MSE軟體7.2版虛擬裝置配置和部署指南

目錄

簡介 必要條件 需求 採用元件 慣例 背景資訊 系統要求 管理軟體和VMware許可 所需資源 設定ESXi主機 安裝MSE虛擬裝置 配置MSE虛擬裝置級別 <u>設定MS</u>E虛擬裝置 配置網路 新增硬碟空間 塊大小 VMware工具 升級虛擬裝置 許可虛擬裝置 虛擬裝置的高可用性 配置高可用性 啟用輔助MSE 停用輔助MSE ESXi 5.0上的虛擬裝置 MSE控制檯過程 <u>將MSE</u>VA新增到NCS 命令列參考 WLC命令 MSE命令 相關資訊

簡介

Cisco Mobility Services Engine(MSE)軟體7.2版新增了虛擬裝置並支援VMware ESXi。本文檔為將 MSE虛擬裝置新增到Cisco Unified WLAN以及運行情景感知服務和/或Cisco Adaptive Wireless Intrusion Prevention System(wIPS)的使用者提供配置和部署指南以及故障排除提示。 此外,本文 檔還介紹了MSE虛擬裝置的系統要求,並提供了針對MSE虛擬裝置的常規部署指南。本文檔不提供 MSE和相關元件的配置詳細資訊。其他檔案中提供了這方面的資料;提供參考資料。

請參閱<u>相關資訊</u>部分,獲取有關情景感知移動服務的配置和設計的文檔清單。自適應wIPS配置也不 在本文檔中介紹。

必要條件

需求

本文件沒有特定需求。

採用元件

本檔案中的資訊是根據Cisco 3300系列行動化服務引擎。

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<u>思科技術提示慣例。</u>

背景資訊

此圖顯示包括思科行動服務引擎(MSE)的典型思科WLAN部署。此部署還包括其他有線/無線網路客 戶端、RFID標籤以及欺詐接入點(AP)和客戶端。MSE為位置和wIPS提供了對這些元素的可視性。 在MSE軟體版本7.2之前,只有物理裝置限於MSE-3310和MSE-3350/3355。



系統要求

MSE軟體7.2版虛擬裝置在VMware ESXi 4.1及更高版本上受支援和測試。這些伺服器配置已經過測 試,建議用作指南。

- 思科整合運算系統(UCS)C200 M2機架式伺服器兩(2)個英特爾[?]至強[?]CPU E5506 @ 2.13GHzRAM(根據配置的級別)具有增強型RAID控制器的SAS驅動器(至少500 GB+)
- UCS C210 M2機架式伺服器2個2 GHz英特爾至強CPU E5640RAM(根據配置的級別)具有增 強型RAID控制器的SAS驅動器(至少500 GB+)
- UCS C250 M2機架式伺服器2個2 GHz英特爾至強CPU E5570RAM(根據配置的級別)具有增 強型RAID控制器的SAS驅動器(至少500 GB+)
- UCS C460 M2機架式伺服器2個2 GHz英特爾至強CPU E7-4830RAM(根據配置的級別)具有 增強型RAID控制器的SAS驅動器(至少500 GB+)
- 附註: 使用兩(2)個至少與前述處理器一樣強大的四核處理器。

管理軟體和VMware許可

Cisco MSE軟體版本7.2虛擬裝置支援ESX/ESXi 4.x及更高版本。

為了管理ESXi主機以及配置和部署虛擬裝置,思科建議您在Windows XP或Windows 7 64位電腦上 安裝vCenter Server 4.x並獲取vCenter Enterprise許可證。或者,如果您只有一個ESXi主機,則可 以使用vSphere客戶端對其進行管理。

所需資源

資源要求取決於要部署的許可證。下表列出了可以配置虛擬裝置的不同級別:

主要MSE	資源		支援的許可證(單獨)		
虛擬裝置級別	總記憶體	CPU	CAS許可證	wIPS許可證	
低	6G	2	2000	2000	
標準	11G	8	18000	5000	
高	20G	16	50000	10000	

注意:僅運行一個服務時,針對CAS和wIPS許可證列出的建議限製為最大支援限制。如果要在同一 裝置上運行這兩種服務,則適用共存限制。

設定ESXi主機

完成以下步驟,以便在UCS或類似伺服器上設定MSE虛擬裝置:

- 1. 確保您的電腦具有至少500 GB+的硬碟空間和帶有增強型RAID控制器的快速SAS驅動器。
 (為ESXi 5.0之前的版本建立資料儲存區時,應至少使用4 MB的塊大小。)
- 2. 安裝ESXi。插入ESXi 4.1或更高版本的安裝磁碟,然後從驅動器啟動。如果使用多個驅動器 ,請在配置為引導驅動器的驅動器中安裝ESXi。預設使用者名稱是root,密碼為空(無密碼

)。**註:如**果您選擇了錯誤的驅動器進行安裝,則可以使用Fedora Live CD重新格式化。

3. 配置IP地址。選擇已啟用且處於活動狀態的網路介面卡。如果主機連線到多個網路,則您可能

擁有多個網路介面卡。您可以在CIMC設定期間設定相同的IP地址;在啟動過程中按F8鍵設定 IP地址。另外,更改預設密碼。

設定ESXi後,您可以使用Windows XP或Windows 7電腦,以及上面配置的IP地址和登入憑據,以 便通過vSphere客戶端連線到ESXi主機。

有關許可ESXi主機的資訊,請參閱<u>許可ESX 4.x、ESXi 4.x和vCenter Server 4.x</u>。

有關如何在ESXi上設定資料儲存區的資訊,請參閱以下文章:

- 建立VMFS資料儲存區
- 增加VMFS資料儲存區

警告: 為ESXi 4.1建立資料儲存區時,應至少使用4 MB的塊大小。

安裝MSE虛擬裝置

MSE虛擬裝置作為開放式虛擬裝置(OVA)映像進行分發,可以使用vSphere客戶端在ESXi主機上部 署該映像。有兩種可用的OVA版本:一個版本用於僅需要60GB磁碟空間的演示映像,另一個版本 是通用生產映像。

可分發的生產映像假定ESXi主機資料儲存區上的可用磁碟空間至少為500 GB及以上。可以通過 vSphere客戶端選擇和部署OVA。選擇**File > Deploy OVF Template**以部署模板。

Ø 17	2.20 vSphere Clier	nt				
File	Edit View Inventory Admi	nistral	tion Plug-ins Help			
	New	•	entory 🕨 🔭 Inventory			
	Deploy OVF Template					
	Export	•				
[Report	2	wnbu-dc3 VMware E5Xi, 4.1	.0, 502767		
	Browse VA Marketplace		Getting Started Summary	Virtual Machines Resource Allocation	Performance Configuration Local Us	ers & Groups
	Print Maps	>	General		Resources	
-	Exit	-	Manufacturer: Model:	IBM IBM System ×3650 -[7979P	CPU usage: 17 MHz	Capacity 8 x 2.327 GHz
		- 1	CPU Cores:	8 CPUs x 2.327 GHz	Memory usage: 1049.00 MB	Capacity
			Processor Type:	Intel(R) Xeon(R) CPU E5345 @ 2.33GHz		12287.13 MB
		- 1	License:	vSphere 4 Enterprise	Datastore 🔨 Capacity	Free
			Processor Sockets:	2	MSEds1 541.50 GE	540.94 GB

Deploy OVF Template	
Source Select the source location.	
Source OVF Template Details Name and Location Disk Format Ready to Complete	Deploy from a file or URL C:\Users\paul\Downloads\MSE-VA-7-2-103-0-Demo.ova Browse Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

根據網路速度,部署映像需要幾分鐘時間。部署後,您可以編輯虛擬機器(VM)配置以配置裝置;配 置時應關閉VM。

配置MSE虛擬裝置級別

本節中的表格列出了虛擬裝置上可配置的級別以及相應的資源要求。將專用核心分配給裝置,而不 是超執行緒虛擬核心,因為如果您假定主機擁有更多虛擬核心,並且部署了更多裝置,則會影響效 能。例如,在上面提到的UCS C200中,有八(8)個可用的物理核心,但是有十六(16)個採用超執行 緒技術的虛擬核心。不要假設有十六(16)個核心可用;僅分配八(8)個核心,以確保MSE在受到壓力 時可靠地運行。

主要MSE	資源	支援的許ī 獨)	可證(單	支援的輔 MSE	助
虛擬裝置 級別	總記憶 體	CAS許可 證	wIPS許 可證	虛擬裝 置	物理 盒
低	6G	2000	2000	低+	
標準	11G	18000	5000	Standar d+	不支 援
高	20G	50000	10000	高+	

MSE1 - Virtual Mach	nine Properties	
Hardware Options Re	sources	Virtual Machine Version: 7
Show All Devices	Add Remove	255 GB Memory Size: 8 - GB -
Hardware Memory	Summary 8192 MB	128 GB Maximum recommended for this
CPUs Video card VMCI device SCSI controller 0 Hard disk 1 CD/DVD Drive 1 Network adapter	2 Video card Restricted LSI Logic Parallel Virtual Disk CD/DVD Drive 1 vlan 10	64 GB Maximum recommended for best 32 GB ■ 16 GB ■ 8 GB ■ 4 GB ■
Network adapter	Z VION 10	2 GB -

設定MSE虛擬裝置

部署並配置虛擬裝置後,即可為其通電。當裝置首次通電時,您需要輸入預設登入憑證

: root/password。

首次登入時,裝置將開始配置MSE軟體並安裝Oracle資料庫。這是一個一次性耗時的過程,至少需 要30-40分鐘。安裝完成後,將再次顯示登入提示。請參閱*Cisco 3355移動服務引擎入門指南*的<u>配置</u> <u>移動服務引擎</u>部分,以繼續配置裝置。

配置網路

預設情況下,VM使用主機網路設定;因此,不需要在ESXi上配置VM介面卡。但是,如果您將公共 和專用網路都連線到主機,並且希望VM能夠同時訪問這兩個網路,則可以在SharePoint客戶端中配 置VM介面卡。

在vSphere客戶端中,選擇主機,按一下**Configuration**頁籤,然後按一下**Networking**。您可以在虛 擬交換機屬性中檢視物理介面卡。

172 - vSphere Clien			
File Edit View Inventory A	dministration Plug-ins Help		
ରି କ	Inventory () () Inventory		
8 172	kft-fx Wiware ESXI, 4.1.0, 502767 Getting Stated Summary Virtual I	Achines Resource Allocation Performance Configurat	tor Local Users & Groups Events, Permissions,
a MSE1	Hardware Health Status Processors Menory	View: Virtual Switch Networking	Refresh Add Networking Properties
GD MSE2	Memory Storage • Networking Storage Adapters Network Adapters Advanced Settings Power Management	Virtual Switch's vSwitchg Virtual Nachine Iver Swaa Virtual Machine (s) VCenterClone Witamal Pot Management Network	Adupters
	Software Licensed Peabures Time Configuration DNS and Routing Authentication Services Virtual Machine Startup(Shutdown Virtual Machine Startup(Shutdown Virtual Machine Swapfile Location Security Profile System Resource Allocation Advanced Settings	Virtuel Switch: vSwitch1 Virtuel Hischine Port Group VILAN ID: 104 VILAN ID: 2104 VILAN ID: 21 VILAN ID: 21 VILAN ID: 21 VILAN ID: 20	Remove Properties al Adaptes wmnic3 1000 Full

使用單獨的介面卡建立單獨的交換機,以隔離網路。然後,您可以根據需要將VM介面卡分配給這些 網路。

2 M	ASE - Virtual Machine Properties	<u> </u>		
Hard	ware Options Resources			Virtual Machine Version: 7
п	Show All Devices	Add Remove	Device Status Connected	
Har	rdware	Summary	Connect at power on	
	Memory (edited) CPUs Video card VMCI device SCSI controller 0 Hard disk 1 CD/DVD Drive 1	8192 MB 2 Video card Restricted LSI Logic Parallel Virtual Disk CD/DVD Drive 1	Adapter Type Current adapter: E1000 MAC Address 00:50:56:89:01:d9 Automatic C Manual	
	Network adapter 2 (edite	vlan 10	Network Connection Network label: vlan 10 VM Network vlan 104 vlan 21 vlan 20 vlan 12 vlan 12 vlan 11 vlan 10 DMZ	•

新增硬碟空間

如果需要,請向VM新增額外的磁碟容量並擴展分割槽。

注意:installDrive.sh指令碼(位於/opt/mse/framework/bin目錄中)檢測新驅動器並重新分割槽現 有分割槽,以便使用和擴展新驅動器。 嘗試重新分割槽磁碟空間之前,請確保備份VM(或至少備份MSE資料)。

若要向虛擬機器新增更多磁碟空間,請關閉虛擬機器,轉到VM設定並新增其他硬碟。

MSE1 - Virtual Machine Prope	erties			
Hardware Options Resources			Virtual Machine Version: 7	
F R 1		Memory Configuration		
Show All Devices	Add Remove	255 GB Memory Size:	8 📩 G8 💌	
Hardware	Summary 8102 MB	128 GB Maximum reco	mmended for this	E .
File Colle	0192 PID		i G8.	11
Video card	Add Hardware	Contraction of the second second	a desta and	
VMCI device SCSI controller 0 Hard disk 1 CD/DVD Drive 1	Device Type What sort of device do	you wish to add to your virtual machine	17	
Network adapter 1	Device Type	Choose the type of device you w	ish to add.	
Network adapter 2	Create a Disk Advanced Options Ready to Complete	Serial Port Parallel Port Floppy Drive CD/DVD Drive USB Controller USB Device (unavailable) USB Device (unavailable) Ethernet Adapter CD Device SCSI Device	- Information This device can be added t	to this Virtual Machine.

新增硬碟後,開啟VM的電源,登入裝置並運行installDrive.sh指令碼。指令碼應裝載並重新分割槽 新增的驅動器。如果新增了多個硬碟,請為每個新硬碟運行一次指令碼。

塊大小

對於5.0之前的ESXi版本,思科建議主機上的資料儲存區具有4 MB或更大的塊大小;否則,OVA的 部署可能會失敗。如果部署失敗,您可以重新配置塊大小。

要重新配置資料塊大小,請轉到ESX主機配置>儲存>刪除資料儲存區,然後再次將儲存區新增到塊 大小至少為4MB的新資料儲存區。

🚱 Add Storage				
Disk/LUN - Formatting Specify the maximum file siz	e and capacity of the datastore			
Disk/LUN Select Disk/LUN Current Disk Layout Properties Formatting Ready to Complete	Maximum file size Large files require large block size block size. 1024 GB , Block size: 4 MB Capacity Maximize capacity	e. The minimum disk sp	ice used by any file is eq	gual to the file system

如果VM引發以下錯誤,請在vSphere客戶端中按一下右鍵VM,然後選擇**Guest > Install/Upgrade** VMware Tools以安裝或升級VMware工具:

Guest OS cannot be shutdown because Vmware tools is not installed or running.

升級虛擬裝置

配置虛擬裝置後,應將其視為物理MSE盒。您無需在每次要升級到最新的MSE版本時都部署新的 OVA;您可以將相應的安裝程式映像下載到裝置中,然後按照物理裝置的升級步驟進行升級。

許可虛擬裝置

配置虛擬裝置後,可以在評估模式(預設60天)下使用虛擬裝置,而無需授權裝置。但是,如果您 計畫部署永久許可證或使用高可用性(HA)等功能,則必須使用虛擬裝置啟用許可證啟用虛擬裝置。 您可以從虛擬裝置(在裝置上運行**show csludi**)或從Cisco Prime網路控制系統(NCS)MSE常規屬性獲 取唯一裝置識別符號(UDI),並使用此資訊購買虛擬裝置啟用許可證和永久服務許可證。

此影象顯示了虛擬裝置的許可證中心UI的最新更改。

🛔 Home Monitor 🖲 C	onfigure	 Services 	Reports	 Administr 	ration ·					* • •
a NCS Licenses Controller MSE	Υ.	License Center Administration > Licens Ø Permanent licen	r e Center > ses includ	Summary > MSE e installed licens Supporte	e counts and in-built I d License	icense counts.				Entries 1 - 3 of 3
lies	>	MSE Name (UDI)	Service	Platform Limit	Type	Installed Limit	License Type	Count	Unlicensed Cour	nt % Used
		ase-65 Not Activ	vated (JR-MSE-VA-KS	:V01:mse-87.cisco.	.com_af72941	10-82f7-11e0-aa6d-0	0505691	000f)	
		Activation sto	Us	18000	CAS Elements	100	Evaluation (59 days left)	0	0 [0%
			- 84	5000	wIPS Monitor Mode APs	10	Evaluation (60 days left)	0	0 [0%
		wPS	WP5	3000	wIPS Local Mode AP	s 10	Evaluation (60 days left)	0	0 [0%
			MSAP	10000	Service Advertisement Clicks	1000	Evaluation (60 days left)	0	0 [0%
		rese-215 Actival	ted (AIR	MSE-VA-K9:V	01:mse-81.cisco.co	m_83d9a67e-	92a4-11e0-85de-00	0c295720	129)	
			CAS	50000	CAS Elements	50000	Permanent	49390	0	
					wIPS Monitor Mode APs	10	Evaluation (60 days left)	0	0 [0%
			wP5	10000	wIPS Local Mode AP	s 10	Evaluation (60 days left)	0	0 [0%
			MSAP	10000	Service Advertisement Clicks	1000	Evaluation (60 days left)	0	0 [0%
		() mse-207 (Al	R-HSE-3	310-K9:V01:No	t Specified)					
							Evaluation (60 days			

對於虛擬裝置,MSE名稱旁邊的消息清楚地指示其是否已啟用。此外,還有兩個限制列:「平台限 制」列列出此裝置上該服務支援的最大許可證(具體取決於分配給VM的資源),「安裝限制」列列 出實際安裝的許可證或通過裝置評估提供的許可證。

虛擬裝置的高可用性

為了使用HA功能,必須使用虛擬裝置啟用許可證啟用主裝置和輔助裝置。

配置高可用性

可以通過NCS上的主MSE設定HA配置。

altala Cisco Prime				0.23		
CISCO Network Control System	m		Virtual Domain: ROOT-DOM/	All root * Log	ou:	7
A Home Monitor Configure	Services Report	s • Administration				* • • •
System 🗸	HA Configuration : m	se-65				
👗 General Properties	Services > Mudiity Services Engin	es > System > Services High /	traiability > Configure High Avail	lability Parameters		
Active Sessions	Configure High Availability	Parameters				
Trap Destinations	Primary Health Monitor IP	1000000.65				
Advanced Parameters	Secondary Device Name	mse-223				
 Services High Availability 	Secondary IP Address	240				
🐇 HA Configuration	Caronadary Darmuned					
🛃 HA Status	percentary resource of					
 Accounts 	Failover Type @	Manual 💌				
Croups	Failback Type @	Manual 💌				
* Status	Long Failover Wait @	10 seconds				
👗 Server Events	(mm					
Audit Logs	Save					
MCS Alarms						
INCS EVENS INSP Connection Status						
* Maintenance						
🛃 Backup						
a Restore						
Download Software						
Context Handle Service /						
🙆 Tools 🔂 Help				Alarm 8	rowser Alarm Sum	mary 🗿 1 🐨 1 🏂 0
ulturala. Cisco Prime						
CISCO Network Control Sy	stem		Virtual Domain	ROOT-OOMAIN	root * Log Out	P.
🔥 Home Monitor 🔻 Config	pure 🔻 Services 🔻	Reports v Admin	istration 🔻			
	Services > Mobility Services	xn 1 mse-65 ces Engines > System > Se	rvices High Availability > Configu	ure High Availability	y Parameters	
	Contiguration					
21 만든 2 4 만 1 1 7 1	Secondary MSE nee	ds to be activated wi	th a Virtual Appliance lice	ense. Add a licen	ise and save the cor	rfg.
					OK	
						-
	Secondary Activatio	n Status Not Act	Deted			
	Activate Secondary	with License	-	kowse		
	Fallover Type @	Manua	N 🐨			
	Failbard Tune (B)					
	Peribeck Type 4	Manu	N			
	Long Failover Wait	P 10	seconds			
	Save Delete					
A Toole I A units						1 Alarm Summary

啟用輔助MSE

必須啟用輔助裝置。您可以使用UDI資訊請求輔助MSE的啟用許可證。在HA Configuration頁面上

,瀏覽許可證並按一下**Save**。成功啟用輔助MSE後,將設定HA。

CISCO Network Control System		Vitual Domain: ROOT-DOMAIN _root * Log Out P . +
💧 Home Monitor 🖲 Configure	Services Reports	Administration • 😢 🔂
System Ceneral Properties Active Sessions Trap Destinations Active Sessions Trap Destinations Active Sessions Trap Destinations Advanced Parameters Integer Logs Services High Availability HA Configuration HA Status HA Status Accounts Users Groups Status Server Events Audit Logs NCS Events NKSP Connection Status Mintenance Backup Restore Download Software	HA Configuration : mse-65 Services > Mobility Services Engines > Sy Configuration Primary Health Monitor IP Secondary Device Name Secondary Pattorn UDI Secondary Pattorm UDI Secondary Activation Status Activate Secondary with License Failover Type @ Failback Type @ Long Failover Watt @	S ten > Services High Availability > Configure High Availability Parameters
😰 Tools I 🛃 Help		Alarm Browser Alarm Summary 🤤 1 🦞 1 🛕 0

停用輔助MSE

如果需要從輔助MSE刪除啟用許可證,可以按一下覈取方塊,然後按一下**Save**以停用輔助MSE。

cisco Network Control Syste	
🛕 Home Monitor 🕶 Configure	Services Reports Administration
System V General Properties Active Sessions Trap Destinations Advanced Parameters Trap Destinations Advanced Parameters Logs Services High Availability HA Configuration HA Status HA Status Accounts Users Croups Satus Server Events MCS Alarms NCS Events MISP Connection Status NMSP Connection Status Maintenance Backup Restore Download Software Context Aware Service >	HA Configuration : mse-65 Services > Mobility Services Engines > System > Services High Availability > Configure High Availability Parameters Configuration Primary Health Monitor P memory Secondary Device Name mse-23 Secondary Padress memory Secondary Padress memory Secondary Patform UO AR-MSE-VA-KS:VU1:mse-82.cscc.ccm_dds13b56-9dbf-11e0-b0c2-0000066910018 Monitory Activation Status Activated Delete Secondary Activation Icense® Fallower Type @ Manual • Long Fallower Wat @ 10 seconds Secondary Delete Switchower
Tools I 🚺 Help	Alerm Browser Alarm Summary 🚱 1 💱 1 🎄 0

ESXi 5.0上的虛擬裝置

在ESXi 5.0上,塊大小固定為1 MB,因為它支援大型虛擬機器部署。為了能夠向虛擬裝置分配八 (8)個以上的核心,您必須升級虛擬硬體。若要升級虛擬硬體,請選擇MSE,然後選擇**Upgrade** Virtual Hardware,如下圖所示:



MSE控制檯過程

:

- 1. 使用以下憑證登入主控台:root/password。初始啟動時,MSE提示管理員啟動安裝指令碼。
- 2. 在此提示中輸入yes。



意:如果MSE沒有提示進行設定,請輸入以下命令:/opt/mse/setup/setup.sh。 3. 配置主機名 Please enter the requested information. At any prompt, enter ^ to go back to the previous prompt. You may exit at any time by typing <Ctrl+C>.

You will be prompted to choose whether you wish to configure a parameter, skip it, or reset it to its initial default value. Skipping a parameter will leave it unchanged from its current value.

Changes made will only be applied to the system once all the information is entered and verified.

Current hostname=[mse-kw] Configure hostname? (Y)es/(S)kip/(U)se default [Skip]: y

The host name should be a unique name that can identify the device on the network. The hostname should start with a letter, end with a letter or number, and contain only letters, numbers, and dashes.

Enter a host name [mse-kw]:

4. 配置DNS域名

Configure domain name? (Y)es/(S)kip/(U)se default [Skip]: y

Enter a domain name for the network domain to which this device belongs. The domain name should start with a letter, and it should end with a valid domain name suffix such as ".com". It must contain only letters, numbers, dashes, and dots.

Enter a domain name [corp.rf-demo.com]: _

5. 配置主HA角色

Current role=[Primary] Configure High Availability? (Y)es/(S)kip/(U)se default [Skip]: _

6. 配置乙太網介面引數

Current IP address=[10.10.10.11] Current eth0 netmask=[255.255.255.0] Current gateway address=[10.10.10.1] Configure eth0 interface parameters? (Y)es/(S)kip/(U)se default [Skip]:

7. 當系統提示輸入eth1介面引數時, 鍵入Skip以繼續執行下一步, 因為操作不需要第二個NIC。

The second ethernet interface is currently disabled for this machine. Configure eth1 interface parameters? (Y)es/(S)kip/(U)se default [Skip]:

注意:所配置的地址必須提供IP連線,以連線至此裝置使用的透視WLC和WCS管理系統。

8. 輸入DNS伺服器資訊。只有一個DNS伺服器才能成功解析域,請輸入備份伺服器以實現恢復能力。

	omain Name Service (DNS) Setup NS is currently enabled. urrent DNS server 1=[10.10.10.10] onfigure DNS related parameters? (Y)es/(S)kip/(U)se default [Skip]:
9. 酉 漥 C	配置時區。思科建議您使用UTC(協調世界時)。如果紐約的預設時區不適用於您的環境,請 創覽位置選單以選擇正確的時區。 urrent timezone=[America/New_York] onfigure timezone? (Y)es/(S)kip/(U)se default [Skip]: y
E P	nter the current date and time. lease identify a location so that time zone rules can be set correctly. lease select a continent or ocean. 1) Africa 2) Americas 3) Antarctica 4) Anctic Ocean
10	
10.	首朱紀捷小配直將來的重利成動口朔和時间,請雖人SKIP。 Enter whether you would like to specify the day and time when you want the MSE to be restarted. If you don't specify g, then Saturday 1 AM will be taken as default.
	Configure future restart day and time ? (Y)es/(S)kip [Skip]: _
11.	配置遠端系統日誌伺服器(如果適用)。
	Configure Remote Syslog Server to publish/MSE logs MSE logs.
	A Remote Syslog Server has not been configured for this machine. Configure Remote Syslog Server Configuration parameters? (Y)es/(S)kip/(U)s ult [Skip]:
12.	配置網路時間協定(NTP)或系統時間。NTP是可選的,但可確保您的系統保持準確的系統時間 。如果選擇啟用NTP,系統時間將從您選擇的NTP伺服器進行配置。否則,系統將提示您輸 入當前日期和時間。
	Network Time Protocol (NTP) Setup.
	If you choose to enable NTP, the system time will be configured from NTP servers that you select. Otherwise, you will be prompted to enter the current date and time.
	NTP is currently enabled. Current NTP server 1=[10.10.10.10] Current NTP server 2=[none] Configure NTP related parameters? (Y)es/(S)kip/(U)se default [Skip]: _
13.	當系統提示配置登入標語時,鍵入Skip。
	Current Login Banner = [Cisco Mobility Service Engine] Configure login banner (Y)es/(S)kip/(U)se default [Skip]:
14.	啟用本地控制檯根登入。此引數用於啟用/禁用對系統的本地控制檯訪問。應啟用本地控制檯 提發
	恨全人,以使進行平地改厚排际。預設值為Skip。 Sustem console is not restricted.
	Configure system console restrictions? (Y)es/(S)kip/(U)se default [Skip]:

15. 啟用安全殼層(SSH)根目錄登入。此引數用於啟用/禁用對系統的遠端控制檯訪問。應啟用 SSH根登入,以便進行遠端故障排除。但是,公司安全策略可能要求禁用此選項。 SSH root access is currently enabled. Configure ssh access for root (Y)es/(S)kip/(U)se default [Skip]: _

- 16. 配置單使用者模式和口令強度。這些配置引數不是必需的;預設值為Skip。 Single user mode password check is currently disabled. Configure single user mode password check (Y)es/(S)kip/(U)se default [Skip]:
- 17. 更改根密碼。此步驟對於確保系統安全至關重要。請務必選擇由字母和數字組成的強密碼 ,且密碼沒有詞典文字。最小密碼長度為8(8)個字元。預設憑據為root/password。

Configure root password? (Y)es/(S)kip/(U)se default [Skip]: _

18. 配置登入和密碼相關引數

Login and password strength related parameter setup Maximum number of days a password may be used : 99999 Minimum number of days allowed between password changes : 0 Minimum acceptable password length : disabled Login delay after failed login : 5 Checking for strong passwords is currently enabled. Configure login/password related parameters? (Y)es/(S)kip/(U)se default

19. 配置引導密碼(Grub)密碼。(選用)不需要此配置引數。預設值為Skip。

GRUB password is not currently configured. Configure GRUB password (Y)es/(D)isable/(S)kip/(U)se default [Skip]:

20. 配置NCS通訊使用者名稱。

Configure NCS communication username? (Y)es/(S)kip/(U)se default [Skip]:

21. 接受對配置的更改。

Configuration Changed Is the above information correct (yes, no, or ^): _

此圖顯示完成螢幕的示例

Flushing firewall rules: E] Setting chains to policy ACCEPT: nat filter C OK] Unloading iptables modules: Removing netfilter NETLINK layer. [OK] ip_tables: (C) 2000-2006 Netfilter Core Team Netfilter messages via NETLINK v0.30. ip_conntrack version 2.4 (8192 buckets, 65536 max) - 304 bytes per conntrack Starting MSE Platform Flushing firewall rules: Ľ 1 Setting chains to policy ACCEPT: filter L OK 1 Unloading iptables modules: Removing netfilter NETLINK layer. I OK J syslogd: unknown facility name "LOCAL*" ip_tables: (C) 2000-2006 Netfilter Core Team Netfilter messages via NETLINK v0.30. ip_conntrack version 2.4 (8192 buckets, 65536 max) - 304 bytes per conntrack Starting Health Monitor, Waiting to check the status. Health Monitor successfully started Starting Admin process... Started Admin process. Starting database Database started successfullu. Starting framework and services

22. 執行getserverinfo命令以驗證設定。

將MSE VA新增到NCS

1. 登入到NCS,然後選擇Services > Mobility Services Engine。



2. 在頁面右側的下拉選單中,選擇Add Mobility Services Engine,然後按一下Go。

IAIN root v Log	Out 📒	P+ Q			⇒
				🚯 🖨	0
		Add Mobi	lity Services E	ingine 👻	Go
		Select a	a command		
		Add Loca	tion Server		
		Add Mobi	ity Services E	ngine	
Secondary Server		Delete Se	rvice(s)		
	Name	Synchron	ize Services	[
	Conte	Synchron	ization History	, I	
lat Cunnarted	Servi	Edit Confi	guration		
loc supported	wIPS	Service	Disabled	Down	

3. 輸入MSE的唯一裝置名稱、之前在MSE設定期間配置的IP地址、支援聯絡人的姓名。以及 MSE設定期間配置的NCS使用者名稱和密碼。請勿將使用者名稱從預設值*admin*變更。您可以 保留為預設值。

Itel Itel Itel Itel Itel Itel Itel Itel	tts: Cisco NCS - MSE Configuration Wizar	*				
Add Mobility Services Engine Add MSEC Configuration Licensing Select Service IP Address Inclusion Tracking Assign Maps Contact Name Username® IVername® Inclusion Password® IntTP® Enable Delete synchronized service assignments permanently removes all service assignments to delet synchronized service assignments to the service assignments to th	cisco Prime cisco Network Control System					root Log Out
Add HSE Configuration Licensing Device Name Select Service IP Address Tracking Assign Maps Contact Name Username [™] Justice Password [™] Password [™] Enable Delete synchronized service assignments I [®] (Network designs, controllers, wired switches and event definitions) Oselete synchronized service assignments I [®] (Network designs, controllers, wired switches and event definitions) Oselete synchronized service assignments I [®] (Network designs, controllers, wired switches and event definitions) Oselete synchronized service assignments I wire switches and event definitions) Oselete synchronized service assignments I wire switches and event definitions) Oseleting Delete synchronized service assignments I wire switches and event definitions) Oseleting Delete synchronized service assignments I wire assignments I to do any future location taking thest is rectained, however you must use manual uservice assignments I to do any future location taking thest is rectained, however you must use manual uservice assignments I to do any future location taking the location taking thest is rectained assignments I to do any future location taking the locating therelocating therelocating the locating thereloc		Add Mobility Services Engine				
Licensing Device Name mee2 Select Service IP Address 10.10.11 Tracking Contact Name Image: Contact Name Assign Maps Contact Name Image: Contact Name Usemame: P admin Image: Contact Name HTTP: P Enable Delete synchronized service assignments Controllers, wired switches and event definitions) Objecting Delete synchronized service assignments Controllers, wired switches and event definitions) Objecting Delete synchronized service assignments Controllers, wired switches and event definitions)	Add MSE Configuration					
Select Service IP Address 10.10.10.11 Tracking Contact Name Image: Contact Name Username Image: Contact Name Image: Contact Name Username Image: Contact Name Image: Contact Name Password Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Username Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name Image: Contact Name	Licensing	Device Name	mse2			
Tracking Contact Name Assign Maps Contact Name Username admin Username admin Password e HTTP Enable Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) Objecting Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) Delete synchronized service assignments is use manuelity removes all service assignments from the MSE. Existing Delete synchronized service assignments is to do any future location takion calculations.	Select Service	IP Address	10.10.10.11			
Assign Maps Contact Name Username admin Username admin Password e HTTP Enable Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) O Selecting Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) O Selecting Delete synchronized service assignments @ (Network designs, controllers, wired switches and event definitions) Delete synchronized service assignments @ numerits to do any future location calculations.	Tracking					
Username admin Password Password HTTP □ Enable Delete synchronized service assignments Delete synchronized service assignments Estable	Assign Maps	Contact Name				
Password		Usemame [®]	admin			
HTTP® ■ Enable Delete synchronized service assignments IV (Network designs, controllers, wired switches and event definitions) © Selecting Delete synchronized service assignments row must use manual ervice assignments from the MSE. Existing location history data is retained, however you must use manual ervice assignments to do any flaure location calculations.		Password IP	•••••			
Delete synchronized service assignments ((Network designs, controllers, wired switches and event definitions) Selecting Delete synchronized service assignments permanently removes all service assignments from the MSE. Existing location history data is retained, however you must use manual service assignments to do any future location calculations.		HTTP⊉	Enable			
		Delete synchronized service assignm © Selecting Delete synchronized ser Existing location history data is retained,	ents III (Network designs, controllers, wired switch ice assignments permanently removes all service overver you must use manual service assignments t	hes and event definitions) e assignments from the MSE. to do any future location calculati	0%.	
O Starting version 7.2.x of the MSE, Virtual IP (VIP) address support has been added for High Availability. If you wish to use High Availability and have configured a VIP, add the fusing the VIP and not the health monitor IP.		O Starting version 7.2.x of the HSE, Wrt using the VIP and not the health monitor :	al IP (VIP) address support has been added for Hig P,	h Awallability. If you wish to use H	sgh Availability and have configured	i a VIP, add the MSE
						Next

- 4. 按「**Next**」(下一步)。
- 5. 按一下Licensing,然後驗證許可。安裝時,預設演示許可證足以進行測試。您可以在「許可」頁面上新增更多購買的許可證或刪除許可證。

cut MSE configuration										
In a sector of	Permanent licen	ses include	e installed licens	e counts and in-built lice	ense counts.					
acensing	MSE Name (UDI)	Service	Platform Limit	Туре	Installed Limit	License Type	Count	Unlicensed Cour	nt % Used	
velect Service	INSIG2 NOT ACTIVAT	ted (AIR	PHSE-VA-K9:V	01:mse-kw.corp.rt-d	emo.com_53	Evaluation (60 days	067-000	x29556807)		_
tracking Assign Maps		0.5	2100	wIPS Monitor Mode	100	left) Evaluation (60 days	0	0	09	6
		wIPS	2000	wIPS Local Mode APs	10	Evaluation (60 days left)	0	0	09	6
		MSAP	0	Service Advertisement Clicks	100	Evaluation (60 days left)	0	0	01	•
支「Next」(下一 Cace NCS - Mobility Services Eng ····································	<u>-步)。</u>					110	6		U	ture
	Select Mobility	Service	1.1							1991
Edit MSE Configuration Ucensing Belect Service Tracking Assign Maps	Context / Cosco Context / Cosco Partor Cosco clien Vireless MSAP Se	Aware Sen Tag Engr Ier Tag En It engine Intrusion F Intrusion F	vice ne igine is required for cl Protection Servi	lents Ce						

7. 在「選擇移動服務」頁面上,按一下**Cisco Tag Engine**(自7.0MR以來可用)單選按鈕(用於 客戶端和RFID標籤支援),或按一下**Partner Tag Engine**單選按鈕(用於Aeroscout等)。

Back Next

- 8. 按一下Wireless Intrusion Protection Service覈取方塊以測試監控模式和增強本地模式功能的 wIPS安全功能。
- 9. 按「**Next**」(下一步)。
- 10. 選中要啟用跟蹤的元素以及那些可用於歷史報告的元素的歷史引數的覈取方塊。

Cisco Prime				
	tem	10		root
	Select Tracking & History Parameters.			
Edit MSE Configuration				
Licensing	Tracking		History	
Select Service	Wred Clents		Wred Stations	
Tracking	Wreless Clents		Clent Stations	
Assign Maps	Rogue AccessPoints		Rogue Access Points	
	Exclude Adhoc Rogue APs		Rogue Clents	
	Rogue Clients		Interferers	
	☑ Interferers		Asset Tags	
				Back
CISCO Network Control Sys	tem			root
CISCO Prime CISCO Network Control Sys	lem			Selected 2 Total 2 😵 🖨 🕼
Edit MSE Configuration			Show	Total 2 Total 2 😵 🖨 🖬
Edit MSE Configuration Ucensing Select Service	Name	Type Status	Show	Selected 2 Total 2 😵 🖨 🖬
Edit MSE Configuration Licensing Select Service Tracking	Name System Campus > Buiding 14 > 1st Floor System Campus > Buiding 14 > 1st Floor	Type Status Floor Area Buddina	Show	Selected 2 Total 2 😵 🖨 🕼
Edit MSE Configuration Licensing Select Service Tracking Assign Maps	Name System Campus > Building 14 > 1st Floor System Campus > Building 14	Type Status Floor Area Building	Shaw	root Selected 2 Total 2 😵 🖨 🕼
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Edit MSE Configuration Licensing Select Service Tracking Assign Maps	Image: System Campus > Building 14 > 1st Floor System Campus > Building 14	Type Status Floor Area Building	Show	v Al

12. 選中現有建築和樓層的覈取方塊,然後按一下**Synchronize**。同步後, Status列將更新以顯示 初始網路設計已同步。

	Name					Туре	Status
✓	System Camp	us > Building	g 14 > 1st	Floor		Floor Area	#
	System Camp	us > Buildin	o 14			Buildina	
S)	/nchronize	Reset	收出租—個	₩壬方塘	120000	速在MSF設定	=
S) 司步	/nchronize 完成後,按一下 MCS - Configuration Witard Syn_	Reset 完成。此時	将出現一個對	對話方塊,	說明已個	諸存MSE設定	Ξ.
S) 可步 data	/nchronize 完成後,按一下 MCS - Coefiguration Wizard Syn In Cisco Prime D Network Control System	Reset 完成。此時	将出現一個對	封話方塊,	說明已備	諸存MSE設定	<u>Eo</u>
S) 司步 cisco Edet MSE	/nchronize 完成後,按一下 NCS - Configuration Wizard Syn Configuration	Reset 完成。此時	将出現一個對	<u>封話方塊,</u>	說明已備	諸存MSE設定	E o
S) 司步 cisco	/nchronize 完成後,按一下 NCS - Configuration Waard Syn Configuration Configuration	Reset 完成。此時 Name	将出現一個對	對話方塊,	說明已(諸存MSE設定 Show [4	E o
S) 司步 cisco	/nchronize 完成後,按一下 NCS - Configuration Wixard Syn // Cisco Prime Metwork Control System Configuration	Reset 完成。此時 * * * * * * * * * * * * * * * * * * *	终出現一個 dding 14 > 1st Floor The page at https://10.10. Your MSE Settin	封話方塊, Type Floor Areas I0.20 says gs have been saved. CX	說明已 Status	諸存MSE設定 Show	E o

14. 在NCS的MSE首頁上確認配置。

	Cisco NCS - All Servers - 10.10.1	0.20 +							
	Cisco Prime Cisco Network Control S	System			Virtual Domain: ROOT	COMAIN root + Lo	• Q 100		÷
	🛕 Home Monitor 🔻 Cor	nfigure 🔹 Services 💌 Reports	 Administration 	•					* 🖬 😶)
Mo	bility Services Engines /cs > Hoblity Services Engines						- Select	a command	• Go
	Device Name	Device Type	IP Address	Version	Reachability Status	Secondary Server	Name	Admin Status	Service Status
	me2	Caco Mobility Services Engine - Virtual Appliance	10.10.10.11	7.2.1.12	Reachable	N/A (Click here to configure)	Context Aware Service wIPS Service MSAP Service	Enabled Enabled Disabled	Up Up Down

確保同步其餘的網路設計、控制器、有線交換機和事件組(如果可用)。**注意:**Cisco環境感 知服務高度依賴於WLC、NCS和MSE之間的同步時鐘。如果這三個系統均未指向同一NTP伺 服器並使用相同的時區設定進行配置,則情景感知服務將無法正常運行。在嘗試任何故障排 除步驟之前,請確保情景感知系統所有元件的系統時鐘相同。

15. 檢查所選服務的MSE和控制器通訊。確認MSE僅與所選服務的每個控制器進行通訊;網路移動服務協定(NMSP)狀態必須為活動。此映像提供未將keyhash新增到WLC的範例。



在WLC主控台上,使用**show auth-list**指令。以下示例從WLC控制檯顯示沒有可用的位置伺服 器

(Cisco Controller) >show auth-list

```
Authorize MIC APs against AAA ..... disabled
Authorize LSC APs against Auth-List ..... disabled
APs Allowed to Join
AP with Manufacturing Installed Certificate.... yes
AP with Self-Signed Certificate..... no
AP with Locally Significant Certificate..... no
```

若要手動新增MSE並建立到WLC的NMSP連線,請完成以下步驟:在MSE控制檯上,運行 cmdshell命令,然後運行show server-auth-info命令。此範例顯示用於新增到WLC的MAC位 址和金鑰雜湊。 cmd> show server-auth-info invoke command: com.aes.server.cli.CmdGetServerAuthInfo Server Auth Info MAC Address: 00:0c:29:55:6b:b7 Key Hash: 1469187db14ac53ac6108e56b04d48015bdd70d7 Certificate Type: S5C 運行 config auth-list add ssc <mac address> <MSE keyhash>命令,然後運行show auth-list。此 範例顯示MSE已新增到WLC(手動)。 (cisco Controller) config-auth-list add ssc 00:0c:29:55:6b:b7 1469187db14ac53ac6108e56b04d48015bdd70d7

(Cisco Controller) config>exit (Cisco Controller) >show auth-list

 Authorize MIC APs against AAA
 disabled

 Authorize LSC APs against Auth-List
 disabled

 APs Allowed to Join
 and the second secon

在NCS上,確認NMSP連線顯示Active。

ᡖ Groups	IP Address	Target Type	Version	NMSP Status	Echo Request Count	Echo Response
 Status 	10.10.10.5	Controller	7.2.1.51	Inactive 😽	0	0
Server Events	10.10.10.25	Controller	7.0.116.0	Active	2	2
NCS Alarms						
NCS Events						
MSP Connection Status						

命令列參考

WLC命令

config location expiry ?

client Timeout for clients calibrating-client Timeout for calibrating clients tags Timeout for RFID tags rogue-aps Timeout for Rogue APs

show location ap-detect ?

allDisplay all (client/rfid/rogue-ap/rogue-client) informationclientDisplay client informationrfidDisplay rfid informationrogue-apDisplay rogue-ap informationrogue-clientDisplay rogue-client information(Cisco Controller) >show location ap-detect client

show client summary

Number of Clients......7MAC AddressAP NameStatusWLAN/Guest-LanAuthProtocolPortWired--00:0e:9b:a4:7b:7dAP6ProbingN/ANo802.11b1No

00:40:96:ad:51:0c AP6 Probing N/A 802.11b 1 No No (Cisco Controller) > show location summary Location Summary Algorithm used: Average Client RSSI expiry timeout: 5 sec Half life: 0 sec Notify Threshold: 0 db Calibrating Client RSSI expiry timeout: 5 sec Half life: 0 sec Rogue AP RSSI expiry timeout: 5 sec Half life: 0 sec Notify Threshold: 0 db RFID Tag RSSI expiry timeout: 5 sec Half life: 0 sec Notify Threshold: 0 db

show rfid config

RFID	Tag data Collection	Enabled	
RFID	timeout	1200 seconds	
RFID	mobility	Oui:00:14:7e : Vendor:pango	State:Disabled

show rfid detail

RFID address	00:0c:cc:7b:77:3b
Vendor	Aerosct
Last Heard	7 seconds ago
Packets Received	40121
Bytes Received	2567744
Detected Polling Interval	30 seconds
Cisco Type	
Content Header	
CCX Tag Version	1
Tx Power	18 dBm
Channel	11
Reg Class	б
Burst Length	1

CCX Payload

======

Nearby AP Statistics:

demo-AP1260(slot 0, chan 11) 6 seconds -48 dBm

show location plm

Location Path Loss Configuration Calibration Client : Enabled , Radio: Uniband Normal Clients : Disabled , Burst Interval: 60

(Cisco Controller) >config location ?
plm Configure Path Loss Measurement (CCX S60) messages
algorithm Configures the algorithm used to average RSSI and SNR values
notify-threshold Configure the LOCP notification threshold for RSSI measurements
rssi-half-life Configures half life when averaging two RSSI readings
expiry Configure the timeout for RSSI values

config location expiry client ?

<seconds> A value between 5 and 3600 seconds

config location rssi-half-life client ?
<seconds> Time in seconds (0,1,2,5,10,20,30,60,90,120,180,300 sec)

show nmsp subscription summary

172.19.32.122	RSSI, Info,	Statistics,	IDS
Server IP	Services		
Mobility Services	Subscribed:		

MSE命令

運行此命令可確定MSE服務的狀態:

[root@MSE ~]# getserverinfo 運行此命令可啟動用於客戶端跟蹤的情景感知引擎:

[root@MSE ~]# /etc/init.d/msed start 運行此命令以確定用於客戶端跟蹤的情景感知引擎的狀態:

[root@MSE ~]# /etc/init.d/msed status 運行此命令可停止用於客戶端跟蹤的情景感知引擎:

[root@MSE ~]# /etc/init.d/msed stop 運行此命令可執行診斷:

[root@MSE ~]# rundiag

注意:rundiag命令還可用於檢視獲取客戶端環境感知引擎的許可證檔案所需的MSE UDI資訊。

相關資訊

•<u>MSE配置指南(虛擬和物理裝置)</u>

• MSE高可用性配置

- <u>Cisco WIPS部署指南</u> <u>產品訂購</u> <u>技術支援與文件 Cisco Systems</u>