

Fonctionnement du cluster haute disponibilité SSM sur site 8.X

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Introduction

Ce document décrit comment la synchronisation des comptes sur site Smart Software Manager (SSM) et l'enregistrement d'instance de produit fonctionnent sur le serveur sur site SSM déployé en tant que cluster haute disponibilité (HA) au moment des scénarios de basculement et de secours.

Conditions préalables

Conditions requises

Cisco vous recommande de prendre connaissance des rubriques suivantes :

- SSM sur site
- HA

Components Used

Les informations de ce document sont basées sur SSM On-Prem 8 et versions ultérieures.

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 votre réseau

est en ligne, assurez-vous de bien comprendre l'incidence possible des commandes.

Informations générales

Il s'agit des documents de référence qui fournissent de l'information sur la haute disponibilité.

- 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

Synchronisation de compte sur site SSM lors du basculement et de la reprise

La haute disponibilité entre deux serveurs SSM On-Prem doit être configurée à l'aide de ce guide :

Déployer le cluster HA :

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

Dans cette démonstration, utilisez :

.5 - Adresse IP du serveur principal

.10 - Adresse IP du serveur secondaire

.12 - Adresse IP virtuelle

Haute disponibilité

1. La configuration réussie de HA montre le serveur principal (.5) comme serveur actif et secondaire (.10) comme sd de veille et VIP (.12) illustré dans l'image.

High Availability

Host

Event Logs

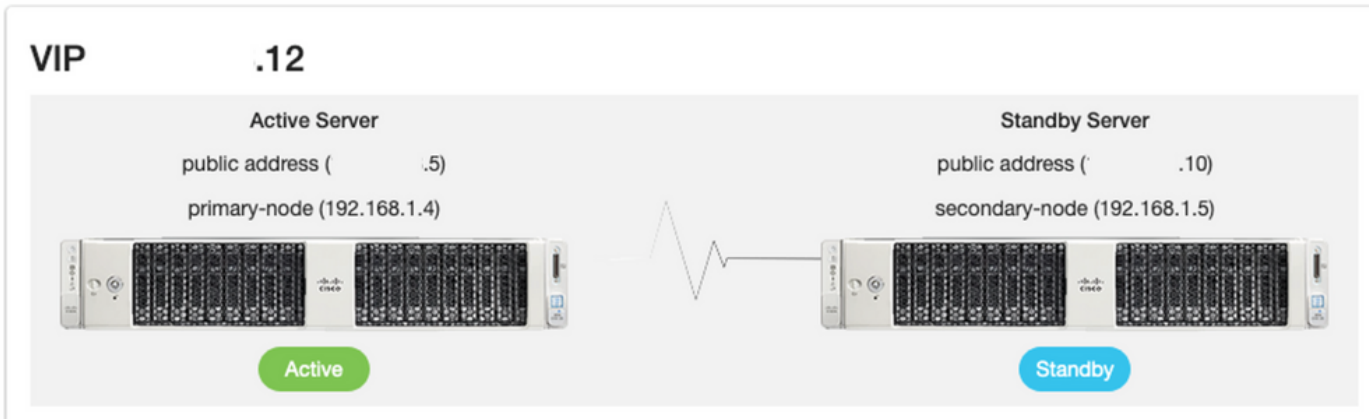


Normal

The status of the high availability cluster is normal.

Heartbeat

Connection status: **Connected**



2. La synchronisation de SSM On-Prem avec Cisco Software Central s'est terminée correctement à partir du serveur principal/actif, comme l'illustre l'image.

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. L'état HA du cluster montre que la base de données du serveur principal (Replication Master) sur la gauche se réplique vers la base de données du serveur secondaire (Replication Slave) sur la droite comme prévu dans l'image.

```
psql: > \d+
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
(1 row)
Replication from master:
 pg_last_xlog_replay_location
-----
0/53CDB68
(1 row)

psql: > \d+
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 (192.168.1.5)
Replication to slave:
 client_addr | backend_start | state | write_lag | flush_lag | replay_lag
-----
(0 rows)
Replication from master:
 pg_last_xlog_replay_location
-----
0/53CDB68
(1 row)
>>
>>
>>
>>
```

Basculement

1. Arrêt du cluster HA sur le serveur principal, comme illustré dans l'image.

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

Stopping Cluster (corosync)...
```

2. Principal|Secondaire comme illustré dans l'image.

```
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

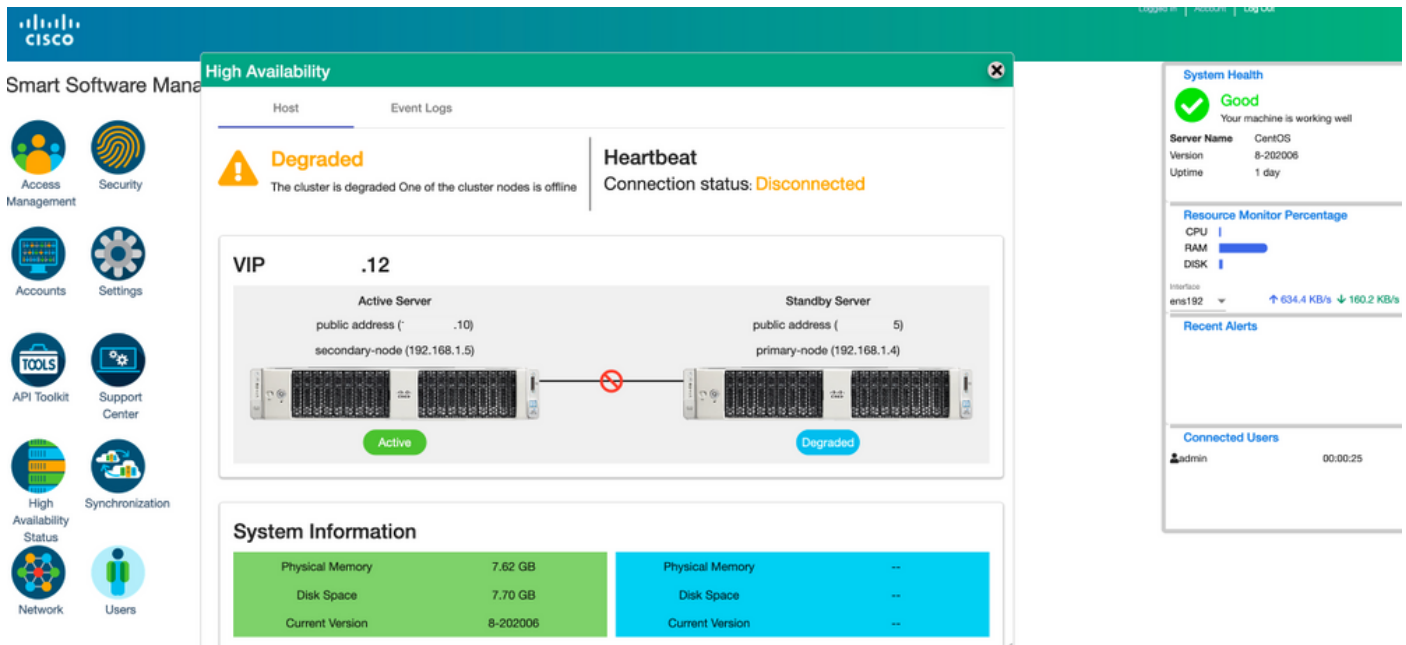
0/53C0C60
(1 row)
```

3. Connecté à l'interface utilisateur graphique SSM On-Prem à l'aide du protocole VIP et l'interface utilisateur graphique principale est désactivée.

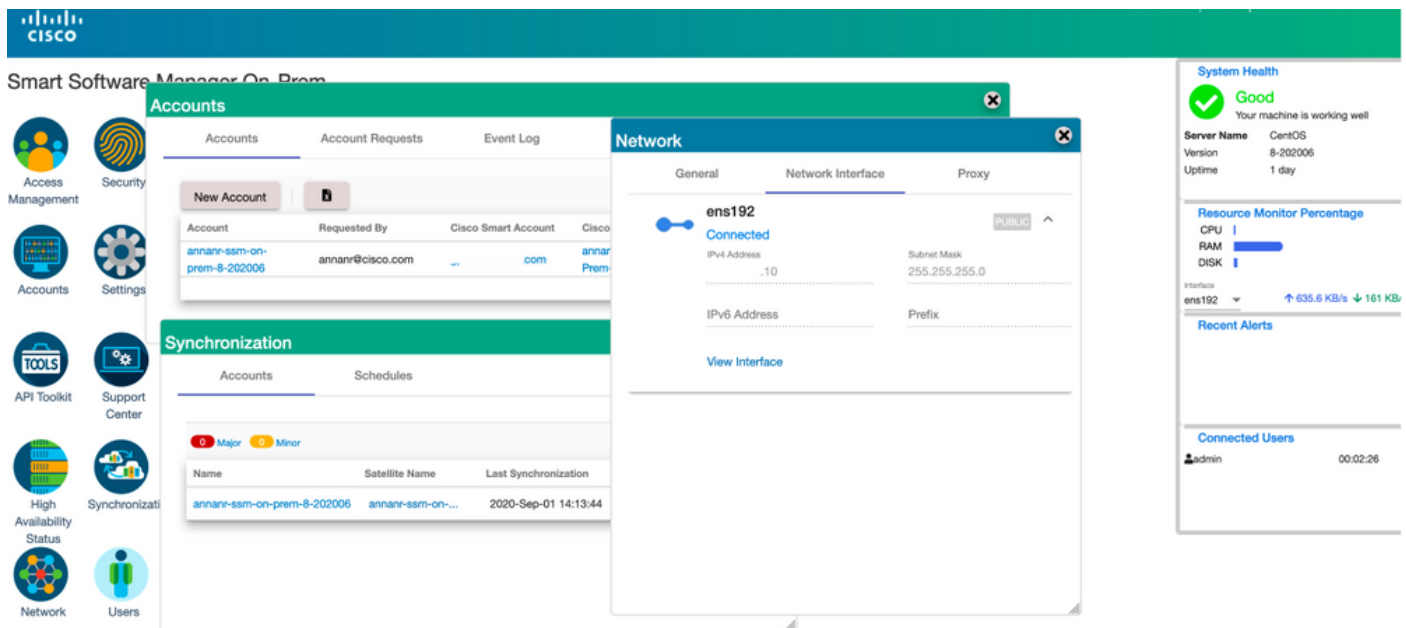
4. Le serveur secondaire (.10) est affiché en tant que serveur actif.

5. La pulsation est déconnectée.

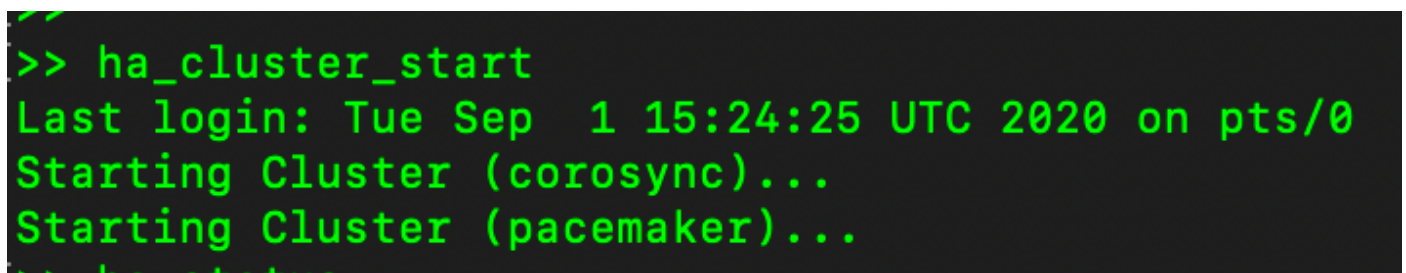
6. Le serveur principal (.5) est passé à l'état Veille.



7. La synchronisation du compte SSM On-Prem avec Cisco Software Central peut être vue correctement à partir de l'interface utilisateur graphique du serveur secondaire/actif, comme l'illustre l'image.



8. Démarrage du cluster HA sur le serveur principal, comme illustré dans l'image.



9. L'état du cluster HA indique que la base de données principale est répliquée à partir de la base de données secondaire.

10. Principal|Secondaire comme illustré dans l'image.

```

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

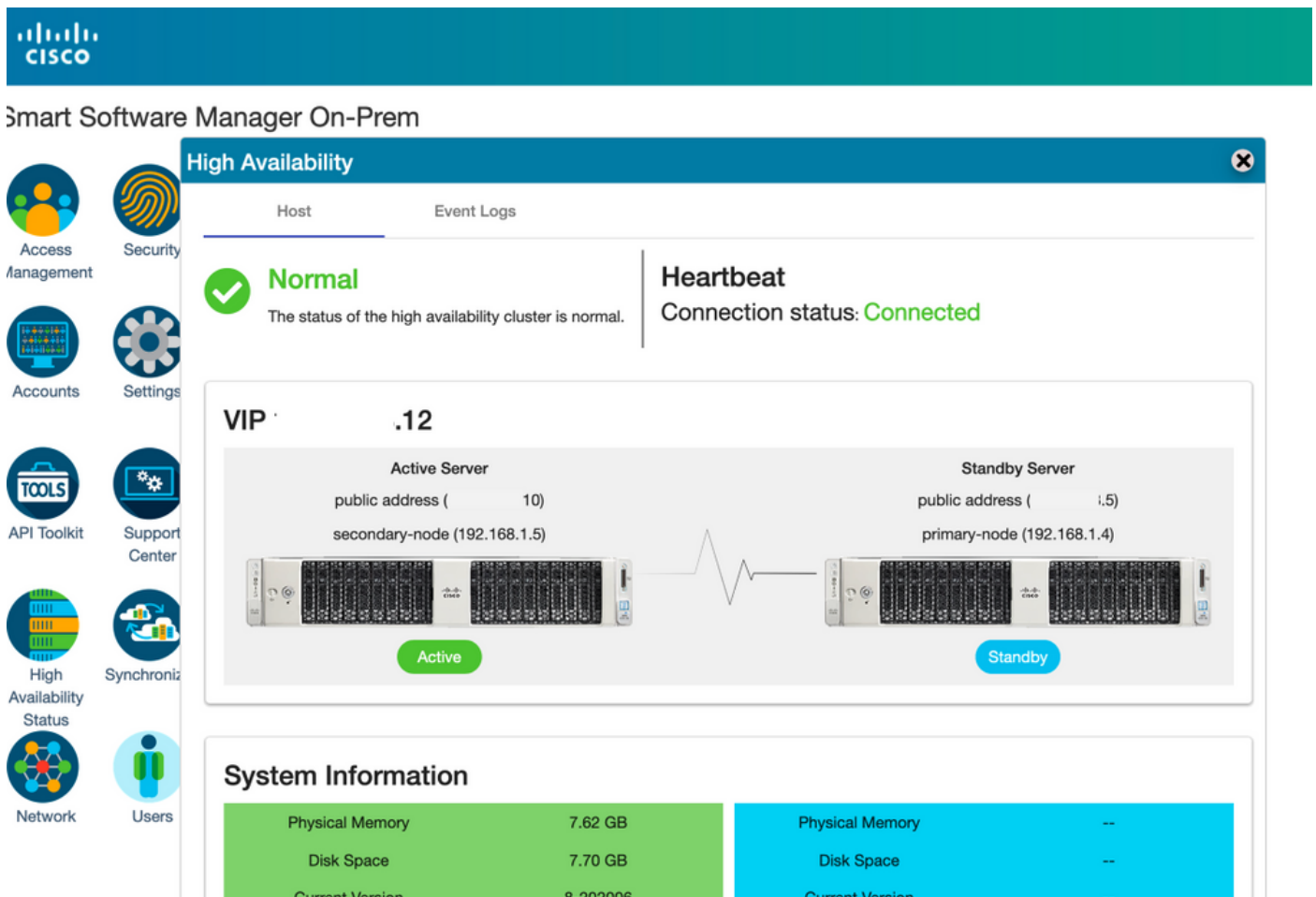
Database Replication Status:
=====
Database is currently the replication master - Replicating to primary-node (:.....6)

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

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

```

11. L'interface utilisateur graphique affiche la pulsation en tant que connexion, l'état Secondaire en état Actif et l'état Principal en veille comme illustré dans l'image.



12. Créez un compte TEST et activez-le en veille active. (.10).

13. L'interface graphique principale (.5) ne sera pas accessible à ce stade.

Accounts

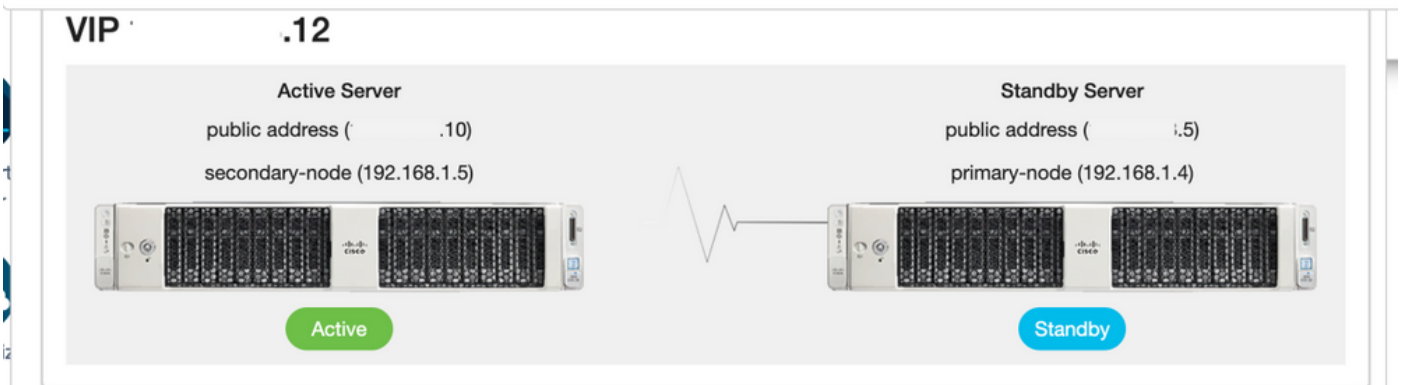
Accounts

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



Basculement

1. Arrêt de Ha_cluster dans Secondaire comme illustré dans l'image.

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

2. L'état actuel de la base de données du serveur principal et de la base de données du serveur secondaire est visible ici.

```
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 09:04:44 UTC 2020 on pts/0
Error: cluster is not currently running on this node
Stopping Cluster (pacemaker)...
Stopping Cluster (corosync)...
[>>
[>>
[>> ha_status
Last login: Wed Sep  2 09:10:52 UTC 2020 on pts/0
Database Replication Status:
DB service not currently running.
[>>
```

3. Connecté à l'interface utilisateur graphique SSM On-Prem à l'aide du protocole VIP et l'interface utilisateur graphique secondaire est désactivée.

4. Le serveur principal (.5) est affiché en tant que serveur actif.

5. La pulsation est déconnectée.

6. Le serveur secondaire (.5) est passé à l'état Veille.

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. Le compte TEST nouvellement créé peut être vu à l'état synchronisé, car la réplication s'est produite de la base de données secondaire vers la base de données principale comme l'illustre l'image.

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. L'interface utilisateur graphique sera accessible à partir de l'adresse VIP (.12) à ce stade et non de l'adresse IP secondaire.

9. Démarrage du cluster HA sur le serveur secondaire, comme illustré dans l'image.


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

10. L'état HA du cluster indique que la base de données du serveur principal (maître de réplication) sur la gauche se réplique vers la base de données du serveur secondaire (esclave de réplication) sur la droite comme prévu dans l'image.

```
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. L'interface utilisateur graphique affiche Heartbeat connecté entre le serveur principal actif et le serveur secondaire de secours.

12. Le compte TEST se synchronise correctement avec Cisco Software Central.

Inscription d'instance de produit avec VIP SSM sur site pendant le basculement et la restauration

La haute disponibilité entre deux serveurs SSM On-Prem doit être configurée à l'aide de ce guide :

Déploiement du cluster HA :

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

Dans cette démonstration, utilisez :

.11 - Adresse IP du serveur principal

.9 - Adresse IP du serveur secondaire

.14 - Adresse IP virtuelle

Haute disponibilité

1. Configuration de la haute disponibilité qui affiche le serveur principal (.11) comme serveur actif, secondaire (.9) comme serveur de secours et VIP (.14).

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

- System Health:** Good (Your machine is working well). Server Name: annann-8-202105, Version: 8-202105, Uptime: 14 days.
- Resource Monitor Percentage:** CPU, RAM, and DISK usage bars.
- Recent Alerts:** Insufficient Licenses.
- Connected Users:** admin (00:07:26).
- High Availability Status:** Normal. The status of the high availability cluster is normal.
- Heartbeat:** Connection status: Connected.
- VIP:** .14. Active Server (public address .11, primary-node 169.254.0.1) and Standby Server (public address .9, 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. L'état HA du cluster indique que la base de données du serveur principal (maître de réplication) à gauche se réplique vers la base de données du serveur secondaire (esclave de réplication) à droite comme prévu dans l'image.

The terminal screenshots show the status of the primary and secondary nodes in a PostgreSQL replication cluster.

Primary Node (Left):

```
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)
>>
>>
```

Secondary Node (Right):

```
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

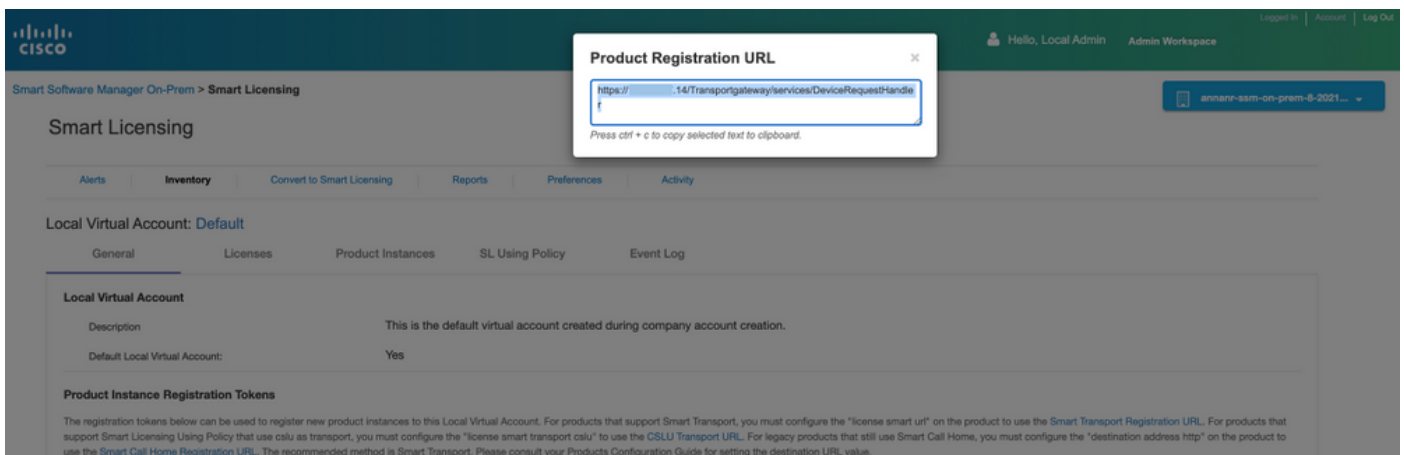
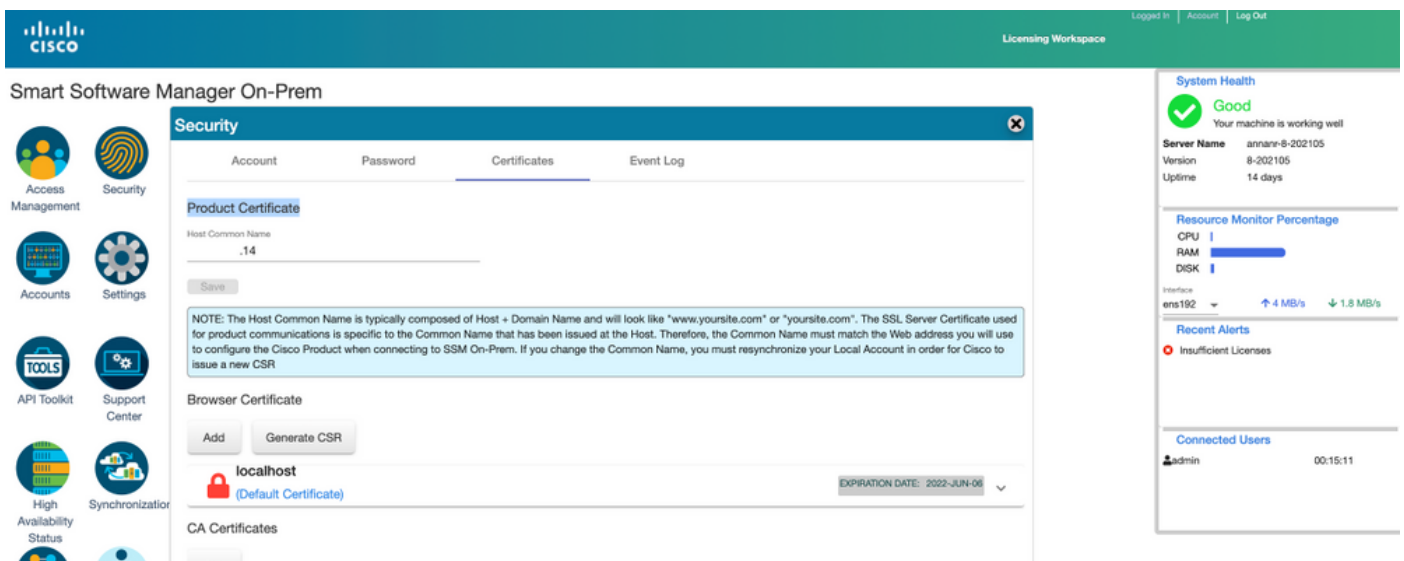
Database Replication Status:
=====
Database is currently the replication slave - Replicating from primary-node (.11)

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. Lorsque SSM On-Prem est déployé en tant que cluster HA, connectez-vous à SSM On-Prem Administration Workspace, accédez à **Security > Certificates** et utilisez l'adresse IP virtuelle sur le nom commun de l'hôte.

4. Cette valeur doit correspondre à la valeur que vous prévoyez d'utiliser pour l'URL de destination du produit. Si vous déployez une double pile (IPv4 et IPv6), cette valeur doit être un nom de domaine complet (FQDN) et non une adresse IP.
5. Après avoir mis à jour le nom commun de l'hôte, assurez-vous que vos certificats sont régénérés avec le nouveau nom commun en synchronisant vos comptes locaux avec Cisco Smart Software Manager.
6. Vous devez effectuer une synchronisation avant de tenter de réenregistrer les produits avec le nouveau nom commun dans la configuration de l'URL de destination.
7. La non-synchronisation peut entraîner l'échec de l'enregistrement des produits avec le nouveau nom commun d'hôte.



8. Deux instances de produit (annanr-39) et (cucmpub) sont enregistrées à l'adresse VIP de SSM On-Prem, comme indiqué dans l'onglet **Product Instances**.
9. La licence consommée/demandée par ces instances de produit est reflétée dans l'onglet **Licence**.

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
cucompub	UCL	2021-Jun-20 18:36:56		Actions

Showing Page 1 of 12 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

License	Billing	Purchased	In Use	Substitution	Balance	Alerts	Actions
Prime Infrastructure 3.x, BASE Lic.	Prepaid	0	1		-1	Insufficient Licenses	Actions
Prime Infrastructure 3.x, Lifecycle Lic.	Prepaid	0	34		-34	Insufficient Licenses	Actions
UC Manager Enhanced License (12.x)	Prepaid	0	3		-3	Insufficient Licenses	Actions
UC Manager Enhanced Plus License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions
UC Manager Telepresence Room License (12.x)	Prepaid	0	1		-1	Insufficient Licenses	Actions

Showing All 6 Records

Basculement

1. Arrêt du cluster HA sur le serveur principal, comme illustré dans l'image.

```

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

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
  Last login: Sun Jun 20 18:12:43 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 20 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 20 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)

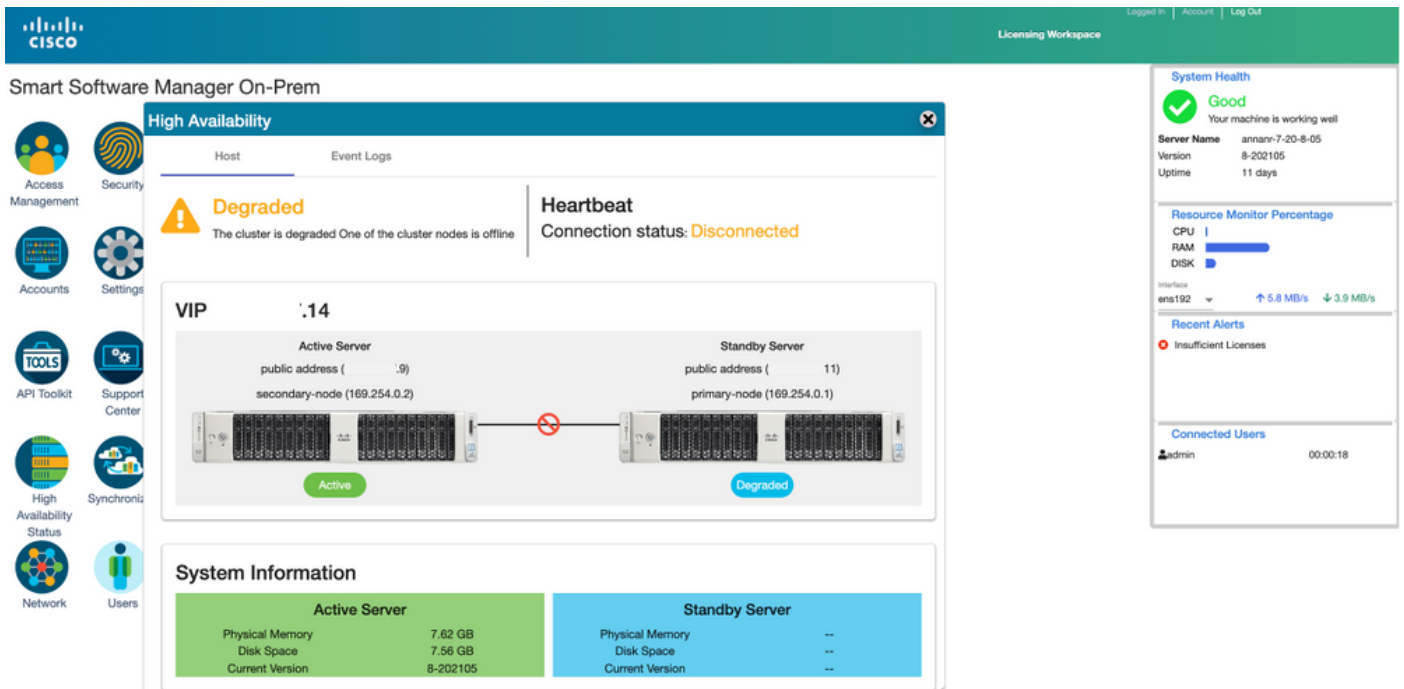
>>
>>
>>
>>
>>
>>
>>
>>
>>
>>
  
```

2. Connecté à l'interface utilisateur graphique SSM On-Prem à l'aide du protocole VIP (.14) et l'interface utilisateur graphique principale est désactivée.

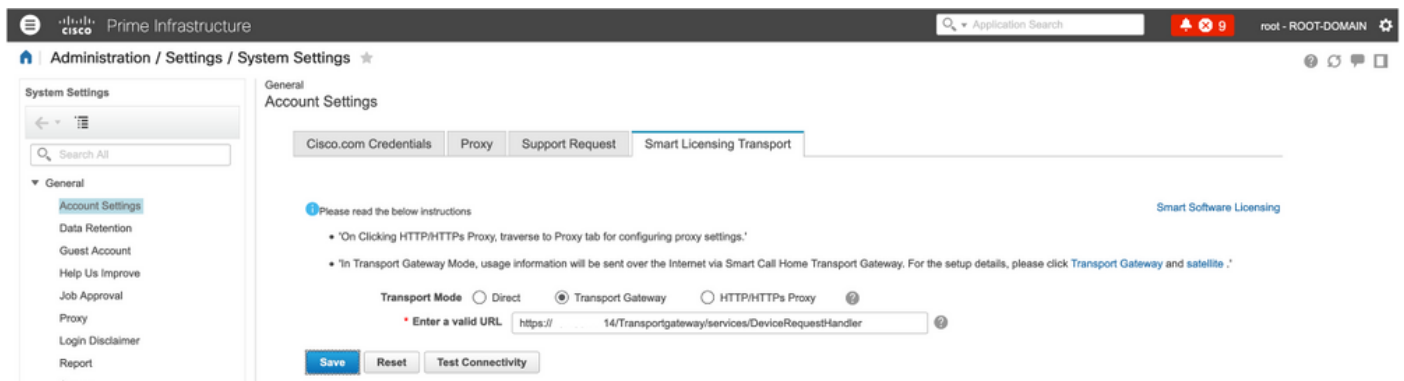
3. Le serveur secondaire (.9) est affiché en tant que serveur actif.

4. La pulsation est déconnectée.

5. Le serveur principal (.11) est déplacé à l'état Veille.



6. Inscription des instances de produit à l'aide du programme VIP SSM On-Prem dans l'URL d'enregistrement de produit au niveau du paramètre de la passerelle de transport, comme illustré dans l'image.



7. Nom de l'instance de produit : pi37 a été enregistré avec succès avec SSM On-Prem avec l'utilisation d'une adresse VIP comme l'illustre l'image.

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

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. Inscription d'autres instances de produit à l'aide de SSM On-Prem VIP dans l'URL d'enregistrement de produit au niveau du paramètre de la passerelle de transport.

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. L'enregistrement du produit s'est terminé avec SSM On-Prem à l'aide d'une adresse VIP, comme indiqué sur l'image.

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. Nom de l'instance de produit : cucm-pub-30 a été enregistré avec succès auprès de SSM On-Prem avec l'utilisation d'une adresse VIP comme l'illustre l'image.

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	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. Deux nouvelles instances de produit (pi37) et (cucm-pub-30) sont enregistrées à l'adresse VIP de SSM On-Prem, comme indiqué dans l'onglet **Product Instances**.

12. La licence consommée/demandée par ces instances de produit est reflétée dans l'onglet **Licence**.

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. Démarrage du cluster HA sur le serveur principal.

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

14. L'état du cluster HA indique que la base de données principale est répliquée à partir de la base de données secondaire.

15. Principal|Secondaire comme illustré dans l'image.

```
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)

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 (.....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. L'interface utilisateur graphique affiche la pulsation en tant que connexion, l'état Secondaire en état Actif et l'état Principal en veille comme illustré dans l'image.

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)
Active

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

Basculement

1. Arrêt de Ha_cluster dans secondaire.
2. L'état actuel de la base de données du serveur principal et de la base de données du serveur secondaire désactivée est visible.

```

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. Connecté à l'interface utilisateur graphique SSM On-Prem à l'aide de VIP (.14) et l'interface utilisateur secondaire est désactivée.
4. Le serveur principal (.11) est affiché en tant que serveur actif.
5. La pulsation est déconnectée.
6. Le serveur secondaire (.9) est passé à l'état Veille.

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

7. L'interface utilisateur graphique sera accessible à partir de l'adresse VIP (.14) à ce stade et non de l'adresse IP secondaire.

8. Démarrage du cluster HA sur le serveur secondaire.

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

9. L'état HA du cluster indique que la base de données du serveur principal (maître de réplication) à gauche se réplique vers la base de données du serveur secondaire (esclave de réplication) à droite comme prévu.

```
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
-----
0/10000000
(1 row)

>>
>>
```

10. L'interface utilisateur graphique affiche Heartbeat connecté entre le serveur principal actif et le serveur secondaire de secours.

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

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. Les quatre instances de produit enregistrées à l'adresse VIP de SSM On-Prem, comme indiqué dans l'onglet **Instances de produit**.

12. La licence consommée/demandée par ces instances de produit est reflétée dans l'onglet **Licence**.

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

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

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		-9	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

Rétrograder un cluster haute disponibilité

1. Un cluster Cisco Smart Manager On-Prem peut être directement rétrogradé vers un seul noeud autonome.
2. Utilisez la console On-Prem pour vous connecter au module SSM principal/actif On-Prem à l'aide de la commande <ha_tear-down>.
3. Après avoir vérifié le fonctionnement de SSM On-Prem, le serveur secondaire/veille doit être abandonné et ne peut pas être réutilisé.
4. Vous disposerez désormais d'un système autonome au lieu d'un cluster.
5. Le démontage a été initié comme le montre l'image.

```
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_tear-down
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)...
Killing any remaining services...
Removing all cluster configuration files...
Disabling HA services...
Removed symlink /etc/systemd/system/multi-user.target.wants/psad.service.
Stopping SSH tunnel...
ssh tunnels.service
Removed symlink /etc/systemd/system/multi-user.target.wants/ssh tunnels.service.
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_tear-down
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)...
Killing any remaining services...
Removing all cluster configuration files...
Disabling HA services...
Removed symlink /etc/systemd/system/multi-user.target.wants/psad.service.
Stopping SSH tunnel...
ssh tunnels.service
Removed symlink /etc/systemd/system/multi-user.target.wants/ssh tunnels.service.
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 11:18:33 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.
```

6. Déclenchement de la désactivation sur le serveur secondaire comme illustré dans l'image.

```

=====
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. Le cluster HA a été détruit. SSMS est maintenant en mode autonome.

```

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. L'interface utilisateur graphique accessible à l'aide de l'adresse IP du serveur secondaire ne neige plus le widget Haute disponibilité.

Smart Software Manager On-Prem

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

Resource Monitor Percentage
CPU: |
RAM: |

Network Interface: ens192
Connected
IPv4 Address: .10
Subnet Mask: 255.255.255.0
IPv6 Address:
Prefix:
Edit Interface

Name	Satellite Name	Last Synchronization	Synchroniz
annanr-ssm-on-prem-8-202006	annanr-ssm-on-...	2020-Sep-02 07:33:32	2020-Oct-
TEST	TEST	2020-Sep-02 07:35:42	2020-Oct-

9. Déclenchement de la désactivation sur le serveur principal comme illustré dans l'image.

```
[>> 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. La HA a été désactivée.

```

>>
>> 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'interface utilisateur graphique accessible à l'aide de l'adresse IP du serveur principal n'enlève plus le widget Haute disponibilité.

The screenshot displays the Cisco Smart Software Manager On-Prem interface. On the left is a navigation menu with icons for Access Management, Settings, Accounts, Support Center, API Toolkit, Synchronization, Network, Users, and Security. The main area features a 'Synchronization' window with a table of synchronization records:

Name	Satellite Name	Last Synchronization	Synchronization Due	Alerts	Actions
annan-ssm-on-prem-8-202006	annan-ssm-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

Below the synchronization table is a 'Network' window showing details for the 'ens192' network interface, including its status as 'Connected' and IP address information.

On the right side, there are several system health and monitoring widgets: 'System Health' (Good), 'Resource Monitor Percentage' (CPU, RAM, DISK), 'Recent Alerts', and 'Connected Users' (admin, 00:00:25).

Et ensuite ? !

1. Connectez-vous à SSM On-Prem Primary **Administration Workspace**, accédez à **Security > Certificates** et utilisez le serveur principal (adresse IP/nom d'hôte/nom de domaine complet) sur le nom commun de l'hôte.
2. Après avoir mis à jour le nom commun de l'hôte, assurez-vous que vos certificats sont régénérés avec le nouveau nom commun en synchronisant vos comptes locaux avec Cisco SSM.
3. Vous devez effectuer une synchronisation avant de tenter de réenregistrer les produits avec le nouveau nom commun dans la configuration de l'URL de destination.
4. La non-synchronisation peut entraîner l'échec de l'enregistrement des produits avec le nouveau nom commun d'hôte.

Informations connexes

- Guide de la console : https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_Console_Guide.pdf

- Guide de l'utilisateur:
https://www.cisco.com/web/software/286285517/151968/Smart_Software_Manager_On-Prem_8_User_Guide.pdf
- Guide d'installation :
https://www.cisco.com/web/software/286285517/152313/Smart_Software_Manager_On-Prem_8-202006_Installation_Guide.pdf
- [**Support et documentation techniques - Cisco Systems**](#)