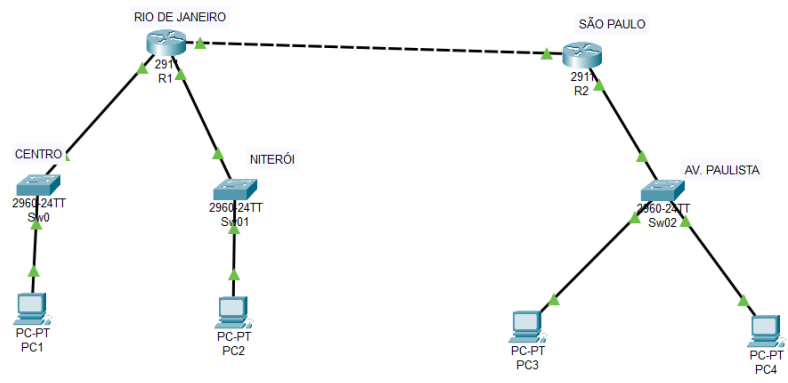


Parte 1. TOPOLOGIA:



**Parte 2:**

Subrede	Endereçamento	Endereços válidos
192.168.1.0/26	192.168.1.0 - 192.168.1.63	192.168.1.1 - 192.168.1.62
192.168.1.64/26	192.168.1.64 - 192.168.1.127	192.168.1.65 - 192.168.1.126
192.168.1.128./26	192.168.1.128 - 192.168.1.191	192.168.1.129 - 192.168.1.190
192.168.1.192/30	192.168.1.192 - 192.168.1.195	192.168.1.193 - 192.168.1.194

**Parte 3: Endereçamento:**

Dispositivo	Interface	Endereço IP	Máscara de Rede	Gateway Padrão
<b>R1</b>	<i>gig0/0</i>	192.168.1.3	255.255.255.192	-
<b>R1</b>	<i>gig0/1</i>	192.168.1.67	255.255.255.192	-
<b>R1</b>	<i>gig0/2</i>	192.168.1.193	255.255.255.252	-
<b>R2</b>	<i>gig0/0</i>	192.168.1.132	255.255.255.192	-
<b>R2</b>	<i>gig0/2</i>	192.168.1.194	255.255.255.252	-
<b>Pc1</b>	<i>FA0</i>	192.168.1.1	255.255.255.192	192.168.1.3
<b>Pc2</b>	<i>FA0</i>	192.168.1.65	255.255.255.192	192.168.1.67
<b>Pc3</b>	<i>FA0</i>	192.168.1.129	255.255.255.192	192.168.1.132
<b>Pc4</b>	<i>FA0</i>	192.168.1.130	255.255.255.192	192.168.1.132
<b>Sw0</b>	<i>vlan1</i>	192.168.1.2	255.255.255.192	-

<b>Sw01</b>	<i>vlan1</i>	192.168.1.66	255.255.255.192	-
<b>Sw02</b>	<i>vlan1</i>	192.168.1.13 1	255.255.255.192	-

## Parte 4: Configuração dos PCs:

### a. Nome dos PCs:

PC1

Physical **Config** Desktop Programming Attributes

**GLOBAL**

- Settings
- Algorithm Settings

**INTERFACE**

- FastEthernet0
- Bluetooth

Global Settings

Display Name **PC1**

Interfaces FastEthernet0

Gateway/DNS IPv4

☐ DHCP

☒ Static

Default Gateway

DNS Server

Gateway/DNS IPv6

☐ Automatic

☒ Static

Default Gateway

DNS Server

☐ Top

Delete

PC2

Physical

Config

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

Global Settings

Display NamePC2

InterfacesFastEthernet0

Gateway/DNS IPv4

DHCP

Static

Default Gateway

DNS Server

Gateway/DNS IPv6

Automatic

Static

Default Gateway

DNS Server

Top

PC3

Physical

Config

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

Global Settings

Display Name

PC3

Interfaces

FastEthernet0

Gateway/DNS IPv4

DHCP

Static

Default Gateway

DNS Server

Gateway/DNS IPv6

Automatic

Static

Default Gateway

DNS Server

Top



PC4

Physical

Config

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

Global Settings

Display NamePC4

InterfacesFastEthernet0

Gateway/DNS IPv4

DHCP

Static

Default Gateway

DNS Server

Gateway/DNS IPv6

Automatic

Static

Default Gateway

DNS Server

Dele

## B e C: Configuração dos endereços IP e Gateway padrão dos PCs:

PC1

Physical Config **Desktop** Programming Attributes

**IP Configuration** X

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.192

Default Gateway: 192.168.1.3

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::20C:85FF:FED4:5CC9

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

Top



PC2

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

192.168.1.65

Subnet Mask

255.255.255.192

Default Gateway

192.168.1.67

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::260:3EFF:FE17:7A50

Default Gateway

DNS Server

802.1X

Use 802.1X Security

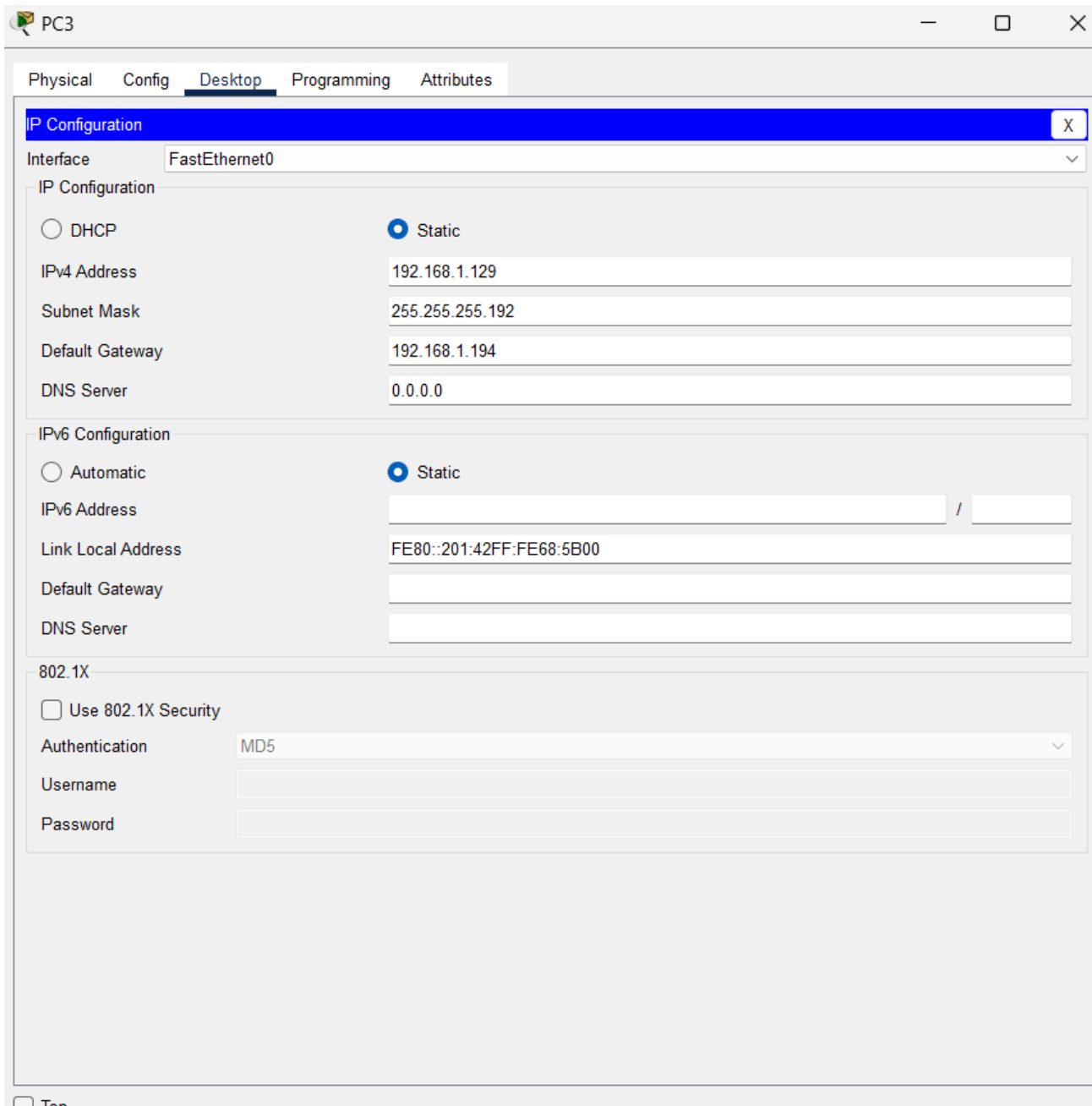
Authentication

MD5

Username

Password

Top



PC4

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

192.168.1.130

Subnet Mask

255.255.255.192

Default Gateway

192.168.1.194

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::2D0:BCFF:FEA8:92EA

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

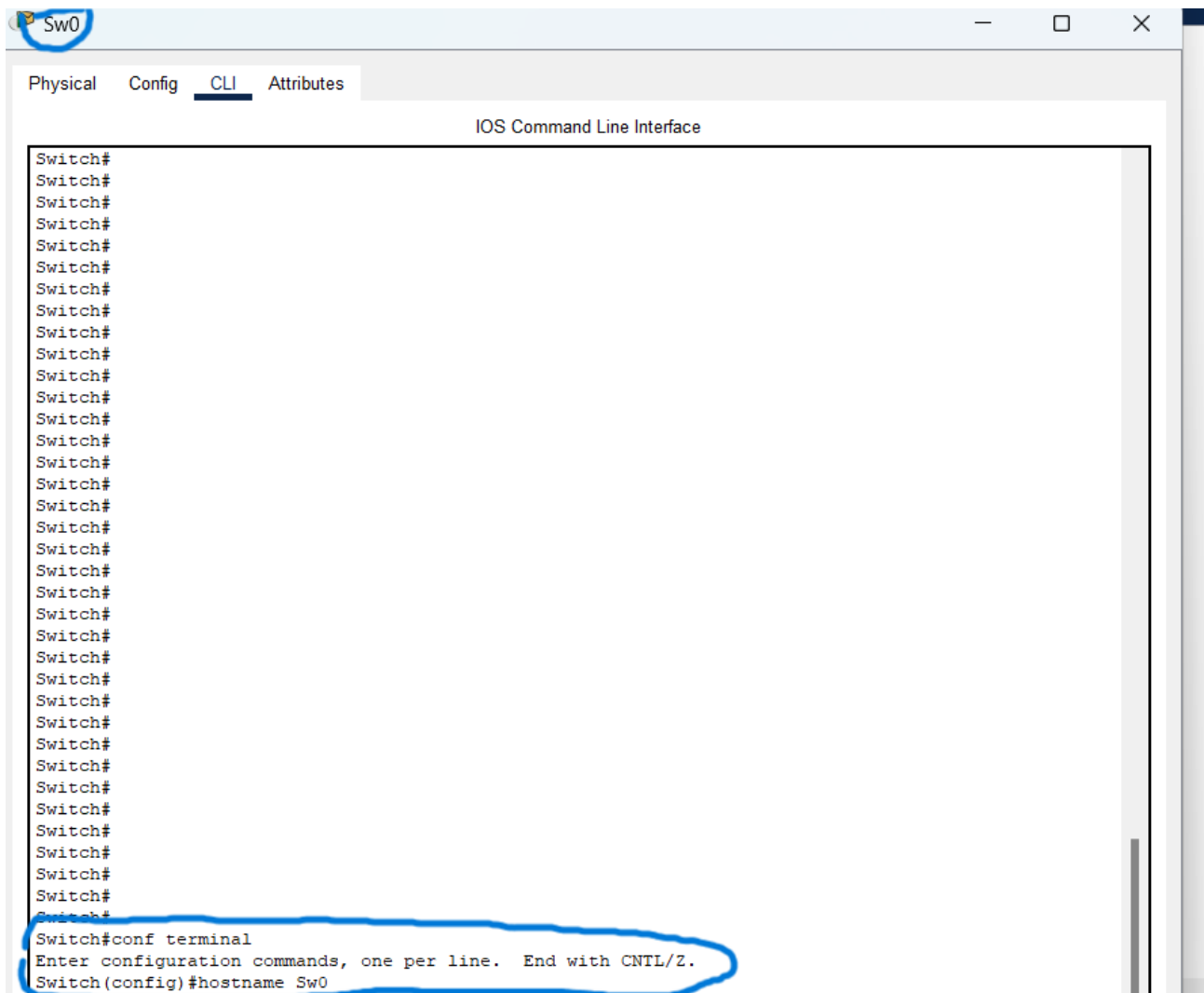
Username

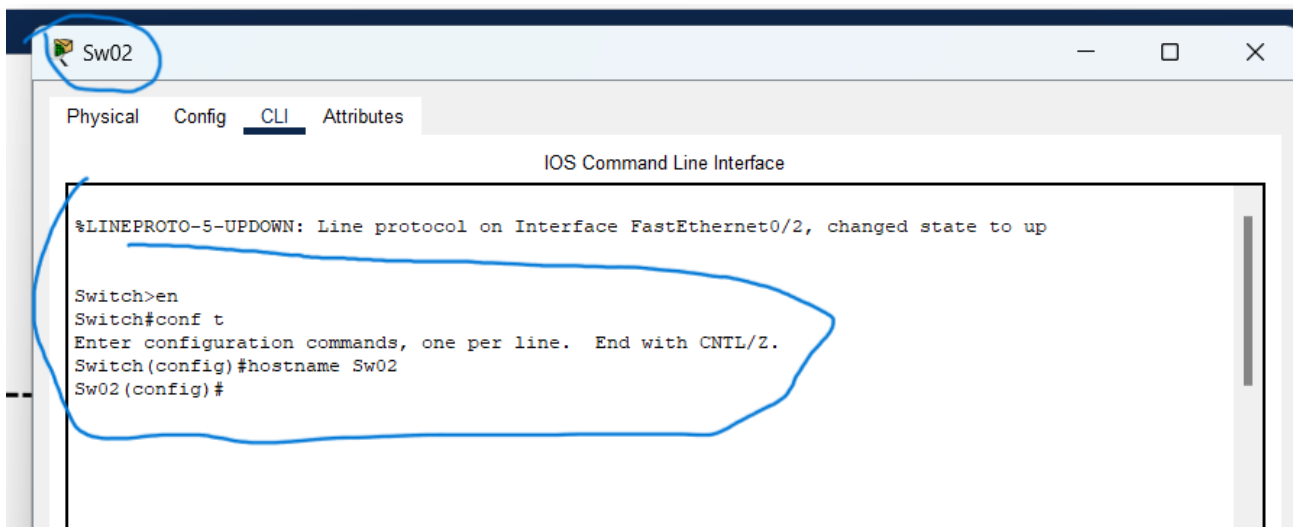
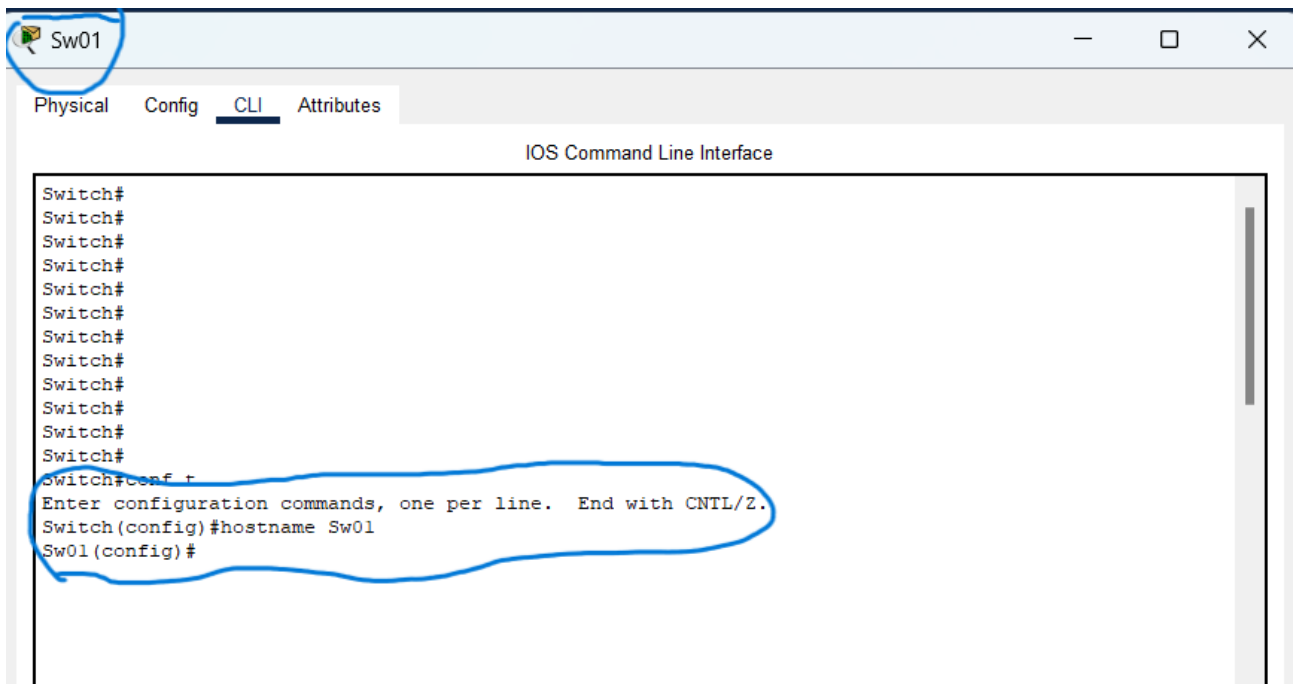
Password

## Parte 5: Configuração dos Switches:

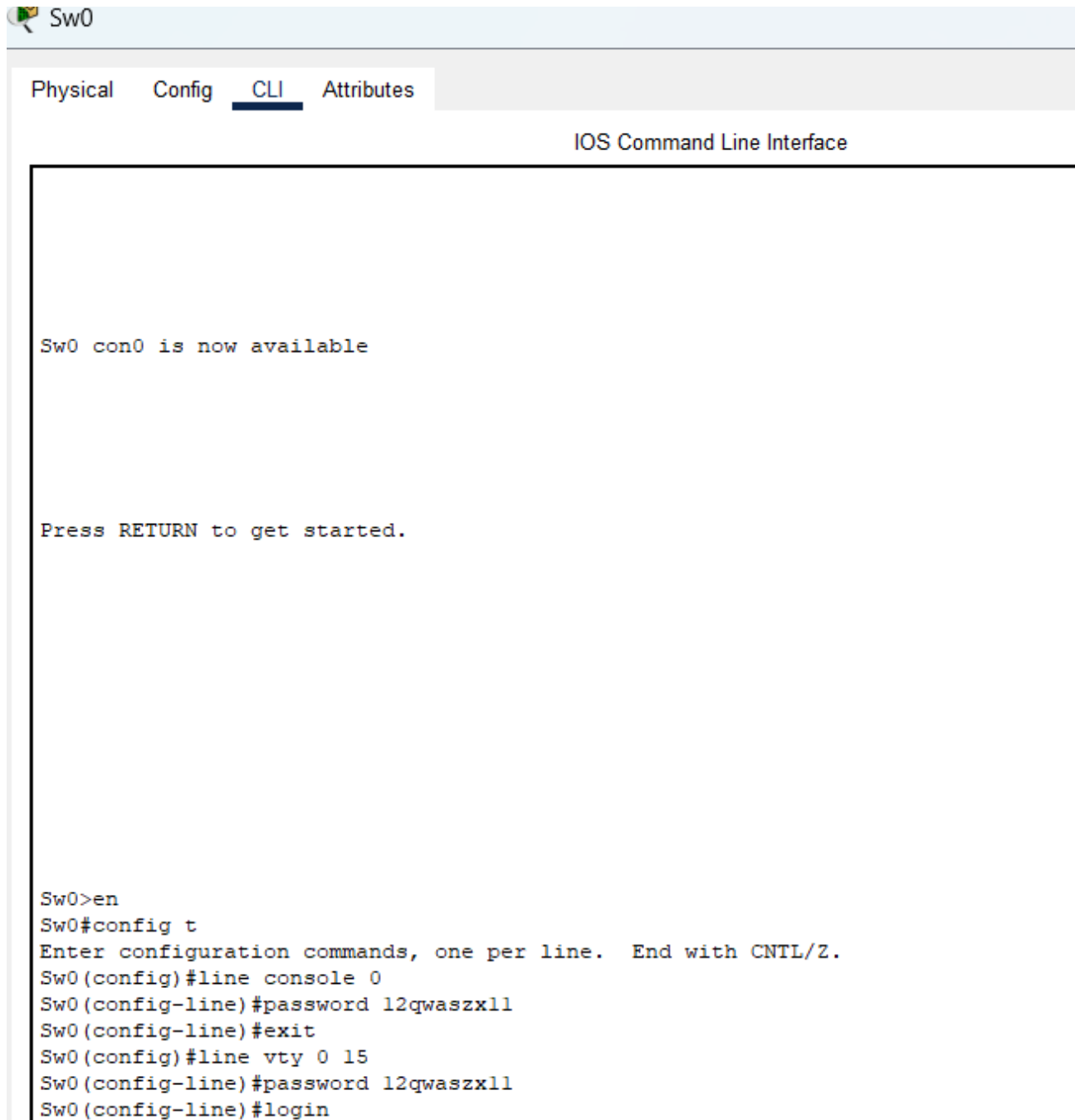
### a. Nome dos switches:

**Observação:** O “Sw0” corresponde ao switch no Centro do Rio de Janeiro. O “Sw01” corresponde ao switch em Niterói. O “Sw02” corresponde ao switch na Av. Paulista, em São Paulo.





**b. senha para o acesso console e senhas vty:**



```
Sw0
Physical  Config  CLI  Attributes

IOS Command Line Interface

Sw0 con0 is now available

Press RETURN to get started.

Sw0>en
Sw0#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Sw0(config)#line console 0
Sw0(config-line)#password 12qwaszx11
Sw0(config-line)#exit
Sw0(config)#line vty 0 15
Sw0(config-line)#password 12qwaszx11
Sw0(config-line)#login
```

Press RETURN to get started.

User Access Verification

Password:

Sw01>

Sw01>en

Password:

Sw01#conf t

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

Sw01(config)#line 0 console

^

% Invalid input detected at '^' marker.

Sw01(config)#line console 0

Sw01(config-line)#password 12qwaszx11

Sw01(config-line)#exit

Sw01(config)#line vty 0 15

Sw01(config-line)#paassword 12qwaszx931208

^

% Invalid input detected at '^' marker.

Sw01(config-line)#password 12qwaszx931208

Sw01(config-line)#login

Sw02

Physical Config CLI Attributes

IOS Command Line Interface

Sw02 con0 is now available

Press RETURN to get started.

User Access Verification

Password:

Password:

Sw02>en

Password:

Sw02#conf t

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

Sw02(config)#line console 0

Sw02(config-line)#password 12qwaszx11

Sw02(config-line)#exit

Sw02(config)#line vty 0 15

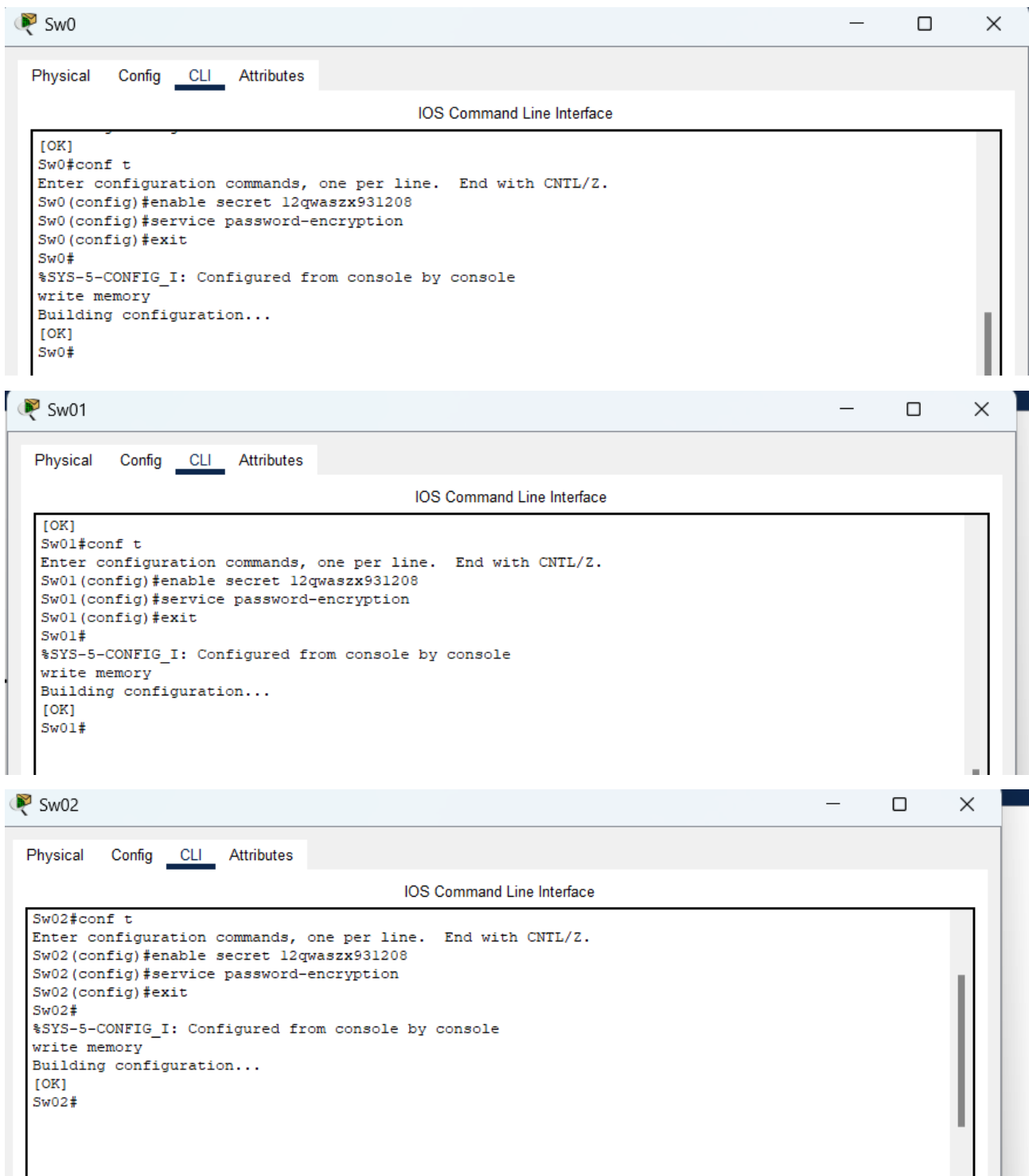
Sw02(config-line)#password 12qwaszx11

Sw02(config-line)#login

Sw02(config-line)#



## C, D, e F: Senha para o acesso EXEC privilegiado, senhas criptografadas e configurações salvas:



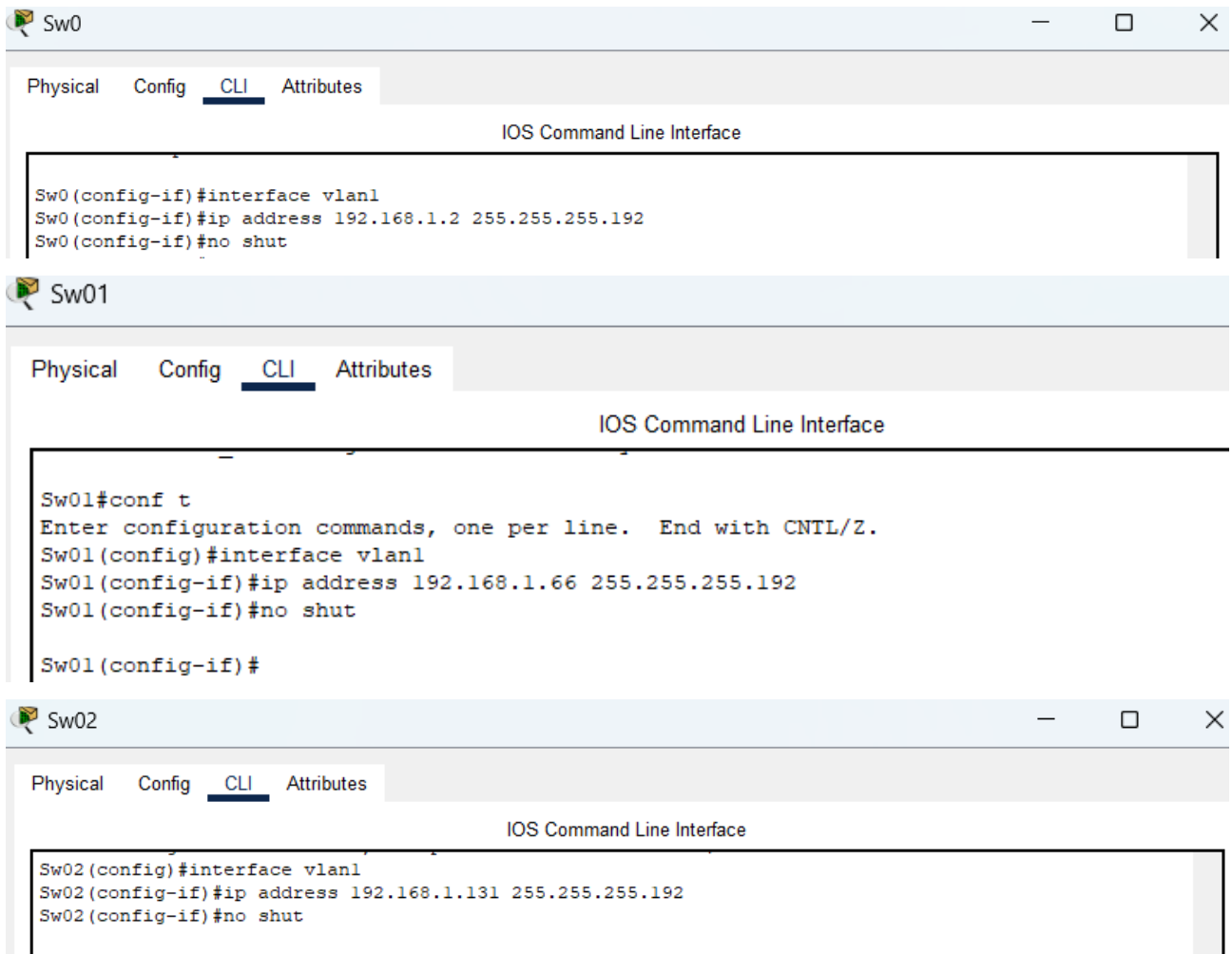
The image displays three separate windows, each representing a network switch (Sw0, Sw01, and Sw02). Each window has a tabbed interface with 'Physical', 'Config', 'CLI', and 'Attributes' tabs. The 'CLI' tab is selected in all three, showing the 'IOS Command Line Interface'. The CLI shows a sequence of commands: entering configuration mode, enabling secret passwords, enabling service password encryption, exiting configuration mode, and saving the configuration to memory. The output of these commands is visible, including confirmation messages and the status of the configuration.

```
[OK]
Sw0#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw0(config)#enable secret 12qwaszx931208
Sw0(config)#service password-encryption
Sw0(config)#exit
Sw0#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
Sw0#
```

```
[OK]
Sw01#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw01(config)#enable secret 12qwaszx931208
Sw01(config)#service password-encryption
Sw01(config)#exit
Sw01#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
Sw01#
```

```
Sw02#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw02(config)#enable secret 12qwaszx931208
Sw02(config)#service password-encryption
Sw02(config)#exit
Sw02#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
Sw02#
```

## e. IP des VLANS:



The image displays three separate windows, each representing the CLI of a different switch (Sw0, Sw01, and Sw02). Each window has a title bar with the switch name and standard window controls. Below the title bar is a tabbed interface with 'Physical', 'Config', 'CLI', and 'Attributes' tabs. The 'CLI' tab is selected in all three windows, showing the 'IOS Command Line Interface'.

**Sw0 CLI:**

```
Sw0(config-if)#interface vlan1
Sw0(config-if)#ip address 192.168.1.2 255.255.255.192
Sw0(config-if)#no shut
```

**Sw01 CLI:**

```
Sw01#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw01(config)#interface vlan1
Sw01(config-if)#ip address 192.168.1.66 255.255.255.192
Sw01(config-if)#no shut
Sw01(config-if)#
```

**Sw02 CLI:**

```
Sw02(config)#interface vlan1
Sw02(config-if)#ip address 192.168.1.131 255.255.255.192
Sw02(config-if)#no shut
```

## f. Salvando as configs:

The image displays three separate windows, each representing the CLI of a different switch: Sw0, Sw01, and Sw02. Each window has a title bar with the switch name and standard window controls. Below the title bar is a tabbed interface with four tabs: 'Physical', 'Config', 'CLI' (which is selected and underlined), and 'Attributes'. The main area of each window is titled 'IOS Command Line Interface' and contains a text area with the command history.

**Sw0 CLI:**

```
Sw0#  
Sw0#  
Sw0#  
Sw0#  
Sw0#copy running-config startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
Sw0#  
Sw0#  
Sw0#  
Sw0#
```

**Sw01 CLI:**

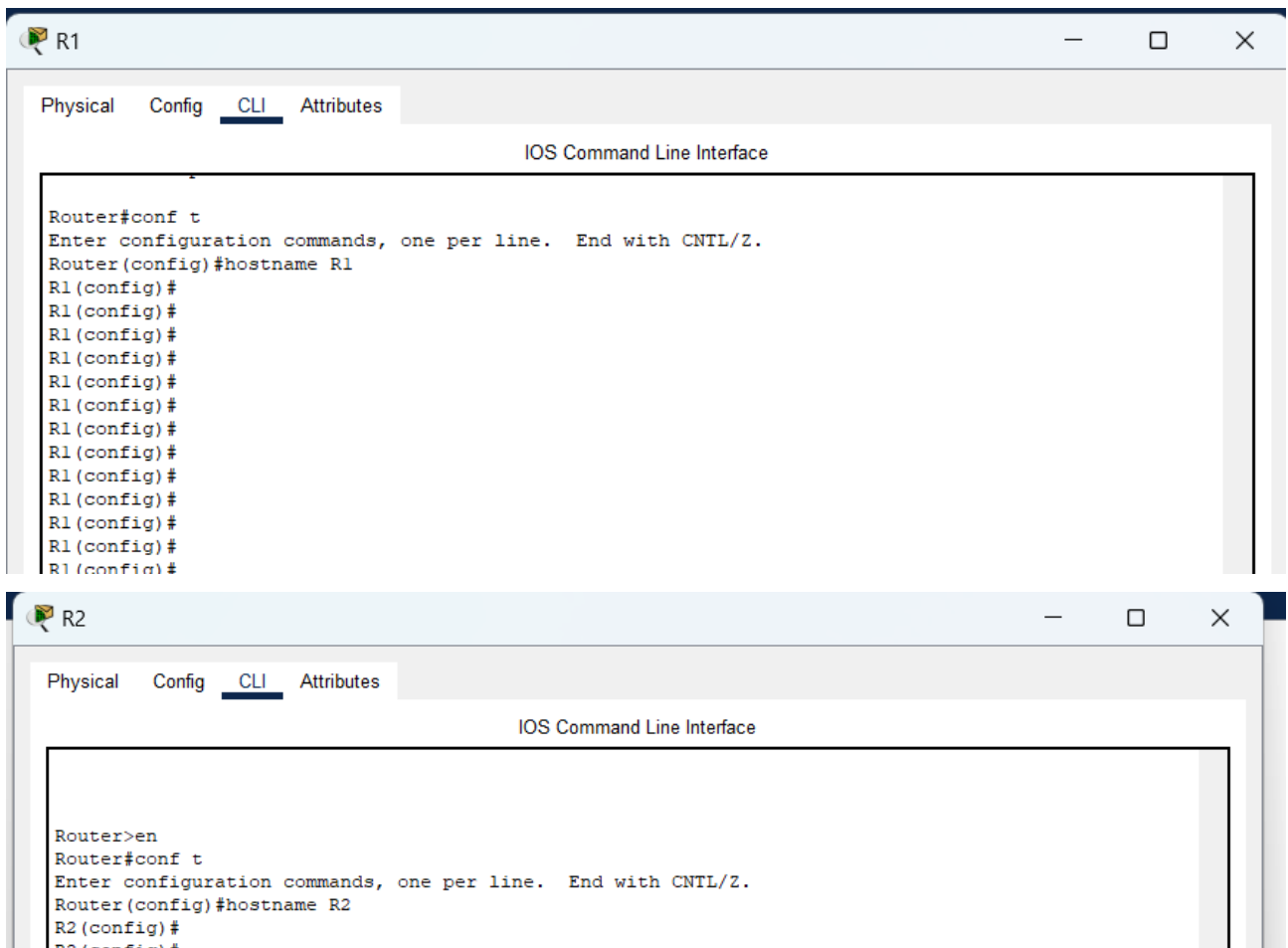
```
Sw01#copy running-config startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
Sw01#  
Sw01#  
Sw01#  
Sw01#  
Sw01#  
Sw01#  
Sw01#  
Sw01#
```

**Sw02 CLI:**

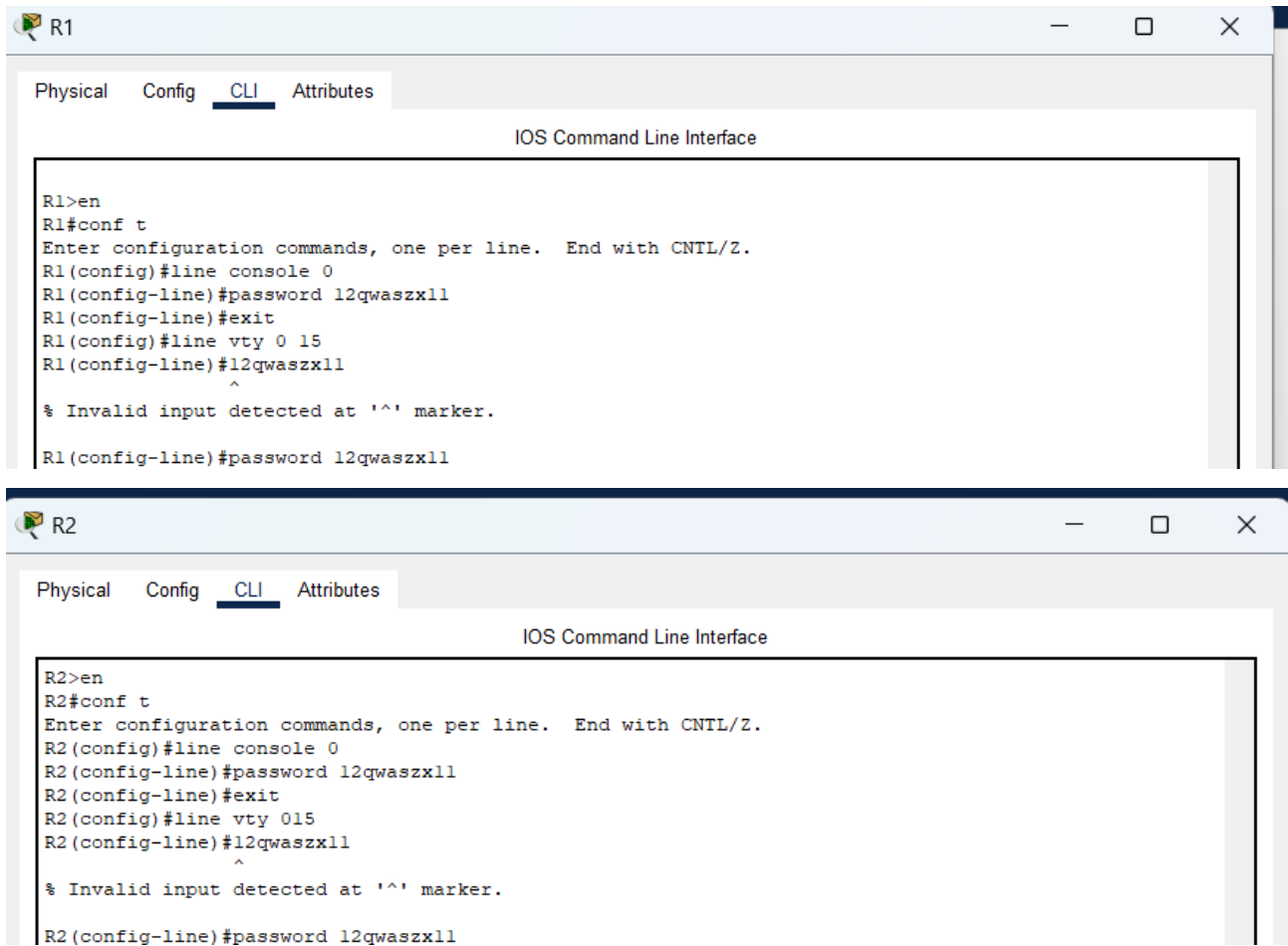
```
Sw02#copy running-config startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
Sw02#  
Sw02#  
Sw02#  
Sw02#  
Sw02#  
Sw02#  
Sw02#  
Sw02#  
Sw02#
```

## Parte 6: Configuração dos roteadores:

### a. Nome dos roteadores:



## b. Senhas para o acesso console e senhas vty:



The image displays two screenshots of the Cisco IOS Command Line Interface (CLI) for routers R1 and R2. Both screenshots show the configuration of console and VTY passwords.

**R1 CLI Screenshot:**

```
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#line console 0
R1(config-line)#password 12qwaszx11
R1(config-line)#exit
R1(config)#line vty 0 15
R1(config-line)#12qwaszx11
^
% Invalid input detected at '^' marker.
R1(config-line)#password 12qwaszx11
```

**R2 CLI Screenshot:**

```
R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#line console 0
R2(config-line)#password 12qwaszx11
R2(config-line)#exit
R2(config)#line vty 0 15
R2(config-line)#12qwaszx11
^
% Invalid input detected at '^' marker.
R2(config-line)#password 12qwaszx11
```

## C e D: Senha para o acesso EXEC privilegiado e senhas criptografadas:



The image displays two separate windows representing the IOS Command Line Interface for two routers, R1 and R2. Each window has a title bar with the router name and standard window controls. Below the title bar is a tabbed interface with 'Physical', 'Config', 'CLI', and 'Attributes' tabs, where 'CLI' is selected. The main area of each window shows the command-line interface with a prompt and entered commands.

**R1 Window:**

```
R1(config)#enable secret 12qwaszx931208
R1(config)#service password encryption
      ^
% Invalid input detected at '^' marker.

R1(config)#service password-encryption
R1(config)#
```

**R2 Window:**

```
R2(config)#enable secret 12qwaszx931208
R2(config)#service password-encryption
R2(config)#
R2(config)#
R2(config)#
R2(config)#
```

**e. Banner:**

R1

Physical Config CLI Attributes

IOS Command Line Interface

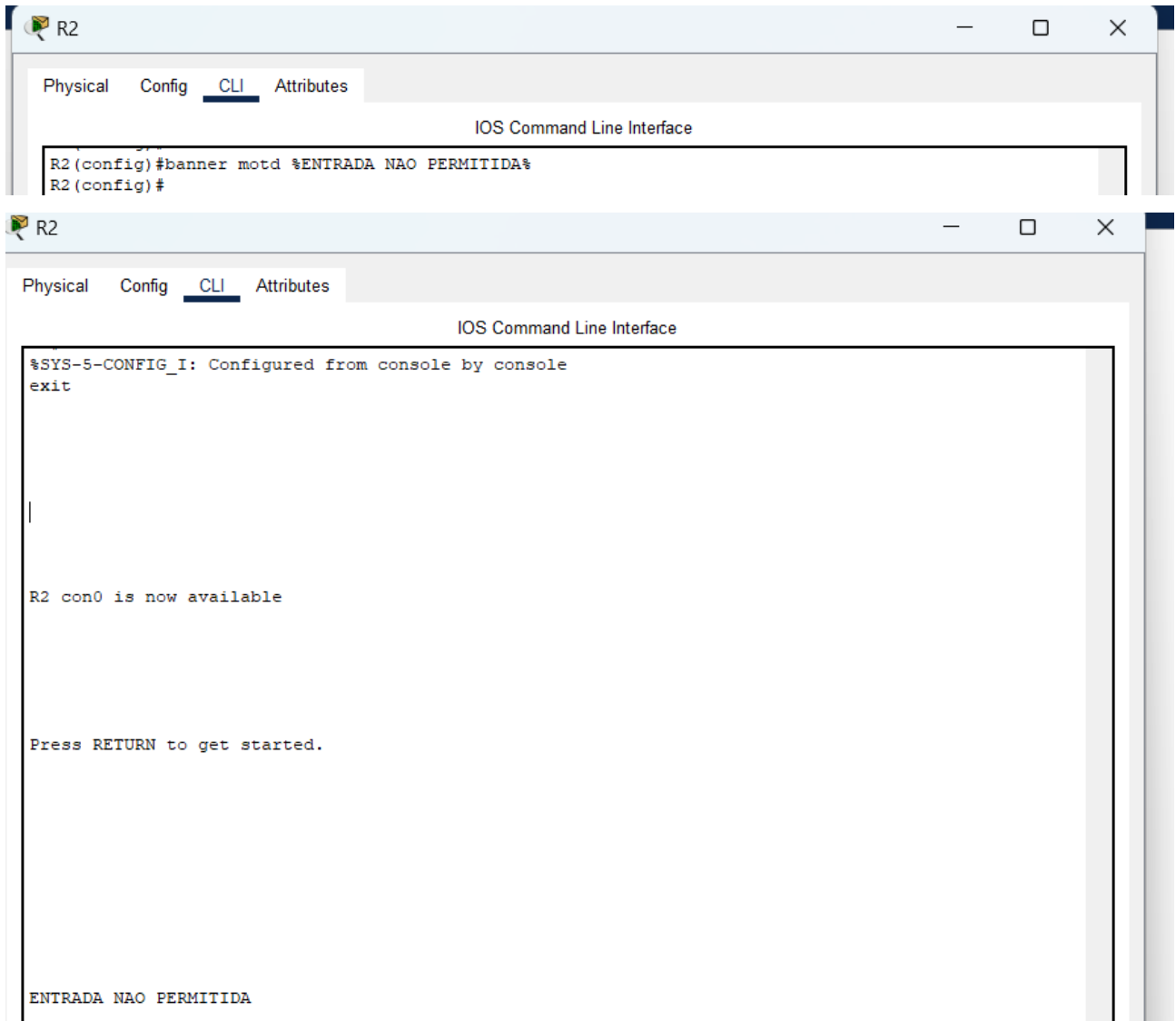
R1(config)#banner motd %ENTRADA NAO PERMITIDA%  
R1(config)#

R1

Physical Config CLI Attributes

IOS Command Line Interface

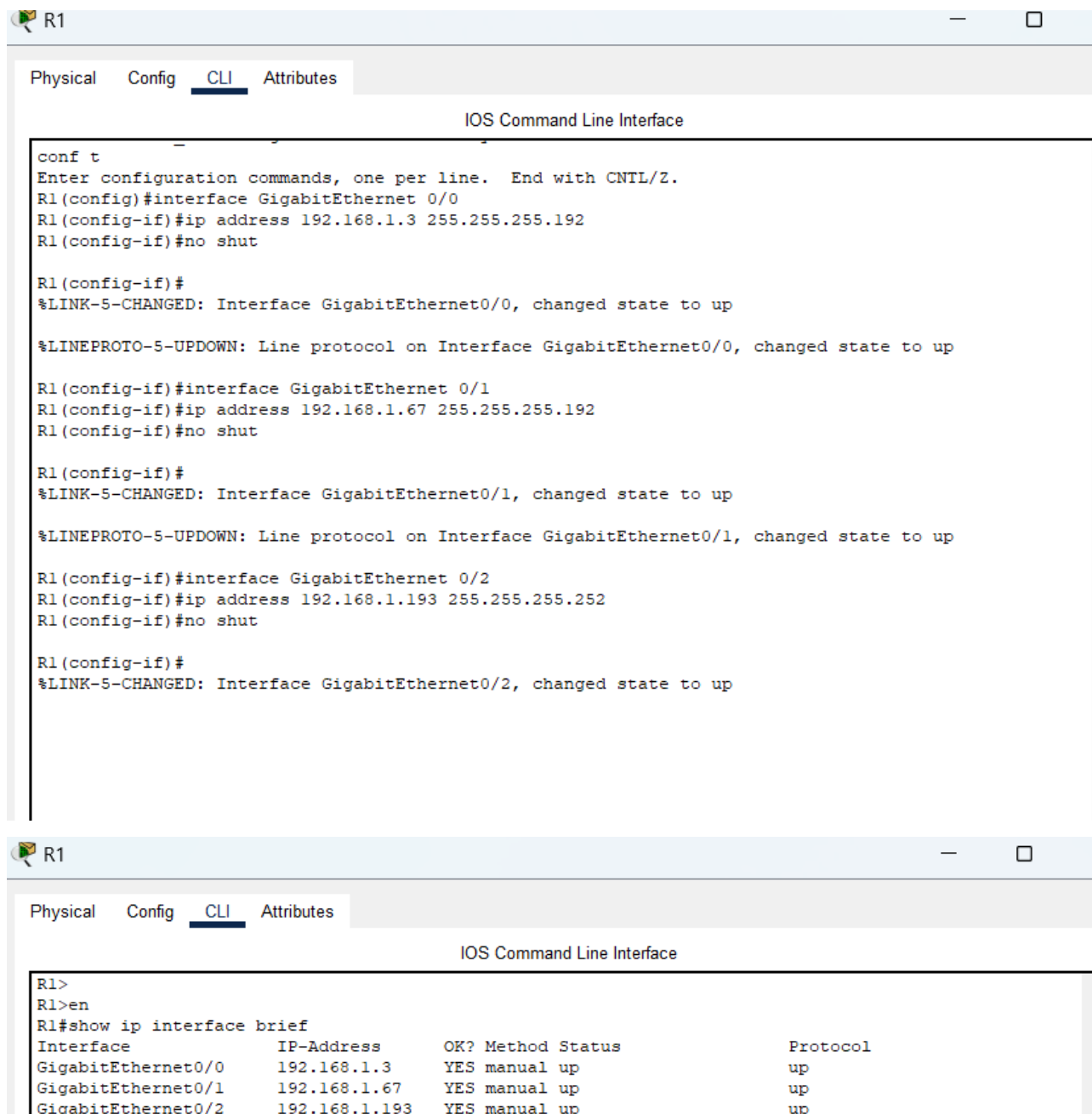
R1 con0 is now available  
  
Press RETURN to get started.  
  
ENTRADA NAO PERMITIDA





## f. configurando o endereçamento IP para os roteadores:

### Roteador 1:



The first screenshot shows the configuration of three interfaces on R1. The user enters configuration mode and configures GigabitEthernet 0/0, 0/1, and 0/2 with IP addresses 192.168.1.3, 192.168.1.67, and 192.168.1.193 respectively. Each interface is brought up, and the status is confirmed by the router.

```
conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface GigabitEthernet 0/0
R1(config-if)#ip address 192.168.1.3 255.255.255.192
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

R1(config-if)#interface GigabitEthernet 0/1
R1(config-if)#ip address 192.168.1.67 255.255.255.192
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

R1(config-if)#interface GigabitEthernet 0/2
R1(config-if)#ip address 192.168.1.193 255.255.255.252
R1(config-if)#no shut


R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up
```

The second screenshot shows the output of the `show ip interface brief` command, displaying the status of the three configured interfaces.

```
R1>
R1>en
R1#show ip interface brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0	192.168.1.3	YES	manual	up	up
GigabitEthernet0/1	192.168.1.67	YES	manual	up	up
GigabitEthernet0/2	192.168.1.193	YES	manual	up	up

## Roteador 2:

 R2


Physical Config CLI Attributes

IOS Command Line Interface

```
conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#interface GigabitEthernet0/0
R2(config-if)#ip address 192.168.1.132 255.255.255.192
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
```

 R2


Physical Config CLI Attributes

IOS Command Line Interface

```
R2(config-if)#interface GigabitEthernet 0/2
R2(config-if)#ip address 192.168.1.194 255.255.255.252
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
```

 R2

Physical Config CLI Attributes

IOS Command Line Interface

```
R2#show ip interface brief
```

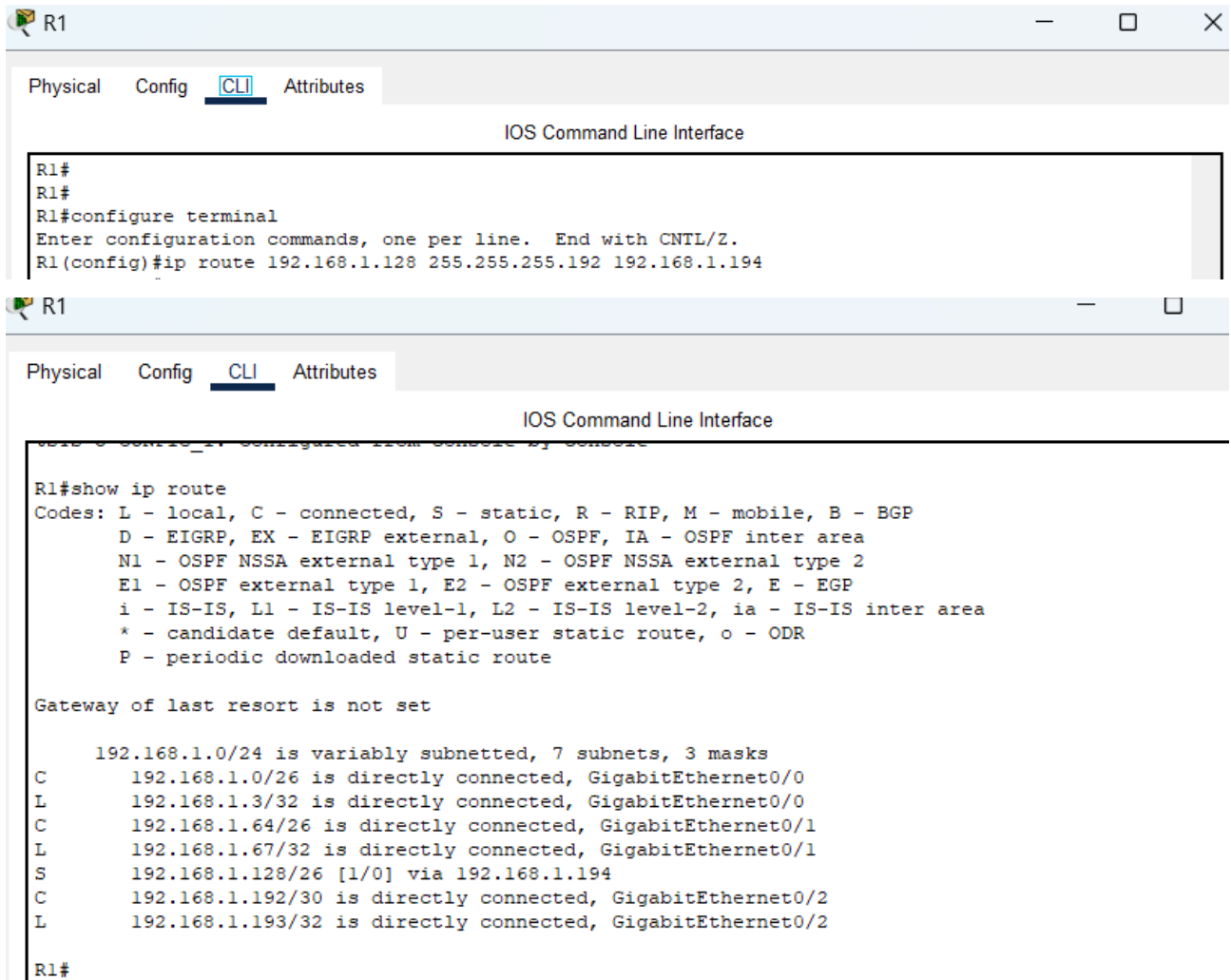
Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0	192.168.1.132	YES	manual	up	up
GigabitEthernet0/1	unassigned	YES	manual	up	down
GigabitEthernet0/2	192.168.1.194	YES	manual	up	up

## g. Salvando:



## Parte 7:

### a. Rota estática do roteador do RJ pro roteador de SP criada:



The first screenshot shows the configuration of a static route on router R1. The user enters the command `ip route 192.168.1.128 255.255.255.192 192.168.1.194` in the CLI. The second screenshot shows the output of the `show ip route` command, which displays the routing table. The static route is listed as `S 192.168.1.128/26 [1/0] via 192.168.1.194`. The output also includes a legend for route codes and a message about the gateway of last resort.

```
R1#
R1#
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.1.128 255.255.255.192 192.168.1.194

R1#show ip route
Codes: L - local, C - connected, S - static, 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

    192.168.1.0/24 is variably subnetted, 7 subnets, 3 masks
C       192.168.1.0/26 is directly connected, GigabitEthernet0/0
L       192.168.1.3/32 is directly connected, GigabitEthernet0/0
C       192.168.1.64/26 is directly connected, GigabitEthernet0/1
L       192.168.1.67/32 is directly connected, GigabitEthernet0/1
S       192.168.1.128/26 [1/0] via 192.168.1.194
C       192.168.1.192/30 is directly connected, GigabitEthernet0/2
L       192.168.1.193/32 is directly connected, GigabitEthernet0/2

R1#
```

## b. Rota estática do roteador de SP pro roteador de RJ criada:

```
R2
Physical Config CLI Attributes
IOS Command Line Interface

R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.1.0 255.255.255.192 192.168.1.193

R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.1.64 255.255.255.192 192.168.1.193
R2(config)#exit
R2#

-----
show ip route
Codes: L - local, C - connected, S - static, 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

    192.168.1.0/24 is variably subnetted, 6 subnets, 3 masks
S       192.168.1.0/26 [1/0] via 192.168.1.193
S       192.168.1.64/26 [1/0] via 192.168.1.193
C       192.168.1.128/26 is directly connected, GigabitEthernet0/0
L       192.168.1.132/32 is directly connected, GigabitEthernet0/0
C       192.168.1.192/30 is directly connected, GigabitEthernet0/2
L       192.168.1.194/32 is directly connected, GigabitEthernet0/2

R2#
```

### c. Tabela de roteamento:

```
R1>en
R1#show ip route
Codes: L - local, C - connected, S - static, 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

    192.168.1.0/24 is variably subnetted, 7 subnets, 3 masks
C       192.168.1.0/26 is directly connected, GigabitEthernet0/0
L       192.168.1.3/32 is directly connected, GigabitEthernet0/0
C       192.168.1.64/26 is directly connected, GigabitEthernet0/1
L       192.168.1.67/32 is directly connected, GigabitEthernet0/1
S       192.168.1.128/26 [1/0] via 192.168.1.194
C       192.168.1.192/30 is directly connected, GigabitEthernet0/2
L       192.168.1.193/32 is directly connected, GigabitEthernet0/2

R1#
```

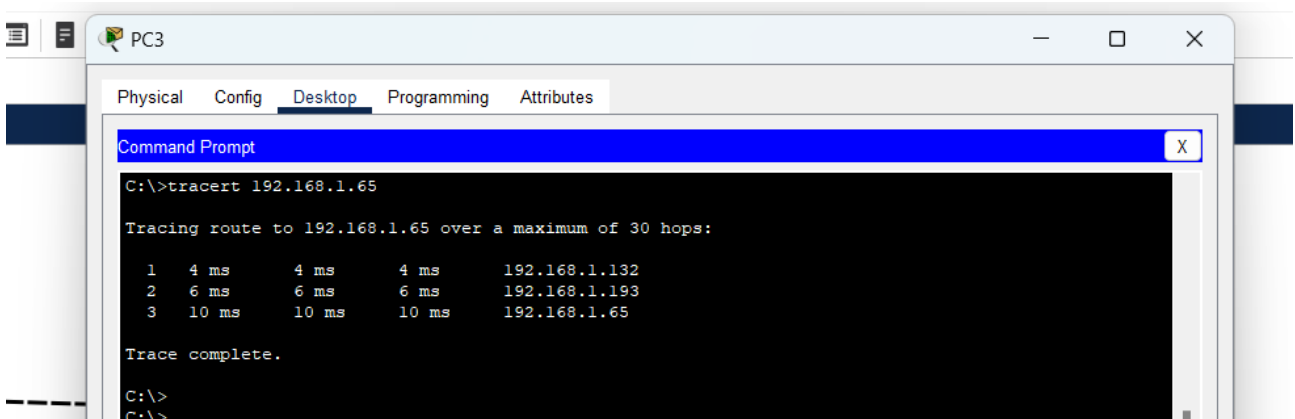
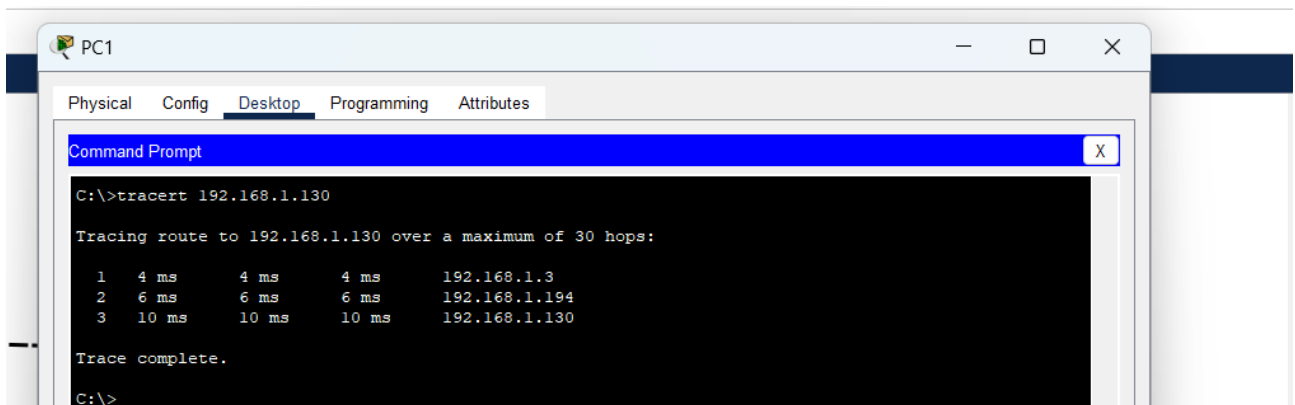
```
R2>en
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, 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

    192.168.1.0/24 is variably subnetted, 6 subnets, 3 masks
S       192.168.1.0/26 [1/0] via 192.168.1.193
S       192.168.1.64/26 [1/0] via 192.168.1.193
C       192.168.1.128/26 is directly connected, GigabitEthernet0/0
L       192.168.1.132/32 is directly connected, GigabitEthernet0/0
C       192.168.1.192/30 is directly connected, GigabitEthernet0/2
L       192.168.1.194/32 is directly connected, GigabitEthernet0/2

R2#
```

**d. conectividade entre as redes do RJ e de SP:**



e. Captura de pacotes de um ping entre os PCs 1 e 4:

