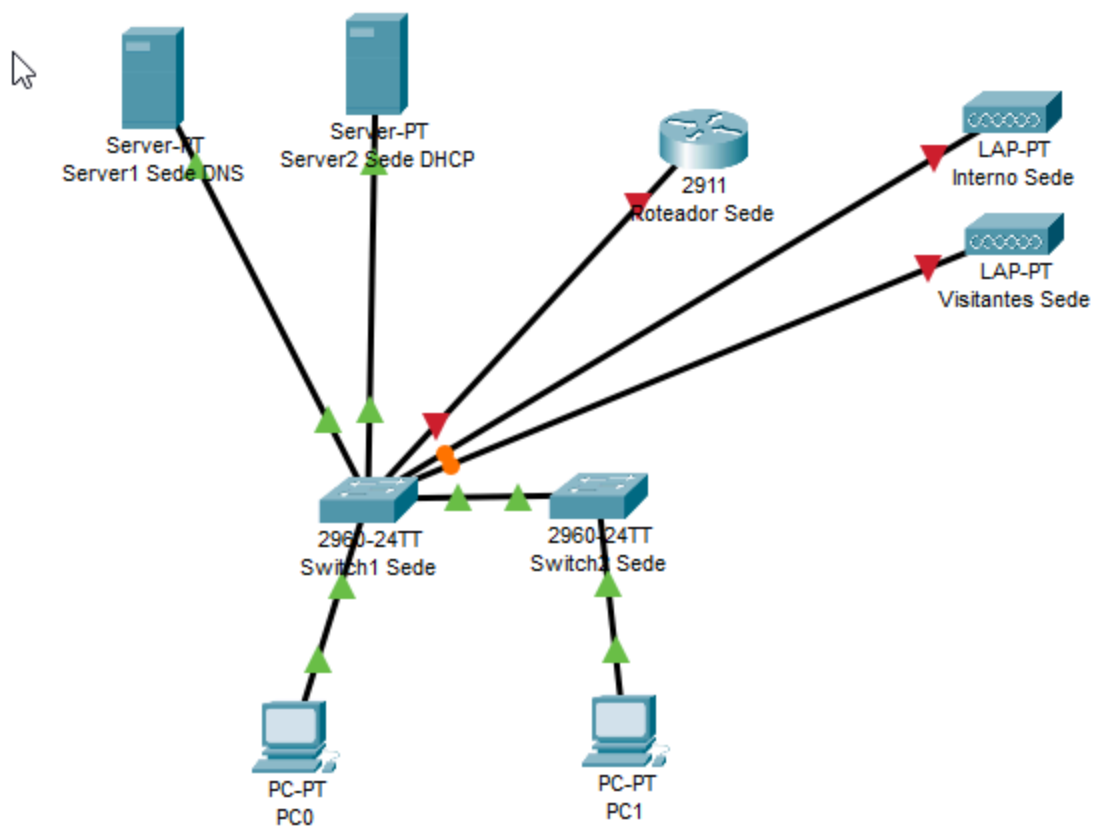


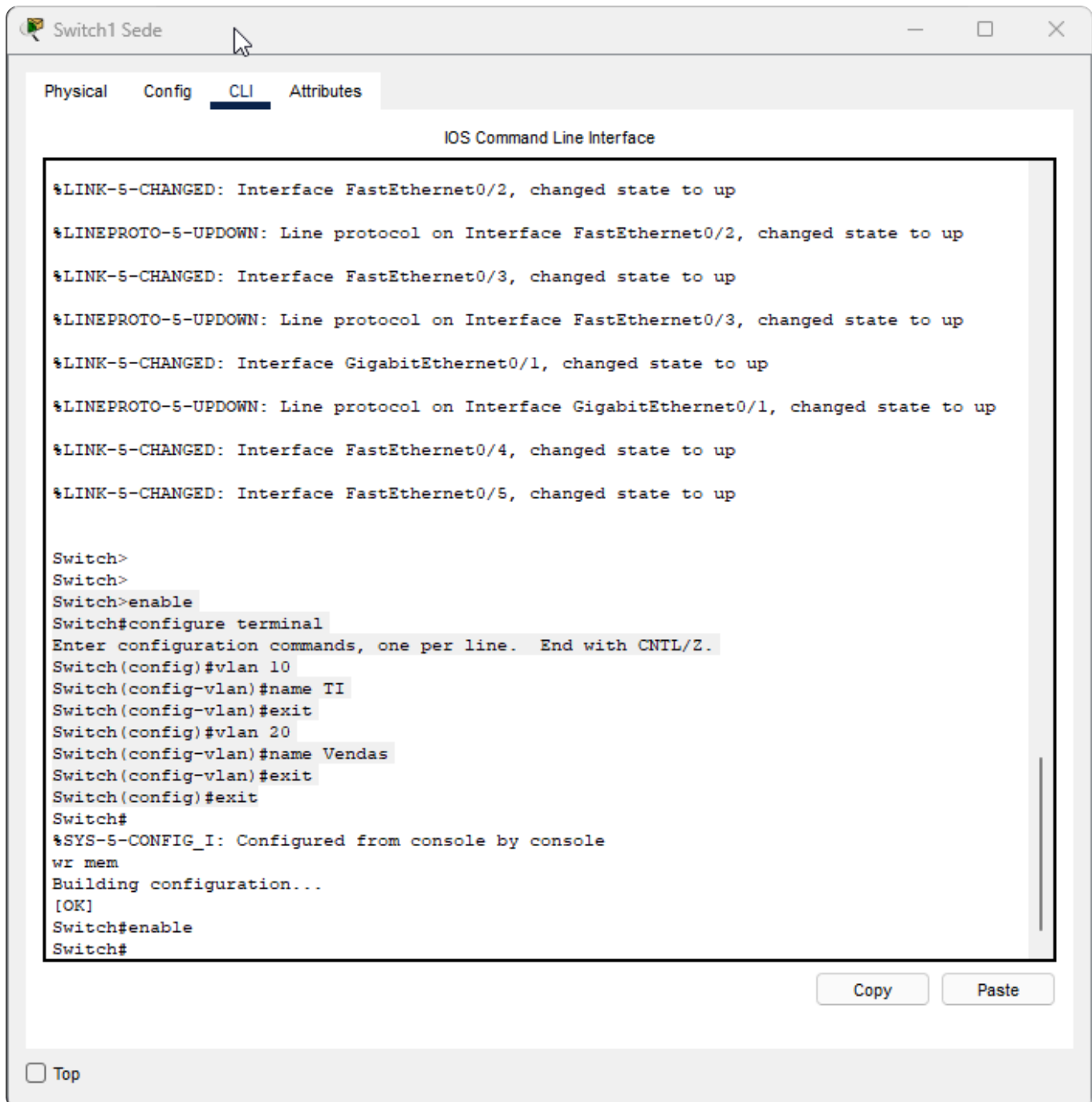
Projeto 1

Estrutura inicial



Configurando Switch 1 - Sede

Configurando Vlans para segmentação de rede



The screenshot shows a web-based interface for a network switch named "Switch1 Sede". The "CLI" tab is selected, displaying the "IOS Command Line Interface". The interface shows the status of several interfaces (FastEthernet0/2, FastEthernet0/3, GigabitEthernet0/1, FastEthernet0/4, and FastEthernet0/5) as being up. Below this, the CLI history shows the user entering commands to enable the switch, enter configuration mode, create VLAN 10 named "TI", and create VLAN 20 named "Vendas". The configuration is saved to memory and the switch is re-enabled.

```
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

Switch>
Switch>
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name TI
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name Vendas
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#enable
Switch#
```

Copy Paste

☐ Top

```
Switch>enable

Switch#configure terminal

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

Switch(config)#vlan 10

Switch(config-vlan)#name TI

Switch(config-vlan)#exit
```

```
Switch(config)#vlan 20
```

```
Switch(config-vlan)#name Vendas
```

```
Switch(config-vlan)#exit
```

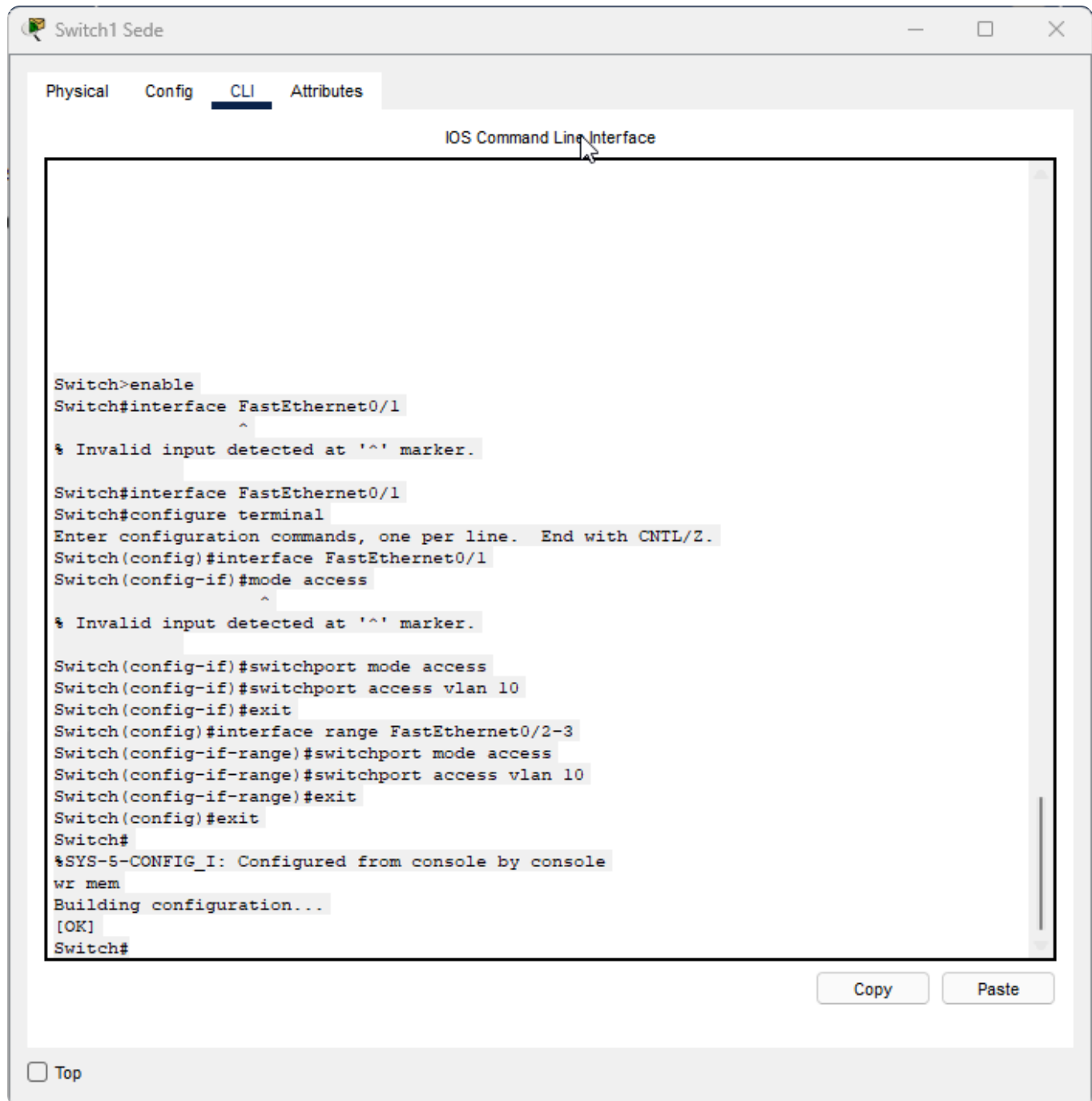
```
Switch(config)#exit
```

```
Switch#
```

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

```
wr mem
```

Configurando as entradas fastethernet para se conectarem na vlan 10 (TI)



Switch1 Sede

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#interface FastEthernet0/1
^
% Invalid input detected at '^' marker.

Switch#interface FastEthernet0/1
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#mode access
^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface range FastEthernet0/2-3
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#
```

Copy Paste

☐ Top

```
Switch>enable

Switch#interface FastEthernet0/1

^

% Invalid input detected at '^' marker.

Switch#interface FastEthernet0/1

Switch#configure terminal
```

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

```
Switch(config)#interface FastEthernet0/1
```

```
Switch(config-if)#mode access
```

```
^
```

```
% Invalid input detected at '^' marker.
```

```
Switch(config-if)#switchport mode access
```

```
Switch(config-if)#switchport access vlan 10
```

```
Switch(config-if)#exit
```

```
Switch(config)#interface range FastEthernet0/2-3
```

```
Switch(config-if-range)#switchport mode access
```

```
Switch(config-if-range)#switchport access vlan 10
```

```
Switch(config-if-range)#exit
```

```
Switch(config)#exit
```

```
Switch#
```

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

```
wr mem
```

```
Building configuration...
```

```
[OK]
```

```
Switch#
```

Inserindo as portas gigabit que conectam os 2 switchs como trunk para que os dados das duas vlans possam transitar no mesmo cabo

Switch1 Sede

Physical Config **CLI** Attributes

IOS Command Line Interface

```
% Invalid input detected at '^' marker.

Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface range FastEthernet0/2-3
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#interface range GigabitEthernet0/1-2
Switch(config-if-range)#

% Invalid input detected at '^' marker.

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface range GigabitEthernet0/1-2
Switch(config-if-range)#switchport mode trunk

Switch(config-if-range)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Switch(config-if-range)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#
```

☐ Top

```
Switch#configure terminal
```

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

```
Switch(config)#interface range GigabitEthernet0/1-2
```

```
Switch(config-if-range)#switchport mode trunk
```

```
Switch(config-if-range)#
```

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

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


Switch(config-if-range)#exit

Switch(config)#exit

Switch#

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

wr mem

Building configuration...

[OK]

Switch#
```

Configurando Switch 2 - Sede

Switch2 Sede

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%SPANTREE-2-RECV_PVID_ERR: Received 802.1Q BPDU on non trunk GigabitEthernet0/1 VLAN1.
%SPANTREE-2-BLOCK_PVID_LOCAL: Blocking GigabitEthernet0/1 on VLAN0001. Inconsistent port type.

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

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name TI
Switch(config-vlan)#EXIT
Switch(config)#vlan 20
Switch(config-vlan)#name Vendas
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#
```

Copy Paste

☐ Top

Switch>enable

Switch#configure terminal

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

Switch(config)#vlan 10

Switch(config-vlan)#name TI

Switch(config-vlan)#EXIT


```
Switch(config)#vlan 20

Switch(config-vlan)#name Vendas

Switch(config-vlan)#exit

Switch(config)#exit

Switch#

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

wr mem

Building configuration...

[OK]

Switch#
```

Configurando as entradas fastethernet para se conectarem na vlan 20 (Vendas)

```
Switch#configure terminal

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

Switch(config)#interface FastEthernet0/1

Switch(config-if)#switchport mode access

Switch(config-if)# switchport access vlan 20

Switch(config-if)#exit

Switch(config)#exit

Switch#

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

wr mem

Building configuration...

[OK]
```

Switch#

Switch2 Sede

Physical Config **CLI** Attributes

IOS Command Line Interface

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

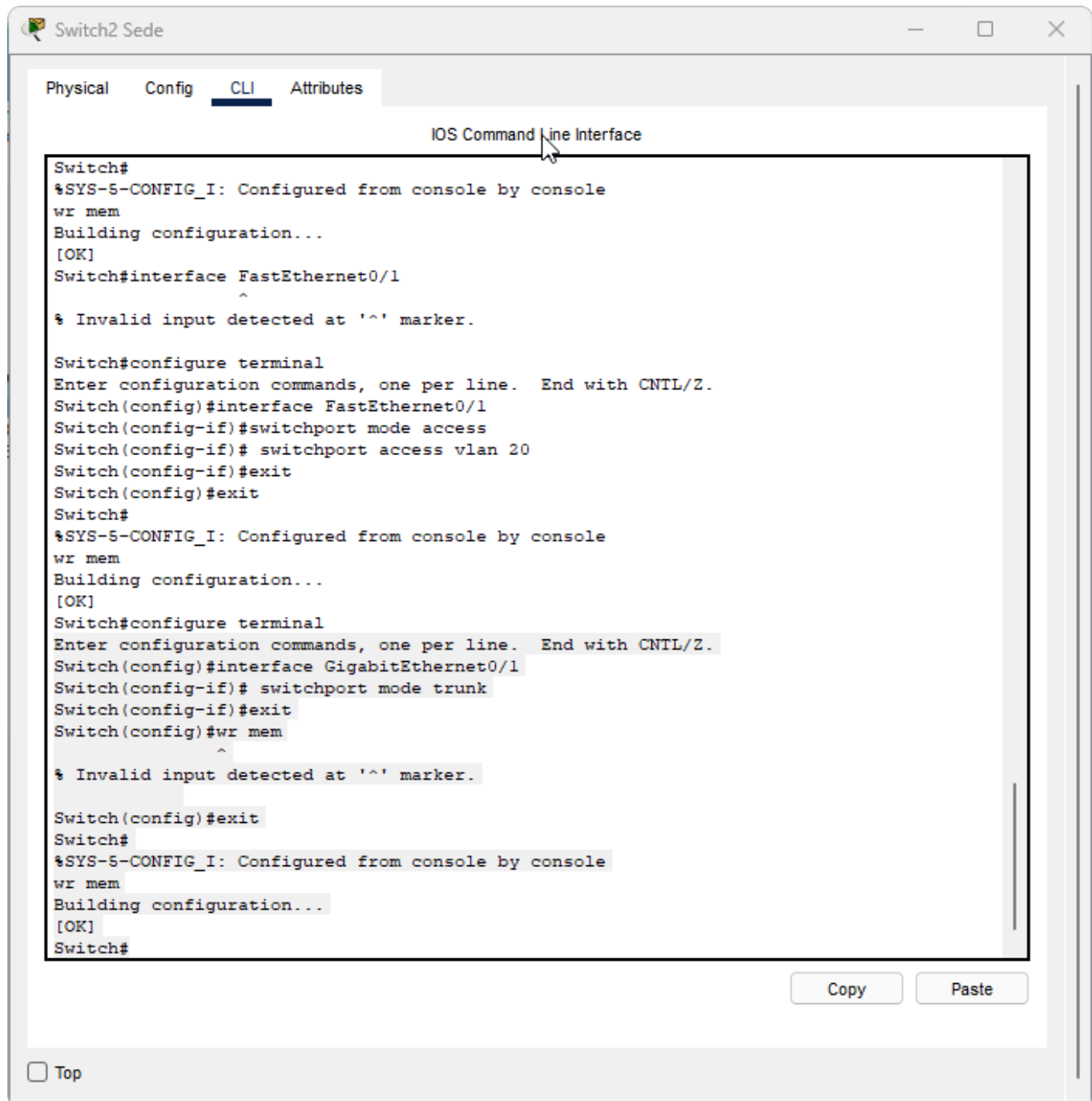
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name TI
Switch(config-vlan)#EXIT
Switch(config)#vlan 20
Switch(config-vlan)#name Vendas
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#interface FastEthernet0/1
      ^
% Invalid input detected at '^' marker.

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)# switchport access vlan 20
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#
```

Copy Paste

☐ Top

Colocando gigabitethernet em modo trunk



The screenshot shows a web-based configuration interface for a switch, titled "Switch2 Sede". It has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying a terminal window titled "IOS Command Line Interface". The terminal shows the following sequence of commands and responses:

```
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#interface FastEthernet0/1
^
% Invalid input detected at '^' marker.

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)# switchport access vlan 20
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface GigabitEthernet0/1
Switch(config-if)# switchport mode trunk
Switch(config-if)#exit
Switch(config)#wr mem
^
% Invalid input detected at '^' marker.

Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Switch#
```

At the bottom of the terminal window, there are "Copy" and "Paste" buttons. Below the terminal window, there is a "Top" button with a checkbox.

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

```
Switch(config)#interface GigabitEthernet0/1
```

```
Switch(config-if)# switchport mode trunk
```

```
Switch(config-if)#exit
```

```
Switch(config)#wr mem
```

^

```
% Invalid input detected at '^' marker.  
  
Switch(config)#exit  
  
Switch#  
  
%SYS-5-CONFIG_I: Configured from console by console  
  
wr mem  
  
Building configuration...  
  
[OK]  
  
Switch#
```

Configurando roteador da Sede

Configurando as duas subinterfaces para as vlans TI e Vendas para que o roteador consiga prover para as duas redes

Roteador Sede

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.1.1 255.255.255.128
Router(config-subif)#exit
Router(config)#interface GigabitEthernet0/0.20
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.1.129 255.255.255.128
Router(config-subif)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown

Router(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

%LINK-5-CHANGED: Interface GigabitEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.20, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Router#
```

Copy Paste

☐ Top

```
Router>enable

Router#configure terminal

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

Router(config)#interface GigabitEthernet0/0.10

Router(config-subif)#encapsulation dot1Q 10

Router(config-subif)#ip address 192.168.1.1 255.255.255.128
```

```
Router(config-subif)#exit
```

```
Router(config)#interface GigabitEthernet0/0.20
```

```
Router(config-subif)#encapsulation dot1Q 20
```

```
Router(config-subif)#ip address 192.168.1.129 255.255.255.128
```

```
Router(config-subif)#exit
```

```
Router(config)#interface GigabitEthernet0/0
```

```
Router(config-if)#no shutdown
```

```
Router(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
```

```
%LINK-5-CHANGED: Interface GigabitEthernet0/0.10, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10, changed state to up
```

```
%LINK-5-CHANGED: Interface GigabitEthernet0/0.20, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.20, changed state to up
```

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

```
Router(config)#exit
```

```
Router#
```

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

```
wr mem
```

```
Building configuration...
```

```
[OK]
```

```
Router#
```

Configurando servidor DNS

Server1 Sede DNS

—

□

×

PhysicalConfigServicesDesktopProgrammingAttributes

IP Configuration

X

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

192.168.1.2

Subnet Mask

255.255.255.128

Default Gateway

192.168.1.1

DNS Server

192.168.1.2

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address

/

Link Local Address

FE80::2D0:BAFF:FE3B:E007

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

▼

Username

Password

☐ Top

Configurando domínio

Server1 Sede DNS

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

Address

Add

Save

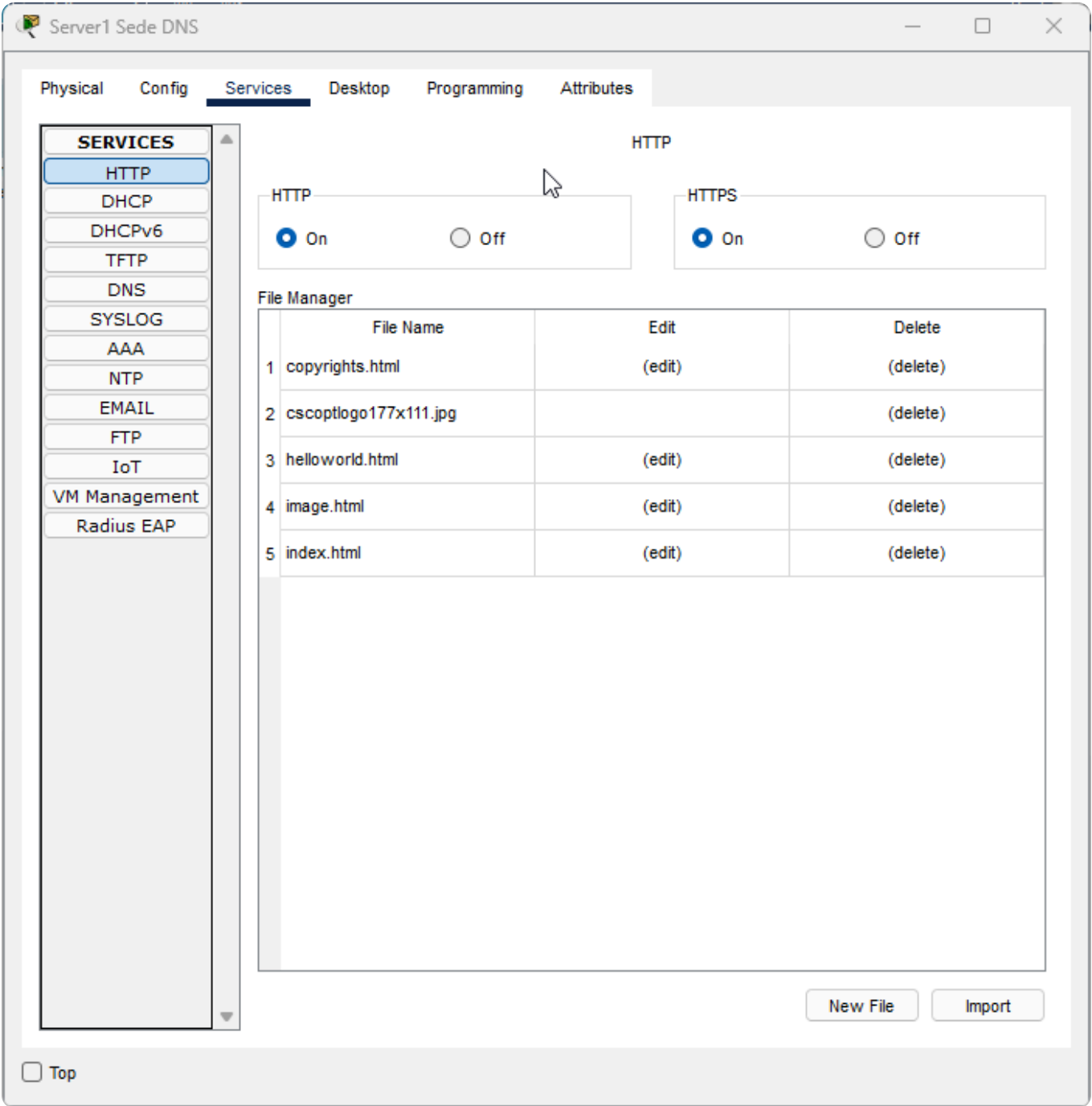
Remove

No.	Name	Type	Detail
0	www.empresa.local	A Record	192.168.1.2

DNS Cache

Top

Serviço de HTTP rodando



Configurando servidor DHCP

Server2 Sede DHCP

Physical

Config

Services

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name

Server2 Sede DHCP

Gateway/DNS IPv4

DHCP

Static

Default Gateway

192.168.1.1

DNS Server

192.168.1.2

Gateway/DNS IPv6

Automatic

Static

Default Gateway

DNS Server

Top

Adicionando respectivas VLANs

Server2 Sede DHCP

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DHCP

InterfaceFastEthernet0

ServiceOnOff

Pool NameserverPool

Default Gateway0.0.0.0

DNS Server0.0.0.0

Start IP Address :19216810

Subnet Mask:255255255128

Maximum Number of Users :512

TFTP Server:0.0.0.0

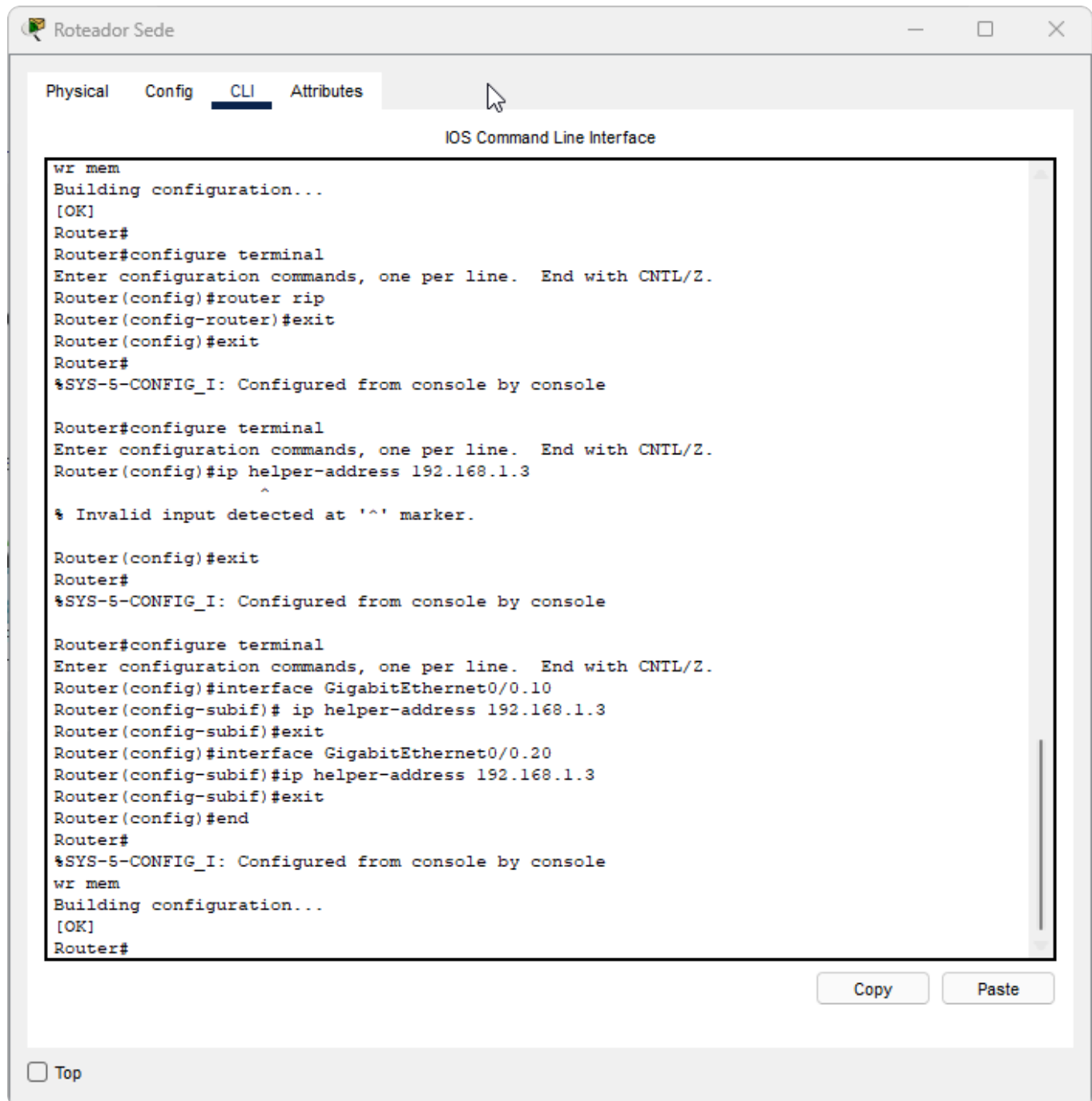
WLC Address:0.0.0.0

AddSaveRemove

Pool Name	Default Gateway	DNS Server	Start ip Address	Subnet Mask	Max User	TFTP Server	WLC Address
VLAN20_Vendas	192.168.1.129	192.168.1.2	192.168.1.140	255.255.255.128	116	0.0.0.0	0.0.0.0
VLAN10_TI	192.168.1.1	192.168.1.2	192.168.1.10	255.255.255.128	116	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	192.168.1.0	255.255.255.128	512	0.0.0.0	0.0.0.0

Top

Configurando roteador para enviar os pedidos DHCP corretamente ao servidor



The screenshot shows a web-based CLI interface for a router named 'Roteador Sede'. The 'CLI' tab is selected. The interface displays the following commands and output:

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip helper-address 192.168.1.3
^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0.10
Router(config-subif)# ip helper-address 192.168.1.3
Router(config-subif)#exit
Router(config)#interface GigabitEthernet0/0.20
Router(config-subif)#ip helper-address 192.168.1.3
Router(config-subif)#exit
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
wr mem
Building configuration...
[OK]
Router#
```

At the bottom of the CLI window, there are 'Copy' and 'Paste' buttons. Below the CLI window, there is a 'Top' button with a checkbox.

```
Router#configure terminal

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

Router(config)#interface GigabitEthernet0/0.10

Router(config-subif)# ip helper-address 192.168.1.3

Router(config-subif)#exit

Router(config)#interface GigabitEthernet0/0.20
```

```
Router(config-subif)#ip helper-address 192.168.1.3
```

```
Router(config-subif)#exit
```

```
Router(config)#end
```

```
Router#
```

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

```
wr mem
```

```
Building configuration...
```

```
[OK]
```

```
Router#
```

Como resultado, podemos ver que os computadores receberam endereços IP via DHCP

PC0 - TI

PC0 - TI

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

▼

IP Configuration

☒ DHCP

☐ Static

IPv4 Address

192.168.1.4

Subnet Mask

255.255.255.128

Default Gateway

0.0.0.0

DNS Server

192.168.1.2

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address

/

Link Local Address

FE80::2D0:D3FF:FED8:7CE6

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

▼

Username

Password

☐ Top

PC1 - Vendas

PC1 - Vendas

Physical Config Desktop **Programming** Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.140

Subnet Mask 255.255.255.128

Default Gateway 192.168.1.129

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::260:47FF:FE36:8ADA

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Configurando Wi-fi