

## Packet Tracer – Implementando um Esquema de Endereçamento IPv6 com Sub-Redes

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P8 INFORMÁTICA

SO2

### Tabela de Endereçamento

Dispositivo	Interface	Endereço IPv6	Endereço Link-local
R1	G0/0	2001:db8:acad:00c8::1/64	fe80::1
	G0/1	2001:db8:acad:00c9::1/64	fe80::1
	S0/0/0	2001:db8:acad:00cc::1/64	fe80::1
R2	G0/0	2001:db8:acad:00ca::1/64	fe80::2
	G0/1	2001:db8:acad:00cb::1/64	fe80::2
	S0/0/0	2001:db8:acad:00cc::2/64	fe80::2
PC1	NIC	Configuração Automática	
PC2	NIC	Configuração Automática	
PC3	NIC	Configuração Automática	
PC4	NIC	Configuração Automática	

### Objetivos

**Etpa 1: Determinar as Sub-Redes IPv6 e o Esquema de Endereçamento**

**Etapa 2: Configurar o endereçamento IPv6 em roteadores e PCs.**

**Etapa 3: verificar a conectividade IPv6.**

### Histórico/Cenário

Os administradores de rede devem saber como implementar o IPv6 em suas redes. Você foi solicitado a configurar uma rede para uso pela equipe de vendas para uma demonstração de cliente. A rede usará uma série de sub-redes IPv6 consecutivas para quatro LANs. Seu trabalho é atribuir as sub-redes às LANs e configurar os roteadores e PCs com endereçamento IPv6. Certifique-se de configurar todos os componentes necessários para o roteamento IPv6 nos roteadores.

### Instruções

#### Etapa 1: Determinar as Sub-Redes de IPv6 e o Esquema de Endereçamento

Você recebeu a sub-rede IPv6 **2001:db8:acad:00c8::/64** como sub-rede inicial. Você precisará de mais quatro sub-redes para cada rede necessária. Incrementar os endereços de sub-rede consecutivamente por um para chegar às quatro sub-redes necessárias. Preencha a tabela abaixo.

**Tabela de Sub-Redes**

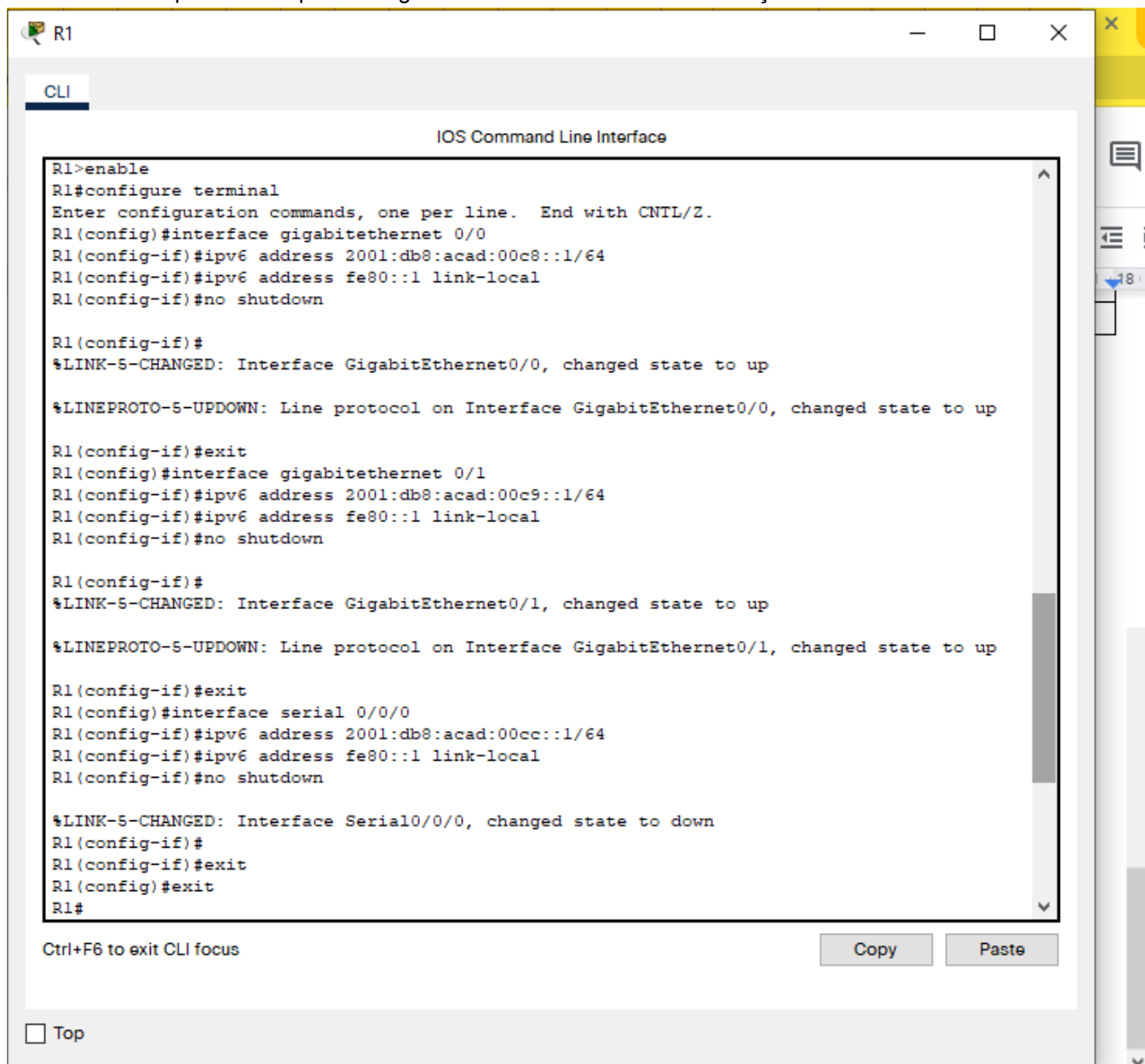
Sub-rede	Endereço
R1 G0/0/ LAN	2001:db8:acad:00c8: :0/64
LAN G0/1 de R1	<b>2001:db8:acad:00c9::1/64</b>
LAN G0/0 de R2	<b>2001:db8:acad:00ca::1/64</b>
LAN G0/1 de R2	<b>2001:db8:acad:00cb::1/64</b>
Rede de link R1 para R2	<b>2001:db8:acad:00cc::1/64</b>

**Etapa 2: Configure o endereçamento IPv6 em roteadores e PCs.**

Preencha a tabela de endereçamento acima para usar como guia para configurar os dispositivos.

- Atribua o primeiro endereço IP na sub-rede às interfaces LAN do roteador.
- Atribua os endereços de link local conforme designado na tabela de endereçamento.
- Para a conexão entre os roteadores, atribua o primeiro endereço na sub-rede a R1.
- Para a conexão entre os roteadores, atribua o segundo endereço na sub-rede ao R2.

- Defina todos os quatro hosts para configurar automaticamente com endereços IPv6.



```
R1#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R1#copy running startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
R1#  
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up  
  
R1#enable  
R1#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
R1(config)#ipv6 unicast-routing  
R1(config)#exit  
R1#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R1#
```

Ctrl+F6 to exit CLI focus

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R2
 — □ ×

CLI

IOS Command Line Interface

```

R2>enable
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#interface gigabitethernet 0/0
R2(config-if)#ipv6 address 2001:db8:acad:00ca::1/64
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#no shutdown

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(config-if)#exit
R2(config)#interface gigabitethernet 0/1
R2(config-if)#ipv6 address 2001:db8:acad:00cb::1/64
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#no shutdown

R2(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

R2(config-if)#exit
R2(config)#interface serial 0/0/0
R2(config-if)#ipv6 address 2001:db8:acad:00cc::2/64
R2(config-if)#ipv6 address fe80?
WORD X:X:X:X::X X:X:X:X::X/<0-128>
R2(config-if)#ipv6 address fe80?
WORD X:X:X:X::X X:X:X:X::X/<0-128>
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#no shutdown

R2(config-if)#
            
```

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```
R2(config-if)#  
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up  
  
R2(config-if)#  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up  
  
R2(config-if)#exit  
R2(config)#exit  
R2#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R2#copy running startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
R2#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
R2(config)#ipv6 unicast-routing  
R2(config)#exit  
R2#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R2#
```

Ctrl+F6 to exit CLI focus

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PC1

Desktop Programming

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address:

Subnet Mask:

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☒ Automatic ☐ Static IPv6 request successful.

IPv6 Address: 2001:DB8:ACAD:C8:230:F2FF:FEBA:2C3A / 64

Link Local Address: FE80::230:F2FF:FEBA:2C3A

Default Gateway: FE80::1

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

☐ Top

PC2

Desktop Programming

**IP Configuration** X

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address:

Subnet Mask:

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☒ Automatic ☐ Static IPv6 request successful.

IPv6 Address: 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9 / 64

Link Local Address: FE80::201:C7FF:FE66:86E9

Default Gateway: FE80::1

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

☐ Top



PC3

Desktop Programming

**IP Configuration** X

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address:

Subnet Mask:

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☒ Automatic ☐ Static IPv6 request successful.

IPv6 Address: 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9 / 64

Link Local Address: FE80::201:C9FF:FE72:E2D9

Default Gateway: FE80::2

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

☐ Top

PC4

Desktop Programming

### IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address:

Subnet Mask:

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☒ Automatic ☐ Static IPv6 request successful.

IPv6 Address: 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB / 64

Link Local Address: FE80::2E0:A3FF:FE12:16CB

Default Gateway: FE80::2

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

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### Etapa 3: Verifique a conectividade IPv6.

Os PCs devem ser capazes de efetuar ping uns aos outros se o endereçamento tiver sido configurado corretamente.

conexão PC2

```
C:\>ping 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9

Pinging 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9 with 32 bytes of data:

Reply from 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9: bytes=32 time=20ms TTL=127
Reply from 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9: bytes=32 time=1ms TTL=127
Reply from 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9: bytes=32 time<1ms TTL=127

Ping statistics for 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 20ms, Average = 5ms

C:\>
```

conexão PC3

```
C:\>ping 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9

Pinging 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9 with 32 bytes of data:

Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=9ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=29ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=11ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=10ms TTL=126

Ping statistics for 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 9ms, Maximum = 29ms, Average = 14ms

C:\>
```

☐ Top

conexão PC4

```
Pinging 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB with 32 bytes of data:

Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=26ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=10ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=11ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=11ms TTL=126

Ping statistics for 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 26ms, Average = 14ms

C:\>
```

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