

# Nexus无故ARP行为与GLBP和地址冲突检测(ACD - RFC 5277)

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## 简介

本文档帮助用户了解Cisco Nexus平台上GLBP的地址冲突检测(ACD - RFC 5277)的行为。

## 先决条件

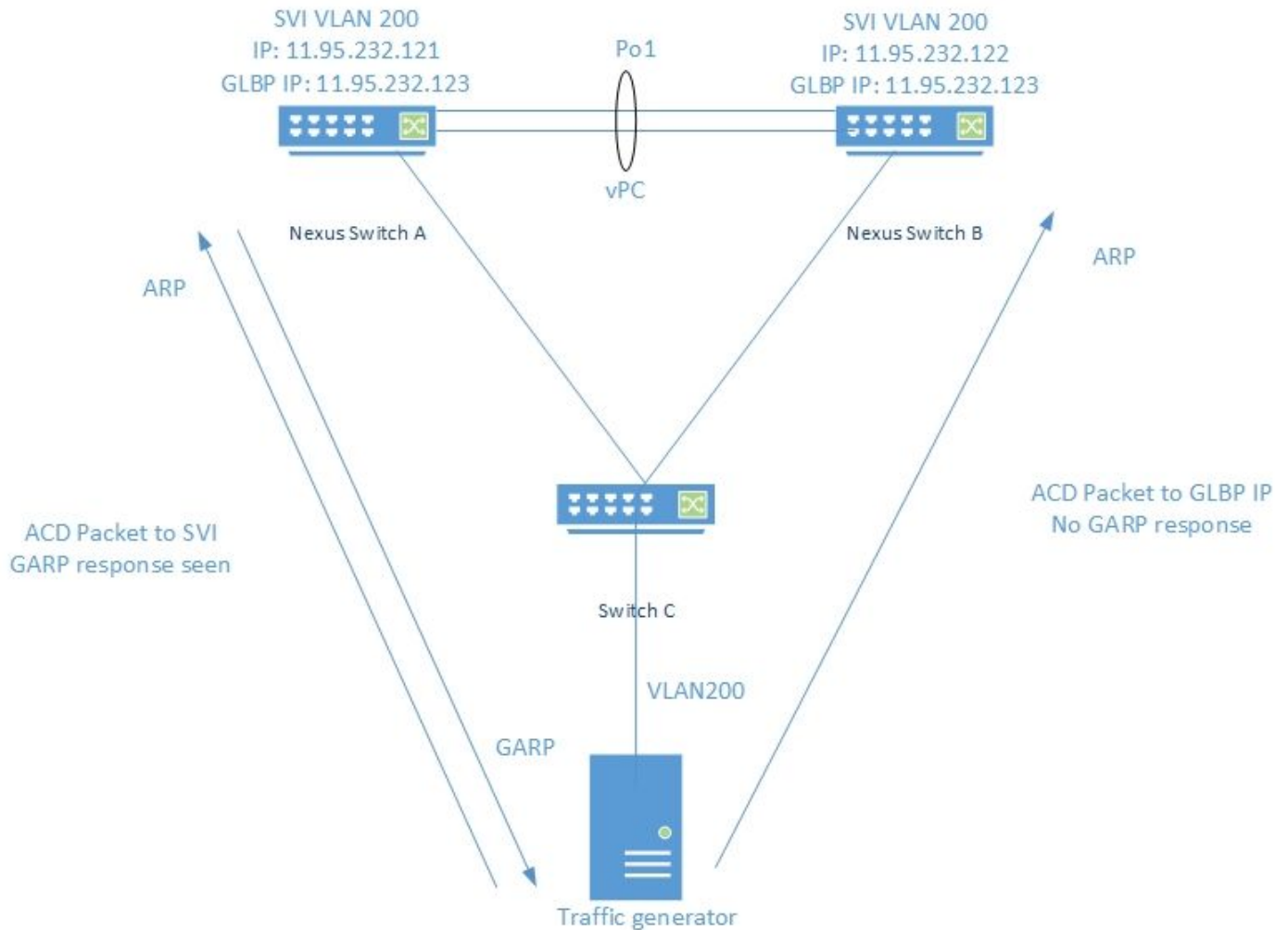
思科建议您对第一跳冗余协议(如HSRP、VRRP、GLBP和虚拟端口通道(vPC)概念)、数据包捕获工具(如Cisco Nexus平台上的Ethanalyzer和ELAM)有基本的了解。

## 使用的组件

本文档中的信息基于Nexus平台。

本文档中的信息基于特定的内部实验环境创建。用于本文的所有设备都始于默认配置。如果您的网络处于活动状态，请确保您了解任何命令对现有流量的潜在影响。

## 拓扑



## 观察

ACD数据包使用流量生成器生成，如下所示

DMAC = ff.ff.ff.ff.ff

SMAC = 00.00.04.00.08.00

SIP = 0.0.0.0

DIP = 11.95.232.123(VIP)

当IXIA向实际SVI IP发送ACD数据包时，交换机会以GARP做出响应，如下所示 —

```
Nexus Switch A# ethanalyzer local interface inband display-filter "arp" limit-captured-frames 0
Capturing on inband
2018-10-18 07:56:09.422340 Xerox_00:08:00 -> Broadcast ARP 60 Who has 11.95.232.121? Tell
0.0.0.0
2018-10-18 07:56:09.424806 Cisco_a6:cb:c1 -> Broadcast ARP 60 Gratuitous ARP for
11.95.232.121 (Request)
2018-10-18 07:56:09.432365 Xerox_00:08:00 -> Broadcast ARP 60 Who has 11.95.232.121? Tell
0.0.0.0
2018-10-18 07:56:09.434743 Cisco_a6:cb:c1 -> Broadcast ARP 60 Gratuitous ARP for
11.95.232.121 (Request)
```

但是，当GLBP VIP发送同一数据包时，我们看不到来自交换机的任何响应。交换机CPU上的捕获

, 如下所示 —

```
Nexus Switch A# ethanalyzer local interface inband display-filter "arp" limit-captured-frames 0
Capturing on inband
2018-10-18 07:56:58.429581 Xerox_00:08:00 -> Broadcast      ARP 60 Who has 11.95.232.123? Tell
0.0.0.0
2018-10-18 07:56:58.439582 Xerox_00:08:00 -> Broadcast      ARP 60 Who has 11.95.232.123? Tell
0.0.0.0
```

**注意 —** Nexus上的ELAM捕获 ( 不包括在此 ) 将源索引显示为入口以太网接口, 该接口是数据包进入交换机的接口。但是, 目标索引指向删除索引。

对HSRP和VRRP等其他FHRP协议执行的类似测试显示, 交换机响应使用VIP IP地址发送的ACD数据包。

### VIP:11.95.232.123的HSRP配置中显示的GARP响应

```
Nexus Switch A# ethanalyzer local interface inband display-filter "arp" limit-captured-frames 0
Capturing on inband
2018-10-18 08:56:09.596212 Xerox_00:08:00 -> Broadcast      ARP 60 Who has 11.95.232.123? Tell
0.0.0.0
2018-10-18 08:56:09.598593 All-HSRP-routers_01 -> Broadcast      ARP 60 Gratuitous ARP for
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0.0.0.0
2018-10-18 08:56:09.608652 All-HSRP-routers_01 -> Broadcast      ARP 60 Gratuitous ARP for
11.95.232.123 (Request)
```

### VIP:11.95.232.123的VRRP配置显示的GARP响应

```
Nexus Switch A# ethanalyzer local interface inband display-filter "arp" limit-captured-frames 0
Capturing on inband
2018-10-18 09:03:30.225724 Xerox_00:08:00 -> Broadcast      ARP 60 Who has 11.95.232.123? Tell
0.0.0.0
2018-10-18 09:03:30.228251 IETF-VRRP-VRID_01 -> Broadcast      ARP 60 Gratuitous ARP for
11.95.232.123 (Request)
2018-10-18 09:03:30.235711 Xerox_00:08:00 -> Broadcast      ARP 60 Who has 11.95.232.123? Tell
0.0.0.0
2018-10-18 09:03:30.238252 IETF-VRRP-VRID_01 -> Broadcast      ARP 60 Gratuitous ARP for
11.95.232.123 (Request)
```

## 结论

配置GLBP后, 两台交换机都将控制VIP。由于此GARP不会发送, 因为它会在日志中生成重复的arp。

## 参考

[CSCvn03802](#) 地址冲突检测(ACD)不适用于GLBP虚拟GW。

**观察结果:**

当IXIA向SVI VIP发送ACD数据包时。看到GARP响应。

```
N7K-C7010-1# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0
```

## 带内捕获

2018-10-18 07:56:09.422340 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.121? 告知0.0.0.0

2018-10-18 07:56:09.424806 Cisco\_a6:cb:c1 ->广播ARP 6011.95.232.121的无故ARP ( 请求 )

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发送到GLBP VIP时未看到任何响应。

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2018-10-18 07:56:58.449502 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.459502 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.469500 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.479461 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

ELAM将源索引显示为ethernet1/5，即数据包通过的接口。但是，目的索引指向接口ethernet2/23，我们假设交换机正在使用该接口丢弃数据包。

VIP:11.95.232.123的HSRP配置显示GARP响应

N7K-C7010-1(config-if)# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0

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2018-10-18 08:56:09.638564 All-HSRP-routers\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 08:56:09.646249 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 08:56:09.648541 All-HSRP-routers\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

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VIP:11.95.232.123的VRRP配置显示GARP响应

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**理由 :**

=====

使用GLBP时，两台设备都控制VIP。因此，我们不能让GARP工作，因为它会继续向我们提供重复的ARP日志，因为这两个日志都会保留IP。

我们已打开DOc Bug [CSCvn03802](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b-7k-Cisco-Nexus-7000-Series-NX-OS-Unicast-Routing-Configuration-Guide-Release/n7k_unicast_config_glb.html#concept_FE1CBD0F54A14417ADD9DA2DC2312900) ,以便在CCO文档中列出。

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b-7k-Cisco-Nexus-7000-Series-NX-OS-Unicast-Routing-Configuration-Guide-Release/n7k\\_unicast\\_config\\_glb.html#concept\\_FE1CBD0F54A14417ADD9DA2DC2312900](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b-7k-Cisco-Nexus-7000-Series-NX-OS-Unicast-Routing-Configuration-Guide-Release/n7k_unicast_config_glb.html#concept_FE1CBD0F54A14417ADD9DA2DC2312900)

**“GLBP不支持无故ARP”**

**此致 ,**

**洛夫凯什**

**观察结果:**

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当IXIA向SVI VIP发送ACD数据包时。看到GARP响应。

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<https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b->



## “GLBP不支持无故ARP”

此致，

洛夫凯什

观察结果:

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ELAM将源索引显示为ethernet1/5，即数据包通过的接口。但是，目的索引指向接口ethernet2/23，我们假设交换机正在使用该接口丢弃数据包。

VIP:11.95.232.123的HSRP配置显示GARP响应

N7K-C7010-1(config-if)# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0

带内捕获

2018-10-18 08:56:09.596212 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 08:56:09.598593 All-HSRP-routers\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 08:56:09.606203 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 08:56:09.608652 All-HSRP-routers\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 08:56:09.616204 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

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2018-10-18 08:56:09.638564 All-HSRP-routers\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 08:56:09.646249 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

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VIP:11.95.232.123的VRRP配置显示GARP响应

N7K-C7010-1(config-if)# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0

带内捕获

2018-10-18 09:03:30.225724 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 09:03:30.228251 IETF-VRRP-VRID\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 09:03:30.235711 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 09:03:30.238252 IETF-VRRP-VRID\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 09:03:30.245710 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

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2018-10-18 09:03:30.268255 IETF-VRRP-VRID\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

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2018-10-18 09:03:30.278259 IETF-VRRP-VRID\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

2018-10-18 09:03:30.285709 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 09:03:30.288296 IETF-VRRP-VRID\_01 -> 11.95.232.123的广播ARP 60无故ARP ( 请求 )

**理由 :**

=====

使用GLBP时，两台设备都控制VIP。因此，我们不能让GARP工作，因为它会继续向我们提供重复的ARP日志，因为这两个日志都会保留IP。

我们已打开DOc Bug [CSCvn03802](#) ,以便在CCO文档中列出。

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b-7k-Cisco-Nexus-7000-Series-NX-OS-Unicast-Routing-Configuration-Guide-Release/n7k\\_unicast\\_config\\_glbp.html#concept\\_FE1CBD0F54A14417ADD9DA2DC2312900](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/unicast/configuration/guide/b-7k-Cisco-Nexus-7000-Series-NX-OS-Unicast-Routing-Configuration-Guide-Release/n7k_unicast_config_glbp.html#concept_FE1CBD0F54A14417ADD9DA2DC2312900)

**“GLBP不支持无故ARP”**

**此致 ,**

**洛夫凯什**

**观察结果:**

=====

当IXIA向SVI VIP发送ACD数据包时。看到GARP响应。

N7K-C7010-1# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0

带内捕获

2018-10-18 07:56:09.422340 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.121? 告知0.0.0.0

2018-10-18 07:56:09.424806 Cisco\_a6:cb:c1 ->广播ARP 6011.95.232.121的无故ARP ( 请求 )

2018-10-18 07:56:09.432365 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.121? 告知0.0.0.0

2018-10-18 07:56:09.434743 Cisco\_a6:cb:c1 ->广播ARP 6011.95.232.121的无故ARP ( 请求 )

2018-10-18 07:56:09.442287 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.121? 告知0.0.0.0

2018-10-18 07:56:09.444740 Cisco\_a6:cb:c1 ->广播ARP 6011.95.232.121的无故ARP ( 请求 )

发送到GLBP VIP时未看到任何响应。

N7K-C7010-1# ethanalyzer本地接口带内显示过滤器“arp” limit-captured-frames 0

带内捕获

2018-10-18 07:56:58.429581 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.439582 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.449502 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

2018-10-18 07:56:58.459502 Xerox\_00:08:00 ->广播ARP 60谁有11.95.232.123? 告知0.0.0.0

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“GLBP不支持无故ARP”

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