

Troubleshooting Smart Licensing Using Policy

- System Message Overview, on page 1
- Smart Licensing Using Policy System Messages, on page 2

System Message Overview

This section describes Smart Licensing Using Policy specific system messages. The system software sends these messages to the console (and, optionally, to a logging server on another system). Not all system messages mean problems with your system. Some messages are informational, and others can help diagnose problems with communications lines, internal hardware, or the system software.

How to Read System Messages

System log messages can contain up to 80 characters. Each system message begins with a percent sign (%) and is structured as follows:

```
%FACILITY-SEVERITY-MNEMONIC: Message-text
```

%FACILITY

Two or more uppercase letters that show the facility to which the message refers. A facility can be a hardware device, a protocol, or a module of the system software

SEVERITY

A single-digit code from 0 to 7 that reflects the severity of the condition. The lower the number, the more serious the situation.

Table 1: Message Severity Levels

Severity Level	Description
0 - emergency	System is unusable.
1 - alert	Immediate action required.
2 - critical	Critical condition.
3 - error	Error condition.

Severity Level	Description
4 - warning	Warning condition.
5 - notification	Normal but significant condition.
6 - informational	Informational message only.
7 - debugging	Message that appears during debugging only.

MNEMONIC

A code that uniquely identifies the message.

Message-text

Message-text is a text string describing the condition. This portion of the message sometimes contains detailed information about the event, including terminal port numbers, network addresses, or addresses that correspond to locations in the system memory address space. Because the information in these variable fields changes from message to message, it is represented here by short strings enclosed in square brackets ([ ]). A decimal number, for example, is represented as [dec].

Table 2: Variable Fields in Messages

Severity Level	Description
[char]	Single character
[chars]	Character string
[dec]	Decimal number
[enet]	Ethernet address (for example, 0000.FEED.00C0)
[hex]	Hexadecimal number
[inet]	Internet address (for example, 10.0.2.16)
[int]	Integer
[node]	Address or node name
[t-line]	Terminal line number in octal (or in decimal if the decimal-TTY service is enabled)
[clock]	Clock (for example, 01:20:08 UTC Tue Mar 2 1993

Smart Licensing Using Policy System Messages

This section provides the list of Smart Licensing Using Policy related system messages you may encounter, possible reasons (incase it is a failure message), and recommended action (if action is required).

- %SMART_LIC-3-POLICY_INSTALL_FAILED
- %SMART_LIC-3-AUTHORIZATION_INSTALL_FAILED

- %SMART_LIC-3-COMM_FAILED
- %SMART_LIC-3-COMM_RESTORED
- %SMART_LIC-3-POLICY_REMOVED
- %SMART_LIC-3-TRUST_CODE_INSTALL_FAILED
- %SMART_LIC-4-REPORTING_NOT_SUPPORTED
- %SMART_LIC-6-POLICY_INSTALL_SUCCESS
- %SMART_LIC-6-AUTHORIZATION_INSTALL_SUCCESS
- %SMART_LIC-6-AUTHORIZATION_REMOVED
- %SMART_LIC-6-REPORTING_REQUIRED
- %SMART_LIC-6-TRUST_CODE_INSTALL_SUCCESS
- %SMART_LIC-4- UTILITY_TRUST_CODE
- %SMART_LIC-4-UTILITY_SUBSCRIPTION_LICENSE
- %SMART_LIC-4-UTILITY_NO_ACK
- %SMART_LIC-4-UTILITY_TRANSPORT_NOT_CONFIG
- %SMART_LIC-3-UTILITY_REPORT_FAILED
- %SMART_LIC-3-UTILITY_STARTED
- %SMART_LIC-6-UTILITY_STOPPED

```
Error Message %SMART_LIC-3-POLICY_INSTALL_FAILED: The installation of a new
licensing policy has failed: [chars].
```

Explanation: A policy was installed, but an error was detected while parsing the policy code, and installation failed. [chars] is the error string with details of the failure.

Possible reasons for failure include:

- A signature mismatch: This means that the system clock is not accurate.
- A timestamp mismatch: This means the system clock on the product instance is not synchronized with CSSM.

Recommended Action:

For both possible failure reasons, ensure that the system clock is accurate and synchronized with CSSM. Configure the **ntp server** command in global configuration mode. For example:

```
Device(config)# ntp server 198.51.100.100 version 2 prefer
```

If the above does not work and policy installation still fails, contact your Cisco technical support representative.


```
Error Message %SMART_LIC-3-AUTHORIZATION_INSTALL_FAILED: The install of a new
licensing authorization code has failed on [chars]: [chars].
```

Explanation: An authorization code was installed, but installation failed. The first [chars] is the UDI for which the authorization code installation failed, and the second [chars] is the error string with details of the failure.

Possible reasons for failure include:

- Not enough licenses with authorization for currently configured features: This means that you have not generated the requisite authorizations for all the required licenses.
- UDI mismatch: One or more UDIs in the authorization code file do not match with the product instance where you are installing the authorization code file. If you have generated authorization codes for multiple UDIs, for a High Availability set-up, all the UDIs listed in the authorization code file must match with all the UDIs in the High Availability set-up. If this is not the case, installation fails.

  Cross-check all UDIs in the authorizatin code file against the UDIs of the product instance (standalone or High Availability) as follows:

  Sample authorization code file with UDI information:

  ```
  <smartLicenseAuthorization>
  <udi>P:CSR1000V,S:9D1YXJM3LKC</udi>

  <output truncated>
  </smartLicenseAuthorization>
  ```

  Sample output of UDI information on a product instance:

  ```
  Device# show license udi
  UDI: PID:CSR1000V,SN:9D1YXJM3LKC
  ```

- A signature mismatch: This means that the system clock is not accurate.

Recommended Action

- In the output of the **show license tech support** command, check the `Failure Reason:` field to understand what may have gone wrong.

  ```
  Device# show license tech support
  <output truncated>
  Authorization Confirmation:
    Attempts: Total=2, Success=2, Fail=0  Ongoing Failure: Overall=0 Communication=0
    Last Response: OK on Sep 23 17:51:52 2020 UTC
      Failure Reason: <none>
    Last Success Time: Sep 23 17:51:52 2020 UTC
    Last Failure Time: <none>
  ```

- Not enough licenses in authorization for currently configured features and UDI mismatch:

  Use the **show license udi** command to verify that you have the correct and complete list of UDIs. This command displays all product instances in case of High Availability set-up. Then complete these tasks again: Generating and Downloading SLAC from CSSM to a File and Installing a File on the Product Instance.

- Signature mismatch:

  Ensure that the system clock is accurate and synchronized with CSSM. To do this, configure the **ntp server** command in global configuration mode. For example:

  ```
  Device(config)# ntp server 198.51.100.100 version 2 prefer
  ```

If the above does not work and policy installation still fails, contact your Cisco technical support representative.

```
Error Message %SMART_LIC-3-COMM_FAILED: Communications failure with the [chars] :
[chars]
```

Explanation: Smart Licensing communication either with CSSM, or CSLU, or SSM On-Prem failed. The first [chars] is the currently configured transport type, and the second [chars] is the error string with details of the failure. This message appears for every communication attempt that fails.

Possible reasons for failure include:

- CSSM, CSLU, SSM On-Prem is not reachable: This means that there is a network reachability problem.
- 404 host not found: This means the CSSM server is down.
- A TLS or SSL handshake failure caused by a missing client certificate. The certificate is required for TLS authentication of the two communicating sides. A recent server upgrade may have cause the certificate to be removed. This reason applies only to a topology where the product instance is directly connected to CSSM.

Note If the error message is displayed for this reason, there is no actual configuration error or disruption in the communication with CSSM.

For topologies where the product instance initiates the sending of RUM reports (Connected to CSSM Through CSLU: Product Instance-Initiated Communication, Connected Directly to CSSM, CSLU Disconnected from CSSM: Product Instance-Initiated Communication, and SSM On-Prem Deployment: Product Instance-Initiated Communication) if this communication failure message coincides with scheduled reporting (**license smart usage interval** *interval_in_days* global configuration command), the product instance attempts to send out the RUM report for up to four hours after the scheduled time has expired. If it is still unable to send out the report (because the communication failure persists), the system resets the interval to 15 minutes. Once the communication failure is resolved, the system reverts the reporting interval to last configured value.

Recommended Action:

Troubleshooting steps are provided for when CSSM is not reachable or there is a missing client certificate, when CSLU is not reachable, and when SSM On-Prem is not reachable.

- If a client certificate is missing and there is no actual configuration error or disruption in the communication with CSSM:

  Configure the **ip http client secure-trustpoint** *trustpoint-name* command in global configuration mode. For *trustpoint-name*, enter only `SLA-TrustPoint`. This command specifies that the secure HTTP client should use the certificate associated with the trustpoint indicated by the trustpoint-name argument.

- If CSSM is not reachable and the configured transport type is **smart**:

  1. Check if the smart URL is configured correctly. Use the **show license status** command in privileged EXEC mode, to check if the URL is exactly as follows: https://smartreceiver.cisco.com/licservice/license. If it is not, reconfigure the **license smart url smart** *smar_URL* command in global configuration mode.
  2. Check DNS resolution. Verify that the product instance can ping `smartreceiver.cisco.com` or the nslookup translated IP. The following example shows how to ping the translated IP

```
Device# ping 171.70.168.183
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 171.70.168.183, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
```

- If CSSM is not reachable and the configured transport type is **callhome**:

1. Check if the URL is entered correctly. Use the **show license status** command in privileged EXEC mode, to check if the URL is exactly as follows: https://tools.cisco.com/its/service/oddce/services/DDCEService.
2. Check if Call Home profile `CiscoTAC-1` is active and destination URL is correct. Use the **show call-home profile all** command in privileged EXEC mode:

```
Current smart-licensing transport settings:
 Smart-license messages: enabled
 Profile: CiscoTAC-1 (status: ACTIVE)
 Destination  URL(s):  https://tools.cisco.com/its/service/oddce/services/DDCEService
```

3. Check DNS Resolution. Verify that the product instance can ping `tools.cisco.com`, or the nslookup translated IP.

```
Device# ping tools.cisco.com
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 173.37.145.8, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 41/41/42 ms
```

   If the above does not work check the following: If the product instance IP network is up. To ensure that the network is up, configure the **no shutdown** command in interface configuration mode.

   Check if the device is subnet masked with a subnet IP, and if the DNS IP is confgured.

4. Verify that the HTTPs client source interface is correct.

   Use the **show ip http client** command in privileged EXEC mode to display current configuration. Use **ip http client source-interface** command in global configuration mode to reconfigure it.

   In case the above does not work, double-check your routing rules, and firewall settings.

- If CSLU is not reachable:

1. Check if CSLU discovery works.
   - Zero-touch DNS discovery of `cslu-local` or DNS discovery of your domain..

     In the **show license all** command output, check if the `Last ACK received:` field. If this has a recent timestamp it means that the product instance has connectivity with CSLU. If it is not, proceed with the following checks:

     Check if the product instance is able to ping `cslu-local`. A successful ping confirms that the product instance is reachable.

     If the above does not work, configure the name server with an entry where hostname `cslu-local` is mapped to the CSLU IP address (the windows host where you installed CSLU). Configure the **ip domain name** *domain-name* and **ip name-server** *server-address* commands in global configuration mode. Here the CSLU IP is 192.168.0.1 and name-server creates entry `cslu-local.example.com`:

```
Device(config)# ip domain name example.com
Device(config)# ip name-server 192.168.0.1
```

- CSLU URL is configured.

  In the **show license all** command output, under the `Transport:` header check the following: The `Type:` must be `cslu`and `Cslu address:` must have the hostname or the IP address of the windows host where you have installed CSLU. Check if the rest of the address is configured as shown below and check if the port number is 8182.

  ```
  Transport:
    Type: cslu
    Cslu address: http://192.168.0.1:8182/cslu/v1/pi
  ```

  If it is not, configure the **license smart transport cslu** and **license smart url cslu** *http://<cslu_ip_or_host>:8182/cslu/v1/pi* commands in global configuration mode

2. For CSLU-initiated communication, in addition to the CSLU discovery checks listed above, check the following:

   Verify HTTP connectivity. Use the **show ip http server session-module** command in privileged EXEC mode. In the output, under header `HTTP server current connections:`, check that `SL_HTTP` is active. If it is not re-configure the **ip http** commands as mentioned in Ensuring Network Reachability for CSLU-Initiated Communication.

   From a Web browser on the device where CSLU is installed, verify `https://<product-instance-ip>/`. This ensures that the REST API from CSLU to the product instance works as expected.

- If SSM On-Prem is not reachable:

1. For product instance-initiated communication, check if the SSM On-Prem transport type and URL are configured correctly.

   In the **show license all** command output, under the `Transport:` header check the following: The `Type:` must be `cslu`and `Cslu address:` must have the hostname or the IP address of the server where you have installed SSM On-Prem and <tenantID> of the *default* local virtual account. See the example below:

   ```
   Transport:
     Type: cslu
     Cslu address: https://192.168.0.1/cslu/v1/pi/on-prem-default
   ```

   Check if you have the correct URL from SSM On-Prem (See Retrieving the Transport URL (SSM On-Prem UI)) and then configure **license smart transport cslu** and **license smart url cslu** *http://<ip>/cslu/v1/pi/<tenant ID>* commands in global configuration mode.

   Check that you have configured any other required commands for your network, as mentioned in Ensuring Network Reachability for Product Instance-Initiated Communication

2. For SSM On-Prem-initiated communication, check HTTPs connectivity.

   Use the **show ip http server session-module** command in privileged EXEC mode. In the output, under header `HTTP server current connections:`, check that `SL_HTTP` is active. If it is not re-configure the **ip http** commands as mentioned in Ensuring Network Reachability for SSM On-Prem-Initiated Communication.

3. Check trustpoint and that certificates are accepted.

For both forms of communication in an SSM On-Prem Deployment, ensure that the correct trustpoint is used and that the necessary certificates are accepted:

```
Device(config)# crypto pki trustpoint SLA-TrustPoint
Device(ca-trustpoint)#
Device(ca-trustpoint)# enrollment terminal
Device(ca-trustpoint)# revocation-check none
Device(ca-trustpoint)# end
Device# copy running-config startup-config
```

If the above does not work and the communication failure persists, contact your Cisco technical support representative.

```
Error Message  %SMART_LIC-3-COMM_RESTORED: Communications with the [chars] restored.
[chars] - depends on the transport type
        - Cisco Smart Software Manager (CSSM)
        - Cisco Smart License utility (CSLU)
Smart Agent communication with either the Cisco Smart Software Manager (CSSM) or the Cisco
 Smart License
utility (CSLU) has been restored. No action required.
```

Explanation: Product instance communication with either the CSSM, CSLU, or SSM On-Prem is restored.

Recommended Action: No action required.

```
Error Message %SMART_LIC-3-POLICY_REMOVED: The licensing policy has been removed.
```

Explanation: A previously installed *custom* licensing policy has been removed. The `Cisco default` policy is then automatically effective. This may cause a change in the behavior of smart licensing.

Possible reasons for failure include:

If you have entered the **license smart factory reset** command in privileged EXEC mode all licensing information including the policy is removed.

Recommended Action:

If the policy was removed intentionally, then no further action is required.

If the policy was removed inadvertantly, you can reapply the policy. Depending on the topology you have implemented, follow the corresponding method to retrieve the policy:

- Connected Directly to CSSM:

  Enter **show license status**, and check field `Trust Code Installed:`. If trust is established, then CSSM will automatically return the policy again. The policy is automatically re-installed on product instances of the corresponding Virtual Account.

  If trust has not been established, complete these tasks: Generating a New Token for a Trust Code from CSSM and Establishing Trust with an ID Token. When you have completed these tasks, CSSM will automatically return the policy again. The policy is then automatically installed on all product instances of that Virtual Account.

- Connected to CSSM Through CSLU:
  - For product instance-initiatied communication), enter the **license smart sync** command in privileged EXEC mode. The synchronization request causes CSLU to push the missing information (a policy or authurization code) to the product instance.
  - For CSLU-initiated communication, complete this task:Collecting Usage Reports: CSLU Initiated (CSLU Interface). This causes CSLU to detect and re-furnish the missing policy in an ACK response.
- CSLU Disconnected from CSSM:
  - For product instance-initiatied communication), enter the **license smart sync** command in privileged EXEC mode. The synchronization request causes CSLU to push the missing information (a policy or authurization code) to the product instance. Then complete these tasks in the given order: Export to CSSM (CSLU Interface) > Uploading Data or Requests to CSSM and Downloading a File > Import from CSSM (CSLU Interface).
  - For CSLU-initiated communication, complete this task:Collecting Usage Reports: CSLU Initiated (CSLU Interface) . This causes CSLU to detect and re-furnish the missing policy in an ACK response. Then complete these tasks in the given order: Export to CSSM (CSLU Interface) > Uploading Data or Requests to CSSM and Downloading a File >Import from CSSM (CSLU Interface) .
- No Connectivity to CSSM and No CSLU

  If you are in an entirely air-gapped network, from a workstation that has connectivity to the internet and CSSM complete this task: Downloading a Policy File from CSSM.

  Then complete this task on the product instance: Installing a File on the Product Instance.
- SSM On-Prem Deployment
  - For product instance-initiatied communication), enter the **license smart sync** command in privileged EXEC mode. The causes the product instance to synchronize with SSM On-Prem and restore any required or missing information. Then synchronize SSM On-Prem with CSSM if required:
  - For SSM On-Prem-initiated communication: In the SSM On-Prem UI, navigate to **Reports** > **Synchronisation pull schedule with the devices** > **Synchronise now with the device**.

  For both forms of communication in an SSM On-Prem Deployment, synchronize with CSSM using either option:
  - SSM On-Prem is connected to CSSM: In the SSM On-Prem UI, Smart Licensing workspace, nagivate to **Reports** > **Usage Schedules** > **Synchronize now with Cisco**.
  - SSM On-Prem is not connected to CSSM: See Exporting and Importing Usage Data (SSM On-Prem UI).

If the above does not work and the custom policy is not restored, contact your Cisco technical support representative.

```
Error Message %SMART_LIC-3-TRUST_CODE_INSTALL_FAILED: The install of a new licensing
trust code has failed on [chars]: [chars].
```

Explanation: Trust code installation has failed. The first [chars] is the UDI where trust code installation was attempted. The second [chars] is the error string with details of the failure.

Possible reasons for failure include:

- A trust code is already installed: Trust codes are node-locked to the UDI of the product instance. If the UDI is already registered, and you try to install another one, installation fails.
- Smart Account-Virtual Account mismatch: This means the Smart Account or Virtual Account (for which the token ID was generated) does not include the product instance on which you installed the trust code. The token generated in CSSM, applies at the Smart Account or Virtual Account level and applies only to all product instances in that account.
- A signature mismatch: This means that the system clock is not accurate.
- Timestamp mismatch: This means the product instance time is not synchronized with CSSM, and can cause installation to fail.

Recommended Action:

- A trust code is already installed: If you want to install a trust code inspite of an existing trust code on the product instance, re-configure the **license smart trust idtoken** *id_token_value* {**local** | **all**} [**force**] command in privileged EXEC mode, and be sure to include the **force** keyword this time. Entering the **force** keyword sets a force flag in the message sent to CSSM to create a new trust code even if one already exists.
- Smart Account-Virtual Account mismatch:

  Log in to the CSSM Web UI at https://software.cisco.com and click **Smart Software Licensing**>**Inventory** > **Product Instances**.

  Check if the product instance on which you want to generate the token is listed in the selected Virtual Account. If it is, proceed to the next step. If not, check and select the correct Smart Account and Virtual Account. Then complete these tasks again: Generating a New Token for a Trust Code from CSSM and Installing a File on the Product Instance again.
- Timestamp mismatch and signature mismatch: Configure the **ntp server** command in global configuration mode. For example:

  ```
  Device(config)# ntp server 198.51.100.100 version 2 prefer
  ```

```
Error Message    %SMART_LIC-4-REPORTING_NOT_SUPPORTED: The CSSM OnPrem that this
product instance is connected to is down rev and does not support the enhanced policy and
usage
reporting mode.
```

Explanation: Cisco Smart Software Manager On-Prem (formerly known as Cisco Smart Software Manager satellite) is supported in the Smart Licensing Using Policy environment starting with Cisco IOS XE Amsterdam 17.3.3 only (See Cisco Smart Software Manager On-Prem (SSM On-Prem)). In *unsupported* releases, the product instance will behave as follows:

- Stop sending registration renewals and authorization renewals.
- Start recording usage and saving RUM reports locally.

Recommended Action:

You have the following options:

- Refer to and implement one of the supported topologies instead. See: Supported Topologies.
- Upgrade to a release where SSM On-Prem is supported with Smart Licensing Using Policy. See Migrating to a Version of SSM On-Prem That Supports Smart Licensing Using Policy.

```
Error Message %SMART_LIC-6-POLICY_INSTALL_SUCCESS: A new licensing policy
was successfully installed.
```

Explanation: A policy was installed in one of the following ways:

- Using Cisco IOS commands.
- CSLU-initiated communication.
- As part of an ACK response.

Recommended Action: No action is required. If you want to know which policy is applied (the policy in-use) and its reporting requirements, enter the **show license all** command in privileged EXEC mode.

```
Error Message %SMART_LIC-6-AUTHORIZATION_INSTALL_SUCCESS: A new licensing
authorization code was successfully installed on: [chars].
```

Explanation: [chars] is the UDI where the authorization code was installed successfully.

Recommended Action: No action is required. If you want to know the details of the authorization code that was installed, enter the **show license authorization** command in privileged EXEC mode.

You can also use the **show license all** and **show license tech support** commands in privileged EXEC mode, to see the kind of authorization installed, and the type of entitlement the product instance can use.

```
Error Message %SMART_LIC-6-AUTHORIZATION_REMOVED: A licensing authorization code has
 been removed from [chars]
```

Explanation: [chars] is the UDI where the authorization code was installed. The authorization code has been removed. This removes the licenses from the product instance and may cause a change in the behavior of smart licensing and the features using licenses.

Recommended Action: No action is required. If you want to see the current state of the license, enter the **show license all** command in privileged EXEC mode.

```
Error Message %SMART_LIC-6-REPORTING_REQUIRED: A Usage report acknowledgement
will be required in [dec] days.
```

Explanation: This is an alert which means that RUM reporting to Cisco is required. [dec] is the amount of time (in days) left to meet this reporting requirements.

Recommended Action: Ensure that RUM reports are sent within the requested time. The topology you have implemented determines the reporting method.

- Connected to CSSM Through CSLU
  - For product instance-initiatied communication: Enter the **license smart sync** command in privileged EXEC mode. If CSLU is currently logged into CSSM the reports will be automatically sent to the associated Smart Account and Virtual Account in CSSM.
  - For CSLU-initiated communication, complete this task:Collecting Usage Reports: CSLU Initiated (CSLU Interface).
- Connected Directly to CSSM: Enter the **license smart sync** command in privileged EXEC mode.
- Connected to CSSM Through a Controller: If the product instance is managed by a controller, the controller will send the RUM report at the scheduled time.

  If you are using Cisco DNA Center as the controller, you have the option of ad-hoc reporting. See the *Cisco DNA Center Administrator Guide* of the required release (Release 2.2.2 onwards) > *Manage Licenses* > *Upload Resource Utilization Details to CSSM*.
- CSLU Disconnected from CSSM: If the product instance is connected to CSLU, synchronize with the product instance as shown for "Connected to CSSM Through CSLU"above, then complete these tasks: Export to CSSM (CSLU Interface), Uploading Data or Requests to CSSM and Downloading a File, and Import from CSSM (CSLU Interface).
- No Connectivity to CSSM and No CSLU: Enter the **license smart save usage** command in privileged EXEC mode, to save the required usage information in a file. Then, from a workstation where you have connectivity to CSSM, complete this task: Uploading Data or Requests to CSSM and Downloading a File.
- SSM On-Prem Deployment:

  Synchronize the product instance with SSM On-Prem:
  - For product instance-initiatied communication: Enter the **license smart sync** command in privileged EXEC mode. If CSLU is currently logged into CSSM the reports will be automatically sent to the associated Smart Account and Virtual Account in CSSM.
  - For SSM On-Prem-initiated communication, complete this task: In the SSM On-Prem UI, navigate to **Reports** > **Synchronisation pull schedule with the devices** > **Synchronise now with the device**.

  Synchronize usage information with CSSM (*choose one*)
  - SSM On-Prem is connected to CSSM: In the SSM On-Prem UI, Smart Licensing workspace, nagivate to **Reports** > **Usage Schedules** > **Synchronize now with Cisco**.
  - SSM On-Prem is not connected to CSSM: See Exporting and Importing Usage Data (SSM On-Prem UI).

```
Error Message %SMART_LIC-6-TRUST_CODE_INSTALL_SUCCESS: A new licensing trust code
 was successfully installed on [chars].
```

Explanation:[chars] is the UDI where the trust code was successfully installed.

Recommended Action: No action is required. If you want to verify that the trust code is installed, enter the **show license status** command in privileged EXEC mode. Look for the updated timestamp under header `Trust Code Installed:` in the output.


```
Error Message %SMART_LIC-4-UTILITY_TRUST_CODE: Trust establishment with an ID TOKEN
 is required before utility usage reporting can start.
```

Explanation:

The utility mode is enabled, and the product instance is directly connected to CSSM using Smart transport, but a trust code is *not* installed. This message is displayed once a week until a trust code is installed or the utility mode is disabled.

If the error condition is detected during normal operation, the message is displayed immediately. It can also be detected at boot time after the system processes the configuration, if the error exists.

Recommended Action:

Complete these tasks: Generating a New Token for a Trust Code from CSSM and Establishing Trust with an ID Token.


```
Error Message %SMART_LIC-4-UTILITY_SUBSCRIPTION_LICENSE: Utility mode is in use with
a license that does not have a subscription id: [chars]
```

Explanation: The utility mode is enabled and a license without a subscription ID is in use. [chars] is the license that is in use. This message is generated only once for each license.

Possible reasons for this include:

- If a license with a subscription ID was in use and then new subscription information is returned in a RUM ACK that does not include an ID for this license.
- If the utility mode is enabled and the license is in-use some time after that, this system message is generated 30 days later, if a subscription ID is not available.
- Delayed communication. There may be a lag between the time that you enabled the utility mode and when the subscription ID and other utility information in the RUM ACK is available on the product instance. For example, if you use CSLU or SSM On-Prem, when the product instance receives information will depend on when CSLU or SSM On-Prem is scheduled to synchronize with the product instance.

Note Note that this system message is not generated if an authorization code is installed for the entitlement tag.

Recommended Action:

If the licenses that you are using do not have subscription IDs, you can order them in CCW. The licenses and corresponding subscription IDs, are deposited in the Smart Account and Virtual Account in CSSM.

If the licenses that you are using already have subscription IDs, and you are still seeing this message because of delayed communication, you can initiate an on-demand synchronization based on the topology you have implemented:

- If you have implemented a topology where the product-instance initiates communication, that is, *Connected Directly to CSSM* or topology, or *Connected to CSSM Through CSLU* (product-instance initiated mode), or *CSLU Disconnected from CSSM* (product-instance initiated mode), or*SSM On-Prem Deployment* (product-instance initiated mode), enter the **license smart sync** command in privileged EXEC mode.
- If you have implemented a topology where CSLU or SSM On-Prem initiate communiation, that is, *Connected to CSSM Through CSLU* (CSLU-initiated mode), or *CSLU Disconnected from CSSM* (CSLU-initiated mode), or *SSM On-Prem Deployment* (CSLU-initiated mode), then from the CSLU or SSM On-Prem UI, initiate an on-demand synchronization with the product instance.
- If using the *No Connectivity to CSSM and No CSLU* topology, install the ACK on the product instance: Installing a File on the Product Instance.

```
Error Message %SMART_LIC-4-UTILITY_NO_ACK: A Usage report acknowledgement has not
been received in the last [dec] days. An Acknowledgement is required every 30 days.
```

Explanation: A RUM ACK message has not been received within the last 30 days. [dec] is the number of days.

In the utility mode, a RUM ACK is required every 30 days. This message will be generated every 30 days until the a RUM ACK is received.

Possible reasons for this include:

- Connectivity problems. Depending on thetopology you have implemented, this can mean a connectivity problem with CSSM, or CSLU, or SSM On-Prem
- Delayed communication. There may be a lag between the time that a RUM Report is sent and the RUM ACK is available on the product instance. For example, if you use CSLU or SSM On-Prem, when the product instance receives information will depend on when CSLU or SSM On-Prem is scheduled to synchronize with the product instance.

Recommended Action:

In case of connectivity problems, refer to the troubleshooting steps that apply to your topology: %SMART_LIC-3-COMM_FAILED.

If RUM reports have been sent, the output of the **show license all** command, field `Next report push` will reflect this informaiton. But if an ACK is not available in case of delayed communication, initiate an on-demand synchronization based on the topology you have implemented:

- If you have implemented a topology where the product-instance initiates communication, that is, *Connected Directly to CSSM* or topology, or *Connected to CSSM Through CSLU* (product-instance initiated mode), or *CSLU Disconnected from CSSM* (product-instance initiated mode), or*SSM On-Prem Deployment* (product-instance initiated mode), enter the **license smart sync** command in privileged EXEC mode.

- If you have implemented a topology where CSLU or SSM On-Prem initiate communiation, that is, *Connected to CSSM Through CSLU* (CSLU-initiated mode), or *CSLU Disconnected from CSSM* (CSLU-initiated mode), or *SSM On-Prem Deployment* (CSLU-initiated mode), then from the CSLU or SSM On-Prem UI, initiate an on-demand synchronization with the product instance.
- If using the *No Connectivity to CSSM and No CSLU* topology, install the ACK on the product instance: Installing a File on the Product Instance.

If an ACK is still not successfully received, contact your Cisco technical support representative.

```
Error Message %SMART_LIC-4-UTILITY_TRANSPORT_NOT_CONFIG: To support utility mode
the transport must be set to 'smart transport' or 'cslu'.
```

Explanation: The utility mode is enabled, but the transport type is not set correctly. This system message is generated once-a-week until the correct transport setting is configured, or the utility mode is disabled.

If the error condition is detected during normal operation, the message is displayed immediately. It can also be detected at boot time after the system processes the configuration, or if you change the transport mode or utility mode.

Recommended Action:

In the utility mode, the transport type must be **`smart`**, or **`cslu`**, or **`off`**. Configure the transport mode depending on the topology you have implemented: Setting the Transport Type, URL, and Reporting Interval.

```
Error Message %SMART_LIC-3-UTILITY_REPORT_FAILED: Smart Agent for Licensing Utility
 has failed to send usage Report.
```

Explanation: Because of a communications failure, the product instance failed to send the RUM report.

Recommended Action:

Check if the RUM report is due any time soon. If not, and the problem is with a server or link that is down, you can try again after some time.

If the communication failure persists, check if the transport type and URL have been set as required by the topology.

Also see %SMART_LIC-3-COMM_FAILED.

If the communication failure persists, contact your Cisco technical support representative.

```
Error Message %SMART_LIC-6-UTILITY_STARTED: Smart Agent for Licensing Utility has
started sending usage reports
```

Explanation: Product instance communication with either the CSSM, CSLU, or SSM On-Prem is restored.

Recommended Action: No action required.

```
Error Message %SMART_LIC-6-UTILITY_STOPPED: Smart Agent for Licensing Utility has
stopped sending usage reports
```

Explanation: The utility mode is disabled.

Recommended Action: No action required.

RUM reports continue to be sent, but they are not flagged as being in the utility mode.
