

# SSRP 示例配置

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## 简介

简单服务器冗余协议(SSRP)在ATM云内的提供冗余。在SSRP前，冗余不是可能的在LAN仿真服务器(LES)和广播未知服务器(BUS)之间。当失败的这些之一，所有LAN仿真客户端(LEC)此仿真LAN(ELAN)的将断开。他们不可能出现直到连接到LES，并且BUS恢复。

使用SSRP，有超过运行在LANE网云的一LES/BUS是可能的。本文将显示网络的配置与一冗余LES/BUS的。LAN仿真配置服务器(LECS)不会冗余。

SSRP冗余功能只运作与Cisco LECS和思科LES/BUS组合。您能以SSRP使用第三方LANE客户端，但是第三方LES、BUS和第三方LEC不支持SSRP，所有权对思科。第三方LEC在SSRP环境工作。通过使用，LEC能找出在支持SSRP的网络的配置服务器：

- 本地管理接口(ILMI)。
- 著名的网络服务访问点(NSAP)地址。

**注意：**在本文显示的多种服务的位置也许不是最佳的。在实现在真实网络的这样一配置前，请查看[LANE设计推荐](#)。

## 支持的版本

因为LEC不是包含的，SSRP的硬件支持没有要求。结果，第三方LEC也能受益于SSRP。

下面支持SSRP LES/BUS/LECS的软件版本：

Cisco Catalyst LANE模块版本3.1和以上

Cisco lightstream 1010版本11.2和以上

Cisco IOS版本11.2及以上版本

## 网络图

在此图表中，全部三设备运行作为LEC。LS1010 ATM交换机和Cisco 7200路由器两个提供LES和BUS。LECS在LS1010配置。

## 示例配置

### Catalyst 5500 LANE 模块 ( 仅限 LEC )

对于LANE客户端，没有在配置上的变化。下面当前配置：

## CAT5500 LANE模块(仅LEC)

```
Current configuration:
!
hostname ATM-5500
!
interface Ethernet0
!
interface ATM0
atm preferred phy A
atm pvc 1 0 5 qsaal
atm pvc 2 0 16 ilmi
no atm ilmi-keepalive
!
interface ATM0.1 multipoint
lane client ethernet 1 admin
!
end
```

## 7200 ( 主 LES/BUS + LEC )

对于在7200平台的LES/BUS，也没有需要的配置更改。下面当前配置：

## 7200 (重要的仅LES/BUS + LEC)

```
Current configuration:
!
version 12.1
!
interface ATM4/0
no ip address
no ip route-cache cef
atm pvc 1 0 5 qsaal
atm pvc 2 0 16 ilmi
no atm ilmi-keepalive
!
interface ATM4/0.2 multipoint
lane server-bus ethernet admin elan-id 1
!
interface ATM4/0.3 multipoint
lane client ethernet admin
!
end
```

## LS1010 ( LECS 、 LEC 和备份 LES/BUS )

当曾经SSRP，将需要修改仅时LANE数据库。而不是输入一服务器ATM地址，您只能当前配置多个服务器在数据库的ATM地址。下面当前配置：

## LS1010 ( LECS 、 LEC 和备份 LES/BUS )

```
Current configuration:
!
version 12.0
!
atm lecs-address-default 47.0091.8100.0000.0060.3e5a.4501.0060.3e5a.4505.00 1
atm address 47.0091.8100.0000.0060.3e5a.4501.0060.3e5a.4501.00
atm router pnni
no aesa embedded-number left-justified
node 1 level 56 lowest
redistribute atm-static
```

```

!
!
lane database SSRPConfig
name admin server-atm-address 47.0091810000000603E5A4501.0030199AB871.02
name admin server-atm-address 47.0091810000000603E5A4501.00603E5A4503.02
name admin elan-id 1
!
!
interface ATM2/0/0
no ip address
no ip directed-broadcast
atm maxvp-number 0
lane config auto-config-atm-address
lane config database SSRPConfig
!
interface ATM2/0/0.1 multipoint
no ip directed-broadcast
lane client ethernet admin
!
interface ATM2/0/0.2 multipoint
no ip directed-broadcast
lane server-bus ethernet admin elan-id 1
!
end

```

## LAN 仿真客户端

**show lane client detail**命令输出如下所示。正如你看到的用于网络的三个设备中的每一个知道仅活动LES。

### Cat5500 LANE模块

```
ATM#show lane client detail
```

```

LE Client ATM0.1 ELAN name: admin Admin: up State: operational
Client ID: 1 LEC up for 17 minutes 44 seconds
ELAN ID: 1
Join Attempt: 10
Known LE Servers: 1 <-- Only one Lan Emulation Server known by the LEC
Last Fail Reason: ATM prefix being changed
HW Address: 00e0.1410.d830 Type: ethernet Max Frame Size: 1516 VLANID: 1
ATM Address: 47.0091810000000603E5A4501.00E01410D830.01
VCD rxFrames txFrames Type ATM Address
0 0 0 configure 47.0091810000000603E5A4501.00603E5A4505.00

```

```

LEC ID: 1, State: LESBUS_ACTIVE
26 1 534 direct 47.0091810000000603E5A4501.0030199AB871.02
27 535 0 distribute 47.0091810000000603E5A4501.0030199AB871.02
28 0 561 send 47.0091810000000603E5A4501.0030199AB872.02
29 21 0 forward 47.0091810000000603E5A4501.0030199AB872.02

```

### 7200路由器

```
7200#show lane client detail
```

```

LE Client ATM4/0.3 ELAN name: admin Admin: up State: operational
Client ID: 2 LEC up for 48 seconds

```

```
ELAN ID: 1
Join Attempt: 1
Known LE Servers: 1 <-- Only one LAN Emulation Server known by the LEC
HW Address: 0030.199a.b870 Type: ethernet Max Frame Size: 1516
ATM Address: 47.00918100000000603E5A4501.0030199AB870.03
VCD rxFrames txFrames Type ATM Address
0 0 0 configure 47.00918100000000603E5A4501.00603E5A4505.00
```

```
LEC ID: 2, State: LESBUS_ACTIVE
31 1 2 direct 47.00918100000000603E5A4501.0030199AB871.02
33 25 0 distribute 47.00918100000000603E5A4501.0030199AB871.02
34 0 5 send 47.00918100000000603E5A4501.0030199AB872.02
36 31 0 forward 47.00918100000000603E5A4501.0030199AB872.02
```

## LS1010

```
LS1010#show lane client detail
LE Client ATM2/0/0.1 ELAN name: admin Admin: up State: operational
Client ID: 3 LEC up for 6 minutes 20 seconds
ELAN ID: 1
Join Attempt: 1
Known LE Servers: 1 <-- Only one LAN Emulation Server known by the LEC
Last Fail Reason: Locally deactivate
HW Address: 0060.3e5a.4502 Type: ethernet Max Frame Size: 1516
ATM Address: 47.00918100000000603E5A4501.00603E5A4502.01
VCD rxFrames txFrames Type ATM Address
0 0 0 configure 47.00918100000000603E5A4501.00603E5A4505.00

LEC ID: 3, State: LESBUS_ACTIVE
129 1 2 direct 47.00918100000000603E5A4501.0030199AB871.02
130 191 0 distribute 47.00918100000000603E5A4501.0030199AB871.02
131 0 8 send 47.00918100000000603E5A4501.0030199AB872.02
132 215 0 forward 47.00918100000000603E5A4501.0030199AB872.02
```

## LAN 仿真服务器

**show lane server**命令显示LES的状态。作为下面的输出请显示，7200作为活动LES，并且全部三LEC加入。备份LES (LS1010)没有客户端。

### 重要的LES (7200)

```
7200#show lane server
LE Server ATM4/0.2, Elan name: admin, Admin: up, State: operational
Master/Backup: Master, Type: ethernet, Max Frame Size: 1516
locally set elan-id: 1
elan-id obtained from LECS: not set
ATM address: 47.00918100000000603E5A4501.0030199AB871.02
LECS used: 47.00918100000000603E5A4501.00603E5A4505.00 connected, vcd 14
control distribute: vcd 16, 3 members, 754 packets <-- All 3 LEC have joined the Active LES
proxy/ (ST: Init, Conn, Waiting, Adding, Joined, Operational, Reject, Term)
lecid ST vcd pkts Hardware Addr ATM Address
1P O 15 752 00e0.1410.d830 47.00918100000000603E5A4501.00E01410D830.01
```

```
2P O 32 2 0030.199a.b870 47.00918100000000603E5A4501.0030199AB870.03
3P O 27 2 0060.3e5a.4502 47.00918100000000603E5A4501.00603E5A4502.01
```

## 备份LES (LS1010)

如show lane server所显示输出在LS1010的，备份LES没有任何成员并且在备份状态，直到活动LES发生故障。它然后将开始接受连接。

```
LS1010#show lane server
LE Server ATM2/0/0.2, Elan name: admin, Admin: up, State: operational
Master/Backup: Backup, Type: ethernet, Max Frame Size: 1516
locally set elan-id: 1
elan-id obtained from LECS: 1
ATM address: 47.00918100000000603E5A4501.00603E5A4503.02
LECS used: 47.00918100000000603E5A4501.00603E5A4505.00 connected, vcd 123
```

## LAN 仿真配置服务器

### LS1010

show lane config命令显示LECS的状态。

下面的输出显示LECS设置VCD对配置的两个。输出也指示哪些两个是活动LES。

```
LS1010#show lane config
LE Config Server ATM2/0/0 config table: SSRPConfig
Admin: up State: operational
LECS Mastership State: active master
list of global LECS addresses (7 seconds to update):
47.00918100000000603E5A4501.00603E5A4505.00 <----- me
ATM Address of this LECS: 47.00918100000000603E5A4501.00603E5A4505.00 (auto)
vcd rxCnt txCnt callingParty
112 1 1 47.00918100000000603E5A4501.0030199AB871.02 LES admin 0 active <-- Primary LES
124 1 1 47.00918100000000603E5A4501.00603E5A4503.02 LES admin 1 backup <--- Backup LES
cumulative total number of unrecognized packets received so far: 0
cumulative total number of config requests received so far: 13
cumulative total number of config failures so far: 1
cause of last failure: no configuration
culprit for the last failure: 47.00918100000000603E5A4501.00603E5A4503.02
```

show lane database命令允许您验证哪个LANE数据库使用了LECS。

```
LS1010#show lane database
LANE Config Server database table 'SSRPConfig' bound to interface/s: ATM2/0/0
no default elan
elan 'admin': un-restricted, elan-id 1, preempts
server 47.00918100000000603E5A4501.0030199AB871.02 (prio 0)
server 47.00918100000000603E5A4501.00603E5A4503.02 (prio 1)
```

## debug 和 show 命令

show lane server

show LANE config

show LANE client detail

show LANE database

debug lane client state

debug lane server

debug LANE config events

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## 相关信息

- [ATM技术支持](#)
  - [技术支持和文档 - Cisco Systems](#)
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