

1- Calcule as sub-redes para 192.168.100.0/25.

Quantas sub-redes?

2 sub-redes.

Quantos IPs por sub-rede?

128 IPs totais por sub-rede.

126 IPs válidos para hosts (2 são reservados: 1 para o network address e 1 para o broadcast).

Primeiro e último IP de cada sub-rede.

Sub-rede	IP da Rede	IPs Válidos	Broadcast
1	192.168.100.0	192.168.100.1 – 192.168.100.126	192.168.100.127
2	192.168.100.128	192.168.100.129 – 192.168.100.254	192.168.100.255

2- Explique com suas palavras o que é o endereço de broadcast e para que serve.

O endereço de broadcast é o último IP de uma sub-rede e serve para enviar mensagens para todos os dispositivos daquela sub-rede ao mesmo tempo. Por exemplo, quando um computador quer localizar outro, ele pode mandar um pacote de broadcast dizendo: "Ei, quem tem esse IP?", e todos os computadores daquela rede vão ouvir. Isso é útil em protocolos como ARP e em descobertas iniciais da rede.

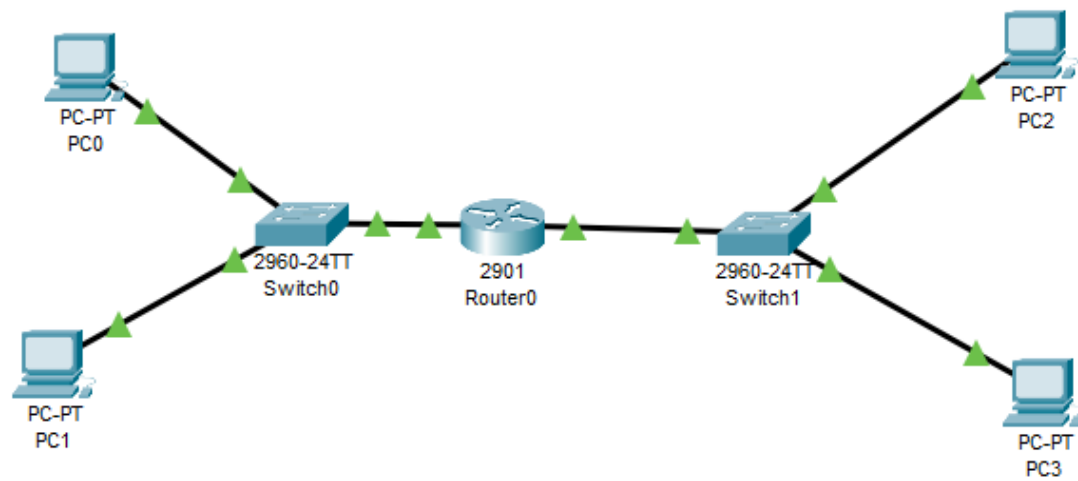
3- Crie no Packet Tracer duas sub-redes com 2 PCs cada, conectadas por um roteador.

OBJETIVO

Criar duas sub-redes utilizando o endereço 192.168.100.0/25, configurando um roteador para interligá-las e testar a comunicação entre os PCs via roteador.

MATERIAIS UTILIZADOS

- 1 Roteador
- 2 Switches
- 4 PCs



CONFIGURAÇÕES REALIZADAS

Sub-rede 1:

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.100.10

Subnet Mask 255.255.255.192

Default Gateway 192.168.100.1

DNS Server 0.0.0.0

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.100.11

Subnet Mask 255.255.255.192

Default Gateway 192.168.100.1

DNS Server 0.0.0.0

Sub-rede 2:

PC2

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.100.70

Subnet Mask 255.255.255.192

Default Gateway 192.168.100.65

DNS Server 0.0.0.0

PC3

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

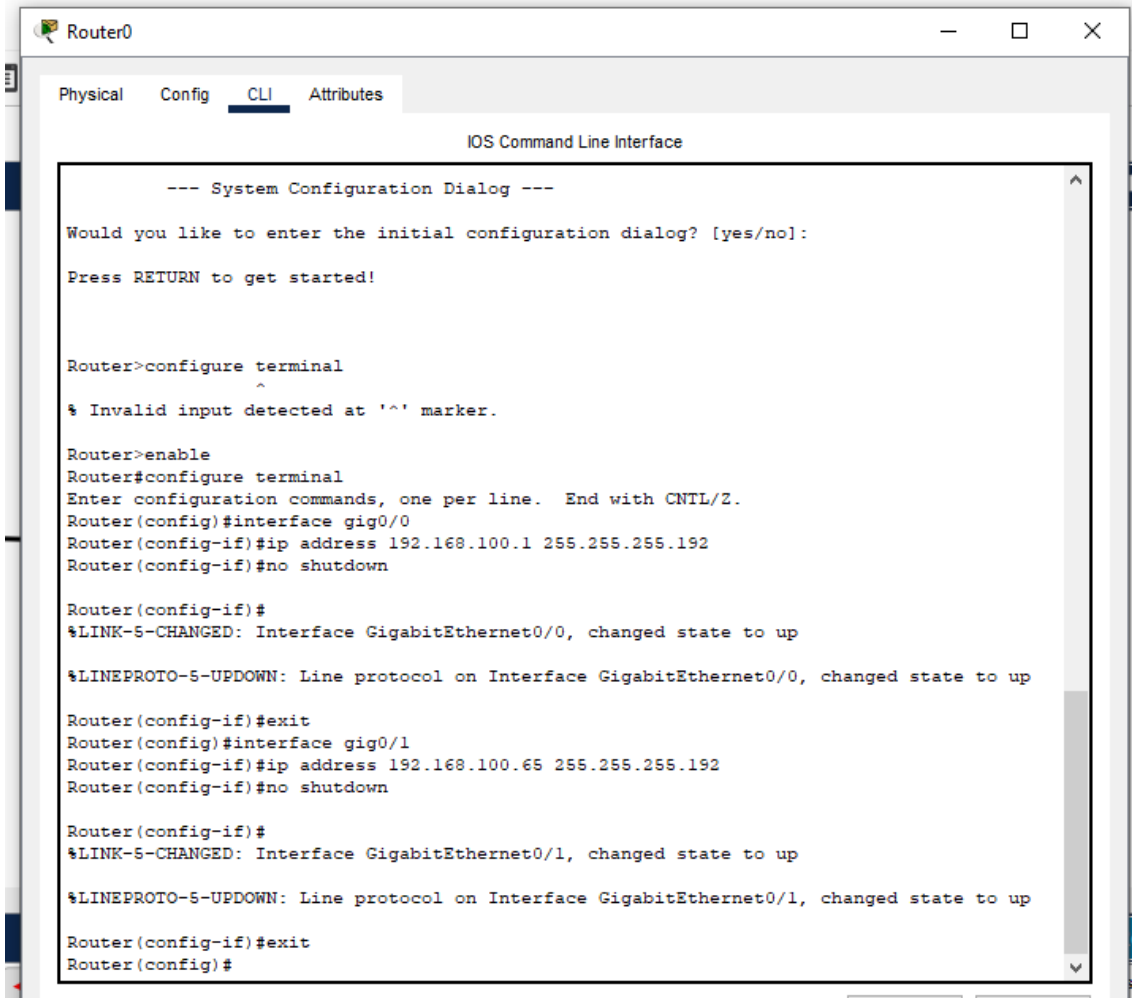
IPv4 Address 192.168.100.71

Subnet Mask 255.255.255.192

Default Gateway 192.168.100.65

DNS Server 0.0.0.0

Roteador:



```
Router0
Physical  Config  CLI  Attributes
IOS Command Line Interface

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]:

Press RETURN to get started!

Router>configure terminal
      ^
% Invalid input detected at '^' marker.

Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface gig0/0
Router(config-if)#ip address 192.168.100.1 255.255.255.192
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

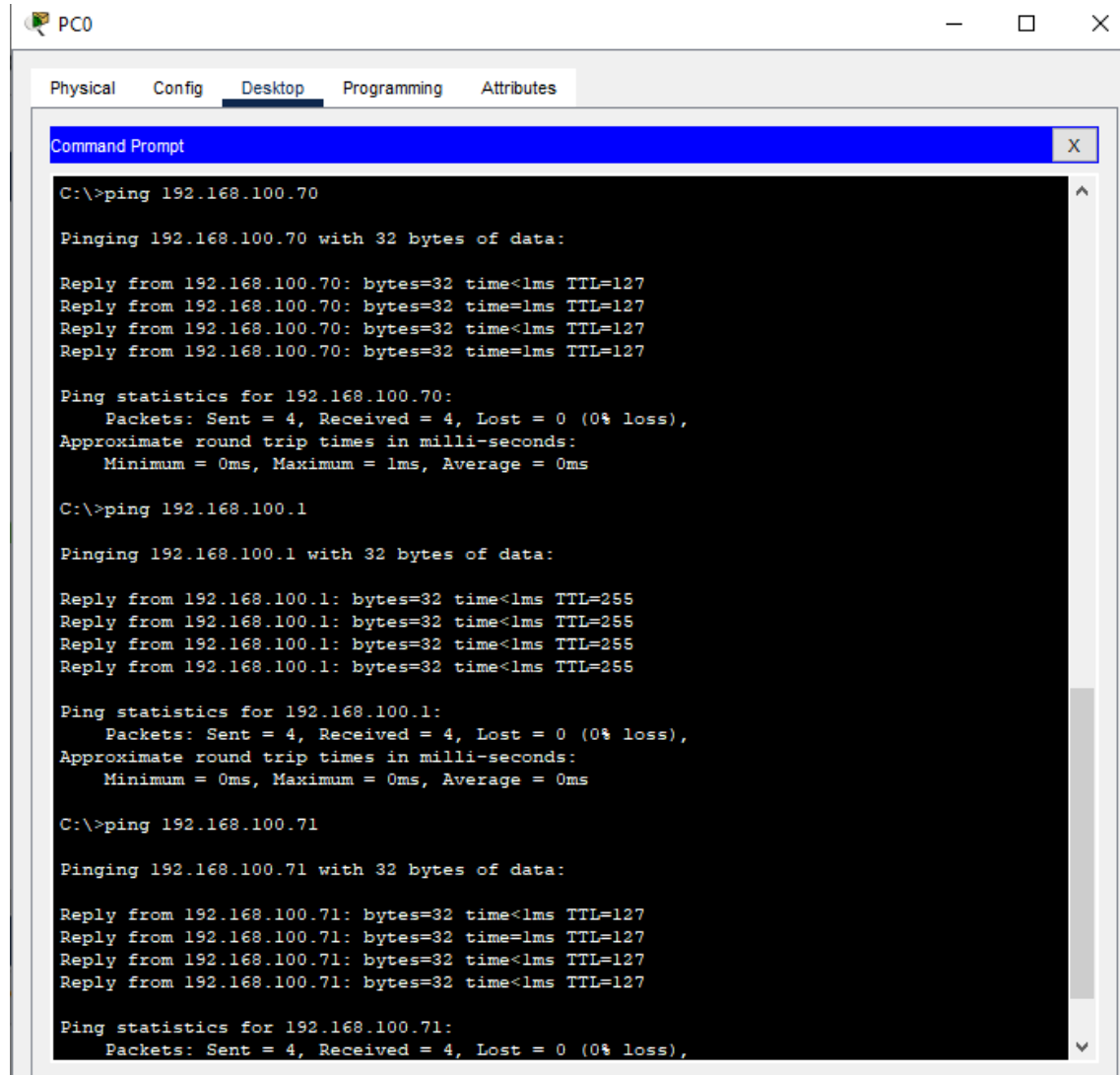
Router(config-if)#exit
Router(config)#interface gig0/1
Router(config-if)#ip address 192.168.100.65 255.255.255.192
Router(config-if)#no shutdown

Router(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

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

CONEXÃO



The screenshot shows a PC window titled "PCO" with a taskbar at the top. Below the taskbar is a window titled "Command Prompt" with a blue header bar. The Command Prompt window has a menu bar with "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is selected. The Command Prompt window contains the following text:

```
C:\>ping 192.168.100.70

Pinging 192.168.100.70 with 32 bytes of data:

Reply from 192.168.100.70: bytes=32 time<1ms TTL=127
Reply from 192.168.100.70: bytes=32 time<1ms TTL=127
Reply from 192.168.100.70: bytes=32 time<1ms TTL=127
Reply from 192.168.100.70: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.100.70:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.100.1

Pinging 192.168.100.1 with 32 bytes of data:

Reply from 192.168.100.1: bytes=32 time<1ms TTL=255
Reply from 192.168.100.1: bytes=32 time<1ms TTL=255
Reply from 192.168.100.1: bytes=32 time<1ms TTL=255
Reply from 192.168.100.1: bytes=32 time<1ms TTL=255

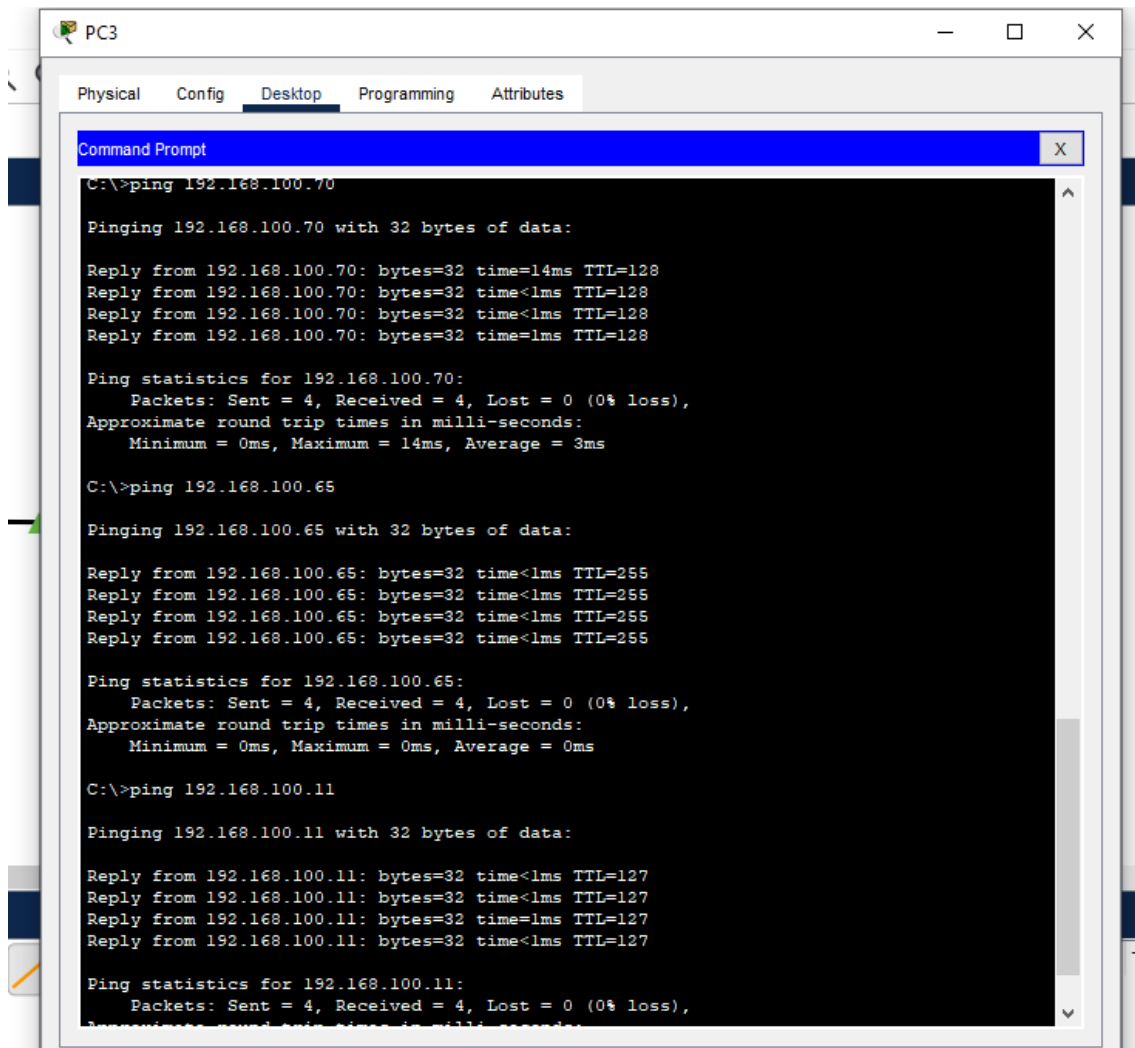
Ping statistics for 192.168.100.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.100.71

Pinging 192.168.100.71 with 32 bytes of data:

Reply from 192.168.100.71: bytes=32 time<1ms TTL=127
Reply from 192.168.100.71: bytes=32 time<1ms TTL=127
Reply from 192.168.100.71: bytes=32 time<1ms TTL=127
Reply from 192.168.100.71: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.100.71:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```



The screenshot shows a virtual machine window titled 'PC3' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The Command Prompt shows the execution of three ping commands from the C:\> prompt:

```
C:\>ping 192.168.100.70

Pinging 192.168.100.70 with 32 bytes of data:

Reply from 192.168.100.70: bytes=32 time=14ms TTL=128
Reply from 192.168.100.70: bytes=32 time<1ms TTL=128
Reply from 192.168.100.70: bytes=32 time<1ms TTL=128
Reply from 192.168.100.70: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.100.70:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 14ms, Average = 3ms

C:\>ping 192.168.100.65

Pinging 192.168.100.65 with 32 bytes of data:

Reply from 192.168.100.65: bytes=32 time<1ms TTL=255
Reply from 192.168.100.65: bytes=32 time<1ms TTL=255
Reply from 192.168.100.65: bytes=32 time<1ms TTL=255
Reply from 192.168.100.65: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.100.65:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.100.11

Pinging 192.168.100.11 with 32 bytes of data:

Reply from 192.168.100.11: bytes=32 time<1ms TTL=127
Reply from 192.168.100.11: bytes=32 time<1ms TTL=127
Reply from 192.168.100.11: bytes=32 time=1ms TTL=127
Reply from 192.168.100.11: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.100.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```

CONCLUSÃO

Ao configurar duas sub-redes diferentes e conectá-las com um roteador, foi possível compreender, na prática, o roteamento entre redes locais (LANs). Os testes de ping demonstraram que os PCs de uma sub-rede conseguem se comunicar com os da outra, graças à configuração correta das interfaces do roteador.

Essa prática reforça o entendimento sobre sub-redes, endereçamento IP e roteamento básico, conceitos fundamentais para redes de computadores.