

IPv6 HSRP配置示例

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简介

本文描述如何配置IPv6的Hot Standby Routing Protocol (HSRP)。HSRP在路由器的一组内用于为了选择活动路由器和备用路由器。在路由器接口的一组中，活动路由器是选择路由器路由信息包的；备用路由器是接管的路由器，当活动路由器出故障或，当预先设置情况符合时。HSRP设计为IPv6主机提供仅一虚拟第一跳。

即HSRP IPv6组有从HSRP组编号和一个虚拟IPv6链路本地地址派生默认情况下的一个虚拟MAC地址，派生从HSRP虚拟MAC地址。定期路由器通告(Ras)为HSRP虚拟IPv6链路本地地址发送，当HSRP组是活跃的时。这些Ras终止，在最终RA发送后，当组离开活动状态。

HSRP使用一个优先级机制为了确定哪个HSRP配置的路由器将是默认活动路由器。为了配置路由器作为活动路由器，您必须指定它高于其他HSRP配置的路由器优先级的优先级。默认优先级是100；因此，如果配置一个路由器有更加高优先级，该路由器将是默认活动路由器。HSRP版本2使用新的IP组播地址224.0.0.102发送Hello数据包而不是224.0.0.2组播地址，版本1使用。

先决条件

要求

尝试进行此配置之前，请确保满足以下要求：

- 配置HSRP知识；参考[配置HSRP](#)欲知更多信息。
- 实现IPv6寻址和基本连通性基础知识；参考[实现IPv6寻址和基本连通性](#)欲知更多信息。
- 在HSRP IPv6可以配置前，在接口必须启用HSRP版本2。
- 在能将配置的HSRP IPv6的设备必须启用IPv6单播路由

使用的组件

在本文的配置根据在Cisco IOS软件版本软件12.4 (15)T 13的Cisco 3700系列路由器。

注意： 验证IPv6命令的许可证信息。

规则

有关文档规则的信息，请参阅 [Cisco 技术提示规则](#)。

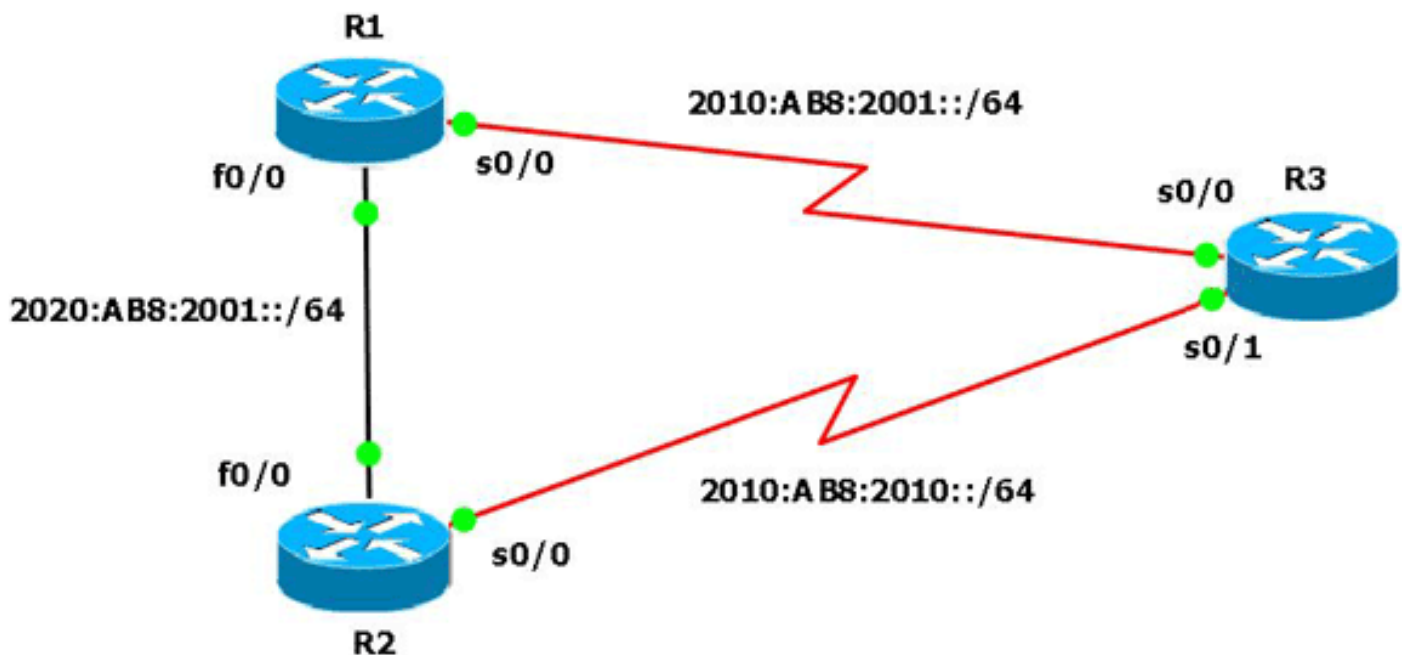
配置

路由器R1和R2连接对R3通过serial interfaces。R1和R2快速以太网接口配置与HSRP IPv6，在这种情况下R1作为活动路由器，并且R2作为备用路由器。万一R1 serial interfaces S0/0断开，R2路由器更改其状态从待机到激活。

注意： 有关本文档所用命令的详细信息，请使用[命令查找工具](#)（[仅限注册用户](#)）。

网络图

本文档使用以下网络设置：



配置

本文档使用以下配置：

- [路由器 R1 配置](#)
- [路由器 R2 配置](#)
- [路由器R3配置](#)

这是链路到展示如何配置 IPv6的HSRP在Cisco IOS路由器的视频(在[Cisco支持社区](#)的联机)：

配置IPv6的HSRP



Posted on Oct 12, 2011 by Sivagami Narayanan

Configuring HSRP for IPv6



This video demonstrates how to configure HSRP in an IPv6 network.

路由器 R1 配置

```
R1#show run Building configuration... ! hostname R1 ! ip
cef ! ipv6 unicast-routing ! interface FastEthernet0/0
no ip address duplex auto speed auto ipv6 address
2020:AB8:2001::1010/64 ipv6 enable standby version 2
standby 1 ipv6 autoconfig !--- Assigns a standby group
and standby IP address. standby 1 priority 120 !--- R1
is configured as the active router. !--- This is done by
assigning a priority value !--- (in this case 120) to
the router's Fa0/0 interface. !--- The default priority
value is 100. standby 1 preempt delay minimum 30 !---
The preempt command allows the router to become the !---
active router when it has the priority higher than !---
all the other HSRP-configured routers. !--- Without
this command, even if a router has higher !--- priority
value, it will not become an active router. !--- The
delay minimum value causes the local router to postpone
!--- taking over the active role for a minimum of 30
seconds. standby 1 track Serial0/0 90 !--- Indicates
that HSRP tracks serial0/0. !--- The interface priority
is configured (in this case 90) which !--- indicates
that if the tracked interface goes down the router !---
priority value is to be decremented by 90. !--- Default
decrement value is 10. ! interface Serial0/0 no ip
address ipv6 enable ipv6 address 2010:AB8:2001::1010/64
clock rate 2000000 ! end
```

路由器 R2 配置

```
R2#show run Building configuration... ! hostname R2 ! ip
cef ! ipv6 unicast-routing ! interface FastEthernet0/0
!--- R2 is configured as a standby router !--- with a
```

```
default priority value of 100. no ip address duplex auto
speed auto ipv6 address 2020:AB8:2001::1011/64 ipv6
enable standby version 2 standby 1 ipv6 autoconfig
standby 1 preempt delay minimum 30 standby 1 track
Serial0/0 ! interface Serial0/0 no ip address ipv6
address 2010:AB8:2010::1020/64 ipv6 enable clock rate
2000000 ! end
```

路由器R3配置

```
R3#show run Building configuration... ! hostname R3 ! ip
cef ! ipv6 unicast-routing ! interface Serial0/0 no ip
address ipv6 address 2010:AB8:2001::1011/64 ipv6 enable
clock rate 2000000 ! interface Serial0/1 no ip address
ipv6 address 2010:AB8:2010::1021/64 clock rate 2000000 !
end
```

验证

请使用[show standby命令](#)在R1和R2路由器为了验证配置。

路由器 R1

```
R1#show standby FastEthernet0/0 - Group 1 (version 2)
State is Active !--- R1 router is in Active state. 4
state changes, last state change 02:51:30 Virtual IP
address is FE80::5:73FF:FEA0:1 Active virtual MAC
address is 0005.73a0.0001 Local virtual MAC address is
0005.73a0.0001 (v2 IPv6 default) Hello time 3 sec, hold
time 10 sec Next hello sent in 2.480 secs Preemption
enabled, delay min 30 secs Active router is local
Standby router is FE80::C010:21FF:FE78:0, priority 100
(expires in 7.036 sec) Priority 120 (configured 120)
Track interface Serial0/0 state Up decrement 10 Group
name is "hsrp-Fa0/0-1" (default)
```

路由器 R2

```
R2#show standby FastEthernet0/0 - Group 1 (version 2)
State is Standby !--- R2 router is in Standby state. 4
state changes, last state change 02:51:43 Virtual IP
address is FE80::5:73FF:FEA0:1 Active virtual MAC
address is 0005.73a0.0001 Local virtual MAC address is
0005.73a0.0001 (v2 IPv6 default) Hello time 3 sec, hold
time 10 sec Next hello sent in 0.900 secs Preemption
enabled, delay min 30 secs Active router is
FE80::C00F:21FF:FE78:0, priority 120 (expires in 9.928
sec) MAC address is c20f.2178.0000 Standby router is
local Priority 100 (default 100) Track interface
Serial0/0 state Up decrement 10 Group name is "hsrp-
Fa0/0-1" (default)
```

万一活动路由器(在本例中的R1)断开，如此表所显示，备用路由器立即更改其状态对激活：

当活动路由器(R1)去在下...

```
路由器 R1R1(config)#interface s0/0 R1(config-if)#shut
R1(config-if)#exit *Mar 1 00:01:34.879: %LINK-5-CHANGED:
Interface Serial0/0, changed state to administratively
down *Mar 1 00:01:35.879: %LINEPROTO-5-UPDOWN: Line
protocol on Interface Serial0/0, changed state to down
R1# *Mar 1 00:04:06.691: %SYS-5-CONFIG_I: Configured
from console by console R1# *Mar 1 00:04:36.175: %HSRP-
```

```
5-STATECHANGE: FastEthernet0/0 Grp 1 state Active ->
Speak R1# *Mar 1 00:04:46.175: %HSRP-5-STATECHANGE:
FastEthernet0/0 Grp 1 state Speak -> Standby !--- When
the interface goes down, the active router changes its
state to Standby. 路由器 R2*Mar 1 00:04:35.631: %HSRP-
5-STATECHANGE: FastEthernet0/0 Grp 1 state Standby -
>Active
```

```
!--- The standby router is now the active router.
R2#show standby FastEthernet0/0 - Group 1 (version 2)
State is Active 2 state changes, last state change
00:10:39 Virtual IP address is FE80::5:73FF:FEA0:1
Active virtual MAC address is 0005.73a0.0001 Local
virtual MAC address is 0005.73a0.0001 (v2 IPv6 default)
Hello time 3 sec, hold time 10 sec Next hello sent in
2.532 secs Preemption enabled, delay min 30 secs Active
router is local Standby router is
FE80::C00F:21FF:FE78:0, priority 30 (expires in 7.524
sec) Priority 100 (default 100) Track interface
Serial0/0 state Up decrement 10 Group name is "hsrp-
Fa0/0-1" (default)
```

故障排除

目前没有针对此配置的故障排除信息。

相关信息

- [IPv6技术支持](#)
- [配置在IPv6的第一份跳跃冗余协议](#)
- [RFC 2281 - Cisco热备份路由协议\(HSRP\)](#)
- [技术支持和文档 - Cisco Systems](#)