



ACL IP Options Selective Drop

The ACL IP Options Selective Drop feature allows Cisco routers to filter packets containing IP options or to mitigate the effects of IP options on a router or downstream routers by dropping these packets or ignoring the processing of the IP options.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

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

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Hardware Compatibility Matrix for Cisco cBR Series Routers



Note

The hardware components introduced in a given Cisco IOS-XE Release are supported in all subsequent releases unless otherwise specified.

Table 1: Hardware Compatibility Matrix for the Cisco cBR Series Routers

Cisco CMTS Platform	Processor Engine	Interface Cards
Cisco cBR-8 Converged Broadband Router	<p>Cisco IOS-XE Release 3.15.0S and Later Releases</p> <p>Cisco cBR-8 Supervisor:</p> <ul style="list-style-type: none"> • PID—CBR-CCAP-SUP-160G • PID—CBR-CCAP-SUP-60G¹ • PID—CBR-SUP-8X10G-PIC 	<p>Cisco IOS-XE Release 3.15.0S and Later Releases</p> <p>Cisco cBR-8 CCAP Line Cards:</p> <ul style="list-style-type: none"> • PID—CBR-LC-8D30-16U30 • PID—CBR-LC-8D31-16U30 • PID—CBR-RF-PIC • PID—CBR-RF-PROT-PIC <p>Cisco cBR-8 Downstream PHY Modules:</p> <ul style="list-style-type: none"> • PID—CBR-D30-DS-MOD • PID—CBR-D31-DS-MOD <p>Cisco cBR-8 Upstream PHY Modules:</p> <ul style="list-style-type: none"> • PID—CBR-D30-US-MOD

¹ Effective with Cisco IOS-XE Release 3.17.0S, CBR-CCAP-SUP-60G supports 8 cable line cards. The total traffic rate is limited to 60Gbps, the total number of downstream service flow is limited to 72268, and downstream unicast low-latency flow does not count against the limits.

Restrictions for ACL IP Options Selective Drop

Resource Reservation Protocol (RSVP) (Multiprotocol Label Switching traffic engineering [MPLS TE]), Internet Group Management Protocol Version 2 (IGMPv2), and other protocols that use IP options packets may not function in drop or ignore modes.

Information About ACL IP Options Selective Drop

Using ACL IP Options Selective Drop

The ACL IP Options Selective Drop feature allows a router to filter IP options packets, thereby mitigating the effects of these packets on a router and downstream routers, and perform the following actions:

- Drop all IP options packets that it receives and prevent options from going deeper into the network.
- Ignore IP options packets destined for the router and treat them as if they had no IP options.

For many users, dropping the packets is the best solution. However, in environments in which some IP options may be legitimate, reducing the load that the packets present on the routers is sufficient. Therefore, users may prefer to skip options processing on the router and forward the packet as though it were pure IP.

Benefits of Using ACL IP Options Selective Drop

- Drop mode filters packets from the network and relieves downstream routers and hosts of the load from options packets.
- Drop mode minimizes loads to the Route Processor (RP) for options that require RP processing on distributed systems. Previously, the packets were always routed to or processed by the RP CPU. Now, the ignore and drop forms prevent the packets from impacting the RP performance.

How to Configure ACL IP Options Selective Drop

Configuring ACL IP Options Selective Drop

This section describes how to configure the ACL IP Options Selective Drop feature.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	ip options {drop ignore} Example: Router(config)# ip options drop	Drops or ignores IP options packets that are sent to the router.
Step 4	exit Example: Router(config)# exit	Returns to privileged EXEC mode.

	Command or Action	Purpose
Step 5	show ip traffic Example: Router# show ip traffic	(Optional) Displays statistics about IP traffic.

Configuration Examples for ACL IP Options Selective Drop

Example Configuring ACL IP Options Selective Drop

The following example shows how to configure the router (and downstream routers) to drop all options packets that enter the network:

```
Router(config)# ip options drop
% Warning:RSVP and other protocols that use IP Options packets may not function in drop or
ignore modes.
end
```

Example Verifying ACL IP Options Selective Drop

The following sample output is displayed after using the **ip options drop** command:

```
Router# show ip traffic
IP statistics:
  Rcvd: 428 total, 323 local destination
        0 format errors, 0 checksum errors, 0 bad hop count
        0 unknown protocol, 0 not a gateway
        0 security failures, 0 bad options, 0 with options
  Opts: 0 end, 0 nop, 0 basic security, 0 loose source route
        0 timestamp, 0 extended security, 0 record route
        0 stream ID, 0 strict source route, 0 alert, 0 cipso, 0 ump
        0 other, 30 ignored
  Frags: 0 reassembled, 0 timeouts, 0 couldn't reassemble
        0 fragmented, 0 fragments, 0 couldn't fragment
  Bcast: 0 received, 0 sent
  Mcast: 323 received, 809 sent
  Sent: 809 generated, 591 forwarded
  Drop: 0 encapsulation failed, 0 unresolved, 0 no adjacency
        0 no route, 0 unicast RPF, 0 forced drop, 0 unsupported-addr
        0 options denied, 0 source IP address zero
```

Additional References for IP Access List Entry Sequence Numbering

The following sections provide references related to IP access lists.

Related Documents

Related Topic	Document Title
Configuring IP access lists	"Creating an IP Access List and Applying It to an Interface"
Cisco IOS commands	Cisco IOS Master Command List, All Releases
IP access list commands	<ul style="list-style-type: none"> • Cisco IOS Security Command Reference: Commands A to C • Cisco IOS Security Command Reference: Commands D to L • Cisco IOS Security Command Reference: Commands M to R • Cisco IOS Security Command Reference: Commands S to Z

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	http://www.cisco.com/techsupport

Feature Information for ACL IP Options Selective Drop

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

**Note**

The below table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for ACL IP Options Selective Drop

Feature Name	Releases	Feature Information
IP Access Lists	Cisco IOS-XE Release 3.15.0S	This feature was introduced on the Cisco cBR Series Converged Broadband Routers.