IP Sessions Over Gigabit EtherChannel

The IP Sessions Over Gigabit EtherChannel (IPoGEC) feature enables you to add the Link Aggregation Control Protocol (LACP) functionality for IP sessions. The LACP defines a virtual interface for a port channel or a port bundle, and adds physical member links to the port channel. This section provides information about the IPoGEC and how to configure it.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and 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 module.

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 IPoGEC

IP Sessions over Gigabit EtherChannel (IPoGEC) currently supports the 1:1 model, where only one member link is active while the second member link is passive and does not carry traffic.

Information About IP Sessions over Gigabit EtherChannel

The IP sessions over Gigabit EtherChannel (IPoGEC) feature ensures consistency between systems by adding redundancy and allows dynamic link management during local and remote system failures. LACP fast

switchover enables the standby member link to take over instantly (in milliseconds) when the active member link goes down. As a result, the port channel remains up. The **carrier-delay** {*delay-seconds* | **msec** *milliseconds*} command used in the configuration of the IPoGEC ensures fast switchover, with the delay in switchover being in milliseconds rather than seconds.

Supported Features for IPoGEC

- IPoGEC supports both simple IP sessions and mobile IP sessions.
- IPoGEC is supported over virtual local area network (VLAN) and subinterfaces.
- IPoGEC is supported on all Ethernet SPAs, including 10-Gigabit Ethernet ports and 1-Gigabit Ethernet ports.

Configuring IP Sessions over Gigabit EtherChannel

SUMMARY STEPS

1. **configure terminal**
2. **interface port-channel** *channel-number*
3. **description** *string*
4. **ip address** *ip-address mask* [**secondary** [**vrf** *vrf-name*]]
5. **load-interval** *seconds*
6. **lacp fast-switchover**
7. **lacp max-bundle** *max-bundle-number*
8. **service-policy type control** *policy-map-name*
9. **ip subscriber** {**l2-connected**}
10. **initiator** {**dhcp** | **radius-proxy** | **static ip subscriber list** *listname* | **unclassified ip** | **unclassified mac-address**}
11. **initiator** {**dhcp** | **radius-proxy** | **static ip subscriber list** *listname* | **unclassified ip** | **unclassified mac-address**}

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Router# configure terminal`	Enters the global configuration mode.
Step 2	**interface port-channel** *channel-number* **Example:** `Router(config)#interface port-channel 1`	Creates a port-channel virtual interface.
Step 3	**description** *string* **Example:** `Router(config-if)#description GEC:1 interface towards switch`	Adds a description to an interface configuration.

	Command or Action	Purpose
Step 4	**ip address** *ip-address mask* [**secondary** [**vrf** *vrf-name*]] **Example:** `Router(config-if)#ip address 21.0.0.1 255.255.0.0`	Removes an IP address from an interface.
Step 5	**load-interval** *seconds* **Example:** `Router(config-if)#load-interval 30`	Changes the length of time for which data is used to compute load statistics.
Step 6	**lacp fast-switchover** **Example:** `Router(config-if)#lacp fast-switchover`	Enables the LACP 1:1 link redundancy.
Step 7	**lacp max-bundle** *max-bundle-number* **Example:** `Router(config-if)#lacp max-bundle 1`	Defines the maximum number of active, bundled LACP ports allowed in a port channel.
Step 8	**service-policy type control** *policy-map-name* **Example:** `Router(config-if)#service-policy type control BB_PMAP`	Applies a control policy to a context.
Step 9	**ip subscriber** {**l2-connected**} **Example:** `Router(config-if)#ip subscriber l2-connected`	Enables Cisco Intelligent Services Gateway (ISG) IP subscriber support on an interface, and specifies the access method that IP subscribers use for connecting to the Cisco ISG on an interface. **Note** The iWAG does not support the routed access method.
Step 10	**initiator** {**dhcp** | **radius-proxy** | **static ip subscriber list** *listname* | **unclassified ip** | **unclassified mac-address**} **Example:** `Router(config-subscriber)# initiator unclassified mac-address`	Enables the Cisco ISG to create an IP subscriber session upon receipt of a specified type of packet.
Step 11	**initiator** {**dhcp** | **radius-proxy** | **static ip subscriber list** *listname* | **unclassified ip** | **unclassified mac-address**} **Example:** `Router(config-subscriber)# initiator dhcp`	Enables the Cisco ISG to create an IP subscriber session upon receipt of a specified type of packet.

Configuring Member Links for IP Sessions over Gigabit EtherChannel

SUMMARY STEPS

1. **interface GigabitEthernet** *slot/subslot/port*
2. **no ip address** *ip-address mask* [**secondary** [**vrf** *vrf-name*]]
3. **carrier-delay** {*delay-seconds* | **msec** *milliseconds*}
4. **lacp port-priority** *priority*
5. **channel-group** *channel-group-number* **mode** {**active** | **passive**}

DETAILED STEPS

	Command or Action	Purpose
Step 1	**interface GigabitEthernet** *slot/subslot/port* **Example:** `Router(config)#interface GigabitEthernet0/0/1`	Enters the interface configuration mode for Gigabit Ethernet interface.
Step 2	**no ip address** *ip-address mask* [**secondary** [**vrf** *vrf-name*]] **Example:** `Router(config-if)#no ip address`	Removes an IP address from an interface.
Step 3	**carrier-delay** {*delay-seconds*	**msec** *milliseconds*} **Example:** `Router(config-if)# carrier-delay msec 50`	Sets the carrier delay on a serial interface. To achieve faster switchover from active to standby member link, the carrier delay value can be set to 0 ms.
Step 4	**lacp port-priority** *priority* **Example:** `Router(config-if)#lacp port-priority 4000`	Sets the LACP priority for a physical interface. IPoGEC currently supports 1:1 model, that is one active member link and one standby member link, which only requires choosing two different values for priority field to make sure one interface is active while the other is standby. The value set for the priority field shall match the value configured on the switch.
Step 5	**channel-group** *channel-group-number* **mode** {**active**	**passive**} **Example:** `Router(config-if)#channel-group 1 mode active`	Configures the interface in a channel group and sets the LACP mode.

Configuration Examples for IP Sessions Over Gigabit EtherChannel

Example: Configuring IPoGEC

```
interface Port-channel1
description GEC:1 interface towards switch
ip address 21.0.0.1 255.255.0.0
load-interval 30
lacp fast-switchover
lacp max-bundle 1
service-policy type control BB_PMAP
ip subscriber l2-connected
  initiator unclassified mac-address ipv4
  initiator dhcp
```

Example: Configuring Member Links for IPoGEC

```
interface GigabitEthernet0/0/1
no ip address
carrier-delay msec 50
lacp port-priority 4000
channel-group 1 mode active

interface GigabitEthernet0/0/2
no ip address
carrier-delay msec 50
lacp port-priority 3000
channel-group 1 mode active
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	*Cisco IOS Master Commands List, All Releases*
iWAG commands	Cisco IOS Intelligent Wireless Access Gateway Command Reference

MIBs

MIB	MIBs Link
No new or modified MIBs are supported by this feature.	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. 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. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for IP Sessions over Gigabit EtherChannel

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.

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Table 1: Feature Information for IP Sessions over Gigabit EtherChannel

Feature Name	Releases	Feature Information
IP Sessions over Gigabit EtherChannel	Cisco IOS XE Release 3.9	The IP sessions over Gigabit EtherChannel (IPoGEC) feature enables you to add the Link Aggregation Control Protocol (LACP) functionality for IP sessions. In Cisco IOS XE Release 3.9S, this feature was implemented on the Cisco ASR 1000 Series Aggregation Services Routers.