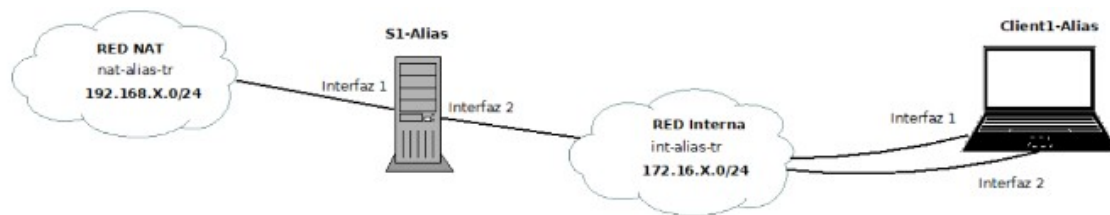


## Examen:

### T1 - RA5 - Examen - DNS Práctico

Jesús Cordero Ávila



## PARTE 1

a)

> Docker	<b>Audio</b>
> PRACTICA	Controlador de anfitrión: Predeterminado Controlador: ICH AC97
<b>RA5 - DNS - EVA</b> Corriendo	<b>Red</b>
	Adaptador 1: Intel PRO/1000 MT Desktop (Red interna, «jccordero») Adaptador 2: Intel PRO/1000 MT Desktop (Red interna, «cordero»)
<b>RA5 - DNS2 - EVA</b> Corriendo	<b>USB</b>
	Controlador USB: OHCI, EHCI
> PRACTICA	Controlador de anfitrión: Predeterminado Controlador: ICH AC97
<b>RA5 - DNS - EVA</b> Corriendo	<b>Red</b>
	Adaptador 1: Intel PRO/1000 MT Desktop (Red interna, «jccordero») Adaptador 2: Intel PRO/1000 MT Desktop (Red interna, «cordero»)
<b>RA5 - DNS2 - EVA</b> Corriendo	<b>USB</b>
	Controlador USB: OHCI, EHCI

## PARTE 2

a)

```
jccordero@server1:~$ cat /etc/netplan/00-installer-config.yaml
# This is the network config written by 'subiquity'
network:
  ethernets:
    enp0s3:
      dhcp4: false
      addresses: [172.20.1.100/24]
      nameservers:
        addresses: [172.20.1.100,172.20.1.101]
        search: [jccordero.es]
    enp0s8:
      dhcp4: false
      addresses: [172.30.1.100/24]
  version: 2
jccordero@server1:~$ sudo netplan apply

** (generate:1196): WARNING **: 15:13:36.184: Permissions for /etc/netplan/00-installer-config.yaml
are too open. Netplan configuration should NOT be accessible by others.
WARNING:root:Cannot call Open vSwitch: ovsdb-server.service is not running.

** (process:1194): WARNING **: 15:13:36.667: Permissions for /etc/netplan/00-installer-config.yaml
are too open. Netplan configuration should NOT be accessible by others.

** (process:1194): WARNING **: 15:13:36.770: Permissions for /etc/netplan/00-installer-config.yaml
are too open. Netplan configuration should NOT be accessible by others.

** (process:1194): WARNING **: 15:13:36.770: Permissions for /etc/netplan/00-installer-config.yaml
are too open. Netplan configuration should NOT be accessible by others.
jccordero@server1:~$ _
```

b)

```
jcordero@server2:~$ cat /etc/netplan/00-installer-config.yaml
# This is the network config written by 'subiquity'
network:
  ethernets:
    enp0s3:
      dhcp4: false
      addresses: [172.20.1.101/24]
    enp0s8:
      dhcp4: false
      addresses: [172.30.1.101/24]
      nameservers:
        addresses: [172.30.1.100,172.30.1.101]
        search: [cordero.es]
  version: 2
jcordero@server2:~$ sudo netplan apply

** (generate:1275): WARNING **: 15:13:49.149: Permissions for /etc/netplan/00-installer-config.yaml
are too open. Netplan configuration should NOT be accessible by others.
WARNING:root:Cannot call Open vSwitch: ovsdb-server.service is not running.

** (process:1273): WARNING **: 15:13:49.566: Permissions for /etc/netplan/00-installer-config.yaml a
re too open. Netplan configuration should NOT be accessible by others.

** (process:1273): WARNING **: 15:13:49.670: Permissions for /etc/netplan/00-installer-config.yaml a
re too open. Netplan configuration should NOT be accessible by others.

** (process:1273): WARNING **: 15:13:49.670: Permissions for /etc/netplan/00-installer-config.yaml a
re too open. Netplan configuration should NOT be accessible by others.
jcordero@server2:~$ _
```

### PARTE 3

a)

Declaración zona maestra e inversa server1:(named.conf.local de server 1)

```
jcordero@server1:/etc/bind$ cat named.conf.local
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "jcordero.es"{
    type master;
    notify yes;
    allow-transfer {172.20.1.101};
    file "/etc/bind/db.jcordero.es";
};

zone "1.20.172.in-addr.arpa"{
    type master;
    notify yes;
    allow-transfer {172.20.1.101};
    file "/etc/bind/db.1.20";
};
jcordero@server1:/etc/bind$
```

Declaración zona esclava e inversa server2(named.conf.local de server 2):

```
jcordero@server2:/etc/bind$ cat named.conf.local
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "jcordero.es"{
    type slave;
    masters {172.20.1.100;};
    allow-notify {172.20.1.100;};
    file "db.jcordero.es";
};

zone "1.20.172.in-addr.arpa"{
    type slave;
    masters {172.20.1.100;};
    allow-notify {172.20.1.100;};
    file "db.1.20";
};
jcordero@server2:/etc/bind$
```

#### Descripción zona directa server1:(db.cordero.es)

```
jcordero@server1:/etc/bind$ cat db.jcordero.es
;
; BIND data file for local loopback interface
;
$TTL      604800
$ORIGIN   jcordero.es.
@         IN      SOA     server1.jcordero.es.  jesus.cordero.iesdonana.org (
    2023121505      ; Serial
    604800          ; Refresh
    86400           ; Retry
    2419200         ; Expire
    604800 )        ; Negative Cache TTL
;
@         IN      NS      server1.jcordero.es.
@         IN      NS      server2.jcordero.es.

server1.jcordero.es.    IN      A      172.20.1.100
server2.jcordero.es.    IN      A      172.20.1.101
impresora.jcordero.es.  IN      A      172.20.1.200
correo.jcordero.es.     IN      A      172.20.1.201

www        IN      CNAME   server1
ftp        IN      CNAME   server1
printer    IN      CNAME   impresora
mail       IN      CNAME   correo
jcordero@server1:/etc/bind$
```

#### Descripción zona inversa server1:(db.1.20)

```
jcordero@server1:/etc/bind$ cat db.1.20
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
$ORIGIN   1.20.172.in-addr.arpa.
@         IN      SOA     server1.jcordero.es.  jesus.cordero.iesdonana.org. (
        2023121508      ; Serial
        604800          ; Refresh
        86400           ; Retry
        2419200         ; Expire
        604800 )        ; Negative Cache TTL
;
@         IN      NS      server1.jcordero.es.
@         IN      NS      server2.jcordero.es.

100.1.20.172.in-addr.arpa.    IN      PTR      server1.jcordero.es.
101                          IN      PTR      server2.jcordero.es.
100.1.20.172.in-addr.arpa.    IN      PTR      www.jcordero.es.
100.1.20.172.in-addr.arpa.    IN      PTR      ftp.jcordero.es.
200                          IN      PTR      impresora.jcordero.es.
200                          IN      PTR      printer.jcordero.es.
201                          IN      PTR      correo.jcordero.es.
201                          IN      PTR      mail.jcordero.es.

jcordero@server1:/etc/bind$ _
```

#### PARTE 4

a)

```
jcordero@server1:/etc/bind$ host www.jcordero.es
www.jcordero.es is an alias for server1.jcordero.es.
server1.jcordero.es has address 172.20.1.100
jcordero@server1:/etc/bind$
```

b)

```
jcordero@server1:/etc/bind$ nslookup server2.jcordero.es 172.20.1.101
Server:      172.20.1.101
Address:     172.20.1.101#53

Name:   server2.jcordero.es
Address: 172.20.1.101

jcordero@server1:/etc/bind$
```

c)

```
jcordero@server1:/etc/bind$ dig correo.jcordero.es @172.20.1.101

; <>> DiG 9.18.18-0ubuntu0.22.04.1-Ubuntu <>> correo.jcordero.es @172.20.1.101
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 4782
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 10d94a9566956afc01000000657c7b25195fe1b9f054970c (good)
;; QUESTION SECTION:
;correo.jcordero.es.                IN      A

;; ANSWER SECTION:
correo.jcordero.es.        604800  IN      A      172.20.1.201

;; Query time: 0 msec
;; SERVER: 172.20.1.101#53(172.20.1.101) (UDP)
;; WHEN: Fri Dec 15 16:13:25 UTC 2023
;; MSG SIZE rcvd: 91

jcordero@server1:/etc/bind$ _
```

d)

```
jcordero@server1:/etc/bind$ host 172.20.1.100 172.20.1.101
Using domain server:
Name: 172.20.1.101
Address: 172.20.1.101#53
Aliases:

100.1.20.172.in-addr.arpa domain name pointer server1.jcordero.es.
100.1.20.172.in-addr.arpa domain name pointer www.jcordero.es.
100.1.20.172.in-addr.arpa domain name pointer ftp.jcordero.es.
jcordero@server1:/etc/bind$
```

e)

```
jcordero@server1:/etc/bind$ nslookup 172.20.1.101 172.20.1.101
101.1.20.172.in-addr.arpa      name = server2.jcordero.es.

jcordero@server1:/etc/bind$ _
```

f)

```
jcordero@server1:/etc/bind$ dig -x 172.20.1.200

; <>> DiG 9.18.18-0ubuntu0.22.04.1-Ubuntu <>> -x 172.20.1.200
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 12295
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;200.1.20.172.in-addr.arpa.        IN      PTR

;; ANSWER SECTION:
200.1.20.172.in-addr.arpa. 604800  IN      PTR      printer.jcordero.es.
200.1.20.172.in-addr.arpa. 604800  IN      PTR      impresora.jcordero.es.

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Fri Dec 15 16:16:39 UTC 2023
;; MSG SIZE rcvd: 111

jcordero@server1:/etc/bind$
```

## PARTE 5

a)

### ARCHIVO DE DECLARACIÓN DE ZONA SERVER2.(named.conf.local)

```
jcordero@server2:/etc/bind$ cat named.conf.local
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "jcordero.es"{
    type slave;
    masters {172.20.1.100;};
    allow-notify {172.20.1.100;};
    file "db.jcordero.es";
};

zone "1.20.172.in-addr.arpa"{
    type slave;
    masters {172.20.1.100;};
    allow-notify {172.20.1.100;};
    file "db.1.20";
};

zone "cordero.es"{
    type master;
    notify yes;
    allow-transfer {172.30.1.100;};
    file "/etc/bind/db.cordero.es";
};

zone "1.30.172.in-addr.arpa"{
    type master;
    notify yes;
    allow-transfer {172.30.1.100;};
    file "/etc/bind/db.1.30";
};
jcordero@server2:/etc/bind$ _
```

### ARCHIVO DE DECLARACIÓN DE ZONA SERVER1.(named.conf.local)

```
jcordero@server1:/etc/bind$ cat named.conf.local
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "jcordero.es"{
    type master;
    notify yes;
    allow-transfer {172.20.1.101;};
    file "/etc/bind/db.jcordero.es";
};

zone "1.20.172.in-addr.arpa"{
    type master;
    notify yes;
    allow-transfer {172.20.1.101;};
    file "/etc/bind/db.1.20";
};

zone "cordero.es"{
    type slave;
    masters {172.30.1.101;};
    allow-notify {172.30.1.101;};
    file "db.cordero.es";
};

zone "1.30.172.in-addr.arpa"{
    type slave;
    masters {172.30.1.101;};
    allow-notify {172.30.1.101;};
    file "db.1.30";
};
jcordero@server1:/etc/bind$ _
```

### Descripción zona directa server2:(db.cordero.es)

```
jccordero@server2:/etc/bind$ cat db.cordero.es
;
; BIND data file for local loopback interface
;
$TTL      604800
$ORIGIN    cordero.es.
@          IN      SOA      server2.cordero.es.  jesus.cordero.iesdonana.org. (
                                2023121503      ; Serial
                                604800           ; Refresh
                                86400            ; Retry
                                2419200          ; Expire
                                604800 )         ; Negative Cache TTL
;
@          IN      NS       server2.cordero.es.
@          IN      NS       server1.cordero.es.

server2    IN      A        172.30.1.101
server1    IN      A        172.30.1.100
mail       IN      A        172.30.1.200

www.cordero.es.    IN      CNAME   server2.cordero.es.
myweb.cordero.es.  IN      CNAME   server2.cordero.es.
jccordero@server2:/etc/bind$ _
```

### Descripción zona inversa server2:

```
jccordero@server2:/etc/bind$ cat db.1.30
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
$ORIGIN    1.30.172.in-addr.arpa.
@          IN      SOA      server2.cordero.es.  jesus.cordero.iesdonana.org. (
                                2023121505      ; Serial
                                604800           ; Refresh
                                86400            ; Retry
                                2419200          ; Expire
                                604800 )         ; Negative Cache TTL
;
@          IN      NS       server2.cordero.es.
@          IN      NS       server1.cordero.es.

101.1.30.172.in-addr.arpa.    IN      PTR      server2.cordero.es.
101.1.30.172.in-addr.arpa.    IN      PTR      www.cordero.es.
101.1.30.172.in-addr.arpa.    IN      PTR      myweb.cordero.es.
101.1.30.172.in-addr.arpa.    IN      PTR      myweb.cordero.es.
100                            IN      PTR      server1.cordero.es.
200                            IN      PTR      mail.cordero.es.
jccordero@server2:/etc/bind$ _
```

### PARTE 6

a)

```
jccordero@server2:/etc/bind$ host myweb.cordero.es
myweb.cordero.es is an alias for server2.cordero.es.
server2.cordero.es has address 172.30.1.101
jccordero@server2:/etc/bind$ _
```



b)

```
jccordero@server2:/etc/bind$ dig server1.cordero.es 172.30.1.101

; <<> DiG 9.18.18-0ubuntu0.22.04.1-Ubuntu <<> server1.cordero.es 172.30.1.101
; global options: +cmd
; Got answer:
; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 18300
; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
; QUESTION SECTION:
;server1.cordero.es.                IN      A

; ANSWER SECTION:
server1.cordero.es.        604800 IN      A      172.30.1.100

; Query time: 0 msec
; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
; WHEN: Fri Dec 15 17:07:04 UTC 2023
; MSG SIZE rcvd: 63

; Got answer:
; ->>HEADER<<- opcode: QUERY, status: SERVFAIL, id: 60324
; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1

; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
; QUESTION SECTION:
;172.30.1.101.                      IN      A

; Query time: 47 msec
; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
; WHEN: Fri Dec 15 17:07:04 UTC 2023
; MSG SIZE rcvd: 41

jccordero@server2:/etc/bind$
```

c)

```
jccordero@server2:/etc/bind$ nslookup www.cordero.es 172.30.1.101
Server:                172.30.1.101
Address:               172.30.1.101#53

www.cordero.es  canonical name = server2.cordero.es.
Name:   server2.cordero.es
Address: 172.30.1.101

jccordero@server2:/etc/bind$ _
```

d)

```
jccordero@server2:/etc/bind$ host 172.30.1.100 172.30.1.101
Using domain server:
Name: 172.30.1.101
Address: 172.30.1.101#53
Aliases:

100.1.30.172.in-addr.arpa domain name pointer server1.cordero.es.
jccordero@server2:/etc/bind$ _
```

e)

```
jccordero@server2:/etc/bind$ nslookup 172.30.1.101 172.30.1.101
101.1.30.172.in-addr.arpa      name = myweb.cordero.es.
101.1.30.172.in-addr.arpa      name = www.cordero.es.
101.1.30.172.in-addr.arpa      name = server2.cordero.es.

jccordero@server2:/etc/bind$
```

f)

```
jcordero@server2:/etc/bind$ dig -x 172.30.1.200

; <<>> DiG 9.18.18-0ubuntu0.22.04.1-Ubuntu <<>> -x 172.30.1.200
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 22294
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;200.1.30.172.in-addr.arpa.      IN      PTR

;; ANSWER SECTION:
200.1.30.172.in-addr.arpa. 604800 IN      PTR      mail.cordero.es.

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Fri Dec 15 16:54:33 UTC 2023
;; MSG SIZE rcvd: 83

jcordero@server2:/etc/bind$
```

## PARTE 7

Al declarar la zona directa no habría ninguna diferencia de como sería con varias redes, pero a la hora de trabajar con las zonas inversas deberemos declarar una sola para todos los dominios, ya que esta abarcaría a toda la red.