

Funzionamento del cluster SSM locale ad alta disponibilità 8.X

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Introduzione

In questo documento viene descritto il funzionamento della sincronizzazione dell'account locale e della registrazione dell'istanza del prodotto di Smart Software Manager (SSM) sul server locale SSM distribuito come cluster ad alta disponibilità (HA) al momento degli scenari di failover e fallback.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- SSM locale
- HA

Componenti usati

Le informazioni di questo documento si basano su SSM On-Prem 8 e versioni successive.

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata

ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Premesse

Si tratta dei documenti di riferimento che forniscono informazioni sull'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

Sincronizzazione dell'account locale SSM durante il failover e il fallback

La disponibilità elevata tra due server locali SSM deve essere configurata con l'aiuto di questa guida:

Distribuire il cluster HA:

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

In questa dimostrazione, utilizzare:

0.5 - Indirizzo IP del server principale

.10 - Indirizzo IP del server secondario

.12 - Indirizzo IP virtuale

Alta disponibilità

1. Una corretta configurazione di HA consente di visualizzare il server primario (.5) come attivo, il server secondario (.10) come standby e l'sd VIP (.12) come illustrato nell'immagine.

High Availability

Host

Event Logs

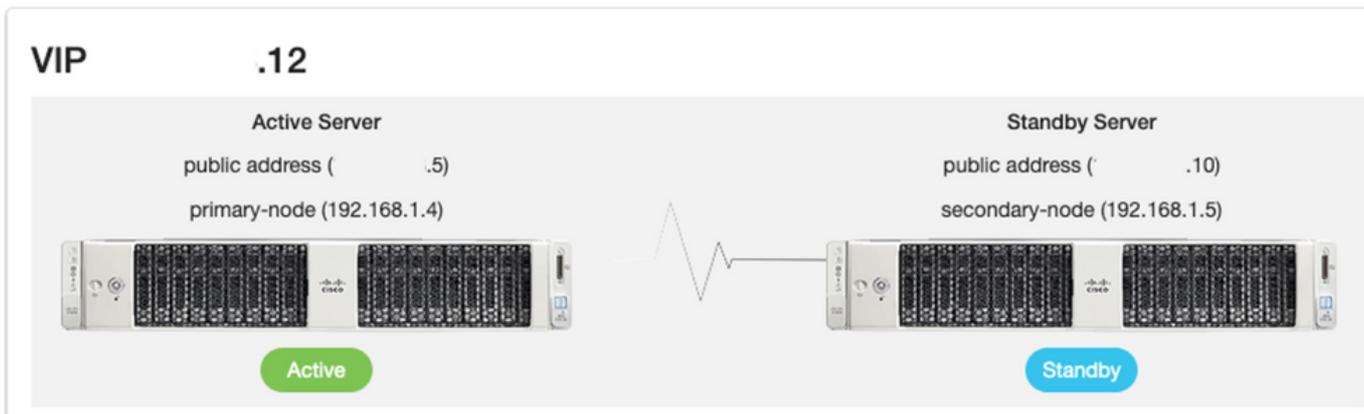


Normal

The status of the high availability cluster is normal.

Heartbeat

Connection status: **Connected**



2. La sincronizzazione di SSM on-Prem con Cisco Software Central è stata completata dal server primario/attivo come mostrato nell'immagine.

The screenshot shows the Cisco Smart Software Manager On-Prem interface. The top navigation bar includes 'Logged In', 'Account', and 'Log Out'. The main content area is divided into several sections:

- Synchronization:** Shows 'Accounts' and 'Schedules' tabs. A table lists synchronization events for 'annanr-ssm-on-prem-8-202006'.
- Network:** Shows the 'ens192' interface as 'Connected' with IPv4 and IPv6 addresses.
- System Health:** Shows 'Good' status with 'Your machine is working well'. Details include Server Name (CentOS), Version (8-202006), and Uptime (1 day).
- Resource Monitor Percentage:** Shows CPU, RAM, and DISK usage.
- Accounts:** A table lists account details for 'annanr-ssm-on-prem-8-202006', including 'Requested By' (annanr@cisco.com) and 'Account Status' (Active).

3. Lo stato HA del cluster indica che il database del server primario (replica master) a sinistra esegue la replica nel database del server secondario (replica slave) a destra come previsto, come mostrato nell'immagine.

```
psql: postgres@192.168.1.4:
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:
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:
>>
>>
>>
>>
```

Failover

1. Arresto del cluster HA sul server primario come mostrato nell'immagine.

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

Stopping Cluster (corosync)...
```

2. Primario|Secondario come mostrato nell'immagine.

```
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)

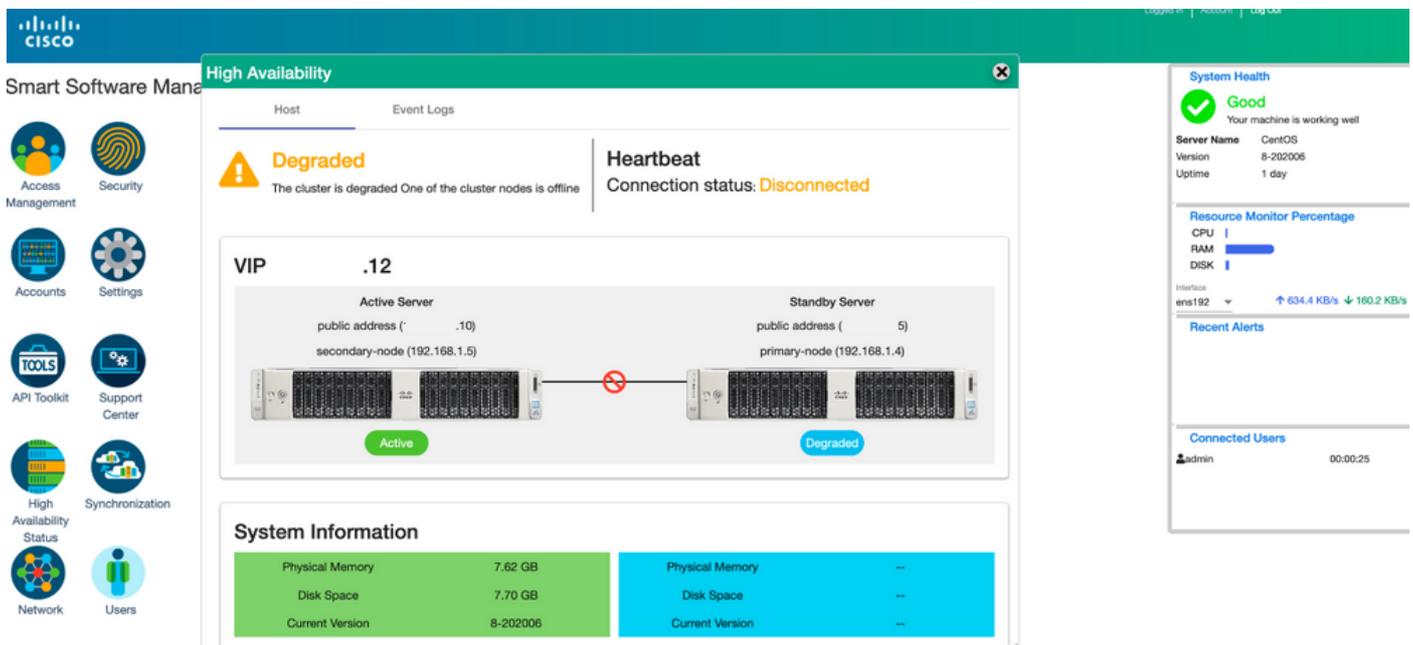
Replication from master:
pg_last_xlog_replay_location
-----
0/53C0C60
(1 row)
```

3. Ha eseguito l'accesso all'interfaccia utente locale di SSM usando VIP e l'interfaccia utente principale è inattiva.

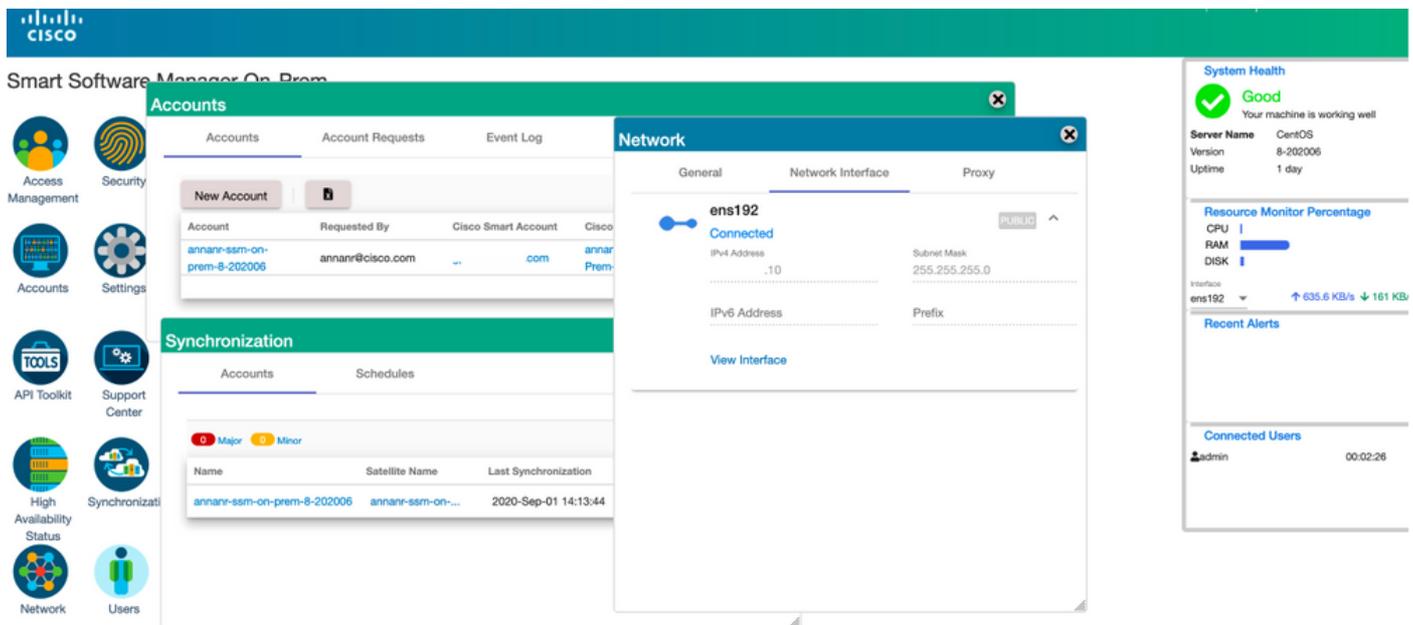
4. Il server secondario (.10) viene visualizzato come server attivo.

5. Heartbeat disconnesso.

6. Il server primario (.5) è stato spostato nello stato Standby.



7. La sincronizzazione dell'account locale SSM con Cisco Software Central può essere verificata correttamente dall'interfaccia utente del server secondario/attivo, come mostrato nell'immagine.



8. Avvio del cluster HA sul server primario come mostrato nell'immagine.

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

9. Lo stato del cluster HA indica che il database primario è replicato dal database secondario.

10. Primario|Secondario come mostrato nell'immagine.

```

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: Offline
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

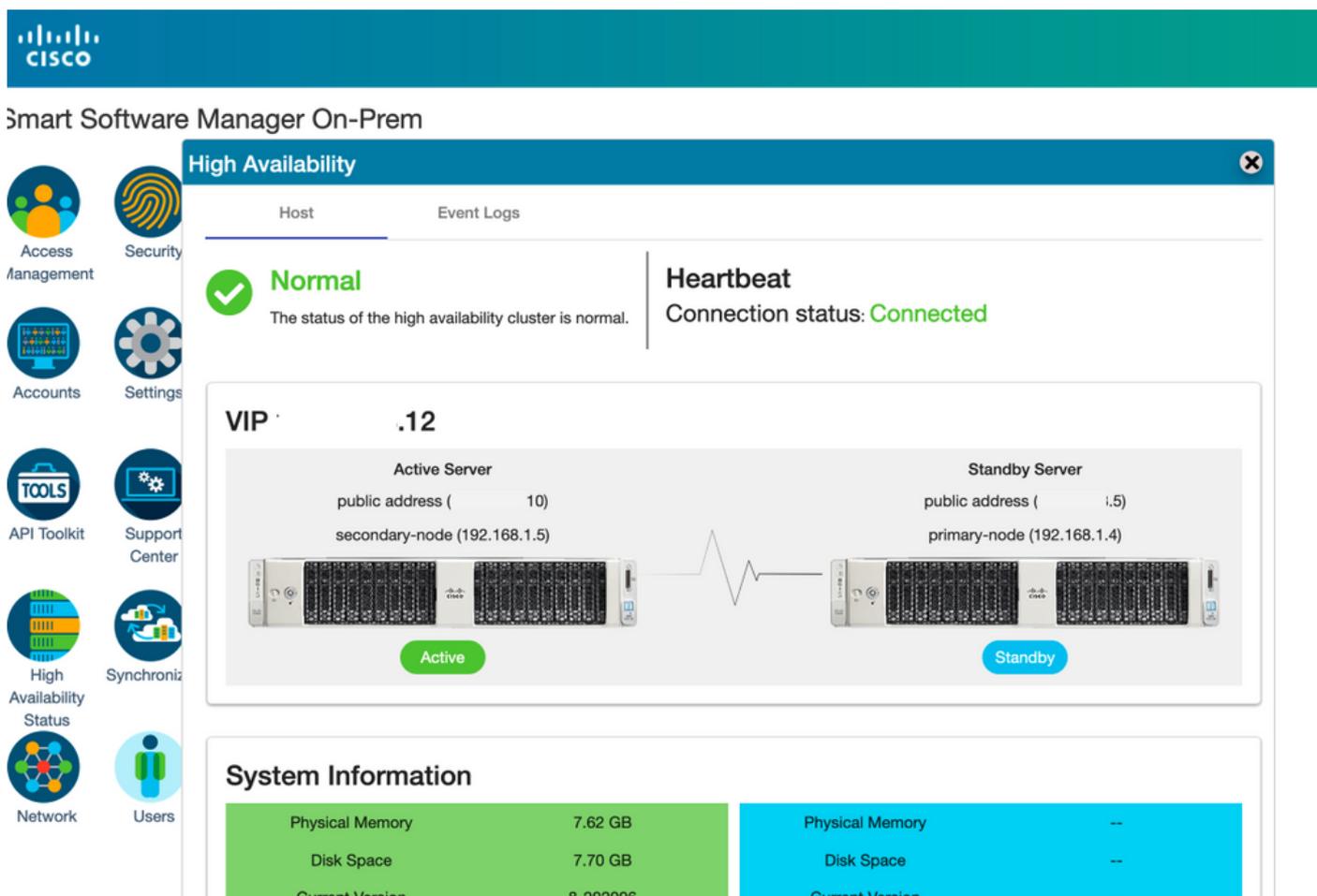
Database Replication Status:
=====
Database is currently the replication master - Replicating to primary-node ( :.....6)

Replication to slave:
client_addr | backend_start | state | write_lag | flush_lag
-----
192.168.1.4 | 2020-09-01 15:36:33.602635+00 | streaming | 0 | 0
(1 row)

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

```

11. La GUI mostra l'heartbeat come connesso, secondario nello stato attivo e primario nello stato di standby, come mostrato nell'immagine.



12. Creare un nuovo account TEST e attivarlo in standby attivo. (.10).

13. In questa fase non sarà possibile accedere all'interfaccia utente principale (.5).

Accounts

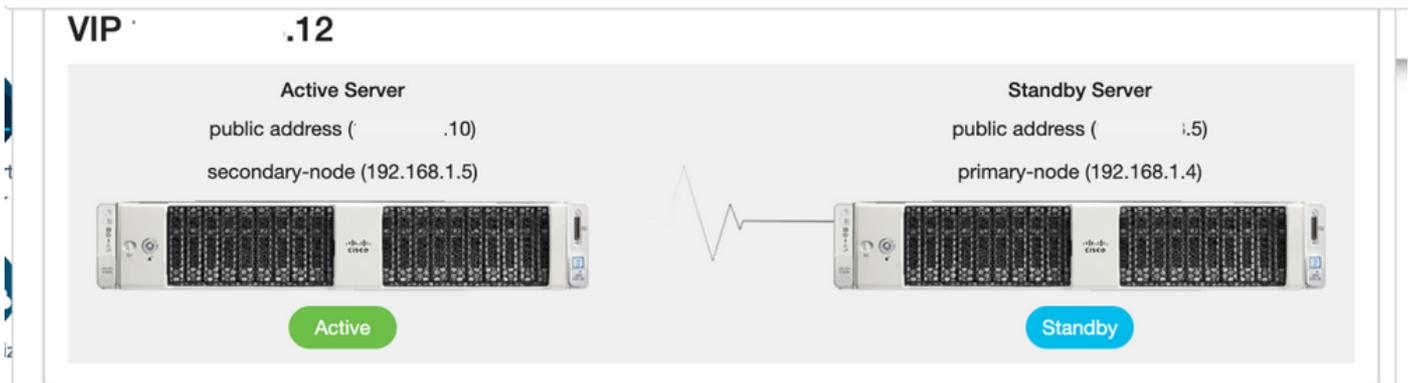
Accounts

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



Fallback

1. Arresto di Ha_cluster in Secondario come mostrato nell'immagine.

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

2. Lo stato corrente del database del server primario e del database del server secondario è indicato qui.

```
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. Ha eseguito l'accesso all'interfaccia utente locale di SSM usando VIP e l'interfaccia utente secondaria è inattiva.

4. Il server principale (.5) viene visualizzato come server attivo.

5. Heartbeat disconnesso.

6. Il server secondario (.5) è stato spostato in stato Standby.

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. L'account TEST appena creato può essere visualizzato in stato sincronizzato quando la replica è avvenuta dal database secondario a quello primario, come mostrato nell'immagine.

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. In questa fase, l'interfaccia utente grafica sarà accessibile dall'indirizzo VIP (.12) e non dall'indirizzo IP secondario.

9. Avvio del cluster HA sul server secondario come mostrato nell'immagine.

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

10. Lo stato HA del cluster indica che il database del server primario (replica master) a sinistra sta eseguendo la replica nel database del server secondario (replica slave) a destra come previsto, come mostrato nell'immagine.

```
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
0/7079810
(1 row)

>>
>>
>>
>>
>>
```

11. La GUI mostra l'heartbeat connesso tra il server primario attivo e il server secondario in standby.

12. L'account TEST viene sincronizzato correttamente con Cisco Software Central.

The screenshot displays the Cisco Smart Software Manager On-Prem High Availability interface. The main window shows a 'Normal' status for the high availability cluster. Below this, a 'Heartbeat' section indicates a 'Connected' status between the Active Server (primary-node 192.168.1.4) and the Standby Server (secondary-node 192.168.1.5). A 'Synchronization' window is also open, showing a table of synchronization events for the 'TEST' account.

Name	Satellite Name	Last Synchronization	Synchronization Due	Alerts	Actions
annanr-sm-on-prem-8-202006	annanr-sm-on-...	2020-Sep-02 07:33:32	2020-Oct-02 07:33:32	Synchronization Successful	Actions
TEST	TEST	2020-Sep-02 07:35:42	2020-Oct-02 07:35:42	Synchronization Successful	Actions

Registrazione dell'istanza del prodotto con SSM On-Prem VIP durante il failover e il fallback

È consigliabile configurare l'alta disponibilità tra due server locali SSM utilizzando questa guida:

Distribuzione del cluster HA:

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

In questa dimostrazione, utilizzare:

.11 - Indirizzo IP del server principale

0.9 - Indirizzo IP del server secondario

.14 - Indirizzo IP virtuale

Alta disponibilità

1. Configurazione riuscita di HA che mostra il server primario (.11) come attivo, il server secondario (.9) come standby e VIP (.14).

The screenshot shows the Cisco Smart Software Manager On-Prem interface. The main window is titled 'High Availability' and displays the following information:

- Status:** Normal (indicated by a green checkmark). The status of the high availability cluster is normal.
- Heartbeat:** Connection status: Connected.
- VIP (.14):** Active Server (primary-node 169.254.0.1) and Standby Server (secondary-node 169.254.0.2).
- System Information:**

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. Lo stato HA del cluster indica che il database del server primario (replica master) a sinistra esegue la replica nel database del server secondario (replica slave) a destra come previsto, come mostrato nell'immagine.

The image shows two terminal windows displaying PostgreSQL replication status:

```
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 15:08:57.211221+00 | streaming | 0 | 0
(1 row)

Replication from master:
pg_last_xlog_replay_location
-----
9/C763AF9
(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 28 18:11:42 UTC 2021 on pts/0

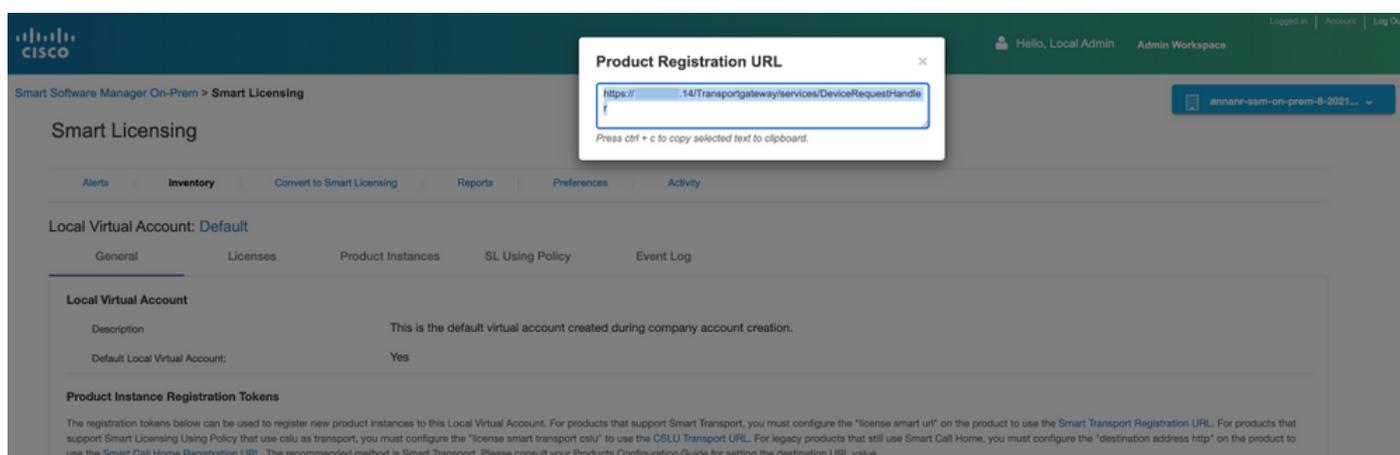
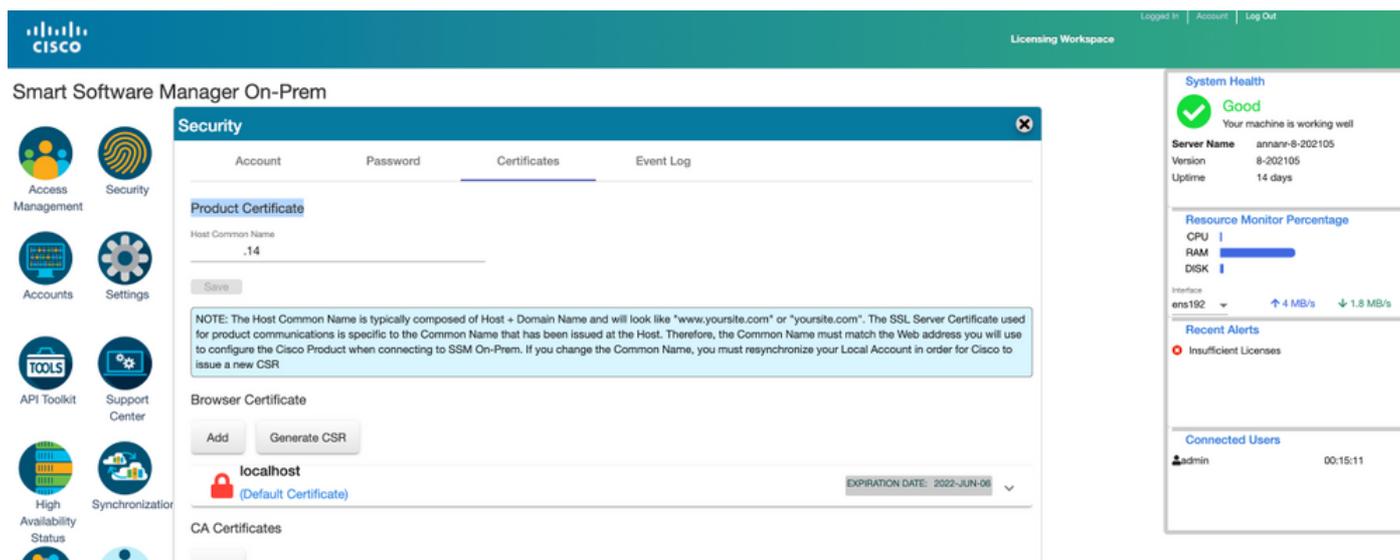
Database Replication Status:
=====
Database is currently the replication slave - Replicating from primary-node (.11)

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

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

3. Quando SSM On-Prem viene distribuito come cluster HA, accedere all'area di lavoro di amministrazione locale di SSM, passare a **Protezione > Certificati** e utilizzare l'indirizzo IP virtuale nel nome comune dell'host.

4. Questo valore deve corrispondere al valore che si intende utilizzare per l'URL di destinazione del prodotto. Se si distribuisce uno stack doppio (sia IPv4 che IPv6), questo valore deve essere un FQDN e non un indirizzo IP.
5. Dopo aver aggiornato il nome comune dell'host, assicurarsi che i certificati vengano rigenerati con il nuovo nome comune sincronizzando gli account locali con Cisco Smart Software Manager.
6. È necessario eseguire la sincronizzazione prima di tentare di registrare nuovamente i prodotti con il nuovo nome comune nella configurazione dell'URL di destinazione.
7. La mancata sincronizzazione può impedire la registrazione dei prodotti con il nuovo nome comune dell'host.



8. Due istanze di prodotto, (annanr-39) e (cucmpub) sono registrate nell'indirizzo VIP di SSM On-Prem come mostrato nella scheda **Istanze di prodotto**.
9. Le licenze utilizzate/richieste da queste istanze del prodotto vengono visualizzate nella scheda **Licenza**.

Failover

1. Arresto del cluster HA sul server primario come mostrato nell'immagine.

```

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 | 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 slaves:
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. Ha eseguito l'accesso all'interfaccia utente locale di SSM utilizzando VIP (.14) e l'interfaccia utente principale è inattiva.

3. Il server secondario (.9) viene visualizzato come server attivo.

4. Heartbeat disconnesso.

5. Il server principale (.11) viene impostato sullo stato Standby.

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. Registrazione delle istanze del prodotto con l'utilizzo di SSM On-Prem VIP nell'URL di registrazione del prodotto nell'impostazione Transport Gateway, come mostrato nell'immagine.

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. Nome istanza prodotto: pi37 è stato registrato con SSM in locale con l'utilizzo di un indirizzo VIP come mostrato nell'immagine.

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

Licensing Settings 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. Registrazione di altre istanze del prodotto con l'utilizzo di SSM On-Prem VIP nell'URL di registrazione del prodotto nell'impostazione 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. La registrazione del prodotto è stata completata con SSM in locale utilizzando un indirizzo VIP come mostrato nell'immagine.

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. Nome istanza prodotto: cucm-pub-30 è stato registrato con SSM On-Prem con l'utilizzo di un indirizzo VIP, come mostrato nell'immagine.

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 Requirements by Type

License Type	Current Usage	Status	Report
CUWL	0	Registered	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. Due nuove istanze del prodotto, (pi37) e (cucm-pub-30) sono registrate nell'indirizzo VIP del servizio locale SSM come mostrato nella scheda **Istanze del prodotto**.

12. Le licenze utilizzate/richieste da queste istanze del prodotto vengono visualizzate nella scheda **Licenza**.

Smart Software Manager On-Prem > Smart Licensing

annanr-ssm-on-prem-8-2021...

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

<input type="checkbox"/>	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. Avvio del cluster HA nel server primario.

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

14. Lo stato del cluster HA indica che il database primario è replicato dal database secondario.

15. Primario|Secondario come mostrato nell'immagine.

```
PCSD 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)

PCSD 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 ( .....13)

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

Replication from master:
pg_last_xlog_replay_location
8/0743028
(1 row)
```

16. La GUI mostra l'heartbeat come connesso, secondario nello stato attivo e primario nello stato di standby, come mostrato nell'immagine.

High Availability

Host | Event Logs

Normal
The status of the high availability cluster is normal.

Heartbeat
Connection status: **Connected**

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	Standby

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

Fallback

1. Arresto di Ha_cluster nel database secondario.
2. È possibile visualizzare lo stato corrente del database del server primario e del database del server secondario inattivo.

```

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
-----
0/8017730
(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. Ha eseguito l'accesso all'interfaccia utente locale di SSM utilizzando VIP (.14) e l'interfaccia utente secondaria è inattiva.
4. Il server primario (.11) viene visualizzato come server attivo.
5. Heartbeat disconnesso.
6. Il server secondario (.9) è stato spostato in stato Standby.

7. In questa fase, l'interfaccia utente grafica sarà accessibile dall'indirizzo VIP (.14) e non dall'indirizzo IP secondario.

8. Avvio del cluster HA sul server secondario.

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

9. Lo stato HA del cluster indica che il database del server primario (replica master) a sinistra esegue la replica nel database del server secondario (replica slave) a destra come previsto.

```
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 19:01:56.610211+00 | streaming | 0 | 0
|
(1 row)

Replication from master:
pg_last_xlog_replay_location
-----
0/1000000
(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 mostra l'heartbeat connesso tra il server primario attivo e il server secondario in standby.

High Availability

Host | Event Logs

Normal
The status of the high availability cluster is normal.

Heartbeat
Connection status: **Connected**

VIP .14

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

System Information

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

System Health
Good
Your machine is working well

Server Name: annan-8-202105
Version: 8-202105
Uptime: 14 days

Resource Monitor Percentage
CPU |
RAM |
DISK |

Interface: ens192 | ↑ 4.1 MB/s | ↓ 1.9 MB/s

Recent Alerts
Insufficient Licenses

Connected Users
admin | 00:07:26

11. Tutte e quattro le istanze del prodotto sono state registrate nell'indirizzo VIP locale di SSM come mostrato nella scheda **Istanze del prodotto**.

12. Le licenze utilizzate/richieste da queste istanze del prodotto vengono visualizzate nella scheda **Licenza**.

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:annan-39	SDNMGMT	2021-Jun-20 18:39:00		Actions
UDI_PID-PI-SOFTWARE:UDI_SN:pi37:	SDNMGMT	2021-Jun-20 19:28:47		Actions
cucompub	UCL	2021-Jun-20 18:36:56		Actions
cuom-pub-30	UCL	2021-Jun-20 19:28:51		Actions

Showing Page 1 of 1 (4 Records)


```

=====
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. Cluster HA eliminato. SSMS è ora in modalità autonoma.

```

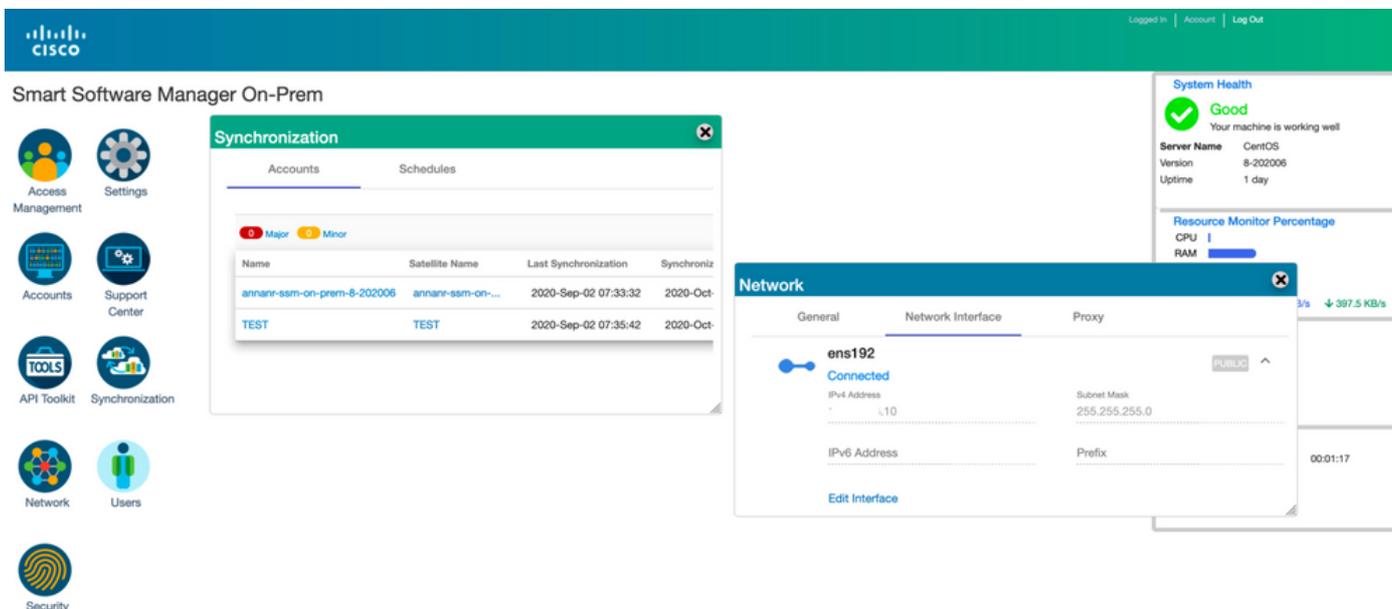
HA cluster has been destroyed.  SSMS is now in stand-alone mode.

[>> 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 cui si accede utilizzando l'indirizzo IP del server secondario non blocca più il widget Alta disponibilità.



9. Attivazione della disinstallazione sul server principale come mostrato nell'immagine.

```
[>> 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. HA è stato disabilitato.

```

>>
>> 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. L'accesso tramite GUI tramite l'indirizzo IP del server principale non provoca più l'effetto neve del widget Alta disponibilità.

E adesso?!

1. Accedere all'**area di lavoro Amministrazione** primaria locale di SSM, passare a **Sicurezza > Certificati** e utilizzare il nome comune host del server primario (indirizzo IP/nome host/FQDN).
2. Dopo aver aggiornato il nome comune dell'host, assicurarsi che i certificati vengano rigenerati con il nuovo nome comune sincronizzando gli account locali con Cisco SSM.
3. È necessario eseguire la sincronizzazione prima di tentare di registrare nuovamente i prodotti con il nuovo nome comune nella configurazione dell'URL di destinazione.
4. La mancata sincronizzazione può impedire la registrazione dei prodotti con il nuovo nome comune dell'host.

Informazioni correlate

- Console: https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_Console_Guide.pdf
- Guida dell'utente:

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

- Guida all'installazione:

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

- [Documentazione e supporto tecnico – Cisco Systems](#)