無線網橋點對點鏈路配置示例

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<u>簡介</u>

本文檔介紹如何通過採用Cisco LEAP身份驗證的Cisco Aironet無線網橋建立點對點無線鏈路。

<u>必要條件</u>

<u>需求</u>

嘗試此組態之前,請確認您已瞭解以下主題的基本知識:

- 無線網橋上的基本引數配置
- Aironet 802.11a/b/g無線LAN(WLAN)使用者端配接器的組態
- 可擴展身份驗證協定(EAP)身份驗證方法

<u>採用元件</u>

本文中的資訊係根據以下軟體和硬體版本:

- •兩個執行Cisco IOS[®]軟體版本12.3(7)JA韌體^的Aironet 1300系列無線網橋
- 兩個運行韌體版本2.5的Aironet 802.11a/b/g客戶端介面卡

註:本文檔使用具有整合天線的無線網橋。如果使用需要外部天線的網橋,請確保天線已連線到網 橋。否則,網橋無法連線到無線網路。某些無線網橋型號配備整合天線,而其它型號則需要外部天 線才能正常工作。有關帶有內建或外接天線的網橋型號的資訊,請參閱相應裝置的訂購指南/產品指 南。

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。

網路圖表

本檔案會使用以下網路設定:



CLIENT A

CLIENT B

此設定使用兩個Aironet 1300系列無線網橋。其中一個網橋配置為根網橋模式,另一個網橋配置為 非根網橋模式。客戶端A與根網橋關聯,客戶端B與非根網橋關聯。如網路圖所示,所有裝置都使用 10.0.0.0/24範圍內的IP地址。此配置在網橋之間建立點對點無線連線。在無線網橋通訊之前,它們 必須相互進行身份驗證。網橋使用以下任何一種驗證方法:

- 開放式身份驗證
- 共用金鑰身份驗證
- EAP身份驗證

本檔案使用LEAP進行驗證,並使用根橋上的本地RADIUS伺服器來驗證憑證。

注意:本文檔不解釋如何將客戶端介面卡配置為與無線網橋關聯。本文檔重點介紹根網橋和非根網 橋之間的點對點連線配置。有關如何配置無線客戶端介面卡以參與WLAN的資訊,請參閱<u>基本無線</u> LAN連線配置示例。

<u>慣例</u>

﹐如需文件慣例的詳細資訊,請參閱<u>思科技術提示慣例。</u>

<u>背景資訊</u>

無線網橋是通過無線介面連線兩個或多個LAN(通常位於不同建築物中)的第2層裝置。無線網橋為 資料密集型和視線應用提供更高的資料速率和卓越的吞吐量。無線網橋之間的高速鏈路提供的吞吐 量比E1/T1線路快許多倍,而成本卻只有後者的一小部分。這樣,無線網橋就不再需要昂貴的租用 線路和光纜。您可以使用無線網橋連線以下網路:

- 難以連線的站點
- 不連續樓層
- 臨時網路
- 倉庫
- 其他網路

無線網橋連線的LAN可以通過有線LAN或無線介面連線到無線網橋。您可以為點對點和點對多點應 用配置無線網橋。本文檔配置用於點對點連線的無線網橋。

配置根橋

<u>GUI配置</u>

本節提供將無線網橋配置為根網橋的資訊。

1. 通過GUI訪問1300無線網橋,並轉到Summary Status視窗。請完成以下步驟:開啟Web瀏覽器,在地址行中輸入IP地址。此示例將IP地址10.0.0.1用於根網橋。有關如何為無線網橋分配IP地址的資訊,請參閱<u>首次配置接入點/網橋</u>文檔的<u>獲取和分配IP地址</u>部分。按Tab以繞過「使用者名稱」欄位前進到「密碼」欄位。將顯示Enter Network Password視窗。輸入區分大小寫的密碼Cisco,然後按Enter。此時將顯示「彙總狀態」視窗,如以下示例所示

_ → - → - ② 2 2 2 0	0 I I- 0			10 - 6 ×
Cisco Sverene adhsadhs.	Cisco Ai	ronet 1300 Series Wir	eless Bridge	18 2
HOME EXPRESS SET-UP	Hostname Root		Root uptime is	6 minutes
EXPRESS SECURITY NETWORK MAP +	Home: Summary Status			
ASSOCIATION +	Association			
INTERFACES +	Clients: 0		Infrastructure clients: 0	
SERVICES +	Network Identity			
WIRELESS SERVICES + SYSTEM SOFTWARE +	IP Address		10.0.0.1	
EVENT LOG +	MAC Address		0013.1a57.dc14	
	Network Interfaces			
	Interface	MAC Address	Transmission Rate	
	* EastEthernet	0013.1a57.dc14	100Mb/s	
	1 Radio0-802 110	0013.1aca.3590	54.0Mb/s	
	Event Log			
	Time	Severity	Description	
	Mar 1 00:06:29.000	*Emor	Interface Dott11Radio0, changed state to up	
	Mar 1 00:06:28.989	 Notification 	Interface Dott 1 Radio0, changed state to reset	
	Mar 1 00:06:28.988	♦Error	Interface Dot! 1 RadioD, changed state to up	
	Mar 1 00:06:28.972	Notification	Interface Dot! 1 RadioD, changed state to reset	
	Mar 1 00:06:28.858	◆Error	interface Dot11Radio0, changed state to down	
	Mar 1 00:02:02.097	 Notification 	Line protocol on Interface Dot! 1RadioD, changed state to up	
	Mar 1 00:02:01.097	♦Error	Interface Dott1Radio0, changed state to up	
	Mar 1 00:02:01.095	Information	Interface Dot11Radio0, frequency 2412 selected	

2. 配置無線電介面。啟用無線電介面並將其定義為根網橋。此無線電介面充當根網橋的無線介面

。注意:運行Cisco IOS軟體版本12.3(7)JA的1300無線網橋上預設禁用無線電介面。請完成以 下步驟:選擇Network Interfaces > Radio0-802.11G > Settings。網路介面:將顯示Radio0-802.11G設定視窗。可以使用此視窗配置與無線電介面相關的各種引數。這些引數包括:無線 網路中的角色無線電資料速率無線電發射功率無線電通道設定天線設定其他引數按一下「 Enable Radio」底下的「Enable」以啟用無線電介面。在無線網橋上啟用根模式。在Role in Radio Network下,按一下Root Bridge。注意: Role in Radio Network引數允許您以以下方式 配置無線網橋:根網橋非根網橋具有無線客戶端的根橋具有無線客戶端的非根網橋根接入點 (AP)中繼器AP工作組網橋掃描器安裝模式如果要為根網橋/非根網橋模式配置無線網橋,並且 有與無線網橋關聯的無線客戶端,則需要為「無線網路中的角色」引數選擇「具有無線客戶端 的根網橋」或「具有無線客戶端的非根網橋」。通過這種方式,無線網橋充當根/非根網橋

+ - → · ② ② ③ ④ ③	B (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)			20 - 6
LISCE SYSTEMS	Cisco Airon	et 1300 Series	s Wireless Bridge	12 4
	RADIO0-802.110 STATUS	VLED STATUS	SETTINGS	CARRIER BUSY TEST
EXPRESS SET-UP EXPRESS SECURITY	Hostname Root			Root uptime is 6 days, 23 hours, 42 minutes
ASSOCIATION *	Network Interfaces: Radio0-802.11G	Settings		
NETWORK INTERFACES	Enable Radio:	C Enable	C Disable	
FastEthernet Radio0-802,11G	Current Status (Software/Hardware)= Disabled 🖶	Down 🖶	
SECURITY + SERVICES + WIRELESS SERVICES + SYSTEM SOFTWARE + EVENT LOG +	Role in Radio Network:	C Access Point C Repeater Root Bridge C Non-Root Bridge C Root Bridge with C Non-Root Bridge C Install Automatic	Wireless Clients with Wireless Clients	
		C Install Root Brid C Install Non-Root C Workgroup Bridg C Scanner	ge Bridge ge	
	Data Rates:	Best Range	Best Throughput Defau	R .
	1.0Mb/se	C Require	C Enable	C Disable
	2.0Mb/se	c @ Require	C Enable	C Disable
	5.5Mb/se	c Require	C Enable	C Disable
	* 6.0Mb/se	c C Require	@ Enable	C Disable
	* 9.0Mb/se	C Require	Enable	C Disable
	11.0Mb/se	e CRequire	C Enable	C Disable

註:如果您使用IEEE 802.11b標準網橋,或具有802.11b客戶端和1300無線網橋,請確保不要 選擇「要求使用正交分頻多工(OFDM)資料速率」。如果為這些資料速率選擇「需要」,則裝 置不會關聯。裝置不關聯,因為802.11b裝置不支援基於IEEE 802.11g標準運行的OFDM速率 。在網路介面中:Radio0-802.11G設定視窗示例,OFDM資料速率在速率旁邊顯示一個星號 (*)。本示例中的設定還顯示了如何為在802.11g環境中運行的802.11b裝置配置資料速率。為 「距離(Km)」引數輸入1,將所有其它引數保留為預設值,然後按一下視窗底部的**應用**。

	↓ • → - () 2 4 (), 1 () 1 - 4		1 - 0 ×
1	External Antenna Configuration:	: O Enable	
		Antenna Gain(dB): DISABLED (-128 - 128)	
	Aironet Extensions:	Enable C Disable	
	Ethernet Encapsulation Transform	mma: @ RFC1042 C 802.1H	
	Concatenation:	@ Enable C Disable	
	Max Length of Concatenation:	3500 (1600-4000)	
	Distance (Km):	1 (0.99)	
	Reliable Multicast to WGB:	O Disable @ Enable	
	Public Secure Packet Forwardin	ag: O Enable @ Disable	
	Short Slot-Time:	Enable C Disable	
	Beacon Period:	100 (20-4000 Kusec) Data Beacon Rate (DTIM): 2 (1-100)	
	Max. Data Retries:	64 (1.120) RTS May Retries: 64 (1.120)	
	nux put retreat		
	Fragmentation Threshold:	4000 (256-4000) RTS Threshold: (0-4000)	
	Root Parent Timeout:	0 (0-65535 sec)	
	Root Parent MAC 1 (optional):	(нини.неени.нини)	
	Root Parent MAC 2 (optional):	(нннн.неен.нннн)	
	Root Parent MAC 3 (optional):	(НИНИ. ЮООН. НИНИ)	
	Root Parent MAC 4 (optional):	044444 56664 55440	
			Incol

注意:本文檔介紹具有互相鄰近放置的整合(不可移除)天線的點對點配置。橋樑之間的距離 不到1公里。因此,所有其他無線電引數均保留其預設值。但是,可能需要配置其他引數。配 置其他引數的必要性取決於部署這些無線網橋的環境以及所使用的天線型別。以下是您可以設 定的其他引數:天線增益無線電距離**註**:這是網橋之間的距離。發射和接收天線的定義用於通 訊的功率電平其他引數**註**:請參閱<u>室外網橋範圍計算</u>實用程式以計算這些引數。在部署網橋之 前,始終使用此實用程式以確保良好的吞吐量和效能。有關如何配置無線網橋上無線電介面的 其他引數的詳細資訊,請參閱<u>配置無線電設定</u>。

3. 對本地RADIUS伺服器啟用LEAP身份驗證,以對無線網橋進行身份驗證。在根網橋上配置 LEAP身份驗證,然後將非根網橋配置為LEAP客戶端,以便向根網橋進行身份驗證。請完成以 下步驟:在左側選單中選擇Security > Server Manager,在Corporate Servers下定義這些引數 ,然後按一下Apply:RADIUS伺服器的IP地址注意:對於本地RADIUS伺服器,請使用AP的 IP地址。在示例中,要使用的IP地址是根網橋的IP地址,即10.0.0.1。驗證和記帳埠RADIUS伺 服器的共用金鑰注意:在本例中,共用金鑰為Cisco。

+ • + · ② ⊇ ⊡ ③	G 3 4-9			30 - C
Circo Stritun	Cisco Ai	ironet 1300 Series W	ireless Bridge	10 5
LUGHE	SERVER MANAGER	GLOBAL PROPERTIES		
EXPRESS SET-UP EXPRESS SECURITY	Hostname Root			Root uptime is 12 minutes
ASSOCIATION +	Security: Server Manager			
NETWORK +	Backup RADIUS Server			
SECURITY Admin Access	Backup RADIUS Server:		(Hostname or IP Address)	
Encryption Manager SSID Manager	Shared Secret:			
Server Manager				Apply Delete Cancel
Local RADIUS Server	Corporate Servers			
SERVICES +	Course Property line			
WIRELESS SERVICES + SYSTEM SOFTWARE +	Current Server List			
EVENT LOG +			1000	
	(NEW)	erver:	10.0.0.1	(Hostingne or IP Address)
	10.0.0.1 S	hared Secret:	******	
	Delete	wthentication Port (optional):	1812 (0-65536)	
	A	ccounting Port (optional):	1813 (0-65536)	
				Apply Cancel
	Default Server Priorities			
	EAP Authentication	MAC Authentica	ation	Accounting
	Priority 1: 10.0.0.1	Priority 1: < NO	NE > •	Priority 1: < NONE > .

注意:本地RADIUS伺服器偵聽埠1812和1813。在此視窗的Default Server Priorities區域中 ,選擇本地RADIUS伺服器IP地址並按一下Apply。要啟用WEP加密,請完成以下步驟:注意 :LEAP身份驗證要求啟用WEP加密。選擇Security > Encryption Manager。在Encryption Modes區域,為WEP Encryption選擇Mandatory,然後從Cipher旁邊的下拉選單中選擇WEP 128 bit。在Encryption Keys區域中,選擇128 bit作為Key Size,然後輸入Encryption Key。注 意:此加密金鑰必須與在非根網橋上配置的加密金鑰匹配。在本例中,加密金鑰為 1234567890abcdef1234567890。以下是範例

2

****	Q B 3 B- B	(2) - 6 3
Cinco Svirtus adhdh.	Cisco Aironet 1300 Series Wireless Bridge	10 5
HOME EXPRESS SET-UP EXPRESS SEC-UP INETWORK MAP + ASSOCIATION + NETWORK INTERFACES + SECURITY Admin Access Encryption Manager SSID Manager SSID Manager SSID Manager Advanced Security SERVICES + WIRELESS SERVICES +	Hostname Root Security: Encryption Manager Encryption Modes None WEP Encryption Mendetory Cisco Compliant TKIP Features: Enable Message Integrity Check (MIC Enable Per Packet Keying (PPK) Cipher WEP 128 bit	Root uptime is 9 minutes
SYSTEM SOFTWARE + EVENT LOG +	Encryption Keys	
	Transmit Key Encryption Key (Hexadecimal) Encryption Key 1: Encryption Key 2: Encryption Key 3: Encryption Key 4: Encryption Key 4: 	Key Size 128 bit • 128 bit • 128 bit • 128 bit •
	Global Properties Broadcast Key Rotation Interval: C Disable Rotation	

為要用於通訊的網橋建立新的服務集識別符號(SSID)。請完成以下步驟:從左側選單中選擇 Security > SSID Manager。將顯示SSID Manager視窗。在SSID欄位中輸入新的SSID。本示 例使用Cisco作為SSID。在Authentication Settings區域中,選中Network EAP覈取方塊,然後 按一下Apply。這將啟用LEAP身份驗證。以下是範例

2

* • * • 🔘 🗗 🖾 🔘	1 C C C C C C C C C C C C C C C C C C C	9 ×
Cisco Station	Cisco Aironet 1300 Series Wireless Bridge	
HOME EXPRESS SET-UP EXPRESS SECURITY NETWORK MAP + ASSOCIATION + NETWORK + INTERFACES + SECURITY Admin Access Encryption Manager Server Manager Server Manager Advanced Security SERVICES + WIRELESS SERVICES + SYSTEM SOFTWARE + EVENT LOO +	Security: SSID Manager SSID Properties Current SSID List Chews SSID: Cisco VLAN: VLAN: Network ID: Delete	
	Authentication Settings	
	Authentication Methods Accepted: Open Authentication: No ADD(TION> Network EAP: No ADD(TION>	
	Server Priorities: MAC Authentication Servers EAP Authentication Servers MAC Authentication Servers © Use Defaults © Use Defaults C Customize © Customize	

註:在Cisco IOS軟體版本12.3(4)JA和更新版本中,可以全域性配置SSID,然後將其應用於特 定無線電介面。請參閱<u>配置多個SSID</u>文檔的<u>全域性建立SSID</u>部分以全域性配置SSID。此外 ,在Cisco IOS軟體版本12.3(7)JA中,沒有預設SSID。向下滾動到Global Radio0-802.11G Properties區域並完成以下步驟

2

J	+ · → · ② 3 4 ③ B 3 B · ●	- 1	9 ×
	□ Advertise Extended Capabilites of this SSID		1
	Advertise Wireless Provisioning Services (WPS) Support		
	Advertise this SSID as a Secondary Broadcast SSID		
	Enable IP Redirection on this SSID		
	IP Address: DISABLED		
	IP Filter (optional): (< NONE > Define Filter		
	Association Limit (optional): (1-255)		
	EAP Client (optional):		
	Usemame: Password:		
	Apply Can	cel	
	Global Radio0.802.11G SSID Properties		
	Set Guest Mode SSID: Cisco		
	Set Infrastructure SSID: Esco Infrastructure Devices to associate celly to this SSID		
	Apply Car	ncel	
		_	
			L I
			1
	Close Window Convictor (c) 1992-2004 by Close Swi	dems, Inc	

從Set Guest Mode SSID和Set Infrastructure SSID下拉選單中,選擇您配置的SSID。在本例 中,選擇Cisco。選中Force Infrastructure Devices to associate only to this SSID覈取方塊。 此操作將SSID Cisco配置為基礎設施SSID並啟用此SSID的訪客模式。配置本地RADIUS伺服 器引數。選擇Security > Local Radius Server,然後按一下General Set-Up頁籤。在「本地 Radius伺服器身份驗證設定」區域中,按一下LEAP。在Network Access Server(AAA Client)區域中,定義RADIUS伺服器的IP地址和共用金鑰,然後按一下Apply。對於本地 RADIUS伺服器,使用AP的IP地址。以下是範例

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↓ · → · () 2 2 4 4) i i i i i i i i i i i i i i i i i i i			11 A A A A A A A A A A A A A A A A A A	- 0 ×
alls. alls.	Cisco Ai	ronet 1300 Series Wi	ireless Bridge	_ IØ ≜	-
	STATISTICS	GENERAL SET-UP	EAP-FAST	SET-UP	_ [
EXPRESS SET-UP	Hostname Root			Root uptime is 14 minu	Aes
NETWORK MAP + ASSOCIATION +	Security: Local RADIUS Serve	r - General Set-Up			
NETWORK +	Local Radius Server Authentic	ation Settings			
Admin Access	Enable Authentication Protoc	cols:			
SSID Manager Server Manager		E LEAP)		
Local RADIUS Server Advanced Security		L) MAG		Apply Cancel	
SERVICES + WIRELESS SERVICES + EVERTEN SOFTWARE	Network Access Servers (AAA	Clients)			
EVENT LOG +	Current Network Access Serv	ers			
	<new> 10.0.0.1</new>	Network Acc	ess Server: 10.0.0	(IP Address)	
		Shared Secr	et:		
	Delete				
				Apply Cancel	
	Individual Users				
	Current Users				
	<new> NonRoat</new>	Osername:	NonRoot		
		Paesword:		C Text & NT Hash	
	1	Confirm Password:			

在Individual Users區域中,定義各個使用者並按一下Apply。您配置的使用者名稱和密碼必須 與LEAP客戶端的使用者名稱和密碼匹配。在此示例中,這些欄位必須與非根網橋的使用者名 稱和密碼匹配。示例使用者名稱為*NonRoot*,密碼為*Cisco123。***註:組**是可選的。組屬性不會 傳遞到Active Directory,並且僅在本地相關。確認基本配置工作正常後,可以稍後新增組。 配置根網橋後,就可以與客戶端和非根網橋關聯了。配置非根網橋以完成此設定並建立點對點無線 連線。

<u>CLI組態</u>

您可以使用CLI使用telnet設定橋接器。

!--- These commands enable the local radius server on the bridge !--- and ensure that local
radius server is used for authentication: bridge#aaa new-model
bridge#aaa group server radius rad_eap server 10.0.0.1 auth-port 1812 acct-port 1813
bridge#aaa authentication login eap_methods group rad_eap

bridge(config)#station role root
bridge(config)#distance 1

!--- This commands enters the bridge into the local server config mode: bridge(config)#radiusserver local

!--- By default LEAP, EAPFAST, and MAC authentications are !--- supported. Using the no form for other 2 types ensures !--- that LEAP is used for authentication. bridge(config-radsrv)#no

authentication eapfast

bridge(config-radsrv)#no authentication mac

bridge(config)#interface dot11radio 0
bridge(config-if)#ssid bridge
!--- This command enables EAP authentication for the SSID. bridge(config-if-ssid)#authentication
network-eap rad_eap

!--- This step is optional. !--- This value seeds the initial key for use with broadcast !--[255.255.255.255] traffic. If more than one VLAN is !--- used, then keys must be set for each
VLAN. bridge(config-if)#encryption vlan 1 key 1 size 128bit 12345678901234567890123456 transmitkey

!--- This defines the policy for the use of Wired !--- Equivalent Privacy (WEP). If more than
one VLAN is used, !--- the policy must be set to mandatory for each VLAN. bridge(configif)#encryption vlan 1 mode wep mandatory

bridge(config)#user cisco password cisco123



<u>GUI配置</u>

本節提供將無線網橋配置為非根網橋的資訊。非根網橋作為LEAP客戶端向根網橋上的本地 RADIUS伺服器進行身份驗證。

 通過GUI訪問無線網橋並轉到「Summary Status(摘要狀態)」視窗。完成配置根網橋一節的 步驟1中的說明以進入「Summary Status」視窗。註:非根網橋配置了IP地址10.0.0.2。此視 窗顯示

↓ • • → · ② ② ③ △ ◎) II (J) 12- (J)		()
albadba	Cisco A	ironet 1300 Series Wir	reless Bridge
HOME EXPRESS SET-UP	Hostname Non-Root		Non-Root uptime is 1 minute
EXPRESS SECURITY NETWORK MAP +	Home: Summary Status		
ASSOCIATION +	Association		
NTERFACES +	Clients: 0		Infrastructure clients: 0
JECORITY + JERVICES +	Network Identity		·····
SYSTEM SOFTWARE +	IP Address		10.0.0.2
EVENT EDG	MAC Address		0013.1a57.dc14
	Network Interfaces		
	Interface	MAC Address	Transmission Rate
	TastEthernet	0013.1a57.dc14	100Mb/s
	Radio0-802.110	0013.1aca.3590	54.0Mb/s
	Event Log		
	Time	Severity	Description
	Mar 1 00:01:31.283	 Notification 	Interface Dot11Radio0, changed state to reset
	Mar 1 00:01:31.282	♦Emor	Interface Dott 1 Radio0, changed state to down
	Mar 1 00:01:31.266	Notification	Interface Dot11Radio0, changed state to reset
	Mar 1 00:01:31.148	*Error	Interface Dott1Radio0, changed state to down
	Mar 1 00:00:53.476	♦ Warning	Interface Dot11Radio0, cannot associate: No Response
	Mar 1 00:00:42.465	Warning	Non-root - scanning for root
	Mar 1 00:00:42.464	Notification	Interface Dot11Radio0, changed state to reset
	Mar 1 00:00:26.660	Notification	Line protocol on Interface Dott 1RadioD, changed state to down

2. 配置SSID進行通訊。從左側選單中選擇**Security > SSID Manager**。出現「SSID Manager (SSID管理器)」視窗。在SSID欄位中輸入在根網橋上配置的相同SSID。在 Authentication Settings區域中,選中**Network EAP**覈取方塊。

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Back to Cisco 105 Series Bridge - 1 Cisco Systems	- Security						
alb_ab_	Cisco Aironet 1300 Series Wireless Bridge	1a 🛎					
HOME EXPRESS SET-UP EXPRESS SECURITY NETWORK MAP + ASSOCIATION +	Hostname Non-Root Security: SSID Manager SSID Properties	Non-Root uptime is 4 minutes					
NETWORK + NTERFACES + SECURITY Admin Access Encryption Manager SSID Manager Server Manager Advanced Security SERVICES + SYSTEM SOFTWARE + EVENT LOG +	Current SSID List CNEW> Tsunami VLAN: Cisco Define V Delete	LANS					
	Authentication Settings						
	Authentication Methods Accepted: Open Authentication: Shared Authentication: Network EAP: Network EAP: Network EAP:						
	Server Priorities: MAC Authentication Servers EAP Authentication Servers MAC Authentication Servers @ Use Defaults @ Use Defaults Defaults Define Defaults C Customize C Customize						

3. 向下滾動到General Settings配置引數,定義EAP客戶端的使用者名稱和密碼,然後按一下 Apply。RADIUS伺服器上必須存在此使用者名稱和密碼才能成功進行LEAP身份驗證。在本例 中,使用者名稱和密碼必須位於根網橋上的本地RADIUS伺服器上。使用使用者名稱 NonRoot和密碼Cisco123(已在本地RADIUS伺服器上配置)。

J	* • • • • • • • • • • • • • • • • • • •	3 B- 3)) = 6	
	Ge	meral Settings		*
		C Advertise Extended Capabilites of this SSID		
		Advertise Wireless Provisioning Services (WPS) Support		
		Advertise this SSID as a Secondary Broadcast SSID		
		Enable IP Redirection on this SSID		
		IP Address: DISABLED		
		IP Filter (optional): < NONE > Define Filter		
		Association Limit (optional): (1-255)		
		EAP Client (optional):		
		Usemame: NonRoot Password:)	
		Apply C	ancel	
	Glo	obal Radio0.802.11G SSID Properties		
	Se	et Guest Mode SSID: Cisco		
	Se	et Infrastructure SSID: Osco Forcestructure Devices to associate only to this SSID		
		Apply C	ancel	
				_

- 4. 向下滾動到該視窗的Global Radio0-802.11G SSID Properties區域並完成以下步驟:從Set Guest Mode SSID和Set Infrastructure SSID下拉選單中,選擇您配置的SSID。在本例中,選 擇Cisco。選中Force Infrastructure Devices to associate only to this SSID覈取方塊。此操作 將SSID Cisco配置為基礎設施SSID並啟用此SSID的訪客模式。
- 5. 啟用無線電介面並將無線電介面配置為非根模式。請完成以下步驟:啟用無線電介面並將其定義為非根網橋。注意:預設情況下禁用無線電介面。請完成以下步驟:選擇Network Interfaces > Radio0-802.11G > Settings。網路介面:將顯示Radio0-802.11G設定視窗。按一下「Enable Radio」底下的「Enable」以啟用無線電介面。在無線網橋上啟用非根模式。請完成以下步驟:對於無線網路中的角色,按一下非根網橋。



為「距離(Km)」引數輸入1,將所有其它引數保留為預設值,然後按一下視窗底部的應用。

+ + + : ◎ 2 △ ◎	C ()				(1) - 0 ×
	External Antenna Configuration:	C Enable	Disable Disable		
		Antenna Gain(dB): DI	SABLED (-128 - 128)		
	Aironet Extensions:	Enable	C Disable		
	Ethernet Encapsulation Transform:	@ RFC1042	C 802.1H		
	Concatenation:	Enable	C Disable		
	Max Length of Concatenation:	3500 (1600-4000)			
	Distance (Km):	1 (0-99)			
	Reliable Multicast to WGB:	C Disable	Enable		
	Public Secure Packet Forwarding:	C Enable	Disable		
	Short Slot-Time:	Enable	C Disable		
	Beacon Period: 100 Max. Data Retries: 64 Fragmentation Threshold: 4000	(20-4000 Kusec) (1-128) (256-4000)	Data Beacon Rate (DTIM): RTS Max. Retries: RTS Threshold:	2 (1-100) 64 (1-128) 4000 (0-4000)	
	Root Parent Timeout: Root Parent MAC 1 (optional): Root Parent MAC 2 (optional): Root Parent MAC 3 (optional): Root Parent MAC 4 (optional):] (0-65535 sec)] (чинискоорскийн)] (чинискоорскийн)] (чинискоорскийн)] (чинискоорскийн)		
			V91 - 11	Apply	Cancel

將非根網橋配置為LEAP客戶端。選擇**Security > Encryption Manager**。在Encryption Modes區域,為WEP Encryption選擇**Mandatory**,然後從Cipher旁邊的下拉選單中選擇**WEP 128 bit**。

* • * • 🔘 🛛 🖓 🖉	1034-0			$\mathbb{E}^{2} = S^{2}$
CISCO SYSTEMS	Cisco Airo	net 1300 Series	Wireless Bridge	10 5
HOME EXPRESS SET-UP	Hostname Non-Root			Non-Root uptime is 6 minutes
EXPRESS SECURITY NETWORK MAP +	Security: Encryption Manager			
NETWORK INTERFACES	Encryption Modes			
Admin Access Encryption Manager	R WED Examplian Mandaton	1		
SSID Manager Server Manager	Cisco (Compliant TKIP Features:	Enable Message Integrity Check (MIC)	
SERVICES + SYSTEM SOFTWARE + EVENT LOG +	C Cipher WEP 128 bit	2	Enable Per Packet Keying (PPK)	
	Encryption Keys			
		Transmit Key	Encryption Key (Hexadecimal)	Key Size
	Encryption Key 1:	æ	******	128 bit •
	Encryption Key 2:	0		128 bit 💌
	Encryption Key 3:	0		128 bit -
	Encryption Key 4:	o		128 bit 💌
				Apply Cancel
Close W	indow	0.0000000000000000000000000000000000000	Copyright (c)	1992-2004 by Cisco Systems, Inc.

在Encryption Keys區域中,選擇**128 bit**作為Key Size,然後輸入Encryption Key。您必須使用 在根網橋上使用的WEP加密金鑰。在本例中,加密金鑰為1234567890abcdef1234567890。

<u>非根CLI配置</u>

您可以使用CLI使用telnet進行配置。

此示例為SSID橋接器設定LEAP使用者名稱和密碼:

```
bridge#configure terminal
bridge(config)#configure interface dot11radio 0
bridge(config)#station role non-root
bridge(config-if)#ssid bridge
!--- This command configures the user name and password for Leap authentication: bridge(config-
ssid)#authentication client username cisco password cisco123
bridge(config-ssid)#end
```



使用此部分可以確認網橋可以彼此關聯。

為點對點連線配置無線網橋後,在根網橋上配置的本地RADIUS伺服器使用LEAP執行身份驗證。

1. 為了驗證LEAP身份驗證是否成功,請檢查根網橋上的Summary Status報告是否與以下示例類 似

:							
+ · → · © ⊇ Ճ ©	1 I I I I I I I I I I I I I I I I I I I		(ii) = 6 ×				
Cites Secreus	Contraction of the local distance of the loc						
-albalb	Cisco Aironet 1300 Series Wireless Bridge						
HOME	Hostname Root		Root uptime is 27 minutes				
EXPRESS SECURITY	Hamas Paraman Photos						
ABSOCIATION +	Home: Summary Status						
NETWORK +	Association						
SECURITY +	<u>Cheres:</u> 0		infrastructure clients: 1				
SERVICES + WIRELESS SERVICES +	DECONST.K. ROCOUTY						
SYSTEM SOFTWARE +	IP Address		10.0.0.1				
EVENTLOG +	MAC Address		0013.1a57.dc14				
	Network Interfaces						
	Interface	MAC Address	Transmission Rate				
	T EastEthernet	0013.1a57.dc14	100Mbrs				
	1 Radio0-802.110	0013.1aca.3590	54.0Mb/s				
	EventLog						
	Time	Severity	Description				
	Mar 1 00:27:23.242	Information	Interface Dot11Radio0, Station Non-Root 000d.eded.708a Associated KEY_MOMT[NONE]				
	Mar 1 00:27:22.483	Information	Interface Dot11Radio0, Deauthenticating Station 000d.eded.708a Reason: Previous authentication no longer valid				
	Mar 1 00:24:29.599	Information	Interface Dot11Radio0, Station Non-Root 000d.eded.708a Associated KEY_MOMT[NONE]				
	Mar 1 00:24:17.329	◆Emor	Interface Dott 1 Radio0, changed state to up				
	Mar 1 00:24:17.244	 Notification 	Interface Dot! 1 Radio0, changed state to reset				
	Mar 1 00:24:17.242	◆Emor	Interface Dot11Radio0, changed state to down				
	Mar 1 00:11:58.142	♦ Error	Interface Dot11Radio0, changed state to up				

2. 檢查Association表是否類似於以下示例

.

alls-alls-			Cisco Airo	net 1300 Se	ries Wireless B	ridge		18 6
PRESS SET-UP		lostname Root					Root uptime	is 28 minute
PRESS SECURITY TWORK MAP +		Association						
SOCIATION		Clients: 0			Infrastructure clients: 1			
TWORK		View: 🖻 Client	Infrastructure	client				Apply
RVICES +		Radio8-802.11G						
RELESS SERVICES + STEM SOFTWARE +	H	SSID Cisco :						
ENTLOG +	Ľ	Device Type	Name	IP Address	MAC Address	State	Parent	VLAN
	d	11g-bridge	Non-Root	10.0.0.2	000d.eded.708a	EAP-Associated	setf	none

3. 檢驗非根網橋關聯表上的連通性。

dh. dh	Cisco Aironet 1300 Series Wireless Bridge						
ME PRESS SET-UP	Hostname Non-Roo					Non-Root upt	ime is 9 minute
TWORK MAP +	Association						
SOCIATION	Clients: 0	Clients: 0			Infrastructure clients: 1		
TWORK ERFACES	View: 🗷 Client	View: R Client R Infrastructure client					Apply
RVICES +	Radio0-802.11G						
STEM SOFTWARE +	SSID Cisco :						
	Device Type	Name	IP Address	MAC Address	State	Parent	VLAN
	11g-bridge	Root	10.0.0.1	000d.eded.708a	Associated		none
							Refre

(a) = 0 >

4. 使用ping測試檢驗點對點連線。選擇Association > Ping/Link Test。

	STATISTICS	PINGLINK TEST		
E RESS SET-UP RESS SECURITY	Hostname Non-Root			Non-Root uptime is 9 min
VORIX MAP +	Association: Station View - Pi	ng IP address: 10.0.0.1	Link Test MAC address: 000d.ed	led.708a
VORK RFACES + JRITY + ACES +	Ping Test: Begin Ping Test:	Start		
EM SOFTWARE + TLOG +	Link Test:			
	Number of Packets (optional):	100 (1-9999)		
	Packet Size(optional):	512 (1-1400)	Stort	
	Continuous Link Test:			
	Packet Size(optional):	512 (1-1400)	Start Stop	
	Link Test Output			

ping輸出確認無線網橋之間建立了點對點連線。



驗證通過網橋的客戶端連線

現在您已在無線網橋之間建立點對點連線,請檢驗連線到無線網橋的終端客戶端之間的連線。

配置客戶端介面卡後,客戶端與網橋關聯。此示例顯示了與客戶端A關聯的根網橋上的「摘要狀態」視窗:

***************************************	9 3 B- 9			8 X			
tare Summer	Cisco Aironet 1300 Series Wireless Bridge						
HOME EXPRESS SET-UP EXPRESS SECURITY	Hostname Root		Root uptime is 27 minutes				
NETWORK MAP +	Home: Summary Status						
NETWORK +	Association						
SECURITY +	Clients:1		Infrastructure clients: 1				
SERVICES +	Network Identify						
SYSTEM SOFTWARE +	IP Address		10.0.0.1				
EVENT LOO +	MAC Address		0013.1a57.dc14				
	Network Interfaces						
	Interface	MAC Address	Transmission Rate				
	1 EastEthernet	0013.1a57.dc14	100Mb/s				
	1 Radio0-802.110	0013.1aca.3590	54.0Mb/s				
	EventLog						
	Time	Severity	Description				
	Mar 1 00:27:23.242	Information	Interface Dott1Radio0, Station Non-Root 050d.eded.708a Associated KEY_MOMT[NONE]				
	Mar 1 00:27:22.483	◆information	Interface Dott 1 Radio0, Deauthenticating Station 000d.eded.708a Reason: Previous authentication no longer valid	_			
	Mar 1 00:24:29.599	Information	Interface Dott 1 Radio0, Station Non-Root 000d, eded.708a Associated KEY_MOMT[NONE]				
	Mar 1 00:24:17.329	'₩Emor	Interface Dot11Radio0, changed state to up				
	Mar 1 00:24:17.244	Notification	Interface Dot11Radio0, changed state to reset				
	Mar 3 00:24:17.242	∰Emor	Interface Dot11Radio0, changed state to down				
1	Mar 1 00:11:58.142	∯Emor	Interface Dott 1 Radio0, changed state to up				

客戶端A上命令提示符的ping測試輸出可確認與客戶端B的可達性。以下是客戶端A上的ping測試示例:

D:\>ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time<10ms TTL=128 Reply from 10.0.0.10: bytes=32 time<10ms TTL=128 Reply from 10.0.0.10: bytes=32 time<10ms TTL=128 Reply from 10.0.0.10: bytes=32 time<10ms TTL=128

Ping statistics for 10.0.0.10: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms

<u>疑難排解</u>

驗證以下各項,以排除無線網橋之間的連線故障:

- 確保橋接器的角色配置正確。
- 確保兩個網橋上的安全設定相同;兩個網橋上的無線設定(如通道和SSID)應配置相同。
- 確保選擇了最暢通的通道; 網橋之間的路徑應該干擾最小。
- 檢查無線電是否使用了適當的天線。
- 確保兩個網橋的天線正確對齊,以接收最大訊號。
- 確保第3層連線。您可以使用ping命令驗證第3層連線。

有關如何排除網橋連線故障的詳細資訊,請參閱排除無線橋接網路的常見問題。

相關資訊

- 室外網橋範圍計算實用程式
- 適用於Cisco Aironet 1300系列室外存取點/橋接器12.3(7) JA的Cisco IOS軟體組態指南
- 無線網橋中的間歇連線問題
- •<u>無線支援頁面</u>
- 技術支援與文件 Cisco Systems