



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.

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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 www.cisco.com/go/cfn. An account on Cisco.com is not required.

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.
- On the Cisco 10720 Internet router, the **ip option ignore** command is not supported. Only drop mode (the **ip option drop** command) is supported.
- The **ip option ignore** command (ignore mode) is supported only on the Cisco 12000 series router.



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Information About ACL IP Options Selective Drop

- [Using ACL IP Options Selective Drop, page 2](#)
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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, page 2](#)

Configuring ACL IP Options Selective Drop

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

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip options { drop | ignore }**
4. **exit**
5. **show ip traffic**

DETAILED STEPS

| | 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. Note On the Cisco 10720 Internet router, the ip option ignore command is not supported. Only drop mode (the ip option drop command) is supported. |
| Step 4 | exit Example: Router(config)# exit | Returns to privileged EXEC mode. |
| Step 5 | show ip traffic Example: Router# show ip traffic | (Optional) Displays statistics about IP traffic. |

- [What to Do Next, page 3](#)

What to Do Next

If you are running Cisco IOS Release 12.3(4)T or a later release, you can also use the ACL Support for Filtering IP Options feature to filter packets based on whether the packet contains specific IP options. For more information, refer to the document "Creating an IP Access List to Filter IP Options, TCP Flags, Noncontiguous Ports, or TTL Values".

Configuration Example for ACL IP Options Selective Drop

- [Example Configuring ACL IP Options Selective Drop, page 4](#)
- [Example Verifying ACL IP Options Selective Drop, page 4](#)

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 15,000 options packets are sent using the **ip options drop** command. Note that the “forced drop” counter increases.

```
Router# show ip traffic
IP statistics:
  Rcvd: 15000 total, 0 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, 15000 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 other
  Frags: 0 reassembled, 0 timeouts, 0 couldn't reassemble
        0 fragmented, 0 couldn't fragment
  Bcast: 0 received, 0 sent
  Mcast: 0 received, 0 sent
  Sent: 0 generated, 0 forwarded
  Drop: 0 encapsulation failed, 0 unresolved, 0 no adjacency
        0 no route, 0 unicast RPF, 15000 forced drop
```

Additional References

Related Documents

| Related Topic | Document Title |
|---|--|
| Cisco IOS commands | Cisco IOS Master Commands List, All Releases |
| Configuring IP access lists | "Creating an IP Access List and Applying It to an Interface" |
| Using access lists for filtering IP options | "Creating an IP Access List to Filter IP Options, TCP Flags, Noncontiguous Ports, or TTL Values" |

Standards

| Standards | Title |
|-----------|-------|
| None | -- |

MIBs

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

RFCs

| RFCs | Title |
|-------------|--------------|
| None | -- |

Technical Assistance

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

Feature Information for ACL IP Options Selective Drop

The following table provides release information about the feature or features described in this module. This 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.

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

Table 1 **Feature Information for ACL IP Options Selective Drop**

| Feature Name | Releases | Feature Information |
|-------------------------------|--|--|
| ACL IP Options Selective Drop | 12.0(22)S 12.3(4)T 12.2(25)S 12.2(27)SBC 12.0(32)S 12.3(19) | <p>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.</p> <p>The following commands were introduced or modified: ip options.</p> |

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