

Supresión del Prefijo Primero de Trayectoria más Corta Abierta

Contenido

[Introducción](#)

[Antecedentes](#)

[Prerequisites](#)

[Requirements](#)

[Componentes Utilizados](#)

[Configurar](#)

[Diagrama de la red](#)

[Configuraciones](#)

[Verificación](#)

[Troubleshoot](#)

Introducción

Este documento describe la función Open Shortest Path First (OSPF) prefix-suppression para IOS® e IOS® -XE.

Antecedentes

La supresión de prefijos OSPF es una función útil para reducir el número de anuncios de estado de link (LSA) que se inundan dentro de un área. En un área OSPF que tiene múltiples links de tránsito entre los hosts y la comunicación real es entre los hosts. No hay necesidad de anunciar los LSA de link de tránsito a todos los routers. Sólo puede anunciar los LSA relacionados con los hosts finales. De forma predeterminada, OSPF anuncia todos los LSA que incluyen los LSA de link de tránsito.

La función de supresión de prefijos OSPF ayuda a superar este comportamiento y reduce el número de LSA tipo 1(router) y tipo 2(red) anunciados.

Esta función se puede habilitar globalmente en un router o por interfaces.

La supresión de prefijos OSPF ayuda a realizar un cálculo más rápido de la ruta más corta primero (SPF) debido a que hay menos prefijos en la base de datos (DB). Los LSA tipo 3, tipo 4, tipo 5 o tipo 7 OSPF no se suprimen.

Prerequisites

Requirements

No hay requisitos específicos para este documento.

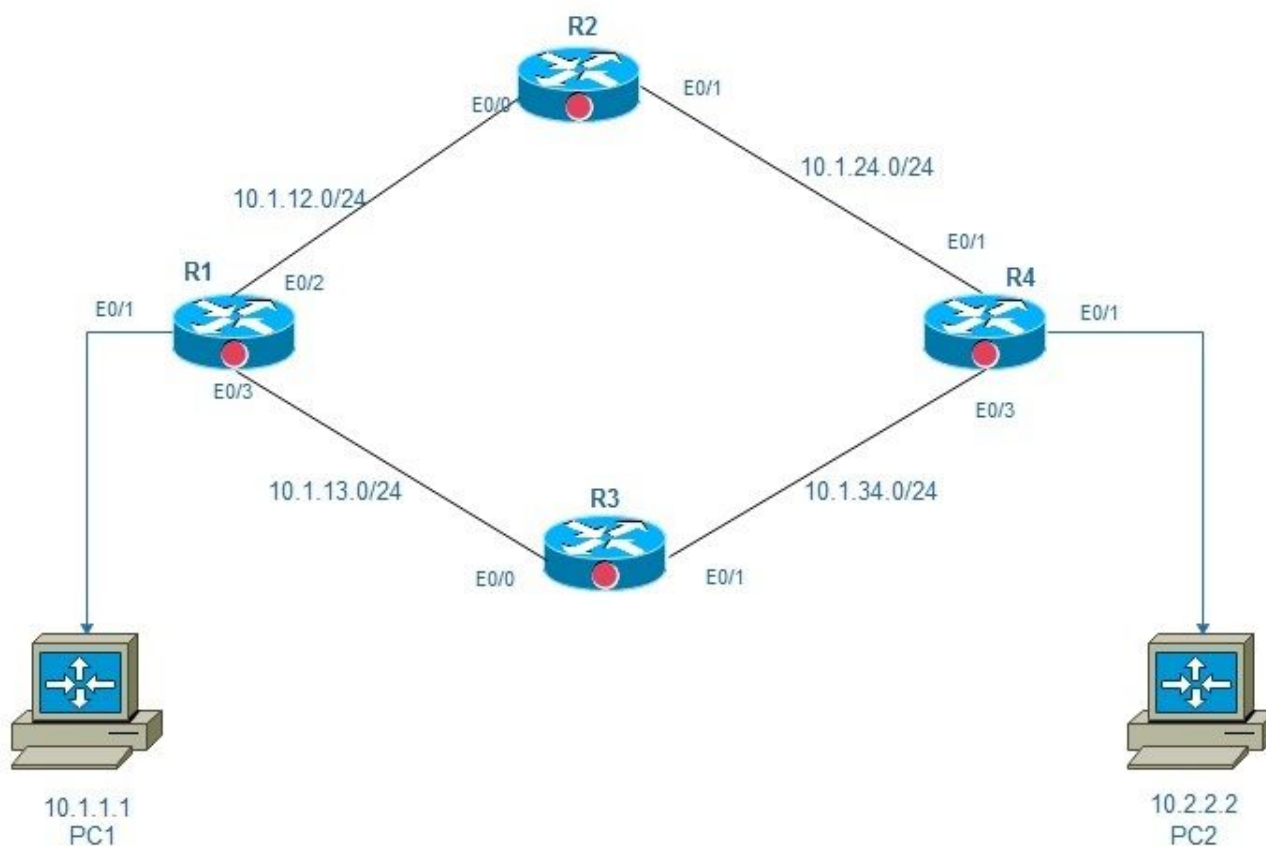
Componentes Utilizados

Este documento no tiene restricciones específicas en cuanto a versiones de software y de hardware.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.

Configurar

Diagrama de la red



Área de supresión de prefijo OSPF 0

Configuraciones

En este diagrama, hay 2 PC, PC1 y PC2 conectados a través de una red que tiene 4 routers, R1, R2, R3 y R4. Como el objetivo aquí es asegurar la disponibilidad de extremo a extremo, puede habilitar la supresión de prefijos OSPF en links de estructura básica de R1, R2, R3 y R4, lo que ayudará a reducir un número de LSA.

La supresión de prefijo OSPF se puede configurar en modo global o modo de interfaz:

Global mode configuration:

```
!  
router ospf 1  
prefix-suppression  
!
```

Interface mode configuration:

```
R1:  
R1#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
R1(config)#int e0/2  
R1(config-if)#ip ospf prefix-suppression  
R1(config-if)#int e0/3  
R1(config-if)#ip ospf prefix-suppression  
R1(config-if)#end  
R1#
```

```
R2:  
  
R2#  
R2#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
R2(config)#int e0/0  
R2(config-if)#ip ospf prefix-suppression  
R2(config-if)#int e0/1  
R2(config-if)#ip ospf prefix-suppression  
R2(config-if)#end  
R2#  
R2#
```

```
R3:  
  
R3#  
R3#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
R3(config-if)#int e0/1  
R3(config-if)# ip ospf prefix-suppression  
R3(config-if)#int e0/0  
R3(config-if)# ip ospf prefix-suppression  
R3(config-if)#end  
R3#  
R3#
```

```
R4:  
  
R4#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
R4(config)#int e0/2  
R4(config-if)#ip ospf prefix-suppression  
R4(config-if)#int e0/3  
R4(config-if)#ip ospf prefix-suppression  
R4(config-if)#end  
R4#  
R4#
```

Nota: Puede que necesite excluir las interfaces de administración o loopback de la supresión de prefijos OSPF si anuncia las interfaces de administración o loopback a través de OSPF.

Verificación

Utilize esta sección para confirmar que su configuración funcione correctamente.

Antes de configurar prefix-suppression:

R1:

```
R1#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
+ - replicated route, % - next hop override
```

Gateway of last resort is not set

```
10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks
C 10.1.1.0/24 is directly connected, Ethernet0/1
L 10.1.1.254/32 is directly connected, Ethernet0/1
C 10.1.12.0/24 is directly connected, Ethernet0/2
L 10.1.12.1/32 is directly connected, Ethernet0/2
C 10.1.13.0/24 is directly connected, Ethernet0/3
L 10.1.13.1/32 is directly connected, Ethernet0/3
O 10.1.24.0/24 [110/20] via 10.1.12.2, 00:02:29, Ethernet0/2
O 10.1.34.0/24 [110/20] via 10.1.13.3, 00:02:12, Ethernet0/3
O 10.2.2.0/24 [110/30] via 10.1.13.3, 00:04:22, Ethernet0/3
[110/30] via 10.1.12.2, 00:04:22, Ethernet0/2
R1#
```

```
R1#show ip ospf database network | i Mask|Attached Router|State ID
Link State ID: 10.1.12.2 (address of Designated Router)
Network Mask: /24
Attached Router: 10.1.24.2
Attached Router: 10.1.13.1
Link State ID: 10.1.13.3 (address of Designated Router)
Network Mask: /24
Attached Router: 10.1.34.3
Attached Router: 10.1.13.1
Link State ID: 10.1.24.4 (address of Designated Router)
Network Mask: /24
Attached Router: 10.2.2.254
Attached Router: 10.1.24.2
Link State ID: 10.1.34.4 (address of Designated Router)
Network Mask: /24
Attached Router: 10.2.2.254
Attached Router: 10.1.34.3
R1#
```

R4:

```
R4#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
```

i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks

```
O 10.1.1.0/24 [110/30] via 10.1.34.3, 00:04:59, Ethernet0/3
  [110/30] via 10.1.24.2, 00:04:59, Ethernet0/2
O 10.1.12.0/24 [110/20] via 10.1.24.2, 00:04:59, Ethernet0/2
O 10.1.13.0/24 [110/20] via 10.1.34.3, 00:04:59, Ethernet0/3
C 10.1.24.0/24 is directly connected, Ethernet0/2
L 10.1.24.4/32 is directly connected, Ethernet0/2
C 10.1.34.0/24 is directly connected, Ethernet0/3
L 10.1.34.4/32 is directly connected, Ethernet0/3
C 10.2.2.0/24 is directly connected, Ethernet0/1
L 10.2.2.254/32 is directly connected, Ethernet0/1
R4#
```

```
R4#show ip ospf database network | i Mask|Attached Router|State ID
Link State ID: 10.1.12.2 (address of Designated Router)
Network Mask: /24
Attached Router: 10.1.24.2
Attached Router: 10.1.13.1
Link State ID: 10.1.13.3 (address of Designated Router)
Network Mask: /24
Attached Router: 10.1.34.3
Attached Router: 10.1.13.1
Link State ID: 10.1.24.4 (address of Designated Router)
Network Mask: /24
Attached Router: 10.2.2.254
Attached Router: 10.1.24.2
Link State ID: 10.1.34.4 (address of Designated Router)
Network Mask: /24
Attached Router: 10.2.2.254
Attached Router: 10.1.34.3
R4#
```

Después de configurar prefix-suppression:

Please note that now we see only one OSPF route on Router1 and Router4.

R1:

```
[110/30] via 10.1.12.2, 00:04:22, Ethernet0/2
R1#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
+ - replicated route, % - next hop override
```

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 7 subnets, 2 masks

```
C 10.1.1.0/24 is directly connected, Ethernet0/1
L 10.1.1.254/32 is directly connected, Ethernet0/1
```

```
C 10.1.12.0/24 is directly connected, Ethernet0/2
L 10.1.12.1/32 is directly connected, Ethernet0/2
C 10.1.13.0/24 is directly connected, Ethernet0/3
L 10.1.13.1/32 is directly connected, Ethernet0/3
O 10.2.2.0/24 [110/30] via 10.1.13.3, 00:07:38, Ethernet0/3
[110/30] via 10.1.12.2, 00:07:38, Ethernet0/2
R1#
```

```
R1#show ip ospf database network | i Mask|Attached Router|State ID
Link State ID: 10.1.12.1 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.13.1
Attached Router: 10.1.24.2
Link State ID: 10.1.13.1 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.13.1
Attached Router: 10.1.34.3
Link State ID: 10.1.24.2 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.24.2
Attached Router: 10.2.2.254
Link State ID: 10.1.34.4 (address of Designated Router)
Network Mask: /32
Attached Router: 10.2.2.254
Attached Router: 10.1.34.3
R1#
```

R4:

```
R4#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
+ - replicated route, % - next hop override
```

Gateway of last resort is not set

```
10.0.0.0/8 is variably subnetted, 7 subnets, 2 masks
O 10.1.1.0/24 [110/30] via 10.1.34.3, 01:15:37, Ethernet0/3
[110/30] via 10.1.24.2, 01:15:47, Ethernet0/2
C 10.1.24.0/24 is directly connected, Ethernet0/2
L 10.1.24.4/32 is directly connected, Ethernet0/2
C 10.1.34.0/24 is directly connected, Ethernet0/3
L 10.1.34.4/32 is directly connected, Ethernet0/3
C 10.2.2.0/24 is directly connected, Ethernet0/1
L 10.2.2.254/32 is directly connected, Ethernet0/1
R4#
```

```
R4#show ip ospf database network | i Mask|Attached Router|State ID
Link State ID: 10.1.12.1 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.13.1
Attached Router: 10.1.24.2
```

```
Link State ID: 10.1.13.1 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.13.1
Attached Router: 10.1.34.3
Link State ID: 10.1.24.2 (address of Designated Router)
Network Mask: /32
Attached Router: 10.1.24.2
Attached Router: 10.2.2.254
Link State ID: 10.1.34.4 (address of Designated Router)
Network Mask: /32
Attached Router: 10.2.2.254
Attached Router: 10.1.34.3
R4#
```

Troubleshoot

Actualmente, no hay información específica de troubleshooting disponible para esta configuración.