Configuring the Cisco IOS Software Activation Feature

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This document describes the tasks used to activate software by using the Cisco IOS Software Activation feature, license keys, and Cisco EXEC commands. When you activate software from a Cisco device, you can license software without the need for additional application software.

Finding Feature Information in This Module

Your software release might not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the"Feature Information for Cisco IOS Software Activation" section on page 21.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Contents

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Restrictions for Cisco IOS Software Activation

- Not all Cisco router and switch platforms can use the Cisco IOS Software Activation feature. Use the Cisco Feature Navigator at http://www.cisco.com/go/cfn and the table in the "Feature Information for Cisco IOS Software Activation" section on page 21 to determine which platforms and images support the Cisco IOS Software Activation feature.
- Cisco IOS Software Activation is supported only on the Cisco ASR 1001 router with Cisco IOS XE Release 3.2S. This feature is not supported on other Cisco ASR routers.
- The ASR1001 router does *not* support these software activation items in Cisco IOS XE Release 3.2S:
  - Evaluation, counted, and subscription licenses
  - The **license agent** configuration commands (including **clear** and **show** commands)
  - The Cisco License Call Home feature
- Some licensing operations (such as installation, upgrade, and rehosting) might affect the state of licensing on the router. When this type of license operation is completed, the ASR 1001 router (the license agent daemon) tries to update its status at a Cisco-supplied Java servlet HttpListenServlet that is used by Cisco License Manager. This servlet is unreachable by the router, and the status update does not occur. As a result, the status of license operation (install, revoke, clear, annotate) will not be updated by Cisco License Manager. The Cisco License Manager user must manually start a license poll operation to update the current state.

How to Activate Software from a Cisco IOS Device

Installing and Upgrading Licenses by Using Software Activation Commands

Use this task to install or upgrade a license by using the software activation commands.

If you use Microsoft Entourage and receive the license file from Cisco in an e-mail attachment, the license file will contain UTF-8 marking. These extra bytes in the license file cause it to be unusable during license installation. To work around this issue, you can use a text editor to remove the extra characters and then install the license file. For more information about UTF-8 encoding, go to this URL: http://www.w3.org/International/questions/qa-utf8-bom.

Prerequisites

Read and understand the concepts in the "License Activation Processes" section of the *Cisco IOS Software Activation Conceptual Overview* module.

You can perform this task to install or upgrade a license by using the Cisco IOS **license install** command. You must have already received the license file from the Cisco Product License Registration portal at http://www.cisco.com/go/license (or you already backed up the license by using the Cisco IOS **license save** command).

Restrictions

The installation process does not install duplicate licenses. This message appears when duplicate licenses are detected:

```
Installing...Feature:xxx-xxx-xxx...Skipped:Duplicate
```

SUMMARY STEPS

1. Obtain the product authorization key (PAK).
2. **enable**
3. **show license udi**
4. Convert the PAK to a license by entering the PAK and the unique device identifier (UDI) into the Cisco Product License Registration portal: http://www.cisco.com/go/license.
5. **license install file** *stored-location-url*
6. **reload**

DETAILED STEPS

	Command or Action	Purpose
Step 1	Obtain the PAK.	The PAK is provided to you when you order or purchase the right to use a feature set for a particular platform. • The PAK serves as a receipt and is used as part of the process to obtain a license.
Step 2	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 3	**show license udi** **Example:** `Router# show license udi`	Displays all the UDI values that can be licensed in a system. • You need the UDI of the device as part of the process to obtain a license.
Step 4	Convert the PAK to a license by entering the PAK and the UDI into the Cisco Product License Registration portal: http://www.cisco.com/go/license.	After entering the appropriate information, you will receive an e-mail containing the license information that you can use to install the license: • Copy the license file received from the Cisco Product License Registration portal to the either bootflash or to usb0 on the device. or • Click the **Install** button on the web page.

	Command or Action	Purpose
Step 5	**license install file** *stored-location-url* **Example:** `Router# license install file bootflash:throughput-license`	Installs the license. • Accept the end-user license agreement if prompted.
Step 6	**reload** **Example:** `Router# reload`	Restarts the device to enable the new feature set.

Managing Licenses by Using Software Activation Commands

- Adding a Comment to a License File, page 5 (optional)
- Saving All Licenses to a Specified Storage Area, page 5 (optional)
- Saving License Credential Information Associated with a Device to a Specified Storage Area, page 6 (optional)
- Displaying All Licenses in a Device, page 7 (optional)
- Displaying Detailed Information about Licensed Features, page 7 (optional)
- Displaying Licensed Feature Sets Available in an Image, page 8 (optional)

Adding a Comment to a License File

Perform this task to add comments to a license file.

SUMMARY STEPS

1. **enable**
2. **license comment add feature** *feature-name comment*
3. **show license file**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license comment add feature** *feature-name comment* **Example:** `Router# license comment add feature throughput "Use this permanent license"`	Adds information about a specific license. • When the license is present in license storage and multiple license lines are stored, you are prompted to select a license line. To select the license, type the number at the Select Index to Add Comment prompt.
Step 3	**show license file** **Example:** `Router# show license file`	Displays comments added to a Cisco software license file.

Saving All Licenses to a Specified Storage Area

Perform this task to save copies of all licenses to a specified storage area. Saved licenses are restored by using the **license install** command.

SUMMARY STEPS

1. **enable**
2. **license save file** *file-sys:filename*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license save file** *file-sys:filename* **Example:** `Router# license save file bootflash:all_licenses.lic`	Saves copies of all licenses in a device to the specified file system with the specified name.

Saving License Credential Information Associated with a Device to a Specified Storage Area

Perform this task to save license credential information associated with a device to a specified storage area.

Prerequisites

Before you can start the rehost or resend process, a device credential is required. Cisco IOS licensing requires that the license files generated by the Cisco back-end licensing system for its devices be secure and tamper-resistant. Security features are in place to authenticate a license by means of encrypted license credentials. If it becomes necessary to transfer a license from one device to another (which is called rehosting), a permission ticket is required. To generate the permission ticket, the Cisco back-end licensing system requires the device credential information.

SUMMARY STEPS

1. **enable**
2. **license save credential file** *file-sys:filename*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license save credential file** *file-sys:filename* **Example:** `Router# license save credential file bootflash:cred.lic`	Saves credential information associated with a device to the specified file system with the specified name.

Displaying All Licenses in a Device

Perform this task to display all licenses in a device.

SUMMARY STEPS

1. **enable**
2. **show license all**
3. **show version**
4. **show logging**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show license all** **Example:** `Router# show license all`	Displays information about all licenses in the device. • If there are no licenses in the router, this command displays nothing. Use the **show version** command instead.
Step 3	**show version** **Example:** `Router# show version`	Displays information about the currently loaded software, including licensing information and the current license level.
Step 4	**show logging** **Example:** `Router# show logging`	(Optional) Displays the status of the throughput license feature. • The status of the throughput feature license is also provided in the log files at bootup; for example: `*Oct 19 13:25:23.241 EDT: %CMRP-6-THROUGHPUT_LICENSE: R0/0: cmand: Throughput license found, throughput set to 5G`

Displaying Detailed Information about Licensed Features

Perform this task to display detailed information about licensed features.

SUMMARY STEPS

1. **enable**
2. **show license detail** [*feature-name*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show license detail** [*feature-name*] **Example:** `Router# show license detail`	Displays detailed information about all licensed features or the specified licensed feature.

Displaying Licensed Feature Sets Available in an Image

Perform this task to display the licensed feature sets available in an image.

SUMMARY STEPS

1. **enable**
2. **show license feature**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show license feature** **Example:** `Router# show license feature`	Displays a list of licensed features available in an image.

Removing Licenses by Using Software Activation Commands

- Removing a License Entry from a Permanent License File, page 9 (optional)
- Removing an "In-Use" License, page 9 (optional)
- Rehosting (Revoking and Transferring) a License, page 11 (optional)

Removing a License Entry from a Permanent License File

Perform this task to remove a license entry from a permanent license file.

Restrictions

- The **license clear** command clears all licenses that are *not* "in-use." To remove an "in-use" license, see the "Removing an "In-Use" License" section on page 9.
- If a license is not "in-use," the **license clear** command displays all the licenses related to this feature and prompts you to make a selection. Different prompts are displayed, depending upon whether single or multiple licenses are available in the device. The selected licenses are removed from the router.
- If a license is "in-use," the **license clear** command will fail.

SUMMARY STEPS

1. **enable**
2. **license clear** *feature-name*
3. **show license detail**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license clear** *feature-name* **Example:** `Router# license clear gsmamrnb-codec-pack`	Removes a license entry from license storage. • You must select the index number of the license to clear. Enter the number at the Select Index to Clear prompt.
Step 3	**show license detail** **Example:** `Router# show license detail`	Verifies that the license has been cleared.

Removing an "In-Use" License

Perform this task to remove an "in-use" license.

Restrictions

Only image-level "in-use" licenses can be removed on the ASR 1001 router in Cisco IOS XE Release 3.2S. Once the throughput feature license is "in-use," it cannot be cleared.

SUMMARY STEPS

1. **enable**
2. **show license all**
3. **configure terminal**
4. **license boot module** *module-name* **group** {**all** | **feature**} **level** *license-level*
5. **exit**
6. **reload**
7. **enable**
8. **show license all**
9. **license clear** *feature-name*
10. **show license all**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show license all** **Example:** `Router# show license all`	Displays the status of all licenses. • If the license that you want to remove is "not in-use," see the "Removing a License Entry from a Permanent License File" section on page 9. • If the license that you want to remove is "in-use," go to the next step.
Step 3	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 4	**license boot module** *module-name* **group** {**all** | **feature**} **level** *license-level* **Example:** `Router(config)# license boot module asr1001 group all level ipbase`	Boots the router at a level that is different than the current one.
Step 5	**exit** **Example:** `Router(config)# exit`	Returns to privileged EXEC mode
Step 6	**reload** **Example:** `Router# reload`	Reloads the router.

	Command or Action	Purpose
Step 7	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 8	**show license all** **Example:** `Router# show license all`	Displays the status of all licenses. • Verifies that the router loaded the specified level and that the license to be removed is no longer "in-use."
Step 9	**license clear** *feature-name* **Example:** `Router# license clear advipservices`	Removes a license entry from license storage • You must select the index number of the license to clear. Enter the number at the Select Index to Clear prompt.
Step 10	**show license all** **Example:** `Router# show license all`	Displays the status of all licenses in the system. • Verifies that the license you cleared is removed from the system.

Rehosting (Revoking and Transferring) a License

Perform this task to rehost (revoke and transfer) a license. The **license revoke** command removes the original, permanent license from the device and provides a license for the new device.

Prerequisites

Read and understand the concepts in the "License Transfer between Devices" section of the *Cisco IOS Software Activation Conceptual Overview* module.

Cisco IOS licensing requires that the license files generated by the Cisco back-end licensing system for its devices be secure and tamper-resistant. Security features are in place to authenticate a license by means of encrypted license credentials. Rehosting requires a permission ticket. To generate the permission ticket, the Cisco back-end licensing system requires the device credential information. Use the **license save credential** command to save device credential information to a specified file system.

SUMMARY STEPS

1. **enable**
2. **license revoke** *permission-file-url output-rehost-ticket-url*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license revoke** *permission-file-url output-rehost-ticket-url* **Example:** `Router# license revoke bootflash:ramanp/pt.lic bootflash:rt.lic`	Revokes and transfers a license by using the permission ticket provided by the Cisco back-end licensing system. • An end-user license agreement is displayed for all grace-period licenses in the permission ticket. • You must read and accept the agreement. If you do not accept the agreement, the rehost operation stops.

Troubleshooting License Operations by Using Software Activation Commands

Perform this task to troubleshoot license operations.

SUMMARY STEPS

1. **enable**
2. **show license file**
3. **show license status**
4. **debug license** {**core** {**all** | **errors** | **events**} | **errors** | **ipc**}
5. **request platform software trace rotate all**
6. **no debug license** {**core** {**all** | **errors** | **events**} | **errors** | **ipc**}

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show license file** **Example:** `Router# show license file`	Displays license entries and license details stored in a Cisco software license file.
Step 3	**show license status** **Example:** `Router# show license status`	Displays the status of licenses in the system.

	Command or Action	Purpose
Step 4	**debug license** {**core** {**all** | **errors** | **events**} | **errors** | **ipc**} **Example:** `Router# debug license errors`	Enables controlled Cisco IOS software license debugging activity on a device.
Step 5	**request platform software trace rotate all** **Example:** `Router# request platform software trace rotate all`	Puts the output from the **debug license** command into standard IOS format and makes it available on bootflash. • Examine the output in the log files in the bootflash:tracelogs directory.
Step 6	**no debug license** {**core** {**all** | **errors** | **events**} | **errors** | **ipc**} **Example:** `Router# no debug license errors`	Disables license debugging activity on a device.

Configuring Examples for Software Licensing

Example: Installing and Upgrading Licenses

The following example shows how to use the **license install** command to install a license from the bootflash system on the Cisco ASR 1001 router:

```
Router# license install file bootflash:1ru_bu2-throughput-license
Installing...Feature:throughput...
1/1 licenses were successfully installed
0/1 licenses were existing licenses
0/1 licenses failed to install
```

Example: Adding a Comment to a License File

The following example shows how to use the **license comment** command to add or delete information about a specific license. The command checks that a license associated with the specified feature is present in license storage.

```
Router# license comment add feature throughput "the latest one"
Feature: throughput
     1  License Type: Permanent
        License State: Active, In Use
        License Addition: Exclusive
        License Count: Non-Counted
        Comment: --
        Store Name: Primary License Storage

% Success: Updating comment "--" with "the latest one" succeeded

Router#
*Aug 16 13:29:38.351 EDT: %LICENSE-6-ANNOTATED: R0/0: licensed: License for feat
ure throughput 1.0 has been annotated, UDI=ASR1001:JAE14020AT5, StoreIndex=0:Pri
mary License Storage, Comment=the latest one

Router# show license file

License Store: Primary License Storage
  Store Index: 0
    License: 11 throughput 1.0 LONG NORMAL STANDALONE EXCL INFINITE_KEYS INFIN
             ITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *12MDFXFBE6TEQR54
             00 NiL NiL NiL 5_MINS <UDI><PID>ASR1001</PID><SN>JAE14020AT5</SN>
             </UDI> :0oy5aopCvhfLBBk3:l0fBb4Kr3EwMLaYAHDV93ClpLXhJGOUE1ZuBusC,
             0B2QIQLvo6eUrKn27faF3zOYTTyjLRCGA8UMkemMyqmvjcg0Jhfm$<WLC>AQEBIQA
             B//8szae77QGOnFBXBoP02Obx6Fq2XtGPUJnh5pGplTkDzw9J5aqkkUjTNkuO4sv4
             FYORqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21MNUjVb
             hoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XC
             Y=</WLC>
    Comment: the latest one
       Hash: ZJJz5MveEOPePQA3ATs6+OxF4bw=
  Store Index: 1
    License: 11 adventerprisek9 1.0 LONG NORMAL STANDALONE EXCL INFINITE_KEYS
             INFINITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *12MDFXFBE6T
             EQR5400 NiL NiL NiL 5_MINS <UDI><PID>ASR1001</PID><SN>JAE14020AT5
             </SN></UDI> dFCG4MGqCj5nRQGYuTNELNjulmgkdTIxsGBaysKmB1f8it6t76IbU
             1nDky:q5h843EeHBw9JMwZWcMfbveX8j93UWZckXYU8gSablS79TVo5Vg$<WLC>AQ
             EBIQAB///Y5fwUA9AySxZ1dkpw8MgMeMEbPYi4rEAcdDnsmUIwbp0xMUblmtUwhaC
             QMd/pCaGRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21M
             NUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5
             Ko8XCY=</WLC>
    Comment:
       Hash: 7AlBc9W0+DqIdv/3EgOMsXW19Xs=
Router#
```

Example: Saving All Licenses to a Specified Storage Area

The following example shows how to use the **license save** command to save a license named throughput-license to bootflash:

```
Router# license save file bootflash:throughput-license
license lines saved ..... to bootflash/throughput-license
```

Example: Removing a "Not In-Use" License

The following example shows how to display the installed licenses on an ASR 1001 router and how to clear the throughput license, which is "not in-use." Note that active, in-use licenses cannot be cleared:

```
Router# show license all

License Store: Primary License Storage
StoreIndex:  0  Feature: throughput                      Version: 1.0
        License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
            Evaluation total period:  4 weeks  2 days
            Evaluation period left:  0 minute   0 second
        License Count: Non-Counted
        License Priority: Low

Router# license clear throughput
Feature: throughput
     1  License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
            Evaluation total period:  4 weeks  2 days
            Evaluation period left:  0 minute   0 second
        License Addition: Additive
        License Count: Non-Counted
        Comment:
        Store Name: Primary License Storage


Are you sure you want to clear? (yes/[no]): yes
Router#
```

Example: Removing an "In-Use" License

The following example shows how to display the installed licenses on an ASR 1001 router and remove the advipservices license that is "in-use." To remove the "in-use" license, the router is configured to boot the ipbase level after reloading, which means that the advipservices license is no longer "in-use." The following example is truncated for readability:

```
Router# show license all

License Store: Primary License Storage
StoreIndex:  0  Feature: advipservices                   Version: 1.0
  License Type: Permanent
  License State: Active, In Use
  License Count: Non-Counted
  License Priority: Medium
License Store: Primary License Storage
StoreIndex:  1  Feature: adventerprise                   Version: 1.0
  License Type: Permanent
  License State: Active, Not in Use
  License Count: Non-Counted
  License Priority: Medium
Router# license clear advipservices
Feature: advipservices
     1 License Type: Permanent
  License State: Active, In Use
  License Addition: Exclusive
  License Count: Non-Counted
  Comment:
  Store Name: Primary License Storage
```

```
Are you sure you want to clear? (yes/[no]): yes
%Clear failed due to license in use
Router# configure terminal
Router(config)# license boot module asr1001 group all level ipbase
Router(config)# exit
Router# reload
.
.
.
Router> enable
Router# show license all

License Store: Primary License Storage
StoreIndex:  0  Feature: advipservices                    Version: 1.0
  License Type: Permanent
  License State: Active, Not in Use
  License Count: Non-Counted
  License Priority: Medium
License Store: Primary License Storage
StoreIndex:  1  Feature: adventerprise                    Version: 1.0
  License Type: Permanent
  License State: Active, Not in Use
  License Count: Non-Counted
  License Priority: Medium
Router# license clear advipservices
Feature: advipservices
     1 License Type: Permanent
  License State: Active, Not in Use
  License Addition: Exclusive
  License Count: Non-Counted
  Comment:
  Store Name: Primary License Storage


Are you sure you want to clear? (yes/[no]): yes

Router#
*Oct 13 11:31:58.844 EDT: %LICENSE-6-REMOVE: R0/0: licensed: Feature advipservices 1.0 was
removed from this device,
UDI=ASR1001:JAE14140D8L, StoreIndex=0:Primary License Storage

Router# show license all
License Store: Primary License Storage
StoreIndex:  1  Feature: adventerprise                    Version: 1.0
  License Type: Permanent
  License State: Active, In Use
  License Count: Non-Counted
  License Priority: Medium
```

Example: Rehosting (Revoking and Transferring) a License

The following example shows how to use the **license revoke** command to revoke a license stored in flash memory and transfer it to another location in flash memory. You might need to read and accept the terms and conditions of the license type being transferred. The following example is truncated for readability:

```
Router# license revoke bootflash:/ramanp/pt.lic bootflash:rt.lic

Following Permanent license(s) will be revoked from this device
    Feature Name: standard

Following Extension license(s) will be installed in this device
    Feature Name: standard

PLEASE  READ THE  FOLLOWING TERMS  CAREFULLY. . .

ACCEPT? [yes/no]: yes
Issue 'license feature standard' command to enable the license
Rehost ticket saved ..... to bootflash:rt.lic
```

Example: Generic Commands Enhanced with Licensing Information

The generic commands described in the following sections are enhanced with licensing information:

- show tech-support, page 17
- show version, page 18

show tech-support

The **show tech-support** command displays the output of the **show license udi** and **show license image-levels** commands. The display is truncated to focus on only these sections:

```
Router# show tech-support

License Info:

License UDI:
Device# PID                     SN                      UDI
------------------------------------------------------------------------------
*0      ASR1001                 JAE14020AT5             ASR1001:JAE14020AT5


License Package Information for Module:'asr1001'


Module name   Image level          Priority   Configured   Valid license

asr1001       adventerprise        1          NO           adventerprise
              advipservices        2          YES          advipservices
              ipbase               3          NO           ipbase

Current License Level: ipbase

cisco ASR1001 (1RU) processor with 3869710K/6147K bytes of memory.
4 Gigabit Ethernet interfaces
1 Ten Gigabit Ethernet interface
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
7782399K bytes of eUSB flash at bootflash:.
```

```
78085207K bytes of SATA hard disk at harddisk:.

Configuration register is 0x0
```

show version

The **show version** command displays the license UDI information:

```
Router# show version

Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Experimen
tal Version 15.1(20100825:030133) [mcp_dev-BLD-BLD_MCP_DEV_LATEST_20100825_01011
7-ios 132]
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Tue 24-Aug-10 21:21 by mcpre


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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.


ROM: IOS-XE ROMMON

1ru_bu2 uptime is 1 day, 46 minutes
Uptime for this control processor is 1 day, 47 minutes
System returned to ROM by reload
System image file is "bootflash:asr10001ru-universalk9.BLD_MCP_DEV_LATEST_201008
25_01"
Last reload reason: Reload Command



This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.


License Info:
License UDI:
Device# PID                     SN                      UDI
------------------------------------------------------------------------------
*0      ASR1001                 JAE14020AT5             ASR1001:JAE14020AT5


License Package Information for Module:'asr1001'
```

```
Module name    Image level          Priority   Configured   Valid license

asr1001        adventerprise        1          NO           adventerprise
               advipservices        2          YES          advipservices
               ipbase               3          NO           ipbase

Current License Level: ipbase

cisco ASR1001 (1RU) processor with 3869710K/6147K bytes of memory.
4 Gigabit Ethernet interfaces
1 Ten Gigabit Ethernet interface
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
7782399K bytes of eUSB flash at bootflash:.
78085207K bytes of SATA hard disk at harddisk:.

Configuration register is 0x0
Router#
```

Additional References

Related Documents

Related Topic	Document Title
Cisco License Manager application	*User Guide for Cisco License Manager*
Cisco IOS Software Activation conceptual overview	*Cisco IOS Software Activation Conceptual Overview*
Cisco IOS Software Activation Command Reference	*Cisco IOS Software Activation Command Reference*
Cisco IOS commands	*Cisco IOS Master Commands List, All Releases*

Standards

Standard	Title
None	—

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for Cisco IOS Software Activation

Table 1 lists the features in this module and provides links to specific configuration information.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Note Table 1 lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 1 Feature Information for Cisco IOS Software Activation

Feature Name	Releases	Feature Information
Cisco IOS Software Activation	Cisco IOS XE Release 3.2S	Cisco IOS Software Activation EXEC commands support basic licensing processes. These sections provide information about this feature: • Installing and Upgrading Licenses by Using Software Activation Commands, page 2 • Managing Licenses by Using Software Activation Commands, page 4 • Removing Licenses by Using Software Activation Commands, page 8 • Troubleshooting License Operations by Using Software Activation Commands, page 12 These commands were introduced or modified by this feature: **debug license**, **license boot module**, **license clear**, **license comment**, **license install**, **license modify priority**, **license revoke**, **license save**, **license save credential**, **show license**.