MSE软件版本7.2虚拟设备配置和部署指南

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简介

思科移动服务引擎(MSE)软件版本7.2增加了虚拟设备并支持VMware ESXi。本文档为将MSE虚拟设 备添加到思科统一WLAN和运行情景感知服务和/或思科自适应无线入侵防御系统(wIPS)的用户提供 配置和部署指南以及故障排除提示。此外,本文档介绍MSE虚拟设备的系统要求,并提供MSE虚 拟设备的一般部署指南。本文档不提供 MSE 和相关组件的配置细节。此信息在其他文件中提供 ;提供了参考。

有关环境感知移动服务配置和设计方面的文档列表,请参阅<u>相关信息部分。</u>本文档也不涉及 Adaptive wIPS 配置。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于Cisco 3300系列移动服务引擎。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您使用的是真实网络,请确保您已经了解所有命令的潜在影响。

规则

有关文档规则的详细信息,请参阅 Cisco 技术提示规则。

背景信息

此图显示了包括思科移动服务引擎(MSE)的典型思科WLAN部署。 此部署还包括其他有线/无线网络 客户端、RFID标签、非法接入点(AP)和客户端。MSE为位置和wIPS提供这些元素的可视性。在 MSE软件版本7.2之前,仅物理设备限于MSE-3310和MSE-3350/3355。



系统要求

在VMware ESXi 4.1及更高版本上支持并测试MSE软件版本7.2虚拟设备。这些服务器配置已经过测试,建议作为指导。

- 思科统一计算系统(UCS)C200 M2机架式服务器两(2)个英特尔[?]至强[?]CPU E5506,2.13GHzRAM(根据配置的级别)具有增强型RAID控制器的SAS驱动器(最少500 GB+)
- UCS C210 M2机架式服务器两(2)个Intel Xeon CPU E5640 @ 2.67GHzRAM(根据配置的级别)具有增强型RAID控制器的SAS驱动器(最少500 GB+)
- UCS C250 M2机架式服务器两(2)个Intel Xeon CPU E5570 @ 2.93GHzRAM(根据配置的级别)具有增强型RAID控制器的SAS驱动器(最少500 GB+)
- UCS C460 M2机架式服务器两(2)个Intel Xeon CPU E7-4830 @ 2.13GHzRAM(根据配置的级别)具有增强型RAID控制器的SAS驱动器(最少500 GB+)
- 注意: 使用两(2)个四核处理器,其功能至少与上述处理器相同。

管理软件和VMware许可

Cisco MSE软件版本7.2虚拟设备支持ESX/ESXi 4.x及更高版本。

为了管理ESXi主机以及配置和部署虚拟设备,思科建议您在Windows XP或Windows 7 64位计算机 上安装vCenter Server 4.x并获取vCenter企业版许可证。或者,如果您只有一台ESXi主机,则可以 使用vSphere客户端来管理它。

资源需求

资源需求取决于要部署的许可证。下表列出了配置虚拟设备的不同级别:

主MSE	资源		支持的许可	证(单独)		
虚拟设备级 别	总内存空 间	CP U	CAS许可 证	wIPS许可 证		
低	6G	2	2000	2000		
标准	11G	8	18000	5000		
高	20G	16	50000	10000		

注意:仅运行一项服务时,CAS和wIPS许可证的建议限制是支持的最大限制。如果要在同一设备上 同时运行两个服务,则应用共存限制。

设置ESXi主机

要在UCS或类似服务器上设置MSE虚拟设备,请完成以下步骤:

- 确保您的计算机至少有500 GB以上的硬盘空间和带增强型RAID控制器的快速SAS驱动器。
 (为ESXi 5.0之前的版本创建Datastore时,使用至少4 MB的块大小。)
- 2. 安装ESXi。插入ESXi 4.1或更高版本的安装磁盘,并从驱动器启动。如果使用多个驱动器,请 在配置为引导驱动器的驱动器中安装ESXi。默认用户名为root,密码为空(无密码)。注:如

果选择了错误的驱动器进行安装,则可以使用Fedora Live CD重新格式化。

- 配置IP地址。选择已启用且处于活动状态的网络适配器。如果主机连接到多个网络,则可能有 多个网络适配器。在CIMC设置期间,您可以设置相同的IP地址;在启动过程中按F8以设置 IP地址。此外,更改默认密码。
- 设置ESXi后,您可以使用Windows XP或Windows 7计算机,以及上面配置的IP地址和登录凭据 ,以便通过vSphere客户端连接到ESXi主机。

有关ESXi主机许可的信息,请参阅许可ESX 4.x、ESXi 4.x和vCenter Server 4.x。

有关如何在ESXi上设置Datastore的信息,请参阅以下文章:

- <u>创建VMFS Datastore</u>
- 增加VMFS数据存储

警告: 为ESXi 4.1创建Datastore时,使用至少4 MB的块大小。

安装MSE虚拟设备

MSE虚拟设备作为开放虚拟设备(OVA)映像分发,可使用vSphere客户端在ESXi主机上部署。有两 个可用的OVA版本:一个版本用于演示映像,只需60GB的磁盘空间,另一个版本是通用生产映像 。

生产映像可分发性假定ESXi主机datastore上至少有500 GB及以上的可用磁盘空间。OVA可通过 vSphere客户端进行选择和部署。选择**文件>部署OVF模**板以部署模板。

Ø 17	2.20 v5phere	: Client						
File	Edit View Inventory	Administra	tion Plug-ins Help					
	New	•	entory 🕨 📆 Inventory					
	Deploy OVF Template							
	Export							
[Report	I	wnbu-dc3 VMware ESXi, 4	.1.0, 502767				
	Browse VA Marketplace		Getting Started Summary	Virtual Machines	Resource Allocatio	n Performance Configura	tion Local Use	rs & Groups
	Print Maps		General			Resources		
-	Exit		Manufacturer: Model:	IBM IBM Syste	m x3650 -[7979₽	CPU usage: 17 MHz		Capacity 8 x 2.327 GHz
			CPU Cores:	8 CPUs x	2.327 GHz	Memory usage: 1049.00	MB	Capacity
			Processor Type:	Intel(R) X ES345 @	eon(R) CPU 2.33GHz			12287.13 MB
			License:	vSphere 4 Licensed f	Enterprise for 2 physical CPU	Datastore /	Capacity	Free Free
			Processor Sockets:	2	-	Ell Procest	541.50 GB	240.14 08

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\pau\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.

根据网络速度,映像部署需要几分钟时间。部署后,您可以编辑虚拟机(VM)配置以配置设备;配置 时应关闭VM。

配置MSE虚拟设备级别

本节中的表列出了可在虚拟设备上配置的级别以及相应的资源要求。将专用核心分配给设备,而不 是超线程虚拟核心,因为如果您假设主机具有更多虚拟核心并且部署了更多设备,将影响性能。例 如,在上述UCS C200中,有八(8)个物理核心可用,但有十六(16)个具有超线程的虚拟核心。不要 假设有十六(16)个内核可用;仅分配八(8)个核心,以确保MSE在受压时能可靠地执行。

主MSE	资源	支持的许可证(单 独)		_原 支持的许可证(单 支持的辅助 独) MSE		甫助
虚拟设备 级别	总内存 空间	CAS许 可证	wIPS许 可证	虚拟设 备	物理盒	
低	6G	2000	2000	低+	Not	
标准	11G	18000	5000	标准+	Suppor	
高	20G	50000	10000	高+	ted	

Ø MSE	1 - Virtual Machine Properties			
Hardwar	e Options Resources			Virtual Machine Version: 7
⊡ sh	ow All Devices	Add Remove	255 GB	Memory Size: 8 + G8 -
Hardwa M M	are lemory	Summary 8192 MB	128 GB -	Maximum recommended for this
	PUs ideo card MCI device CSI controller 0 lard disk 1 D/DVD Drive 1	2 Video card Restricted LSI Logic Parallel Virtual Disk CD/DVD Drive 1	64 GB - 32 GB - 16 GB - 8 GB -	 Maximum recommended for best performance: 196540 MB. Default recommended for this guest OS: 384 MB. Minimum recommended for this guest OS: 256 MB.
	ietwork adapter 1 ietwork adapter 2	vlan 10 vlan 10	4 G8 2 G8	

设置MSE虚拟设备

部署和配置虚拟设备后,您就可以启动虚拟设备。当设备首次通电时,您需要输入默认登录凭证 :root/password。

首次登录时,设备将开始配置MSE软件,并安装Oracle数据库。这是一个一次性且耗时的过程,至 少需要30-40分钟。安装完成后,将再次显示登录提示。要继续配置设<u>备,请参阅《Cisco 3355移动</u> <u>服</u>务引擎入*门指南》的"配置移动服务引擎"*部分。

配置网络

默认情况下,虚拟机使用主机网络设置;因此,您无需在ESXi上配置VM适配器。但是,如果公共 网络和专用网络都连接到主机,并且您希望虚拟机能够访问两者,则可以在vShpere客户端中配置 虚拟机适配器。

在vSphere客户端中,选择主机,单击"Configuration(配置)"**选项卡**,然后单击"**Networking(网** 络)"。您可以在虚拟交换机属性中查看物理适配器。



使用单独的适配器创建单独的交换机以隔离网络。然后,您可以根据需要将VM适配器分配到这些网 络。

MSE - Virtual Machine Properties	9	
Hardware Options Resources		Virtual Machine Version: 7
Show All Devices	Add Remove	Device Status Connected
Hardware	Summary	Connect at power on
Memory (edited) CPUs Video card VMCI device SCSI controller 0 Hard disk 1 CD/DVD Drive 1 Network adaptes 1 (edite	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

添加硬盘空间

如果需要,请向VM添加额外的磁盘容量并扩展分区。

注意:installDrive.sh脚本(位于/opt/mse/framework/bin目录中)检测新驱动器并重新分区现有分区,以便使用和扩展新驱动器。

在尝试重新分区磁盘空间之前,请确保备份VM(或至少备份MSE数据)。

要向虚拟机添加更多磁盘空间,请关闭虚拟机,转到虚拟机设置,然后添加额外的硬盘。



添加硬盘后,打开VM电源,登录设备,然后运行installDrive.sh脚本。脚本应装载并重新分区新添加的驱动器。如果添加了多个硬盘,请为每个新驱动器运行一次脚本。

地址块大小

对于5.0之前的ESXi版本,思科建议主机上的Datastore的块大小为4 MB或更大;否则,OVA的部署 可能会失败。如果部署失败,您可以重新配置块大小。

要重新配置块大小,请转到ESX主机配置>存储>删除数据存储,然后将存储重新添加到块大小至少 为4MB的新数据存储中。

🚱 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. The minimum disk space used by any file is equal to the file system block size. 1024 G8 , Block size: 4 MB Capacity
	Maximize capacity

VMware工具

如果VM引发以下错误,请右键单击vSphere客户端中的VM,然后选择**Guest>Install/Upgrade** VMware Tools以安装或升级VMware工具: Guest OS cannot be shutdown because Vmware tools is not installed or running.

升级虚拟设备

配置虚拟设备后,应将其视为物理MSE框。每次要升级到最新MSE版本时,您无需部署新的 OVA;您可以将适当的安装程序映像下载到设备,并按照物理设备的升级步骤进行升级。

许可虚拟设备

配置虚拟设备后,可以在评估模式(默认60天)下使用虚拟设备,无需许可设备。但是,如果计划 部署永久许可证或使用高可用性(HA)等功能,则必须使用虚拟设备激活许可证激活虚拟设备。 您可 以从虚拟设备(在设备上运行**show csludi**)或从Cisco Prime网络控制系统(NCS)MSE常规属性获取唯 一设备标识符(UDI),并使用此信息购买虚拟设备激活许可证和永久服务许可证。

此图像显示对虚拟设备的许可证中心UI的最近更改。

Home Monitor • Co	nfigure '	Services	Reports	 Administr 	ation .			_		* 8 0
NCS Licenses Controller MSE		License Center Administration > Licens Ø Permanent licen	r se Center > ises includ	Summary > MSE le installed licens Supporte	e counts and in-built I d License	icense counts.				Entries 1 - 3 of 3 4 44 4 1 1 1 1 1 1 1
les	>	MSE Name (UDI)	Service	Platform Limit	Type	Installed Limit	License Type	Count	Unlicensed Court	t % Used
		mse-65 Not Activ	vated (JR-MSE-VA-KS	V01:mse-87.cisco	.com_af72941	0-82f7-11e0-aa6d-0	0505691	000f)	
		Activation sto	atus.	18000	CAS Elements	100	Evaluation (59 days left)	0	0	0%
			-	5000	wIPS Monitor Mode APs	10	Evaluation (60 days left)	0	• [0%
			wp5	5000	wIPS Local Mode AP	's 10	Evaluation (60 days left)	0	•	0%
			MSAP	10000	Service Advertisement Clicks	1000	Evaluation (60 days left)	0	•	0%
		mse-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	
				10000	wIPS Monitor Mode APs	10	Evaluation (60 days left)	0	• [0%
			45.2	20000	wIPS Local Mode AP	's 10	Evaluation (60 days left)	0	•	0%
			MSAP	10000	Service Advertisement Clicks	s 1000	Evaluation (60 days left)	0	• [0%
		() mse-207 (Al	IR-MSE-3	310-K9:V01:No	t Specified)					
							Deskustion / 60 daws			

对于虚拟设备,MSE名称旁边的消息会清楚地指示是否激活它。此外,还有两个限制列:平台限制 列列出此设备上该服务支持的最大许可证(取决于对VM的资源分配),而安装限制列列出设备上已 安装或通过评估可用的实际许可证。

虚拟设备的高可用性

要使用HA功能,必须使用虚拟设备激活许可证激活主设备和辅助设备。

配置高可用性

您可以通过NCS上的主MSE设置HA配置。

cisco Prime CISCO Network Control System		Virtual Dorrain: ROOT-DOMAIN	root * Log Out	÷
🛕 Home Monitor 🔻 Configure	▼ Services ▼ Reports ▼ Ad	ministration 🔻		* 😂 😣
System V Ceneral Properties Active Sessions	HA Configuration : mse-65 Services > Hubity Services Engines > System : Configure High Availability Parameters	Services High Availability > Configure High Availabi	Sty Parameters	
Trap Destinations Advanced Parameters Logs Services High Availability Logs	Primary Health Monitor IP Internet Secondary Device Name mse-222 Secondary IP Address Secondary Password IP	■.240		
HA Status Accounts Accounts Broups Croups Counts	Failover Type @ Manual Failback Type @ Manual			
Server Events Addt Logs NCS Alarms NCS Events NCS Events NDSP Connection Status	Save	PECONOS		
Maintenance Maintenance Backup Beckup Restore Download Software Context Aware Service >				
🤷 Tools I 😣 Help			Alarm Browser Alarm Sum	mary 🔕 1 🗑 1 🏂 0

CISCO Network Control S	ystem	Vitua	Domain: ROOT-OOMADI	roet * Log Out	P.
A Home Monitor • Con	lgure	Administration *			
	HA Configuration : mse-6: Services > Mobility Services Engines > Sy Configuration) stem > Services High Availability >	Configure High Availability	Parameters	
	Secondary MSE needs to be acti	rated with a Virtual Applia	nce license. Add a licens	e and save the con	fg.
				ОК	
	Secondary Advation Status	Not Activated	Damas		
	Fallover Type @	Marcual	(Dime.)		
	Failback Type @	Maqual			
	Long Failover Wait @	10 seconds			
	Save Delete				
🛱 Tools I 🔕 Help				Alarm Browser	Alarm Summary

激活辅助MSE

必须激活辅助设备。您可以使用UDI信息为辅助MSE请求激活许可证。在"HA配置"(HA Configuration)页面上,浏览许可证,然后单击**保存**。辅助MSE成功激活后,将设置HA。

allasta Cisco Prime			
Home Monitor Configure	Services Reports	Administration	* C 0
System Ceneral Properties Active Sessions Trap Destinations Advanced Parameters Logs Services High Availability HA Configuration HA Configuration HA Status Accounts Groups Service Privents Audit Logs NICS Events Even	HA Configuration : mse-65 Services > Mobility Services Engines > Syst Configuration Primary Health Monitor IP Secondary Device Name Secondary Plathorm UDI Secondary Plathorm UDI Secondary Activation Status Activate Secondary with License Failback Type @ Failback Type @ Long Failover Wait @	5 pten > Servces High Availability > Configure High Availability Parameters	
🔛 Tools I 🐏 Help		Alarm Browser Alarm Summa	ry 🥵 1 🦞 1 🛓 0

停用辅助MSE

如果需要从辅助MSE中删除激活许可证,可以单击复选框,然后单击**Save**以停用辅助MSE。

CISCO Prime CISCO Network Control Syste	m Wrtual Domain: ROOT-DOMAIN root + Lop Out P+ +
🛕 Home Monitor 🖲 Configure	Services Reports Administration
System V General Properties Active Sessions Active Sessions Active Sessions Active Sessions Active Sessions Active Sessions Active Sessions Advanced Parameters Advanced Parameters Advanced Parameters Advanced Parameters Logs Services High Availability HA Configuration HA Status HA Status Serveres Coups Coups Server Events Audit Logs MCS Lorents MMSP Connection Status Maintenance Backup Restore Download Software Context Aware Service	HA Configuration: mee e5 Brown Sholls parvice tables > System > Services High Availability > Configure High Availability Parameters Demonstration Pinnary Headth Monitor P Brown Yields main Brown Yields main Brown Yields main Brown Yields <
M rows r V new	Annu stored i Amatu A

ESXi 5.0上的虚拟设备

在ESXi 5.0上,块大小固定为1 MB,因为它支持大型虚拟机部署。为了能够为虚拟设备分配八(8)个 以上的核心,必须升级虚拟硬件。要升级虚拟硬件,请选择MSE,然后选择"升级虚拟硬件",**如下** 图所示:

File	e Edit View Inventory Administration Plug-ins Help									
		😫 Home 🕨 🛃 1	Inve	ntory 🕨 🗊 Inventory						
6	ø									
8		en Mohilha Condens Eng	_	esx-250.cisco.com VMware	ESXI. 5.0.0	469512				
		co mobility services Eng		Power	,	es Resource Allocation	Performance Configuration Local Users &	Groups		
				Guest	,	ssors				
				Snapshot	,	tral				
			-	Open Console		el	Intel(R) Xeon(R) CPU E7- 4830 @ 2.1	3GHz		
			9	Edit Settings		essor Speed	2.1 GHz			
			L.,	Upgrade Virtual Hardware		essor Sockets	2			
				Add Permission	Ctrl+P	cal Processors	32			
				Report Performance		athreading	Enabled			
				Rename						
				Open in New Window Ctrl	+Alt+N	em				
				Remove from Inventory		ufacturer	Cisco Systems Inc			
				Delete from Disk		el	UCSC-BASE-M2-C460			
				Licensed Features	Re	lease Date	5/24/2011 12:00:00 AM			
				Time Configuration	As	set Tag	Unknown OCTI 536 A3EC			
				DNS and Routing	56	THUC TON	A112204262			
				Authentication Services						

MSE控制台过程

- 1. 使用以下凭证登录控制台:root/password。首次启动时,MSE 会提示管理员启动设置脚本。
- 2. 在此提示符中输入yes。

```
Cisco Mobility Service Engine
mse-kw login: root
Password:
Last login: Fri Oct 21 15:46:34 on tty1
Enter whether you would like to set up the initial
parameters manually or via the setup wizard.
Setup parameters via Setup Wizard (yes/no) [yes]: _____注
意:如果MSE未提示设置,请输入以下命令:/opt/mse/setup/setup.sh。
```

3. 配置主机名

2

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. 配置以太网接口参数

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. 当系统提示输入eth1接口参数时,键入Skip以继续下一步,因为操作不需要第二个网卡。

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

注意: 配置的地址必须提供与此设备使用的透视WLC和WCS管理系统的IP连接。

8. 输入DNS服务器信息。要成功解析域,只需一个DNS服务器,请输入备用服务器以实现恢复能力。

Domain	Name	Service	(DNS)	Setup				
DNS is	curre	ently ena	ubled.					
Current	: DNS	server 1	L=[10.:	10.10.10]				
Conf igu	ire DM	IS relate	ed para	ameters?	(Y)es∕	(S)kip∕(U)se	default	[Skip]:

 配置时区。思科建议您使用UTC(协调世界时)。如果纽约的默认时区不适用于您的环境,请 浏览位置菜单以选择正确的时区。

Current timezone=[America/New_York] Configure timezone? (Y)es/(S)kip/(U)se default [Skip]: y

Enter the current date and time.

Please identify a location so that time zone rules can be set correctly. Please select a continent or ocean. 1) Africa

- 2) Americas
- 3) Antarctica
- Arctic Ocean
- 10. 当系统提示配置将来的重新启动日期和时间时,键入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. 配置远程系统日志服务器(如果适用)。

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. 配置网络时间协议(NTP)或系统时间。NTP是可选的,但可确保系统保持准确的系统时间。如果选择启用NTP,系统时间将从您选择的NTP服务器配置。否则,系统将提示您输入当前日期和时间。

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. 当提示配置登录标语时,键入Skip。

Current Login Banner = [Cisco Mobility Service Engine] Configure login banner (Y)es/(S)kip/(U)se default [Skip]:

- 14. 启用本地控制台根登录。此参数用于启用/禁用对系统的本地控制台访问。应启用本地控制台 根登录,以便进行本地故障排除。默认值为Skip。 System console is not restricted. Configure system console restrictions? (Y)es/(S)kip/(U)se default [Skip]:
- 15. 启用安全外壳(SSH)根登录。此参数用于启用/禁用对系统的远程控制台访问。应启用SSH根 登录,以便进行远程故障排除。但是,公司安全策略可能要求禁用此选项。

SSH root access is currently enabled. Configure ssh access for root (Y)es/(S)kip/(U)se default [Skip]: _

- 16. 配置单用户模式和密码强度。无需这些配置参数;默认值为Skip。 Single user mode password check is currently disabled. Configure single user mode password check (Y)es/(S)kip/(U)se default [Skip]:
- 17.更改根密码。此步骤对确保系统安全至关重要。请务必选择由字母和数字组成的、不含字典 单词的强口令。最小密码长度为八(8)个字符。默认凭证为根/密码。

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

18. 配置登录和密码相关参数

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. 配置引导密码(Grub)密码。(可选)不需要此配置参数。默认值为Skip。

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

20. 配置NCS通信用户名。

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

21. 接受对配置的更改。

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

此图显示了完成屏幕的示例

Flushing firewall rules: E] Setting chains to policy ACCEPT: nat filter C OX] 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. 运行getserverinfo命令以验证配置。

将MSE VA添加到NCS

1. 登录到NCS,然后选择Services > Mobility Services Engines。

Cisco Prime Network Control S	System							
ne Monitor 🔻 Cor	nfigure 🔻	Ser	vices	•	Repor	ts	V	Admini
ervices Engines bility Services Engines	Ð	Mobi Mobi Sync Sync	ines ory					
e Name		High Availability Context Aware Notifications MSAP					ons	
	Demo Mob	H =	Iden	tity	Service	s		

2. 从页面右侧的下拉列表中,选择添加移动服务引**擎,然后**单击开始。

IAIN root 🔻 Log O	ut 📒	P.+	>
			🔶 🛱 🕗
		Add Mobility Services	Engine 👻 Go
		Select a command	-
		Add Location Server	
		Add Mobility Services	Engine
Secondary Server		Delete Service(s)	
	Name	Synchronize Services	
	Conte	Synchronization Histor	Y
lot Supported	Servic	Edit Configuration	
for supported	WIPS	Service Disabled	Down

3. 输入MSE的唯一设备名称、MSE设置期间之前配置的IP地址、支持联系人姓名。以及在 MSE设置过程中配置的NCS用户名和密码。请勿更改默认用户名 admin。可以保留为默认值

# Cisco NCS - MSE Configuration Wizar	*	
Cisco Prime Cisco Network Control System		root Log Out
	Add Mobility Services Engine	
Add MSE Configuration		
Licensing	Device Name	mse2
Select Service	IP Address	10.10.11
Tracking		
Assign Maps	Contact Name	
	Usemame P	admin
	Password ₽	*****
	http:	tnable
	Delete synchronized service assignr Selecting Delete synchronized ser Existing location history data is retained. Starting version 7.2.x of the MSE, Vir using the VIP and not the health monitor	rments 🗹 (Network designs, controllers, wired switches and event definitions) ervice assignments permanently removes all service assignments from the MSE. L, however you must use manual service assignments to do any future location calculations. rtual IP (VP) address support has been added for High Availability. If you wish to use High Availability and have configured a VIP, add the MSE r IP.
		Next

4. 单击 Next。

~

5. 单击**Licensing**,然后验证许可。在安装时,默认演示许可证足以进行测试。您可以在"许可"(Licensing)页面添加更多购买的许可证或删除许可证。

# Gisco NCS - License Center - 10.10.10	.+.									
1111111. Cisco Prime CISCO Network Control System									100	t Log Out
	MSE License Su	immary								
Edit MSE Configuration	O Permanent licen	ses includ	e installed licens	e counts and in-built le	ense counts.					
Licensing	MSE Name (UDI)	Service	Platform Limit	Туре	Installed Limit	License Type	Count	Unlicensed Count	t % Used	
Select Service	esse2 Not Activa	ted (AIF	R-MSE-VA-K9:V	/01:mse-kw.corp.rf-	lemo.com_53	9b9f18-e86b-11e0-9	0b7-000	c29556bb7)		
Tracking		CAS	2100	CAS Elements	100	Evaluation (60 days left)	0	0 [0%	
Assign Maps				wIPS Monitor Mode APs	10	Evaluation (60 days left)	0	0 [0%	
		WP5	2000	wIPS Local Mode APr	10	Evaluation (60 days left)	0	0 [0%	
		MSAP	0	Service Advertisemer Clicks	^t 100	Evaluation (60 days left)	0	0 [0%	
	Add License	Remove	License							
									Back	Next

6. 单击 Next。

## Cisco NCS - Mobility Services Engine	+	
Cisco Prime CISCO Network Control System		not Log Out
	Select	Mobility Service
Edit MSE Configuration		
Licensing Select Service		Context Aware Service
Tracking		Cisco Tag Engine
Assign Maps		Partner Tag Engine
		Csco clent engine is required for clents
		Wireless Intrusion Protection Service
		MSAP Service
		Sack Next

- 7. 在"选择移动服务"(Select Mobility Service)页面上,单击**Cisco Tag Engine**(自7.0MR起可用)单选按钮(用于客户端和RFID标签支持),或单击**Partner Tag Engine**(用于Aeroscout等)单选按钮。
- 8. 单击Wireless Intrusion Protection Service复选框以测试监控模式和增强本地模式功能的 wIPS安全功能。
- 9. 单击 Next。
- 10. 选中要启用跟踪的元素的复选框,以及可用于历史报告的这些元素的历史记录参数的复选框
 - 0

🗰 Cisco NCS - Configuration Wizard Tra	*		
Cisco Prime CISCO Network Control System			reat Log Out
Edit MSE Configuration Licensing Select Service Tracking Assign Maps	Select Tracking & History Parameters. Tracking V Wred Clents V Wreless Clents C Rogue AccessPoints Exclude Adhoc Rogue APs Rogue Clents V Interferers Active RFED Tags	History Wred Stations Clent Stations Rogue Access Points Rogue Clents Interferes Asset Tags	Back Next
└ 畄十 Novet			

11. <u>单击 Next</u>。

📩 Cisco NCS - Configuration Wizard Syn	*			
cisco Prime Cisco Network Control System				root Log Out
Edit MSE Configuration				Selected 2 Total 2 😵 🖨 🕸 🎡 🗸
Licensing			Show	AI - 🖌
Select Service	 ✓ Name ✓ System Campus > Building 14 > 1st Floor 	Type Status Floor Area		
nacong	System Campus > Building 14	Building		
	Synchronize Reset			
				Back Done

12. 选中现有建筑和楼层的复选框,然后单击"同**步"**。同步后,"状态"(Status)列会更新,以显示 初始网络设计已同步。

	Status
em Campus > Building 14 > 1st Floor Floor Area	#
em Campus > Building 14 Building	#
nize Reset 5. 单击"完成"。系统将显示一个对话框,其中显示MSE设置已保存。	
Selected 2	Total 2 😵 🛱
Show Al	
System Campus > Building 14 > 1st Floor Floor Area System Campus > B System Campus	
The pade at https://10.10.20 save	
Your MSE Settings have been saved.	

14. 在NCS的主MSE页面上确认配置。

🚓 Cisco NCS - All Servers - 10.10.10.20 🔅									
.1	Italia Cisco Prime ISCO Network Control S	System			Virtual Domain: ROOT	COMADI root + Lo	• Q 100		÷
	🛔 Home Monitor 🔻 Cor	nfigure • Services • Reports	 Administration 	•					🚸 🖨 🚹
Mo Serv	bility Services Engines css > Hobility Services Engines						- Select	a command	• Go
	Device Name	Device Type	IP Address	Version	Reachability Status	Secondary Server	Mo Name	Admin Status	Service Status
	mse2	Cisco 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

确保同步其余的网络设计、控制器、有线交换机和事件组(如果可用)。**注意:**思科情景感 知服务高度依赖于WLC、NCS和MSE之间的同步时钟。如果这三个系统都未指向同一NTP服 务器,并且配置了相同的时区设置,则情景感知服务将无法正常运行。在尝试任何故障排除 步骤之前,请确保情景感知系统的所有组件上的系统时钟相同。

15. 检查MSE和控制器通信以获取所选服务。验证MSE是否仅与所选服务的每个控制器通信;网络移动服务协议(NMSP)状态必须处于活动状态。此映像提供了密钥哈希未添加到WLC的示



在WLC控制台上,使用**show auth-list**命令。以下示例从WLC控制台显示没有可用的位置服务 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
```

要手动添加MSE并建立到WLC的NMSP连接,请完成以下步骤:在MSE控制台上,运行 cmdshell命令,然后运**行show server-auth-info命令。**此示例显示要用于添加到WLC的 MAC地址和密钥哈希。 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: SSC 运行 config auth-list add ssc <*mac address*> <*MSE keyhash*>命令,然后运行show auth-list。此 示例显示MSE已添加到WLC(手动)。 (cisco controller) config>auth-list add ssc 00:0c:29:55:6b:b7 1469187db14ac53ac6108e56b04d48015bdd70d7 (cisco controller) config>exit (cisco controller) config>exit

 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

 Mac Addr
 Cert Type
 Key Hash

 00:0c:29:55:6b:b7
 SSC
 1469187db14ac53ac6108e56b04d48015bdd70d7

在NCS上,确认NMSP连接显示"活动"。

	🖥 Groups	IP Address	Target Type	Version	NMSP Status	Echo Request Count	Echo Response
۳	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						

命令行参考

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 Clients7MAC 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

运行以下命令以确定MSE服务的状态:

[root@MSE ~]# getserverinfo 运行以下命令以启动用于客户端跟踪的情景感知引擎:

[root@MSE ~]# /etc/init.d/msed start 运行以下命令以确定用于客户端跟踪的情景感知引擎的状态:

[root@MSE ~]# /etc/init.d/msed status 运行以下命令以停止用于客户端跟踪的情景感知引擎:

[root@MSE ~]# /etc/init.d/msed stop 运行以下命令以执行诊断:

[root@MSE ~]# rundiag **注意: rundiag** 命令还可用于查看为客户端环境感知引擎获取许可证文件所需的MSE UDI信息。

相关信息

• <u>MSE配置指南(虚拟和物理设备)</u>

• MSE高可用性配置

- <u>思科WIPS部署指南</u> <u>产品订购</u> <u>技术支持和文档 Cisco Systems</u>