

SCTP Parameter Template Configuration Mode Commands

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.

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

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

Product All

Privilege Security Administrator, Administrator

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.

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-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.

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-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.

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-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

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-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.

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-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 > 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-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 > 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-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

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-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
```