在根据来源的位置的vPC的组播转发

Contents

简介

当来源在vPC环境里时，被安置本文解释组播转发多种方案

Prerequisites

Requirements

Cisco 建议您了解以下主题：

- 路由和Mutilcast转发
- 连结平台
- 虚拟Port-Channel

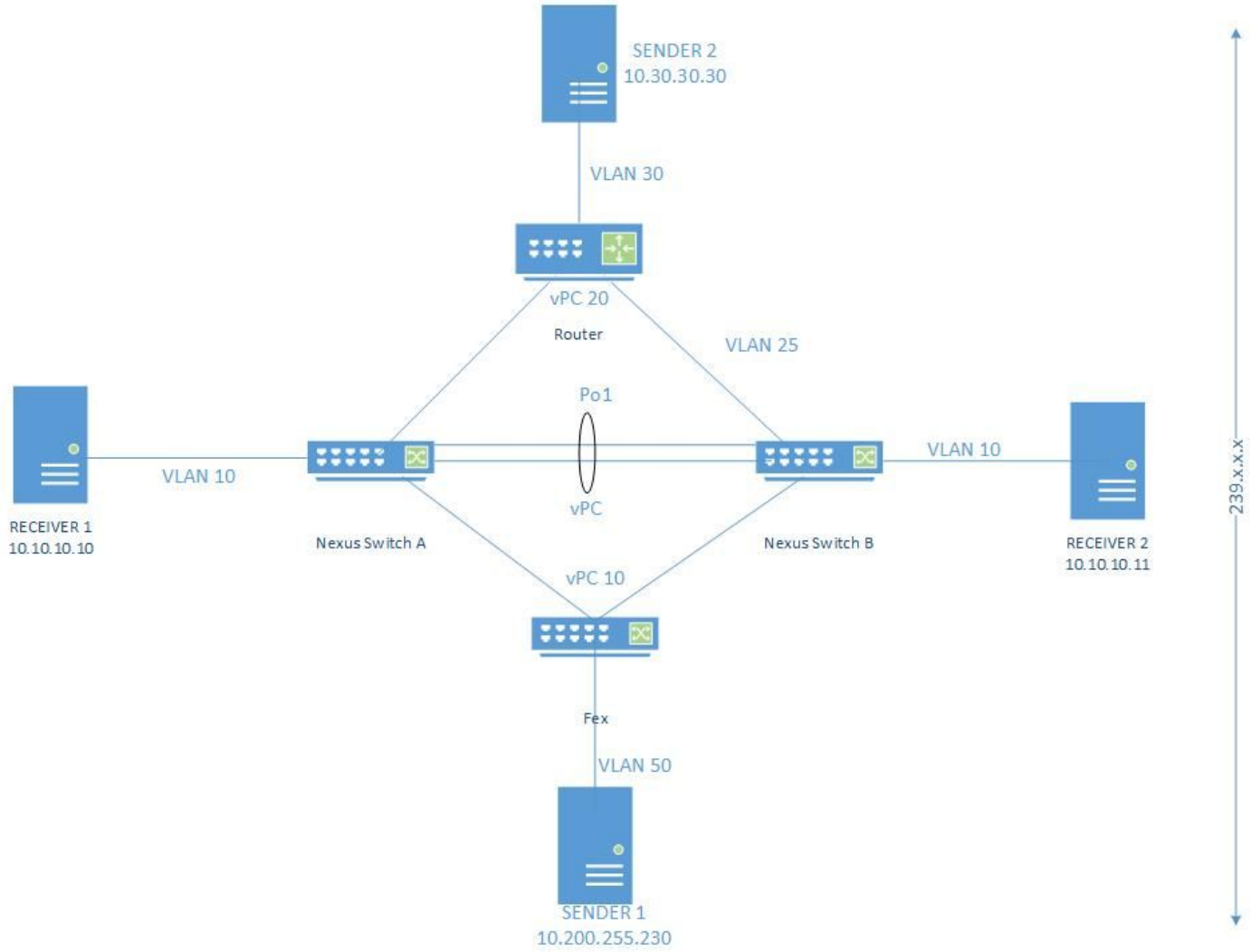
Components Used

本文档中的信息基于以下软件和硬件版本：

- 连结7000运行的软件8.1(1)
- Supervisor N7K-SUP2E
- 线卡N7K-M348XP-25L

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.If your network is live, make sure that you understand the potential impact of any command.

拓扑



Configure

交换机A和交换机B是VPC对等体。

Sender1在VLAN 50被连接(10.200.255.230， 239.3.0.2)

Sender2被连接到在VLAN 30和已知VPC对等体的L3_swicth/Router通过VLAN 25 (10.30.30.30，239.3.0.2)

Receiver1在交换机A的一个孤立的端口4/1被连接

Receiver2在交换机B的一个孤立的端口4/1被连接

Switch A

```
Ip route 10.30.30.0/24 10.25.25.250
ip pim rp-address 10.25.25.250 group-list 224.0.0.0/4
ip pim ssm range 232.0.0.0/8
ip pim pre-build-spt
```

Switch B

```
Ip route 10.30.30.0/24 10.25.25.250
ip pim rp-address 10.25.25.250 group-list 224.0.0.0/4
```

```
ip pim ssm range 232.0.0.0/8
ip pim pre-build-spt
```

来源被连接到vPC VLAN

Receiver1为从组239.3.0.2的数据流不断地请求并且注册(* ， G)在VLAN10的交换机A。

交换机B在CFS帮助下添加同一个条目。接受器在VPC VLAN的孤立行或vpc成员端口可以被连接。

因为Sender1被连接到VPC VLAN数据流被发送到VLAN 50，并且两个连结设备添加OIF条目(S，G)。

当发送方直接地，被连接到vPC VLAN两个设备转发根据PIM内部转发算法的数据流。

```
Switch A# show ip pim internal vpc rpf-source
PIM vPC RPF-Source Cache for Context "default" - Chassis Role Secondary
Source: 10.200.255.230
  Pref/Metric: 0/0
  Ref count: 1
  In MRIB: yes
  Is (*,G) rpf: no
  Source role: Primary
  Forwarding state: Win-force (forwarding)

Switch B# show ip pim internal vpc rpf-source
PIM vPC RPF-Source Cache for Context "default" - Chassis Role Secondary
Source: 10.200.255.230
  Pref/Metric: 0/0
  Ref count: 1
  In MRIB: yes
  Is (*,G) rpf: no
  Source role: secondary
  Forwarding state: Win-force (forwarding)
```

OIF也被填充对两vpc并列。

```
Switch A# show ip mroute

(*, 232.0.0.0/8), uptime: 02:16:01, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

(*, 239.3.0.2/32), uptime: 01:42:35, igmp ip pim
  Incoming interface: Vlan10, RPF nbr: 10.10.10.251
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 01:42:35, igmp, (RPF)

(10.200.255.230/32, 239.3.0.2/32), uptime: 02:15:57, ip pim mrib
  Incoming interface: Vlan50, RPF nbr: 10.200.255.230
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 01:42:35, mrib

Switch B# sh ip mroute

(*, 232.0.0.0/8), uptime: 02:03:17, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

(*, 239.3.0.2/32), uptime: 01:31:59, igmp ip pim
```

```
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 01:31:59, igmp

(10.200.255.230/32, 239.3.0.2/32), uptime: 02:03:13, ip pim mrib
  Incoming interface: Vlan50, RPF nbr: 10.200.255.230
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 01:31:59, mrib
```

Receiver1获得流，并且，当Receiver2要求同一个组，接受器2也开始接受它。

来源被连接到L3路由器

Sender2发送流到是在VLAN 30的L3_swicth，在这种情况下也运作作为RP的FHRP。

L3_swicth将转发往VPC对等体的流在VPC VLAN 25。此数据流被处理作为在L3的组播，并且两VPC对等体将构件(S， G)。

Receiver1和Receiver2要求组播流和(*， G)被创建在两个vpc对等体。

因为Sender2流在PIM接收在SVI 25和不直接地在VPC SVI，只有一个设备(DR)转发根据PIM内部转发算法的数据流，因为发送方2不直接地在VPC SVI。

```
Switch A# show ip pim internal vpc rpf-source
Source: 10.30.30.30
  Pref/Metric: 1/0
  Ref count: 1
  In MRIB: yes
  Is (*,G) rpf: no
  Source role: primary
  Forwarding state: Tie (forwarding)
  MRIB Forwarding state: forwarding

Switch B# sh ip pim internal vpc rpf-source
Source: 10.30.30.30
  Pref/Metric: 1/0
  Ref count: 1
  In MRIB: yes
  Is (*,G) rpf: no
  Source role: secondary
  Forwarding state: Tie (not forwarding)
  MRIB Forwarding state: not forwarding
```

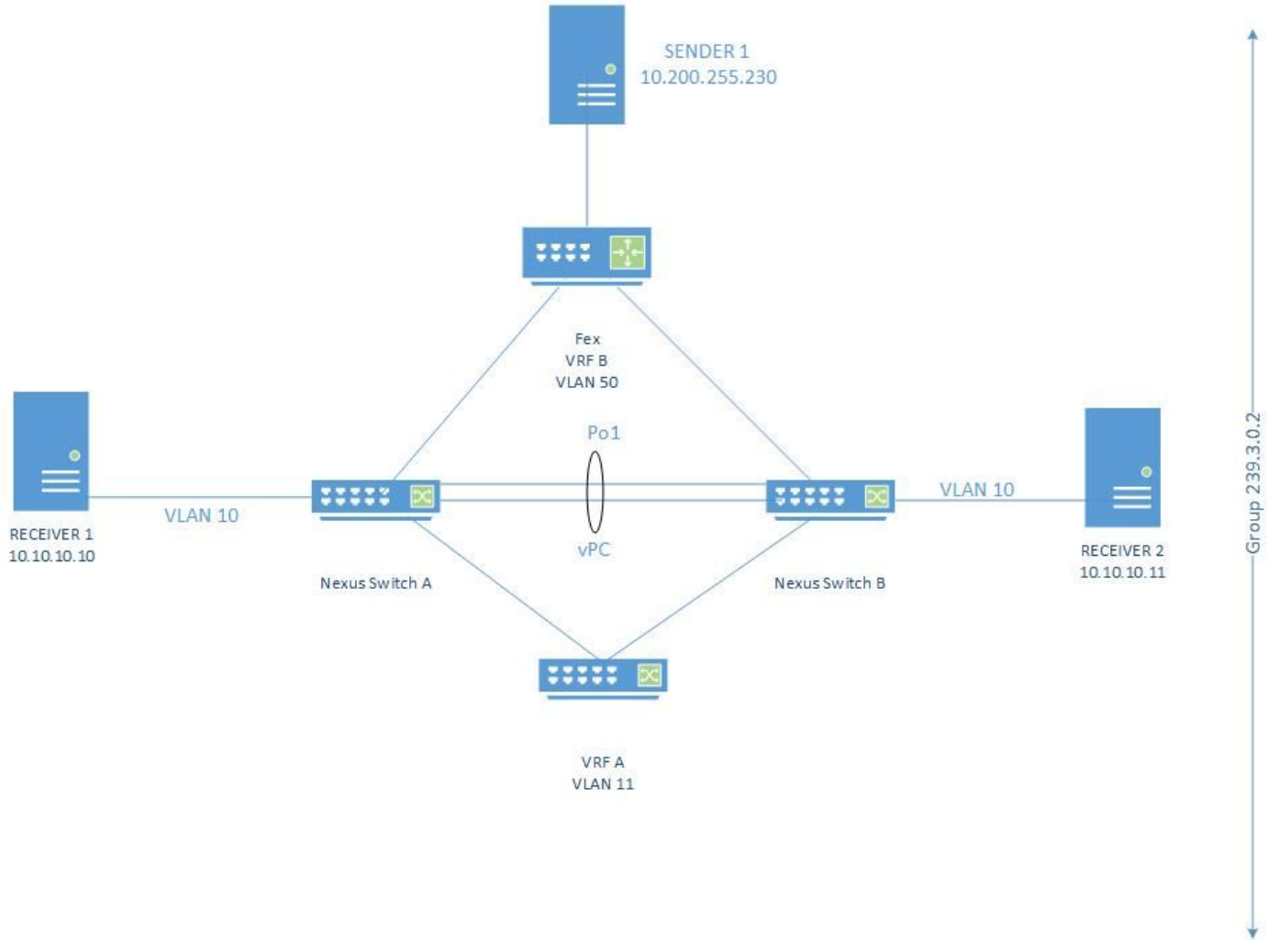
因此在DR仅填充的OIF。

```
Switch A# show ip mroute
IP Multicast Routing Table for VRF "default"

(*, 232.0.0.0/8), uptime: 02:37:29, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

(*, 239.3.0.2/32), uptime: 02:37:26, igmp ip pim
  Incoming interface: Vlan25, RPF nbr: 10.25.25.250
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 02:37:26, igmp

(10.30.30.30/32, 239.3.0.2/32), uptime: 02:37:26, ip mrib pim
  Incoming interface: Vlan25, RPF nbr: 10.25.25.250
```

```
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 02:37:26, mrib

Switch B# show ip mroute
(*, 232.0.0.0/8), uptime: 02:38:15, pim ip
  Incoming interface: Null, RPF nbr: 0.0.0.0
  Outgoing interface list: (count: 0)

(*, 239.3.0.2/32), uptime: 02:38:15, igmp ip pim
  Incoming interface: Vlan25, RPF nbr: 10.25.25.250
  Outgoing interface list: (count: 1)
    Vlan10, uptime: 02:38:15, igmp

(10.30.30.30/32, 239.3.0.2/32), uptime: 02:38:15, ip mrib pim
  Incoming interface: Vlan25, RPF nbr: 10.25.25.250
  Outgoing interface list: (count: 1) >>>>>> no OIF
```

在这种情况下，因为Receiver1获得流和接受器2不会获得流由于在**交换机B的**缺少OIF。

来源被连接区别VRF之间



而接受器被连接到附属对等体不接受它，组播数据流只转发到在vlan10的一台接受器被连接到主要的vpc对等体。

1. 组播被发送到在VLAN 50 (vpc VLAN)的fex，在这种情况下，**交换机A**和**交换机B**有VRF的B OIF，当来源直接地被连接到它，并且在vpc VLAN。

2. 此数据流转发到往VRF A的VLAN 51位于不同的VDC和被发送到RP。
3. 此VDC有VLAN 11在VRF A和VLAN 51在默认值VRF。
4. 在VRF A.的数据流当前被发送到交换机A VLAN 11。
5. 仅一**交换机A/Switch B**有VRF的A OIF由于被提及的同一个限制在**发送方2被连接到L3路由器**
6. Receiver1被连接到**交换机A**用OIF获得组播流。

这是设计限制。

如果PIM，直接地转发数据流被在VPC VLAN的发送方和不在两交换机上能只有OIF安装的VPC对等体。

因此OIF安装了在VRF A上作为发送方直接地被连接到VRF A，但是不在VRF B上，通过PIM被连接。

要获得在两个VPC对等体的OIF，应该直接地连接发送方到vpc VLAN。

此功能稍后将实现作为在VPC的"L3一部分”功能

参考

已知缺陷

CSCtq49254 VPC ：没转发的Mcast，当从从L3-hop的VPC接受在VPC秒。