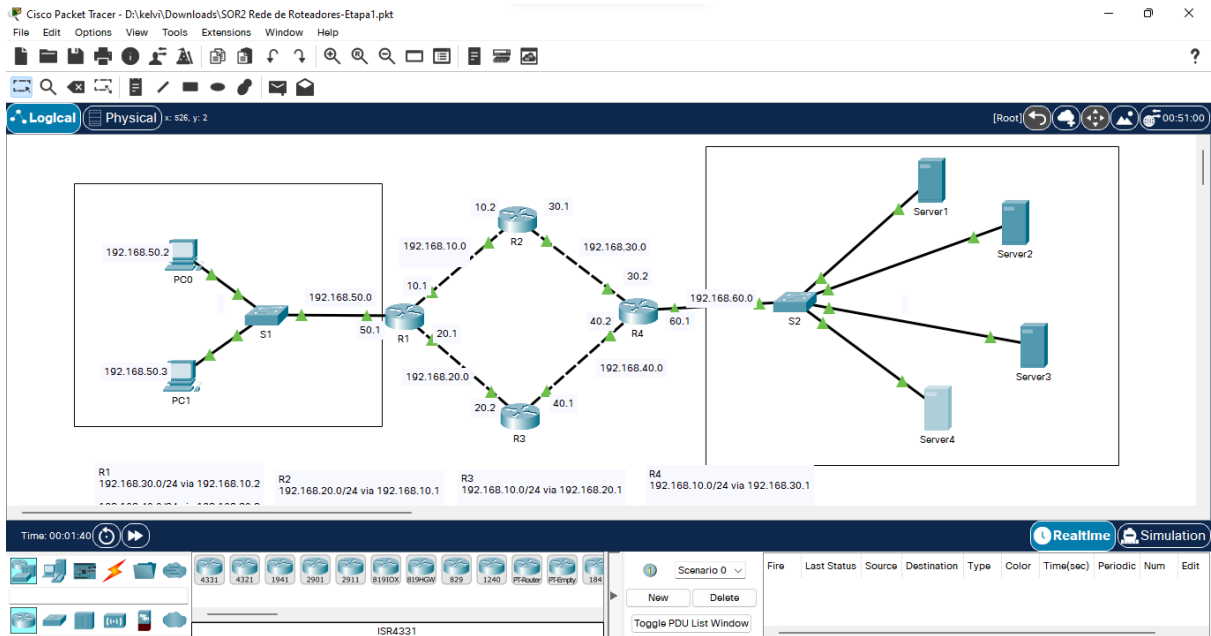



Atividade 06 - Sistemas Operacionais de Redes 2

Nome: Kelvin de Lima Rodrigues
Turma: P8 de Informática
Etapa 1



Etapa 2 - Configurando as interfaces dos roteadores

 R1

CLI

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

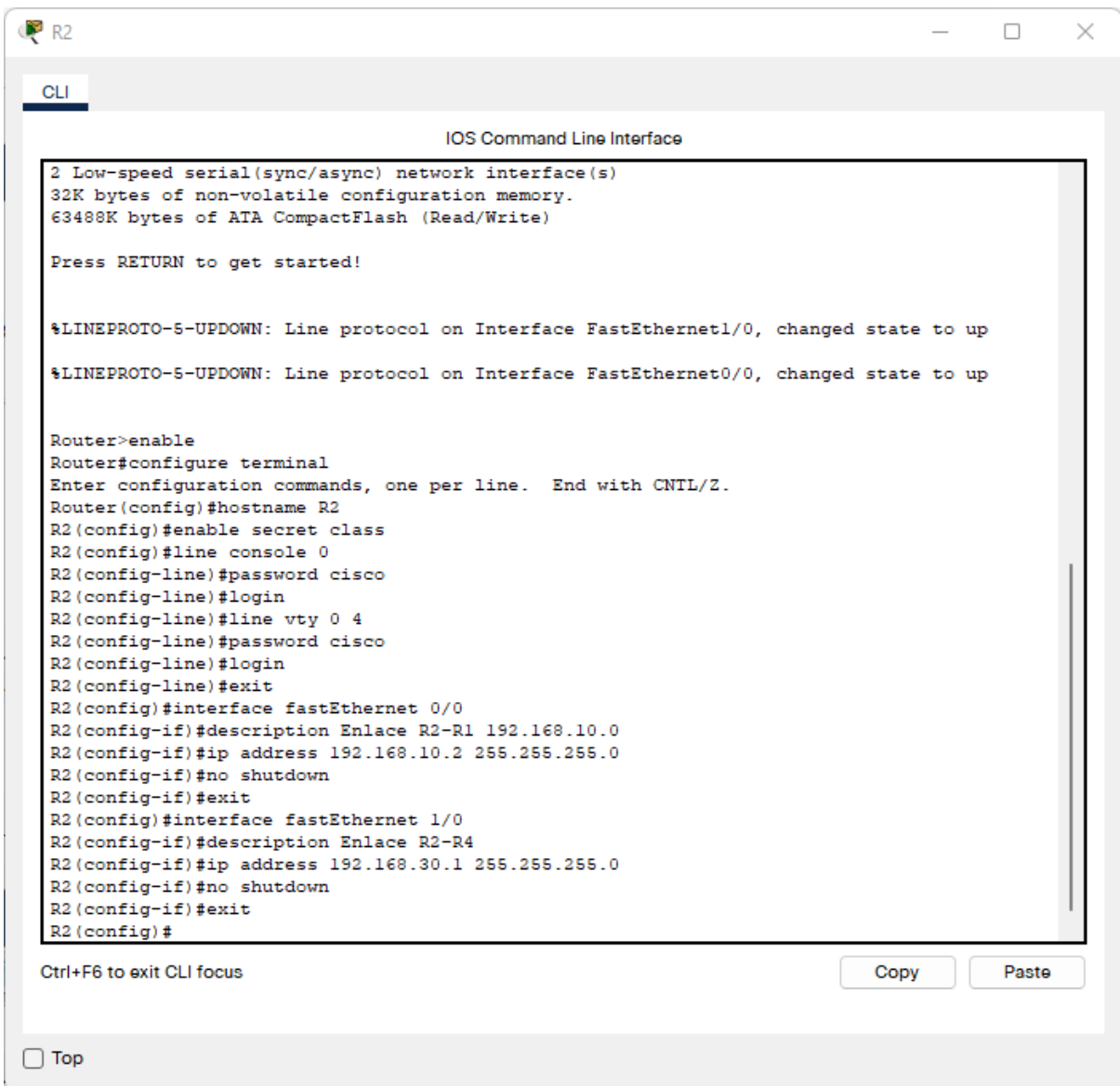
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#enable secret class
R1(config)#line console 0
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#line vty 0 4
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#exit
R1(config)#interface fastEthernet 0/0
R1(config-if)#description Enlace R1-R2 192.168.10.0
R1(config-if)#ip address 192.168.10.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface fastEthernet1/0
R1(config-if)#description Enlace R1-R3
R1(config-if)#ip address 192.168.20.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface fastEthernet 6/0
R1(config-if)#description Enlace LAN 192.168.50.0
R1(config-if)#ip address 192.168.50.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#
```

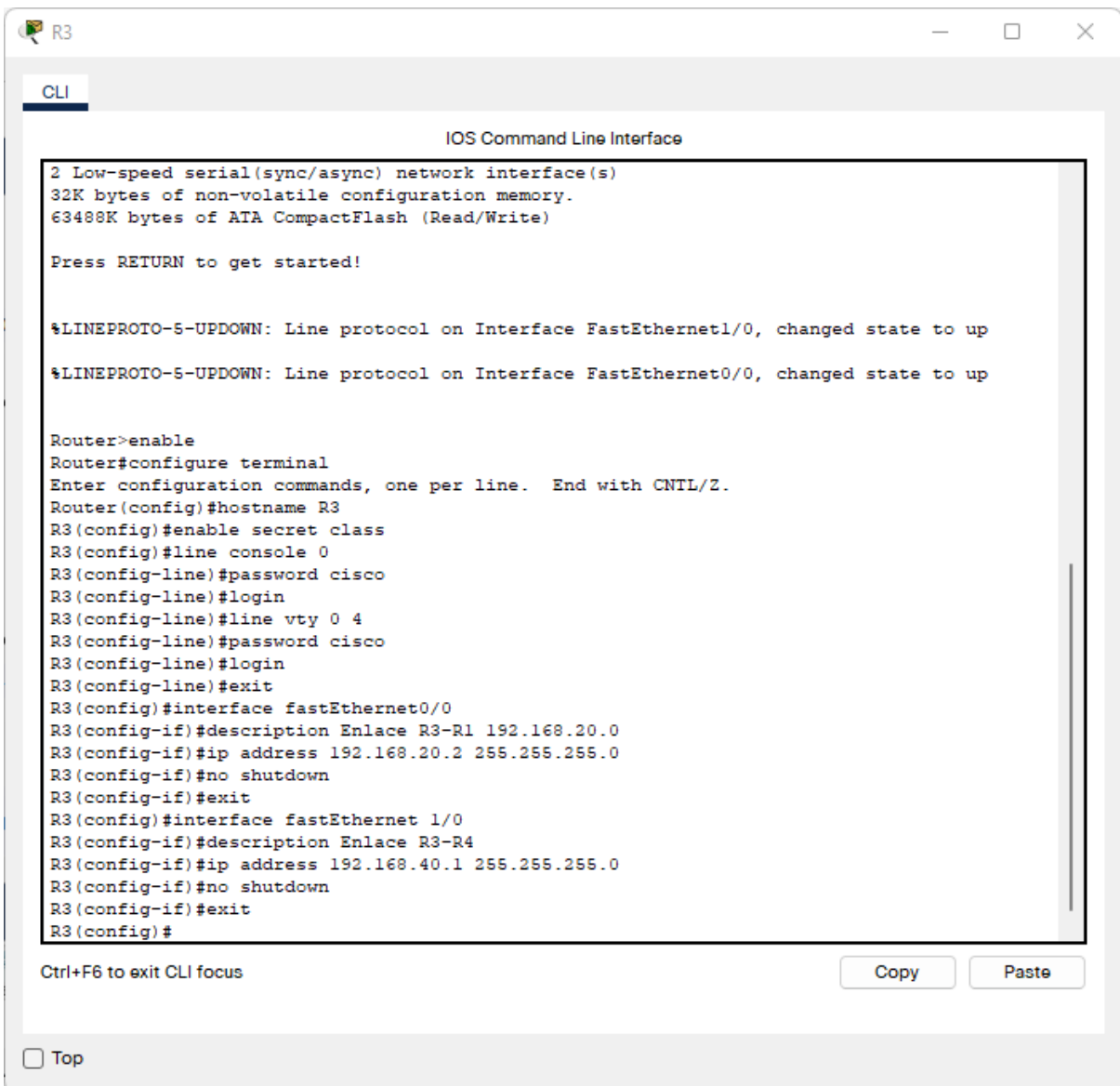
Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top





R4

CLI

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0, changed state to up

Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R4
R4(config)#enable secret class
R4(config)#line console -
      ^
% Invalid input detected at '^' marker.

R4(config)#line console 0
R4(config-line)#password cisco
R4(config-line)#login
R4(config-line)#line vty 0 4
R4(config-line)#password cisco
R4(config-line)#login
R4(config-line)#interface fastEthernet 0/0
R4(config-if)#description Enlace R4-R2 192.168.10.0
R4(config-if)#ip address 192.168.30.2 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#exit
R4(config)#interface fastEthernet 1/0
R4(config-if)#description Enlace R4-R3
R4(config-if)#ip address 192.168.40.2 255.255.255.0
R4(config-if)#
R4(config-if)#no shutdown
R4(config-if)#exit
R4(config)#interface fastEthernet 6/0
R4(config-if)#description Enlace LAN 192.168.60.0
R4(config-if)#ip address 192.168.60.1 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#exit
R4(config)#
```

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

Etapa 3 - Configurando as rotas dos roteadores

R1

CLI

IOS Command Line Interface

```
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.30.0 255.255.255.0 192.168.10.2
R1(config)#ip route 192.168.40.0 255.255.255.0 192.168.20.2
R1(config)#ip route 192.168.60.0 255.255.255.0 192.168.10.2
R1(config)#ip route 192.168.60.0 255.255.255.0 192.168.20.2
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, FastEthernet0/0
C    192.168.20.0/24 is directly connected, FastEthernet1/0
S    192.168.30.0/24 [1/0] via 192.168.10.2
S    192.168.40.0/24 [1/0] via 192.168.20.2
C    192.168.50.0/24 is directly connected, FastEthernet6/0
S    192.168.60.0/24 [1/0] via 192.168.10.2
      [1/0] via 192.168.20.2

R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

R2

CLI

IOS Command Line Interface

```
%SYS-5-CONFIG_1: Configured from console by console

R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.20.0 255.255.255.0 192.168.10.1
R2(config)#ip route 192.168.40.0 255.255.255.0 192.168.30.2
R2(config)#ip route 192.168.50.0 255.255.255.0 192.168.10.1
R2(config)#ip route 192.168.60.0 255.255.255.0 192.168.30.2
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

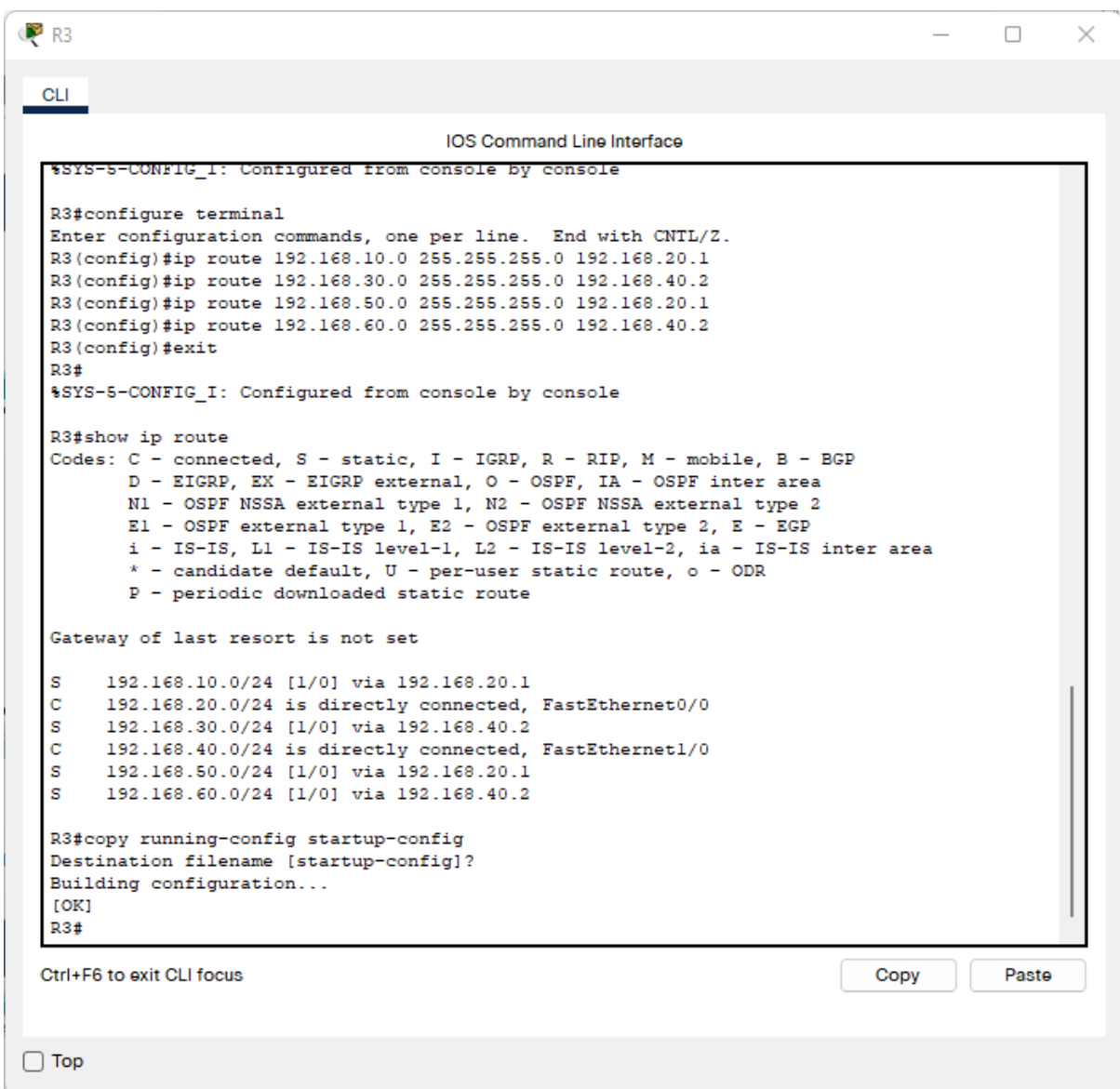
C    192.168.10.0/24 is directly connected, FastEthernet0/0
S    192.168.20.0/24 [1/0] via 192.168.10.1
C    192.168.30.0/24 is directly connected, FastEthernet1/0
S    192.168.40.0/24 [1/0] via 192.168.30.2
S    192.168.50.0/24 [1/0] via 192.168.10.1
S    192.168.60.0/24 [1/0] via 192.168.30.2

R2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2#
```

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top



R4

CLI

IOS Command Line Interface

```
R4#
%SYS-5-CONFIG_I: Configured from console by console

R4#configure
Configuring from terminal, memory, or network [terminal]? terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R4(config)#ip route 192.168.10.0 255.255.255.0 192.168.30.1
R4(config)#ip route 192.168.20.0 255.255.255.0 192.168.40.1
R4(config)#ip route 192.168.50.0 255.255.255.0 192.168.30.1
R4(config)#ip route 192.168.60.0 255.255.255.0 192.168.40.1
R4(config)#exit
R4#
%SYS-5-CONFIG_I: Configured from console by console

R4#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

S    192.168.10.0/24 [1/0] via 192.168.30.1
S    192.168.20.0/24 [1/0] via 192.168.40.1
C    192.168.30.0/24 is directly connected, FastEthernet0/0
C    192.168.40.0/24 is directly connected, FastEthernet1/0
S    192.168.50.0/24 [1/0] via 192.168.30.1
      [1/0] via 192.168.40.1
C    192.168.60.0/24 is directly connected, FastEthernet6/0

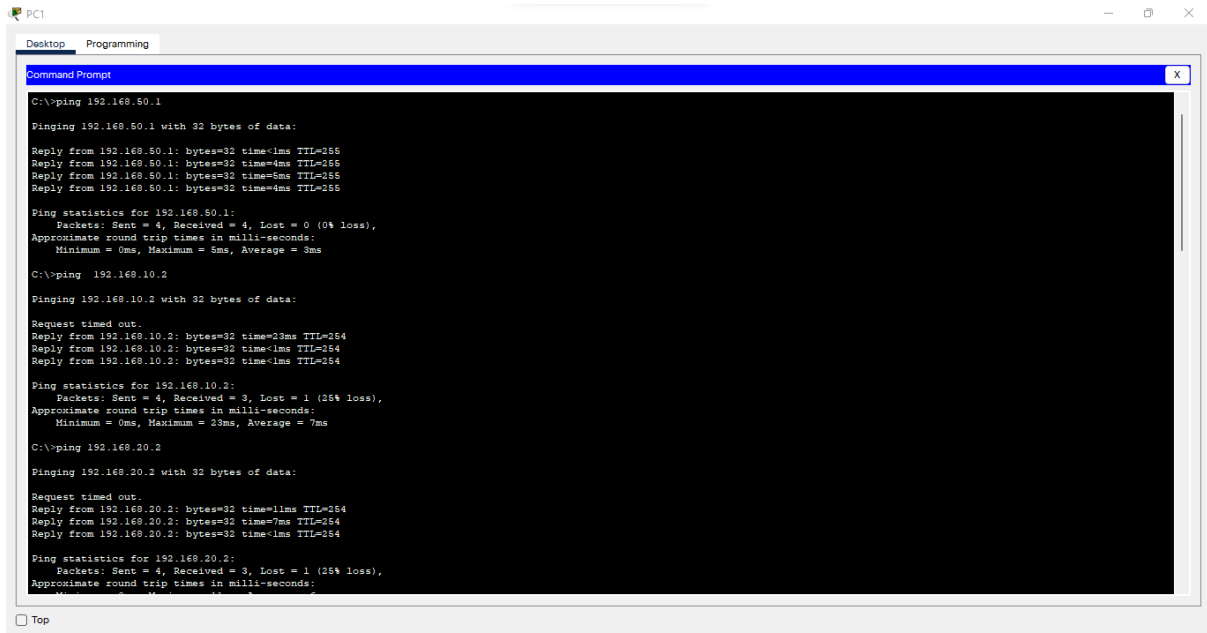
R4#copy running-config startup-config
Destination filename [startup-config]?

Ctrl+F6 to exit CLI focus
```

CopyPaste

☐ Top

Testando a conexão



```
C:\>ping 192.168.50.1

Pinging 192.168.50.1 with 32 bytes of data:

Reply from 192.168.50.1: bytes=32 time<1ms TTL=255
Reply from 192.168.50.1: bytes=32 time<4ms TTL=255
Reply from 192.168.50.1: bytes=32 time=6ms TTL=255
Reply from 192.168.50.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.50.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 6ms, Average = 3ms

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.10.2: bytes=32 time=23ms TTL=254
Reply from 192.168.10.2: bytes=32 time<1ms TTL=254
Reply from 192.168.10.2: bytes=32 time<1ms TTL=254

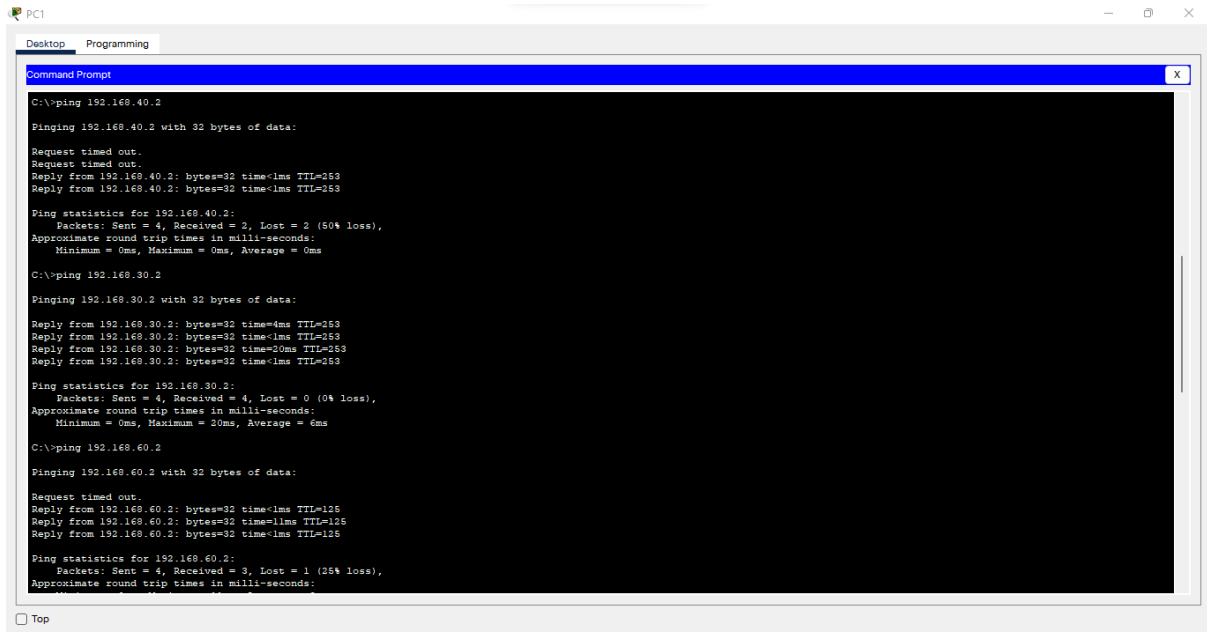
Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 23ms, Average = 7ms

C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.2: bytes=32 time<1ms TTL=254
Reply from 192.168.20.2: bytes=32 time=7ms TTL=254
Reply from 192.168.20.2: bytes=32 time<1ms TTL=254

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
```



```
C:\>ping 192.168.40.2

Pinging 192.168.40.2 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.40.2: bytes=32 time<1ms TTL=253
Reply from 192.168.40.2: bytes=32 time<1ms TTL=253

Ping statistics for 192.168.40.2:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.30.2

Pinging 192.168.30.2 with 32 bytes of data:

Reply from 192.168.30.2: bytes=32 time=4ms TTL=253
Reply from 192.168.30.2: bytes=32 time<1ms TTL=253
Reply from 192.168.30.2: bytes=32 time=20ms TTL=253
Reply from 192.168.30.2: bytes=32 time<1ms TTL=253

Ping statistics for 192.168.30.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 20ms, Average = 6ms

C:\>ping 192.168.60.2

Pinging 192.168.60.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.2: bytes=32 time<1ms TTL=125
Reply from 192.168.60.2: bytes=32 time<1ms TTL=125
Reply from 192.168.60.2: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.60.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
```

PC1

Desktop Programming

Command Prompt

```
C:\>ping 192.168.60.3

Pinging 192.168.60.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.3: bytes=32 time=1ms TTL=125
Reply from 192.168.60.3: bytes=32 time=10ms TTL=125
Reply from 192.168.60.3: bytes=32 time=1ms TTL=125

Ping statistics for 192.168.60.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 3ms

C:\>ping 192.168.60.4

Pinging 192.168.60.4 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.4: bytes=32 time=1ms TTL=125
Reply from 192.168.60.4: bytes=32 time=1ms TTL=125
Reply from 192.168.60.4: bytes=32 time=1ms TTL=125

Ping statistics for 192.168.60.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 3ms

C:\>ping 192.168.60.5

Pinging 192.168.60.5 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.60.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Top

Etapa 4 Configurando DNS

PC1

Desktop Programming

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.50.3

Subnet Mask 255.255.255.0

Default Gateway 192.168.50.1

DNS Server 192.168.60.5

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::20C:FFFE:FE8D:A301

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MDS

Username

Password

Top

PC0

Desktop Programming

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.50.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.50.1

DNS Server 192.168.60.5

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::230:F2FF:FE00:666

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MDS

Username

Password

Top

Taskbar: Windows Start, Search, Task View, File Explorer, Edge, Teams, OneDrive, Settings, Network, Volume, 21:44, 13/12/2021

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

A Record



Address

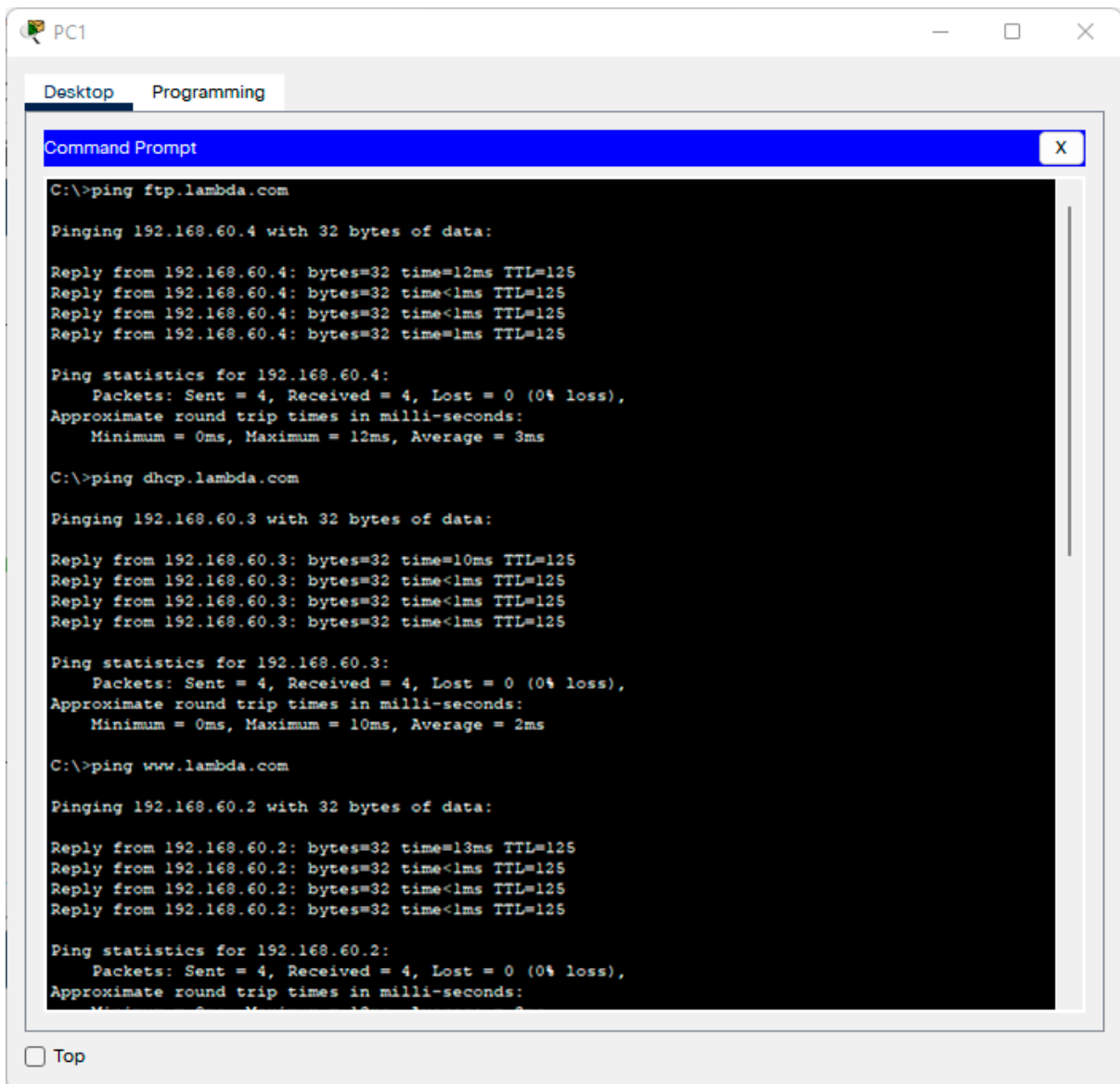
Add

Save

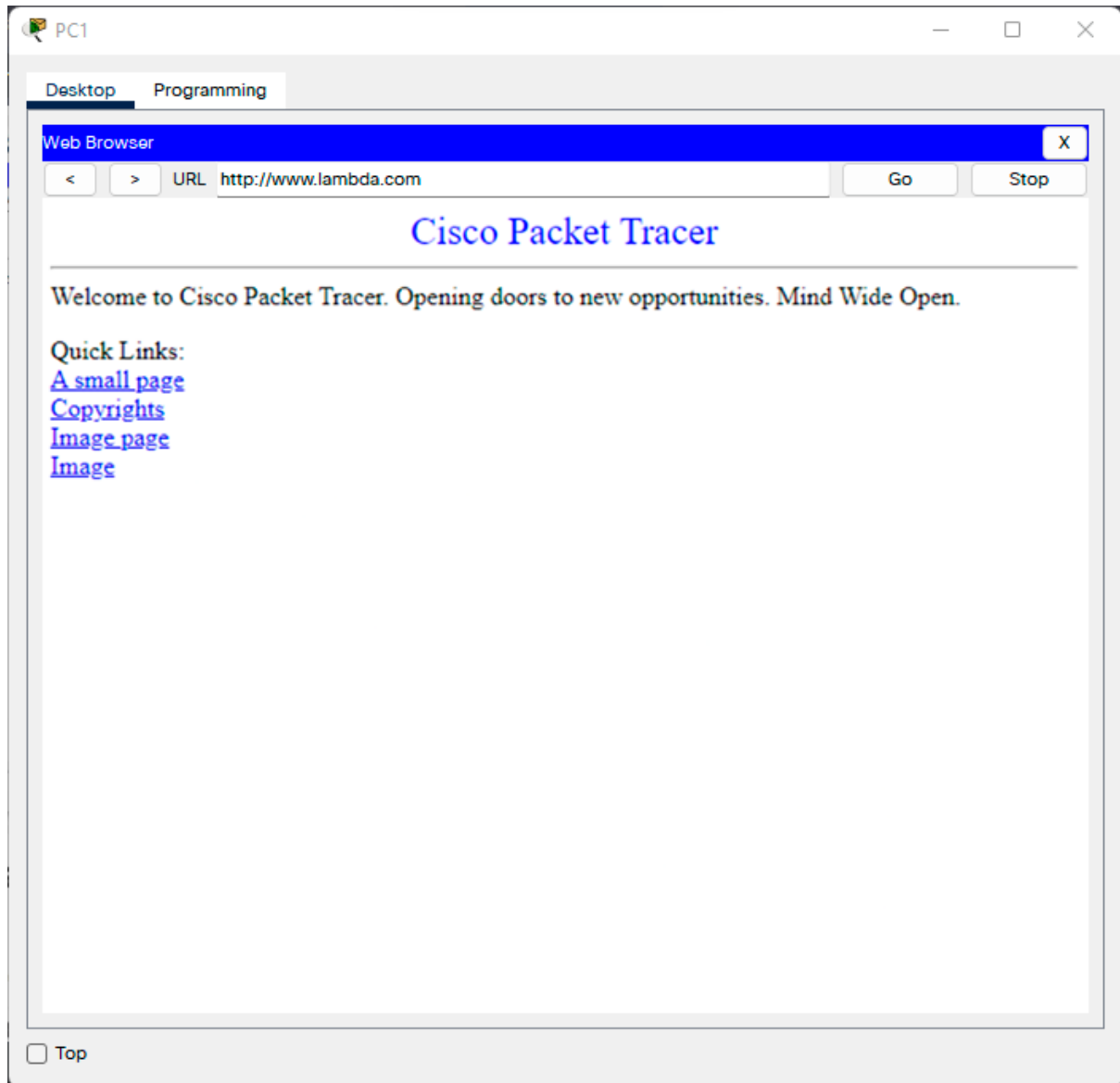
Remove

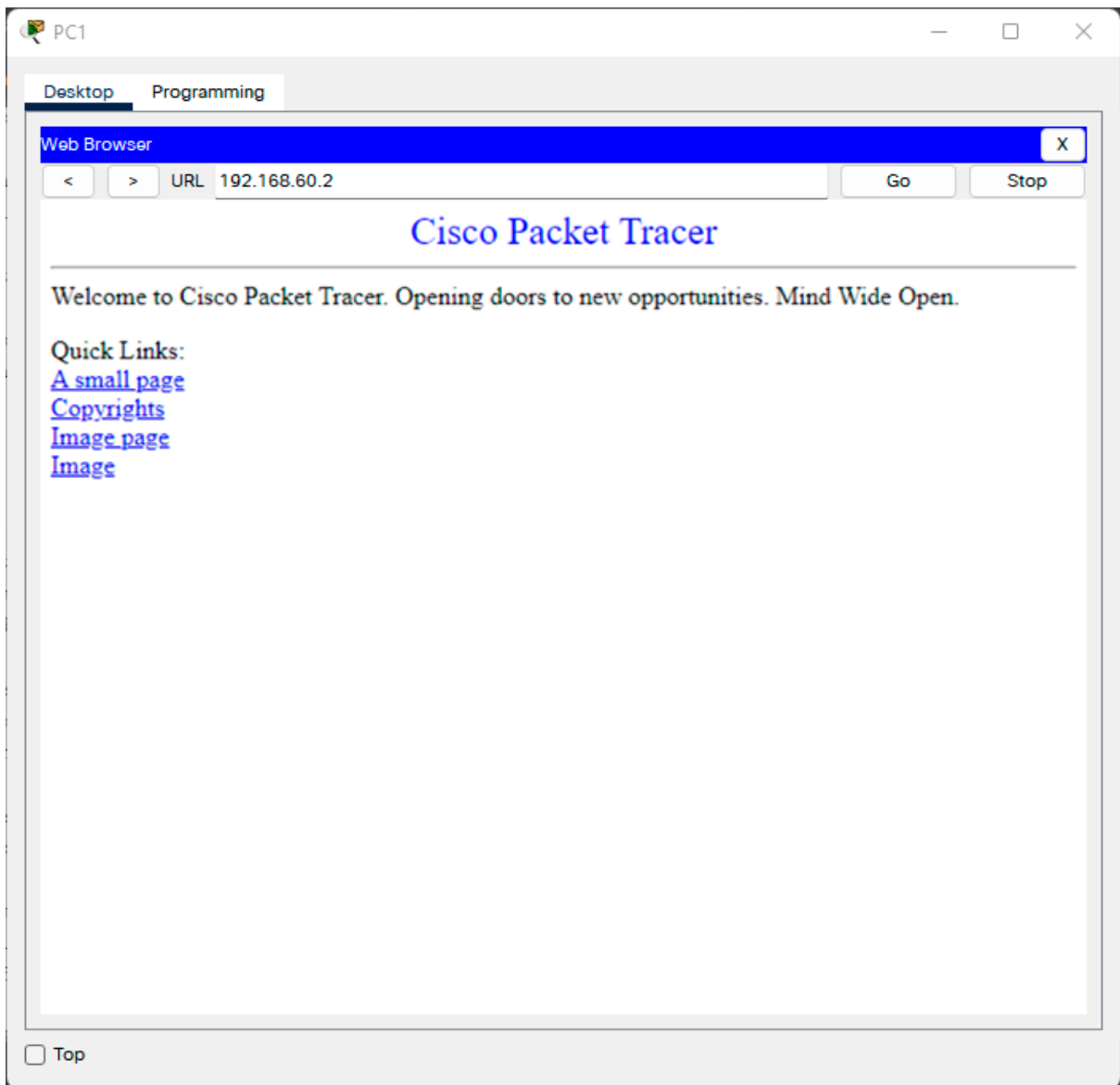
No.	Name	Type	Detail
0	dhcp.lambda.com	A Record	192.168.60.3
1	ftp.lambda.com	A Record	192.168.60.4
2	www.lambda.com	A Record	192.168.60.2

DNS Cache



Configurando HTTP





Configurando DHCP

Server2

Physical Config **Services** Desktop Programming Attributes

SERVICES

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

DHCP

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool2

Default Gateway: 192.168.50.1

DNS Server: 192.168.60.5

Start IP Address: 192 168 50 3

Subnet Mask: 255 255 255 0

Maximum Number of Users: 252

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool2	192.168...	192.168...	192.168...	255.255...	252	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	192.168...	255.255...	512	0.0.0.0	0.0.0.0

User Access Verification

Password:

R1>enable

Password:

R1#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#interface fast

R1(config)#interface fastEthernet 6/0

R1(config-if)#ip helper-address 192.168.60.3

R1(config-if)#end

R1#

%SYS-5-CONFIG_I: Configured from console by console

R1#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#interface fast

R1(config)#interface fastEthernet 6/0

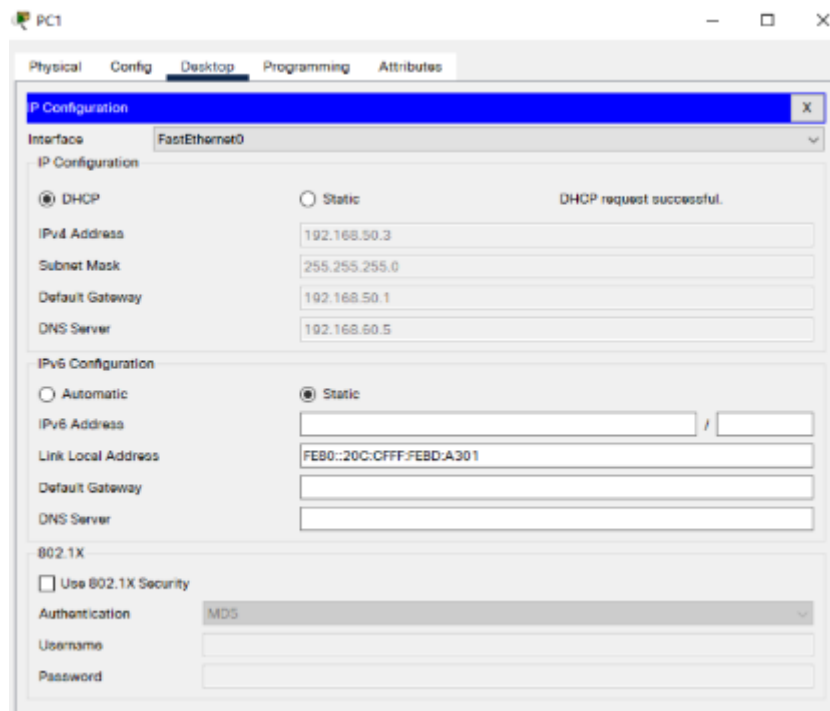
R1(config-if)#ip helper-address 192.168.60.3

R1(config-if)#end

R1#

%SYS-5-CONFIG_I: Configured from console by console

R1#



```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.60.2

Pinging 192.168.60.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.2: bytes=32 time=15ms TTL=125
Reply from 192.168.60.2: bytes=32 time<1ms TTL=125
Reply from 192.168.60.2: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.60.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 15ms, Average = 5ms
```

Configurando FTP

Server3

Physical Config **Services** Desktop Programming Attributes

SERVICES

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

FTP

Service ☒ On ☐ Off

User Setup

Username Password

☐ Write ☐ Read ☐ Delete ☐ Rename ☐ List

	Username	Password	Permission	
1	cisco	cisco	RWDNL	Add
2	xico	1234	RWDNL	Save
				Remove

File

1	asa842-k8.bin
2	asa923-k8.bin
3	c1841-advipservicesk9-mz.124-15.T1.bin
4	c1841-ipbase-mz.123-14.T7.bin
5	c1841-ipbasek9-mz.124-12.bin
6	c1900-universalk9-mz.SPA.155-3.M4a.bin

Remove

Command Prompt

```
C:\>ftp ftp.lambda.com
Trying to connect...ftp.lambda.com
Connected to ftp.lambda.com
220- Welcome to PT Ftp server
Username:xico
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir

Listing /ftp directory from ftp.lambda.com:
 0 : asa842-k8.bin                    5571584
 1 : asa923-k8.bin                    30468096
 2 : cl841-advipservicesk9-mz.124-15.T1.bin 33591768
 3 : cl841-ipbase-mz.123-14.T7.bin    13832032
 4 : cl841-ipbasek9-mz.124-12.bin     16599160
 5 : cl900-universalk9-mz.SPA.155-3.M4a.bin 33591768
 6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
 7 : c2600-i-mz.122-28.bin            5571584
 8 : c2600-ipbasek9-mz.124-8.bin      13169700
 9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
11 : c2800nm-ipbase-mz.123-14.T7.bin  5571584
12 : c2800nm-ipbasek9-mz.124-8.bin    15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-i6q412-mz.121-22.EA4.bin  3058048
15 : c2950-i6q412-mz.121-22.EA8.bin  3117390
16 : c2960-lanbase-mz.122-25.FX.bin   4414921
17 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k_caa-universalk9.16.03.02.SPA.bin 505532849
24 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
```