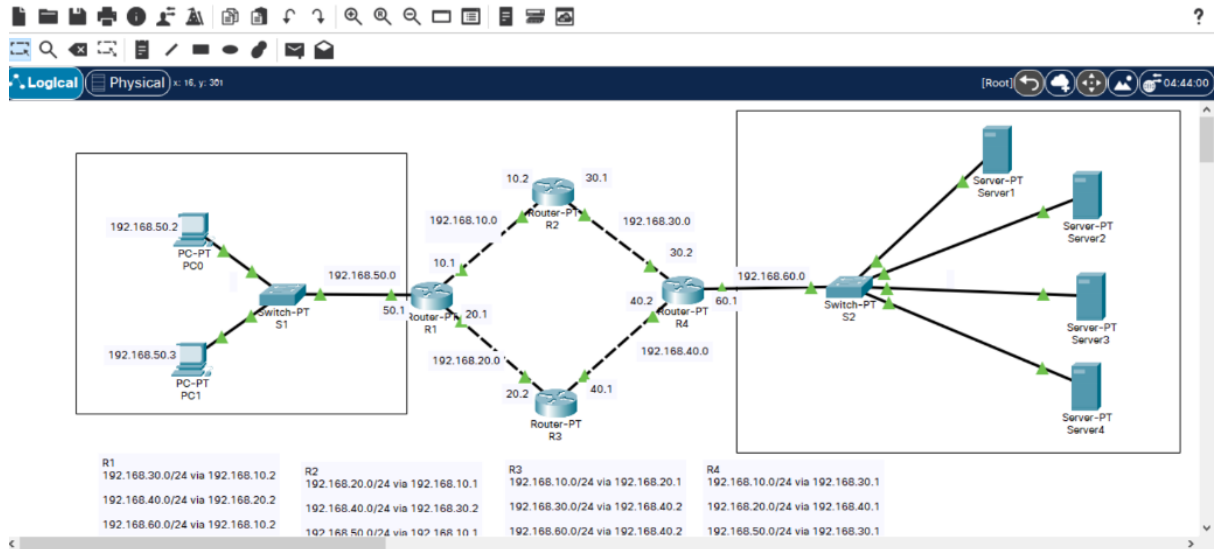


Atividade 09 - Sistemas Operacionais de Redes 2

Nome: Kelvin de Lima Rodrigues

Turma: P8 de Informática

Etapa 1

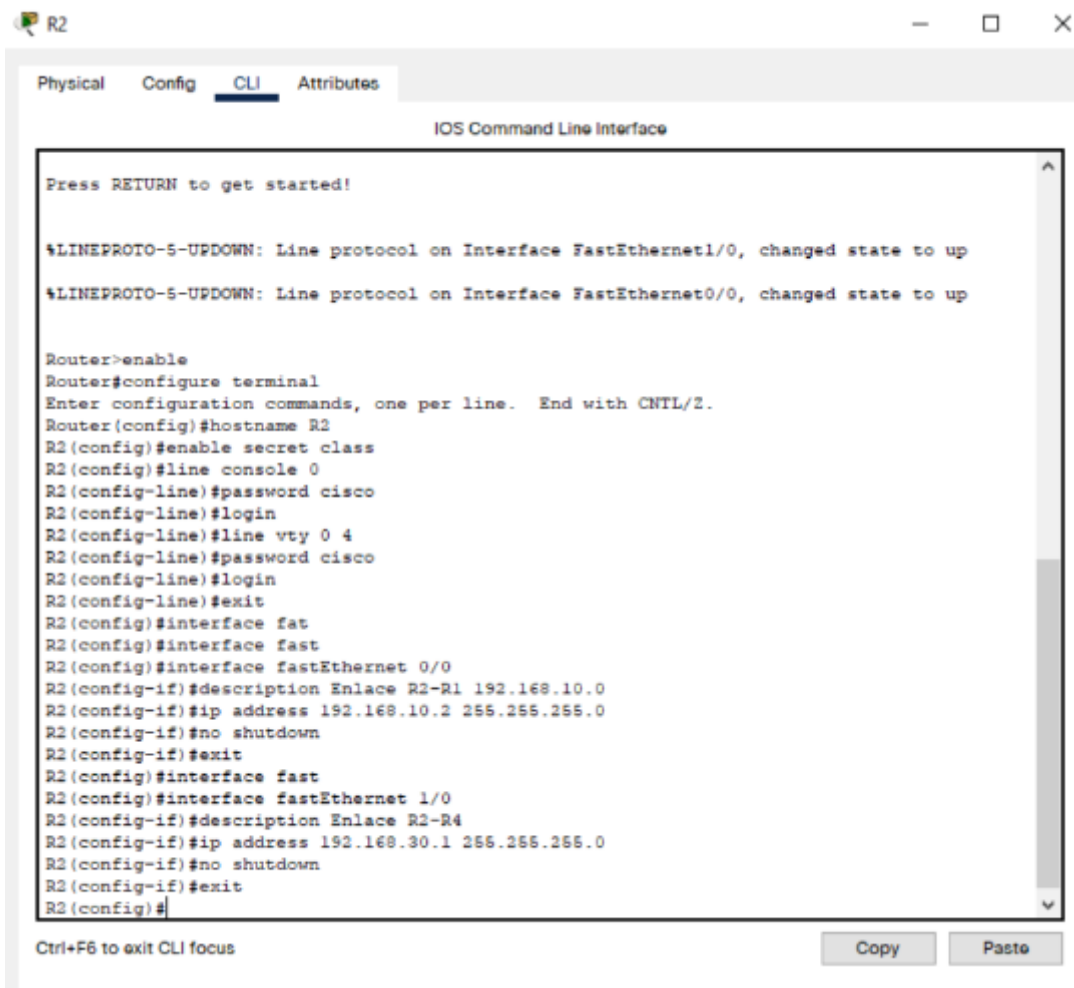


Etapa 2 - Configurando interface dos roteadores

R1

```
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 fast
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 fast
R1(config)#interface fastEthernet 1/0
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 fast
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)#
```

R2



The screenshot shows a window titled "R2" with a tabbed interface. The "CLI" tab is selected, displaying the "IOS Command Line Interface". The interface shows the following text:

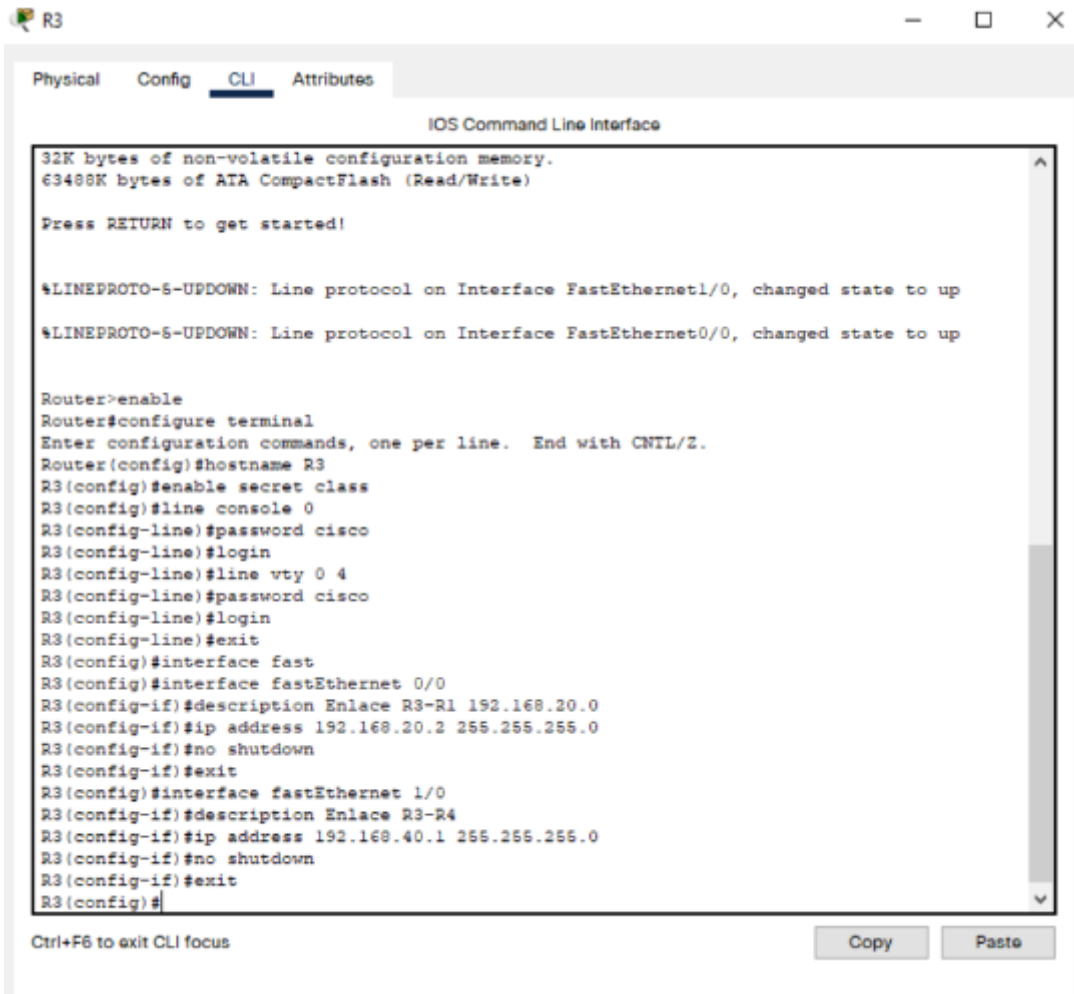
```
Press RETURN to get started!

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

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#enable secret class
R2(config)#line console 0
R2(config-line)#password cisco
R2(config-line)#login
R2(config-line)#line vty 0 4
R2(config-line)#password cisco
R2(config-line)#login
R2(config-line)#exit
R2(config)#interface fast
R2(config)#interface fast
R2(config)#interface fastEthernet 0/0
R2(config-if)#description Enlace R2-R1 192.168.10.0
R2(config-if)#ip address 192.168.10.2 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#interface fast
R2(config)#interface fastEthernet 1/0
R2(config-if)#description Enlace R2-R4
R2(config-if)#ip address 192.168.30.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#
```

At the bottom of the window, there is a status bar that says "Ctrl+F6 to exit CLI focus" and two buttons: "Copy" and "Paste".

R3



The screenshot shows a window titled "R3" with a tabbed interface. The "CLI" tab is selected, displaying the "IOS Command Line Interface". The interface shows the router's memory status (32K bytes of non-volatile configuration memory, 63488K bytes of ATA CompactFlash (Read/Write)) and a prompt to press RETURN to get started. Below this, two status messages indicate that the line protocol on interfaces FastEthernet1/0 and FastEthernet0/0 has changed state to up. The main part of the window shows the configuration commands entered in the CLI, starting with "Router>enable" and "Router#configure terminal". The configuration includes setting the hostname to R3, enabling secret class, configuring console and vty lines with passwords and login, and configuring two interfaces: FastEthernet 0/0 and FastEthernet 1/0. Both interfaces are configured with a description, IP address, and no shutdown. The window has a "Copy" button and a "Paste" button at the bottom right. A status bar at the bottom left indicates "Ctrl+F6 to exit CLI focus".

```
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

Press RETURN to get started!

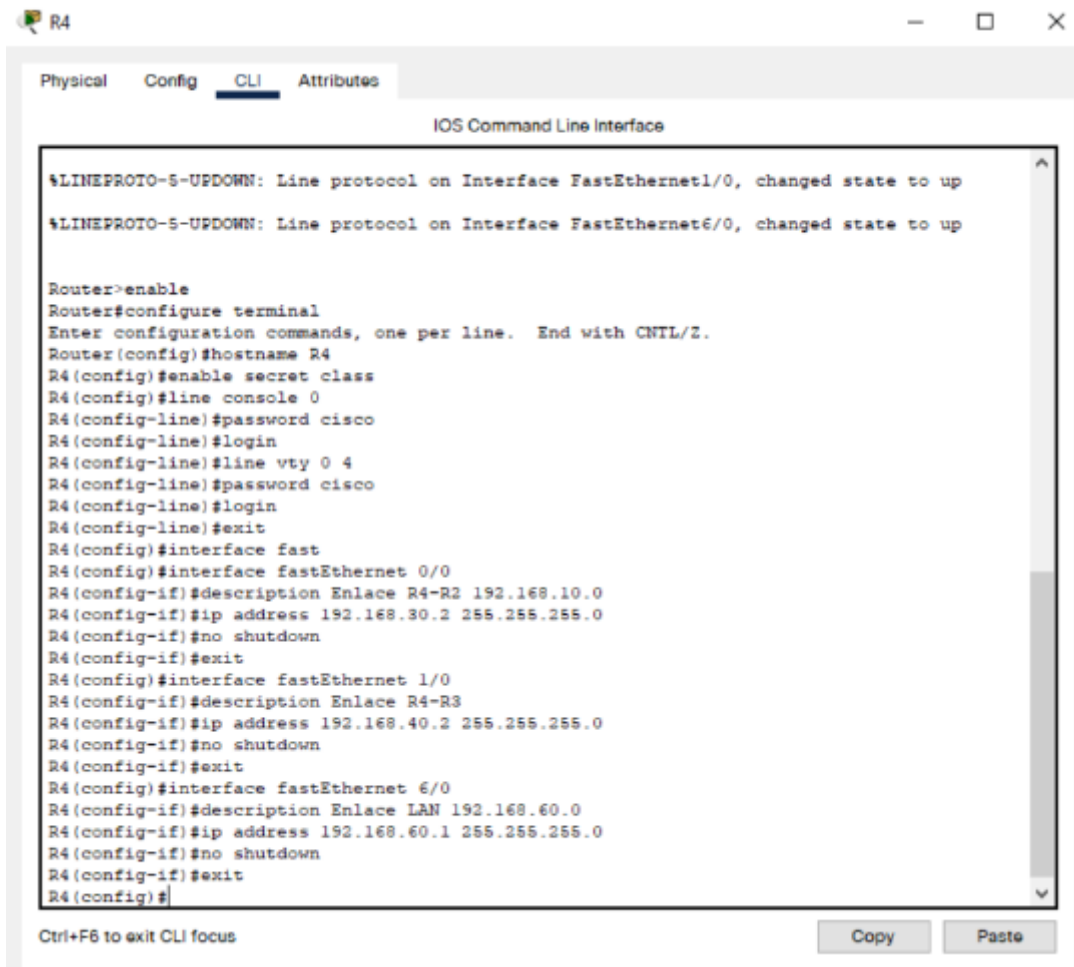
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3
R3(config)#enable secret class
R3(config)#line console 0
R3(config-line)#password cisco
R3(config-line)#login
R3(config-line)#line vty 0 4
R3(config-line)#password cisco
R3(config-line)#login
R3(config-line)#exit
R3(config)#interface fast
R3(config)#interface fastEthernet 0/0
R3(config-if)#description Enlace R3-R1 192.168.20.0
R3(config-if)#ip address 192.168.20.2 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#interface fastEthernet 1/0
R3(config-if)#description Enlace R3-R4
R3(config-if)#ip address 192.168.40.1 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

R4



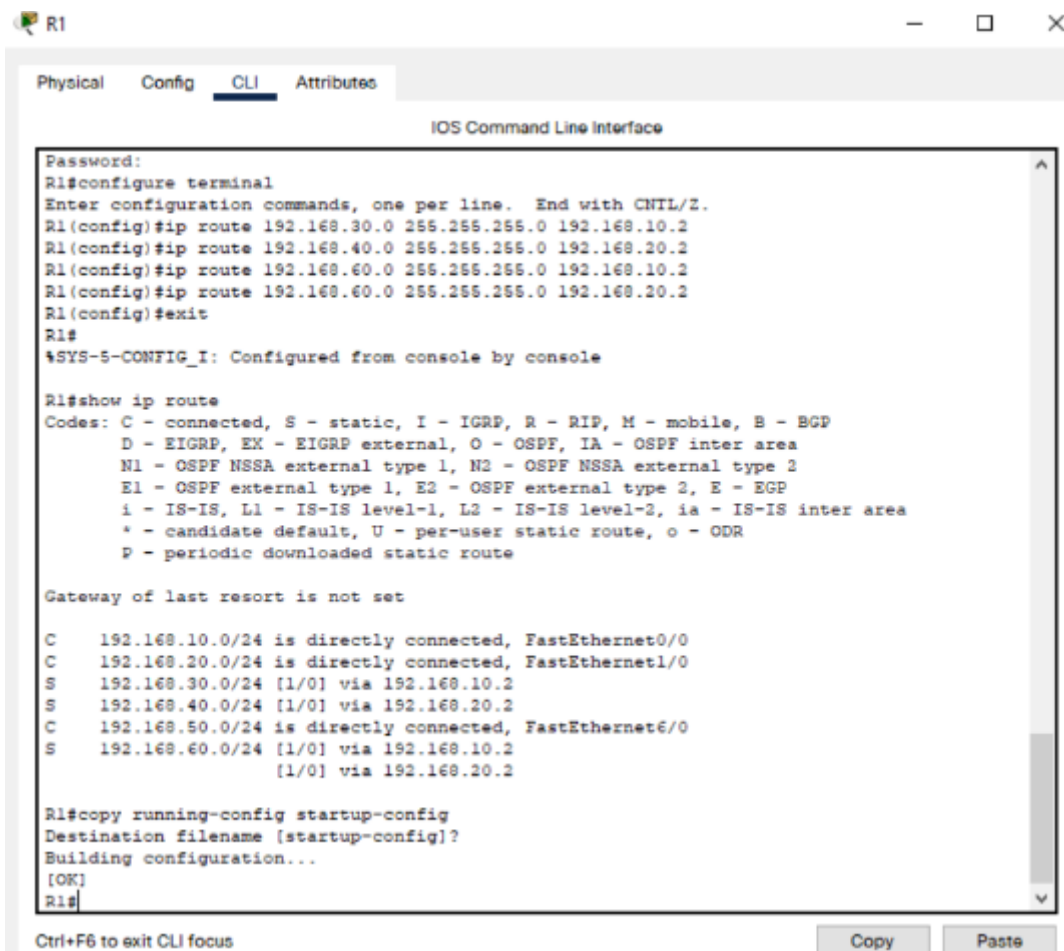
The screenshot shows a window titled "R4" with a tabbed interface. The "CLI" tab is selected, displaying the "IOS Command Line Interface". The interface shows the following text:

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
%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 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)#exit
R4(config)#interface fast
R4(config)#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)#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)#
```

At the bottom of the window, there is a status bar that reads "Ctrl+F6 to exit CLI focus". To the right of the status bar are two buttons: "Copy" and "Paste".

Etapa 3 - Configurando as rotas dos roteadores R1



The screenshot shows the CLI of a router named R1. The interface has tabs for Physical, Config, CLI (selected), and Attributes. The main window displays the following commands and output:

```

Password:
R1#configure terminal
Enter configuration commands, one per line. End with CHTL/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

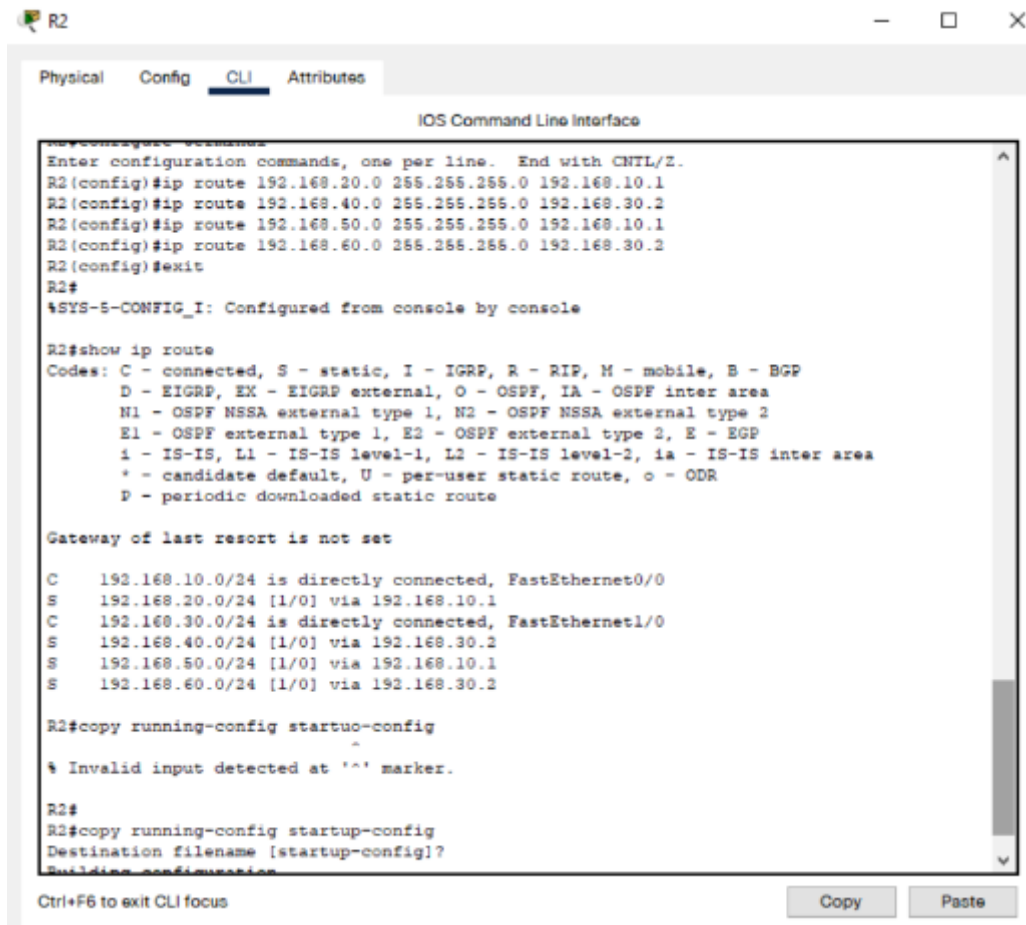
Gateway of last resort is not set

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#
```

At the bottom of the window, there is a status bar with the text "Ctrl+F6 to exit CLI focus" and two buttons: "Copy" and "Paste".

R2



The screenshot shows a network configuration window for a router named R2. The window has tabs for Physical, Config, CLI, and Attributes, with CLI selected. The title bar says 'IOS Command Line Interface'. The CLI window contains the following text:

```
newconfig@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 startuo-config
      ^
% Invalid input detected at '^' marker.

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

At the bottom of the window, there is a status bar that says 'Ctrl+F6 to exit CLI focus' and two buttons: 'Copy' and 'Paste'.

R3

 R3

—

□

×

Physical Config **CLI** Attributes

IOS Command Line Interface

```
R3>enable
Password:
R3#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#ip route 192.168.10.0 255.255.255.0 192.168.20.1
R3(config)#ip route 192.168.30.0 255.255.255.0 192.168.40.2
R3(config)#ip route 192.168.50.0 255.255.255.0 192.168.20.1
R3(config)#ip route 192.168.60.0 255.255.255.0 192.168.40.2
R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#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 192.168.20.1
C    192.168.20.0/24 is directly connected, FastEthernet0/0
S    192.168.30.0/24 [1/0] via 192.168.40.2
C    192.168.40.0/24 is directly connected, FastEthernet1/0
S    192.168.50.0/24 [1/0] via 192.168.20.1
S    192.168.60.0/24 [1/0] via 192.168.40.2

R3#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R3#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

R4

Physical
Config
CLI
Attributes

IOS Command Line Interface

```

Password:
R4#configure 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 192.168.50.0 255.255.255.0 192.168.40.1
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]?
Building configuration...
[OK]
R4#

```

Ctrl+F6 to exit CLI focus

Copy Paste

Testando a conexão

```
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=17ms TTL=253
Reply from 192.168.40.2: bytes=32 time=16ms 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 = 16ms, Maximum = 17ms, Average = 16ms

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=22ms TTL=253
Reply from 192.168.30.2: bytes=32 time=13ms TTL=253
Reply from 192.168.30.2: bytes=32 time=10ms TTL=253
Reply from 192.168.30.2: bytes=32 time=10ms 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 = 10ms, Maximum = 22ms, Average = 13ms

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=22ms TTL=125
Reply from 192.168.60.2: bytes=32 time=11ms TTL=125
Reply from 192.168.60.2: bytes=32 time=14ms 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 = 11ms, Maximum = 22ms, Average = 16ms
```

```
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=13ms TTL=125
Reply from 192.168.60.3: bytes=32 time=14ms TTL=125
Reply from 192.168.60.3: bytes=32 time=14ms 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 = 13ms, Maximum = 14ms, Average = 13ms

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=14ms TTL=125
Reply from 192.168.60.4: bytes=32 time=14ms TTL=125
Reply from 192.168.60.4: bytes=32 time=14ms 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 = 14ms, Maximum = 14ms, Average = 14ms
```

```
C:\>ping 192.168.60.5

Pinging 192.168.60.5 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.5: bytes=32 time=22ms TTL=125
Reply from 192.168.60.5: bytes=32 time=15ms TTL=125
Reply from 192.168.60.5: bytes=32 time=16ms TTL=125

Ping statistics for 192.168.60.5:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 22ms, Average = 17ms
```

Etapa 4

Configurando DNS

PC0

The screenshot shows the 'Network Configuration' window for PC0, with the 'Desktop' tab selected. The 'IP Configuration' section is expanded, showing settings for the 'FastEthernet0' interface. The 'Static' radio button is selected for both IPv4 and IPv6 configurations. The IPv4 settings are: IP Address 192.168.50.2, Subnet Mask 255.255.255.0, Default Gateway 192.168.50.1, and DNS Server 192.168.60.5. The IPv6 settings are: Static configuration, Link Local Address FE80::230:F2FF:FEE0:666, and empty fields for IPv6 Address, Default Gateway, and DNS Server. The '802.1X' section is also visible, with 'Use 802.1X Security' unchecked and 'Authentication' set to 'MD5'.

Physical	Config	Desktop	Programming	Attributes
IP Configuration				
Interface: FastEthernet0				
IP Configuration				
<input type="radio"/> DHCP <input checked="" type="radio"/> 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				
<input type="radio"/> Automatic <input checked="" type="radio"/> Static				
IPv6 Address:				
Link Local Address: FE80::230:F2FF:FEE0:666				
Default Gateway:				
DNS Server:				
802.1X				
<input type="checkbox"/> Use 802.1X Security				
Authentication: MD5				
Username:				
Password:				

PC1

Physical	Config	Desktop	Programming	Attributes
IP Configuration				
Interface: FastEthernet0				
IP Configuration				
<input type="radio"/> DHCP <input checked="" type="radio"/> 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				
<input type="radio"/> Automatic <input checked="" type="radio"/> Static				
IPv6 Address:				
Link Local Address: FE80::20C:CFFF:FE8D:A301				
Default Gateway:				
DNS Server:				
802.1X				
<input type="checkbox"/> Use 802.1X Security				
Authentication: MD5				
Username:				
Password:				

Physical Config **Services** Desktop Programming Attributes

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** vAddress

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

Command Prompt

```
C:\>ping ftp.lambda.com

Pinging 192.168.60.4 with 32 bytes of data:

Reply from 192.168.60.4: bytes=32 time=11ms TTL=125
Reply from 192.168.60.4: bytes=32 time=12ms TTL=125
Reply from 192.168.60.4: bytes=32 time=12ms TTL=125
Reply from 192.168.60.4: bytes=32 time=13ms TTL=125

Ping statistics for 192.168.60.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 11ms, Maximum = 13ms, Average = 12ms

C:\>ping dhcp.lambda.com

Pinging 192.168.60.3 with 32 bytes of data:

Reply from 192.168.60.3: bytes=32 time=17ms TTL=125
Reply from 192.168.60.3: bytes=32 time=13ms TTL=125
Reply from 192.168.60.3: bytes=32 time=18ms TTL=125
Reply from 192.168.60.3: bytes=32 time=10ms TTL=125

Ping statistics for 192.168.60.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 18ms, Average = 14ms

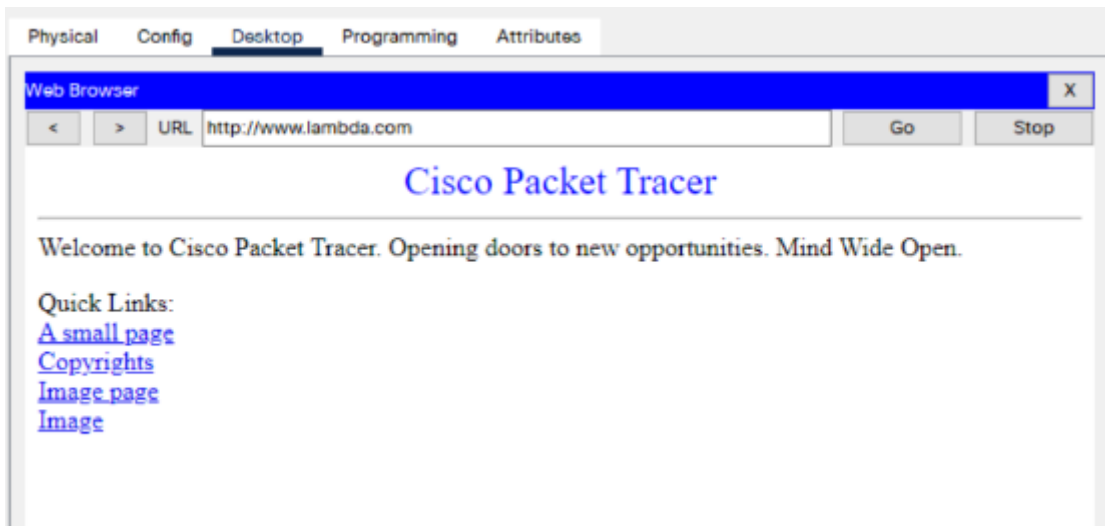
C:\>ping www.lambda.com

Pinging 192.168.60.2 with 32 bytes of data:

Reply from 192.168.60.2: bytes=32 time=33ms TTL=125
Reply from 192.168.60.2: bytes=32 time=14ms TTL=125
Reply from 192.168.60.2: bytes=32 time=12ms TTL=125
Reply from 192.168.60.2: bytes=32 time=38ms TTL=125

Ping statistics for 192.168.60.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 38ms, Average = 24ms
```

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#

PC1

Physical Config Desktop Programming Attributes

IP Configuration X

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:CFFF:FEBD:A301

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

```
C:\>ping 192.168.60.2

Pinging 192.168.60.2 with 32 bytes of data:

Reply from 192.168.60.2: bytes=32 time=27ms TTL=125
Reply from 192.168.60.2: bytes=32 time=19ms TTL=125
Reply from 192.168.60.2: bytes=32 time=14ms TTL=125
Reply from 192.168.60.2: bytes=32 time=13ms TTL=125

Ping statistics for 192.168.60.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 13ms, Maximum = 27ms, Average = 18ms
```


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

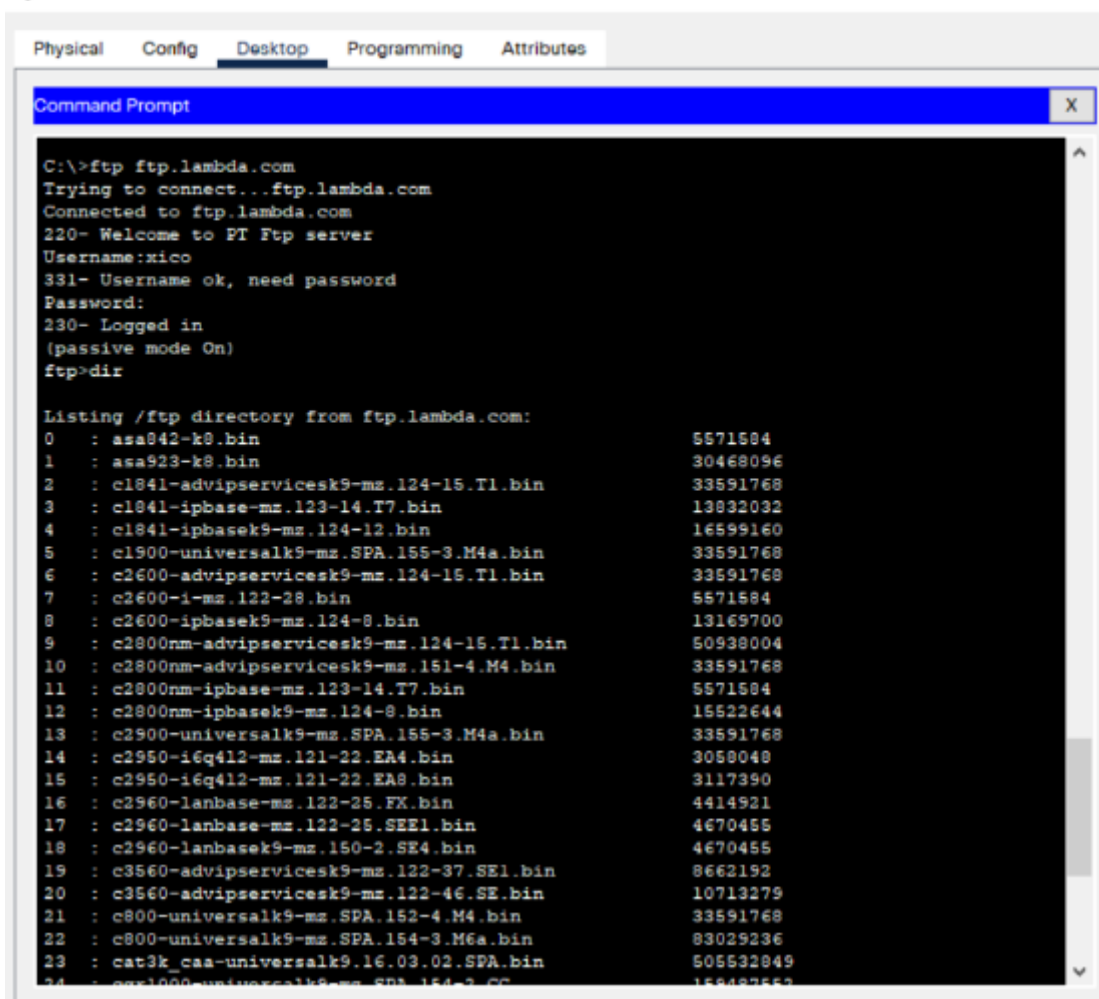
☐ Write ☐ Read ☐ Delete ☐ Rename ☐ List

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

File

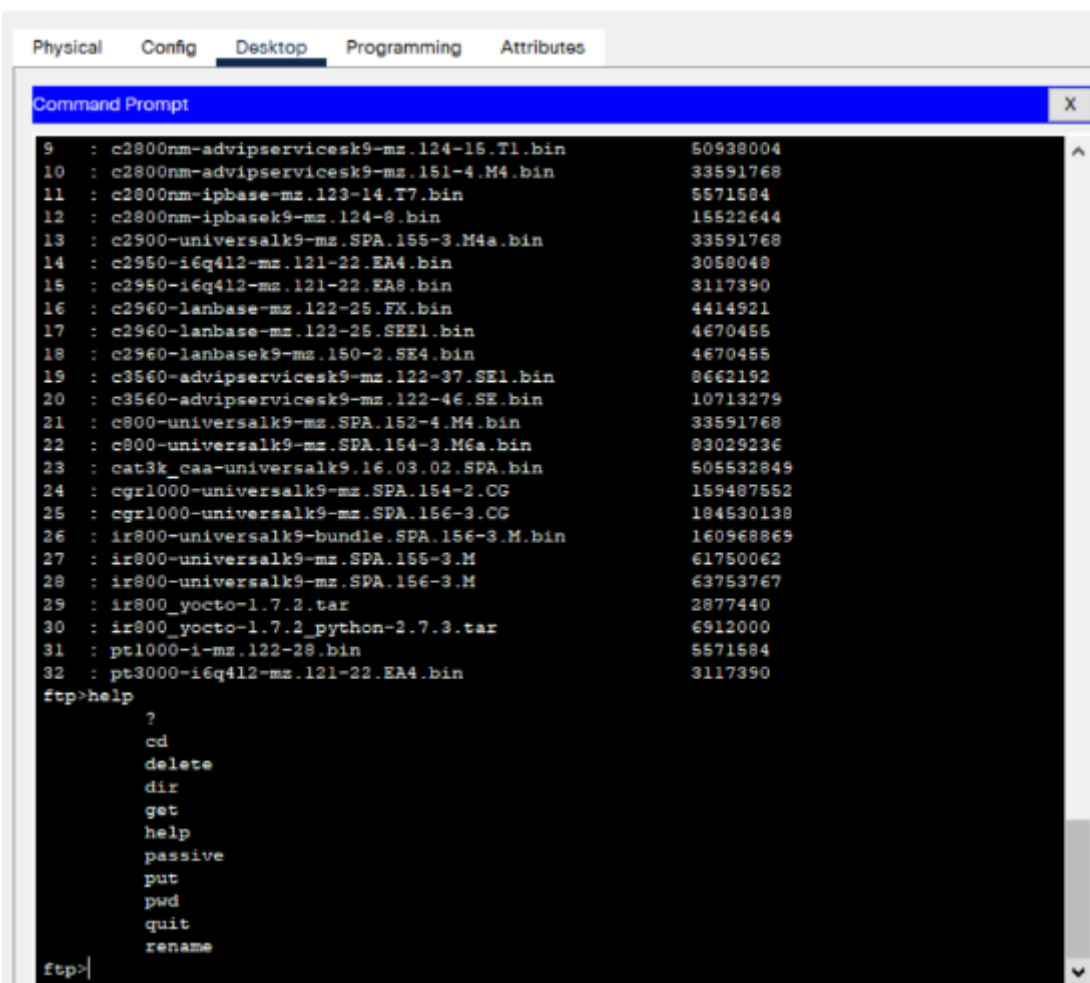
1	asa842-k8.bin
2	asa923-k8.bin
3	c1841-advipservicesk9-mz.124-15.T1.bin
4	c1841-ipbase-mz.123-14.T7.bin
5	c1841-ipbasek9-mz.124-12.bin

Remove



```
C:\>ftp ftp.lambda.com
Trying to connect...ftp.lambda.com
Connected to ftp.lambda.com
220- Welcome to FT 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  : c1841-advipservicesk9-ms.124-15.T1.bin      33591768
 3  : c1841-ipbase-ms.123-14.T7.bin               13822032
 4  : c1841-ipbasek9-ms.124-12.bin                16599160
 5  : c1900-universalk9-ms.SPA.155-3.M4a.bin      33591768
 6  : c2600-advipservicesk9-ms.124-15.T1.bin      33591768
 7  : c2600-1-ms.122-28.bin                       5571584
 8  : c2600-ipbasek9-ms.124-8.bin                 13169700
 9  : c2800nm-advipservicesk9-ms.124-15.T1.bin    50938004
10  : c2800nm-advipservicesk9-ms.151-4.M4.bin     33591768
11  : c2800nm-ipbase-ms.123-14.T7.bin             5571584
12  : c2800nm-ipbasek9-ms.124-8.bin              15522644
13  : c2900-universalk9-ms.SPA.155-3.M4a.bin      33591768
14  : c2950-i6q412-ms.121-22.EA4.bin             3050048
15  : c2950-i6q412-ms.121-22.EA8.bin             3117390
16  : c2960-lanbase-ms.122-25.FX.bin             4414921
17  : c2960-lanbase-ms.122-25.SEE1.bin           4670455
18  : c2960-lanbasek9-ms.150-2.SE4.bin            4670455
19  : c3560-advipservicesk9-ms.122-37.SE1.bin     8662192
20  : c3560-advipservicesk9-ms.122-46.SE.bin     10713279
21  : c800-universalk9-ms.SPA.152-4.M4.bin        33591768
22  : c800-universalk9-ms.SPA.154-3.M6a.bin       83029236
23  : cat3k_caa-universalk9.16.03.02.SPA.bin      505532849
24  : cml1000-universalk9-ms.SPA.154-3.CC        158487552
```



The screenshot shows a window titled "PC1" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows a list of files and their sizes, followed by a help menu.

File Name	Size
c2800nm-advipservicesk9-ms.124-15.T1.bin	50938004
c2800nm-advipservicesk9-ms.151-4.M4.bin	33591768
c2800nm-ipbase-ms.123-14.T7.bin	5571584
c2800nm-ipbasek9-ms.124-8.bin	15522644
c2900-universalk9-ms.SPA.155-3.M4a.bin	33591768
c2950-i6q412-ms.121-22.EA4.bin	3058048
c2950-i6q412-ms.121-22.EA8.bin	3117390
c2960-lanbase-ms.122-25.FX.bin	4414921
c2960-lanbase-ms.122-25.SEE1.bin	4670455
c2960-lanbasek9-ms.150-2.SE4.bin	4670455
c3560-advipservicesk9-ms.122-37.SE1.bin	8662192
c3560-advipservicesk9-ms.122-46.SE.bin	10713279
c800-universalk9-ms.SPA.152-4.M4.bin	33591768
c800-universalk9-ms.SPA.154-3.M6a.bin	83029236
cat3k_caa-universalk9.16.03.02.SPA.bin	505532849
cgr1000-universalk9-ms.SPA.154-2.CG	159487552
cgr1000-universalk9-ms.SPA.156-3.CG	184530138
ir800-universalk9-bundle.SPA.156-3.M.bin	160968869
ir800-universalk9-ms.SPA.155-3.M	61750062
ir800-universalk9-ms.SPA.156-3.M	63753767
ir800_yocto-1.7.2.tar	2877440
ir800_yocto-1.7.2_python-2.7.3.tar	6912000
pt1000-1-ms.122-28.bin	5571584
pt3000-i6q412-ms.121-22.EA4.bin	3117390

ftp>help

- ?
 - cd
 - delete
 - dir
 - get
 - help
 - passive
 - put
 - pwd
 - quit
 - rename

ftp>