

Cisco Unified SIP Proxy (CUSP) License State Definitions

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Introduction

This document defines the different CUSP license states and describes how each license state affects call handling. CUSP uses Cisco Smart Manager to register and authorize licenses.

You must have a valid account in Cisco Smart Manager to configure smart licensing for CUSP.

Problem

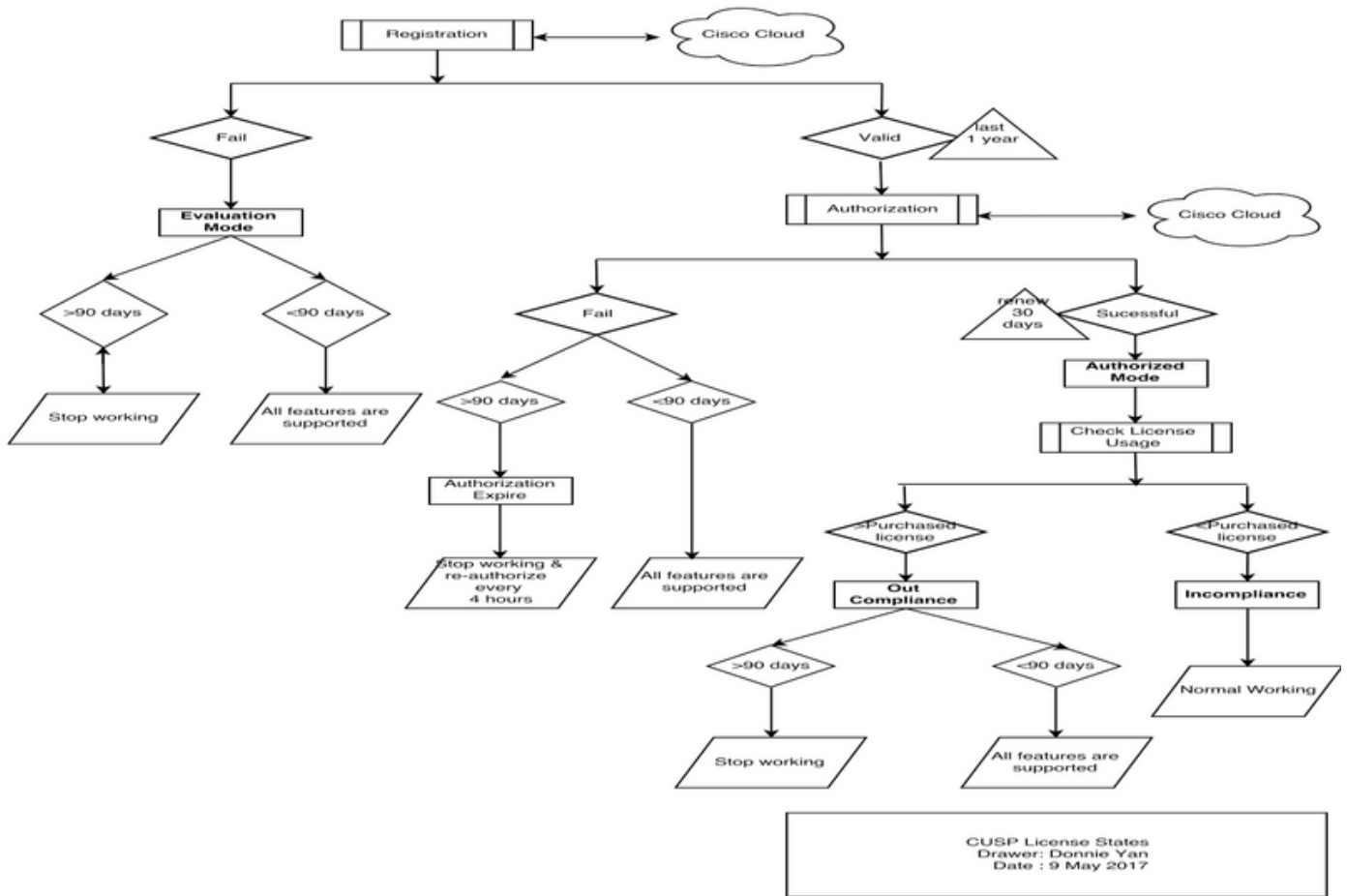
The CUSP license has different states, and each state causes CUSP to handle calls differently. Enforcement modes are described below.

Enforcement Modes

Enforcement modes determine the mode of license usage after the entitlement (license count) is requested.

- **Eval:** When the CUSP state is unidentified or registered, the enforcement mode is Eval. The evaluation period is 90 days by default. Calls are allowed in this state. The evaluation period starts the moment that smart licensing is enabled. If registration or authorization requests fail, CUSP moves to Eval mode.
- **InCompliance:** The license count requested to the server is within the purchased limits.
- **OutOfCompliance:** The license count that was requested is more than the license count that is available (that is, more than the license count that was purchased in Cisco Smart Manager). The request is honored here and calls are allowed. There is no impact on call handling.
- **EvalExpired:** The evaluation period has expired. Calls are not allowed in this mode.
- **AuthorizationExpired:** The authorization period has expired. Calls are not allowed in this mode.

This image summarizes the CUSP license states and the effect of each state.



License States diagram

Solution

The Check License Usage state is based on the sum of the CUSP server's configured counts compared to the purchased license count. The Check License Usage state is *not* the real-time Call Per Second (CPS) count.

You must check the number of licenses purchased and the usage from the Cisco Smart License website: <https://software.cisco.com/#SmartLicensing-Inventory>

Virtual Account: CUSP TEST

3 Major | 4 Minor | Hid

License	Quantity	In Use	Surplus (+) / Shortage (-)	Alerts	Actions
ICV CUSP-5 calls per second	30	216	-186	Insufficient Licenses	Transfer..

Showing 1 Record

This image shows where to check the current CUSP license state from the CUSP Admin page.

The screenshot displays the Cisco Unified SIP Proxy Admin interface. The left sidebar contains a navigation menu with the following items: Configure, System, Monitor, Reports, Administration (expanded), Backup / Restore (expanded), Configuration, Start Backup, Scheduled Backups, Start Restore, Control Panel, Manage Configuration (expanded), Restore Defaults / Rollback, Candidate Preview, Smart License (expanded), Configuration, License Summary (highlighted), Manage Inactivity Timeout, and Troubleshoot. The main content area is titled 'License Summary' and contains the following information:

Smart License Client State:	OUT_OF_COMPLIANCE
Module Serial Number:	qzHWUdZfXhQ
Product ID:	UC_CUSP
Cusp UDI:	UC_CUSP:qzHWUdZfXhQ
Entitlement Tag:	regid.2014-08.com.cisco.CUSP-5,1.0_8f106f12-4d11-44b7-8f36-f7aeae3dfaa
License Server Address:	https://tools.cisco.com/its/service/oddce/services/DDCEService
Smart Agent Transport Mode:	TransportCallHome
Enforcement Mode:	OutOfCompliance
Software ID TAG:	regid.2014-12.com.cisco.CUSP,1.0_5548940b-3dff-4353-b418-10e29cb7493b
Product ID TAG:	UC_CUSP
Entitlement Version:	9.0
Registration Expiry Date:	Wed May 09 01:42:49 GMT 2018
Next Auth Date:	Wed May 10 11:43:50 GMT 2017
Evaluation Period(in hrs):	0
Entitlement Count Requested:	10
Is Registration Successful:	YES
Is Authorization Successful:	YES
Is Agent Enabled:	ENABLED
Is Evaluation Mode:	NO
Latest Failure Reason:	No recent Failure messages
Http Proxy Address:	Not Set:

CPS Mechanism

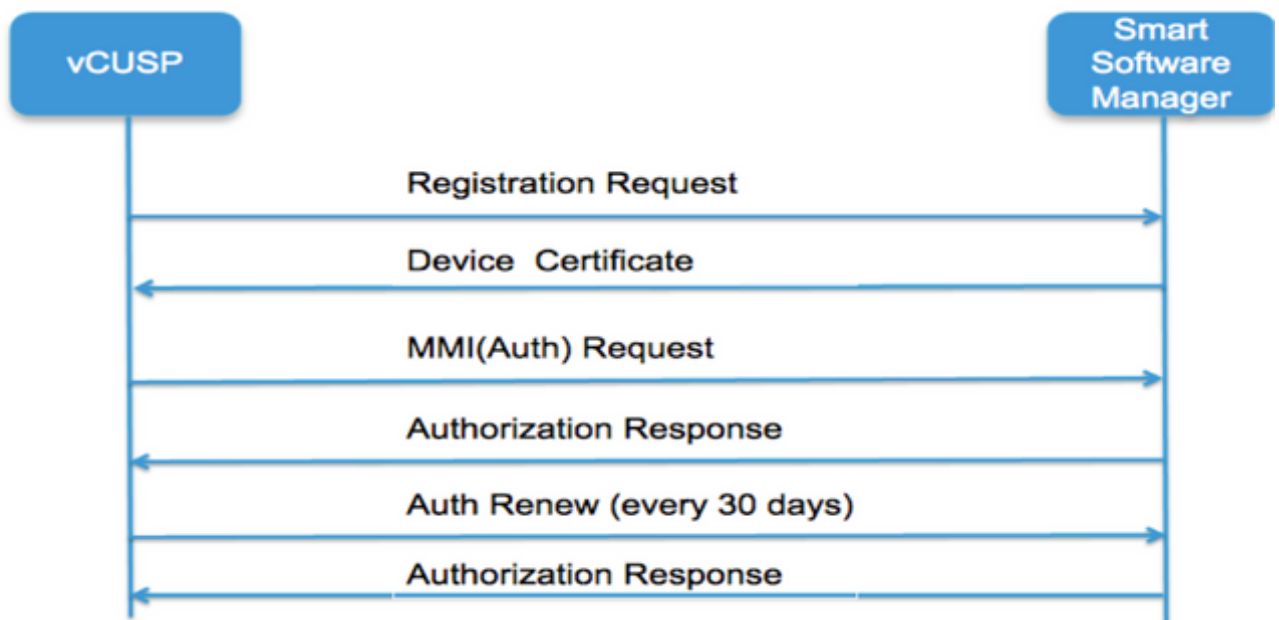
- The CPS check is different than the license usage check. For releases earlier than vCUSP 9.1.5, CUSP rejects calls immediately if the CPS check is over the configured license count. The response messages are either 500 or 503 error messages.
- CUSP keeps count of the calls and records a snapshot every 30 seconds for a window time of five minutes. The average CPS for these five-minute records must be well under the license's limit. If the average goes higher than the limit, CUSP starts rejecting the calls. If the call volume stays consistently high, CUSP does not resume service until the CPS drops to the limit.
- You must enable failed call logging to see rejected calls. This image shows where to enable the Failed Call Log.



Enable Failed Call logging

Message Flow and Contents

Message flow



Registration Request

Token [hash generated for the customer account in Smart Manager]

Software Tag Identifier (CUSP software ID)

[UDI|SN#*] (CUSP generates an 11-character random string for SN)

Certificate Signing Request

Registration Message Response

PEM-encoded Device ID certificate

Product Instance Identifier

Cisco Signing Certificate

Signature [signed by Cisco Signing Cert]

Device ID Certificate

CommonName = GUID

SN=PID:<PID>SN:<SN>

Domain=has(logical account name)

Validity Period =360 days

MMI (Mother May I Request) Message

Capability [Entitlement tags and counts]

Client Nonce

Product Instance Identifier

Cisco Signing Cert SN#

Signature [MMI signed by ID cert]

MMI Response

Signature

Status

Expiry

Entitlement Tag

Logs Analysis

Registration

```
23:43:53,400 277058 [RubyThread-6: file:/opt/CUSP/dsnrs/lib/cisco/ruby-gems-1.0.jar!/smart_agent.rb:161] DEBUG root - register received: id_cert_sn:970857, signing_cer:sub_ca_cert:2, renew_interval:1555200000
```

23:43:53,421 277079 [RubyThread-6: file:/opt/CUSP/dsnrs/lib/cisco/ruby-gems-1.0.jar!/smart_agent.rb:161] DEBUG root - **Registration success with response:** {"signature"=>{"type"=>"SHA256",

<this registration signed by Cisco cloud , and will renew after 1 year >

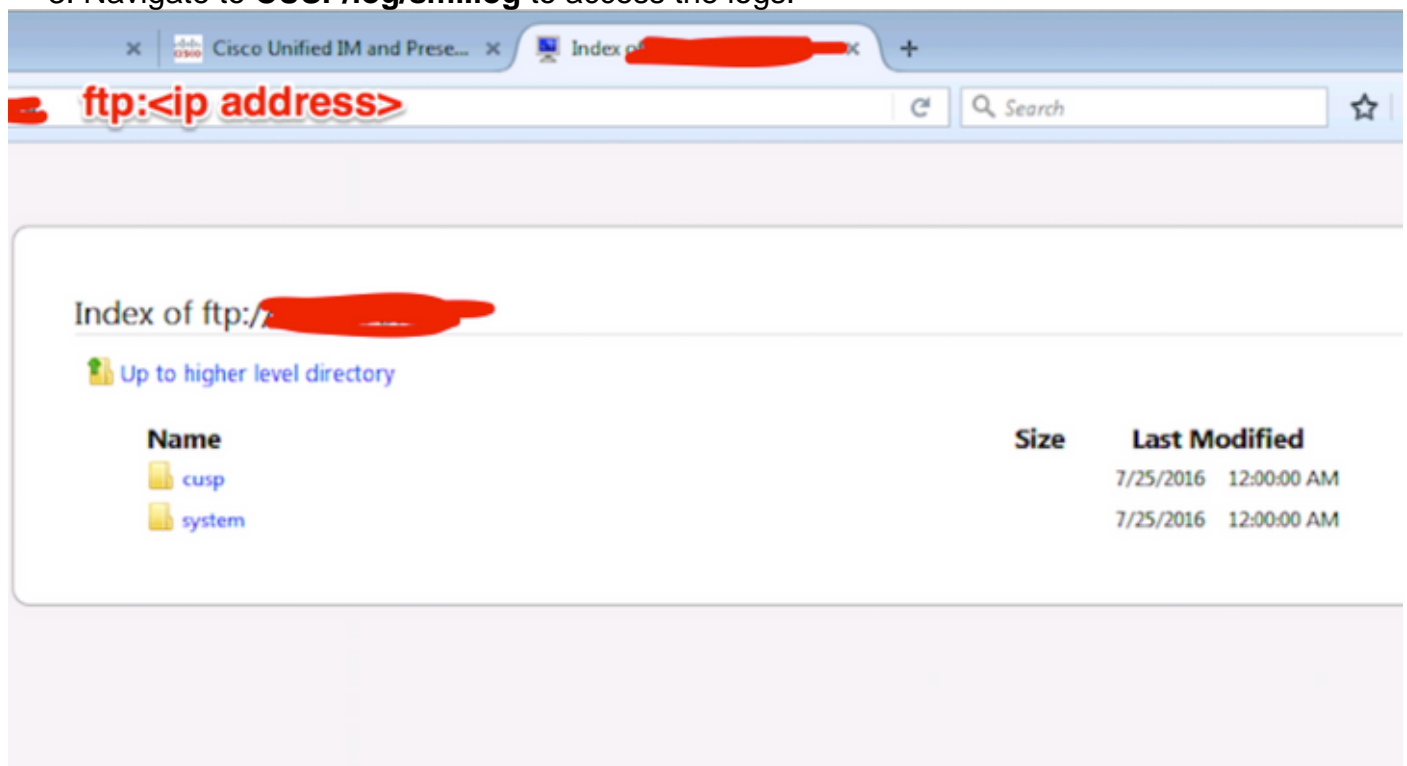
Authentication

13:48:25,614 1461205341 [RubyThread-1275: jar:file:/opt/CUSP/dsnrs/lib/cisco/ruby-gems-1.0.jar!/gems/rufus-scheduler-2.0.23/lib/rufus/sc/scheduler.rb:464] DEBUG root - Sending auth request msg with sudi:#<Sudi:0x531d9e>, hostname:se-10-66-75-64, **signing_cert_sn:3**, id_cert_sn:969365,**product_instance_id:c2d100c0-c268-49ad-ad8c-9519d2b823c2**, entitlements:[#<LicenseEntitlement:0x1de5cd2 @listener=#<Java::ComCiscoNeslaSmartLicense::EntitlementNotificationListenerImpl:0x16c1b44 >, @entitlement_tag="regid.2014-08.com.cisco.CUSP-5,1.0_8f106f12-4d11-44b7-8f36-f7aeae3dfaa", @requested_count=2, @vendor="8f106f12-4d11-44b7-8f36-f7aeae3dfaa", @requested_date=#<Date: 49322-04-19 ((19735659j,0s,0n),+0s,-Infj)>, @entitlement_version="9.0", @display_name="ICV CUSP-5 calls per second", @description="ICV CUSP-5 calls per second", @enforce_mode=:out_of_compliance, @days_left=-17206>]

13:48:28,516 1461208243 [RubyThread-6: file:/opt/CUSP/dsnrs/lib/cisco/ruby-gems-1.0.jar!/smart_agent.rb:161] DEBUG root - auth request received: start_date:1494337382539, **compliance_status:OOC**,expiry:**7775673**, retry_interval:**43200**

FTP to Collect Logs from CUSP

1. Create a username and assign privilege in CUSP CLI.**Example:**Username cisco
createUsername cisco password ciscoUsername cisco group pfs-privusers
2. Use a browser and type FTP:<CUSP SERVER IP ADDRESS>.
3. Navigate to **CUSP/log/sml.log** to access the logs.



Related Information

- [Installation Guide for Cisco Unified SIP Proxy Release 9.1.x](#)
- [Technical Support & Documentation - Cisco Systems](#)