Configureer standaardroute in DHCP

Inhoud

Inleiding

Deze documenten beschrijft hoe u standaardroutes in Enhanced Interior Gateway Routing Protocol (DHCP) kunt configureren.

Voorwaarden

Vereisten

Cisco raadt aan dat u kennis hebt van DHCP.

Gebruikte componenten

Dit document is niet beperkt tot specifieke software- en hardware-versies.

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk levend is, zorg er dan voor dat u de mogelijke impact van om het even welke opdracht begrijpt.
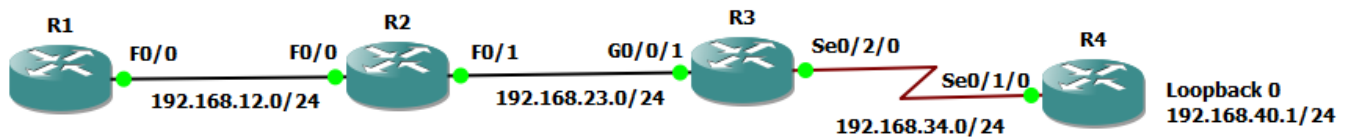
Configureren

Deze methoden zijn beschikbaar om de standaardroute in Ecu te adverteren die in dit artikel wordt uitgelegd:

1. Gebruik standaardroute en herdistributie

2. Gebruik overzichtsadres

Netwerkdiagram

Configuratie

Hier worden de routers R1, R2 en R3 gevormd met Ecu en geen Ecu loopt binnen tussen R3 en R4.

R1

```
!
router eigrp 1 network 192.168.12.0
!
```

```
R1#show ip route
Codes: 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

Gateway of last resort is not set

C 192.168.12.0/24 is directly connected, FastEthernet0/0
D 192.168.23.0/24 [90/30720] via 192.168.12.2, 00:10:27, FastEthernet0/0
```

R2

```
!
router eigrp 1
 network 192.168.12.0
 network 192.168.23.0
!
```

```
R2#show ip route
Codes: 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

Gateway of last resort is not set
```

```
C 192.168.12.0/24 is directly connected, FastEthernet0/0
C 192.168.23.0/24 is directly connected, FastEthernet0/1
```

R3

```
!
router eigrp 1
 network 192.168.23.0
!
```

R3#show 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
a - application route
+ - replicated route, % - next hop override

Gateway of last resort is not set

D 192.168.12.0/24
[90/28416] via 192.168.23.2, 00:05:16, GigabitEthernet0/0/1
192.168.23.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.23.0/24 is directly connected, GigabitEthernet0/0/1
L 192.168.23.3/32 is directly connected, GigabitEthernet0/0/1
192.168.34.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.34.0/24 is directly connected, Serial0/2/0
L 192.168.34.3/32 is directly connected, Serial0/2/0
```

Methode 1. Gebruik een standaardroute en een herverdeling

Deze methode beschrijft hoe te om standaardroute in Ecu met het gebruik van statische standaardroute te adverteren:

```
R3(config)#ip route 0.0.0.0 0.0.0.0 192.168.34.4
```

R3#show 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
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is 192.168.34.4 to network 0.0.0.0

S*    0.0.0.0/0 [1/0] via 192.168.34.4
D     192.168.12.0/24
         [90/28416] via 192.168.23.2, 00:59:18, GigabitEthernet0/0/1
      192.168.23.0/24 is variably subnetted, 2 subnets, 2 masks
```

```
C          192.168.23.0/24 is directly connected, GigabitEthernet0/0/1
L          192.168.23.3/32 is directly connected, GigabitEthernet0/0/1
        192.168.34.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.34.0/24 is directly connected, Serial0/2/0
L          192.168.34.3/32 is directly connected, Serial0/2/0
```

Opmerking: In deze situatie kan een netwerkverklaring niet binnen daarom worden gebruikt om 0.0.0.0 te adverteren omdat het niet direct verbonden is.

Herdistributie van statische route wordt uitgevoerd onder Ecu zoals hier wordt getoond:

```
R3(config)#router eigrp 1
R3(config-router)#redistribute static metric 100000 1000 255 1 1500
```

Verifiëren

Gebruik dit gedeelte om te bevestigen dat de configuratie correct werkt.

```
R1#show ip route
Codes: 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

Gateway of last resort is 192.168.12.2 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
D    192.168.23.0/24 [90/30720] via 192.168.12.2, 00:14:01, FastEthernet0/0
D*EX 0.0.0.0/0 [170/286720] via 192.168.12.2, 00:00:39, FastEthernet0/0


R2#show ip route
Codes: 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

Gateway of last resort is 192.168.23.3 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
C    192.168.23.0/24 is directly connected, FastEthernet0/1
D*EX 0.0.0.0/0 [170/284160] via 192.168.23.3, 00:04:44, FastEthernet0/1
```
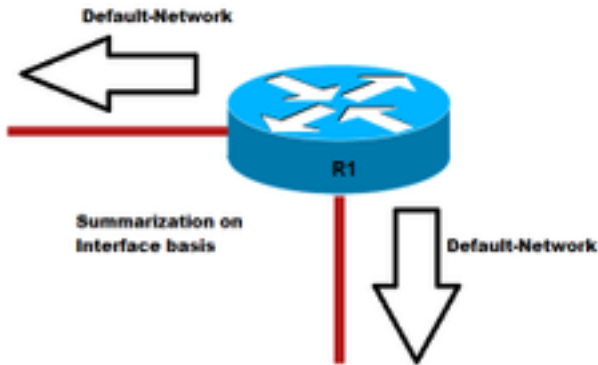
Methode 2. Gebruik overzichtsadres

Deze methode gebruikt de samenvattingsregel van DHCP zoals in het beeld getoond.

```
!
R3(config)#interface gigabitEthernet 0/0/1 R3(config-if)#ip summary-address eigrp 1 0.0.0.0
0.0.0.0
!
```

Verifiëren

Gebruik dit gedeelte om te bevestigen dat de configuratie correct werkt.

```
R3#show 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
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

D*      0.0.0.0/0 is a summary, 00:00:06, Null0
D       192.168.12.0/24
            [90/28416] via 192.168.23.2, 00:15:54, GigabitEthernet0/0/1
        192.168.23.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.23.0/24 is directly connected, GigabitEthernet0/0/1
L          192.168.23.3/32 is directly connected, GigabitEthernet0/0/1
        192.168.34.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.34.0/24 is directly connected, Serial0/2/0
L          192.168.34.3/32 is directly connected, Serial0/2/0
```

R1 en R2 die tabel routing toont nu een standaardroute die van DHCP wordt geleerd:

```
R1#show ip route
Codes: 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
```

```
Gateway of last resort is 192.168.12.2 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
D    192.168.23.0/24 [90/30720] via 192.168.12.2, 00:17:50, FastEthernet0/0
D*   0.0.0.0/0 [90/30976] via 192.168.12.2, 00:01:30, FastEthernet0/0


R2#show ip route
Codes: 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

Gateway of last resort is 192.168.23.3 to network 0.0.0.0

C    192.168.12.0/24 is directly connected, FastEthernet0/0
C    192.168.23.0/24 is directly connected, FastEthernet0/1
D*   0.0.0.0/0 [90/28416] via 192.168.23.3, 00:03:50, FastEthernet0/1
```

Problemen oplossen

Er is momenteel geen specifieke troubleshooting-informatie beschikbaar voor deze configuratie.