# 使用Catalyst 9800 WLC排除CW917X Wifi7 AP加入問題

## 目錄



## 簡介

本文檔介紹跨多個階段的WiFi7 AP加入故障的故障排除。

## 採用元件

- 9800系列無線控制器
- Cisco IOS XE 17.18.03版本
- CW9172I

## AP啟動問題

當新的WiFi7 AP被解除盒裝且無法正確引導時，首先檢查LED狀態和控制檯啟動日誌。您可以參考特定AP型號的硬體安裝指南，檢查各種AP條件的LED狀態：WiFi7 AP安裝指南

- 根據AP資料表驗證AP的最低功率要求（PoE類/瓦數）和預期的LED狀態，以排除電源問題：Cisco Wireless 9172系列接入點資料表
- 如果電源足夠，AP將成功啟動，並載入Meraki OS作為其主/預設映像。
- 在Meraki模式下，AP首次無法通過CDP檢視，直到AP收到IP地址；請改用LLDP在網路上發現它。

## AP無法獲取IP地址

如果AP無法獲取IP地址，在AP控制檯上，您可以看到處於0天離線遷移模式的AP:

在<Meraki>控制檯提示符下運行offline-migration-info，以獲取當前日誌和遷移嘗試的狀態。

**<#root>**

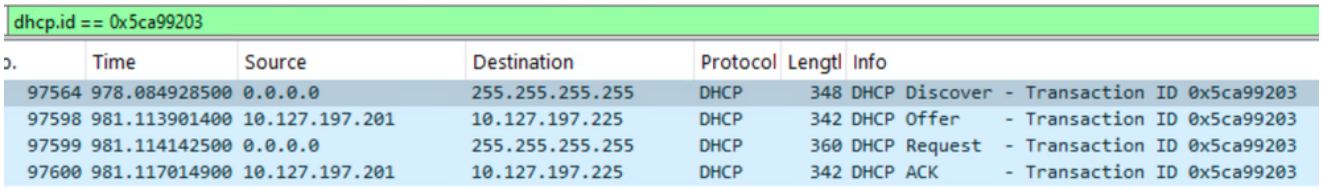
```
<Meraki>

offline-migration-info


| [2000-01-01 00:00:36.528] AP in day0 - offline migration
```

如果AP保持此狀態：

- 驗證上行鏈路交換機的switchport配置：它可以是接入模式，也可以是將AP管理VLAN設定為本機的TRUNK模式。
- 在AP上行鏈路交換機埠上收集資料包捕獲並檢查DORA（發現、提供、請求、確認）流，以確認DHCP請求是否到達伺服器，並且提供是否被返回。以下是AP與DHCP伺服器之間成功進行DHCP事務的示例：



dhcp.id == 0x5ca99203

| ). | Time | Source | Destination | Protocol | Lengtl | Info |
|---|---|---|---|---|---|---|
| 97564 | 978.084928500 | 0.0.0.0 | 255.255.255.255 | DHCP | 348 | DHCP Discover - Transaction ID 0x5ca99203 |
| 97598 | 981.113901400 | 10.127.197.201 | 10.127.197.225 | DHCP | 342 | DHCP Offer - Transaction ID 0x5ca99203 |
| 97599 | 981.114142500 | 0.0.0.0 | 255.255.255.255 | DHCP | 360 | DHCP Request - Transaction ID 0x5ca99203 |
| 97600 | 981.117014900 | 10.127.197.201 | 10.127.197.225 | DHCP | 342 | DHCP ACK - Transaction ID 0x5ca99203 |

AP上行鏈路捕獲：AP和DHCP伺服器之間的DHCP事務(DORA)成功

# AP Catalyst模式轉換失敗

CW917x系列接入點(AP)使用的遷移機制與舊的Catalyst 9100系列AP不同。要將CW917x AP轉換為Catalyst模式，該過程依賴於特定網路配置，包括DHCP選項、DNS設定和雲可達性。

AP首先嘗試使用DHCP選項43方法。如果沒有設定值或IP無法連線，它會回退到DNS方法。以下是可能會中斷此轉換過程的常見問題。

## 快速離線遷移問題

### DHCP選項43(0xF3)遷移問題

- 選項43值無效：AP未收到有效的十六進位制值(例如，未能以正確的子選項型別（如0xF3）開始)。

**<#root>**

```
<Meraki>

offline-migration-info


| [2000-01-01 00:00:36.528] AP in day0 - offline migration
| [2000-01-01 00:06:54.265] [init] start offline migration detection (v1.1)
| [2000-01-01 00:07:59.65 ] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:08:04.112] [fast-offline-migration][v4]

no fast offline migration by DHCP


| [2000-01-01 00:08:04.113] [fast-offline-migration][v6]

no fast offline migration by DHCP


| [2000-01-01 00:08:04.113] [fast-offline-migration] waiting for 420sec before taking any migration dec
```

- ICMP故障：AP首先嘗試訪問從DHCP伺服器選項43(0xF3)接收的已解析IP。如果對已解析IP沒有ICMP可達性，則AP無法切換到Catalyst模式。

<#root>

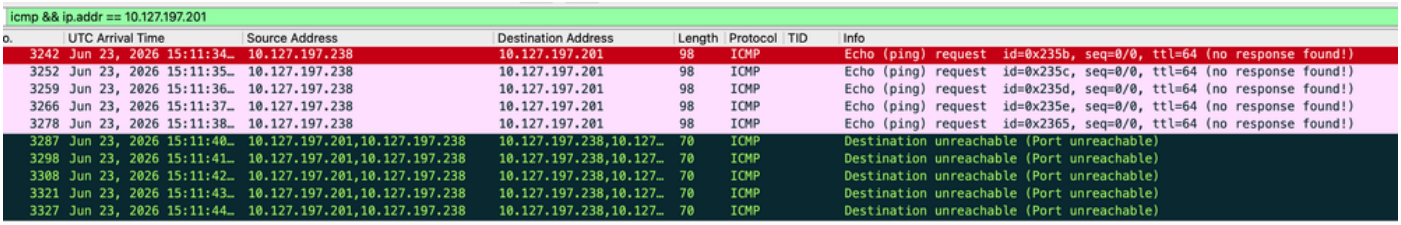
```
<Meraki> offline-migration-info
| [2000-01-01 00:00:48.388] AP in day0 - offline migration
| [2000-01-01 00:02:59.526] [init] start offline migration detection (v1.2)
| [2000-01-01 00:04:00.774] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:04:10.799] [fast-offline-migration]

[v4][icmp] DHCP: WLC 10.127.197.201 is unreachable >>

Here 10.127.197.201 is IP of Switch present in Network
| [2000-01-01 00:04:15.906] [fast-offline-migration]

[v4][capwap] DHCP: WLC 10.127.197.201 is down


| [2000-01-01 00:04:15.906] [fast-offline-migration][v4] no fast offline migration by DHCP
| [2000-01-01 00:04:15.906] [fast-offline-migration][v6] no fast offline migration by DHCP
```




AP上行鏈路捕獲：無法通過ICMP訪問已解析的IP

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附註：

AP始終執行ICMP可達性測試，然後執行CAPWAP可達性測試。

當網路中沒有WLC時，可以使用ICMP連線機制。

如果存取點(AP)透過DHCP選項43(0xF3)取得無線LAN控制器(WLC)IP位址，且無法存取從AP到WLC IP的CAPWAP流量，但提供對WLC IP的ICMP連線能力，則AP仍可切換到Catalyst模式。

如果存取點(AP)透過DHCP選項43(0xF3)取得在不受支援的版本中執行的無線LAN控制器(WLC)IP位址，但提供對WLC IP的ICMP連線能力，則AP仍可切換到Catalyst模式。但是無法加入WLC。

---

以下是具有ICMP可達性的成功遷移：

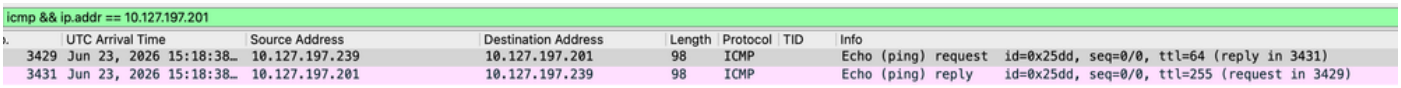
<#root>

```
<Meraki> offline-migration-info
| [2000-01-01 00:00:49.2 ] AP in day0 - offline migration
| [2000-01-01 00:03:00.367] [init] start offline migration detection (v1.2)
| [2000-01-01 00:04:03.34 ] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:04:08.56 ]
```

**[fast-offline-migration][v4][icmp] DHCP: WLC 10.127.197.201 is reachable**

```
| [2000-01-01 00:04:08.56 ]
```

**[fast-offline-migration][DHCP][IPv4] migrate to Catalyst**




AP上行鏈路捕獲：通過ICMP可達性成功將AP快速遷移到Catalyst模式

- 不支援的WLC軟體版本：回應WLC執行的軟體版本低於Cisco IOS XE 17.15.1（或AP支援的最低版本），導致Catalyst模式交換器失敗。
  <#root>

  ```
  <Meraki> offline-migration-info
  | [2000-01-01 00:00:36.600] AP in day0 - offline migration
  | [2000-01-01 00:02:49.984] [init] start offline migration detection (v1.1)
  | [2000-01-01 00:03:53.950] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
  | [2000-01-01 00:04:03.966] [fast-offline-migration][v4][icmp] DHCP: WLC 10.127.197.196 is unreach
  | [2000-01-01 00:04:04.42 ]
  ```

  **[fast-offline-migration][v4][capwap] DHCP: WLC 10.127.197.196 is unsupported - version 17.12.4.22**

  ```
  | [2000-01-01 00:04:04.42 ] [fast-offline-migration][v4] no fast offline migration by DHCP
  | [2000-01-01 00:04:04.43 ] [fast-offline-migration][v6] no fast offline migration by DHCP
  | [2000-01-01 00:04:04.43 ] [fast-offline-migration][v4] missing DNS config (server and/or domain)
  | [2000-01-01 00:04:04.43 ] [fast-offline-migration][v6] missing DNS config (server and/or domain)
  | [2000-01-01 00:04:04.43 ] [fast-offline-migration] waiting for 420sec before taking any migratio
  ```

DNS遷移問題

如果接入點(AP)無法使用DHCP完成快速離線遷移，則嘗試使用DNS方法。最初，AP驗證它是否從DHCP伺服器收到有效的域名（選項15）和DNS伺服器IP地址（選項6）。使用此資訊，AP會嘗試解析主機名cisco-automigrate。<domain>。如果此解析成功，則AP繼續遷移到Catalyst模式。

- 缺少DHCP選項：AP無法從DHCP伺服器接收有效的域名（DHCP選項15）或DNS伺服器IP（DHCP選項6）。

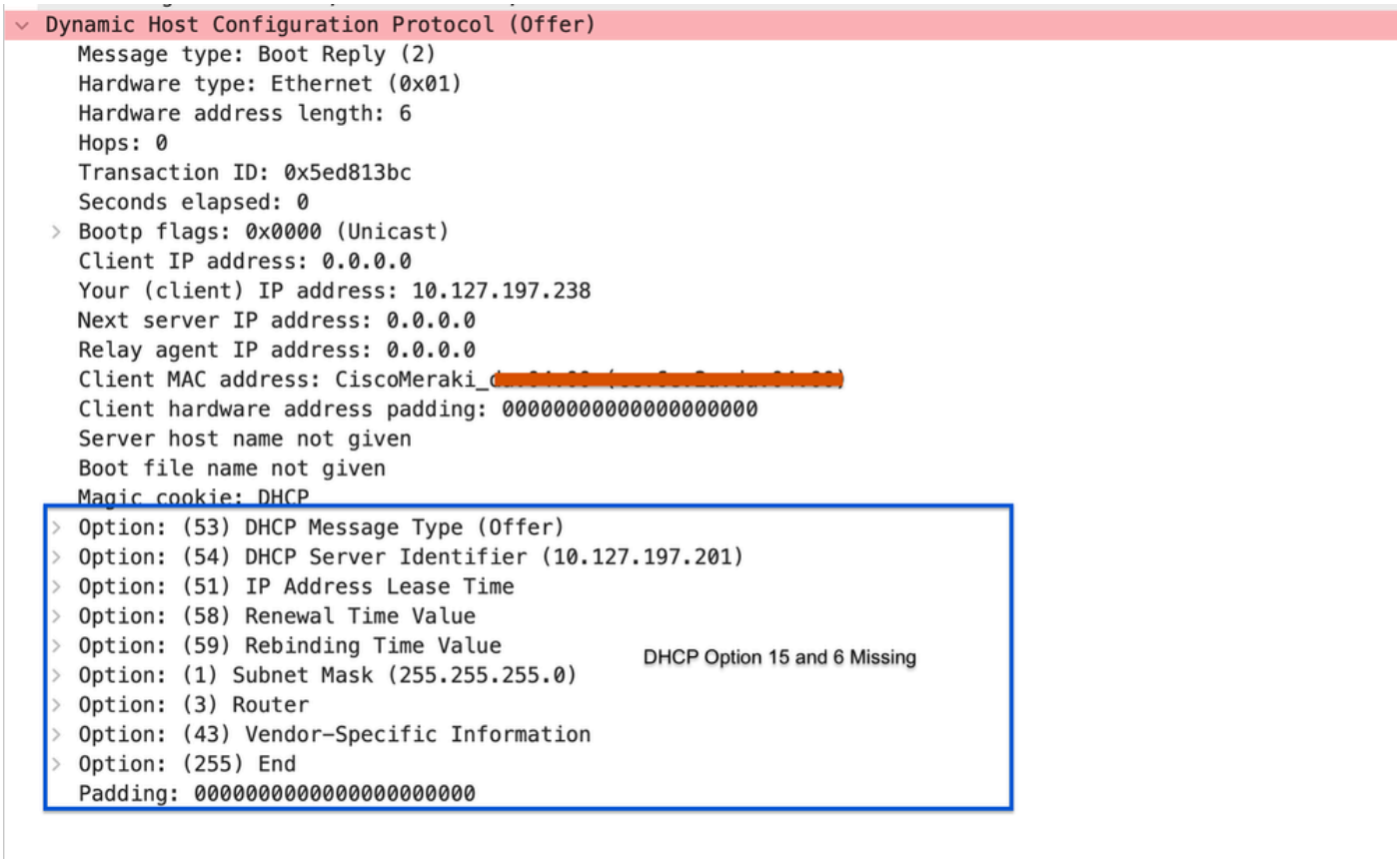
<#root>

```
<Meraki> offline-migration-info
| [2000-01-01 00:00:48.565] AP in day0 - offline migration
| [2000-01-01 00:02:59.840] [init] start offline migration detection (v1.2)
| [2026-06-24 11:11:58.392] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2026-06-24 11:12:03.438] [fast-offline-migration][v4] no fast offline migration by DHCP
| [2026-06-24 11:12:03.438] [fast-offline-migration][v6] no fast offline migration by DHCP
| [2026-06-24 11:12:03.529]
```

**[fast-offline-migration][v4] missing DNS config (server and/or domain)**

```
 >> DNS Option Missing in DHCP Response
| [2026-06-24 11:12:03.529]
```

**[fast-offline-migration][v4] missing DNS config (server and/or domain)**




AP上行鏈路捕獲：DHCP響應上缺少DNS伺服器和域名

- 解決失敗：DNS伺服器無法解析FQDN cisco-automigrate。<your-domain>。

<#root>

```
<Meraki> offline-migration-info
| [2000-01-01 00:00:48.565] AP in day0 - offline migration
| [2000-01-01 00:02:59.840] [init] start offline migration detection (v1.2)
| [2026-06-24 11:11:58.392] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2026-06-24 11:12:03.438] [fast-offline-migration][v4] no fast offline migration by DHCP
| [2026-06-24 11:12:03.438] [fast-offline-migration][v6] no fast offline migration by DHCP
| [2026-06-24 11:12:03.529]
```

**[fast-offline-migration][v4] no fast offline migration by DNS**

```
>> It received a DNS server and domain but unable to resolve the hostname
| [2026-06-24 11:12:03.529] [fast-offline-migration][v6] missing DNS config (server and/or domain)
| [2026-06-24 11:12:03.529] [fast-offline-migration] waiting for 420sec before taking any migration dec
```

```
Dynamic Host Configuration Protocol (Offer)
   Message type: Boot Reply (2)
   Hardware type: Ethernet (0x01)
   Hardware address length: 6
   Hops: 0
   Transaction ID: 0x3d491a56
   Seconds elapsed: 0
 > Bootp flags: 0x0000 (Unicast)
   Client IP address: 0.0.0.0
   Your (client) IP address: 10.127.197.217
   Next server IP address: 0.0.0.0
   Relay agent IP address: 0.0.0.0
   Client MAC address: CiscoMeraki_da:0[redacted]
   Client hardware address padding: 00000000000000000000
   Server host name not given
   Boot file name not given
   Magic cookie: DHCP
 > Option: (53) DHCP Message Type (Offer)
 > Option: (54) DHCP Server Identifier (10.127.197.201)
 > Option: (51) IP Address Lease Time
 > Option: (58) Renewal Time Value
 > Option: (59) Rebinding Time Value
 > Option: (1) Subnet Mask (255.255.255.0)
 > Option: (3) Router
 v Option: (15) Domain Name
      Length: 12
      Domain Name: [redacted]
 v Option: (6) Domain Name Server
      Length: 4
      Domain Name Server: [redacted]
 > Option: (255) End
```

AP上行鏈路捕獲：DHCP響應中存在有效的DNS伺服器和域名

| UTC Arrival Time | Source Address | Destination Address | Length | Protocol | TID | Info |
|---|---|---|---|---|---|---|
| Jun 24, 2026 09:44:20… | 10.127.197.217 | DNS Server | 90 | DNS | | Standard query 0x6120 A cisco-automigrate. domain-name |
| Jun 24, 2026 09:44:20… | DNS Server | 10.127.197.217 | 163 | DNS | | Standard query response 0x6120 No such name A cisco-automigrate. domain-name |

AP上行鏈路捕獲：主機名解析失敗

- 無法連線解析的IP:AP成功解析了cisco-automigrate。<your-domain>，但無法通過ICMP訪問生成的IP地址。

```
<Meraki>

offline-migration-info


| [2000-01-01 00:01:58.622] [init] start offline migration detection
| [2000-01-01 00:03:05.252] [fast-offline-migration-delay] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:04:05.156] [fast-offline-migration][v4] no fast offline migration by DHCP
| [2000-01-01 00:04:15.290] [fast-offline-migration][v6] no fast offline migration by DHCP
| [2000-01-01 00:04:20.271]

[fast-offline-migration][v4][icmp] DNS automigrate: WLC 10.27.XX.XX is not alive

>> No ICMP reachability to hostname resolved IP
```

## 離線遷移問題

如果AP未能成功進行快速離線遷移，它將嘗試連線到Meraki雲以檢查是否已在大約7分鐘內將其新增到Meraki網路。如果在此時間段內AP與Meraki雲保持通訊並新增到網路，則可以切換到Meraki模式。

但是，如果7分鐘後AP仍無法到達Meraki雲或者未新增到網路，並且未配置靜態IP地址，則它會通過DHCP更新其IP地址。在此階段，AP進入離線遷移階段。在離線遷移中，AP使用DHCP、DNS和第2層發現方法查詢網路上的無線LAN控制器(WLC)詳細資訊，然後切換到Catalyst模式。離線遷移過程中可能會遇到各種問題

### DHCP選項43遷移問題

- IP刷新後，AP會檢查它是否收到帶有0xF1的DHCP選項43、收到有效的WLC IP、CAPWAP可達性和來自受支援版本的響應，您可能會遇到以下錯誤：

<#root>

```
!! No valid WLC IP recievd on DHCP Option 43 0xF1 !!

| [2000-01-01 00:14:19.658][fast-offline-migration] waiting for 0min before taking any migration decisi
| [2000-01-01 00:15:07.101] [offline-migration] forcing DHCP renew
| [2000-01-01 00:15:07.102] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:15:12.150] [offline-migration] migration decision
| [2000-01-01 00:15:12.150]

[offline-migration][v4] no WLC IP in DHCP option 43 >> No valid WLC IPv4 received


| [2000-01-01 00:15:12.150] [offline-migration][v4] missing DNS config (server and/or domain)
| [2000-01-01 00:15:12.151]
```

**[offline-migration][v6] no WLC IP in DHCP option 52 >> No valid WLC IPv4 received**

```
| [2000-01-01 00:15:12.151] [offline-migration][v6] missing DNS config (server and/or domain)

!! No CAPWAP reachability to recieved IP !!
| [2000-01-01 00:10:50.713] [offline-migration] migration decision
| [2000-01-01 00:10:50.713] [offline-migration][v4] WLC IP present in DHCP option 43
| [2000-01-01 00:10:55.759]
```

**[offline-migration][v4][capwap] DHCP: WLC 10.127.197.196 is down**

```
!! WLC IP received on DHCP option is running on unsupported release !!

| [2000-01-01 00:39:44.529] [fast-offline-migration] waiting for 48sec before taking any migration deci
| [2000-01-01 00:40:35.585] [offline-migration] forcing DHCP renew
| [2000-01-01 00:40:35.586] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:40:41.592] [offline-migration] migration decision
| [2000-01-01 00:40:41.593] [offline-migration][v4] WLC IP present in DHCP option 43
| [2000-01-01 00:40:41.675]
```

**[offline-migration][v4][capwap] DHCP: WLC 10.127.197.196 is unsupported - version 17.12.4.22**

```
| [2000-01-01 00:40:41.675] [offline-migration][v4] missing DNS config (server and/or domain)
| [2000-01-01 00:40:41.675] [offline-migration][v6] no WLC IP in DHCP option 52
| [2000-01-01 00:40:41.675] [offline-migration][v6] missing DNS config (server and/or domain)
```

當使用DHCP選項進行離線遷移失敗時，訪問點(AP)會嘗試從DHCP回覆中提取域名和DNS伺服器資訊來執行DNS選項。此程式可能會導致錯誤：

DNS解析故障

**<#root>**

```
!! No valid DNS server or domain name received in DHCP reply !!

| [2000-01-01 00:14:19.658][fast-offline-migration] waiting for 0min before taking any migration decisi
| [2000-01-01 00:15:07.101] [offline-migration] forcing DHCP renew
| [2000-01-01 00:15:07.102] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:15:12.150] [offline-migration] migration decision
| [2000-01-01 00:15:12.150] [offline-migration][v4] no WLC IP in DHCP option 43
| [2000-01-01 00:15:12.150]
```

**[offline-migration][v4] missing DNS config (server and/or domain)**

```
| [2000-01-01 00:15:12.151] [offline-migration][v6] no WLC IP in DHCP option 52
| [2000-01-01 00:15:12.151]
```

**[offline-migration][v6] missing DNS config (server and/or domain)**

```
!! Unable to resolve the hostname
```

**cisco-capwap-controller.**

```
 !!
| [2026-06-24 11:19:12.395] [offline-migration] migration decision
| [2026-06-24 11:19:12.395] [offline-migration][v4] no WLC IP in DHCP option 43
| [2026-06-24 11:19:12.479]
```

**[offline-migration][v4] no WLC IP resolved by DNS**

```
| [2026-06-24 11:19:12.527] [offline-migration][v4] no PnP IP resolved by DNS

!! No CAPWAP reachability or unsupported version !!

| [2000-01-01 00:15:07.102] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:15:12.150] [offline-migration] migration decision
| [2000-01-01 00:15:12.150] [offline-migration][v4] no WLC IP in DHCP option 43
| [2000-01-01 00:15:12.150] [offline-migration][v4]
```

**WLC IP resolved by DNS: 10.127.197.233**

```
| [2000-01-01 00:15:12.151] [offline-migration][v4][capwap]
```

**DNS: WLC 172.16.30.10 is not valid/ unsupported version 17.12.4.22**

## 回退到第2層CAPWAP發現

如果DHCP和DNS方法都失敗，AP將廣播第2層CAPWAP發現請求。常見錯誤包括：

- 沒有響應廣播CAPWAP發現
  <#root>

```
| [2000-01-01 00:23:37.901] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:23:42.949] [offline-migration] migration decision
| [2000-01-01 00:23:42.949] [offline-migration][v4] no WLC IP in DHCP option 43
| [2000-01-01 00:23:42.949] [offline-migration][v4] missing DNS config (server and/or domain)
| [2000-01-01 00:23:42.950] [offline-migration][v6] no WLC IP in DHCP option 52
| [2000-01-01 00:23:42.950] [offline-migration][v6] missing DNS config (server and/or domain)
| [2000-01-01 00:23:48.22 ]
```

```
[offline-migration][v4][capwap-l2] 0 WLC(s) detected (unsupported)

| [2000-01-01 00:23:53.66 ]
[offline-migration][v6][capwap-l2] 0 WLC(s) detected (unsupported)

| [2000-01-01 00:23:53.66 ] [offline-migration] no migration & not claimed => restart detection
```

為此，請確保在無線控制器(WLC)上啟用自動CAPWAP自註冊，以接受單播和廣播探索請求。附註：預設情況下，此設定處於禁用狀態，它可以在第0天模式下拒絕專門來自全域性使用AP的任何CAPWAP發現請求。在預設AP加入配置檔案中啟用此設定。AP最初加入控制器時使用此配置檔案

```
<#root>

CW9800(config)#
ap profile default-ap-profile

CW9800(config-ap-profile)#capwap-discovery onboarding ?
all        Configure automatic CAPWAP onboarding from Meraki based on both unicast and broadcast d
unicast    Configure automatic CAPWAP onboarding from Meraki based on unicast discovery request or
```

- 成功的響應但不受支援的版本 — WLC響應的版本未在17.15.02或更高版本上運行：

```
<#root>

| [2000-01-01 00:15:07.101] [offline-migration] forcing DHCP renew
| [2000-01-01 00:15:07.102] [offline-migration] forcing DHCPv6 INFORMATION REQUEST
| [2000-01-01 00:15:12.150] [offline-migration] migration decision
| [2000-01-01 00:15:12.150] [offline-migration][v4] no WLC IP in DHCP option 43
| [2000-01-01 00:15:12.150] [offline-migration][v4] missing DNS config (server and/or domain)
| [2000-01-01 00:15:12.151] [offline-migration][v6] no WLC IP in DHCP option 52
| [2000-01-01 00:15:12.151] [offline-migration][v6] missing DNS config (server and/or domain)
| [2000-01-01 00:15:17.193]

[offline-migration][v4][capwap-l2] 1 WLC(s) detected (unsupported)


| [2000-01-01 00:15:17.283]

[offline-migration][v4][capwap-l2] - unsupported - 10.127.197.196 - 17.12.4.22
```

# AP無法完成加入階段

AP成功轉換為CATALYST模式後，會使用與其他Catalyst AP相同的加入過程來連線到9800無線LAN控制器。問題可能出現在三個階段：

- CAPWAP發現階段
- DTLS隧道建立階段
- 加入階段

通過參考以下內容，應用相同的故障排除方法：
瞭解使用 Catalyst 9800 WLC 的 AP 加入流程.

# AP管制域解析失敗

CW917x系列AP沒有預定義的管制域。無法通過控制器在CW917x系列AP上手動配置國家/地區代碼。相反，AP使用多種方法自動確定國家代碼，如接近檢測（RF和CDP/LLDP）、GPS/GNSS和WLC上的RAF檔案。

## 針對相應版本的國家/地區的AP支援

在對管制域進行故障排除之前，請確認要在您的9800控制器版本上配置的國家/地區支援特定的CW917x系列AP型號。如果不支援該國家/地區，則兩個無線電保持關閉狀態。

您可以根據特定AP型號的技術參考和接入點功能表的WLC版本驗證國家/地區到管道的對映，並確認特定控制器版本是否提供針對CW917x系列AP的特定國家/地區支援。
此外，您可以檢視文檔，該文檔概述了來自Cisco CW917x Wi-Fi 7接入點國家/地區代碼和階段的CW917x AP的每個國家/地區的監管階段

驗證CW917x系列接入點的WLC版本是否支援您所在的國家/地區，然後檢查AP是否可以使用受支援的方法之一解析其管制域。如果AP沒有解析管制域，您可以看到AP狀態：

<#root>

```
WLC#

show ap summary


Number of APs: 2

CC = Country Code
RD = Regulatory Domain

AP Name      Slots       AP Model         Ethernet MAC        Radio MAC

CC    RD

    IP Address      State       Location
-------------------------------------------------------------------------------------------------------
```

```
LAB-9136       4       C9136I-ROW        aaaa.bbbb.cccc      aaaa.bbbb.cccc  IN    -RW  10.127.197.153
LAB-CW9172     3        CW9172H          aaaa.bbbb.cccc      aaaa.bbbb.cccc
```

**--    -UN**

```
  10.127.197.152  Registered   default location
```

<#root>

```
WLC#
```

**show ap config general | in AP_NAME| Country**

```
Cisco AP Name : AP_NAME
Regulatory Domain Allowed by Country : 802.11bg:-A^ 802.11a:-DN^ 802.11 6GHz:
AP Country Code
```

**: - >> No Country Code resolved**

## 使用鄰近度

處於全球模式的Wi-Fi 7 AP可以從現有傳統AP或連線到地板上同一WLC的Wi-Fi 7 AP，或者從發現為CDP/LLDP鄰居的AP解析國家/地區代碼。基於鄰近的發現可以使用基於RF的檢測或CDP/LLDP鄰居檢測。如果Wi-Fi 7 AP無法通過鄰近發現相鄰AP，您可以看到錯誤：

<#root>

```
[*06/28/2026 15:24:36.7773]
```

**Sending proximity_request payload**

```
[*06/28/2026 15:24:36.7787]
```

**SinglePID Proximity resolution: Country Code not available**

```
[*06/28/2026 15:24:36.7795] SinglePID Regulatory Blob resolution: Country Code not available
[*06/28/2026 15:25:35.8011] Sending proximity_request payload
[*06/28/2026 15:25:35.8025] SinglePID Proximity resolution: Country Code not available
[*06/28/2026 15:25:35.8031] SinglePID Regulatory Blob resolution: Country Code not available
```

基於RF的

若要使用此方法，請將具有已解析國家/地區代碼和Wi-Fi 7 AP管制域的AP放在附近，以便它們可以交換鄰居發現資料包。此AP必須連線到同一個WLC，且其國家/地區代碼已解析。這些資料包是使用2.4GHz無線電交換的，因此請確保目標AP（您要從中解析國家/地區代碼的AP）上啟用了2.4GHz無線電功能。

基於CDP/LLDP

當具有已解析國家/地區代碼的全功能AP和全球模式（無國家/地區代碼）的Wi-Fi 7 AP連線到同一台交換機和同一個WLC時，會使用基於CDP/LLDP的發現機制。

要使用此方法，請確保以下內容：

- 兩個AP都連線到同一台交換機。
- 兩個AP連線到同一個WLC。
- 一個AP具有已解析的國家/地區代碼，並且正在積極為客戶端提供服務。
- Wi-Fi 7 AP處於全球模式，需要國家代碼。

---

附註：從Cisco IOS XE版本17.15.4和17.18.1開始，支援基於CDP/LLDP的發現。請驗證WLC是否正在運行這些受支援的版本之一或更高版本。

---

## 使用RAF檔案

如果Proximity方法無法解析監管域，則可以從Meraki控制面板使用RAF（監管域授權檔案）作為替代方法。為此，請執行以下操作：

1. 使用雲AP宣告Wi-Fi 7 AP並將其新增到您的網路。請注意，AP不需要與要新增的Meraki控制面板建立網路連線。
2. 為宣告該AP的網路中的AP配置所需的國家/地區代碼。
3. 從控制器下載管制網域檔案並上傳。檔案必須包含AP序列號、MAC地址和國家/地區代碼。

```
<#root>

!! Verify the data on RAF File !!
WLC#

show ap regulatory activation all
```

```
Regulatory Activation file Meta-data
-----------------------------------
Date Created : 06/30/2026 08:12:41
Created By : shchoube@cisco.com
Device count : 2
Organization Id : 1780642

AP MAC             Serial Number       Country code
-------------------------------------------------
 AP1_MAC            AP1_SN                    IN
 AP2_MAC            AP2_SN                    US
```

4. 將新的AP新增到需要不同國家/地區代碼的同一控制器時，請將其放在Meraki控制面板中的獨立網路中。這可確保其各自國家/地區代碼設定不會相互覆蓋。

# 由於許可證問題，AP不相容

AP使用正確的國家/地區代碼加入後，如果它未獲得許可，仍然可以報告合規性問題。Wi-Fi 7 AP需進行合規性檢查並需要思科無線(CW)許可證。相比之下，早期的非Wi-Fi 7 AP使用AIR許可證，不需要合規性檢查。

<#root>

```
WLC#

show ap summary license


For AIR licenses, per AP tracking of license state is unavailable. Please use "show license summary" to
Policy allowed state means device is deemed compliant due to a policy downloaded from licensing authori

AP Name AP Model    AP MAC     License Type  License State   Non Compliance Reason
-------------------------------------------------------------------------------------------------------
AP1     CW9172H  xxxx.xxxx.xxxx   CW         Non Compliant     Never Licensed
AP2     CW9176I  xxxx.xxxx.xxxx   CW         Non Compliant     Never License

WLC#

show license summary


Account Information:
Smart Account: <none>
Virtual Account: <none>
License Usage:
License Entitlement Tag Count Status
-----------------------------------------------------------------------------
cisco-wireless-advan... (CNS_CW_A) 2 IN USE

!! Check the current level of license configured on WLc for WiFi7AP !!
```

```
WLC#

show version | in License Level


License Level: adventerprise
AIR License Level: AIR Network Essentials addon AIR DNA Essentials
Next reload AIR License Level: AIR Network Essentials addon AIR DNA Essentials
Cisco Wireless License Level: Cisco Wireless Advantage
Next reload Cisco Wireless License Level: Cisco Wireless Advantage
```

對於此問題，請確保在9800 WLC上配置了用於Wifi7 AP的正確許可級別。Wifi7 AP需要CW許可證：

1. Cisco Wireless Essentials
2. Cisco Wireless Advantage

如果AP未獲得授權，請通過在Catalyst 9800上配置智慧授權和對其進行故障排除對9800 WLC上的智慧授權問題進行故障排除

# 日誌收集

## 來自WLC的日誌

- 啟用term exec prompt timestamp，以便對所有命令具有時間引用。
- Show命令：
  - show ap summary | i存取點數量
  - sh log | i AP事件：
  - show ap uptime
  - show ap cdp neighbor
  - show wireless stats ap history
  - show wireless stats ap discovery
  - show wireless stats ap join summary
  - show wireless certification config
  - show wireless management trustpoint
  - 顯示無線dtls連線
  - show logging profile wireless start last X days filter mac <radio-or-ethernet-AP-mac>
  - show ap regulatory activation all
  - show ap config general
  - show tech-support wireless
- 無線電活動跟蹤：
  - debug wireless AP_MAC {aaaa.bbb.cccc } {monitor-time} {N seconds} !!設定時間允許我們啟用最多24天的跟蹤。
  - no debug wireless AP_MAC {aaaa.bbb.cccc} !!禁用調試

WLC使用Client_info生成調試跟蹤檔案，並命令檢查生成的調試跟蹤檔案dir bootflash: | i debug !!

---

警告：條件調試啟用調試級別日誌記錄，從而增加生成的日誌量。保持此運行可減少檢視日誌的時間間隔。因此，建議在故障排除會話結束時始終禁用調試。

---

- 要禁用所有調試，請運行以下命令：

  # clear platform condition all !!

  # undebug all !!

  通過GUI:

  步驟1.導覽至Troubleshooting > Radiative Trace。

  步驟2.按一下Add並輸入AP MAC位址

  步驟3.準備好開始放射性示蹤後，按一下開始。啟動後，調試日誌記錄會寫入磁碟，記錄與跟蹤的MAC地址相關的任何控制平面處理。
  步驟4.重現要診斷的問題時，按一下Stop。
  步驟5.對於已調試的每個MAC地址，您可以通過按一下Generate生成一個日誌檔案，該檔案整理與該MAC地址相關的所有日誌。
  步驟6.選擇想要整理日誌檔案的回溯時間，然後按一下Apply to Device。
  步驟7.現在，您可以按一下檔案名稱旁邊的小圖示來下載檔案。此檔案存在於控制器的啟動快閃記憶體驅動器中，也可以通過CLI從盒中複製出來。

- 通過AP IP地址ACL過濾的嵌入式資料包捕獲：

!!建立ACL模!!

ip access-list extended CAP-FILTER

permit ip host <AP_IP> any

permit ip any host <AP_IP>

!!配置資料包捕獲!!

monitor capture MYCAP interface Po1 both

monitor capture MYCAP緩衝區循環大小100

monitor capture MYCAP access-list CAP-FILTER monitor capture MYCAP match any/ipv4/ipv6.MAC !!
monitor capture MYCAP start !!
!!複製
監視器捕獲MYCAP停止
monitor capture MYCAP export flash:|tftp:|http:.../filename.pcap

## 來自AP的日誌

Meraki模式下的AP

- offline-migration-info，獲取當前日誌和遷移嘗試的狀態。

Catalyst模式下的AP

- show tech !!收集show tech以獲取AP的所有配置詳細資訊和無線電統計資訊。
- show dtls connection !!檢查DTLS的證書、埠和密碼、版本
- 終端監控和logging console（如果SSH訪問）啟用控制檯日誌記錄和日誌顯示
- 基本調試
  - debug capwap client event
  - debug capwap client error
  - debug dtls client error（調試dtls客戶端錯誤）
  - debug dtls client event
- 高級調試
  - debug capwap client keepalive
  - debug capwap client pmtu
  - debug capwap client payload
  - debug capwap client details

## 來自連線到接入點的上行鏈路交換機的日誌

- AP連線埠上的嵌入式資料包捕獲
  - monitor capture mycap interface <AP_Connected_Port> both

- monitor capture mycap match any
- 監控擷取緩衝區大小50
- monitor capture mycap file location flash:mycap.pcap
- monitor capture mycap start/stop
- show monitor capture file flash:mycap.pcap

- 交換器連線埠分析器（SPAN擷取）
  - monitor session 1 source interface <AP_Connected_Port>
  - monitor session 1 destination interface x/x/x encapsulation replicate >>>>> — 與wireshark連線的PC的埠正在運行。

---

附註：如果使用第三方交換器，請在上行鏈路交換器連線埠上收集連線埠SPAN或等價封包擷取。

---

## 相關資訊

- Cisco Wireless CW917x系列接入點部署指南

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。