

Atividade 6

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Etapa 1

Nesse exercício serão apresentadas etapas de configuração onde duas redes locais interligadas por roteadores usarão serviços de rede como HTTP, FTP, DNS e DHCP.

Em cada etapa serão definidas atividades que evoluem para uma configuração onde os serviços se tornam operacionais.

1) Etapa1-Planejamento das rotas e configuração das redes locais

- a) Planejamento das redes identificando os ids das redes.
- b) As redes locais estão caracterizadas por um switch conectado a uma interface de um roteador. Essa interface é chamada de default gateway e pertence a faixa de endereços IP da Rede Local do switch.
- 3) Cada enlace entre dois roteadores é caracterizado com um id de rede.
- 4) No enlace entre os dois roteadores serão usados dois ips para identificar cada lado do enlace. Os dois ips pertencem a faixa de ips da rede que está associada ao enlace.
- 5) No planejamento da rede deve constar as rotas de cada roteador onde é explicitado o salto a ser feito para alcançar determinada rede. Esse mapeamento das rotas será usado no roteamento estático.
- 6) As rotas estáticas de cada Roteador estão assim definidas:

R1

192.168.30.0/24 via 192.168.10.2

192.168.40.0/24 via 192.168.20.2

192.168.60.0/24 via 192.168.10.2

192.168.60.0/24 via 192.168.20.2

R2

192.168.20.0/24 via 192.168.10.1

192.168.40.0/24 via 192.168.30.2

192.168.50.0/24 via 192.168.10.1

192.168.60.0/24 via 192.168.30.2

R3

192.168.10.0/24 via 192.168.20.1

192.168.30.0/24 via 192.168.40.2

192.168.60.0/24 via 192.168.40.2

192.168.50.0/24 via 192.168.20.1

R4

192.168.10.0/24 via 192.168.30.1

192.168.20.0/24 via 192.168.40.1

192.168.50.0/24 via 192.168.30.1

192.168.50.0/24 via 192.168.40.1

Etapa 2

Nessa etapa faremos a configuração das interfaces dos roteadores para viabilizar a conectividade entre os roteadores envolvidos entre as duas redes locais.

Consultar Módulo-10 Configuração Básica do Roteador.

1) Configuração das interfaces do Roteador R1

**** Configuração Básica do Roteador ****

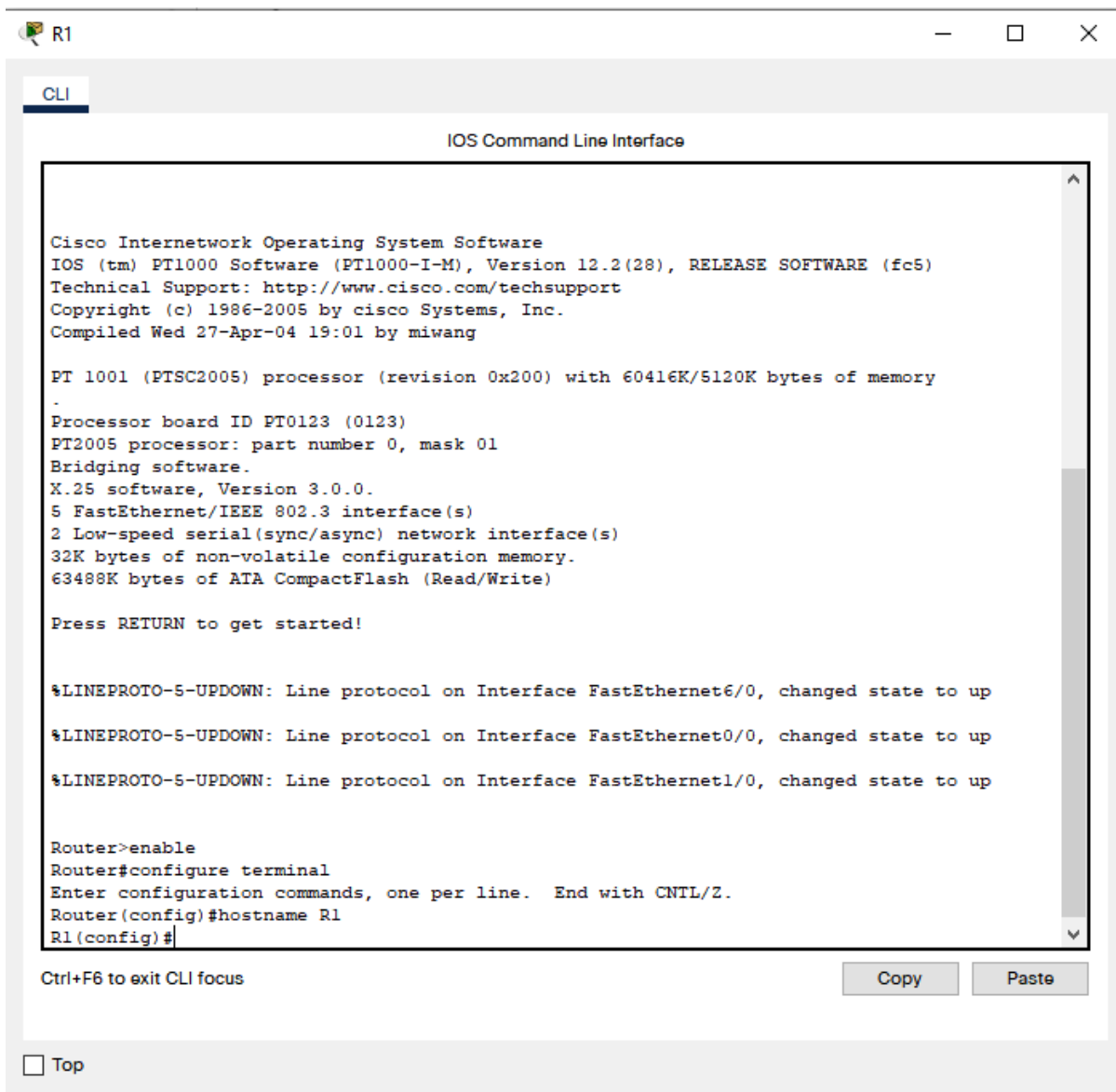
Router>enable

Router#configure terminal

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

Router(config)#hostname R1

R1(config)#

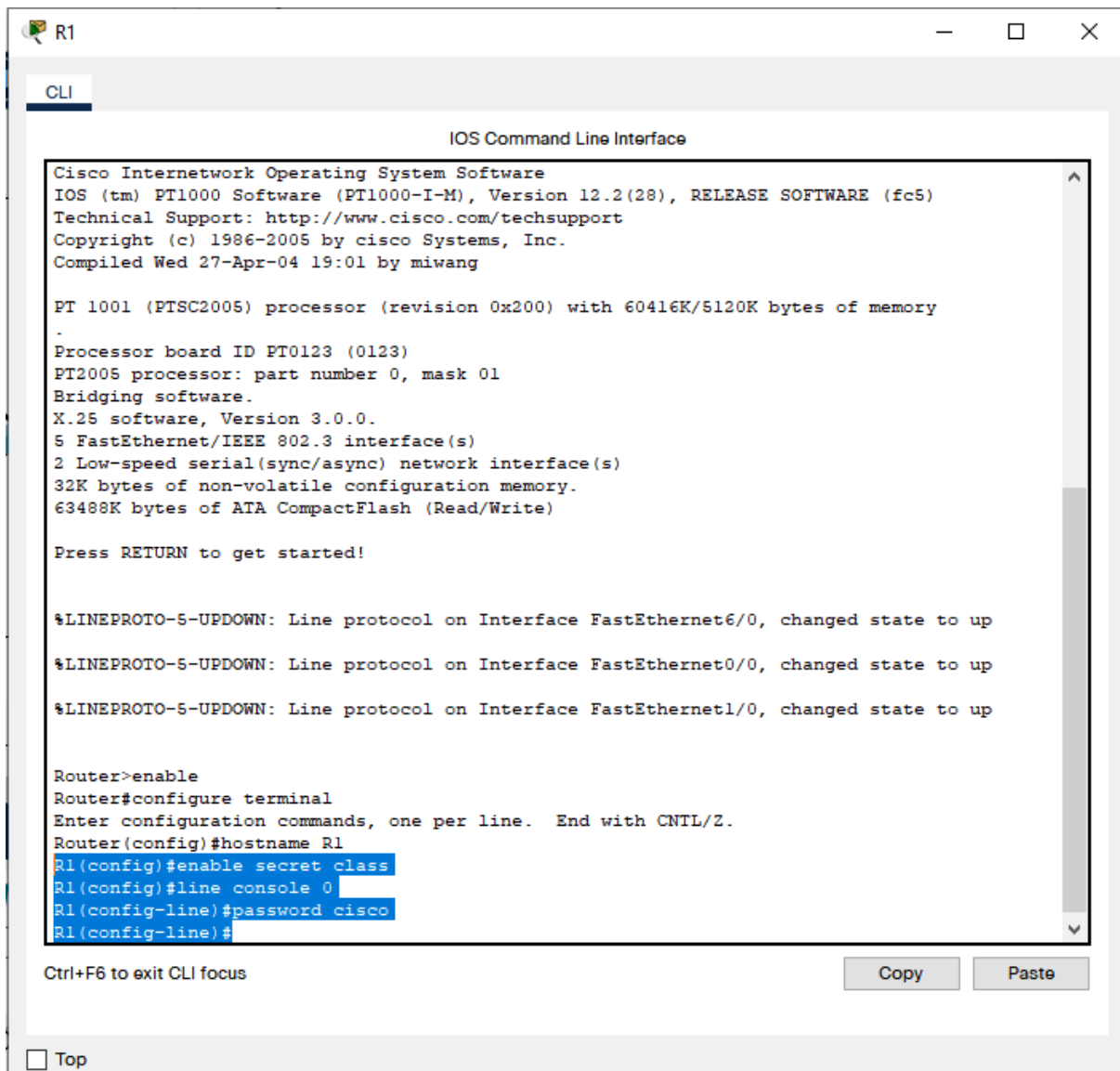


**** Habilita senha do modo privilegiado ****

R1(config)#enable secret class

R1(config)#line console 0

R1(config-line)#password cisco



**** Permite tentativa de acesso remoto ****

R1(config-line)#login

R1

CLI

IOS Command Line Interface

```
IOS (tm) PT1000 Software (PT1000-I-M), Version 12.2(28), RELEASE SOFTWARE (fc5)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 27-Apr-04 19:01 by miwang

PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
5 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
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 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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configuração das linhas vty para acesso remoto**

**** ao roteador usando o protocolo Telnet (porta 23)**

R1(config-line)#line vty 0 4

R1(config-line)#password cisco

R1(config-line)#login

R1

CLI

IOS Command Line Interface

```
Compiled Wed 27-Apr-04 19:01 by miwang

PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
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%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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configurar a interface FastEthernet0/0**

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

**** Ativa a interface f 0/0**

R1(config-if)#no shutdown

R1(config-if)#exit

R1

CLI

IOS Command Line Interface

Bridging software.
X.25 software, Version 3.0.0.
5 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

Press RETURN to get started!

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%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)#interface fastEthernet 0/0
R1(config-if)#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)#

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configurar a interface fastEthernet 1/0 ****

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

CLI

IOS Command Line Interface

63488K bytes of ATA CompactFlash (Read/Write)
Press RETURN to get started!

%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)#interface fastEthernet 0/0
R1(config-if)#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)#

Ctrl+F6 to exit CLI focus

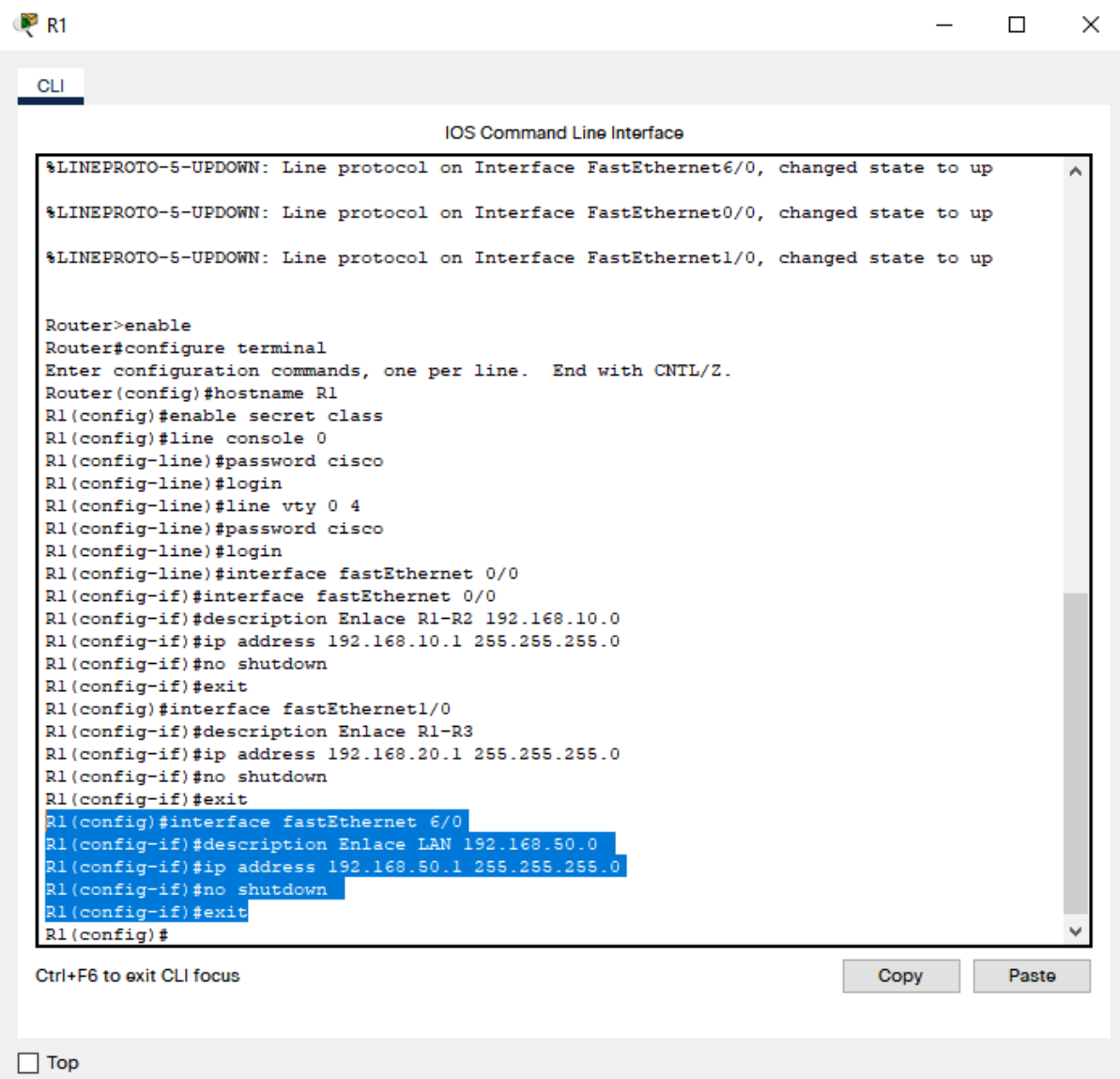
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**** Configurar a interface fastEthernet6/0 ****

```
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
```

2) Configuração das interfaces do Roteador R2

** Configuração Básica do Roteador **

```
Router(config-if)#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
```

```
CLI
IOS Command Line Interface

Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 27-Apr-04 19:01 by miwang

PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
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Processor board ID PT0123 (0123)
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2 Low-speed serial(sync/async) network interface(s)
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#config
Configuring from terminal, memory, or network [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)#

Ctrl+F6 to exit CLI focus
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```

**** Configurar a interface fastEthernet 0/0 ****

```
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
```

CLI

IOS Command Line Interface

```
PT2005 processor: part number 0, mask 01
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4 FastEthernet/IEEE 802.3 interface(s)
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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

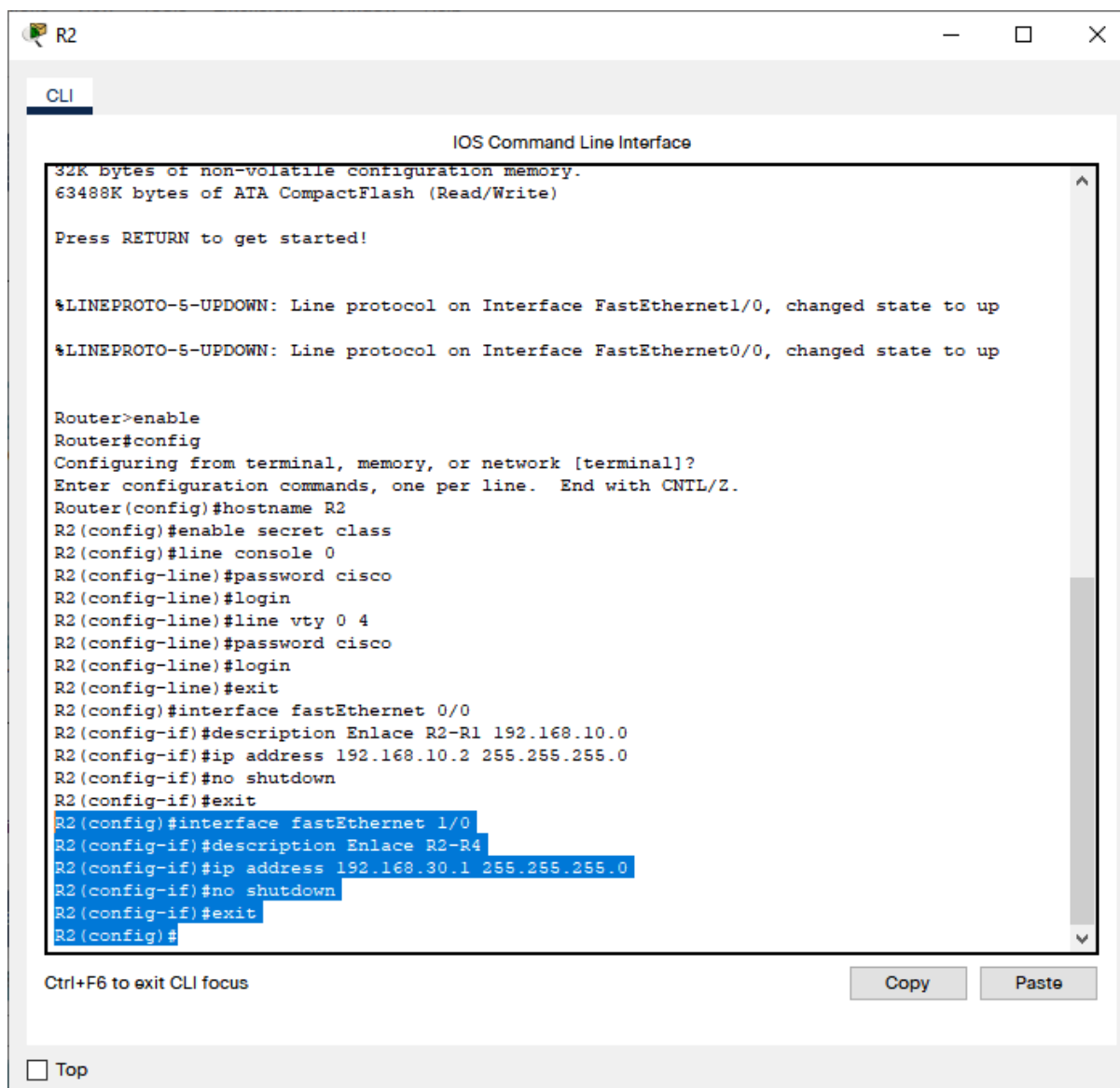
Router>enable
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#enable secret class
R2(config)#line console 0
R2(config-line)#password cisco
R2(config-line)#login
R2(config-line)#line vty 0 4
R2(config-line)#password cisco
R2(config-line)#login
R2(config-line)#exit
R2(config)#interface 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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top**** Configurar a interface fastEthernet 1/0 ******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**



3) Configuração das interfaces do Roteador R3

**** Configuração Básica do Roteador ****

```
Router(config-if)#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

CLI

IOS Command Line Interface

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Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
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)#

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configurar a interface fastEthernet0/0**

R3(config)#interface fastEthernet0/0


R3(config-if)#description Enlace R3-R1 192.168.20.0

R3(config-if)#ip address 192.168.20.2 255.255.255.0

**** Ativa a interface ****

R3(config-if)#no shutdown

R3(config-if)#exit



CLI

IOS Command Line Interface

```
Processor board ID FT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
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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 fastEthernet0/0
R3(config-if)#description Enlace R3-R4 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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top

Configurar a interface fastEthernet 1/0

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

```
CLI
IOS Command Line Interface

2 Low-speed serial(sync/async) network interface(s)
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 fastEthernet0/0
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
Top
```

4) Configuração das interfaces do Roteador R4

**** Configuração Básica do Roteador ****

```
Router(config-if)#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

CLI

IOS Command Line Interface

```
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Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
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2 Low-speed serial(sync/async) network interface(s)
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 FastEthernet0/0, changed state to up
%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#config
Configuring from terminal, memory, or network [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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configurar a interface fastEthernet 0/0**

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

**** Ativa a interface**

R4(config-if)#no shutdown

R4(config-if)#exit

R4

CLI

IOS Command Line Interface

```
X.25 software, Version 3.0.0.
5 FastEthernet/IEEE 802.3 interface(s)
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%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0, changed state to up

Router>enable
Router#config
Configuring from terminal, memory, or network [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 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)#
```

Ctrl+F6 to exit CLI focus

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☐ Top

**** Configurar a interface fastEthernet 1/0**

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

CLI

IOS Command Line Interface

```
Press RETURN to get started!

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

Router>enable
Router#config
Configuring from terminal, memory, or network [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 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)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

**** Configurar a interface fastEthernet 6/0 ****

```
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
```

```
Router>enable
Router#config
Configuring from terminal, memory, or network [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 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)#
```

Ctrl+F6 to exit CLI focus

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Etapa 3

Nessa etapa faremos a configuração das rotas estáticas nos roteadores para viabilizar o encaminhamento de pacotes entre as duas redes locais.

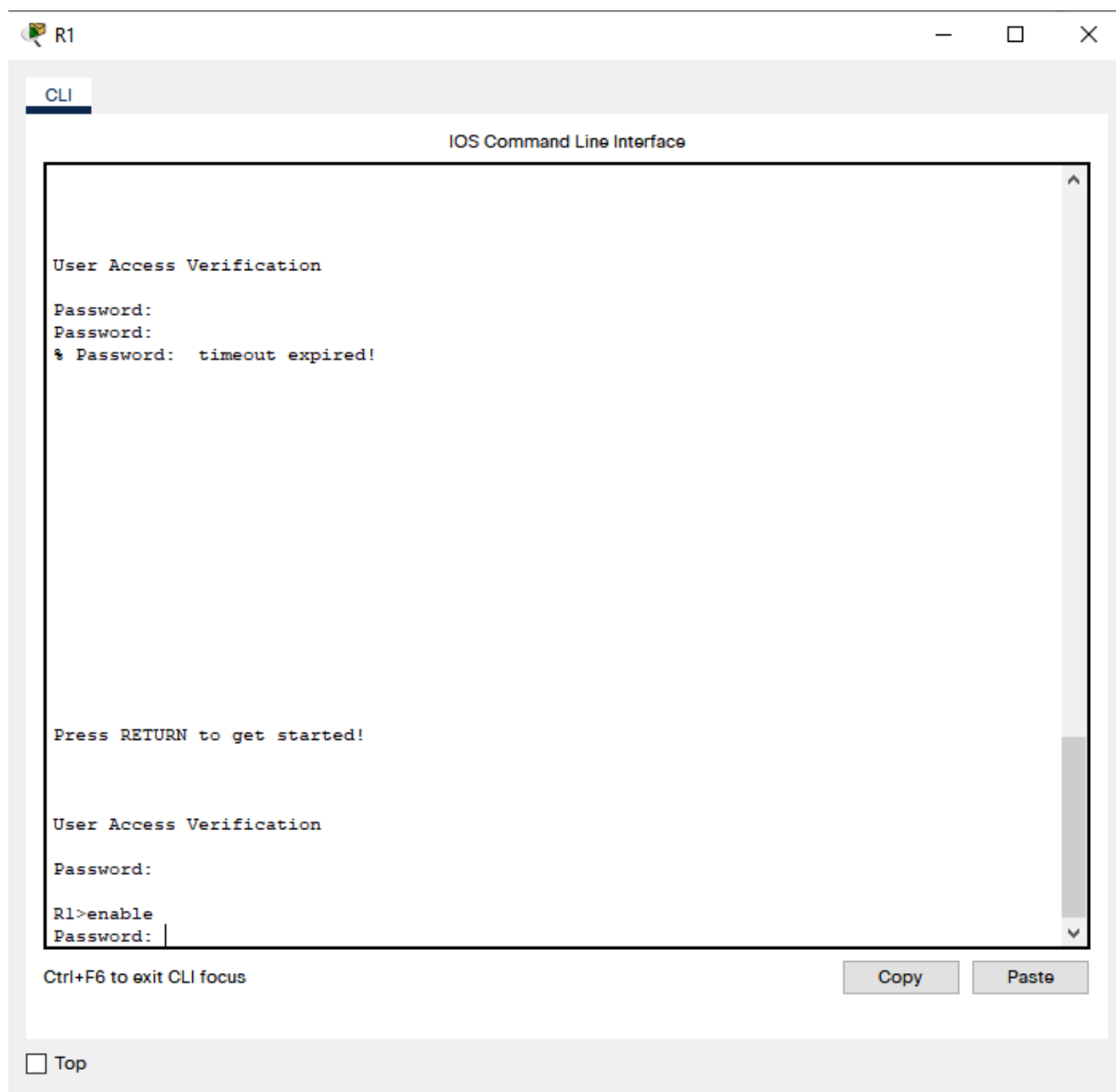
Consultar Módulo-08 Camada de Rede

Usar as tabelas de rotas definidas na etapa-1

1) Configurar as rotas do Roteador R1

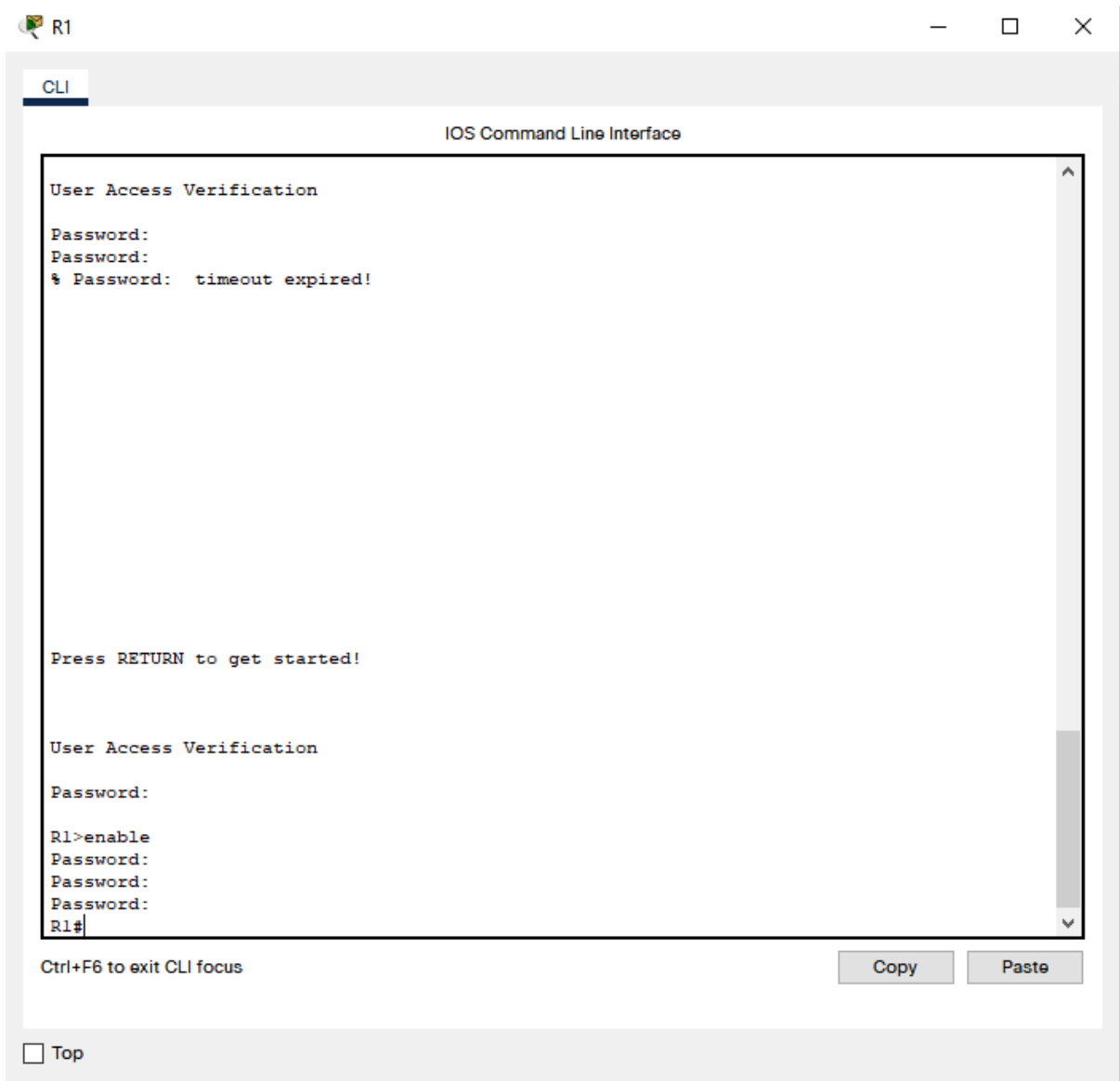
**** Acessar o roteador R1 digitando a senha cisco ****

R1>enable



**** Entrar no modo EXEC Privilegiado com a senha class ****

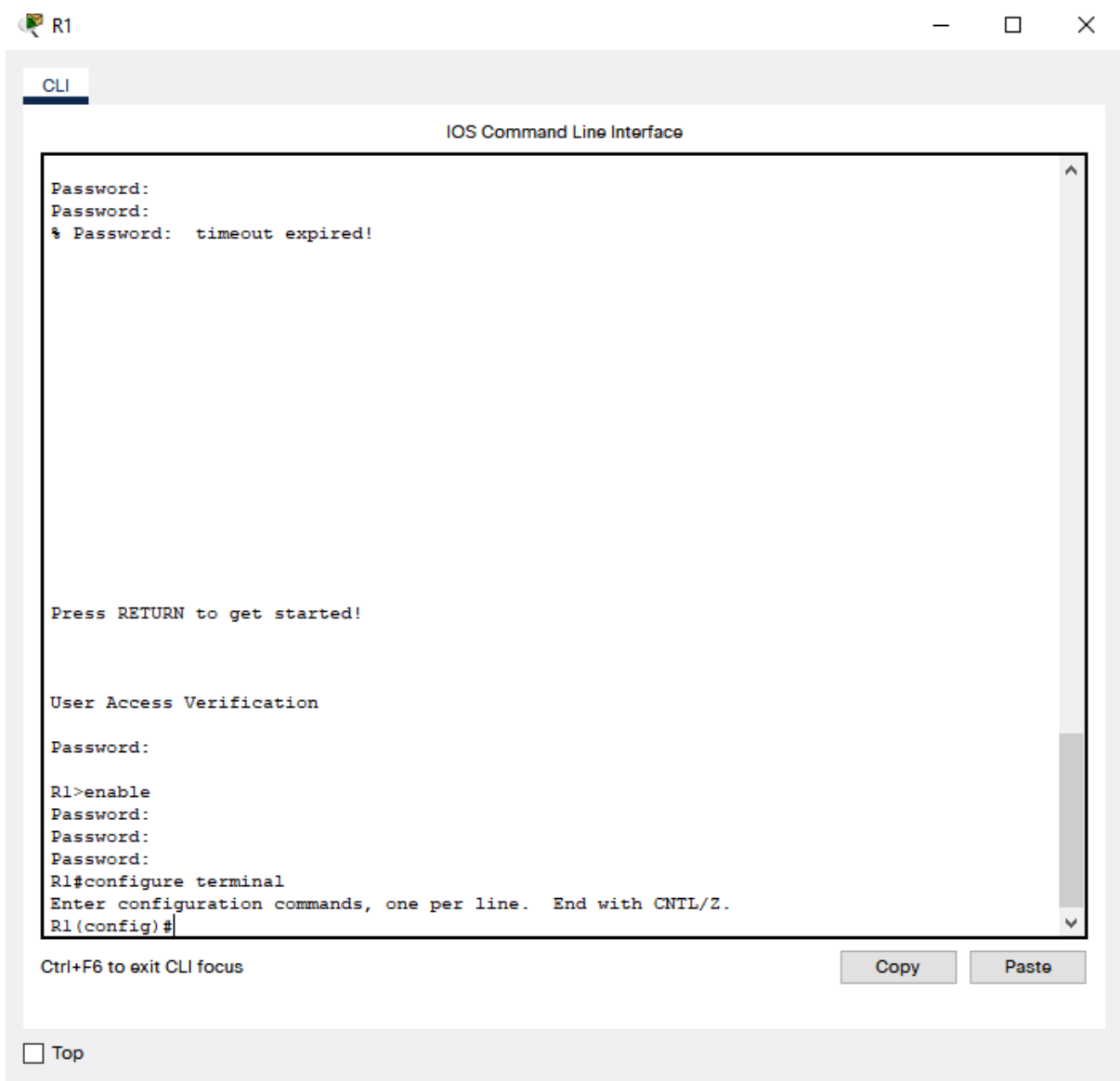
R1#



**** Entrar no modo de Configuração Global ****

R1#configure terminal

R1(config)#



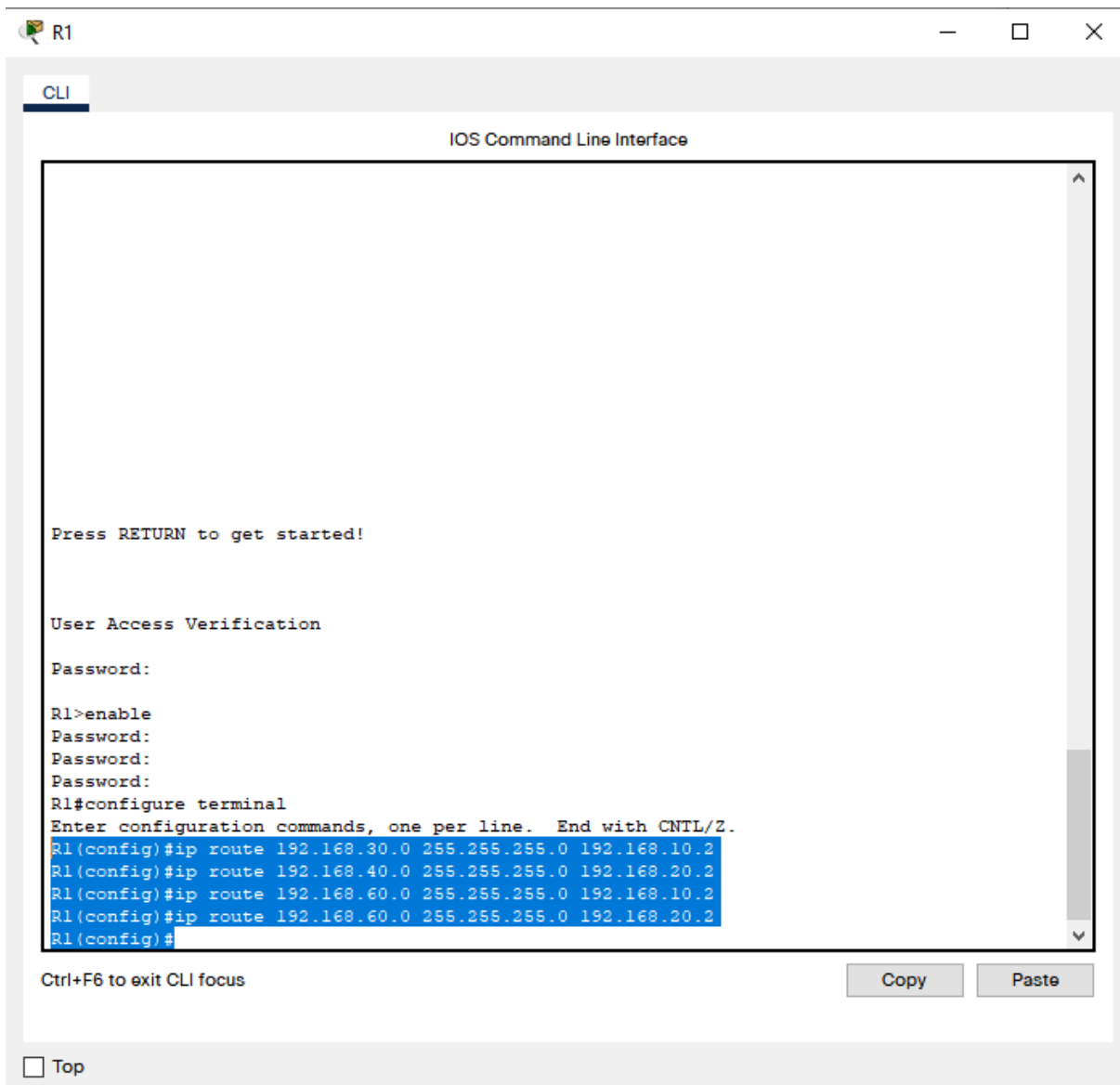
**** Configurar as rotas estáticas ****

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

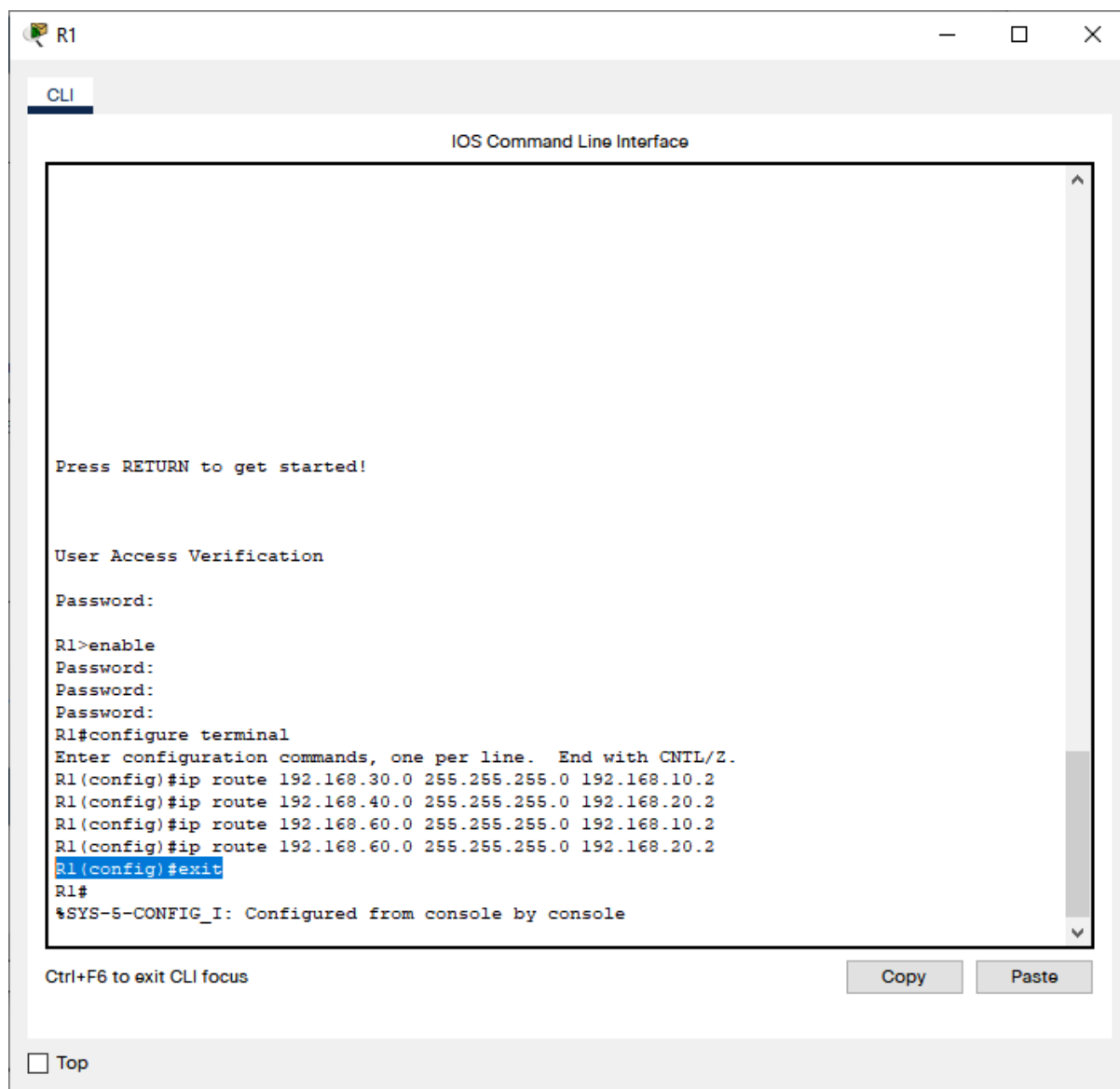
R1(config)#ip route 192.168.60.0 255.255.255.0 192.168.20.2



**** Voltar ao modo EXEC Privilegiado ****

R1(config)#exit

R1#



**** Mostrar a tabela de rotas ****

R1#show ip route

R1

CLI

IOS Command Line Interface

```
R1>enable
Password:
Password:
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#
```

Ctrl+F6 to exit CLI focus

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**** Salvar as configurações ****

R1#copy running-config startup-config

```
R1
CLI
IOS Command Line Interface

Password:
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

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2) Configurar as rotas do Roteador R2

**** Acessar o roteador R2 digitando a senha cisco ****

R2>enable

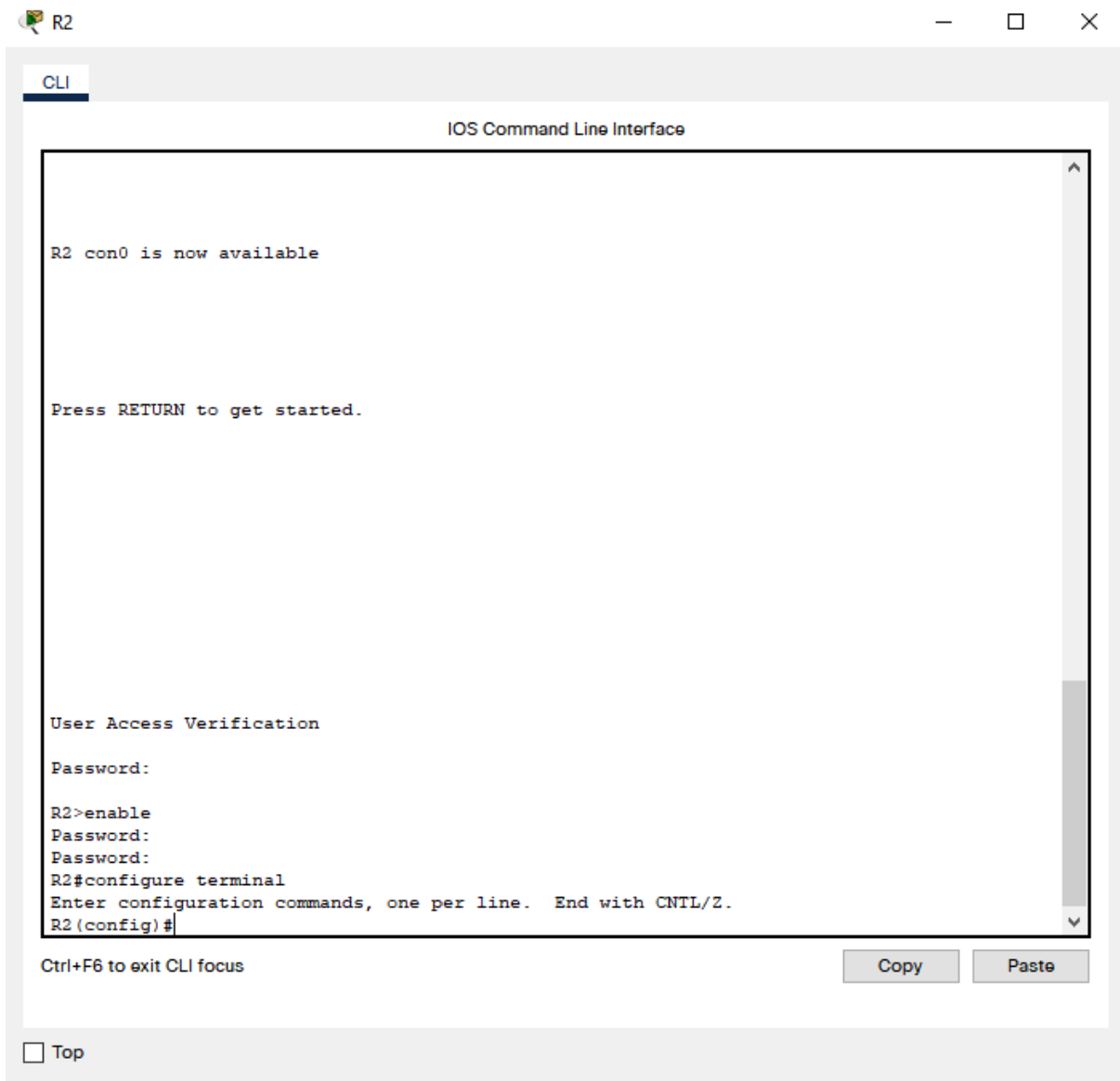
**** Entrar no modo EXEC Privilegiado com a senha class ****

R2#

**** Entrar no modo configure terminal ****

R2#configure terminal

R2(config)#



**** Configurar as rotas estáticas ****

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

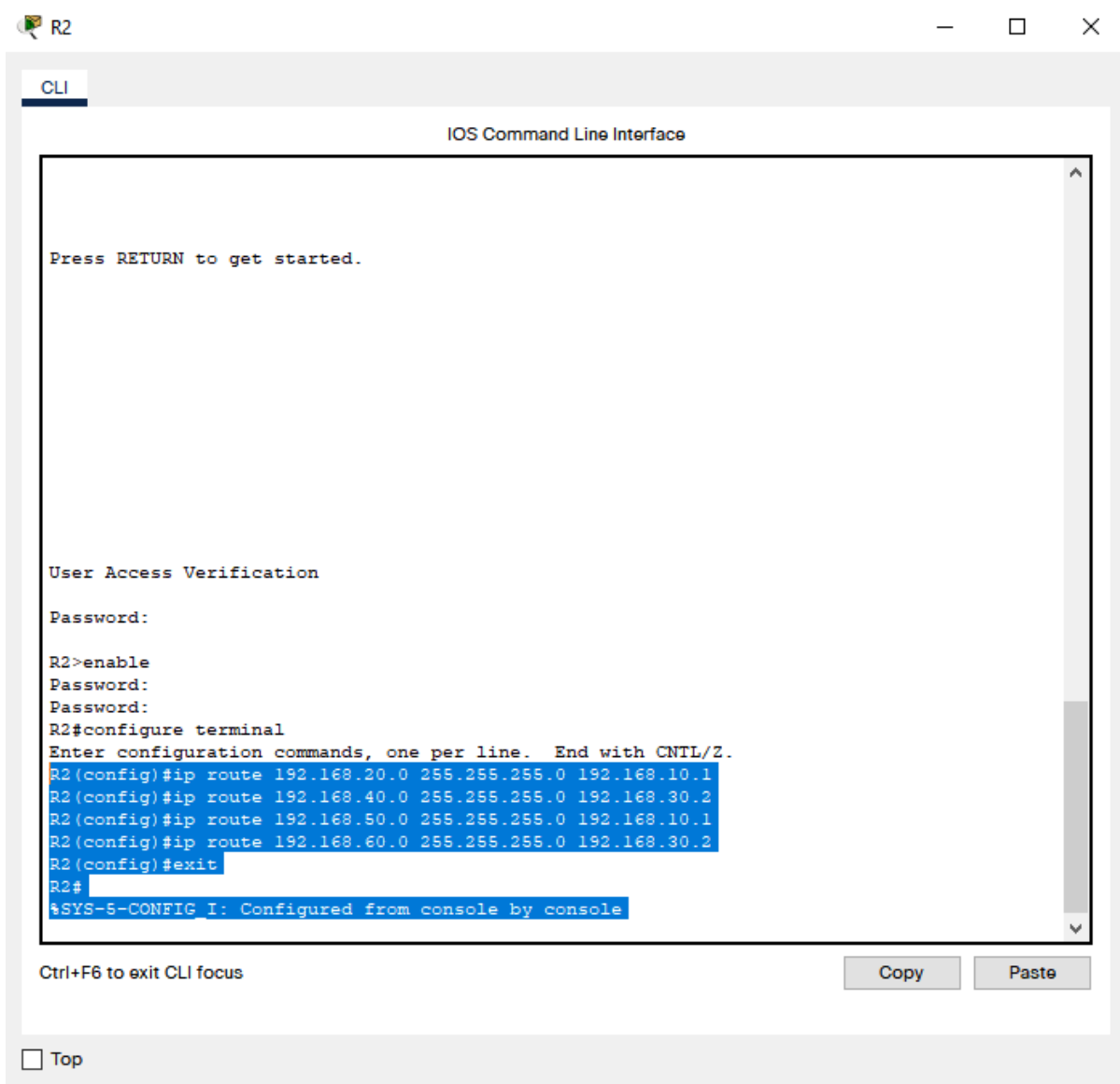
R2(config)#ip route 192.168.50.0 255.255.255.0 192.168.10.1

R2(config)#ip route 192.168.60.0 255.255.255.0 192.168.30.2

**** Voltar ao modo EXEC Privilegiado ****

R2(config)#exit

R2#



**** Mostrar a tabela de rotas ****

R2#show ip route

R2

CLI

IOS Command Line Interface

Password:

R2>enable

Password:

Password:

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#

Ctrl+F6 to exit CLI focus

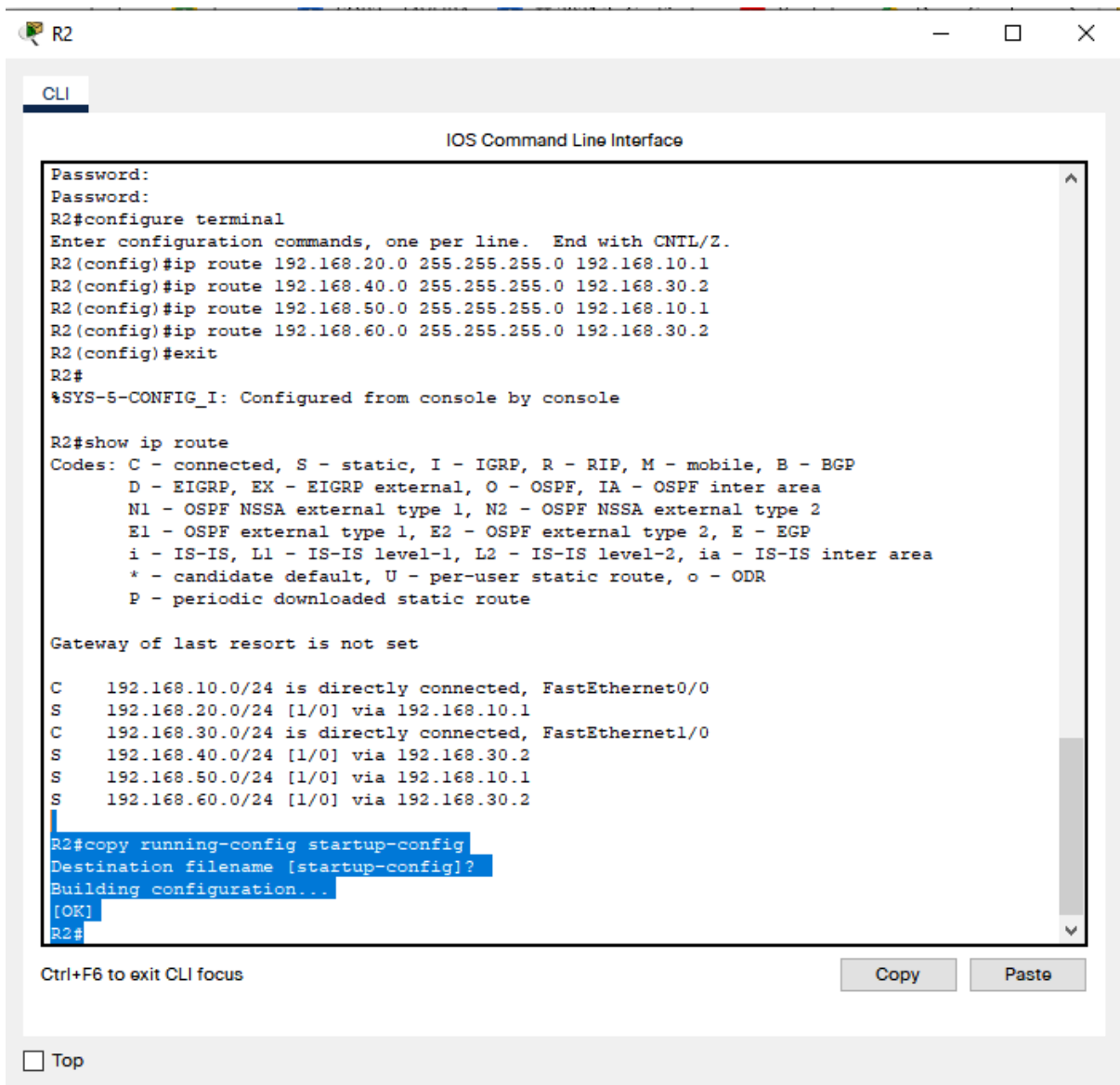
Copy

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**** Salvar as configurações ****

R2#copy running-config startup-config



```
CLI
IOS Command Line Interface

Password:
Password:
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

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3) Configurar as rotas do Roteador R3

**** Acessar roteador R3 digitando a senha cisco ****

R3>enable

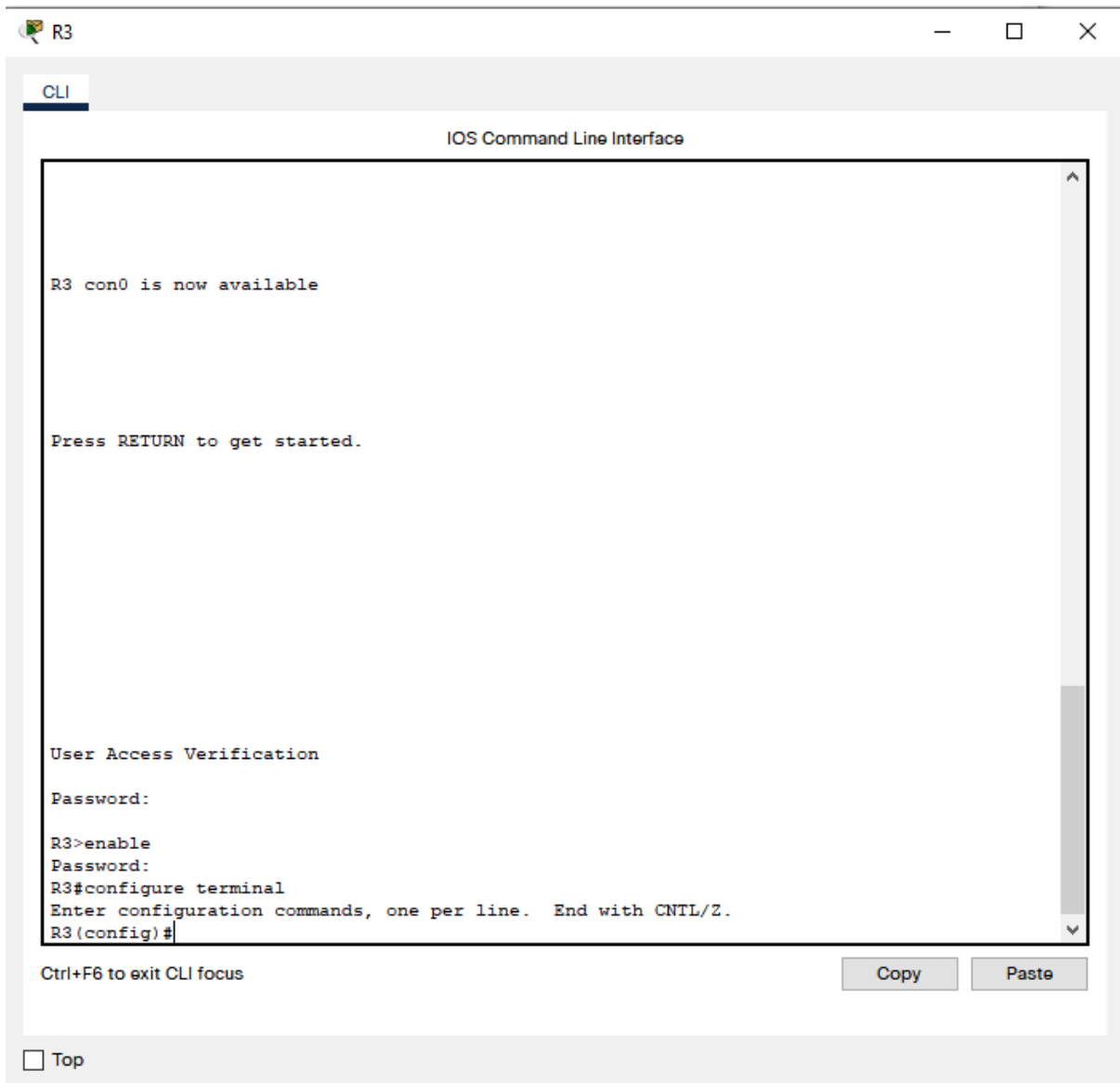
**** Entrar no modo EXEC Privilegiado com a senha class ****

R3#

**** Entrar no modo Configuração Global ****

R3#configure terminal

R3(config)#



**** Configurar as rotas estáticas ****

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

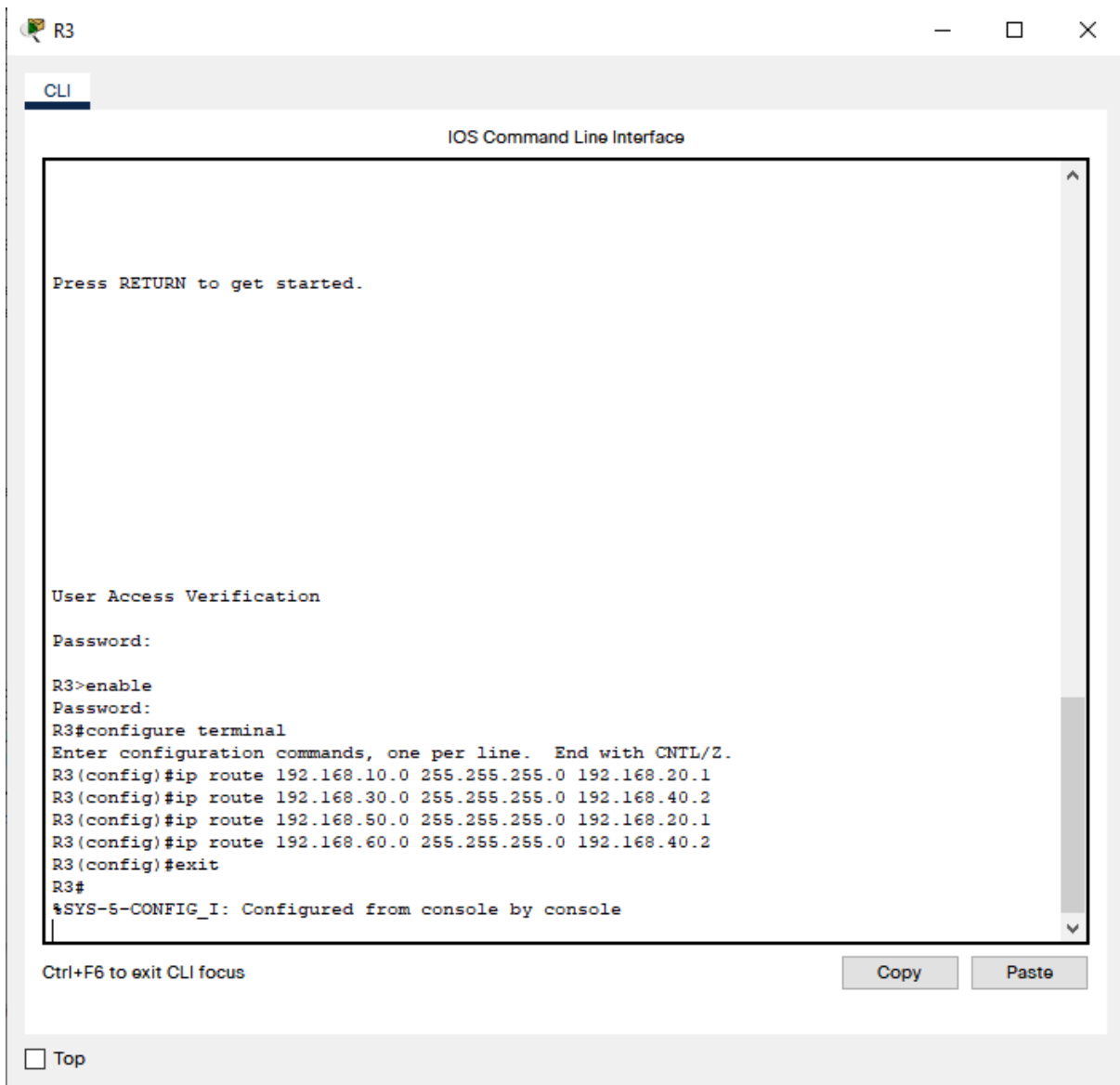
R3(config)#ip route 192.168.50.0 255.255.255.0 192.168.20.1

R3(config)#ip route 192.168.60.0 255.255.255.0 192.168.40.2

**** Voltar ao modo EXEC Privilegiado ****

R3(config)#exit

R31#



**** Mostrar a tabela de rotas ****

R3#show ip route

R3

CLI

IOS Command Line Interface

User Access Verification

Password:

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#

Ctrl+F6 to exit CLI focus

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**** Salvar as configurações ****

R3#copy running-config startup-config

```
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

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4) Configurar as rotas do Roteador R4

**** Acessar o roteador R4 digitando a senha cisco ****

R4>enable

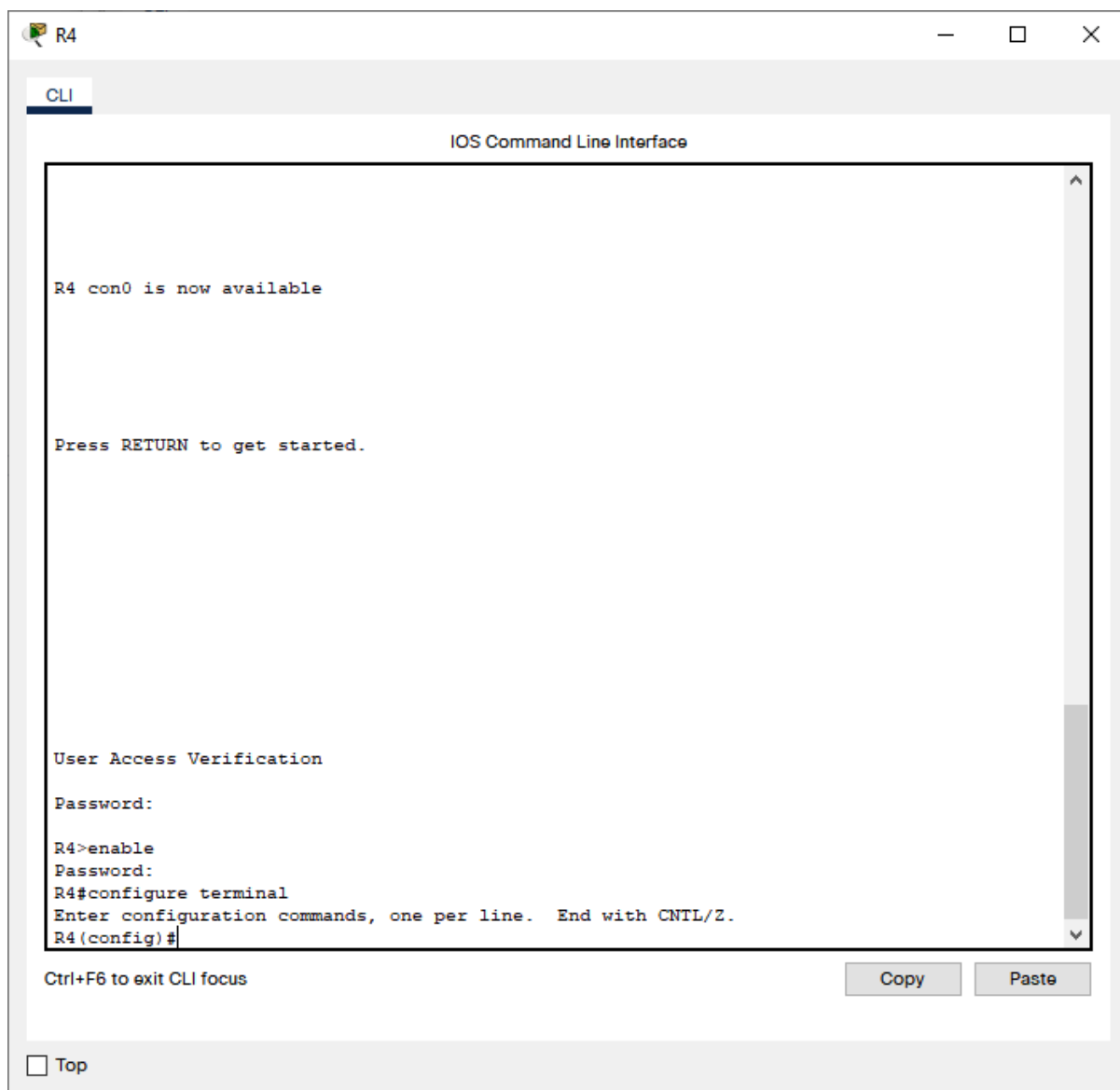
**** Entrar no modo EXEC Privilegiado com a senha class ****

R4#

**** Entrar no modo configure terminal ****

R4#configure terminal

R4(config)#



**** Configurar as rotas estáticas ****

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

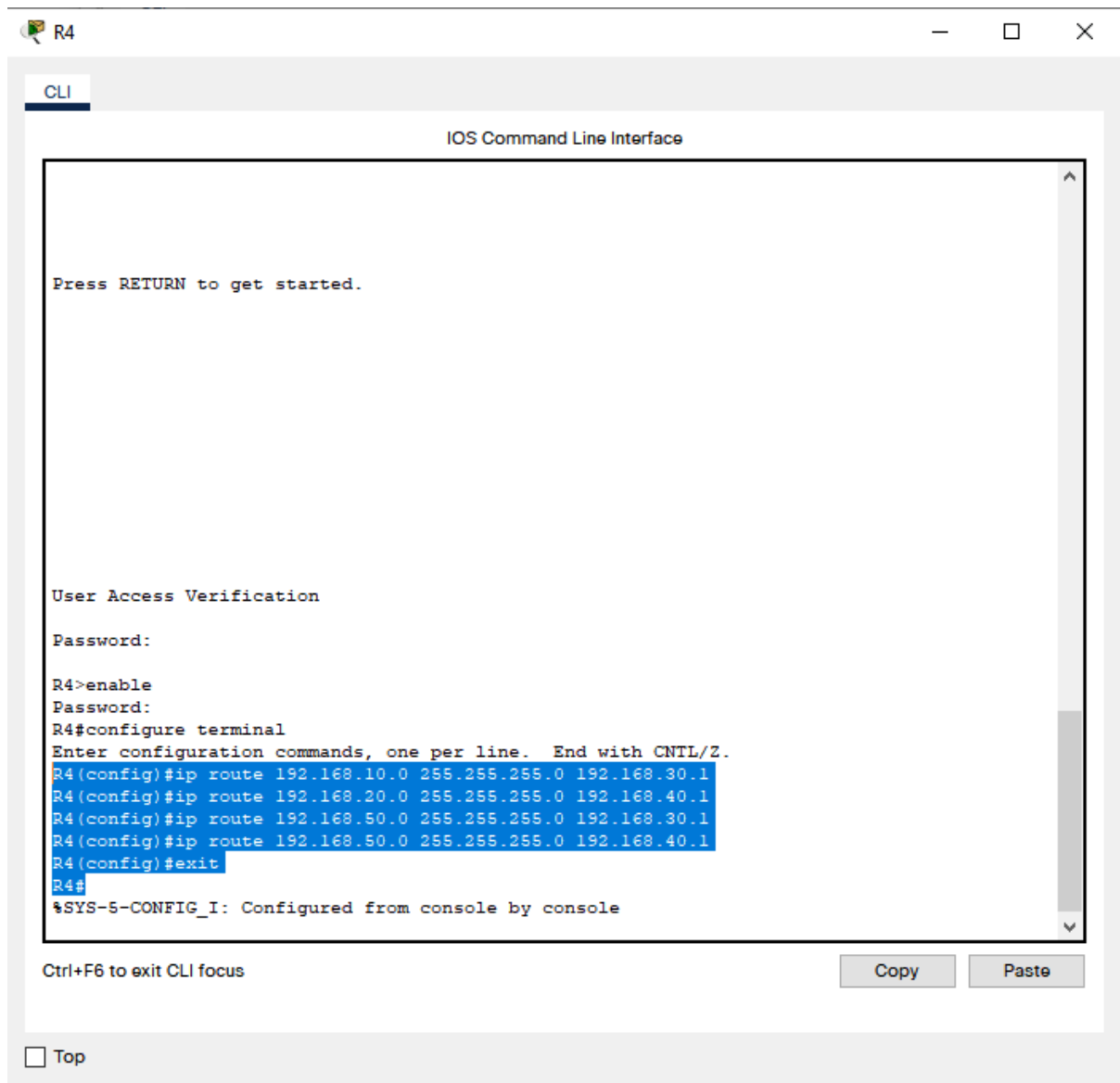
R4(config)#ip route 192.168.50.0 255.255.255.0 192.168.30.1

R4(config)#ip route 192.168.50.0 255.255.255.0 192.168.40.1

**** Voltar ao modo EXEC Privilegiado ****

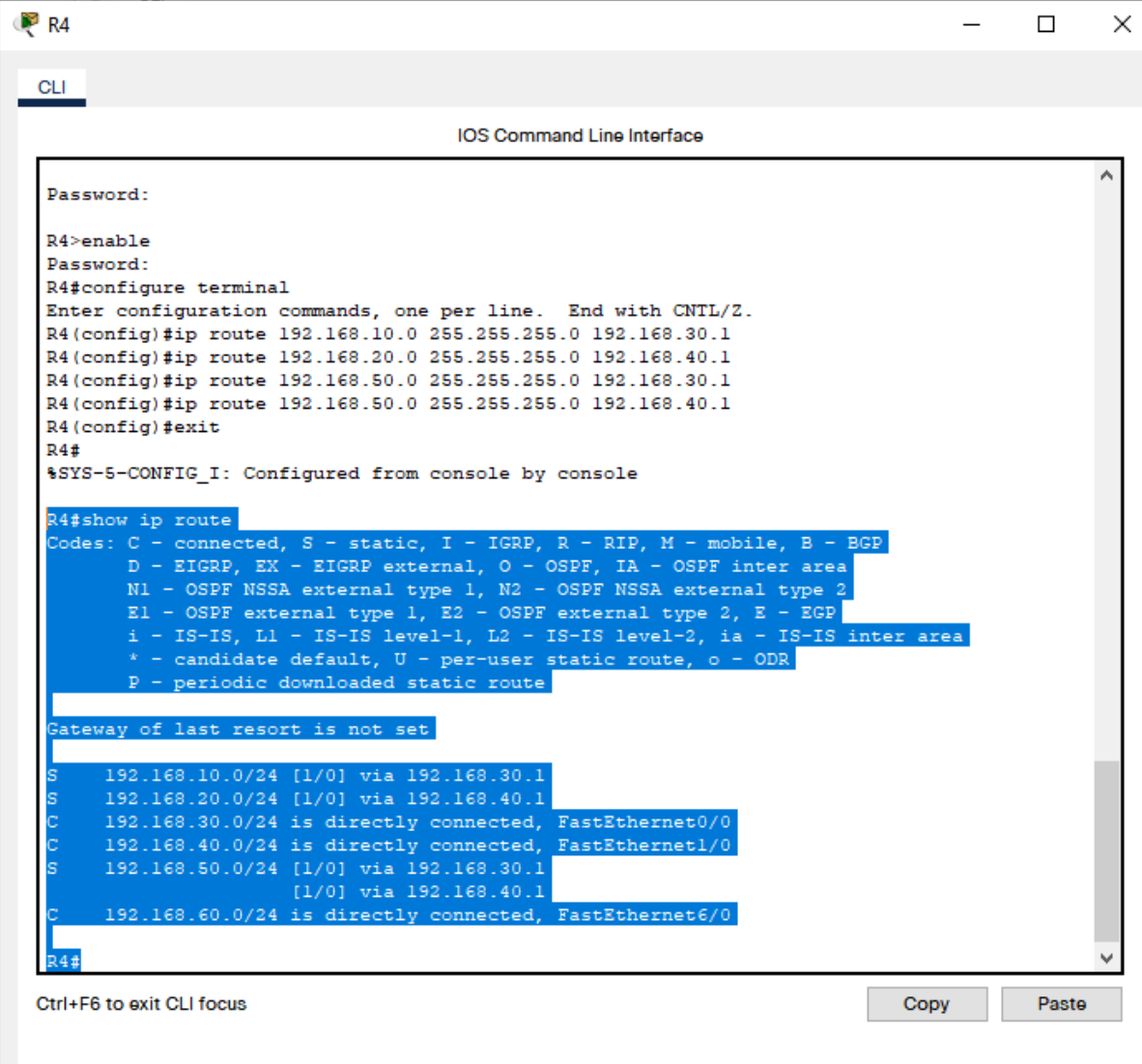
R4(config)#exit

R4#



**** Mostrar a tabela de rotas ****

R4#show ip route



```
R4
CLI
IOS Command Line Interface

Password:

R4>enable
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 192.168.60.0 255.255.255.0 192.168.40.1
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#
```

Ctrl+F6 to exit CLI focus

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**** Salvar as configurações ****

R4#copy running-config startup-config

R4

CLI

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

Top

5) Testar a conectividade entre as duas redes locais

**** pingar do computador PC1 para os endereços IP listados abaixo ****

192.168.50.1
192.168.10.2
192.168.20.2
192.168.40.2
192.168.30.2
192.168.60.2
192.168.60.3
192.168.60.4
192.168.60.5

Command Prompt

Packet Tracer PC Command Line 1.0

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<1ms TTL=255

Reply from 192.168.50.1: bytes=32 time<1ms 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 = 0ms, Average = 0ms

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<1ms 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 = 0ms, Average = 0ms

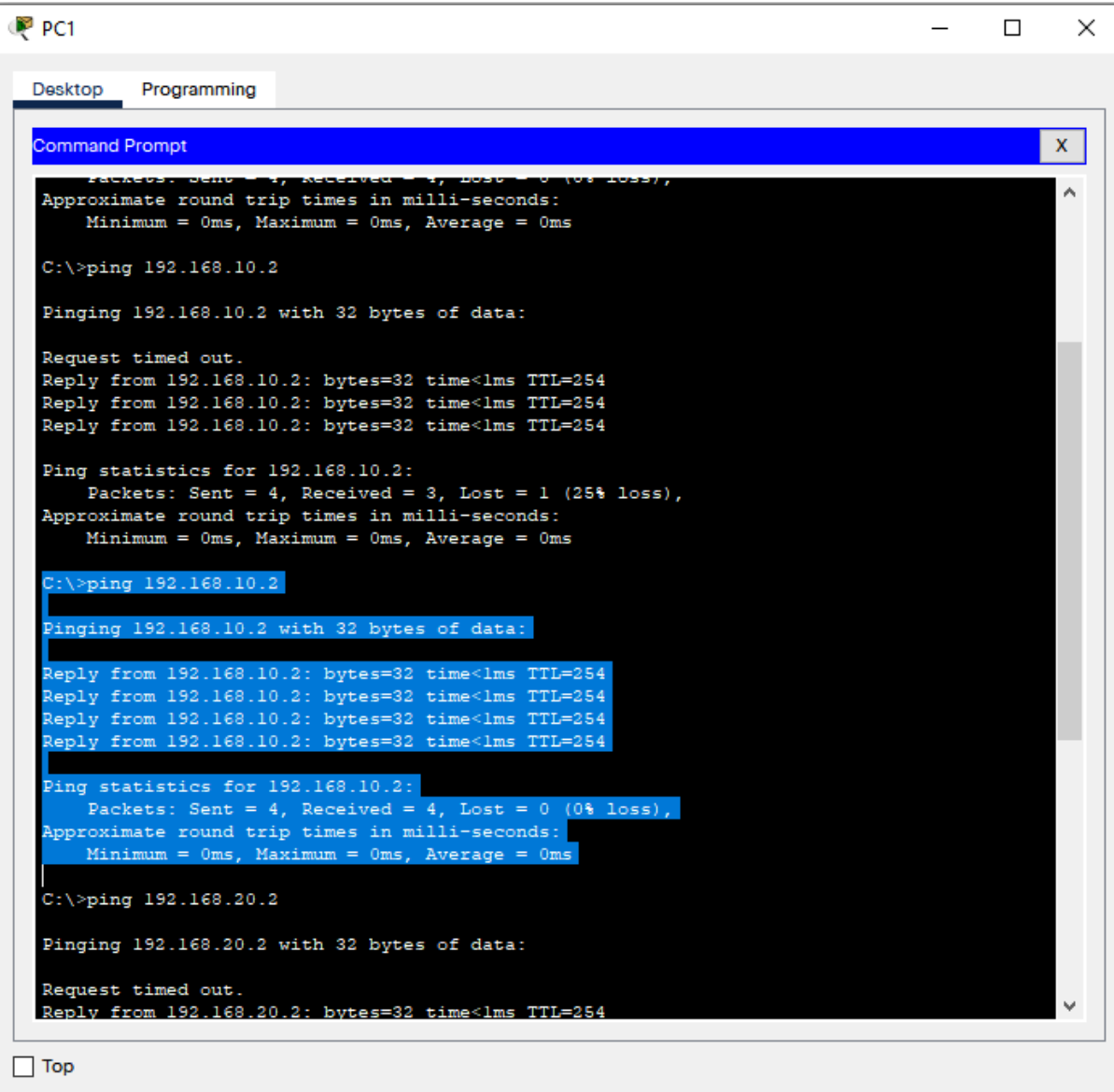
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms 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



Desktop Programming

Command Prompt

```
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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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<1ms 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:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=254
Reply from 192.168.20.2: bytes=32 time=11ms TTL=254
Reply from 192.168.20.2: bytes=32 time<1ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 2ms

C:\>
```

☐ Top

Desktop Programming

Command Prompt

```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
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 192.168.40.2

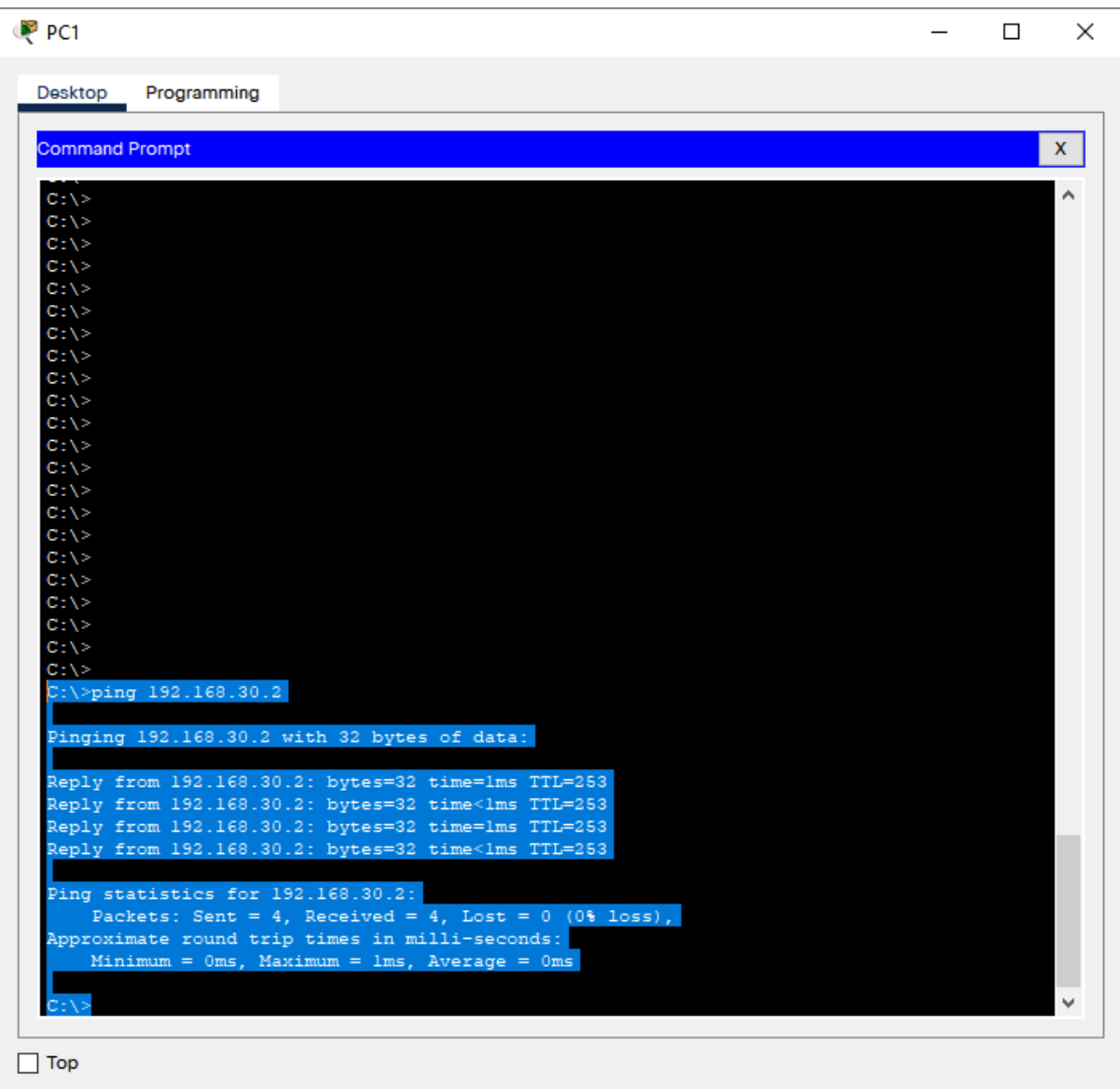
Pinging 192.168.40.2 with 32 bytes of data:

Reply from 192.168.40.2: bytes=32 time<1ms TTL=253
Reply from 192.168.40.2: bytes=32 time<1ms TTL=253
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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top



Desktop Programming

Command Prompt

```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
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:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

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<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
Reply from 192.168.60.2: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top

Desktop Programming

Command Prompt

```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
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<1ms 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 = 0ms, Average = 0ms

C:\>ping 192.168.60.3

Pinging 192.168.60.3 with 32 bytes of data:

Reply from 192.168.60.3: bytes=32 time<1ms TTL=125
Reply from 192.168.60.3: bytes=32 time<1ms TTL=125
Reply from 192.168.60.3: bytes=32 time<1ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top

Desktop Programming

Command Prompt

```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
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 = 1ms, Average = 0ms

C:\>ping 192.168.60.4

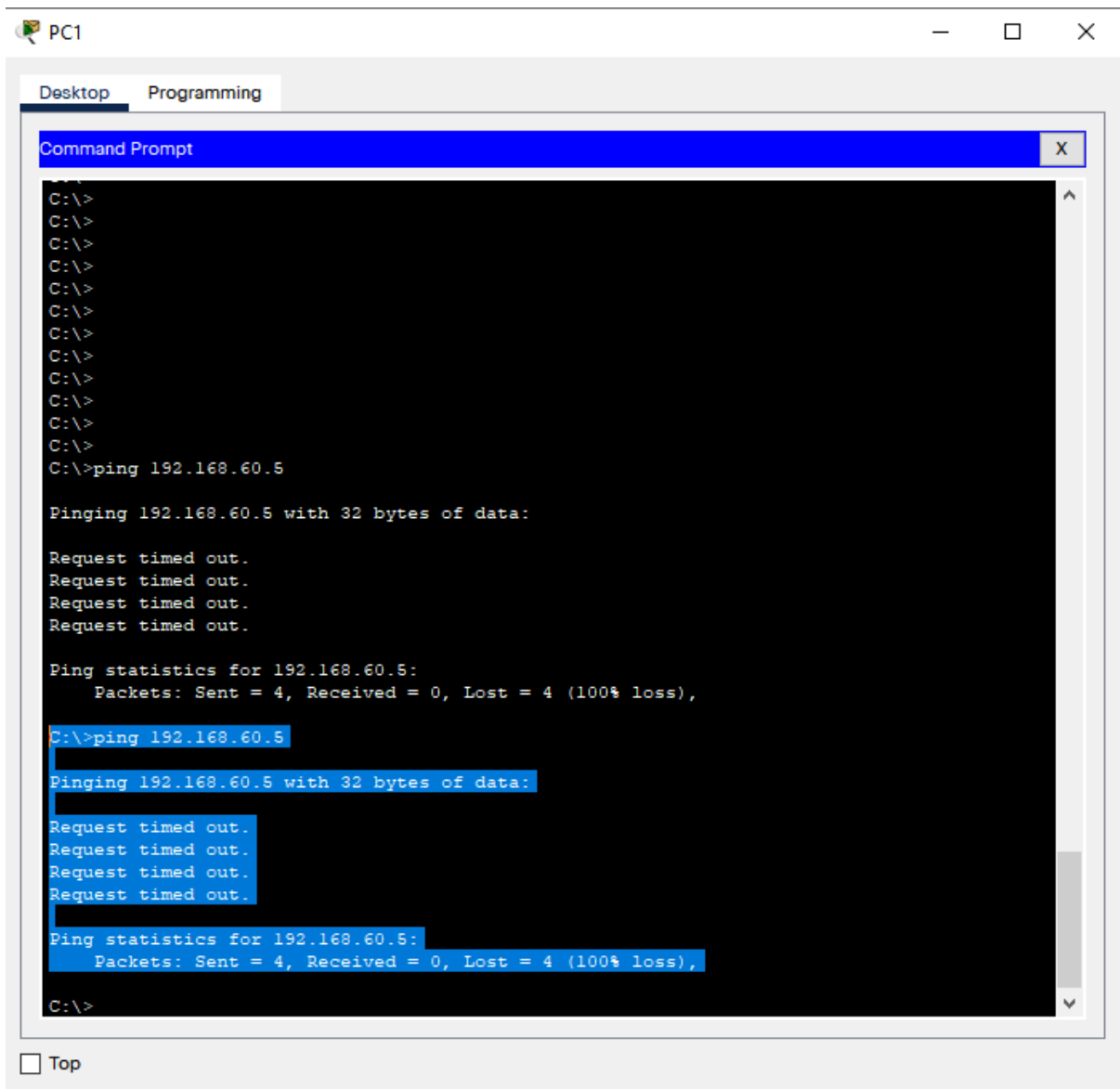
Pinging 192.168.60.4 with 32 bytes of data:

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
Reply from 192.168.60.4: bytes=32 time<1ms TTL=125

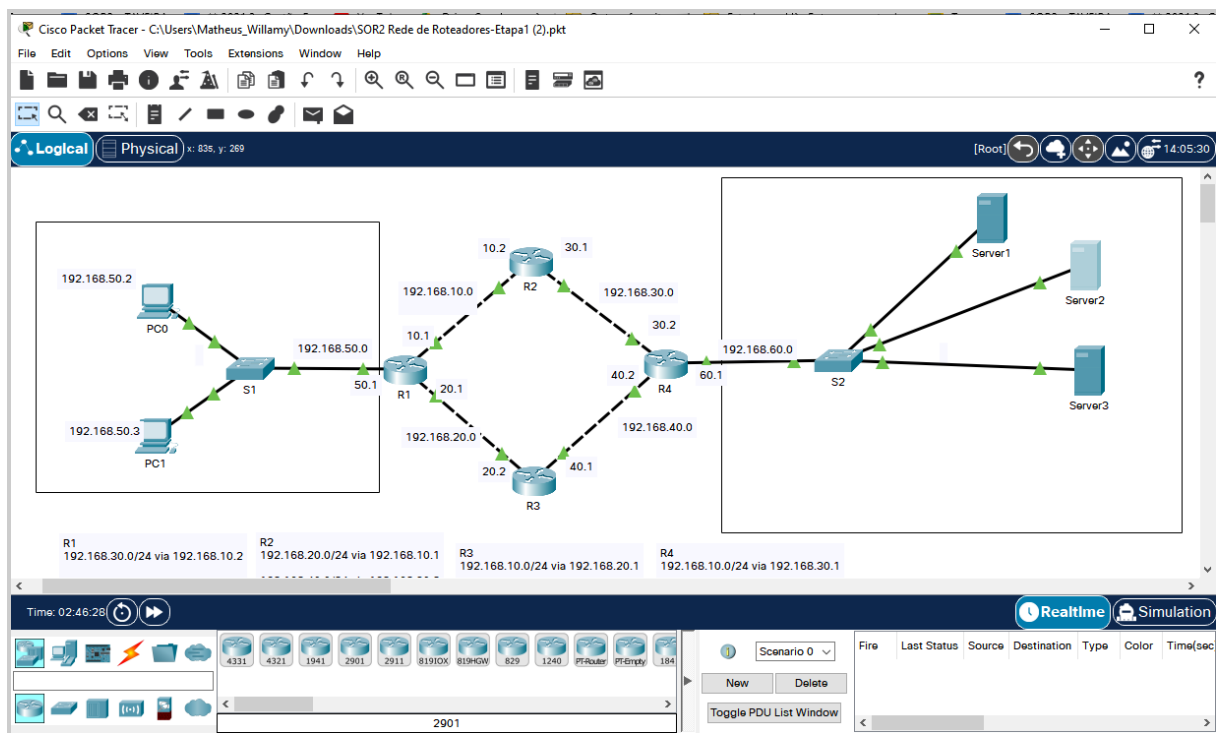
Ping statistics for 192.168.60.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top



Deu Request time out, pois o servidor do ping 192.168.60.5 não existia no packet tracer



Para resolver o problema, foi conectado um novo servido no switch da rede 192.168.60.0 e configurei seu nome, default gateway, ipv4 e subnet mask.

Server4

Physical

Config

Services

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name

Server4

Gateway/DNS IPv4

DHCP

Static

Default Gateway

192.168.60.1

DNS Server

Gateway/DNS IPv6

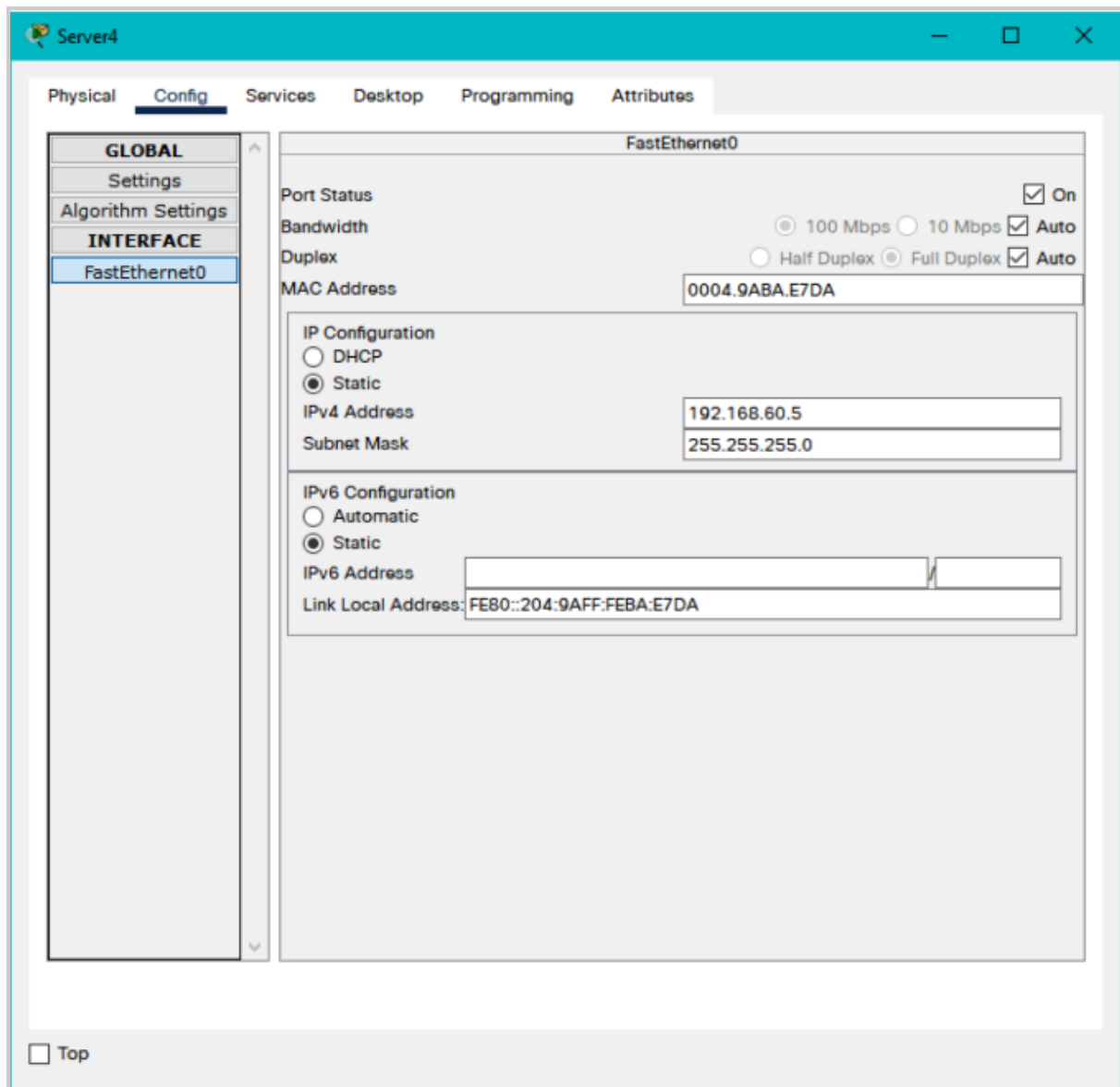
Automatic

Static

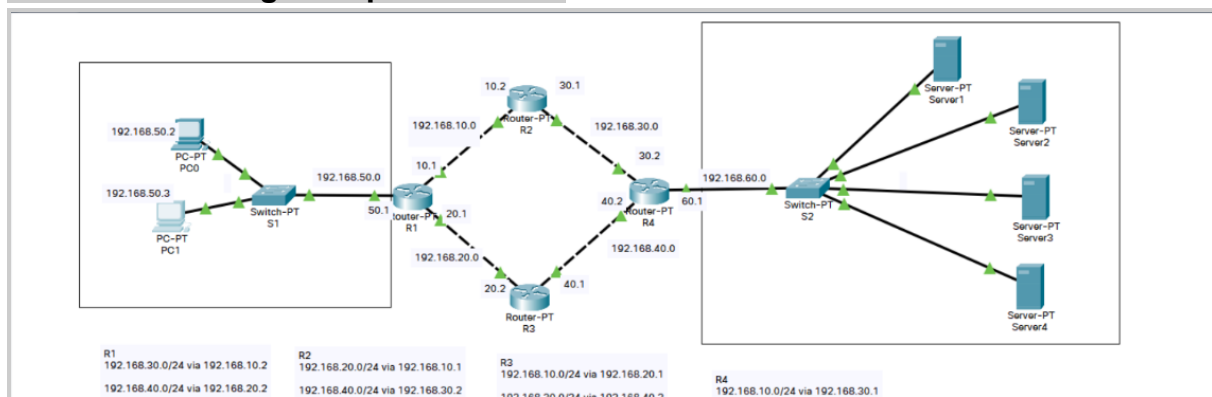
Default Gateway

DNS Server

Top



Estando assim agora o packet tracer



ping 192.168.60.5

```
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<1ms TTL=125
Reply from 192.168.60.5: bytes=32 time<1ms TTL=125
Reply from 192.168.60.5: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms
```

Etapa 4

Nessa etapa faremos a configuração dos serviços HTTP, DHCP, FTP e DNS.

1) Configurar e testar o serviço DNS

Configurar os PC's da rede 192.168.50.0 para usar o endereço de DNS
192.168.60.5

PC0

Physical

Config

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

Global Settings

Display Name

PC0

Interfaces

FastEthernet0

Gateway/DNS IPv4

DHCP

Static

Default Gateway

192.168.50.1

DNS Server

192.168.60.5

Gateway/DNS IPv6

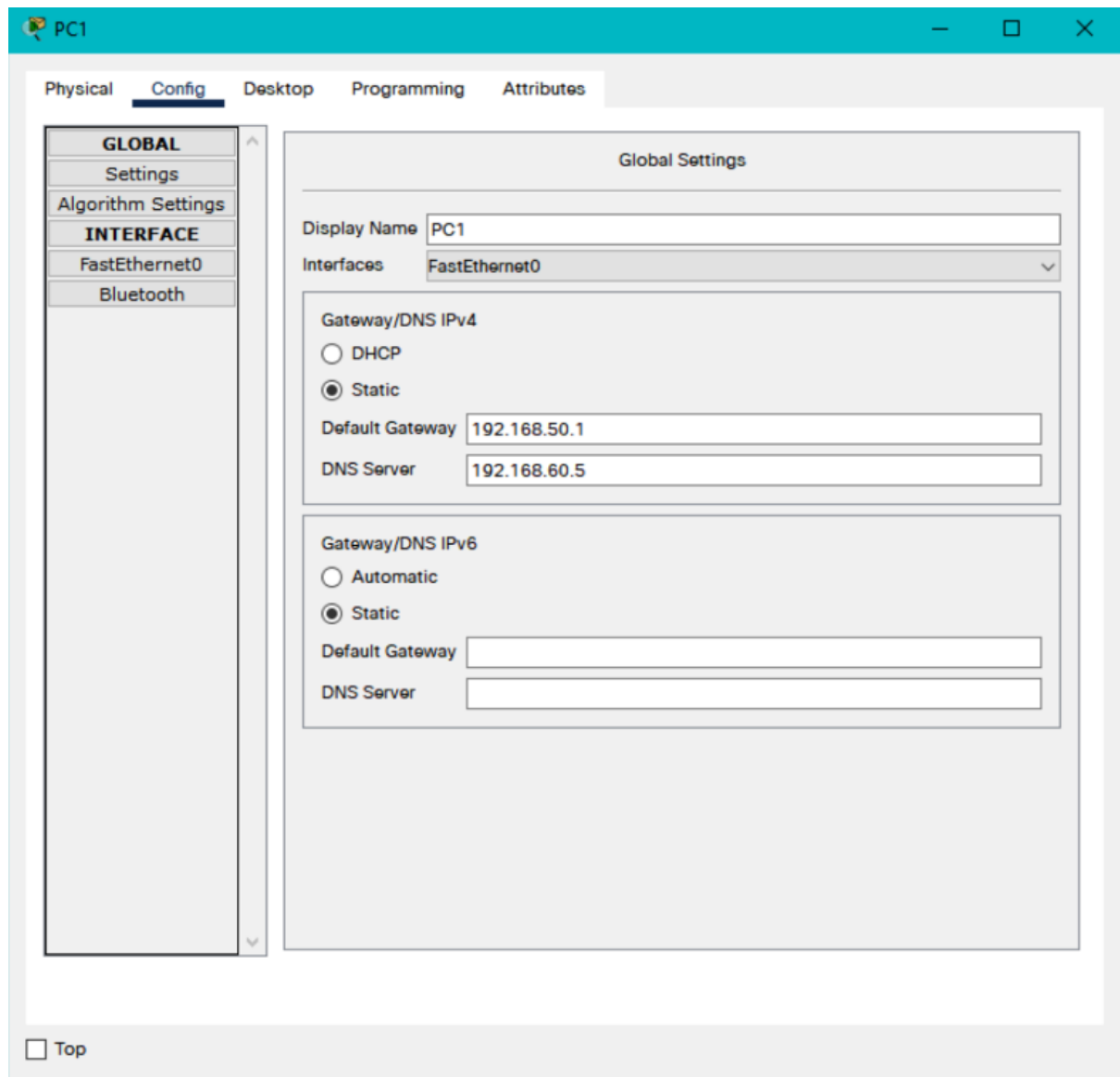
Automatic

Static

Default Gateway

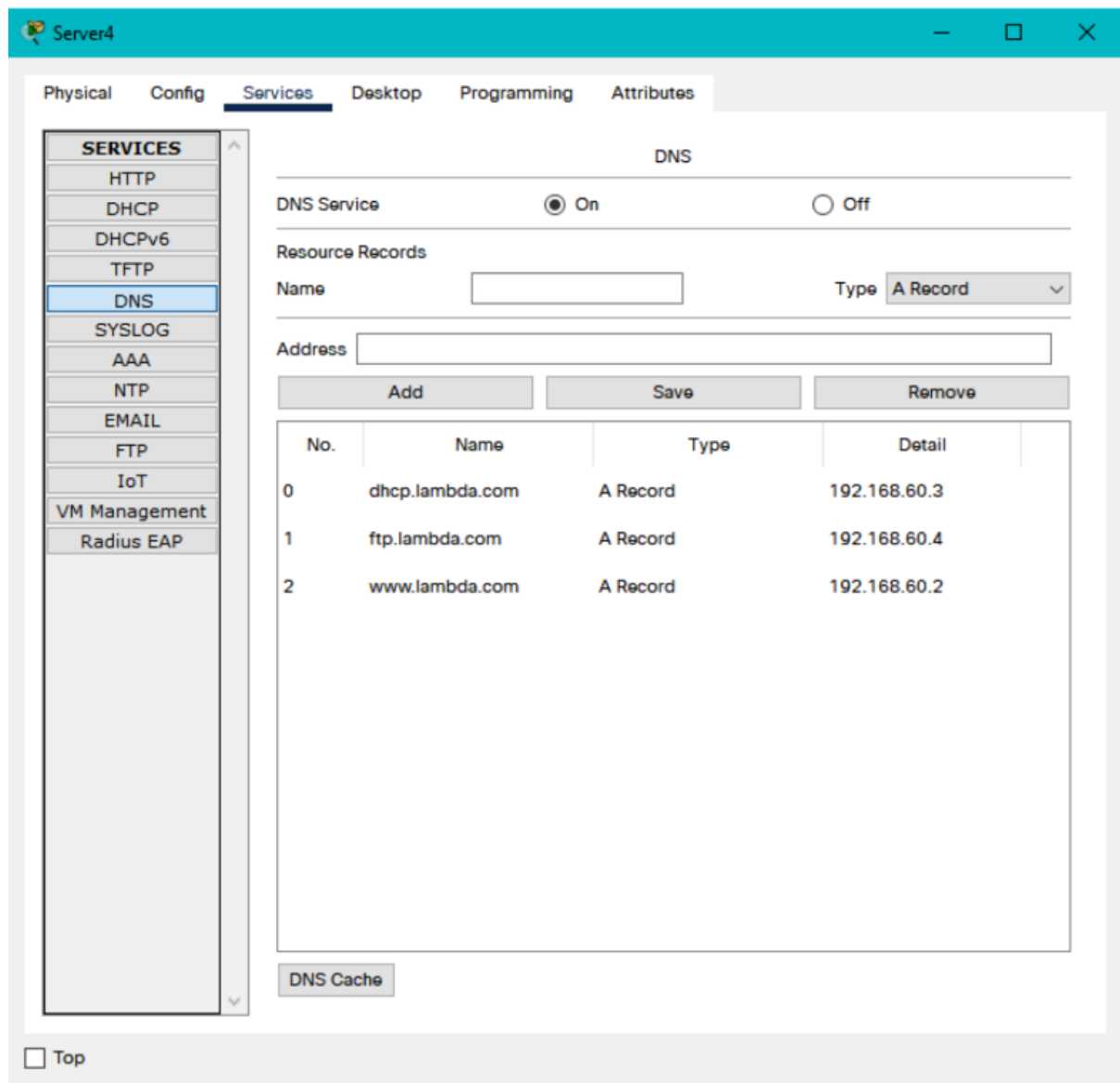
DNS Server

Top



Configurar o serviço DNS no computador dns.lambda.com cujo endereço IP é 192.168.6.5

Seguir a configuração conforme a figura DNS-01.jpeg



Testar a partir do PC0 ou do PC1 a conectividade usando os seguintes comandos:

C:\>ping ftp.lambda.com

C:\>ping dhcp.lambda.com

C:\>ping www.lambda.com

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

Pinging 192.168.60.4 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.4: bytes=32 time=6ms 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 = 6ms, Average = 2ms
```

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

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<1ms 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 = 0ms, Average = 0ms
```

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

Pinging 192.168.60.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.60.2: bytes=32 time=8ms 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 = 8ms, Average = 2ms
```

Observação: No início a resposta é lenta por conta do processo de resolução de nomes.

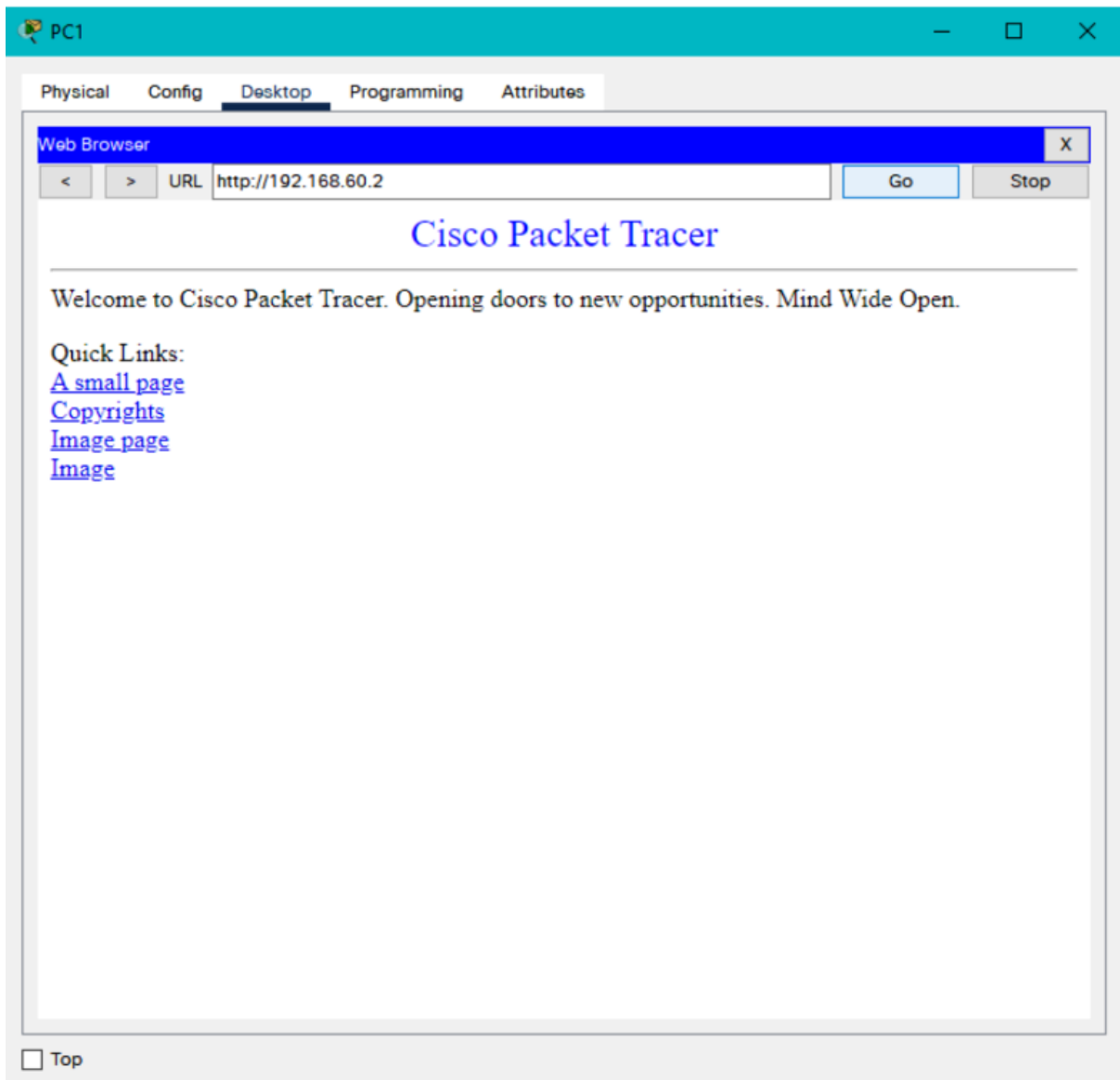
2) Configurar e testar o serviço HTTP

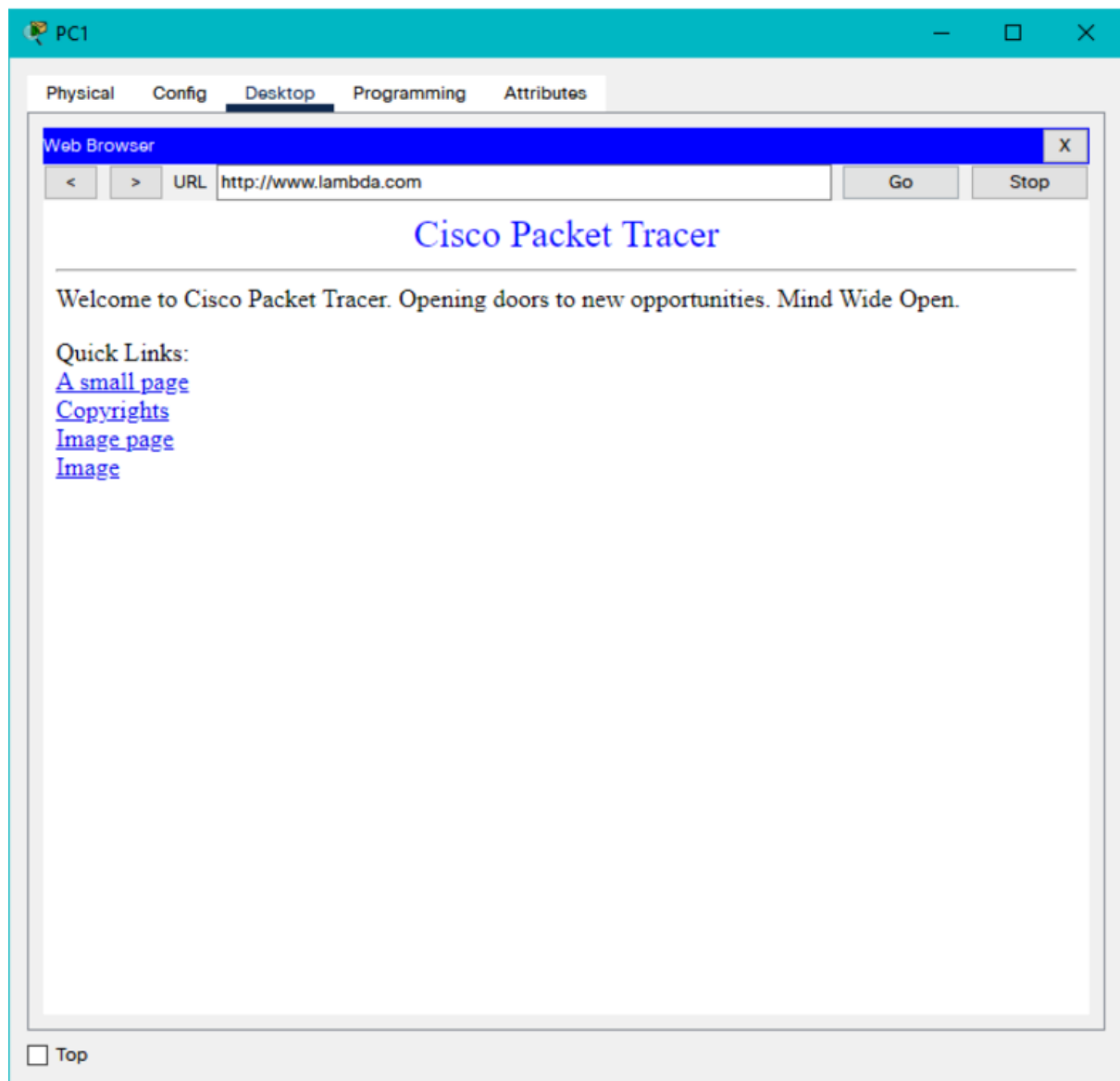
A configuração do serviço HTTP consiste em ativá-lo conforme a figura

Testes HTTP

do PC1 chamar do WebBrowser a URL 192.168.60.2

do PC1 chamar do WebBrowser a URL <http://www.lambda.com>

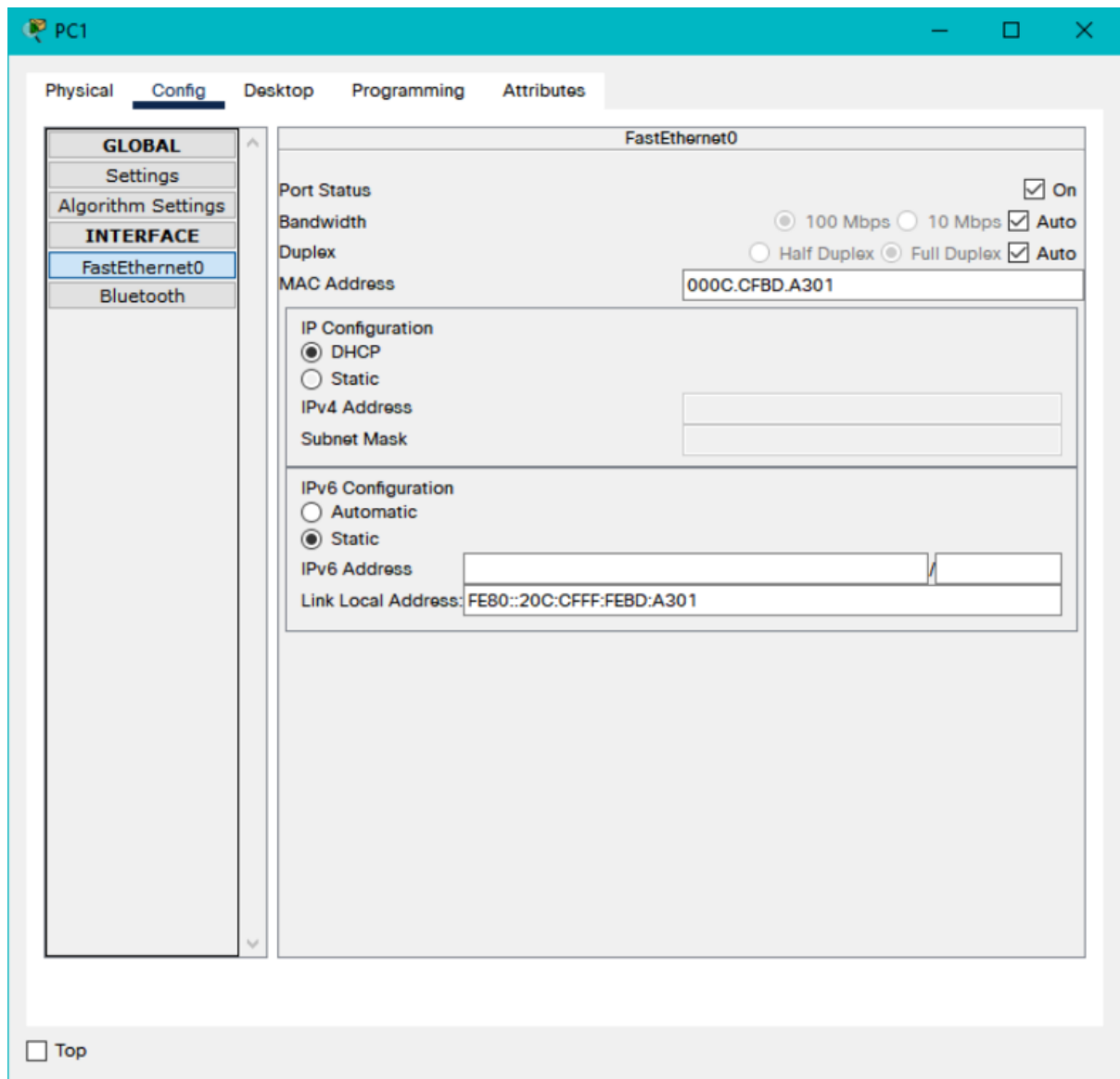




3) Configurar e testar o serviço DHCP

Configurar um computador da rede 192.168.50.0 com DHCP (Ip Dinamico)

Observar se o endereço IP é configurado.



Para receber endereços DHCP na rede 192.168.50.0 é necessário configurar a interface do roteador a qual está configurado o default gateway. Assim os broadcast de requisição de endereço DHCP serão passados adiante.

Configurar a interface Fastethernet 6/0 do roteador R1 para encaminhar broadcast de requisição DHCP até o DHCP Server 192.168.60.3

R1#configure terminal

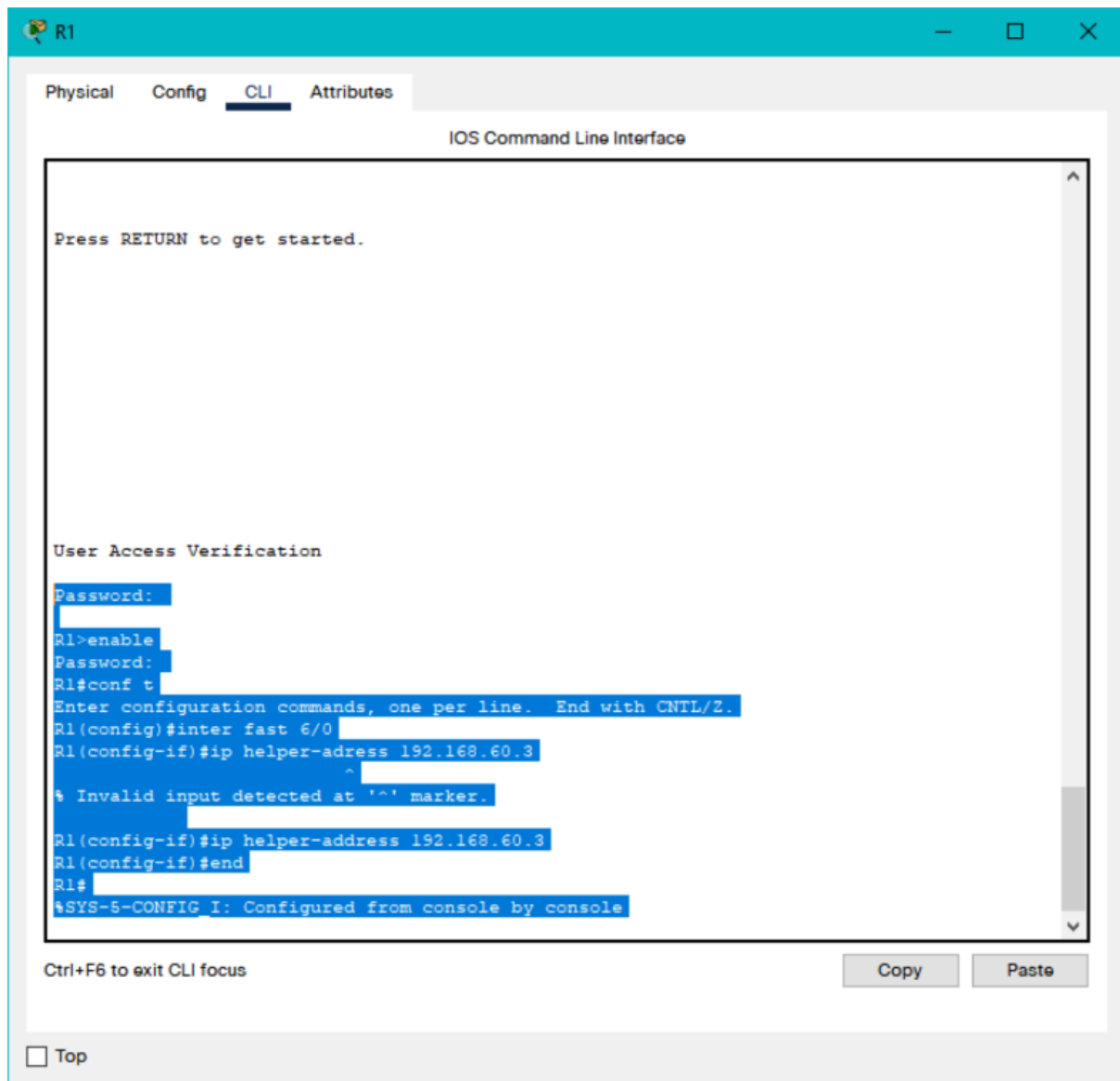
Enter configuration commands, one per line. End with CRTL/Z.

R1(config)#interface fastethernet 6/0

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

R1(config-if)#end

R1#



Observar se o endereço IPv4 foi configurado no computador.

dhcp.lambda.com

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

serverPool

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
serverPool	192.168...	192.168...	192.168...	255.255...	252	0.0.0.0	0.0.0.0

<div>

Top

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

☐ Top

Testar a conectividade usando o ping para o IP 192.168.60.2

```
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<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
Reply from 192.168.60.2: bytes=32 time=7ms 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 = 0ms, Maximum = 7ms, Average = 1ms

C:\>
```

4) Configurar e testar o serviço FTP

The screenshot shows the PT (Packet Tracer) interface with the 'Server 03' configuration window open. The 'Services' tab is selected, and the 'FTP' service is configured. The 'Service' is set to 'On'. The 'User Setup' section shows two users: 'cisco' with password 'cisco' and 'xico' with password '1234', both with 'RWDNL' permissions. The 'File' section shows a list of files: 'asa842-k8.bin', 'asa923-k8.bin', 'c1841-advipservicesk9-mz.124-15.T1.bin', 'c1841-ipbase-mz.123-14.T7.bin', and 'c1841-ipbasek9-mz.124-12.bin'. The 'Remove' button is visible at the bottom right of the file list.

Server 03 // ftp.lambda.com

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
2	xico	1234	RWDNL

Add 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

☐ Top

```
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: 1234
230- Logged in
(passive mode On)
ftp>dir
ftp>help
```

```
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>
```

```
ftp>dir
```

```
Listing /ftp directory from ftp.lambda.com:
```

0	:	asa842-k8.bin	5571584
1	:	asa923-k8.bin	30468096
2	:	c1841-advipservicesk9-mz.124-15.T1.bin	33591768
3	:	c1841-ipbase-mz.123-14.T7.bin	13832032
4	:	c1841-ipbasek9-mz.124-12.bin	16599160
5	:	c1900-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-i6q4l2-mz.121-22.EA4.bin	3058048
15	:	c2950-i6q4l2-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
29	:	ir800_yocto-1.7.2.tar	2877440
30	:	ir800_yocto-1.7.2_python-2.7.3.tar	6912000
31	:	pt1000-i-mz.122-28.bin	5571584
32	:	pt3000-i6q4l2-mz.121-22.EA4.bin	3117390

```
ftp>
```

```
ftp>help
```

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

```
ftp>|
```