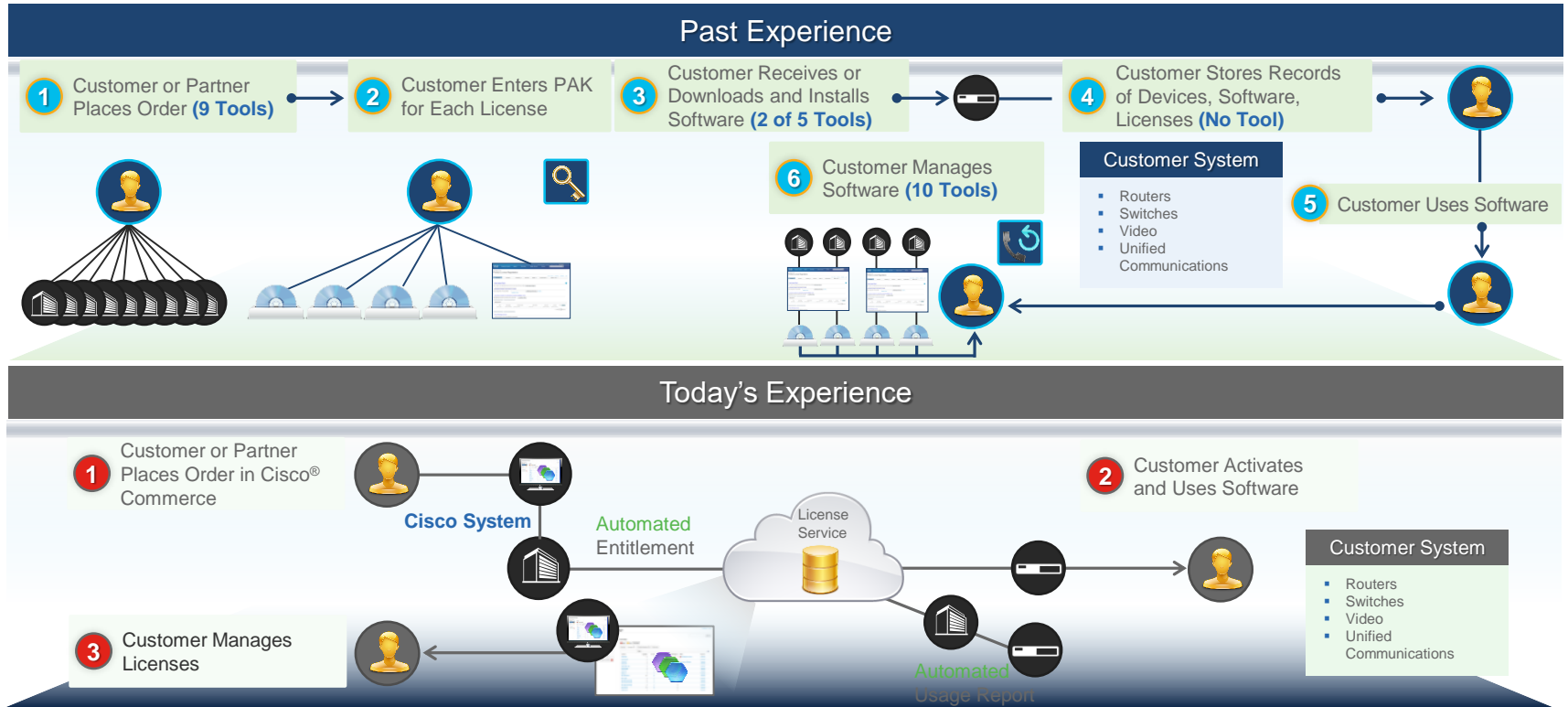


Cisco Smart Software Manager On-Prem License Server

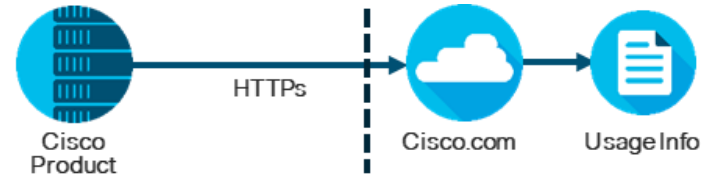
Why Do We Care About Software Licensing?



Deploying Smart License Enabled Products

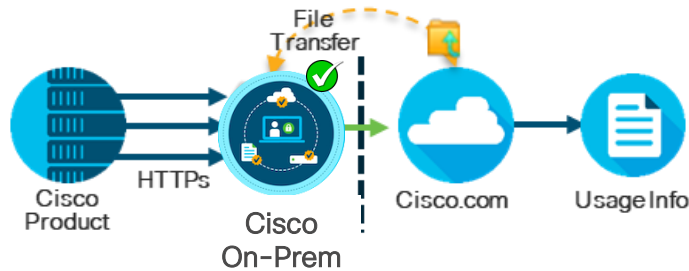
Access To Cisco

Cisco product sends usage information directly **over the internet or through a HTTP Proxy Server**. No additional components are needed.



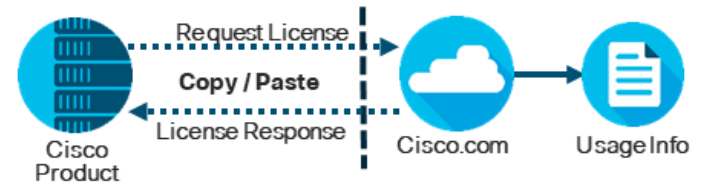
Access Through An On-Premise License Management

Cisco products send usage information to **Smart Software Manager locally installed**. Periodically, exchange information automatically in connected environments or manually in disconnected environments.



No Access - License Reservation

Use copy/paste information between product and Cisco.com to manually check in and out Licenses. Functionally equivalent to current node locking, but with Smart License tracking.



What is Smart Software Manager (SSM) On-Prem?



A Smart Software Manager On-Prem is...

- A component of Cisco Smart Licensing and works in conjunction with the cloud-based Cisco Smart Software Manager (SSM)

A Smart Software Manager On-Prem is ideal for...

- Customers who have strict security requirements and do not want their products to communicate with the central licensing database on Smart Software Manager over a direct Internet connection

Cisco SSM On-Prem Benefits

Trusted Security



Secure on-premises single source of truth of license consumption

Real-time Entitlement



Near real-time license entitlement based on synchronization schedules with backend install base

Utilization Visibility



Complete view of software, services, and devices in easy-to-use portal.

Increased Control



Flexible licensing pooling enable licenses to be reused across devices and the organization

Unlocked



Elimination of the node-locking of licenses to devices, simplifies the RMA process

Cost Reduction



Save time and money through efficient license usage

SSM On-Prem - Deployment Model Overview



**Smart Software
Manager
On-Prem**



Service Providers



Cisco Partners



Large Enterprises

Supports multiple
Local Accounts



Scales up to 100,000+
products and 500 Local
Accounts



Provides online or offline
connectivity



Similar User Interface
to Cisco SSM



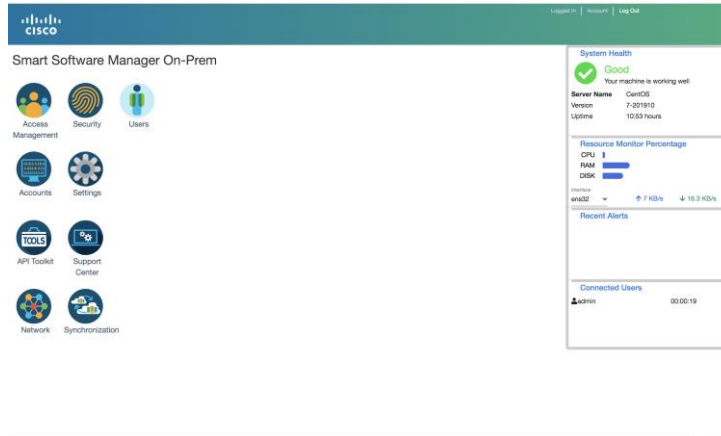
Security built-in
to increase resiliency
and trustworthiness.



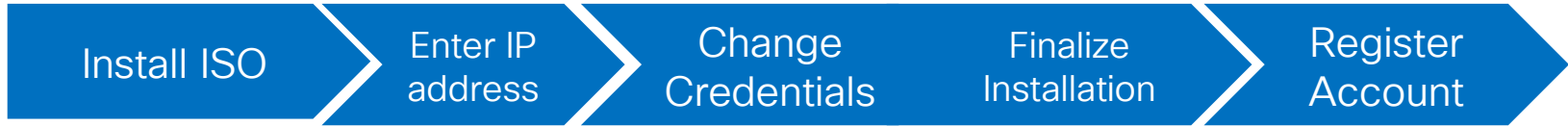
To get a more detailed description of Smart Software Manager On-Prem solutions in the User Guide

<https://www.cisco.com/go/smartlicensing>

Cisco SSM On-Prem – 5 step installation



Support for physical or virtual deployment of Cisco SSM On-Prem License Server



200 GB Hard Disk
8GB Memory
Products*:
4 vCPUs/50,000
6 vCPUs/100,000

Enter IP and Subnet/Prefi x, and DNS

Shell/GUI PWD, Language, Host Common Name

Finalize installation and bring up On-Prem server

Enter NTP and Register Local Account with Cisco



* Maximum of 25,000 products per Local Account

Data Security: Smart License Manager On-Prem

Licensing Portal vs. Admin Portal

Licensing Portal



Similar functionality to software.cisco.com



Users can manage their local accounts, users, product instances, devices and licenses



Users can create new local accounts, request access to local accounts and manage local accounts and local virtual accounts



Administration Portal



Enables internal administrative functions including user control, account management, registration, synchronization, and much more



Supports additional functionality including external authentication, syslog and proxy support



Restricted to only authorized users

Data Security: Smart License Manager On-Prem

Licensing and Administration Portal Roles



Administration Portal Roles

System Admins

Have all of the abilities as the System Operator plus they can approve and delete local accounts and complete all system configurations



Licensing Portal Roles

Similar to CSSM Smart Account and Virtual Account roles but at the local level within the SSM On-Prem.

System Operators

Have full admin access to all the local accounts, can perform local Account registration/synchronization, & can not change system configurations



System Users

Has No permission on the Admin portal. Access to Local Accounts based on [Licensing Portal Roles](#)



Local Account Admins

Local Account Users

Local Virtual Account Admins

Local Virtual Account Users

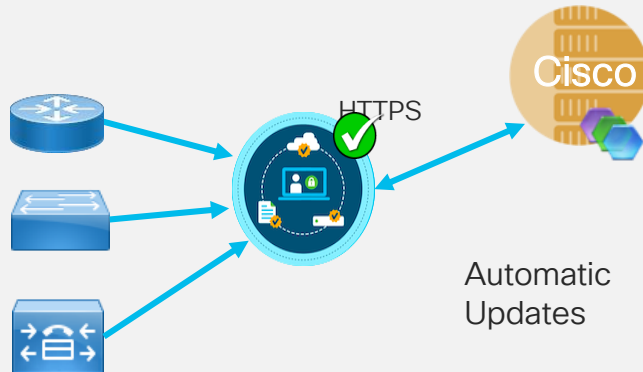
Data Security: Smart License Manager On-Prem

Deployment Modes – Connected v. Disconnected



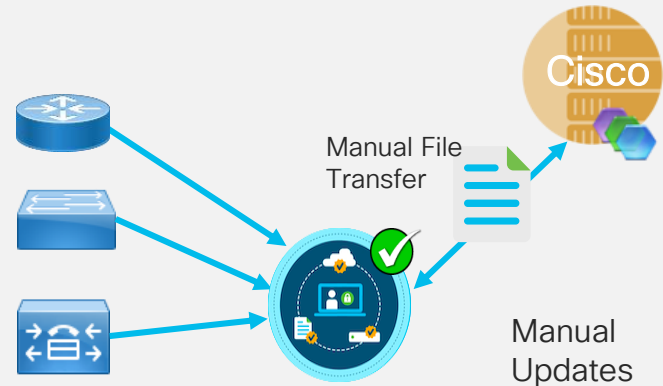
Connected

- Mode is used when there is direct connectivity to cisco.com from the SSM On-Prem
- License consumption and entitlement can be synchronized with Cisco SSM on-demand or automatically via scheduling
- Standard model, easiest to deploy



Disconnected

- Mode is used when there is no connectivity to cisco.com from the SSM On-Prem
- SSM On-Prem can be synchronized with Cisco SSM via a file upload and download



Key Features in SSM On-Prem



Multi-tenancy: Manage multiple local accounts in a single management portal

- Support for Multiple Local Accounts
- Multiple levels of RBAC (Admin, Operator, User)



Data Privacy:

- Restrict Product information (hostname, ip, etc.) from being sent to Cisco
- Auditable data exchange between SSM On-Prem and Cisco
- Local User Authentication Control: LDAP, Active Directory
- Local User Accounts limit need for users to have a Cisco CCOid or access to Cisco Smart Account



Networking Support

- IPv4 and IPv6 support
- Multi-NIC: multiple interfaces for traffic separation between network management and product instance registrations.
- Proxy support: Allow for SSM On-Prem to have a proxy between itself and Cisco
- Firewall Zones: Ability to configure interfaces for Internal (access) or External (no access)



System Alerts and Notifications

- Email and Syslog support: Account events can be configured to be sent to a syslog server

Key Features in SSM On-Prem



New License Features

- License AppHA: Allows for the reporting of a single license usage for both standby and active Applications
- License Hierarchy: Enable borrowing of a higher-tier license to be fulfilled when a lower tier license is not available



API Support

- Resource and Owner credentials **grant** supported
- 5 major API groups for over 15 unique APIs



Longer Sync Intervals

- Native 365-day Synchronization Schedule
- Allow SSM On-Prem to functions as long as it synchronizes with Cisco once a year.



Improved Scalability

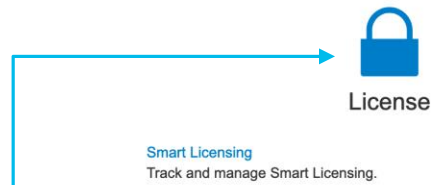
- 500+ accounts
- 100,000 Product Instances (25000 per Local Account)
- Active development in progress to increase scale

License Workspace

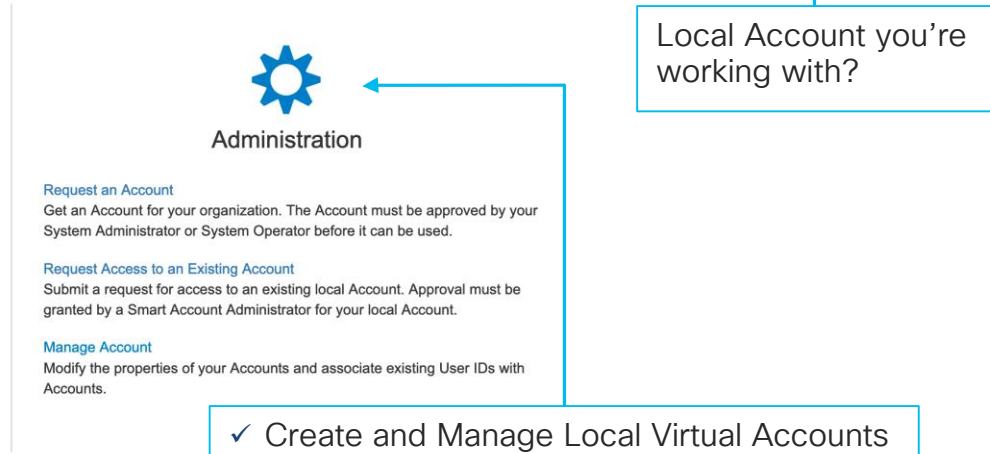


Smart Software Manager On-Prem

DVS Demo Account 1



- ✓ View Local License Availability and Usage
- ✓ Manage Products registered to On-Prem
- ✓ Generate Reports on product and License Usage
- ✓ View Local Account activity

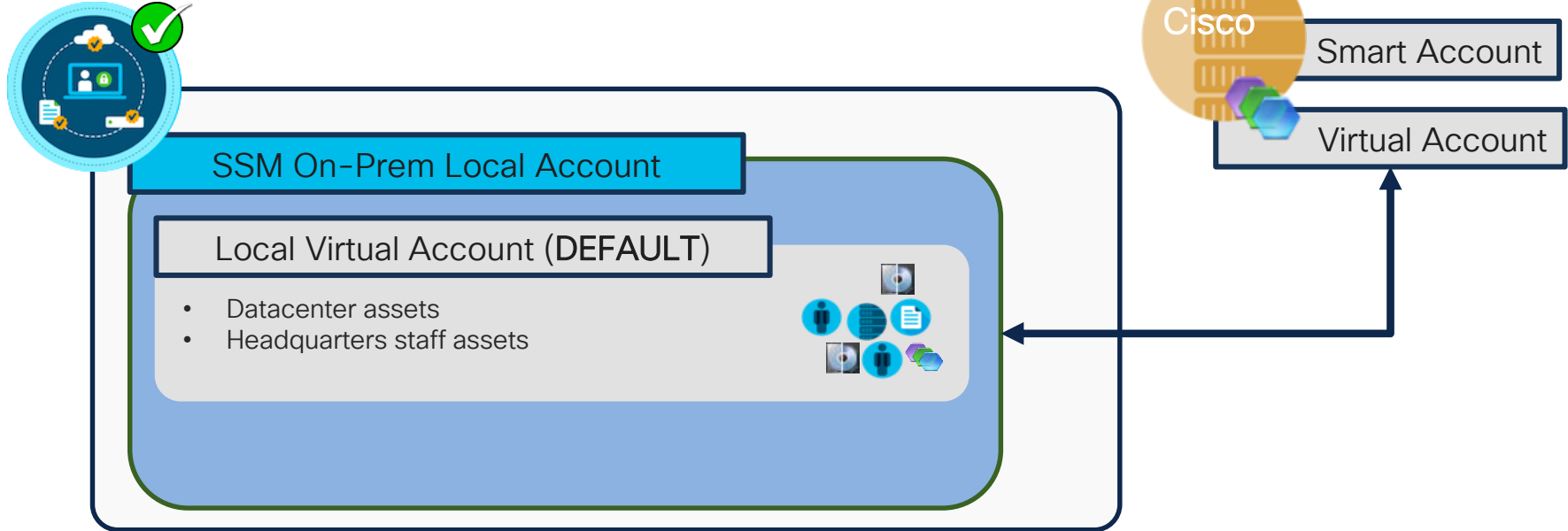


- ✓ Create and Manage Local Virtual Accounts
- ✓ Manage Local Users Account Access
- ✓ Custom Tags and Local User Groups
- ✓ View Event Logs

Administration Workspace – Registration



- All Local Accounts map to a Smart Account/Virtual Account
- Flexible Account Setup models
 - Single Smart Account mapping to Multiple On-Prem Accounts
 - Multiple Smart Account mapping to Multiple On-Prem Accounts

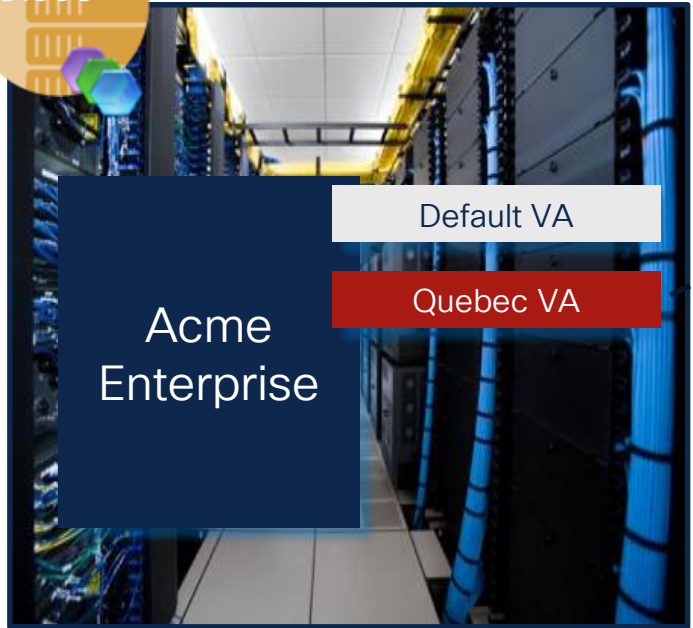


Administration Workspace – Account Registration

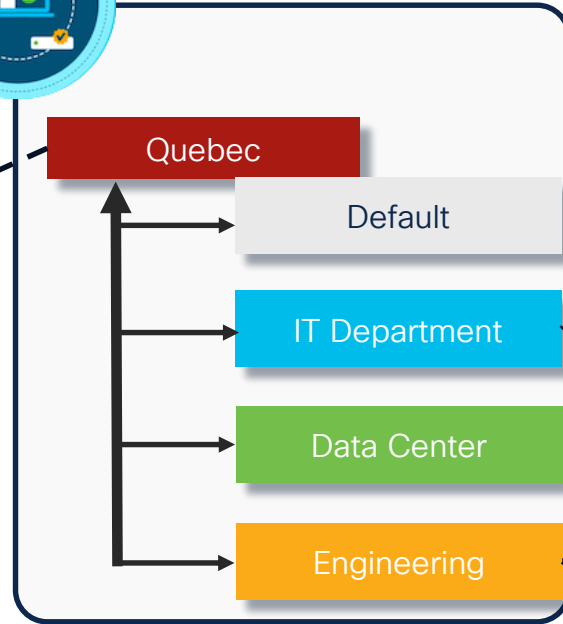
Example: On-Prem Accounts to Single Smart Account



Accounts



(software.cisco.com)



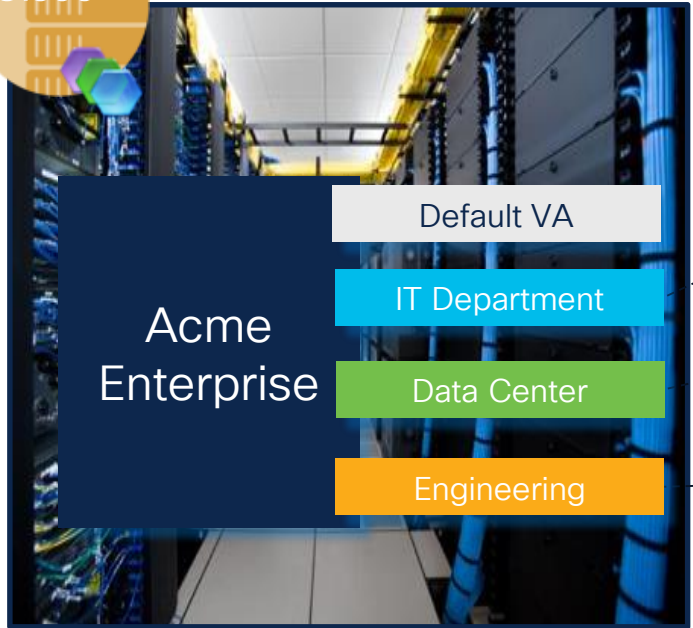
SSM On-Prem

Administration Workspace – Account Registration

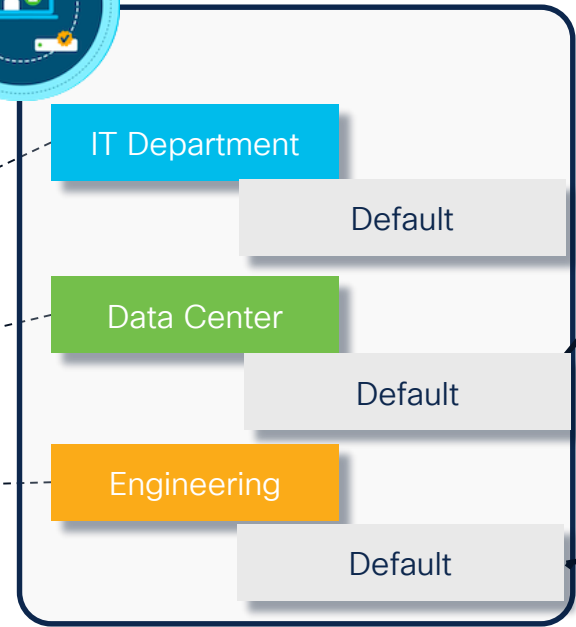
Example: On-Prem Accounts to Single Smart Account



Accounts



(software.cisco.com)



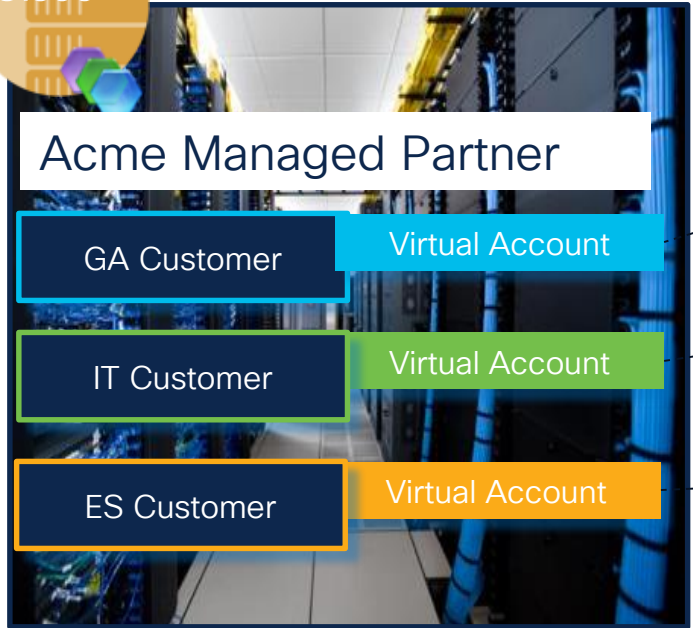
SSM On-Prem

Administration Workspace – Account Registration

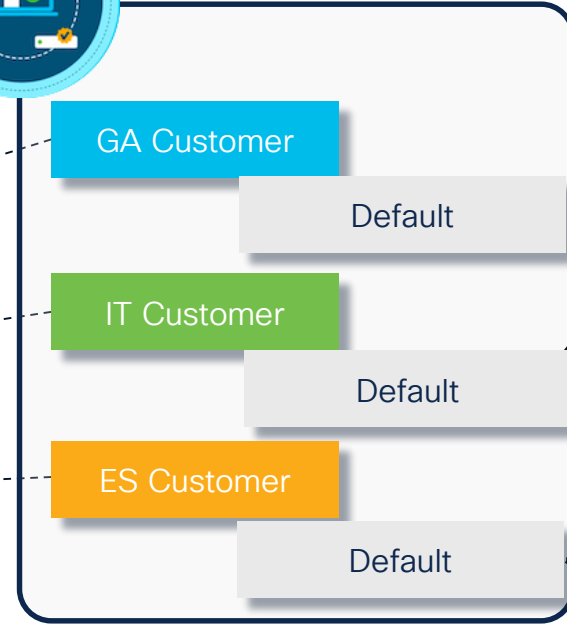
Example: On-Prem Accounts to Multiple Smart Account



Accounts



(software.cisco.com)



SSM On-Prem

Administration Workspace – Synchronization



Synchronization Requirements

The SSM On-Prem server must be synchronized with Cisco periodically. Synchronization

- If **Connected** this can be scheduled to occur automatically
- If **Disconnected**, this can be done via a manual file transfers
- Synchronization can be scheduled or performed manually
 - By default SSM On-Prem synchronizes with Cisco every **30 days**
 - Many Customers doing manual synchronization, synchronize with Cisco every **90 days**
 - It is recommended you do not exceed **180 days** (6 months) with out synchronization
- Synchronization with Cisco **MUST occur within 364 days**.
After 364 days without synchronization;
 - A new Account **MUST** be registered with Cisco
 - All ID Tokens in the Account are expired
 - Products will need to be re-registered

Administration Workspace – Synchronization



Synchronization

Account Synchronization

Local Account: **Quebec**



Default			
<input type="checkbox"/>	License	Billing	Purchased
<input checked="" type="checkbox"/>	Cisco ASAv30	Prepaid	5
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	Prepaid	15

ASAv30

5
0
+ 0
= 5

CSR 1KV

15
0
+ 0
= 15

Smart Account:
Acme Enterprise



Quebec VA			
<input type="checkbox"/>	License	Billing	Purchased
<input checked="" type="checkbox"/>	Cisco ASAv30	Prepaid	5
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	Prepaid	15

Administration Workspace – Synchronization



Synchronization

Account Synchronization

Local Account: Quebec



Default

<input type="checkbox"/>	License	Billing	Purchased
<input type="checkbox"/>			
<input checked="" type="checkbox"/>	Cisco ASAv30	Prepaid	1
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	Prepaid	6

IT Department LVA:

<input type="checkbox"/>	License	Billing	Purchased
<input type="checkbox"/>			
<input checked="" type="checkbox"/>	Cisco ASAv30	Prepaid	4
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	Prepaid	7

Data Center LVA:

<input type="checkbox"/>	License	Purchased
<input type="checkbox"/>		
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	2

Smart Account: Acme Enterprise



Quebec VA

<input type="checkbox"/>	License	Billing	Purchased
<input type="checkbox"/>			
<input checked="" type="checkbox"/>	Cisco ASAv30	Prepaid	5
<input checked="" type="checkbox"/>	CSR 1KV AX 100M	Prepaid	15

Administration Workspace – Synchronization



Synchronization

Account Synchronization

Local Account: Quebec



Default

License	Billing	Purchased
<input type="checkbox"/>		
+ Cisco ASAv30	Prepaid	1
+ CSR 1KV AX 100M	Prepaid	6

IT Department LVA:

License	Billing	Purchased
<input type="checkbox"/>		
+ Cisco ASAv30	Prepaid	4
+ CSR 1KV AX 100M	Prepaid	7

Data Center LVA:

License	Billing	Purchased
<input type="checkbox"/>		
+ CSR 1KV AX 100M		2

ASAv30

1
4
+ 0
= 5

CSR 1KV

6
7
+ 2
= 15

Smart Account: Acme Enterprise



Quebec VA

License	Billing	Purchased
<input type="checkbox"/>		
+ Cisco ASAv30	Prepaid	5
+ CSR 1KV AX 100M	Prepaid	15



SSM On-Prem – Product Registration

Product Registration with Strict Cert Checking

- Products which support Strict SSL Cert Checking require the **Host Common Name** to match the “destination http” URL address configured for the product.
- If you do not have a valid DNS entry for the host name, the use the IP address of the SSM On-Prem server instead.

Security

Account Password Certificates Event Log

Product Certificate

Host Common Name
10.83.111.69

Save

NOTE: The Host Common Name is typically composed of Host + Domain Name and will look like "www.yoursite.com" or "yoursite.com". The SSL Server Certificate used for product communications is specific to the Common Name that has been issued at the Host. Therefore, the Common Name must match the Web address you will use to configure the Cisco Product when connecting to SSM On-Prem. If you change the Common Name, you must resynchronize your Local Account in order for Cisco to issue a new CSR

Browser Certificate

Add Generate CSR

localhost
(Default Certificate)

EXPIRATION DATE: - ▾

destination address http <https://10.83.111.69/Transportgateway/services/DeviceRequestHandler>

SSM On-Prem – Product Registration

Product Registration with Strict Cert Checking

Assume On-Prem Cert is assigned to **CN=Cisco-On-Prem** with IP address of 10.83.111.69

- If you can change the URL for your device to point to:
<https://Cisco-On-Prem/Transportgateway>
- That means your device can resolve "Cisco-On-Prem" to a valid IP address
 - In regular IOS you can static map the host name to an IP. Example:
"ip host Cisco-On-Prem 10.83.111.69"

- If you can change the URL for your device to point to
<https://10.83.111.69/Transportgateway>
- That means you need to configure the On-Prem name to 10.83.111.69
- This will cause the Cert to be assigned to CN=10.83.111.69

HTTPS, by default, will do a server identity check during SSL handshake which verifies destination URL is the same Common Name (hostname or ip) filled in certificate.

Note: If product supports it, you can use "*no http secure server-identity-check*" to disable the check and keep using ip address in URL.

SSM On-Prem – Product Registration

Configuring Destination URL

- Products register to On-Prem the exact the same way as with Cisco
- Change the ‘Authorized Backend Address’ (See product documentation)

Smart Transport Config:

```
Device(config)# license smart transport smart
Device(config)# license smart privacy [all | hostname | version]
Device(config)# license smart url https://10.83.111.69/SmartTransport
```

Or

Smart Call Home Config:

```
call-home
  data-privacy level hostname
  profile "CiscoTAC-1"
    no destination transport-method email
    destination address http https://10.83.111.69/Transportgateway/services/DeviceRequestHandler
    no destination address http https://tools.cisco.com/its/service/oddce/services/DDCEService
```

SSM On-Prem – Product Registration

Configuring Global Data Privacy Settings

```
:sync: 2.0.0,  
:version: 2.0.0  
:id_cert: |- XXXXXXXXXXXXXXXXXXXXX  
  
:collector_id: 4cdd0470-e5e4-0132-a310-005056841670  
:csr: |-  
:last_sync: 2017-Jun-22 08:50:35 UTC  
:last_generated: 2017-Jul-20 11:22:16 UTC  
:virtual_accounts:  
- :id: 101342  
  :name: Virtual-Account-1  
  :product_instances:  
  - :id: 2373d312-2cd8-4029-9517-8c60037cca8c  
    :registration_date: 2017-Jun-12 07:25:40 UTC  
    :last_contact_date: 2017-Jul-02 06:13:47 UTC  
    :is_active: true  
    :software_tag_identifier: regid.2013-08.com.cisco.CSR1000V,1.0_1562da96-9176-4f99-a6cb-14b4dd0fa135  
    :udi_pid: CSR1000V  
    :hostname: Router-1  
    :ip_address:  
    :mac_address:  
    :udi_serial_number: 97YZFA9VYJK  
    :host_identifier:  
    :licenses:  
  - :tag_id: 1146  
    :tag: regid.2014-05.com.cisco.ax_2500M,1.0_3e0288f3-4838-47c2-93a8-3d8743850f0c  
    :consumed_quantity: 1
```

Global Synchronization Data Privacy Settings

Exclude the following from the product instance data sent to Cisco. This change applies to all accounts unless overridden individually on each account.

- Hostname
- IP Address
- MAC Address

NOTE: Even if the Cisco Product sends it to On-Prem, it can be excluded in the data exchange with Cisco though Data Privacy settings in the On-Prem Administration Workspace

SSM On-Prem – Communication Channels and Ports



Cisco Products communicate by default (out of the box with Smart Software Manager)

Products:

HTTPS(443): tools.cisco.com

HTTP(80): www.cisco.com

On-Prem

HTTPS(443): swapi.cisco.com

IPv4: 146.112.59.25

IPv6: 2a04:e4c7:ffe::4

Cisco Products communicate with Smart Software Manager On-Prem using the same protocol.

Protocol:

User Interface: HTTPS(8443) Only

Products: HTTP(80)/HTTPS(443)

CSSM: HTTPS(443)

Syncs:

api.cisco.com. (old)

swapi.cisco.com (new)

Account Registration:

cloudsso.cisco.com

Thank you

