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。

- https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_Console_Guide.pdf
- https://www.cisco.com/web/software/286285517/152313/Smart_Software_Manager_On-Prem_8-202006_Installation_Guide.pdf

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
：https://www.cisco.com/web/software/286285517/152313/Smart_Software_Manager_On-Prem_8-202006_Installation_Guide.pdf

在本演示中，使用：

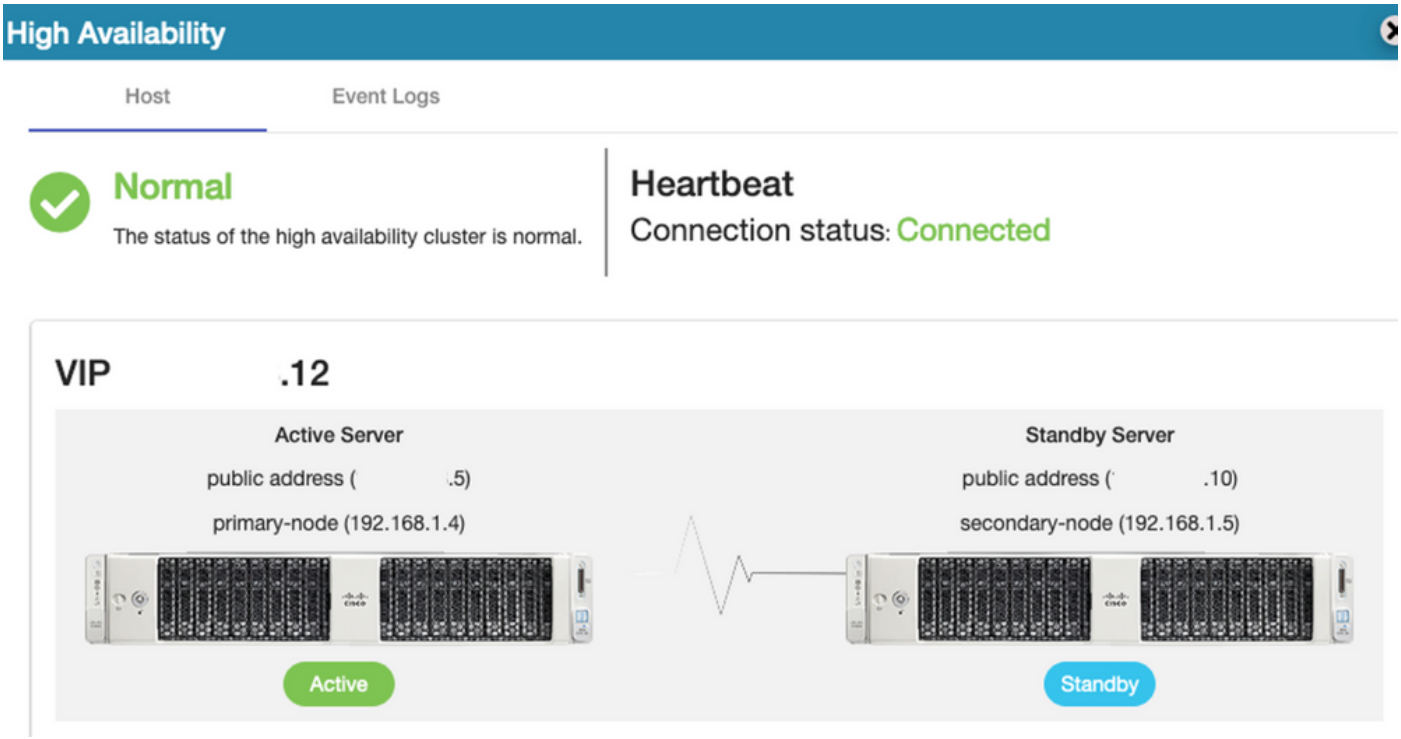
.5 — 主服务器的IP地址

.10 — 辅助服务器的IP地址

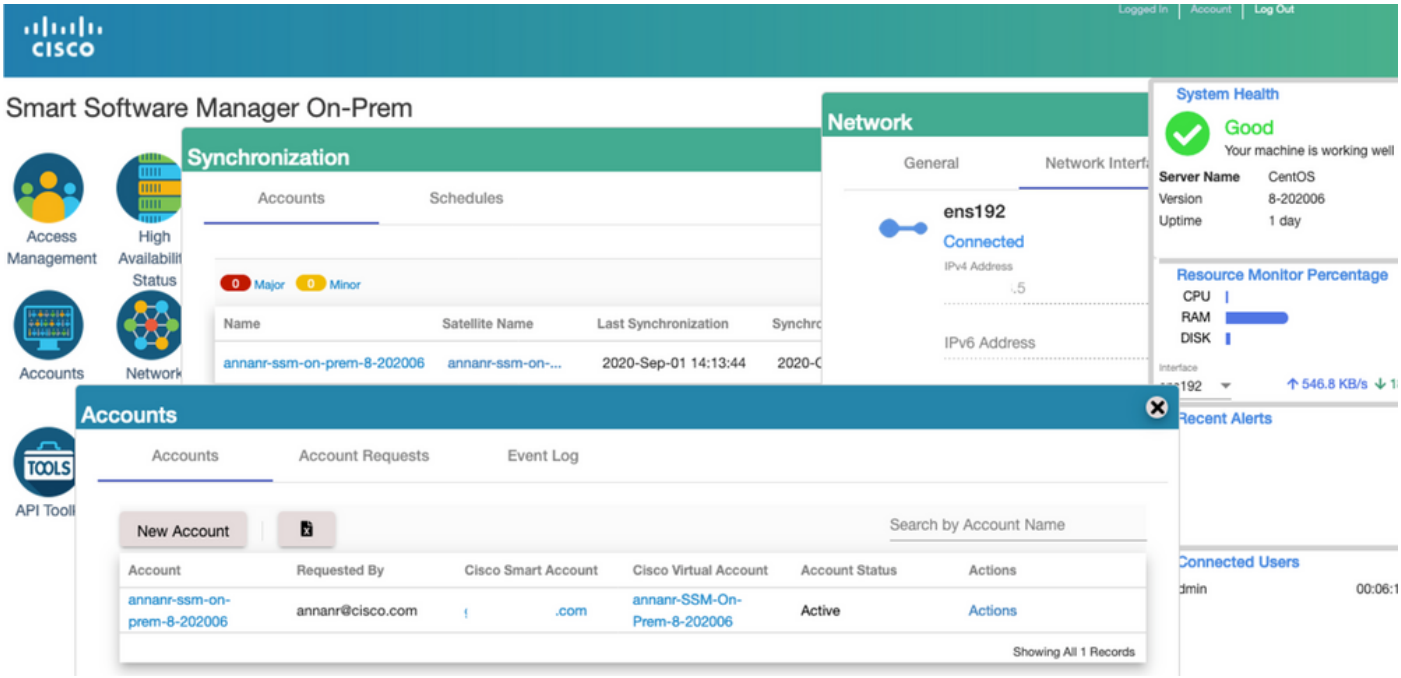
.12 — 虚拟IP地址

高可用性

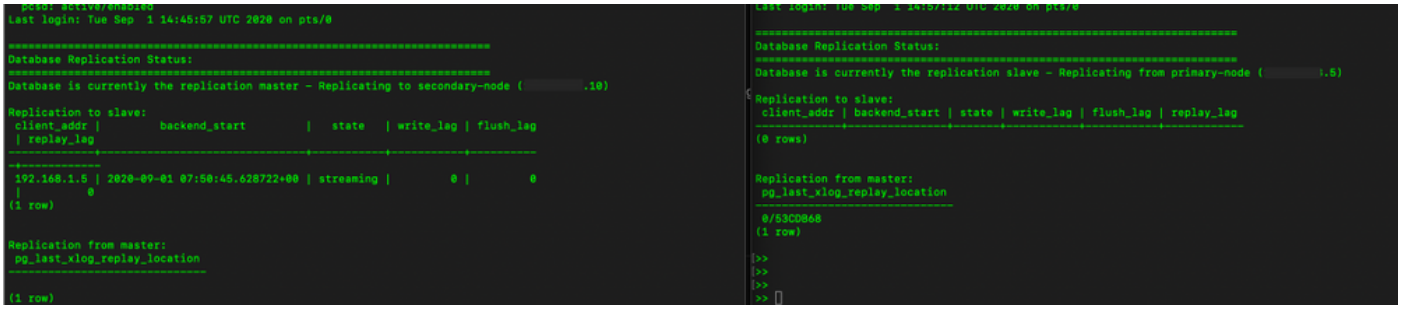
1. HA的成功配置显示主服务器(.5)为主用服务器，辅助服务器(.10)为备用服务器，VIP(.12)sd为映像所示。



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。

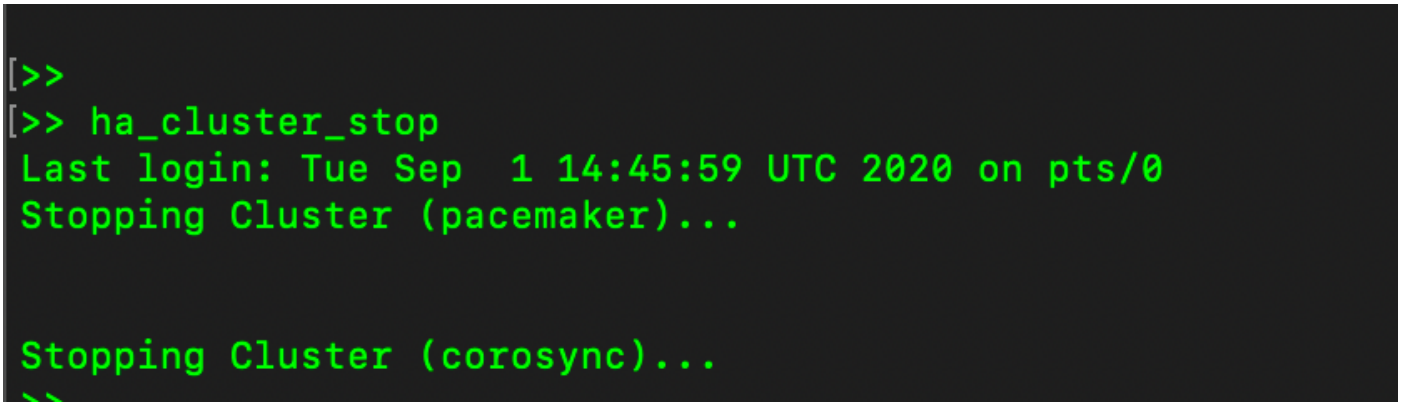


3.群集HA状态显示，主服务器左侧的数据库（复制主服务器）按照映像所示复制到右侧的辅助服务器数据库（复制从服务器）。

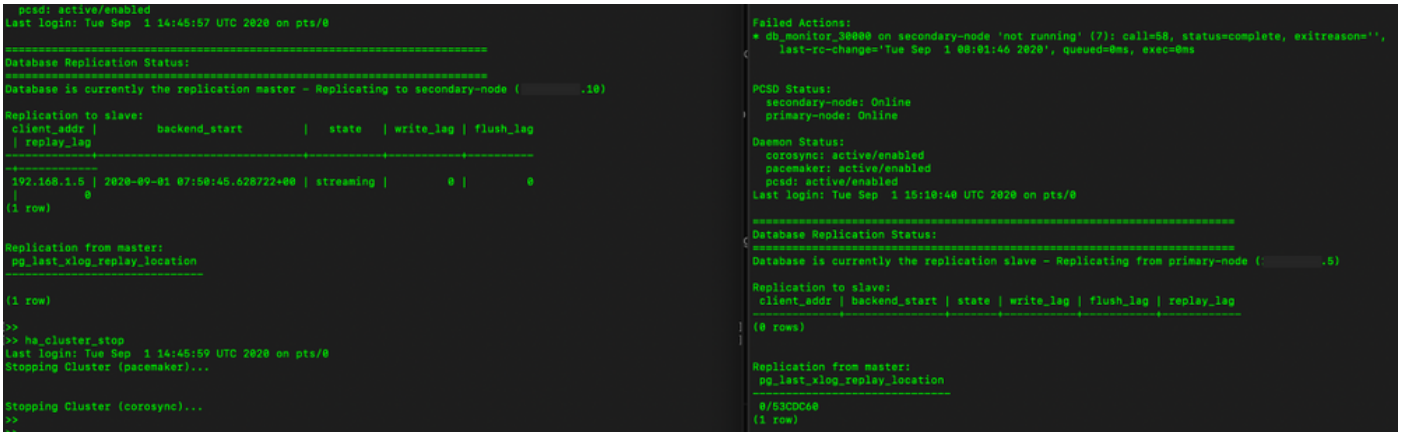


故障转移

1.停止主服务器上的HA群集，如图所示。



2.主|次，如图所示。

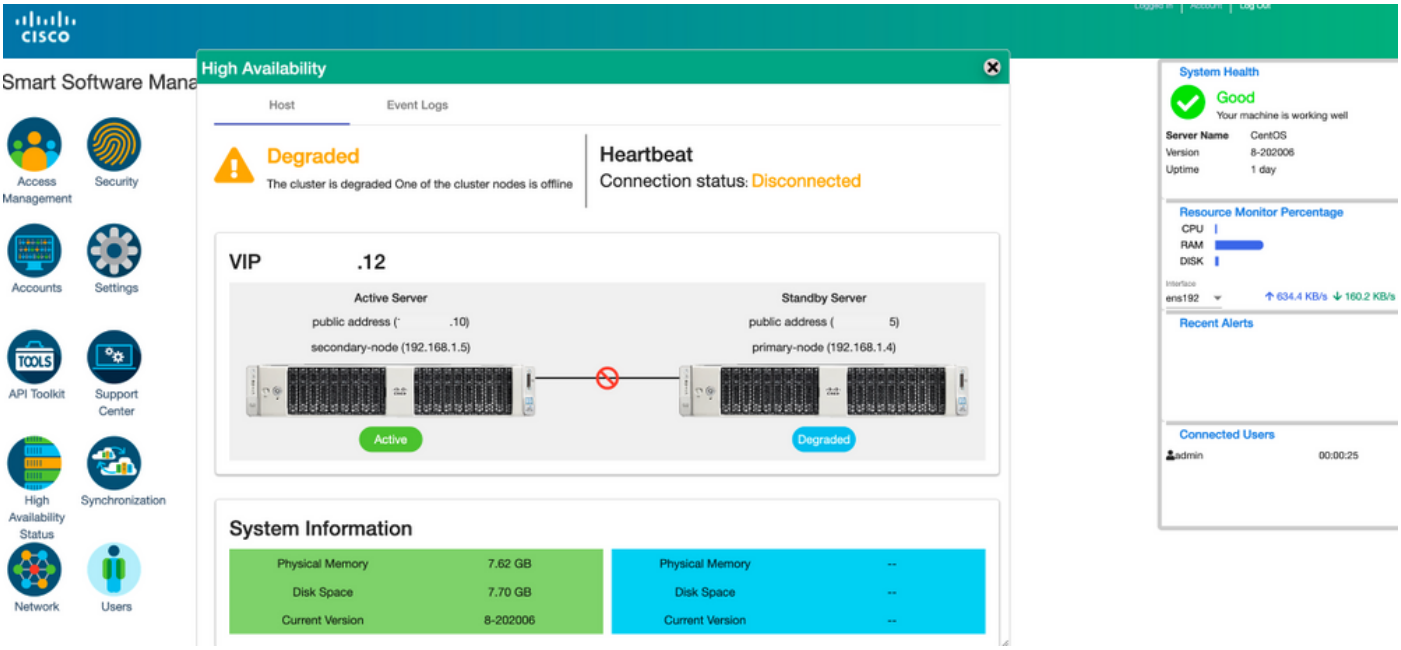


3.使用VIP登录SSM内部GUI，主GUI关闭。

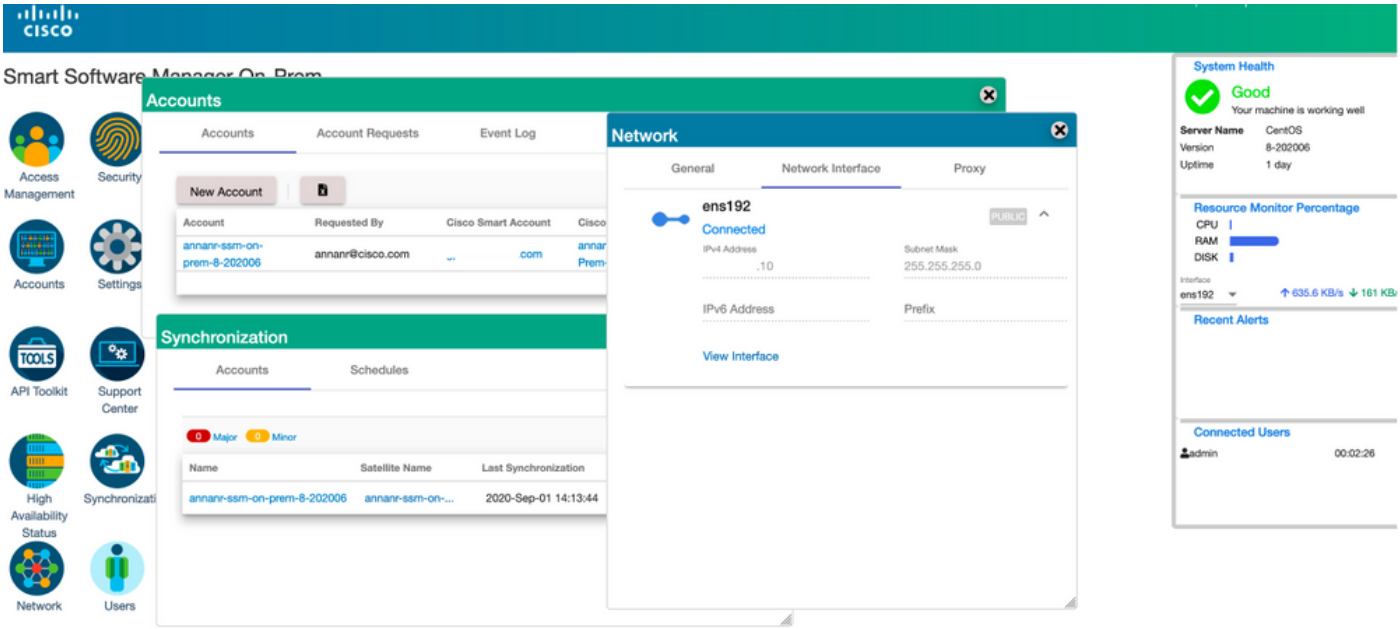
4.辅助服务器(.10)显示为活动服务器。

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。



8.在主服务器上启动HA群集，如图所示。

```
>> ha_cluster_start
Last login: Tue Sep  1 15:24:25 UTC 2020 on pts/0
Starting Cluster (corosync)...
Starting Cluster (pacemaker)...
```

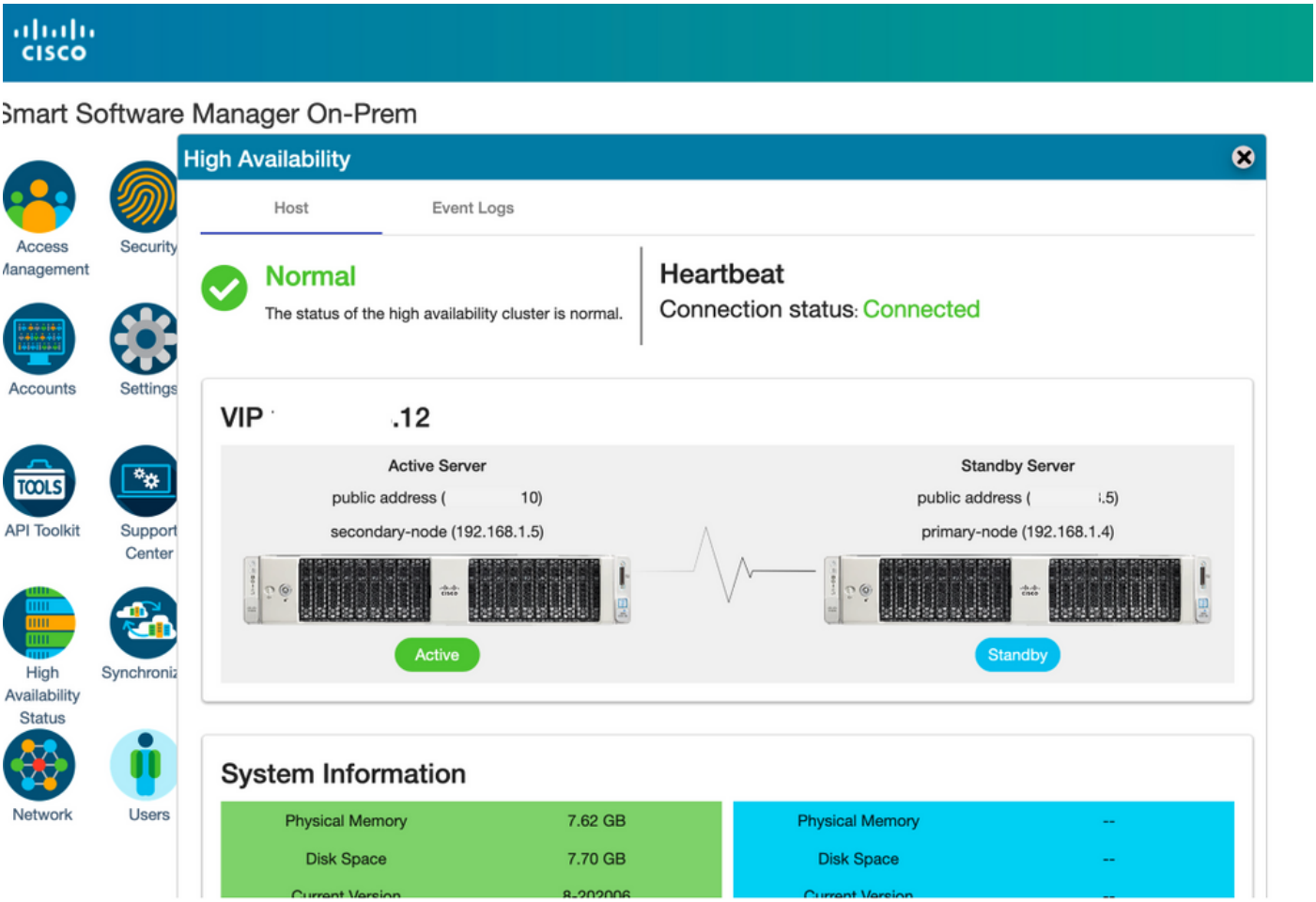
9. HA群集状态显示主数据库是从辅助数据库复制的。

10.主|次，如图所示。

```
PCSD Status:
  primary-node: Online
  secondary-node: Online

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Wed Sep  2 08:52:24 UTC 2020 on pts/0

Database Replication Status:
Database is currently the replication slave - Replicating from secondary-node (:.10)

Replication to slave:
 client_addr | backend_start | state | write_lag | flush_lag | replay_lag
(0 rows)

Replication from master:
 pg_last_xlog_replay_location
 0/7079718
(1 row)
```

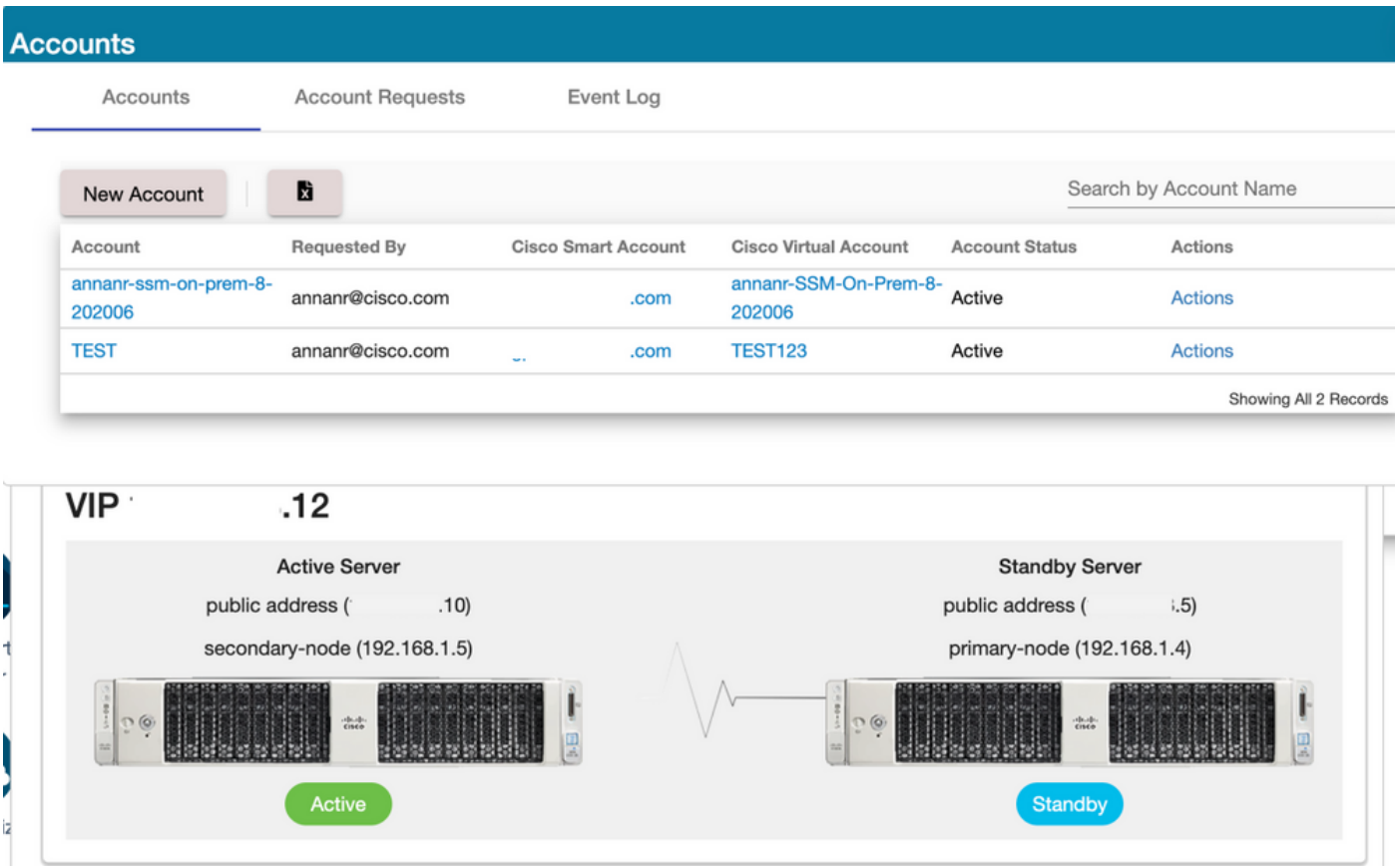
```
Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Wed Sep  2 09:03:23 UTC 2020 on pts/0

Database Replication Status:
Database is currently the replication master - Replicating to primary-node (.5)

Replication to slave:
 client_addr |         backend_start         |   state   | write_lag | flush_lag
 | replay_lag
 192.168.1.4 | 2020-09-01 15:36:33.502635+00 | streaming |         0 |         0
 |          0
(1 row)

Replication from master:
 pg_last_xlog_replay_location
 0/53CDC60
(1 row)
```

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。



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。

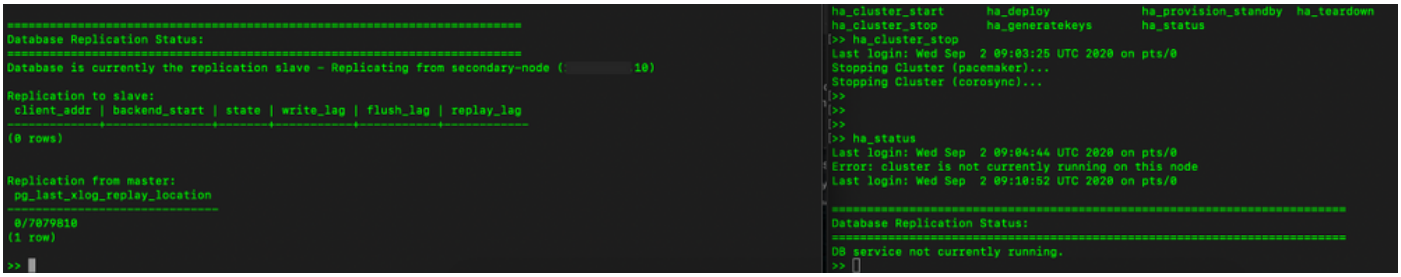


回退

1.停止辅助中的Ha_cluster，如图所示。

```
[>> ha_cluster_stop
 Last login: Wed Sep  2 09:03:25 UTC 2020 on pts/0
 Stopping Cluster (pacemaker)...
 Stopping Cluster (corosync)...
[>>
```

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。

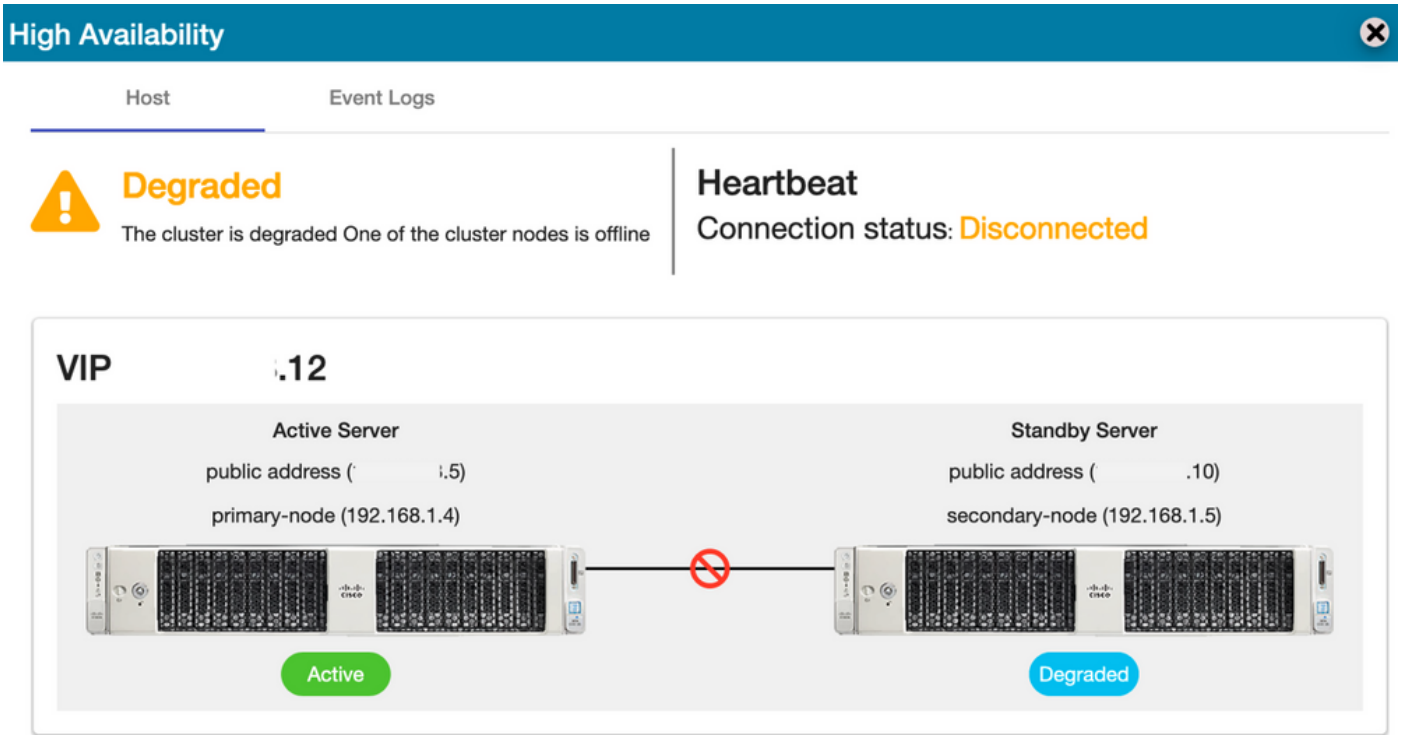


3.使用VIP登录SSM内部GUI，辅助GUI关闭。

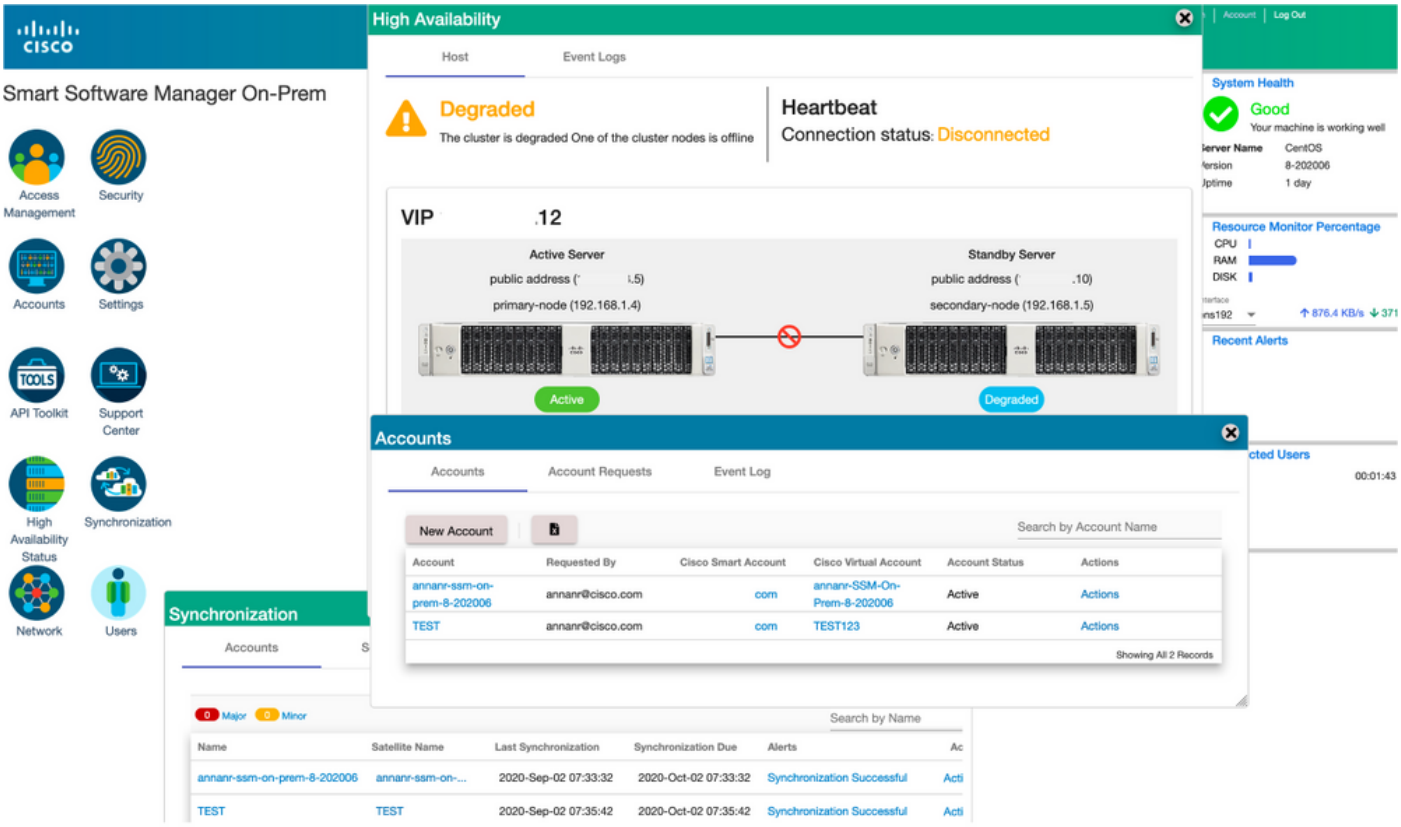
4.主服务器(.5)显示为活动服务器。

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。



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。

```
[>> ha_cluster_start
Last login: Wed Sep  2 09:10:52 UTC 2020 on pts/0
Starting Cluster (corosync)...
Starting Cluster (pacemaker)...
```

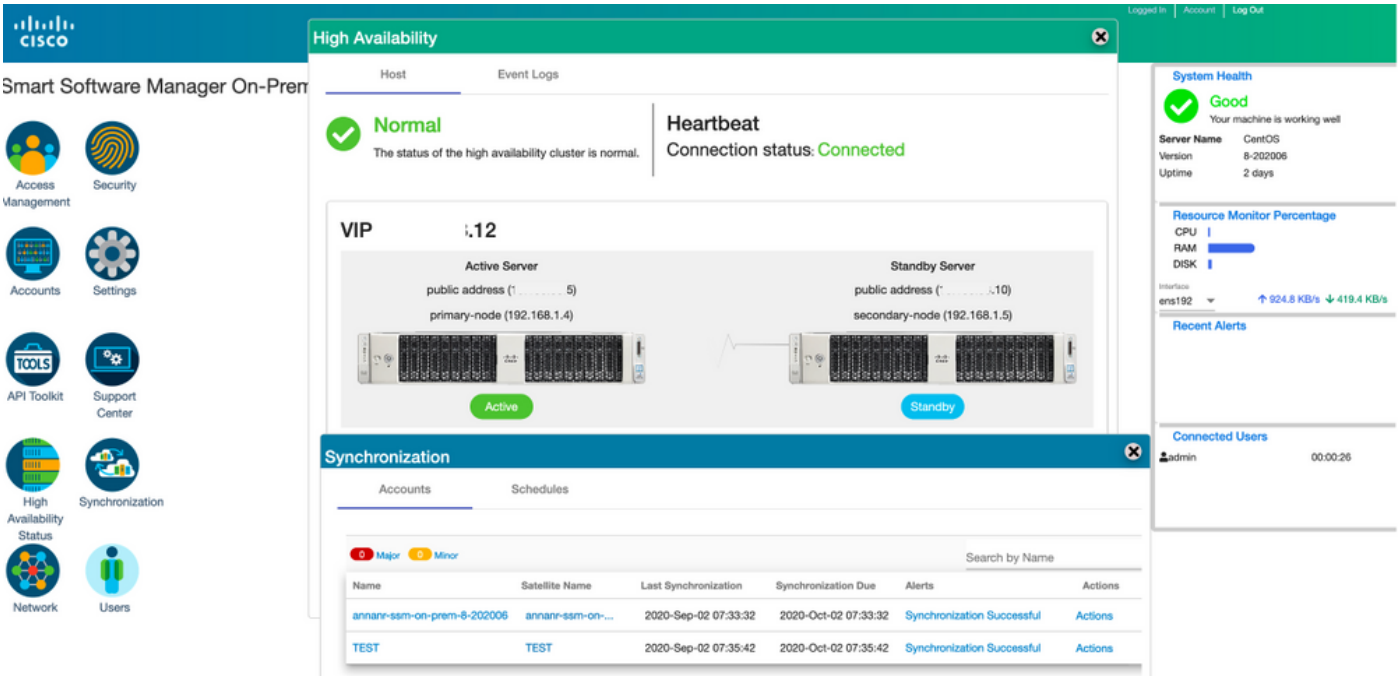
10.群集HA状态显示，主服务器的数据库（复制主服务器）正在复制到右侧的辅助服务器的数据库（复制从服务器），如图所示。

```
PCSD Status:
  secondary-node: Online
  primary-node: Online

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Wed Sep  2 09:09:35 UTC 2020 on pts/0

==========
Database Replication Status:
==========
Database is currently the replication master - Replicating to secondary-node (          .10)

Replication to slave:
 client_addr |         backend_start         |   state   | write_lag | flush_lag
 | replay_lag
-------------+-------------------------------+-----------+-----------+-----------
-+------------
 192.168.1.5 | 2020-09-02 09:08:39.350586+00 | streaming |         0 |         0
 |         0
(1 row)


Replication from master:
 pg_last_xlog_replay_location
------------------------------
 0/7079810
(1 row)
```

```
PCSD Status:
  secondary-node: Online
  primary-node: Online

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Wed Sep  2 09:20:43 UTC 2020 on pts/0

==========
Database Replication Status:
==========
Database is currently the replication slave - Replicating from primary-node (          .5)

Replication to slave:
 client_addr | backend_start | state | write_lag | flush_lag | replay_lag
-------------+---------------+-------+-----------+-----------+------------
(0 rows)


Replication from master:
 pg_last_xlog_replay_location
------------------------------
 0/9000000
(1 row)

[>>
[>>
[>>
[>>
[>>
```

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
：https://www.cisco.com/web/software/286285517/152313/Smart_Software_Manager_On-Prem_8-202006_Installation_Guide.pdf

在本演示中，使用：

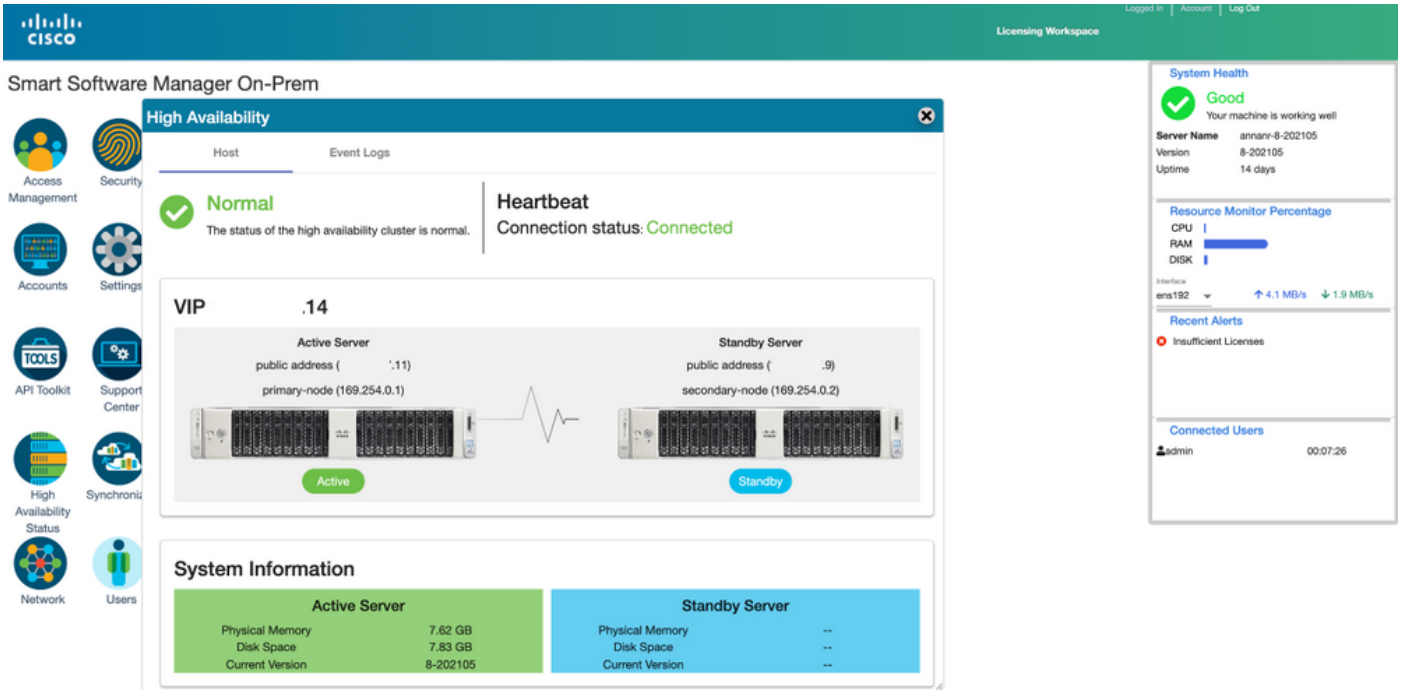
.11 — 主服务器的IP地址

.9 — 辅助服务器的IP地址

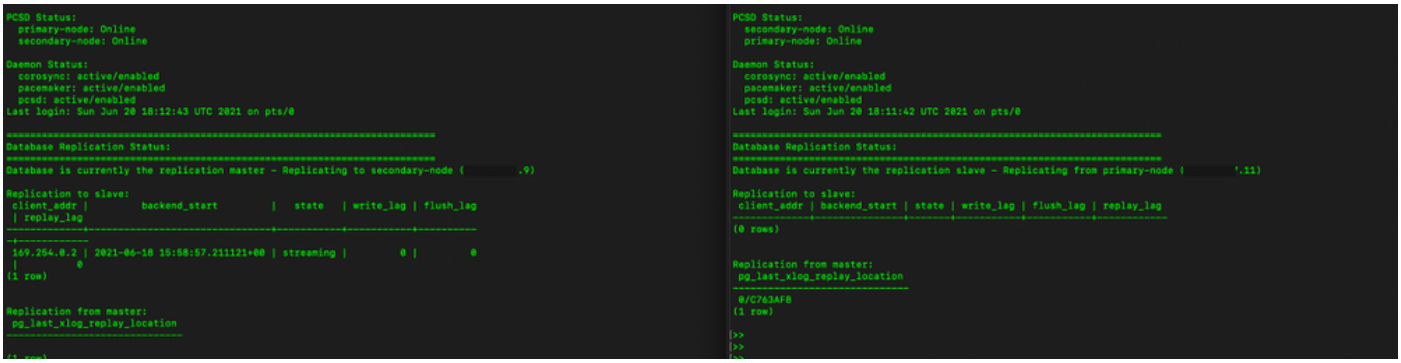
.14 — 虚拟IP地址

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。



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）。



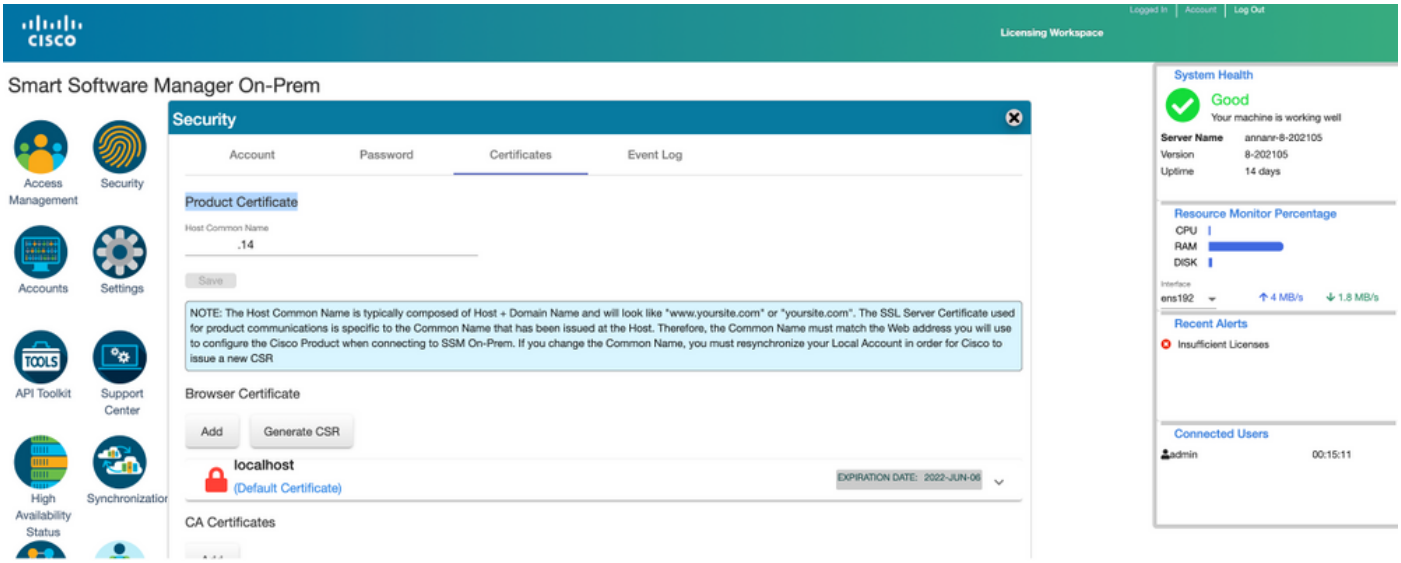
3.当SSM本地部署为HA群集时，请登录SSM本地管理工作**空间**，导航到**安全 > 证书**，然后使用主机公用名上的虚拟IP地址。

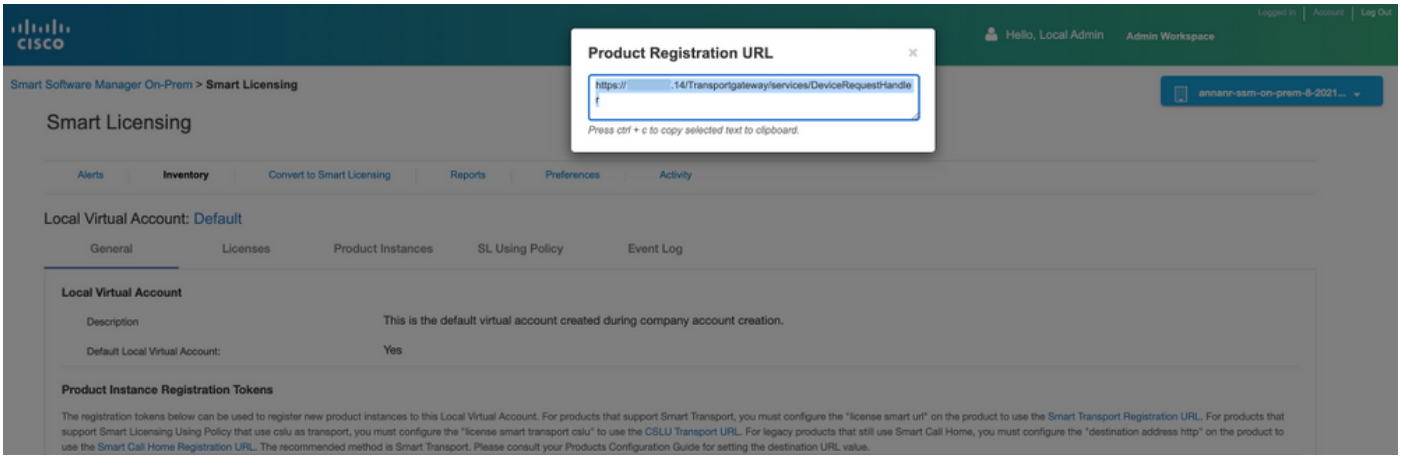
4.此值必须与您计划用于产品目标URL的值匹配。如果部署双堆栈（IPv4和IPv6），此值必须是FQDN，而不是IP地址。

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。

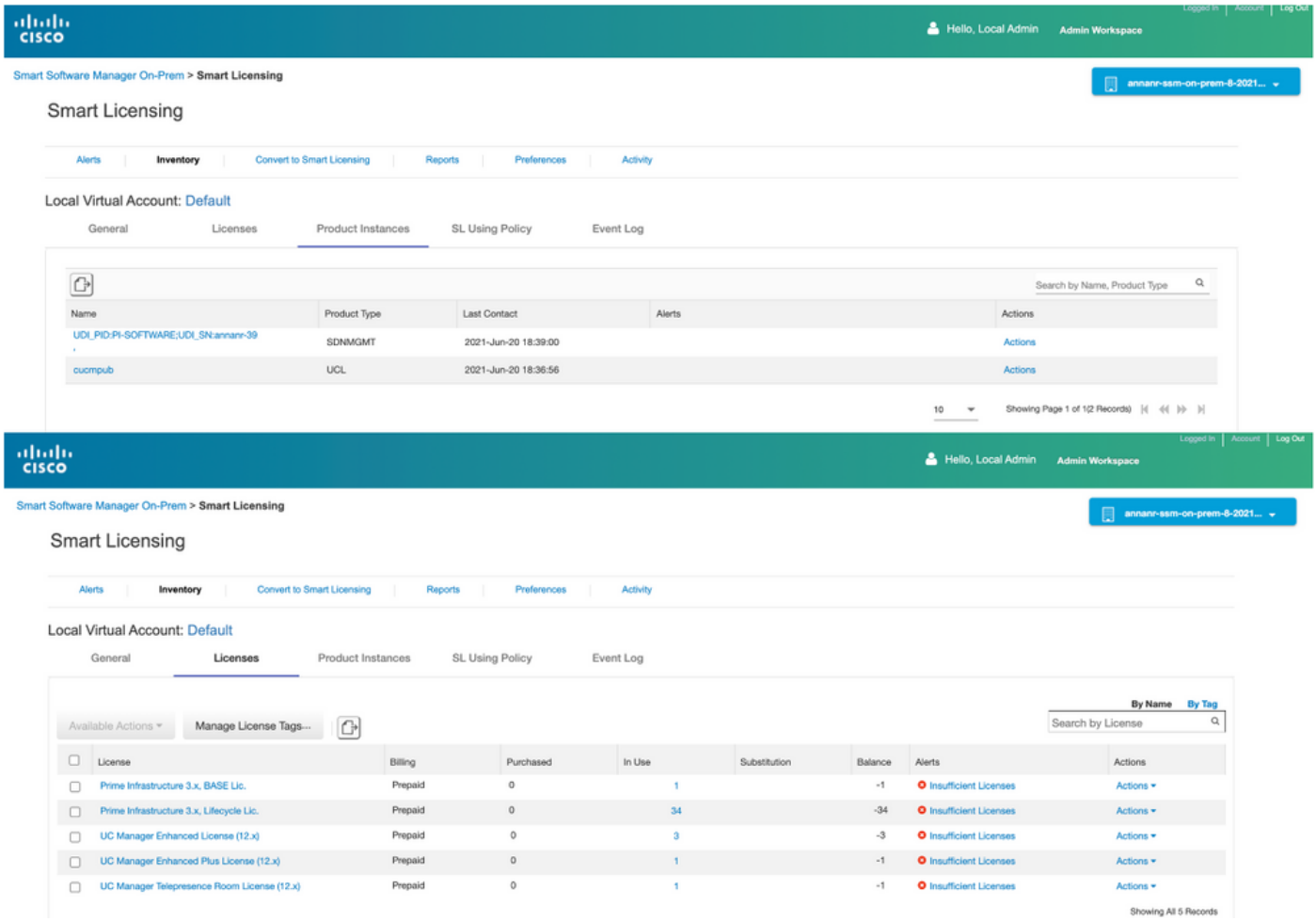
7.不同步可能导致产品无法注册到新的主机公用名。





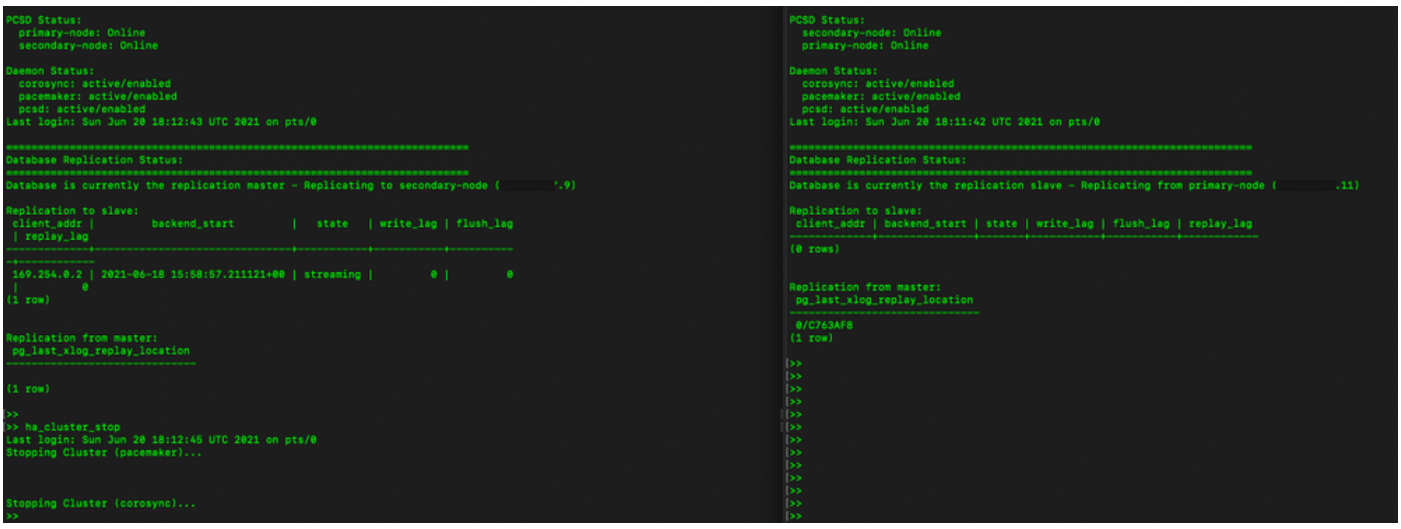
8.两个产品实例(annar-39)和(cucmpub)注册到SSM On-Prem的VIP地址，如“产品实例”(Product Instances)选**项卡**所示。

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。



故障转移

1.停止主服务器上的HA群集，如图所示。

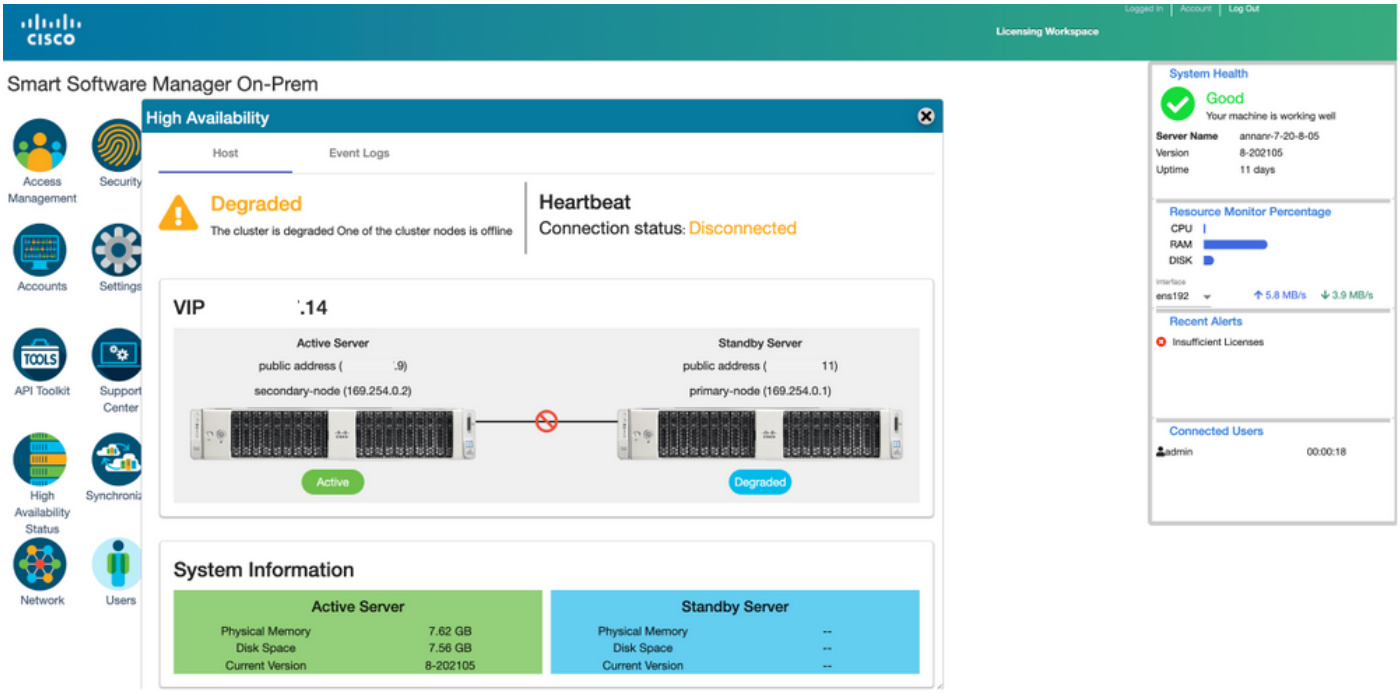


2.使用VIP(.14)登录SSM内部GUI，主GUI关闭。

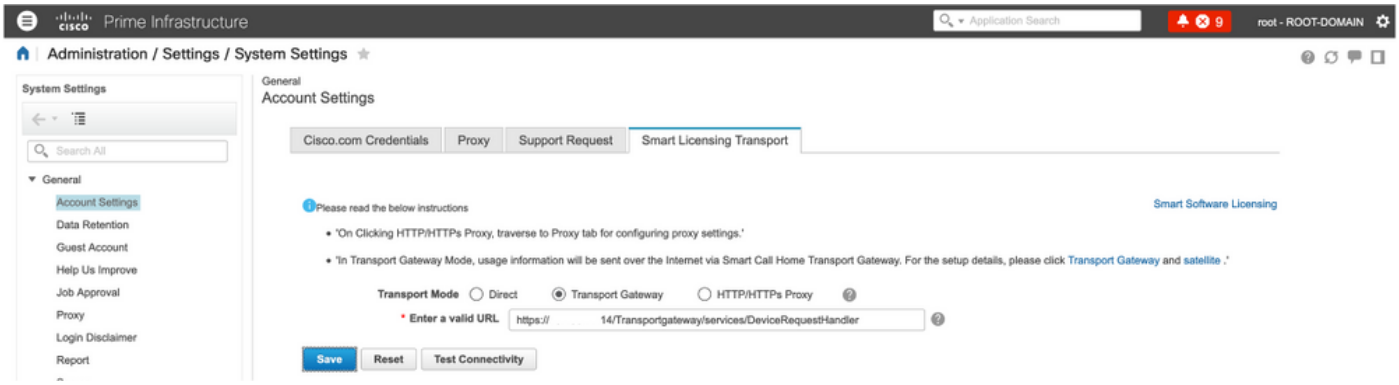
3.辅助服务器(.9)显示为活动服务器。

4.心跳已断开。

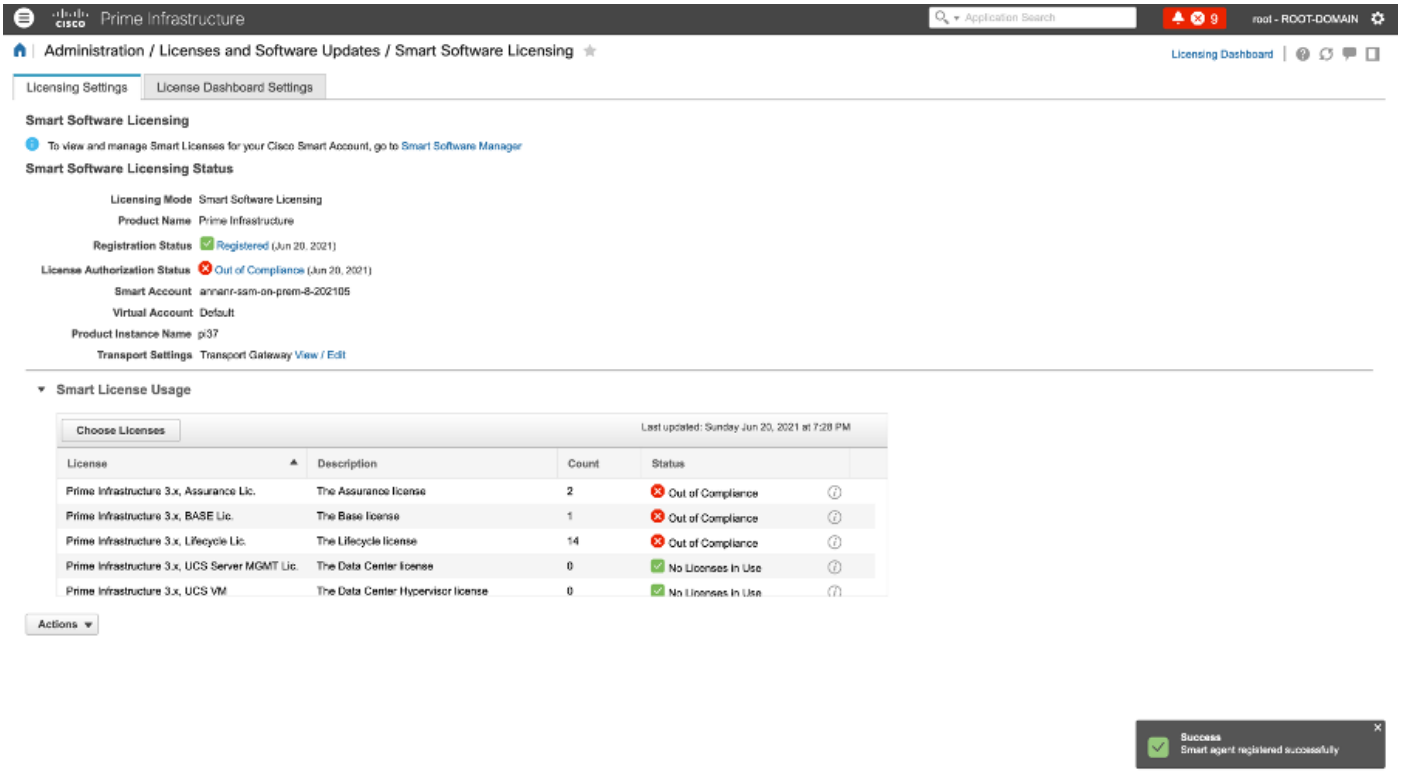
5.主服务器(.11)将移至备用状态。



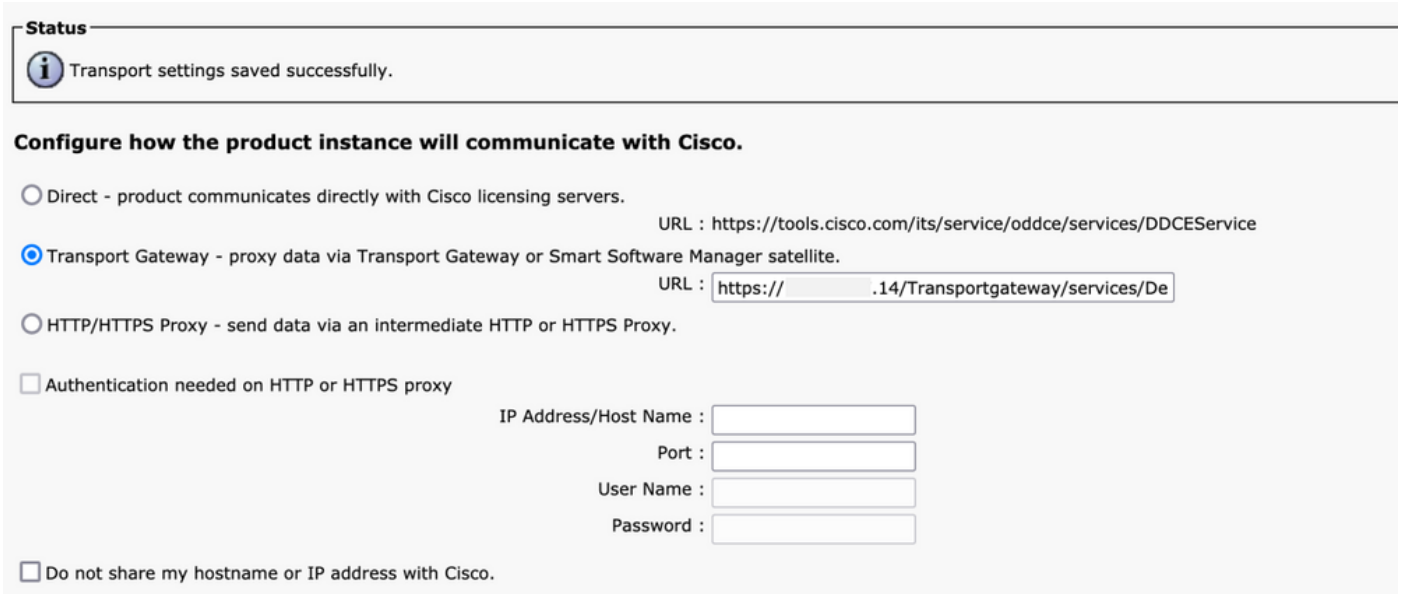
6.使用SSM On-Prem VIP在产品注册URL的传输网关设置中注册产品实例，如图所示。



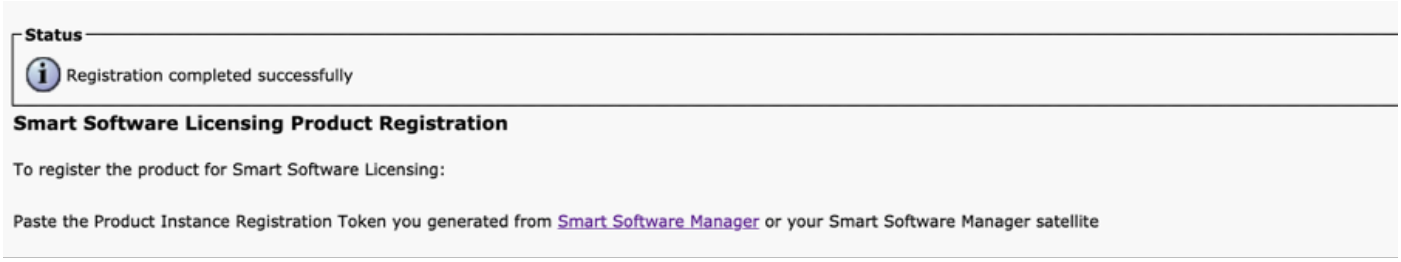
7.产品实例名称：pi37已使用VIP地址成功注册到SSM现场，如图所示。



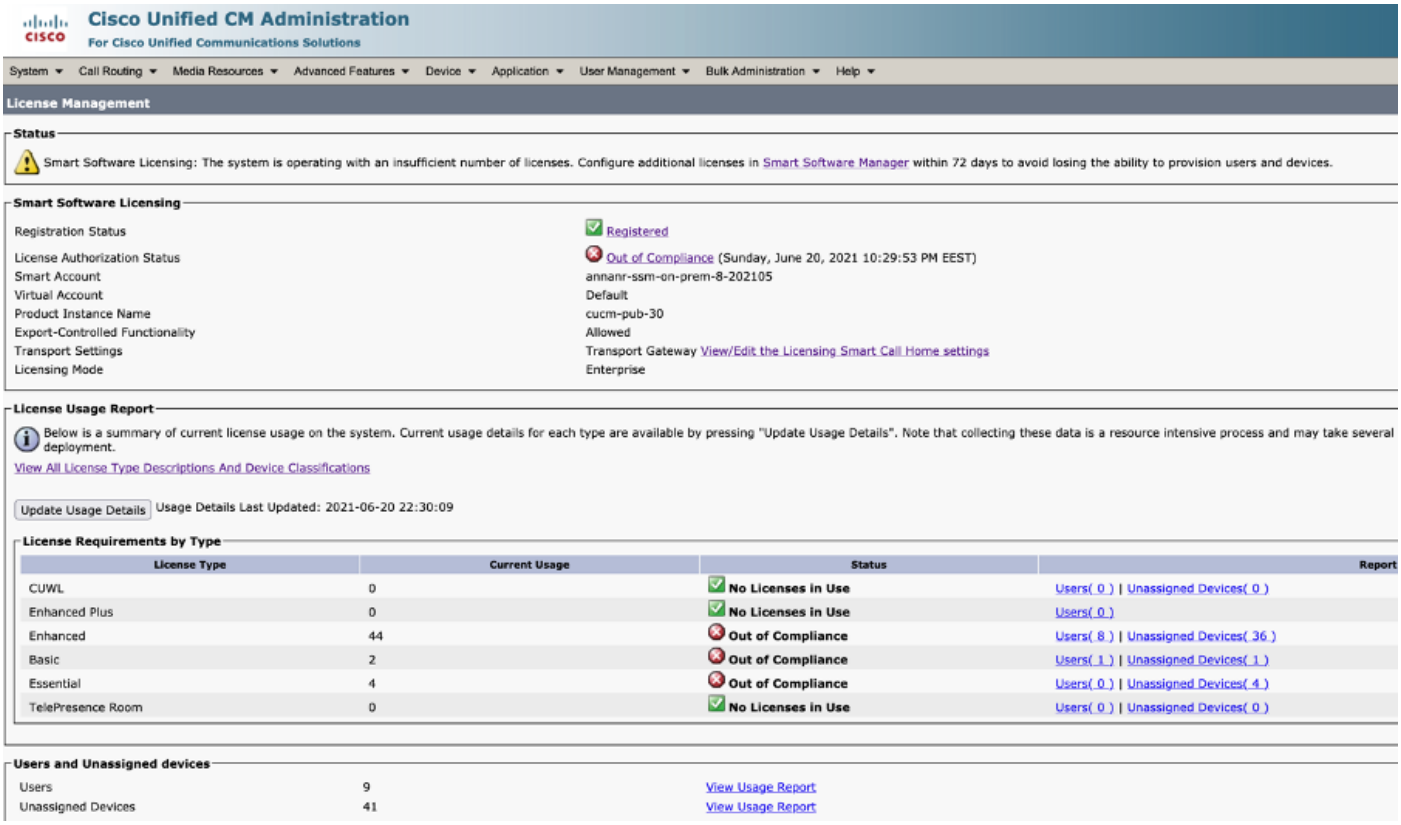
8.在“传输网关”设置的产品注册URL中使用SSM现场VIP注册其他产品实例。



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。

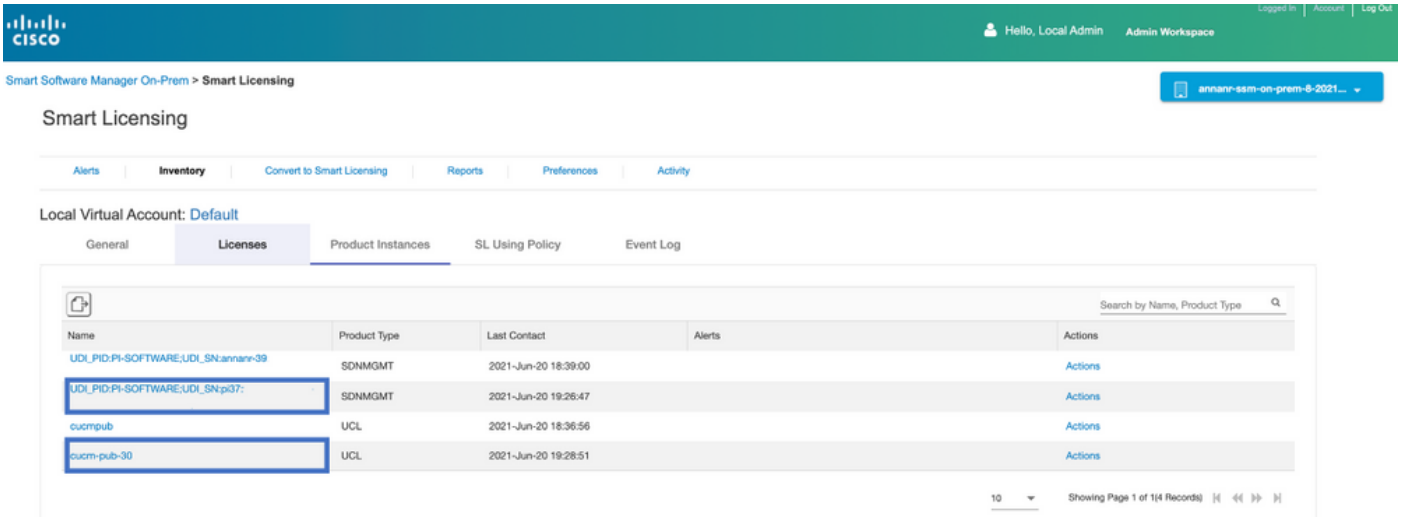


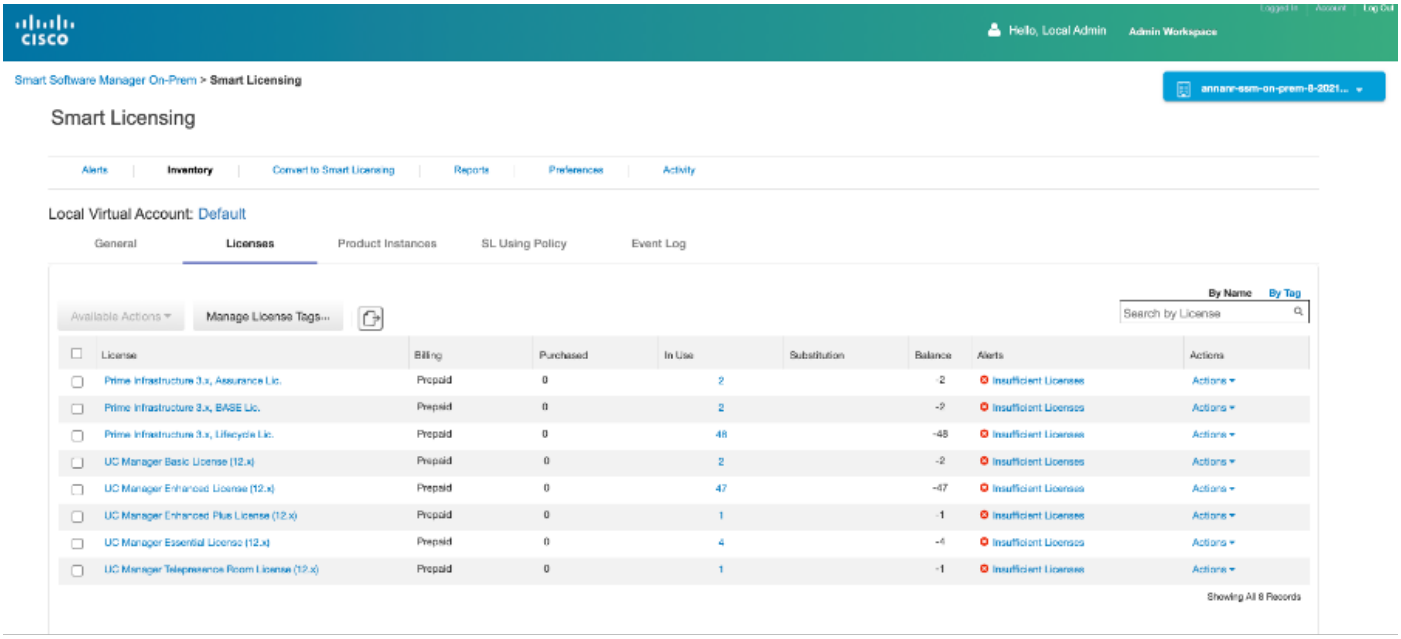
十、产品实例名称：cucm-pub-30已使用VIP地址成功注册到SSM On-Prem，如图所示。



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。



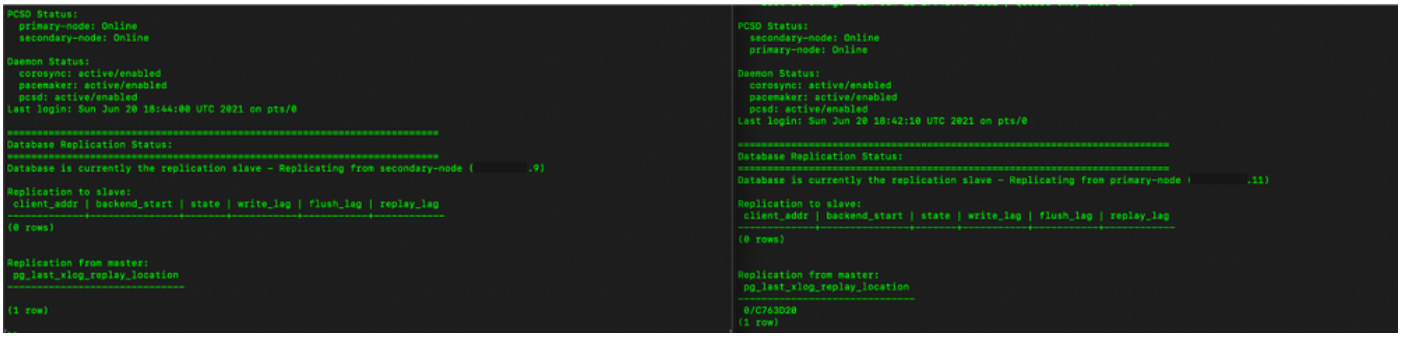


13.在主服务器上启动HA群集。

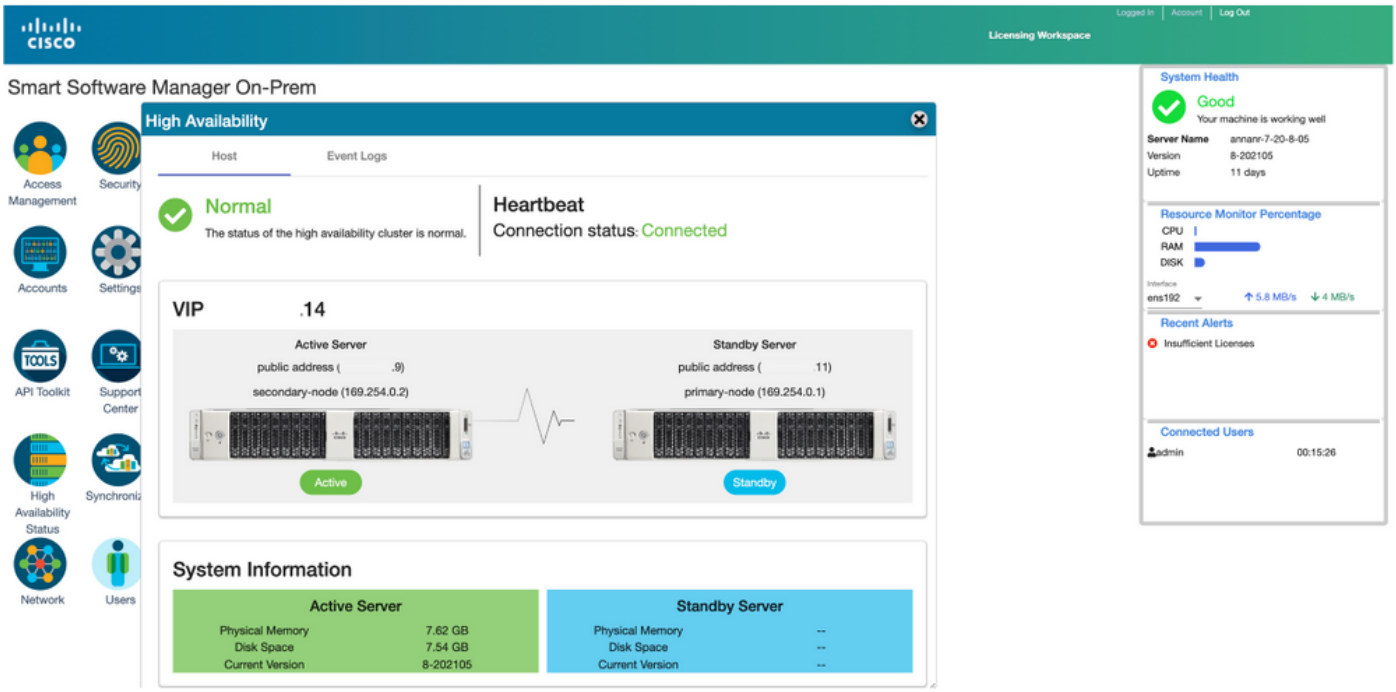
```
>> ha_cluster_start
Last login: Sun Jun 20 19:36:49 UTC 2021 on pts/0
Starting Cluster (corosync)...
Starting Cluster (pacemaker)...
```

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。



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。

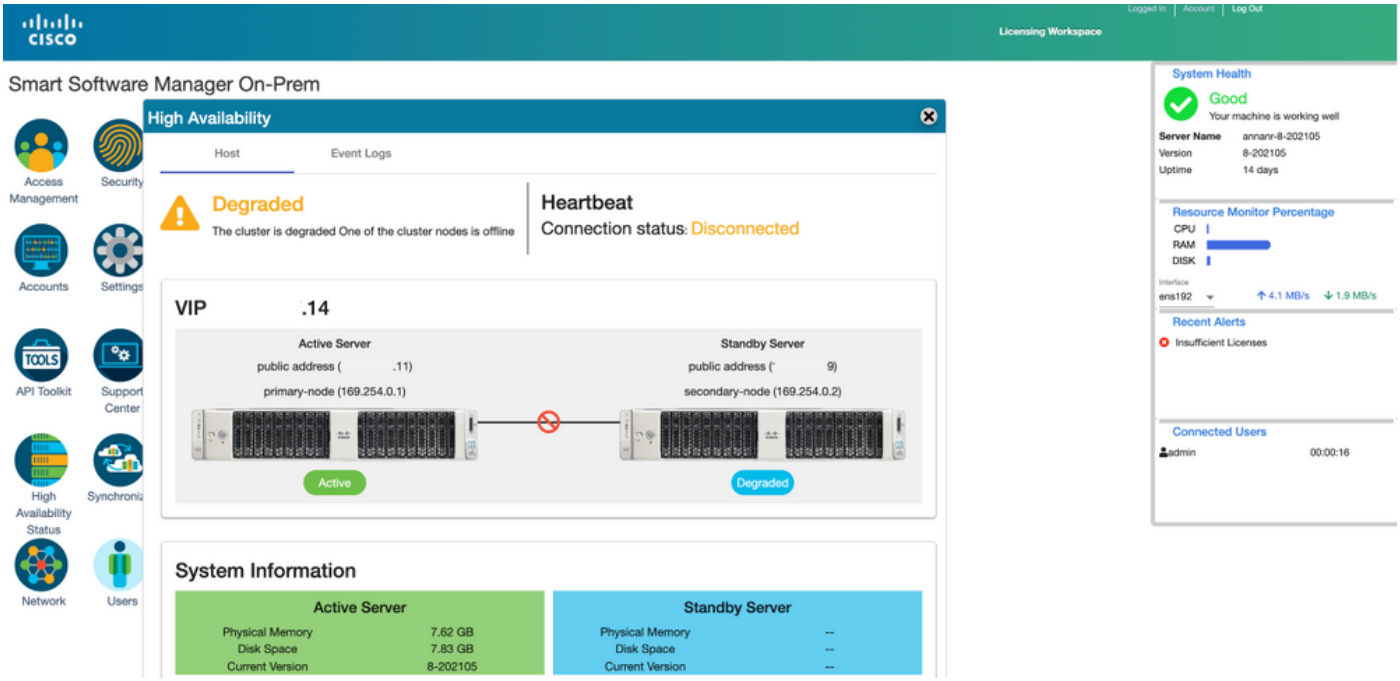
2.可以看到主服务器数据库和辅助服务器数据库的当前状态。

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。

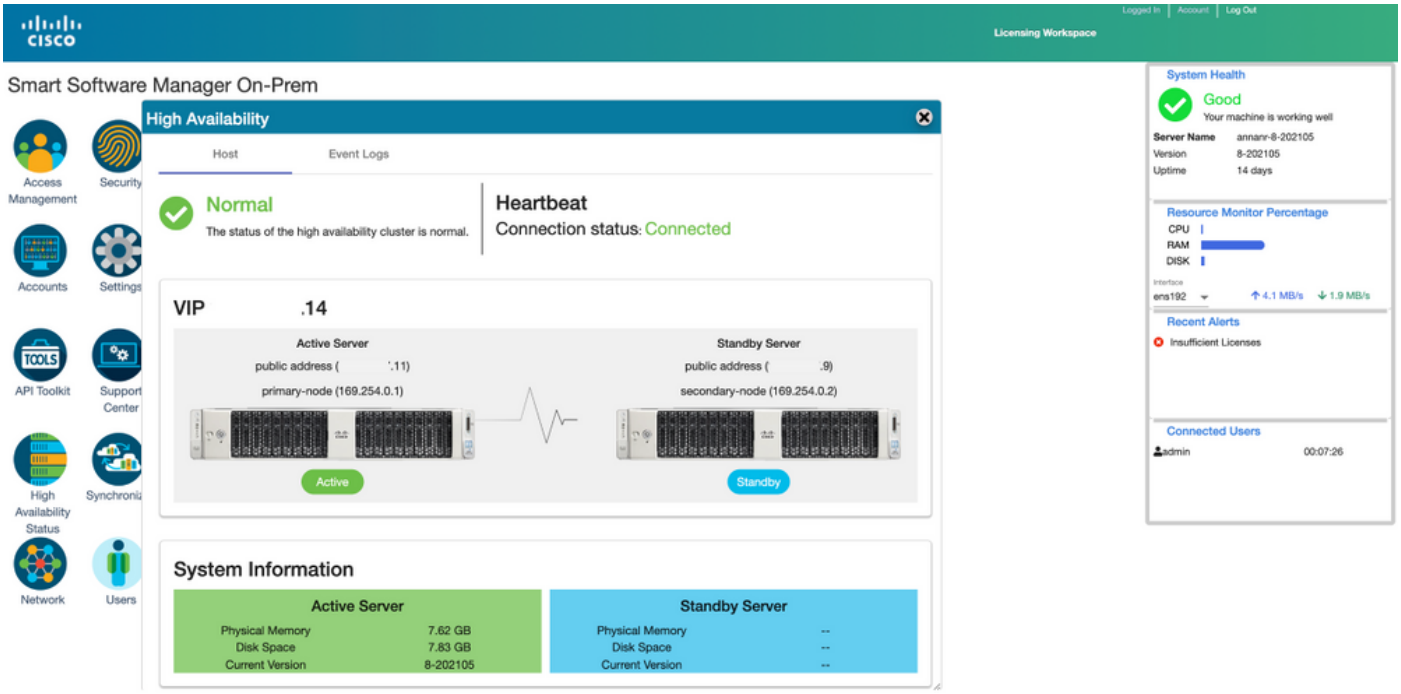
```
[>> ha_cluster_start
Last login: Sun Jun 20 18:57:24 UTC 2021 on pts/0
Starting Cluster (corosync)...
Starting Cluster (pacemaker)...
[>>
```

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）。

```
PCSD Status:
  primary-node: Online
  secondary-node: Online

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Sun Jun 20 19:05:59 UTC 2021 on pts/0

==========
Database Replication Status:
==========
Database is currently the replication master - Replicating to secondary-node (      .9)

Replication to slave:
 client_addr |         backend_start         |   state   | write_lag | flush_lag
 | replay_lag
-------------+-------------------------------+-----------+-----------+-----------
-+------------
 169.254.0.2 | 2021-06-20 19:01:56.616211+00 | streaming |         0 |         0
 |         0
(1 row)


Replication from master:
 pg_last_xlog_replay_location
------------------------------
 0/E012F30
(1 row)
```

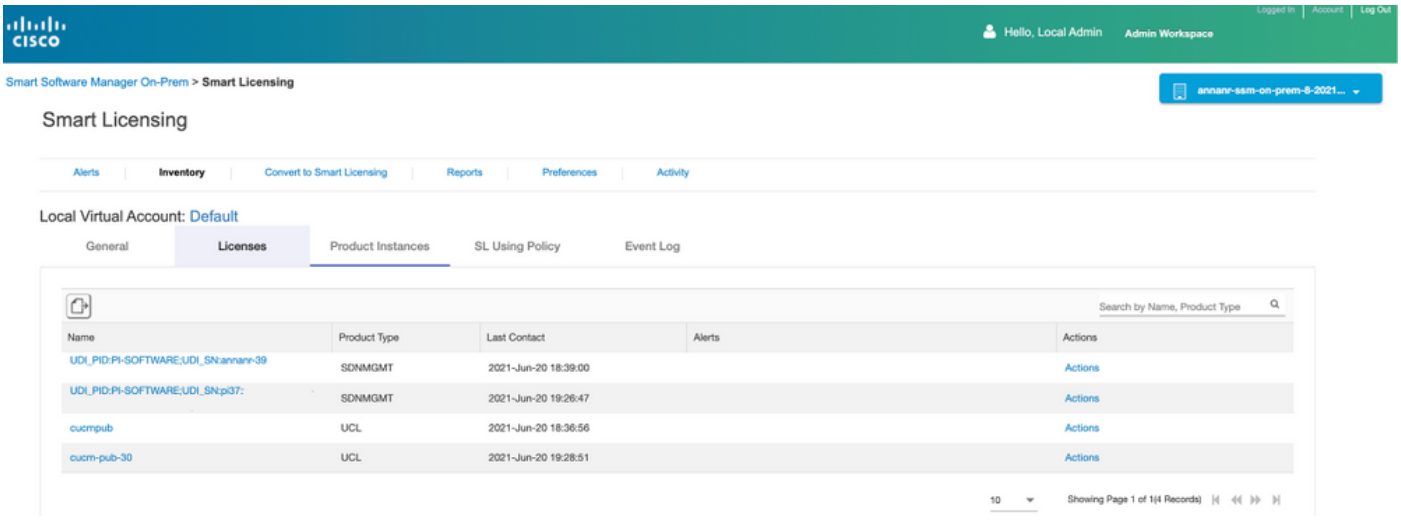
```
PCSD Status:
  secondary-node: Online
  primary-node: Online

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
Last login: Sun Jun 20 19:04:47 UTC 2021 on pts/0

==========
Database Replication Status:
==========
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
-------------+---------------+-------+-----------+-----------+------------
(0 rows)


Replication from master:
 pg_last_xlog_replay_location
------------------------------
 0/10000000
(1 row)

[>>
[>>
[>>
```

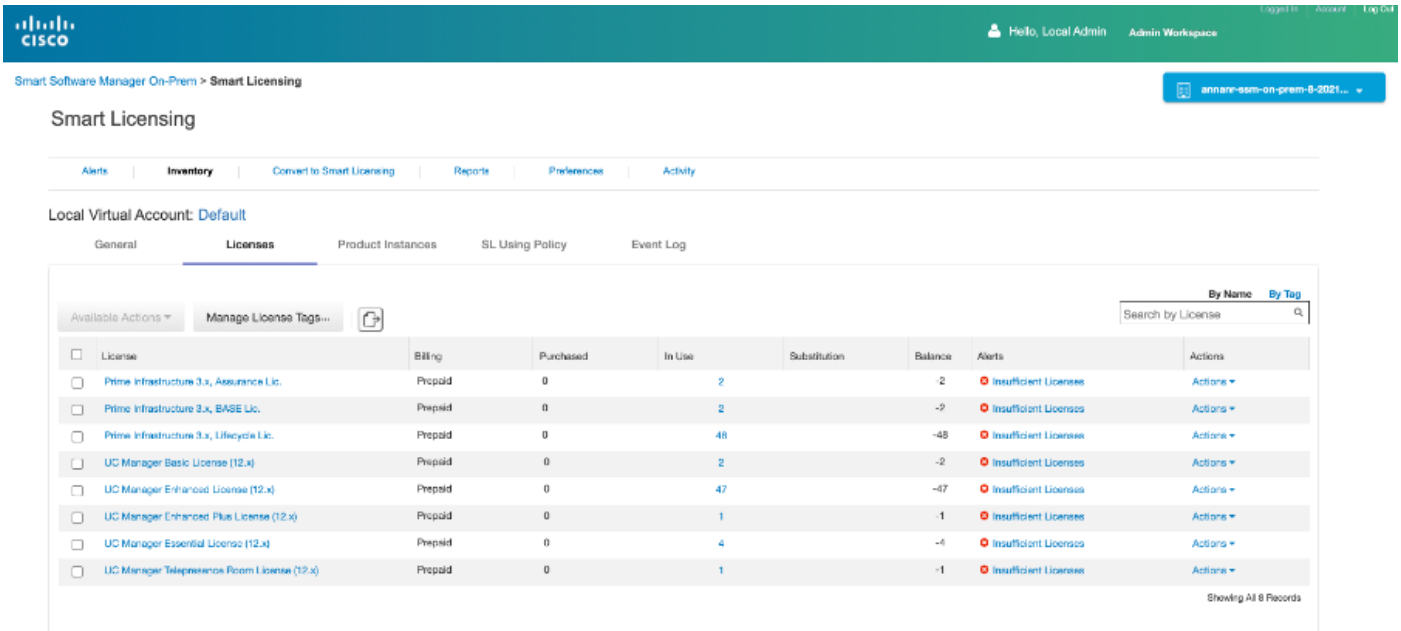
10. GUI显示主用主服务器和备用辅助服务器之间连接的心跳。



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。

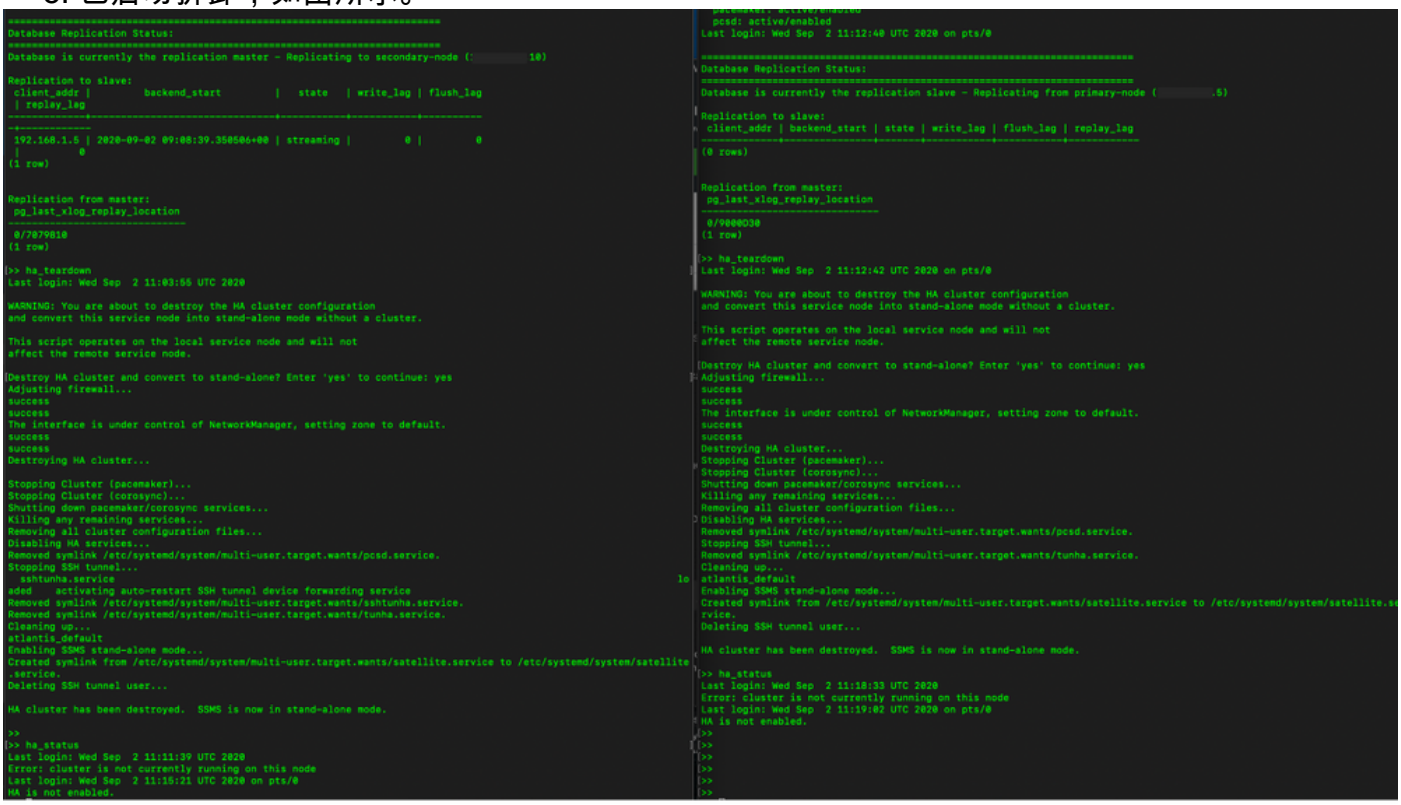
12.这些产品实例已使用/请求的许可证反映在“许可证”**选项**卡上。





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。



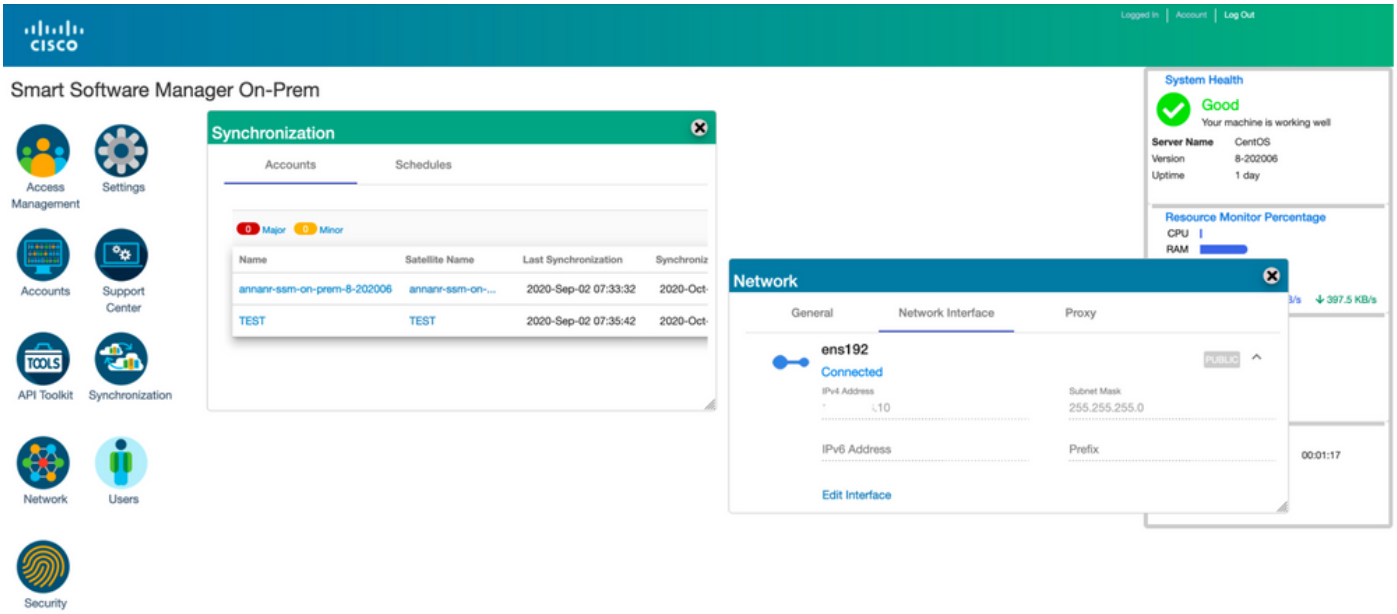
6.触发从属服务器拆卸，如图所示。

```
================================================================================
Database Replication Status:
================================================================================
Database is currently the replication slave - Replicating from primary-node (        .5)

Replication to slave:
 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)

[>> ha_teardown
Last login: Wed Sep  2 11:12:42 UTC 2020 on pts/0

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/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。

```
HA cluster has been destroyed.  SSMS is now in stand-alone mode.

[>> ha_status
Last login: Wed Sep  2 11:18:33 UTC 2020
Error: cluster is not currently running on this node
Last login: Wed Sep  2 11:19:02 UTC 2020 on pts/0
HA is not enabled.
>>
```

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。



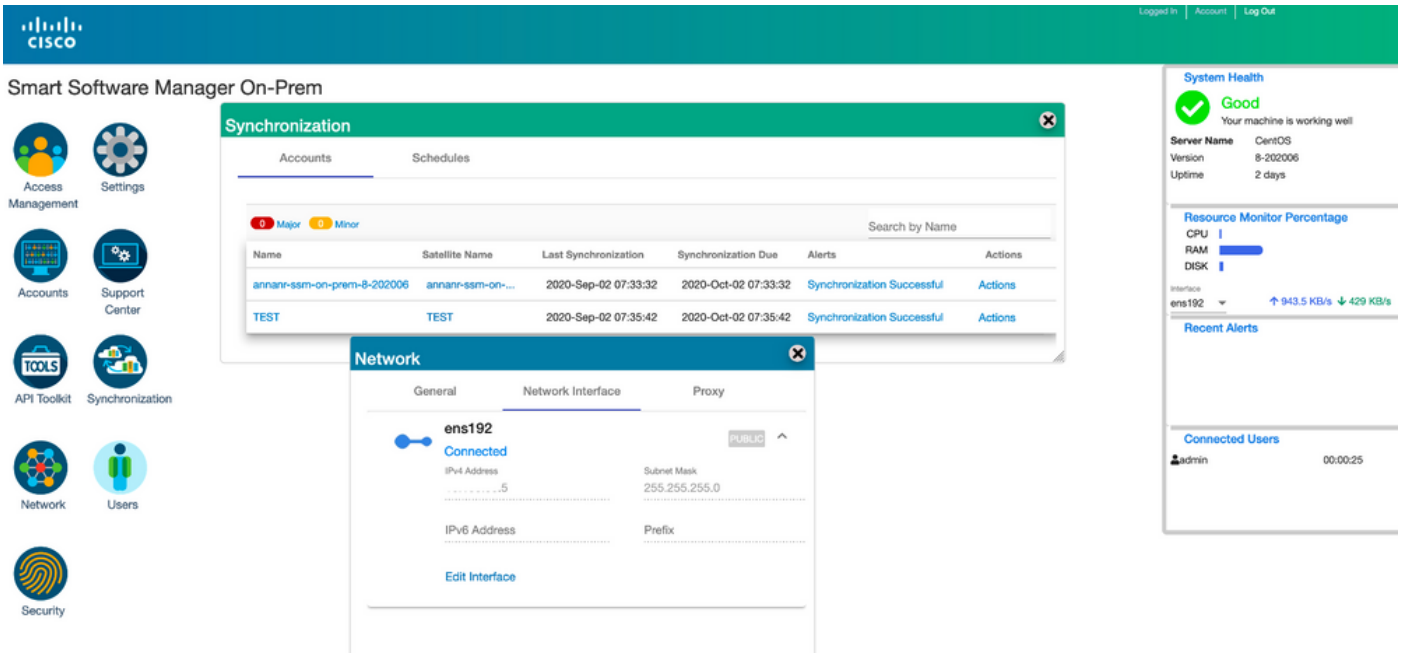
9.触发主服务器拆卸，如图所示。

```
[>> 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/systemd/system/multi-user.target.wants/pcsd.service.
Stopping SSH tunnel...
  sshtunha.service                                                                    lo
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 SSH tunnel user...

HA cluster has been destroyed.  SSMS is now in stand-alone mode.
```

10.已成功禁用HA。

```
>>
>> ha_status
Last login: Wed Sep  2 11:11:39 UTC 2020
Error: cluster is not currently running on this node
Last login: Wed Sep  2 11:15:21 UTC 2020 on pts/0
HA is not enabled.
>>
```

11.使用主服务器IP地址访问的GUI不再存放高可用性构件。



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：https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_Console_Guide.pdf
- 用户指南：https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_User_Guide.pdf
- 安装指南:https://www.cisco.com/web/software/286285517/152313/Smart_Software_Manager_On-

Prem_8-202006_Installation_Guide.pdf

- 技术支持和文档 - Cisco Systems