

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.

TCP Keepalive Timer

- If there is no activity on a given connection for a period of time, the server sends a probe segment to see if the client is still alive.
- The keepalive timer specifies the interval at which the server wants to know if the client's host has either crashed or is down. The interval is normally 2 hours.
- When the Keepalive timer expires, the server sends a probe segment:
 - (1) if the client is still alive,
 - It will respond and there will be no more probes for next 2
 - (2) if the client is down,
 - It times out after 75 seconds, and the server sends a total of 10 probes, 75 seconds apart, and if no response, the server terminates the connection.
 - (3) if the client is rebooted,
 - There is a response for the probe, but the response will be a reset. → terminating the connection
 - (4) if the client is alive but not unreachable,
 - same as in case (2)

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TCP timers

- **Retransmission timer**- expecting acknowledgment time
- **Persist timer**- keeps window size information flowing
- **Keepalive timer**- detect idle connection due to crashing or reboot
- **2MSL**- duration of TIME_WAIT state