

# Pedro Miguel Neves Martins

2021135054

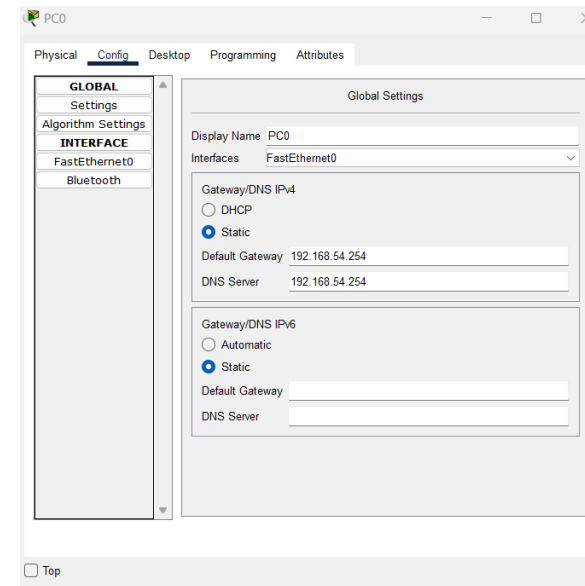
# Pergunta 1

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip host DNS_SERVER 192.168.54.1
Router(config)#ip host WEB_SERVER 192.168.54.2
Router(config)#ip host PC0 192.168.54.80
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
```

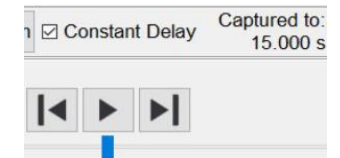
```
Router#ping WEB_SERVER

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.54.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/4/15 ms

Router#
```



	Last Device	At Device	Type
	--	PC0	DNS
PC0	Switch0		DNS
Switch0	Router0		DNS
--	PC0		DNS



O pc0 se quiser chegar ao DNS\_SERVER pelo nome dele, não é suficiente ter o comando “ip host”, uma vez que isso não corresponde a um serviço DNS. O pc0 ao pingar o DNS\_SERVER envia esse pedido para o router0, e no entanto, não vai reconhecer esse nome.

# Pergunta 1

```
Router#ping DNS_SERVER
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 192.168.54.1, timeout is 2 seconds:  
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/1 ms
```

```
Router#ping PC0
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 192.168.54.80, timeout is 2 seconds:  
.!!!!
```

```
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms
```

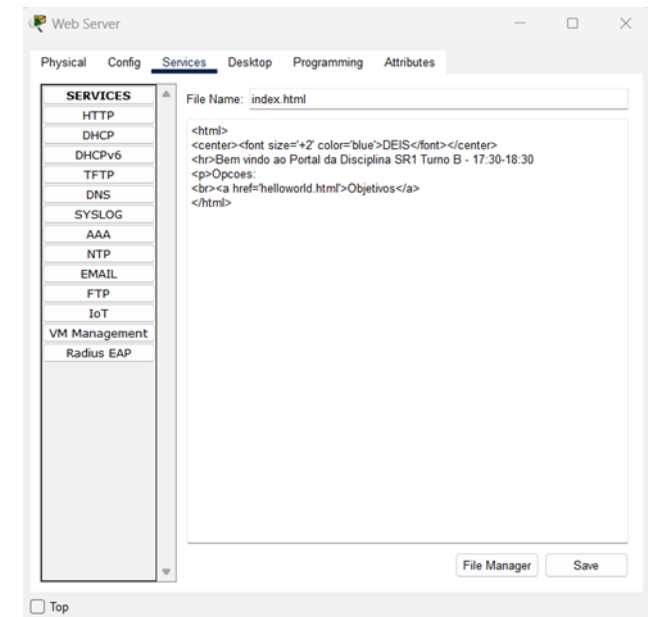
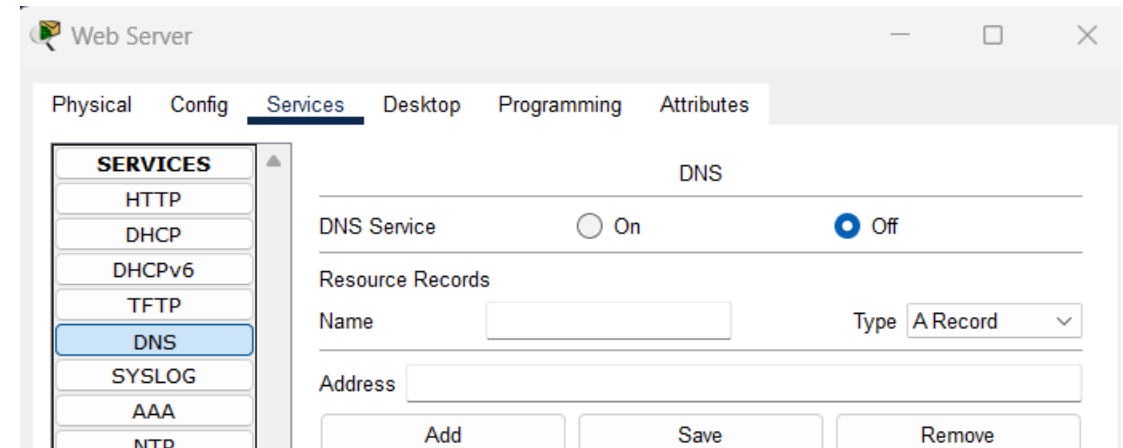
```
Router#ping PC0
```

```
Type escape sequence to abort.
```

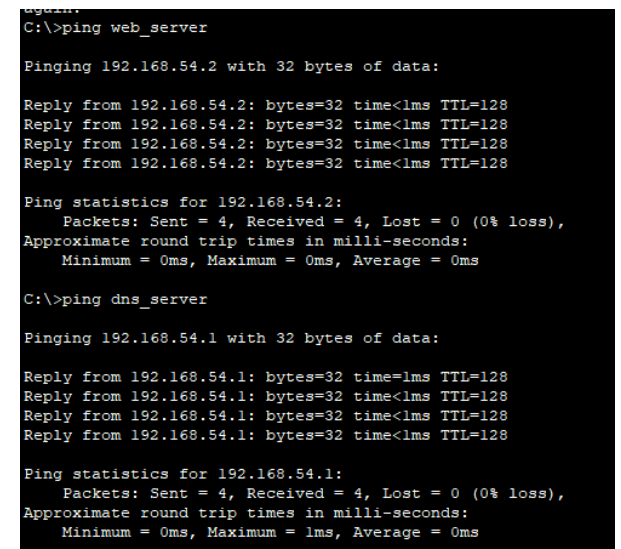
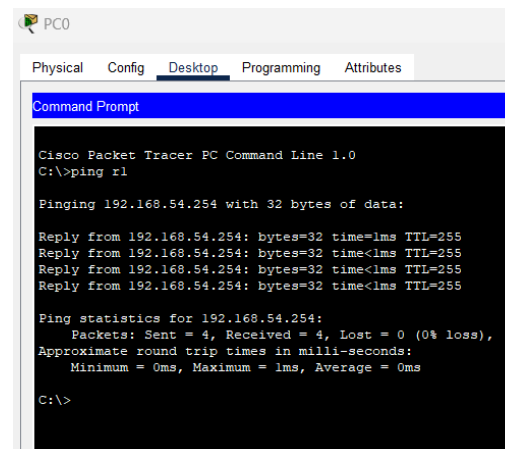
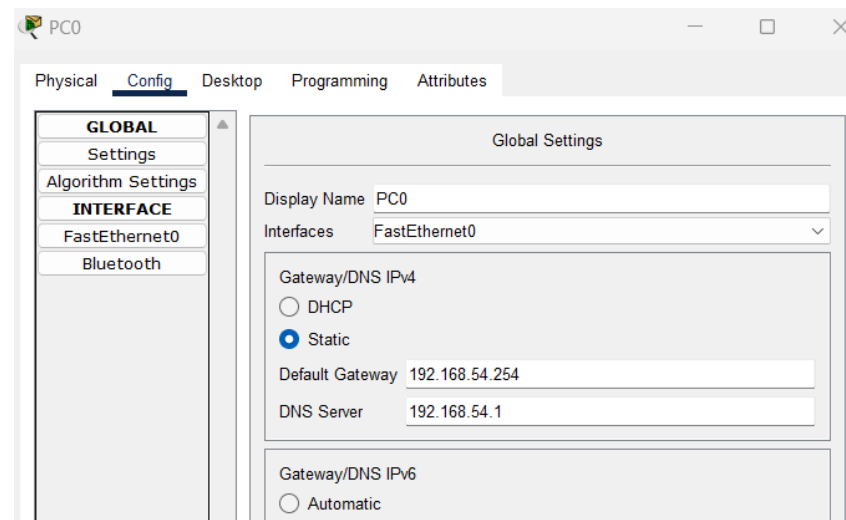
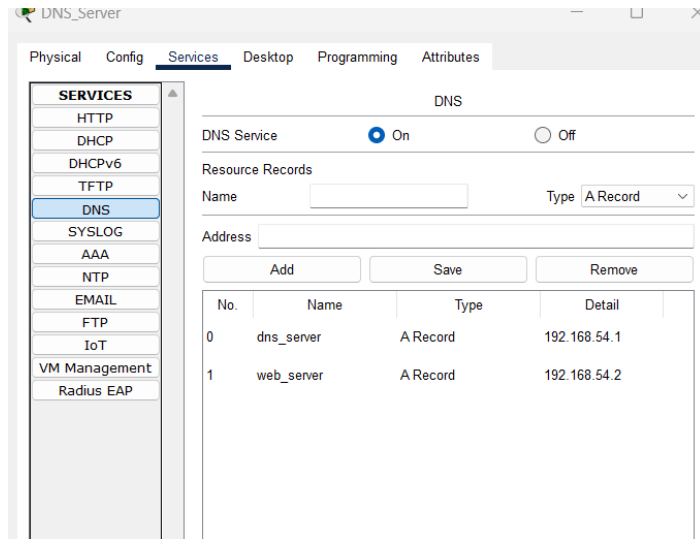
```
Sending 5, 100-byte ICMP Echos to 192.168.54.80, timeout is 2 seconds:  
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/3/17 ms
```

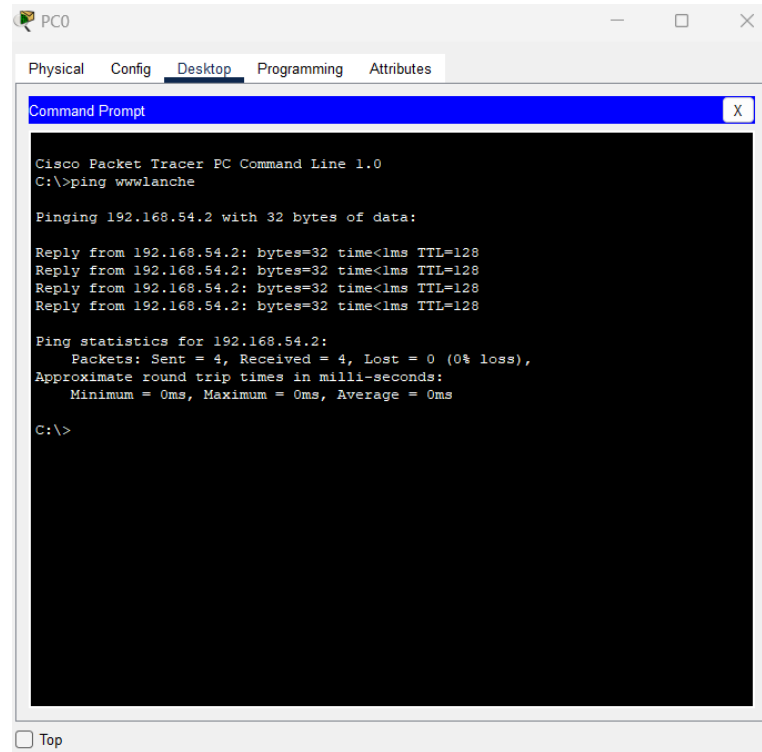
```
Router#
```



# Pergunta 2



# Pergunta 2



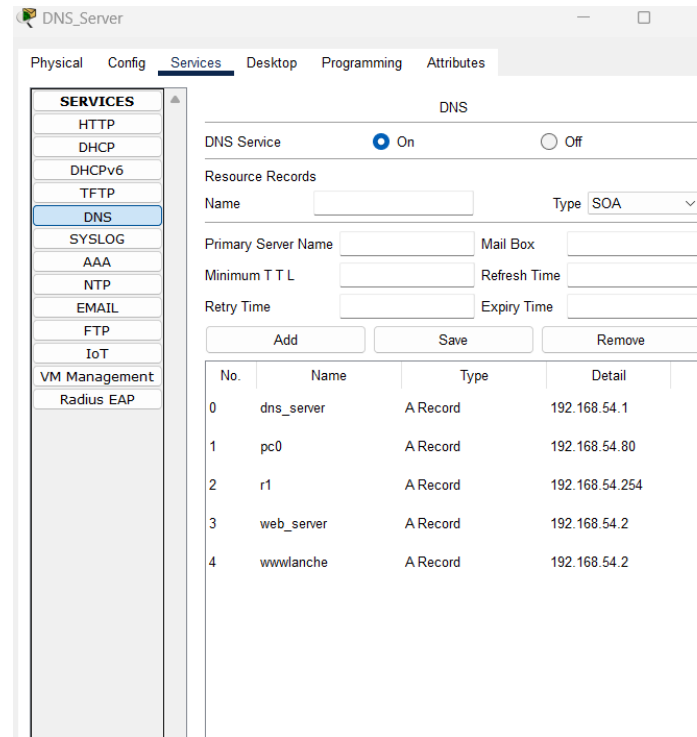
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping wwwlanche

Pinging 192.168.54.2 with 32 bytes of data:

Reply from 192.168.54.2: bytes=32 time<1ms TTL=128
Reply from 192.168.54.2: bytes=32 time<1ms TTL=128
Reply from 192.168.54.2: bytes=32 time<1ms TTL=128
Reply from 192.168.54.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.54.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```



**SERVICES**

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

**DNS**

DNS Service ☒ On ☐ Off

Resource Records

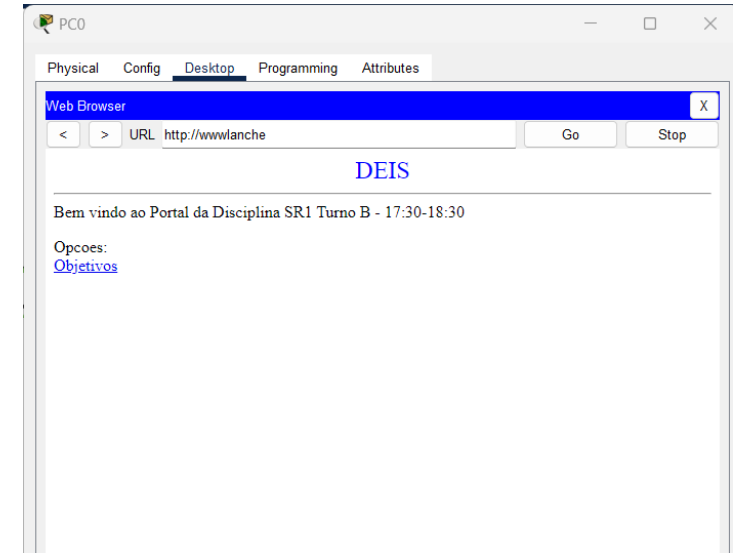
Name  Type

Primary Server Name  Mail Box

Minimum T T L  Refresh Time

Retry Time  Expiry Time

No.	Name	Type	Detail
0	dns_server	A Record	192.168.54.1
1	pc0	A Record	192.168.54.80
2	r1	A Record	192.168.54.254
3	web_server	A Record	192.168.54.2
4	wwwlanche	A Record	192.168.54.2

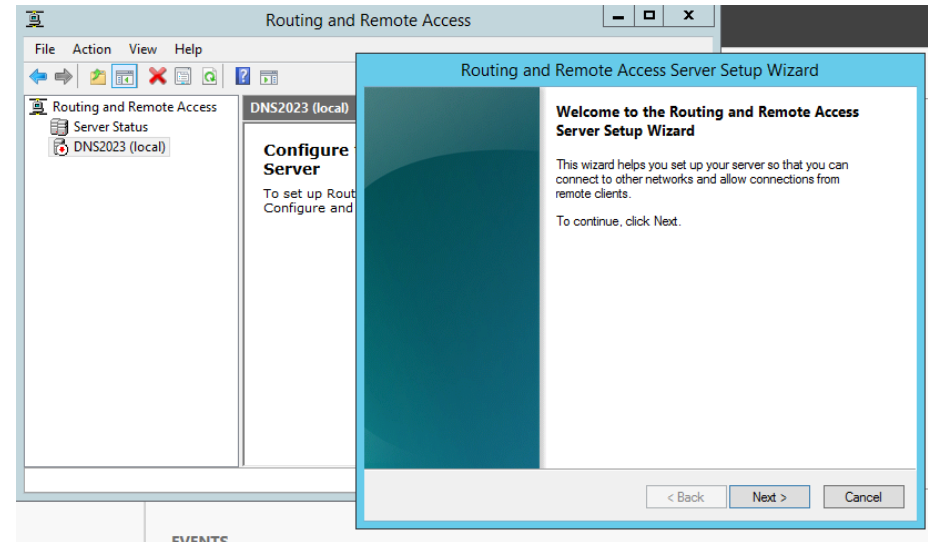
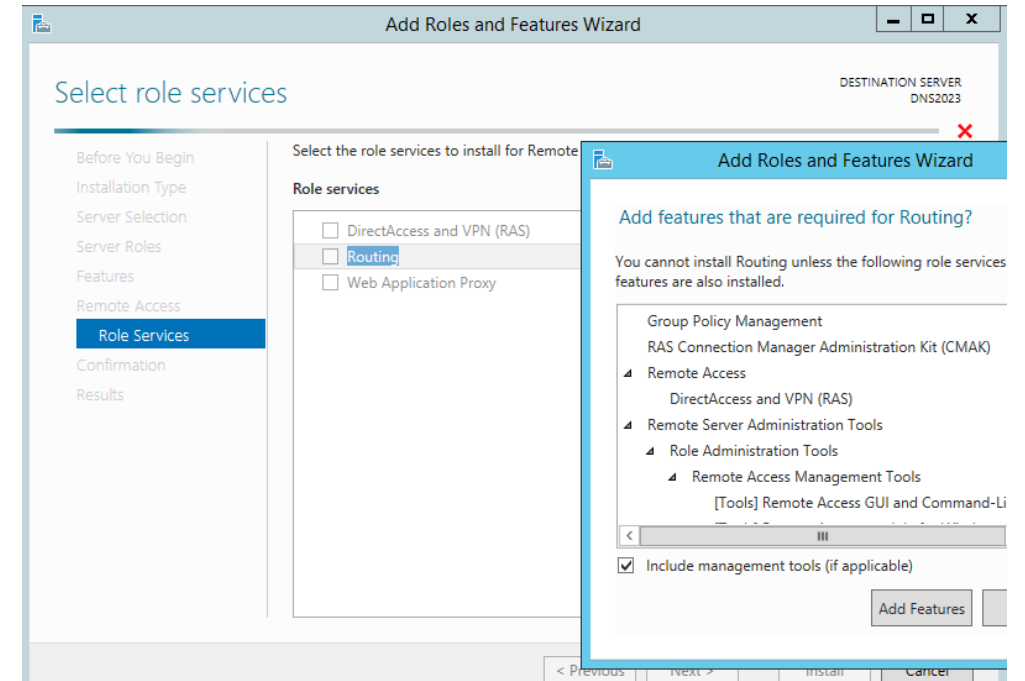
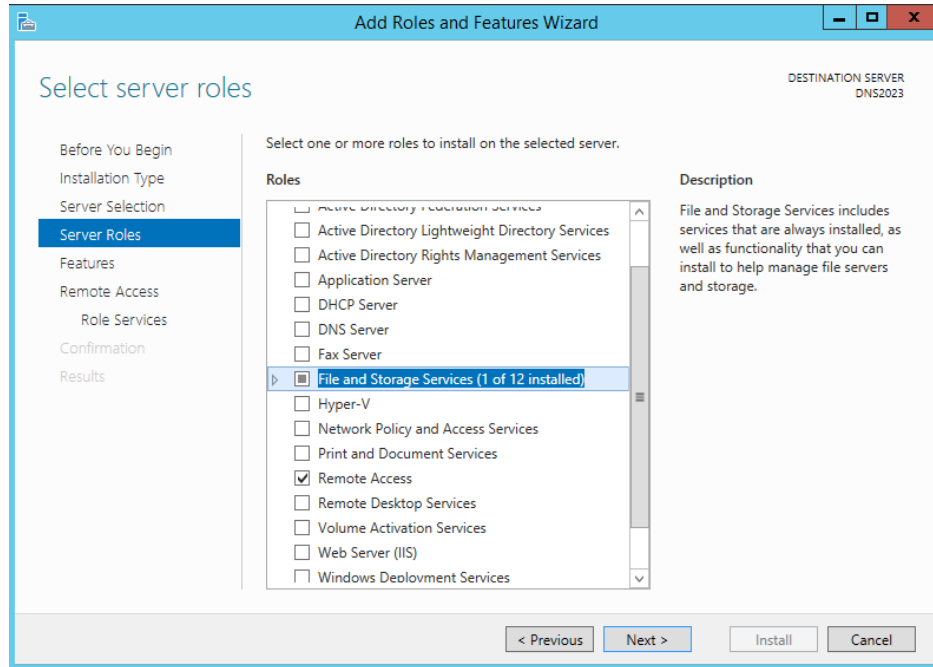


# Pergunta 2

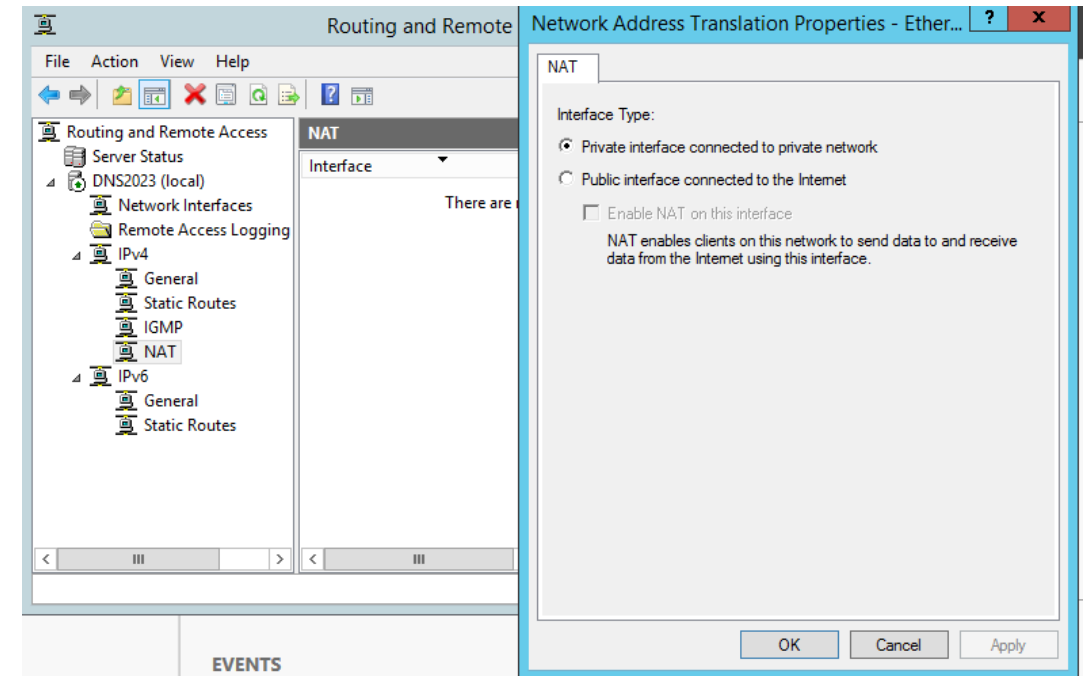
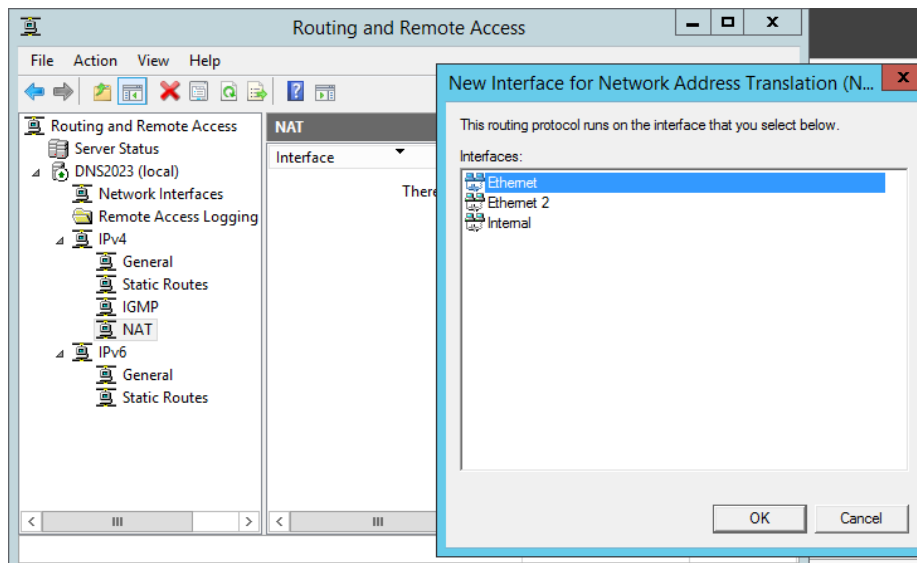
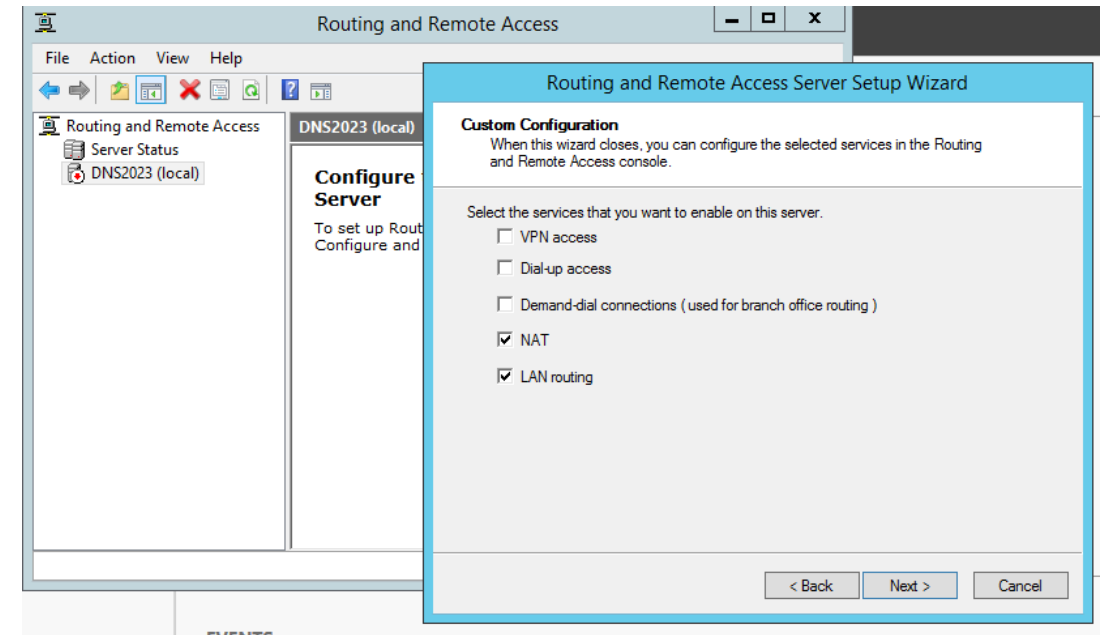
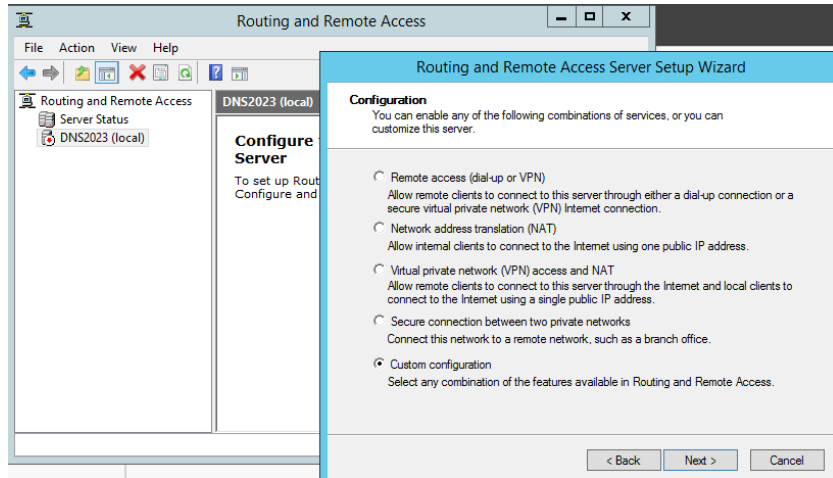
```
Router#ping web_server
Translating "web_server"...domain server (192.168.54.1)
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.54.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

Router#
```

# Pergunta 3

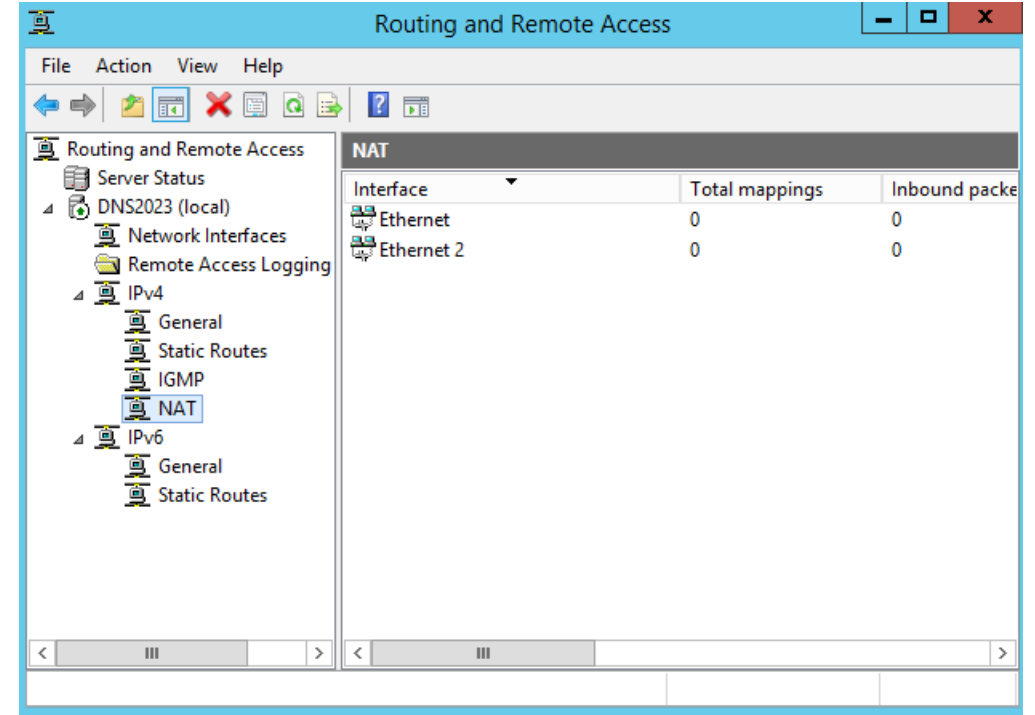
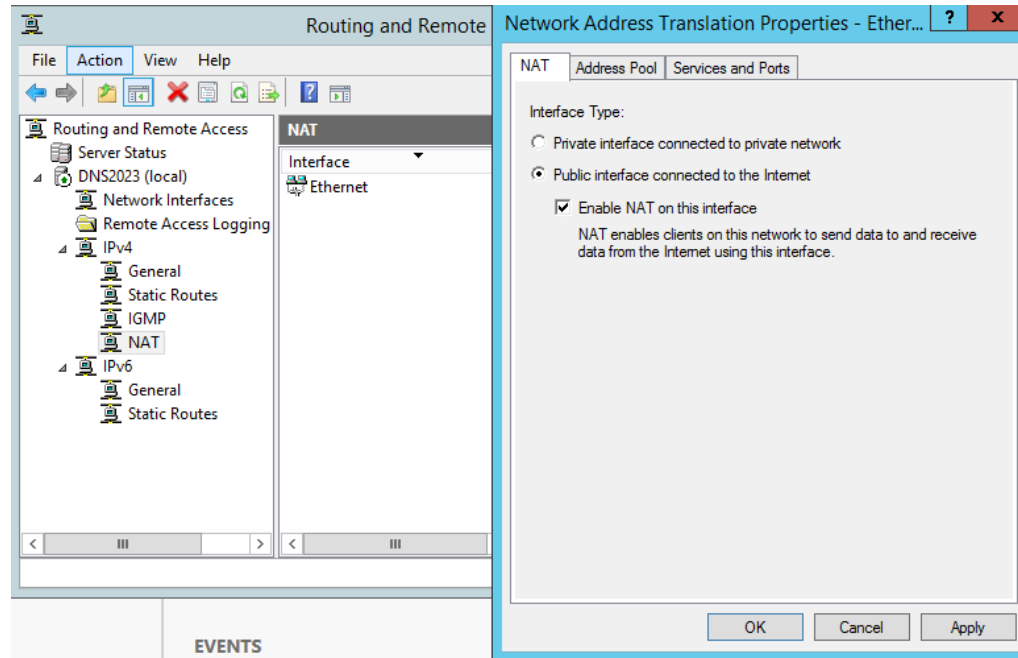


# Pergunta 3





# Pergunta 3



- Ethernet -> internal network
- Ethernet 2 -> NAT

# Pergunta 3

```
C:\Users\WK01>ping isec.pt

Pinging isec.pt [193.137.78.72] with 32 bytes of data:
Reply from 193.137.78.72: bytes=32 time=4ms TTL=61
Reply from 193.137.78.72: bytes=32 time=3ms TTL=61
Reply from 193.137.78.72: bytes=32 time=8ms TTL=61
Reply from 193.137.78.72: bytes=32 time=4ms TTL=61

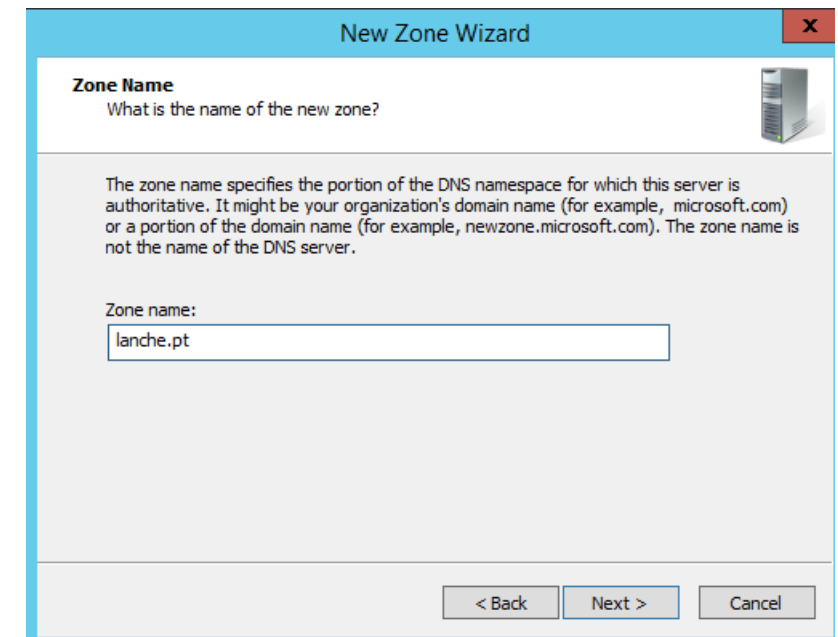
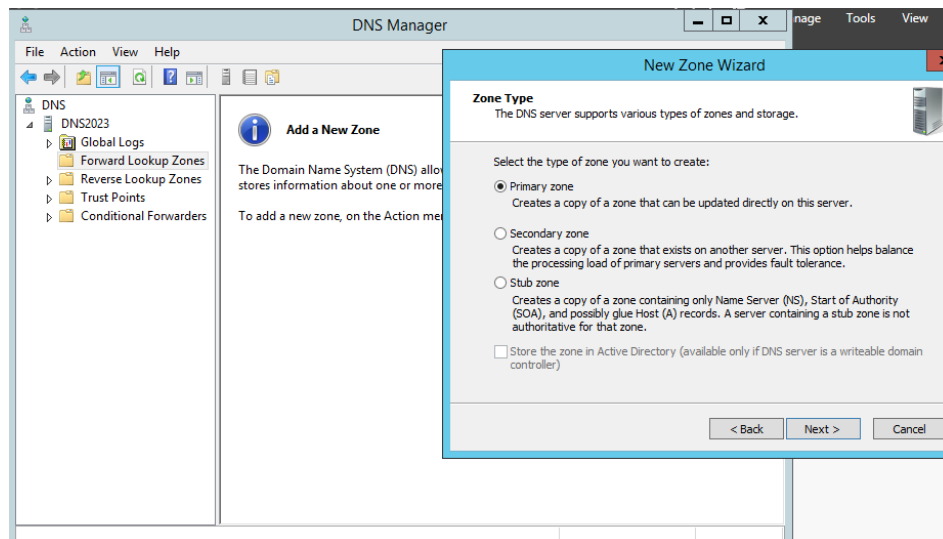
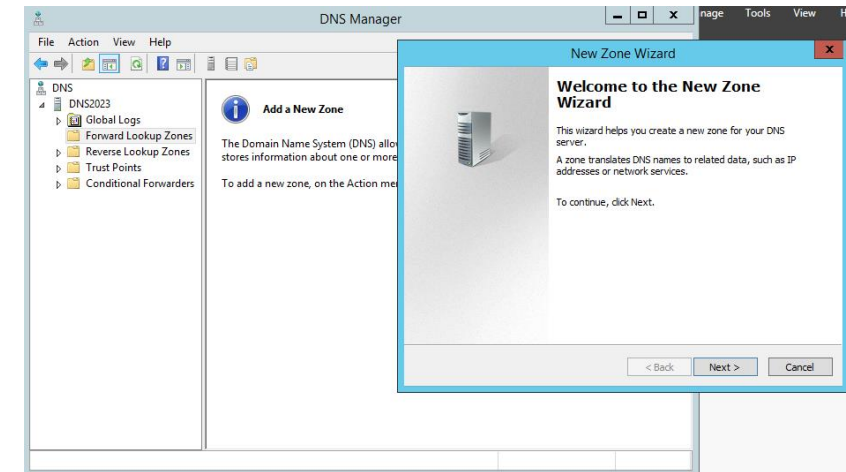
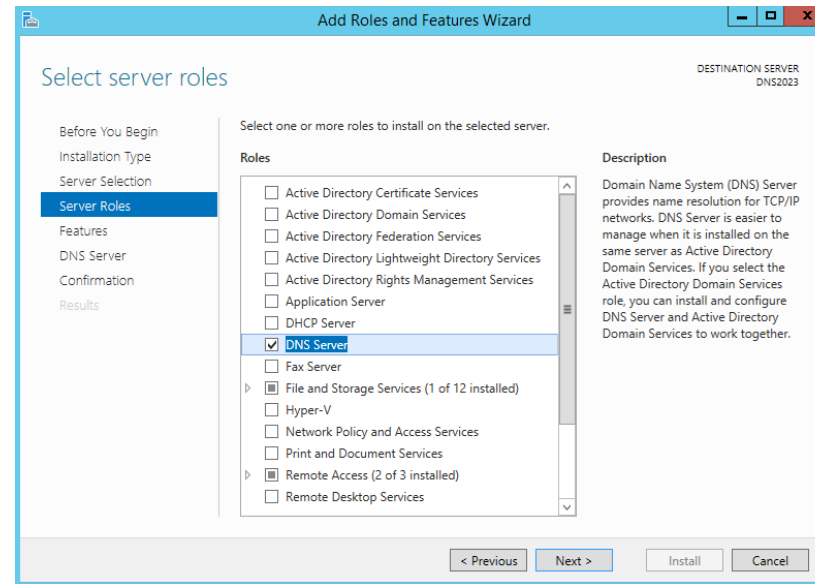
Ping statistics for 193.137.78.72:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 8ms, Average = 4ms
```



The screenshot shows a web browser window with the URL `isec.pt/PT/Default.aspx`. The page features the ISEC logo (Politécnico de Coimbra) and a large banner titled "Convívio ISEC" with a date of "3 de maio'23". Below the banner, three statistics are displayed:

Statistic	Value
70% DE ALUNOS EMPREGADOS ANTES DE CONCLUIR O CURSO	70% DE ALUNOS EMPREGADOS ANTES DE CONCLUIR O CURSO
98% DE ALUNOS EMPREGADOS ATÉ 6 MESES APÓS A	98% DE ALUNOS EMPREGADOS ATÉ 6 MESES APÓS A
90% DE ALUNOS DE 2º CICLO EMPREGADOS NA ÁREA DE	90% DE ALUNOS DE 2º CICLO EMPREGADOS NA ÁREA DE

# Pergunta 4



# Pergunta 4

**Edit Forwarders**

IP addresses of forwarding servers:

IP Address	Server FQDN	Validated
<a href="#">Click here to add an IP Address or DNS Name&gt;</a>		
8.8.8.8	dns.google	OK

Number of seconds before forward queries time out: 3

The server FQDN will not be available if the appropriate reverse lookup zones and entries are not configured.

OK Cancel

**lanche.pt Properties**

Name Servers WINS Zone Transfers

General Start of Authority (SOA)

Serial number: 1 Increment

Primary server: dnslanche Browse...

Responsible person: admin.lanche.pt Browse...

Refresh interval: 15 minutes

Retry interval: 10 minutes

Expires after: 1 days

Minimum (default) TTL: 1 hours

TTL for this record: 0 :1 :0 :0 (DDDDD:HH.MM.SS)

OK Cancel Apply Help

**New Host**

Name (uses parent domain name if blank): www

Fully qualified domain name (FQDN): www.lanche.pt.

IP address: 192.168.50.15

☐ Create associated pointer (PTR) record

Add Host Cancel

# Pergunta 4

**New Resource Record** [X]

Alias (CNAME)

Alias name (uses parent domain if left blank):  
[webmail]

Fully qualified domain name (FQDN):  
[webmail.lanche.pt.]

Fully qualified domain name (FQDN) for target host:  
[www.lanche.pt] [Browse...]

[OK] [Cancel]

**New Resource Record** [X]

Alias (CNAME)

Alias name (uses parent domain if left blank):  
[moodle]

Fully qualified domain name (FQDN):  
[moodle.lanche.pt.]

Fully qualified domain name (FQDN) for target host:  
[www.lanche.pt] [Browse...]

[OK] [Cancel]

**New Host** [X]

Name (uses parent domain name if blank):  
[smtp]

Fully qualified domain name (FQDN):  
[smtp.lanche.pt.]

IP address:  
[192.168.50.50]

☐ Create associated pointer (PTR) record

[Add Host] [Cancel]

# Pergunta 4

```
C:\Users\WK01>nslookup
Default Server:  UnKnown
Address:  192.168.50.1

> webmail.lanche.pt
Server:  UnKnown
Address:  192.168.50.1

Name:    www.lanche.pt
Address:  192.168.50.15
Aliases:  webmail.lanche.pt

> moodle.lanche.pt
Server:  UnKnown
Address:  192.168.50.1

Name:    www.lanche.pt
Address:  192.168.50.15
Aliases:  moodle.lanche.pt
```

```
> publico.pt
Server:  UnKnown
Address:  192.168.50.1

Non-authoritative answer:
Name:    publico.pt
Address:  195.23.67.18

> set q=ptr
> publico.pt
Server:  UnKnown
Address:  192.168.50.1

publico.pt
        primary name server = dns.publico.pt
        responsible mail addr = it.publico.pt
        serial = 2023041101
        refresh = 1800 (30 mins)
        retry = 600 (10 mins)
        expire = 604800 (7 days)
        default TTL = 900 (15 mins)
>
```

```
C:\Users\WK01>nslookup
Default Server:  UnKnown
Address:  192.168.50.1

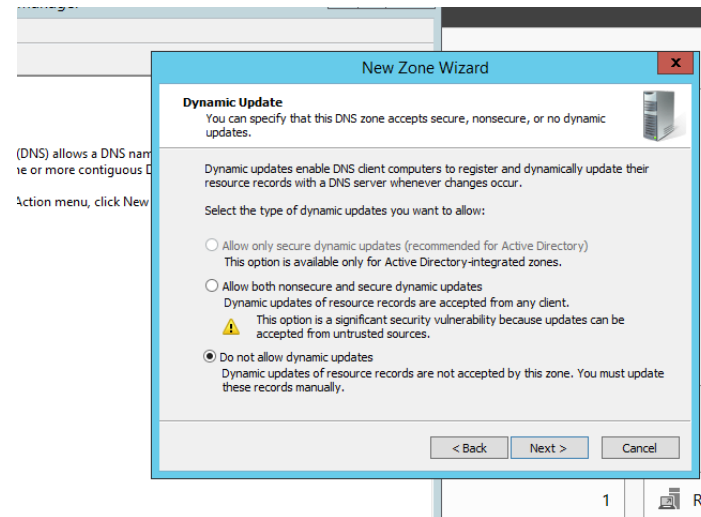
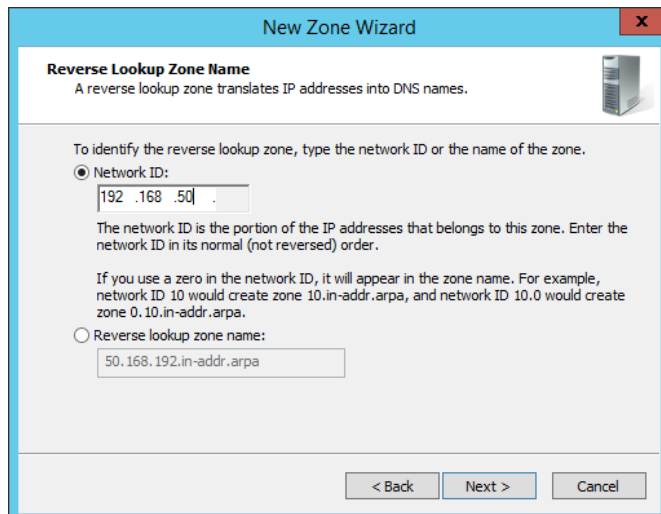
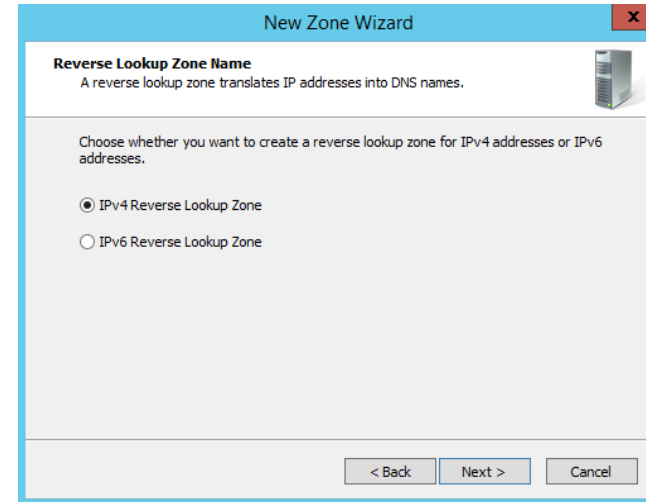
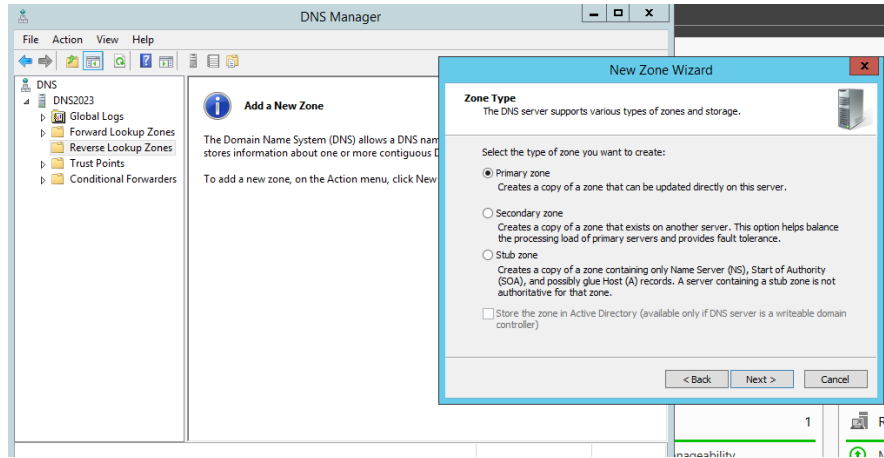
> smtp.lanche.pt
Server:  UnKnown
Address:  192.168.50.1

Name:    smtp.lanche.pt
Address:  192.168.50.50
```

The screenshot shows the 'lanche.pt Properties' dialog box with the 'Start of Authority (SOA)' tab selected. The 'General' tab is also visible. The 'Serial number' is 2023041101. The 'Primary server' is dns.publico.pt. The 'Responsible person' is it.publico.pt. The 'Refresh interval' is 1800 seconds. The 'Retry interval' is 600 seconds. The 'Expires after' is 7 days. The 'Minimum (default) TTL' is 900 seconds. The 'TTL for this record' is 0 : 1 : 0 : 0 (DDDDD:HH:MM:SS).

The screenshot shows the 'tarde.pt Properties' dialog box with the 'Name Servers' tab selected. The 'General' tab is also visible. The 'Name servers' list contains one entry: dns2023. [192.168.50.1]. The 'Add...', 'Edit...', and 'Remove' buttons are at the bottom. A note at the bottom states: '\* represents an IP address retrieved as the result of a DNS query and may not represent actual records stored on this server.'

# Pergunta 5



# Pergunta 5

192.168.50.15 Properties ? x

Pointer (PTR)

Host IP Address:  
192.168.50.15

Fully qualified domain name (FQDN):  
15.50.168.192.in-addr.arpa

Host name:  
www.lanche.pt Browse...

OK Cancel Apply

New Host x

Name (uses parent domain name if blank):  
crm

Fully qualified domain name (FQDN):  
crm.lanche.pt.

IP address:  
192.168.50.60

☐ Create associated pointer (PTR) record

Add Host Cancel

New Resource Record x

Pointer (PTR)

Host IP Address:  
192.168.50.60

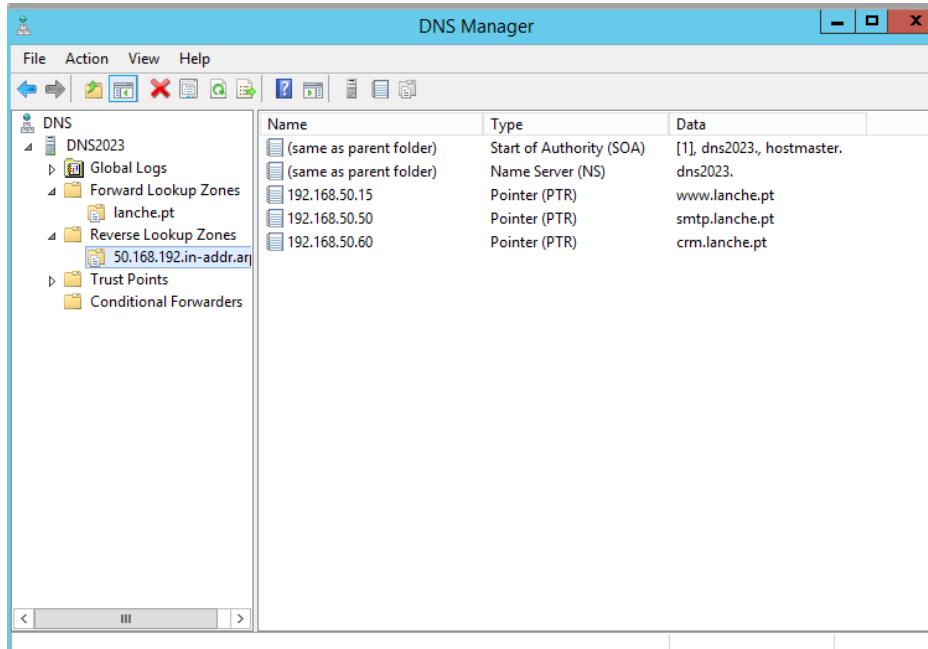
Fully qualified domain name (FQDN):  
60.50.168.192.in-addr.arpa

Host name:  
crm.lanche.pt Browse...

OK Cancel



# Pergunta 5



```
C:\Users\WK01>nslookup
Default Server: UnKnown
Address: 192.168.50.1

> set q=ptr
> crm.lanche.pt
Server: UnKnown
Address: 192.168.50.1

lanche.pt
    primary name server = dnslanche
    responsible mail addr = admin.lanche.pt
    serial = 10
    refresh = 900 (15 mins)
    retry = 600 (10 mins)
    expire = 86400 (1 day)
    default TTL = 3600 (1 hour)
> webmail.lanche.pt
Server: UnKnown
Address: 192.168.50.1

webmail.lanche.pt    canonical name = www.lanche.pt
>
```

```
> smtp.lanche.pt
Server: UnKnown
Address: 192.168.50.1

lanche.pt
    primary name server = dnslanche
    responsible mail addr = admin.lanche.pt
    serial = 10
    refresh = 900 (15 mins)
    retry = 600 (10 mins)
    expire = 86400 (1 day)
    default TTL = 3600 (1 hour)
>
```

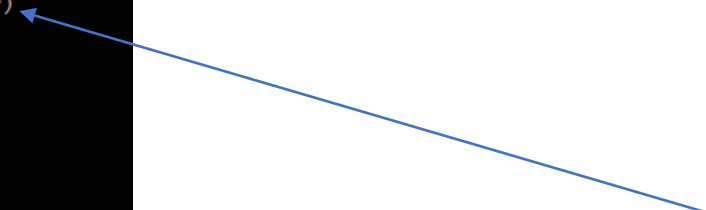
# Pergunta 6

```
> www.ipc.pt
Server: UnKnown
Address: 192.168.50.1

ipc.pt
  primary name server = ns.ipc.pt
  responsible mail addr = hostmaster
  serial = 2023010901
  refresh = 900 (15 mins)
  retry = 600 (10 mins)
  expire = 86400 (1 day)
  default TTL = 3600 (1 hour)
>
C:\Users\WK01>nslookup
Default Server: UnKnown
Address: 192.168.50.1

> www.ipc.pt
Server: UnKnown
Address: 192.168.50.1

Non-authoritative answer:
Name: www.ipc.pt
Address: 193.137.79.168
>
```



```
> www.ipc.pt
Server: UnKnown
Address: 192.168.50.1

ipc.pt
  primary name server = ns.ipc.pt
  responsible mail addr = hostmaster
  serial = 2023010901
  refresh = 900 (15 mins)
  retry = 600 (10 mins)
  expire = 86400 (1 day)
  default TTL = 3600 (1 hour)
>
```

O número serie seria: 2022052201