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 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.

Information About ACL IP Options Selective Drop

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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

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. - Enter your password if prompted.

	Command or Action	Purpose
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.
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

The following sections provide references related to ACL IP Options Selective Drop.

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IP access list commands	*Cisco IOS Security Command Reference*
Using access lists for filtering IP options	"Creating an IP Access List to Filter IP Options, TCP Flags, or Noncontiguous Ports"

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	--

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco IOS XE software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	--

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	Cisco IOS XE Release 2.1	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. This feature was introduced on Cisco ASR 1000 Series Aggregation Services Routers. The following command was introduced: **ip options**.