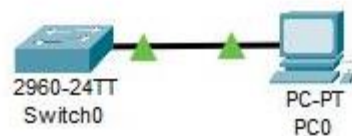


# Davi Ventura C. Perdigão - 82148

## Parte 1:

**Passo 1.** Faça o cabeamento como mostra a topologia.

- a) Atache os dispositivos como mostra a topologia e os cabos necessários
- b) Ligue todos os dispositivos na topologia



**Passo 2.** Configure o endereçamento Ipv4 para o PC

- a) Configure o endereço Ipv4 , submáscara e o default gateway para o PC-A

The screenshot shows the configuration window for the 'FastEthernet0' interface of a device. The 'Config' tab is selected. On the left, a sidebar shows 'GLOBAL' settings and 'INTERFACE' settings, with 'FastEthernet0' selected. The main area displays the following configuration:

- Port Status: ☒ On
- Bandwidth: ☒ 100 Mbps ☐ 10 Mbps
- Duplex: ☐ Half Duplex ☒ Full Duplex
- MAC Address: 0060.70CC.7081
- IP Configuration: ☐ DHCP ☒ Static
- IPv4 Address: 192.168.1.3
- Subnet Mask: 255.255.255.0
- IPv6 Configuration: ☐ Automatic ☒ Static
- IPv6 Address: (empty field)
- Link Local Address: FE80::260:70FF:FECC:7081

- b) A partir do prompt de comando no PC-A, execute ping para o endereço do switch. O ping foi realizado com sucesso? Explique.

**Não, pois o Switch ainda não está configurado.**

The screenshot shows the 'Desktop' tab of a device in Cisco Packet Tracer. A terminal window is open, displaying the command 'ping 192.168.1.1' entered at the prompt. The terminal output is not visible, indicating the command has not yet been executed or the result is not shown.

### Passo 3. Configurações básicas para o switch.

a) A partir do console do switch entre nas configurações do mesmo

```
Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
```

b) Associe um nome para o host baseado na tabela de endereçamento

```
Switch(config)# hostname S1
```

c) Desabilite o DNS lookup

```
S1(config)# no ip domain-lookup
```

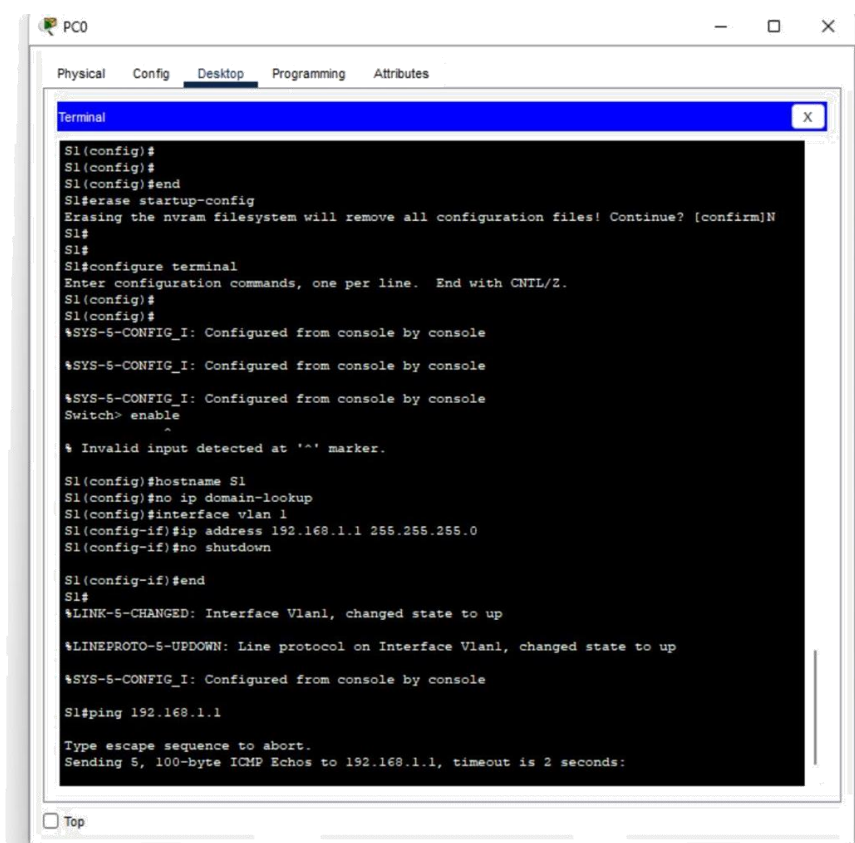
d) Configure e habilite a Switch Vlan Interface para VLAN1

```
S1(config)# interface vlan 1
S1(config-if)# ip address 192.168.1.1 255.255.255.0
S1(config-if)# no shutdown
S1(config-if)# end
*Mar 1 00:07:59.048: %SYS-5-CONFIG_I: Configured from console by console
```

### Passo 4. Verifique a conectividade da rede

Realize o ping do PC-A para o Switch e do Switch para o PCA-A. O comando foi realizado com sucesso?

**Sim, pois o switch foi configurado corretamente.**



## Parte 2:

### Passo 1 Analise o Endereçamento MAC da interface de rede do PC-A

a)

```
Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) 82577LM Gigabit Network Connection
Physical Address. . . . . : 5C-26-0A-21-2A-60
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::b875:731b:3c7b:c0b1%10(Preferred)
IPv4 Address. . . . . : 192.168.1.3(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 240920024
```

Qual é A OUI do MAC address do dispositivo? **5C-26-0A**

Qual é o serial number do MAC address do dispositivo? **5C-26-0A-21-2A-60**

Usando o exemplo dado, encontre o nome do vendedor para a interface. **Com base no MAC address, podemos identificar que o fabricante da placa de rede é a Intel Corporation.**

b) Do prompt de comando do PC-A, execute o **ipconfig /all** e responda: Identifique o serial number por meio do MAC address. Identifique o nome do vendedor.

**O prefixo MAC "006070" pertence à empresa "Cisco Systems, Inc."**

```
Cisco Packet Tracer PC Command Line 1.0
C:\>

ipconfig /all

FastEthernet0 Connection: (default port)

Connection-specific DNS Suffix. : 
Physical Address. . . . . : 0060.70CC.7081
Link-local IPv6 Address . . . . . : FE80::260:70FF:FECC:7081
IPv6 Address. . . . . : ::
IPv4 Address. . . . . : 192.168.1.3
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : ::
                          192.168.1.1

DHCP Servers . . . . . : 0.0.0.0
DHCPv6 IAID . . . . . : 
DHCPv6 Client DUID. . . . . : 00-01-00-01-20-B0-AA-28-00-60-70-CC-70-81
DNS Servers . . . . . : ::
                          255.255.255.0

Bluetooth Connection:

Connection-specific DNS Suffix. : 
Physical Address. . . . . : 0007.EC27.66DD
Link-local IPv6 Address . . . . . : ::
--More--
```

## Passo 2 Identifique o MAC address para o SWITCH S1

- a. Verifique informações da interface por meio do comando **show interface vlan 1**

```
S1# show interfaces vlan 1
Vlan1 is up, line protocol is up
  Hardware is EtherSVI, address is 001b.0c6d.8f40 (bia 001b.0c6d.8f40)
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
Keepalive not supported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output 00:14:51, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts (0 IP multicasts)
  0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  34 packets output, 11119 bytes, 0 underruns
  0 output errors, 2 interface resets
  0 unknown protocol drops
  0 output buffer failures, 0 output buffers swapped out
```

Qual o MAC address para a interface VLAN 1 no S1?

```
S1#show interface vlan 1
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 00e0.8f28.dd1b (bia 00e0.8f28.dd1b)
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1682 packets input, 530955 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicast)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    563859 packets output, 0 bytes, 0 underruns
    0 output errors, 23 interface resets
    0 output buffer failures, 0 output buffers swapped out
```



Qual o serial number para a VLAN 1

```
Sl#show interface vlan 1
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 00e0.8f28.dd1b (bia 00e0.8f28.dd1b)
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1682 packets input, 530955 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicast)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    563859 packets output, 0 bytes, 0 underruns
    0 output errors, 23 interface resets
    0 output buffer failures, 0 output buffers swapped out
```

Qual o nome do vendedor?

```
Sl#show interface vlan 1
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 00e0.8f28.dd1b (bia 00e0.8f28.dd1b)
  Internet address is 192.168.1.1/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1682 packets input, 530955 bytes, 0 no buffer
    Received 0 broadcasts (0 IP multicast)
    0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    563859 packets output, 0 bytes, 0 underruns
    0 output errors, 23 interface resets
    0 output buffer failures, 0 output buffers swapped out
```

- b) Outra maneira de exibir o endereço MAC no switch é usar o comando show arp. Use o comando show arp para exibir informações de endereço MAC. Este comando mapeia o endereço Layer 2 para o seu correspondente endereço de camada 3. Uma amostra é mostrada abaixo. Use o resultado gerado pelo seu switch para responder as perguntas

```
S1#show arp
Protocol Address      Age (min)  Hardware Addr  Type   Interface
Internet 192.168.1.1      -         00E0.8F28.DD1B  ARPA   Vlan1
```

Qual é o endereço de camada 2 mostrado no S1?

Qual o endereço de camada 3 mostrado no S2?

```
S1# show arp
Protocol Address      Age (min)  Hardware Addr  Type   Interface
Internet 192.168.1.1      -         001b.0c6d.8f40  ARPA   Vlan1
Internet 192.168.1.3      0         5c26.0a24.2a60  ARPA   Vlan1
```

**Passo 3:** Visualização do MAC address no switch.

Para isso execute o comando show mac address-table. Um exemplo de saída:

```
S1# show mac address-table
Mac Address Table
-----
Vlan    Mac Address      Type        Ports
-----
All     0100.0ccc.cccc   STATIC      CPU
All     0100.0ccc.cccd   STATIC      CPU
All     0180.c200.0000   STATIC      CPU
All     0180.c200.0001   STATIC      CPU
All     0180.c200.0002   STATIC      CPU
All     0180.c200.0003   STATIC      CPU
All     0180.c200.0004   STATIC      CPU
All     0180.c200.0005   STATIC      CPU
All     0180.c200.0006   STATIC      CPU
All     0180.c200.0007   STATIC      CPU
All     0180.c200.0008   STATIC      CPU
All     0180.c200.0009   STATIC      CPU
All     0180.c200.000a   STATIC      CPU
All     0180.c200.000b   STATIC      CPU
All     0180.c200.000c   STATIC      CPU
All     0180.c200.000d   STATIC      CPU
All     0180.c200.000e   STATIC      CPU
All     0180.c200.000f   STATIC      CPU
All     0180.c200.0010   STATIC      CPU
All     ffff.ffff.ffff   STATIC      CPU
1       5c26.0a24.2a60   DYNAMIC     Fa0/6
Total Mac Addresses for this criterion: 21
```

O resultado mostra o MAC address do PC-A? Se a resposta for sim, qual porta ele está configurado?

```

S1#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -

```

### Para refletir

Pode ter broadcast na camada 2? Em caso afirmativo, qual seria o endereço MAC?

**Sim, é possível enviar um broadcast na camada 2 do modelo OSI. Nesse caso, o pacote é enviado para todos os dispositivos da rede local. O endereço MAC é representado por um endereço MAC especial, que consiste em todos os bits iguais a 1. Esse endereço é conhecido como endereço MAC de broadcast ou endereço MAC FF:FF:FF:FF:FF:FF.**

Por que você precisa saber o endereço MAC de um dispositivo?

**Existem várias razões pelas quais alguém pode precisar saber o endereço MAC de um dispositivo, incluindo gerenciamento de rede, resolução de problemas de rede, segurança, controle de acesso à rede.**







