

# 如何实施集合点的一个过滤策略

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## [Introduction](#)

本文在动态RP配置适用的组播环境里解释如何实现集合点的(RP)一个过滤策略在RP映射代理(自动RP)。

## [Prerequisites](#)

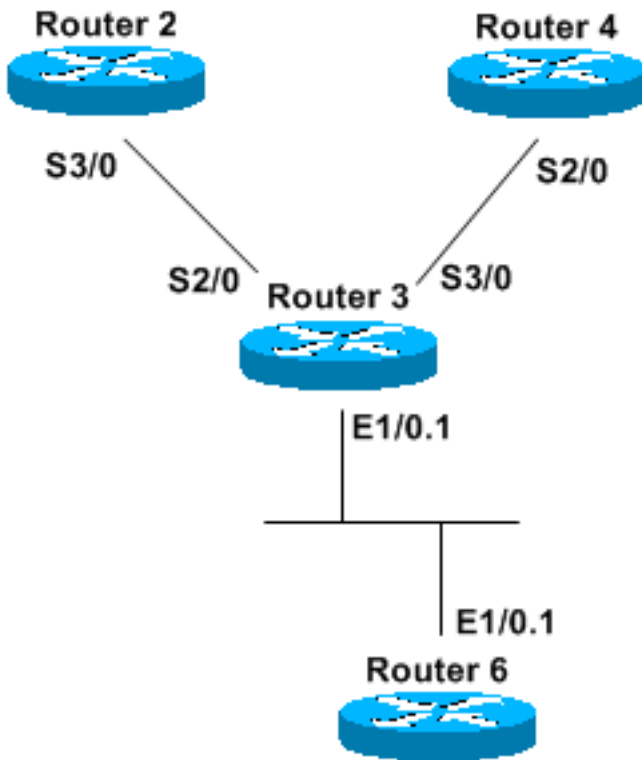
### [Requirements](#)

尝试进行此配置之前，请确保满足以下要求：

基本的了解独立于协议的组播(PIM)

### [Components Used](#)

作为一个参考请使用此图表在本文中：



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.

## Conventions

Refer to [Cisco Technical Tips Conventions](#) for more information on document conventions.

## 自动RP

自动RP是一个动态方法了解每个路由器RP信息在网络。当您通过IP组播时，分配所有组对RP信息这达到。

所有支持PIM的路由器自动地参加给他们获得所有组对RP映射信息的Cisco RP发现组(224.0.1.40)。称为RP映射代理的实体分配此信息。映射代理参加另一个组— Cisco RP宣布(第224.0.1.39组)。RP在定期组播消息通告自己的所有候选瞄准了RP宣布组地址。

映射代理听所有RP候选公告并且构件与信息的一张表。如果几个RP为组播组范围自称，映射代理只选择—— RP用最高的IP地址。使用RP发现消息，它然后通告RP到网络的所有PIM路由器。映射代理发送此信息每60秒(默认设置)。

## 过滤RP地址

您能使用`ip pim rp-announce-filter rp-list access-list group-list access-list`命令过滤某些组播组的某些RP。

如果被配置在映射代理，`ip pim rp-announce-filter rp-list access-list group-list access-list`命令只有含义。**RP列表访问列表**定义了候选RP访问列表，如果允许，为在`group-list access-list`命令指定的组播范围被接受。

**Note:** 小心地请使用此命令。由**RP列表**匹配的RP (允许由permit语句)有**Group-list**过滤的他们的组播

组。被拒绝的RP (由明确或含蓄拒绝)不是受他们的组播组支配过滤和“盲目”被接受作为所有的候选RP他们的组。换句话说，由RP列表允许仅的RP有Group-list过滤的他们的组播组。其他RP被接受，不用考试。

另外的RP宣布过滤器是需要有效过滤被接受，不用考试的RP。[过滤示例](#)部分澄清此程序。

## [过滤示例](#)

在Components Used部分的[图表中](#)，R2和R4自称作为候选RP通过RP发现消息发布此信息)的这些组的(：

224.1.0.1

224.1.0.2

224.1.0.3

R3只被配置作为映射代理并且收集此信息，构件其表，并且发送一个RP地址到R6，是仅一个支持PIM的路由器。中间系统对中间系统(IS-IS)用于此示例作为单播路由协议，但是其他协议将运作。PIM稀疏密集模式是组224.0.1.39和224.0.1.40需要的接收组播信息没有有为那些组配置的RP。换句话说，如果没有已知RP，稀疏密集模式运作类似密集模式。当RP知道时，稀疏密集模式使用RP通告自己的组。

## [R2 配置](#)

```
hostname R2

ip multicast-routing

interface Loopback0
 ip address 50.0.0.2 255.255.255.255
 ip router isis
 ip pim sparse-dense mode

interface Serial3/0
 ip address 10.2.0.2 255.255.255.0
 ip router isis
 ip pim sparse-dense mode

router isis
 net 49.0002.0000.0000.0002.00

ip pim send-rp-announce Loopback0 scope 16 group-list groupB
!
!
ip access-list standard groupB
 permit 224.1.0.1
 permit 224.1.0.2
 permit 224.1.0.3
```

## R4配置

```
hostname R4

ip multicast-routing

interface Loopback0
 ip address 50.0.0.4 255.255.255.255
 ip router isis
 ip pim sparse-dense mode

interface Serial3/0
 ip address 10.3.0.4 255.255.255.0
 ip router isis
 ip pim sparse-dense mode

router isis
 net 49.0002.0000.0000.0004.00

ip pim send-rp-announce Loopback0 scope 16 group-list groupA
!
!
ip access-list standard groupA
 permit 224.1.0.1
 permit 224.1.0.2
 permit 224.1.0.3
```

## R3配置

```
hostname R3

ip multicast-routing

interface Loopback0
 ip address 50.0.0.3 255.255.255.255
 ip router isis
 ip pim sparse-dense mode

interface Ethernet1/0.1
 encapsulation dot1Q 65
 ip address 65.0.0.3 255.255.255.0
 ip router isis
 ip pim sparse-dense-mode

interface Serial2/0
 ip address 10.2.0.3 255.255.255.0
 ip router isis
 ip pim sparse-dense-mode

interface Serial3/0
 ip address 10.3.0.3 255.255.255.0
 ip router isis
```

```
ip pim sparse-dense-mode
```

```
router isis
```

```
net 49.0002.0000.0000.0003.00
```

## [R6配置](#)

```
hostname R6
```

```
ip multicast-routing
```

```
interface Loopback0
```

```
ip address 50.0.0.6 255.255.255.255
```

```
ip router isis
```

```
interface Ethernet1/0.1
```

```
encapsulation dot1Q 65
```

```
ip address 65.0.0.6 255.255.255.0
```

```
ip router isis
```

```
ip pim sparse-dense-mode
```

```
router isis
```

```
net 49.0002.0000.0000.0006.00
```

如果要过滤R4，因为可能的RP任何那些组和只有R2作为工作的RP，请配置RP宣布在R3的过滤器：

```
ip pim rp-announce-filter rp-list filtering-RP group-list filtering-group
```

```
!
```

```
!
```

```
ip access-list standard filtering-RP
```

```
permit 50.0.0.2
```

```
deny 50.0.0.4
```

```
!--- ACL "filtering-RP" specifically allows R2 and explicitly denies R4. ip access-list standard filtering-group permit 224.1.0.1 permit 224.1.0.2 permit 224.1.0.3
```

然后，清除当前组对RP关联，请发出**clear ip pim rp-mapping**命令在R3和R6。

然而，如果查看R6，您能看到信息不是您期待：

```
R6#show ip pim rp mapping
```

```
PIM Group-to-RP Mappings
```

```
Group(s) 224.1.0.1/32
```

```
RP 50.0.0.4 (?), v2v1
```

```
!--- RP is R4 Info source: 65.0.0.3 (?), elected via Auto-RP Uptime: 00:00:02, expires: 00:02:55
```

```
Group(s) 224.1.0.2/32 RP 50.0.0.4 (?), v2v1 !--- RP is R4 Info source: 65.0.0.3 (?), elected via
```

```
Auto-RP Uptime: 00:00:02, expires: 00:02:55 Group(s) 224.1.0.3/32 RP 50.0.0.4 (?), v2v1 !--- RP
```

```
is R4 Info source: 65.0.0.3 (?), elected via Auto-RP Uptime: 00:00:02, expires: 00:02:55
```

如果查看R3，您能看到过滤实际上没有被执行：

```
R3# show ip pim rp mapping
PIM Group-to-RP Mappings
This system is an RP-mapping agent
!--- This line confirms that R3 is configured as the mapping agent. Group(s) 224.1.0.1/32 RP
50.0.0.4 (?), v2v1 !--- No filtering has taken effect. Info source: 50.0.0.4 (?), elected via
Auto-RP !--- R4 is elected because it has a higher IP address. Uptime: 00:09:06, expires:
00:02:53 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires:
00:02:27 Group(s) 224.1.0.2/32 RP 50.0.0.4 (?), v2v1 Info source: 50.0.0.4 (?), elected via
Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via
Auto-RP Uptime: 00:09:29, expires: 00:02:27 Group(s) 224.1.0.3/32 RP 50.0.0.4 (?), v2v1 Info
source: 50.0.0.4 (?), elected via Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?),
v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires: 00:02:28
```

R4的地址特别地被拒绝，并且不是受其组播组支配任何过滤—由映射代理“盲目”接受。映射代理选择根据最高的IP地址的一个RP（在本例中，50.0.0.4）然后寄此信息给R6。

配置另一个RP宣布允许R4并且拒绝所有其组为了有效过滤R4地址的过滤器：

```
R3# show ip pim rp mapping
PIM Group-to-RP Mappings
This system is an RP-mapping agent
!--- This line confirms that R3 is configured as the mapping agent. Group(s) 224.1.0.1/32 RP
50.0.0.4 (?), v2v1 !--- No filtering has taken effect. Info source: 50.0.0.4 (?), elected via
Auto-RP !--- R4 is elected because it has a higher IP address. Uptime: 00:09:06, expires:
00:02:53 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires:
00:02:27 Group(s) 224.1.0.2/32 RP 50.0.0.4 (?), v2v1 Info source: 50.0.0.4 (?), elected via
Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via
Auto-RP Uptime: 00:09:29, expires: 00:02:27 Group(s) 224.1.0.3/32 RP 50.0.0.4 (?), v2v1 Info
source: 50.0.0.4 (?), elected via Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?),
v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires: 00:02:28
```

如果查看debug ip pim auto-rp命令的R3和enable (event)，当您接受宣布从R4的消息的RP，您能看到这些消息：

```
R3# show ip pim rp mapping
PIM Group-to-RP Mappings
This system is an RP-mapping agent
!--- This line confirms that R3 is configured as the mapping agent. Group(s) 224.1.0.1/32 RP
50.0.0.4 (?), v2v1 !--- No filtering has taken effect. Info source: 50.0.0.4 (?), elected via
Auto-RP !--- R4 is elected because it has a higher IP address. Uptime: 00:09:06, expires:
00:02:53 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires:
00:02:27 Group(s) 224.1.0.2/32 RP 50.0.0.4 (?), v2v1 Info source: 50.0.0.4 (?), elected via
Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?), v2v1 Info source: 50.0.0.2 (?), via
Auto-RP Uptime: 00:09:29, expires: 00:02:27 Group(s) 224.1.0.3/32 RP 50.0.0.4 (?), v2v1 Info
source: 50.0.0.4 (?), elected via Auto-RP Uptime: 00:09:06, expires: 00:02:51 RP 50.0.0.2 (?),
v2v1 Info source: 50.0.0.2 (?), via Auto-RP Uptime: 00:09:29, expires: 00:02:28
```

然后，当您检查组对RP表时，您能只看到R2：

```
R3#show ip pim rp mapping
PIM Group-to-RP Mappings
This system is an RP-mapping agent

Group(s) 224.1.0.1/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
    Uptime: 00:00:04, expires: 00:02:52
Group(s) 224.1.0.2/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
```

```
Uptime: 00:00:04, expires: 00:02:54
Group(s) 224.1.0.3/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
      Uptime: 00:00:04, expires: 00:02:55
```

最后，如果要有R2作为224.1.0.1的RP和R4作为224.1.0.2和224.1.0.3的RP，您有此配置在R3：

```
R3#show ip pim rp mapping
PIM Group-to-RP Mappings
This system is an RP-mapping agent

Group(s) 224.1.0.1/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
      Uptime: 00:00:04, expires: 00:02:52
Group(s) 224.1.0.2/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
      Uptime: 00:00:04, expires: 00:02:54
Group(s) 224.1.0.3/32
  RP 50.0.0.2 (?), v2v1
    Info source: 50.0.0.2 (?), elected via Auto-RP
      Uptime: 00:00:04, expires: 00:02:55
```

## Verify

当前没有可用于此配置的验证过程。

## Troubleshoot

目前没有针对此配置的故障排除信息。

## Related Information

- [配置IP组播路由](#)
- [TCP/IP 多播支持页](#)
- [Technical Support & Documentation - Cisco Systems](#)