

通過智慧軟體管理器(SSM)衛星為XRv 9000提供智慧許可證

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簡介

本文檔介紹當託管XRv 9000的虛擬機器(VM)無法直接訪問網際網路時，在XRv 9000上啟用思科智慧許可證的程式。

必要條件

需求

思科建議您瞭解以下主題：

- 虛擬機器基礎知識。

- 有關安裝在VMware或KVM虛擬機器監控程式上的Cisco IOS XRv 9000路由器的知識。
- Cisco IOS XRv 9000路由器許可模式的基本知識。
- 思科智慧軟體管理器(SSM)衛星的基本知識。

採用元件

本檔案所提供的資訊是根據以下軟體和硬體版本：

- Cisco IOS XRv 9000路由器 — xrv9k-xr-6.0.1
- Smart Software Manager衛星- 3.0.4版

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆已透過預設組態初始化。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

思科智慧授權

思科智慧許可是一個基於雲的軟體許可證管理解決方案，使您能夠自動執行手動許可任務。它幫助您執行採購、管理和報告功能。思科智慧許可使用Cisco Smart Call Home功能與思科智慧軟體管理器通訊。Smart Call Home自動配置為預設智慧許可設定。

在Cisco IOS XRv 9000路由器中，許可將僅限於智慧許可。因此，您需要啟用智慧許可，它根本不包括節點鎖定許可實施。XRv 9000路由器與思科授權雲通訊，以提供系統正在使用的功能和規模的報表。

以下是使用思科智慧許可證的優勢：

- 您可以自動自行註冊網路中安裝的軟體，而無需使用產品啟用金鑰(PAK)。
- 您不必在每個節點上安裝許可證檔案。您可以建立許可證池（許可證的邏輯分組）以反映您的組織結構。智慧許可為您提供思科智慧軟體管理器，這是一個集中式門戶，使您能夠從一個集中式網站管理所有思科軟體許可證。
- 您可以通過門戶獲得您已購買的許可證以及網路中實際部署內容的整合檢視。

Cisco IOS XRv 9000路由器許可型號

Cisco IOS XRv 9000路由器(Sunstone)許可模式包括演示和生產模式。下表簡要說明每種模式：

模式說明

·這是啟動路由器時的預設模式。

演示

·無需雲連線。

·無功能級別實施。

·200 Kbps的速率限制

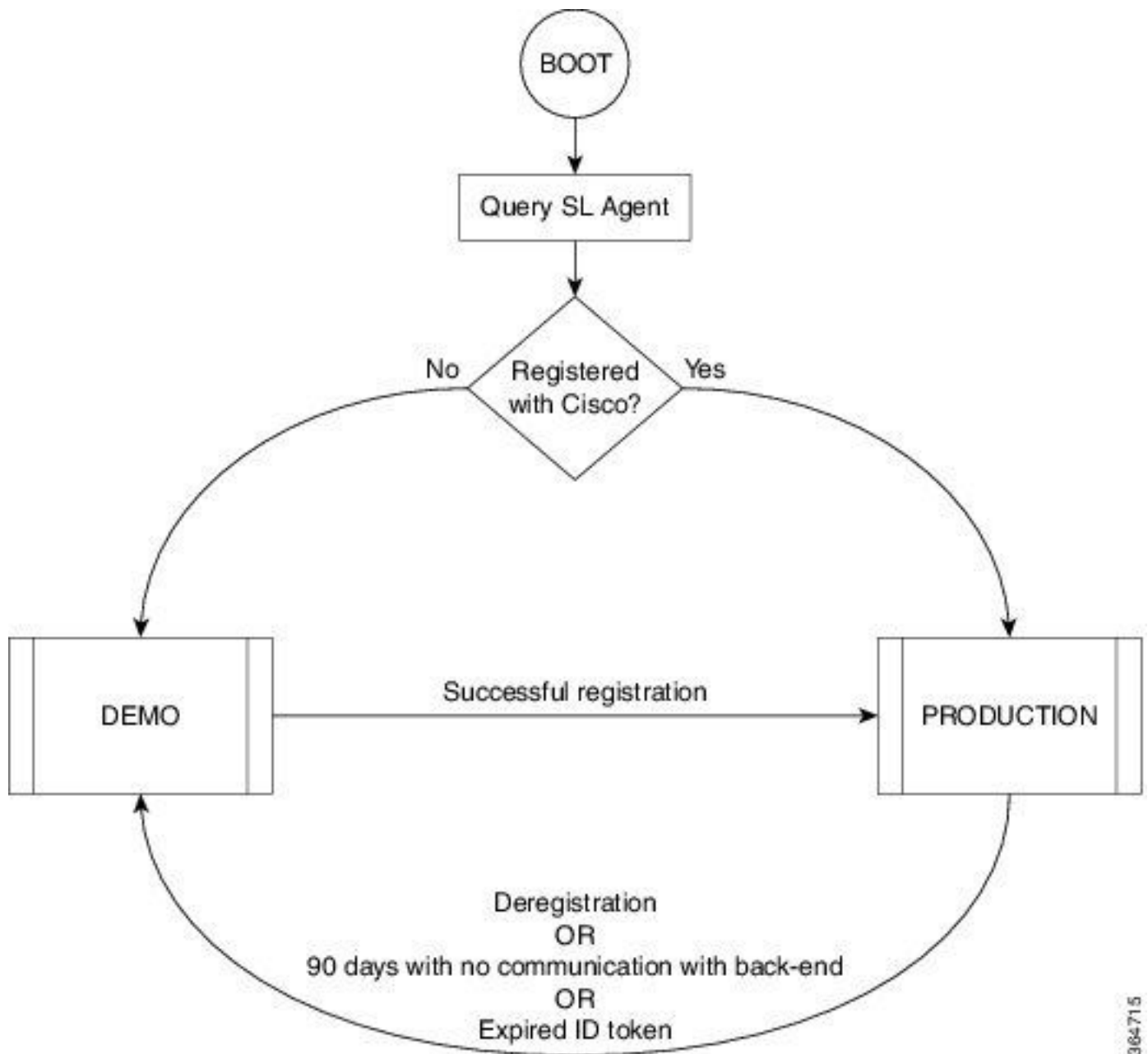
生產 ·此模式要求註冊。
·沒有執行措施。

下表顯示Cisco IOS XRv路由器許可模式(來源：[Cisco IOS XRv 9000路由器安裝及設定指南 — 章節：Cisco IOS XRv 9000路由器智慧許可](#))

預設情況下，XRv 9000(Sunstone)在演示模式下運行，該模式對支援的路由數量和吞吐量應用高度限制。它將在特定天數後過期，並且持續顯示警告警報。

當XRv 9000處於生產模式時，您可以利用它的所有可用容量。但是，要啟用生產模式，需要在後端(<https://software.cisco.com/#SmartLicensing-Alerts>)註冊路由器的許可證並購買授權(直接通過代理或通過智慧許可衛星)。

此圖顯示了演示與生產模式之間的基本狀態轉換。



演示與生產模式之間的轉換如圖所示

Cisco IOS XRv 9000(XRv9k)路由器上的預設Smart Call Home配置足以運行智慧許可。此配置由智慧許可使用內建CiscoTAC-1配置檔案在內部觸發。但是，您需要確保通過XRv9k路由器上的流量或

管理埠連線到Cisco.com。因此，唯一的要求是配置IP連線，以便能夠從XRv9k路由器訪問思科雲。

預設情況下，XRv9k路由器上始終啟用智慧許可，要在生產模式下使用路由器，您必須向思科註冊。使用ID令牌，路由器上的許可證代理向思科註冊產品，並接收身份證書。此證書用於將來與思科的所有通訊。路由器上的許可證代理每30天自動向思科更新一次註冊資訊。有關註冊XRv9k路由器的詳細資訊，請參閱以下連結：

[Cisco IOS XRv 9000路由器安裝及設定指南 — 章節：Cisco IOS XRv 9000路由器智慧許可](#)

問題：無法訪問Internet來註冊XRv9k路由器許可證。

由於安全原因或公司策略，您無法將XRv9k或VM主機連線到Internet甚至Cisco Cloud。因此，XRv9k Router上的許可證代理無法訪問<https://software.cisco.com/#SmartLicensing-Alerts>來註冊產品，並且每30天更新一次。因此，不能啟用生產模式。還有別的解決辦法嗎？

解決方案

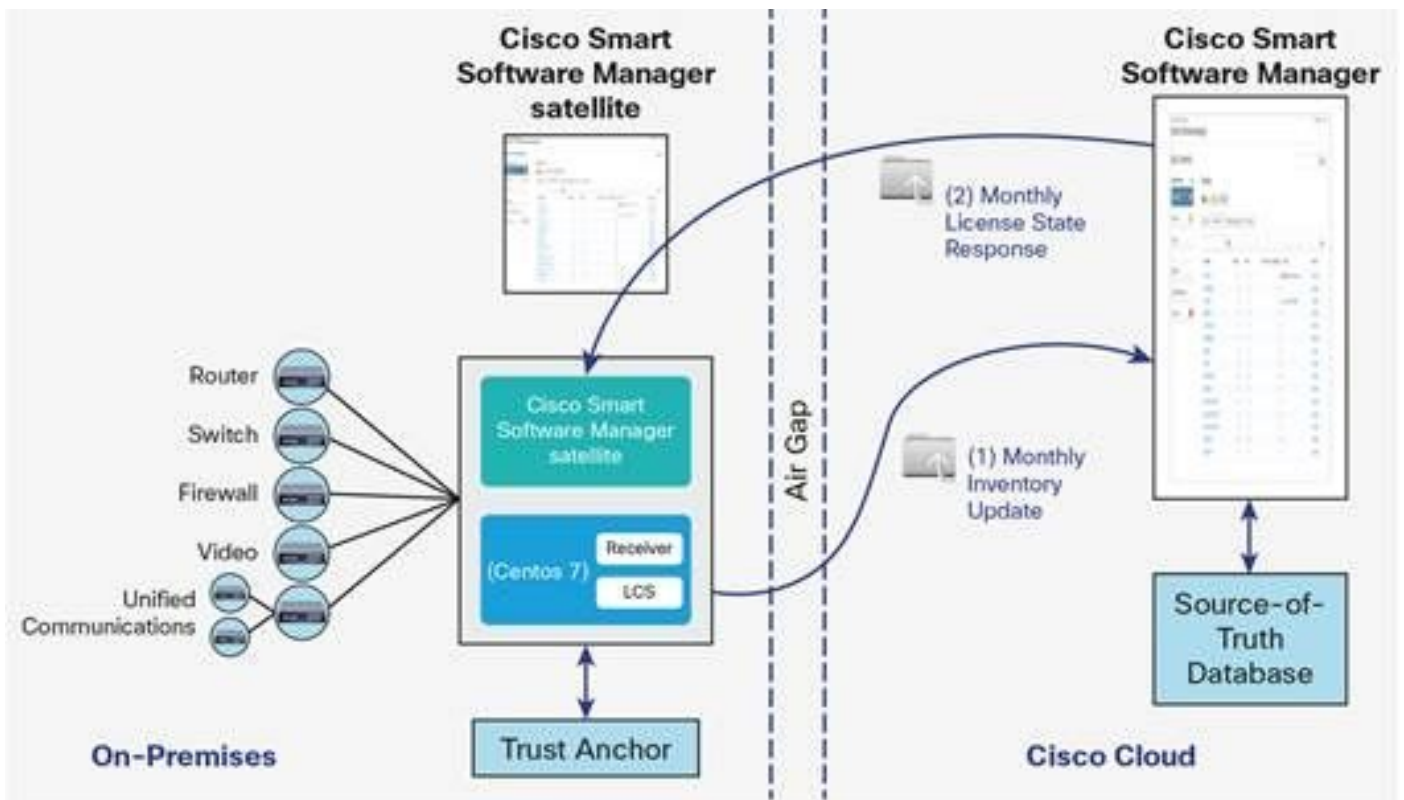
根據網路的安全性、可管理性和操作模式方面的要求，您可以通過以下幾種方式部署智慧許可：

1. 您可以選擇不允許XRv9K直接連線到思科雲/後端伺服器。在這種情況下，您可以在本地使用代理伺服器，並管理防火牆、流量以及智慧許可應用如何滿足組織的安全需求。這可以通過在Windows或Linux作業系統上運行的開源Apache軟體輕鬆設定。
2. 您可能希望將所有XRv9K裝置連線到聚合器主機，該主機可以在將所有XRv9K裝置轉發到思科後端伺服器之前接收來自這些裝置的所有本地請求。這是運行在Linux和Windows上的傳輸網路軟體的作業，可在Cisco Transport-Gateway download: [Cisco Transport Gateway - Release and General Information](#)中下載
3. 您可能希望使用在Linux和Windows上運行的本地軟體進行完全離線操作，並僅允許此本地主機與思科雲進行許可資訊交換，進而向終端裝置提供有關其合規狀態的資訊。5.3.1版或更高版本中將提供此軟體。

本討論介紹的場景包括Smart Software Manager Satellite，它是一種本地軟體，用於與思科雲通訊，並在生產模式下註冊XRv9k路由器以及續訂許可證。

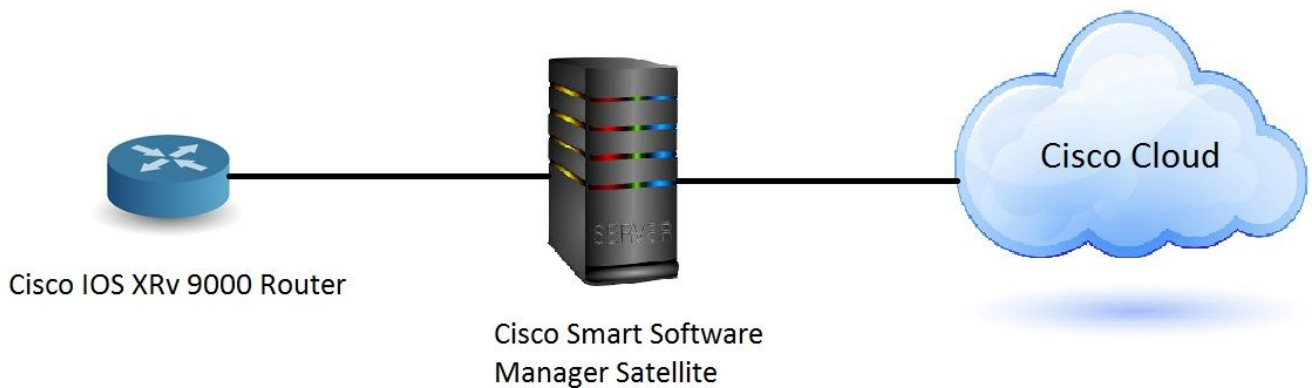
實施Smart Software Manager衛星

智慧軟體管理器衛星是思科智慧許可的一個元件。它與思科智慧軟體管理器(SSM)配合使用，可智慧地管理您的產品許可證。它提供您購買和使用的思科許可證的近即時可視性和報告。該圖顯示了智慧軟體管理器衛星的實施：



此圖顯示Smart Software Manager衛星部署(來源：[Cisco Smart Software Manager衛星資料表](#))

如果您決定完全離線安裝XRv9k路由器，而不直接連線到網際網路，則您可以使用Cisco Smart Software Manager Satellite與Cisco雲通訊。您可以根據圖中所示的拓撲實施此解決方案：



安裝Smart Software Manager衛星

Smart Software Manager Satellite打包為開放式虛擬裝置(OVA)，需要以下配置：

- 50GB - 200GB硬碟
- 8 GB記憶體
- 4個vCPU

Smart Software Manager衛星支援以下Web瀏覽器：

- Chrome 32.0及更新版本
- Firefox 25.0及更高版本

- Safari 6.0.5

開啟OVA檔案時，Smart Software Manager衛星會提取VM並將其匯入電腦上安裝的任何虛擬化軟體。

安裝OVA檔案之前，必須提供、安裝和配置以下外部元件：

- 具有足夠OVA資源的ESXi v5.x或更高版本主機
- vSphere客戶端v5.x

要部署和安裝Smart Software Manager Satellite OVA，以下文檔將指導您逐步完成安裝：

[Smart Software Manager衛星安裝指南](#)

配置Smart Software Manager衛星上的IP地址

成功部署衛星後，請開啟衛星電源並在vSphere客戶端上開啟衛星的控制檯。

系統將詢問您預設的使用者名稱和密碼：

- 預設使用者：admin
- 預設密碼：Admin!23

註：首次登入時，系統會要求您更改密碼。

您必須配置衛星的IP地址，才能通過Web瀏覽器訪問它。

- 配置IPv4: `sudo conf ip <interface-name(eth0)> <IP> <NetMask> <Gateway>`
- 要配置DNS: `sudo conf dns [DNS ip-address2]`

範例如下：

```

[admin@satellite-node-01 ~]$ sudo conf ip
This script is used to configure IPv4 networking - Usage:
=====

Configure IPv4:
-----
      /sbin/conf ip <interface-name(eth0)> <IP> <NetMask> <Gateway>

Configure IPv6:
-----
      /sbin/conf ip6 <interface-name(eth0)> <IP> <Gateway>

Configure DNS:
-----
      /sbin/conf dns <DNS ip-address1> [DNS ip-address2]

[admin@satellite-node-01 ~]$ sudo conf ip eth0 10.66.70.125 255.255.255.128 10.66.70.1
Configuring Network.....
IP = 10.66.70.125
NETMASK = 255.255.255.128
GATEWAY = 10.66.70.1
Restarting network (via systemctl): [ OK ]
Configuring satellite.....
success
[admin@satellite-node-01 ~]$ sudo conf dns 8.8.8.8
Configuring DNS.....
DNS nameserver: 8.8.8.8
Restarting network (via systemctl): [ OK ]
[admin@satellite-node-01 ~]$

```

通過Web瀏覽器訪問Smart Software Manager衛星

在通過CLI配置衛星上的IP地址後，可以通過Web瀏覽器登入該地址：

步驟1.開啟Web瀏覽器並輸入地址：http://<ip-address>:8080或https://<ip-address>:8443

例如：<https://10.66.70.125:8443>

步驟2.此時將顯示登入視窗，如圖所示。使用預設的使用者和密碼登入到衛星。

Smart Software Manager satellite

Version 3.0.4

Satellite:

User:

Password:

Log in

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步驟3.由於這是第一次，系統會提示您更改密碼。輸入您的新密碼，如下圖所示：

Smart Software Manager satellite

Version 3.0.4

Signed in successfully.

New Password:

Confirm New Password:

Change Password



For security purposes, you must create a new password.

Password requirements:

- Length should be between 6 to 128
- Need at least one letter
- At least one digit
- At least one of . _ - @ # ! \$ % ^ & * +

Logout

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接下來是繼續衛星組態的程式：

步驟1.要安裝新衛星，請選中**Configure as new Satellite**，如下圖所示：

Satellite Setup


Choose whether to configure this as a new satellite or by importing data from an existing backup file.

- Configure as new satellite.
- Configure by importing data from a satellite backup file - this will restore configuration settings, including registered product instances.

No file chosen


步驟2. 下一個視窗顯示您通過CLI完成的初始配置。

步驟3. 驗證時鐘設定，如果時鐘設定未同步，則必須編輯NTP設定。

Smart Software Manager satellite admin Log Out | About | Help 

Satellite Setup

[Network Settings](#) [Setup Method](#) [Register Satellite](#) [Synchronization Settings](#) [Summary](#)

 Unless the time on the satellite is accurate, synchronization with the Cisco Smart Software Manager will fail. Verify that the time displayed below is accurate. If it is not accurate, ensure sure that the platform the satellite is running on is configured to use an NTP server.

Administration Network Interface - eth0

Status: Enabled Connected

Hardware Address: 1500

IPv4:	IPv6:
Configuration: static	Configuration: not configured
IP Address: 10.66.70.125	IP Address:
Subnet Mask: 255.255.255.128	Prefix Length:
Gateway: 10.66.70.1	Gateway:

Product Registration Interface - eth1

Status: Disabled

Hardware Address:

DNS Settings

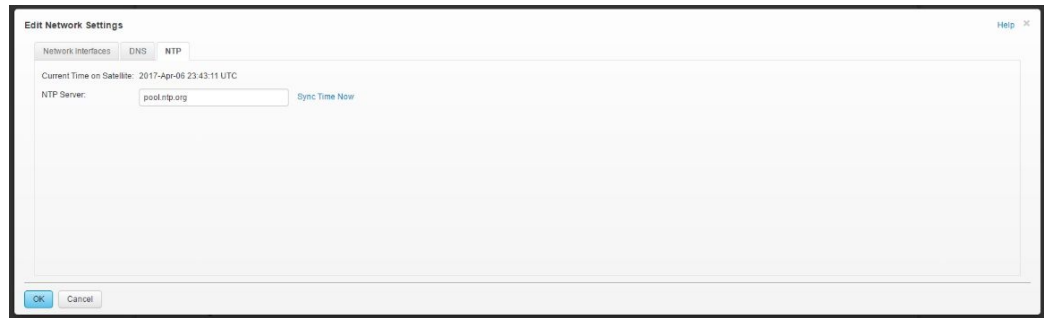
DNS Servers: 8.8.8.8

Search Domains:

NTP Settings

Current Time on Satellite: 2017-Apr-06 23:43:11 UTC

Selected NTP Server: pool.ntp.org [Sync Time Now](#)



步驟4.選擇「Sync Time Now」，您將收到一條成功的消息，如下圖所示：

Smart Software Manager satellite admin Log Out | About | Help

Satellite Setup

Network Settings Setup Method Register Satellite Synchronization Settings Summary

⚠ Unless the time on the satellite is accurate, synchronization with the Cisco Smart Software Manager will fail. Verify that the time displayed below is accurate. If it is not accurate, ensure sure that the platform the satellite is running on is configured to use an NTP server.

[Edit Network Settings](#) [Launch Network Diagnostics](#)

Administration Network Interface - eth0

Status: Enabled Connected
Hardware Address: 1500

IPv4: Configuration: static IP Address: 10.66.70.125 Subnet Mask: 255.255.255.128 Gateway: 10.66.70.1	IPv6: Configuration: not configured IP Address: Prefix Length: Gateway:
--	--

Product Registration Interface - eth1

Status: Disabled
Hardware Address:

DNS Settings

DNS Servers: 64.104.200.248
Search Domains:

NTP Settings

Current Time on Satellite: 2017-Apr-07 02:06:17 UTC Synchronization Successful

Selected NTP Server: ntp.esl.cisco.com [Sync Time Now](#)

[Back](#) [Next](#)

您可以選擇設定方法：

- 網路設定
- 手動設定

在此案例中，已選擇網路設定，如下圖所示：

Satellite Setup

✓ Network Settings **Setup Method** Register Satellite Synchronization Settings Summary

Before the satellite can be configured, it must first be registered with your Smart Account using Smart Software Manager. Choose a registration method below. Registering over the network requires this application to have internet access.

Network Setup - the setup utility will connect to Cisco to complete the registration.



When you click the Next button you will be redirected to a login page to enter your Cisco.com user name and password.

Manual Setup - the setup utility will generate a file that you will need to upload to Smart Software Manager to complete the registration.

Back

Next

智慧許可要求產品與智慧帳戶相關聯，智慧帳戶可以在思科軟體中心建立。智慧帳戶與唯一的公司ID關聯，類似於包含該客戶的思科權利和裝置的線上銀行帳戶。通過思科智慧軟體管理器，可以建立子帳戶(也稱為虛擬帳戶)來代表公司的各個子部門或購買中心。

步驟1.要註冊衛星，您必須選擇衛星名稱，然後輸入智慧帳戶和虛擬帳戶資訊。按一下「Register Satellite」以繼續，如下圖所示：

Satellite Setup

✓ Network Settings ✓ Setup Method **Register Satellite** Synchronization Settings Summary



The registration process will take several minutes and will require the satellite setup application to restart. When you click Register Satellite below you will be taken to a progress page and then automatically redirected to the login page when the restart has completed. After you log in, you will be taken to the next step in the setup process.

Enter a name for the satellite and choose the Smart Account and one or more Virtual Accounts to associate with this satellite.

* Satellite Name:

* Smart Account:

* Virtual Accounts:

Add

Name	Description	Actions
1 - Spark Flex		Remove

Back

Register Satellite

步驟2.註冊後衛星將自動重新啟動，然後再次顯示登入提示，如下圖所示：

Satellite Setup

✓ Network Settings ✓ Setup Method **Register Satellite** Synchronization Settings Summary



Restart in Progress

This Smart Software Manager satellite is currently restarting. This page will automatically reload to the login page when the restart has completed. Once you log in, you will be able to complete the satellite setup process.

您可以使用online或offline方法通過GUI註冊衛星。聯機（網路）選項需要網路連線；當您斷開與思科智慧軟體管理器門戶的連線時，應使用離線（手動）。完成衛星註冊過程後，您會收到思科智慧

軟體管理器發出的即時響應，確認註冊。

步驟1.如圖所示，如果您從衛星訪問Internet，請選中**Network synchronization**。

The screenshot shows the 'Smart Software Manager satellite' interface. The top navigation bar includes 'admin', 'Log Out', 'About', 'Help', and the Cisco logo. The main content area is titled 'Satellite Setup' and has a progress bar with five steps: 'Network Settings', 'Setup Method', 'Register Satellite', 'Synchronization Settings' (which is highlighted in blue), and 'Summary'. Below the progress bar, there is a paragraph explaining that the satellite needs to periodically synchronize with Cisco's licensing servers. Under 'Synchronization Mode', there are two radio button options: 'Network Synchronization' (selected) and 'Manual Synchronization'. An information icon (i) provides a note that this setting can be modified later. At the bottom left, there is a 'Next' button.

步驟2.如圖所示，按一下**Configure Satellite**，與Cisco Smart Software Manager同步。

The screenshot shows the 'Smart Software Manager satellite' interface at the 'Summary' step. The top navigation bar is the same as in the previous screenshot. The 'Satellite Setup' section now shows a progress bar where 'Summary' is highlighted in blue. Below the progress bar, there is a paragraph asking the user to review settings and click 'Configure Satellite'. The summary information is as follows: Satellite Name: SYD-XR-LAB-Satellite; Smart Account: Cisco Demo Smart Account; Authorization File: network_register; Synchronization Mode: schedule. At the bottom left, there are two buttons: 'Back' and 'Configure Satellite'.

向智慧軟體管理器(SSM)註冊衛星後，可以在首頁中看到連結圖示，如下圖所示：

Smart Software Manager satellite

admin Log Out | About | Help

Cisco Smart Software Manager

SYD-XR-LAB-Satellite

Last Synchronization: 2017-Apr-07 03:33:23 UTC Synchronize Now

Virtual Accounts

1 - Spark Flex

Synchronization

Reports

Administration

1 - Spark Flex

General Licenses Product Instances Event Log

Virtual Account

Description:

Product Instance Registration Tokens

The registration tokens below can be used to register new product instances to this virtual account. In order to register the product to this satellite, you must set the Smart Call Home Destination URL on the product to the following: `https://<IP_Address>|FQDN|<port>/Transportgateway/services/DeviceRequestHandler`

The registration tokens below can be used to register new product instances to this virtual account.

New Token...

Token	Expiration Date	Description	Created By	Actions
0 results found				

在思科智慧軟體管理器上驗證

步驟1. 登入到您的智慧帳戶，然後按一下衛星頁籤，您可以在清單中看到連結的衛星，如下圖所示。
<https://software.cisco.com/#module/SmartLicensing>

Worldwide [change] Logged In | Account | Log Out | My Cisco

Products & Services Support How to Buy Training & Events Partners

Cisco Software Central > Smart Software Licensing

English [Change] Hello, Maryam Naseri Cisco Demo Smart Account

Smart Software Licensing

Feedback Support Help

Alerts | Inventory | License Conversion | Reports | Email Notification | Satellites | Activity

Satellites

21 Major Hide Alerts


New satellite... Search by Name

Name	Product Instances	Last Synchronization	Synchronization Due	Alerts	Actions
SYD-XR-LAB-Satellite	0	2017-Apr-07 03:34:34	2017-May-07 03:34:34	Download Sync Response File...	Actions

步驟2. 訂購許可證時，您可以在庫存>許可證中檢視特定智慧帳戶和虛擬帳戶的可用許可證，如下圖所示：

Smart Software Licensing

Feedback Support Help


Alerts | **Inventory** | License Conversion | Reports | Email Notification | Satellites | ActivityQuestions About Licensing? 
Try our Virtual Assistant

Virtual Account:

20 Minor | Hide Alerts

6_APJGC Demo  Satellite Virtual Account (SYD-XR-LAB-Satellite)


General
Licenses
Product Instances
Event Log



License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts	Actions
IOS XRv 9000 License for 1 vRouter Instantiation	1	0		1	Transfer..
IOS XRv 9000 License for vRR functionality with 1m...	1	0		1	Transfer..

Showing All 2 Records

步驟3.衛星同步後，許可證可在Satellite Licenses頁籤中找到，如下圖所示：

Smart Software Manager satellite
admin Log Out | About | Help 

Cisco Smart Software Manager
Last Synchronization: 2017-Apr-10 03:24:17 UTC Synchronize Now

Virtual Accounts

1 - Spark Flex 1

6_APJGC Demo

Synchronization

Reports

Administration

Version Compatibility Update Installed - The compatibility update has been successfully installed and the satellite can now be used to register Product Instances using Smart Licensing Agent versions prior to version 1.5. Dismiss

6_APJGC Demo

General
Licenses
Product Instances
Event Log

Filter

License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts
IOS XRv 9000 License for 1 vRouter Instantiation	1	0		1
IOS XRv 9000 License for vRR functionality with 1m Route	1	0		1

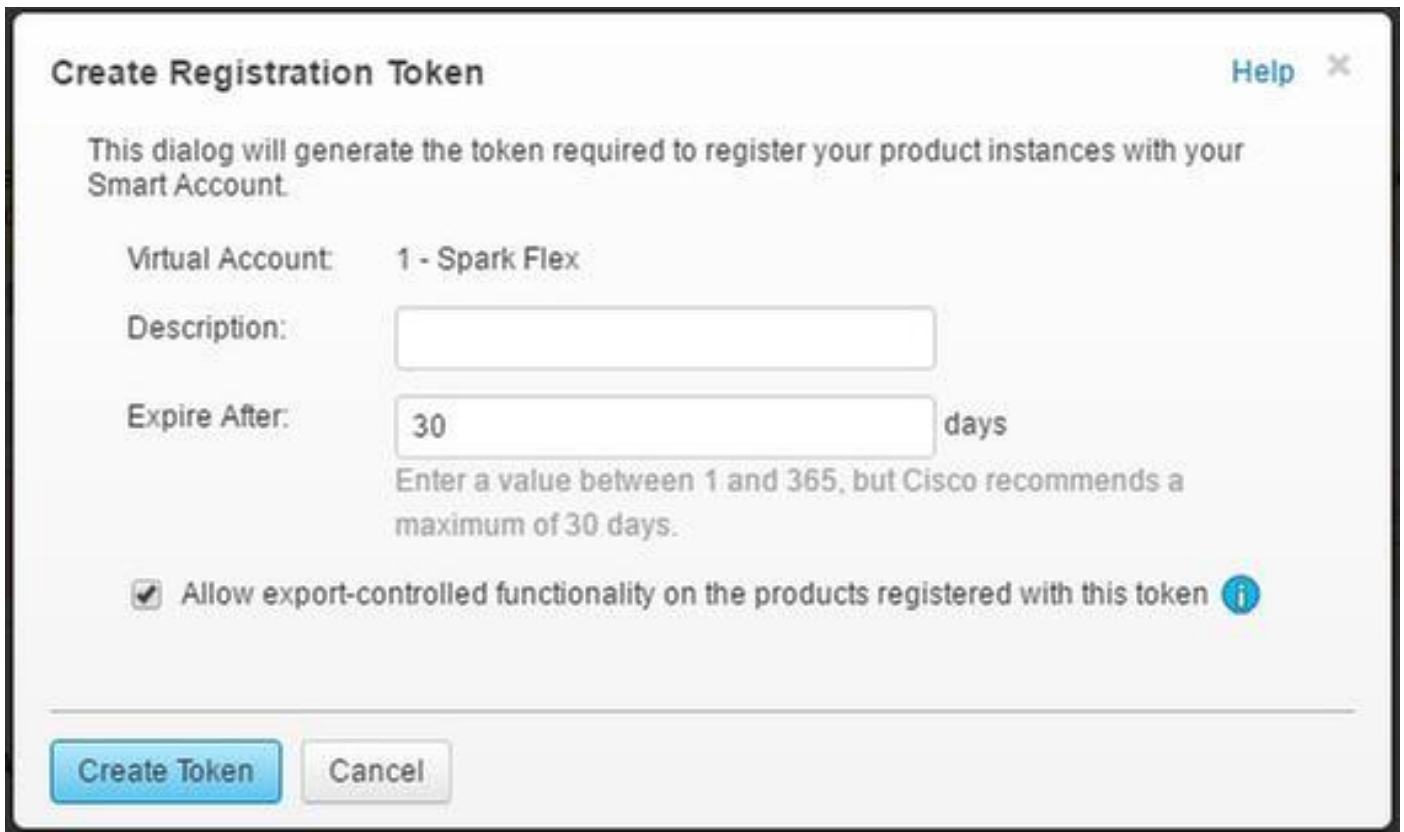
在衛星上建立註冊令牌

在「衛星」的「常規」頁籤中，按一下**New Token**，然後在「**建立註冊令牌**」對話方塊中輸入令牌的說明。

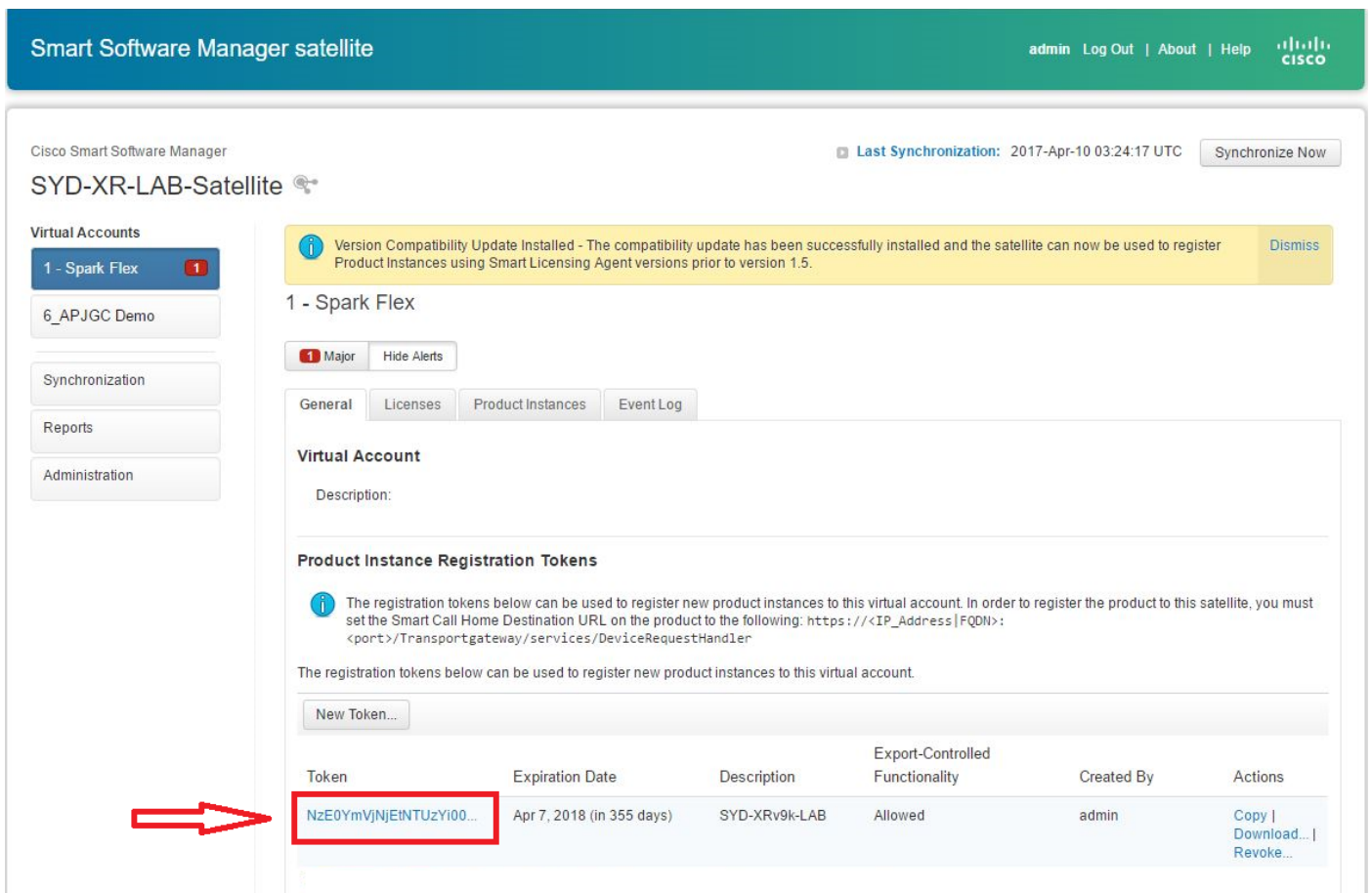
步驟1.輸入您希望令牌有效的天數。

註：預設值為30天，最大值為365。

步驟2.按一下「**Create Token**」按鈕，如下圖所示。



步驟3.您可以在清單中看到XRv9k配置所需的生成令牌。



XRv9k路由器配置

XRv9k中已提供此預設配置，如下圖所示：

```

RP/0/RP0/CPU0:ios#show running-config call-home
Fri Apr 7 02:26:09.460 UTC
call-home
  service active
  contact smart-licensing
  profile CiscoTAC-1
  active
  destination transport-method http
  ?
  ?
RP/0/RP0/CPU0:ios#_

```

如果您檢查許可證，可以看到預設情況下已啟用智慧許可。但是，它沒有註冊。因此，XRv9k狀態也處於DEMO狀態：

```

RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license all
Fri Apr 7 03:09:56.674 UTC

Smart Licensing Status
=====

Smart Licensing is ENABLED

Registration:
  Status: UNREGISTERED
  Smart Account:
  Virtual Account:

License Authorization:
  Status: No Licenses in Use

License Usage
=====

No licenses in use

Product Information
=====
UDI: PID:R-IOSXRV9000-IMG, SN:2651B9AEF31, SUVI:R-IOSXRV9000-IMG2651B9AEF31, UUID:423F5DA9-773D-43AC-56FB-A6656291FE6B

Agent Version
=====
Smart Agent for Licensing: 2.2.0_rel/5
RP/0/RP0/CPU0:SYD-XRV9k-LAB#

```

```

RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license platform summary
Fri Apr 7 03:12:26.465 UTC
Current state: DEMO

Collection: LAST: (disabled)
            NEXT: (disabled)
Reporting:  LAST: (disabled)
            NEXT: (disabled)

Feature/Area  Entitlement
=====
Count
Last Next
=====
RP/0/RP0/CPU0:SYD-XRV9k-LAB#

```

配置XRv9k與衛星之間的連線

配置衛星和XRv9k之間的連線所需的路由。

可以按以下方式配置到衛星的靜態路由：


```
RP/0/RP0/CPU0:XRv9000(config)#router static
RP/0/RP0/CPU0:XRv9000(config-static)# address-family ipv4 unicast
RP/0/RP0/CPU0:XRv9000(config-static-afi)# 10.66.70.0/25 MgmtEth0/RP0/CPU0/0 1
RP/0/RP0/CPU0:XRv9000(config-static-afi)#commit
```

Ping Stellite IP地址以確保連通性。

配置Call-home配置檔案以使用XRv9k上的智慧軟體管理器衛星

必須新增指向衛星的目標地址，如下所示：

```
RP/0/RP0/CPU0:XRv9000(config)#call-home
RP/0/RP0/CPU0:XRv9000(config-call-home)# service active
RP/0/RP0/CPU0:XRv9000(config-call-home)# profile CiscoTAC-1
RP/0/RP0/CPU0:XRv9000(config-call-home-profile)# active
RP/0/RP0/CPU0:XRv9000(config-call-home-profile)# destination address http
http://10.66.70.125:80/Transportgateway/services/DeviceRequestHandler << =====
RP/0/RP0/CPU0:XRv9000(config-call-home-profile)# destination transport-method http
RP/0/RP0/CPU0:XRv9000(config-call-home-profile)# no destination address http
https://tools.cisco.com/its/service/oddce/services/DDCEService << =====
RP/0/RP0/CPU0:XRv9000(config-call-home-profile)#commit
```

向Cisco Smart Software Manager衛星註冊XRv9k

使用在CSSM衛星處生成的令牌ID向CSSM衛星註冊XRv9000。

範例：

```
RP/0/RP0/CPU0:XRv9000#license smart register idtoken ZTZIMDE5ODgtOTIzZC00MDd
```

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB# license smart register idtoken NZE0YmVjNjEtNTUZYi00N2Q4LWEzOGQtZWVhNzA3YZE2Y2Fi
Mon Apr 10 03:58:04.287 UTC
License command "license smart register idtoken " completed successfully.
Registration process is in progress. Use the 'show license status' command to check the progress and result
```

步驟1.您可以看到初始註冊成功。可能需要一些時間才能找到許可證。

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license status
Fri Apr 7 03:24:57.692 UTC

Smart Licensing is ENABLED
  Initial Registration: SUCCEEDED on Fri Apr 07 2017 03:23:52 UTC
  Last Renewal Attempt: None
  Registration Expires: Never

License Authorization:
  Status: No Licenses in Use
  Last Communication Attempt: SUCCEEDED on Mon Apr 03 2017 23:56:05 UTC
  Next Communication Attempt: Thu Jan 01 1970 00:00:00 UTC
  Communication Deadline: Thu Jan 01 1970 00:00:00 UTC
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license platform summary
Fri Apr 7 03:25:09.601 UTC
Current state: DEMO

Collection: LAST: (disabled)
            NEXT: (disabled)
Reporting:  LAST: (disabled)
            NEXT: (disabled)

Feature/Area      Entitlement
=====
RP/0/RP0/CPU0:SYD-XRV9k-LAB#
```

步驟2.您可以登入到衛星，並手動對其進行同步。然後您會看到狀態已變更為Registered，如下圖所示：

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license all
Mon Apr 10 03:00:07.162 UTC

Smart Licensing Status
=====

Smart Licensing is ENABLED
Registration:
Status: REGISTERED
Smart Account: CISCO Demo Smart Account
Virtual Account: 1 - Spark Flex
Initial Registration: SUCCEEDED on Fri Apr 07 2017 12:47:22 UTC
Last Renewal Attempt: None
Next Renewal Attempt: wed Oct 04 2017 12:47:23 UTC
Registration Expires: Sat Apr 07 2018 12:11:35 UTC

License Authorization:
  Status: OUT OF COMPLIANCE on Fri Apr 07 2017 12:49:21 UTC
  Last Communication Attempt: SUCCEEDED on Mon Apr 10 2017 00:49:35 UTC
  Next Communication Attempt: Mon Apr 10 2017 12:49:35 UTC
  Communication Deadline: Sat Apr 07 2018 12:11:34 UTC

License Usage
=====

IOS XRV 9000 License for 1 vRouter Instantiation (IOS-XRV-9000-vRouter-VM):
  Description: IOS XRV 9000 License for 1 vRouter Instantiation
  Count: 1
  Version: 1.0
  Status: OUT OF COMPLIANCE

Product Information
=====
UDI: PID:R-IOSXRV9000-IMG,SN:2651B9AEF31,SUVI:R-IOSXRV9000-IMG2651B9AEF31,UUID:423

Agent Version
=====
Smart Agent for Licensing: 2.2.0_rel/5
```

步驟3.如果所需的許可證不在您的智慧帳戶或您定義的虛擬帳戶中，則許可證使用狀態顯示Out Of Compliance。但是，當前狀態更改為PRODUCTION，如下圖所示：

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license platform summary
Mon Apr 10 03:31:01.804 UTC
Current state:      PRODUCTION

Collection: LAST: Mon Apr 10 02:53:48 2017
              NEXT: Mon Apr 10 03:53:48 2017
Reporting:  LAST: Sun Apr  9 12:53:48 2017
              NEXT: Mon Apr 10 12:53:48 2017

-----
Feature/Area      Entitlement
-----
System            Product: Right to Use
-----
Count
Last Next
-----
1      1
```

步驟4.Smart Software Manager Satellite還將主警報顯示為「Insufficient Licenses」（許可證不足）和Expos of one license(-1)。

The screenshot shows the Smart Software Manager satellite interface. At the top, it says 'Smart Software Manager satellite' with user 'admin' and options 'Log Out | About | Help'. Below that, it displays 'Cisco Smart Software Manager' and 'SYD-XR-LAB-Satellite'. A 'Last Synchronization' timestamp is shown as '2017-Apr-07 12:21:25 UTC' with a 'Synchronize Now' button. On the left, there are 'Virtual Accounts' including '1 - Spark Flex' (with a red '1' indicator) and '6_APJGC Demo'. A 'Synchronization' section contains 'Reports' and 'Administration' buttons. A yellow warning banner states: 'Version Compatibility Note - Temporarily, this satellite will only be able to register Product Instances that are using the multi-level certificate hierarchy feature (use "show license" on the Product Instance to ensure that the agent version is 1.5+). To enable registration of Product Instances using older versions of the agent, wait two business days after the satellite's initial registration and then synchronize.' Below this, the '1 - Spark Flex' account is selected, showing a 'Major' alert and 'Hide Alerts' button. The 'Licenses' tab is active, displaying a table of license information:


License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts
IOS XRv 9000 License for 1 vRouter Instantiation	0	1	-1	Insufficient Licenses
IOS XRv 9000 Route scale license for upto 4m Route	1	0	1	

將所需的許可證轉移到相關虛擬帳戶


您必須將所需的許可證轉移到相關的智慧帳戶和虛擬帳戶才能使用它。

步驟1.如果您訂購了許可證，並且該許可證位於不同的虛擬帳戶中，您可以登入到智慧軟體許可帳戶，並將其轉移到為XRV9k路由器生成令牌的虛擬帳戶，然後按一下Transfer，如下圖所示：

Smart Software Licensing

[Feedback](#) [Support](#) [Help](#)[Alerts](#) | [Inventory](#) | [License Conversion](#) | [Reports](#) | [Email Notification](#) | [Satellites](#) | [Activity](#)Questions About Licensing? 
Try our Virtual Assistant

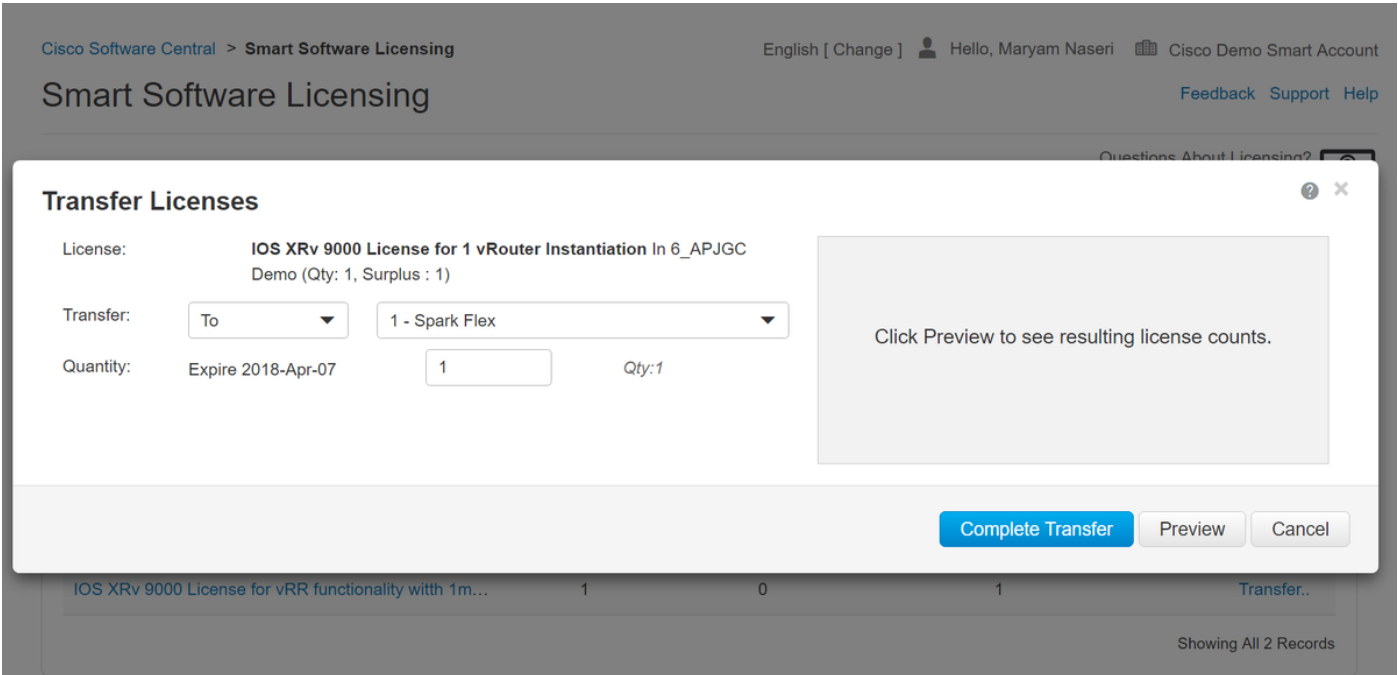
Virtual Account:

20 Minor | [Hide Alerts](#)6_APJGC Demo  Satellite Virtual Account (SYD-XR-LAB-Satellite)

License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts	Actions
IOS XRv 9000 License for 1 vRouter Instantiation	1	0		1	Transfer..
IOS XRv 9000 License for vRR functionality with 1m...	1	0		1	Transfer..

Showing All 2 Records

步驟2. 輸入有關正確虛擬帳戶和許可證數量的資訊，然後按一下**完成傳輸**，如下圖所示。



Transfer Licenses

License: IOS XRv 9000 License for 1 vRouter Instantiation In 6_APJGC Demo (Qty: 1, Surplus : 1)

Transfer: To

Quantity: Expire 2018-Apr-07 Qty:1

Click Preview to see resulting license counts.

[Complete Transfer](#) [Preview](#) [Cancel](#)

步驟3. 在傳輸許可證時，您可以手動同步衛星，並清除主警報。

Cisco Smart Software Manager

Last Synchronization: 2017-Apr-10 03:24:17 UTC

Synchronize Now

SYD-XR-LAB-Satellite

Virtual Accounts

1 - Spark Flex

6_APJGC Demo

Synchronization

Reports

Administration

1 - Spark Flex

General Licenses Product Instances Event Log

Type text to begin searching

Filter

License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts
IOS XRv 9000 License for 1 vRouter Instantiation	1	1	0	
IOS XRv 9000 License for vRR functionality with 1m Route	1	0	1	
IOS XRv 9000 Route scale license for upto 4m Route	1	0	1	

步驟4.您還可以驗證智慧軟體許可並確保使用中許可證的數量。

Cisco Software Central > Smart Software Licensing

English [Change] Hello, Maryam Naseri Cisco Demo Smart Account

Smart Software Licensing

Feedback Support Help

Alerts Inventory License Conversion Reports Email Notification Satellites Activity

Questions About Licensing? Try our Virtual Assistant

Virtual Account: 1 - Spark Flex Satellite Virtual Account (SYD-XR-LAB-Satellite)

General Licenses Product Instances Event Log



Search by License



License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts	Actions
IOS XRv 9000 License for 1 vRouter Instantiation	1	1	0		Transfer..
IOS XRv 9000 License for vRR functionality with 1m ...	1	0	1		Transfer..
IOS XRv 9000 Route scale license for upto 4m Route	1	0	1		Transfer..

Showing All 3 Records

驗證XRv9k中的許可證狀態

您可以使用以下命令驗證XRv9k路由器的許可證狀態：

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license all
```

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license platform summary
```

與Satellite通訊並找到所需的許可證後，許可證的狀態更改為**Authorized**。

註：您可以使用現有令牌註冊許可證，以防狀態未更改。

```
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license status
Mon Apr 10 03:58:12.175 UTC

Smart Licensing is ENABLED
Initial Registration: SUCCEEDED on Mon Apr 10 2017 03:58:10 UTC
Last Renewal Attempt: SUCCEEDED on Mon Apr 10 2017 03:55:37 UTC
Failure reason:
Next Renewal Attempt: Sat Oct 07 2017 03:58:10 UTC
Registration Expires: Tue Apr 10 2018 03:14:27 UTC

License Authorization:
Status: OUT OF COMPLIANCE on Fri Apr 07 2017 12:49:21 UTC
Last Communication Attempt: SUCCEEDED on Mon Apr 10 2017 00:49:35 UTC
Next Communication Attempt: Mon Apr 10 2017 12:49:35 UTC
Communication Deadline: Sat Apr 07 2018 12:11:34 UTC
RP/0/RP0/CPU0:SYD-XRV9k-LAB#show license all
Mon Apr 10 03:58:26.510 UTC

Smart Licensing Status
=====

Smart Licensing is ENABLED

Registration:
Status: REGISTERED
Smart Account: Cisco Demo Smart Account
Virtual Account: 1 - Spark Flex
Initial Registration: SUCCEEDED on Mon Apr 10 2017 03:58:10 UTC
Last Renewal Attempt: SUCCEEDED on Mon Apr 10 2017 03:55:37 UTC
Failure reason:
Next Renewal Attempt: Sat Oct 07 2017 03:58:09 UTC
Registration Expires: Tue Apr 10 2018 03:14:26 UTC

License Authorization
Status: AUTHORIZED on Mon Apr 10 2017 03:58:18 UTC
Last Communication Attempt: SUCCEEDED on Mon Apr 10 2017 03:58:18 UTC
Next Communication Attempt: Wed May 10 2017 03:58:17 UTC
Communication Deadline: Tue Apr 10 2018 03:14:26 UTC

License Usage
=====

IOS XRV 9000 License for 1 vRouter Instantiation (IOS-XRV-9000-vRouter-VM):
Description: IOS XRV 9000 License for 1 vRouter Instantiation
Count: 1
Version: 1.0
Status: AUTHORIZED

Product Information
=====

UDI: PID:R-IOSXRV9000-IMG,SN:2651B9AEF31,SUVI:R-IOSXRV9000-IMG2651B9AEF31,UUID:423F5DA9-773D-43AC-56FB-A6656291FE6B

Agent Version
=====

Smart Agent for Licensing: 2.2.0_re1/5
```

您的XRv9k路由器正在使用該許可證，並且衛星將自己與智慧軟體帳戶同步。

相關資訊

- 有關調配VM的詳細資訊，請參閱以下連結：
[Cisco IOS XRv 9000路由器安裝及設定指南 — 章節：準備安裝](#)
- 有關XRv 9000 6.0.0版的系統要求的詳細資訊，請參閱以下連結：
[適用於Cisco IOS XR軟體版本6.0.0的Cisco IOS XRv 9000路由器版本說明 — 系統要求](#)
- 您可以參考此連結以獲取有關Cisco IOS XRv 9000路由器安裝及設定指南的詳細資訊：
[Cisco IOS XRv 9000路由器安裝及設定指南 — 章節：在VMware ESXi環境中安裝Cisco IOS XRv 9000路由器](#)
- 如需詳細資訊，請參閱此連結：
[Cisco IOS XRv 9000路由器安裝及設定指南 — 章節：Cisco IOS XRv 9000路由器智慧許可](#)
- 如需詳細資訊，請參閱以下連結：

[智慧客戶經理衛星](#)

[Cisco Smart Software Manager衛星資料表](#)

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。