



# SCTP Parameter Template Configuration Mode Commands

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This chapter provides information about commands used to configure parameters for Stream Control Transmission Protocol (SCTP) associations. The commands become part of a template that can be associated with services running on the system.

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## Command Modes

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local] host_name(sctp-param-template) #
```



---

## Important

The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

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- [do show](#), on page 2
- [end](#), on page 2
- [exit](#), on page 2
- [sctp-alpha](#), on page 3
- [sctp-alt-accept-flag](#), on page 3
- [sctp-beta](#), on page 4
- [sctp-checksum-type](#), on page 5
- [sctp-cookie-life](#), on page 6
- [sctp-max-assoc-retx](#), on page 6
- [sctp-max-in-strms](#), on page 7
- [sctp-max-init-retx](#), on page 8
- [sctp-max-mtu-size](#), on page 8
- [sctp-max-out-strms](#), on page 9
- [sctp-max-path-retx](#), on page 10
- [sctp-min-mtu-size](#), on page 11
- [sctp-rto-initial](#), on page 12
- [sctp-rto-max](#), on page 12
- [sctp-rto-min](#), on page 13

- [sctp-sack-frequency](#), on page 14
- [sctp-sack-period](#), on page 14
- [sctp-start-mtu-size](#), on page 15
- [timeout](#), on page 16

## do show

Executes all **show** commands while in Configuration mode.

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**Product** All

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**Privilege** Security Administrator, Administrator

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**Syntax Description** `do show`

---

**Usage Guidelines** Use this command to run all Exec mode **show** commands while in Configuration mode. It is not necessary to exit the Config mode to run a **show** command.

The pipe character | is only available if the command is valid in the Exec mode.




---

**Caution** There are some Exec mode **show** commands which are too resource intensive to run from Config mode. These include: **do show support collection**, **do show support details**, **do show support record** and **do show support summary**. If there is a restriction on a specific **show** command, the following error message is displayed:

```
Failure: Cannot execute 'do show support' command from Config mode.
```

---

## end

Exits the current configuration mode and returns to the Exec mode.

---

**Product** All

---

**Privilege** Security Administrator, Administrator

---

**Syntax Description** `end`

---

**Usage Guidelines** Use this command to return to the Exec mode.

## exit

Exits the current mode and returns to the parent configuration mode.

---

**Product** All

---

**Privilege** Security Administrator, Administrator

---

**Syntax Description**    **exit**

---

**Usage Guidelines**    Use this command to return to the parent configuration mode.

## sctp-alpha

Configures the SCTP retransmission timeout (RTO) alpha value.

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**Product**    MME

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**Privilege**    Administrator

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**Command Modes**    Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template) #
```

---

**Syntax Description**    **sctp-alpha** *value*  
**default sctp-alpha**

### **default**

Returns the command to its default setting of 5.

### **value**

Default: 5

Specifies the SCTP retransmission timeout alpha value. *value* must be an integer from 0 through 65535.

---

**Usage Guidelines**    Use this command to configure the SCTP RTO alpha value. The RTO alpha value is used in calculating the smoothed round-trip time (SRTT) and the round-trip time variation (RTTVAR) for new round trip time (RTT) measurements.

### **Example**

The following command sets the SCTP RTO alpha value to 10:

```
sctp-alpha 10
```

## sctp-alt-accept-flag

Configures the SCTP alternate accept flag for additional life time for the association.

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**Product**    MME

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**Privilege**    Administrator

**Command Modes** Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description** **sctp-alt-accept-flag** { **disable** | **enable** }  
**default** **sctp-alt-accept-flag**

**default**

Returns the command to its default setting of enable.

**disable | enable**

Specifies if the alternate accept flag is enabled or disabled.

**Usage Guidelines** Use this command to configure the SCTP alternate accept flag for additional life time for the association.

**Example**

The following command disables the alternate accept flag for the SCTP association:

```
sctp-alt-accept-flag disable
```

## sctp-beta

Configures the SCTP retransmission timeout (RTO) beta value.

**Product** MME

**Privilege** Administrator

**Command Modes** Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description** **sctp-beta** *value*  
**default** **sctp-beta**

**default**

Returns the command to its default setting of 10.

**value**

Specifies the SCTP retransmission timeout beta value as an integer from 0 through 65535. Default: 10

---

**Usage Guidelines**

Use this command to configure the SCTP RTO beta value. The RTO beta value is used in calculating the smoothed round-trip time (SRTT) and the round-trip time variation (RTTVAR) for new round trip time (RTT) measurements.

**Example**

The following command sets the SCTP RTO beta value to 20:

```
sctp-beta 20
```

## sctp-checksum-type

Configures the checksum type used to increase the integrity of the SCTP packets during transmission.

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**Product**

MME

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**Privilege**

Administrator

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**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

```
configure > sctp-param-template template_name
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template) #
```

---

**Syntax Description**

```
sctp-checksum-type { adler32 | crc32 }  
default sctp-checksum-type
```

**default**

Returns the command to its default setting of CRC32.

**adler32 | crc32**

Specifies the type of checksum used to increase data integrity of SCTP packets.

**adler32**: Specifies that the Adler-32 checksum algorithm is used to increase data integrity for SCTP packets.

**crc32**: Specifies that a 32-bit cyclic redundancy check is used to increase data integrity of SCTP packets.

---

**Usage Guidelines**

Use this command to select the checksum for data integrity of SCTP packets.

**Example**

The following command enables the Adler-32 checksum algorithm used to increase data integrity of SCTP packets:

```
sctp-checksum-type adler32
```

## sctp-cookie-life

Configures the lifetime of the SCTP cookie.

---

**Product**

MME

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**Privilege**

Administrator

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**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

---

**Syntax Description**

**sctp-cookie-life** *value*  
**default sctp-cookie-life**

**default**

Returns the command to its default setting of 600 (60000 milliseconds).

**value**

Default: 600 (60000 milliseconds)

Specifies the lifetime of the SCTP cookie. *value* is an integer from 50 through 1200. The range translates to 5000 milliseconds to 120000 milliseconds, as the granularity is in 100-millisecond increments.

---

**Usage Guidelines**

Use this command to configure the lifetime of the SCTP cookie.

**Example**

The following command configures the lifetime of the SCTP cookie to 80000 milliseconds:

```
sctp-cookie-life 800
```

## sctp-max-assoc-retx

Configures the maximum number of retransmissions for SCTP associations.

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**Product**

MME

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**Privilege**

Administrator

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**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

**sctp-max-assoc-retx** *value*  
**default sctp-max-assoc-retx**

**default**

Returns the command to its default setting of 10.

**value**

Specifies the maximum number of retransmissions allowed by this template for SCTP associations as an integer from 0 through 255. Default: 10

**Usage Guidelines**

Use this command to configure the maximum number of retransmissions allowed.

**Example**

The following command configures the maximum number of retransmissions to 7:

```
sctp-max-assoc-retx 7
```

## sctp-max-in-strms

Configures the maximum number of incoming SCTP streams.

**Product**

MME  
 SGSN

**Privilege**

Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

**sctp-max-in-strms** *value*  
**default sctp-max-in-strms**

**default**

Returns the command to its default setting of 16.

**value**

Specifies the maximum number of incoming SCTP streams as an integer from 1 through 16. Default: 16.

The MME restricts the allowable range as 2-16. If a value of 1 is entered, value 2 will be applied for any MME service associated with this SCTP parameter template.

**Usage Guidelines** Use this command to configure the maximum number of incoming SCTP streams.

### Example

The following command configures the maximum number of incoming SCTP streams to 5:

```
sctp-max-in-strms 5
```

## sctp-max-init-retx

Configures the maximum number of retransmissions for SCTP initiations.

**Product** MME

**Privilege** Administrator

**Command Modes** Exec > Global Configuration > SCTP Parameter Template Configuration

```
configure > sctp-param-template template_name
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description** `sctp-max-init-retx` *value*  
`default sctp-max-init-retx`

### default

Returns the command to its default setting of 5.

### value

Specifies the maximum number of retransmissions for SCTP initiations as an integer from 0 through 255.  
 Default: 5

**Usage Guidelines** Use this command to configure the maximum number of retransmissions for SCTP initiations.

### Example

The following command configures the maximum number of retransmissions for SCTP initiations to 10:

```
sctp-max-init-retx 10
```

## sctp-max-mtu-size

Configures the maximum transmission unit (MTU) size (in bytes) for SCTP streams.

**Product** MME



**Privilege**

Administrator

**Command Modes**

Exec &gt; Global Configuration &gt; SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description****sctp-max-mtu-size** *bytes*  
**default sctp-max-mtu-size****default**

Returns the command to its default setting of 1500 bytes.

**bytes**

Specifies the maximum MTU size (in bytes) for SCTP streams as an integer from 508 through 65535. Default: 1500.

In the StarOS 21.17.17 release, the maximum MTU size (in bytes) for SCTP streams as an integer is from 512 through 65535. Default: 1500.

**Usage Guidelines**

Use this command to configure the maximum MTU size, in bytes, for SCTP streams.

**Note**To modify the **sctp-max-mtu-size** value, follow the steps in the maintenance mode:

1. Un configure and configure back the SCTP association from Diameter endpoint.
2. Reset the Diameter peer with the CLI **diameter reset connection endpoint** *endpoint name*.

**Example**

The following command configures the maximum MTU size for SCTP streams to 3000:

```
sctp-max-mtu-size 3000
```

## sctp-max-out-strms

Configures the maximum number of outgoing SCTP streams.

**Product**MME  
SGSN**Privilege**

Administrator

**Command Modes**

Exec &gt; Global Configuration &gt; SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

---

### Syntax Description

**sctp-max-out-strms** *value*  
**default sctp-max-out-strms**

#### default

Returns the command to its default setting of 2.

#### value

Specifies the maximum number of outgoing SCTP streams as an integer from 1 through 16.

MME Default 16.

SGSN Default: 2.

---

### Usage Guidelines

Use this command to configure the maximum number of outgoing SCTP streams.

The MME restricts the allowable range as 2-16. If a value of 1 is entered, value 2 will be applied for any MME service associated with this SCTP parameter template.

For the SGSN, if the user tries to configure the value of **sctpmax-out-strms** less than "2", a message is displayed and the default value is set.

#### Example

The following command configures the maximum number of outgoing SCTP streams to 5:

```
sctp-max-out-strms 5
```

## sctp-max-path-retx

Configures the maximum number of retransmissions of SCTP paths.

---

### Product

MME

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### Privilege

Administrator

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### Command Modes

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

---

### Syntax Description

**sctp-max-path-retx** *value*  
**default sctp-max-path-retx**

**default**

Returns the command to its default setting of 5.

**value**

Specifies the maximum number of retransmissions of SCTP paths as an integer from 0 through 255. Default: 5

**Usage Guidelines**

Use this command to configure the maximum number of retransmissions of SCTP paths. An SCTP path is a connection between an endpoint address and a peer endpoint address.

**Example**

The following command configures the maximum number of retransmissions of SCTP paths to 10:

```
sctp-max-path-retx 10
```

## sctp-min-mtu-size

Configures the minimum maximum transmission unit (MTU) size (in bytes) for SCTP streams.

**Product**

MME

**Privilege**

Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

```
configure > sctp-param-template template_name
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template) #
```

**Syntax Description**

```
sctp-min-mtu-size bytes  
default sctp-min-mtu-size
```

**default**

Returns the command to its default setting of 508 bytes.

**bytes**

Specifies the minimum MTU size (in bytes) for SCTP streams as an integer from 508 through 65535. Default: 508

**Usage Guidelines**

Use this command to configure the minimum MTU size, in bytes, for SCTP streams.

**Example**

The following command configures the minimum MTU size for SCTP streams to 1000:

```
sctp-min-mtu-size 1000
```

## sctp-rto-initial

Configures the initial time for SCTP retransmission timeouts (RTOs).

---

**Product**

MME

---

**Privilege**

Administrator

---

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

---

**Syntax Description**

**sctp-rto-initial** *value*  
**default sctp-rto-initial**

**default**

Returns the command to its default setting of 30 (3000 milliseconds).

**value**

Specifies the initial time for SCTP RTO as an integer from 1 through 1200. The granularity is in 100ms increments (20 = 2000ms). Default: 30 (3000 milliseconds)

---

**Usage Guidelines**

Use this command to configure the initial time for SCTP RTOs.

**Example**

The following command configures the initial SCTP RTO to 6000ms:

```
sctp-rto-initial 60
```

## sctp-rto-max

Configures the maximum time for SCTP retransmission timeouts (RTOs).

---

**Product**

MME

---

**Privilege**

Administrator

---

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

**sctp-rto-max** *value*  
**default sctp-rto-max**

**default**

Returns the command to its default setting of 600 (60000 milliseconds).

**value**

Specifies the maximum time for SCTP RTOs as an integer from 5 through 1200. The granularity is in 100ms increments (120 = 12000ms). Default: 600 (60000 milliseconds)

**Usage Guidelines**

Use this command to configure the maximum time for SCTP RTOs.

**Example**

The following command configures the maximum time for SCTP RTOs to 120000ms:

```
sctp-rto-max 120
```

## sctp-rto-min

Configures the minimum SCTP retransmission timeout (RTO).

**Product**

MME

**Privilege**

Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

**sctp-rto-min** [ **units-10ms** ] *value*  
**default sctp-rto-min**

**default**

Returns the command to its default setting of 10 (1000 milliseconds).

**units-10ms**

Including this keyword specifies that the integer *value* is to be calculated using 10ms increments (instead of 100ms increments) to allow for finer granularity. *value* is an integer from 0 through 500.

**value**

Specifies the minimum time for SCTP RTOs as an integer from 1 through 50. The granularity is in 100ms increments (20 = 2000ms). Default: 10 (1000 milliseconds)

**Usage Guidelines** Use this command to configure the minimum time for SCTP RTOs.

**Example**

The following command configures the minimum time for SCTP RTOs to 2000ms:

```
sctp-rto-min 20
```

## sctp-sack-frequency

Configures the frequency of transmission of SCTP selective acknowledgements (SACK).

**Product** MME

**Privilege** Administrator

**Command Modes** Exec > Global Configuration > SCTP Parameter Template Configuration

```
configure > sctp-param-template template_name
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description** **sctp-sack-frequency** *value*  
**default sctp-sack-frequency**

**default**

Returns the command to its default setting of 2.

**value**

Specifies the frequency of SCTP selective acknowledgements as an integer from 1 through 20. Default: 2

**Usage Guidelines** Use this command to configure the frequency of SCTP selective acknowledgements.

**Example**

The following command configures the frequency of SCTP selective acknowledgements to 10:

```
sctp-sack-frequency 10
```

## sctp-sack-period

Configures the delay before sending an SCTP selective acknowledgement (SACK).

**Product** MME

**Privilege** Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

**sctp-sack-period** [ **units-10ms** ] *value*  
**default sctp-sack-period**

**default**

Returns the command to its default setting of 2 (200 milliseconds).

**units-10ms**

Including this keyword specifies that the integer *value* is to be calculated using 10ms increments (instead of 100ms increments) to allow for finer granularity. *value* is an integer from 0 through 50.

**value**

Specifies the period for SCTP selective acknowledgements as an integer from 0 through 5. The granularity is in 100ms increments (3 = 300ms). Default: 2 (200 milliseconds).

**Important**

If this value is set to 0, the MME service will automatically configure a 10 ms sack period in order to allow proper initialization of the CCPU SCTP stack.

**Usage Guidelines**

Use this command to configure the period for SCTP selective acknowledgements.

**Example**

The following command configures the period for SCTP selective acknowledgements to 400ms (using the 10ms granularity):

```
sctp-sack-period units-10ms 40
```

## sctp-start-mtu-size

Configures the start maximum transmission unit (MTU) size (in bytes) for SCTP streams.

**Product**

MME

**Privilege**

Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

**configure** > **sctp-param-template** *template\_name*

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

```
sctp-start-mtu-size bytes  
default sctp-start-mtu-size
```

**default**

Returns the command to its default setting of 1500 bytes.

**bytes**

Specifies the start MTU size (in bytes) for SCTP streams as an integer from 508 through 65535. Default: 1500

**Usage Guidelines**

Use this command to configure the start MTU size, in bytes, for SCTP streams.

**Example**

The following command configures the start MTU size for SCTP streams to *3000*:

```
sctp-start-mtu-size 3000
```

# timeout

Configures timeouts for SCTP data chunk bundle transmissions and/or SCTP heartbeat request responses.

**Product**

MME

**Privilege**

Administrator

**Command Modes**

Exec > Global Configuration > SCTP Parameter Template Configuration

```
configure > sctp-param-template template_name
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(sctp-param-template)#
```

**Syntax Description**

```
timeout { sctp-bundle [ units-10ms ] timer | sctp-heart-beat value }  
[ default | no ] timeout { sctp-bundle | sctp-heart-beat }
```

**default**

Returns the command to its default setting of disabled for **sctp-bundle** and 30 seconds for **sctp-heart-beat**.

**no**

Removes the selected configuration.

**sctp-bundle [ units-10ms ] timer**

Specifies that SCTP data chunks are to be queued until this timer expires at which time the data chunks are bundled and committed for transmission.



*timer* is an integer from 1 through 65535, in 100ms increments (10 = 1000ms or 1 second).

**[ units-10ms ]**: Including this optional keyword specifies that the integer *timer* is to be calculated using 10ms increments (instead of 100ms increments) to allow for finer granularity.

Default: Disabled.

#### **sctp-heart-beat value**

Default: 30 seconds

Specifies the SCTP heartbeat timeout (in seconds) as an integer from 1 through 300. An SCTP heartbeat is sent to a peer to determine reachability. If an acknowledgement is not received before this timer runs out, heartbeat requests are no longer sent and the peer is considered unreachable.

#### **Usage Guidelines**

Use this command to configure timeouts for SCTP data chunk bundle transmissions and/or SCTP heartbeat request responses.

#### **Example**

The following command enables the SCTP data chunk bundle timeout value and configures it to 2 seconds:

```
timeout sctp-bundle 20
```

■ timeout