

Trabajo en clúster de alta disponibilidad en las instalaciones de SSM 8.X

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Introducción

Este documento describe cómo funciona la sincronización Smart Software Manager (SSM) On-Prem Account y el registro de la instancia del producto en el servidor SSM On-Prem implementado como un clúster de alta disponibilidad (HA), en el momento de los escenarios de recuperación ante fallos y recuperación.

Prerequisites

Requirements

Cisco recomienda que tenga conocimiento sobre estos temas:

- SSM in situ
- HA

Componentes Utilizados

La información en este documento se basa en SSM On-Prem 8 y superiores.

The information in this document was created from the devices in a specific lab environment. All of

the devices used in this document started with a cleared (default) configuration. Si tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.

Antecedentes

Estos son los documentos de referencia que proporcionan información sobre HA.

- 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

Sincronización de cuenta en las instalaciones de SSM durante conmutación por fallas y reserva

Se debe configurar HA entre dos servidores en las instalaciones de SSM con la ayuda de esta guía:

Implementar el clúster HA:

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

En esta demostración, utilice:

.5 - Dirección IP del servidor principal

.10 - Dirección IP del servidor secundario

.12 - Dirección IP virtual

Alta disponibilidad

1. La configuración correcta de HA muestra el servidor primario (.5) como activo, servidor secundario (.10) como en espera y VIP (.12) sd que se muestra en la imagen.

High Availability

Host

Event Logs

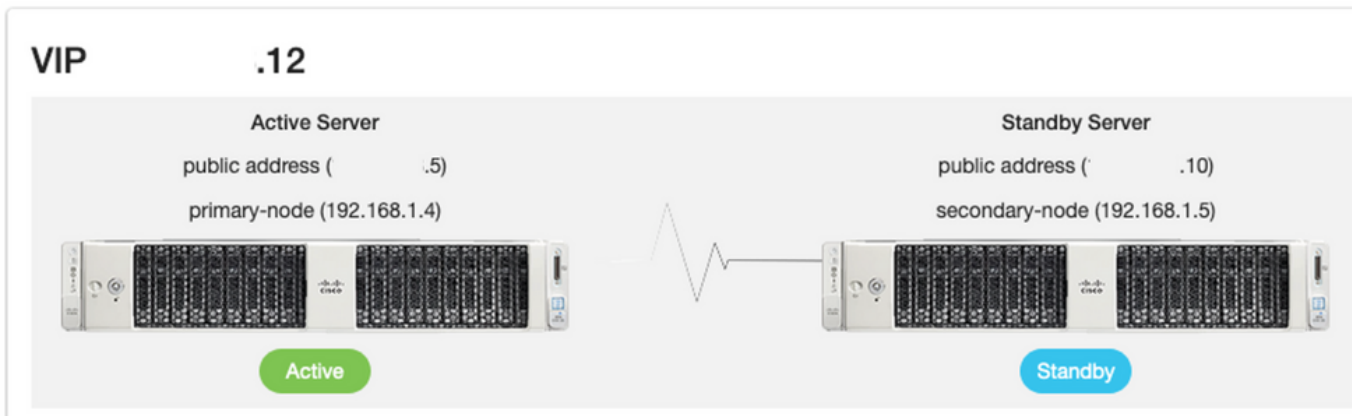


Normal

The status of the high availability cluster is normal.

Heartbeat

Connection status: **Connected**



2. La sincronización de SSM en las instalaciones con Cisco Software Central se ha completado correctamente desde el servidor primario/activo, como se muestra en la imagen.

Smart Software Manager On-Prem

Synchronization

Name	Satellite Name	Last Synchronization	Synchron...
annanr-ssm-on-prem-8-202006	annanr-ssm-on-...	2020-Sep-01 14:13:44	2020-C

Accounts

Account	Requested By	Cisco Smart Account	Cisco Virtual Account	Account Status	Actions
annanr-ssm-on-prem-8-202006	annanr@cisco.com	.com	annanr-SSM-On-Prem-8-202006	Active	Actions

Network

ens192
Connected
IPv4 Address: .5
IPv6 Address

System Health
Good
Your machine is working well
Server Name: CentOS
Version: 8-202006
Uptime: 1 day

Resource Monitor Percentage
CPU |
RAM |
DISK |

Recent Alerts

Connected Users
admin 00:06:1

3. El estado HA del clúster muestra que la base de datos del servidor primario (Replication Master) a la izquierda se replica a la base de datos del servidor secundario (Replication Slave) a la derecha, como se espera en la imagen.

```
psql: postgres@192.168.1.4:5041=# \c
psql (13.10)
Last login: Tue Sep 1 14:48:57 UTC 2020 on pts/0

Database Replication Status:
=====
Database is currently the replication master - Replicating to secondary-node (192.168.1.10)

Replication to slave:
 client_addr | backend_start | state | write_lag | flush_lag | replay_lag
-----
 192.168.1.5 | 2020-09-01 07:50:45.628722+00 | streaming | 0 | 0 | 0
(1 row)

Replication from master:
 pg_last_xlog_replay_location
-----
 0/53CDB68
(1 row)

psql: postgres@192.168.1.5:5041=# \c
psql (13.10)
Last login: Tue Sep 1 14:48:57 UTC 2020 on pts/0

Database Replication Status:
=====
Database is currently the replication slave - Replicating from primary-node (192.168.1.4)

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

Replication from master:
 pg_last_xlog_replay_location
-----
 0/53CDB68
(1 row)

psql: postgres@192.168.1.5:5041=#
```

Failover

1. Detención del clúster HA en el servidor primario como se muestra en la imagen.

```
[>>
[>> ha_cluster_stop
Last login: Tue Sep  1 14:45:59 UTC 2020 on pts/0
Stopping Cluster (pacemaker)...

Stopping Cluster (corosync)...
```

2. Primario|Secundario como se muestra en la imagen.

```
..pcsd: active/enabled
Last login: Tue Sep  1 14:45:57 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 | 2020-09-01 07:58:45.628722+00 | streaming | 0 | 0 | 0
(1 row)

Replication from master:
pg_last_xlog_replay_location

(1 row)

>>
>> ha_cluster_stop
Last login: Tue Sep  1 14:45:59 UTC 2020 on pts/0
Stopping Cluster (pacemaker)...

Stopping Cluster (corosync)...
```

```
Failed Actions:
* db_monitor_30000 on secondary-node 'not running' (?): call=50, status=complete, exitreason='',
last-rc-change='Tue Sep  1 08:01:46 2020', queued=0ms, exec=0ms

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Tue Sep  1 15:10:40 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

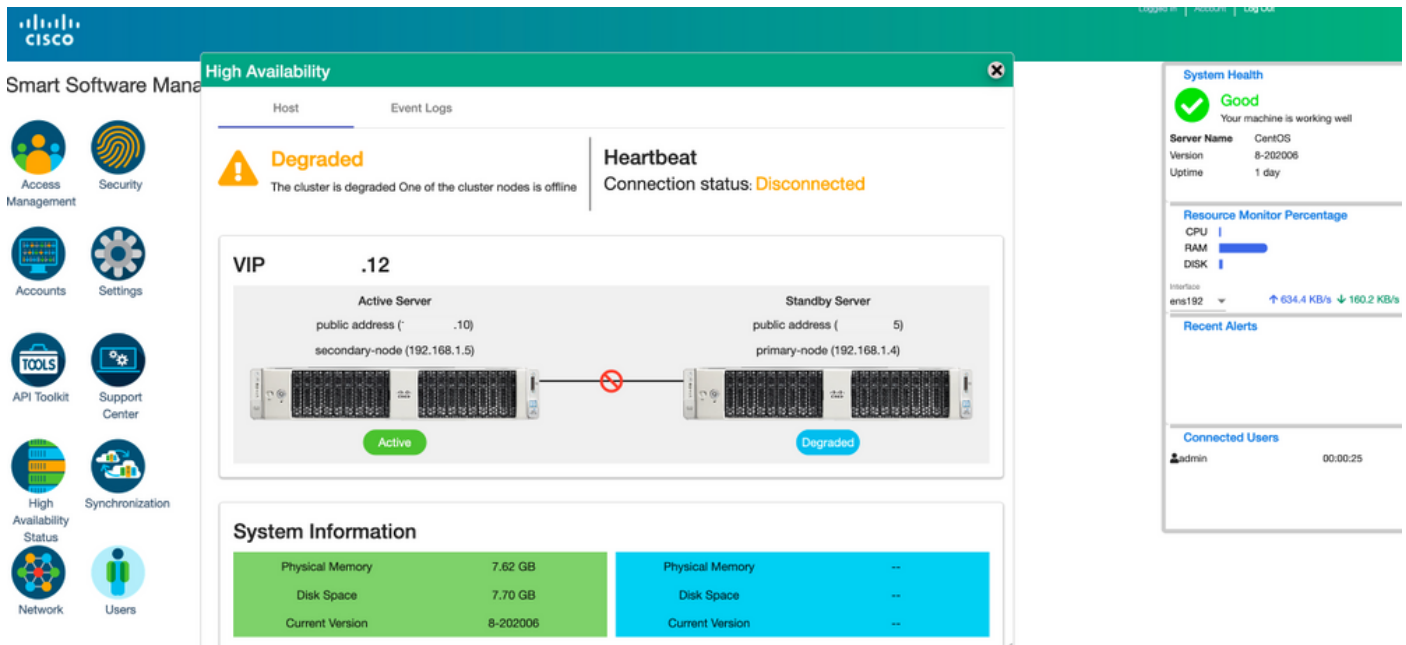
0/53C0C60
(1 row)
```

3. Se ha conectado a la GUI en las instalaciones de SSM con el uso de VIP y la GUI principal está inactiva.

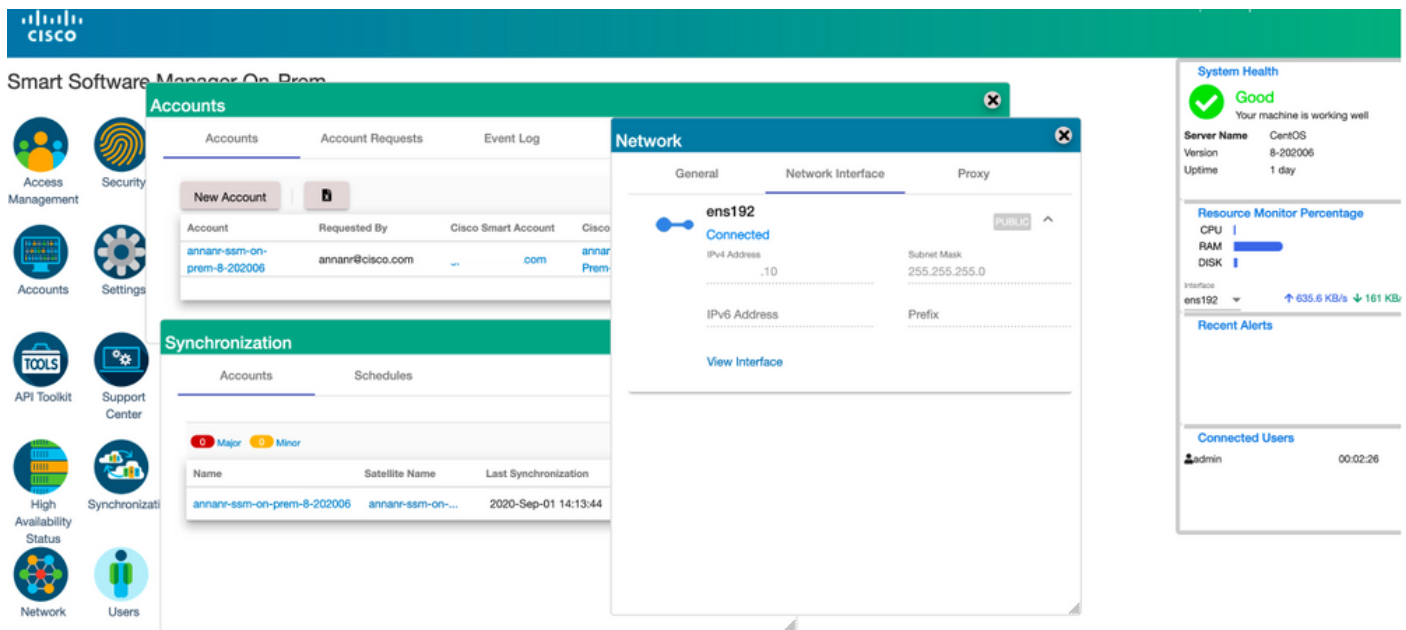
4. El servidor secundario (.10) se muestra como servidor activo.

5. El latido se desconecta.

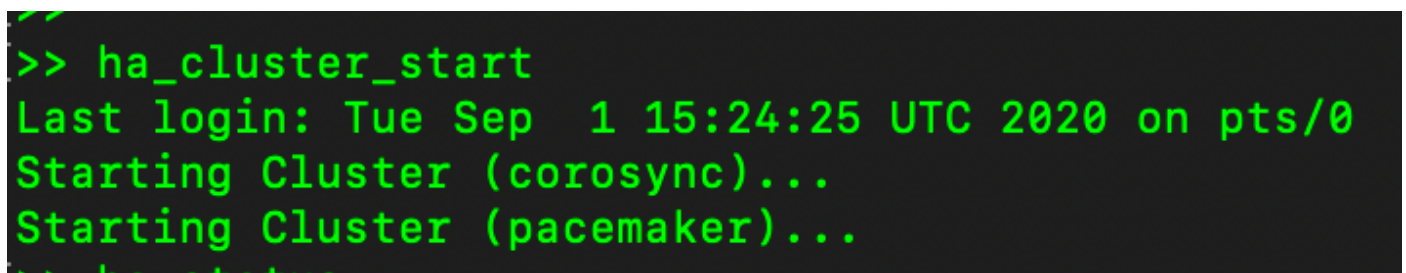
6. El servidor principal (.5) se ha movido al estado En espera.



7. La sincronización de la cuenta en las instalaciones de SSM con Cisco Software Central se puede ver correctamente desde la GUI del servidor secundario/activo, como se muestra en la imagen.



8. Iniciando el clúster HA en el servidor primario como192 se muestra en la imagen.



9. El estado del clúster de HA muestra que la base de datos principal se replica desde la base de datos secundaria.

10. Primario|Secundario como se muestra en la imagen.

```

last-rc-change: Tue Sep  1 18:26:24 2020; questions, execute

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 (:.....18)

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

Replication from master:
pg_last_xlog_replay_location
-----
0/7879718
(1 row)

secondary-node: Online
primary-node: Online

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

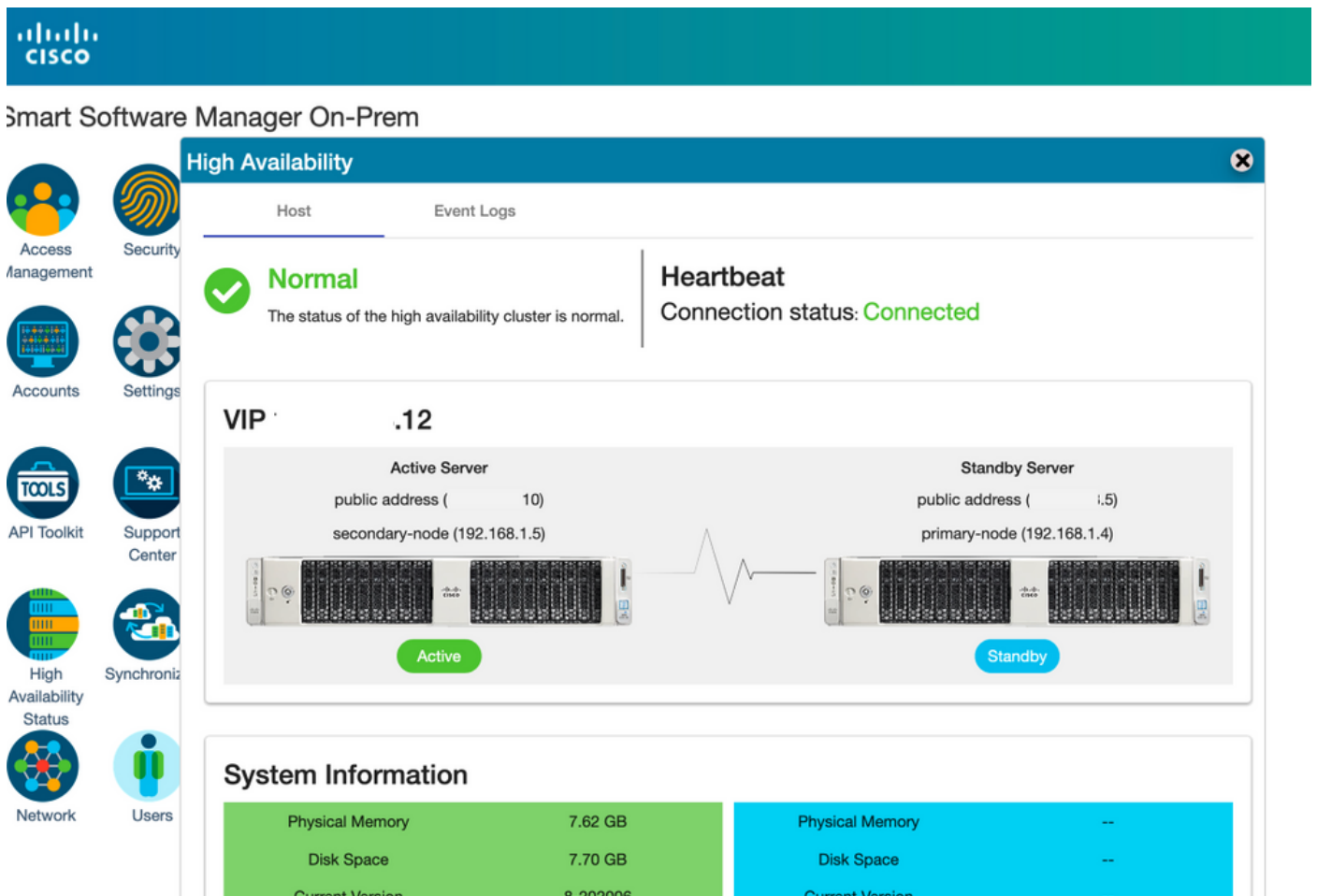
Database Replication Status:
=====
Database is currently the replication master - Replicating to primary-node (:.....6)

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
(1 row)

Replication from master:
pg_last_xlog_replay_location
-----
0/53C0C48
(1 row)

```

11. La GUI muestra el latido como conectado, Secundario en estado Activo y Primario en estado En espera como se muestra en la imagen.



12. Cree una nueva cuenta TEST y actívela en Active standby. (.10).

13. En esta etapa no se podrá acceder a la GUI principal (.5).

Accounts

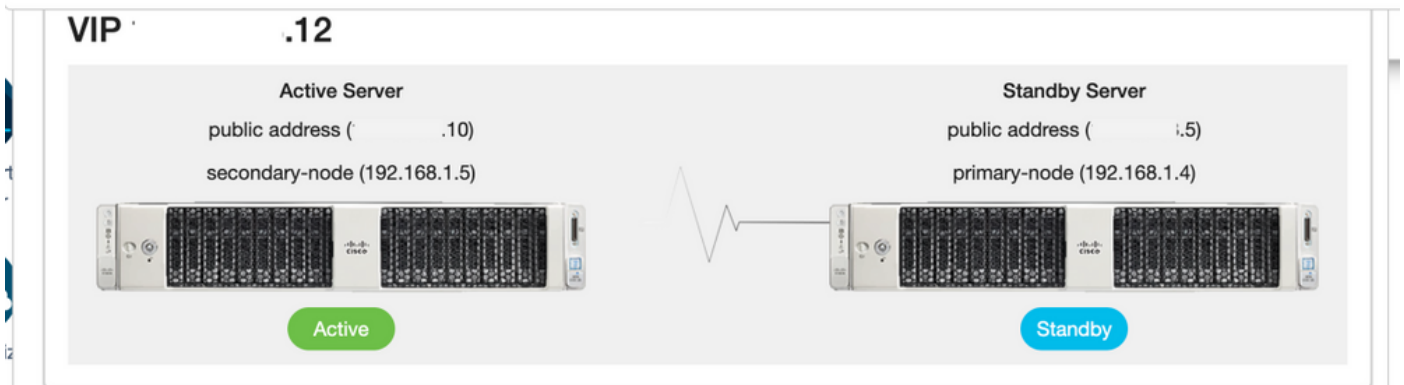
Accounts

Account Requests

Event Log

Account	Requested By	Cisco Smart Account	Cisco Virtual Account	Account Status	Actions
annanr-ssm-on-prem-8-202006	annanr@cisco.com	.com	annanr-SSM-On-Prem-8-202006	Active	Actions
TEST	annanr@cisco.com	.com	TEST123	Active	Actions

Showing All 2 Records



Reserva

1. Detener Ha_cluster en Secundario como se muestra en la imagen.

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

2. El estado actual de la base de datos del servidor primario y de la base de datos del servidor secundario se puede ver aquí.

```
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
9/7079810
(1 row)

ha_cluster_start ha_deploy ha_provision_standby ha_teardown
ha_cluster_stop ha_generatekeys ha_status
>> ha_cluster_stop
Last login: Wed Sep  2 09:03:25 UTC 2020 on pts/0
Stopping Cluster (pacemaker)...
Stopping Cluster (corosync)...
>>
>>
>> ha_status
Last login: Wed Sep  2 09:04:44 UTC 2020 on pts/0
Error: cluster is not currently running on this node
Last login: Wed Sep  2 09:10:52 UTC 2020 on pts/0

Database Replication Status:
DB service not currently running.
>>
```

3. Se ha conectado a la GUI en las instalaciones de SSM con el uso de VIP y la GUI secundaria está inactiva.

4. El servidor principal (.5) se muestra como servidor activo.

5. El latido se desconecta.

6. El servidor secundario (.5) pasó al estado En espera.

High Availability

Host | Event Logs

Degraded
The cluster is degraded One of the cluster nodes is offline

Heartbeat
Connection status: **Disconnected**

VIP .12

Active Server
public address (. .5)
primary-node (192.168.1.4)
Active

Standby Server
public address (. .10)
secondary-node (192.168.1.5)
Degraded

7. La cuenta TEST creada recientemente se puede ver en estado sincronizado como la replicación ocurrió desde la base de datos secundaria a la principal, como se muestra en la imagen.

High Availability

Host | Event Logs

Degraded
The cluster is degraded One of the cluster nodes is offline

Heartbeat
Connection status: **Disconnected**

VIP .12

Active Server
public address (. .5)
primary-node (192.168.1.4)
Active

Standby Server
public address (. .10)
secondary-node (192.168.1.5)
Degraded

Accounts

Account	Requested By	Cisco Smart Account	Cisco Virtual Account	Account Status	Actions
annan-ssm-on-prem-8-202006	annan@cisco.com	com	annan-SSM-On-Prem-8-202006	Active	Actions
TEST	annan@cisco.com	com	TEST123	Active	Actions

Showing All 2 Records

Synchronization

Name	Satellite Name	Last Synchronization	Synchronization Due	Alerts	Ac
annan-ssm-on-prem-8-202006	annan-ssm-on-...	2020-Sep-02 07:33:32	2020-Oct-02 07:33:32	Synchronization Successful	Acti
TEST	TEST	2020-Sep-02 07:35:42	2020-Oct-02 07:35:42	Synchronization Successful	Acti

8. Se podrá acceder a la GUI desde la dirección VIP (.12) en esta etapa y no desde la dirección IP secundaria.

9. Inicio del clúster HA en el servidor secundario como se muestra en la imagen.


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

10. El estado HA del clúster muestra que la base de datos del servidor primario (Replication Master) a la izquierda se está replicando a la base de datos del servidor secundario (Replication Slave) a la derecha como se esperaba, como se muestra en la imagen.

```
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 (192.168.1.10)

Replication to slave:
client_addr | backend_start | state | write_lag | flush_lag | replay_lag
-----|-----|-----|-----|-----|-----
192.168.1.5 | 2020-09-02 09:08:39.358506+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 (192.168.1.5)

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

Replication from master:
pg_last_xlog_replay_location
-----
0/7000000
(1 row)

>>
>>
>>
>>
```

11. La GUI muestra Heartbeat conectado entre el servidor primario activo y el servidor secundario en espera.

12. La cuenta TEST se sincroniza correctamente con Cisco Software Central.

Registro de instancia de producto con SSM On-Prem VIP durante la conmutación por fallas y la reserva

Se debe configurar la alta disponibilidad entre dos servidores en las instalaciones de SSM mediante esta guía:

Implementación del clúster HA:

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

En esta demostración, utilice:

.11 - Dirección IP del servidor principal

.9 - Dirección IP del servidor secundario

.14 - Dirección IP virtual

Alta disponibilidad

1. Configuración correcta de HA que muestra el servidor primario (.11) como activo, servidor secundario (.9) como en espera y VIP (.14).

The screenshot shows the Cisco Smart Software Manager On-Prem High Availability configuration page. The status is 'Normal' and the heartbeat is 'Connected'. The VIP (.14) is shown pointing to an Active Server (primary-node 169.254.0.1) and a Standby Server (secondary-node 169.254.0.2). System information for both servers is displayed below.

Active Server		Standby Server	
Physical Memory	7.62 GB	Physical Memory	--
Disk Space	7.83 GB	Disk Space	--
Current Version	8-202105	Current Version	--

2. El estado HA del clúster muestra que la base de datos del servidor primario (Replication Master) a la izquierda se replica a la base de datos del servidor secundario (Replication Slave) a la derecha, como se espera en la imagen.

The two terminal screenshots show the PostgreSQL replication status. The left terminal shows the primary node (secondary-node) and the right terminal shows the secondary node (primary-node). Both show 'Database Replication Status' and 'Replication to slave' information.

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
last login: Sun Jun 28 18:12:43 UTC 2021 on pts/0

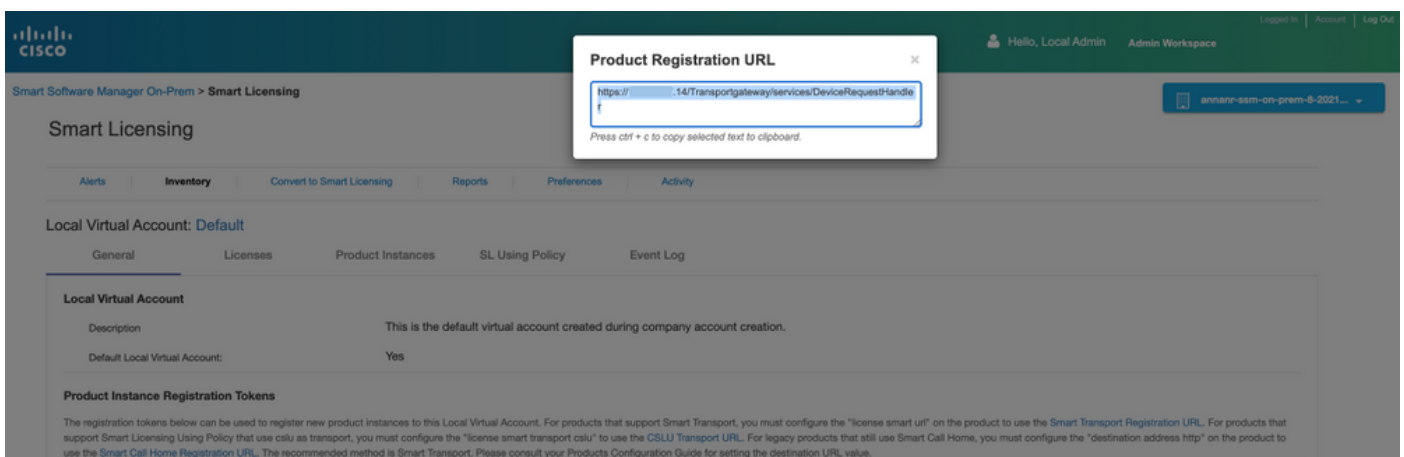
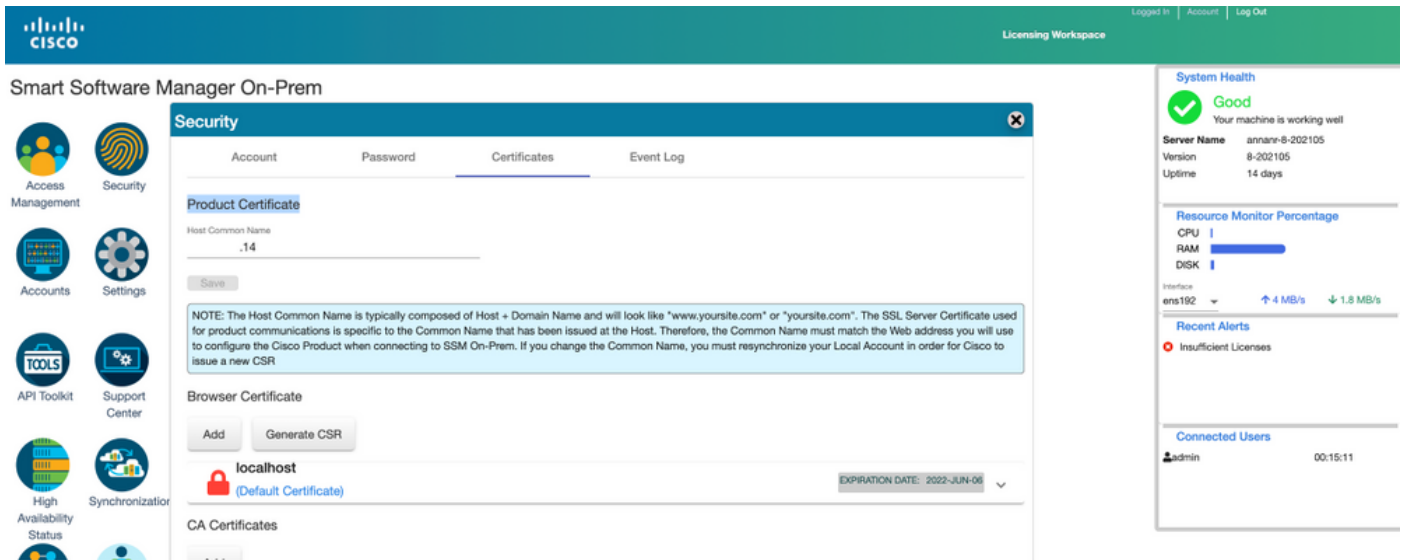
Database Replication Status:
=====
Database is currently the replication master - Replicating to secondary-node (.9)

Replication to slave:
client_addr | backend_start | state | write_lag | flush_lag
| replay_lag
-----
169.254.8.2 | 2021-06-18 15:08:57.211221+00 | streaming | 0 | 0
(1 row)

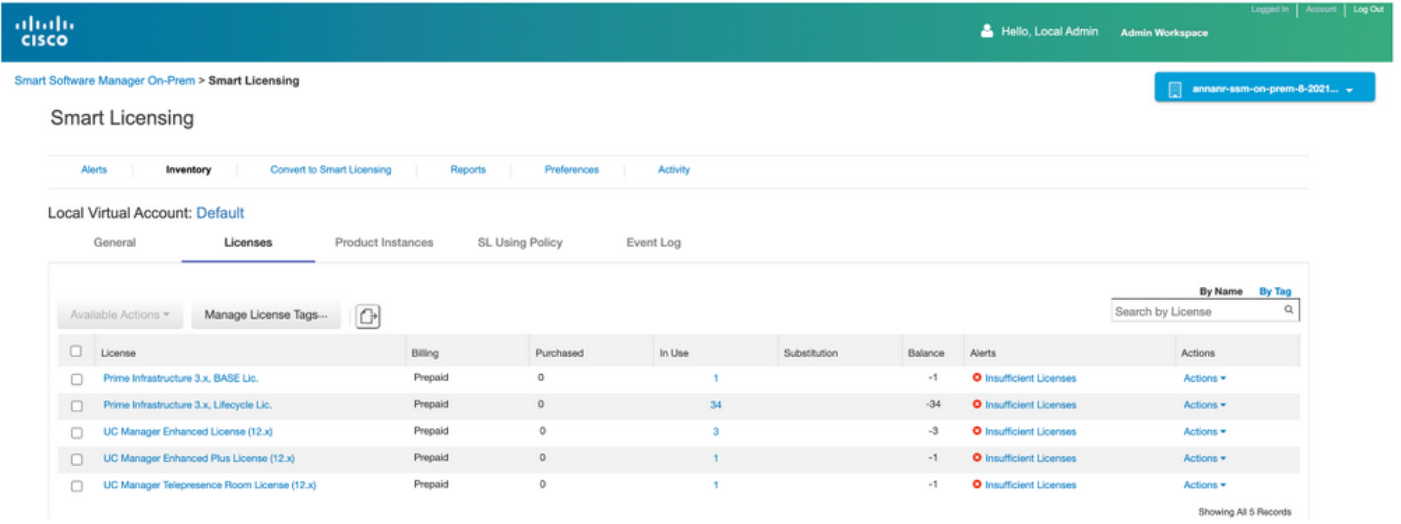
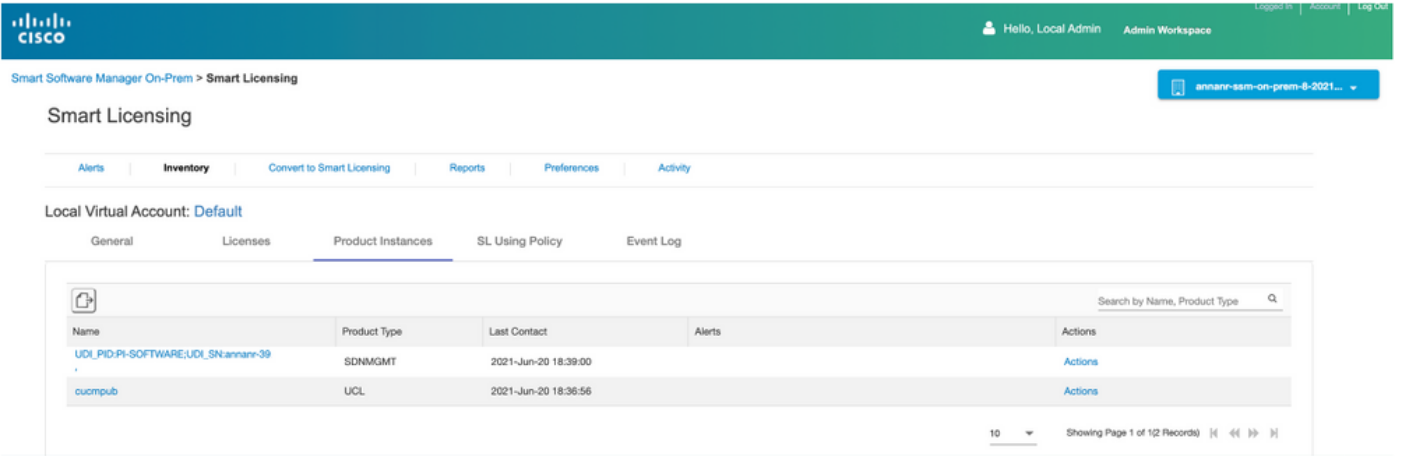
Replication from master:
pg_last_xlog_replay_location
-----
9/C763AF9
(1 row)
>>
>>
```

3. Cuando SSM On-Prem se implementa como un clúster HA, inicie sesión en SSM On-Prem Administration Workspace, navegue hasta Security > Certificates y utilice la dirección IP virtual en Host Common Name.

- Este valor debe coincidir con el valor que planea utilizar para la URL de destino del producto. Si implementa una pila doble (tanto IPv4 como IPv6), este valor debe ser un FQDN y no una dirección IP.
- Después de actualizar el nombre común del host, asegúrese de que los certificados se regeneran con el nuevo nombre común sincronizando las cuentas locales con Cisco Smart Software Manager.
- Debe sincronizar antes de intentar volver a registrar los productos con el nuevo nombre común en la configuración de URL de destino.
- Si no se sincroniza, los productos no se pueden registrar con el nuevo nombre común de host.



- Dos instancias del producto (annanr-39) y (cucmpub) se registran en la dirección VIP de SSM On-Prem, como se ve en la pestaña **Instancias del producto**.
- La licencia consumida/solicitada por estas instancias del producto se refleja en la pestaña **Licencia**.



Failover

1. Detención del clúster HA en el servidor primario como se muestra en la imagen.

```

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Sun Jun 28 18:12:43 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 | 2021-06-18 15:58:57.211121+00 | streaming | 0 | 0
(1 row)

Replication from master:
pg_last_xlog_replay_location
-----
(1 row)

>> ha_cluster_stop
Last login: Sun Jun 28 18:12:45 UTC 2021 on pts/0
Stopping Cluster (pacemaker)...

Stopping Cluster (corosync)...

```

```

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Sun Jun 28 18:11:42 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/C763AF8
(1 row)

>>
>>
>>
>>
>>
>>
>>
>>
>>
>>

```

2. Inició sesión en la GUI de SSM in situ con el uso de VIP (.14) y la GUI principal está inactiva.
3. El servidor secundario (.9) se muestra como servidor activo.
4. El latido se desconecta.
5. El servidor primario (.11) se mueve al estado En espera.

High Availability

Host | Event Logs

Degraded
The cluster is degraded One of the cluster nodes is offline

Heartbeat
Connection status: **Disconnected**

VIP .14

Active Server	Standby Server
public address (.9)	public address (11)
secondary-node (169.254.0.2)	primary-node (169.254.0.1)
Active	Degraded

System Information

Active Server	Standby Server
Physical Memory 7.62 GB	Physical Memory --
Disk Space 7.56 GB	Disk Space --
Current Version 8-202105	Current Version --

System Health
Good
Your machine is working well

Server Name: annann-7-20-8-05
Version: 8-202105
Uptime: 11 days

Resource Monitor Percentage
CPU |
RAM |
DISK |

Interface: ens192 | ↑ 5.8 MB/s ↓ 3.9 MB/s

Recent Alerts
Insufficient Licenses

Connected Users
admin 00:00:18

6. Registro de instancias de productos con el uso de SSM On-Prem VIP en la URL de registro de productos en la configuración Transport Gateway, como se muestra en la imagen.

Prime Infrastructure | Application Search | root - ROOT-DOMAIN

Administration / Settings / System Settings

System Settings | General Account Settings

Cisco.com Credentials | Proxy | Support Request | **Smart Licensing Transport**

Please read the below instructions

- *On Clicking HTTP/HTTPS Proxy, traverse to Proxy tab for configuring proxy settings.*
- *In Transport Gateway Mode, usage information will be sent over the Internet via Smart Call Home Transport Gateway. For the setup details, please click [Transport Gateway](#) and [satellite](#).*

Transport Mode: Direct Transport Gateway HTTP/HTTPS Proxy

Enter a valid URL:

Save | Reset | Test Connectivity

7. Nombre de la instancia del producto: pi37 se ha registrado correctamente con SSM On-Prem con el uso de una dirección VIP como se muestra en la imagen.

Prime Infrastructure Administration / Licenses and Software Updates / Smart Software Licensing

License Dashboard Settings

Smart Software Licensing

To view and manage Smart Licenses for your Cisco Smart Account, go to [Smart Software Manager](#)

Smart Software Licensing Status

Licensing Mode: Smart Software Licensing
 Product Name: Prime Infrastructure
 Registration Status: ✔ Registered (Jun 20, 2021)
 License Authorization Status: ✘ Out of Compliance (Jun 20, 2021)
 Smart Account: anranr-sam-on-prem-8-202105
 Virtual Account: Default
 Product Instance Name: p37
 Transport Settings: Transport Gateway [View / Edit](#)

Smart License Usage

Choose Licenses Last updated: Sunday Jun 20, 2021 at 7:28 PM

License	Description	Count	Status
Prime Infrastructure 3.x, Assurance Lic.	The Assurance license	2	✘ Out of Compliance
Prime Infrastructure 3.x, BASE Lic.	The Base license	1	✘ Out of Compliance
Prime Infrastructure 3.x, Lifecycle Lic.	The Lifecycle license	14	✘ Out of Compliance
Prime Infrastructure 3.x, UCS Server MGMT Lic.	The Data Center license	0	✔ No Licenses In Use
Prime Infrastructure 3.x, UCS VM	The Data Center Hypervisor license	0	✔ No Licenses In Use

Success
Smart agent registered successfully

8. Registro de otras instancias de productos con el uso de SSM On-Prem VIP en la URL de registro de productos en el parámetro Transport Gateway.

Status

i Transport settings saved successfully.

Configure how the product instance will communicate with Cisco.

Direct - product communicates directly with Cisco licensing servers.
 URL : <https://tools.cisco.com/its/service/oddce/services/DDCEService>

Transport Gateway - proxy data via Transport Gateway or Smart Software Manager satellite.
 URL :

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.

9. Registro del producto completado correctamente con SSM On-Prem usando una dirección VIP como se muestra en la imagen.

Status

i Registration completed successfully

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

10. Nombre de la instancia del producto: cucm-pub-30 se ha registrado correctamente con SSM On-Prem con el uso de una dirección VIP como se muestra en la imagen.

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾ User Management ▾ Bulk Administration ▾ Help ▾

License Management

Status

Smart Software Licensing: The system is operating with an insufficient number of licenses. Configure 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 EEST)
Smart Account	annanr-ssm-on-prem-8-202105
Virtual Account	Default
Product Instance Name	cucm-pub-30
Export-Controlled Functionality	Allowed
Transport Settings	Transport Gateway View/Edit the Licensing Smart Call Home settings
Licensing Mode	Enterprise

License Usage Report

Below is a summary of current license usage on the system. Current usage details for each type are available by pressing "Update Usage Details". Note that collecting these data is a resource intensive process and may take several deployment.

[View All License Type Descriptions And Device Classifications](#)

Update Usage Details | Usage Details Last Updated: 2021-06-20 22:30:09

License Type	Current Usage	Status	Report
CUWL	0	No 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. Se registran dos nuevas instancias de productos (pi37) y (cucm-pub-30) en la dirección VIP de SSM On-Prem como se ve en la pestaña **Instancias de producto**.

12. La licencia consumida/solicitada por estas instancias del producto se refleja en la pestaña **Licencia**.

Smart Software Manager On-Prem > Smart Licensing

Smart Licensing

Alerts | **Inventory** | Convert to Smart Licensing | Reports | Preferences | Activity

Local Virtual Account: Default

General | **Licenses** | Product Instances | SL Using Policy | Event Log

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID-PI-SOFTWARE;UDI_SN:annanr-39	SDNMGMT	2021-Jun-20 18:39:00		Actions
UDI_PID-PI-SOFTWARE;UDI_SN:pi37:	SDNMGMT	2021-Jun-20 19:28:47		Actions
cucmpub	UCL	2021-Jun-20 18:36:56		Actions
cucm-pub-30	UCL	2021-Jun-20 19:28:51		Actions

Showing Page 1 of 1(4 Records) | << >>

Smart Software Manager On-Prem > Smart Licensing

Smart Licensing

Alerts | **Inventory** | Convert to Smart Licensing | Reports | Preferences | Activity

Local Virtual Account: Default

General | **Licenses** | Product Instances | SL Using Policy | Event Log

Available Actions | Manage License Tags... | Search by License

License	Billing	Purchased	In Use	Substitution	Balance	Alerts	Actions
<input type="checkbox"/> Prime Infrastructure 3.x, Assurance Lic.	Prepaid	0	2		-2	Insufficient Licenses	Actions
<input type="checkbox"/> Prime Infrastructure 3.x, BASE Lic.	Prepaid	0	2		-2	Insufficient Licenses	Actions
<input type="checkbox"/> Prime Infrastructure 3.x, Lifecycle Lic.	Prepaid	0	48		-48	Insufficient Licenses	Actions
<input type="checkbox"/> UC Manager Basic License (12.x)	Prepaid	0	2		-2	Insufficient Licenses	Actions
<input type="checkbox"/> UC Manager Enhanced License (12.x)	Prepaid	0	47		-47	Insufficient Licenses	Actions
<input type="checkbox"/> UC Manager Enhanced Plus License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions
<input type="checkbox"/> UC Manager Essential License (12.x)	Prepaid	0	4		-4	Insufficient Licenses	Actions
<input type="checkbox"/> UC Manager Telepresence Room License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions

Showing All 8 Records

13. Inicio del clúster HA en el servidor primario.

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

14. El estado del clúster de HA muestra que la base de datos principal se replica desde la base de datos secundaria.

15. Primario|Secundario como se muestra en la imagen.

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Sun Jun 20 18:44:08 UTC 2021 on pts/0

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

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

Replication from master:
pg_last_xlog_replay_location
(1 row)

PGSD Status:
secondary-node: Online
primary-node: Online

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Sun Jun 20 18:42:18 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
8/C763028
(1 row)
```

16. La GUI muestra el latido como conectado, Secundario en estado Activo y Primario en estado En espera como se muestra en la imagen.

High Availability

Host | Event Logs

Normal
The status of the high availability cluster is normal.

Heartbeat
Connection status: **Connected**

VIP .14

Active Server
public address (.9)
secondary-node (169.254.0.2)

Standby Server
public address (.11)
primary-node (169.254.0.1)

System Information

Active Server		Standby Server	
Physical Memory	7.62 GB	Physical Memory	--
Disk Space	7.54 GB	Disk Space	--
Current Version	8-202105	Current Version	--

System Health
Good
Your machine is working well

Server Name annan-7-20-8-05
Version 8-202105
Uptime 11 days

Resource Monitor Percentage
CPU |
RAM |
DISK |

Interface: ens192 | ↑ 5.8 MB/s | ↓ 4 MB/s

Recent Alerts
Insufficient Licenses

Connected Users
admin | 00:15:26

Reserva

1. Deteniendo Ha_cluster en secundario.
2. Se puede ver el estado actual de la base de datos del servidor primario y de la base de datos del servidor secundario.

```

Last login: Sun Jun 20 18:58:34 UTC 2021 on pts/0
-----
Database Replication Status:
-----
Database is currently the replication slave - Replicating from secondary-node ( .9)

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

Replication from master:
 pg_last_xlog_replay_location
-----
0/8012730
(1 row)
>>

[>>]
[>>]
[>> ha_cluster_stop
Last login: Sun Jun 20 18:45:56 UTC 2021
Stopping Cluster (pacemaker)...

Stopping Cluster (corosync)...
>>
>>
[>> ha_status
Last login: Sun Jun 20 18:47:20 UTC 2021 on pts/0
Error: cluster is not currently running on this node
Last login: Sun Jun 20 18:57:24 UTC 2021 on pts/0
-----
Database Replication Status:
-----
DB service not currently running.
>>

```

3. Inició sesión en la GUI en las instalaciones de SSM con VIP (.14) y la GUI secundaria está inactiva.
4. El servidor principal (.11) se muestra como servidor activo.
5. El latido se desconecta.
6. El servidor secundario (.9) pasó al estado En espera.

The screenshot shows the Cisco Smart Software Manager On-Prem interface. The main window is titled 'High Availability' and shows a 'Degraded' status with a warning icon. Below this, there is a 'Heartbeat' section indicating 'Connection status: Disconnected'. A diagram shows two servers: an 'Active Server' (primary-node 169.254.0.1) and a 'Standby Server' (secondary-node 169.254.0.2). The Standby Server is marked as 'Degraded'. Below the diagram, 'System Information' is provided for both servers, including Physical Memory, Disk Space, and Current Version.

7. Se podrá acceder a la GUI desde la dirección VIP (.14) en esta etapa y no desde la dirección IP secundaria.

8. Inicio del clúster HA en el servidor secundario.

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

9. El estado HA del clúster muestra que la base de datos del servidor primario (Replication Master) a la izquierda se replica a la base de datos del servidor secundario (Replication Slave) a la derecha como se esperaba.

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

Daemon Status:
corosync: active/enabled
pacemaker: active/enabled
pcsd: active/enabled
Last login: Sun Jun 20 19:05:09 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
(1 row)

Replication from master:
pg_last_xlog_replay_location
-----
0/6012730
(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
-----
0/1000000
(1 row)

>>
>>
```

10. La GUI muestra Heartbeat conectado entre el servidor primario activo y el servidor secundario en espera.

11. Las cuatro instancias de producto registradas en la dirección VIP de SSM On-Prem como se ve en la pestaña **Instancias de producto**.

12. La licencia consumida/solicitada por estas instancias del producto se refleja en la pestaña **Licencia**.

Smart Software Manager On-Prem > Smart Licensing

Smart Licensing

Alerts | Inventory | Convert to Smart Licensing | Reports | Preferences | Activity

Local Virtual Account: Default

General | Licenses | Product Instances | SL Using Policy | Event Log

Available Actions Manage License Tags... Search by License

License	Billing	Purchased	In Use	Substitution	Balance	Alerts	Actions
Prime Infrastructure 3.x, Assurance Lic.	Prepaid	0	2		-2	Insufficient Licenses	Actions
Prime Infrastructure 3.x, BASE Lic.	Prepaid	0	2		-2	Insufficient Licenses	Actions
Prime Infrastructure 3.x, Lifecycle Lic.	Prepaid	0	48		-48	Insufficient Licenses	Actions
UC Manager Basic License (12.x)	Prepaid	0	2		-2	Insufficient Licenses	Actions
UC Manager Enhanced License (12.x)	Prepaid	0	47		-47	Insufficient Licenses	Actions
UC Manager Enhanced Plus License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions
UC Manager Essential License (12.x)	Prepaid	0	4		-4	Insufficient Licenses	Actions
UC Manager Telepresence Room License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions

Showing All 8 Records

Reducir un clúster de alta disponibilidad

1. Un clúster in situ de Cisco Smart Manager se puede degradar directamente a un solo nodo independiente.
2. Utilice la consola en las instalaciones para conectarse al SSM principal/activo en las instalaciones con el comando <ha_teardown>.
3. Después de verificar la operación de SSM On-Prem, el servidor secundario/en espera se debe descartar y no se puede reutilizar.
4. Ahora tendrá un sistema independiente en lugar de un clúster.
5. La eliminación se ha iniciado como se muestra en la imagen.

```

Database Replication Status:
Database is currently the replication master - Replicating to secondary-node (192.168.1.5)
Replication to slave:
client_addr | backend_start | state | write_lag | flush_lag | replay_lag
192.168.1.5 | 2020-09-02 09:08:59.358586+00 | streaming | 0 | 0
(1 row)
Replication from master:
pg_last_xlog_replay_location
0/7079010
(1 row)
>> ha_teardown
Last login: Wed Sep 2 11:03:58 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
The interface is under control of NetworkManager, setting zone to default.
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...
ssh tunnels.service
added activating auto-restart SSH tunnel device forwarding service
Removed symlink /etc/systemd/system/multi-user.target.wants/ssh tunnels.service.
Removed symlink /etc/systemd/system/multi-user.target.wants/tunha.service.
Cleaning up...
atlantis_default
Enabling SSM 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. SSM is now in stand-alone mode.
>>
>> 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.
Database Replication Status:
Database is currently the replication slave - Replicating from primary-node (192.168.1.5)
Replication to slave:
client_addr | backend_start | state | write_lag | flush_lag | replay_lag
(0 rows)
Replication from master:
pg_last_xlog_replay_location
0/9080030
(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
The interface is under control of NetworkManager, setting zone to default.
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...
ssh tunnels.service
added activating auto-restart SSH tunnel device forwarding service
Removed symlink /etc/systemd/system/multi-user.target.wants/ssh tunnels.service.
Removed symlink /etc/systemd/system/multi-user.target.wants/tunha.service.
Cleaning up...
atlantis_default
Enabling SSM 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. SSM is now in stand-alone mode.
>> ha_status
Last login: Wed Sep 2 11:18:53 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.
    
```

6. Desencadenando la desactivación en el servidor secundario como se muestra en la imagen.

```

=====
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.service.
Deleting SSH tunnel user...

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

>> ]

```

7. El clúster de HA ha sido destruido. SSMS está ahora en modo autónomo.

```

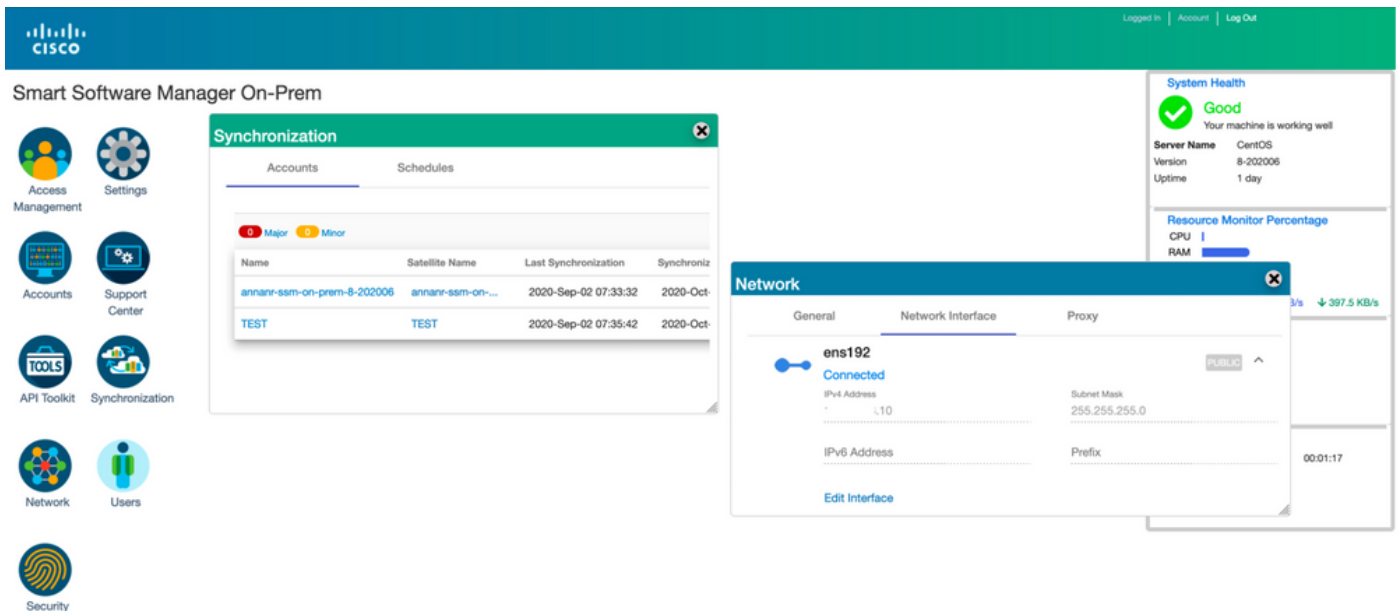
HA cluster has been destroyed.  SSMS is now in stand-alone mode.

[>> 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. La GUI a la que se accede con el uso de la dirección IP del servidor secundario ya no muestra el widget de alta disponibilidad.



9. Desencadenando la desactivación en el servidor primario como se muestra en la imagen.

```
[>> ha_takedown
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
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
```

10. HA se ha inhabilitado correctamente.

```

>>
>> 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. La GUI a la que se accede con el uso de la dirección IP del servidor principal ya no nieva el widget de alta disponibilidad.

¿Qué sigue?!

1. Inicie sesión en SSM On-Prem Primary **Administration Workspace**, navegue hasta **Security > Certificates** y utilice el servidor primario (dirección IP/nombre de host/FQDN) en Host Common Name.
2. Después de actualizar el nombre común de host, asegúrese de que los certificados se regeneran con el nuevo nombre común sincronizando las cuentas locales con Cisco SSM.
3. Debe sincronizar antes de intentar volver a registrar los productos con el nuevo nombre común en la configuración de URL de destino.
4. Si no se sincroniza, los productos no se pueden registrar con el nuevo nombre común de host.

Información Relacionada

- Guía de consola:
https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_Console_Guide.pdf
- Guía del usuario:

https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_User_Guide.pdf

- Guía de instalación:

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

- [**Soporte Técnico y Documentación - Cisco Systems**](#)