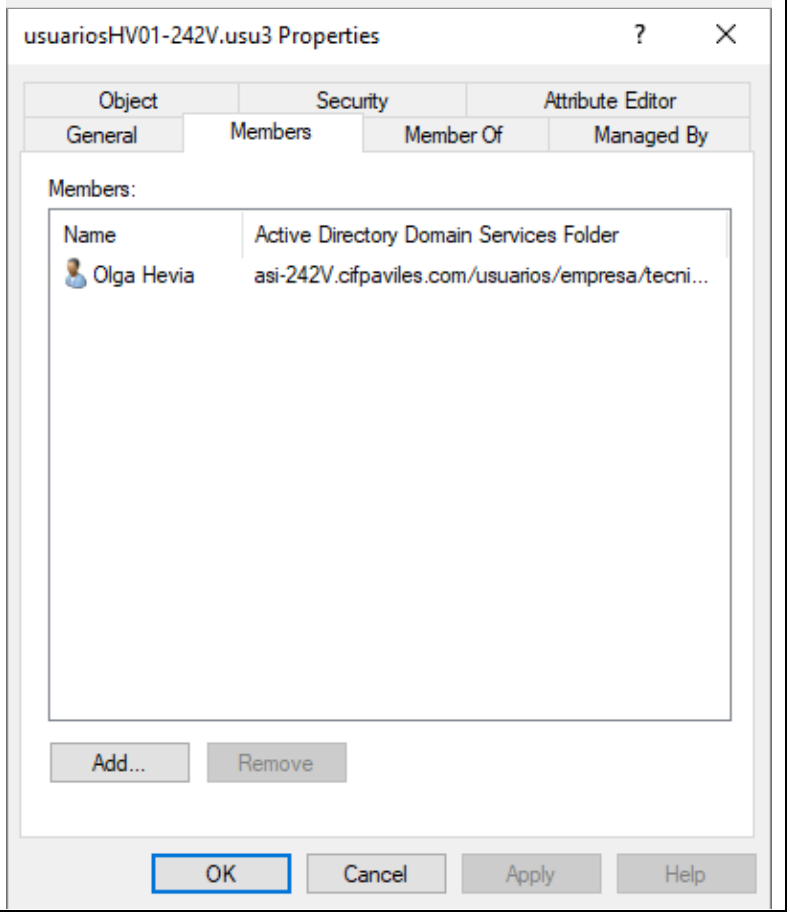


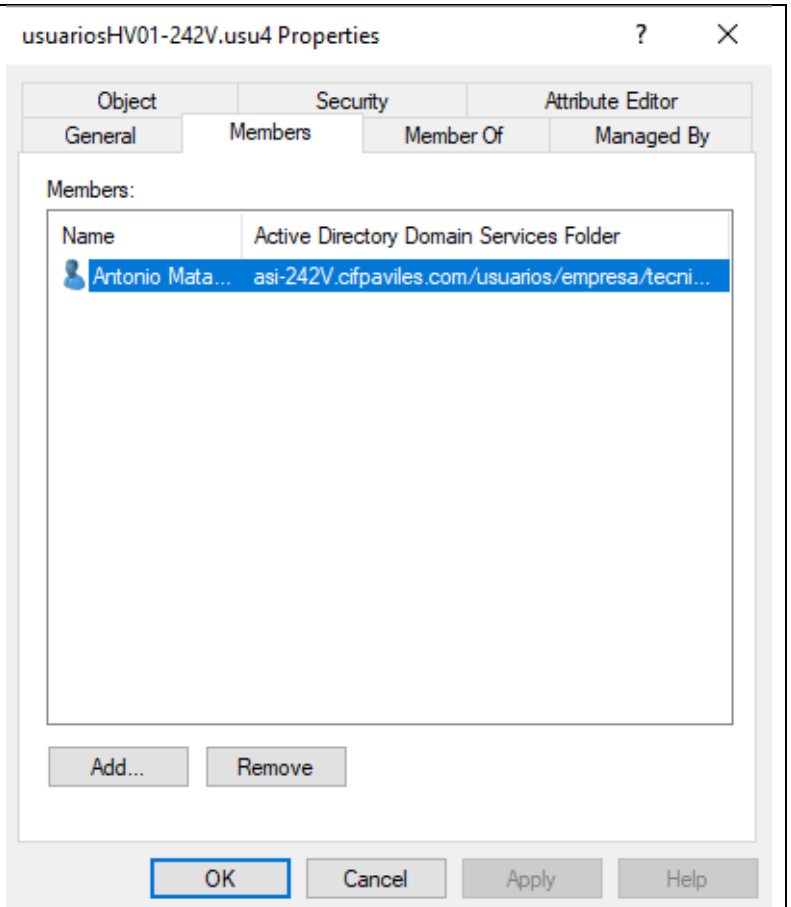


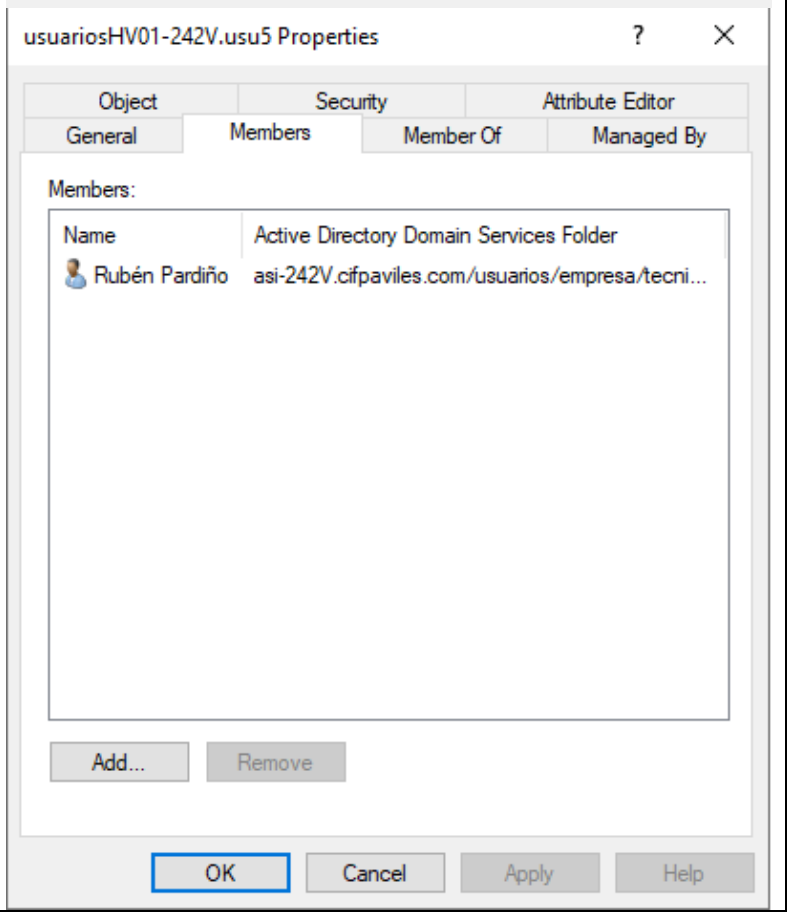

usuariosHV01-242V Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Fold
usuariosHV01-242V.usu1
asi-242V.cifpaviles.com/usuarios/empr
usuariosHV01-242V.usu2
asi-242V.cifpaviles.com/usuarios/empr
usuariosHV01-242V.usu3
asi-242V.cifpaviles.com/usuarios/empr
usuariosHV01-242V.usu4
asi-242V.cifpaviles.com/usuarios/empr
usuariosHV01-242V.usu5
asi-242V.cifpaviles.com/usuarios/empr
usuariosHV01-242V.usu6
asi-242V.cifpaviles.com/usuarios/empr
Add...
Remove
OK
Cancel
Apply
Help

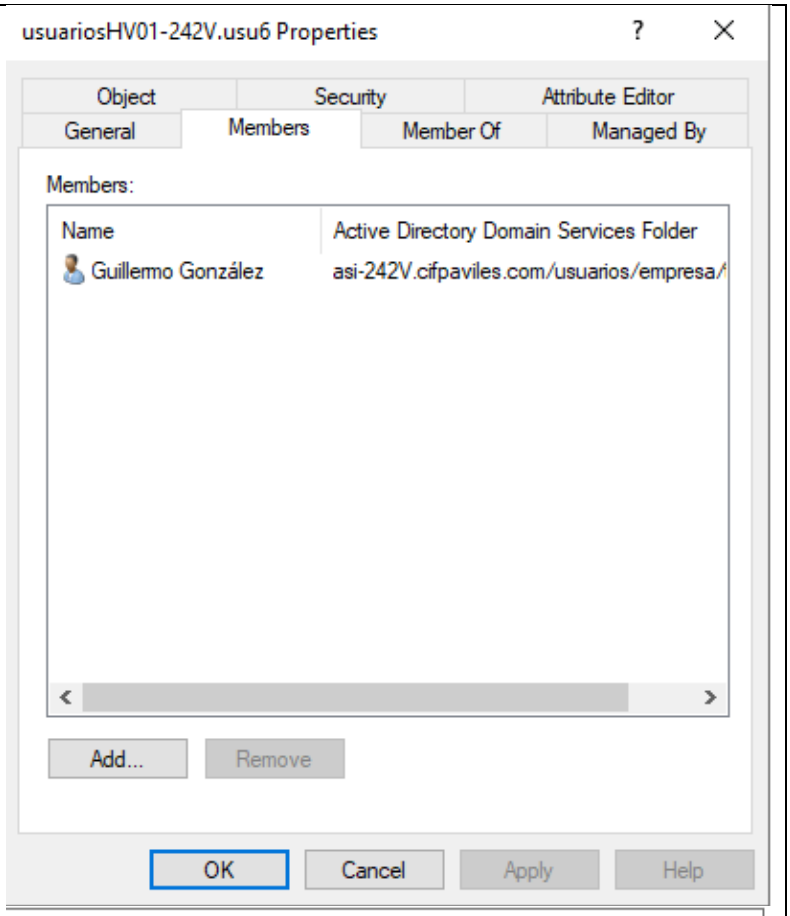

usuariosHV01-242V.usu1 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Luisma Alvarez
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

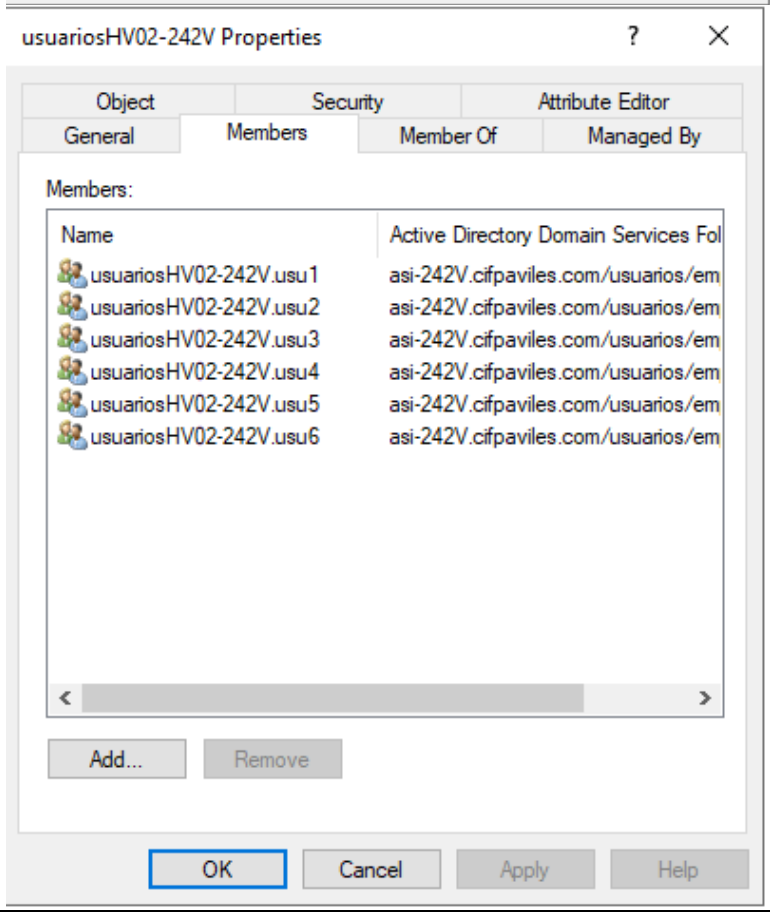

usuariosHV01-242V.usu2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Luis Lestón
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

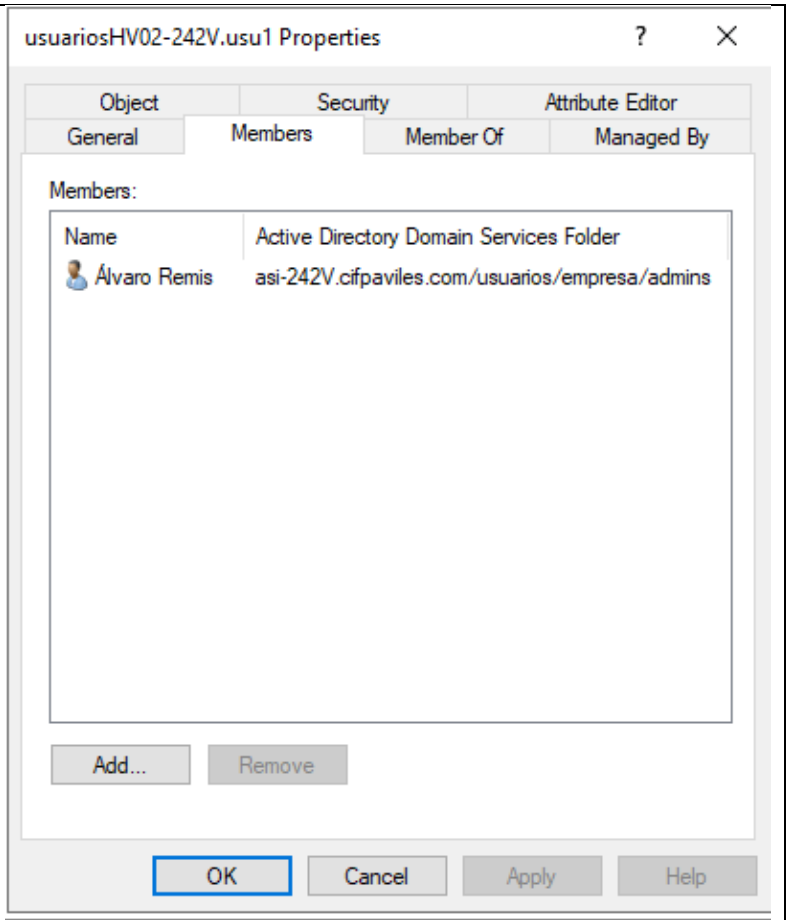

usuariosHV01-242V.usu3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Olga Hevia
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

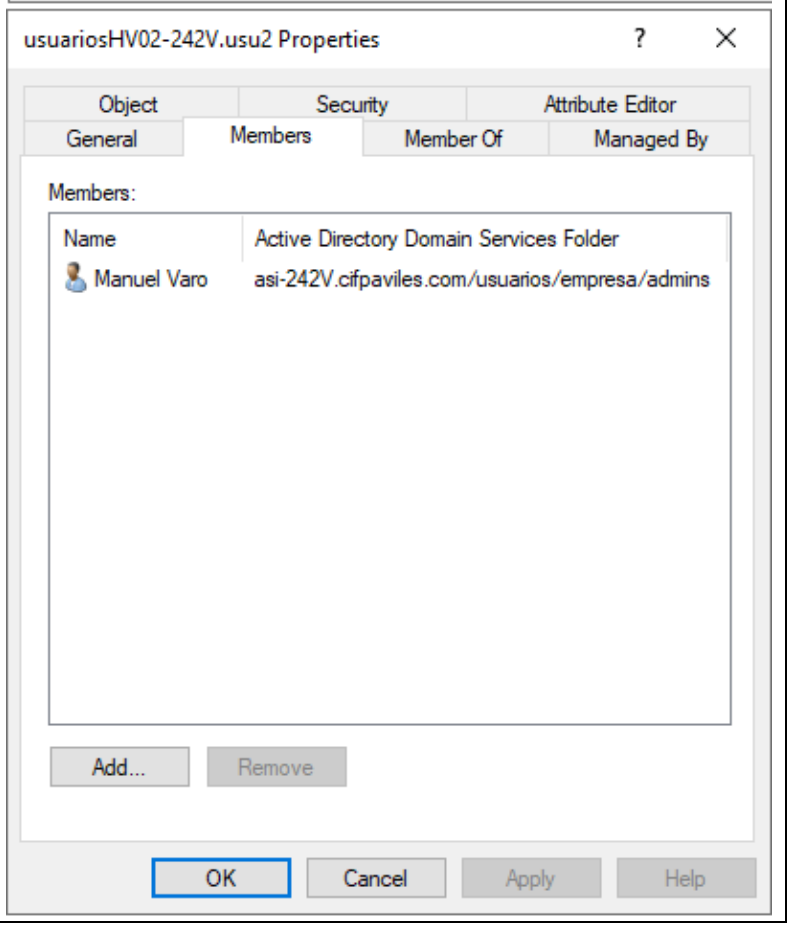

usuariosHV01-242V.usu4 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Antonio Mata...
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

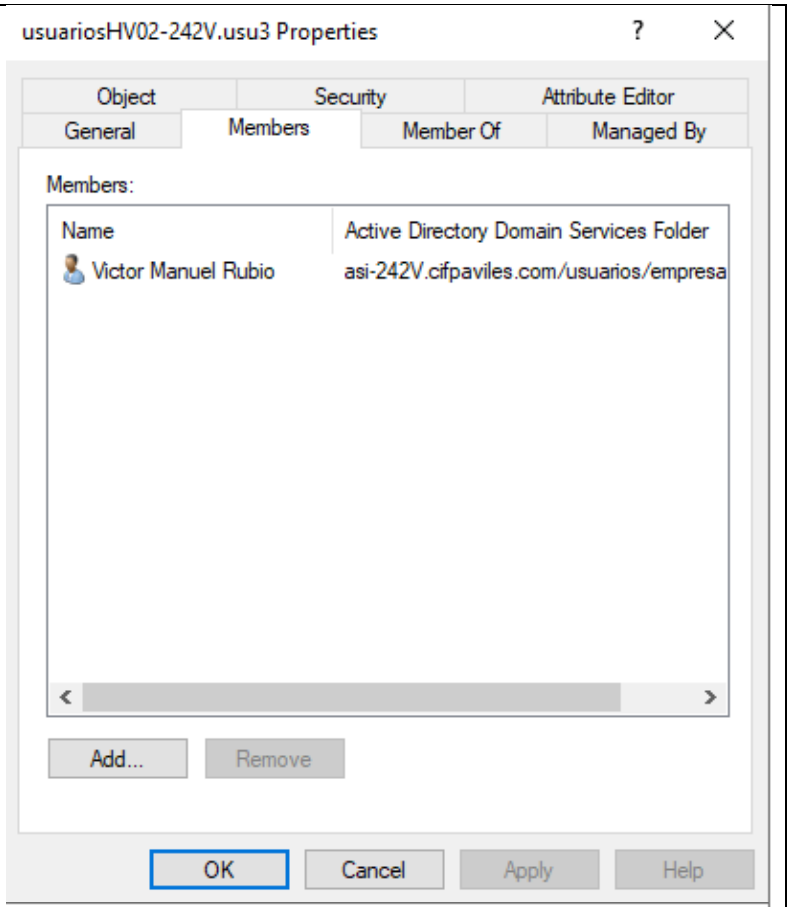

usuariosHV01-242V.usu5 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Rubén Pardiño
asi-242V.cifpaviles.com/usuarios/empresa/tecni...
Add...
Remove
OK
Cancel
Apply
Help

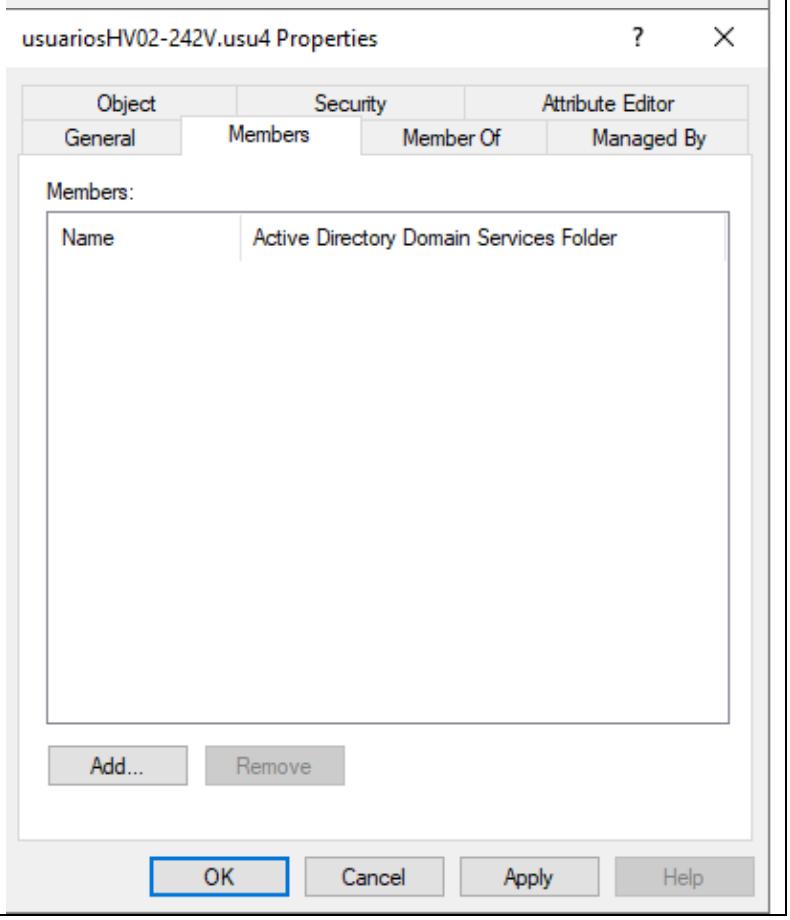

usuariosHV01-242V.usu6 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Guillermo González
asi-242V.cifpaviles.com/usuarios/empresa/
Add...
Remove
OK
Cancel
Apply
Help


usuariosHV02-242V Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Fol
usuariosHV02-242V.usu1
asi-242V.cifpaviles.com/usuarios/em
usuariosHV02-242V.usu2
asi-242V.cifpaviles.com/usuarios/em
usuariosHV02-242V.usu3
asi-242V.cifpaviles.com/usuarios/em
usuariosHV02-242V.usu4
asi-242V.cifpaviles.com/usuarios/em
usuariosHV02-242V.usu5
asi-242V.cifpaviles.com/usuarios/em
usuariosHV02-242V.usu6
asi-242V.cifpaviles.com/usuarios/em
Add...
Remove
OK
Cancel
Apply
Help

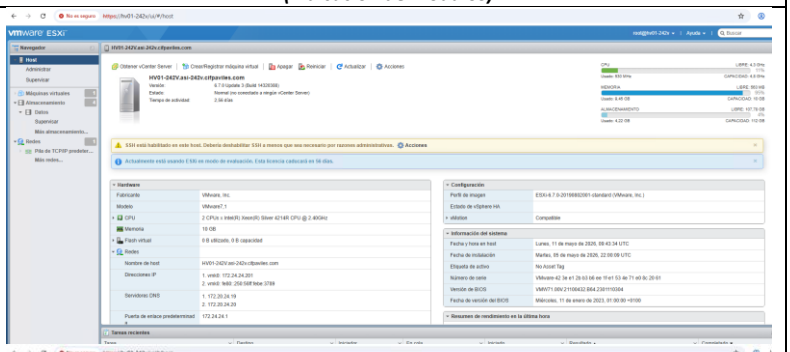
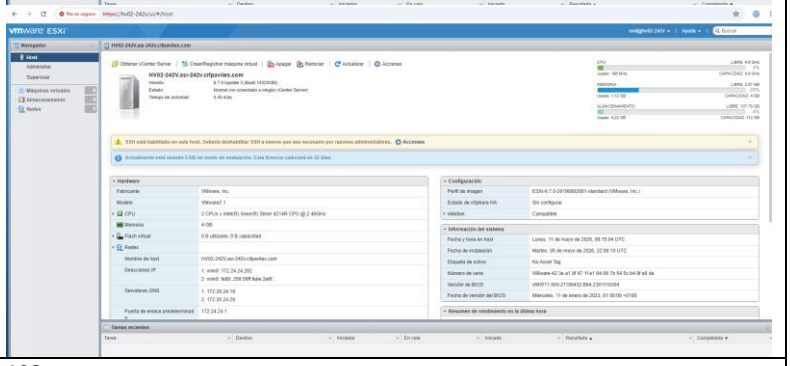
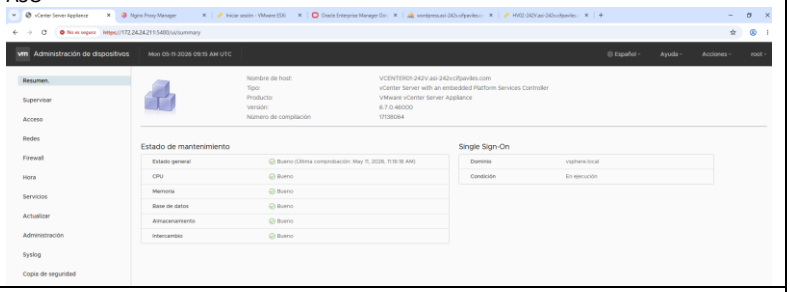
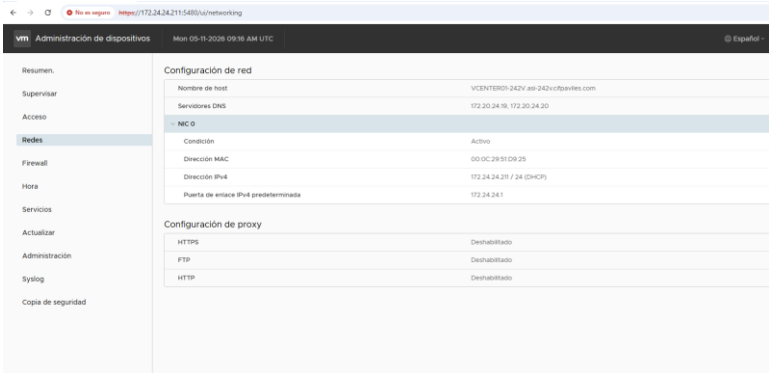
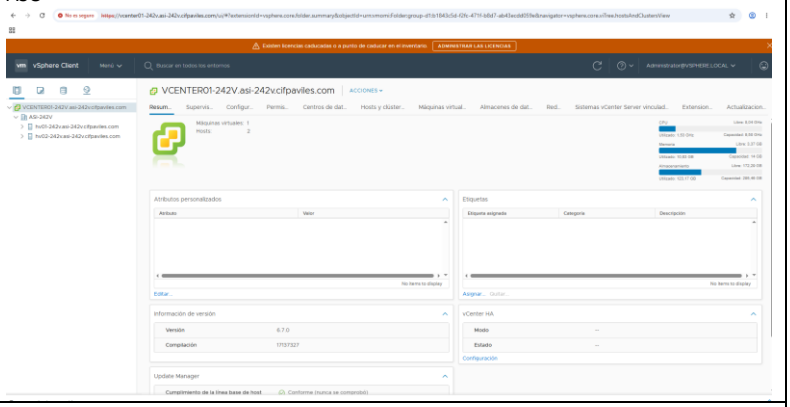

usuariosHV02-242V.usu1 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Álvaro Remis
asi-242V.cifpaviles.com/usuarios/empresa/admins
Add...
Remove
OK
Cancel
Apply
Help

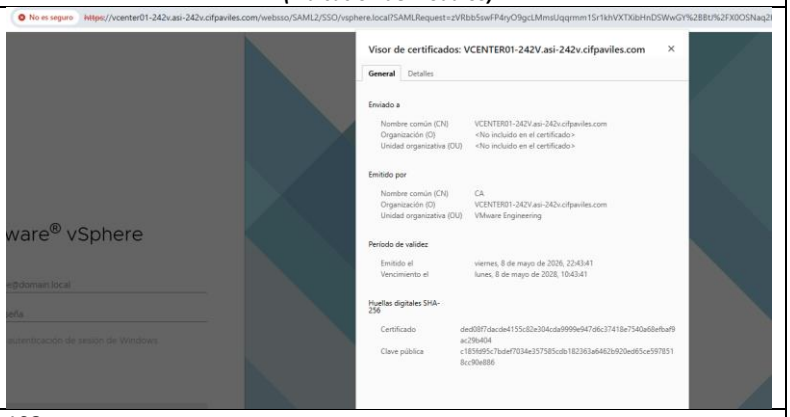
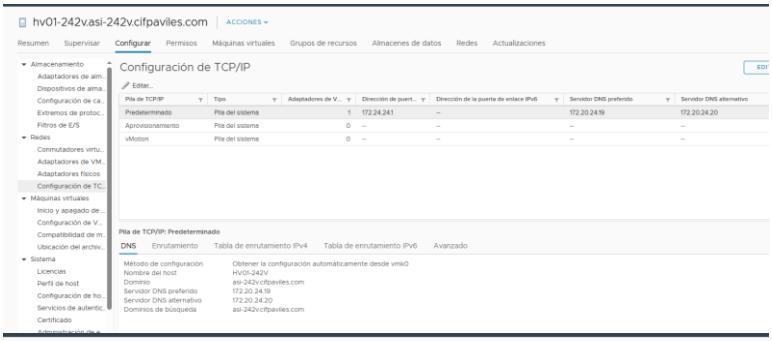
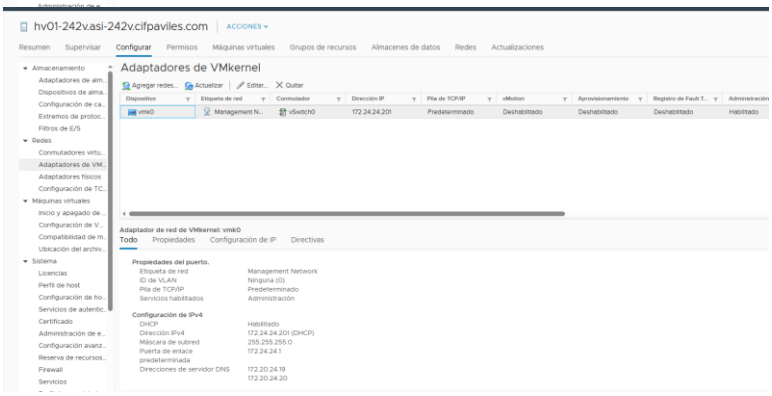
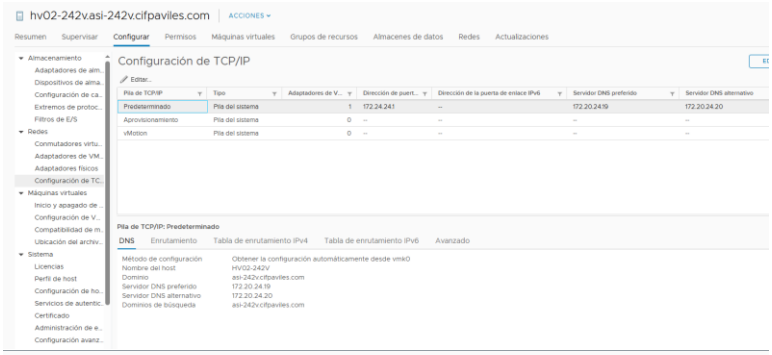
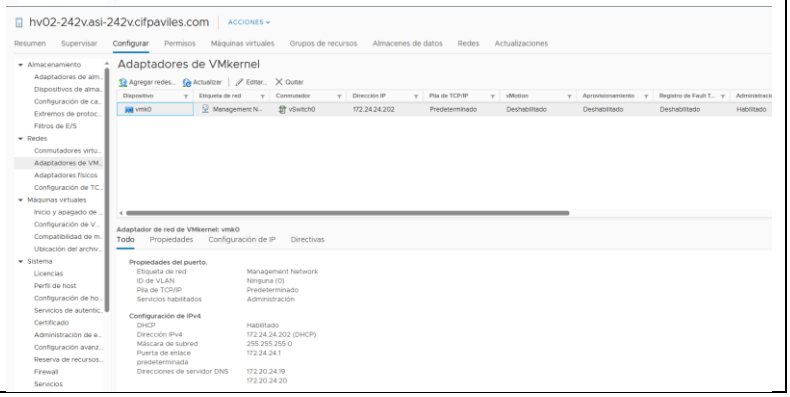

usuariosHV02-242V.usu2 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Manuel Varo
asi-242V.cifpaviles.com/usuarios/empresa/admins
Add...
Remove
OK
Cancel
Apply
Help

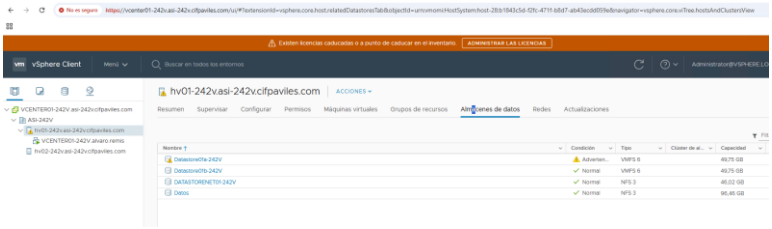
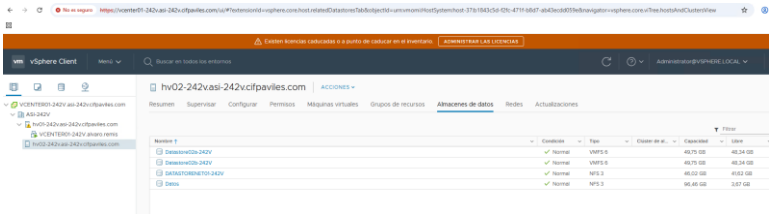
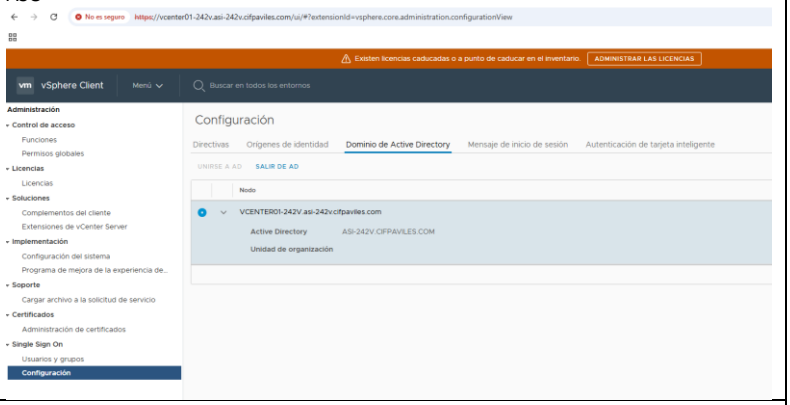
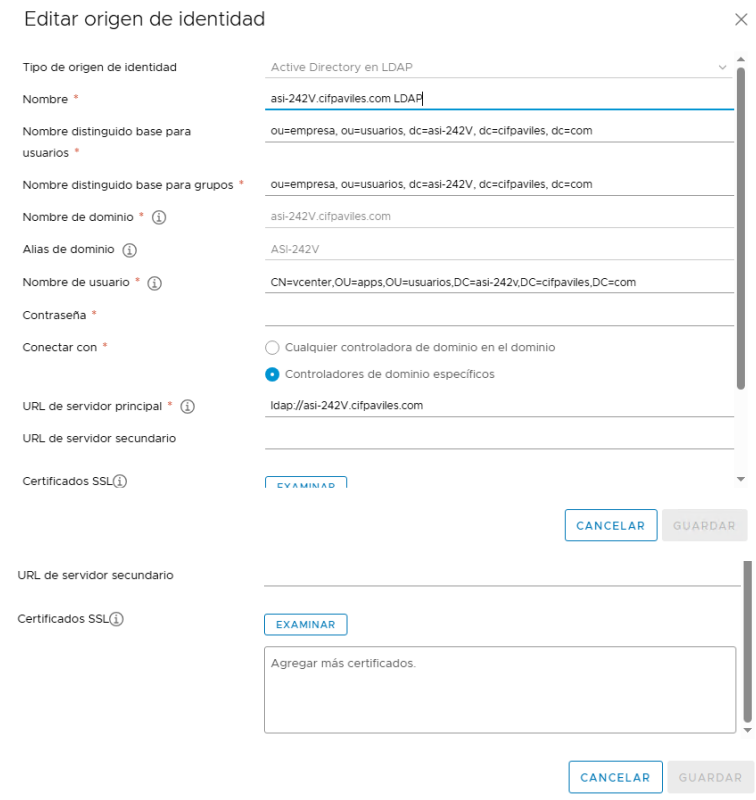

usuariosHV02-242V.usu3 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Victor Manuel Rubio
asi-242V.cifpaviles.com/usuarios/empresa
Add...
Remove
OK
Cancel
Apply
Help

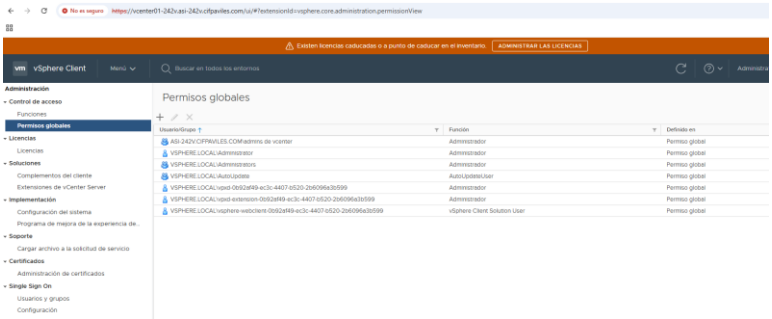
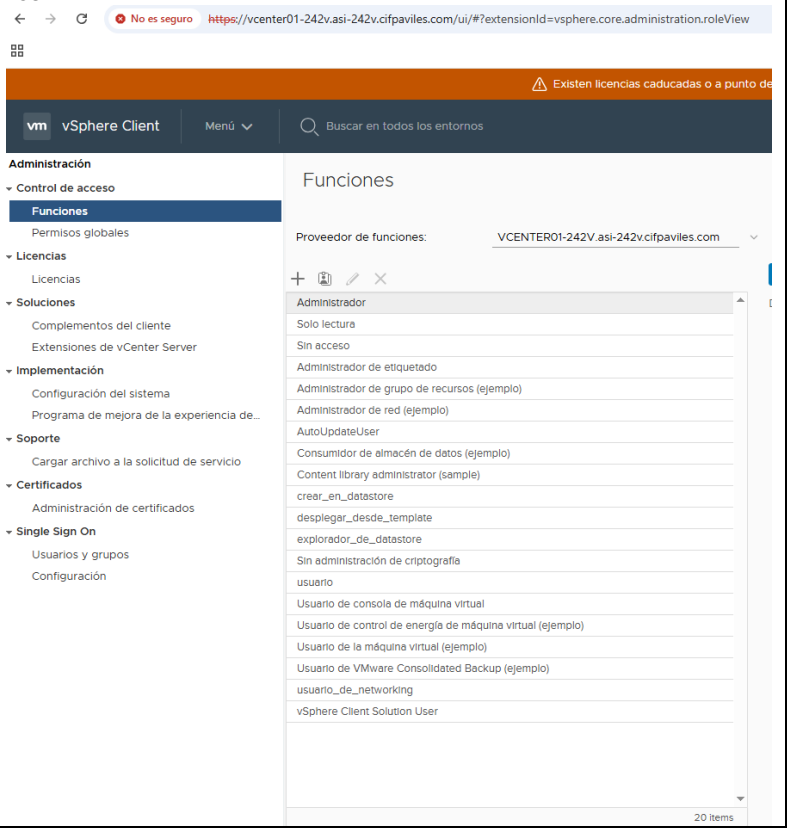

usuariosHV02-242V.usu4 Properties
Object
Security
Attribute Editor
General
Members
Member Of
Managed By
Members:
Name
Active Directory Domain Services Folder
Add...
Remove
OK
Cancel
Apply
Help

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			usuariosHV02-242V.usu5 Properties Object / Security / Attribute Editor General / Members / Member Of / Managed By Members: Name — Active Directory Domain Services Folder Add... / Remove OK / Cancel / Apply / Help usuariosHV02-242V.usu6 Properties Object / Security / Attribute Editor General / Members / Member Of / Managed By Members: Name — Active Directory Domain Services Folder Add... / Remove OK / Cancel / Apply / Help
47.	Acceso web al **hosts**	Para cada host: Pantalla principal de la interfaz web, mostrando el host de virtualización tras validarse con usuario root.	ASO

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
		Debe de verse la url de conexión en la barra de direcciones del navegador.	 
48.	Acceso web a **appliance vcenter** (puerto 5480)	Pantalla principal de la interfaz web, mostrando el sistema tras validarse con usuario root Debe de verse la url de conexión en la barra de direcciones del navegador.	ASO 
49.	Configuración de red de appliance vcenter	Acceso web a appliance vcenter/ Redes/ Configuración de red	ASO 
50.	Acceso web a **vcenter** (puerto 443)	Pantalla principal de la interfaz web, mostrando el sistema tras validarse con usuario Administrator@vsphere.local Debe de verse la url de conexión en la barra de direcciones del navegador. Mostrar el datacenter con los dos hosts esxi en la vista física.	ASO 
51.	Certificado de seguridad autogenerado para el sistema vcenter	Imagen del certificado mostrado al acceder a la url de vcenter	ASO

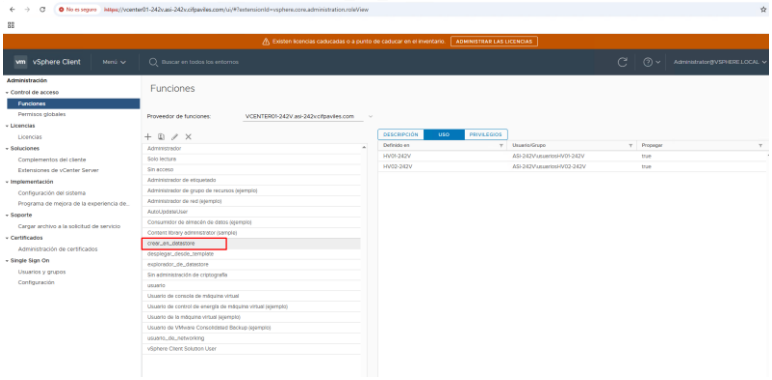
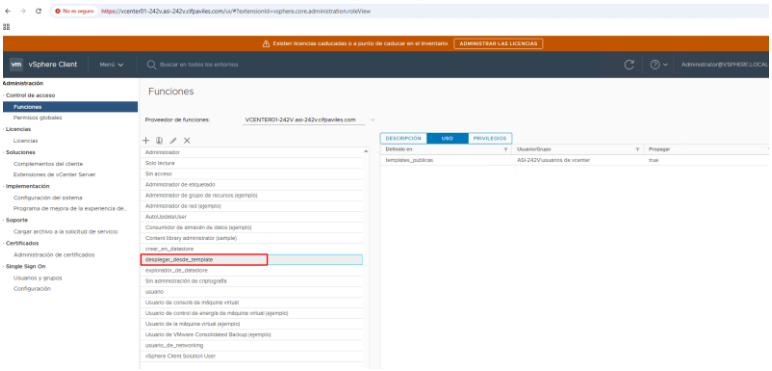
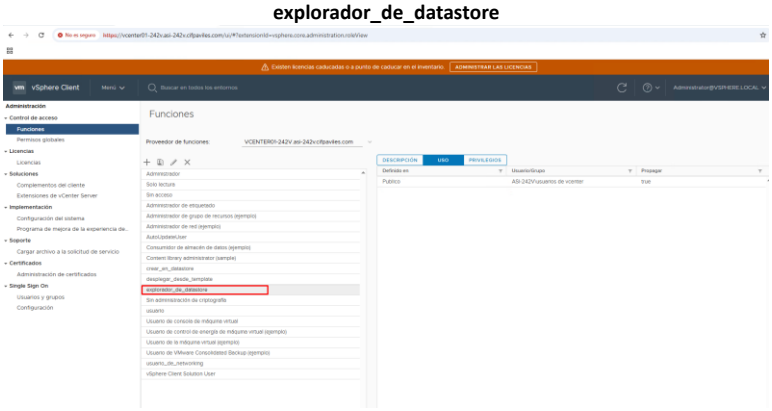
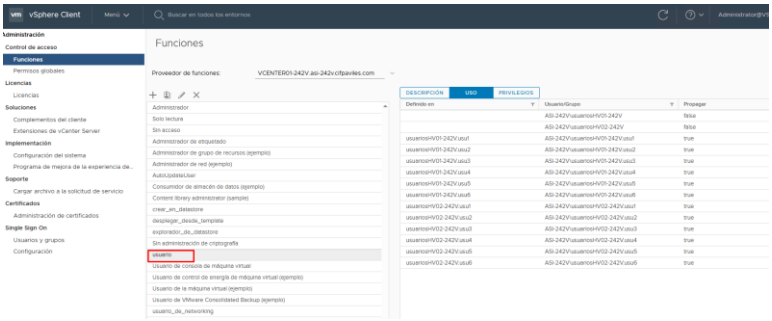
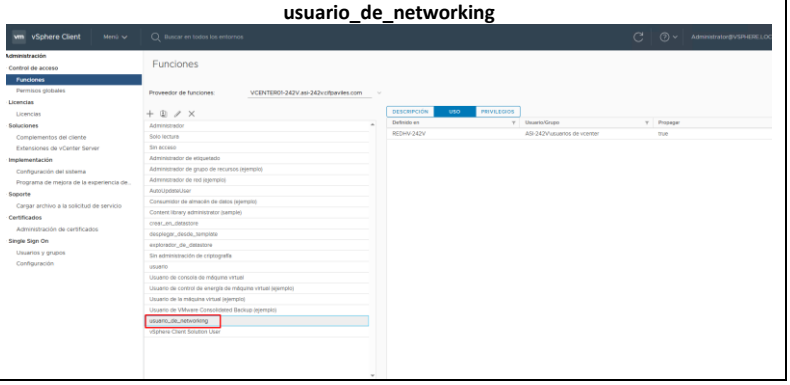
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			
52.	Configuración de red de hosts esxi:	Para cada host esxi: Consola vsphere/ vista física/ seleccionar host/ Configurar/ Redes/ Localizar y mostrar parámetros: • Hostname • Dominio • Dirección IP • Máscara de subred • Puerta de enlace • Servidores dns • Dominio de búsqueda.	ASO **HV01-242V**   **HV02-242V**  

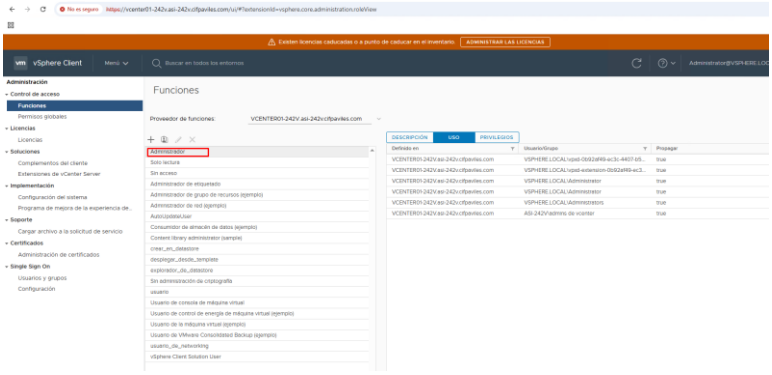
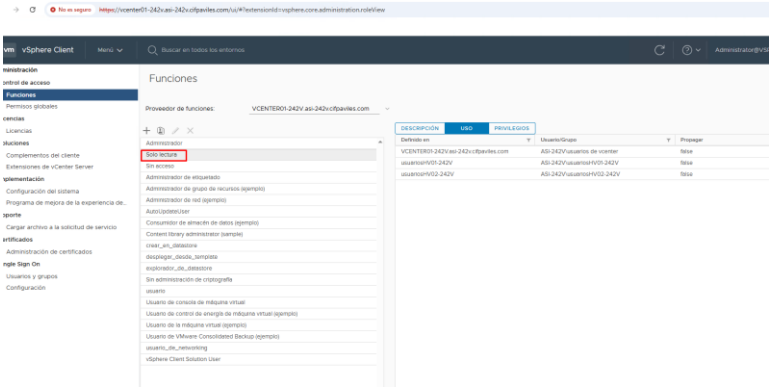
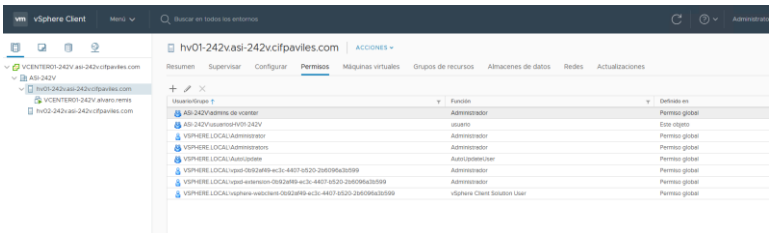
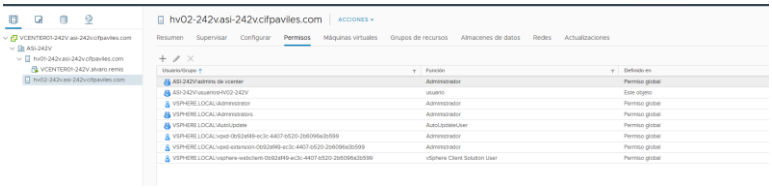
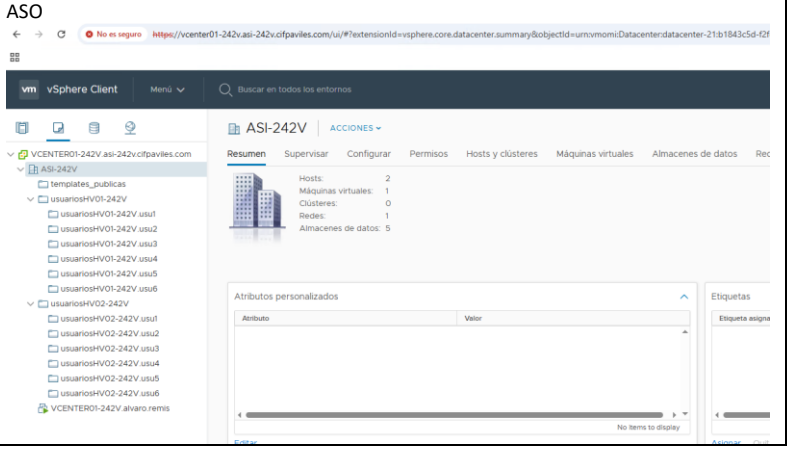
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
53.	Configuración de **datastores** de hosts esxi	Para cada host esxi: Consola vsphere/ vista física/ seleccionar host/ Almacenes de datos. Mostrar datastores locales y de red asociados a cada host.	ASO **HV01-242V**  **HV02-242V** 
54.	Integración de vcenter en dominio	Menú/ Administración/ Single Sign On/ Configuración/ Dominio de Active Directory	ASO 
55.	Configuración de identity source con ldap	Menú/ Administración/ Single Sign On/ Configuración/ Orígenes de identidad/ seleccionar dominio AD/ Editar	ASO 

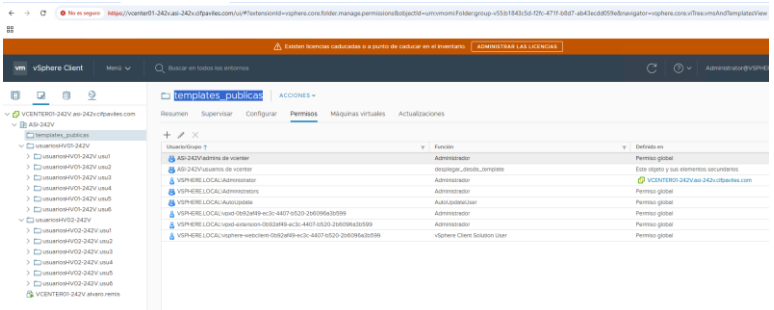
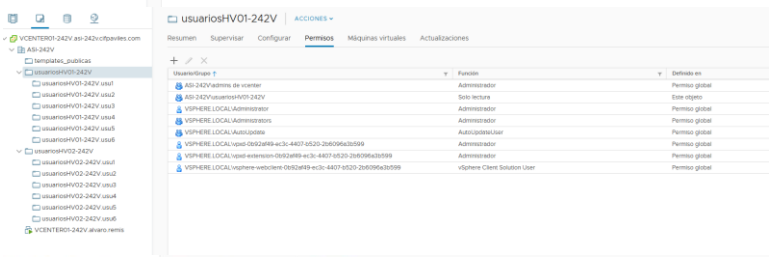
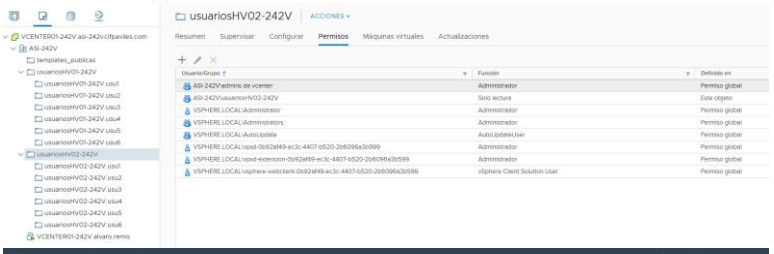
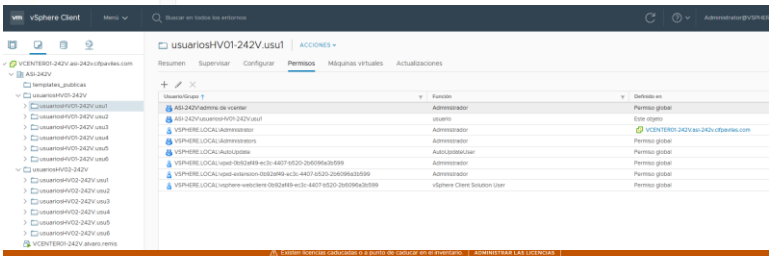
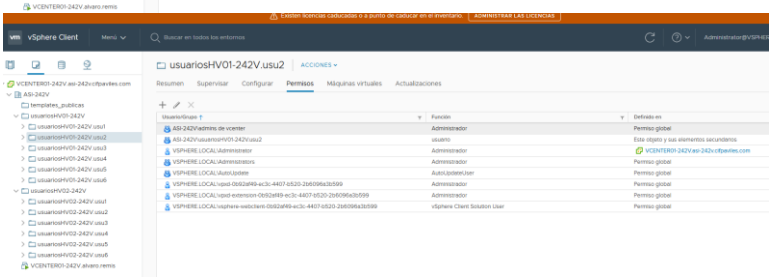
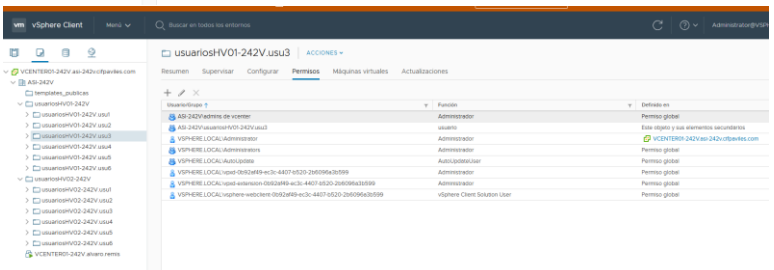
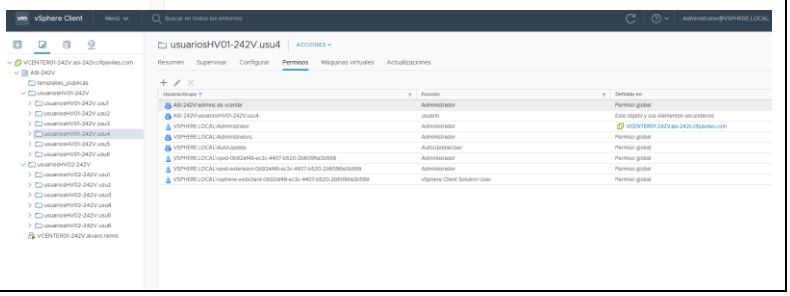
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
56.	Permisos globales	Menú/ Administración/ Control de acceso/ Permisos globales	ASO 
57.	Roles definidos	Menú/ Administración/ Control de acceso/ Funciones Lista de roles en que se vean los roles definidos.	ASO 

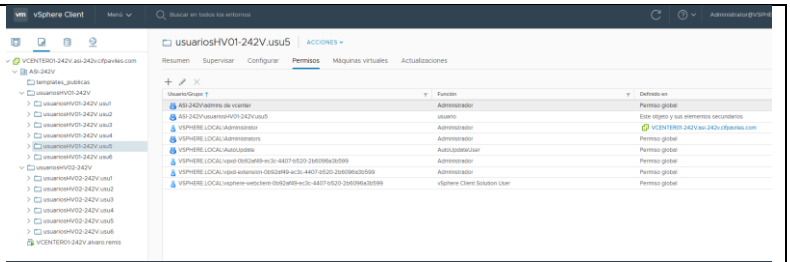
58.	Roles definidos: definición	Menú/ Administración/ Control de acceso/ Funciones Para cada rol creado: seleccionar el rol/ Privilegios/ seleccionar y copiar texto con lista de privilegios del rol	ASO **crear_en_datastore** Almacén de datos o Asignar espacio o Examinar almacén de datos o Operaciones de archivos de bajo nivel **desplegar_desde_template** Máquina virtual o Aprovisionar ➢ Clonar máquina virtual ➢ Implementar plantilla o Cambiar la configuración ➢ Agregar disco nuevo ➢ Agregar o quitar dispositivo o Editar el inventario ➢ Crear a partir de existente **explorador_de_datastore** Almacén de datos o Examinar almacén de datos **usuario** Recurso o Asignar máquina virtual a grupo de recursos Máquina virtual o Administración de instantáneas o Cambiar el nombre de instantánea o Crear instantánea o Quitar instantánea o Revertir a instantánea Aprovisionar o Clonar máquina virtual o Clonar plantilla o Crear plantilla desde máquina virtual o Implementar plantilla o Leer especificaciones de personalización o Marcar como máquina virtual o Marcar como plantilla o Modificar especificación de personalización Cambiar la configuración o Actualizar compatibilidad de la máquina virtual o Adquirir concesión de disco o Agregar disco nuevo o Agregar o quitar dispositivo o Agregar un disco existente o Alternar el seguimiento de cambios del disco o Alternar elemento primario de bifurcación o Cambiar configuración o Cambiar la colocación del archivo de intercambio o Cambiar la memoria o Cambiar nombre o Cambiar recuento de CPU o Cambiar recurso o Configuración avanzada o Configurar Administrado por o Configurar anotación o Configurar un dispositivo USB de host o Configurar un dispositivo sin formato o Consultar archivos sin propietario o Consultar compatibilidad con Fault Tolerance o Extender disco virtual o Modificar configuración de dispositivos o Mostrar configuración de conexión o Quitar disco o Restablecer información del invitado o Volver a cargar desde la ruta de acceso Editar el inventario o Cancelar el registro o Crear a partir de existente o Crear nueva o Mover o Quitar

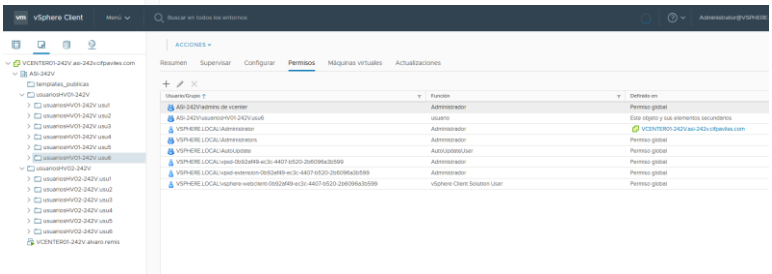
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			Registrar • Interacción ○ Apagar ○ Crear captura de pantalla ○ Encender ○ Instalar VMware Tools ○ Interacción de consola ○ Restablecer **usuario_de_networking** Red ○ Asignar red

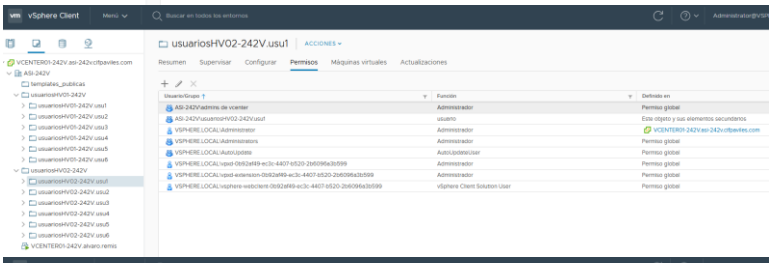
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
59.	Roles definidos: uso	Menú/ Administración/ Control de acceso/ Funciones Para cada rol creado: seleccionar el rol/ Uso/ Copiar imagen que indica: • Definido en • Usuario/grupo • Propagar	ASO **crear_en_datastore**  **desplegar_desde_template**  **explorador_de_datastore**  **usuario**  Nota: al aplicar roles sobre hosts físicos estos no aparecen en la columna 'Definido en'. Mas adelante se ve que los roles se han asignado correctamente. **usuario_de_networking** 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
60.	Roles predeterminados: uso (solamente roles Administrador y Solo lectura)	Menú/ Administración/ Control de acceso/ Funciones Para los roles predeterminados Administrador y Solo lectura: seleccionar el rol/ Uso/ Copiar imagen que indica: • Definido en • Usuario/grupo • Propagar	ASO **Administrador**  **Solo lectura** 
61.	Permisos sobre hosts	Para cada host: Seleccionar host/ Permisos	ASO **HV01-242V**  **HV02-242V** 
62.	Carpetas en vista lógica (Máquinas virtuales y plantillas).	Imagen de todas las carpetas creadas en la vista de Máquinas virtuales y plantillas, y su contenido	ASO 

63.	Permisos sobre carpetas de vista lógica	Para cada carpeta creada: Seleccionar carpeta/ Permisos	ASO       


vSphere Client
usuariosHV01-242V.usu5
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones


vSphere Client
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones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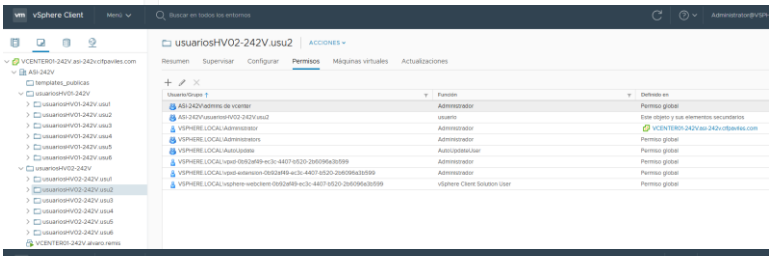
usuariosHV02-242V.usu1
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones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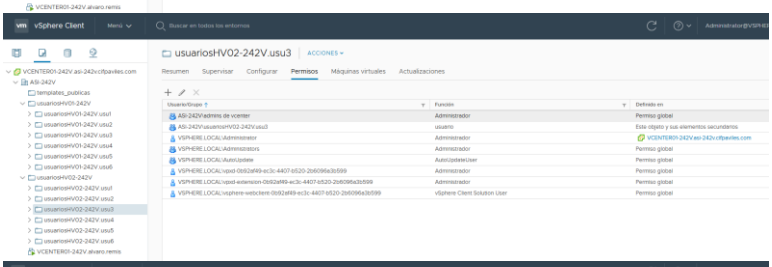
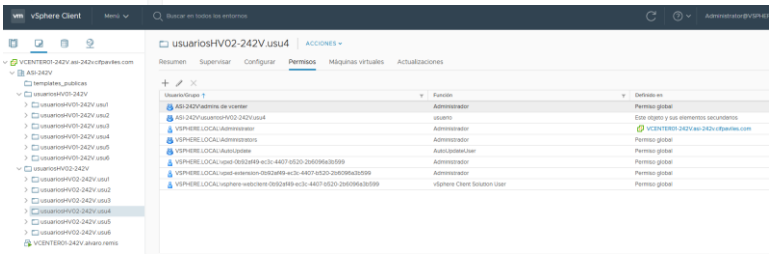
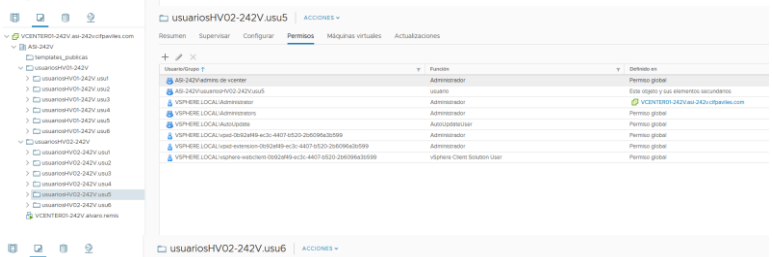
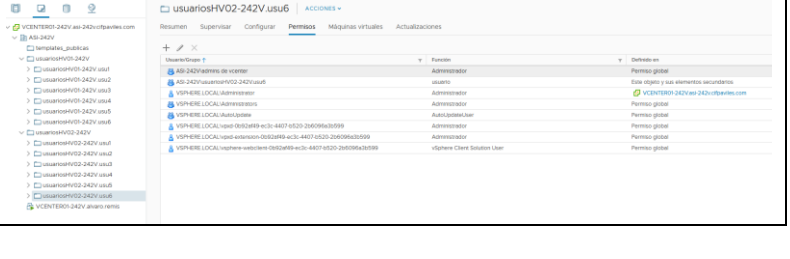
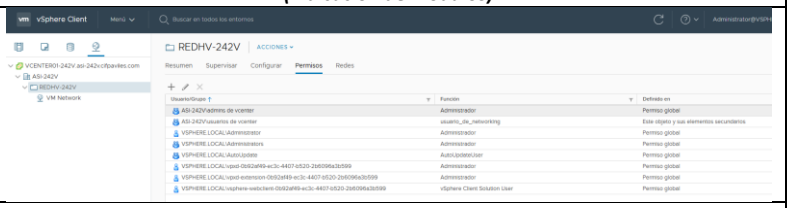
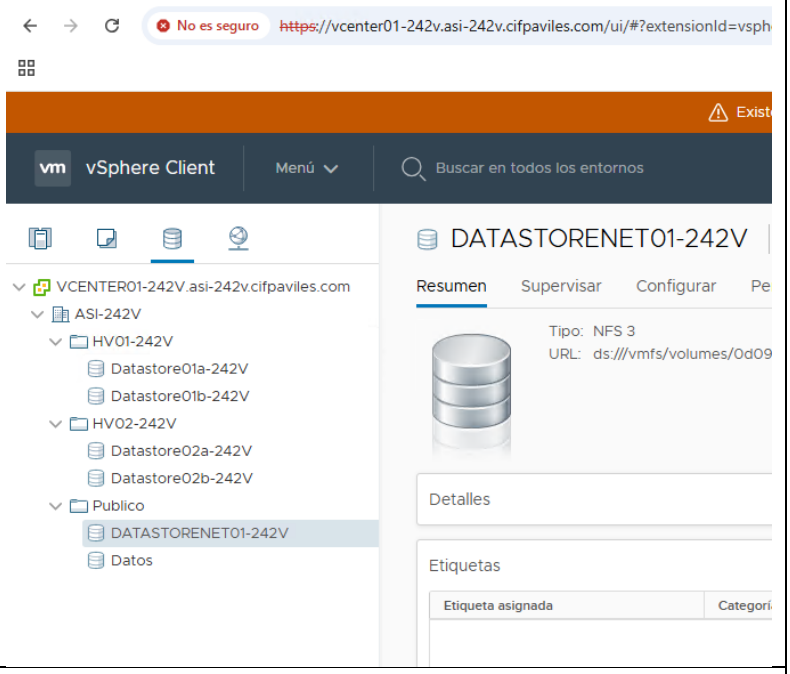
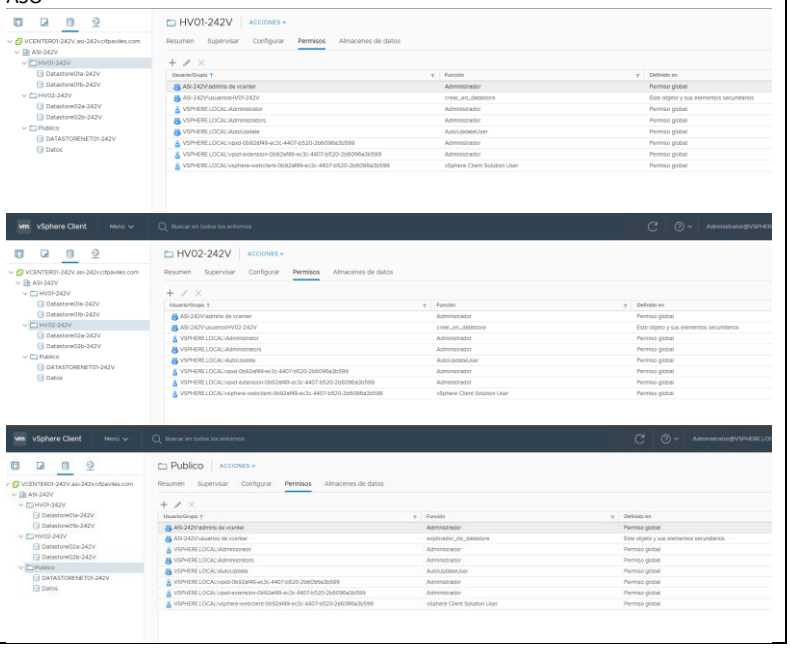
usuariosHV02-242V.usu2
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones

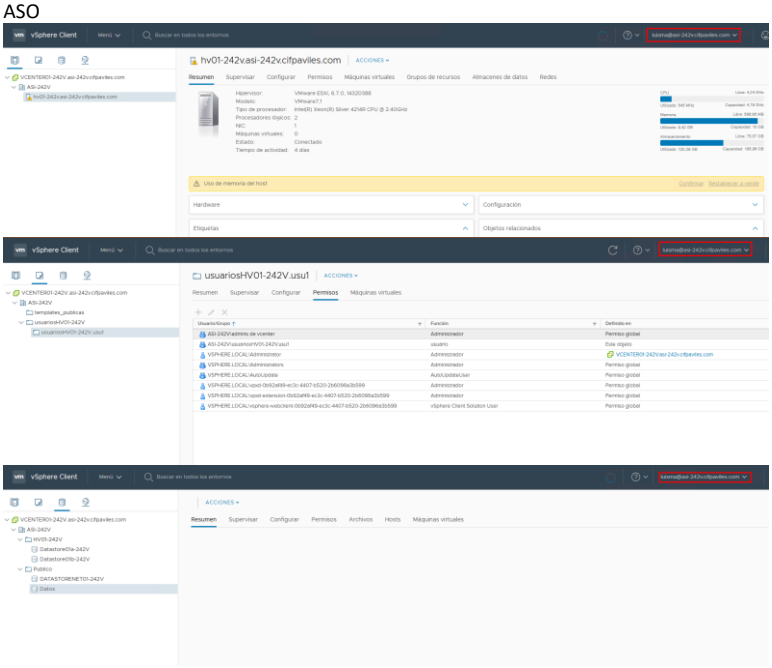
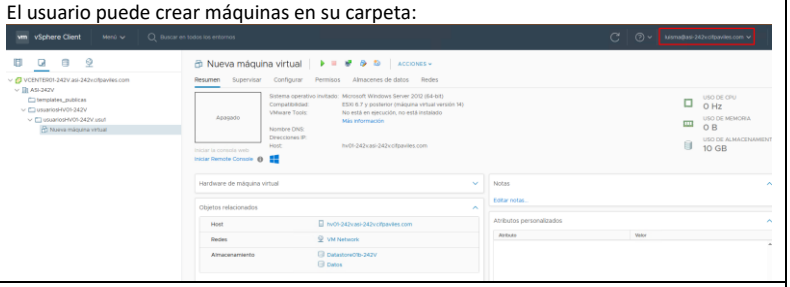
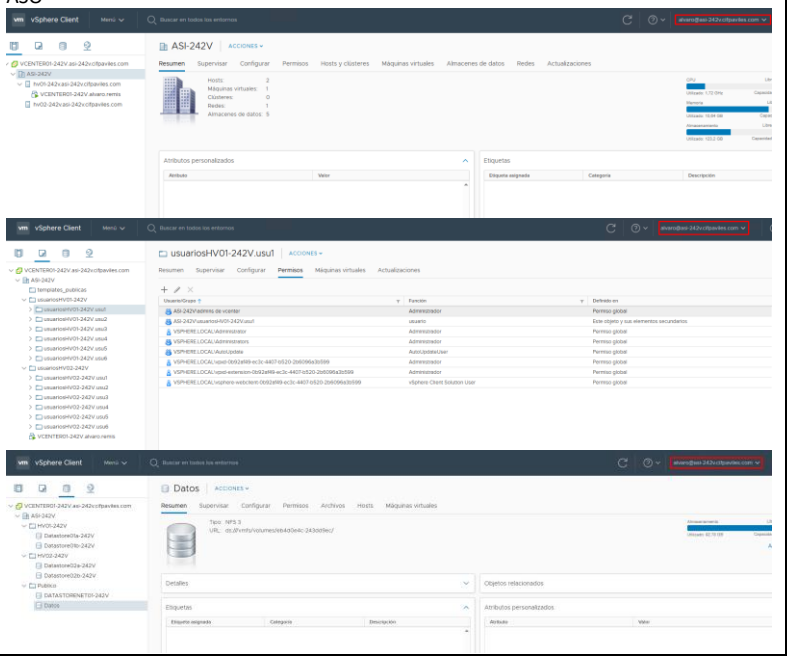

vSphere Client
usuariosHV02-242V.usu3
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones


vSphere Client
usuariosHV02-242V.usu4
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones


usuariosHV02-242V.usu5
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones


usuariosHV02-242V.usu6
Resumen
Supervisar
Configurar
Permisos
Máquinas virtuales
Actualizaciones

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			
64.	Carpetas en vista de almacenamiento (Datastores)	Imagen de todas las carpetas creadas en la vista de almacenamiento, y su contenido	ASO 
65.	Permisos sobre carpetas de vista de almacenamiento	Para cada carpeta creada: Seleccionar carpeta/ Permisos	ASO 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
66.	Permisos de usuario de dominio del grupo tecnicos sobre objetos de cada vista	Tras validarse en vsphere con usuario de dominio, copiar imágenes de vista física, vista lógica y vista de almacenamiento, desplegando todas las carpetas y objetos sobre los que tiene permisos el usuario.	ASO  El usuario puede crear máquinas en su carpeta: 
67.	Permisos de usuario de dominio del grupo admins sobre objetos de cada vista	Tras validarse en vsphere con usuario de dominio, copiar imágenes de vista física, vista lógica y vista de almacenamiento, desplegando todas las carpetas y objetos sobre los que tiene permisos el usuario.	ASO 

68.	Infraestructura de **clave pública/privada** para **acceso ssh sin contraseña**	Descripción de la infraestructura:
		
		• Archivos de clave generados
		• Ubicación de las claves en sistemas cliente y servidor.
		• Imagen de entrada a sistemas remotos sin pedir contraseña
		• Scripts bash elaborados
			ASO/SADIS
			`root@ROUTER01-242V:/home/administrador/.ssh# ls -l 242v*`
			`-rw------- 1 administrador administrador 419 may 11 10:06 242v`
			`-rw-r--r-- 1 administrador administrador 109 may 11 10:06 242v.pub`
			`root@ROUTER01-242V:/home/administrador/.ssh#`
			Clave privada en servidor
			`administrador@ROUTER01-242V:~$ sudo ./instalaclaveprivada.sh 10.31.9.254 administrador`
			`The authenticity of host '10.31.9.254 (10.31.9.254)' can't be established.`
			`ECDSA key fingerprint is SHA256:UgDcN/+ahAOXzejs91N5b3y2ny71V6uVsylfONG+kSA.`
			`Are you sure you want to continue connecting (yes/no)? yes`
			`Warning: Permanently added '10.31.9.254' (ECDSA) to the list of known hosts.`
			`administrador@10.31.9.254's password:`
			`242v`
			`Operación finalizada: Clave privada instalada en ~/.ssh/`
			`administrador@ROUTER01-242V:~$`
			Clave pública en máquinas
			172.24.24.211 - PuTTY
			`root@VCENTER01-242V [ ~ ]# ls`
			`instalaclavepublica.sh`
			`root@VCENTER01-242V [ ~ ]# ./instalaclavepublica.sh 10.31.9.254 administrador`
			`The authenticity of host '10.31.9.254 (10.31.9.254)' can't be established.`
			`ECDSA key fingerprint is SHA256:UgDcN/+ahAOXzejs91N5b3y2ny71V6uVsylfONG+kSA.`
			`Are you sure you want to continue connecting (yes/no)? yes`
			`administrador@10.31.9.254's password:`
			`242v.pub 100% 109 18.5KB/s 00:00`
			`Operación finalizada: Clave pública autorizada.`
			`root@VCENTER01-242V [ ~ ]#`
			Ubicación de claves
			Servidor:
			ROUTER01-242V
			`administrador@ROUTER01-242V:~/.ssh$ ls`
			`242v 242v.pub known_hosts`
			`administrador@ROUTER01-242V:~/.ssh$`
			Clientes:
			LAMP01-242V
			`administrador@lamp01-242v:~/.ssh$ ls`
			`authorized_keys known_hosts known_hosts.old`
			`administrador@lamp01-242v:~/.ssh$ cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW administrador@ROUTER01-242V`
			`administrador@lamp01-242v:~/.ssh$`
			WS03-242V
			`administrador@WS03-242V:~/.ssh$ cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW administrador@ROUTER01-242V`
			`administrador@WS03-242V:~/.ssh$`
			FILER01-242V
			`root@FILER01-242V[~/.ssh]# cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW administrador@ROUTER01-242V`
			`root@FILER01-242V[~/.ssh]#`
			HV01-242V
			`[root@HV01-242V:/etc/ssh/keys-root] ls`
			`authorized_keys`
			`[root@HV01-242V:/etc/ssh/keys-root] cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW`
			`[root@HV01-242V:/etc/ssh/keys-root]`
			HV02-242V
			`[root@HV02-242V:/etc/ssh/keys-root] cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW`
			`[root@HV02-242V:/etc/ssh/keys-root]`
			VCENTER01-242V
			`root@VCENTER01-242V [ ~/.ssh ]# cat authorized_keys`
			`ssh-ed25519 AAAAC3NzaC11ZDI1NTE5AAAAID/ipy3cCIf2+0u2tVN1Q60xly/wVfaTarrkTTmD1sXW`
			`administrador@ROUTER01-242V`
			`root@VCENTER01-242V [ ~/.ssh ]#`
			Acceso:
			LAMP01-242V

```
administrador@ROUTER01-242V:~$ ssh -i ~/.ssh/242v administrador@172.16.24.77
Welcome to Ubuntu 24.04.4 LTS (GNU/Linux 6.8.0-110-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of lun 11 may 2026 11:48:31 CEST

  System load:  0.12               Processes:               343
  Usage of /:   52.5% of 50.94GB   Users logged in:         1
  Memory usage: 28%                IPv4 address for ens192: 172.16.24.77
  Swap usage:   49%

  => There is 1 zombie process.

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

El mantenimiento de seguridad expandido para Applications está desactivado

Se pueden aplicar 17 actualizaciones de forma inmediata.
Para ver estas actualizaciones adicionales, ejecute: apt list --upgradable

Active ESM Apps para recibir futuras actualizaciones de seguridad adicionales.
Vea https://ubuntu.com/esm o ejecute «sudo pro status»


*** Es necesario reiniciar el sistema ***
Last login: Fri May  8 23:22:19 2026 from 172.16.24.1
administrador@lamp01-242v:~$
```

VCENTER01-242V

```
administrador@ROUTER01-242V:~/.ssh$ ssh -i ~/.ssh/242v root@172.24.24.211

VMware vCenter Server Appliance 6.7.0.46000

Type: vCenter Server with an embedded Platform Services Controller

root@VCENTER01-242V [ ~ ]#
```

FILER01-242V

```
administrador@ROUTER01-242V:~$ ssh -i ~/.ssh/242v root@172.24.24.11
Last login: Sat May  9 08:31:12 2026 from 172.24.24.1
FreeBSD 13.1-RELEASE-p9 n245433-9dc2dc9b081 TRUENAS

        TrueNAS (c) 2009-2025, iXsystems, Inc.
        All rights reserved.
        TrueNAS code is released under the modified BSD license with some
        files copyrighted by (c) iXsystems, Inc.

        For more information, documentation, help or support, go here:
        http://truenas.com
Welcome to TrueNAS

Warning: the supported mechanisms for making configuration changes
are the TrueNAS WebUI and API exclusively. ALL OTHERS ARE
NOT SUPPORTED AND WILL RESULT IN UNDEFINED BEHAVIOR AND MAY
RESULT IN SYSTEM FAILURE.

root@FILER01-242V[~]#
```

WS01-242V

```
administrador@ROUTER01-242V:~$ ssh -i ~/.ssh/242v administrador@172.28.24.24
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.17.0-23-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

El mantenimiento de seguridad expandido para Applications está desactivado

Se pueden aplicar 140 actualizaciones de forma inmediata.
Para ver estas actualizaciones adicionales, ejecute: apt list --upgradable

Active ESM Apps para recibir futuras actualizaciones de seguridad adicionales.
Vea https://ubuntu.com/esm o ejecute «sudo pro status»

Last login: Sat May  9 17:16:32 2026 from 172.28.24.1
administrador@WS03-242V:~$
```

HV01-242V

```
administrador@ROUTER01-242V:~/.ssh$ ssh -i 242v root@172.24.24.201
The time and date of this login have been sent to the system logs.

WARNING:
   All commands run on the ESXi shell are logged and may be included i
   support bundles. Do not provide passwords directly on the command l
   Most tools can prompt for secrets or accept them from standard inpu

VMware offers supported, powerful system administration tools.  Please
see www.vmware.com/go/sysadmintools for details.

The ESXi Shell can be disabled by an administrative user. See the
vSphere Security documentation for more information.
[root@HV01-242V:~]
```

HV02-242V

```
administrador@ROUTER01-242V:~/.ssh$ ssh -i 242v root@172.24.24.202
The time and date of this login have been sent to the system logs.

WARNING:
   All commands run on the ESXi shell are logged and may be included in
   support bundles. Do not provide passwords directly on the command line.
   Most tools can prompt for secrets or accept them from standard input.

VMware offers supported, powerful system administration tools.  Please
see www.vmware.com/go/sysadmintools for details.

The ESXi Shell can be disabled by an administrative user. See the
vSphere Security documentation for more information.
[root@HV02-242V:~]
```

Script **instalaclaveprivada.sh**

```
administrador@ROUTER01-242V:~$ cat instalaclaveprivada.sh
#!/bin/bash
# Uso: ./instalaclaveprivada.sh IP_SERVIDOR_CLAVES USUARIO_REMOTO

if [ $# -ne 2 ]
then
    echo "Error: forma de uso:"
    echo "$0 IP_servidor_claves usuario_remoto"
else
    # Aseguramos que existe el directorio .ssh local
    mkdir -p ~/.ssh
    chmod 700 ~/.ssh

    # Descargamos la clave privada (la identidad)
    scp $2@$1:~/.ssh/242v ~/.ssh/242v

    # Ajustamos permisos: la clave privada DEBE ser 600 o SSH la rechazará
    chmod 600 ~/.ssh/242v
    echo "Operación finalizada: Clave privada instalada en ~/.ssh/"
fi
administrador@ROUTER01-242V:~$
```

Script **instalaclavepublica.sh**

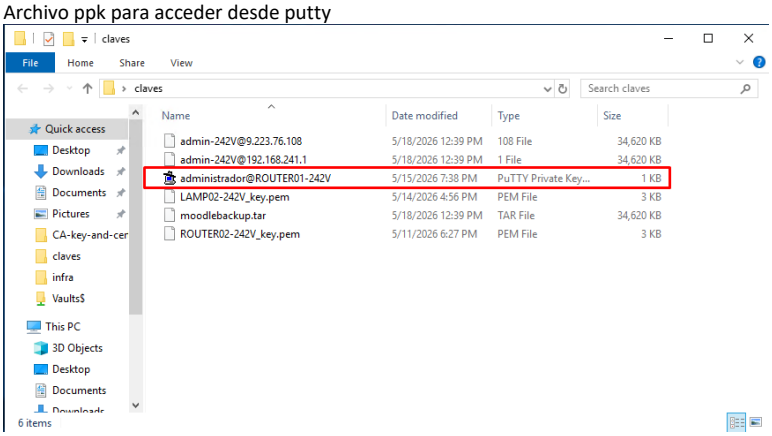
```
[root@HV02-242V:~] cat instalaclavepublica.sh
#!/bin/bash
# Uso: ./instalaclavepublica.sh IP_SERVIDOR_CLAVES USUARIO_REMOTO

# En primer lugar, se hace que si no se utilizan dos argumentos salte un mensaje de
 error explicando como ejecutar el script
if [ $# -ne 2 ]
then
    echo "Error: forma de uso:"
    echo "$0 IP_servidor_claves usuario_remoto"
else
    # Dentro del else creamos el directorio (el parámetro -p hace que no pase nada
si el directorio ya existe) y asignamos permisos
    mkdir -p ~/.ssh
    chmod 700 ~/.ssh

    # Utilizamos el comando scp para transferir el archivo a /tmp, donde se almacen
an archivos temporales
    # $1 es la IP del servidor y $2 es el usuario en ese servidor
    scp $2@$1:~/.ssh/242v.pub /tmp/key_transfer.pub

    # Llevamos la clave a /.ssh/authorized_keys en el directorio home del usuario q
ue ejecuta el script y otorgamos permisos
    cat /tmp/key_transfer.pub >> ~/.ssh/authorized_keys
    chmod 600 ~/.ssh/authorized_keys

    # Borramos el archivo temporal de /tmp
    rm /tmp/key_transfer.pub
    echo "Operación finalizada: Clave pública autorizada."
fi
[root@HV02-242V:~]
```

Script **instalaclaveprivadaesxi.sh**

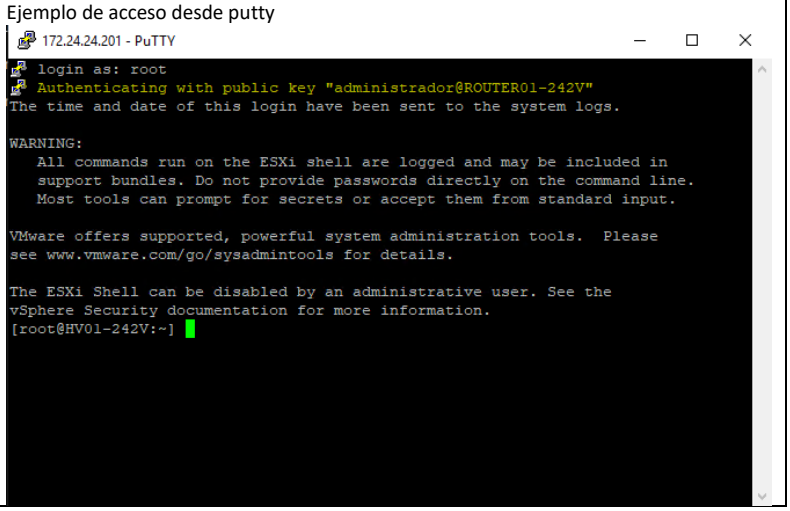
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

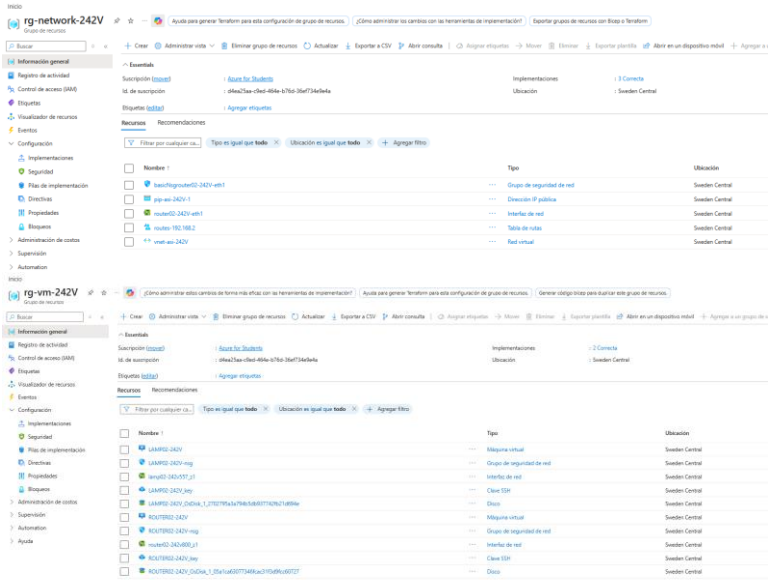
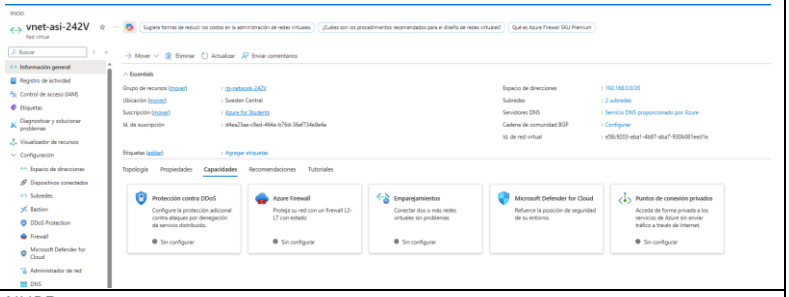
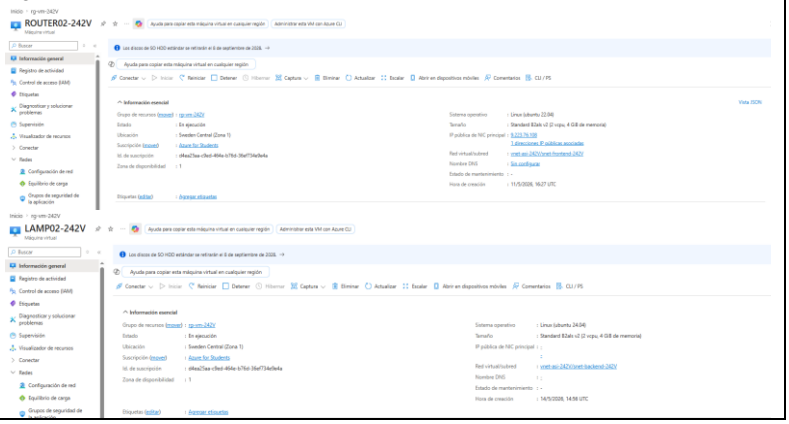
```
administrador@ROUTER01-242V:~$ cat instalaclavepublicaesxi.sh
#!/bin/bash
# Uso: ./instalaclavepublicaesxi.sh IP_ESXi

IP_ESXi=$1
R_ORIGEN="/home/administrador/.ssh/242v.pub"
USUARIO_ESXi="root"

if [ $# -ne 1 ]; then
    echo "Error: forma de uso: $0 IP_ESXi"
    exit 1
fi

echo "--- Habilitando Algoritmos Modernos (ED25519) en ESXi ($IP_ESXi) ---"
CLAVE_PUB=$(cat "$R_ORIGEN" | awk '{print $1, $2}')

ssh $USUARIO_ESXi@$IP_ESXi << EOF
    # 1. Asegurar la llave en la ruta oficial
    mkdir -p /etc/ssh/keys-root
    echo "$CLAVE_PUB" > /etc/ssh/keys-root/authorized_keys
    chmod 700 /etc/ssh/keys-root
    chmod 600 /etc/ssh/keys-root/authorized_keys

    # 2. Configurar el demonio SSH para aceptar ED25519
    # Primero limpiamos si ya existen las lineas
    sed -i '/PubkeyAcceptedKeyTypes/d' /etc/ssh/sshd_config

    # Añadimos la compatibilidad explícita para ED25519 y RSA
    echo "PubkeyAcceptedKeyTypes +ssh-ed25519,ssh-rsa" >> /etc/ssh/sshd_config

    # Aseguramos que el login de root y llaves estén activos
    sed -i 's/.*PermitRootLogin.*/PermitRootLogin yes/g' /etc/ssh/sshd_config
    sed -i 's/.*PubkeyAuthentication.*/PubkeyAuthentication yes/g' /etc/ssh/sshd
_config

    # 3. Reiniciar el servicio
    /etc/init.d/SSH restart
EOF

echo "--- Configuración aplicada ---"
echo "Prueba ahora la conexión normal:"
echo "ssh -i ~/.ssh/242v root@$IP_ESXi"
administrador@ROUTER01-242V:~$
```

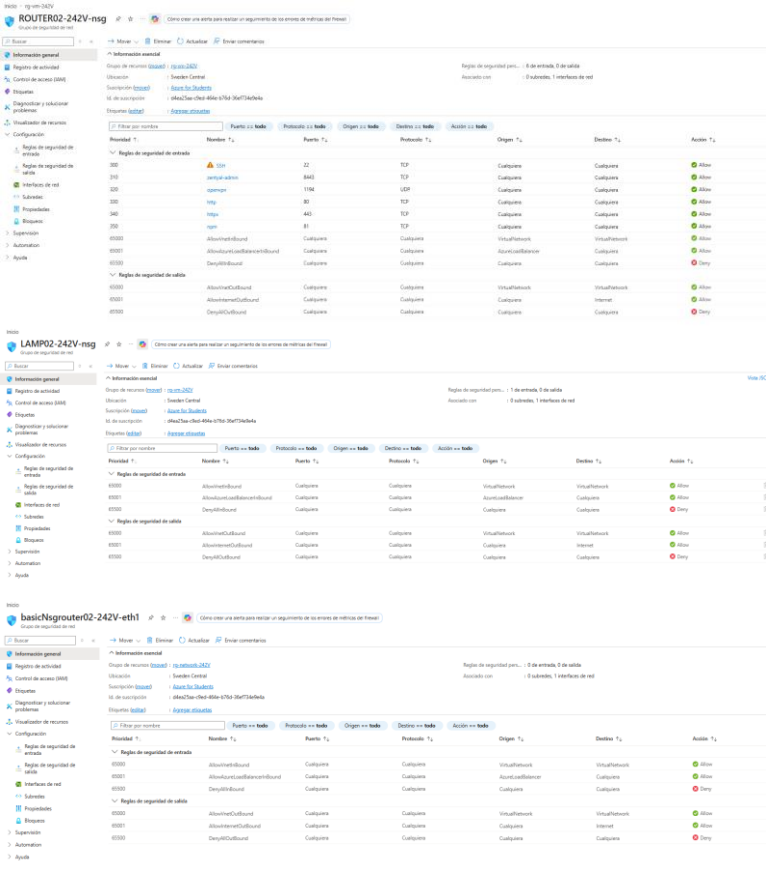
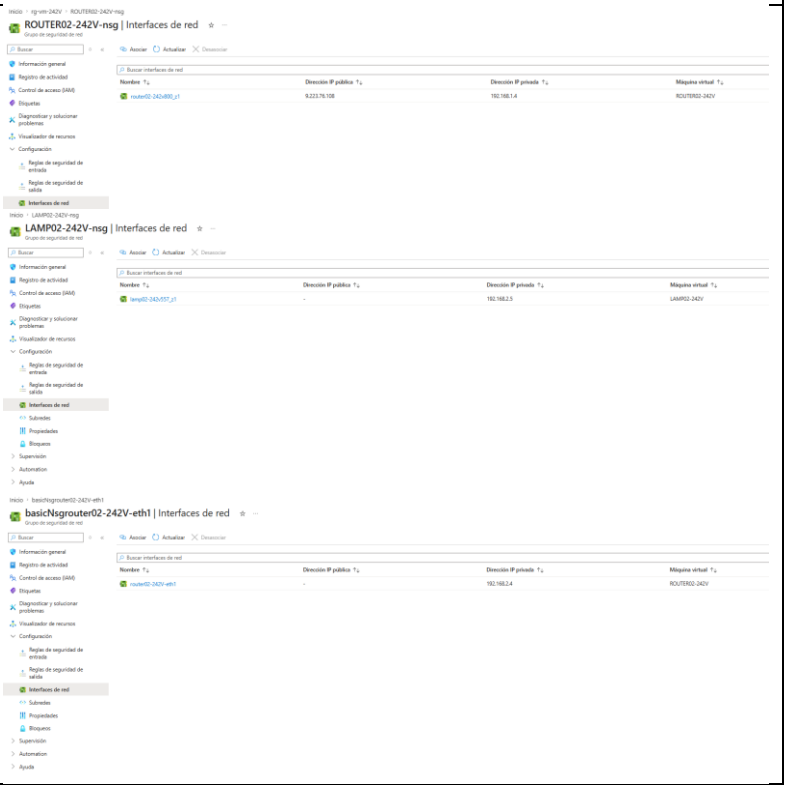
Archivo ppk para acceder desde putty

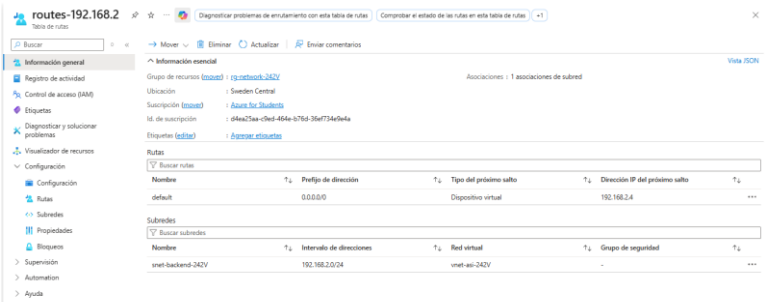


Ejemplo de acceso desde putty

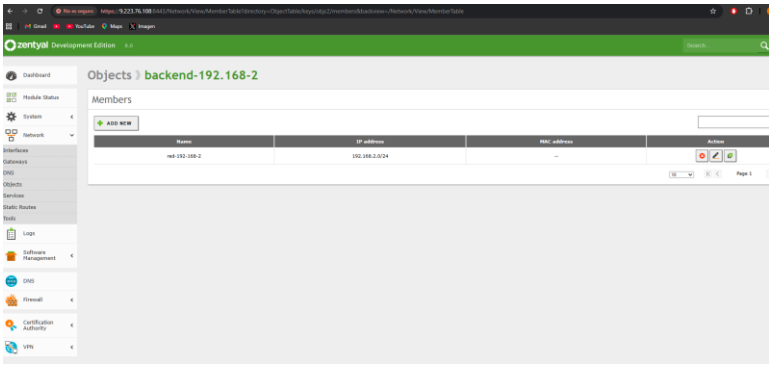
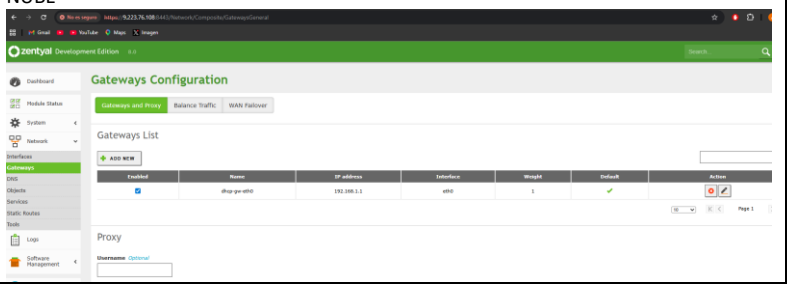


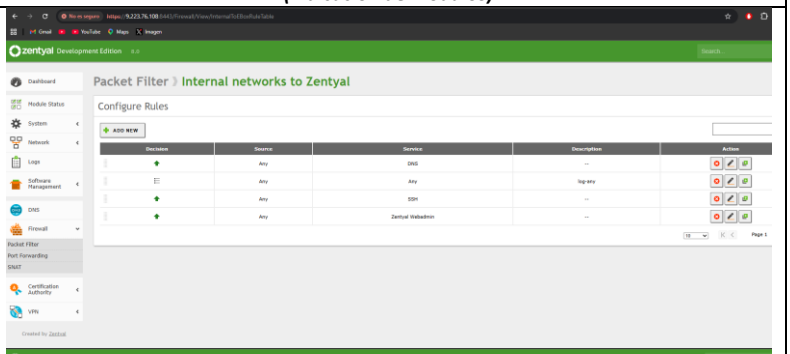
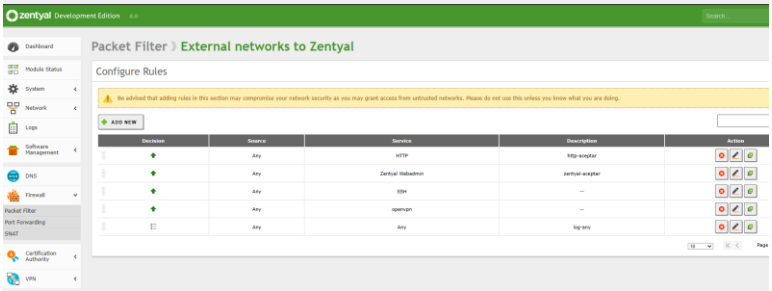
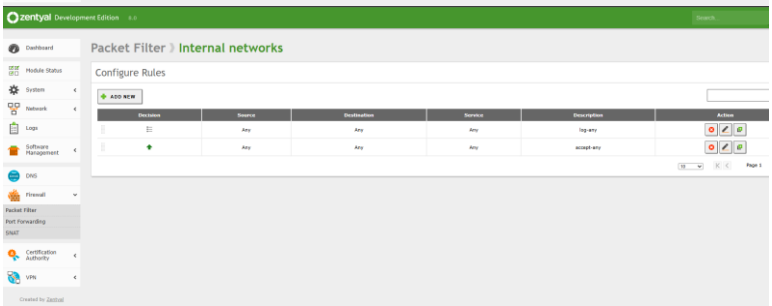
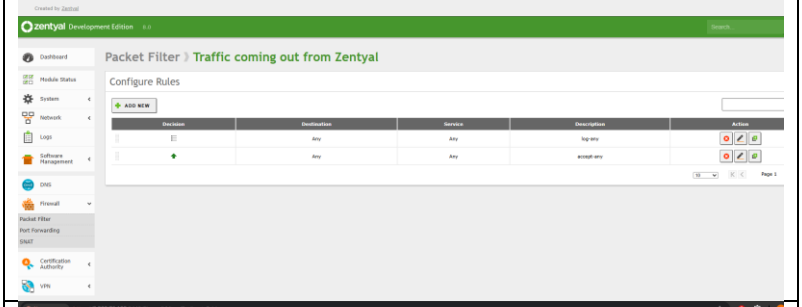
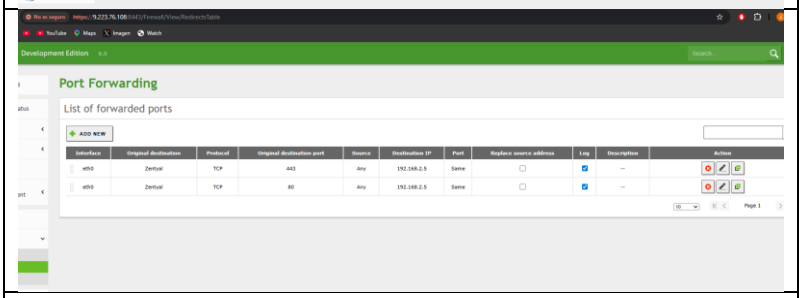
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
69.	Azure: grupos de recursos y recursos	Para cada grupo de recursos configurado: Grupo de recursos/ Información general, mostrando nombre del grupo de recursos, y para cada recurso: nombre, tipo y ubicación	NUBE 
70.	Azure: direcciones IP públicas	Para cada dirección ip: Dirección IP pública/ Información general, mostrando nombre, dirección IP y nombre dns asociado	NUBE
71.	Azure: red virtual	Para cada red virtual: Red virtual/ Información general, mostrando nombre y espacio de direcciones	NUBE 
72.	Azure: subredes	Para cada Red virtual: Red virtual/ Configuración/ Subredes, mostrando nombre y direccionamiento de subredes	NUBE
73.	Azure: Máquinas virtuales	Para cada máquina virtual: Máquina virtual/ Información general/ Información esencial	NUBE 

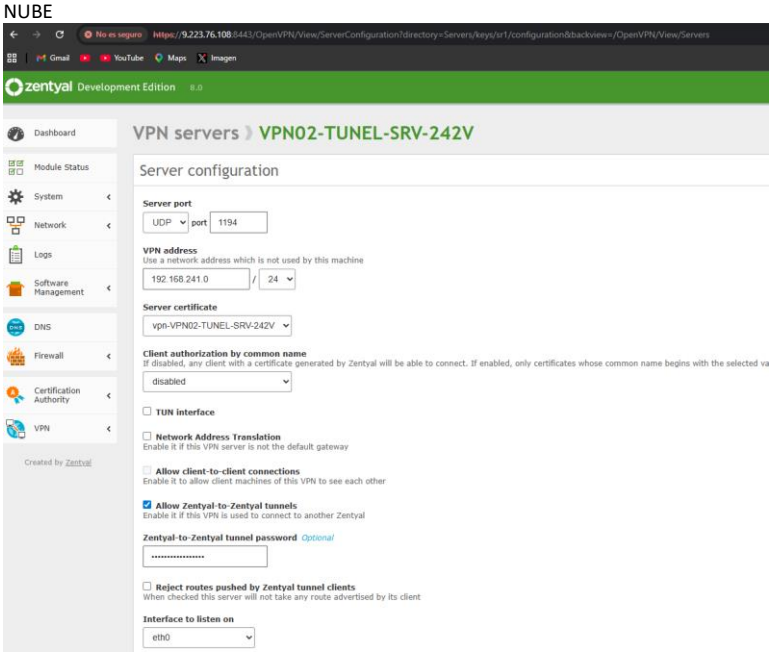
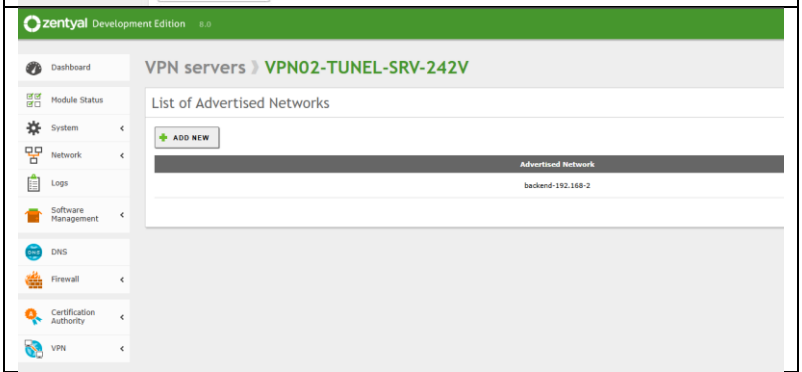
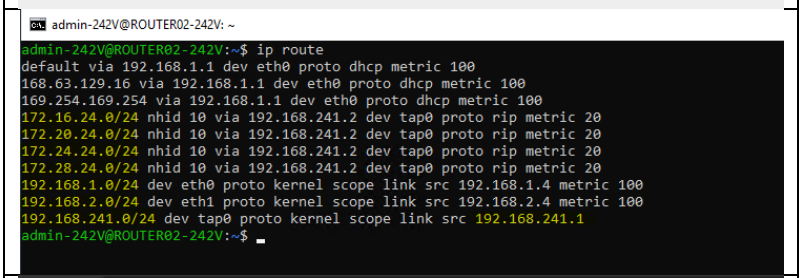
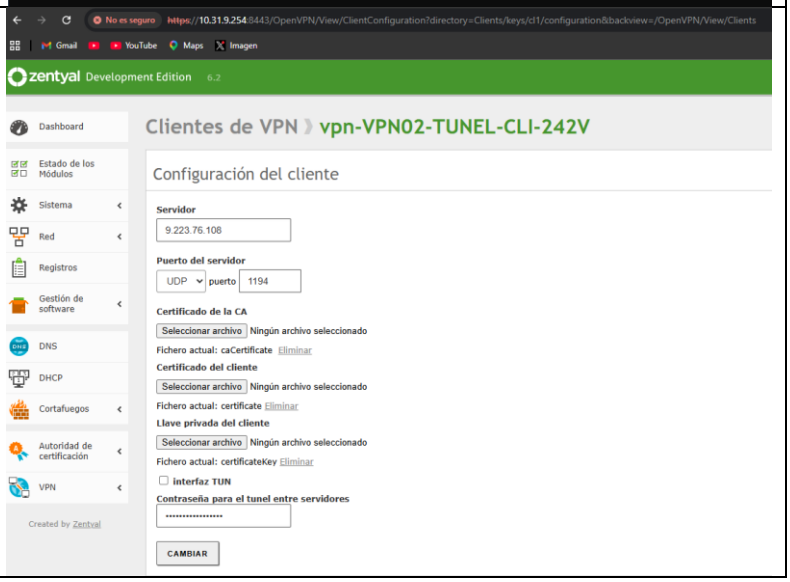
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
74.	Azure: grupos de seguridad de red	Para cada grupo de seguridad de red: a) Grupo de seguridad de red/ Información general/Información esencial, Reglas de seguridad de entrada, Reglas de seguridad de salida b) Grupo de seguridad de red/ Configuración/ Interfaces de red	NUBE  

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
75.	Azure: tablas de rutas	Para cada tabla de rutas: Tabla de rutas/ Información general/ Información esencial, mostrando Rutas y Subredes	NUBE 

76.	**Azure: Router Zentyal ROUTER02-ID**, configuración básica	a) Comando **hostnamectl**
		b) Comando **lsb_release –a**
		c) Archivo **hostname**
		d) Archivo **hosts**
		e) Archivo **netplan**
		f) Archivo **resolv.conf**
		g) Comando **ip address**
			NUBE
			`admin-242V@ROUTER02-242V:~/.ssh$ hostnamectl`
			`Static hostname: ROUTER02-242V`
			`Icon name: computer-vm`
			`Chassis: vm`
			`Machine ID: 36af6f83b65f431b8143e258fce4eb68`
			`Boot ID: 1351b3429258432b8fce59308cb40480`
			`Virtualization: microsoft`
			`Operating System: Ubuntu 22.04.5 LTS`
			`Kernel: Linux 6.8.0-1052-azure`
			`Architecture: x86-64`
			`Hardware Vendor: Microsoft Corporation`
			`Hardware Model: Virtual Machine`
			`admin-242V@ROUTER02-242V:~/.ssh$`
			`admin-242V@ROUTER02-242V:~/.ssh$ lsb_release -a`
			`No LSB modules are available.`
			`Distributor ID: Ubuntu`
			`Description: Ubuntu 22.04.5 LTS`
			`Release: 22.04`
			`Codename: jammy`
			`admin-242V@ROUTER02-242V:~/.ssh$`
			`admin-242V@ROUTER02-242V:~/.ssh$ cd ..`
			`admin-242V@ROUTER02-242V:~$ cat /etc/hostname`
			`ROUTER02-242V`
			`admin-242V@ROUTER02-242V:~$`
			`admin-242V@ROUTER02-242V:~$ cat /etc/hosts`
			`127.0.0.1 localhost`
			`127.0.1.1 router02-242v.asi-242v.cifpaviles.com router02-242v`
			`# The following lines are desirable for IPv6 capable hosts`
			`::1 ip6-localhost ip6-loopback`
			`fe00::0 ip6-localnet`
			`ff00::0 ip6-mcastprefix`
			`ff02::1 ip6-allnodes`
			`ff02::2 ip6-allrouters`
			`ff02::3 ip6-allhosts`
			`admin-242V@ROUTER02-242V:~$`
			`root@ROUTER02-242V:/etc/netplan# cat netplan.yaml`
			`network:`
			`version: 2`
			`renderer: NetworkManager`
			`ethernets:`
			`eth0:`
			`dhcp4: true`
			`dhcp6: false`
			`eth1:`
			`dhcp4: true`
			`dhcp6: false`
			`root@ROUTER02-242V:/etc/netplan#`

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			admin-242V@ROUTER02-242V:/etc/netplan$ cat /etc/resolv.conf # This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8). Do not edit. # # This file might be symlinked as /etc/resolv.conf. If you're looking at /etc/resolv.conf and seeing this text, you have followed the symlink. # # This is a dynamic resolv.conf file for connecting local clients to the internal DNS stub resolver of systemd-resolved. This file lists all configured search domains. # # Run "resolvectl status" to see details about the uplink DNS servers currently in use. # # Third party programs should typically not access this file directly, but only through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a different way, replace this symlink by a static file or a different symlink. # # See man:systemd-resolved.service(8) for details about the supported modes of operation for /etc/resolv.conf. nameserver 127.0.0.53 options edns0 trust-ad search aojizznb3oduxk3hsmfqqhxndg.gvxx.internal.cloudapp.net admin-242V@ROUTER02-242V:/etc/netplan$ admin-242V@ROUTER02-242V:/etc/netplan$ ip address 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000 link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00 inet 127.0.0.1/8 scope host lo valid_lft forever preferred_lft forever inet 127.0.1.1/8 scope host secondary lo valid_lft forever preferred_lft forever 2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 7c:ed:8d:9d:5a:91 brd ff:ff:ff:ff:ff:ff inet 192.168.1.4/24 brd 192.168.1.255 scope global noprefixroute eth0 valid_lft forever preferred_lft forever 3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 38:33:c5:d1:3c:32 brd ff:ff:ff:ff:ff:ff inet 192.168.2.4/24 brd 192.168.2.255 scope global noprefixroute eth1 valid_lft forever preferred_lft forever 4: enP34632s1: <BROADCAST,MULTICAST,SLAVE,UP,LOWER_UP> mtu 1500 qdisc mq master eth0 state UP group default qlen 1000 link/ether 7c:ed:8d:9d:5a:91 brd ff:ff:ff:ff:ff:ff altname enP34632p0s2 6: tap0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UNKNOWN group default qlen 1000 link/ether 02:db:3a:c2:bb:32 brd ff:ff:ff:ff:ff:ff inet 192.168.241.1/24 scope global tap0 valid_lft forever preferred_lft forever admin-242V@ROUTER02-242V:/etc/netplan$
77.	**Azure: Router Zentyal ROUTER02-ID**, objetos de red	Zentyal/ Red/ Objetos/ Listas de objetos/Miembros (IP-MAC)	NUBE 
78.	**Azure: Router Zentyal ROUTER02-ID,** enrutamiento, cortafuegos y NAT	a) Zentyal/ Red/ Puertas de enlace b) Zentyal/ Cortafuegos/ Filtrado de paquetes/ (mostrar reglas de los 4 tipos) c) Zentyal/ Cortafuegos/ Redirecciones de puertos	NUBE 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			    

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
79.	**Azure: Router ZentyaL ROUTER02-ID**, servicio túnel VPN Cliente de túnel (router on-premises ROUTER01-ID)	a) Zentyal/ VPN/ Servidores/ Configuración/ Configuración del servidor (página completa mostrando desde Puerto del servidor Interfaz en la que escuchar). b) Zentyal/ VPN/ Servidores/ /Redes anunciadas/ Lista de redes anunciadas c) ROUTER02-ID: comando **ip route** d) ROUTER01-ID/ VPN/ Clientes/ Configuración/ Configuración del cliente e) ROUTER01-ID: comando **ip route**	NUBE    

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			administrador@ROUTER01-242V: ~
			`administrador@ROUTER01-242V:~$ ip route`
			`10.31.9.0/24 dev eth0 proto kernel scope link src 10.31.9.254`
			`172.16.24.0/24 dev eth1 proto kernel scope link src 172.16.24.1`
			`172.20.24.0/24 dev eth2 proto kernel scope link src 172.20.24.1`
			`172.24.24.0/24 dev eth3 proto kernel scope link src 172.24.24.1`
			`172.28.24.0/24 dev eth4 proto kernel scope link src 172.28.24.1`
			`172.31.24.0/24 via 172.31.24.2 dev tun0`
			`172.31.24.2 dev tun0 proto kernel scope link src 172.31.24.1`
			`192.168.2.0/24 via 192.168.241.1 dev tap1`
			`192.168.241.0/24 dev tap1 proto kernel scope link src 192.168.241.2`
			`administrador@ROUTER01-242V:~$`

80.	Azure: Configuración de servidor **LAMP02-ID**	a) Comando **hostnamectl**
		b) Comando **lsb_release –a**
		c) Archivo **hostname**
		d) Archivo **hosts**
		e) Archivo **netplan**
		f) Archivo **resolv.conf**
		g) Comando **resolvectl status | tail -n 5**
		h) Comando **ip address**
			NUBE
			`admin-242V@LAMP02-242V:~$ hostnamectl`
			`Static hostname: LAMP02-242V`
			`Icon name: computer-vm`
			`Chassis: vm`
			`Machine ID: aaf49db240c3415f9d2525372fce3fe4`
			`Boot ID: 5770e22a54d74a2aaf6263fbf3f9ffee`
			`Virtualization: microsoft`
			`Operating System: Ubuntu 24.04.4 LTS`
			`Kernel: Linux 6.17.0-1013-azure`
			`Architecture: x86-64`
			`Hardware Vendor: Microsoft Corporation`
			`Hardware Model: Virtual Machine`
			`Firmware Version: Hyper-V UEFI Release v4.1`
			`Firmware Date: Thu 2026-01-08`
			`Firmware Age: 4month 1w 2d`
			`admin-242V@LAMP02-242V:~$ D`
			
			`admin-242V@LAMP02-242V:~$ lsb_release -a`
			`No LSB modules are available.`
			`Distributor ID: Ubuntu`
			`Description: Ubuntu 24.04.4 LTS`
			`Release: 24.04`
			`Codename: noble`
			`admin-242V@LAMP02-242V:~$`
			
			`admin-242V@LAMP02-242V:~$ cat /etc/hostname`
			`LAMP02-242V`
			`admin-242V@LAMP02-242V:~$`
			
			`admin-242V@LAMP02-242V:~$ cat /etc/hosts`
			`127.0.0.1 localhost`
			`127.0.0.1 lamp02-242v.asi-242v.cifpaviles.com lamp02-242v`
			`172.20.24.19 DC01-242v.asi-242v.cifpaviles.com DC01-242v`
			`172.20.24.20 DC02-242v.asi-242v.cifpaviles.com DC02-242v`
			
			`# The following lines are desirable for IPv6 capable hosts`
			`::1 ip6-localhost ip6-loopback`
			`fe00::0 ip6-localnet`
			`ff00::0 ip6-mcastprefix`
			`ff02::1 ip6-allnodes`
			`ff02::2 ip6-allrouters`
			`ff02::3 ip6-allhosts`
			`admin-242V@LAMP02-242V:~$`
			
			`admin-242V@LAMP02-242V:/etc/netplan$ sudo cat 50-cloud-init.yaml`
			`network:`
			`version: 2`
			`ethernets:`
			`eth0:`
			`match:`
			`macaddress: "7c:1e:52:40:2c:56"`
			`driver: "hv_netvsc"`
			`dhcp4: true`
			`dhcp4-overrides:`
			`route-metric: 100`
			`dhcp6: false`
			`set-name: "eth0"`
			`admin-242V@LAMP02-242V:/etc/netplan$`

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

			`admin-242V@LAMP02-242V:/etc$ cat resolv.conf`
			`# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).`
			`# Do not edit.`
			`#`
			`# This file might be symlinked as /etc/resolv.conf. If you're looking at`
			`# /etc/resolv.conf and seeing this text, you have followed the symlink.`
			`#`
			`# This is a dynamic resolv.conf file for connecting local clients to the`
			`# internal DNS stub resolver of systemd-resolved. This file lists all`
			`# configured search domains.`
			`#`
			`# Run "resolvectl status" to see details about the uplink DNS servers`
			`# currently in use.`
			`#`
			`# Third party programs should typically not access this file directly, but only`
			`# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a`
			`# different way, replace this symlink by a static file or a different symlink.`
			`#`
			`# See man:systemd-resolved.service(8) for details about the supported modes of`
			`# operation for /etc/resolv.conf.`
			
			`nameserver 127.0.0.53`
			`options edns0 trust-ad`
			`search aojizznb3oduxk3hsmfqqhxndg.gvxx.internal.cloudapp.net`
			`admin-242V@LAMP02-242V:/etc$`

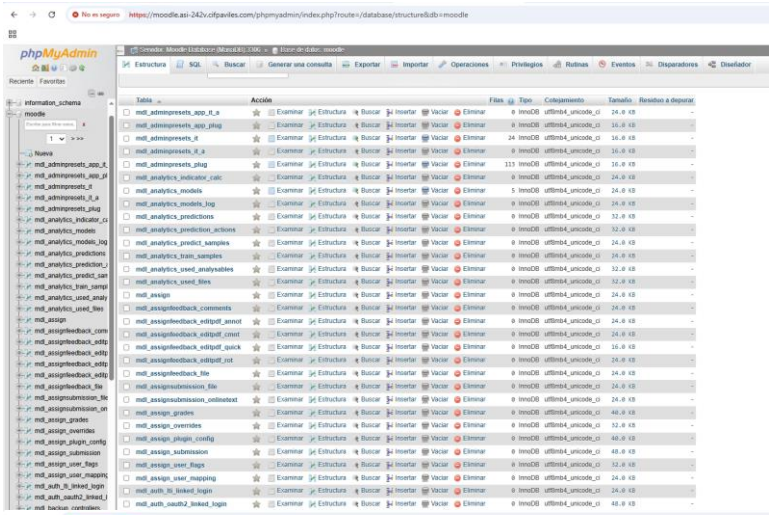
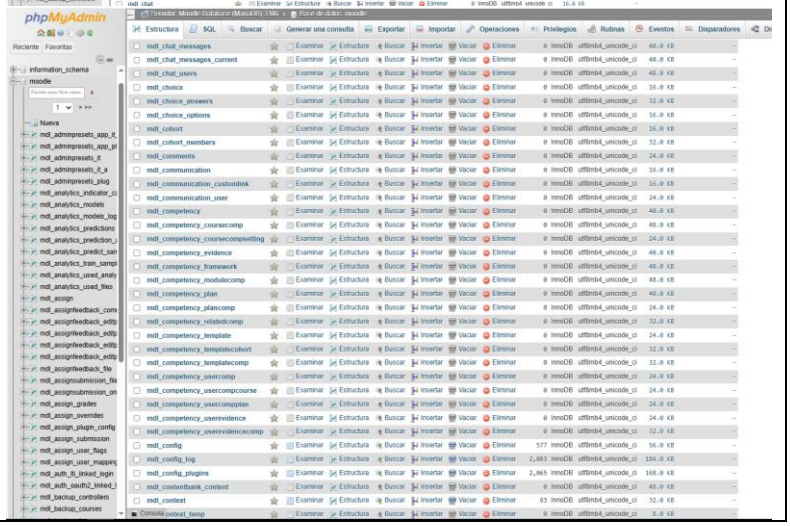
			No se ve la información de nuestra interfaz con tail -n 5
			`admin-242V@LAMP02-242V:/etc$ resolvectl status | tail -n 10`
			`Current Scopes: none`
			`Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			
			`Link 18 (vethebeac2d)`
			`Current Scopes: none`
			`Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			
			`Link 19 (vethd8ec805)`
			`Current Scopes: none`
			`Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`admin-242V@LAMP02-242V:/etc$`

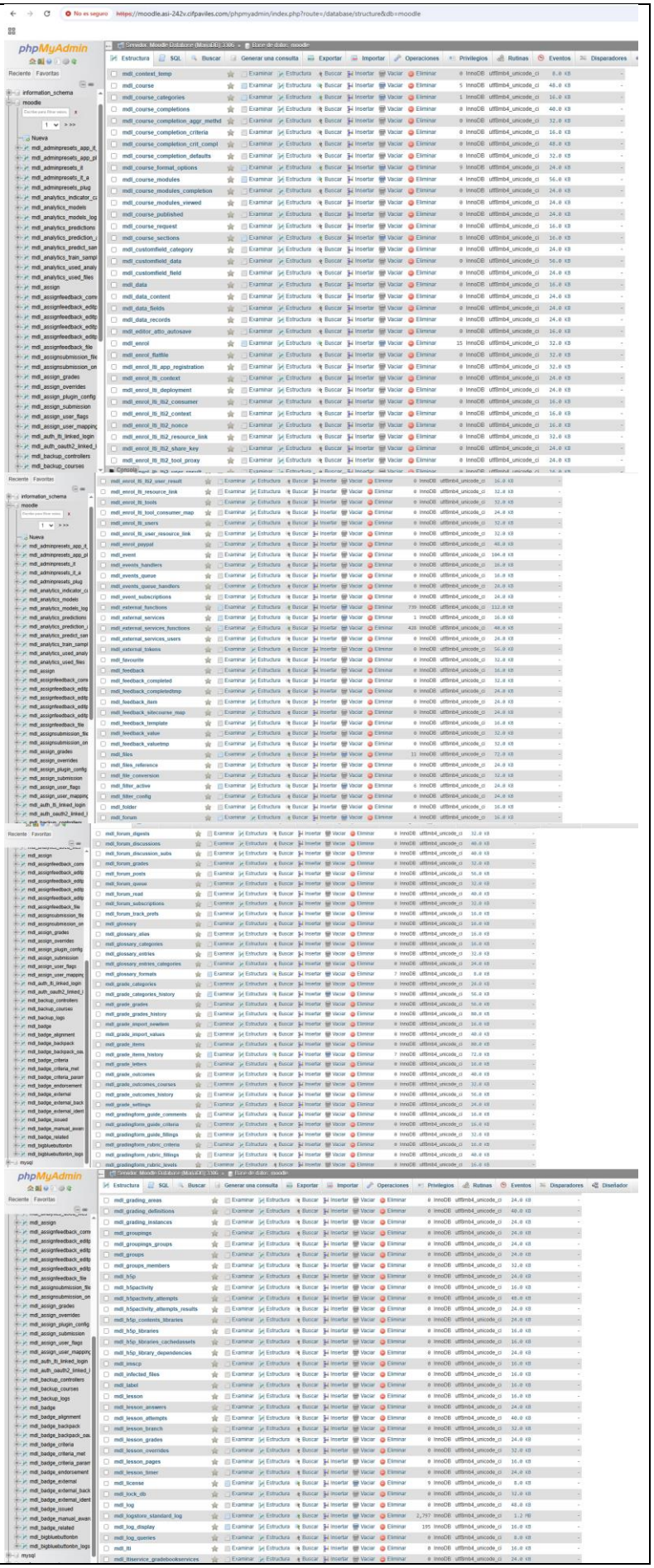
			Con head -n 10:
			`admin-242V@LAMP02-242V:/etc$ resolvectl status | head -n 10`
			`Global`
			`Protocols: -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`resolv.conf mode: stub`
			
			`Link 2 (eth0)`
			`Current Scopes: DNS`
			`Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported`
			`Current DNS Server: 168.63.129.16`
			`DNS Servers: 168.63.129.16`
			`DNS Domain: aojizznb3oduxk3hsmfqqhxndg.gvxx.internal.cloudapp.net`
			`admin-242V@LAMP02-242V:/etc$`

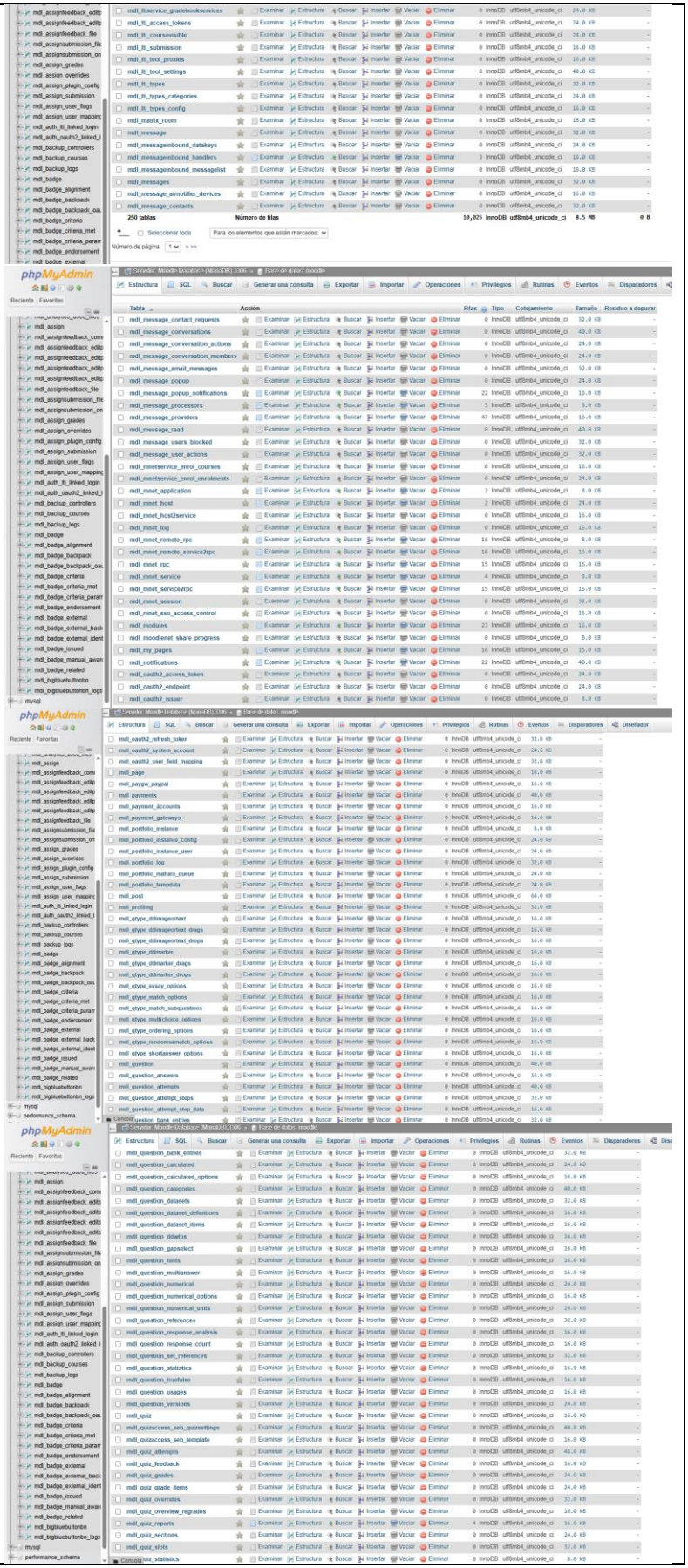
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

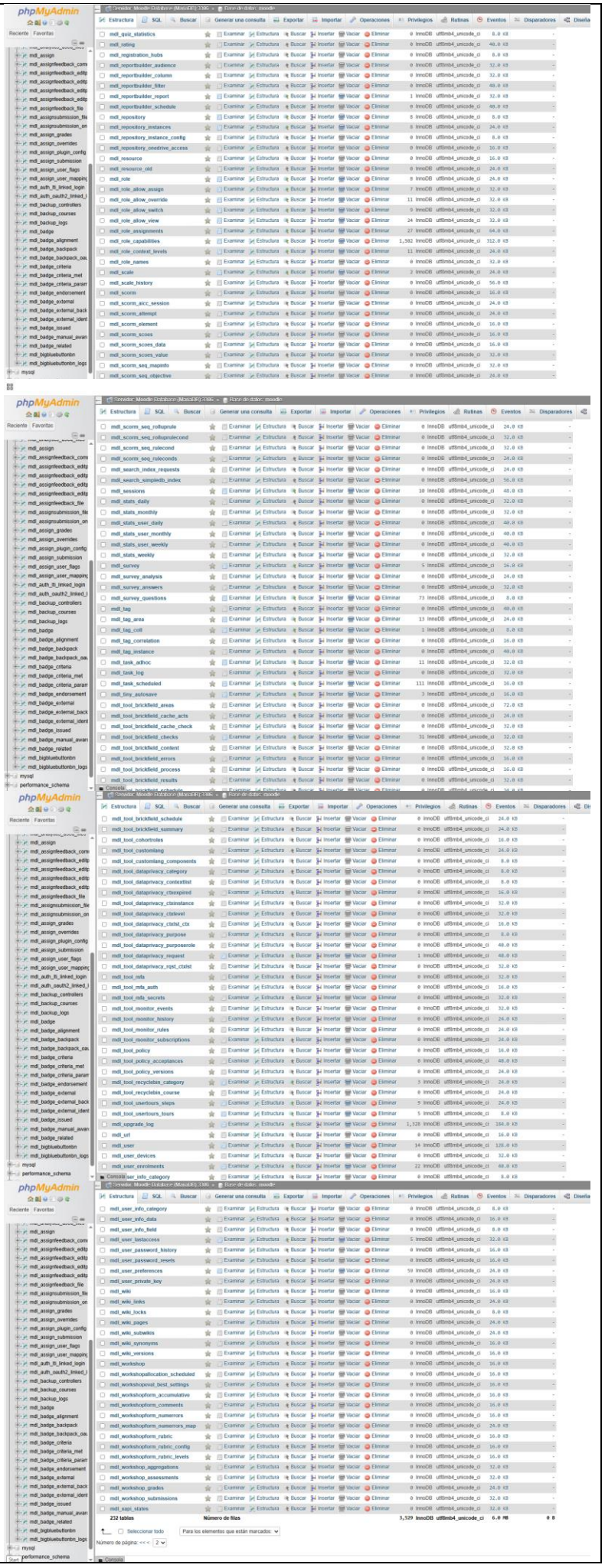
81.	Azure: Servidor **LAMP02-ID**: Instalación de servicios y aplicaciones	Ventana de terminal con el resultado de ejecutar el comando:
		dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin
			NUBE
			Se ha migrado a Azure toda la infraestructura de Docker. De forma similar a con la máquina LAMP01-242V se ejecutará el comando en cada contenedor:
			moodle_frontend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it moodle_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin`
			`dpkg-query: no packages found matching mysql-server`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend`
			`| / Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`|| / Name  Version  Architecture Description`
			`+++-==========-==========-============-==========================================================`
			`ii  apache2  2.4.58-1ubuntu8.12 amd64  Apache HTTP Server`
			`ii  libapache2-mod-php 2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (Apache 2 module) (default)`
			`ii  php  2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (default)`
			`ii  php-mysql  2:8.3+93ubuntu2  all  MySQL module for PHP [default]`
			`ii  phpmyadmin  4:5.2.1+dfsg-3  all  MySQL web administration tool`
			`admin-242V@LAMP02-242V:/etc$`
			wordpress_frontend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it wordpress_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin`
			`dpkg-query: no packages found matching mysql-server`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend`
			`| / Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`|| / Name  Version  Architecture Description`
			`+++-==========-==========-============-==========================================================`
			`ii  apache2  2.4.58-1ubuntu8.12 amd64  Apache HTTP Server`
			`ii  libapache2-mod-php 2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (Apache 2 module) (default)`
			`ii  php  2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (default)`
			`ii  php-mysql  2:8.3+93ubuntu2  all  MySQL module for PHP [default]`
			`ii  phpmyadmin  4:5.2.1+dfsg-3  all  MySQL web administration tool`
			`admin-242V@LAMP02-242V:/etc$`
			moodle_backend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it moodle_backend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin`
			`dpkg-query: no packages found matching apache2`
			`dpkg-query: no packages found matching php`
			`dpkg-query: no packages found matching libapache2-mod-php`
			`dpkg-query: no packages found matching php-mysql`
			`dpkg-query: no packages found matching phpmyadmin`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend`
			`| / Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`|| / Name  Version  Architecture Description`
			`+++-==========-==========-============-==========================================`
			`un  mysql-server  <none>  <none>  (no description available)`
			`admin-242V@LAMP02-242V:/etc$`
			`admin-242V@LAMP02-242V:/etc$ docker exec -it moodle_backend mariadb --version`
			`mariadb  Ver 15.1 Distrib 10.11.16-MariaDB, for debian-linux-gnu (x86_64) using  EditLine wrapper`
			`admin-242V@LAMP02-242V:/etc$`
			wordpress_backend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it wordpress_backend mysql --version`
			`mysql  Ver 8.0.46 for Linux on x86_64 (MySQL Community Server - GPL)`
			`admin-242V@LAMP02-242V:/etc$`
			inventario_frontend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it inventario_frontend dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin`
			`dpkg-query: no packages found matching php-mysql`
			`dpkg-query: no packages found matching mysql-server`
			`dpkg-query: no packages found matching phpmyadmin`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend`
			`| / Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`|| / Name  Version  Architecture Description`
			`+++-==========-==========-============-==========================================================`
			`ii  apache2  2.4.58-1ubuntu8.12 amd64  Apache HTTP Server`
			`ii  libapache2-mod-php 2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (Apache 2 module) (default)`
			`ii  php  2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (default)`
			`admin-242V@LAMP02-242V:/etc$`
			inventario_backend
			`admin-242V@LAMP02-242V:/etc$ docker exec -it inventario_backend rpm -qa | grep -E "oracle|instantclient"`
			`oraclelinux-release-8.10-1.0.7.el8.x86_64`
			`oraclelinux-release-el8-1.0-38.el8.x86_64`
			`oracle-database-xe-21c-1.0-1.x86_64`
			`admin-242V@LAMP02-242V:/etc$`
			contenedor_default
			`admin-242V@LAMP02-242V:/etc$ docker exec -it contenedor_default dpkg -l apache2 php libapache2-mod-php php-mysql mysql-server phpmyadmin`
			`dpkg-query: no packages found matching php-mysql`
			`dpkg-query: no packages found matching mysql-server`
			`dpkg-query: no packages found matching phpmyadmin`
			`Desired=Unknown/Install/Remove/Purge/Hold`
			`| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend`
			`| / Err?=(none)/Reinst-required (Status,Err: uppercase=bad)`
			`|| / Name  Version  Architecture Description`
			`+++-==========-==========-============-==========================================================`
			`ii  apache2  2.4.58-1ubuntu8.12 amd64  Apache HTTP Server`
			`ii  libapache2-mod-php 2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (Apache 2 module) (default)`
			`ii  php  2:8.3+93ubuntu2  all  server-side, HTML-embedded scripting language (default)`
			`admin-242V@LAMP02-242V:/etc$`
			servidor_proxy
			`admin-242V@LAMP02-242V:/etc$ docker exec -it servidor_proxy nginx -v && docker exec -it servidor_proxy node -v`
			`nginx version: openresty/1.27.1.2`
			`v22.22.0`
			`admin-242V@LAMP02-242V:/etc$`

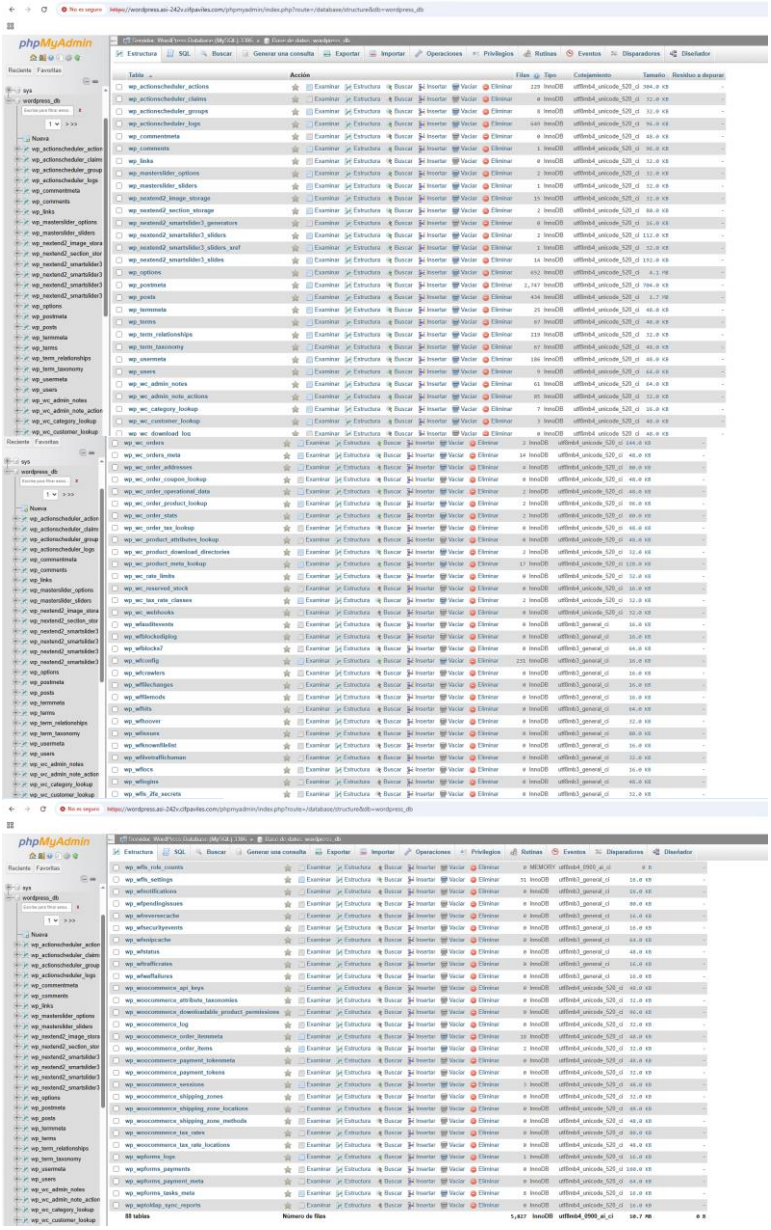
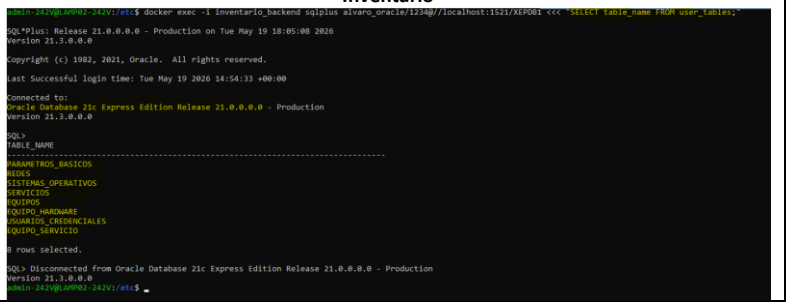
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
82.	Azure: Servidor **LAMP02-ID**: Instalación de extensiones php	**dpkg -l php-intl php-xmlrpc php-soap php-ldap**	NUBE Solo se ejecuta el comando en contenedores frontend. **moodle_frontend** admin-242V@LAMP02-242V:/etc$ docker exec -it moodle_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap Desired=Unknown/Install/Remove/Purge/Hold | Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend |/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad) ||/ Name Version Architecture Description +++-==========-==========-==========-========== ii php-intl 2:8.3+93ubuntu2 all Internationalisation module for PHP [default] ii php-ldap 2:8.3+93ubuntu2 all LDAP module for PHP [default] ii php-soap 2:8.3+93ubuntu2 all SOAP module for PHP [default] un php-xmlrpc <none> <none> (no description available) admin-242V@LAMP02-242V:/etc$ **wordpress_frontend** admin-242V@LAMP02-242V:/etc$ docker exec -it wordpress_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap dpkg-query: no packages found matching php-intl dpkg-query: no packages found matching php-soap Desired=Unknown/Install/Remove/Purge/Hold | Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend |/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad) ||/ Name Version Architecture Description +++-==========-==========-==========-========== un php-ldap <none> <none> (no description available) un php-xmlrpc <none> <none> (no description available) admin-242V@LAMP02-242V:/etc$ **inventario_frontend** admin-242V@LAMP02-242V:/etc$ docker exec -it inventario_frontend dpkg -l php-intl php-xmlrpc php-soap php-ldap dpkg-query: no packages found matching php-intl dpkg-query: no packages found matching php-soap Desired=Unknown/Install/Remove/Purge/Hold | Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend |/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad) ||/ Name Version Architecture Description +++-==========-==========-==========-========== ii php-ldap 2:8.3+93ubuntu2 all LDAP module for PHP [default] un php-xmlrpc <none> <none> (no description available) admin-242V@LAMP02-242V:/etc$ **contenedor_default** admin-242V@LAMP02-242V:/etc$ docker exec -it contenedor_default dpkg -l php-intl php-xmlrpc php-soap php-ldap dpkg-query: no packages found matching php-intl dpkg-query: no packages found matching php-soap dpkg-query: no packages found matching php-ldap Desired=Unknown/Install/Remove/Purge/Hold | Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend |/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad) ||/ Name Version Architecture Description +++-==========-==========-==========-========== un php-xmlrpc <none> <none> (no description available) admin-242V@LAMP02-242V:/etc$
83.	Azure: Servidor **LAMP02-ID**: Acceso a aplicación phpmyadmin mediante IP pública.	a) Ventana de explorador de internet con la url de acceso a la aplicación phpmyadmin **mediante IP pública**, tras validarse en la pantalla de entrada a la aplicación, mostrando **bases de datos**. b) Para cada aplicación migrada a Azure: mostrar **tablas** de la base de datos de la aplicación.	NUBE Al haber varias aplicaciones dockerizadas en el servidor redirigidas por nginx a ips privadas se accede por nombre DNS **Moodle** No es seguro https://moodle.asi-242v.cifpaviles.com/phpmyadmin/ Command Prompt C:\Users\admin\Desktop\claves>hostname EXTERNA01-242V C:\Users\admin\Desktop\claves>nslookup moodle.asi-242v.cifpaviles.com Server: dnsproxy3.informatica.cifpaviles.pa Address: 10.220.3.20 Non-authoritative answer: Name: pip-asi-242v-1.asi-242v.cifpaviles.com Address: 9.223.76.108 Aliases: moodle.asi-242v.cifpaviles.com C:\Users\admin\Desktop\claves> phpMyAdmin Bienvenido a phpMyAdmin Idioma (Language) Español - Spanish Iniciar sesión Usuario: Contraseña: Iniciar sesión **Wordpress** No es seguro https://wordpress.asi-242v.cifpaviles.com/phpmyadmin/ Command Prompt C:\Users\admin\Desktop\claves>nslookup wordpress.asi-242v.cifpaviles.com Server: dnsproxy3.informatica.cifpaviles.pa Address: 10.220.3.20 Non-authoritative answer: Name: pip-asi-242v-1.asi-242v.cifpaviles.com Address: 9.223.76.108 Aliases: wordpress.asi-242v.cifpaviles.com C:\Users\admin\Desktop\claves> phpMyAdmin Bienvenido a phpMyAdmin Idioma (Language) Español - Spanish Iniciar sesión Usuario: Contraseña: Iniciar sesión **Inventario no tiene phpmyadmin al funcionar con una base de datos Oracle.**

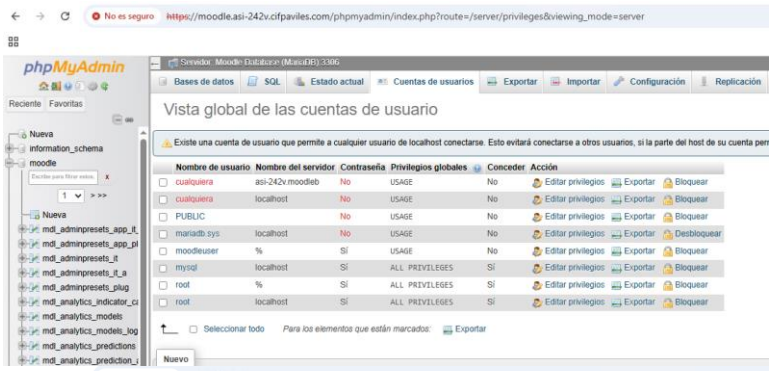
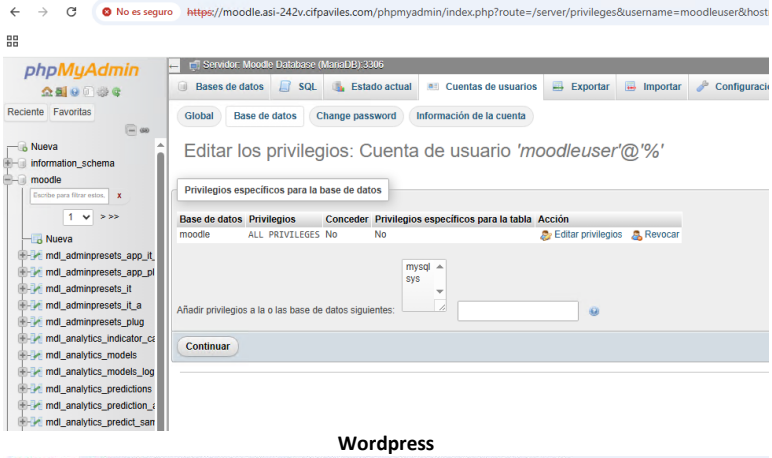
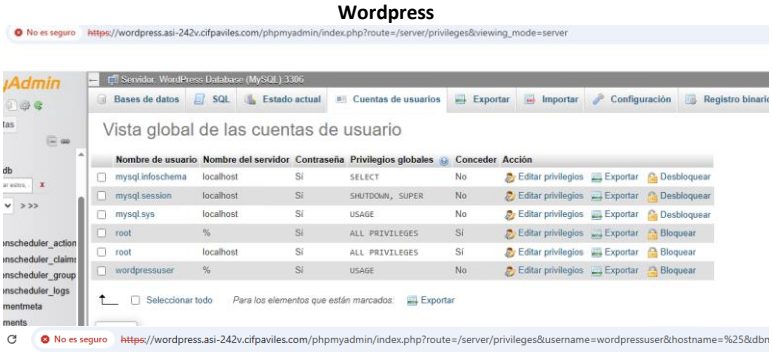
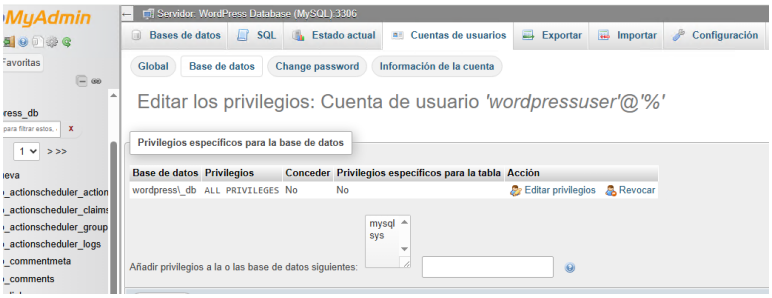
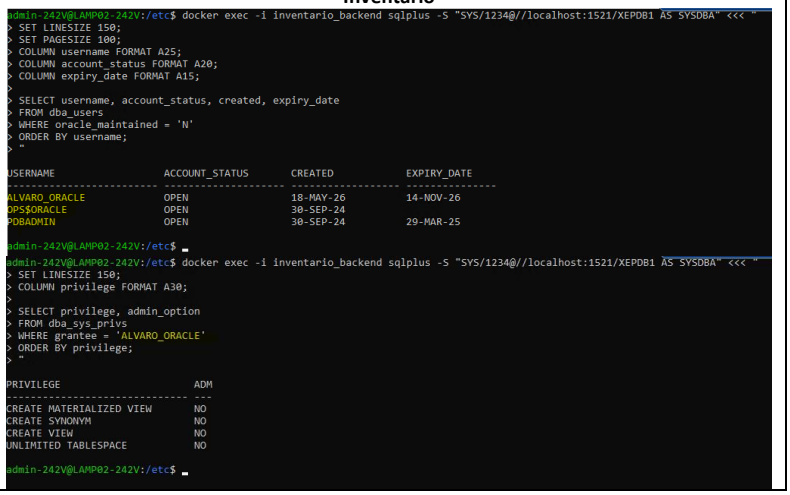
			Moodle  

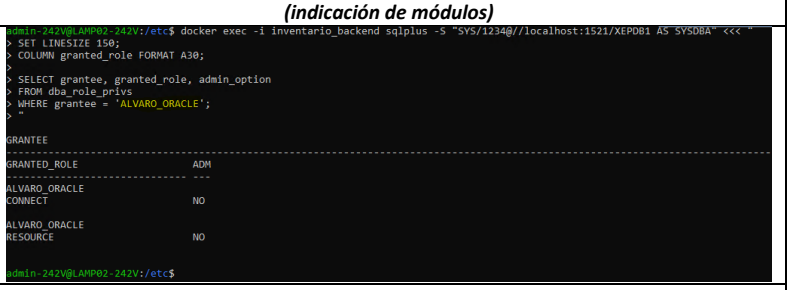
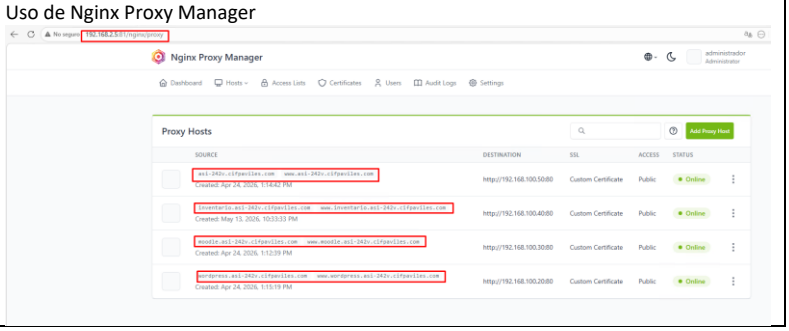

No es seguro
https://moodle.asi-242v.cifpaviles.com/phpmyadmin/index.php?route=/database/structure&db=moodle
phpMyAdmin
Servidor: Moodle Distribuidor (MariaDB): 3306 » Base de datos: moodle
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Privilegios
Rutinas
Eventos
Disparadores
Diseñador
Reciente
Favoritos
information_schema
moodle
Nueva
mdl_context_temp
mdl_course
mdl_course_categories
mdl_course_completions
mdl_course_completion_aggr_method
mdl_course_completion_criteria
mdl_course_completion_crit_compl
mdl_course_completion_defaults
mdl_course_format_options
mdl_course_modules
mdl_course_modules_completion
mdl_course_modules_viewed
mdl_course_published
mdl_course_request
mdl_course_sections
mdl_customfield_category
mdl_customfield_data
mdl_customfield_field
mdl_data
mdl_data_content
mdl_data_fields
mdl_data_records
mdl_editor_atto_autosave
mdl_enrol
mdl_enrol_flatfile
mdl_enrol_lti_app_registration
mdl_enrol_lti_context
mdl_enrol_lti_deployment
mdl_enrol_lti_lti2_consumer
mdl_enrol_lti_lti2_context
mdl_enrol_lti_lti2_nonce
mdl_enrol_lti_lti2_resource_link
mdl_enrol_lti_lti2_share_key
mdl_enrol_lti_lti2_tool_proxy
mdl_enrol_lti_lti2_user_result
mdl_enrol_lti_resource_link
mdl_enrol_lti_tools
mdl_enrol_lti_tool_consumer_map
mdl_enrol_lti_users
mdl_enrol_lti_user_resource_link
mdl_enrol_paypal
mdl_event
mdl_events_handlers
mdl_events_queue
mdl_events_queue_handlers
mdl_event_subscriptions
mdl_external_functions
mdl_external_services
mdl_external_services_functions
mdl_external_services_users
mdl_external_tokens
mdl_favourite
mdl_feedback
mdl_feedback_completed
mdl_feedback_completedtmp
mdl_feedback_item
mdl_feedback_sitecourse_map
mdl_feedback_template
mdl_feedback_value
mdl_feedback_valuetmp
mdl_files
mdl_files_reference
mdl_file_conversion
mdl_filter_active
mdl_filter_config
mdl_folder
mdl_forum
mdl_forum_digests
mdl_forum_discussions
mdl_forum_discussion_subs
mdl_forum_grades
mdl_forum_posts
mdl_forum_queue
mdl_forum_read
mdl_forum_subscriptions
mdl_forum_track_prefs
mdl_glossary
mdl_glossary_alias
mdl_glossary_categories
mdl_glossary_entries
mdl_glossary_entries_categories
mdl_glossary_formats
mdl_grade_categories
mdl_grade_categories_history
mdl_grade_grades
mdl_grade_grades_history
mdl_grade_import_newitem
mdl_grade_import_values
mdl_grade_items
mdl_grade_items_history
mdl_grade_letters
mdl_grade_outcomes
mdl_grade_outcomes_courses
mdl_grade_outcomes_history
mdl_grade_settings
mdl_gradingform_guide_comments
mdl_gradingform_guide_criteria
mdl_gradingform_guide_fillings
mdl_gradingform_rubric_criteria
mdl_gradingform_rubric_fillings
mdl_gradingform_rubric_levels
mdl_grading_areas
mdl_grading_definitions
mdl_grading_instances
mdl_groupings
mdl_groupings_groups
mdl_groups
mdl_groups_members
mdl_h5p
mdl_h5pactivity
mdl_h5pactivity_attempts
mdl_h5pactivity_attempts_results
mdl_h5p_contents_libraries
mdl_h5p_libraries
mdl_h5p_libraries_cachedassets
mdl_h5p_library_dependencies
mdl_imscp
mdl_infected_files
mdl_label
mdl_lesson
mdl_lesson_answers
mdl_lesson_attempts
mdl_lesson_branch
mdl_lesson_grades
mdl_lesson_overrides
mdl_lesson_pages
mdl_lesson_timer
mdl_license
mdl_lock_db
mdl_log
mdl_logstore_standard_log
mdl_log_display
mdl_log_queries
mdl_lti
mdl_ltiservice_gradebookservices
mysql

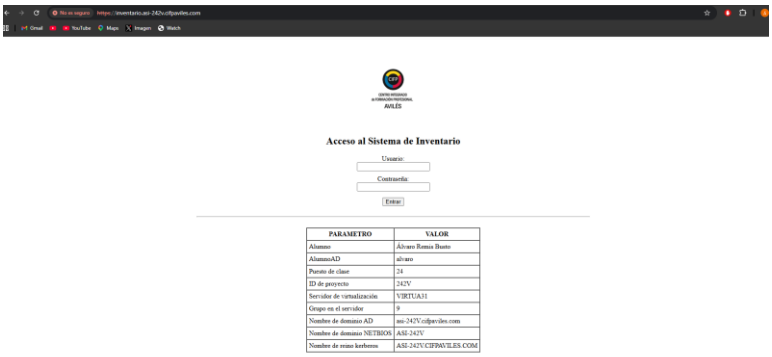
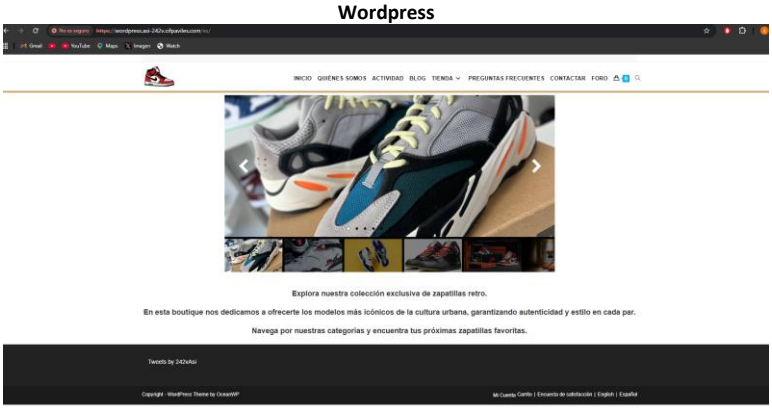



phpMyAdmin
Servidor: Moodle Database (MariaDB):3306 » Base de datos: moodle
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Privilegios
Rutinas
Eventos
Disparadores
232 tablas
Número de filas
3,529
InnoDB
utf8mb4_unicode_ci
6.0 MB
0 B

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			Wordpress  **Inventario** 

84.	Servidor **LAMP02-ID**: cuentas de usuarios en mysql	a) phpmyadmin/ Cuentas de usuarios/ Vista global de las cuentas de usuario b) Para cada aplicación configurada: Seleccionar usuario específico de la aplicación/ privilegios específicos para la base de datos	ASGBD **Moodle**   **Wordpress**   **Inventario** 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
			
85.	Azure: Servidor **LAMP02-ID**: Definición de sitios virtuales	Archivos de sitios definidos en **/etc/apache2/sites-available/**	NUBE Uso de Nginx Proxy Manager 

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
86.	Azure: Servidor **LAMP02-ID**: Acceso a aplicaciones ubicadas en Azure Servicios dns con resolución a ip pública	a) Para cada aplicación ubicada en Azure: ventana de navegador de internet mostrando url de acceso a aplicación b) Servicios DNS (interno, externo, internet) configurados, resolviendo nombres dns de aplicaciones a dirección IP pública. Para cada servicio dns configurado, mostrar los registros dns que resuelven a IP pública.	NUBE **Default** **Moodle** **Inventario**  **Wordpress** 

			INTERNO Z:\>hostname WS02-242V Z:\>nslookup wordpress.asi-242v.cifpaviles.com Servidor: DC01-242V.asi-242V.cifpaviles.com Address: 172.20.24.19 Nombre: pip-asi-242V-1.asi-242v.cifpaviles.com Address: 9.223.76.108 Aliases: wordpress.asi-242v.cifpaviles.com Z:\>nslookup moodle.asi-242v.cifpaviles.com Servidor: DC01-242V.asi-242V.cifpaviles.com Address: 172.20.24.19 Nombre: pip-asi-242V-1.asi-242v.cifpaviles.com Address: 9.223.76.108 Aliases: moodle.asi-242v.cifpaviles.com Z:\>nslookup inventario.asi-242v.cifpaviles.com Servidor: DC01-242V.asi-242V.cifpaviles.com Address: 172.20.24.19 Nombre: pip-asi-242V-1.asi-242v.cifpaviles.com Address: 9.223.76.108 Aliases: inventario.asi-242v.cifpaviles.com Z:\>_ **EXTERNO**

```
C:\Users\alvar>ipconfig

Configuración IP de Windows


Adaptador desconocido OpenVPN TAP-Windows6:

   Sufijo DNS específico para la conexión. . : informatica.cifpaviles.pa
   Vínculo: dirección IPv6 local. . . : fe80::36a2:7f11:5fb9:d6a6%19
   Dirección IPv4. . . . . . . . . . . . . . : 10.232.2.56
   Máscara de subred . . . . . . . . . . . . : 255.255.255.0
   Puerta de enlace predeterminada . . . . . :

Adaptador desconocido OpenVPN Wintun:

   Estado de los medios. . . . . . . . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

Adaptador de Ethernet Ethernet:

   Sufijo DNS específico para la conexión. . :
   Vínculo: dirección IPv6 local. . . : fe80::11b9:888b:ecc7:e29c%13
   Dirección IPv4. . . . . . . . . . . . . . : 192.168.1.139
   Máscara de subred . . . . . . . . . . . . : 255.255.255.0
   Puerta de enlace predeterminada . . . . . : 192.168.1.1

Adaptador de Ethernet Ethernet 2:

   Sufijo DNS específico para la conexión. . :
   Vínculo: dirección IPv6 local. . . : fe80::4ed8:6e5d:ea89:445e%2
   Dirección IPv4. . . . . . . . . . . . . . : 192.168.56.1
   Máscara de subred . . . . . . . . . . . . : 255.255.255.0
   Puerta de enlace predeterminada . . . . . :

Adaptador desconocido OpenVPN Data Channel Offload:

   Estado de los medios. . . . . . . . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

Adaptador de Ethernet Conexión de red Bluetooth:

   Estado de los medios. . . . . . . . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

C:\Users\alvar>nslookup moodle.asi-242v.cifpaviles.com
Servidor:  dnsproxy3.informatica.cifpaviles.pa
Address:  10.220.3.20

Respuesta no autoritativa:
Nombre:  pip-asi-242v-1.asi-242v.cifpaviles.com
Address:  9.223.76.108
Aliases:  moodle.asi-242v.cifpaviles.com


C:\Users\alvar>_
```

```
C:\Users\alvar>nslookup inventario.asi-242v.cifpaviles.com
Servidor:  dnsproxy3.informatica.cifpaviles.pa
Address:  10.220.3.20

Respuesta no autoritativa:
Nombre:  pip-asi-242v-1.asi-242v.cifpaviles.com
Address:  9.223.76.108
Aliases:  inventario.asi-242v.cifpaviles.com


C:\Users\alvar>
C:\Users\alvar>nslookup wordpress.asi-242v.cifpaviles.com
Servidor:  dnsproxy3.informatica.cifpaviles.pa
Address:  10.220.3.20

Respuesta no autoritativa:
Nombre:  pip-asi-242v-1.asi-242v.cifpaviles.com
Address:  9.223.76.108
Aliases:  wordpress.asi-242v.cifpaviles.com


C:\Users\alvar>
```

INTERNET

Publicación de sitios web

Host	TTL	Record type	Value
_dmarc.asi-242v.cifpaviles.com.		TXT	v=DMARC1; p=quarantine; adkim=s; aspf=s
asi-242v.cifpaviles.com.		TXT	v=spf1 +a +mx +a:asi-242v.cifpaviles.com +include:_spf.google.com -all
asi-242v.cifpaviles.com.		NS	ns2.asi-242v.cifpaviles.com.
asi-242v.cifpaviles.com.		NS	ns1.asi-242v.cifpaviles.com.
asi-242v.cifpaviles.com.		MX (10)	mail.asi-242v.cifpaviles.com.
ftp.asi-242v.cifpaviles.com.		CNAME	asi-242v.cifpaviles.com.
www.asi-242v.cifpaviles.com.		A	9.223.76.108
ipv4.asi-242v.cifpaviles.com.		A	82.165.14.187
mail.asi-242v.cifpaviles.com.		A	82.165.14.187
webmail.asi-242v.cifpaviles.com.		A	82.165.14.187
asi-242v.cifpaviles.com.		A	9.223.76.108
ns2.asi-242v.cifpaviles.com.		A	82.165.14.187
ns1.asi-242v.cifpaviles.com.		A	82.165.14.187
inventario.asi-242v.cifpaviles.com.		A	9.223.76.108
moodle.asi-242v.cifpaviles.com.		A	9.223.76.108
www.moodle.asi-242v.cifpaviles.com.		A	9.223.76.108
wordpress.asi-242v.cifpaviles.com.		A	9.223.76.108
www.wordpress.asi-242v.cifpaviles.com.		A	9.223.76.108

```
C:\Users\alvar>ipconfig

Configuración IP de Windows


Adaptador desconocido OpenVPN Wintun:

   Estado de los medios. . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

Adaptador de Ethernet Ethernet:

   Sufijo DNS específico para la conexión. . :
   Vínculo: dirección IPv6 local. . . : fe80::11b9:888b:ecc7:e29c%13
   Dirección IPv4. . . . . . . . . . . . : 192.168.1.139
   Máscara de subred . . . . . . . . . . : 255.255.255.0
   Puerta de enlace predeterminada . . . . . : 192.168.1.1

Adaptador de Ethernet Ethernet 2:

   Sufijo DNS específico para la conexión. . :
   Vínculo: dirección IPv6 local. . . : fe80::4ed8:6e5d:ea89:445e%2
   Dirección IPv4. . . . . . . . . . . . : 192.168.56.1
   Máscara de subred . . . . . . . . . . : 255.255.255.0
   Puerta de enlace predeterminada . . . . . :

Adaptador desconocido OpenVPN TAP-Windows6:

   Estado de los medios. . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

Adaptador desconocido OpenVPN Data Channel Offload:

   Estado de los medios. . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

Adaptador de Ethernet Conexión de red Bluetooth:

   Estado de los medios. . . . . : medios desconectados
   Sufijo DNS específico para la conexión. . :

C:\Users\alvar>nslookup moodle.asi-242v.cifpaviles.com
Servidor:  UnKnown
Address:  fe80::1

Respuesta no autoritativa:
Nombre:  moodle.asi-242v.cifpaviles.com
Address:  9.223.76.108


C:\Users\alvar>nslookup inventario.asi-242v.cifpaviles.com
Servidor:  UnKnown
Address:  fe80::1

Respuesta no autoritativa:
Nombre:  inventario.asi-242v.cifpaviles.com
Address:  9.223.76.108


C:\Users\alvar>_
```

```
C:\Users\alvar>nslookup wordpress.asi-242v.cifpaviles.com
Servidor:  UnKnown
Address:  fe80::1

Respuesta no autoritativa:
Nombre:  wordpress.asi-242v.cifpaviles.com
Address:  9.223.76.108


C:\Users\alvar>
```

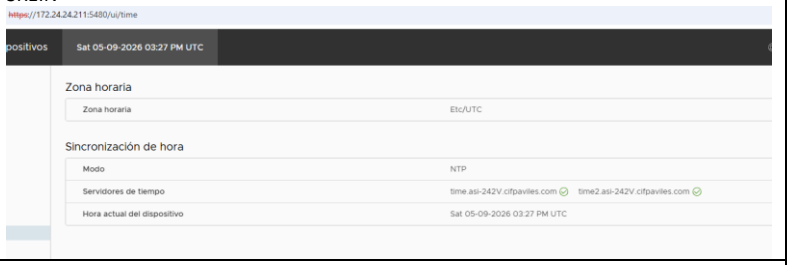
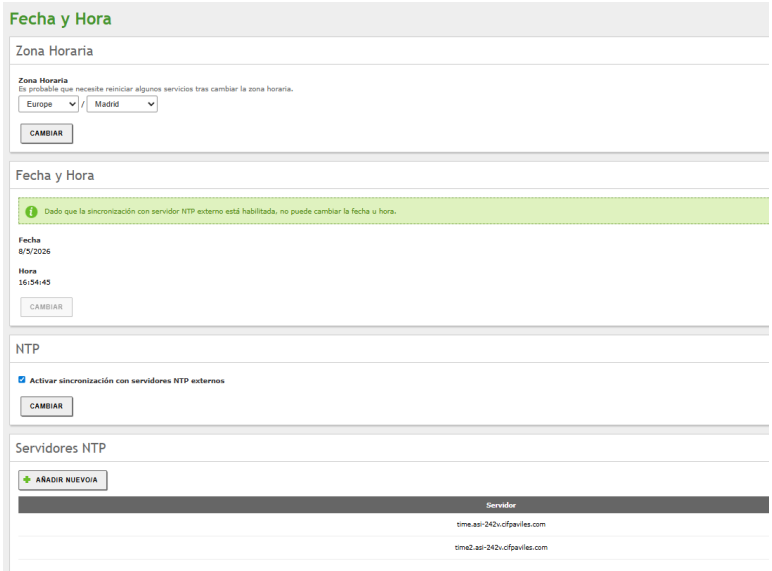
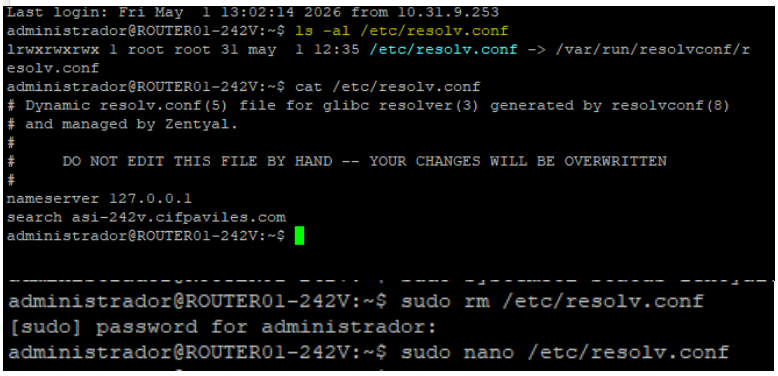
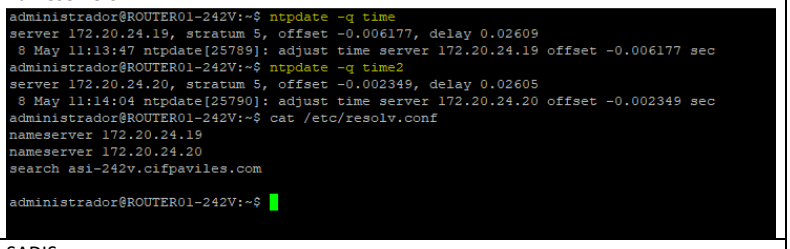
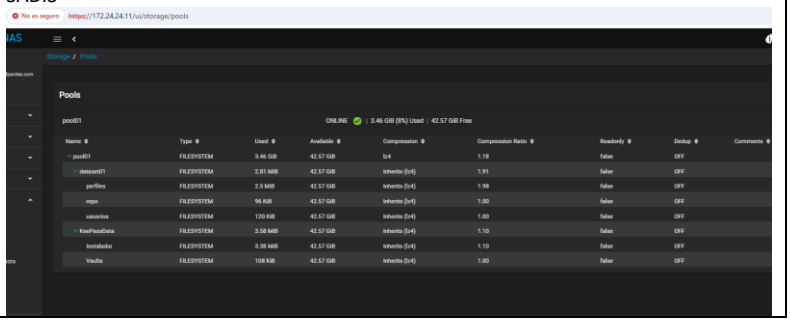
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
87.	Sincronización horaria de controladores de dominio	En cada contolador de dominio, ejecutar los comandos: **a) w32tm /query /status** **b) w32tm /query /configuration**	SREIN C:\Users\Administrator>hostname DC01-242V C:\Users\Administrator>w32tm /query /status Leap Indicator: 0(no warning) Stratum: 5 (secondary reference - syncd by (S)NTP) Precision: -23 (119.209ns per tick) Root Delay: 0.0494101s Root Dispersion: 5.0240140s ReferenceId: 0x0ADC010C (source IP: 10.220.1.12) Last Successful Sync Time: 10/05/2026 17:19:45 Source: time.informatica.cifpaviles.pa,0x9 Poll Interval: 7 (128s) C:\Users\Administrator>_ C:\Users\Administrator.ASI-242V>hostname DC02-242V C:\Users\Administrator.ASI-242V>w32tm /query /status Leap Indicator: 0(no warning) Stratum: 5 (secondary reference - syncd by (S)NTP) Precision: -23 (119.209ns per tick) Root Delay: 0.0511068s Root Dispersion: 8.3447742s ReferenceId: 0x0ADC010C (source IP: 10.220.1.12) Last Successful Sync Time: 09/05/2026 16:31:43 Source: time.informatica.cifpaviles.pa,0x9 Poll Interval: 6 (64s) C:\Users\Administrator.ASI-242V>_

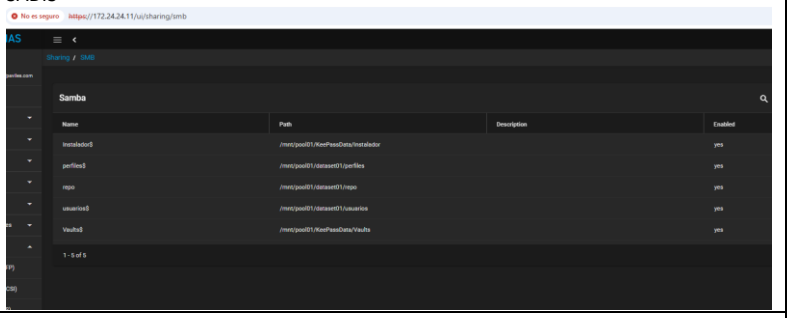
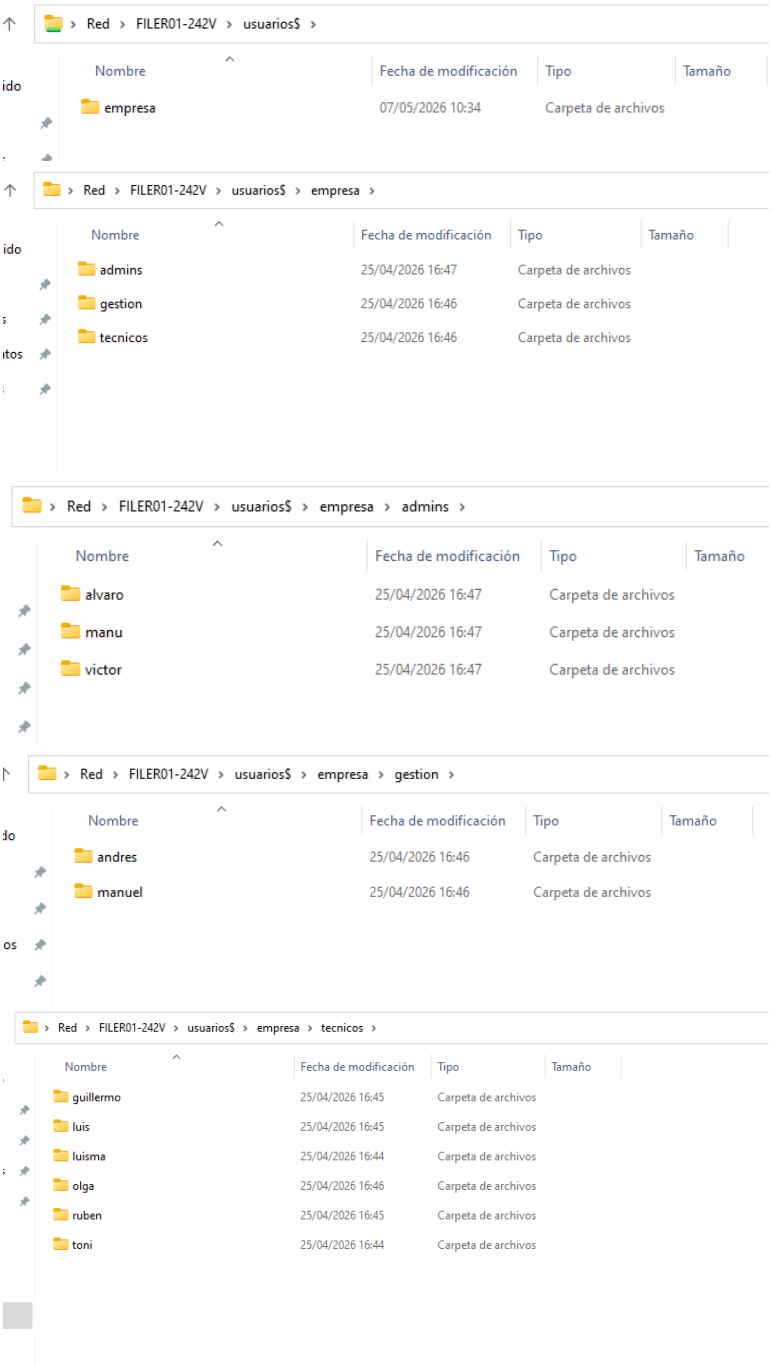
```
C:\Users\Administrator>hostname
DC01-242V

C:\Users\Administrator>w32tm /query /configuration
[Configuration]

EventLogFlags: 2 (Local)
AnnounceFlags: 10 (Local)
TimeJumpAuditOffset: 28800 (Local)
MinPollInterval: 6 (Local)
MaxPollInterval: 10 (Local)
MaxNegPhaseCorrection: 172800 (Local)
MaxPosPhaseCorrection: 172800 (Local)
MaxAllowedPhaseOffset: 300 (Local)

FrequencyCorrectRate: 4 (Local)
PollAdjustFactor: 5 (Local)
LargePhaseOffset: 50000000 (Local)
SpikeWatchPeriod: 900 (Local)
LocalClockDispersion: 10 (Local)
HoldPeriod: 5 (Local)
PhaseCorrectRate: 7 (Local)
UpdateInterval: 100 (Local)


[TimeProviders]

NtpClient (Local)
DllName: C:\Windows\system32\w32time.dll (Local)
Enabled: 1 (Local)
InputProvider: 1 (Local)
AllowNonstandardModeCombinations: 1 (Local)
ResolvePeerBackoffMinutes: 15 (Policy)
ResolvePeerBackoffMaxTimes: 7 (Policy)
CompatibilityFlags: 2147483648 (Local)
EventLogFlags: 0 (Policy)
LargeSampleSkew: 3 (Local)
SpecialPollInterval: 1024 (Policy)
Type: NTP (Policy)
NtpServer: time.informatica.cifpaviles.pa,0x9 (Policy)

NtpServer (Local)
DllName: C:\Windows\system32\w32time.dll (Local)
Enabled: 1 (Local)
InputProvider: 0 (Local)
AllowNonstandardModeCombinations: 1 (Local)

VMICTimeProvider (Local)
DllName: C:\Windows\System32\vmictimeprovider.dll (Local)
Enabled: 1 (Local)
InputProvider: 1 (Local)
```

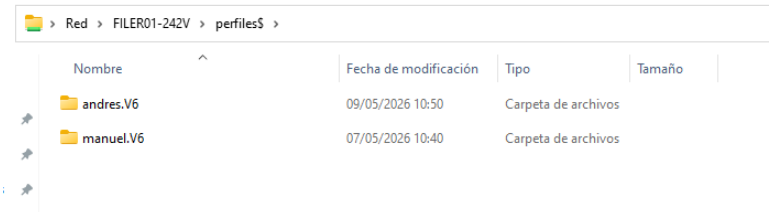
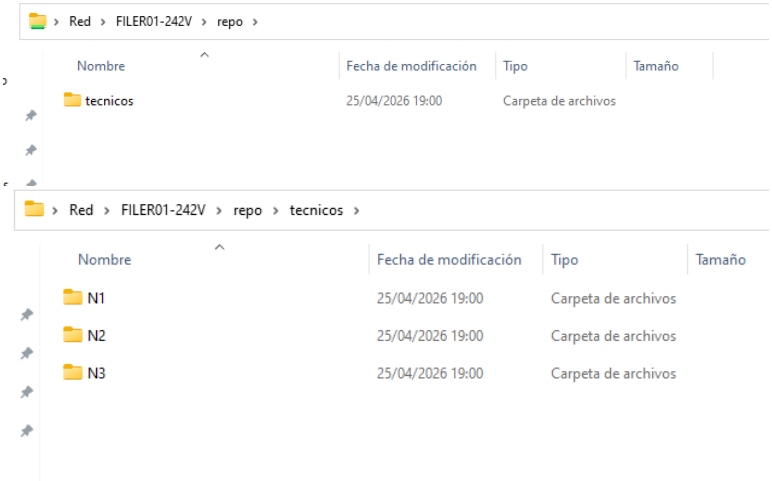
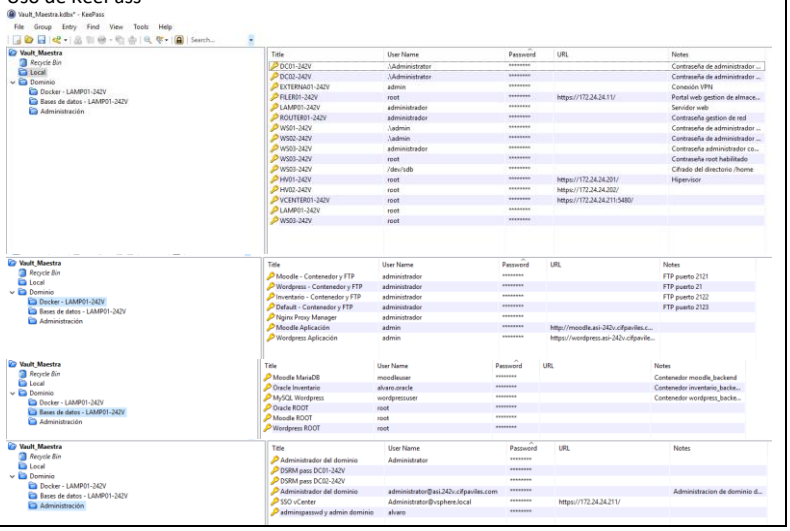
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

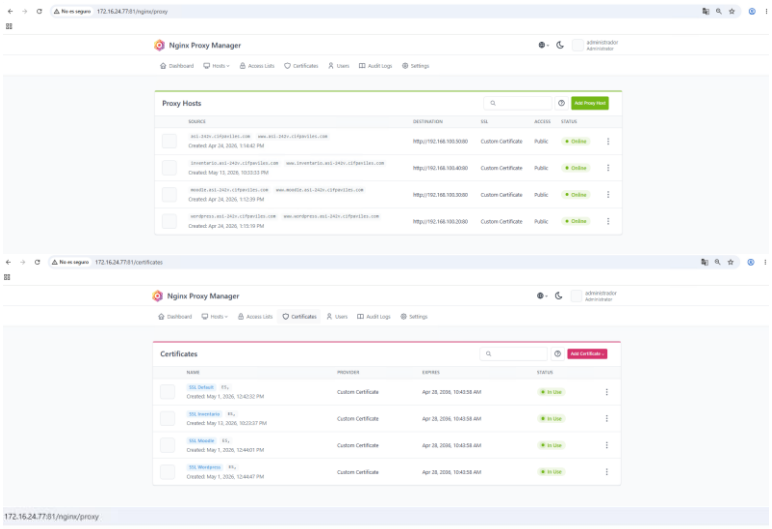
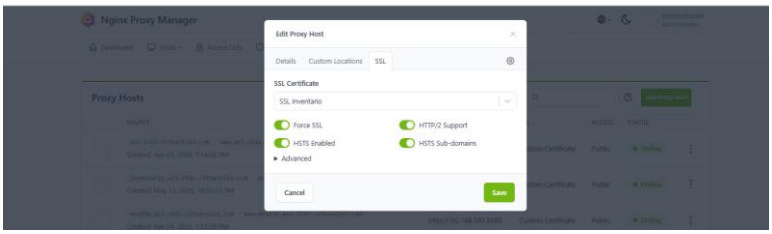
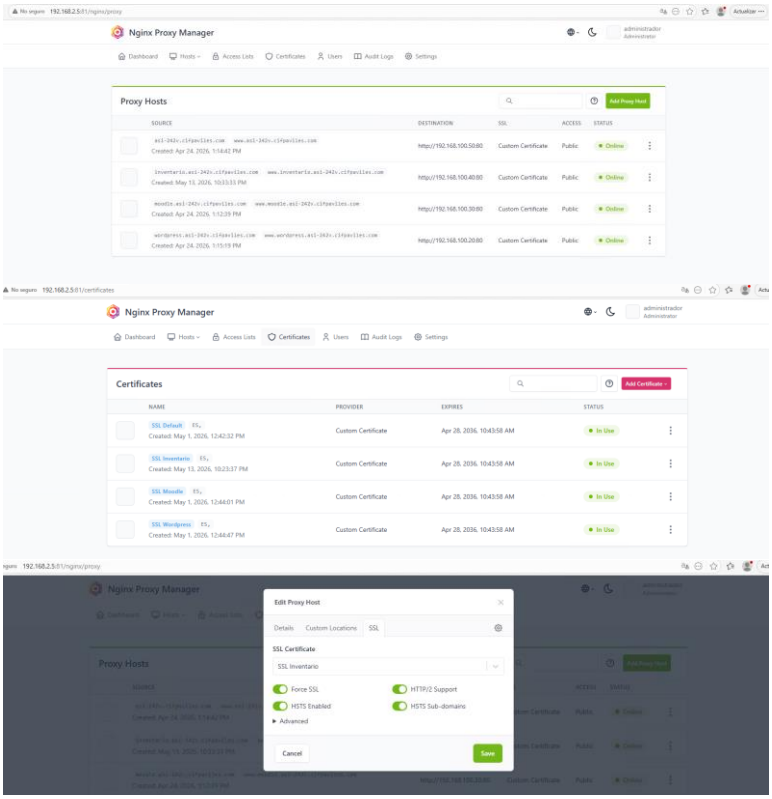
```
C:\Users\Administrator.ASI-242V>hostname
DC02-242V

C:\Users\Administrator.ASI-242V>w32tm /query /configuration
[Configuration]

EventLogFlags: 2 (Local)
AnnounceFlags: 5 (Local)
TimeJumpAuditOffset: 28800 (Local)
MinPollInterval: 6 (Local)
MaxPollInterval: 10 (Local)
MaxNegPhaseCorrection: 172800 (Local)
MaxPosPhaseCorrection: 172800 (Local)
MaxAllowedPhaseOffset: 300 (Local)

FrequencyCorrectRate: 4 (Local)
PollAdjustFactor: 5 (Local)
LargePhaseOffset: 50000000 (Local)
SpikeWatchPeriod: 900 (Local)
LocalClockDispersion: 10 (Local)
HoldPeriod: 5 (Local)
PhaseCorrectRate: 7 (Local)
UpdateInterval: 100 (Local)


[TimeProviders]

NtpClient (Local)
DllName: C:\Windows\SYSTEM32\w32time.DLL (Local)
Enabled: 1 (Local)
InputProvider: 1 (Local)
CrossSiteSyncFlags: 2 (Policy)
AllowNonstandardModeCombinations: 1 (Local)
ResolvePeerBackoffMinutes: 15 (Policy)
ResolvePeerBackoffMaxTimes: 7 (Policy)
CompatibilityFlags: 2147483648 (Local)
EventLogFlags: 0 (Policy)
LargeSampleSkew: 3 (Local)
SpecialPollInterval: 1024 (Policy)
Type: NTP (Policy)
NtpServer: time.informatica.cifpaviles.pa,0x9 (Policy)

NtpServer (Local)
DllName: C:\Windows\SYSTEM32\w32time.DLL (Local)
Enabled: 1 (Local)
InputProvider: 0 (Local)
AllowNonstandardModeCombinations: 1 (Local)

VMICTimeProvider (Local)
DllName: C:\Windows\System32\vmictimeprovider.dll (Local)
Enabled: 1 (Local)
InputProvider: 1 (Local)
```

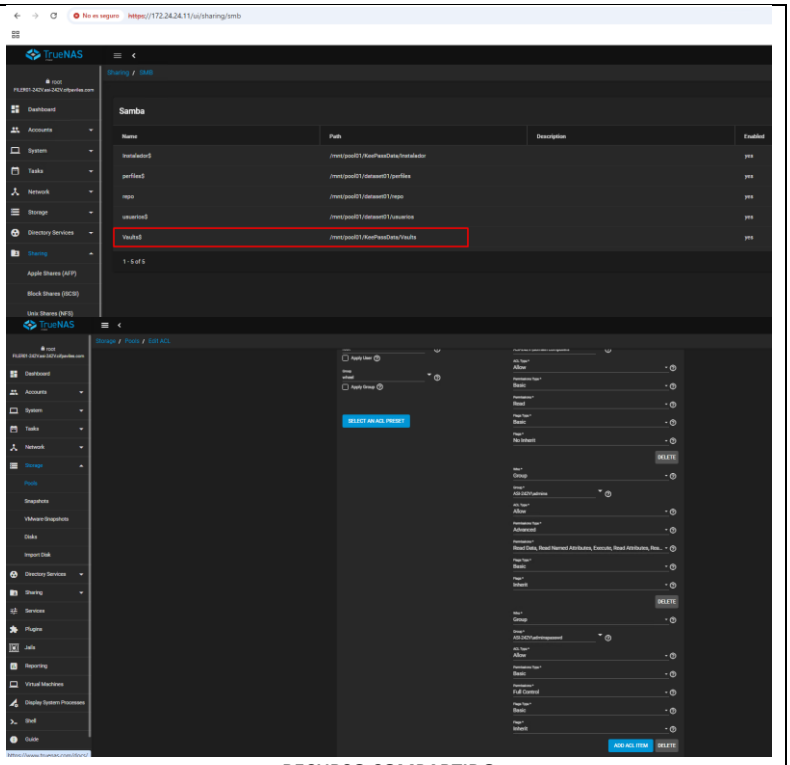
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
88.	Sincronización horaria de sistemas Linux	En cada sistema Linux, ejecutar el comando: **systemctl status systemd-timesyncd**	SREIN **LAMP01-242V** administrador@lamp01-242v:/mnt$ systemctl status systemd-timesyncd ● systemd-timesyncd.service - Network Time Synchronization Loaded: loaded (/usr/lib/systemd/system/systemd-timesyncd.service; enabled; preset: enabled) Active: active (running) since Sat 2026-05-09 17:23:38 CEST; 25s ago Docs: man:systemd-timesyncd.service(8) Main PID: 45376 (systemd-timesyn) Status: "Contacted time server 172.20.24.19:123 (time.asi-242v.cifpaviles.com)." Tasks: 2 (limit: 4600) Memory: 1.3M (peak: 1.6M) CPU: 73ms CGroup: /system.slice/systemd-timesyncd.service └─45376 /usr/lib/systemd/systemd-timesyncd may 09 17:23:38 lamp01-242v systemd[1]: Starting systemd-timesyncd.service - Network Time Synchronization... may 09 17:23:38 lamp01-242v systemd[1]: Started systemd-timesyncd.service - Network Time Synchronization. may 09 17:23:38 lamp01-242v systemd-timesyncd[45376]: Contacted time server 172.20.24.19:123 (time.asi-242v.cifpaviles.com). may 09 17:23:38 lamp01-242v systemd-timesyncd[45376]: Initial clock synchronization to Sat 2026-05-09 17:23:37.991302 CEST. administrador@lamp01-242v:/mnt$ **WS03-242V** administrador@WS03-242V:~$ systemctl status systemd-timesyncd ● systemd-timesyncd.service - Network Time Synchronization Loaded: loaded (/usr/lib/systemd/system/systemd-timesyncd.service; enabled; preset: enabled) Active: active (running) since Sun 2026-05-10 20:32:20 CEST; 19s ago Docs: man:systemd-timesyncd.service(8) Main PID: 12097 (systemd-timesyn) Status: "Contacted time server 172.20.24.19:123 (time.asi-242v.cifpaviles.com)." Tasks: 2 (limit: 2260) Memory: 1.3M (peak: 1.7M) CPU: 57ms CGroup: /system.slice/systemd-timesyncd.service └─12097 /usr/lib/systemd/systemd-timesyncd may 10 20:32:20 WS03-242V.asi-242V.cifpaviles.com systemd[1]: Starting systemd-timesyncd.service - Network Time Synchronization... may 10 20:32:20 WS03-242V.asi-242V.cifpaviles.com systemd[1]: Started systemd-timesyncd.service - Network Time Synchronization. may 10 20:32:20 WS03-242V.asi-242V.cifpaviles.com systemd-timesyncd[12097]: Contacted time server 172.20.24.19:123 (time.asi-242v.cifpaviles.com). may 10 20:32:20 WS03-242V.asi-242V.cifpaviles.com systemd-timesyncd[12097]: Initial clock synchronization to Sun 2026-05-10 20:32:20.522244 CEST. **FILER01-242V** NTP Servers Filter NTP Servers Address | Burst | IBurst | Prefer | Min. Poll | Max. Poll time.asi-242v.cifpaviles.com | yes | yes | yes | 6 | 10 time2.asi-242v.cifpaviles.com | yes | yes | no | 6 | 10 1 - 2 of 2
89.	Sincronización horaria de hipervisores esxi	En cada hipervisor, ejecutar los comandos: **a) chkconfig ntpd** b) **cat /etc/ntp.conf**	SREIN **HV01-242V** 172.24.24.201 - PuTTY [root@HV01-242V:~] chkconfig ntpd ntpd on [root@HV01-242V:~] **HV02-242V** 172.24.24.202 - PuTTY [root@HV02-242V:~] chkconfig ntpd ntpd on [root@HV02-242V:~] **HV01-242V** 172.24.24.201 - PuTTY [root@HV01-242V:~] cat /etc/ntp.conf restrict default nomodify notrap nopeer noquery restrict 127.0.0.1 driftfile /etc/ntp.drift server time.asi-242v.cifpaviles.com server time2.asi-242v.cifpaviles.com [root@HV01-242V:~] **HV02-242V** 172.24.24.202 - PuTTY [root@HV02-242V:~] cat /etc/ntp.conf restrict default nomodify notrap nopeer noquery restrict 127.0.0.1 driftfile /etc/ntp.drift server time.asi-242v.cifpaviles.com server time2.asi-242v.cifpaviles.com [root@HV02-242V:~]

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
90.	Sincronización horaria de vcenter	Acceso web a appliance vcenter (puerto 5480)/ Hora	SREIN 
91.	Sincronización horaria de router Zentyal ROUTER01-ID	Zentyal/ Sistema/ Fecha y hora	SREIN   Reescribimos el netplan con las IP de nuestros controladores de dominio como nameservers. 
92.	FILER01-ID: Pools y datasets creados	FILER01-ID/ Storage / Pools (desplegar pools de modo que se vean sus datasets)	SADIS 

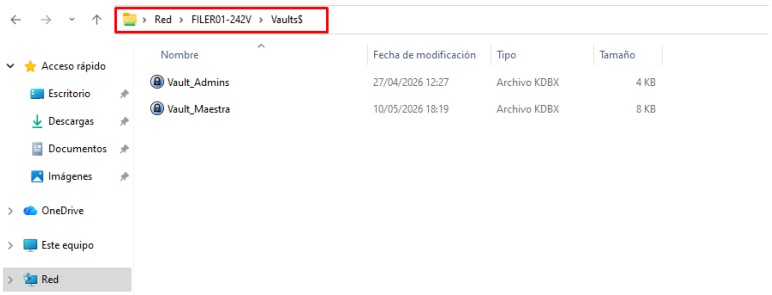
	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
93.	FILER01-ID: Recursos compartidos SMB	FILER01-ID/ Sharing/ SMB (mostrar nombres y rutas)	SADIS 
94.	Recurso compartido usuarios$	Ventana del explorador que muestre el contenido del recurso compartido, accedido mediante ruta UNC: \\FILER01-ID\usuarios$	SADIS  Nota: los permisos de las carpetas se han adaptado para que cada usuario pueda acceder a su carpeta personal y no a las demás a pesar de la existencia de subcarpetas.

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*
95.	Recurso compartido perfiles$	Ventana del explorador que muestre el contenido del recurso compartido, accedido mediante ruta UNC: \\FILER01-ID\perfiles$	SADIS 
96.	Recurso compartido repo	Ventana del explorador que muestre el contenido del recurso compartido, accedido mediante ruta UNC: \\FILER01-ID\repo	SADIS 
97.	**Credenciales** (usuarios y contraseñas)	Descripción del método utilizado para gestionar y almacenar las credenciales de la práctica	COMUN/SADIS Uso de KeePass 

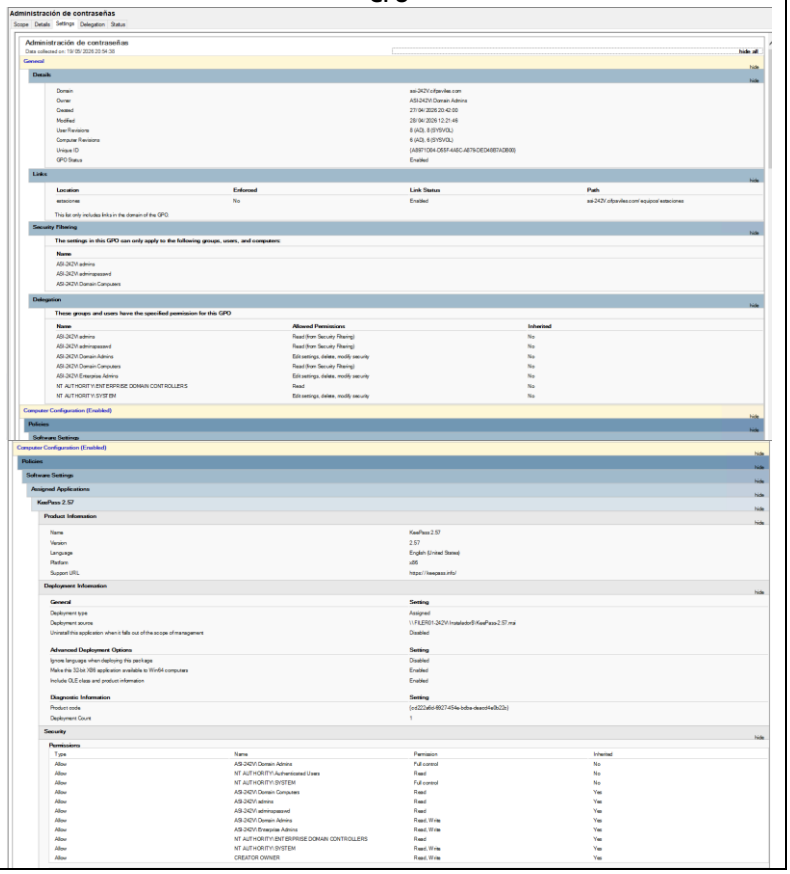
98.	Otros	Ampliaciones: Cualquier otra funcionalidad que hayas implementado y no haya quedado recogida en ninguno de los puntos anteriores. Comentarios y observaciones que quieras hacer sobre tu trabajo.	COMUN Uso de Nginx Proxy Manager como proxy inverso, para la asignación de certificados y forzado de https **LAMP01-242V**   **LAMP02-242V**  Bases de datos de KeePass administradas desde recurso compartido de TrueNAS. Creación de GPO para el despliegue automático de KeePass con distintas bases de datos precargadas en función del grupo al que pertenezca el usuario. **FILER01-242V**

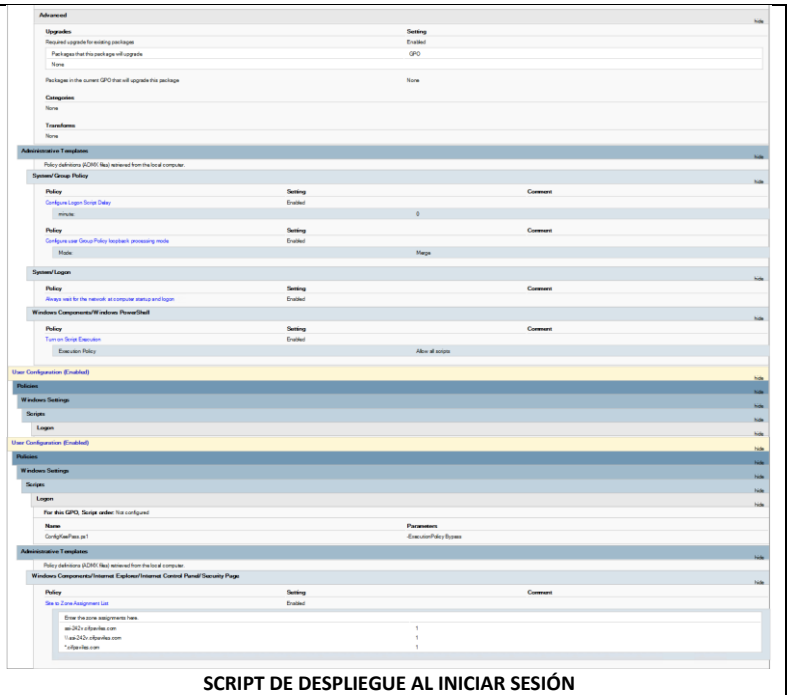


RECURSO COMPARTIDO

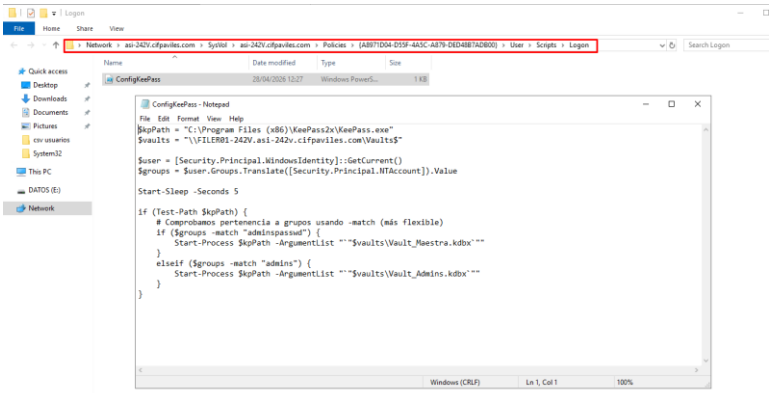


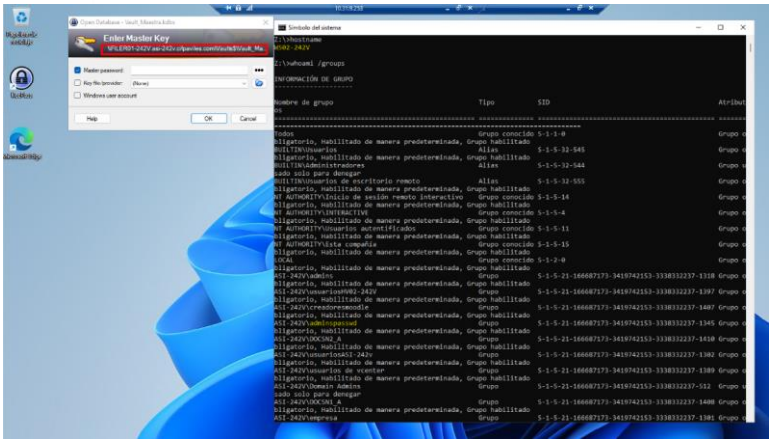
GPO





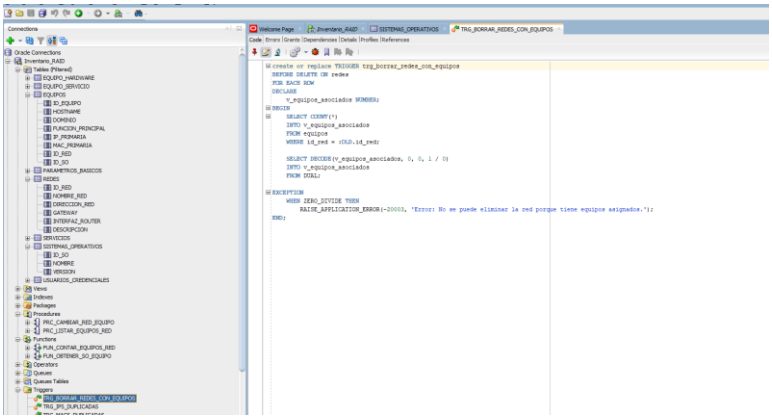
SCRIPT DE DESPLIEGUE AL INICIAR SESIÓN





Construcción de base de datos en Oracle y uso de lenguaje pl/sql para administrar la base de datos y la aplicación de inventario en php

EJEMPLO DE TRIGGER



EJEMPLO PHP

	Parámetro/configuración	*Texto o imagen demostrativa*	*(indicación de módulos)*

```
admin-242V@LAMP02-242V:~/infra/bind-mounts/inventario/www/equipos$ cat select_equipos.php
<?php

error_reporting(E_ALL);
ini_set('display_errors', 1);

require_once '/var/www/privado/session.safe.php';
require_once '/var/www/privado/db.connect.oracle.php';

// ========================================================================
// CONEXIÓN
// ========================================================================
if (!$conn) {
    $e = oci_error();
    die("Error de conexión Oracle: " . $e['message']);
}

// ========================================================================
// EXPORTACIÓN
// ========================================================================
if (isset($_GET['exportar'])) {

    $formato = limpiar($_GET['exportar']);

    $query = "SELECT
                ID_EQUIPO,
                HOSTNAME,
                DOMINIO,
                FUNCION_PRINCIPAL,
                IP_PRIMARIA,
                MAC_PRIMARIA,
                ID_RED,
                ID_SO
              FROM EQUIPOS
              ORDER BY ID_EQUIPO ASC";

    $stmt = oci_parse($conn, $query);

    if (!$stmt) {
        die(oci_error($conn)['message']);
    }

    oci_execute($stmt);

    $datos = [];

    while ($row = oci_fetch_assoc($stmt)) {
        $datos[] = $row;
    }

    oci_free_statement($stmt);

    if (ob_get_level()) ob_end_clean();

    if ($formato === 'csv') {

        header('Content-Type: text/csv; charset=utf-8');
        header('Content-Disposition: attachment; filename="equipos_inventario.csv"');

        $output = fopen('php://output', 'w');

        if (!empty($datos)) {
            fputcsv($output, array_keys($datos[0]));
```