

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

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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: :1/64	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	2001:db8:acad:00c9: :0/64
LAN G0/0 de R2	2001:db8:acad:00ca: :0/64
LAN G0/1 de R2	2001:db8:acad:00cb: :0/64
Rede de link R1 para R2	2001:db8:acad:00cc: :0/64

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.

```

R1>enable
R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface gigabitEthernet 0/0
R1(config-if)#ipv6 address 2001:DB8:ACAD:00C8::1/64
R1(config-if)#ipv6 address FE80::1 link-local
R1(config-if)#no shutdown

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

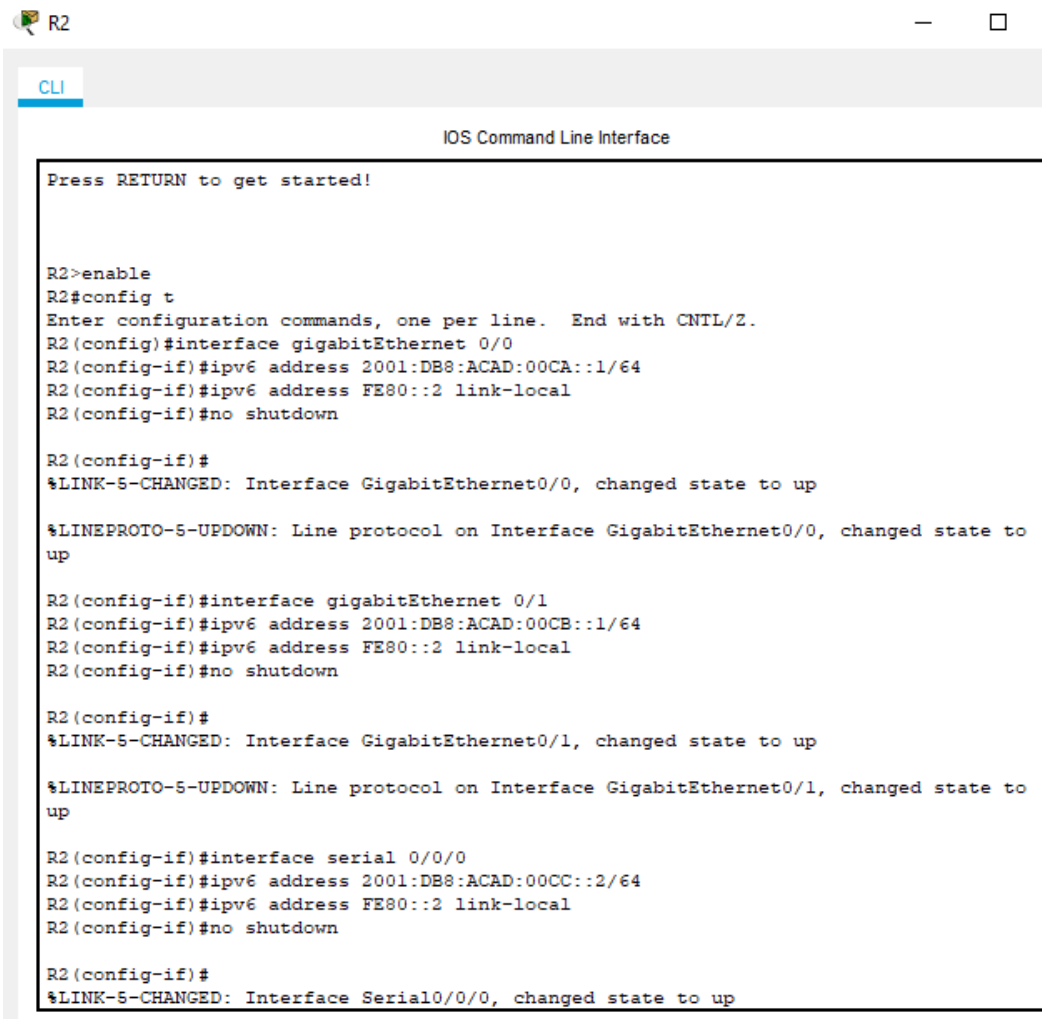
R1(config-if)#interface gigabitEthernet 0/1
R1(config-if)#ipv6 address 2001:DB8:ACAD:00C9::1/64
R1(config-if)#ipv6 address FE80::1 link-local
R1(config-if)#no shutdown

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 serial 0/0/0
R1(config-if)#ipv6 address 2001:DB8:ACAD:00CC::1/64
R1(config-if)#ipv6 address FE80::1 link-local
R1(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
R1(config-if)#
%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
  
```

- Para a conexão entre os roteadores, atribua o segundo endereço na sub-rede ao R2.



```
R2>enable
R2#config t
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-S-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

R2(config-if)#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

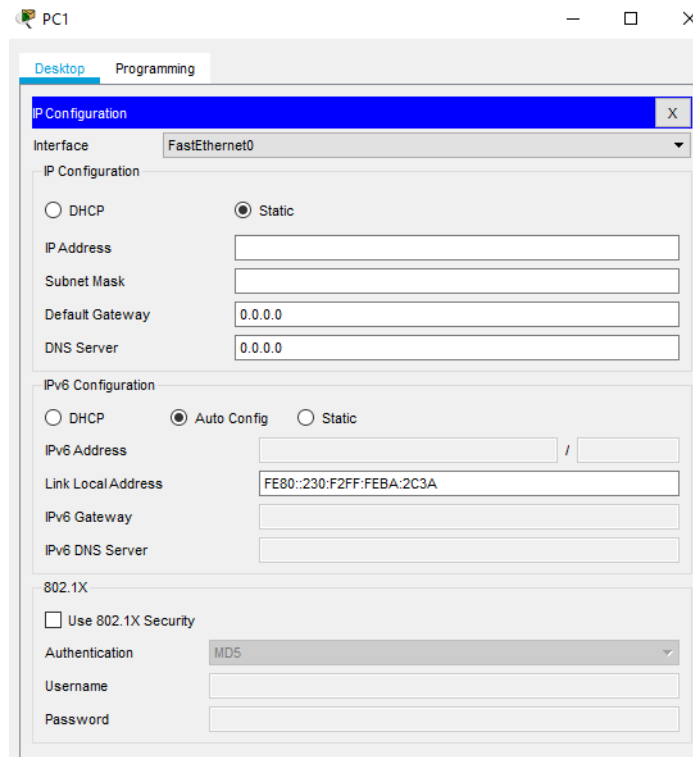
R2(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/1, changed state to up

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

R2(config-if)#interface serial 0/0/0
R2(config-if)#ipv6 address 2001:DB8:ACAD:00CC::2/64
R2(config-if)#ipv6 address FE80::2 link-local
R2(config-if)#no shutdown

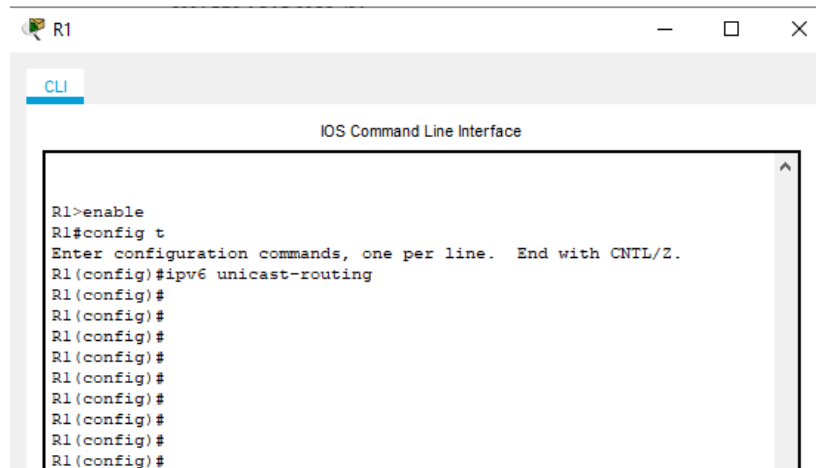
R2(config-if)#
%LINK-S-CHANGED: Interface Serial0/0/0, changed state to up
```


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



Etapa 3: Verifique a conectividade IPv6.

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



 R2


CLI

IOS Command Line Interface

```
R2(config-if)#  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0  
state to up  
  
R2(config-if)#exit  
R2(config)#ipv6 unicast-routing  
R2(config)#  
R2(config)#  
R2(config)#  
R2(config)#
```

Conexão PCS:

PC2: O mesmo processo acontece com os outros (3 e 4).

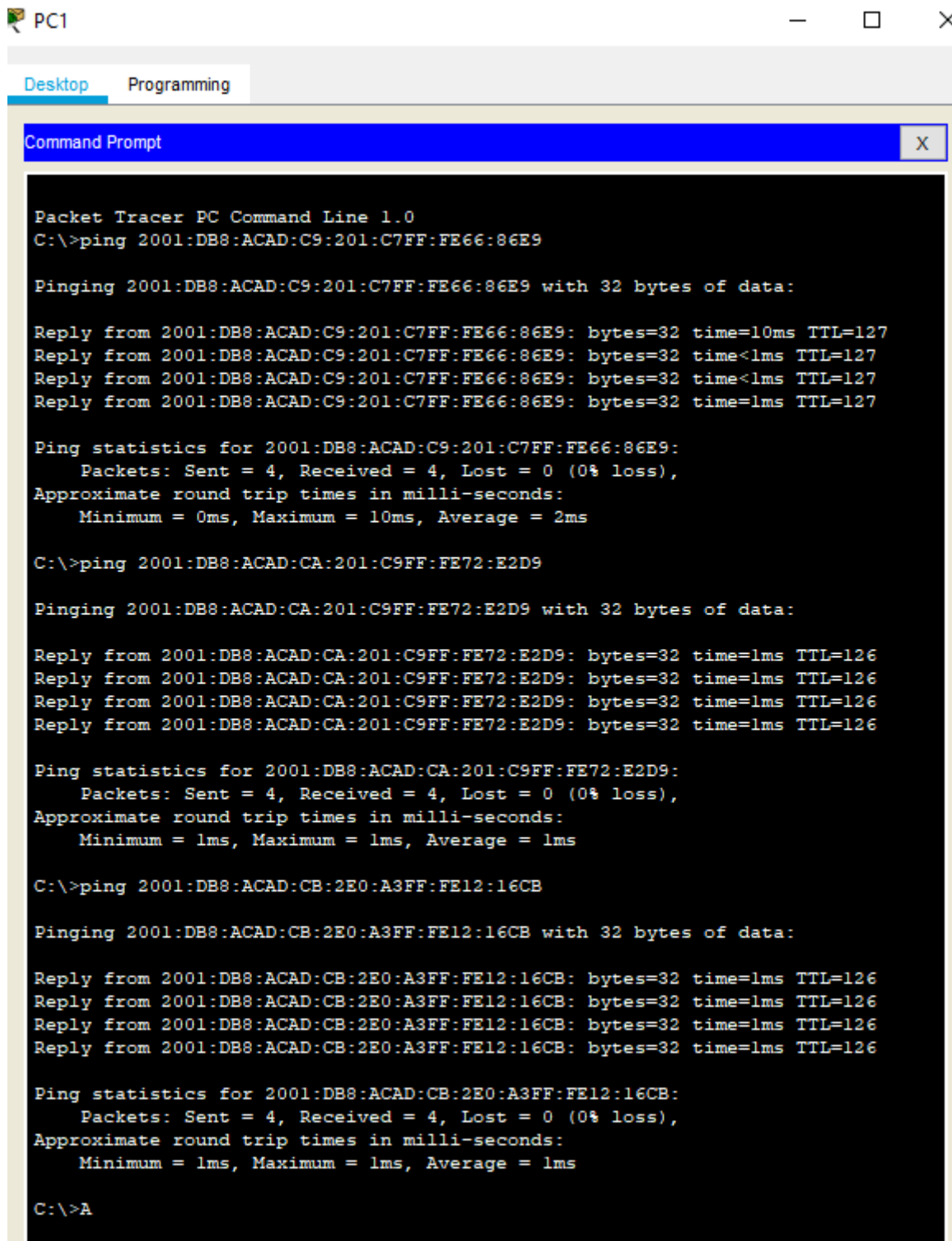
 PC2

Desktop Programming

Command Prompt

```
Packet Tracer PC Command Line 1.0  
C:\>ipv6config  
  
FastEthernet0 Connection: (default port)  
  
Link-local IPv6 Address.....: FE80::201:C7FF:FE66:86E9  
IPv6 Address.....: 2001:DB8:ACAD:C9:201:C7FF:FE66:86E9/64  
Default Gateway.....: FE80::1  
DHCPv6 Client DUID.....: 00-01-00-01-02-DC-BD-36-00-01-C7-66-86-E9  
  
Bluetooth Connection:  
  
Link-local IPv6 Address.....: ::  
IPv6 Address.....: ::/0  
Default Gateway.....: ::  
DHCPv6 Client DUID.....: 00-01-00-01-02-DC-BD-36-00-01-C7-66-86-E9  
  
C:\>
```

PC1: Está na ordem (2,3,4)



The screenshot shows the Command Prompt window of PC1 in Packet Tracer. The window has tabs for 'Desktop' and 'Programming'. The Command Prompt displays the following text:

```

Packet Tracer PC Command Line 1.0
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=10ms 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 = 10ms, Average = 2ms

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=1ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=1ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=1ms TTL=126
Reply from 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9: bytes=32 time=1ms 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 = 1ms, Maximum = 1ms, Average = 1ms

C:\>ping 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB

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=1ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=1ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=1ms TTL=126
Reply from 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB: bytes=32 time=1ms 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 = 1ms, Maximum = 1ms, Average = 1ms

C:\>A
  
```