在存取點Catalyst 9124上配置遠端區域網(RLAN)

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簡介

本檔案介紹如何使用WLC型號9800在AP Catalyst 9124型號上設定遠端區域網路(RLAN)。

必要條件

需求

思科建議您瞭解以下主題:

- 9800 WLC
- 對無線控制器和存取點的指令行介面(CLI)存取。

採用元件

本文中的資訊係根據以下軟體和硬體版本:

- Catalyst 9800-L WLC版本17.09.05
- C9124系列AP

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。如果您的網路運作中,請確保您瞭解任何指令可能造成的影響。

背景

遠端LAN (RLAN)用於使用控制器驗證有線使用者端。一旦有線客戶端成功加入控制器,LAN埠就會 在集中或本地交換模式之間交換流量。來自有線客戶端的流量被視為無線客戶端流量。存取點 (AP)中的RLAN會傳送驗證要求以驗證有線使用者端。RLAN中有線客戶端的身份驗證類似於中央驗 證的無線客戶端。

有關RLAN的詳細資訊,請訪問Cisco Catalyst 9800系列無線控制器軟體配置指南。

RLAN在具有多個乙太網埠的AP中受支援,AP型號9124包含2個名為GigabitEthernet0和LAN1的乙 太網埠,在圖表中分別標籤為2和3:



9124個乙太網埠

完整的硬體詳細資訊,請閱讀Cisco Catalyst 9124AX系列戶外存取點硬體安裝指南。

設定

本文檔假設AP已加入到WLC。

如果需要有關將AP 9124加入WLC的指導,請閱讀本指南:<u>在Catalyst 9800無線LAN控制器上配置</u> <u>Mesh</u>。

與在Flex+Bridge模式下一樣,AP在本地模式下都支援RLAN。其配置與本地模式中來自RLAN的所 有流量都採用集中交換的差異相同。 如果需要本地交換RLAN流量,則AP模式必須為 Flex+Bridge。

網路圖表



拓撲

組態

AAA配置

1. 在本文檔中,RLAN的安全方法是MAC過濾,因此您需要提前配置AAA。您可以將MAC位址放在 遠端AAA伺服器上,或放在WLC本機上使用。

此處使用本地WLC資料庫。將沒有任何分隔符號的客戶端MAC地址增加到Device Authentication清 單中,該地址預計將連線到RLAN:

Cisco Cata	alyst 9800-L Wireless Controller		w	Velcome admin 🛛 🖌 🦿		• 10	0	C Sea
Q. Search Menu Items Dashboard Image: Configuration means Administration means	Configuration * > Security * > AAA + AAA Wizard Servers / Groups AAA Method Lis Global Config RADIUS Faltback Attribute List Name	MAC Address Serial Number			×		•	Lpicac
C Licensing	Device Authentication AP Policy Password Policy AAA Interface	MAC Address* Attribute List Name Description WLAN Profile Name WLAN Profile Name Concel	f8e43bee53af None RLAN Client Select a value	Apply to Devic	kdio kdio h h			

裝置管理本地資料庫

2. 配置Authorization方法以使用本地資料庫。此處命名為RLAN_macF:

Cisco Cisco	Catalyst 9800-L Wireless Controller			Welco	ome admin 🛪 🕿 🖻	Contraction of the second clients of the sec	Teedback 🖌
Q. Search Menu Items	Configuration * > Security * > AAA				Quick Setup: AAA Authoriz	zation	×
Dashboard	+ AAA Wizard				Method List Name*	RLAN_macF	
Monitoring	Servers / Groups AAA Method Lis	t AAA Advanced			Group Type	local v ()	
Nonfiguration	Authentication	+ Add × Delet			Authenticated	0	
O Administration	Authorization	Name	Т Туре	T Group Type	Available Server Groups	Assigned Server Groups	
	Accounting	default	network	local	idap		~
		sc-client	network	local	radius_ise		
X Troubleshooting		Autho_IOT	network	group			
		RLAN_macF	network	local	<	Ψ. Ψ.	<u> </u>

AAA授權方法

RLAN配置

1. 若要建立RLAN設定檔,請導覽至「組態」>「無線」>「遠端LAN」,然後輸入RLANProfile的 「設定檔名稱」和RLAN ID,如下圖所示。

Cisco Cataly	vst 9800-L Wireless Controller		Welcome admin	
Q. Search Menu Items	Configuration * > Tags & Profiles * > Remote LAN		Edit RLAN Profile	×
Dashboard	RLAN Profile RLAN Policy		General Security Profile Name*	9124RLANProf
Monitoring	+ Add X Delete Clone Enable RLAN Pr	rofile Disable RLAN Profile	RLAN ID*	1
🖏 Configuration	Selected RLAN Profiles : 0		Status	ENABLED
(i) Administration	Status T	Name 9124RLANProf	Client Association Limit	0
C Licensing	·····································		mDNS Mode	Bridging
X Troubleshooting				
			Cancel	Update & Apply to Device

RLAN設定檔一般

2. 切換作業選項至「安全性」。在本示例中,使用的安全方法是MAC過濾。轉至第2層,將 802.1x保留為停用,然後選擇MAC過濾的授權方法,如下圖所示。

Cisco Cata	lyst 9800-L Wireless Controller	Welcome admin 🛛 🗌	A B A B A B C Search APs and Clients Q E Feedback x ^A A
Q. Search Menu Items	Configuration * > Tags & Profiles * > Remote LAN	Edit RLAN Profile	×
bashboard	RLAN Profile RLAN Policy	General Security Layer2 Layer3 AAA	
Monitoring	+ Add X Delete C Clone Enable RLAN Profile Disable RLAN Profile	802.1x	DISABLED
Configuration	Selected RLAN Profiles : 0	MAC Filtering	RLAN_macF v
Administration	Status Y Name 9124RLNNProf	Authentication List	Not Configured
C Licensing	H 4 1 H H 10 V	Fallback Mechanism	No Fallback 🔻
X Troubleshooting		EAP-Identity-Request Retries Status	DISABLED
		EAP-Request Retries Status	DESARLED

3. 建立RLAN策略。導航到Configuration > Wireless > Remote LAN,在Remote LAN頁面上,按一 下RLAN Policy頁籤,如此圖所示。

Cisco Cata	lyst 9800-L Wireless Controller		Welcome admin	****	Search APs and Clients	Q	•
Q. Search Menu Items	Configuration * > Tags & Profiles * > Remote LAN		Edit RLAN Policy				×
Dashboard	RLAN Profile RLAN Policy		General Access Policies A	Advanced			
Monitoring	+ Add X Delete		🛦 Con	figuring in enabled state will result in loss of con	nnectivity for clients associated wit	th this policy.	
2 Configuration	Name	▼ Status	Policy Name*	9124RLANPolicy	RLAN Switching Policy		
	9124RLANPolicy	<					
Administration >	N 4 1 1 N 10 V		Description	Enter Description	Central Switching		
C Licensing			Status	ENABLED	Central DHCP	ENABLED	
			PoE	0			
Toubleshooting			Power Level	4 🗸			

RLAN策略

在此設定中,所有流量在WLC上集中交換。

4. 導航到訪問策略並配置VLAN和主機模式,然後應用設定。

Cisco Catal	yst 9800-L Wireless Controller		Welcome admin	***	Search APs and Clients Q	Feedback 🖉
Q. Search Menu Items	Configuration * > Tags & Profiles * > Remote LAN		Edit RLAN Policy			×
_	RLAN Profile RLAN Policy		General Access Policies A	Advanced		
Dashboard	+ Add X Dekite		Pre-Authentication	0	Host Mode	singlehost 👻
Monitoring	Name	▼ Status	VLAN	VLAN0100 VLAN0100		
Configuration	9124RLANPolicy	1 00000	Remote LAN ACL			
(O) Administration	H 4 1 > H 10 V		IPv4 ACL	Not Configured 👻 🚨		
C Licensing			IPv6 ACL	Not Configured 👻 💈		

RLAN策略訪問策略

5. 建立PolicyTag,並將RLAN Profile對映到RLAN Policy。導航到配置>標籤和配置檔案>標籤。

Edit Policy Tag					
Name*	9124RLANPolTag				
Description	Enter Description				
V WLAN-POLICY	Maps: 0				
+ Add × Delet	te				
WLAN Profile		T	Policy Profile		T
⋈ ∢ 0 ⊨ ⋈	10 🔻			1	No items to display
RLAN-POLICY + Add × Delet	Maps: 1				
Port ID	T	RLAN Profile	T	RLAN Policy Profile	٣
□ 1		9124RLANProf		9124RLANPolicy	
H ≺ 1 ► H	10 🔻				1 - 1 of 1 items
Map RLAN and Polic	сy				
RLAN Profile*	9124RLANProf		RLAN Policy Profile*	9124RLANPolicy	/ 🔻 🛛

策略標籤

6. 我們必須對AP應用策略標籤並啟用 LAN埠。導航到配置 > 無線 > 存取點,然後點選AP。

Cisco Cata	vst 9800-L Wireless Controller	Welcome admin 🚜 🕫 🛕 🖺 🌣 🔞	Ø Starth APs and Clients Q □ Starth APs and Clien
Q. Search Menu Items	Configuration * > Wireless * > Access Points	Edit AP	×
Dashboard	✓ All Access Points	General Interfaces High Availability Inventory	ICap Advanced Support Bundle
Monitoring ,	Total APs : 1 🖸	AP Name* AP9124_01	Policy 9124RLANPortad V
Configuration	AP Name I AP Model I Slots I Status Up Time I IP Address	Location* WGB_LAB_Test	Site Search or Select 2
(C) Administration	AP9124_01 Abiat C9124AXI-B 2 C 0days 1 hrs 26 192.168.100 mins 30 secs 192.168.100	Base Radio MAC 4ca6.4d23.aee0	RF default-policy-tag LWA_TestTag
C Licensing		Ethemet MAC 3c57.31c5.ac2c	Write Tag Config to AP PLG_SC_POLICY

AP配置上的策略標籤

應用設定後,AP重新加入WLC。按一下AP,然後選擇Interfaces並在LAN Port Settings中啟用 LAN埠。

eneral	Interfac	ces H	igh Availa	ability I	Inven	itory ICa	ар	Advanced	S	upport B	lundle	
Etherne	t Interface	S										
Interface	T	Operation	Status	Speed	T	Rx Packets	Ţ	Tx Packets	T	Discarde	ed Packets	T
GigabitEth	ernet0	0	>	1000 Mbps	s	22065		12905		0		
GigabitEth	ernet1	0	•	Auto		0		0		0		
LAN1		0	•	Auto		11682		156		0		
N 4	1 ►	▶ 10) ▼								1 - 3 of 3 ite	ems
INCOULD IN	iterraces											
Slot Y No	Interfaces	Ŧ	Band 1	Admin Status	Ŧ	Operation Status	Spec Admi	trum Y n Status	Spect Opera Status	trum ation	Regulatory Domain	Ŧ
Slot T No	Interface 802.11ax	▼ - 2.4 GHz	Band Y	Admin Status Enabled	Ŧ	Operation Status	Spec Admi Enabl	trum ▼ n Status ed	Spect Opera Status	trum ation s	Regulatory Domain -A	Ŧ
Slot Y No 0	Interface 802.11ax 802.11ax	▼ - 2.4 GHz - 5 GHz	Band All	Admin Status Enabled Enabled	Ţ	Operation Status	Spec Admi Enabl Enabl	trum ▼ n Status ed ed	Spect Opera Status	ation s	Regulatory Domain -A -B	Ŧ
Slot Y No 0 1	Interface 802.11ax 802.11ax 1	▼ - 2.4 GHz - 5 GHz ■ 10	Band ` All All	Admin Status Enabled Enabled	T	Operation Status O	Spec Admi Enabl	trum ▼ n Status ed ed	Spect Opera Status	ation s O	Regulatory Domain -A -B 1 - 2 of 2 ite	▼ ems
Slot Y No 0 1 Power (Interface 802.11ax 802.11ax 1 Nover Ethern	▼ - 2.4 GHz - 5 GHz M 10 net Setting	Band All All All S	Admin Status Enabled Enabled	T	Operation Status O O LAN PO	Spec Admi Enabl Enabl	trum n Status ed ed tings	Spect Opera Statu:	trum ation s O	Regulatory Domain -A -B 1 - 2 of 2 ite	▼ ems
Slot Y No 0 1 Power C Power Ty	Interface 802.11ax 802.11ax 1 Dver Ethern ype/Mode	▼ - 2.4 GHz - 5 GHz N 10 net Setting	Band All All All S PoE PoW	Admin Status Enabled Enabled	T	Operation Status O C LAN Port ID	Spec Admi Enabl Enabl	trum Status YLAN	Spect Opera Status	PoE	Regulatory Domain -A -B 1 - 2 of 2 ite Power Level	▼ ems RLAN
Slot Y No 0 1 Power C Power Ty PoE Pre-	Interface 802.11ax 802.11ax 1 Ner Ethern ype/Mode	▼ - 2.4 GHz - 5 GHz N 10	Band All All D T B B B C B C B C B C B C B C B C B C B	Admin Status Enabled Enabled	T	Operation Status O O LAN Port LAN1	Spec Admi Enabl Enabl	trum Totatus Totatus VLAN 100	Spect Opera Statu:	PoE	Regulatory Domain -A -B 1 - 2 of 2 its Power Level	T ems RLAN
Slot Y No 0 1 Power C Power Ty PoE Pre- Switch	Interface 802.11ax 802.11ax 1 Dver Ethern ype/Mode Standard	▼ - 2.4 GHz - 5 GHz M 10	Band All All	Admin Status Enabled Enabled	T	Operation Status Co Co LAN Port ID LAN 1	Spec Admi Enabl Enabl	trum Y n Status ed ed tings atus VLAN 100	Spect Opera Status	PoE	Regulatory Domain -A -B 1 - 2 of 2 ite Power Level NA 1 - 1 o	T ems RLAN

AP LAN1埠設定

套用設定並驗證狀態。確保RLAN顯示綠色。

驗證

將PC連線到AP的LAN1埠。PC透過MAB進行身份驗證,並從配置的VLAN獲取IP地址。

導航到Monitoring > Wireless > Clients檢查客戶端狀態。



客戶端詳細資訊

從AP CLI中,可以檢視埠狀態更改和客戶端詳細資訊:

AP9124_01#debug rlan critical Enable RLAN critical level debugging errors Enable RLAN error level debugging events Enable RLAN event level debugging info Enable RLAN info level debugging

```
[*08/07/2024 13:45:23.4807] chatter: wiredif_mapper :: WiredIfMapper - Invalid Port 2 State 1
[*08/07/2024 13:45:23.4807] chatter: Device wired2 notify state change link UP
[*08/07/2024 13:45:24.1266] RLAN_EVENT-RlanPortControl: LAN-Port[0] UP Event
[*08/07/2024 13:45:26.3522] RLAN_EVENT-RlanPortControl: LAN-Port[0] Detect client F8:E4:3B:EE:53:AF
[*08/07/2024 13:45:26.3523] RLAN_EVENT-RlanPortControl: LAN-Port[0] send_assoc for client F8:E4:3B:EE:5
[*08/07/2024 13:45:26.3604] RLAN_CFG: rlan_add_client client F8:E4:3B:EE:53:AF, port 0 vlan: 0
```

AP9124_01#show wired clients Total wired clients: 1 mac port state local_client detect_ago associated_ago tx_pkts tx_bytes rx_pkts rx_bytes F8:E4:3B:EE:53:AF 2 ASSOCIATED No 12 12 9 1074 337 55639

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)。