



# show debugging

To display information about the types of debugging that are enabled for your router, use the show debugging command in privileged EXEC mode.

## show debugging

### Syntax Description

This command has no arguments or keywords.

### Command Modes

Privileged EXEC (#)

### Command History

Release	Modification
11.1	This command was introduced.
12.3(7)T	The output of this command was enhanced to show TCP Explicit Congestion Notification (ECN) configuration.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
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 output of this command was enhanced to show the user-group debugging configuration.



## Examples

The following is sample output from the show debugging command. In this example, the remote host is not configured or connected.

```
Router# show debugging
!
TCP:
  TCP Packet debugging is on
  TCP ECN debugging is on
!
Router# telnet 10.1.25.234
!
Trying 10.1.25.234 ...
!
00:02:48: 10.1.25.31:11001 <---> 10.1.25.234:23 out ECN-setup SYN
00:02:48: tcp0: O CLOSED 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 ECE CWR SYN WIN 4128
00:02:50: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:02:50: cwnd from 1460 to 1460, ssthresh from 65535 to 2920
00:02:50: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 ECE CWR SYN WIN 4128
00:02:54: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:02:54: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:02:54: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 ECE CWR SYN WIN 4128
00:03:02: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:03:02: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:03:02: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 ECE CWR SYN WIN 4128
00:03:18: 10.1.25.31:11001 <---> 10.1.25.234:23 SYN with ECN disabled
00:03:18: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:03:18: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:03:18: tcp0: O SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 SYN WIN 4128
00:03:20: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:03:20: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:03:20: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 SYN WIN 4128
00:03:24: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:03:24: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:03:24: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 SYN WIN 4128
00:03:32: 10.1.25.31:11001 <---> 10.1.25.234:23 congestion window changes
00:03:32: cwnd from 1460 to 1460, ssthresh from 2920 to 2920
00:03:32: tcp0: R SYNSENT 10.1.25.234:11001 10.1.25.31:23 seq 1922220018
      OPTS 4 SYN WIN 4128
!Connection timed out; remote host not responding
```

The following is sample output from the show debugging command when user-group debugging is configured:

```
Router# show debugging
!
usergroup:
  Usergroup Deletions debugging is on
  Usergroup Additions debugging is on
  Usergroup Database debugging is on
  Usergroup API debugging is on
!
```

The following is sample output from the show debugging command when SNAP debugging is configured:

```
Router# show debugging

Persistent variable debugging is currently All

SNAP Server Debugging ON

SNAP Client Debugging ON
```

Router#

The table below describes the significant fields in the output.

**Table 1** *show debugging Field Descriptions*

Field	Description
OPTS 4	Bytes of TCP expressed as a number. In this case, the bytes are 4.
ECE	Echo congestion experience.
CWR	Congestion window reduced.
SYN	Synchronize connections--Request to synchronize sequence numbers, used when a TCP connection is being opened.
WIN 4128	Advertised window size, in bytes. In this case, the bytes are 4128.
cwnd	Congestion window (cwnd)--Indicates that the window size has changed.
ssthresh	Slow-start threshold (ssthresh)--Variable used by TCP to determine whether or not to use slow-start or congestion avoidance.
usergroup	Statically defined usergroup to which source IP addresses are associated.

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# show hosts

To display the default domain name, the style of name lookup service, a list of name server hosts, and the cached list of hostnames and addresses specific to a particular Domain Name System (DNS) view or for all configured DNS views, use the **show hosts** command in privileged EXEC mode.

```
show hosts [vrf vrf-name] [view [view-name | default]] [all] [hostname | summary]
```

Syntax Description

<b>vrf</b> <i>vrf-name</i>	(Optional) The <i>vrf-name</i> argument specifies the name of the Virtual Private Network (VPN) routing and forwarding (VRF) instance associated with the DNS view whose hostname cache entries are to be displayed. Default is the global VRF (that is, the VRF whose name is a NULL string) with the specified or default DNS view.  <b>Note</b> More than one DNS view can be associated with a VRF. To uniquely identify a DNS view, specify both the view name and the VRF with which it is associated.
<b>view</b> <i>view-name</i>	(Optional) The <i>view-name</i> argument specifies the DNS view whose hostname cache information is to be displayed. Default is the default (unnamed) DNS view associated with the specified or global VRF.  <b>Note</b> More than one DNS view can be associated with a VRF. To uniquely identify a DNS view, specify both the view name and the VRF with which it is associated.
<b>default</b>	(Optional) Displays the default view.
<b>all</b>	(Optional) Display all the host tables.

<i>hostname</i>	(Optional) The specified hostname cache information displayed is to be limited to entries for a particular hostname. Default is the hostname cache information for all hostname entries in the cache.
<b>summary</b>	(Optional) The specified hostname cache information is to be displayed in brief summary format. Disabled by default.

### Command Modes

Privileged EXEC (#)

### Command History

Release	Modification
10.0	This command was introduced.
12.2T	Support was added for Cisco modem user interface feature.
12.4(4)T	The <b>vrf</b> , <b>all</b> , and <b>summary</b> keywords and <i>vrf-name</i> and <i>hostname</i> arguments were added.
12.4(9)T	The <b>view</b> keyword and <i>view-name</i> argument were added.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
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.

### Usage Guidelines

This command displays the default domain name, the style of name lookup service, a list of name server hosts, and the cached list of hostnames and addresses specific to a particular DNS view or for all configured DNS views.

If you specify the **show hosts** command without any optional keywords or arguments, only the entries in the global hostname cache will be displayed.

If the output from this command extends beyond the bottom of the screen, press the Space bar to continue or press the Q key to terminate command output.

### Examples

The following is sample output from the **show hosts** command with no parameters specified:

```
Router# show hosts
```

```

Default domain is CISCO.COM
Name/address lookup uses domain service
Name servers are 192.0.2.220
Host Flag Age Type Address(es)
EXAMPLE1.CISCO.COM (temp, OK) 1 IP 192.0.2.10
EXAMPLE2.CISCO.COM (temp, OK) 8 IP 192.0.2.50
EXAMPLE3.CISCO.COM (temp, OK) 8 IP 192.0.2.115
EXAMPLE4.CISCO.COM (temp, EX) 8 IP 192.0.2.111
EXAMPLE5.CISCO.COM (temp, EX) 0 IP 192.0.2.27
EXAMPLE6.CISCO.COM (temp, EX) 24 IP 192.0.2.30

```

The following is sample output from the **show hosts** command that specifies the VRF vpn101:

```

Router# show hosts vrf vpn101

Default domain is example.com
Domain list: example1.com, example2.com, example3.com
Name/address lookup uses domain service
Name servers are 192.0.2.204, 192.0.2.205, 192.0.2.206
Codes: UN - unknown, EX - expired, OK - OK, ?? - revalidate
       temp - temporary, perm - permanent
       NA - Not Applicable None - Not defined
Host      Port  Flags  Age  Type  Address(es)
user      None  (perm, OK)  0   IP    192.0.2.001
www.example.com  None  (perm, OK)  0   IP    192.0.2.111
                                      192.0.2.112

```

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

**Table 2** *show hosts Field Descriptions*

Field	Description
Default domain	Default domain name to be used to complete unqualified names if no domain list is defined.
Domain list	List of default domain names to be tried in turn to complete unqualified names.
Name/address lookup	Style of name lookup service.
Name servers	List of name server hosts.
Host	Learned or statically defined hostname. Statically defined hostname-to-address mappings can be added to the DNS hostname cache for a DNS view by using the <b>ip hosts</b> command.
Port	TCP port number to connect to when using the defined hostname in conjunction with an EXEC connect or Telnet command.

Field	Description
Flags	<p>Indicates additional information about the hostname-to-IP address mapping. Possible values are as follows:</p> <ul style="list-style-type: none"> <li>EX--Entries marked EX are expired.</li> <li>OK--Entries marked OK are believed to be valid.</li> <li>perm--A permanent entry is entered by a configuration command and is not timed out.</li> <li>temp--A temporary entry is entered by a name server; the Cisco IOS software removes the entry after 72 hours of inactivity.</li> <li>??--Entries marked ?? are considered suspect and subject to revalidation.</li> </ul>
Age	Number of hours since the software last referred to the cache entry.
Type	<p>Type of address. For example, IP, Connectionless Network Service (CLNS), or X.121.</p> <p>If you have used the <b>ip hp-host global</b> configuration command, the <b>show hosts</b> command will display these hostnames as type HP-IP.</p>
Address(es)	IP address of the host. One host may have up to eight addresses.

#### Related Commands

Command	Description
<b>clear host</b>	Removes static hostname-to-address mappings from the hostname cache for the specified DNS view or all DNS views.
<b>ip host</b>	Defines static hostname-to-address mappings in the DNS hostname cache for a DNS view.



# show inventory

To display the product inventory listing of all Cisco products installed in the networking device, use the **show inventory** command in user EXEC or privileged EXEC mode.

```
show inventory [raw] [entity]
```

Syntax Description

raw	(Optional) Retrieves information about all of the Cisco products--referred to as entities--installed in the Cisco networking device, even if the entities do not have a product ID (PID) value, a unique device identifier (UDI), or other physical identification.
entity	(Optional) Name of a Cisco entity (for example, chassis, backplane, module, or slot). A quoted string may be used to display very specific UDI information; for example “sfslot 1” will display the UDI information for slot 1 of an entity named sfslot.

Command Modes

User EXEC Privileged EXEC

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.0(27)S	This command was integrated into Cisco IOS Release 12.0(27)S.
12.2(25)S	This command was integrated into Cisco IOS Release 12.2(25)S.



Release	Modification
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2(27)SBC.
12.2(18)SXE5	This command was integrated into Cisco IOS Release 12.2(18)SXE5.

## Usage Guidelines

The **show inventory** command retrieves and displays inventory information about each Cisco product in the form of a UDI. The UDI is a combination of three separate data elements: a product identifier (PID), a version identifier (VID), and the serial number (SN).

The PID is the name by which the product can be ordered; it has been historically called the “Product Name” or “Part Number.” This is the identifier that one would use to order an exact replacement part.

The VID is the version of the product. Whenever a product has been revised, the VID will be incremented. The VID is incremented according to a rigorous process derived from Telcordia GR-209-CORE, an industry guideline that governs product change notices.

The SN is the vendor-unique serialization of the product. Each manufactured product will carry a unique serial number assigned at the factory, which cannot be changed in the field. This is the means by which to identify an individual, specific instance of a product.

The UDI refers to each product as an entity. Some entities, such as a chassis, will have subentities like slots. Each entity will display on a separate line in a logically ordered presentation that is arranged hierarchically by Cisco entities.

Use the **show inventory** command without options to display a list of Cisco entities installed in the networking device that are assigned a PID.

## Examples

The following is sample output from the **show inventory** command without any keywords or arguments. This sample output displays a list of Cisco entities installed in a router that are assigned a PID.

```
Router# show inventory
NAME: "Chassis", DESCR: "12008/GRP chassis"
PID: GSR8/40 , VID: V01, SN: 63915640
NAME: "slot 0", DESCR: "GRP"
PID: GRP-B , VID: V01, SN: CAB021300R5
NAME: "slot 1", DESCR: "4 port ATM OC3 multimode"
PID: 4OC3/ATM-MM-SC , VID: V01, SN: CAB04036GT1
NAME: "slot 3", DESCR: "4 port OC3 POS multimode"
PID: LC-4OC3/POS-MM , VID: V01, SN: CAB014900GU
NAME: "slot 5", DESCR: "1 port Gigabit Ethernet"
PID: GE-GBIC-SC-B , VID: V01, SN: CAB034251NX
NAME: "slot 7", DESCR: "GRP"
PID: GRP-B , VID: V01, SN: CAB0428AN40
NAME: "slot 16", DESCR: "GSR 12008 Clock Scheduler Card"
PID: GSR8-CSC/ALRM , VID: V01, SN: CAB0429AUYH
NAME: "sfslot 1", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0428ALOS
NAME: "sfslot 2", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0429AU0M
NAME: "sfslot 3", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0429ARD7
NAME: "PSSlot 1", DESCR: "GSR 12008 AC Power Supply"
PID: FWR-GSR8-AC-B , VID: V01, SN: CAB041999CW
```

The table below describes the fields shown in the display.

**Table 3** *show inventory Field Descriptions*

Field	Description
NAME	Physical name (text string) assigned to the Cisco entity. For example, console or a simple component number (port or module number), such as "1," depending on the physical component naming syntax of the device.
DESCR	Physical description of the Cisco entity that characterizes the object. The physical description includes the hardware serial number and the hardware revision.
PID	Entity product identifier. Equivalent to the entPhysicalModelName MIB variable in RFC 2737.
VID	Entity version identifier. Equivalent to the entPhysicalHardwareRev MIB variable in RFC 2737.
SN	Entity serial number. Equivalent to the entPhysicalSerialNum MIB variable in RFC 2737.

For diagnostic purposes, the **show inventory** command can be used with the **raw** keyword to display every RFC 2737 entity including those without a PID, UDI, or other physical identification.

**Note**

The **raw** keyword option is primarily intended for troubleshooting problems with the **show inventory** command itself.

```
Router# show inventory raw
NAME: "Chassis", DESCR: "12008/GRP chassis"
PID:          , VID: V01, SN: 63915640
NAME: "slot 0", DESCR: "GRP"
PID:          , VID: V01, SN: CAB021300R5
NAME: "slot 1", DESCR: "4 port ATM OC3 multimode"
PID: 4OC3/ATM-MM-SC , VID: V01, SN: CAB04036GT1
NAME: "slot 3", DESCR: "4 port OC3 POS multimode"
PID: LC-4OC3/POS-MM , VID: V01, SN: CAB014900GU
```

Enter the **show inventory** command with an *entity* argument value to display the UDI information for a specific type of Cisco entity installed in the networking device. In this example, a list of Cisco entities that match the sfslot argument string is displayed.

```
Router# show inventory sfslot
NAME: "sfslot 1", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0428ALOS
NAME: "sfslot 2", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0429AU0M
NAME: "sfslot 3", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC , VID: V01, SN: CAB0429ARD7
```

You can request even more specific UDI information using the **show inventory** command with an *entity* argument value that is enclosed in quotation marks. In this example, only the details for the entity that exactly matches the sfslot 1 argument string are displayed.

```
Router# show inventory "sfslot 1"
NAME: "sfslot 1", DESCR: "GSR 12008 Switch Fabric Card"
PID: GSR8-SFC          , VID: V01, SN: CAB0428ALOS
```

#### Related Commands

Command	Description
<b>show diag</b>	Displays diagnostic information about the controller, interface processor, and port adapters for a networking device.
<b>show tech-support</b>	Displays general information about the router when it reports a problem.

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## show pagp

To display port-channel information, use the **show pagp** command in user EXEC or privileged EXEC mode.

**show pagp** [*group-number*] {**counters** | **internal** | **neighbor** | **pgroup**}

### Syntax Description

<i>group-number</i>	(Optional) Channel-group number; valid values are a maximum of 64 values from 1 to 282.
<b>counters</b>	Displays the traffic information.
<b>internal</b>	Displays the internal information.
<b>neighbor</b>	Displays the neighbor information.
<b>pgroup</b>	Displays the active port channels.

### Command Default

This command has no default settings.

### Command Modes

User EXEC Privileged EXEC

### Command History

Release	Modification
12.2(14)SX	Support for this command was introduced on the Supervisor Engine 720.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to Release 12.2(17d)SXB.

Release	Modification
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

### Usage Guidelines

You can enter any **show pagp** command to display the active port-channel information. To display the nonactive information, enter the **show pagp** command with a group.

The **port-channel** *num* values from 257 to 282 are supported on the CSM and the FWSM only.

### Examples

This example shows how to display information about the PAgP counters:

```
Router#
show pagp
counters
```

Port	Information		Flush	
	Sent	Recv	Sent	Recv
-----				
Channel group: 1				
Fa5/4	2660	2452	0	0
Fa5/5	2676	2453	0	0
Channel group: 2				
Fa5/6	289	261	0	0
Fa5/7	290	261	0	0
Channel group: 1023				
Fa5/9	0	0	0	0
Channel group: 1024				
Fa5/8	0	0	0	0

```
Router#
```

This example shows how to display internal PAgP information:

```
Router# show pagp
1 internal
```

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
A - Device is in Auto mode.

Timers: H - Hello timer is running. Q - Quit timer is running.  
S - Switching timer is running. I - Interface timer is running.

Channel group 1

Port	Flags	State	Timers	Hello Interval	Partner Count	PAgP Priority	Learning Method
Fa5/4	SC	U6/S7		30s	1	128	Any
Fa5/5	SC	U6/S7		30s	1	128	Any

```
Router#
```

This example shows how to display PAgP-neighbor information for all neighbors:

```
Router# show pagp
neighbor
```

Flags: S - Device is sending Slow hello. C - Device is in Consistent state.  
A - Device is in Auto mode. P - Device learns on physical port.

Channel group 1 neighbors

Port	Partner Name	Partner Device ID	Partner Port	Age	Flags	Group Cap.
Fa5/4	JAB031301	0050.0f10.230c	2/45	2s	SAC	2D
Fa5/5	JAB031301	0050.0f10.230c	2/46	27s	SAC	2D

Channel group 2 neighbors

Port	Partner Name	Partner Device ID	Partner Port	Age	Flags	Group Cap.
Fa5/6	JAB031301	0050.0f10.230c	2/47	10s	SAC	2F
Fa5/7	JAB031301	0050.0f10.230c	2/48	11s	SAC	2F

```

Channel group 1023 neighbors
      Partner
Port      Name      Partner
Device ID
Channel group 1024 neighbors
      Partner
Port      Name      Partner
Device ID
Router#

```

## Related Commands

Command	Description
<b>pagp learn-method</b>	Learns the input interface of the incoming packets.
<b>pagp port-priority</b>	Selects a port in hot standby mode.

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# show processes cpu

To display detailed CPU utilization statistics (CPU use per process) when Cisco IOS, Cisco IOS XE, or Cisco IOS Software Modularity images are running, use the **show processes cpu** command in user EXEC or privileged EXEC mode.

### Cisco IOS Software

```
show processes cpu [history [table] | sorted [1min | 5min | 5sec]]
```

### Cisco IOS Software Modularity

```
show processes cpu [detailed [process-id | process-name] | history]
```

### Cisco Catalyst 4500e Series Switches running IOS XE software

```
show processes cpu [detailed process [process-id | process-name] | history [detailed | summary | table] | sorted]
```

### Syntax Description

history	(Optional) Displays CPU history in a graph format.
table	(Optional) Displays CPU history in a table format.
summary	(Optional) Displays a summary of the CPU history.
sorted	(Optional) Displays CPU utilization sorted by percentage.
1min	(Optional) Sorts CPU utilization based on 1 minute utilization.
5min	(Optional) Sorts CPU utilization based on 5 minutes utilization.
5sec	(Optional) Sorts CPU utilization based on 5 seconds utilization.
detailed	(Optional) Displays more detailed information about Cisco IOS processes (not for POSIX processes).



<i>process-id</i>	(Optional) Process identifier.
-------------------	--------------------------------

<i>process-name</i>	(Optional) Process name.
---------------------	--------------------------

**Command Modes**

User EXEC (&gt;) Privileged EXEC (#)

**Command History**

Release	Modification
12.0	This command was introduced.
12.2(2)T	This command was modified. The <b>history</b> keyword was added.
12.3(8)	This command was enhanced to display Address Resolution Protocol (ARP) output.
12.3(14)T	This command was enhanced to display ARP output.
12.2(18)SXF4	This command was enhanced to support Cisco IOS Software Modularity images.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(33)SB	This command was integrated into Cisco IOS Release 12.2(33)SB.
12.2(33)SCB3	This command was integrated into Cisco IOS Release 12.2(33)SCB3. Support was added for Cisco uBR10012 and uBR7200 routers.
Cisco IOS XE Release 2.1	This command was integrated into Cisco IOS XE Release 2.1.
15.0(1)M	This command was modified. The output was modified to display the CPU time in microseconds that the process has used.
Cisco IOS XE Release 3.1.0.SG	This command was introduced on the Cisco Catalyst 4500e Series Switches.

**Usage Guidelines****Cisco IOS Software**

If you use the optional **history** keyword, three graphs are displayed for Cisco IOS images:

- CPU utilization for the last 60 seconds
- CPU utilization for the last 60 minutes
- CPU utilization for the last 72 hours



Maximum usage is measured and recorded every second; average usage is calculated on periods of more than one second. Consistently high CPU utilization over an extended period indicates a problem. Use the **show processes cpu** command to troubleshoot. Also, you can use the output of this command in the Cisco [Output Interpreter](#) tool to display potential issues and fixes. Output Interpreter is available to registered users of Cisco.com who are logged in and have Java Script enabled.

For a list of system processes, go to [http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products\\_tech\\_note09186a00800a65d0.shtml](http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_tech_note09186a00800a65d0.shtml).

### Cisco IOS Software Modularity

Cisco IOS Software Modularity images display only one graph that shows the CPU utilization for the last 60 minutes. The horizontal axis shows times (for example, 0, 5, 10, 15 minutes), and the vertical axis shows total percentage of CPU utilization (0 to 100 percent).

## Examples

Example output varies between Cisco IOS software images and Cisco IOS Software Modularity software images. The following sections show output examples for each image:

- [show processes cpu, page 15](#)
- [show processes cpu, page 15](#)
- [show processes cpu, page 15](#)

### Cisco IOS Software

The following is sample output from the **show processes cpu** command without keywords:

```
Router# show processes cpu
CPU utilization for five seconds: 0%/0%; one minute: 0%; five minutes: 0%
  PID Runtime(uS)   Invoked    uSecs   5Sec   1Min   5Min TTY Process
    1      4000         67         59  0.00%  0.00%  0.00% 0 Chunk Manager
    2      4000       962255         0  0.00%  0.00%  0.00% 0 Load Meter
    3         0          1         0  0.00%  0.00%  0.00% 0 cpf_process_tp
    4         0          1         0  0.00%  0.00%  0.00% 0 EDDRI_MAIN
    5 586520704     732013     6668  0.00%  0.11%  0.08% 0 Check heaps
    6      4000        991         4  0.00%  0.00%  0.00% 0 Pool Manager
    7         0          1         0  0.00%  0.00%  0.00% 0 DiscardQ Backg
    8         0          2         0  0.00%  0.00%  0.00% 0 Timers
    9         0          2         0  0.00%  0.00%  0.00% 0 ATM AutoVC Per
   10         0          2         0  0.00%  0.00%  0.00% 0 ATM VC Auto Cr
   11 2154956000   4809201     448  0.00%  0.03%  0.03% 0 EnvMon
  PID Runtime(uS)   Invoked    uSecs   5Sec   1Min   5Min TTY Process
   12         0          1         0  0.00%  0.00%  0.00% 0 OIR Handler
   13         0          1         0  0.00%  0.00%  0.00% 0 Crash writer
   14         0          1         0  0.00%  0.00%  0.00% 0 IPC Process le
   15         0       80189         0  0.00%  0.00%  0.00% 0 IPC Dynamic Ca
   16         0          1         0  0.00%  0.00%  0.00% 0 IPC Zone Manag
   17         0     962246         0  0.00%  0.00%  0.00% 0 IPC Service No
   18         0   4698177         0  0.00%  0.00%  0.00% 0 IPC Periodic T
   19         0   4698177         0  0.00%  0.00%  0.00% 0 IPC Deferred P
   20         0          1         0  0.00%  0.00%  0.00% 0 IPC Seat Manag
   21         0          1         0  0.00%  0.00%  0.00% 0 IPC Seat Contr
   22         0     962246         0  0.00%  0.00%  0.00% 0 IPC Loadometer
<snip>
```

The following is sample output of the one-hour portion of the output. The Y-axis of the graph is the CPU utilization. The X-axis of the graph is the increment within the time period displayed in the graph. This example shows the individual minutes during the previous hour. The most recent measurement is on the left of the X-axis.

```
Router# show processes cpu history!-- One minute output omitted
6665776865756676676666667667677676766666766767767666566667
```

```

6378016198993513709771991443732358689932740858269643922613
100
90
80      * *      * *      * * * *
70 * * * * * * * * * * * * * * * * * * * *
60 #####*#####*#####*#####*#####*#####*#####
50 #####*#####*#####*#####*#####*#####*#####
40 #####*#####*#####*#####*#####*#####*#####
30 #####*#####*#####*#####*#####*#####*#####
20 #####*#####*#####*#####*#####*#####*#####
10 #####*#####*#####*#####*#####*#####*#####
0.....1.....1.....2.....2.....3.....3.....4.....4.....5.....5.....
   0      5      0      5      0      5      0      5      0      5
CPU% per minute (last 60 minutes)
* = maximum CPU% # = average CPU%!--- 72-hour output omitted

```

The top two rows, read vertically, display the highest percentage of CPU utilization recorded during the time increment. In this example, the CPU utilization for the last minute recorded is 66 percent. The device may have reached 66 percent only once during that minute, or it may have reached 66 percent multiple times. The device records only the peak reached during the time increment and the average over the course of that increment.

The following is sample output from the **show processes cpu** command on a Cisco uBR10012 router:

```

Router# show processes cpu
CPU utilization for five seconds: 2%/0%; one minute: 2%; five minutes: 2%
  PID Runtime(us)   Invoked    uSecs    5Sec    1Min    5Min  TTY Process
    1         8       471        16  0.00%  0.00%  0.00%  0 Chunk Manager
    2         4       472         8  0.00%  0.00%  0.00%  0 Load Meter
    3         0         1         0  0.00%  0.00%  0.00%  0 IPC 0x50000 Vers
    4         0        10         0  0.00%  0.00%  0.00%  0 C10K Card Event
    5         0        65         0  0.00%  0.00%  0.00%  0 Retransmission o
    6         0         5         0  0.00%  0.00%  0.00%  0 IPC ISSU Dispatc
    7       5112       472     10830  0.63%  0.18%  0.18%  0 Check heaps
    8         0         1         0  0.00%  0.00%  0.00%  0 Pool Manager
    9         0         2         0  0.00%  0.00%  0.00%  0 Timers
   10         0         2         0  0.00%  0.00%  0.00%  0 Serial Backgroun
   11         0      786         0  0.00%  0.00%  0.00%  0 WBCMTS process
   12         0         1         0  0.00%  0.00%  0.00%  0 AAA_SERVER_DEADT
   13         0         1         0  0.00%  0.00%  0.00%  0 Policy Manager
   14         0         1         0  0.00%  0.00%  0.00%  0 Crash writer
   15         0         1         0  0.00%  0.00%  0.00%  0 RO Notify Timers
   16         0         1         0  0.00%  0.00%  0.00%  0 RMI RM Notify Wa
   17         0     2364         0  0.00%  0.00%  0.00%  0 Facility Alarm
   18         0         41         0  0.00%  0.00%  0.00%  0 IPC Dynamic Cach

```

The following is sample output from the **show processes cpu** command that shows an ARP probe process:

```

Router# show processes cpu | include ARP
 17      38140      389690      97  0.00%  0.00%  0.00%  0 ARP Input
 36         0         1         0  0.00%  0.00%  0.00%  0 IP ARP Probe
 40         0         1         0  0.00%  0.00%  0.00%  0 ATM ARP INPUT
 80         0         1         0  0.00%  0.00%  0.00%  0 RARP Input
114         0         1         0  0.00%  0.00%  0.00%  0 FR ARP

```

The table below describes the fields shown in the output.

**Table 4** *show processes cpu Field Descriptions*

Field	Description
CPU utilization for five seconds	CPU utilization for the last 5 seconds. The second number indicates the percent of CPU time spent at the interrupt level.
one minutes	CPU utilization for the last minute.

Field	Description
five minutess	CPU utilization for the last 5 minutes.
PID	Process ID.
Runtime (us)	CPU time that the process has used (in microseconds).
Invoked	Number of times that the process has been invoked.
uSecs	Microseconds of CPU time for each process invocation.
5Sec	CPU utilization by task in the last 5 seconds.
1Min	CPU utilization by task in the last minute.
5Min	CPU utilization by task in the last 5 minutes.
TTY	Terminal that controls the process.
Process	Name of the process.

**Note**

Because platforms have a 4- to 8-microsecond clock resolution, run times are considered reliable only after several invocations or a reasonable, measured run time.

### Cisco IOS Software Modularity

The following is sample output from the **show processes cpu** command when a Software Modularity image is running:

```
Router# show processes cpu
Total CPU utilization for 5 seconds: 99.6%; 1 minute: 98.5%; 5 minutes: 85.3%
PID      5Sec    1Min     5Min Process
1         0.0%    0.1%    0.8% kernel
3         0.0%    0.0%    0.0% qdelogger
4         0.0%    0.0%    0.0% devc-pty
6         0.7%    0.2%    0.1% devc-ser2681
7         0.0%    0.0%    0.0% dumper.proc
4104     0.0%    0.0%    0.0% pipe
8201     0.0%    0.0%    0.0% mqueue
8202     0.0%    0.0%    0.0% fsdev.proc
8203     0.0%    0.0%    0.0% flashfs_hes_slot1.proc
8204     0.0%    0.0%    0.0% flashfs_hes_slot0.proc
8205     0.0%    0.0%    0.0% flashfs_hes_bootflash.proc
8206     0.0%    0.0%    0.0% dfs_disk2.proc
8207     0.0%    0.0%    0.0% dfs_disk1.proc
8208     0.0%    0.0%    0.0% dfs_disk0.proc
8209     0.0%    0.0%    0.0% ldcache.proc
8210     0.0%    0.0%    0.0% watchdog.proc
8211     0.0%    0.0%    0.0% syslogd.proc
8212     0.0%    0.0%    0.0% name_svr.proc
8213     0.0%    0.1%    0.0% wdsysmon.proc
--More--
```

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

**Table 5** *show processes cpu (Software Modularity) Field Descriptions*

Field	Description
Total CPU utilization for five seconds	Total CPU utilization for the last 5 seconds. The second number indicates the percent of CPU time spent at the interrupt level.
1 minute	CPU utilization for the last minute.
5 minutes	CPU utilization for the last 5 minutes.
PID	Process ID.
5Sec	Percentage of CPU time spent at the interrupt level for this process during the last five seconds.
1Min	Percentage of CPU time spent at the interrupt level for this process during the last minute.
5Min	Percentage of CPU time spent at the interrupt level for this process during the last five minutes.
Process	Process name.

The following is partial sample output from the **show processes cpu** command with the **detailed** keyword when a Software Modularity image is running:

```
Router# show processes cpu detailed
Total CPU utilization for 5 seconds: 99.6%; 1 minute: 99.3%; 5 minutes: 88.6%
PID/TID   5Sec   1Min   5Min Process                Prio  STATE      CPU
1          0.0%   0.7%   0.7% kernel                  0     Ready      8.900
  1        0.4%   0.7%   11.4% [idle thread]          0     Ready      2m28s
  2        0.0%   0.0%   0.0%                      63    Receive    0.000
  3        0.0%   0.0%   0.0%                      10    Receive    0.000
  4        0.0%   0.0%   0.1%                      11    Receive    1.848
  5        0.0%   0.0%   0.0%                      63    Receive    0.000
.
.
.
PID/TID   5Sec   1Min   5Min Process                Prio  STATE      CPU
8214      0.0%   0.0%   0.0% sysmgr.proc            10    Receive    0.216
  1        0.0%   0.0%   0.0%                      10    Receive    0.132
  2        0.0%   0.0%   0.0%                      10    Sigwaitin  0.000
  3        0.0%   0.0%   0.0%                      10    Receive    0.004
  4        0.0%   0.0%   0.0%                      10    Receive    0.000
  5        0.0%   0.0%   0.0%                      10    Receive    0.000
  6        0.0%   0.0%   0.0%                      10    Receive    0.004
  7        0.0%   0.0%   0.0%                      10    Receive    0.000
  8        0.0%   0.0%   0.0%                      10    Receive    0.000
  9        0.0%   0.0%   0.0%                      10    Receive    0.000
 10        0.0%   0.0%   0.0%                      10    Receive    0.000
 11        0.0%   0.0%   0.0%                      10    Receive    0.000
 12        0.0%   0.0%   0.0%                      10    Receive    0.000
 13        0.0%   0.0%   0.0%                      10    Receive    0.028
 14        0.0%   0.0%   0.0%                      10    Receive    0.040
 15        0.0%   0.0%   0.0%                      10    Receive    0.000
 16        0.0%   0.0%   0.0%                      10    Receive    0.000
 17        0.0%   0.0%   0.0%                      10    Receive    0.004
 18        0.0%   0.0%   0.0%                      10    Receive    0.000
 19        0.0%   0.0%   0.0%                      10    Receive    0.000
 20        0.0%   0.0%   0.0%                      10    Receive    0.000
 21        0.0%   0.0%   0.0%                      10    Receive    0.004
 22        0.0%   0.0%   0.0%                      10    Receive    0.000
```

```

PID/TID   5Sec   1Min   5Min Process          Prio  STATE      CPU
8215      0.0%   0.0%   0.0% kosh.proc           10   Reply      0.044
      1   0.0%   0.0%   0.0%
PID/TID   5Sec   1Min   5Min Process          Prio  STATE      CPU
12290     0.0%   0.0%   0.0% chkptd.proc         10   Receive    0.080
      1   0.0%   0.0%   0.0%
      2   0.0%   0.0%   0.0%
PID/TID   5Sec   1Min   5Min Process          Prio  STATE      CPU
12312     0.0%   0.0%   0.0% sysmgr.proc         10   Receive    0.112
      1   0.0%   0.0%   0.0%
      2   0.0%   0.0%   0.0%
PID/TID   5Sec   1Min   5Min Process          Prio  STATE      CPU
12316     0.0%   0.0%   0.0% installer.proc      10   Receive    0.072
      1   0.0%   0.0%   0.0%
      3   0.0%   0.0%   0.0%
      4   0.0%   0.0%   0.0%
      6   0.0%   0.0%   0.0%

```

Process sbin/ios-base, type IOS, PID = 12317

CPU utilization for five seconds: 12%/9%; one minute: 13%; five minutes: 10%

Task	Runtime(us)	Invoked	uSecs	5Sec	1Min	5Min	TTY	Task Name
1	219	1503	145	0.00%	0.00%	0.00%	0	Hot Service Task
2	23680	42384	558	2.39%	6.72%	4.81%	0	Service Task
3	6104	11902	512	3.51%	1.99%	1.23%	0	Service Task
4	1720	5761	298	1.91%	0.90%	0.39%	0	Service Task
5	0	5	0	0.00%	0.00%	0.00%	0	Chunk Manager
6	0	1	0	0.00%	0.00%	0.00%	0	Connection Mgr
7	4	106	37	0.00%	0.00%	0.00%	0	Load Meter
8	6240	7376	845	0.23%	0.15%	0.55%	0	Exec
9	379	62	6112	0.00%	0.07%	0.04%	0	Check heaps
10	0	1	0	0.00%	0.00%	0.00%	0	Pool Manager
11	3	2	1500	0.00%	0.00%	0.00%	0	Timers
12	0	1	0	0.00%	0.00%	0.00%	0	AAA_SERVER_DEADT
13	0	2	0	0.00%	0.00%	0.00%	0	AAA high-capacit
14	307	517	593	0.00%	0.05%	0.03%	0	EnvMon
15	0	1	0	0.00%	0.00%	0.00%	0	OIR Handler
16	283	58	4879	0.00%	0.04%	0.02%	0	ARP Input
17	0	2	0	0.00%	0.00%	0.00%	0	Serial Backgroun
18	0	81	0	0.00%	0.00%	0.00%	0	ALARM_TRIGGER_SC
19	0	2	0	0.00%	0.00%	0.00%	0	DDR Timers
20	0	2	0	0.00%	0.00%	0.00%	0	Dialer event
21	4	2	2000	0.00%	0.00%	0.00%	0	Entity MIB API
22	0	54	0	0.00%	0.00%	0.00%	0	Compute SRP rate
23	0	9	0	0.00%	0.00%	0.00%	0	IPC Dynamic Cach
24	0	1	0	0.00%	0.00%	0.00%	0	IPC Zone Manager
25	0	1	0	0.00%	0.00%	0.00%	0	IPC Punt Process
26	4	513	7	0.00%	0.00%	0.00%	0	IPC Periodic Tim
27	11	513	21	0.00%	0.00%	0.00%	0	IPC Deferred Por
28	0	1	0	0.00%	0.00%	0.00%	0	IPC Seat Manager
29	83	1464	56	0.00%	0.00%	0.00%	0	EEM ED Syslog
.								
.								
.								

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

**Table 6** *show processes cpu detailed (Software Modularity) Field Descriptions*

Field	Description
Total CPU utilization for five seconds	Total CPU utilization for the last 5 seconds. The second number indicates the percent of CPU time spent at the interrupt level.
1 minute	CPU utilization for the last minute.
5 minutes	CPU utilization for the last 5 minutes.
PID/TID	Process ID or task ID.

Field	Description
5Sec	Percentage of CPU time spent at the interrupt level for this process during the last five seconds.
1Min	Percentage of CPU time spent at the interrupt level for this process during the last minute.
5Min	Percentage of CPU time spent at the interrupt level for this process during the last five minutes.
Process	Process name.
Prio	Priority level of the process.
STATE	Current state of the process.
CPU	CPU utilization of the process in minutes and seconds.
type	Type of process; can be either IOS or POSIX.
Task	Task sequence number.
Runtime(us)	CPU time that the process has used (in microseconds).
Invoked	Number of times that the process has been invoked.
uSecs	Microseconds of CPU time for each process invocation.
5Sec	CPU utilization by task in the last 5 seconds.
1Min	CPU utilization by task in the last minute.
5Min	CPU utilization by task in the last 5 minutes.
TTY	Terminal that controls the process.
Task Name	Task name.

### Cisco Catalyst 4500e Series Switches running IOS XE software

The following is sample output from the **show processes cpu** command:

```
Switch#show proc cpu
Core 0: CPU utilization for five seconds: 1%; one minute: 7%; five minutes: 5%
Core 1: CPU utilization for five seconds: 1%; one minute: 20%; five minutes: 12%
PID      Runtime(ms) Invoked    uSecs  5Sec  1Min  5Min  TTY   Process
1         935         596    156971 0.00  0.00  0.00  0     init
2          0          79    10405 0.00  0.00  0.00  0     kthreadd
3         13        2450    5575 0.00  0.00  0.00  0     migration/0
4         12         808    15237 0.00  0.00  0.00  0     ksoftirqd/0
5          8        1413    6170 0.00  0.00  0.00  0     migration/1
6         14         894    16370 0.00  0.00  0.00  0     ksoftirqd/1
7        31        1422    21961 0.00  0.00  0.00  0     events/0
8        32        1269    25403 0.00  0.00  0.00  0     events/1
9          5         637     9070 0.00  0.00  0.00  0     khelper
61       80          79   102031 0.00  0.00  0.00  0     kblockd/0
```

[illegible]

The following is sample output from the **show processes cpu history detailed** command:

```
History information for core 0:
```

100

33333333343333253333433334333343333433334333343333433333

[illegible][illegible]

90



The table below describes the fields shown in the output.

Field	Description
Core (#)	Core for which CPU utilization is being generated.
CPU utilization for five seconds	CPU utilization for the last 5 seconds. The second number indicates the percent of CPU time spent at the interrupt level.
one minutes	CPU utilization for the last minute.
five minutess	CPU utilization for the last 5 minutes.
PID	Process ID.

Field	Description
Runtime (us)	CPU time that the process has used (in microseconds).
Invoked	Number of times that the process has been invoked.
uSecs	Microseconds of CPU time for each process invocation.
5Sec	CPU utilization by task in the last 5 seconds.
1Min	CPU utilization by task in the last minute.
5Min	CPU utilization by task in the last 5 minutes.
TTY	Terminal that controls the process.
Process	Name of the process.

#### Related Commands

Command	Description
<b>show processes</b>	Displays information about active processes.
<b>show processes memory</b>	Displays the amount of system memory used per system process.

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## show running-config

---

To display the contents of the current running configuration file or the configuration for a specific module, Layer 2 VLAN, class map, interface, map class, policy map, or virtual circuit (VC) class, use the **show running-config** command in privileged EXEC mode.

**show running-config** [*options*]

**Syntax Description***options*

(Optional) Keywords used to customize output. You can enter more than one keyword.

- **all** --Expands the output to include the commands that are configured with default parameters. If the **all** keyword is not used, the output does not display commands configured with default parameters.
- **brief** --Displays the configuration without certification data and encrypted filter details. The **brief** keyword can be used with the **linenum** keyword.
- **class-map** [*name*][**linenum**]--Displays class map information. The **linenum** keyword can be used with the **class-map** *name* option.
- **control-plane** [**cef-exception**| **host**| **transit**]--Displays control-plane information. The **cef-exception**, **host**, and **transit** keywords can be used with the **control-plane** option.
- **flow** {**exporter** | **monitor** | **record**}--Displays global flow configuration commands. The **exporter**, **monitor**, and **record** keywords can be used with the **flow** option.
- **full** --Displays the full configuration.
- **interface** *type number* -- Displays interface-specific configuration information. If you use the **interface** keyword, you must specify the interface type and the interface number (for example, **interface ethernet 0**). Keywords for common interfaces include **async**, **ethernet**, **fastEthernet**, **group-async**, **loopback**, **null**, **serial**, and **virtual-template**. Use the **show run interface ?** command to determine the interfaces available on your system.
- **linenum** --Displays line numbers in the output. The **brief** or **full** keyword can be used with the **linenum** keyword. The **linenum** keyword can be used with the **class-map**, **interface**, **map-class**, **policy-map**, and **vc-class** keywords.
- **map-class** [**atm** | **dialer** | **frame-relay**] [**name**] [**linenum**]--Displays map class information. This option is described separately; see the **show running-config map-class** command page.

- **partition types** -- Displays the configuration corresponding to a partition. The **types** keyword can be used with the **partition** option.
- **policy-map** [*name*][*linenum*]--Displays policy map information. The **linenum** keyword can be used with the **policy-map** *name* option.
- **vc-class** [*name*] [*linenum*]--Displays VC-class information (the display is available only on certain routers such as the Cisco 7500 series routers). The **linenum** keyword can be used with the **vc-class** *name* option.

- **view full** --Enables the display of a full running configuration. This is for view-based users who typically can only view the configuration commands that they are entitled to access for that particular view.
- **vrf** *name* --Displays the Virtual routing and forwarding (VRF)-aware configuration module number .
- **vlan** [*vlan-id*]--Displays the specific VLAN information ; valid values are from 1 to 4094.

### Command Default

The default syntax, **show running-config**, displays the contents of the running configuration file, except commands configured using the default parameters.

### Command Modes

Privileged EXEC (#)

### Command History

Release	Modification
11.0	This command was introduced.
12.0	This command was replaced by the <b>more system:running-config</b> command.
12.0(1)T	This command was integrated into Cisco IOS Release 12.0(1)T, and the output modifier (!) was added.
12.2(4)T	This command was modified. The <b>linenum</b> keyword was added.
12.3(8)T	This command was modified. The <b>view full</b> option was added.

Release	Modification
12.2(14)SX	This command was integrated into Cisco IOS Release 12.2(14)SX. The <b>module number</b> and <b>vlan vlan-id</b> keywords and arguments were added for the Supervisor Engine 720.
12.2(17d)SXB	This command was integrated into Release 12.2(17d)SXB and implemented on the Supervisor Engine 2.
12.2(33)SXH	This command was modified. The <b>all</b> keyword was added.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2. This command was enhanced to display the configuration information for traffic shaping overhead accounting for ATM and was implemented on the Cisco 10000 series router for the PRE3.
12.2(33)SRC	This command was integrated into Cisco IOS Release 12.2(33)SRC.
12.2(33)SB	This command was modified. Support for the Cisco 7300 series router was added.
12.4(24)T	This command was modified in a release earlier than Cisco IOS Release 12.4(24)T. The <b>partition</b> and <b>vrf</b> keywords were added. The <b>module</b> and <b>vlan</b> keywords were removed.
15.0(1)M	This command was modified. The output was modified to include encrypted filter information.
12.2(33)SXI	This command was modified. The output was modified to display Access Control List (ACL) information.

### Usage Guidelines

The **show running-config** command is technically a command alias (substitute or replacement syntax) of the **more system:running-config** command. Although the use of more commands is recommended (because of their uniform structure across platforms and their expandable syntax), the **show running-config** command remains enabled to accommodate its widespread use, and to allow typing shortcuts such as **show run**.

The **show running-config interface** command is useful when there are multiple interfaces and you want to look at the configuration of a specific interface.

The **linenum** keyword causes line numbers to be displayed in the output. This option is useful for identifying a particular portion of a very large configuration.

You can enter additional output modifiers in the command syntax by including a pipe character (|) after the optional keyword. For example, **show running-config interface serial 2/1 linenum | begin 3**. To display

the output modifiers that are available for a keyword, enter `| ?` after the keyword. Depending on the platform you are using, the keywords and the arguments for the *options* argument may vary.

Prior to Cisco IOS Release 12.2(33)SXH, the **show running-config** command output omitted configuration commands set with default values. Effective with Cisco IOS Release 12.2(33)SXH, the **show running-config all** command displays complete configuration information, including the default settings and values. For example, if the Cisco Discovery Protocol (abbreviated as CDP in the output) hold-time value is set to its default of 180:

- The **show running-config** command does not display this value.
- The **show running-config all** displays the following output: `cdp holdtime 180`.

If the Cisco Discovery Protocol holdtime is changed to a nondefault value (for example, 100), the output of the **show running-config** and **show running-config all** commands is the same; that is, the configured parameter is displayed.



#### Note

In Cisco IOS Release 12.2(33)SXH, the **all** keyword expands the output to include some of the commands that are configured with default values. In subsequent Cisco IOS releases, additional configuration commands that are configured with default values will be added to the output of the **show running-config all** command.

Effective with Cisco IOS Release 12.2(33)SXI, the **show running-config** command displays ACL information. To exclude ACL information from the output, use the **show running | section exclude ip access | access list** command.

#### Cisco 7600 Series Router

In some cases, you might see a difference in the duplex mode that is displayed between the **show interfaces** command and the **show running-config** command. The duplex mode that is displayed in the **show interfaces** command is the actual duplex mode that the interface is running. The **show interfaces** command displays the operating mode of an interface, and the **show running-config** command displays the configured mode of the interface.

The **show running-config** command output for an interface might display the duplex mode but no configuration for the speed. This output indicates that the interface speed is configured as auto and that the duplex mode that is displayed becomes the operational setting once the speed is configured to something other than auto. With this configuration, it is possible that the operating duplex mode for that interface does not match the duplex mode that is displayed with the **show running-config** command.

#### Examples

The following example shows the configuration for serial interface 1. The fields are self-explanatory.

```
Router# show running-config interface serial 1
Building configuration...
Current configuration:
!
interface Serial1
 no ip address
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
 shutdown
end
```

The following example shows the configuration for Ethernet interface 0/0. Line numbers are displayed in the output. The fields are self-explanatory.

```
Router# show running-config interface ethernet 0/0 linenum
Building configuration...
Current configuration : 104 bytes
 1 : !
 2 : interface Ethernet0/0
 3 : ip address 10.4.2.63 255.255.255.0
 4 : no ip route-cache
 5 : no ip mroute-cache
 6 : end
```

The following example shows how to set line numbers in the command output and then use the output modifier to start the display at line 10. The fields are self-explanatory.

```
Router# show running-config linenum | begin 10

10 : boot-start-marker
11 : boot-end-marker
12 : !
13 : no logging buffered
14 : enable password #####
15 : !
16 : spe 1/0 1/7
17 : firmware location bootflash:mica-modem-pw.172.16.0.0.bin
18 : !
19 : !
20 : resource-pool disable
21 : !
22 : no aaa new-model
23 : ip subnet-zero
24 : ip domain name cisco.com
25 : ip name-server 172.16.11.48
26 : ip name-server 172.16.2.133
27 : !
28 : !
29 : isdn switch-type primary-5ess
30 : !
.
.
.
126 : end
```

The following example shows how to display the module and status configuration for all modules on a Cisco 7600 series router. The fields are self-explanatory.

```
Router#
show running-config
Building configuration...
Current configuration:
!
version 12.0
service timestamps debug datetime localtime
service timestamps log datetime localtime
no service password-encryption
!
hostname Router
!
boot buffersize 126968
boot system flash slot0:7600r
boot bootldr bootflash:c6msfc-boot-mz.120-6.5T.XE1.0.83.bin
enable password lab
!
clock timezone Pacific -8
clock summer-time Daylight recurring
redundancy
main-cpu
auto-sync standard
!
```



```

ip subnet-zero
!
ip multicast-routing
ip dvmrp route-limit 20000
ip cef
mls flow ip destination
mls flow ipx destination
cns event-service server
!
spanning-tree portfast bpdu-guard
spanning-tree uplinkfast
spanning-tree vlan 200 forward-time 21
port-channel load-balance sdip
!
!
!
shutdown
!
!
.
.
.

```

In the following sample output from the **show running-config** command, the **shape average** command indicates that the traffic shaping overhead accounting for ATM is enabled. The BRAS-DSLAM encapsulation type is qinq and the subscriber line encapsulation type is snap-rbe based on the ATM adaptation layer 5 (AAL5) service. The fields are self-explanatory

```

Router# show running-config
.
.
.
subscriber policy recording rules limit 64
no mpls traffic-eng auto-bw timers frequency 0
call rsvp-sync
!
controller Tl 2/0
framing sf
linecode ami
!
controller Tl 2/1
framing sf
linecode ami
!
!
policy-map unit-test
class class-default
shape average percent 10 account qinq aal5 snap-rbe
!

```

The following is sample output from the **show running-config class-map** command. The fields in the display are self-explanatory.

```

Router# show running-config class-map
Building configuration...
Current configuration : 2910 bytes
!
class-map type stack match-all ip_tcp_stack
 match field IP protocol eq 0x6 next TCP
class-map type access-control match-all my
 match field UDP dest-port eq 1111
 match encrypted
  filter-version 0.1, Dummy Filter 2
  filter-id 123
  filter-hash DE0EB7D3C4AFDD990038174A472E4789
  algorithm aes256cbc
  cipherkey realm-cisco.sym
  ciphervalue #
oeahb4L6JK+XuC0q8k9AqXvBeQWzVfdg8WV67WEXbiWdXGQs6BEXqQeb4Pfow570zM4eDw0gxlp/Er8w
/lXsmolSgYpYuxFMYb1KX/H2iCXvA76VX7w5TElb/+6ekgbfP/d5ms6DEzKa8D1Opl+Q95lP194PsIlU
wCyfVCwLS+T8p3RDLi8dKBgQMCDW4Dha1ObBJTpV4zpwhEdMvJDu5PATtEQhfjhN/UYeyQiPRthjbkJn

```

```

LzT8hQFxxYwVW8PCjkyqEwYrr+R+mFG/C7tFRiooaW9MU9PCpFd95FARv1U=#
exit
class-map type stack match-all ip_udp_stack
match field IP protocol eq 0x11 next UDP
class-map type access-control match-all psirt1
match encrypted
  filter-version 0.0_DummyVersion_20090101_1830
  filter-id      cisco-sa-20090101-dummy_ddts_001
  filter-hash    FC50BED10521002B8A170F29AF059C53
  algorithm      aes256cbc
  cipherkey      realm-cisco.sym
  ciphervalue    #
DkGbVq0FPAsVJKguU15lQPDfZyTcHUXWsJ8+tD+dCSYW9cjkRU9jyST4v04u69/L62QlbyQuKdyQmb10
6sAeY5vDsDfDV05k4o5eD+j8cMt78iZT0Qg7uGiBSYBbak3kKn/5w2gDdlvnivyQ7g4Ltd9+XM+GP6XL
27RrXeP5A5iGbzc7KI9t6riZXk0gmR/vFwla5wck0D/iQHilFa/yRPoKMSF1qfIlLTe5NM7JArSTKET2
pu7wZammTz4FF6rY#
exit
match start TCP payload-start offset 0 size 10 regex "abc.*def"
match field TCP source-port eq 1234
class-map type access-control match-all psirt2
match encrypted
  filter-version 0.0_DummyVersion_20090711_1830
  filter-id      cisco-sa-20090711-dummy_ddts_002
  filter-hash    DE0EB7D3C4AFDD990038174A472E4789
  algorithm      aes256cbc
  cipherkey      realm-cisco.sym

```

## Related Commands

Command	Description
<b>bandwidth</b>	Specifies or modifies the bandwidth allocated for a class belonging to a policy map, and enables ATM overhead accounting.
<b>boot config</b>	Specifies the device and filename of the configuration file from which the router configures itself during initialization (startup).
<b>configure terminal</b>	Enters global configuration mode.
<b>copy running-config startup-config</b>	Copies the running configuration to the startup configuration. (Command alias for the <b>copy system:running-config nvram:startup-config</b> command.)
<b>shape</b>	Shapes traffic to the indicated bit rate according to the algorithm specified, and enables ATM overhead accounting.
<b>show interfaces</b>	Displays statistics for all interfaces configured on the router or access server.
<b>show policy-map</b>	Displays the configuration of all classes for a specified service policy map or all classes for all existing policy maps, and displays ATM overhead accounting information, if configured.

Command	Description
<b>show startup-config</b>	Displays the contents of NVRAM (if present and valid) or displays the configuration file pointed to by the CONFIG_FILE environment variable. (Command alias for the <b>more:nvram startup-config</b> command.)

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## show software authenticity file

To display information related to software authentication for a specific image file, use the **show software authenticity file** command in privileged EXEC mode.

```
show software authenticity file {flash0:filename | flash1:filename | flash:filename |
nvrn:filename | usbflash0:filename | usbflash1:filename}
```

### Syntax Description

<i>flash0:</i>	Displays information related to software authentication for flash 0 resources.
filename	Name of the filename in memory.
<i>flash1:</i>	Displays information related to software authentication for flash 1 resources.
flash:	Displays information related to software authentication for flash resources.
nvrn:	Displays information related to software authentication for NVRAM resources.
<b>usbflash0:</b>	Displays information related to software authentication for Universal Serial Bus (USB) flash 0 resources.
<b>usbflash1:</b>	Displays information related to software authentication for USB flash 1 resources.

### Command Modes

Privileged EXEC (#)

**Command History**

Release	Modification
15.0(1)M	This command was introduced for the Cisco 1941, 2900, and 3900 routers.

**Usage Guidelines**

The show software authenticity file command allows you to display software authentication related information that includes image credential information, key type used for verification, signing information, and other attributes in the signature envelope, for a specific image file. The command handler will extract the signature envelope and its fields from the image file and dump the required information.

**Examples**

The following example displays software authentication related information for an image file named c3900-universalk9-mz.SSA:

```
Router# show software authenticity file flash0:c3900-universalk9-mz.SSA
File Name           : flash0:c3900-universalk9-mz.SSA
Image type          : Development
  Signer Information
    Common Name      : xxx
    Organization Unit : xxx
    Organization Name : xxx
    Certificate Serial Number : xxx
    Hash Algorithm    : SHA512
  Signature Algorithm : 2048-bit RSA
    Key Version      : A
```

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

**Table 8** *show software authenticity file Field Descriptions*

Field	Description
File Name	Name of the filename in the memory. For example, flash0:c3900-universalk9-mz.SSA refers to filename c3900-universalk9-mz.SSA in flash memory (flash0:).
Image type	Displays the type of image.
Signer Information	Signature information.
Common Name	Displays the name of the software manufacturer.
Organization Unit	Displays the hardware the software image is deployed on.
Organization Name	Displays the owner of the software image.
Certificate Serial Number	Displays the certificate serial number for the digital signature.
Hash Algorithm	Displays the type of hash algorithm used in digital signature verification.

Field	Description
Signature Algorithm	Displays the type of signature algorithm used in digital signature verification.
Key Version	Displays the key version used for verification.

**Related Commands**

Command	Description
<b>show software authenticity keys</b>	Displays the software public keys that are in the storage with the key types.
<b>show software authenticity running</b>	Displays information related to software authentication for the current ROMMON, monitor library (monlib), and Cisco IOS image used for booting.

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# show software authenticity keys

To display the software public keys that are in the storage with the key types, use the **show software authenticity keys** command in privileged EXEC mode.

**show software authenticity keys**

## Syntax Description

This command has no argument or keywords.

## Command Modes

Privileged EXEC (#)

## Command History

Release	Modification
15.0(1)M	This command was introduced for the Cisco 1941, 2900, and 3900 routers.

## Usage Guidelines

The display from this command includes the public keys that are in the storage with the key types.

## Examples

The following is sample output from the show software authenticity keys command:

```
Router# show software authenticity keys
Public Key #1 Information
-----
Key Type           : Release   (Primary)
Public Key Algorithm : RSA
Modulus :
    CC:CA:40:55:8C:71:E2:4A:3A:B6:9D:5C:94:1D:02:BA:
    .....
    26:04:6B:33:EB:70:2B:18:24:C7:D9:31:3E:77:24:85
Exponent : xxx
Key Version           : A
Public Key #2 Information
-----
Key Type           : Development (Primary)
Public Key Algorithm : RSA
Modulus :
```



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```

CC:CA:40:55:8C:71:E2:4A:3A:B6:9D:5C:94:1D:02:BA:
.....
26:04:6B:33:EB:70:2B:18:24:C7:D9:31:3E:77:24:85
Exponent : xxx
Key Version      : A

```

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

**Table 9** *show software authenticity running Field Descriptions*

Field	Description
Public Key #	Public key number.
Key Type	Displays the key type used for image verification.
Public Key Algorithm	Displays the name of the algorithm used for public key cryptography.
Modulus	Modulus of the public key algorithm.
Exponent	Exponent of the public key algorithm
Key Version	Displays the key version used for verification.

#### Related Commands

Command	Description
<b>show software authenticity file</b>	Displays information related to software authentication for the loaded image file.
<b>show software authenticity running</b>	Displays information related to software authentication for the current ROM monitor (ROMMON), monitor library (monlib), and Cisco IOS image used for booting.

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# show software authenticity running

To display information related to software authentication for the current ROM monitor (ROMMON), monitor library (monlib), and Cisco IOS image used for booting, use the **show software authenticity running** command in privileged EXEC mode.

**show software authenticity running**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Modes</b>	Privileged EXEC (#)
----------------------	---------------------

Command History	Release	Modification
	15.0(1)M	This command was introduced for the Cisco 1941, 2900, and 3900 routers.

<b>Usage Guidelines</b>	<p>The information displayed by the show software authenticity running command about the current ROMMON, monlib and Cisco IOS image used for booting includes:</p> <ul style="list-style-type: none"><li>• Image credential information</li><li>• Key type used for verification</li><li>• Signing information</li><li>• Any other attributes in the signature envelope</li></ul>
-------------------------	---

<b>Examples</b>	<p>The following example displays software authentication related information for the current ROM monitor (ROMMON), monitor library (monlib), and Cisco IOS image used for booting:</p>
-----------------	---

```
Router(mode-prompt
)# show software authenticity running
SYSTEM IMAGE
-----
Image type : Development
```



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```

Signer Information
Common Name : xxx
Organization Unit : xxx
Organization Name : xxx
Certificate Serial Number : xxx
Hash Algorithm : xxx
Signature Algorithm : 2048-bit RSA
Key Version : xxx
Verifier Information
Verifier Name : ROMMON 2
Verifier Version : System Bootstrap, Version 12.4(20090409:084310)
ROMMON 2
-----
Image type : Development
Signer Information
Common Name : xxx
Organization Unit : xxx
Organization Name : xxx
Certificate Serial Number : xxx
Hash Algorithm : xxx
Signature Algorithm : 2048-bit RSA
Key Version : xxx
Verifier Information
Verifier Name : ROMMON 2
Verifier Version : System Bootstrap, Version 12.4(20090409:084310)

```

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

**Table 10** *show software authenticity running Field Descriptions*

Field	Description
SYSTEM IMAGE	Section of the output displaying the system image information.
Image type	Displays the type of image.
Common Name	Displays the name of the software manufacturer.
Organization Unit	Displays the hardware the software image is deployed on.
Organization Name	Displays the owner of the software image.
Certificate Serial Number	Displays the certificate serial number for the digital signature.
Hash Algorithm	Displays the type of hash algorithm used in digital signature verification.
Signature Algorithm	Displays the type of signature algorithm used in digital signature verification.
Key Version	Displays the key version used for verification.
Verifier Name	Name of the program responsible for performing the digital signature verification.
Verifier Version	Version of the program responsible for performing the digital signature verification.

Field	Description
ROMMON 2	Section of the output displaying the current ROM monitor (ROMMON) information.

**Related Commands**

Command	Description
<b>show software authenticity file</b>	Displays the software authenticity related information for the loaded image file.
<b>show software authenticity keys</b>	Displays the software public keys that are in the storage with the key types.

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## show software installer rollback-timer

The **show software installer rollback-timer** command displays the current auto-rollback timer status for a standalone platform or all switches in a stacked system.

**show software installer rollback-timer**

### Command Default

There are no command options.

### Command Modes

User EXEC (>) Privileged EXEC (#)

### Command History

Release	Modification
IOS XE 3.2.0 SE	Command introduced.

### Usage Guidelines

There are no command options.

### Examples

To show the auto-rollback timer status for the current switch, perform the following.

```
infra-p2-3#show software installer rollback-timer
Switch#      Status      Duration
-----
1             active      00:31:28
2             active      00:31:43

infra-p2-3#

infra-p2-3#show software installer rollback-timer
Switch#      Status      Duration
-----
1             inactive    -
2             inactive    -
```

```
infra-p2-3#
```

**Related Commands**

Command	Description
<b>software clean</b>	Use this command to remove any and all packages and provisioning files that are no longer in use.
<b>software install file</b>	Install Cisco IOS XE files.
<b>software commit</b>	Use this command to commit a package set that was installed using the <b>auto-rollback</b> command option of the <b>software install</b> command.
<b>software install source switch</b>	Use this command to install the running IOS XE software packages from one stack member to one or more other stack members.
<b>software rollback</b>	Use this command to roll back the committed Cisco IOS XE Software to a previous installation point.
<b>show version</b>	To display information about the currently loaded software along with hardware and device information, use the <b>show version</b> command.

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## show software package

To display information about a specific bundle or package file, use the **show software package** command in privileged EXEC mode.

**show software package** *bundle or package url* [**detail**][**verbose**]

### Syntax Description

<i>bundle or package url</i>	Specify the name of the bundle or package file whose information should be displayed.
<b>detail</b>	(optional) This command option is intended to provide additional details about the specified package or bundle file. Currently, no additional information is displayed.
<b>verbose</b>	(optional) provides some additional info in the log files

### Command Default

No default behavior or values.

### Command Modes

User EXEC (>) Privileged EXEC (#)

### Command History

Release	Modification
IOS XE 3.2.0 SE	Command introduced.

## Usage Guidelines

The 'show software package' command displays information about the specified bundle or package file.

If a package file is specified, this command displays information from its package metadata.

If a bundle file is specified, this command displays information from its bundle metadata, and also information from the package metadata of each package included in the bundle.

## Examples

The following example shows the **show software package** output for a bundle file.

```
infra-p2-3#show software package flash:cat3k_caa-universalk9.SSA.03.09.19.
EMP.150-9.19.EMP.bin
Package: cat3k_caa-universalk9.SSA.03.09.19.EMP.150-9.19.EMP.bin
Size: 220766688
Timestamp: 2012-11-15 11:53:50 UTC
Canonical path: /flash/cat3k_caa-universalk9.SSA.03.09.19.EMP.150-9.19.EMP.bin
Header size: 2928 bytes

Internal package information:
Name: rp_super
BuildTime: Thu Nov 15 01:55:09 PST 2012
ReleaseDate: Thu Nov 15 01:55:09 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-universalk9
Build: 03.09.19.EMP
Dependencies: PROVIDES: cat3k_caa-base,03.09.19.EMP,mips; cat3k_caa-infra,03.09.19.EMP,
mips; cat3k_caa-platform,03.09.19.EMP,mips; cat3k_caa-iosd-universalk9,150-9.19.EMP,
mips; cat3k_caa-wcm,03.09.19.EMP,mips; cat3k_caa-drivers,03.09.19.EMP,mips;
BuildType: Production

Package is bootable from media and tftp.
Package contents:

Package: cat3k_caa-base.SSA.03.09.19.EMP.pkg
Size: 74390336
Timestamp: 2012-11-15 11:55:30 UTC
Header size: 412 bytes

Internal package information:
Name: rp_base
BuildTime: Thu Nov 15 01:52:19 PST 2012
ReleaseDate: Thu Nov 15 01:52:19 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-base
Build: 03.09.19.EMP
Dependencies: PROVIDES: nova-gold,03.09.19.EMP,mips; nova-goldlib,
03.09.19.EMP,mips;
nova-base,03.09.19.EMP,mips#REQUIRES:#WORKSWITH:#CONFLICTS:#
BuildType: Production

Package is not bootable.

Package: cat3k_caa-drivers.SSA.03.09.19.EMP.pkg
Size: 2734772
Timestamp: 2012-11-15 11:55:37 UTC
Header size: 252 bytes

Internal package information:
Name: drivers
BuildTime: Thu Nov 15 01:54:53 PST 2012
ReleaseDate: Thu Nov 15 01:54:53 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-drivers
Build: 03.09.19.EMP
Dependencies: PROVIDES: ng3k-drivers,03.09.19.EMP,mips#REQUIRES:#WORKSWITH:
```

```

#CONFLICTS:#
BuildType: Production

Package is not bootable.

Package: cat3k_caa-infra.SSA.03.09.19.EMP.pkg
Size: 32465772
Timestamp: 2012-11-15 11:55:32 UTC
Header size: 436 bytes

Internal package information:
Name: rp_infra
BuildTime: Thu Nov 15 01:53:08 PST 2012
ReleaseDate: Thu Nov 15 01:53:08 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-infra
Build: 03.09.19.EMP
Dependencies: PROVIDES: nova-infra,03.09.19.EMP,mips;
nova-infralibs,03.09.19.EMP,mips; nova-web,03.09.19.EMP,mips;
nova-shell,03.09.19.EMP,mips; nova-console-relay,03.09.19.EMP,mips;
nova-mgmt,03.09.19.EMP,mips; nova-ng3k-flash,03.09.19.EMP,mips#
EQUIRES:#WORKSWITH:#CONFLICTS:#
BuildType: Production

Package is not bootable.

Package: cat3k_caa-iosd-universalk9.SSA.150-9.19.EMP.pkg
Size: 30384940
Timestamp: 2012-11-15 11:55:34 UTC
Header size: 372 bytes

Internal package information:
Name: rp_iosd
BuildTime: Thu Nov 15 01:54:09 PST 2012
ReleaseDate: Thu Nov 15 01:54:09 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-iosd-universalk9
Build: 150-9.19.EMP
Dependencies: PROVIDES: iosd-stuff,03.09.19.EMP,mips; nova-ioslibs-required,
03.09.19.EMP,mips; ioucon,150-9.19.EMP,mips;
ng3k-iosd-universalk9,150-9.19.EMP,mips#REQUIRES:#WORKSWITH:#CONFLICTS:#
BuildType: Production

Package is not bootable.

Package: cat3k_caa-platform.SSA.03.09.19.EMP.pkg
Size: 18148064
Timestamp: 2012-11-15 11:55:33 UTC
Header size: 296 bytes

Internal package information:
Name: rp_platform
BuildTime: Thu Nov 15 01:53:39 PST 2012
ReleaseDate: Thu Nov 15 01:53:39 PST 2012
RouteProcessor: mips
Platform: ng3k
User: udonthi
PackageName: cat3k_caa-platform
Build: 03.09.19.EMP
Dependencies: PROVIDES: nova-platformlibs-required,03.09.19.EMP,mips;
ng3k-platform,03.09.19.EMP,mips#REQUIRES:#WORKSWITH:#CONFLICTS:#
BuildType: Production

Package is not bootable.

Package: cat3k_caa-wcm.SSA.03.09.19.EMP.pkg
Size: 62638800
Timestamp: 2012-11-15 11:55:37 UTC
Header size: 280 bytes

```



```

Internal package information:
  Name: rp_wcm
  BuildTime: Thu Nov 15 01:54:34 PST 2012
  ReleaseDate: Thu Nov 15 01:54:34 PST 2012
  RouteProcessor: mips
  Platform: ng3k
  User: udonthi
  PackageName: cat3k_caa-wcm
  Build: 03.09.19.EMP
  Dependencies: PROVIDES: wcm-ng3k,03.09.19.EMP,mips; nova-wcmlibs-required,
    03.09.19.EMP,mips#REQUIRES:#WORKSWITH:#CONFLICTS:#
  BuildType: Production

Package is not bootable.

```

```
infra-p2-3#
```

## Related Commands

Command	Description
<b>software clean</b>	Use this command to remove any and all packages and provisioning files that are no longer in use.
<b>software install file</b>	Install Cisco IOS XE files.
<b>software commit</b>	Use this command to commit a package set that was installed using the <b>auto-rollback</b> command option of the <b>software install</b> command.
<b>software install source switch</b>	Use this command to install the running IOS XE software packages from one stack member to one or more other stack members.
<b>software rollback</b>	Use this command to roll back the committed Cisco IOS XE Software to a previous installation point.
<b>show version</b>	To display information about the currently loaded software along with hardware and device information, use the <b>show version</b> command.

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# show version

To display information about the currently loaded software along with hardware and device information, use the **show version** command in user EXEC, privileged EXEC, or diagnostic mode.

**show version**

**Cisco Catalyst 3850 Series Switches and Cisco 5760 Series Wireless Controllers**

**show version** [*switchnode*][**running** | **committed** | **provisioned**]

**Cisco ASR 1000 Series Routers**

**show version** [*rp-slot*] [**installed** [**user-interface**] | **provisioned** | **running**]

**Cisco Catalyst 4500e Series Switches running IOS XE software**

**show version** [*rp-slot*] [**running**]

**Cisco Catalyst 6500 Series Routers**

**show version** [*epld slot*]

**Syntax Description**

<i>switchnode</i>	(optional) Only a single switch may be specified. Default is all switches in a stacked system.
<b>running</b>	(optional) Specifies information on the files currently running.  cat3850 and ct5760: (optional) Displays information about the active package set currently running on the switch. When booted in installed mode, this is typically the set of packages listed in the booted provisioning file. When booted in bundle mode, this is typically the set of packages contained in the booted bundle.

**committed**

(optional) Displays information about the committed package set. If no installation operations have been performed since bootup, this output will be the same as **show version running**. If any installation operations have been performed since bootup, this output will display the set of packages that will be activated/running on the next reload.

**Note** This command option is only applicable when running in installed mode.

**provisioned**

(optional) Specifies information on the software files that are provisioned.

cat3850 and ct5760: (optional) Displays information about the provisioned package set. In most cases, the provisioned package set is the same as the committed package set. These package sets will differ if an installation was performed with the 'auto-rollback' option and the installed packages have not yet been committed using the 'software commit' command. This command option is only applicable when running in installed mode.

*rp-slot*

Specifies the software of the RP in a specific RP slot of a Cisco ASR 1000 Series Router. Options include:

- **r0** --the RP in RP slot 0.
- **r1** --the RP in RP slot 1.
- **rp active** --the active RP.
- **rp standby** --the standby RP.

**installed**

Specifies information on the software installed on the RP

**user-interface**

Specifies information on the files related to the user-interface.

**epld slot**

(Optional) Specifies the software of the EPLD slot of a Cisco Catalyst 6500 Series Router.

**Command Default**

No default behavior or values.

**Command Modes**

User EXEC (>) Privileged EXEC (#) Diagnostic (diag)--Cisco ASR 1000 Series Routers only

**Command History**

<b>Release</b>	<b>Modification</b>
9.0	This command was introduced.
12.1EC	This command was integrated into Cisco IOS Release 12.1EC.
12.1(1a)T1	This command was modified to include information about the clock card on CMTS routers.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.3(4)T	The output format of this command was updated.
12.2(14)SX	Support for this command was introduced on the Supervisor Engine 720.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to 12.2(17d)SXB.
12.2(25)S	The output format of this command was updated.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
Cisco IOS XE Release 2.1	<p>This command was introduced on the Cisco ASR 1000 Series Routers, and the following enhancements were introduced:</p> <ul style="list-style-type: none"> <li>the command became available in diagnostic mode.</li> <li>the <i>rp-slot</i>, <b>installed</b>, <b>user-interface</b>, <b>provisioned</b>, and <b>running</b> options all became available for the first time.</li> </ul>
12.2(18)SX	Added ELPD keyword and output for the Cisco Catalyst 6500 Series Router.
Cisco IOS XE Release 2.4	The output format of this command was updated.
Cisco IOS XE Release 3.1.0.SG	This command was introduced on the Cisco Catalyst 4500e Series Switches with support for the <i>rp-slot</i> parameter and <i>running</i> command option.
IOS XE 3.2.0 SE	Command introduced on the Cisco Catalyst 3850 Series Switches and Cisco 5760 Series Wireless Controllers with support for the <i>switch</i> keyword and <i>running</i> , <i>provisioned</i> and <i>committed</i> command options.

## Usage Guidelines

This command displays information about the Cisco IOS software version currently running on a routing device, the ROM Monitor and Bootflash software versions, and information about the hardware configuration, including the amount of system memory. Because this command displays both software and hardware information, the output of this command is the same as the output of the **show hardware** command. (The **show hardware** command is a command alias for the **show version** command.)

Specifically, the **show version** command provides the following information:

- Software information
  - Main Cisco IOS image version
  - Main Cisco IOS image capabilities (feature set)
  - Location and name of bootfile in ROM
  - Bootflash image version (depending on platform)
- Device-specific information
  - Device name
  - System uptime
  - System reload reason
  - Config-register setting
  - Config-register settings for after the next reload (depending on platform)
- Hardware information
  - Platform type
  - Processor type
  - Processor hardware revision
  - Amount of main (processor) memory installed
  - Amount I/O memory installed
  - Amount of Flash memory installed on different types (depending on platform)
  - Processor board ID

The output of this command uses the following format:

```
Cisco IOS Software, <platform> Software (<image-id>), Version <software-version>,
  <software-type>

Technical Support: http://www.cisco.com/techsupport
Copyright (c) <date-range> by Cisco Systems, Inc.
Compiled <day> <date> <time> by <compiler-id>

ROM: System Bootstrap, Version <software-version>, <software-type>
BOOTLDR: <platform> Software (image-id), Version <software-version>, <software-type>

<router-name> uptime is <w> weeks, <d> days, <h> hours,
<m> minutes
System returned to ROM by reload at <time> <day> <date>
System image file is "<filesystem-location>/<software-image-name>"
Last reload reason: <reload-reason>Cisco <platform-processor-type>
processor (revision <processor-revision-id>) with <free-DRAM-memory>
K/<packet-memory>K bytes of memory.
Processor board ID <ID-number>

<CPU-type> CPU at <clock-speed>Mhz, Implementation <number>, Rev <
Revision-number>, <kilobytes-Processor-Cache-Memory>KB <cache-Level> Cache
```

See the Examples section for descriptions of the fields in this output.

### Cisco ASR 1000 Series Routers

Entering **show version** without any of the options on the Cisco ASR 1000 Series Router will generate output similar to **show version** on other Cisco routers.

In order to understand the **show version** output on Cisco ASR 1000 Series Routers, it is important to understand that the individual sub-packages run the processes on the router. Among other things, the output of this command provides information on where various individual sub-packages are stored on the router, and which processes these individual sub-packages are and are not currently running.

More specifically, the command displays each individual sub-package file on the router, the hardware where the sub-package could be running, and whether the sub-package is currently being run on that hardware.

The **show version provisioned** command displays only the individual sub-packages that can be provisioned, which are the RP-specific sub-packages (RP Access, RP Base, RP Control, and RP IOS) and the provisioning file. The output includes the individual sub-package file, the hardware where the sub-package could be running, and whether the sub-package is currently being run on that hardware.

The command displays only the individual sub-packages that are currently active. The output includes the individual sub-package file and the hardware where the sub-package is running.

### Cisco Catalyst 4500e Series Switches

Entering **show version** without any of the options on a Cisco Catalyst 4500e Series Switch running IOS XE software will generate output similar to **show version** on other Cisco platforms. One notable difference is that the output displays the IOS XE software version instead of the IOS image version.

The IOS XE software bundle includes a set of individual packages that comprise the complete set of software that runs on the switch. The **show version running** command displays the list individual packages that are currently active, that is, the set of packages included in the IOS XE software bundle currently running on the Cisco Catalyst 4500e Series Switch.

### Cisco Catalyst 3850 Series Switches and Cisco 5760 Series Wireless Controllers

Entering **show version** without any of the options on a Cisco Catalyst 3850 Series Switch or Cisco 5760 Series Wireless Controller will generate output similar to **show version** on other Cisco platforms. One notable difference is that the output displays the IOS XE software version instead of the IOS image version.

The IOS XE software bundle includes a set of individual packages that comprise the complete set of software that runs on the switch or wireless controller.

The **show version running** command displays the list of individual packages that are currently running on the switch. When booted in installed mode, this is typically the set of packages listed in the booted provisioning file. When booted in bundle mode, this is typically the set of packages contained in the bundle.

The **show version committed** command displays information about the switch's or wireless controller's committed package set. If no installation operations have been performed since bootup, this output will be the same as **show version running**. If any installation operations have been performed since bootup, this output will display the set of packages that will be activated/running on the next reload. This command is not applicable when running in bundle mode.

The **show version provisioned** command displays information about the provisioned package set. In most cases, the provisioned package set is the same as the committed package set. These package sets will differ if an installation was performed with the **auto-rollback** option and the installed packages have not yet been committed by use of the **software commit** command. This command is not applicable when running in bundle mode.

---

## Examples

### Cisco 3660 Router

The following is sample output from the **show version** command issued on a Cisco 3660 running Cisco IOS Release 12.3(4)T:

```
Router# show version

Cisco IOS Software, 3600 Software (C3660-I-M), Version 12.3(4)T
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2003 by Cisco Systems, Inc.
Compiled Thu 18-Sep-03 15:37 by ccai
ROM: System Bootstrap, Version 12.0(6r)T, RELEASE SOFTWARE (fc1)
ROM:
C3660-1 uptime is 1 week, 3 days, 6 hours, 41 minutes
System returned to ROM by power-on
System image file is "slot0:tftpboot/c3660-i-mz.123-4.T"
Cisco 3660 (R527x) processor (revision 1.0) with 57344K/8192K bytes of memory.
Processor board ID JAB055180FF
R527x CPU at 225Mhz, Implementation 40, Rev 10.0, 2048KB L2 Cache
3660 Chassis type: ENTERPRISE
2 FastEthernet interfaces
4 Serial interfaces
DRAM configuration is 64 bits wide with parity disabled.
125K bytes of NVRAM.
16384K bytes of processor board System flash (Read/Write)
Flash card inserted. Reading filesystem...done.
20480K bytes of processor board PCMCIA Slot0 flash (Read/Write)
Configuration register is 0x2102
```

### Cisco 7200 Router

The following is sample output from the **show version** command issued on a Cisco 7200 router running Cisco IOS Release 12.4(4)T. This output shows the total bandwidth capacity and the bandwidth capacity that is configured on the Cisco 7200. Displaying bandwidth capacity is available in Cisco IOS Release 12.2 and later releases.

```
Router# show version

Cisco IOS Software, 7200 Software (C7200-JS-M), Version 12.4(4)T, RELEASE SOFTW
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Thu 27-Oct-05 05:58 by ccai
ROM: System Bootstrap, Version 12.1(20000710:044039) [nlaw-121E_npeb 117], DEVEE
BOOTLDR: 7200 Software (C7200-KBOOT-M), Version 12.3(16), RELEASE SOFTWARE (fc4)
router uptime is 5 days, 18 hours, 2 minutes
System returned to ROM by reload at 02:45:12 UTC Tue Feb 14 2006
System image file is "disk0:c7200-js-mz.124-4.T"
Last reload reason: Reload Command
Cisco 7206VXR (NPE400) processor (revision A) with 491520K/32768K bytes of memo.
Processor board ID 26793934
R7000 CPU at 350MHz, Implementation 39, Rev 3.2, 256KB L2 Cache
6 slot VXR midplane, Version 2.6
Last reset from power-on

PCI bus mb0_mb1 (Slots 0, 1, 3 and 5) has a capacity of 600 bandwidth points.
Current configuration on bus mb0_mb1 has a total of 440 bandwidth points.
This configuration is within the PCI bus capacity and is supported.
PCI bus mb2 (Slots 2, 4, 6) has a capacity of 600 bandwidth points.
Current configuration on bus mb2 has a total of 390 bandwidth points
This configuration is within the PCI bus capacity and is supported.
Please refer to the following document "Cisco 7200 Series Port Adaptor
Hardware Configuration Guidelines" on Cisco.com <http://www.cisco.com>
for c7200 bandwidth points oversubscription and usage guidelines.
4 Ethernet interfaces
2 FastEthernet interfaces
2 ATM interfaces
125K bytes of NVRAM.
62976K bytes of ATA PCMCIA card at slot 0 (Sector size 512 bytes).
125952K bytes of ATA PCMCIA card at slot 1 (Sector size 512 bytes).
8192K bytes of Flash internal SIMM (Sector size 256K).
```

Configuration register is 0x2002

Router#

For information about PCI buses and bandwidth calculation, go to the "Cisco 7200 Series Port Adapter Installation Requirements" chapter, of the *Cisco 7200 Series Port Adapter Hardware Configuration Guidelines* guide.

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

**Table 11** *show version Field Descriptions*

Field	Description
<p>Cisco IOS Software, <i>platform</i> Software (<i>image-id</i>), Version <i>software-version</i>, <i>release-type</i></p> <p>For example:</p> <p>Cisco IOS Software, 7200 Software (C7200-G4JS-M), Version 12.3(4)T</p>	<p><i>platform</i> --Cisco hardware device name.</p> <p><i>image-id</i> --The coded software image identifier, in the format <i>platform-features-format</i> (for example, "c7200-g4js-mz").</p> <p><i>software-version</i> --The Cisco IOS software release number, in the format <i>x.y(z)A</i>, where <i>x.y</i> is the main release identifier, <i>z</i> is the maintenance release number, and <i>A</i>, where applicable, is the special release train identifier. For example, 12.3(4)T indicates the fourth maintenance release of the 12.3T special technology release train.</p> <p><b>Note</b> In the full software image filename, 12.3(4)T appears as 123-4.T. In the IOS Upgrade Planner, 12.3(4)T appears as 12.3.4T (ED).</p> <p><i>release-type</i> --The description of the release type. Possible values include MAINTENANCE [for example, 12.3(3)] or INTERIM [for example, 12.3(3.2)].</p> <p><b>Tip</b> Refer to "The ABC's of Cisco IOS Networking" (available on Cisco.com) for more information on Cisco IOS software release numbering and software versions.</p> <p>Cisco IOS is a registered trademark (R) of Cisco Systems, Inc.</p>
<p>Technical Support: <a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a></p> <p>Copyright (c) <i>date-range</i> by Cisco Systems, Inc.</p>	<p>The Cisco Technical Support &amp; Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.</p> <p>Cisco IOS software, including the source code, user-help, and documentation, is copyrighted by Cisco Systems, Inc. It is Cisco's policy to enforce its copyrights against any third party who infringes on its copyright.</p>



Field	Description
ROM: System Bootstrap, Version 12.0(6r)T, RELEASE SOFTWARE (fc1)	The system “bootstrap” software, stored in ROM memory.
BOOTFLASH:	The system “bootflash” software, stored in Flash memory (if applicable).
<i>device uptime is ...</i> For example: C3660-1 uptime is 1 week, 3 days, 6 hours, 41 minutes	The amount of time the system has been up and running.
System returned to ROM by <i>reload-reason</i> at <i>timedaydate</i> For example: System returned to ROM by reload at 20:56:53 UTC Tue Nov 4 2003	Shows the last recorded reason for a system reload, and time of last reload.
Last reload reason: <i>reload-reason</i> For example: Last reload reason: Reload command	Shows the last recorded reason for a system reload.
Last reset from <i>reset-reason</i> For example: Last reset from power-on	Shows the last recorded reason for a system reset. Possible <i>reset-reason</i> values include: <ul style="list-style-type: none"> <li>power-on--System was reset with the initial power on or a power cycling of the device.</li> <li>s/w peripheral--System was reset due to a software peripheral.</li> <li>s/w nmi--System was reset by a nonmaskable interrupt (NMI) originating in the system software. For example, on some systems, you can configure the device to reset automatically if two or more fans fail.</li> <li>push-button--System was reset by manual activation of a RESET push-button (also called a hardware NMI).</li> <li>watchdog--System was reset due to a watchdog process.</li> <li>unexpected value--May indicate a bus error, such as for an attempt to access a nonexistent address (for example, “System restarted by bus error at PC 0xC4CA, address 0x210C0C0”).</li> </ul> (This field was formerly labeled as the “System restarted by” field.)

Field	Description
System image file is " <i>file-location/ file-name</i> " For example: System image file is "slot0:tftpboot/c3660-i-mz. 123-3.9.T2"	Displays the file location (local or remote filesystem) and the system image name.

Field	Description
<p>Cisco <i>platform (processor-type )</i> processor (revision <i>processor-revision-id</i> ) with <i>free -DRAM-memory K/ packet-memory K</i> bytes of memory.</p> <p>Example--Separate DRAM and Packet Memory:</p> <p>Cisco RSP4 (R5000) processor with 65536K/2072K bytes of memory</p> <p>Example--Combined DRAM and Packet Memory:</p> <p>Cisco 3660 (R527x) processor (revision 1.0) with 57344K/8192K bytes of memory.</p>	<p>This line can be used to determine how much Dynamic RAM (DRAM) is installed on your system, in order to determine if you meet the “Min. Memory” requirement for a software image. DRAM (including SDRAM) is used for system processing memory and for packet memory.</p> <p>Two values, separated by a slash, are given for DRAM: The first value tells you how DRAM is available for system processing, and the second value tells you how much DRAM is being used for Packet memory.</p> <p>The first value, Main Processor memory, is either:</p> <ul style="list-style-type: none"> <li>• The amount of DRAM available for the processor, or</li> <li>• The total amount of DRAM installed on the system.</li> </ul> <p>The second value, Packet memory, is either:</p> <ul style="list-style-type: none"> <li>• The total physical input/output (I/O) memory (or “Fast memory”) installed on the router (Cisco 4000, 4500, 4700, and 7500 series), or</li> <li>• The amount of “shared memory” used for packet buffering. In the shared memory scheme (Cisco 2500, 2600, 3600, and 7200 Series), a percentage of DRAM is used for packet buffering by the router's network interfaces.</li> </ul> <p><b>Note</b> The terms “I/O memory” or “iomem”; “shared memory”; “Fast memory” and “PCI memory” all refer to “Packet Memory”. Packet memory is either separate physical RAM or shared DRAM.</p> <p><b>Separate DRAM and Packet Memory</b></p> <p>The 4000, 4500, 4700, and 7500 series routers have separate DRAM and Packet memory, so you only need to look at the first number to determine total DRAM. In the example to the left for the Cisco RSP4, the first value shows that the router has 65536K (65,536 kilobytes, or 64 megabytes) of DRAM. The second value, 8192K, is the Packet memory.</p> <p><b>Combined DRAM and Packet Memory</b></p> <p>The 2500, 2600, 3600, and 7200 series routers require a minimum amount of I/O memory to support certain interface processors.</p> <p>The 1600, 2500, 2600, 3600, and 7200 series routers use a fraction of DRAM as Packet memory,</p>

Field	Description
	so you need to add both numbers to find out the real amount of DRAM. In the example to the left for the Cisco 3660, the router has 57,344 kilobytes (KB) of free DRAM and 8,192 KB dedicated to Packet memory. Adding the two numbers together gives you $57,344K + 8,192K = 65,536K$ , or 64 megabytes (MB) of DRAM.
	For more details on memory requirements, see the document "How to Choose a Cisco IOS® Software Release" on Cisco.com.
Configuration register is <i>value</i> For example: Configuration register is 0x2142 (will be 0x2102 at next reload)	Shows the current configured hex value of the software configuration register. If the value has been changed with the <b>config-register</b> command, the register value that will be used at the next reload is displayed in parenthesis.  The boot field (final digit) of the software configuration register dictates what the system will do after a reset.  For example, when the boot field of the software configuration register is set to 00 (for example, 0x0), and you press the NMI button on a Performance Route Processor (PRP), the user-interface remains at the ROM monitor prompt (rommon>) and waits for a user command to boot the system manually. But if the boot field is set to 01 (for example, 0x1), the system automatically boots the first Cisco IOS image found in the onboard Flash memory SIMM on the PRP.  The factory-default setting for the configuration register is 0x2102. This value indicates that the router will attempt to load a Cisco IOS software image from Flash memory and load the startup configuration file.

### Catalyst 6500 Series Switches and Cisco 7600 Series Routers

This example shows how to display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images:

```
Router# show version
Cisco Internetwork Operating System Software
IOS (tm) c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1 (nightly.E020626) NIG
HTLY BUILD
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Wed 26-Jun-02 06:20 by
Image text-base: 0x40008BF0, data-base: 0x419BA000
ROM: System Bootstrap, Version 12.1(11r)E1, RELEASE SOFTWARE (fc1)
Router uptime is 2 weeks, 8 hours, 48 minutes
Time since Router switched to active is 1 minute
System returned to ROM by power-on (SP by power-on)
System image file is "sup-bootflash:c6sup22-jsv-mz"
```

```

cisco Catalyst 6000 (R7000) processor with 112640K/18432K bytes of memory.
Processor board ID SAD06210067
R7000 CPU at 300Mhz, Implementation 39, Rev 3.3, 256KB L2, 1024KB L3 Cache
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
3 Virtual Ethernet/IEEE 802.3 interface(s)
48 FastEthernet/IEEE 802.3 interface(s)
381K bytes of non-volatile configuration memory.
16384K bytes of Flash internal SIMM (Sector size 512K).
Configuration register is 0x2102
Router#

```

The following table describes the fields that are shown in the example.

**Table 12** *show version Field Descriptions*

Field	Description
IOS (tm) c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1(nightly.E020626) NIGHTLY BUILD	Version number. Always specify the complete version number when reporting a possible software problem. In the example output, the version number is 12.1.
ROM: System Bootstrap, Version 12.1(11r)E1, RELEASE SOFTWARE (fc1)	Bootstrap version string.
BOOTFLASH: 7200 Software (C7200-BOOT-M), Version 11.1(472), RELEASE SOFTWARE	Boot version string.
Router uptime is	Amount of time that the system has been up and running.
Time since Router switched to active	Amount of time since switchover occurred.
System restarted by	Log of how the system was last booted, both as a result of normal system startup and of system error. For example, information can be displayed to indicate a bus error that is typically the result of an attempt to access a nonexistent address, as follows:  System restarted by bus error at PC 0xC4CA, address 0x210C0C0
System image file is	If the software was booted over the network, the Internet address of the boot host is shown. If the software was loaded from onboard ROM, this line reads “running default software.”
cisco Catalyst 6000 (R7000) processor with 112640K/18432K bytes of memory.	Remaining output in each display that shows the hardware configuration and any nonstandard software options.
Configuration register is	Configuration register contents that are displayed in hexadecimal notation.

The output of the **show version EXEC** command can provide certain messages, such as bus error messages. If such error messages appear, report the complete text of this message to your technical support specialist.

This example shows how to display the EPLD version information of a slot:

```
Router# show version epld 4

Module 4 EPLD's:
Number of EPLD's: 6
EPLD A : 0x5
EPLD B : 0x2
EPLD C : 0x1
EPLD D : 0x1
EPLD E : 0x1
Router#
```

### Cisco uBR7246VXR Router

The following is sample output from the **show version** command for a Cisco uBR7246 VXR with the cable clock card installed:

```
Router#
Cisco Internetwork Operating System Software
IOS (tm) 7200 Software (UBR7200-P-M), Version 12.1(10)EC, RELEASE SOFTWARE
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2000 by cisco Systems, Inc.
Compiled Wed 02-Feb-00 16:49 by ccai
Image text-base:0x60008900, data-base:0x61192000
ROM:System Bootstrap, Version 12.0(15)SC, RELEASE SOFTWARE
VXR1 uptime is 2 days, 1 hour, 24 minutes
System returned to ROM by power-on at 10:54:38 PST Sat Feb 5 2000
System restarted at 11:01:08 PST Sat Feb 5 2000
System image file is "slot1:ubr7200-p-mz.121-0.8.T"
cisco uBR7246VXR (NPE300) processor (revision B) with 122880K/40960K bytes of memory.
Processor board ID SAB0329005N
R7000 CPU at 262Mhz, Implementation 39, Rev 1.0, 256KB L2, 2048KB L3 Cache
6 slot VXR midplane, Version 2.0
Last reset from power-on
X.25 software, Version 3.0.0.
National clock card with T1 controller
1 FastEthernet/IEEE 802.3 interface(s)
2 Cable Modem network interface(s)
125K bytes of non-volatile configuration memory.
16384K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
20480K bytes of Flash PCMCIA card at slot 1 (Sector size 128K).
4096K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x0
Router#
```

The following table describes significant fields shown in these displays.

**Table 13** *show version Field Descriptions*

Field	Description
IOS (tm) 7200 Software (UBR7200-P-M), Version xx.x	Always specify the complete version number when reporting a possible software problem. In the example, the version number is Cisco IOS Release 12.1(10)EC.
ROM: System Bootstrap	Bootstrap version string.

Field	Description
Router uptime is	The amount of time the system has been up and running.
System restarted at	Also displayed is a log of how the system was last booted, as a result of normal system startup or system error.
System image file is	If the software was booted over the network, the Internet address of the boot host is shown. If the software was loaded from onboard ROM, this line reads “running default software.”
cisco uBR7246VXR (NPE300) processor	The remaining output in each display shows the hardware configuration and any nonstandard software options.
Configuration register is	The configuration register contents, displayed in hexadecimal notation.

The output of the **show version** command can also provide certain messages, such as bus error messages. If such error messages appear, report the complete text of this message to your technical support specialist.

### Cisco uBR10012 Router

The following example shows sample output from the show version command on a Cisco uBR10012 universal broadband router running Cisco IOS Release 12.3(17b)BC4:

```
Router> show version
Cisco Internetwork Operating System Software
IOS (tm) 10000 Software (UBR10K2-K9P6U2-M), Version 12.3(17b)BC4, RELEASE SOFTWARE
(fcl)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Wed 22-Nov-06 11:41 by tinhuang
Image text-base: 0x60010F0C, data-base: 0x62480000
ROM: System Bootstrap, Version 12.0(20020314:211744) [REL-pulsar_sx.ios-rommon 1
12], DEVELOPMENT SOFTWARE
ubr10k uptime is 2 days, 22 hours, 13 minutes
System returned to ROM by reload at 01:34:58 UTC Sun Jun 8 2008
System image file is "disk0:ubr10k2-k9p6u2-mz.123-17b.BC4"
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.
cisco uBR10000 (PRE2-RP) processor with 946175K/98304K bytes of memory.
Processor board ID TBA05380380
R7000 CPU at 500MHz, Implementation 39, Rev 4.1, 256KB L2, 8192KB L3 Cache
Backplane version 1.1, 8 slot
Last reset from register reset
PXF processor tmc0 is running.
PXF processor tmc1 is running.
PXF processor tmc2 is running.
```

```

PXF processor tmc3 is running.
1 TCCplus card(s)
1 FastEthernet/IEEE 802.3 interface(s)
3 Gigabit Ethernet/IEEE 802.3 interface(s)
24 Cable Modem network interface(s)
2045K bytes of non-volatile configuration memory.
125440K bytes of ATA PCMCIA card at slot 0 (Sector size 512 bytes).
125440K bytes of ATA PCMCIA card at slot 1 (Sector size 512 bytes).
65536K bytes of Flash internal SIMM (Sector size 512KB).
Secondary is up.
Secondary has 1044480K bytes of memory.
Configuration register is 0x2102

```

## Cisco ASR 1000 Series Routers

### In Cisco IOS XE Release 2.4

In the following example, the show version command is responsible for displaying the packages installed, provisioned and running on the current RP.

In the following example, the command is entered on a Cisco ASR 1000 Series Router in diagnostic mode. Note that the output shows what every file that can be found in the consolidated package is or is not currently running (provisioning file, RP Access, RP Base, RP Control, RP IOS, ESP Base, SIP Base, SIP SPA).

```

PE23_ASR-1006#
Package: Provisioning File, version: n/a, status: active
  File: consolidated:packages.conf, on: RP0
  Built: n/a, by: n/a
  File SHA1 checksum: b6cb06bled02e041d48644340aa077833cff2076
Package: rpbase, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-rpbase.02.04.00.122-33.XND.pkg, on: RP0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 093f2c935b9dc4ed136623bc43488c6517b9a4ae
Package: rpcontrol, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-rpcontrol.02.04.00.122-33.XND.pkg, on: RP0/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: d71e05c824cb889048b3353257bd16129eb72c44
Package: rpios-advipservicesk9, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-rpios-advipservicesk9.02.04.00.122-33.XND.pkg, on: RP0/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 4167d300514153f67c3815c487c270c14449185d
Package: rpaccess, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-rpaccess.02.04.00.122-33.XND.pkg, on: RP0/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 0b0d108cd2683570778668697b7ffca2451b78b3
Package: rpcontrol, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpcontrol.02.04.00.122-33.XND.pkg, on: RP0/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: d71e05c824cb889048b3353257bd16129eb72c44
Package: rpios-advipservicesk9, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpios-advipservicesk9.02.04.00.122-33.XND.pkg, on: RP0/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 4167d300514153f67c3815c487c270c14449185d
Package: rpaccess, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpaccess.02.04.00.122-33.XND.pkg, on: RP0/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 0b0d108cd2683570778668697b7ffca2451b78b3
Package: rpbase, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpbase.02.04.00.122-33.XND.pkg, on: RP1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 093f2c935b9dc4ed136623bc43488c6517b9a4ae
Package: rpcontrol, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpcontrol.02.04.00.122-33.XND.pkg, on: RP1/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: d71e05c824cb889048b3353257bd16129eb72c44
Package: rpios-advipservicesk9, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpios-advipservicesk9.02.04.00.122-33.XND.pkg, on: RP1/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 4167d300514153f67c3815c487c270c14449185d

```



```

Package: rpaccess, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpaccess.02.04.00.122-33.XND.pkg, on: RP1/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 0b0d108cd2683570778668697b7ffca2451b78b3
Package: rpcontrol, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpcontrol.02.04.00.122-33.XND.pkg, on: RP1/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: d71e05c824cb889048b3353257bd16129eb72c44
Package: rpios-advipservicesk9, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpios-advipservicesk9.02.04.00.122-33.XND.pkg, on: RP1/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 4167d300514153f67c3815c487c270c14449185d

Package: rpaccess, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-rpaccess.02.04.00.122-33.XND.pkg, on: RP1/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 0b0d108cd2683570778668697b7ffca2451b78b3
Package: espbase, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-espbase.02.04.00.122-33.XND.pkg, on: ESP0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 3ae9255c7272a30f5dae319dec109acd29d9ae87
Package: espbase, version: 02.04.00.122-33.XND, status: inactive
  File: consolidated:asr1000rpl-espbase.02.04.00.122-33.XND.pkg, on: ESP1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 3ae9255c7272a30f5dae319dec109acd29d9ae87
Package: sipbase, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipbase.02.04.00.122-33.XND.pkg, on: SIP0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: fc6e41d7de2ded3a16b6dc7e5e3a1151b788d254
Package: sipspa, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP0/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP0/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP0/2
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP0/3
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipbase, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipbase.02.04.00.122-33.XND.pkg, on: SIP1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: fc6e41d7de2ded3a16b6dc7e5e3a1151b788d254
Package: sipspa, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP1/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP1/1
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: active
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP1/2
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipspa, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP1/3
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836
Package: sipbase, version: 02.04.00.122-33.XND, status: inactive
  File: consolidated:asr1000rpl-sipbase.02.04.00.122-33.XND.pkg, on: SIP2
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: fc6e41d7de2ded3a16b6dc7e5e3a1151b788d254
Package: sipspa, version: 02.04.00.122-33.XND, status: n/a
  File: consolidated:asr1000rpl-sipspa.02.04.00.122-33.XND.pkg, on: SIP2/0
  Built: 2009-06-29_23.07, by: mcpre
  File SHA1 checksum: 24fb5b788582e062c900e2713b5c56a2704ca836

```

[illegible]

**Table 14** *show version installed, provisioned, and running Field Descriptions*

Field	Description
Package:	The individual sub-package name.
version:	The consolidated package version of the individual sub-package.
status:	Reveals if the sub-package is active or inactive for the specific hardware component only.
File:	The location and filename of the individual sub-package file.
on:	The hardware component.
Built:	The date the individual sub-package was built.
File SHA1 checksum:	The SHA1 sum for the file. This sum can be compared against a SHA1 sum generated by any SHA1 sum-generating tool.

### Cisco Catalyst 3850 Series Switches and Cisco 5760 Series Wireless Controllers

The following is sample output from the show version command on a Cisco Catalyst 3850 Series Switch that is the active switch in a 2-member stack:

```

infra-p2-3#show version
Cisco IOS Software, IOS-XE Software, Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version 03.09.19.EMP EARLY DEPLOYMENT ENGINEERING NOVA_WEEKLY BUILD, synced to
DSGS_PI2_POSTPC_FLO_DSBUE7_NG3K_1105
Copyright (c) 1986-2012 by Cisco Systems, Inc.
Compiled Thu 15-Nov-12 01:45 by udonthi

ROM: IOS-XE ROMMON
BOOTLDR: C3850 Boot Loader (C3850-HBOOT-M) Version 1.2, engineering software (D)

infra-p2-3 uptime is 5 minutes
Uptime for this control processor is 7 minutes
System returned to ROM by reload
System image file is "flash:packages.conf"
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.

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If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

```

License Level: Ipservices
License Type: Permanent
Next reload license Level: Ipservices

```

```
cisco WS-C3850X-24P-PROTO2 (MIPS) processor with 2097152K bytes of physical memory.
Processor board ID FHH1515P03Y
1 Virtual Ethernet interface
56 Gigabit Ethernet interfaces
8 Ten Gigabit Ethernet interfaces
2048K bytes of non-volatile configuration memory.
2097152K bytes of physical memory.
160618K bytes of Crash Files at crashinfo:.
160618K bytes of Crash Files at crashinfo-1:.
706860K bytes of Flash at flash:.
698827K bytes of Flash at flash-1:.
3915670K bytes of USB Flash at usbflash0:.
0K bytes of Dummy USB Flash at usbflash0-1:.
0K bytes of  at webui:.
```

```
Base Ethernet MAC Address      : 64:00:f1:25:11:00
Motherboard Assembly Number    : 73-12240-03
Motherboard Serial Number      : FHH15130010
Model Revision Number          : 01
Motherboard Revision Number    : 02
Model Number                   : WS-C3850X-24P-PROTO2
System Serial Number           : FHH1515P03Y
```

Switch	Ports	Model	SW Version	SW Image	Mode
1	32	WS-C3850X-24P-PROT	03.09.19.EMP	cat3k_caa-universalk9	INSTALL
2	32	WS-C3850X-24P-PROT	03.09.19.EMP	cat3k_caa-universalk9	INSTALL

```
Switch 01
```

```
-----
Switch uptime                : 7 minutes
Base Ethernet MAC Address    : 64:00:f1:25:1a:00
Motherboard Assembly Number  : 73-12240-03
Motherboard Serial Number    : FHH1513000T
Model Revision Number        : 01
Motherboard Revision Number  : 02
Model Number                 : WS-C3850X-24P-PROTO2
System Serial Number         : FHH1515P047
```

```
Configuration register is 0x2 (will be 0x102 at next reload)
```

```
infra-p2-3#
```

In the following example, the show version running command is entered on a Cisco Catalyst 3850 Series Switch to view information about the packages currently running on both switches in a 2-member stack:

```
infra-p2-3#show version running
Package: Base, version: 03.09.19.EMP, status: active
  File: cat3k_caa-base.SSA.03.09.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:52:19 PST 2012, by: udonthi

Package: Drivers, version: 03.09.19.EMP, status: active
  File: cat3k_caa-drivers.SSA.03.09.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:54:53 PST 2012, by: udonthi

Package: Infra, version: 03.09.19.EMP, status: active
  File: cat3k_caa-infra.SSA.03.09.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:53:08 PST 2012, by: udonthi

Package: IOS, version: 150-9.19.EMP, status: active
  File: cat3k_caa-iosd-universalk9.SSA.150-9.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:54:09 PST 2012, by: udonthi

Package: Platform, version: 03.09.19.EMP, status: active
  File: cat3k_caa-platform.SSA.03.09.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:53:39 PST 2012, by: udonthi

Package: WCM, version: 03.09.19.EMP, status: active
  File: cat3k_caa-wcm.SSA.03.09.19.EMP.pkg, on: Switch1
  Built: Thu Nov 15 01:54:34 PST 2012, by: udonthi
```

```

Package: Base, version: 03.09.19.EMP, status: active
File: cat3k_caa-base.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:52:19 PST 2012, by: udonthi

Package: Drivers, version: 03.09.19.EMP, status: active
File: cat3k_caa-drivers.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:53 PST 2012, by: udonthi

Package: Infra, version: 03.09.19.EMP, status: active
File: cat3k_caa-infra.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:53:08 PST 2012, by: udonthi

Package: IOS, version: 150-9.19.EMP, status: active
File: cat3k_caa-iosd-universalk9.SSA.150-9.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:09 PST 2012, by: udonthi

Package: Platform, version: 03.09.19.EMP, status: active
File: cat3k_caa-platform.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:53:39 PST 2012, by: udonthi

Package: WCM, version: 03.09.19.EMP, status: active
File: cat3k_caa-wcm.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:34 PST 2012, by: udonthi

```

In the following example, the show version provisioned and show version committed commands are entered on a Cisco Catalyst 3850 Series Switch that is the active switch in a 2-member stack. The show version committed commands displays information about the packages in the committed package set that will be running on the next reload. The show version provisioned command displays information about the packages in the provisioned package set.

In most cases, the show version provisioned and show version committed output will display the same information, since the provisioned and committed packages sets include the same packages. The provisioned package set may differ from the committed package set in cases where a **software install** operation was performed with the **auto-rollback** command option, and the **software commit** command has not yet been entered. This is the case in the sample output below, where the packages from the 03.09.19.EMP were installed with the **auto-rollback** command option, but the 'software commit' command has not yet been entered.

The show version provisioned and show version committed commands are not applicable when the switch is booted in bundle mode.

```

infra-p2-3#show version provisioned
Package: Provisioning File, version: n/a, status: active
File: packages.conf, on: Switch1
Built: n/a, by: n/a

Package: Base, version: 03.09.19.EMP, status: active
File: cat3k_caa-base.SSA.03.09.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:52:19 PST 2012, by: udonthi

Package: Infra, version: 03.09.19.EMP, status: active
File: cat3k_caa-infra.SSA.03.09.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:53:08 PST 2012, by: udonthi

Package: Platform, version: 03.09.19.EMP, status: active
File: cat3k_caa-platform.SSA.03.09.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:53:39 PST 2012, by: udonthi

Package: IOS, version: 150-9.19.EMP, status: active
File: cat3k_caa-iosd-universalk9.SSA.150-9.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:54:09 PST 2012, by: udonthi

Package: WCM, version: 03.09.19.EMP, status: active
File: cat3k_caa-wcm.SSA.03.09.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:54:34 PST 2012, by: udonthi

Package: Drivers, version: 03.09.19.EMP, status: active
File: cat3k_caa-drivers.SSA.03.09.19.EMP.pkg, on: Switch1
Built: Thu Nov 15 01:54:53 PST 2012, by: udonthi

```

```
Package: Provisioning File, version: n/a, status: active
File: packages.conf, on: Switch2
Built: n/a, by: n/a

Package: Base, version: 03.09.19.EMP, status: active
File: cat3k_caa-base.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:52:19 PST 2012, by: udonthi

Package: Infra, version: 03.09.19.EMP, status: active
File: cat3k_caa-infra.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:53:08 PST 2012, by: udonthi

Package: Platform, version: 03.09.19.EMP, status: active
File: cat3k_caa-platform.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:53:39 PST 2012, by: udonthi

Package: IOS, version: 150-9.19.EMP, status: active
File: cat3k_caa-iosd-universalk9.SSA.150-9.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:09 PST 2012, by: udonthi

Package: WCM, version: 03.09.19.EMP, status: active
File: cat3k_caa-wcm.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:34 PST 2012, by: udonthi

Package: Drivers, version: 03.09.19.EMP, status: active
File: cat3k_caa-drivers.SSA.03.09.19.EMP.pkg, on: Switch2
Built: Thu Nov 15 01:54:53 PST 2012, by: udonthi

infra-p2-3#show version committed

Package: Provisioning File, version: n/a, status: active
File: packages.conf, on: Switch1
Built: n/a, by: n/a

Package: Base, version: 03.09.17.EMP, status: active
File: cat3k_caa-base.SSA.03.09.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:27:51 PST 2012, by: udonthi

Package: Infra, version: 03.09.17.EMP, status: active
File: cat3k_caa-infra.SSA.03.09.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:28:53 PST 2012, by: udonthi

Package: Platform, version: 03.09.17.EMP, status: active
File: cat3k_caa-platform.SSA.03.09.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:29:33 PST 2012, by: udonthi

Package: IOS, version: 150-9.17.EMP, status: active
File: cat3k_caa-iosd-universalk9.SSA.150-9.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:29:58 PST 2012, by: udonthi

Package: WCM, version: 03.09.17.EMP, status: active
File: cat3k_caa-wcm.SSA.03.09.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:30:29 PST 2012, by: udonthi

Package: Drivers, version: 03.09.17.EMP, status: active
File: cat3k_caa-drivers.SSA.03.09.17.EMP.pkg, on: Switch1
Built: Mon Nov 12 20:31:01 PST 2012, by: udonthi

Package: Provisioning File, version: n/a, status: active
File: packages.conf, on: Switch2
Built: n/a, by: n/a

Package: Base, version: 03.09.17.EMP, status: active
File: cat3k_caa-base.SSA.03.09.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:27:51 PST 2012, by: udonthi

Package: Infra, version: 03.09.17.EMP, status: active
File: cat3k_caa-infra.SSA.03.09.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:28:53 PST 2012, by: udonthi
```

```

Package: Platform, version: 03.09.17.EMP, status: active
File: cat3k_caa-platform.SSA.03.09.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:29:33 PST 2012, by: udonthi

Package: IOS, version: 150-9.17.EMP, status: active
File: cat3k_caa-iosd-universalk9.SSA.150-9.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:29:58 PST 2012, by: udonthi

Package: WCM, version: 03.09.17.EMP, status: active
File: cat3k_caa-wcm.SSA.03.09.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:30:29 PST 2012, by: udonthi

Package: Drivers, version: 03.09.17.EMP, status: active
File: cat3k_caa-drivers.SSA.03.09.17.EMP.pkg, on: Switch2
Built: Mon Nov 12 20:31:01 PST 2012, by: udonthi

```

infra-p2-3#

**Table 15** *Table 5, Cisco Catalyst 3850 Series Switches and Cisco 5760 Series Wireless Controllers show version running Field Descriptions*

Field	Description
Package:	The individual sub-package name.
version:	The individual sub-package version.
status:	Reveals if the package is active or inactive for the specific Supervisor module.
File:	The filename of the individual package file.
on:	The slot number of the Active or Standby Supervisor that this package is running on.
Built:	The date the individual package was built.

### Cisco Catalyst 4500e Series Switches

The following is sample output from the show version command on a Cisco Catalyst 4500e Series Switch running IOS XE software:

```

Switch#show version
Cisco IOS Software, IOS-XE Software, Catalyst 4500 L3 Switch Software
(cat4500e-UNIVERSALK9-M), Experimental Version 3.1.0.SG
[/nobackup/xxxx/cwab/build/arch_ppc/buildtree-ios/vob/ios/sys 100] Copyright (c)
1986-2010 by Cisco Systems, Inc.
Compiled Mon 19-Apr-10 09:19 by xxxx

```

Cisco IOS-XE software, Copyright (c) 2005-2010 by cisco Systems, Inc.

All rights reserved. Certain components of Cisco IOS-XE software are licensed under the GNU General Public License ("GPL") Version 2.0. The software code licensed under GPL Version 2.0 is free software that comes with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such GPL code under the terms of GPL Version 2.0. For more details, see the documentation or "License Notice" file accompanying the IOS-XE software, or the applicable URL provided on the flyer accompanying the IOS-XE software.

Image text-base: 0x100D9954, data-base: 0x14B379D8

ROM: 12.2(54r)XO(0.246)

Jawa Revision 7, Snowtrooper Revision 0x0.0x14

```
gsgsw-g9-35 uptime is 4 minutes
Uptime for this control processor is 5 minutes
System returned to ROM by reload
System image file is "tftp://1.2.3.4/tftpboot/xxxx/x.bin"
```

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](mailto:export@cisco.com).

```
License Information for 'iosd'
  License Level: entservices
  Type: Evaluation
  Next reboot license Level: entservices
```

```
cisco WS-C4510R-E (MPC8572) processor (revision 2) with 786516K/16384K bytes of memory.
Processor board ID SPE1046002Q
MPC8572 CPU at 1.5GHz, Supervisor 7
Last reset from Reload
1 Virtual Ethernet interface
84 Gigabit Ethernet interfaces
14 Ten Gigabit Ethernet interfaces
```

```
Configuration register is 0x920
```

```
Switch#
```

In the following example, the show version running command is entered on a Cisco Catalyst 4500e Series Switch to view the list of packages contained in the IOS XE software bundle currently loaded on the system.

```
Switch# show version running
```

```
Package: Base, version: 3.0.0, status: active
30
  File: cat4500e-base.SSA.3.0.0.pkg, on: Slot5
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:08:38 PDT 2010, by: xxxx

Package: Infra, version: 3.0.0, status: active
  File: cat4500e-infra.SSA.3.0.0.pkg, on: Slot5
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:09:30 PDT 2010, by: xxxx

Package: IOS, version: 150-1.XO, status: active
  File: cat4500e-universalk9.SSA.150-1.XO.pkg, on: Slot5
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:10:02 PDT 2010, by: xxxx

Package: Base, version: 3.0.0, status: active
  File: cat4500e-base.SSA.3.0.0.pkg, on: Slot6
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:08:38 PDT 2010, by: xxxx

Package: Infra, version: 3.0.0, status: active
  File: cat4500e-infra.SSA.3.0.0.pkg, on: Slot6
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:09:30 PDT 2010, by: xxxx

Package: IOS, version: 150-1.XO, status: active
  File: cat4500e-universalk9.SSA.150-1.XO.pkg, on: Slot6
  From Bundle: cat4500e-universalk9.SSA.3.1.0.SG
  Built: Mon Apr 19 10:10:02 PDT 2010, by: xxxx
Switch#
```



**Table 16**      **Table 6, Cisco Catalyst 4500e Series Switches show version running Field Descriptions**

Field	Description
Package:	The individual sub-package name.
version:	The individual sub-package version.
status:	Reveals if the package is active or inactive for the specific Supervisor module.
File:	The filename of the individual package file.
on:	The slot number of the Active or Standby Supervisor that this package is running on.
From Bundle:	The name of the IOS XE software bundle that includes this package.
Built:	The date the individual package was built.

**Related Commands**

Command	Description
<b>show diag</b>	Displays hardware and diagnostic information for a networking device, a line card, a processor, a jacket card, a chassis, or a network module.
<b>show inventory</b>	Displays the Cisco Unique Device Identifier information, including the Product ID, the Version ID, and the Serial Number, for the hardware device and hardware components.

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