無線LAN控制器和輕量接入點故障切換外部移動組配置示例

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簡介

本檔案將說明如何在無線LAN控制器(WLC)上設定容錯移轉功能。 此功能允許輕量型存取點(LAP)容錯移轉至其行動群組以外的WLC。

必要條件

需求

嘗試此組態之前，請確保符合以下要求：

- 輕量型存取點(AP)和Cisco WLC組態的基本知識
- 輕量AP協定(LWAPP)基礎知識
- 對WLC故障切換和移動組有基礎認識。有關WLC故障切換功能的詳細資訊，請參閱適用於輕型接入點的WLAN控制器故障切換配置示例。有關移動組的詳細資訊，請參閱配置移動組。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- Cisco Aironet 1000系列輕量AP
- 執行韌體版本4.2.61.0的Cisco 2100系列WLC
- 執行韌體版本4.2.61.0的Cisco 4400系列WLC

本文說明的功能是在WLC 4.2.61.0版中匯入。此組態僅與執行4.2.61.0或更新版本的Cisco WLC搭配使用。

注意：如果執行最新的WLC版本5.0.148.0，請確保您已瞭解以下限制：

- 控制器軟體版本5.0.148.0不支援2000系列控制器。
- 控制器軟體版本5.0.148.0不支援1000系列接入點。

注意：如需詳細資訊，請參閱版本5.0.148.0的Cisco無線LAN控制器和輕量存取點版本說明。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

慣例

如需文件慣例的詳細資訊，請參閱思科技術提示慣例。

背景資訊

在低於4.2.61.0的所有WLC版本**中，當WLC「關閉」**時，在該WLC上註冊的LAP只能故障切換到同一移動組的另一個WLC，以防LAP配置為進行故障切換。有關詳細資訊，請參閱適用於輕量接入點的WLAN控制器故障轉移配置示例。

從Cisco WLC 4.2.61.0版起，引入了一項稱為*備份控制器支援*的新功能，用於接入點故障切換到控制器，即使是在移動組**之外**。

當接入點在本地區域失去主控制器時，集中位置的單個控制器可以作為接入點的備份。**集中式和區域控制器不需要位於同一個移動組中**。通過使用控制器CLI，您可以為網路的接入點指定主、次和第三控制器。在控制器軟體版本4.2.61.0中，可以指定備份控制器的IP地址，這樣接入點就可以故障切換到移動組之外的控制器。**此功能目前僅透過控制器CLI支援。**

本文使用這個初始組態設定來說明此功能：

- 兩個運行韌體版本4.2.61.0的Cisco WLC。為清楚起見，本檔案使用名稱**WLC1**和**WLC2**，以便在整個組態中參考WLC。
- WLC1的管理介面IP地址為10.77.244.210/27。
- WLC2的管理介面IP地址為10.77.244.204/27。
- 當前註冊到**WLC1**的Cisco 1000系列LAP。在我們的配置中，此LAP的名稱為**AP1**。

有關如何在WLC上設定基本引數的詳細資訊，請參閱無線LAN控制器和輕量型存取點基本組態範例。

設定

本節提供用於設定本文件中所述功能的資訊。

完成以下步驟即可設定此功能：

1. 設定WLC的行動化
2. 配置WLC和LAP以在移動組外部進行故障切換

設定WLC的行動化

第一步是在兩個不同的行動群組中設定WLC1和WLC2。

在本範例中，WLC1在**TSWEB行動組**中設定，WLC2在**backupwlc行動組**中設定。本節介紹如何透過控制器的CLI為WLC設定行動群組。

在WLC的CLI模式下輸入以下命令以設定行動群組：

- WLC1>**config mobility group domain** ***TSWEB***
- WLC2>**config mobility group domain** ***backupwlc***

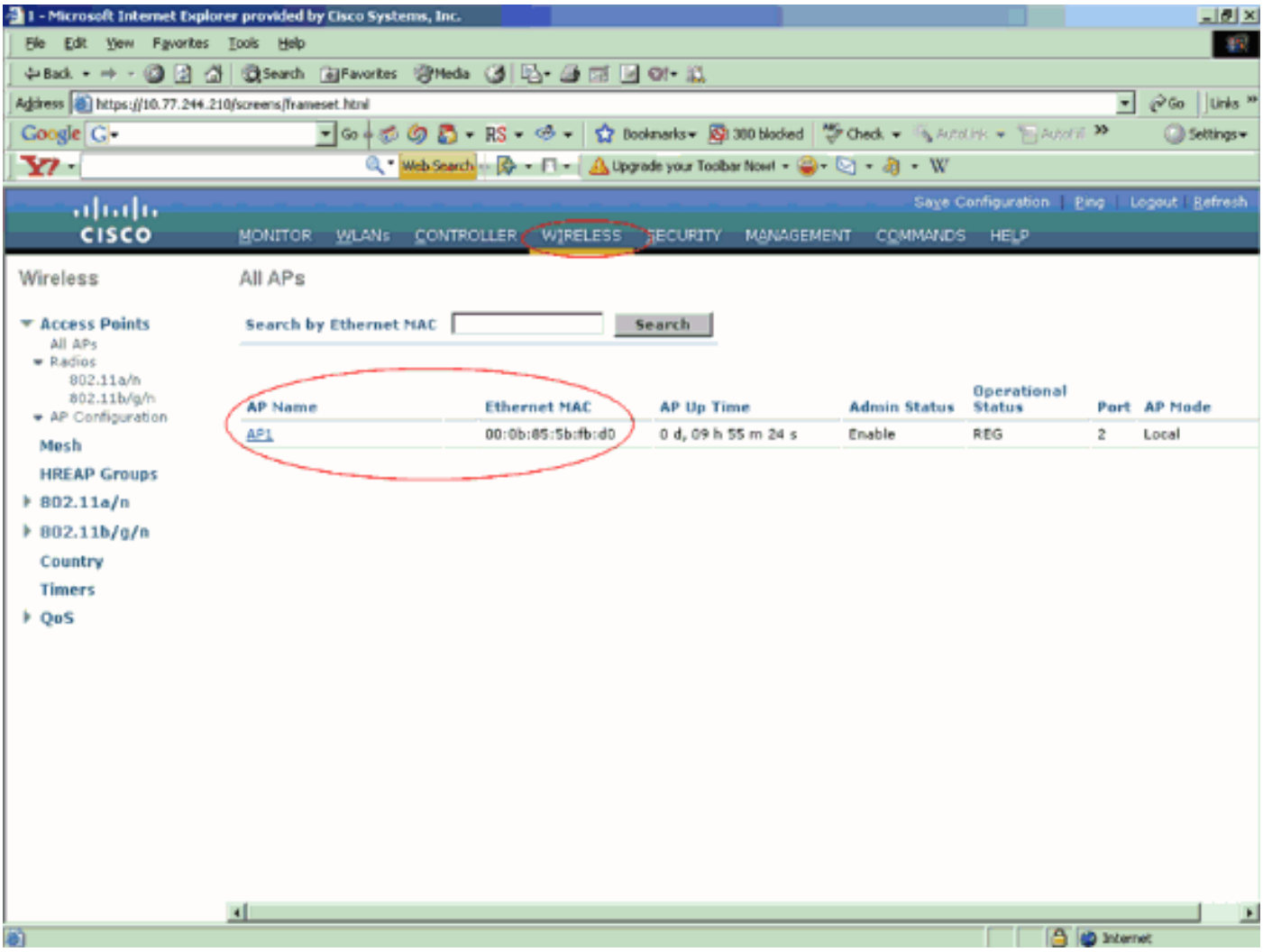
因此，WLC1和WLC2設定為位於兩個不同的行動群組中。

您也可以使用WLC GUI進行設定。如需詳細資訊，請參閱設定WLC的行動化。

配置WLC和LAP以在移動組外部進行故障切換

下一步是將WLC和LAP配置為在移動組外進行故障切換。

如本檔案前面所述，LAP目前已註冊到WLC1。您可以在WLC1上驗證這一點(在我們的範例中為**10.77.244.210**)。若要驗證這一點，請在控制器GUI上按一下**Wireless**。在本例中，LAP名稱為**AP1**。



目標是配置此LAP，使其可以故障切換到位於不同移動組中的WLC2(10.77.244.204)。為此，請透

過Telnet應用或直接主控台連線，登入LAP目前註冊到的WLC(WLC1)的CLI模式，並設定此LAP的主要WLC和輔助WLC。

1. 在WLC1的CLI模式下，發出以下命令：
   ```
   WLC1>config ap primary-base
   controller_name Cisco_AP [controller_ip_address]
   ```

   controller_name欄位代表主WLC的系統名稱。在我們的示例中，WLC1本身是**AP**1 **LAP的主**WLC。這裡,**WLC1是WLC1的系統名稱。**.您可以在WLC的**Monitor**螢幕上看到GUI模式下的控制器名稱。**Cisco_AP**欄位表示Cisco AP的名稱。在本例中，它是**AP1**。**[controller_ip_address]**欄位表示主WLC的管理介面IP地址。在本例中，10.77.244.210是WLC1的管理介面IP地址。**注意：如果備份控制器位於接入點所連線的移動組(主控制**器)之外，則始終需要分別提供主控制器、輔助控制器或第三控制器的IP地址。否則，存取點無法加入備份控制器。因此，在本範例中用於設定的命令是WLC1 **>config ap primary-base** ***WLC1 AP1 10.77.244.210***
2. 現在，將**WLC2**設定為輔助WLC，以便在主WLC(**WLC1**)關閉時讓LAP進行故障轉移。若要設定來自不同行動群組的WLC2，請在WLC1的CLI模式**下發出以下命令**:
   ```
   WLC1>config ap secondary-base
   controller_name Cisco_AP [controller_ip_address]
   ```

   controller_name欄位代表備份或輔助WLC的系統名稱。在我們的示例中，WLC2是**AP**1 LAP的**輔助**WLC。這裡,**WLC2是WLC2的系統名稱。Cisco_AP**欄位表示Cisco AP的名稱。在本例中，它是**AP1**。**[controller_ip_address]**欄位表示輔助WLC(WLC2)的管理介面IP地址。在本示例中，10.77.244.204是WLC2的管理介面IP地址。**注意：如果備份控制器始終位於接入點所連線的移動組(主控制**器)之外，則需要分別提供主、次或第三控制器的IP地址。否則，存取點無法加入備份控制器。因此，在我們的示例中用於配置的命令是WLC1 **>config ap secondary-base** ***WLC2 AP1 10.77.244.204***。

這是CLI螢幕，其中演示了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!
```

驗證

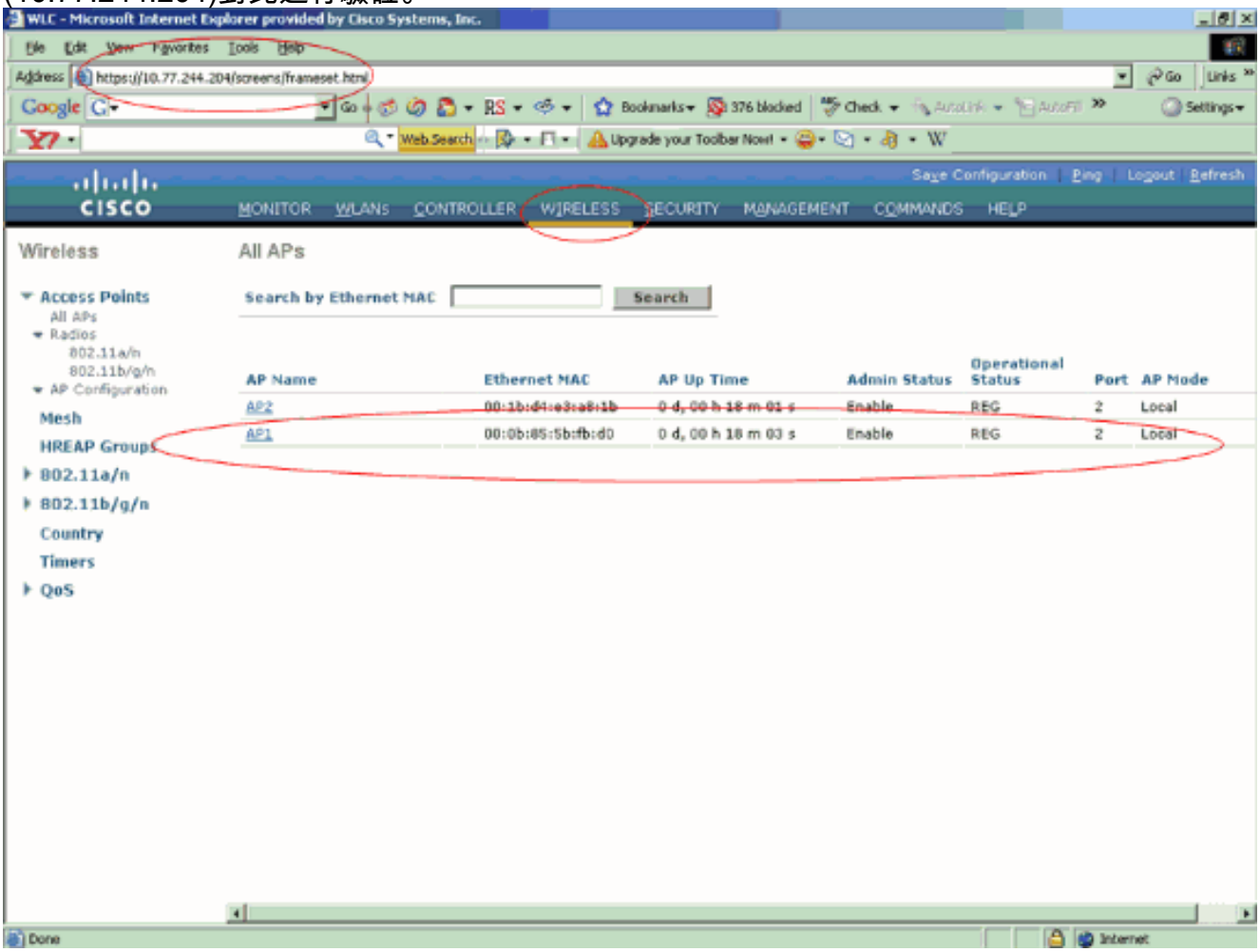
您需要驗證組態是否正常運作。在本例中，當WLC1關閉時，AP1必須故障切換並註冊到位於不同移動組中的WLC2。

若要驗證這一點，請完成以下步驟：

1. 斷開連線WLC1和AP1的電源或乙太網電纜。一旦斷開連線，LAP會從WLC中註銷自己並搜尋

不同的WLC。

2. 根據LAP與WLC的正常註冊流程，AP1必須能夠成功向WLC2註冊。請從WLC2的GUI模式(10.77.244.204)對此進行驗證。



注意此螢幕抓圖中的環繞引數。此處您會看到AP1已註冊到WLC2(10.77.244.204)。

您也可以使用**debug lwapp events enable**指令，從WLC2的CLI模式驗證註冊程式。以下是範例：

```
(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
```

在此輸出中，您可以看到所有組態引數都已從WLC2成功下載到AP1。只有在LAP註冊到該WLC時，才會執行此下載過程。

show ap config general Cisco_AP 命令用於檢視本文檔中說明的配置。以下是範例：

```
WLC2 >show ap config general AP1 Cisco AP Identifier.............................. 5 Cisco AP
Name.................................... AP1
.....................................................
.....................................................
.....................................................
..................................................... Name
Server..................................... Cisco AP Location.............................
default_location Cisco AP Group Name.............................. default-group Primary Cisco
Switch Name....................... WLC1
Primary Cisco Switch IP Address.................. 10.77.244.210
Secondary Cisco Switch Name...................... WLC2
Secondary Cisco Switch IP Address................ 10.77.244.204
Tertiary Cisco Switch Name.......................
```

疑難排解

您可以使用以下debug指令對組態進行疑難排解：

- debug lwapp errors enable — 配置LWAPP錯誤的調試。
- debug dhcp message enable — 配置與DHCP伺服器交換的DHCP消息的調試。
- debug dhcp packet enable — 配置從DHCP伺服器傳送和傳送的DHCP資料包詳細資訊的調試。

相關資訊

- 思科無線LAN控制器組態設定指南4.2版 — 控制輕量型存取點
- 輕量AP(LAP)註冊到無線LAN控制器(WLC)
- 輕量接入點的WLAN控制器故障切換配置示例
- 無線LAN控制器和輕量型存取點基本組態範例
- 無線LAN控制器(WLC)組態最佳實踐
- 技術支援與文件 - Cisco Systems