路由表中不存在默认路由

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简介

本文档介绍与Cisco IOS-XE不同的Cisco IOS-XE软件在路由表中安装默认路由时的预期行为。

问题：路由表中不存在默认路由

默认路由不显示在路由表和转发表中，尽管它已正确配置，并且在show running-config和show sdwan running-config中均可看到

```
Router#sh run | i ip route 0\.0\.0\.0
ip route 0.0.0.0 0.0.0.0 192.168.10.10
Router#sh sdwan run | i ip route 0\.0\.0\.0
ip route 0.0.0.0 0.0.0.0 192.168.10.10
```

同时，您在路由表和转发表中看不到该路由：

```
Router#sh ip ro | b Gateway
Gateway of last resort is not set

      192.168.9.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.9.0/24 is directly connected, GigabitEthernet0/0/0
L        192.168.9.254/32 is directly connected, GigabitEthernet0/0/0
      192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.10.0/24 is directly connected, GigabitEthernet0/0/1
L        192.168.10.254/32 is directly connected, GigabitEthernet0/0/1
Router#sh ip cef 0.0.0.0/0
0.0.0.0/0
  no route
```

故障排除

您可以尝试调试ip routing和debug ip cef events，以便了解此路由未安装的原因：

```
*Dec 22 10:34:43.706: RT: updating static 0.0.0.0/0 (0x0) [local lbl/ctx:1048577/0x0] omp-tag:0
:
    via 192.168.10.10   0 1048578 0x100001

*Dec 22 10:34:43.707: RT: add 0.0.0.0/0 via 192.168.10.10, static metric [1/0]
*Dec 22 10:34:43.707: RT: default path is now 0.0.0.0 via 192.168.10.10
*Dec 22 10:34:43.997: RT: del 0.0.0.0 via 192.168.10.10, static metric [1/0]
```

```
*Dec 22 10:34:43.997: RT: delete network route to 0.0.0.0/0
*Dec 22 10:34:43.997: RT: default path has been cleared
*Dec 22 10:34:43.713: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by admin,
transaction-id 2086
```

但是，输出并未解释默认路由未安装到路由表的原因。

如果检查了下一跳可达性，您可以看到下一跳不可达：

```
Router#ping 192.168.10.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.10, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
```

ARP解析也不起作用：

```
Router#sh arp 192.168.10.10
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  192.168.10.10           0   Incomplete      ARPA
```

因此，得出的结论是默认网关不可达。

此外，在某些情况下，可以注意到接口上没有输入数据包，这可能是问题的额外证据：

```
GigabitEthernet0/0/1 is up, line protocol is up
   Hardware is BUILT-IN-2T+6X1GE, address is a8b4.5639.4e84 (bia a8b4.5639.4e84)
   Internet address is 192.168.10.254/24 MTU 1500 bytes, BW 100000 Kbit/sec, DLY 100 usec,
reliability 255/255, txload 1/255, rxload 1/255 Encapsulation ARPA, loopback not set Keepalive
not supported Full Duplex, 100Mbps, link type is auto, media type is T output flow-control is
on, input flow-control is on ARP type: ARPA, ARP Timeout 04:00:00 Last input never, output
00:00:07, output hang never Last clearing of "show interface" counters never Input queue:
0/375/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: fifo Output queue:
0/40 (size/max) 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0
packets/sec 0 packets input, 0 bytes, 0 no buffer Received 0 broadcasts (0 IP multicasts) 0
runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored 0 watchdog, 0
multicast, 0 pause input
```

解决方案

Cisco IOS-XE SDWAN软件使用在Viptela vEdge路由器上实现的相同功能，称为**跟踪默认网关**

此功能类似于Cisco IOS上用于配置可靠静态路由备份的ip sla和对象跟踪功能。

默认情况下，此功能已启用，在相应的show sdwan running-config系统输**出中无法看到该**功能：

```
Router#show sdwan running-config system | i track-default-gateway
Router#
```

有关此功能的详细信息，请访问：https://sdwan-
docs.cisco.com/Product_Documentation/Command_Reference/Configuration_Commands/track-
default-gateway

启用网关跟踪后，软件每10秒向静态路由的下一跳发送一次ARP消息。如果软件收到ARP响应，它
会将静态路由放入本地路由表中。在丢失10个连续的ARP响应后，该静态路由将从路由表中删除。
软件继续定期发送ARP消息，一旦再次收到ARP响应，静态路由就会添加回路由表。