# SSM现场8.X高可用性集群工作正常

### 目录

简介 先决条件 要求 使用的组件 背景信息 故障切换和回退期间的SSM内部帐户同步 高可用性 故障转移 回退 在故障切换和回退期间向SSM现场VIP注册产品实例 高可用性 故障转移 回退 降级高可用性集群 接下来呢?! 相关信息

## 简介

本文档介绍在故障转移和回退方案时,智能软件管理器(SSM)内部帐户同步和产品实例注册如何在 部署为高可用性(HA)群集的SSM内部服务器上工作。

## 先决条件

### 要求

Cisco 建议您了解以下主题:

- SSM现场
- HA

### 使用的组件

本文档中的信息基于SSM On-Prem 8及更高版本。

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。如果您的网络处于活动状态,请确保您了解所有命令的潜在影响。

背景信息

#### 这些是提供HA信息的参考文档。

- <u>https://www.cisco.com/web/software/286285517/151968/Smart\_Software\_Manager\_On-</u>
   <u>Prem\_8\_Console\_Guide.pdf</u>
- <u>https://www.cisco.com/web/software/286285517/152313/Smart\_Software\_Manager\_On-Prem\_8-202006\_Installation\_Guide.pdf</u>

## 故障切换和回退期间的SSM内部帐户同步

应在本指南的帮助下配置两台SSM本地服务器之间的HA:

#### 部署HA群集

: <u>https://www.cisco.com/web/software/286285517/152313/Smart\_Software\_Manager\_On-</u> Prem\_8-202006\_Installation\_Guide.pdf

在本演示中,使用:

- .5 主服务器的IP地址
- .10 辅助服务器的IP地址
- .12 虚拟IP地址

### 高可用性

1. HA的成功配置显示主服务器(.5)为主用服务器,辅助服务器(.10)为备用服务器,VIP(.12)sd为映 像所示。



2.已从主/主服务器成功完成SSM内部与思科软件中心的同步,如图所示。

ululu cisco								Logge	id In Acco	unt   Log Out
Smart So	oftware N	1anager On-Prer	n			Network			Syste	m Health Good
Access	High Sy	Accounts	Schedules			Gen	eral ens192 Connected	Network Interf	Server Na Version Uptime	Your machine is working well ame CentOS 8-202006 1 day
Management Accounts	Availabilif Status Network	Major Minor Name annanr-ssm-on-prem-8-202	Satellite Name 006 annanr-ssm-on	Last Synchronization 2020-Sep-01 14:13:44	Synchro 2020-C		IPv4 Address	15	Resol CPU RAM DISK	I 546 8 KB/c sk 1
	counts Account	s Account Requ	ests Event Log					6	Recei	nt Alerts
API Tooli	New Account	unt B	Cisco Smart Accou	Int Cisco Virtual Account	Acc	Search	Actions	Name	Conn	ected Users
	annanr-ssm-o prem-8-2020	on- annanr@cisco.co	om <u>(</u> .con	annanr-SSM-On- Prem-8-202006	Acti	ive	Actions	nowing All 1 Records	dmin	00:06:1

3.群集HA状态显示,主服务器左侧的数据库(复制主服务器)按照映像所示复制到右侧的辅助服务 器数据库(复制从服务器)。



### 故障转移

1.停止主服务器上的HA群集,如图所示。



2.主|次,如图所示。



3.使用VIP登录SSM内部GUI,主GUI关闭。

4.辅助服务器(.10)显示为活动服务器。

5.心跳已断开。

6.主服务器(.5)已移至备用状态。



7.如图所示,从辅助/主用服务器GUI中可以成功看到SSM内部帐户与思科软件中心的同步。

cisco										
Smart Softwa	Are M Ac	Accounts	Account Requests	Event Log		Network General	Network Interface	X Proxy	System Healt	h CentOS 8-202006 1 day
Management Accounts Sett	ngs Nort	New Account Account aman-ssm-on- prem-8-202006	Requested By annanr@cisco.com	Cisco Smart Account	Cisc anna Pren	ens192 Connected IPv4 Addres IPv6 Addres View Interfa	0 IS Ce	Subnet Mask 255.255.255.0 Prefix	Resource Mo CPU   RAM DISK   Prantace ens192 ~ Recent Alerts	nitor Percentage ↑ 635.6 KB/s ↓ 161 KB
Cer High Availability Status	ter ponizati	Major     Minor     Name     annan-ssm-on-prem-8	Satellite Name	Last Synchronizz	ation 4:13:44				Connected U	oc.02.26

8.在主服务器上启动HA群集,如图所示。



9. HA群集状态显示主数据库是从辅助数据库复制的。

10.主|次,如图所示。



11. GUI显示心跳已连接,辅助处于活动状态,主要处于备用状态,如图所示。

uluilu cisco

#### Smart Software Manager On-Prem



### 12.创建新的TEST帐户,并在主用备用模式下将其激活。(.10)服务器。

### 13.此阶段无法访问主(.5)GUI。

ccounts					
Accounts	Account Requests	Event Log			
New Account	D			1	Search by Account Name
Account	Requested By	Cisco Smart Accoun	t Cisco Virtual Account	Account Status	s Actions
annanr-ssm-on-prem-8- 202006	annanr@cisco.com	.com	annanr-SSM-On-Prem-8- 202006	Active	Actions
TEST	annanr@cisco.com		TEST123	Active	Actions
					Showing All 2 Records



1.停止辅助中的Ha\_cluster,如图所示。



2.此处可以看到主服务器数据库和辅助服务器数据库的当前状态。



3.使用VIP登录SSM内部GUI,辅助GUI关闭。

4.主服务器(.5)显示为活动服务器。

5.心跳已断开。

6.辅助服务器(.5)已移至备用状态。



7.新创建的TEST帐户可以在同步状态下看到,因为复制从辅助数据库复制到主数据库,如图所示。

ahaha			High Av	vailability	/					0	0   Aco	ount Log Out
cisco				Host	Event Log	8						
Smart So	ftware M	anager On-Prem		Degra	ded		He	eartbeat			Syste	Good
Access	Security			The cluster	r is degraded One of th	ne cluster nodes is offline	Co	onnection status:	Disconnecte	d	Jerver N Aersion Jptime	Your machine is working well lame CentOS 8-202006 1 day
Management			VIP		.12						Reso	urce Monitor Percentage
				pu	Active Server	1.5)		p	Standby Ser	.10)	CPU RAM DISK	
Accounts	Settings			p	primary-node (192.168.	1.4)		5	econdary-node (19	2.168.1.5)	ins192	
TOOLS	•*		the second			ananan  -	-0	L .			Rece	nt Alerts
API Toolkit	Support				Active				Degraded			_
	Center		Accour	nts							۲	
	<b>2</b>		_	Accounts	Account Req	uests Event	Log					Cted Users 00:01:43
High S Availability	Synchronization	1	N	ew Account	6				Sea	rch by Account Name		
Status			Acc	ount	Requested By	Cisco Smart A	ccount	Cisco Virtual Account	Account Status	Actions		
	<b>()</b>	Curchyonization	ann	m-8-202006	annanr@cisco.	com	com	annanr-SSM-On- Prem-8-202006	Active	Actions		
Network	Users	Synchronization	TES	ST	annanr@cisco.	com	com	TEST123	Active	Actions		
		Accounts	-							Showing AII 2 R	oords	
												6
		Name	Satallita Ma	ma 1	ast Sunchronization	Sunchronization Pro-	Alerte	Search by Name				
		annanr-ssm-on-prem-8-202006	annanr-san	n-on 1	2020-Sep-02 07:33:32	2020-Oct-02 07:33:32	Synch	ronization Successful	Acti			
		TEST	TEST		2020-Sep-02 07:35:42	2020-Oct-02 07:35:42	Synchr	ronization Successful	Acti			

8.在此阶段,可以从VIP地址(.12)访问GUI,而不是从辅助IP地址。

9.在辅助服务器上启动HA群集,如图所示。



10.群集HA状态显示,主服务器的数据库(复制主服务器)正在复制到右侧的辅助服务器的数据库 (复制从服务器),如图所示。

PCSD Status: secondary-node: Online primary-node: Online	PCSD Status: secondary-node: Online primary-node: Online
Daemon Status: corosync: active/enabled pacemaker: active/enabled pcsd: active/enabled Last login: Wed Sep 2 09:09:35 UTC 2020 on pts/0	corosync: active/enabled pacemaker: active/enabled pcsdi sctive/enabled Last login: Wed Sep 2 09:20:43 UTC 2020 on pts/0
Database Renjication Status:	Database Replication Status:
Database is currently the replication master - Neplicating to secondary-mode (: .10) Replication to slave: lient address - backend start - i state   write lan   fluch lan	Replication to slave: client_addr   backend_start   state   write_lag   flush_lag   replay_lag
replay_lag	
192.168.1.5   2020-09-02 09:08:39.350506+00   streaming   0   0   0 (1 row)	Replication from master: pg_last_xlog_replay_location 
Replication from master: _pg_last_xlog_replay_location	
	Þ
0//0/9510 (1 row)	b>
	las l

11. GUI显示主用主服务器和备用辅助服务器之间连接的心跳。

12. TEST帐户已成功与思科软件中心同步。



## 在故障切换和回退期间向SSM现场VIP注册产品实例

应使用本指南配置两个SSM内部服务器之间的高可用性:

#### 部署HA群集

: <u>https://www.cisco.com/web/software/286285517/152313/Smart\_Software\_Manager\_On-</u> <u>Prem\_8-202006\_Installation\_Guide.pdf</u>

在本演示中,使用:

.11 — 主服务器的IP地址

.9 — 辅助服务器的IP地址

.14 — 虚拟IP地址

### 高可用性

1.成功配置HA,将主服务器(.11)显示为主用服务器,将辅助服务器(.9)显示为备用服务器,将 VIP(.14)显示为主服务器。

cisco					Logged In   Account   Log Dut
Smart So Access Management	oftware I	Mana ligh Av	ger On-Prem railability Host Event Logs Normal The status of the high availability cluster is normal.	Heartbeat Connection status: Connected	System Health Constraints of the second sec
Accounts	Settings Support Center		.14 Active Server public address ( `.11) primary-node (169.254.0.1)	Standby Server public address ( .9) secondary-node (169,254.0.2)	DISK ↓ Tentform Tent
High Availability Status Vetwork	Synchroni: Users	Sys	Stem Information Active Server Physical Memory 7.62 GB Disk Space 7.83 GB Current Version 8-202105	Standby Server Physical Memory Disk Space Current Version	

2.群集HA状态显示,主服务器左侧的数据库(复制主服务器)按照映像所示复制到右侧的辅助服务 器数据库(复制从服务器)。

PCGD Bistusi primary-mode: Online secondsry-mode: Online Caresons: Status: corosyn:: activa/anabled pacemaker: activa/anabled pcdd: activa/anabled pcdd: activa/anabled pcdd: activa/anabled pcdd: activa/anabled pcdd: activa/anabled pcdd: activa/anabled pcdd: activa/anabled	PCDS Bistus: secondsty-mode: Online primary-mode: Online correspon: active/enabled pscemaker: active/enabled psced: active/enabled Last legin: Sum Jum 70 lB:11:42 UTC 2021 on pts/0
Database Replication Status:	Database Replication Status:
Database is currently the replication master - Replicating to secondary-node (9)	Database is currently the replication slave - Replicating from primary-node ( .11)
Replication to slave: client_addr   backend_start   state  write_lag  flush_lag   replay_lag	Replication to slave; client_sddr   backend_start   state   write_leg   flush_leg   replay_leg
166.254.0.2   2021-06-18 15:58:57.231321-00   streaming   0   0   0 (1 row)	Replication from master: pg_last_wlog_replay_location
Replication from master: pp_last_xlog_replay_location	8/C/434F8 (1 row) >>

3.当SSM本地部署为HA群集时,请登录SSM本地管理工作**空间**,导航到**安全 > 证书**,然后使用主 机公用名上的虚拟IP地址。

4.此值必须与您计划用于产品目标URL的值匹配。如果部署双堆栈(IPv4和IPv6),此值必须是 FQDN,而不是IP地址。

5.更新主机公用名后,请通过将本地帐户与思科智能软件管理器同步,确保用新公用名重新生成证 书。

6.在尝试使用目标URL配置中的新公用名重新注册产品之前,必须进行同步。

7.不同步可能导致产品无法注册到新的主机公用名。

cisco	Licensing Works	pace
Smart Software Manager On-Prem		System Health
Security Account Password Certificate	s Event Log	Your matchine is working well           Server Name         annam-8-202105           Vorsion         8-202105
Access Socurity Management Product Certificate Hest Common Name .14		Uptime 14 days Resource Monitor Percentage CPU 1 RAM DISK 1
Accounts Settings Seven NOTE: The Host Common Name is typically composed of Host + Domain for product communications is specific to the Common Name that has be to configure the Cisco Product when connecting to SSM On-Prem. If you issue a new CSR	Name and will look like "www.yoursite.com" or "yoursite.com". The SSL Server Certificate used en issued at the Host. Therefore, the Common Name must match the Web address you will use change the Common Name, you must resynchronize your Local Account in order for Cisco to	ensise ← ↑ 4 MB/s ↓ 1.8 MB/s Recent Alerts ● Insufficient Licenses
API Toolkit Support Center Add Generate CSR Iocalhost (Default Certificate)	IDXPIRATION DATE: 2022-JUN-D6	Connected Users ≜admin 00:15:11
Availability Status		Logged In Account Log Cut
cisco	Product Registration URL ×	dmin Admin Workspace
Smart Software Manager On-Prem > Smart Licensing Smart Licensing	https://     .14/Transportgateway/services/DeviceRequestHandle       f       Press ctrl + c to copy selected text to clipboard.	annanr-asm-on-prem-8-2021 *
Alerts Inventory Convert to Smart Licensing Reports	Preferences Activity	
Local Virtual Account: Default		
General Licenses Product Instances SL Using Pol	icy Event Log	
Local Virtual Account		
Description This is the default virtual account Default Local Virtual Account: Yes	at created during company account creation.	
Product Instance Registration Tokens		
The registration tokens below can be used to register new product instances to this Local Virtual Account. F support Smart Licensing Using Policy that use celu as transport, you must configure the "license smart tran	or products that support Smart Transport, you must configure the "license smart un" on the product to use the Smart sport calu" to use the CSLU Transport URL. For legacy products that still use Smart Cali Home, you must configure th	Transport Registration URL. For products that • "destination address http" on the product to

8.两个产品实例(annar-39)和(cucmpub)注册到SSM On-Prem的VIP地址,如"产品实例"(Product Instances)选**项卡**所示。

9.这些产品实例使用/请求的许可证反映在"许可证"**选项**卡上。

ululu cisco						🐣 Hello, Local Admir	Lagged in Account Lag Out
Smart Software Manager On-Prem > Smart Licensing Smart Licensing							annanr-ssm-on-prem-8-2021 🔹
Alerts Inventory Convert to Smart Licer	sing Report	s Preferences	Activity				
Local Virtual Account: Default							
General Licenses Produc	t Instances	SL Using Policy E	event Log				
							Search by Name, Product Type Q
Name Produ	ct Type	Last Contact	Alerts			Actions	
UDI_PID:PI-SOFTWARE;UDI_SN:annanr-39 SDNN	IGMT	2021-Jun-20 18:39:00				Actions	
cuempub UCL		2021-Jun-20 18:36:56				Actions	
						10 - Showin	g Page 1 of 1(2 Records)  (
alialia cisco						🐣 Hello, Local Admin	Logged in Account Log Out
Smart Software Manager On-Prem > Smart Licensing Smart Licensing							annanr-ssm-on-prem-8-2021 +
Alerts Inventory Convert to Smart Licer	ising Report	s Preferences	Activity				
Local Virtual Account: Default General Licenses Produc	t Instances	SL Using Policy E	ivent Log				
Available Actions * Manage License Tags	Þ						By Name By Tag Search by License Q
License	Billing	Purchased	In Use	Substitution	Balance	Alerts	Actions
Prime Infrastructure 3.x, BASE Lic.	Prepaid	0	1		-1	O Insufficient Licenses	Actions -
Prime Infrastructure 3.x, Lifecycle Lic.	Prepaid	0	34		-34	O Insufficient Licenses	Actions *
UC Manager Enhanced License (12.x)	Prepaid	0	з		-3	O Insufficient Licenses	Actions *
UC Manager Enhanced Plus License (12.x)	Prepaid	0	1		-1	O Insufficient Licenses	Actions +
UC Manager Telepresence Room License (12.x)	Prepaid	0	1		-1	O Insufficient Licenses	Actions - Showing All 5 Records

### 故障转移

1.停止主服务器上的HA群集,如图所示。

PCSD Status: primary-node: Online secondary-node: Online	PCSD Status: secondsty-mode: Online primaty-mode: Online
Daemon Status: corosync: active/enabled pacemaker: active/enabled pesd: active/enabled Last login: Sun Jun 20 18:12:43 UTC 2021 on pts/0	Daemon Status: corosync: active/enabled pacemaker: active/enabled pcsd: active/enabled Last login: Sun Jun 20 18:11:42 UTC 2021 on pts/0
Database Replication Status:	Database Replication Status:
Database is currently the replication master - Replicating to secondary-node ( '.9)	Database is currently the replication slave - Replicating from primary-node ( .11)
Replication to slave: client_addr   backend_start   state   write_lag   flush_lag 1 reniw: ion	Replication to slave: _client_sddr   backend_start   state   write_leg   flush_leg   replay_leg
alaanaanaanaanaanaanaanaanaanaanaanaanaa	
169-254.0-2   2021-06-18 15:58:57-211121+00   streaming   0   0   0 ( trow)	Application from master: pp_lst_plog_replay_location
Replication from master: pg_last_xlog_replay_location	0/C753AF8 (1 Tow)
(1 row)	
(2) La ha cluster ston	
Last login: Sun Jun 20 18:12:45 UTC 2021 on pts/0	
Stopping Cluster (pacamaxer)	
Stopping Cluster (corosync)	

2.使用VIP(.14)登录SSM内部GUI,主GUI关闭。

3.辅助服务器(.9)显示为活动服务器。

4.心跳已断开。

5.主服务器(.11)将移至备用状态。



6.使用SSM On-Prem VIP在产品注册URL的传输网关设置中注册产品实例,如图所示。



7.产品实例名称:pi37已使用VIP地址成功注册到SSM现场,如图所示。

alleder Prime Infrastructure					Q - Application Search	🐥 😣 9	root - ROOT-DOMAIN 🔅
Administration / Licenses and Softwar	re Updates / Smart Software Lic	ensing 🖈				Licensing Das	hboard   🕘 💭 🗭 🗖
Licensing Settings License Dashboard Setting	8						
Smart Software Licensing							
To view and manage Smart Licenses for your Cisco Sr	nart Account, go to Smart Software Manager						
Smart Software Licensing Status							
Licensing Mode Smart Software Licens	ing						
Product Name Prime Infrastructure							
Registration Status 🛛 Registered (Jun 20.	2021)						
License Authorization Status 8 Out of Compliance	(Jun 20, 2021)						
Smart Account annanr-ssm-on-prem-6	3-202105						
Virtual Account Default							
Transport Settings Transport Gateway Vie	w/Edit						
<ul> <li>Smart License Usage</li> </ul>							
Choose Licenses			Last updated: Sunday Jun 20, 202	1 at 7:28 PM			
License	Description	Count	Status				
Prime Infrastructure 3.x, Assurance Lic.	The Assurance license	2	🙁 Out of Compliance	۵.			
Prime Infrastructure 3.x, BASE Lic.	The Base license	1	😣 Out of Compliance	(i)			
Prime Infrastructure 3.x, Lifecycle Lic.	The Lifecycle license	14	😣 Out of Compliance	(i)			
Prime Infrastructure 3.x, UCS Server MGMT Lic.	The Data Center license	0	🗹 No Licenses in Use	0			
Prime Infrastructure 3.x, UCS VM	The Data Center Hypervisor license	0	🔽 No Licenses in Use	(I)			
Actions v							

### 8.在"传输网关"设置的产品注册URL中使用SSM现场VIP注册其他产品实例。

- Status	
Transport settings saved successfully.	
Configure how the product instance will communicate with Cis	isco.
O Direct - product communicates directly with Cisco licensing servers.	
URL :	: https://tools.cisco.com/its/service/oddce/services/DDCEService
O Transport Gateway - proxy data via Transport Gateway or Smart Software Ma	Manager satellite.
URL :	: https:// .14/Transportgateway/services/De
$\bigcirc$ HTTP/HTTPS Proxy - send data via an intermediate HTTP or HTTPS Proxy.	
Authentication needed on HTTP or HTTPS proxy	
IP Address/Host Name :	:
Port :	:
User Name :	:
Password :	:
Do not share my hostname or IP address with Cisco.	

Smart egent registered successfully

### 9.使用VIP地址(如图所示)通过SSM现场部署成功完成产品注册。

Status           Image: Complete and the successful s
Smart Software Licensing Product Registration
To register the product for Smart Software Licensing:
Paste the Product Instance Registration Token you generated from Smart Software Manager or your Smart Software Manager satellite

十、产品实例名称:cucm-pub-30已使用VIP地址成功注册到SSM On-Prem,如图所示。

Cisco Unified CM Administr For Cisco Unified Communications Solution	ration <sup>s</sup>		
System • Call Routing • Media Resources • Advanced F	eatures - Device - Application - U	Jser Management 👻 Bulk Administration 👻 Help 💌	
License Management			
Chabura			
Status			
Smart Software Licensing: The system is operating w	ith an insufficient number of licenses. C	onfigure additional licenses in Smart Software Manager within 72	days to avoid losing the ability to provision users and devices.
Smart Software Licensing			
Registration Status		Registered	
License Authorization Status		Out of Compliance (Sunday, June 20, 2021 10:29:53 PM FEST	1
Smart Account		annanr-ssm-on-prem-8-202105	,
Virtual Account		Default	
Product Instance Name		cucm-pub-30	
Export-Controlled Functionality		Allowed	
Licensing Mode		Fransport Gateway view/boilt the Licensing Smart Call Home settil	ngs
License Usage Report			
Below is a summary of current license usage on the s deployment.	system. Current usage details for each t	ype are available by pressing "Update Usage Details". Note that co	ellecting these data is a resource intensive process and may take several
View All License Type Descriptions And Device Classification	005		
Index Uses Date 1. Liegos Dataile Last Lindated: 2021	-06-20 22:30:09		
Opdate Usage Details Usage Details cast Opdated. 2021	-00-20 22.50.05		
License Requirements by Type			
License Type	Current Usage	Status	Report
CUWL	0	Mo Licenses in Use	Users( 0 ) Unassigned Devices( 0 )
Enhanced Plus	0	No Licenses in Use	Users( 0 )
Enhanced	44	Out of Compliance	Users(.8.)   Unassigned Devices(.36.)
Basic	2	🙆 Out of Compliance	Users(1) Unassigned Devices(1)
Essential	4	Out of Compliance	Users(_0_)   Unassigned Devices(_4_)
TelePresence Room	0	🖾 No Licenses in Use	Users( 0 )   Unassigned Devices( 0 )
Users and Unassigned devices			
Users	9	View Usage Report	
Unassigned Devices	41	View Usage Report	
-			

11.两个新产品实例(pi37)和(cucm-pub-30)注册到SSM On-Prem的VIP地址,如"产品实例"(Product Instances)选项**卡所**示。

12.这些产品实例已使用/请求的许可证反映在"许可证"**选项**卡上。

annan-ssm-on-prem-8-20
LaJ
Search by Name, Product Type Q
Actions

co						📥 Hello, Local Admir	) Admin Workspace
Software Manager On-Prem > Smart Licensing							annanr-ssm-on-prem-8
Smart Licensing							
Alerts Inventory Convert to Smart Ucene	ing Reports	Preferences	Activity				
Local Virtual Account: Default							
General Licenses Product	Instances SL	Using Policy E	vent Log				
							By Name By Tag
Available Actions * Manage License Tags	]						Search by License Q
License License	Billing	Purchased	In Use	Substitution	Balance	Alerts	Actiona
Prime Infrastructure 3.x, Assurance Lic.	Prepaid	0	2		-2	Insufficient Licenses	Actions *
<ul> <li>Prime infrastructure 3.x, BASE Lie.</li> </ul>	Prepsid	0	2		-2	Insufficient Licenses	Actions +
<ul> <li>Prime Infrastructure 3.x, Lifecycle Lic.</li> </ul>	Prepaid	0	48		-48	Insufficient Licenses	Actions +
UC Manager Basic Upense (12.x)	Prepaid	0	2		-2	Insufficient Licenses	Actions *
	Prepaid	0	47		-47	Insufficient Licenses	Actions -
<ul> <li>UC Manager Enhanced License (12:x)</li> </ul>							
UC Manager Enhanced License (12.x) UC Manager Enhanced Plus License (12.x)	Propoid	0	1		-1	Insufficient Licenses	Actions =
UC Manager Enhanced License (12.x) UC Manager Enhanced Plus License (12.x) UC Manager Essential License (12.x)	Propaid Prepsid	0	1		-1	<ul> <li>Insufficient Licenses</li> <li>Insufficient Licenses</li> </ul>	Actions * Actions *

13.在主服务器上启动HA群集。

>> ha\_cluster\_start Last login: Sun Jun 20 19:36:49 UTC 2021 on pts/0 Starting Cluster (corosync)... Starting Cluster (pacemaker)...

14. HA集群状态显示主数据库是从辅助数据库复制的。

15.主|次,如图所示。

RCSD Status:	PCSD Status:
primary-node: Online	secondary-mode: Online
secondary-node: Online	seimer-emeite: Online
Deemon Status:	Daemon Status:
corosync: active/enabled	corosync: attive/emabled
pscemaker: active/enabled	pacemaker: attive/emabled
pscs/: active/enabled	pedd: active/emabled
Last login: Sun Jun 20 18:44:00 UTC 2021 on pts/0	Last login: Sun Jun 20 18:42:10 UTC 2021 on pts/0
Database Replication Status:	Database Replication Status
Database is currently the replication slave - Replicating from secondary-node (	Database weplication Status:
Replication to slave:	Database is currently the replication slave - Replicating from primary-mode ( ,11)
client_addr   backend_start   state   write_leg   flush_leg   replay_leg	Replication to slave:
(0 rows)	client_addr   backend_start   state   write_lag   flush_lag   replay_lag
	(0 rows)
Application from master:	Replication from matter:
pg_last_slog_replay_location	pg_last_xlog_replay_location
(1 ros)	e/c76302e (1 row)

16. GUI显示心跳已连接,辅助处于活动状态,主要处于备用状态,如图所示。



### 回退

1.停止辅助中的Ha\_cluster。

2.可以看到主服务器数据库和辅助服务器数据库的当前状态。



3.使用VIP(.14)登录SSM内部GUI,辅助GUI关闭。

4.主服务器(.11)显示为活动服务器。

5.心跳已断开。

6.辅助服务器(.9)已移至备用状态。



7.在此阶段,可以从VIP地址(.14)访问GUI,而不是从辅助IP地址。

8.在辅助服务器上启动HA群集。



9.群集HA状态显示,左侧主服务器的数据库(复制主服务器)按照预期复制到右侧辅助服务器的数 据库(复制从服务器)。



10. GUI显示主用主服务器和备用辅助服务器之间连接的心跳。



11.注册到SSM现场的VIP地址的所有四个产品实例,如"产品实例"选**项卡**所示。

### 12.这些产品实例已使用/请求的许可证反映在"许可证"**选项**卡上。

					🐣 Hello, Local Admin	Admin Workspace
oftware Manager On-Prem > Smart L	icensing					annanr-ssm-on-prem-8-2021
Smart Licensing						
Alerts Inventory	Convert to Smart Licensing	Reports Preferences	Activity			
ocal Virtual Account: Default						
General Licer	Product Instances	SL Using Policy	Event Log			
					Se	arch by Name, Product Type Q
Name	Product Type	Last Contact	Alerts		Actions	
UDI_PID:PI-SOFTWARE;UDI_SN:anna	sonmant	2021-Jun-20 18:39:00			Actions	
UDI_PID:PI-SOFTWARE;UDI_SN:pi37:	SDNMGMT	2021-Jun-20 19:26:47			Actions	
cuempub	UCL	2021-Jun-20 18:36:56			Actions	
cucm-pub-30	UCL	2021-Jun-20 19:28:51			Actions	
						Logged In Account
ilii co	Licensing				🐣 Hello, Local Admin	Admin Workspace
III. Co Software Manager On-Prem > Smart Smart Licensing	Licensing				🔺 Hello, Local Admin	Admin Workspace
Software Manager On-Prem > Smart Smart Licensing Aints Inventory	Licensing Convert to Smart Licensing	Reports Preferences	Activity		📥 Hello, Local Admin	Admin Workspace
Software Manager On-Prem > Smart Smart Licensing Alets   Inventory   Local Virtual Account: Default General Lice	Licensing Converte Smart Licensing	Reports Preferences SL Using Policy	Activity Event Log		📥 Hello, Local Admin	Admin Workspace
Software Manager On-Prem > Smart Smart Licensing Aints Inventory Local Virtual Account: Default General Lice	Converte Smart Licensing	Reports Preferences	Activity Event Log		📥 Hello, Local Admin	Admin Workspace
Software Manager On-Prem > Smart Smart Licensing Alarts Inventory   Local Virtual Account: Default General Lice Available Actions + Manage	Convert to Smart Ucerwing anses Product Instances b License Tegs	Reports Preferences	Activity Event Log		🔺 Hello, Local Admin	Admin Workspace           Image: Second press - Secon
Software Manager On-Prem > Smart Smart Licensing Alats Inventory   Local Virtual Account: Default General Lice Available Actions ~ Manage	Licensing Converte Smart Licensing anses Product Instances b License Tags Bill?	Reports Preferences a SL Using Policy a SL Using Policy	Activity Event Log	Substitution Balance	Aketa	Admin Workspace           Image: Second system           By Name         By Tag           Search by License         Q           Actiona         Image: Second system
Software Manager On-Prem > Smart Smart Licensing Alaris Inventory   Local Virtual Account: Default General Lice Available Actions ~ Manage License Prime infestingting 3.x, Assure	Licensing Converte Smart Licensing anses Product Instances b License Tags Bitr nce Lice. Prod	Reports Preferences a SLUsing Policy a Purchased paid 0	Event Log	Bubathulion Balance -2	Aketa Aketa Insufficient Licenses	Admin Workspuce
Cool Virtual Account: Default General Lice Available Actions ~ Manage License Prime Instructure 3.x, Assure Prime Instructure 3.x, Assure Reserved Structure 2.x, RASE	Licensing Converte Smart Licensing anses Product Instancer a License Tags Bitr nce Lic. Proj Lic. Proj	Reports Preferences SLUsing Policy SLUsing Policy Parchased poid 0	Activity Event Log	Substitution Balance -2 -2	Aveta Aveta Insufficient Licenses Insufficient Licenses Insufficient Licenses	Admin Workspuce
Available Actions = Manage     Available Actions = Manage     Available Actions = Manage     License     Prime infrastructure 3.x, Assure     Prime infrastructure 3.x, EASE     Prime infrastructure 3.x, Lifeop	Licensing Converte Smart Licensing anses Product Instancer a License Tags Bair nee Lic. Pro Lic. P	Reports Preferences SLUsing Policy Ng C Parchased paid 0 paid 0	Activity Event Log In Use 2 2 2 48	Substitution Balance -2 -2 -48	Helo, Local Admin     Helo, Local Admin     Aurts     insufficient Licenses     insufficient Licenses     insufficient Licenses     insufficient Licenses	Admin Workspuce  By Name By Tog  Bearch by License Q  Actions  Act
Software Manager On-Prem > Smart Smart Licensing Alerts Inventory Local Virtual Account: Default General Lice Available Actions ~ Manage License Prime Infostructure 3.x, Assure Prime Infostructure 3.x, Assure Prime Infostructure 3.x, Assure Prime Infostructure 3.x, Lifeop UC Manager Basic Ucense 182	Licensing Converte Smart Licensing anses Product Instances bLicense Tags	Reports Parlierences SLUsing Parlierences Parchased paid 0 paid 0 paid 0 paid 0 0 paid 0 paid	Activity Event Log Event Log In Use 2 2 2 48 2	Substitution Balance -2 -2 -48 -2	Averts Averts Insufficient Licenses Insuffic	Admin Workspuce  By Name By Tog  Bearch by License  Actions  Actio
Software Manager On-Prem > Smart Smart Licensing Aleris Inventory Local Virtual Account: Default General Lice Available Actions ~ Manage License Prime Infrastructure 3.x, Assure Prime Infrastructure 3.x, Assure Difference Enforcementa 3.x, Lifety UC Manager Back Uncome 102	Licensing Converte Smart Licensing anses Product Instances License Tags ELicense Tags	Reports Parlierences SL Using Parlier Ng SL Parlier Parchased parlier SL Using Parlier Parchased Parcha	Activity Event Log Event Log In Use 2 2 48 2 48 2 47	Substitution Balance -2 -2 -48 -2 -2 -47	Helo, Local Admin     Helo, Local Admin     Auts     Insuficient Lionnee	Admin Workspace  By Name By Tog  Bearch by License Q  Actions Actions  Acti
Software Manager On-Prem > Smart Smart Licensing Aleris Inventory Local Virtual Account: Default General Lice Available Actions ~ Manage License Prime Infrastructure 3.x, Assure Prime Infrastructure 3.x, Lifecy UC Manager Exhanced INE	Licensing Converto Smart Licensing anses Product Instancer b License Tags	Reports Parlierences SLUsing Parlier a SLUsing Parlier parlier sub sub sub sub sub sub sub sub	Activity Event Log Event Log In Use 2 2 48 2 48 2 47 47 1	Bubstitution Balance -2 -2 -48 -2 -48 -2 -47 -47 -1	Averts Averts Insufficient Licenses Insuffic	Admin Workspace  By Name By Tog  Bearch by License Q  Actions Actions +  Acti
Software Manager On-Prem > Smart Sontware Manager On-Prem > Smart Smart Licensing Alaris Inventory Local Virtual Account: Default General Lice Available Actions ~ Manage Available Actions ~ Manage Uccesse Prime Intestnuture 3.x, Assur Prime Intestnuture 3.x, Assur UCC Manager Estimated Intesse UCC Manager Estimated Interse	Licensing Converto Smart Licensing anses Product Instances a License Tags b Licen	Reports Parlierences  SLUsing Parlierences  Rep Parchased  Rep Parchased Rep Parch	Activity Event Log In Use 2 2 4 4 8 2 4 4 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Bubstitution Balance -2 -2 -48 -2 -48 -2 -47 -4 -1 -4	Helo, Local Admin      Aerts     Insufficient Licenses	Admin Workspace

# 降级高可用性集群

- 1. Cisco Smart Manager On-Prem集群可以直接降级为单个独立节点。
- 2. 使用<ha\_teardown>命令,使用现场控制台连接到主/主用SSM现场。
- 3. 在验证SSM On-Prem的操作后,必须丢弃辅助/备用服务器,且不能重用。
- 4. 您现在将拥有独立系统,而不是集群。
- 5. 已启动拆卸,如图所示。



6.触发从属服务器拆卸,如图所示。

```
Database Replication Status:
Database is currently the replication slave - Replicating from primary-node (
client_addr | backend_start | state | write_lag | flush_lag | replay_lag
(0 rows)
Replication from master:
pg_last_xlog_replay_location
0/9000D30
(1 row)
and convert this service node into stand-alone mode without a cluster.
This script operates on the local service node and will not
Adjusting firewall...
success
The interface is under control of NetworkManager, setting zone to default.
Destroying HA cluster...
Stopping Cluster (pacemaker)...
Stopping Cluster (corosync)..
Shutting down pacemaker/corosync services...
Killing any remaining services...
Removing all cluster configuration files...
Disabling HA services.
Removed symlink /etc/systemd/system/multi-user.target.wants/pcsd.service.
Stopping SSH tunnel
Removed symlink /etc/systemd/system/multi-user.target.wants/tunha.service.
Cleaning up...
atlantis_default
Enabling SSMS stand-alone mode...
Created symlink from /etc/systemd/system/multi-user.target.wants/satellite.service to /etc/systemd/system/satellite.se
rvice.
Deleting SSH tunnel user...
HA cluster has been destroyed. SSMS is now in stand-alone mode.
```

7. HA群集已销毁。SSMS现在处于独立模式。



8.使用辅助服务器IP地址访问的GUI不再存放高可用性构件。

ululu cisco								Logge	t in   Account   Log Out	
Smart S	oftware Mana	ager On-Prem							System Health	
Access Management	Settings	Synchronization Accounts	Schedules		8				Your machine is Server Name CentOS Version 8-20200 Uptime 1 day	J working well
Accounts	Support	Major     Minor     Name     annanr-ssm-on-prem-8	Satellite Name	Last Synchronization 2020-Sep-02 07:33:32	Synchroniz 2020-Oct-	Network			Resource Monitor P CPU I RAM	Vercentage
	Center	TEST	TEST	2020-Sep-02 07:35:42	2020-Oct-	General	Network Interface	Proxy		3/s ¥ 397.5 KB/s
API Toolkit	Synchronization				,	Connected IPvt Address	0	Subnet Mask 255.255.255.0	PUBLIC ^	
Network	Users					IPv6 Addre	55	Prefix		00:01:17
Security										

### 9.触发主服务器拆卸,如图所示。

[>> ha_teardown Last login: Wed Sep 2 11:03:55 UTC 2020
WARNING: You are about to destroy the HA cluster configuration and convert this service node into stand-alone mode without a cluster.
This script operates on the local service node and will not affect the remote service node.
[Destroy HA cluster and convert to stand-alone? Enter 'yes' to continue: yes Adjusting firewall success success
The interface is under control of NetworkManager, setting zone to default. success success
Destroying HA cluster
Stopping Cluster (pacemaker) Stopping Cluster (corosync) Shutting down pacemaker/corosync services Killing any remaining services Removing all cluster configuration files Disabling HA services Removed symlink /etc/system/multi-user.target.wants/pcsd.service.
Stopping SSH tunnel
aded activating auto-restart SSH tunnel device forwarding service Removed symlink /etc/systemd/system/multi-user.target.wants/sshtunha.service. Removed symlink /etc/systemd/system/multi-user.target.wants/tunha.service. Cleaning up
atlantis_default Enabling SSMS stand-alone mode Created symlink from /etc/systemd/system/multi-user.target.wants/satellite.service to /etc/systemd/system/satellite .service. Deleting SCM turned user
HA cluster has been destroyed. SSMS is now in stand-alone mode.

10.已成功禁用HA。



11.使用主服务器IP地址访问的GUI不再存放高可用性构件。

uludu cisco								Logged In Account	Log Out
Smart So	oftware Manager	On-Prem Inchronization					8	System He GO Your	alth od machine is working well
Access Management	Settings	Accounts	Schedules					Server Name Version Uptime	CentOS 8-202006 2 days
		0 Major 0 Minor				Search by Name		Resource CPU	Monitor Percentage
Accounts	Support	Name annanr-ssm-on-prem-8-202006	Satellite Name	Last Synchronization 2020-Sep-02 07:33:32	Synchronization Due 2020-Oct-02 07:33:32	Alerts Synchronization Successful	Actions Actions	RAM DISK I Interface ens192 ¥	↑ 943.5 KB/s ↓ 429 KB/
TOOLS		TEST	TEST k	2020-Sep-02 07:35:42	2020-Oct-02 07:35:42	Synchronization Successful	Actions	Recent Ale	rts
API Toolkit	Synchronization		General	Network Interface	Proxy				
Network	Users	•	Connected	Subri 255.	PUBLIC ^ et Mask 255.255.0			Connected &admin	Users 00:00:25
Security			IPv6 Address Edit Interface	Prefi	bt				

### 接下来呢?!

1.登录到SSM本地主管理工**作区**,导航到**安全> 证书**,并在主机公用名上使用主服务器的(IP地址 /主机名/FQDN)。

2.更新主机公用名后,请通过将本地帐户与Cisco SSM同步,确保用新公用名重新生成证书。

3.在尝试使用目标URL配置中的新公用名重新注册产品之前,必须进行同步。

4.不同步可能导致产品无法注册到新的主机公用名。

## 相关信息

• 控制台指南

: <u>https://www.cisco.com/web/software/286285517/151968/Smart\_Software\_Manager\_On-</u> <u>Prem\_8\_Console\_Guide.pdf</u>

• 用户指南

: <u>https://www.cisco.com/web/software/286285517/151968/Smart\_Software\_Manager\_On-</u> <u>Prem\_8\_User\_Guide.pdf</u>

• 安装指南 :https://www.cisco.com/web/software/286285517/152313/Smart\_Software\_Manager\_OnPrem 8-202006 Installation Guide.pdf • <u>技术支持和文档 - Cisco Systems</u>