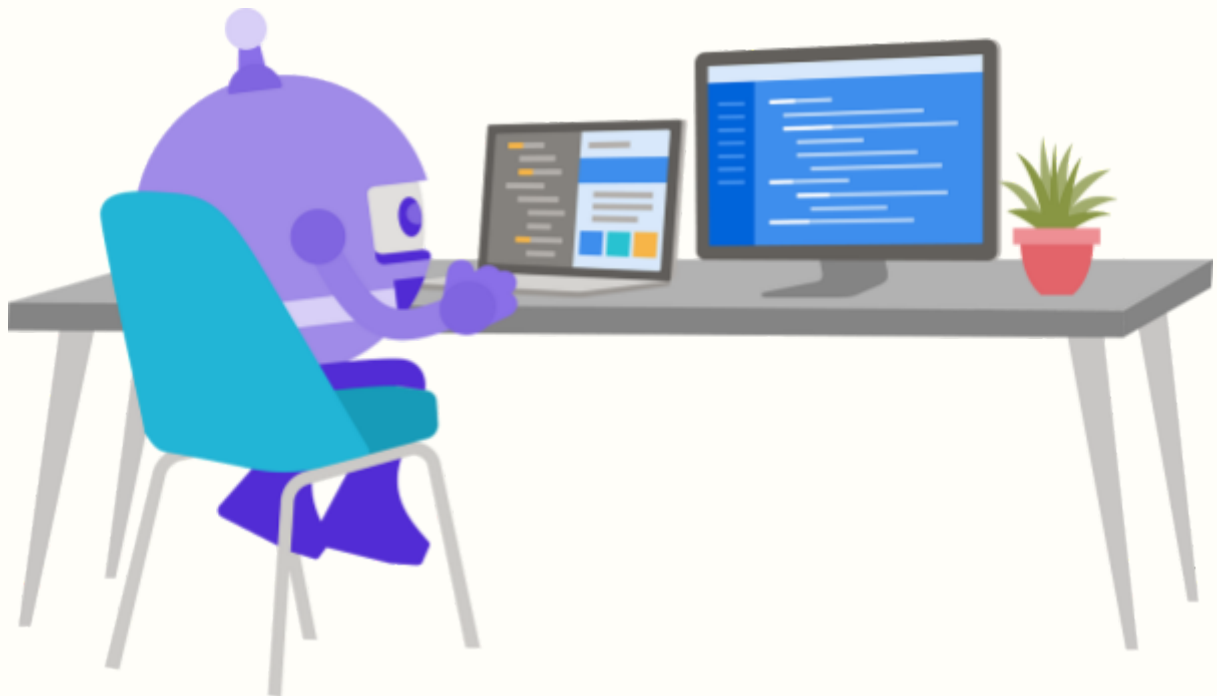


Servicio DNS



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Objetivos

- Analizar la planificación de un servidor en DNS
- Planificar la instalación de un servidor DNS.
- Planificar la configuración de un servidor DNS.
- Configurar servidor DNS
- Comprobar el funcionamiento de un servidor DNS

Información básica / Preparación

Es importante mantener actualizados los sistemas operativos y las aplicaciones para garantizar un funcionamiento estable y enfrentar las vulnerabilidades de seguridad. Estas actualizaciones se denominan revisiones, parches, correcciones o simplemente actualizaciones.

Este laboratorio se llevará a cabo individualmente con la ayuda de uno de tus compañeros en las partes que se te indique.

Se necesitan los siguientes recursos:

- Una computadora con Linux Ubuntu
- Al menos una computadora con Windows

Condiciones de entrega

Debes entregar un documento dónde se indique los pasos dados para llevar a cabo la tarea expuesta.

Pon hincapié en la estructura de dicho documento, portada, índice, paginación, etc

Contenido

Paso 1: Guardar la configuración actual

No olvides guardar la configuración actual para luego al término de la actividad volver a ella.

Paso 2: Configurar servidor DNS

Configurar un servicio DNS, cuyo dominio sea inicial del nombre y el segundo apellido.

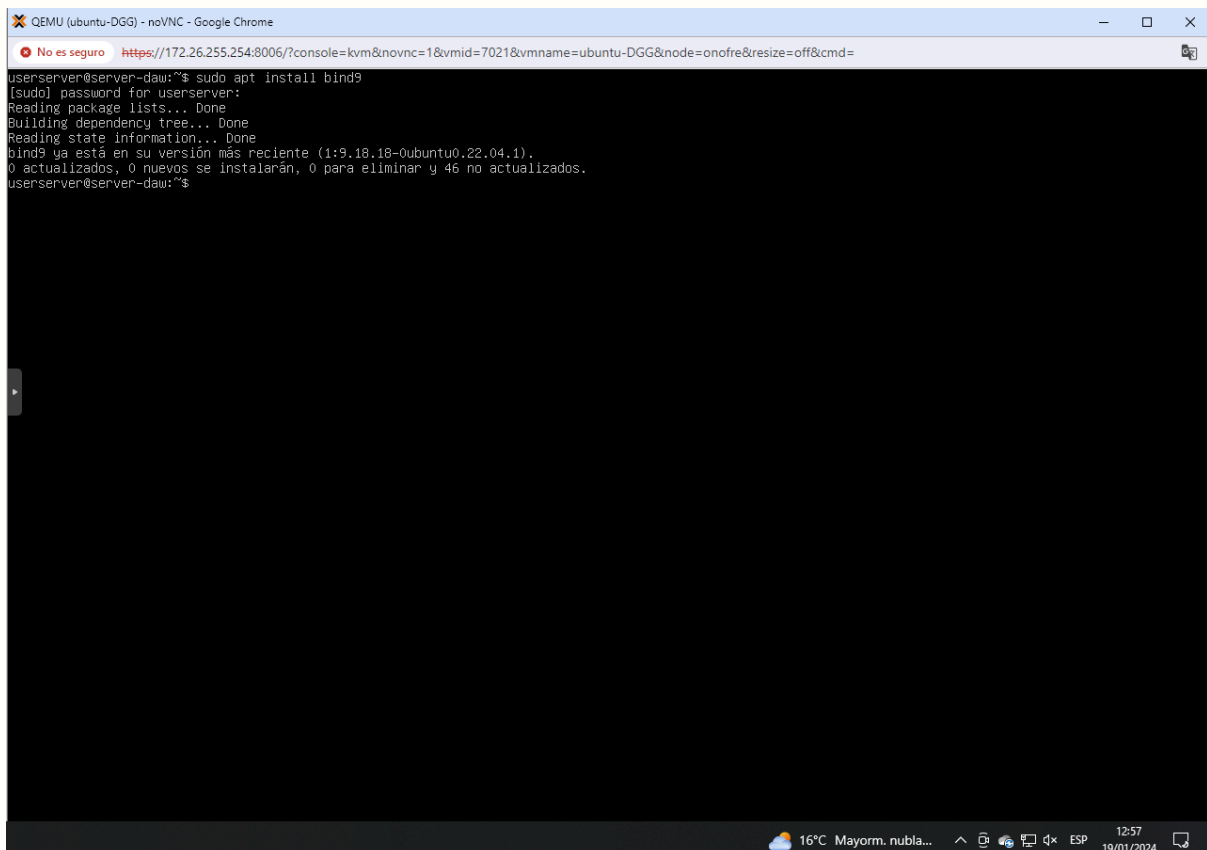
Ejemplo Amapola Gutiérrez de la Vega sería agutierrez.inf con las siguientes

características:

- La dirección de red será 172.20.XY.0/24
- Configurar al menos 3 ordenadores en el dominio a parte del servidor.
- `www.tunombre.inf` 172.20.XY.2

Primero debemos instalar nuestro servicio de DNS, en este caso este será Bind9. Para instalarlo usaremos:

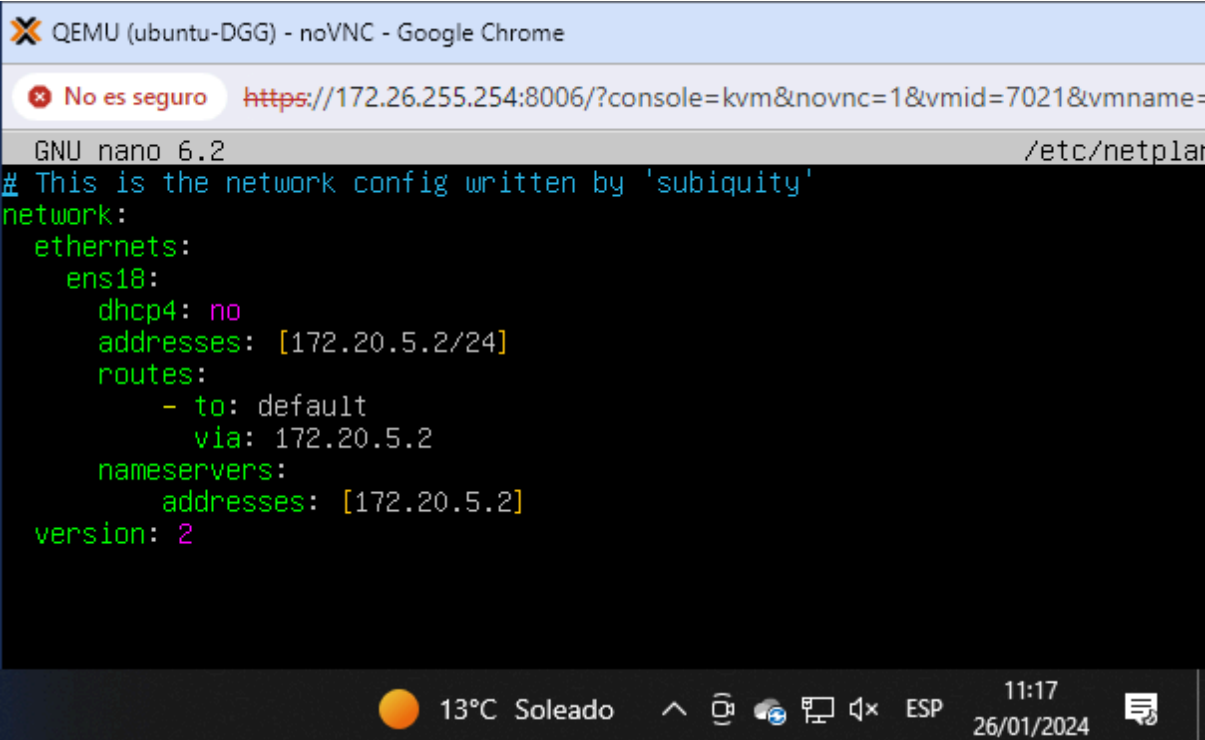
```
$ sudo apt install bind9
```



The screenshot shows a terminal window titled 'QEMU (ubuntu-DGG) - noVNC - Google Chrome'. The address bar shows a URL: <https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=ubuntu-DGG&node=onofre&resize=off&cmd=>. The terminal output shows the command `sudo apt install bind9` being executed. The output indicates that bind9 is already installed at its latest version (1:9.18.18-0ubuntu0.22.04.1) and no new packages will be installed. The prompt returns to `userserver@server-daw:~$`.

```
userserver@server-daw:~$ sudo apt install bind9
[sudo] password for userserver:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
bind9 ya está en su versión más reciente (1:9.18.18-0ubuntu0.22.04.1).
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 46 no actualizados.
userserver@server-daw:~$
```

Una vez instalamos Bind9 debemos configurar nuestra red y pondremos lo siguiente:

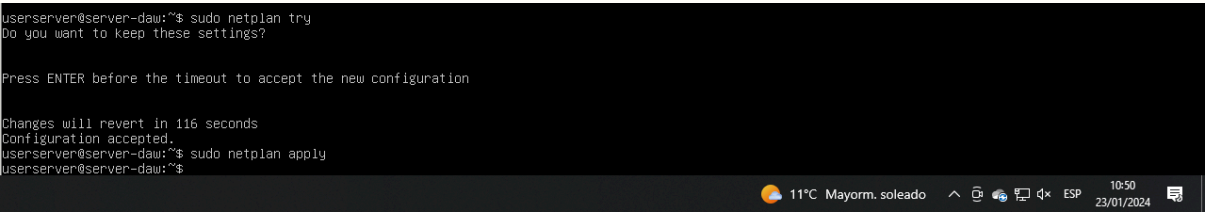


The screenshot shows a terminal window titled "QEMU (ubuntu-DGG) - noVNC - Google Chrome". The address bar displays a URL: <https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=>. The terminal content shows the GNU nano 6.2 editor editing a file in /etc/netplan. The configuration is as follows:

```
network:
  ethernets:
    ens18:
      dhcp4: no
      addresses: [172.20.5.2/24]
      routes:
        - to: default
          via: 172.20.5.2
      nameservers:
        addresses: [172.20.5.2]
  version: 2
```

The bottom status bar of the terminal shows a temperature of 13°C, weather "Soleado", and the time 11:17 on 26/01/2024.

Y estableceremos las configuraciones:



The screenshot shows a terminal window with the following commands and output:

```
userserver@server-daw:~$ sudo netplan try
Do you want to keep these settings?

Press ENTER before the timeout to accept the new configuration

Changes will revert in 116 seconds
Configuration accepted.
userserver@server-daw:~$ sudo netplan apply
userserver@server-daw:~$
```

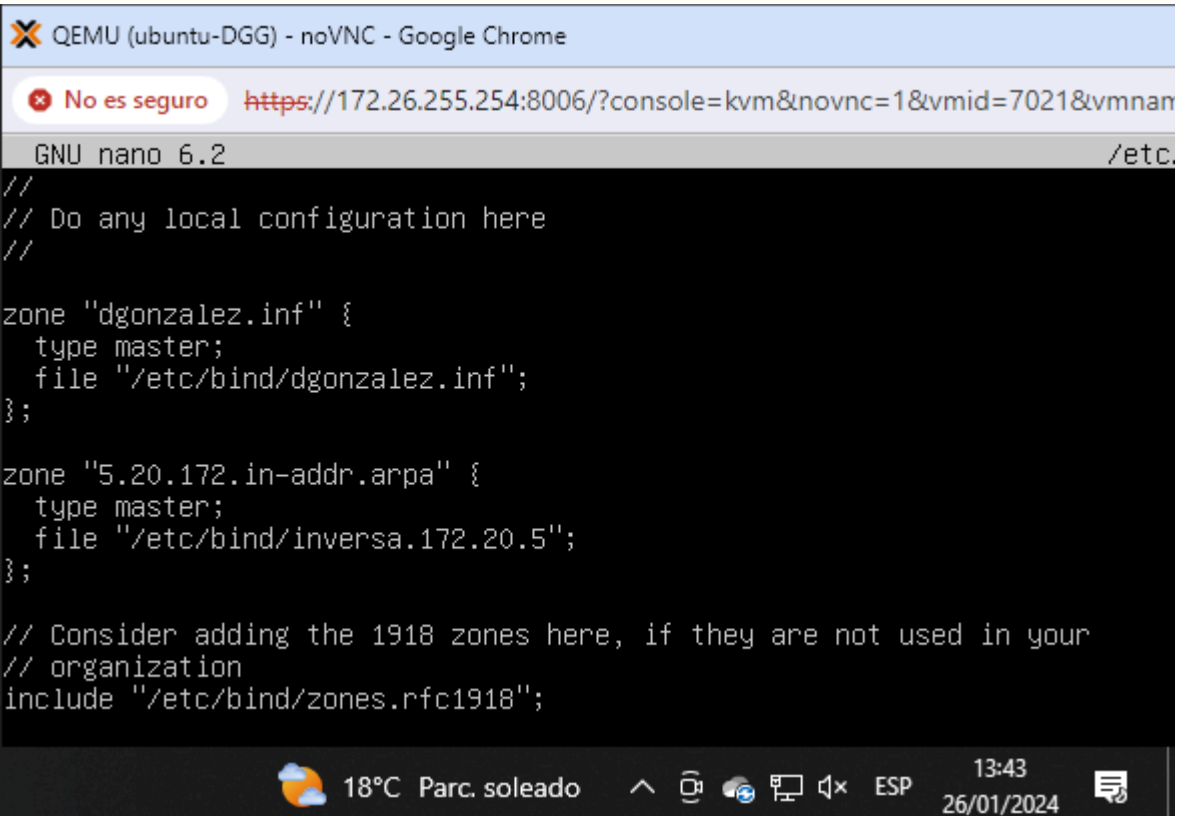
The bottom status bar of the terminal shows a temperature of 11°C, weather "Mayorm. soleado", and the time 10:50 on 23/01/2024.

Una vez lo tenemos instalado, configuraremos nuestro servidor DNS empezando por modificar el fichero **/etc/bind/named.conf.local**

Para ello usaremos el siguiente comando:

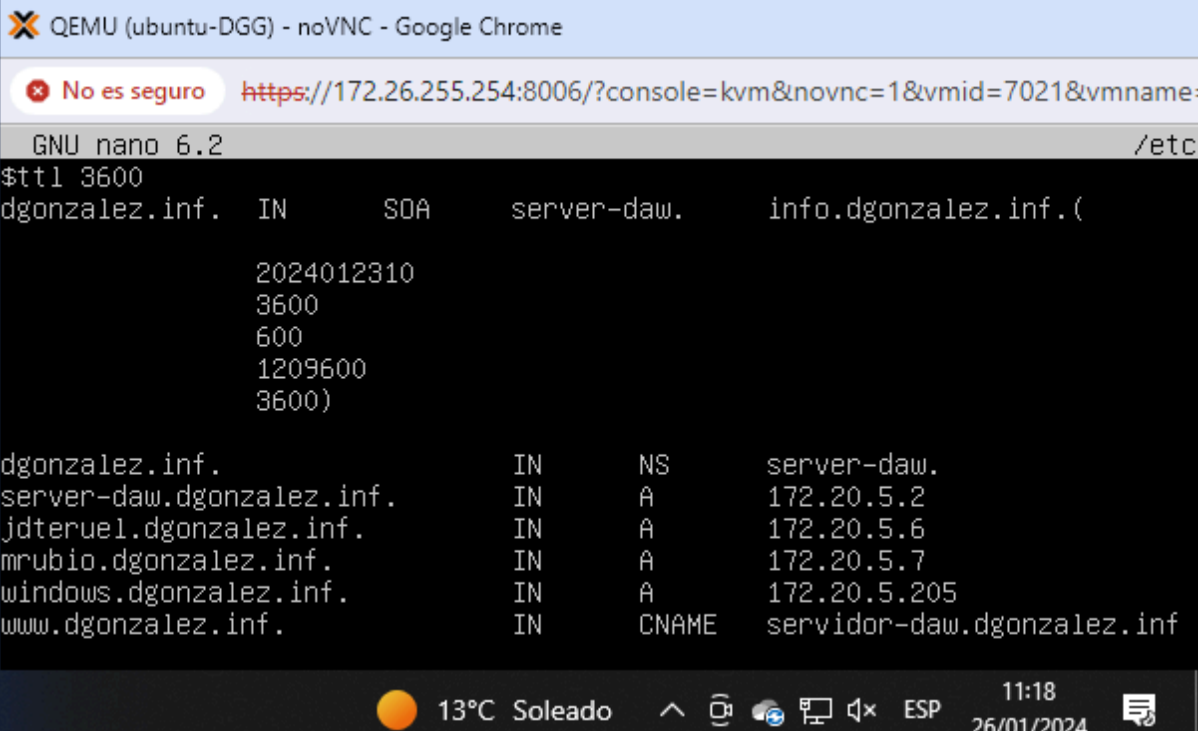
```
$ sudo nano /etc/bind/named.conf.local
```

Debemos introducir en él lo siguiente:



```
QEMU (ubuntu-DGG) - noVNC - Google Chrome
No es seguro https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=ubuntu-DGG
GNU nano 6.2 /etc.
//
// Do any local configuration here
//
zone "dgonzalez.inf" {
    type master;
    file "/etc/bind/dgonzalez.inf";
};
zone "5.20.172.in-addr.arpa" {
    type master;
    file "/etc/bind/inversa.172.20.5";
};
// Consider adding the 1918 zones here, if they are not used in your
// organization
include "/etc/bind/zones.rfc1918";
18°C Parc. soleado 13:43 26/01/2024
```

Una vez configurada la zona, debemos proceder a crear el fichero de la zona directa

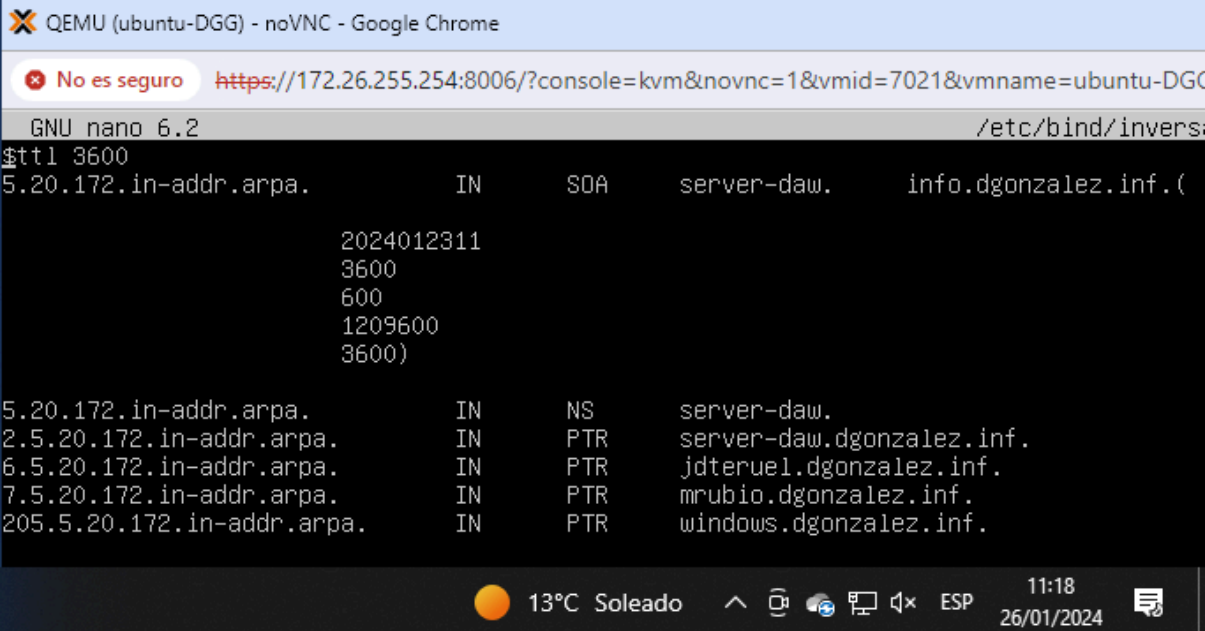


The screenshot shows a web browser window titled "QEMU (ubuntu-DGG) - noVNC - Google Chrome". The address bar displays a URL starting with "https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=". A security warning "No es seguro" is visible. The main content area shows a terminal window with the GNU nano 6.2 editor. The editor is editing a file in /etc. The content of the file is a DNS zone file for dgonzalez.inf. It includes a header line "\$ttl 3600" and a series of records: an SOA record for dgonzalez.inf. with a serial of 2024012310, and several A and CNAME records for subdomains like server-daw.dgonzalez.inf., jdteruel.dgonzalez.inf., mrubio.dgonzalez.inf., windows.dgonzalez.inf., and www.dgonzalez.inf. The bottom of the screen shows a system status bar with a temperature of 13°C, weather "Soleado", and the time 11:18 on 26/01/2024.

```
GNU nano 6.2 /etc.
$ttl 3600
dgonzalez.inf.  IN      SOA      server-daw.  info.dgonzalez.inf. (
                        2024012310
                        3600
                        600
                        1209600
                        3600)

dgonzalez.inf.  IN      NS       server-daw.
server-daw.dgonzalez.inf.  IN      A        172.20.5.2
jdteruel.dgonzalez.inf.  IN      A        172.20.5.6
mrubio.dgonzalez.inf.  IN      A        172.20.5.7
windows.dgonzalez.inf.  IN      A        172.20.5.205
www.dgonzalez.inf.  IN      CNAME     servidor-daw.dgonzalez.inf
```

Ahora debemos configurar la zona inversa:



The screenshot shows a terminal window titled "QEMU (ubuntu-DGG) - noVNC - Google Chrome". The address bar indicates a connection to <https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=ubuntu-DGG>. The terminal displays the GNU nano 6.2 editor editing the file `/etc/bind/invers`. The content of the file is as follows:

```
$ttl 3600
5.20.172.in-addr.arpa.      IN      SOA      server-daw.  info.dgonzalez.inf. (
                               2024012311
                               3600
                               600
                               1209600
                               3600)

5.20.172.in-addr.arpa.      IN      NS       server-daw.
2.5.20.172.in-addr.arpa.    IN      PTR       server-daw.dgonzalez.inf.
6.5.20.172.in-addr.arpa.    IN      PTR       jdteruel.dgonzalez.inf.
7.5.20.172.in-addr.arpa.    IN      PTR       mrubio.dgonzalez.inf.
205.5.20.172.in-addr.arpa.  IN      PTR       windows.dgonzalez.inf.
```

The terminal's status bar at the bottom shows a temperature of 13°C, the location "Soleado", and the date and time "11:18 26/01/2024".

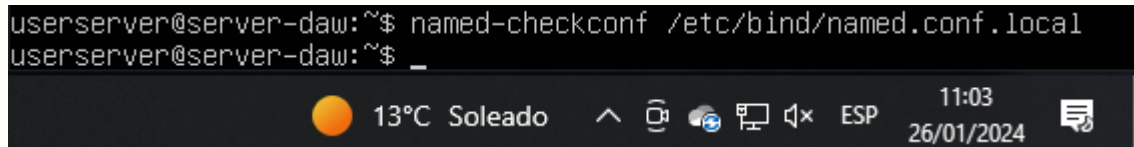
Paso 3: Comprobar funcionamiento

Comprueba que la configuración llevada a cabo en el paso anterior funciona.

Comprobamos si los ficheros están escritos correctamente con los siguientes comandos:

```
$ named-checkconf /etc/bind/named.conf.local
```

```
userserver@server-daw:~$ named-checkconf /etc/bind/named.conf.local
userserver@server-daw:~$ _
```



Para comprobar las zonas usaremos:

```
$ named-checkzone gonzalez.inf /etc/bind/dgonzalez.inf
```

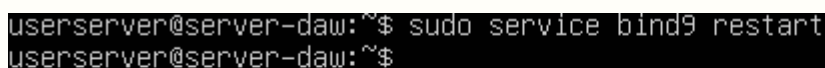
```
$ named-checkzone gonzalez.inf /etc/bind/inversa.172.20.5
```

```
userserver@server-daw:~$ named-checkzone dgonzalez.inf /etc/bind/dgonzalez.inf
zone dgonzalez.inf/IN: loaded serial 2024012310
OK
userserver@server-daw:~$ named-checkzone 5.20.172.in-addr.arpa /etc/bind/inversa.172.20.5
zone 5.20.172.in-addr.arpa/IN: loaded serial 2024012311
OK
```

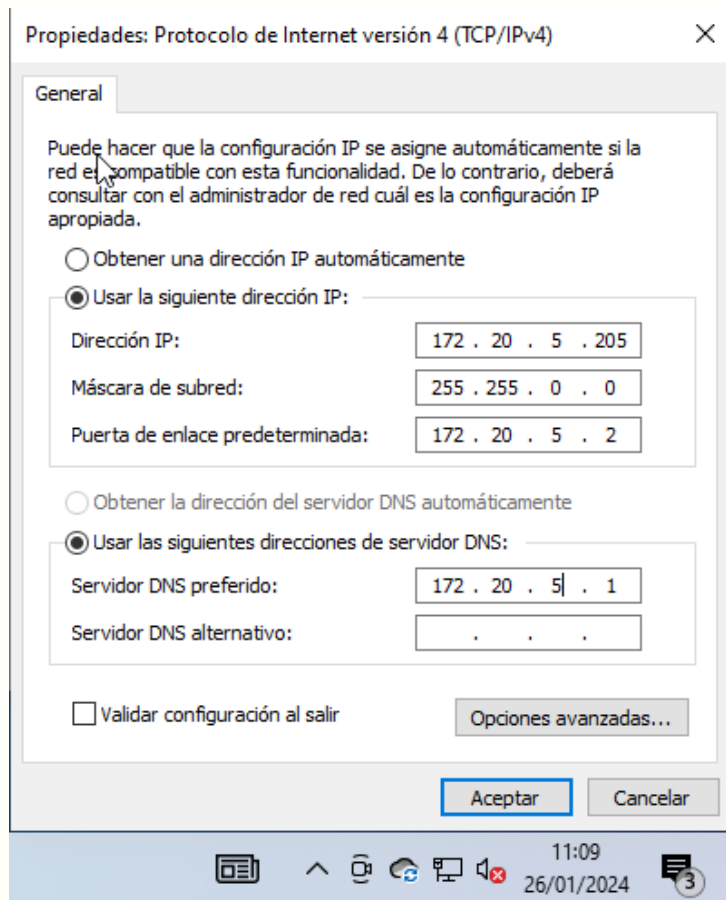


Reiniciamos el servicio Bind9

```
userserver@server-daw:~$ sudo service bind9 restart
userserver@server-daw:~$
```

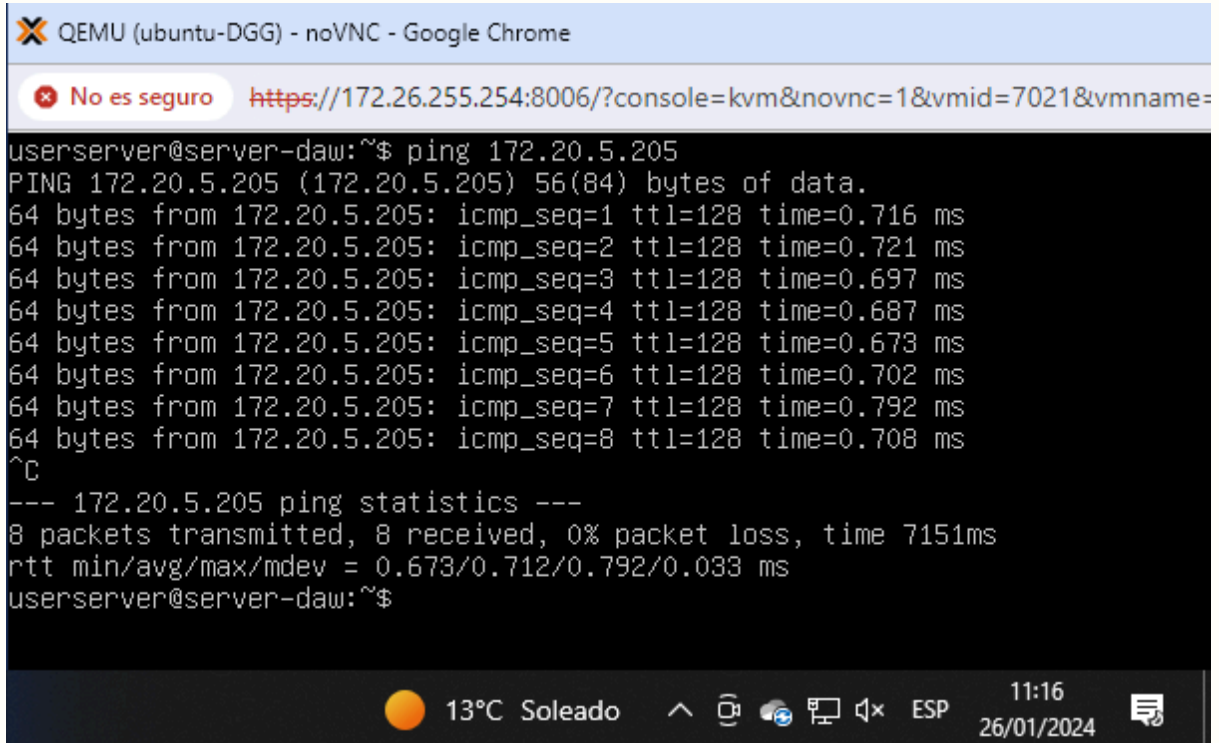


Configuramos nuestra máquina Windows:



Y le hacemos ping desde nuestra máquina linux:

```
$ ping 172.20.5.205
```

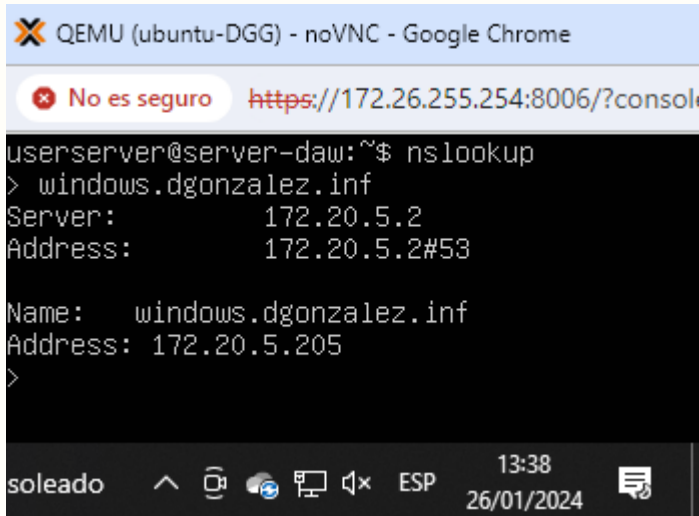


The screenshot shows a QEMU terminal window titled "QEMU (ubuntu-DGG) - noVNC - Google Chrome". The address bar indicates a connection to <https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=>. The terminal output shows a ping command being executed from the user 'userserver' on the host 'server-daw' to the IP address 172.20.5.205. The ping results show 8 packets transmitted, 8 received, with 0% packet loss and a total time of 7151ms. The round-trip time (rtt) statistics are: min/avg/max/mdev = 0.673/0.712/0.792/0.033 ms. The terminal window has a dark background and a status bar at the bottom showing the system temperature (13°C), weather (Soleado), and the time (11:16) on 26/01/2024.

```
userserver@server-daw:~$ ping 172.20.5.205
PING 172.20.5.205 (172.20.5.205) 56(84) bytes of data.
64 bytes from 172.20.5.205: icmp_seq=1 ttl=128 time=0.716 ms
64 bytes from 172.20.5.205: icmp_seq=2 ttl=128 time=0.721 ms
64 bytes from 172.20.5.205: icmp_seq=3 ttl=128 time=0.697 ms
64 bytes from 172.20.5.205: icmp_seq=4 ttl=128 time=0.687 ms
64 bytes from 172.20.5.205: icmp_seq=5 ttl=128 time=0.673 ms
64 bytes from 172.20.5.205: icmp_seq=6 ttl=128 time=0.702 ms
64 bytes from 172.20.5.205: icmp_seq=7 ttl=128 time=0.792 ms
64 bytes from 172.20.5.205: icmp_seq=8 ttl=128 time=0.708 ms
^C
--- 172.20.5.205 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7151ms
rtt min/avg/max/mdev = 0.673/0.712/0.792/0.033 ms
userserver@server-daw:~$
```

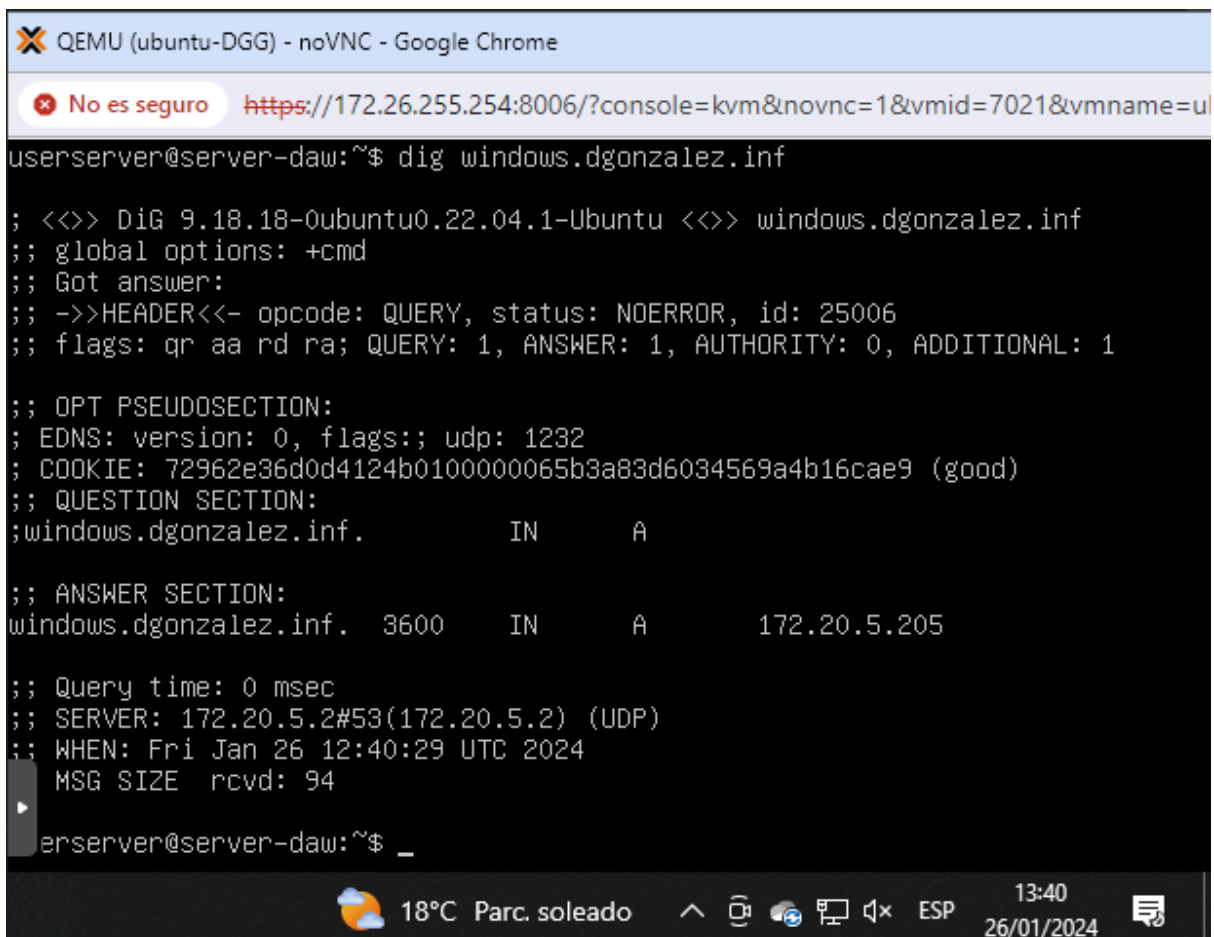
Paso 4: Comprobar el funcionamiento

Para ello usaremos el comando nslookup y probamos con cualquier máquina:



```
QEMU (ubuntu-DGG) - noVNC - Google Chrome
No es seguro https://172.26.255.254:8006/?console=
userserver@server-daw:~$ nslookup
> windows.dgonzalez.inf
Server:      172.20.5.2
Address:     172.20.5.2#53

Name:   windows.dgonzalez.inf
Address: 172.20.5.205
>
```



```
QEMU (ubuntu-DGG) - noVNC - Google Chrome
No es seguro https://172.26.255.254:8006/?console=kvm&novnc=1&vmid=7021&vmname=ul
userserver@server-daw:~$ dig windows.dgonzalez.inf

;<><> DiG 9.18.18-0ubuntu0.22.04.1-Ubuntu <>> windows.dgonzalez.inf
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25006
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:;; udp: 1232
; COOKIE: 72962e36d0d4124b0100000065b3a83d6034569a4b16cae9 (good)
;; QUESTION SECTION:
;windows.dgonzalez.inf.      IN      A

;; ANSWER SECTION:
windows.dgonzalez.inf.  3600    IN      A      172.20.5.205

;; Query time: 0 msec
;; SERVER: 172.20.5.2#53(172.20.5.2) (UDP)
;; WHEN: Fri Jan 26 12:40:29 UTC 2024
MSG SIZE rcvd: 94

userserver@server-daw:~$ _
```