

Índice:

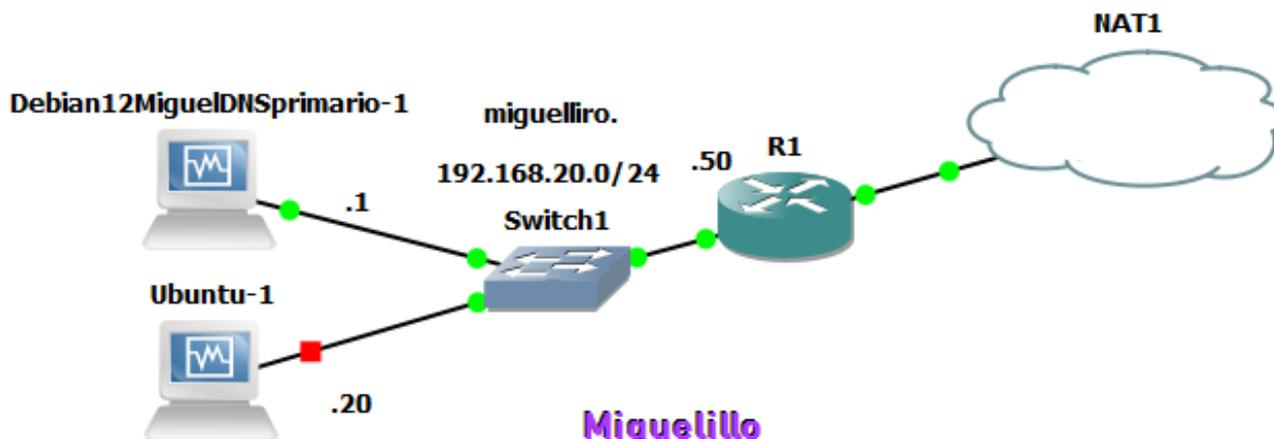
Ejercicio 1	2
a) Servidor DNS BIND IPv4 Linux (caché y reenvío de consultas recursivas)	2

Ejercicio 1

a) Servidor DNS BIND IPv4 Linux (caché y reenvío de consultas recursivas)

Solución:

Escenario:



Configuramos el forwarder

```

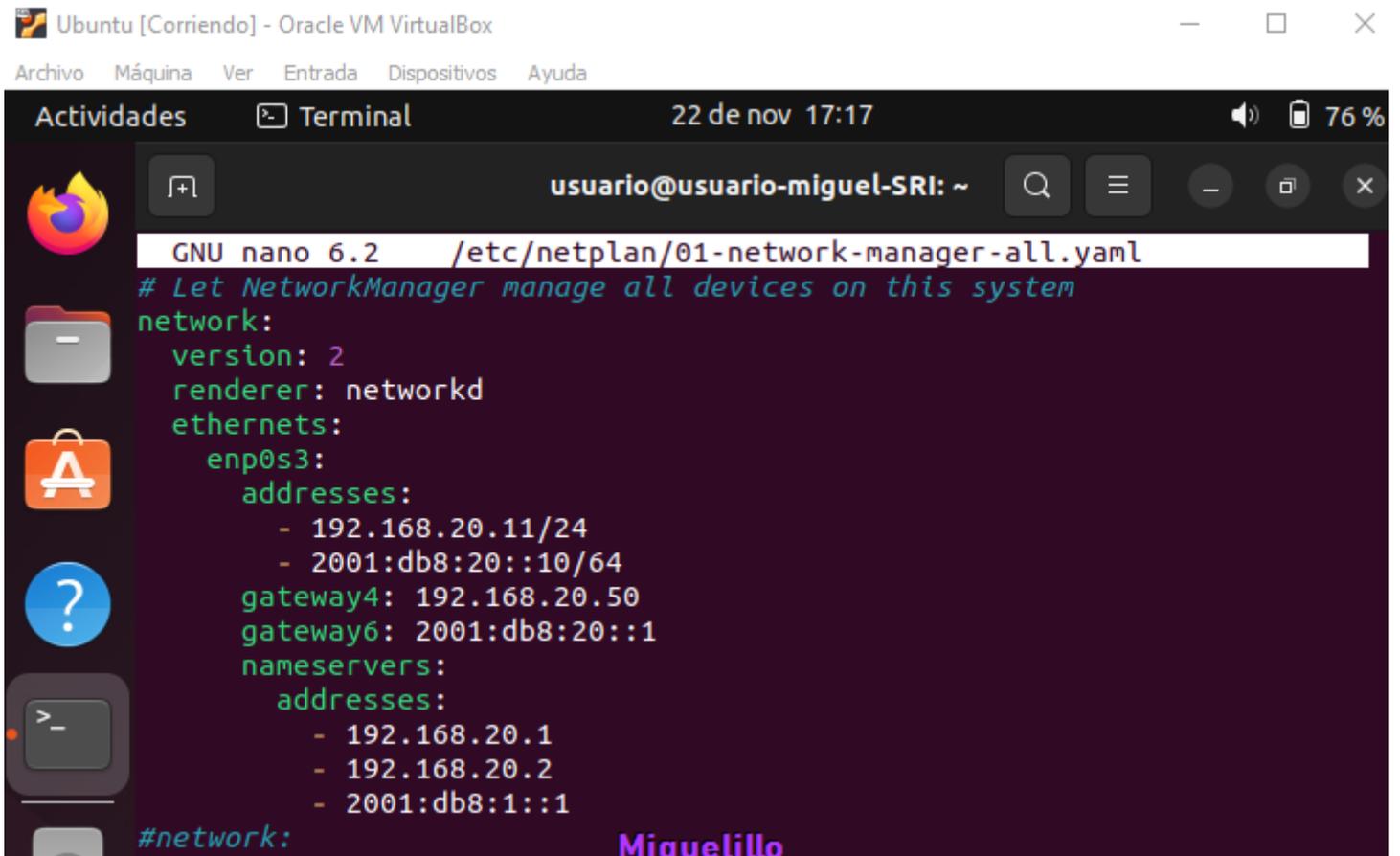
Debian12MiguelDNSprimario (Limpia sin servicios) [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
Actividades  Terminal  22 de nov 14:26  100 %
miguel@debian-SRI: ~
GNU nano 7.2  /etc/bind/named.conf.options *
// If there is a firewall between you and nameservers you wa
// to talk to, you may need to fix the firewall to allow mul
// ports to talk.  See http://www.kb.cert.org/vuls/id/800113

// If your ISP provided one or more IP addresses for stable
// nameservers, you probably want to use them as forwarders.
// Uncomment the following block, and insert the addresses r
// the all-0's placeholder.

forwarders {
    8.8.8.8;
};

//=====
// If BIND logs error messages about the root key being expi
^G Ayuda  ^O Guardar  ^W Buscar  ^K Cortar  ^T Ejecutar
^X Salir  ^R Leer fich. ^\ Reemplazar ^U Pegar  ^J Justificar
Miguelillo
BLOQ MAYUS
  
```

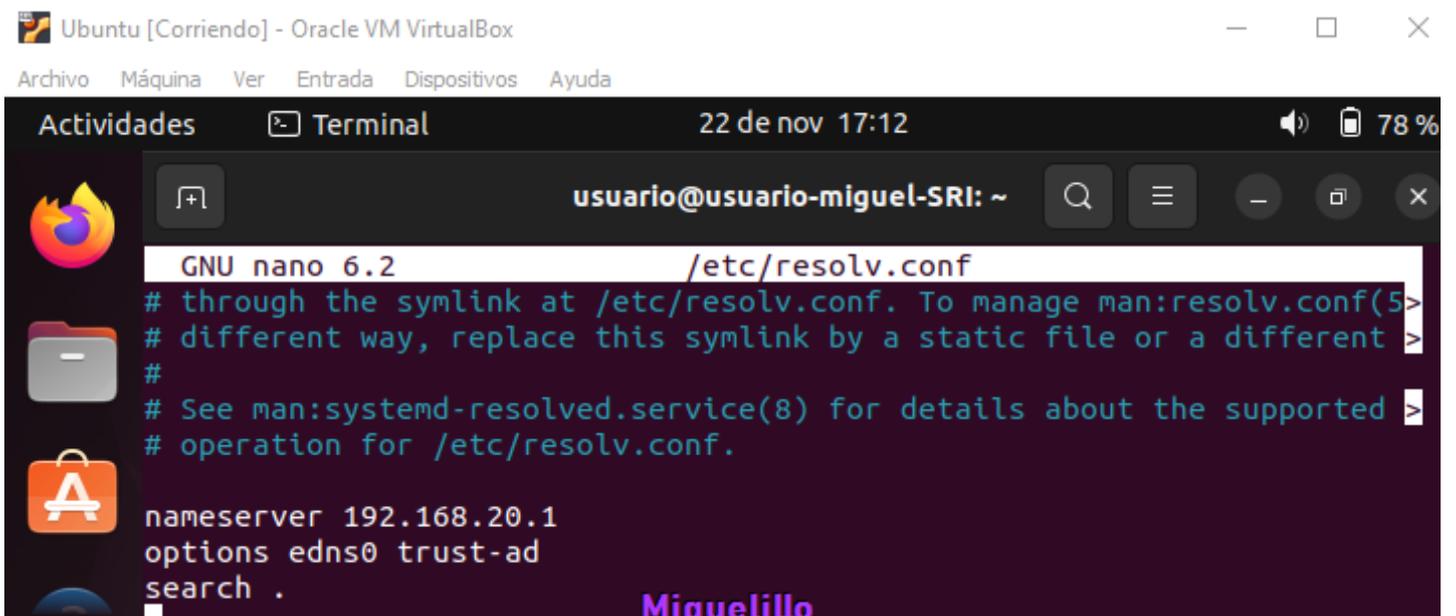
Configuramos la tarjeta de red del cliente configurando el servidor DNS y la puera de enlace



The screenshot shows a terminal window titled 'usuario@usuario-miguel-SRI: ~' with the file '/etc/netplan/01-network-manager-all.yaml' open in nano 6.2. The configuration is as follows:

```
GNU nano 6.2 /etc/netplan/01-network-manager-all.yaml
# Let NetworkManager manage all devices on this system
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      addresses:
        - 192.168.20.11/24
        - 2001:db8:20::10/64
      gateway4: 192.168.20.50
      gateway6: 2001:db8:20::1
      nameservers:
        addresses:
          - 192.168.20.1
          - 192.168.20.2
          - 2001:db8:1::1
#network:
Miguelillo
```

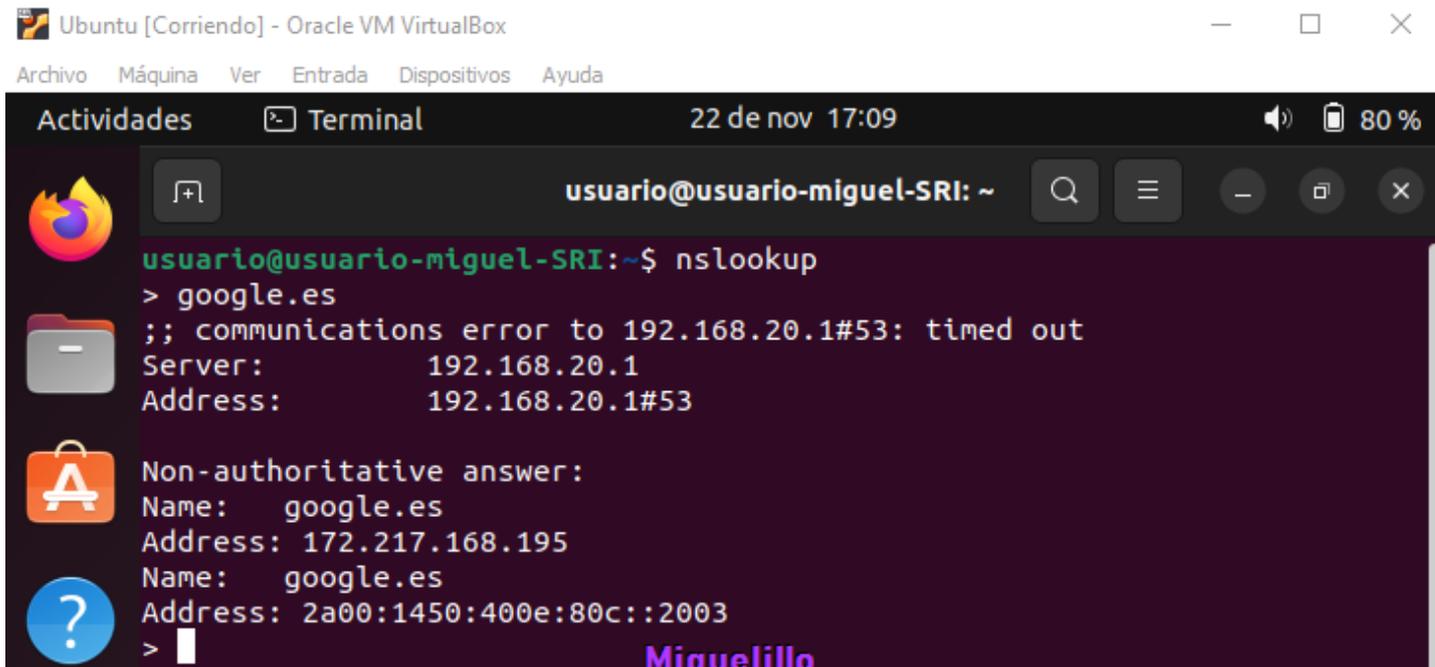
Configuramos el resolv en el cliente



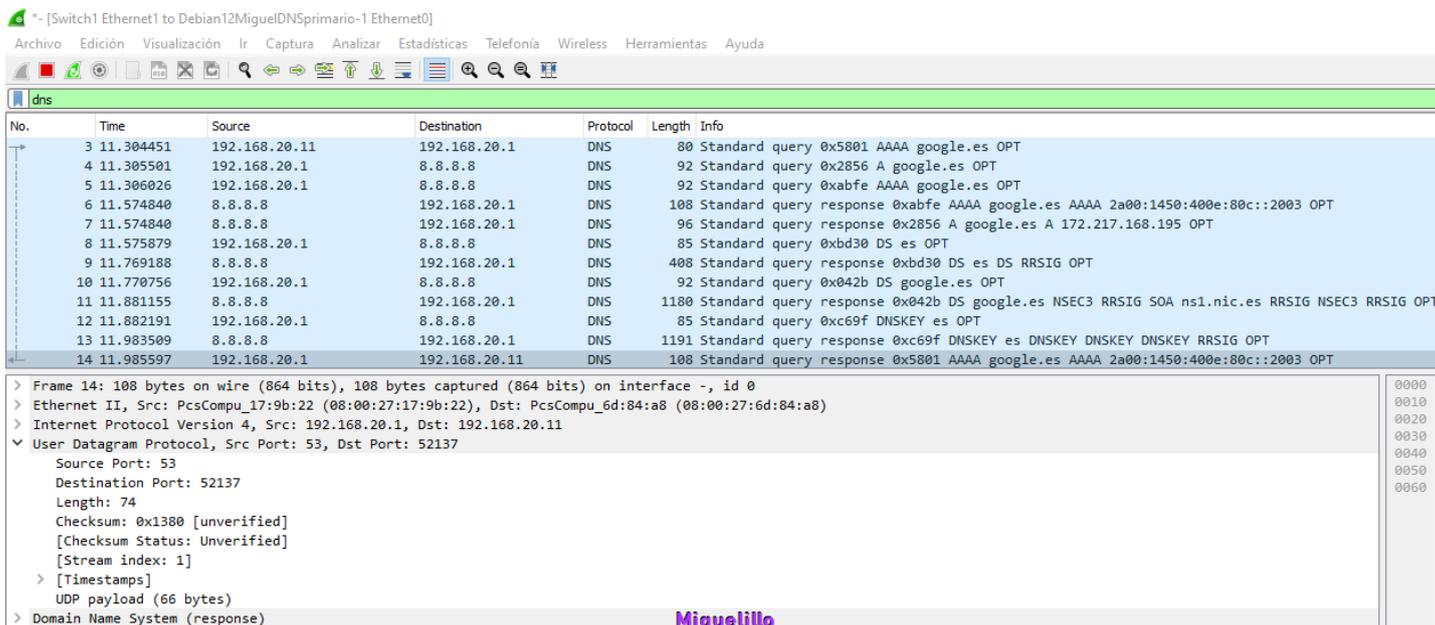
The screenshot shows a terminal window titled 'usuario@usuario-miguel-SRI: ~' with the file '/etc/resolv.conf' open in nano 6.2. The configuration is as follows:

```
GNU nano 6.2 /etc/resolv.conf
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5)
# different way, replace this symlink by a static file or a different
#
# See man:systemd-resolved.service(8) for details about the supported
# operation for /etc/resolv.conf.
nameserver 192.168.20.1
options edns0 trust-ad
search .
Miguelillo
```

Comprobamos



Podemos capturar el tráfico y ver como al no conocer el nombre pregunta al reenviador en este caso el 8.8.8.8



Comprobación de caché para ello consultaré al nombre de www.youtube.com dos veces la primera vez tarda más tiempo

```

Ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Actividades Terminal
usuario@usuario-miguel-SRI:~$ dig www.youtube.com
; <<>> DiG 9.18.12-0ubuntu0.22.04.3-Ubuntu <<>> www.youtube.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59672
;; flags: qr rd ra; QUERY: 1, ANSWER: 12, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; COOKIE: 8506667c09d84adb01000000656991b38f61e4f3e36e4a83 (good)
;; QUESTION SECTION:
;www.youtube.com.                IN      A
;; ANSWER SECTION:
www.youtube.com.                88      IN      CNAME   youtube-ui.l.google.com.
youtube-ui.l.google.com.        183     IN      A       142.250.178.174
youtube-ui.l.google.com.        183     IN      A       142.250.185.14
youtube-ui.l.google.com.        183     IN      A       142.250.200.78
youtube-ui.l.google.com.        183     IN      A       142.250.201.78
youtube-ui.l.google.com.        183     IN      A       172.217.17.14
youtube-ui.l.google.com.        183     IN      A       142.250.184.14
youtube-ui.l.google.com.        183     IN      A       142.250.184.174
youtube-ui.l.google.com.        183     IN      A       142.250.200.110
youtube-ui.l.google.com.        183     IN      A       216.58.215.142
youtube-ui.l.google.com.        183     IN      A       172.217.168.174
youtube-ui.l.google.com.        183     IN      A       142.250.200.142
;; Query time: 4082 msec
;; SERVER: 10.0.19.1#53(10.0.19.1) (UDP)
;; WHEN: Fri Dec 01 08:56:35 CET 2023
;; MSG SIZE rcvd: 285
Miguelillo

```

En la segunda vez vemos como tarda menos.

```

Ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Actividades Terminal
usuario@usuario-miguel-SRI:~$ dig www.youtube.com
; <<>> DiG 9.18.12-0ubuntu0.22.04.3-Ubuntu <<>> www.youtube.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 16904
;; flags: qr rd ra; QUERY: 1, ANSWER: 12, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; COOKIE: 785c61321cd000ea01000000656991ba0c49654e2c83342a (good)
;; QUESTION SECTION:
;www.youtube.com.                IN      A
;; ANSWER SECTION:
www.youtube.com.                81      IN      CNAME   youtube-ui.l.google.com.
youtube-ui.l.google.com.        176     IN      A       142.250.185.14
youtube-ui.l.google.com.        176     IN      A       172.217.168.174
youtube-ui.l.google.com.        176     IN      A       142.250.184.14
youtube-ui.l.google.com.        176     IN      A       142.250.200.110
youtube-ui.l.google.com.        176     IN      A       142.250.200.78
youtube-ui.l.google.com.        176     IN      A       142.250.184.174
youtube-ui.l.google.com.        176     IN      A       142.250.178.174
youtube-ui.l.google.com.        176     IN      A       142.250.200.142
youtube-ui.l.google.com.        176     IN      A       142.250.201.78
youtube-ui.l.google.com.        176     IN      A       172.217.17.14
youtube-ui.l.google.com.        176     IN      A       216.58.215.142
;; Query time: 4 msec
;; SERVER: 10.0.19.1#53(10.0.19.1) (UDP)
;; WHEN: Fri Dec 01 08:56:42 CET 2023
;; MSG SIZE rcvd: 285
Miguelillo

```