IPsec Security Association Idle Timers

When a router running the Cisco IOS XE software creates an IPsec security association (SA) for a peer, resources must be allocated to maintain the SA. The SA requires both memory and several managed timers. For idle peers, these resources are wasted. If enough resources are wasted by idle peers, the router could be prevented from creating new SAs with other peers. The IPsec Security Association Idle Timers feature introduces a configurable idle timer to monitor SAs for activity, allowing SAs for idle peers to be deleted. Benefits of this feature include:

- Increased availability of resources
- Improved scalability of Cisco IOS XE IPsec deployments. Because this feature prevents the wasting of resources by idle peers, more resources will be available to create new SAs as required.

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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.

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.

Prerequisites for IPsec Security Association Idle Timers

You must configure Internet Key Exchange (IKE) as described in the " Configuring Internet Key Exchange Security Protocol " chapter of the *Cisco IOS XE Security Configuration Guide* .

Information About IPsec Security Association Idle Timers

Lifetimes for IPsec Security Associations

The Cisco IOS software currently allows the configuration of lifetimes for IPsec SAs. Lifetimes can be configured globally or per crypto map. There are two lifetimes: a “timed” lifetime and a “traffic-volume” lifetime. A security association expires after the first of these lifetimes is reached.

IPsec Security Association Idle Timers

The IPsec SA idle timers are different from the global lifetimes for IPsec SAs. The expiration of the global lifetime is independent of peer activity. The IPsec SA idle timer allows SAs associated with inactive peers to be deleted before the global lifetime has expired.

If the IPsec SA idle timers are not configured, only the global lifetimes for IPsec SAs are applied. SAs are maintained until the global timers expire, regardless of peer activity.

Note If the last IPsec SA to a given peer is deleted due to idle timer expiration, the Internet Key Exchange (IKE) SA to that peer will also be deleted.

How to Configure IPsec Security Association Idle Timers

Configuring the IPsec SA Idle Timer Globally

This task configures the IPsec SA idle timer globally. The idle timer configuration will be applied to all SAs.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **crypto ipsec security-association idle-time** *seconds*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:**	Enters global configuration mode.

	Command or Action	Purpose
	`Router# configure terminal`	
Step 3	**crypto ipsec security-association idle-time** *seconds* **Example:** `Router(config)# crypto ipsec security-association idle-time 600`	Configures the IPsec SA idle timer. • The *seconds* argument specifies the time, in seconds, that the idle timer will allow an inactive peer to maintain an SA. Valid values for the *seconds* argument range from 60 to 86400.

Configuring the IPsec SA Idle Timer per Crypto Map

This task configures the IPsec SA idle timer for a specified crypto map. The idle timer configuration will be applied to all SAs under the specified crypto map.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **crypto map** *map-name seq-number* **ipsec-isakmp**
4. **set security-association idle-time** *seconds*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**crypto map** *map-name seq-number* **ipsec-isakmp** **Example:** `Router(config)# crypto map test 1 ipsec-isakmp`	Creates or modifies a crypto map entry and enters crypto map configuration mode.
Step 4	**set security-association idle-time** *seconds* **Example:** `Router(config-crypto-map)# set security-association idle-time 600`	Specifies the maximum amount of time for which the current peer can be idle before the default peer is used. • The *seconds* argument is the number of seconds for which the current peer can be idle before the default peer is used. Valid values are 60 to 86400.

Configuration Examples for IPsec Security Association Idle Timers

Configuring the IPsec SA Idle Timer Globally Example

The following example globally configures the IPsec SA idle timer to drop SAs for inactive peers after 600 seconds:

```
crypto ipsec security-association idle-time 600
```

Configuring the IPsec SA Idle Timer per Crypto Map Example

The following example configures the IPsec SA idle timer for the crypto map named test to drop SAs for inactive peers after 600 seconds:

```
crypto map test 1 ipsec-isakmp
 set security-association idle-time 600
```

Additional References

The following sections provide references related to the IPsec Security Association Idle Timers feature.

Related Documents

Related Topic	Document Title
Additional information about configuring IKE	Internet Key Exchange for IPsec VPNs
Additional information about configuring global lifetimes for IPsec SAs	• Configuring Security for VPNs with IPsec • IPsec Preferred Peer
Additional Security commands	Cisco IOS Security Command Reference

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

MIB	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

RFC	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 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/techsupport

Feature Information for IPsec Security Association Idle Timers

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 IPsec Security Association Idle Timers

Feature Name	Releases	Feature Information
IPsec Security Association Idle Timers	Cisco IOS XE Release 2.1	When a router running the Cisco IOS XE software creates an IPsec security association (SA) for a peer, resources must be allocated to maintain the SA. The SA requires both memory and several managed timers. For idle peers, these resources are wasted. If enough resources are wasted by idle peers, the router could be prevented from creating new SAs with other peers. The IPsec Security Association Idle Timers feature introduces a configurable idle timer to monitor SAs for activity, allowing SAs for idle peers to be deleted. The following command was introduced or modified: **crypto ipsec security-association idle-time**.
	Cisco IOS XE Release 2.1	The **set security-association idle-time** command was added, allowing for the configuration of an IPsec idle timer for a specified crypto map. The following command was introduced or modified: **set security-association idle-time**.