



SIP Timer

The SIP Timer feature allows the user to configure a number of Session Initiation Protocol (SIP) timers that were hard-coded in the previous releases of Cisco IOS software. The ability to configure SIP timers enables users to improve the interoperability and performance of their devices and network environment.



Note

For Cisco IOS XE Release 2.4 and later, this feature is supported in the unified model only.

Cisco Unified Border Element (SP Edition) was formerly known as Integrated Session Border Controller and may be commonly referred to in this document as the session border controller (SBC).

For a complete description of the commands used in this chapter, refer to the *Cisco Unified Border Element (SP Edition) Command Reference: Unified Model* at:

http://www.cisco.com/en/US/docs/ios/sbc/command/reference/sbcu_book.html.

For information about all Cisco IOS commands, use the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or a Cisco IOS master commands list.

Feature History for SIP Timer Functions

Release	Modification
Cisco IOS XE Release 2.4	This feature was introduced on the Cisco IOS XR along with support for the unified model.

Contents

This module contains the following sections:

- [Information About SIP Timer, page 27-1](#)
- [How to Configure SIP Timer, page 27-3](#)

Information About SIP Timer

The SIP timer feature allows the user to configure some of the SIP timers that were hardcoded to default values in the previous releases of Cisco IOS software. In the previous releases, Cisco Unified Border Element (SP Edition) used the default SIP timer values recommended by RFC 3261. See [Table 27-1](#).

Table 27-1 Default Values of the Timers

Timer	Value	Meaning
T1	500 ms default	round-trip time (RTT) estimate
T2	4 s	The maximum retransmit interval for non-INVITE requests and INVITE responses
T4	5 s	Maximum duration a message will remain in the network
Timer A	initially T1	INVITE request retransmit interval, for UDP only
Timer B	64* T1	INVITE transaction timeout timer
Timer C	> 3 min	Proxy INVITE transaction timeout
Timer D	> 32 s for UDP 0 s for TCP/Stream Control Transmission Protocol (SCTP)	Wait time for response retransmits
Timer E	initially T1	non-INVITE request retransmit interval, UDP only
Timer F	64* T1	non-INVITE transaction timeout timer
Timer G	initially T1	INVITE response retransmit interval
Timer H	64* T1	Wait time for ACK receipt
Timer I	T4 for UDP 0 s for TCP/SCTP	Wait time for ACK retransmits
Timer J	64* T1 for UDP 0 s for TCP/SCTP	Wait time for non-INVITE request retransmits
Timer K	T4 for UDP 0 s for TCP/SCTP	Wait time for response retransmits

Cisco Unified Border Element (SP Edition) allows the user to modify T1, T2 and Timer D, using the **udp-first-retransmit-interval**, **udp-max-retransmit-interval**, and **udp-response-linger-period** commands. You can also use the **invite-timeout** command to choose how long SBC should wait for the remote SIP endpoint to respond to the SBC's outgoing INVITE or Timer B in an outgoing transaction.

In addition to the SIP protocol-level timers, Cisco Unified Border Element (SP Edition) also allows modification of transport-related timer commands: **tcp-connect-timeout** (how long TCP SYN will wait for the reply) and **tcp-idle-timeout** (how long TCP connection should stay active while idle). Although these timers are transport-level values, Cisco IOS XE Release 2.4 supports these timers in SIP only, but not in H.323, nor H.248.

**Note**

The incorrect configuration of the SIP timer values may lead to unexpected behavior in certain cases.

How to Configure SIP Timer

This section contains the steps for configuring SIP timers.

Configuring SIP Timer

SUMMARY STEPS

1. **configure**
2. **sbc** *service-name*
3. **sbe**
4. **sip timer**
5. **tcp-connect-timeout** *interval*
6. **tcp-idle-timeout** *interval*
7. **invite-timeout** *interval*
8. **udp-first-retransmit-interval** *interval*
9. **udp-max-retransmit-interval** *interval*
10. **udp-response-linger-period** *interval*
11. **end**
12. **show sbc** *service-name* **sbe sip timers**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: Router# configure	Enables global configuration mode.
Step 2	sbc <i>service-name</i> Example: Router(config)# sbc mysbc	Enters the mode of an SBC service. • Use the <i>service-name</i> argument to define the name of the service.
Step 3	sbe Example: Router(config-sbc)# sbe	Enters the mode of the signaling border element (SBE) function of the SBC.
Step 4	sip timer Example: Router(config-sbc-sbe)# sip timer	Enters the mode of the SIP timer function of the SBC.

	Command or Action	Purpose
Step 5	<p>tcp-connect-timeout <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# tcp-connect-timeout 3000</p>	Configures the time (in milliseconds) that SBC waits for a SIP TCP connection to a remote peer to complete before failing that connection. The default timeout interval is 1000 milliseconds.
Step 6	<p>tcp-idle-timeout <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# tcp-idle-timeout 30000</p>	<p>Minimum time (in milliseconds) a TCP socket has not processed any traffic, before it is closed. The default is 2 minutes.</p> <p>Note The value for this command might not be precise since the idle timers are checked every 12 seconds.</p>
Step 7	<p>invite-timeout <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# invite-timeout 60</p>	Configures the time (in seconds) that SBC waits for a final response to an outbound SIP INVITE request. The default is 180 seconds. If no response is received during that time, an internal “408 Request Timeout” response is generated and returned to the caller.
Step 8	<p>udp-first-retransmit-interval <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# udp-first-retransmit-interval 1000</p>	<p>Configures the time (in milliseconds) that SBC waits for a UDP response or ACK before sending the first retransmission of the relevant signal.</p> <p>If SBC keeps getting no responses, it doubles subsequent retransmission intervals each time until they reach the udp-max-retransmit-interval duration. SBC ceases retransmitting the request and time out the signal if 64 times this duration passes without the receipt of a response/ACK.</p> <p>The default first UDP retransmission interval is 500 milliseconds.</p>
Step 9	<p>udp-max-retransmit-interval <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# udp-max-retransmit-interval 8000</p>	Configures the maximum time interval (in milliseconds) at which SBC will retransmit (see Step 9, udp-first-retransmit-interval above). The default maximum UDP retransmission interval is 4 seconds.
Step 10	<p>udp-response-linger-period <i>interval</i></p> <p>Example: Router(config-sbc-sbe-sip-tmr)# udp-response-linger-period 10000</p>	<p>Configures the time (in milliseconds) for which SBC will retain negative UDP responses to INVITE requests.</p> <p>All subsequent retransmitted responses received within this time will be answered with a negative ACK. Thereafter, any further retransmitted responses are ignored.</p> <p>The default UDP response linger period is 32 seconds.</p>

	Command or Action	Purpose
Step 11	end Example: Router(config-sbc-sbe-sip-tmr)# end	Exits the sip timer mode and returns to Privileged EXEC mode.
Step 12	show sbc <i>service-name</i> sbe sip timers Example: Router# show sbc mysbc sbe sip timers	Shows the currently configured SIP-related timers.

