show license through snmp-server host

show license

To display information about a Cisco IOS software license, use the **show license** command in privileged EXEC mode.

Cisco ASR 903 Routers
show license [{**agent** {**counters** | **session**} | **all** | **detail** [*feature-name*] | **feature** | **file** | **handle** | **image levels** | **statistics** | **status** | **udi**}]

Cisco ASR 1001 Routers
show license [{**EULA** | **agent** | **all** | **call-home** | **detail** [*feature-name*] | **feature** | **file** | **right-to-use** | **statistics** | **status** | **udi**}]

Cisco 4400 Series Integrated Services Routers
show license [{**EULA** | **agent** | **all** | **call-home** | **detail** [*feature-name*] | **feature** | **file** | **right-to-use** | **statistics** | **status** | **udi**}]

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms
show license [{**agent** {**counters** | **session**} | **all** | **detail** [*feature-name*] | **feature** | **file** | **statistics** | **status** | **udi** [**modules**]}]

Cisco Catalyst 3560-E and Cisco Catalyst 3750-E Switch and Switch Stack Platforms
show license [{**agent** {**counters** | **session**} | **all** | **detail** [*feature-name*] | **feature** | **file** | **image levels** | **statistics** | **status** | **udi** [**modules**] **switch** *switch-num*}]

Cisco Catalyst 3750-E Mixed Switch Stacks
show license [{**agent** {**counters** | **session**} | **detail** {*feature-name* **switch** *switch-num* | **switch** *switch-num*} | [{**all** | **feature** | **file** | **status** | **udi** [**modules**]}] **switch** *switch-num*}]

Cisco CSR 1000V Series Cloud Services Routers
show license [{**EULA** | **agent** | **all** | **call-home** | **detail** [*feature-name*] | **feature** | **file** | **handle** | **statistics** | **status** | **udi** [**history**]}]

Cisco uBR10012 Universal Broadband Routers
show license [{[**agent** {**counters** | **session**}] | **detail** {*feature-name* **subslot** *slot/subslot* | **subslot** *slot/subslot*} | **udi** [{**subslot***slot/subslot*}]}] {**all** | **feature** | **file** | **status** | **udi** [**modules**]} **switch** *switch-num*

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers
show license [{[**agent** {**counters** | **session**}]}]
detail {*feature-name* **slot** *slot* | **slot** *slot*} | **udi** [{**slot***slot*}]
{**all** | **feature** | **file** | **status** | **udi** [**modules**]} **switch** *switch-num*

Syntax Description	agent	Shows information about a license agent.
	counters	Shows statistics counters for the license agent.
	session	Shows session information related to a license agent.
	all	Shows information about all licenses in the system.

detail *feature-name*	Shows detailed information about a specified licensed feature or about all licenses.
EULA	Shows information about the End User License Agreement.
expiring	Shows all available expiring licenses.
feature	Shows a list of licensed features available in an image.
file	Shows license entries stored in the license file.
handle	Shows license handle information.
image levels	Shows license image levels.
image-levels	Shows license image levels.
in-use	Show all available in-use licenses.
permanent	Show all available permanent licenses.
right-to-use	Show all available right-to-use licenses.
statistics	Shows license statistics information.
status	Shows information about supported license types and license operations, and provides device status.
udi	Shows all the unique device identifier (UDI) values that can be licensed in a system.
modules	Shows the hierarchical relationship between the UDI modules.
history	Shows the UDI history.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The range is 1 to 9.
subslot	Shows the slot and subslot information of a line card.
slot	Shows the slot information of a line card.
slot **/**	Slot where the line card resides: • Cisco uBR7246VXR router—The range is 3 to 6. • Cisco uBR7225VXR router—The range is 1 to 2. • Cisco uBR10012 router—The range is 5 to 8.
subslot	The subslot number is 0 or 1.

Command Modes   Privileged EXEC (#)

Command History

Release	**Modification**
12.2(35)SE2	This command was introduced.

Release	Modification
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC on the Cisco UBR-10 MC20X20V line card.
15.0(1)M	This command was modified. The **modules** keyword was added.
12.2(33)SCD	This command was modified. The **subslot** *slot* / *subslot* keyword and arguments were added for the Cisco uBR7225VXR and Cisco uBR7246VXR routers.
Cisco IOS XE Release 3.2S	This command was modified. The **expiring**, **image-levels**, **in-use**, and **permanent** keywords were added for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.3S	This command was modified. The output for the **show license feature** command now includes information about the cube_ent-100 feature license for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was modified. The **handle** keyword was added for the Cisco ASR 903 router.
Cisco IOS XE Release 3.9S	This command was modified. The **EULA** and **UDI history** keywords were added for the Cisco CSR 1000V router. This command was implemented on Cisco 4400 Series ISRs.

Usage Guidelines

Use this command to display license information and to help with troubleshooting issues related to Cisco IOS software licenses. This command displays all the licenses in the system.

This command also displays the features that are available but not licensed to execute. Output is grouped according to how the features are stored in license storage.

If a switch number is specified, information from that switch is displayed. If a switch number is not specified, details of the local switch are displayed.

If the **show license all** command displays the license as *Active, Not in Use, EULA not accepted*, you can use the **license boot module** global configuration command to enable the license and accept the end-user license agreement (EULA). Do not confuse the **license boot module** global configuration command with a similarly named command available in privileged EXEC mode.

Cisco uBR10012 Universal Broadband Router Usage Guidelines

In a Cisco uBR10012 router, the line card is identified with a slot ID, which is a combination of the *slot* / *subslot*. Use the **subslot** keyword with the **show license** command syntax, when appropriate.

The **show license udi** command shows the UDI values for all cable interface line cards. When the command is used with the **subslot** keyword, the UDI value for the specified line card is displayed.

Keywords such as **all**, **detail**, **feature**, **file**, and **status** require the **subslot** *slot* / *subslot* keyword and arguments to execute the **show license** command.

To enable evaluation license on the Cisco uBR10012 router, use the **license modify** command.

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers Usage Guidelines

To enable evaluation license on the Cisco uBR7225VXR and Cisco uBR7246VXR routers, use the **license modify** command.

Note The **agent** keyword is not supported in Cisco IOS Release 12.2(33)SCD on the Cisco uBR7225VXR and on the Cisco uBR7246VXR routers.

Examples The following is sample output from the **show license agent counters** command:

```
Router# show license agent counters
License Agent Counters
Request Messages Received:0: Messages with Errors:0
Request Operations Received:0: Operations with Errors:0
Notification Messages Sent:0: Transmission Errors:0: Soap Errors:0
```

The following is sample output from the **show license all** command on the Cisco ASR 1001 router:

```
Router# show license all
License Store: Primary License Storage
StoreIndex:  0  Feature: throughput                    Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
License Store: Primary License Storage
StoreIndex:  4  Feature: adventerprisek9                Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
```

The table below describes the significant fields shown in the display.

Table 1: show license Field Descriptions

Field	Description
Pak Number	Product authorization key number, which is provided to you when you order and 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.
SKU Name	Stock keeping unit name, which maps to one or more Cisco software features.
Description	Description provided for the SKU.
Ordered Qty	Quantity ordered.
Feature List	List of features.
Platform Supported	List of Cisco device platforms supported.

The following is sample output from the **show license detail** command:

```
Router# show license detail
Index: 1        Feature: SNASw                         Version: 1.0
        License Type: Evaluation
        License State: Active, Not in Use, EULA not accepted
            Evaluation total period: 8  weeks 4  days
```

```
                     Evaluation period left: 8  weeks 4  days
             Lock type: Non Node locked
             Vendor info:
             License Addition: Additive
             License Generation version: 0x8100000
             License Count: Non-Counted
             License Priority: None
             Store Index: 5
             Store Name: Evaluation License Storage
Index: 2        Feature: SSL_VPN                          Version: 1.0
             License Type: Evaluation
             License State: Active, Not in Use, EULA accepted
                 Evaluation total period: 8  weeks 4  days
                 Evaluation period left: 0  minute  0  second
             Lock type: Non Node locked
             Vendor info:
             License Addition: Additive
             License Generation version: 0x8100000
             License Count: 200/0/0  (Active/In-use/Violation)
             License Priority: Low
             Store Index: 4
             Store Name: Evaluation License Storage
Index: 3        Feature: datak9                           Version: 1.0
             License Type: Evaluation
             License State: Active, Not in Use, EULA not accepted
                 Evaluation total period: 8  weeks 4  days
                 Evaluation period left: 8  weeks 4  days
             Lock type: Non Node locked
             Vendor info:
             License Addition: Additive
             License Generation version: 0x8100000
             License Count: Non-Counted
             License Priority: None
             Store Index: 2
             Store Name: Evaluation License Storage
Index: 4        Feature: gatekeeper                       Version: 1.0
             License Type: Evaluation
             License State: Active, Not in Use, EULA accepted
                 Evaluation total period: 8  weeks 4  days
                 Evaluation period left: 0  minute  0  second
             Lock type: Non Node locked
             Vendor info:
             License Addition: Additive
             License Generation version: 0x8100000
             License Count: Non-Counted
             License Priority: Low
             Store Index: 3
             Store Name: Evaluation License Storage
Index: 5        Feature: ios-ips-update                   Version: 1.0
             License Type: Paid Subscription
             Start Date:          N/A, End Date: Jun 16 2010
             License State: Active, Not in Use
             Lock type: Node locked
             Vendor info: <UDI><PID>CISCO3900-MPE140</PID><SN>FHH123000G9</SN></UDI><T>PAS</T>
             License Addition: Exclusive
             License Generation version: 0x8200000
             License Count: Non-Counted
             License Priority: Medium
             Store Index: 0
             Store Name: Primary License Storage
```

The following is sample output from the **show license feature** command on the Cisco ASR 1001 router:

```
Router# show license feature
Feature name      Enforcement   Evaluation   Clear Allowed   Enabled
adventerprisek9   yes           no           yes             yes
advipservicesk9   yes           no           yes             no
ipbasek9          no            no           yes             no
throughput        yes           no           yes             yes
```

The following is sample output from the **show license feature** command on the Cisco 4451-X Integrated Services Router:

```
Router# show license feature
Feature name Enforcement Evaluation Subscription Enabled RightToUse
appxk9       yes         yes        no           yes     yes
uck9         yes         yes        no           no      yes
securityk9   yes         yes        no           no      yes
ipbasek9     no          no         no           no      yes
```

The following is sample output from the **show license file** command:

```
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$<WLC>AQEBIQA
             B//8szae77QGOnFBXBoP02Obx6Fq2XtGPUJnh5pGplTkDzw9J5aqkkUjTNkuO4sv4
             FYORqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21MNUjVb
             hoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XC
             Y=</WLC>
    Comment: --
       Hash: ZJJz5MveEOPePQA3ATs6+OxF4bw=
  Store Index: 1
    License: 11 adventerprisek9 1.0 LONG NORMAL STANDALONE EXCL INFINITE_KEYS
             INFINITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *12MDFXFBE6T
             EQR5400 NiL NiL NiL 5_MINS <UDI><PID>ASR1001</PID><SN>JAE14020AT5
             </SN></UDI> dFCG4MGqCj5nRQGYuTNELNjulmgkdTIxsGBaysKmB1f8it6t76IbU
             1nDky:q5h843EeHBw9JMwZWcMfbveX8j93UWZckXYU8gSablS79TVo5Vg$<WLC>AQ
             EBIQAB///Y5fwUA9AySxZ1dkpw8MgMeMEbPYi4rEAcdDnsmUIwbp0xMUblmtUwhaC
             QMd/pCaGRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21M
             NUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5
             Ko8XCY=</WLC>
    Comment:
       Hash: 7AlBc9W0+DqIdv/3EgOMsXW19Xs=
```

The following is sample output from the **show license image levels** command on the Catalyst 3750E switch:

```
Switch# show license image levels
Module name   Image level(s)   Priority   Configure   Valid license(s)
c3750e        ipservices       2          YES         ipservices;advipservices
              ipbase           3          NO          ipbase
```

The following is sample output from the **show license status** command:

```
Switch# show license status
              License Type Supported
      permanent  Non-expiring node locked license
      extension  Expiring node locked license
      evaluation Expiring non node locked license
```

```
                   License Operation Supported
        install   Install license
        clear     Clear license
        annotate  Comment license
        save      Save license
        revoke    Revoke license
        call-home License call-home
                 Call-home Operation Supported
        show pak  Display license pak via call-home
        install   Install license via call-home
        revoke    Revoke license via call-home
        resend    Fetch license via call-home
                 Device status
        Device Credential type: DEVICE
        Device Credential Verification: PASS
        Rehost Type: DC_OR_IC

SWIFT url status
        Swift URL set to default value : https://tools.cisco.com/SWIFT/Licensing
```

The following is sample output from the **show license udi modules** command:

```
Router# show license udi modules
Location      PID                   SN              UDI
-------------------------------------------------------------------------------------
Slot0         WS-C3750E-24TD-E      CAT1146R04N     WS-C3750E-24TD-E:CAT1146R04N
Slot0/1       WS-C3750E-24TD-E      CAT1146R04X     WS-C3750E-24TD-E:CAT1146R04X
Slot0/1/1     WS-C3750E-24TD-E      CAT1146R04Y     WS-C3750E-24TD-E:CAT1146R04Y
```

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers

The following is sample output from the **show license all** command, where slot 5 denotes the line card for which the license information is requested. The table below describes the fields shown in the command output.

```
Router# show license all slot 5
License Store: Primary License Storage
StoreIndex: 0   Feature: DS_License                   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: 8/8/0  (Active/In-use/Violation)
        License Priority: Medium
StoreIndex: 1   Feature: US_License                   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: 8/8/0  (Active/In-use/Violation)
        License Priority: Medium
License Store: Evaluation License Storage
StoreIndex: 0   Feature: US_License                   Version: 1.0
        License Type: Evaluation
        License State: Inactive
           Evaluation total period: 8  weeks 4  days
           Evaluation period left: 8  weeks 4  days
        License Count: 8/0/0  (Active/In-use/Violation)
        License Priority: None
StoreIndex: 1   Feature: DS_License                   Version: 1.0
        License Type: Evaluation
        License State: Inactive
           Evaluation total period: 8  weeks 4  days
           Evaluation period left: 8  weeks 4  days
```

```
                    License Count: 8/0/0  (Active/In-use/Violation)
                    License Priority: None
```

The following is sample output from the **show license detail** command, where slot 5 specifies the line card for which detailed feature information is requested:

```
Router# show license detail slot 5
Index: 1        Feature: DS_License                      Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: 8/8/0  (Active/In-use/Violation)
        License Priority: Medium
        Store Index: 0
        Store Name: Primary License Storage
Index: 2        Feature: DS_License                      Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period: 8  weeks  4  days
            Evaluation period left: 8  weeks  4  days
        License Count: 8/0/0  (Active/In-use/Violation)
        License Priority: None
        Store Index: 1
        Store Name: Evaluation License Storage
Index: 3        Feature: US_License                      Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: 8/8/0  (Active/In-use/Violation)
        License Priority: Medium
        Store Index: 1
        Store Name: Primary License Storage
Index: 4        Feature: US_License                      Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period: 8  weeks  4  days
            Evaluation period left: 8  weeks  4  days
        License Count: 8/0/0  (Active/In-use/Violation)
        License Priority: None
        Store Index: 0
        Store Name: Evaluation License Storage
```

The following is sample output from the **show license status** command, where slot 5 denotes the line card for which license information is requested:

```
Router# show license status slot 5
License Type Supported
        permanent               Non-expiring node locked license
        extension               Expiring node locked license
        evaluation              Expiring non node locked license
                License Operation Supported
        install    Install license
        clear      Clear license
        annotate   Comment license
        save       Save license
        Modify     Modify license
        revoke     Revoke license
        call-home  License call-home
                Call-home Operation Supported
        show pak   Display license pak via call-home
        install    Install license via call-home
        revoke     Revoke license via call-home
        resend     Fetch license via call-home
                Device status
        Device Credential type: DEVICE
```

```
        Device Credential Verification: PASS
        Rehost Type: DC_OR_IC
SWIFT url status
        Swift URL set to default value : https://tools.cisco.com/SWIFT/Licensing
```

The following is sample output from the **show license feature** command, for the Upstream (US) and Downstream (DS) feature:

```
Router# show license feature slot 5
Feature name            Enforcement  Evaluation  Subscription  Enabled
US_License              yes          yes         no            yes
DS_License              yes          yes         no            yes
```

The following is sample output from the **show license udi** command, where slot 5 specifies the line card for which UDI information is requested:

```
Router# show license udi slot 5
SlotID  PID                   SN                  UDI
-----------------------------------------------------------------------
*5      UBR-MC88U             CSJ12514210    UBR-MC88U:CSJ12514210
```

The following is sample output from the **show license udi** command, when the **slot** keyword is not specified:

```
Router# show license udi
SlotID  PID                   SN                  UDI
-----------------------------------------------------------------------
 5      UBR-MC88U             CSJ12514210    UBR-MC88U:CSJ12514210
```

The table below describes the significant fields shown in the display.

Table 2: show license udi Field Descriptions

Field	Description
SlotID	The slot number of the line card on the Cisco uBR7225VXR or Cisco uBR7246VXR router.
PID	Product identification number. The name by which the product can be ordered.
SN	Serial number. Used to identify an individual, specific instance of a product.
UDI	Unique device identifier. This information is printed on the device and stored electronically on the device to facilitate remote retrieval.

The following is sample output from the **show license file** command:

```
Router# show license file slot 5
License Store: Primary License Storage
  Store Index: 0
    License: 11 DS_License 1.0 LONG NORMAL STANDALONE EXCL 8_KEYS INFINITE_KEY
             S NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1VDWSEZNBXMDUF6400 NiL
             NiL NiL 5_MINS <UDI><PID>UBR-MC88U</PID><SN>CSJ12514210</SN></UDI
             > dai:f7mhotuFuD:1flGnfTcbjjqZNSj4w2ZOJKrlVM3riaI6MhGUsnGkIbk83bi
             U3SpE1bzN4X1TQ8x9HRC93fVHK9eTcFaMsLX6I,G4p4wWfimLew3H0SUSfdspJvyz
             ikLZ$<WLC>AQEBIQAB///Z8GMgzMS3HccHkeioc4KXGR28VwY2ckacKin9G6PtV18
             N/XB0WKmA+Mj6R0tJ+RmRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJ
             VlPyEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ+
             +/Vtc/q3SF/5Ko8XCY=</WLC>
    Comment:
```

```
             Hash: rYHlS/Q7961pN+kZpf3LQ9UR+dY=
       Store Index: 1
         License: 11 US_License 1.0 LONG NORMAL STANDALONE EXCL 8_KEYS INFINITE_KEY
                 S NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1VDWSEZNBXMDUF6400 NiL
                 NiL NiL 5_MINS <UDI><PID>UBR-MC88U</PID><SN>CSJ12514210</SN></UDI
                 > yxU,2eYAsVZXLX1UhO:zfDWS4rE7OZr5g:cYy:rCOcVBi97MjRUZUzWb6Vi8MB2
                 3VVvaGQBN4tni,0BsTsufqgGLjXaryA,NexvAPypO9AJRh3soHjqW,COT2V6fbgzPt
                 5u35$<WLC>AQEBIQAB//9uV7Zp1YcBuFy6gMM/gAYOXR7dm/+O06pGceLT3qUNUug
                 l4skFZoucJkLd0ojdk+mRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJ
                 VlPyEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ+
                 +/Vtc/q3SF/5Ko8XCY=</WLC>
         Comment:
             Hash: Hg6bxVO8ZZITGbFg7NoAQU/QGhs=
   License Store: Evaluation License Storage
       Store Index: 0
         License: 11 US_License 1.0 LONG TRIAL DISABLED 1440 DISABLED STANDALONE AD
                 D 8_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE DEMO NiL NiL Ni N
                 iL NiL 5_MINS NiL V7kIRj,EZLjQ4gpW6nQYL40zCTx,wvk1k9buST3EOhLRys9
                 slYKaMRsXbMSuz3iHfA$<WLC>AQEBIQAB//QgcWXs1rLFOkfnLaMbSpR5sFnSmYb
                 dL0ZcysI1rlNaK9yrCLeW3aidzf+WNvFg86RqwInXo3s+nsLU7rOtdOxoIxYZAo3L
                 YmUJ+MFzsqlhKoJVlPyEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolV
                 zdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XCY=</WLC>
         Comment:
             Hash: Rox9tmRbNJOygotZlWYmr0OOvY4=
       Store Index: 1
         License: 11 DS_License 1.0 LONG TRIAL DISABLED 1440 DISABLED STANDALONE AD
                 D 8_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE DEMO NiL NiL Ni N
                 iL NiL 5_MINS NiL Hp5gBr76OsVcoCNVW8Hi33rQs2xMyd5YU6sDI6oQSdVTrxI
                 vaLwepwAB4GXyk1zvLP$<WLC>AQEBIQAB//8c0JDyC40fqQGUTylDKqaN/AyL43ZV
                 PdJH0HolJAgOF5mjctCLuw5RaXRSPAJ09LaRqwInXo3s+nsLU7rOtdOxoIxYZAo3L
                 YmUJ+MFzsqlhKoJVlPyEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolV
                 zdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XCY=</WLC>
         Comment:
             Hash: 3bm6gofelRl4J0rO/J44poj+dEY=
```

	Command	Description
Related Commands	**license boot module**	Boots a new software license.
	license call-home install	Installs a license using the Cisco License Call Home feature.
	license call-home resend	Restores a lost license by using the Cisco License Call Home feature.
	license call-home revoke	Revokes and transfers a license by using the Cisco License Call Home feature.
	license clear	Removes a license entry from license storage.
	license comment	Add or removes a comment about a feature license.
	license modify priority	Modifies a license priority.
	license save	Saves a copy of a permanent license to a specified license file.

show license call-home

To display the stock keeping unit (SKU) list and features available in a product authorization key (PAK), use the **show license call-home** command in privileged EXEC mode.

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms
show license call-home pak *pak-id*

Cisco uBR10012 Universal Broadband Router
show license [**call-home pak** *pak-id*]

Cisco Catalyst 3560-E and Cisco Catalyst 3750-E Switch Platforms
show license call-home pak *pak-id*

Cisco Catalyst 4500E Series Switch Platforms
show license call-home pak *pak-id*

Syntax Description

pak	Shows the product authorization key.
pak-id	The product authorization key sent through e-mail or through regular mail by manufacturing to authorize software upgrades.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC on the Cisco uBR10012 universal broadband router.
Cisco IOS XE Release 3.3SG	This command was integrated into Cisco IOS XE Release 3.3SG on the Cisco Catalyst 4500E series switch.
15.1(1)SG	This command was integrated into Cisco IOS Release 15.1(1)SG on the Cisco Catalyst 4500E series switch.

Usage Guidelines

The Cisco License Call Home feature allows a Cisco router to communicate with the Cisco licensing infrastructure through the Internet and retrieve licensing information. This command requires that the router be connected to the Internet.

This command requires the following:

- The router or switch must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure. To set up a secure HTTP connection, see the HTTP 1.1 Web Server and Client module in the *Cisco IOS Network Management Configuration Guide*.

- Only certain platforms support the Cisco License Call Home feature, and those devices must be running a Cisco IOS crypto K9 image.

- You must obtain the device certificate from the Cisco licensing infrastructure.

- You need a Cisco.com user login account.

Issuing the **show license call-home** command causes these actions to occur:

- The Cisco licensing infrastructure returns parsed XML content to the command line. The parsed content contains information about SKUs and feature names. The content might also contain warning messages.

- The SKU information and any warning messages are displayed as formatted output on the router command line.

Cisco uBR10012 Universal Broadband Router

In the Cisco uBR10012 universal broadband router, the **call-home** keyword is optional in the **show license** command syntax.

Examples

The following example shows the PAKs and SKUs associated with a software license:

```
Router# show license call-home pak 3XPXR9E7D30
CCO User name : User1
CCO password  : *******
Pak Number        : 3XPXR9E7D30
Pak Fulfillment type: SINGLE
    1. SKU Name            : Gatekeeper
       SKU Type            : Product
       Description         : Gatekeeper
       Ordered Qty         : 1
       Available Qty       : 1
       Feature List        :
           Feature name:        gatekeeper Count: Uncounted
       Platform Supported : 5400
                            5350
                            2800
                            3800
```

The table below describes the significant fields shown in the display.

Table 3: show license call-home Field Descriptions

Field	Description
Pak Number	Product authorization key number, which is provided to you when you order and 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.
SKU Name	Stock keeping unit name, which maps to one or more Cisco software features.
Description	Description provided for the SKU.
Ordered Qty	Quantity ordered.
Feature List	List of features.
Platform Supported	List of Cisco device platforms supported.

Related Commands

Command	Description
license call-home install	Installs a license by using the Cisco License Call Home feature.
license call-home resend	Restores a lost license by using the Cisco License Call Home feature.
license call-home revoke	Rehosts (revokes and transfers) a license by using the Cisco License Call Home feature.

show license right-to-use

Syntax Description

Command Default

Command Modes

Command History

Release	Modification

Usage Guidelines

Examples

Related Commands

Command	Description

show license statistics

To display license statistics information, use the **show license statistics** command in privileged EXEC mode.

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms
show license statistics

Cisco ASR 903 Router
show license statistics
standby

Cisco Catalyst 3560-E Switch Platforms
show license statistics

Cisco Catalyst 3750-E Switch and Switch Stack Platforms
show license statistics [{**switch** *switch-num*}]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms
show license statistics switch *switch-num*

Cisco uBR10012 Universal Broadband Routers
show license {**statistics subslot** *slot*/*subslot*}

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers
show license [{**statistics slot** *slot*}]

Syntax Description	standby	(Optional) Specifies standby license information.
	switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The range is 1 to 9.
	module	(Optional) Shows license statistics information from the specified module slot of the Catalyst 6500 series switch.
	subslot	(Cisco uBR10012 universal broadband routers only) Shows the slot and subslot information of a line card.
	slot	Shows the slot information of a line card.
	slot	Slot where the line card resides: • Cisco uBR7246VXR router--The range is 3 to 6. • Cisco uBR7225VXR router--The range is 1 to 2. • Cisco uBR10012 router--The range is 5 to 8.
	subslot	(Cisco uBR10012 universal broadband routers only) The value is 0 or 1.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC on Cisco uBR10012 universal broadband routers.
12.2(33)SCD	This command was modified. The **slot** *slot* keyword and argument were added for the Cisco uBR7225VXR and Cisco uBR7246VXR routers.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

Cisco uBR10012 Universal Broadband Routers

The command displays statistics information of the line card in the specified *slot / subslot*. The **subslot** *slot/subslot* keyword and arguments were added for Cisco uBR10012 universal broadband routers.

Examples

The following is sample output from the **show license statistics** command:

```
Router# show license statistics
  Administrative statistics
 Install success count:   4
 Install failure count:   1
 Install duplicate count: 12
 Comment add count:       2
 Comment delete count:    0
 Clear count:            10
 Save count:             1
 Save cred count:         6
  Client statistics
 Request success count 0
 Request failure count 0
 Release count         0
 Global Notify count   21
  SWIFT url status
 Swift value changed by user
 Current Value : https://cisco.com/SWIFT/Licensing
 Default Value : https://cisco.com/SWIFT/Licensing
```

Cisco uBR10012 Universal Broadband Routers: Example

The following is sample output from the **show license statistics subslot 8/1** command executed on the Cisco uBR10012 router:

```
Router# show license statistics subslot 8/1
Administrative statistics
        Install success count:   0
        Install failure count:   0
        Install duplicate count: 0
        Comment add count:       0
        Comment delete count:    0
        Clear count:             0
        Save count:              0
```

```
          Save cred count:         0
                  Client statistics
          Request success count:   1
          Request failure count:   1
          Release count:           0
          Global Notify count:     1
```

The table below describes the significant fields shown in the display.

Table 4: show license statistics Field Descriptions

Field	Description
Administrative statistics	• Install success count--Number of successful installations
	• Install failure count--Number of failed installation attempts
	• Install duplicate count--Number of duplicate installations
	• Comment add count--Number of added comments
	• Comment delete count--Number of deleted comments
	• Clear count--Number of License Clear events
	• Save count--Number of License Save events
	• Save cred count--Number of License Save Credentials
Client statistics	• Request success count--Number of successful license requests
	• Request failure count--Number of failed license requests
	• Release count--Number of released licenses
	• Global Notify count--Number of global notifications
SWIFT url status	• Current Value--Current SWIFT URL
	• Default Value--Default SWIFT URL

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers: Example

The following is sample output from the **show license statistics slot 5** command executed on the Cisco uBR7246VXR router:

```
Router# show license statistics slot 5
            Administrative statistics
      Install success count:   0
      Install failure count:   0
      Install duplicate count: 0
      Comment add count:       0
      Comment delete count:    0
      Clear count:             0
      Save count:              0
      Save cred count:         0
```

```
              Client statistics
      Request success count:   2
      Request failure count:   0
      Release count:           0
      Global Notify count:     0
```

The table below describes the significant fields shown in the display.

Table 5: show license statistics Field Descriptions

Field	Description
Administrative statistics	• Install success count--Number of successful installations • Install failure count--Number of failed installation attempts • Install duplicate count--Number of duplicate installations • Comment add count--Number of added comments • Comment delete count--Number of deleted comments • Clear count--Number of License Clear events • Save count--Number of License Save events • Save cred count--Number of License Save Credentials
Client statistics	• Request success count--Number of successful license requests • Request failure count--Number of failed license requests • Release count--Number of released licenses • Global Notify count--Number of global notifications

Related Commands

Command	Description
debug license	Enables controlled debugging options in the Cisco software licensing module.
show license status	Displays license information to troubleshoot licensing issues.

show subsys license

To display the subsystem running for a feature set, use the **show subsys license** command in either user EXEC or privileged EXEC mode.

show subsys license *subsystem*

Syntax Description

subsystem	Name of the subsystem for a specified license.

Command Default Subsystem information is not displayed.

Command Modes User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.

Usage Guidelines Use this command to display license information and to help with troubleshooting issues related to Cisco IOS software licenses.

Examples The following is sample output that shows the subsystem running the IP base feature set:

```
Router# show subsys license ipbase
License level: ipbase
Name                          Class       Version
obfl_env_app                  Kernel      1.000.001
exception                     Kernel      1.000.001
xml_proxy_client              Kernel      1.000.000
proto_counter                 Kernel      1.000.001
sched_ui                      Kernel      1.000.001
policy_manager                Kernel      1.000.001
fib_table_trace               Kernel      1.000.001
ifmibapi_access               Kernel      1.000.000
xml_engine                    Kernel      1.000.000
fddi_mtu                      Kernel      1.000.001
fib_trace                     Kernel      1.000.001
.
.
.
qos_set                       Protocol    1.000.001
rip                           Protocol    1.000.001
ipdiag                        Protocol    1.000.001
aaa_peruser                   Protocol    1.000.001
identity_cli                  Management  1.000.001
notification_log_mib          Management  1.000.000
pagpmib                       Management  1.000.000
ifmib                         Management  1.000.000
rtty_chain                    Management  1.000.001
cdpmib                        Management  1.000.000
```

```
vlmem                          Management  1.000.000
.
.
.
psecure_registry              Registry    1.000.001
ip_ios_registry              Registry    1.000.001
sys_name_registry            Registry    1.000.001
INIT                         SystemInit  2.000.001
parser                       EHSA        1.000.001
tmpsys_ifs                   EHSA        1.000.001
hulc_fib_rf_ehsa             EHSA        1.000.001
regexp_ui                    EHSA        1.000.001
system_ifs                   EHSA        1.000.001
chunk_ui                     EHSA        1.000.001
rbcp                         EHSA        1.000.000
gdb_ui                       EHSA        1.000.001
ifs_image_elf                EHSA        1.000.001
nvram_common                 EHSA        1.000.001
ifs_image_ascii              EHSA        1.000.001
clock_ui                     EHSA        1.000.001
nv_ifs                       EHSA        1.000.001
sff8472                      Pre-Driver  1.000.001
aggmgr                       Pre-Driver  1.000.000
ifindex_pers                 Pre-Driver  1.000.001
sff8472_fixed                Pre-Driver  1.000.000
fib_rp_predriver             Pre-Driver  1.000.001
system_capability            Pre-Driver  1.000.001
fib_lc_predriver             Pre-Driver  1.000.001
fib_ios_chain                Pre-Driver  1.000.001
transceiver                  Pre-Driver  1.000.002
fib_ios_predriver            Pre-Driver  1.000.001
license_client               License     1.000.001
hulc_flash                   License     1.000.001
ios_licensing_image_application  License 1.000.001
ifs                          License     1.000.001
sdb                          License     1.000.001
boot_upgrade                 License     1.000.001
hulc_universal_only          License     1.000.001
```

The table below describes the fields shown in the display.

Table 6: show subsys license Field Descriptions

Field	Description
License level	Feature set for which the license is issued; for example, Advanced IP services, IP services, or IP base.
Name	Name of the subsystem.
Class	Class of the subsystem. Possible classes include Driver, Kernel, Library, License, Management, Protocol, Registry.
Version	Version of the subsystem.

snmp-server enable traps

To enable all Simple Network Management Protocol (SNMP) notification types that are available on your system, use the **snmp-server enable traps** command in global configuration mode. To disable all available SNMP notifications, use the **no** form of this command.

snmp-server enable traps [*notification-type*] [**vrrp**]
no snmp-server enable traps [*notification-type*] [**vrrp**]

Syntax Description		
	notification-type	(Optional) Type of notification (trap or inform) to enable or disable. If no type is specified, all notifications available on your device are enabled or disabled (if the **no** form is used). The notification type can be one of the following keywords:
		alarms --Enables alarm filtering to limit the number of syslog messages generated. Alarms are generated for the severity configured as well as for the higher severity values.
		• The *severity*argument is an integer or string value that identifies the severity of an alarm. Integer values are from 1 to 4. String values are critical, major, minor, and informational. The default is 4 (informational). Severity levels are defined as follows:

		• 1--Critical. The condition affects service.
		    • 2--Major. Immediate action is needed.
		    • 3--Minor. Minor warning conditions.
		    • 4--Informational. No action is required. This is the default.

		• **auth-framework sec-violation** --Enables the SNMP CISCO-AUTH-FRAMEWORK-MIB traps. The optional **sec-violation** keyword enables the SNMP camSecurityViolationNotif notification. [1]
		• **config** --Controls configuration notifications, as defined in the CISCO-CONFIG-MAN-MIB (enterprise 1.3.6.1.4.1.9.9.43.2). The notification type is (1) ciscoConfigManEvent.

		• **dot1x** --Enables IEEE 802.1X traps. This notification type is defined in the CISCO PAE MIB.
		
		Catalyst 6500 Series Switches The following keywords are available under the **dot1x** keyword:
		
		    • • **auth-fail-vlan** --Enables the SNMP cpaeAuthFailVlanNotif notification.
		        • **no-auth-fail-vlan** --Enables the SNMP cpaeNoAuthFailVlanNotif notification.
		        • **guest-vlan** --Enables the SNMP cpaeGuestVlanNotif notification.
		        • **no-guest-vlan** --Enables the SNMP cpaeNoGuestVlanNotif notification.

	• **ds0-busyout** --Sends notification when the busyout of a DS0 interface changes state (Cisco AS5300 platform only). This notification is defined in the CISCO-POP-MGMT-MIB (enterprise 1.3.6.1.4.1.9.10.19.2), and the notification type is (1) cpmDS0BusyoutNotification. • **ds1-loopback** --Sends notification when the DS1 interface goes into loopback mode (Cisco AS5300 platform only). This notification type is defined in the CISCO-POP-MGMT-MIB (enterprise 1.3.6.1.4.1.9.10.19.2) as (2) cpmDS1LoopbackNotification. • **dsp** --Enables SNMP digital signal processing (DSP) traps. This notification type is defined in the CISCO-DSP-MGMT-MIB. • **dsp oper-state** --Sends a DSP notification made up of both a DSP ID that indicates which DSP is affected and an operational state that indicates whether the DSP has failed or recovered.
	• **l2tc** --Enable the SNMP Layer 2 tunnel configuration traps. This notification type is defined in CISCO-L2-TUNNEL-CONFIG-MIB.[2]
	• **entity** --Controls Entity MIB modification notifications. This notification type is defined in the ENTITY-MIB (enterprise 1.3.6.1.2.1.47.2) as (1) entConfigChange.

	• **entity-diag** *type*-- Enables the SNMP CISCO-ENTITY-DIAG-MIB traps. The valid *type* values are as follows: [3]
	
	   • **boot-up-fail**--(Optional) Enables the SNMP ceDiagBootUpFailedNotif traps.
	   • **hm-test-recover**--(Optional) Enables the SNMP ceDiagHMTestRecoverNotif traps.
	   • **hm-thresh-reached**--(Optional) Enables the SNMP ceDiagHMThresholdReachedNotif traps.
	   • **scheduled-fail**--(Optional) Enables the SNMP ceDiagScheduledJobFailedNotif traps.

	• **hsrp** --Controls Hot Standby Routing Protocol (HSRP) notifications, as defined in the CISCO-HSRP-MIB (enterprise 1.3.6.1.4.1.9.9.106.2). The notification type is (1) cHsrpStateChange.
	• **ipmulticast** --Controls IP multicast notifications.

	• **license** --Enables licensing notifications as traps or informs. The notifications are grouped into categories that can be individually controlled by combining the keywords with the **license** keyword, or as a group by using the **license** keyword by itself.
	
	   • **deploy**--Controls notifications generated as a result of install, clear, or revoke license events.
	   • **error**--Controls notifications generated as a result of a problem with the license or with the usage of the license.
	   • **imagelevel**--Controls notifications related to the image level of the license.
	   • **usage**--Controls usage notifications related to the license.

	• **modem-health** --Controls modem-health notifications.
	• **module-auto-shutdown** [**status**]-- Enables the SNMP CISCO-MODULE-AUTO-SHUTDOWN-MIB traps. The optional **status** keyword enables the SNMP Module Auto Shutdown status change traps. [4]
	• **rsvp** --Controls Resource Reservation Protocol (RSVP) flow change notifications.
	• **sys-threshold** --(Optional) Enables the SNMP cltcTunnelSysDropThresholdExceeded notification. This notification type is an enhancement to the CISCO-L2-TUNNEL-CONFIG-MIB. [5]
	• **tty** --Controls TCP connection notifications.
	• **xgcp** --Sends External Media Gateway Control Protocol (XGCP) notifications. This notification is from the XGCP-MIB-V1SMI.my, and the notification is enterprise 1.3.6.1.3.90.2 (1) xgcpUpDownNotification. **Note** For additional notification types, see the Related Commands table.
vrrp	(Optional) Specifies the Virtual Router Redundancy Protocol (VRRP).

[1] Supported on the Catalyst 6500 series switches.
[2] Supported on the Catalyst 6500 series switches.
[3] Supported on the Catalyst 6500 series switches.
[4] Supported on the Catalyst 6500 series switches.
[5] Supported on the Catalyst 6500 series switches.

Command Default   No notifications controlled by this command are sent.

Command Modes   Global configuration (config)

Command History

Release	Modification
10.3	This command was introduced.
12.0(2)T	The **rsvp** notification type was added in Cisco IOS Release 12.0(2)T.
12.0(3)T	The **hsrp** notification type was added in Cisco IOS Release 12.0(3)T.
12.0(24)S	This command was integrated into Cisco IOS Release 12.0(24)S.
12.2(14)SX	Support for this command was implemented on the Supervisor Engine 720.
12.2(18)S	This command was integrated into Cisco IOS Release 12.2(18)S.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was integrated into Cisco IOS Release 12.2(17d)SXB.
12.3(11)T	The **vrrp**notification type was added in Cisco IOS Release 12.3(11)T.

Release	Modification
12.4(4)T	Support for the **alarms** *severity* notification type and argument was added in Cisco IOS Release 12.4(4)T. Support for the **dsp** and **dsp oper-state** notification types was added in Cisco IOS Release 12.4(4)T.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.4(11)T	The **dot1x** notification type was added in Cisco IOS Release 12.4(11)T.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
12.4(20)T	The **license** notification type keyword was added.
12.2(33)SXH	The **l2tc** keyword was added and supported on the Catalyst 6500 series switch.
12.2(33)SXI	The following keywords were added and supported on the Catalyst 6500 series switch: **auth-fail-vlan** **entity-diag** **guest-vlan** **module-auto-shutdown** **no-auth-fail-vlan** **no-guest-vlan** **sys-threshold**
Cisco IOS XE Release 2.6	This command was integrated into Cisco IOS XE Release 2.6.

Usage Guidelines

For additional notification types, see the Related Commands table for this command.

SNMP notifications can be sent as traps or inform requests. This command enables both traps and inform requests for the specified notification types. To specify whether the notifications should be sent as traps or informs, use the **snmp-server host** [**traps** | **informs**] command.

To configure the router to send these SNMP notifications, you must enter at least one **snmp-server enable traps** command. If you enter the command with no keywords, all notification types are enabled. If you enter the command with a keyword, only the notification type related to that keyword is enabled. To enable multiple types of notifications, you must issue a separate **snmp-server enable traps** command for each notification type and notification option.

Most notification types are disabled by default but some cannot be controlled with the **snmp-server enable traps** command.

The **snmp-server enable traps** command is used in conjunction with the **snmp-server host** command. Use the **snmp-server host** command to specify which host or hosts receive SNMP notifications. To send notifications, you must configure at least one **snmp-server host** command.

The following MIBs were enhanced or supported in Cisco IOS Release 12.2(33)SXI and later releases on the Catalyst 6500 series switch:

- CISCO-L2-TUNNEL-CONFIG-MIB-LLDP--Enhancement. The CISCO-L2-TUNNEL-CONFIG-MIB provides SNMP access to the Layer 2 tunneling-related configurations.

- CISCO-PAE-MIB--Enhancement for critical condition and includes traps when the port goes into the Guest Vlan or AuthFail VLAN.

- CISCO-MODULE-AUTO-SHUTDOWN-MIB--Supported. The CISCO-MODULE-AUTO-SHUTDOWN-MIB provides SNMP access to the Catalyst 6500 series switch Module Automatic Shutdown component.

- CISCO-AUTH-FRAMEWORK-MIB--Supported. The CISCO-AUTH-FRAMEWORK-MIB provides SNMP access to the Authentication Manager component.

- CISCO-ENTITY-DIAG-MIB--The CISCO-ENTITY-DIAG-MIB provides SNMP traps for generic online diagnostics (GOLD) notification enhancements.

Examples

The following example shows how to enable the router to send all traps to the host specified by the name myhost.cisco.com, using the community string defined as public:

```
Router(config)# snmp-server enable traps
```

```
Router(config)# snmp-server host myhost.cisco.com public
```

The following example shows how to configure an alarm severity threshold of 3:

```
Router# snmp-server enable traps alarms 3
```

The following example shows how to enable the generation of a DSP operational state notification from from the command-line interface (CLI):

```
Router(config)# snmp-server enable traps dsp oper-state
```

The following example shows how to enable the generation of a DSP operational state notification from a network management device:

```
setany -v2c 1.4.198.75 test cdspEnableOperStateNotification.0 -i 1
cdspEnableOperStateNotification.0=true(1)
```

The following example shows how to send no traps to any host. The Border Gateway Protocol (BGP) traps are enabled for all hosts, but the only traps enabled to be sent to a host are ISDN traps (which are not enabled in this example).

```
Router(config)#  snmp-server enable traps bgp
```

```
Router(config)# snmp-server host user1 public isdn
```

The following example shows how to enable the router to send all inform requests to the host at the address myhost.cisco.com, using the community string defined as public:

```
Router(config)# snmp-server enable traps
```

```
Router(config)# snmp-server host myhost.cisco.com informs version 2c public
```

The following example shows how to send HSRP MIB traps to the host myhost.cisco.com using the community string public:

```
Router(config)# snmp-server enable traps hsrp
```

```
Router(config)# snmp-server host myhost.cisco.com traps version 2c public hsrp
```

The following example shows that VRRP will be used as the protocol to enable the traps:

```
Router(config)# snmp-server enable traps vrrp
Router(config)# snmp-server host myhost.cisco.com traps version 2c vrrp
```

The following example shows how to send IEEE 802.1X MIB traps to the host "**myhost.example.com**" using the community string defined as public:

```
Router(config)# snmp-server enable traps dot1x
Router(config)# snmp-server host myhost.example.com traps public
```

Related Commands

Command	Description
snmp-server enable traps atm pvc	Enables ATM PVC SNMP notifications.
snmp-server enable traps atm pvc extension	Enables extended ATM PVC SNMP notifications.
snmp-server enable traps bgp	Enables BGP server state change SNMP notifications.
snmp-server enable traps calltracker	Enables Call Tracker callSetup and callTerminate SNMP notifications.
snmp-server enable traps envmon	Enables environmental monitor SNMP notifications.
snmp-server enable traps frame-relay	Enables Frame Relay DLCI link status change SNMP notifications.
snmp-server enable traps ipsec	Enables IPsec SNMP notifications.
snmp-server enable traps isakmp	Enables IPsec ISAKMP SNMP notifications.
snmp-server enable traps isdn	Enables ISDN SNMP notifications.
snmp-server enable traps memory	Enables memory pool and buffer pool SNMP notifications.
snmp-server enable traps mpls ldp	Enables MPLS LDP SNMP notifications.
snmp-server enable traps mpls traffic-eng	Enables MPLS TE tunnel state-change SNMP notifications.
snmp-server enable traps mpls vpn	Enables MPLS VPN specific SNMP notifications.
snmp-server enable traps repeater	Enables RFC 1516 hub notifications.
snmp-server enable traps snmp	Enables RFC 1157 SNMP notifications.

Command	Description
snmp-server enable traps syslog	Enables the sending of system logging messages via SNMP.
snmp-server host	Specifies whether you want the SNMP notifications sent as traps or informs, the version of SNMP to use, the security level of the notifications (for SNMPv3), and the destination host (recipient) for the notifications.
snmp-server informs	Specifies inform request options.
snmp-server trap-source	Specifies the interface (and the corresponding IP address) from which an SNMP trap should originate.
snmp-server trap illegal-address	Issues an SNMP trap when a MAC address violation is detected on an Ethernet hub port of a Cisco 2505, Cisco 2507, or Cisco 2516 router.
vrrp shutdown	Disables a VRRP group.

snmp-server host

To specify the recipient of a Simple Network Management Protocol (SNMP) notification operation, use the **snmp-server host** command in global configuration mode. To remove the specified host from the configuration, use the **no** form of this command.

snmp-server host {*hostnameip-address*} [{**vrf** *vrf-name* | **informs** | **traps** | **version** {**1** | **2c** | **3** [{**auth** | **noauth** | **priv**}]}}] *community-string* [{**udp-port** *port* [*notification-type*]*notification-type*}]
no snmp-server host {*hostnameip-address*} [{**vrf** *vrf-name* | **informs** | **traps** | **version** {**1** | **2c** | **3** [{**auth** | **noauth** | **priv**}]}}] *community-string* [{**udp-port** *port* [*notification-type*]*notification-type*}]

Command Syntax on Cisco ME 3400, ME 3400E, and Catalyst 3750 Metro Switches
snmp-server host *ip-address* {*community-string* | **informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth**}}} {*community-string* | **vrf** *vrf-name* {**informs** | **traps**}} [{*notification-type*}]
no snmp-server host *ip-address* {*community-string* | **informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth**}}} {*community-string* | **vrf** *vrf-name* {**informs** | **traps**}} [{*notification-type*}]

Command Syntax on Cisco 7600 Series Router
snmp-server host *ip-address* {*community-string* | {**informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string* | **vrf** *vrf-name* {**informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string*}}} [*notification-type*]
no snmp-server host *ip-address* {*community-string* | {**informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string* | **vrf** *vrf-name* {**informs** | **traps**} {*community-string* | **version** {**1** | **2c** | **3** {**auth** | **noauth** | **priv**}} *community-string*}}} [*notification-type*]

Syntax Description		
hostname	Name of the host. The SNMP notification host is typically a network management station (NMS) or SNMP manager. This host is the recipient of the SNMP traps or informs.	
ip-address	IPv4 address or IPv6 address of the SNMP notification host.	
vrf	(Optional) Specifies that a VPN routing and forwarding (VRF) instance should be used to send SNMP notifications. • In Cisco IOS Release 12.2(54)SE, the **vrf** keyword is required.	
vrf-name	(Optional) VPN VRF instance used to send SNMP notifications. • In Cisco IOS Release 12.2(54)SE, the *vrf-name* argument is required.	
informs	(Optional) Specifies that notifications should be sent as informs. • In Cisco IOS Release 12.2(54)SE, the **informs** keyword is required.	
traps	(Optional) Specifies that notifications should be sent as traps. This is the default. • In Cisco IOS Release 12.2(54)SE, the **traps** keyword is required.	

version	(Optional) Specifies the version of the SNMP that is used to send the traps or informs. The default is 1.
	• In Cisco IOS Release 12.2(54)SE, the **version** keyword is required and the **priv** keyword is not supported.
	If you use the **version** keyword, one of the following keywords must be specified:
	• **1** --SNMPv1.
	• **2c** --SNMPv2C.
	• **3** --SNMPv3. The most secure model because it allows packet encryption with the **priv** keyword. The default is **noauth**.
	One of the following three optional security level keywords can follow the **3** keyword:
	• **auth** --Enables message digest algorithm 5 (MD5) and Secure Hash Algorithm (SHA) packet authentication.
	• **noauth** --Specifies that the noAuthNoPriv security level applies to this host. This is the default security level for SNMPv3.
	• **priv** --Enables Data Encryption Standard (DES) packet encryption (also called "privacy").
community-string	Password-like community string sent with the notification operation.
	Note You can set this string using the **snmp-server host** command by itself, but Cisco recommends that you define the string using the **snmp-server community** command prior to using the **snmp-server host** command.
	Note The "at" sign (@) is used for delimiting the context information.
udp-port	(Optional) Specifies that SNMP traps or informs are to be sent to an network management system (NMS) host.
	• In Cisco IOS Release 12.2(54)SE, the **udp-port** keyword is not supported.
port	(Optional) User Datagram Protocol (UDP) port number of the NMS host. The default is 162.
	• In Cisco IOS Release 12.2(54)SE, the *port* argument is not supported.
notification-type	(Optional) Type of notification to be sent to the host. If no type is specified, all available notifications are sent. See the "Usage Guidelines" section for more information about the keywords available.

Command Default   This command behavior is disabled by default. A recipient is not specified to receive notifications.

Command Modes

Global configuration (config)

Command History

Release	Modification
10.0	This command was introduced.
12.0(3)T	This command was modified. • The **version 3** [**auth** | **noauth** | **priv**] syntax was added as part of the SNMPv3 Support feature. • The **hsrp** notification-type keyword was added. • The **voice** notification-type keyword was added.
12.1(3)T	This command was modified. The **calltracker** notification-type keyword was added for the Cisco AS5300 and AS5800 platforms.
12.2(2)T	This command was modified. • The **vrf** *vrf-name* keyword-argument pair was added. • The **ipmobile** notification-type keyword was added. • Support for the **vsimaster** notification-type keyword was added for the Cisco 7200 and Cisco 7500 series routers.
12.2(4)T	This command was modified. • The **pim** notification-type keyword was added. • The **ipsec** notification-type keyword was added.
12.2(8)T	This command was modified. • The **mpls-traffic-eng** notification-type keyword was added. • The **director** notification-type keyword was added.
12.2(13)T	This command was modified. • The **srp** notification-type keyword was added. • The **mpls-ldp** notification-type keyword was added.
12.3(2)T	This command was modified. • The **flash** notification-type keyword was added. • The **l2tun-session** notification-type keyword was added.
12.3(4)T	This command was modified. • The **cpu** notification-type keyword was added. • The **memory** notification-type keyword was added. • The **ospf notification-type** keyword was added.

Release	Modification
12.3(8)T	This command was modified. The **iplocalpool notification-type** keyword was added for the Cisco 7200 and 7301 series routers.
12.3(11)T	This command was modified. The **vrrp** keyword was added.
12.3(14)T	This command was modified. • Support for SNMP over IPv6 transport was integrated into Cisco IOS Release 12.3(14)T. Either an IP or IPv6 Internet address can be specified as the *hostname* argument. • The **eigrp** notification-type keyword was added.
12.4(20)T	This command was modified. The **license** notification-type keyword was added.
15.0(1)M	This command was modified. • The **nhrp** notification-type keyword was added. • The automatic insertion of the **snmp-server community** command into the configuration, along with the community string specified in the **snmp-server host** command, was changed. The **snmp-server community** command must be manually configured.
12.0(17)ST	This command was modified. The **mpls-traffic-eng** notification-type keyword was added.
12.0(21)ST	This command was modified. The **mpls-ldp notification-type** keyword was added.
12.0(22)S	This command was modified. • All features in Cisco IOS Release 12.0ST were integrated into Cisco IOS Release 12.0(22)S. • The **mpls-vpn** notification-type keyword was added.
12.0(23)S	This command was modified. The **l2tun-session** notification-type keyword was added.
12.0(26)S	This command was modified. The **memory** notification-type keyword was added.
12.0(27)S	This command was modified. • Support for SNMP over IPv6 transport was added. Either an IP or IPv6 Internet address can be specified as the *hostname* argument. • The **vrf** *vrf-name* keyword and argument combination was added to support multiple Lightweight Directory Protocol (LDP) contexts for VPNs.
12.0(31)S	This command was modified. The **l2tun-pseudowire-status** notification-type keyword was added.

Release	Modification
12.2(18)S	This command was integrated into Cisco IOS Release 12.2(18)S.
12.2(25)S	This command was modified. • The **cpu** notification-type keyword was added. • The **memory** notification-type keyword was added.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	The **cef** notification-type keyword was added.
12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2(33)SXH.
12.2(33)SB	This command was integrated into Cisco IOS Release 12.2(33)SB.
12.2(33)SXI5	This command was modified. • The **dhcp-snooping** notification-type keyword was added. • The **errdisable** notification-type keyword was added.
12.2(54)SE	This command was modified. See the SNMP server host commands for the command syntax for these switches.
12.2(33)SXJ	This command was integrated into Cisco IOS Release 12.2(33)SXJ. The **public storm-control** notification-type keyword was added.
15.0(1)S	This command was modified. The **flowmon notification-type** keyword was added.
Cisco IOS XE Release 2.1	This command was integrated into Cisco IOS XE Release 2.1.
15.2(1)S	This command was modified. The **p2mp-traffic-eng** notification-type keyword was added.
Cisco IOS XE Release 3.2SE	This command was implemented in Cisco IOS XE Release 3.2SE.
Cisco IOS XE Release 3.3SE	This command was implemented in Cisco IOS XE Release 3.3SE.

Usage Guidelines   If you enter this command with no optional keywords, the default is to send all notification-type traps to the host. No informs will be sent to the host.

The **no   snmp-server   host** command with no keywords disables traps, but not informs, to the host. To disable informs, use the **no   snmp-server   host   informs** command.

Note   If a community string is not defined using the **snmp-server   community** command prior to using this command, the default form of the **snmp-server   community** command will automatically be inserted into the configuration. The password (community string) used for this automatic configuration of the **snmp-server community** command will be the same as that specified in the **snmp-server   host** command. This automatic command insertion and use of passwords is the default behavior for Cisco IOS Release 12.0(3) and later releases. However, in Cisco IOS Release 12.2(33)SRE and later releases, you must manually configure the **snmp-server community** command. That is, the **snmp-server community** command will not be seen in the configuration.

SNMP notifications can be sent as traps or inform requests. Traps are unreliable because the receiver does not send acknowledgments when it receives traps. The sender cannot determine if the traps were received. However, an SNMP entity that receives an inform request acknowledges the message with an SNMP response protocol data unit (PDU). If the sender never receives the response, the inform request can be sent again. Thus, informs are more likely to reach their intended destination than traps.

Compared to traps, informs consume more resources in the agent and in the network. Unlike a trap, which is discarded as soon as it is sent, an inform request must be held in memory until a response is received or the request times out. Also, traps are sent only once; an inform may be tried several times. The retries increase traffic and contribute to a higher overhead on the network.

If you do not enter an **snmp-server   host** command, no notifications are sent. To configure the router to send SNMP notifications, you must enter at least one **snmp-server   host** command. If you enter the command with no optional keywords, all trap types are enabled for the host.

To enable multiple hosts, you must issue a separate **snmp-server   host** command for each host. You can specify multiple notification types in the command for each host.

When multiple **snmp-server   host** commands are given for the same host and kind of notification (trap or inform), each succeeding command overwrites the previous command. Only the last **snmp-server   host** command will be in effect. For example, if you enter an **snmp-server   host   inform** command for a host and then enter another **snmp-server   host   inform** command for the same host, the second command will replace the first.

The **snmp-server   host** command is used in conjunction with the **snmp-server   enable** command. Use the **snmp-server   enable** command to specify which SNMP notifications are sent globally. For a host to receive most notifications, at least one **snmp-server   enable** command and the **snmp-server   host** command for that host must be enabled.

Some notification types cannot be controlled with the **snmp-server   enable** command. Some notification types are always enabled, and others are enabled by a different command. For example, the **linkUpDown** notifications are controlled by the **snmp   trap   link-status** command. These notification types do not require an **snmp-server   enable** command.

The availability of notification-type options depends on the router type and the Cisco IOS software features supported on the router. For example, the **envmon** notification type is available only if the environmental monitor is part of the system. To see what notification types are available on your system, use the command help **?** at the end of the **snmp-server   host** command.

The **vrf** keyword allows you to specify the notifications being sent to a specified IP address over a specific VRF VPN. The VRF defines a VPN membership of a user so that data is stored using the VPN.

In the case of the NMS sending the query having a correct SNMP community but not having a read or a write view, the SNMP agent returns the following error values:

- For a get or a getnext query, returns GEN_ERROR for SNMPv1 and AUTHORIZATION_ERROR for SNMPv2C.

- For a set query, returns NO_ACCESS_ERROR.

Notification-Type Keywords

The notification type can be one or more of the following keywords.

Note The available notification types differ based on the platform and Cisco IOS release. For a complete list of available notification types, use the question mark (?) online help function.

- **aaa server** --Sends SNMP authentication, authorization, and accounting (AAA) traps.

- **adslline** --Sends Asymmetric Digital Subscriber Line (ADSL) LINE-MIB traps.

- **atm** --Sends ATM notifications.

- **authenticate-fail** --Sends an SNMP 802.11 Authentication Fail trap.

- **auth-framework** --Sends SNMP CISCO-AUTH-FRAMEWORK-MIB notifications.

- **bgp** --Sends Border Gateway Protocol (BGP) state change notifications.

- **bridge** --Sends SNMP STP Bridge MIB notifications.

- **bstun** --Sends Block Serial Tunneling (BSTUN) event notifications.

- **bulkstat** --Sends Data-Collection-MIB notifications.

- **c6kxbar** --Sends SNMP crossbar notifications.

- **callhome** --Sends Call Home MIB notifications.

- **calltracker** -- Sends Call Tracker call-start/call-end notifications.

- **casa** --Sends Cisco Appliances Services Architecture (CASA) event notifications.

- **ccme** --Sends SNMP Cisco netManager Event (CCME) traps.

- **cef** --Sends notifications related to Cisco Express Forwarding.

- **chassis** --Sends SNMP chassis notifications.

- **cnpd** --Sends Cisco Network-based Application Recognition (NBAR) Protocol Discovery (CNPD) traps.

- **config** --Sends configuration change notifications.

- **config-copy** --Sends SNMP config-copy notifications.

- **config-ctid** --Sends SNMP config-ctid notifications.

- **cpu** --Sends CPU-related notifications.

- **csg** --Sends SNMP Content Services Gateway (CSG) notifications.

- **deauthenticate** --Sends an SNMP 802.11 Deauthentication trap.

- **dhcp-snooping** --Sends DHCP snooping MIB notifications.

- **director** --Sends notifications related to DistributedDirector.

- **disassociate** --Sends an SNMP 802.11 Disassociation trap.

- **dlsw** --Sends data-link switching (DLSW) notifications.

- **dnis** --Sends SNMP Dialed Number Identification Service (DNIS) traps.

- **dot1x** --Sends 802.1X notifications.

- **dot11-mibs** --Sends dot11 traps.

- **dot11-qos** --Sends SNMP 802.11 QoS Change trap.

- **ds1** --Sends SNMP digital signaling 1 (DS1) notifications.

- **ds1-loopback** --Sends ds1-loopback traps.

- **dspu** --Sends downstream physical unit (DSPU) notifications.

- **eigrp** --Sends Enhanced Interior Gateway Routing Protocol (EIGRP) stuck-in-active (SIA) and neighbor authentication failure notifications.

- **energywise** --Sends SNMP energywise notifications.

- **entity** --Sends Entity MIB modification notifications.

- **entity-diag** --Sends SNMP entity diagnostic MIB notifications.

- **envmon** --Sends Cisco enterprise-specific environmental monitor notifications when an environmental threshold is exceeded.

- **errdisable** --Sends error disable notifications.

- **ethernet-cfm** --Sends SNMP Ethernet Connectivity Fault Management (CFM) notifications.

- **event-manager** --Sends SNMP Embedded Event Manager notifications.

- **firewall** --Sends SNMP Firewall traps.

- **flash** --Sends flash media insertion and removal notifications.

- **flexlinks** --Sends FLEX links notifications.

- **flowmon** --Sends flow monitoring notifications.

- **frame-relay** --Sends Frame Relay notifications.

- **fru-ctrl** --Sends entity field-replaceable unit (FRU) control notifications.

- **hsrp** --Sends Hot Standby Routing Protocol (HSRP) notifications.

- **icsudsu** --Sends SNMP ICSUDSU traps.

- **iplocalpool** --Sends IP local pool notifications.

- **ipmobile** --Sends Mobile IP notifications.

- **ipmulticast** --Sends IP multicast notifications.

- **ipsec** --Sends IP Security (IPsec) notifications.

- **isakmp** --Sends SNMP ISAKMP notifications.

- **isdn** --Sends ISDN notifications.

- **l2tc** --Sends SNMP L2 tunnel configuration notifications.

- **l2tun-pseudowire-status** --Sends pseudowire state change notifications.

- **l2tun-session** --Sends Layer 2 tunneling session notifications.

- **license** --Sends licensing notifications as traps or informs.

- **llc2** --Sends Logical Link Control, type 2 (LLC2) notifications.

- **mac-notification** --Sends SNMP MAC notifications.

- **memory** --Sends memory pool and memory buffer pool notifications.

- **module** --Sends SNMP module notifications.

- **module-auto-shutdown** --Sends SNMP module autoshutdown MIB notifications.

- **mpls-fast-reroute** --Sends SNMP Multiprotocol Label Switching (MPLS) traffic engineering fast reroute notifications.

- **mpls-ldp** --Sends MPLS Label Distribution Protocol (LDP) notifications indicating status changes in LDP sessions.

- **mpls-traffic-eng** --Sends MPLS traffic engineering notifications, indicating changes in the status of MPLS traffic engineering tunnels.

- **mpls-vpn** --Sends MPLS VPN notifications.

- **msdp** --Sends SNMP Multicast Source Discovery Protocol (MSDP) notifications.

- **mvpn** --Sends multicast VPN notifications.

- **nhrp** --Sends Next Hop Resolution Protocol (NHRP) notifications.

- **ospf** --Sends Open Shortest Path First (OSPF) sham-link notifications.

- **pim** --Sends Protocol Independent Multicast (PIM) notifications.

- **port-security** --Sends SNMP port-security notifications.

- **power-ethernet** --Sends SNMP power Ethernet notifications.

- **public storm-control** --Sends SNMP public storm-control notifications.

- **pw-vc** --Sends SNMP pseudowire virtual circuit (VC) notifications.

- **p2mp-traffic-eng**--Sends SNMP MPLS Point to Multi-Point MPLS-TE notifications.

- **repeater** --Sends standard repeater (hub) notifications.

- **resource-policy** --Sends CISCO-ERM-MIB notifications.

- **rf** --Sends SNMP RF MIB notifications.

- **rogue-ap** --Sends an SNMP 802.11 Rogue AP trap.

- **rsrb** --Sends remote source-route bridging (RSRB) notifications.

- **rsvp** --Sends Resource Reservation Protocol (RSVP) notifications.

- **rtr** --Sends Response Time Reporter (RTR) notifications.

- **sdlc** --Sends Synchronous Data Link Control (SDLC) notifications.

- **sdllc** --Sends SDLC Logical Link Control (SDLLC) notifications.

- **slb** --Sends SNMP server load balancer (SLB) notifications.

- **snmp** --Sends any enabled RFC 1157 SNMP linkUp, linkDown, authenticationFailure, warmStart, and coldStart notifications.

Note To enable RFC-2233-compliant link up/down notifications, you should use the **snmp server link trap** command.

- **sonet** --Sends SNMP SONET notifications.

- **srp** --Sends Spatial Reuse Protocol (SRP) notifications.

- **stpx** --Sends SNMP STPX MIB notifications.

- **srst** --Sends SNMP Survivable Remote Site Telephony (SRST) traps.

- **stun** --Sends serial tunnel (STUN) notifications.

- **switch-over** --Sends an SNMP 802.11 Standby Switchover trap.

- **syslog** --Sends error message notifications (Cisco Syslog MIB). Use the **logging history level** command to specify the level of messages to be sent.

- **syslog** --Sends error message notifications (Cisco Syslog MIB). Use the **logging history level** command to specify the level of messages to be sent.

- **tty** --Sends Cisco enterprise-specific notifications when a TCP connection closes.

- **udp-port** --Sends the notification host's UDP port number.

- **vlan-mac-limit** --Sends SNMP L2 control VLAN MAC limit notifications.

- **vlancreate** --Sends SNMP VLAN created notifications.

- **vlandelete** --Sends SNMP VLAN deleted notifications.

- **voice** --Sends SNMP voice traps.

- **vrrp** --Sends Virtual Router Redundancy Protocol (VRRP) notifications.

- **vsimaster** --Sends Virtual Switch Interface (VSI) notifications.

- **vswitch** --Sends SNMP virtual switch notifications.

- **vtp** --Sends SNMP VLAN Trunking Protocol (VTP) notifications.

- **wlan-wep** --Sends an SNMP 802.11 Wireless LAN (WLAN) Wired Equivalent Privacy (WEP) trap.

- **x25** --Sends X.25 event notifications.

• **xgcp** --Sends External Media Gateway Control Protocol (XGCP) traps.

SNMP-Related Notification-Type Keywords

The *notification-type* argument used in the **snmp-server host** command do not always match the keywords used in the corresponding **snmp-server enable traps** command. For example, the *notification-type* argument applicable to Multiprotocol Label Switching Protocol (MPLS) traffic engineering tunnels is specified as **mpls-traffic-eng** (containing two hyphens and no embedded spaces). The corresponding parameter in the **snmp-server enable traps** command is specified as **mpls traffic-eng** (containing an embedded space and a hyphen).

This syntax difference is necessary to ensure that the CLI interprets the *notification-type* keyword of the **snmp-server host** command as a unified, single-word construct, which preserves the capability of the **snmp-server host** command to accept multiple *notification-type* keywords in the command line. The **snmp-server enable traps** commands, however, often use two-word constructs to provide hierarchical configuration options and to maintain consistency with the command syntax of related commands. The table below maps some examples of **snmp-server enable traps** commands to the keywords used in the **snmp-server host** command.

Table 7: snmp-server enable traps Commands and Corresponding Notification Keywords

snmp-server enable traps Command	snmp-server host Command Keyword
snmp-server enable traps l2tun session	**l2tun-session**
snmp-server enable traps mpls ldp	**mpls-ldp**
snmp-server enable traps mpls traffic-eng [6]	**mpls-traffic-eng**
snmp-server enable traps mpls vpn	**mpls-vpn**
snmp-server host *host-address community-string* **udp-port** *port* **p2mp-traffic-eng**	**snmp-server enable traps mpls p2mp-traffic-eng** [**down**	**up**]

[6] See the *Cisco IOS Multiprotocol Label Switching Command Reference* for documentation of this command.

Examples

If you want to configure a unique SNMP community string for traps but prevent SNMP polling access with this string, the configuration should include an access list. The following example shows how to name a community string comaccess and number an access list 10:

```
Router(config)# snmp-server community comaccess ro 10
Router(config)# snmp-server host 10.0.0.0 comaccess
Router(config)# access-list 10 deny any
```

Note   The "at" sign (@) is used as a delimiter between the community string and the context in which it is used. For example, specific VLAN information in BRIDGE-MIB may be polled using *community @VLAN-ID* (for example, public@100), where 100 is the VLAN number.

The following example shows how to send RFC 1157 SNMP traps to a specified host named myhost.cisco.com. Other traps are enabled, but only SNMP traps are sent because only **snmp** is specified in the **snmp-server host** command. The community string is defined as comaccess.

```
Router(config)# snmp-server enable traps
Router(config)# snmp-server host myhost.cisco.com comaccess snmp
```

The following example shows how to send the SNMP and Cisco environmental monitor enterprise-specific traps to address 10.0.0.0 using the community string public:

```
Router(config)# snmp-server enable traps snmp
Router(config)# snmp-server enable traps envmon
Router(config)# snmp-server host 10.0.0.0 public snmp envmon
```

The following example shows how to enable the router to send all traps to the host myhost.cisco.com using the community string public:

```
Router(config)# snmp-server enable traps
Router(config)# snmp-server host myhost.cisco.com public
```

The following example will not send traps to any host. The BGP traps are enabled for all hosts, but only the ISDN traps are enabled to be sent to a host. The community string is defined as public.

```
Router(config)# snmp-server enable traps bgp
Router(config)# snmp-server host myhost.cisco.com public isdn
```

The following example shows how to enable the router to send all inform requests to the host myhost.cisco.com using the community string public:

```
Router(config)# snmp-server enable traps
Router(config)# snmp-server host myhost.cisco.com informs version 2c public
```

The following example shows how to send HSRP MIB informs to the host specified by the name myhost.cisco.com. The community string is defined as public.

```
Router(config)# snmp-server enable traps hsrp
Router(config)# snmp-server host myhost.cisco.com informs version 2c public hsrp
```

The following example shows how to send all SNMP notifications to example.com over the VRF named trap-vrf using the community string public:

```
Router(config)# snmp-server host example.com vrf trap-vrf public
```

The following example shows how to configure an IPv6 SNMP notification server with the IPv6 address 2001:0DB8:0000:ABCD:1 using the community string public:

```
Router(config)# snmp-server host 2001:0DB8:0000:ABCD:1 version 2c public udp-port 2012
```

The following example shows how to specify VRRP as the protocol using the community string public:

```
Router(config)# snmp-server enable traps vrrp
Router(config)# snmp-server host myhost.cisco.com traps version 2c public vrrp
```

The following example shows how to send all Cisco Express Forwarding informs to the notification receiver with the IP address 10.0.1.1 using the community string public:

```
Router(config)# snmp-server enable traps cef
Router(config)# snmp-server host 10.0.1.1 informs version 2c public cef
```

The following example shows how to enable all NHRP traps, and how to send all NHRP traps to the notification receiver with the IP address 10.0.0.0 using the community string public:

```
Router(config)# snmp-server enable traps nhrp
Router(config)# snmp-server host 10.0.0.0 traps version 2c public nhrp
```

The following example shows how to enable all P2MP MPLS-TE SNMP traps, and send them to the notification receiver with the IP address 172.20.2.160 using the community string "comp2mppublic":

```
Router(config)# snmp-server enable traps mpls p2mp-traffic-eng
Router(config)# snmp-server host 172.20.2.160 comp2mppublic udp-port 162 p2mp-traffic-eng
```

Related Commands

Command	Description
show snmp host	Displays recipient details configured for SNMP notifications.
snmp-server enable peer-trap poor qov	Enables poor quality of voice notifications for applicable calls associated with a specific voice dial peer.
snmp-server enable traps	Enables SNMP notifications (traps and informs).
snmp-server enable traps nhrp	Enables SNMP notifications (traps) for NHRP.
snmp-server informs	Specifies inform request options.
snmp-server link trap	Enables linkUp/linkDown SNMP traps that are compliant with RFC 2233.
snmp-server trap-source	Specifies the interface from which an SNMP trap should originate.
snmp-server trap-timeout	Defines how often to try resending trap messages on the retransmission queue.
test snmp trap storm-control event-rev1	Tests SNMP storm-control traps.