Smart Licensing

Feature Summary and Revision History

Summary Data

Applicable Product(s) or Functional Area	All
Applicable Platform(s)	ASR 5500 VPC-SI VPC-DI
Feature Default	Disabled - Configuration Required
Related Changes in This Release	Not Applicable
Related Documentation	• *ASR 5500 System Administration Guide* • *Command Line Interface Reference* • *VPC-DI System Administration Guide* • *VPC-SI System Administration Guide*

Revision History

Revision Details	Release
First introduced.	21.3

Smart Software Licensing

Overview

StarOS 21.3 and higher releases support Smart Licensing. Smart Licensing is a cloud-based approach to licensing that simplifies the purchase, deployment, and management of Cisco software assets. Entitlements are purchased through your Cisco account via Cisco Commerce Workspace (CCW) and immediately deposited into your Virtual Account for usage. This eliminates the need to install license files on every device. Products that are smart enabled communicate directly to Cisco to report consumption. A single location is available to customers to manage Cisco software licenses—the Cisco Smart Software Manager (CSSM). License ownership and consumption are readily available to help make better purchase decision based on consumption or business need.

Refer to http://www.cisco.com/c/en/us/buy/smart-accounts/software-licensing.html for more information about Cisco Smart Licensing.

Comparison Between Legacy Licensing and Smart Licensing

Cisco employs two types of license models - Legacy Licensing and Smart Software Licensing. **Legacy Licensing** consists of software activation by installing Product Activation Keys (PAK) on to the Cisco product. A Product Activation Key is a purchasable item, ordered in the same manner as other Cisco equipment and used to obtain license files for feature set on Cisco Products. **Smart Software Licensing** is a cloud based licensing of the end-to-end platform through the use of a few tools that authorize and deliver license reporting. Smart Software Licensing leverages Smart Call Home to complete the product registration, authorization resulting in reporting services available to the end customer.

Smart Licensing in Release 21.3

Smart Licensing is disabled by default. On initial system boot, the product enters an evaluation mode for 90 days where a maximum of 1 counting license can be used.

> **Note** When Smart Licensing is enabled in Release 21.3, it operates in mixed mode where both Legecy and Smart Licensing is used.

- Legacy (PAK-based) licenses continue to be used for On/Off features.

- Smart licensing is used for counting each service. In Release 21.3 only the counting licenses listed below in "Entitlement Tags" are controlled by Smart Licensing. All other counting licenses use Legacy (PAK-based) licenses.

Cisco Smart Software Manager

Cisco Smart Software Manager (CSSM) enables the management of software licenses and Smart Account from a single portal. The interface allows you to activate your product, manage entitlements, and renew and upgrade software. A functioning Smart Account is required to complete the registration process. To access the Cisco Smart Software Manager, see https://software.cisco.com.

Smart Accounts/Virtual Accounts

A Smart Account provides a single location for all Smart-enabled products and entitlements. It helps speed procurement, deployment, and maintenance of Cisco Software. When creating a Smart Account, you must have the authority to represent the requesting organization. After submitting, the request goes through a brief approval process.

A Virtual Account exists as a sub-account withing the Smart Account. Virtual Accounts are a customer-defined structure based on organizational layout, business function, geography or any defined hierarchy. They are created and maintained by the Smart Account administrator.

See http://software.cisco.com to learn about, set up, or manage Smart Accounts.

Request a Cisco Smart Account

A Cisco Smart Account is an account where all products enabled for Smart Licensing are deposited. A Cisco Smart Account allows you to manage and activate your licenses to devices, monitor license use, and track Cisco license purchases. Through transparent access, you have a real-time view into your Smart Licensing products. IT administrators can manage licenses and account users within your organization's Smart Account through the Smart Software Manager.

Step 1 In a browser window, enter the following URL:
```
http://software.cisco.com
```

Step 2 Log in using your credentials, and then click **Request Smart Account** in the **Administration** area under **Smart Account Management**.
The **Smart Account Request** window is displayed.

Step 3 Under **Create Account**, select one of the following options:

- **Yes, I have authority to represent my company and want to create the Smart Account** – If you select this option, you agree to authorization to create and manage product and service entitlements, users, and roles on behalf of your organization.

- **No, the person specified below will create the account** – If you select this option, you must enter the email address of the person who will create the Smart Account.

Step 4 Under **Account Information**:
a) Click **Edit** beside **Account Domain Identifier**.
b) In the **Edit Account Identifier** dialog box, enter the domain, and click **OK**. By default, the domain is based on the email address of the person creating the account and must belong to the company that will own this account.

c) Enter the **Account Name** (typically, the company name).

Step 5 Click **Continue**.

The Smart Account request will be in pending status until it has been approved by the Account Domain Identifier. After approval, you will receive an email confirmation with instructions for completing the setup process.

Software Tags and Entitlement Tags

Tags for the following software and entitlements have been created to identify, report, and enforce licenses.

Software Tags

Software tags uniquely identify each licenseable software product or product suite on a device. The following software tags exist for the StarOS.

Product Type / Description	Software Tag
ASR5500 ASR-5500 Multimedia Core Platform	regid.2017-02.com.cisco.ASR5500,1.0_401f2e9e-67fd -4131-b61d-6e229d13a338
VPC_SI Virtualized Packet Core (Single instance)	regid.2017-02.com.cisco.VPC_SI,1.0_dcb12293-10c0 -4e90-b35e-b10a9f8bfac1
VPC_DI Virtualized Packet Core (Distributed instance)	regid.2017-02.com.cisco.VPC_DI,1.0_5cb68f91-c1d6 -48d6-9482-e9750203f5e6

Entitlement Tags

Entitlement tags indentify features in use for a service type.

TagId	Service Type / Description	Entitlement Tag
0	ASR5K-00-PW10GTWY PDN GW Bundle, 10K Sessions	regid.2017-02.com.cisco.ASR5K-00 -PW10GTWY,1.0_85a577a1-017d-4dc6-8bf7 -4fac7c4d465a
1	ASR5K-00-SG10 SAE GW Bundle, 10K Sessions	regid.2017-02.com.cisco. ASR5K-00-SG10,1.0_e87d1e76-e34c-4699-94ad- 68eafa2da8b2
2	ASR5K-00-GN10SESS GGSN Software License, 10K sessions	regid.2017-02.com.cisco. ASR5K-00-GN10SESS,1.0_bf7eb1d7-35bf- 40c6-8763-a4770f5ebf64
3	ASR5K-00-SW10LIC Serving GW Bundle, 10K Sessions	regid.2017-02.com.cisco. ASR5K-00-SW10LIC,1.0_ca9d09ee- 5e72-4695-97ef-d5117037cfb4

TagId	Service Type / Description	Entitlement Tag
4	ASR5K-00-ME10LIC MME Bundle, 10K sessions	regid.2017-02.com.cisco. ASR5K-00-ME10LIC,1.0_ 37a452c9-ff23-41fc-b96c-c8b2eb09254b
5	ASR5K-00-EG10S-K9 EPDG, 10k Sessions	regid.2017-02.com.cisco. ASR5K-00-EG10S-K9,1.0_5c625d0f-8b2c-4c44-970b-9668a072890f
6	ASR5K-00-SM10S-K9 SaMOG GW 10k Sessions	regid.2017-02.com.cisco. ASR5K-00-SM10S-K9,1.0_289f4807-fb6e-4750-b047-a9d57e7b045f

Configuring Smart Licensing

Before you begin, ensure you have:

- created a Smart Licensing/Virtual account on https://software.cisco.com

- registered products on https://software.cisco.com using the ID tokens created as part of virtual account.

- enabled a communication path between the StarOS system to the CSSM server.

By default, Smart Licensing is disabled in StarOS. To enable Smart Licensing, enter the following Config mode commands:

config
  license smart enable
  end

Enter the following command to verify the configuration:

show configuration | grep license
Register the system with the Product Instance Registration token provided when you registered the products on software.cisco.com using the following Exec mode command:

license smart register idtoken *token*
The system will now automatically report entitlement usage count to the CSSM server and receive a compliance status. This will also remove the system from "Evaluation Mode" To show the compliance status, enter any of the following Exec mode commands:

show license status
show license summary
show license statistics
The registration for the system is renewed automatically every 6 months. If needed, use the following Exec mode command to renew the registration information manually:

license smart renew id
The license authorization for the system is renewed automatically every 30 days. If needed, use the following Exec mode command to renew the license authorization manually:

license smart renew auth

Handling Out of Compliance

If there are not enough licenses in the virtual account for a given SKU, CSSM sends Out Of Compliance (OOC) message to the device, in response to authorization request. The system stops allowing additional sessions until the OOC state is cleared. OOC state is cleared when the devices receives authorized response to one of the subsequent authorization request.

Monitoring and Troubleshooting Smart Licensing

Enter the following Exec mode command to verify the Smart Licensing configuration:

show configuration | grep license
The following Exec mode commands display information about Smart Licensing:

show license { all | smart-tags | statistics | status | summary | tech-support | udi | usage } [| { grep *grep_options* **| more }]**
Notes:

- **all** - Shows a superset of information that includes show status, show usage, show UDI, as well as the Smart Licensing agent version.

- **summary** - Shows an overview of Smart Licensing status.

- **smart-tags** - Shows the services that are currently supported and the corresponding Smart Entitlement Tag.

- **statistics** - Shows individual feature license status.

- **status** - Shows overall Smart Licensing status information.

- **summary** - Shows summary of Smart Licensing status.

- **tech-support** - Shows information useful for debugging issues with Smart Licensing.

- **udi** - Shows details for all Unique Device Identifiers (UDI).

- **usage** - Shows the usage information for all entitlements that are currently in use.

The following SNMP alarms (traps) are produced to track issues with Smart Licensing.

- starSmartLicenseServiceOOC / starSmartLicenseServiceOOCClear

- starSmartLicenseEvalMode / starSmartLicenseEvalModeClear

- starSmartLicenseEvalModeExpire / starSmartLicenseEvalModeExpireClear

- starSmartLicenseCSSMConntectionFail / starSmartLicenseCSSMConnectionFailClear

Note   For more information regarding these SNMP MIB alarms, see the *SNMP MIB Reference*.

Smart Licensing Bulk Statistics

The following statistics are provided in support of Smart Licensing

- current_sl_state – Current state of Smart Licensing, eitherenabled or disabled.

- current_sl_mode – Current mode of Smart Licensing, either Evaluation or Registered.

- total_sl_enabled – Total number of times Smart Licensing has been enabled.

- total_sl_disabled – Total number of times Smart Licensing has been disabled.

- mode – Counters for each service type when product in Evaluation and Registered mode.

- tagid – Tagid for each service type.

- cur_call_policy – Current call policy for new sessions of each service type, either ALLOW or BLOCK.

- cur_call_count – Current number of sessions/calls counted for the entire product for a particular service type.

- max_call_count – Maximum number of sessions/calls counted for the entire product for a particular service type.

- last_lic_count – License count last reported to Cisco licensing (CSSM) for particular service type.

- max_lic_count – Maximum license count reported to Cisco licensing (CSSM) for particular service type up to this point in time.

- policy_change_block_calls – Number of times particular service type blocked new sessions as a result of insufficient licenses available.