



## ACL IP Options Selective Drop

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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 that are documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. The Feature Information Table at the end of this document provides information about the documented features and lists the releases in which each feature is supported.

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## Hardware Compatibility Matrix for the Cisco cBR Series Routers



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

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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><b>Cisco IOS-XE Release 16.5.1 and Later Releases</b></p> <p>Cisco cBR-8 Supervisor:</p> <ul style="list-style-type: none"> <li>• PID—CBR-SUP-250G</li> <li>• PID—CBR-CCAP-SUP-160G</li> <li>• PID—CBR-CCAP-SUP-60G</li> <li>• PID—CBR-SUP-8X10G-PIC</li> </ul> | <p><b>Cisco IOS-XE Release 16.5.1 and Later Releases</b></p> <p>Cisco cBR-8 CCAP Line Cards:</p> <ul style="list-style-type: none"> <li>• PID—CBR-LC-8D30-16U30</li> <li>• PID—CBR-LC-8D31-16U30</li> <li>• PID—CBR-RF-PIC</li> <li>• PID—CBR-RF-PROT-PIC</li> <li>• PID—CBR-CCAP-LC-40G</li> <li>• PID—CBR-CCAP-LC-40G-R</li> </ul> <p>Cisco cBR-8 Downstream PHY Modules:</p> <ul style="list-style-type: none"> <li>• PID—CBR-D30-DS-MOD</li> <li>• PID—CBR-D31-DS-MOD</li> </ul> <p>Cisco cBR-8 Upstream PHY Modules:</p> <ul style="list-style-type: none"> <li>• PID—CBR-D30-US-MOD</li> <li>• PID—CBR-D31-US-MOD</li> </ul> |

## 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   |
|---------------|---|---|
| <b>Step 1</b> | <b>enable</b><br><b>Example:</b><br><br>Router> enable  | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| <b>Step 2</b> | <b>configure terminal</b><br><b>Example:</b><br><br>Router# configure terminal                | Enters global configuration mode.                                       |
| <b>Step 3</b> | <b>ip options { drop   ignore }</b><br><b>Example:</b><br><br>Router(config)# ip options drop | Drops or ignores IP options packets that are sent to the router.        |
| <b>Step 4</b> | <b>exit</b><br><b>Example:</b><br><br>Router(config)# exit                                    | Returns to privileged EXEC mode.  |
| <b>Step 5</b> | <b>show ip traffic</b><br><b>Example:</b><br><br>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" |

| Related Topic           | Document Title   |
|-------------------------|--|
| IP access list commands | <ul style="list-style-type: none"> <li>• <a href="#">Cisco IOS Security Command Reference: Commands A to C</a></li> <li>• <a href="#">Cisco IOS Security Command Reference: Commands D to L</a></li> <li>• <a href="#">Cisco IOS Security Command Reference: Commands M to R</a></li> <li>• <a href="#">Cisco IOS Security Command Reference: Commands S to Z</a></li> </ul> |

### 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> | <a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a> |

## Feature Information for ACL IP Options Selective Drop

Use Cisco Feature Navigator to find information about the 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 the [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn) link. An account on the Cisco.com page is not required.



**Note** The following table lists the software release in which a given feature is introduced. 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 Fuji 16.7.1 | This feature was integrated into Cisco IOS XE Fuji 16.7.1 on the Cisco cBR Series Converged Broadband Routers. |

