



# Configuring TCP Keepalive Timer

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## Restrictions for TCP Keepalive Timer

The TCP Keepalive timer parameters can be configured only on vty and TTY applications.

## Information about TCP Keepalive Timer

The TCP Keepalive Timer feature provides a mechanism to identify dead connections.

When a TCP connection on a routing device is idle for too long, the device sends a TCP keepalive packet to the peer with only the Acknowledgment (ACK) flag turned on. If a response packet (a TCP ACK packet) is not received after the device sends a specific number of probes, the connection is considered dead and the device initiating the probes frees resources used by the TCP connection.

The following parameters are used to configure TCP keepalive:

- **TCP Keepalive idle time:** The value of this parameter indicates the time for which a TCP connection can be idle before the connection initiates keepalive probes.
- **TCP Keepalive retries:** The value of this parameter is the number of unacknowledged probes that a device can send before declaring the connection as dead and tearing it down.
- **TCP Keepalive interval:** The time between subsequent probe retries.

# Configuring Keepalive Parameters

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"><li>• Enter your password if prompted.</li></ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# configure terminal	Enables global configuration mode.
<b>Step 3</b>	<b>ip tcp keepalive interval</b> <i>seconds</i> <b>Example:</b> Device(config)# ip tcp keepalive interval 23	Configures the keepalive interval.
<b>Step 4</b>	<b>ip tcp keepalive retries</b> <i>number-of-retries</i> <b>Example:</b> Device(config)# ip tcp keepalive retries 5	Configures the number of unacknowledged probes that can be sent before declaring the connection as dead.
<b>Step 5</b>	<b>end</b> <b>Example:</b> Device(config)# end	Exits global configuration mode and returns to privileged EXEC mode.
<b>Step 6</b>	<b>show running-config</b> <b>Example:</b> Device# show running-config	(Optional) Displays the running configuration.

## Example: Configuring Keepalive Parameters

The following example shows how to configure TCP keepalive parameters.

```
Device> enable
Device# configure terminal
Device(config)# ip tcp keepalive interval 2
Device(config)# ip tcp keepalive retries 5
Device(config)# end
```

The following is a sample output of the **show running-config** command:

```
Device# show running-config
```

```
ip tcp keepalive retries 5
ip tcp keepalive interval 2
```

## Additional References for TCP Keepalive Timer

### Standards and RFCs

Standard/RFC	Title
RFC 793	<a href="#">Transmission Control Protocol</a>
RFC 1191	<a href="#">Path MTU discovery</a>
RFC 1323	<a href="#">TCP Extensions for High Performance</a>
RFC 2018	<a href="#">TCP Selective Acknowledgment Options</a>
RFC 2581	<a href="#">TCP Congestion Control</a>
RFC 3168	<a href="#">The Addition of Explicit Congestion Notification (ECN) to IP</a>
RFC 3782	<a href="#">The NewReno Modification to TCP's Fast Recovery Algorithm</a>
RFC 4022	<a href="#">Management Information Base for the Transmission Control Protocol (TCP)</a>

### 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.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature History for TCP Keepalive Timer

This table provides release and related information for the features explained in this module.

These features are available in all the releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature	Feature Information
Cisco IOS XE Fuji 16.8.1a	TCP Keepalive Timer	The TCP Keepalive Timer feature introduces the capability to identify dead connections between multiple routing devices.  The following command was introduced or modified by this feature: <b>ip tcp keepalive</b> .

Use the Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>.