无线局域网控制器和轻量接入点故障切换外部移 动组配置示例

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<u>简介</u>

本文档说明如何在无线局域网控制器(WLC)上配置故障切换功能。此功能允许轻量接入点(LAP)故 障切换到移动组外的WLC。

<u>先决条件</u>

<u>要求</u>

尝试进行此配置之前,请确保满足以下要求:

- •了解轻量接入点 (AP) 和 Cisco WLC 配置的基础知识
- •了解轻量 AP 协议 (LWAPP) 的基础知识
- •基本了解WLC故障切换和移动组。有关WLC故<u>障切换功能的详细信息,请参</u>阅轻量接入点的 WLAN控制器故障切换配置示例。有关移动组<u>的详细信息,</u>请参阅配置移动组。

<u>使用的组件</u>

本文档中的信息基于以下软件和硬件版本:

- Cisco Aironet 1000 系列轻量 AP
- •运行固件版本4.2.61.0的Cisco 2100系列WLC
- •运行固件版本4.2.61.0的Cisco 4400系列WLC

本文档中介绍的功能在WLC版本4.2.61.0中引入。此配置仅适用于运行4.2.61.0或更高版本的Cisco WLC。

注意:如果运行最新的WLC版本5.0.148.0,请确保您了解以下限制:

•2000系列控制器不支持与控制器软件版本5.0.148.0一起使用。

•1000系列接入点不支持与控制器软件版本5.0.148.0一起使用。

注:有关详细信息,请参阅5.0.148.0版的思科无线LAN控制器和轻量接入点的版本说明。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您使用的是真实网络,请确保您已经了解所有命令的潜在影响。

规则

有关文档规则的详细信息,请参阅 Cisco 技术提示规则。

<u>背景信息</u>

在4.2.61.0之前的所有WLC版本中,当WLC"关闭"时,注册到此WLC的LAP**仅可故障切换到同一移** 动组的另一个WLC,如果LAP配置为故障切换。有关详细信息<u>,请参阅轻量接入点的WLAN控制器</u> 故障切换配置示例。

从Cisco WLC版本4.2.61.0中,引入了一项名为*Backup Controller Support*的新功能,即使在移动组 之外,也可以为接入点**故障切换到控制器**。

当接入点丢失本地区域的主控制器时,集中位置的单个控制器可充当接入点的备份。**集中式控制器 和区域控制器不必位于同一移动组中**。通过使用控制器CLI,您可以为网络的接入点指定主控制器、 辅助控制器和第三控制器。在控制器软件版本4.2.61.0中,可以指定备用控制器的IP地址,这允许接 入点故障切换到移动组外的控制器。当前仅通过控制器CLI支持此功能。

本文档使用此初始配置设置来解释此功能:

- •运行固件版本4.2.61.0的两个Cisco WLC。为清楚起见,本文档使用名称WLC1和WLC2,以在整个配置中引用WLC。
- •WLC1的管理接口IP地址为10.77.244.210/27。
- •WLC2的管理接口IP地址为10.77.244.204/27。

•当前注册到WLC1的Cisco 1000系列LAP。在我们的配置中,此LAP的名称是AP1。

有关如何在WLC上配置基本参数的详细信息,请参阅无线LAN控制器和轻量接入点基本配置示例。

配置

本部分提供有关如何配置本文档所述功能的信息。

要配置此功能,请完成以下步骤:

- 1. <u>配置 WLC 的移动组</u>
- 2. 配置WLC和LAP以在移动组外进行故障转移

<u>配置 WLC 的移动组</u>

第一步是在两个不同的移动组中配置WLC1和WLC2。

在本示例中,WLC1在TSWEB移**动组**中配置,WLC2在backupwlc移动组**中**配置。本节介绍如何通 过控制器的CLI为WLC配置移动组。

在WLC的CLI模式下输入以下命令以配置移动组:

• WLC1>config mobility group domain TSWEB(配置移动组域TSWEB)

• WLC2>config mobility group domain backupwlc

因此,WLC1和WLC2配置为位于两个不同的移动组中。

您也可以使用WLC GUI配置此配置。有关详细信息<u>,请参阅为WLC配</u>置移动组。

<u>配置WLC和LAP以在移动组外进行故障转移</u>

下一步是配置WLC和LAP,以在移动组外进行故障转移。

如本文档前面所述,LAP当前已注册到WLC1。您可以在WLC1上验证此情况,在本例中为 10.77.244.210。要执行此操作,请从控制器GUI中单击Wireless。在本例中,LAP名称**为AP1**。

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目标是配置此LAP,使其能够故障切换到位于不同移动组中的WLC2(10.77.244.204)。为此,请通 过Telnet应用或直接控制台连接登录LAP当前注册到的WLC(WLC1)的CLI模式,并配置此LAP的主 WLC和辅助WLC。 1. 在WLC1的CLI模式下,发出以下命令:

WLC1>config ap primary-base controller_name Cisco_AP [controller_ip_address]

controller_name字段表示主WLC的系统名称。在本例中,WLC1本身是AP1 LAP的**主WLC**。 此处,**WLC1是WLC1的系统名称。**。在WLC的"监控"(Monitor)屏幕上,您可以在GUI模**式下**看 到控制器名称。**Cisco_AP**字段表示Cisco AP的名称。在本例中,它是**AP1**。

[controller_ip_address]字段表示主WLC的管理接口IP地址。在本例中,10.77.244.210是WLC1的管理接口IP地址。**注意:**如果备份控制器位于接入点所连接的移动组(主控制器)之外,则您始终需要分别提供主控制器、辅助控制器或第三控制器的IP地址。否则,接入点无法加入备用控制器。因此,本示例中用于配置的命令是WLC1 >config ap primary-base WLC1 AP1 10.77.244.210

 现在,将WLC2配置为辅助WLC,以便在主WLC WLC1关闭时,LAP进行故障切换。要配置来 自不同移动组的WLC2,请在WLC1的CLI模式下发出以下命令: ^{WLC1>config ap secondary-base}

controller_name Cisco_AP [controller_ip_address]

controller_name字段表示备份或辅助WLC的系统名称。在本例中,WLC2是AP1 LAP的辅助WLC。此处,WLC2是WLC2的系统名称。Cisco_AP字段表示Cisco AP的名称。在本例中,它是AP1。[controller_ip_address]字段表示辅助WLC(WLC2)的管理接口IP地址。在本例中,10.77.244.204是WLC2的管理接口IP地址。注意:如果备份控制器始终位于接入点所连接的移动组(主控制器)之外,则您需要分别提供主控制器、辅助控制器或第三控制器的IP地址。否则,接入点无法加入备用控制器。因此,在本例中,用于配置的命令是WLC1 >config ap secondary-base WLC2 AP1 10.77.244.204。

这是CLI屏幕,演示WLC1的配置。

WLC1 >config ap primary-base WLC1 AP1 10.77.244.210

WLC1 >config ap secondary-base WLC2 AP1 10.77.244.204

WLC1 >save config

Are you sure you want to save? (y/n) y

Configuration Saved!

验证

您需要验证配置是否正常工作。在示例中,当WLC1关闭时,AP1必须故障切换并注册到位于不同 移动组中的WLC2。

要验证此情况,请完成以下步骤:

- 1. 断开连接WLC1和AP1的电源或以太网电缆。断开后,LAP会从WLC中自行注销并搜索其他 WLC。
- 2. 根据LAP与WLC的正常注册过程,AP1必须能够成功注册到WLC2。请从WLC2的GUI模式 (10.77.244.204)验证此点。

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Mesh	AP2	00:10:44:e3:a8:10	0 d, 00 h 18 m 01 s	Enable	REG	2	Local
HREAP Group	AP1	00:05:65:55:fb:d0	0 d, 00 h 18 m 03 s	Enable	REG	2	Local
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注意此屏幕截图中的圈定参数。您会看到AP1已注册到WLC2(10.77.244.204)。 您还可以使用debug lwapp events enable命令从WLC2的CLI模式验**证注册过**程。示例如下:

```
(Cisco Controller) >Fri Apr 4 04:31:36 2008: 00:0b:85:5b:fb:d0
Received LWAPP ECHO_REQUEST from AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:36 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Ech
o-Response to AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:36 2008: 00:0b:85:5b:fb:d0 Received LWAPP PRIMARY_DISCOVERY_REQ
from AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:36 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Pri
mary Discovery Response to AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP
00:0b:85:5b:fb:d0
Fri Apr 4 04:31:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air
ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP
00:0b:85:5b:fb:d0
Fri Apr 4 04:31:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air
ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0
Fri Apr 4 04:31:37 2008: 00:1c:58:05:e9:c0 Received LWAPP ECHO_REQUEST from AP
00:1c:58:05:e9:c0
Fri Apr 4 04:31:37 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Ech
o-Response to AP 00:1c:58:05:e9:c0
Fri Apr 4 04:31:37 2008: 00:1c:58:05:e9:c0 Received LWAPP PRIMARY_DISCOVERY_REQ
from AP 00:1c:58:05:e9:c0
Fri Apr 4 04:31:37 2008: 00:1b:d4:e3:a8:1b Successful transmission of LWAPP Pri
mary Discovery Response to AP 00:1b:d4:e3:a8:1b
Fri Apr 4 04:31:38 2008: 00:1c:58:05:e9:c0 Received LWAPP RRM_DATA_REQ from AP
00:1c:58:05:e9:c0
Fri Apr 4 04:31:38 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Air
ewave-Director-Data Response to AP 00:1c:58:05:e9:c0
```

Fri Apr 4 04:31:56 2008: 00:1c:58:05:e9:c0 Received LWAPP RRM_DATA_REQ from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:31:56 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:06 2008: 00:0b:85:5b:fb:d0 Received LWAPP ECHO_REQUEST from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:06 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Ech o-Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:06 2008: 00:0b:85:5b:fb:d0 Received LWAPP PRIMARY_DISCOVERY_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:06 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Pri mary Discovery Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:07 2008: 00:1c:58:05:e9:c0 Received LWAPP ECHO_REQUEST from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:07 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Ech o-Response to AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:07 2008: 00:1c:58:05:e9:c0 Received LWAPP PRIMARY_DISCOVERY_REQ from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:07 2008: 00:1b:d4:e3:a8:1b Successful transmission of LWAPP Pri mary Discovery Response to AP 00:1b:d4:e3:a8:1b Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Received LWAPP ECHO_REQUEST from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Ech o-Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Received LWAPP PRIMARY_DISCOVERY_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Pri mary Discovery Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Received LWAPP STATISTICS_INFO from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:36 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Sta tistics Info Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP STATISTICS_INFO from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Sta tistics Info Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0

Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP RRM_DATA_REQ from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Received LWAPP STATISTICS_INFO from AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:0b:85:5b:fb:d0 Successful transmission of LWAPP Sta tistics Info Response to AP 00:0b:85:5b:fb:d0 Fri Apr 4 04:32:37 2008: 00:1c:58:05:e9:c0 Received LWAPP ECHO_REQUEST from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:37 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Ech o-Response to AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:37 2008: 00:1c:58:05:e9:c0 Received LWAPP PRIMARY_DISCOVERY_REQ from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:37 2008: 00:1b:d4:e3:a8:1b Successful transmission of LWAPP Pri mary Discovery Response to AP 00:1b:d4:e3:a8:1b Fri Apr 4 04:32:38 2008: 00:1c:58:05:e9:c0 Received LWAPP RRM_DATA_REQ from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:38 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:56 2008: 00:1c:58:05:e9:c0 Received LWAPP RRM_DATA_REQ from AP 00:1c:58:05:e9:c0 Fri Apr 4 04:32:56 2008: 00:1c:58:05:e9:c0 Successful transmission of LWAPP Air ewave-Director-Data Response to AP 00:1c:58:05:e9:c0

在此输出中,您可以看到所有配置参数都已成功从WLC2下载到AP1。此下载过程仅在LAP注册到该WLC时发生。

使用show ap config general Cisco_AP命令查看本文档中介绍的配置。示例如下:

<u>故障排除</u>

您可以使用以下debug命令排除配置故障:

- debug lwapp errors enable 配置 LWAPP 错误的调试。
- debug dhcp message enable 配置与 DHCP 服务器相互交换的 DHCP 消息的调试。
- debug dhcp packet enable 配置与 DHCP 服务器相互往来的 DHCP 数据包详细信息的调试

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相关信息

- 思科无线局域网控制器配置指南,版本4.2 控制轻量接入点
- 轻量 AP (LAP) 注册到无线 LAN 控制器 (WLC)

- <u>对轻量接入点进行 WLAN 控制器故障切换配置示例</u> <u>无线 LAN 控制器和轻量接入点基本配置示例</u>
- <u>无线 LAN 控制器 (WLC) 配置最佳实践</u>
 <u>技术支持和文档 Cisco Systems</u>