



# Link Configuration Mode Commands

## Command Modes

The Link configuration mode defines the MTP3 link parameters for a specific link in a linkset of an SS7 routing domain instance.

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id) #
```



## Important

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



## Important

For information on common commands available in this configuration mode, refer to the [Common Commands](#) chapter.

- [arbitration](#), on page 2
- [mtp2-aerm-emergency-threshold](#), on page 3
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## arbitration

This command configures link arbitration.

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### Product

SGSN

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### Privilege

Security Administrator, Administrator

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### Command Modes

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

### Syntax Description

```
arbitration { active | passive }  
no arbitration
```

#### **no**

Removes the arbitration configuration for the link.

#### **active**

The SSCOP initiates the transmission of PDUs.

#### **passive**

The SSCOP waits to receive PDUs.

---

### Usage Guidelines

Sets the configuration to initiate transmission of PDUs.

### Example

```
arbitration active
```

## mtp2-aerm-emergency-threshold

Configure the alignment error rate monitor (AERM) emergency threshold value. This command is only available for a lowspeed-narrowband link-type.

<b>Product</b>	SGSN
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration  <b>configure</b> > <b>ss7-routing-domain</b> <i>domain_id</i> <b>variant</b> <i>var_type</i> > <b>linkset id</b> <i>linkset_id</i> > <b>link id</b> <i>link_id</i>  Entering the above command sequence results in the following prompt: <pre>[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#</pre>
<b>Syntax Description</b>	<b>mtp2-aerm-emergency-threshold</b> <i>value</i> <b>default</b> <b>mtp2-aerm-emergency-threshold</b>  <b>default</b> Resets the parameter to the default value of 1.  <b>value</b> <i>value</i> : Enter an integer from 1 to 50. Default: 1.
<b>Usage Guidelines</b>	This command sets the emergency threshold for the MTP2 alignment error rate monitor.

### Example

Set the emergency AERM threshold to 17:

```
mtp2-aerm-emergency-threshold 17
```

## mtp2-aerm-normal-threshold

Configure the alignment error rate monitor (AERM) normal threshold value. This command is only available for a lowspeed-narrowband link-type.

<b>Product</b>	SGSN
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration  <b>configure</b> > <b>ss7-routing-domain</b> <i>domain_id</i> <b>variant</b> <i>var_type</i> > <b>linkset id</b> <i>linkset_id</i> > <b>link id</b> <i>link_id</i>

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**mtp2-aerm-normal-threshold** *value*  
**default** mtp2-aerm-normal-threshold

**default**

Resets the parameter to the default value of 4.

**value**

*value* : Enter an integer from 4 to 100. Default: 4.

---

**Usage Guidelines**

This command sets the normal threshold for the MTP2 alignment error rate monitor.

**Example**

Set the normal AERM threshold to 55:

```
mtp2-aerm-normal-threshold 55
```

## mtp2-eim-decrement

Configure the errored interval monitor (EIM) emergency decrement value. This command is only available for a highspeed-narrowband link-type.

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**Product**

SGSN

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**Privilege**

Security Administrator, Administrator

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**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**mtp2-eim-decrement** *value*  
**default** mtp2-eim-decrement

**default**

Resets the parameter to the default value of 11.

**value**

*value* : Enter an integer from 1 to 63. Default: 11.

---

**Usage Guidelines**

This command sets the emergency decrement value for the EIM.

**Example**

Reset the EIM emergency decrement to 1:

```
default mtp2-eim-decrement
```

## mtp2-eim-increment

Configure the errored interval monitor (EIM) emergency increment value. This command is only available for a highspeed-narrowband link-type.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description**

```
mtp2-eim-increment value
default mtp2-eim-increment
```

**default**

Resets the parameter to the default value of 198.

**value**

*value* : Enter an integer from 1 to 1023. Default: 198.

**Usage Guidelines**

This command sets the emergency increment value for the EIM.

**Example**

Set the EIM emergency increment to 2:

```
mtp2-eim-increment 2
```

## mtp2-eim-threshold

Configure the errored interval monitor (EIM) emergency threshold value. This command is only available for a highspeed-narrowband link-type.

**Product**

SGSN

<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration  <b>configure &gt; ss7-routing-domain</b> <i>domain_id</i> <b>variant</b> <i>var_type</i> > <b>linkset id</b> <i>linkset_id</i> > <b>link id</b> <i>link_id</i>  Entering the above command sequence results in the following prompt:  [local] <i>host_name</i> (config-ss7-rd-linkset-linkset_id-link-link_id) #
<b>Syntax Description</b>	<b>mtp2-eim-threshold</b> <i>value</i> <b>default mtp2-eim-threshold</b>  <b>default</b>  Resets the parameter to the default value of 794.  <b>value</b>  <i>value</i> : Enter an integer from 1 to 65535. Default: 794.
<b>Usage Guidelines</b>	This command sets the emergency threshold value for the EIM.

**Example**

Set the EIM emergency threshold to 154:

```
mtp2-eim-threshold 154
```

## mtp2-error-correction

Configure the error correction method to be used. This command is only available for lowspeed or highspeed narrowband link-types.

<b>Product</b>	SGSN
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration  <b>configure &gt; ss7-routing-domain</b> <i>domain_id</i> <b>variant</b> <i>var_type</i> > <b>linkset id</b> <i>linkset_id</i> > <b>link id</b> <i>link_id</i>  Entering the above command sequence results in the following prompt:  [local] <i>host_name</i> (config-ss7-rd-linkset-linkset_id-link-link_id) #
<b>Syntax Description</b>	<b>mtp2-error-correction</b> { <b>basic</b>   <b>preventive-cyclic-retransmission</b> } <b>default mtp2-error-correction</b>  <b>default</b>  Resets the parameter to the default value.

**basic**

Basic error correction (BEC) is a positive / negative acknowledgement method that uses backwards retransmission. This method is best for links with less than 30 ms one-way propagation delays.

**preventive-cyclic-retransmission**

PCR is recommended for links with 125 ms, or higher, propagation delays.

**Usage Guidelines**

Set the method of MTP2 layer error correct to be used on the link.

**Example**

Set error correction for a link with 15 ms propagaion delay::

```
mtp2-error-correction basic
```

## mtp2-issu-len

This command sets the length of the link status signal unit (LSSU) which carries link status information used to manage link alignment and indicate the status of the signaling points to each other. This command is only available for lowspeed or highspeed narrowband link-types.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description**

```
mtp2-issu-len #_octets
default mtp2-issu-len
```

**default**

Using this keyword with the command resets the length to the default of 1 octet.

**#\_octets**

Sets the number of octets for the length of the LSSU.

#\_octets: Must be either 1 or 2.

**Usage Guidelines**

Use this command to define the maximum amount of link status information that is to be shared between signaling points.

**Example**

You can use the following command to set the LSSU length to 2 octets - the maximum length:

```
mtp2-lssu-len 2
```

## mtp2-max-outstand-frames

This command sets the maximum number of outstanding packets to be sent by the link manager (linkmgr) - applicable for both high speed (HSL) and low speed (LSL) narrowband links.

<b>Product</b>	SGSN
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration  <b>configure</b> > <b>ss7-routing-domain</b> <i>domain_id</i> <b>variant</b> <i>var_type</i> > <b>linkset id</b> <i>linkset_id</i> > <b>link id</b> <i>link_id</i>  Entering the above command sequence results in the following prompt:  [local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
<b>Syntax Description</b>	<b>mtp2-max-outstand-frames</b> #_bytes <b>default mtp2-max-outstand-frames</b>

**default**

Using this keyword with the command resets number of packets to the default of 7 bytes.

**#\_bytes**

Sets the maximum number of packets sent by the linkmgr that can be allowed to be outstanding.

#\_bytes: Must be an integer from 5 to 10.

**Usage Guidelines**

The linkmgr (MTP2) sends data at a higher rate, than the narrowband (NB) E1 link speed, when in congestion and performing retransmission. This can lead to more congestion leading to more time taken for the link to come out of congestion. If using a value of 10 during congestion, then linkmgr pumps data at a rate higher than 2.5 mbps. To avoid this problem, a lower value is usually considered optimal. This configuration holds good for both HSL and LSL.

**Example**

Use the following command to reset the default number of outstanding packets sent by the LinkMgr:

```
default mtp2-max-outstand-frames
```

Set the maximum number of outstanding packets the linkmgr can send to 6:

```
mtp2-max-outstand-frames 6
```



## mtp2-suerm-threshold

Configure the signal unit error rate monitor (SUERM) threshold. This command is only available for lowspeed-narrowband link-types.

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description** **mtp2-suerm-threshold** *value*  
**default** **mtp2-suerm-threshold**

### default

Resets the parameter to the default value.

### value

Defines the threshold for number of bad frames

*value*: Enter an integer from 64 to 1023. Default is 64.

**Usage Guidelines** Sets the threshold for link monitoring of bad frames.

### Example

Set a new link monitoring bad frames (SEURM) threshold of 256:

```
mtp2-suerm-threshold 256
```

## mtp3-discard-priority

Configure MTP3 message discard priority.

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**mtp3-discard-priority** *priority*  
**default mtp3-discard-priority**

**default**

Resets the priority to the default value.

**priority**

*priority*: must be an integer between 0 and 3.

Default is 0.

---

**Usage Guidelines**

Use this command to manage MTP3 messaging.

**Example**

```
mtp3-discard-priority 2
```

## mtp3-max-slt-try

Configure maximum number of times to retry SLT (signaling link test).

---

**Product**

SGSN

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**Privilege**

Security Administrator, Administrator

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**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**mtp3-max-slt-try** *retries*  
**default mtp3-max-slt-try**

**default**

Resets the number of retries to the default value.

**retries**

*retries*: must be an integer between 1 to 65535.

Default is 10.

**Usage Guidelines** Use this command to troubleshoot MTP3 link mismatch.

**Example**

```
mtp3-max-slt-try 35
```

## mtp3-msg-priority

Configures the priority for sending MTP3 management messages.

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description** **mtp3-msg-priority** *priority*  
**default mtp3-msg-priority**

**default**

Resets the number of priority to the default value.

**priority**

*priority*: must be an integer from 0 to 3.

Default: 0

**Usage Guidelines** Use this command to set the priority for sending MTP3 management messages.

**Example**

Use the following to set the message priority to 3:

```
mtp3-msg-priority 3
```

## mtp3-msg-size

Configures the size of messages from layer 3 to layer 2.

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description** **mtp3-msg-size** *size*  
**default** **mtp3-msg-size**

**default**

Resets the the size to the default value which is 4096 (for q.2140) or 272 (for MTP2)

**size**

*size*: must be an integer from 1 to 272 for high-speed or low-speed narrowband SS7 links.

*size*: must be an integer from 1 to 4096 for ATM broadband links.

**Usage Guidelines** Use this command to set the maximum message size, in bytes.

**Example**

Use this command to set the MTP3 message size to 4096 bytes:

```
mtp3-msg-size 4096
```

## mtp3-p1-qlen

Configure the size for the MTP3 p1 queue length.

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description** **mtp3-p1-qlen** *size*  
**default** **mtp3-p1-qlen**

**default**

Resets the number of size of the priority 1 queue to the default value.

**size**

*size*: integer from 1 to 65535. Size should be less than MTP3 p2 qlen and p3 qlen.

Default: 1024

**Usage Guidelines**

Use this command to configure the queue length threshold for raising the congestion priority to level 1.

**Example**

Use this command to set the queue length priority to 128:

```
mtp3-p1-qlen 128
```

## mtp3-p2-qlen

Configure the size of the priority 2 queue.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description**

```
mtp3-p2-qlen size  
default mtp3-p2-qlen
```

**default**

Resets the number of size of the priority 2 queue to the default value.

**size**

*size*: integer from 1 to 65535. Size should be less than MTP3 p3 qlen and greater than p1 qlen.

Default: 1024

**Usage Guidelines**

Use this command to configure the queue length threshold for raising the congestion priority to level 2.

**Example**

Use this command to set the queue length threshold to 256:

**mtp3-p2-qlen** 256

## mtp3-p3-qlen

Configure the size of the priority 3 queue.

---

### Product

SGSN

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### Privilege

Security Administrator, Administrator

---

### Command Modes

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

### Syntax Description

**mtp3-p3-qlen** *size*  
**default** **mtp3-p3-qlen**

#### **default**

Resets the number of size of the priority 3 queue to the default value.

#### **size**

*size*: integer from 1 to 65535. Size should be greater than MTP3 p1 qlen and p2 qlen .

Default: 1024

---

### Usage Guidelines

Use this command to configure the queue length threshold for raising the congestion priority to level 3.

#### **Example**

**mtp3-p3-qlen** 1024

## mtp3-test-pattern

Configures the character string for the test message.

---

### Product

SGSN

---

### Privilege

Security Administrator, Administrator

---

### Command Modes

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**mtp3-test-pattern** *pattern*  
**default mtp3-test-pattern**

**default**

Resets the pattern to the default value.

**pattern**

*pattern*: 1 to 15 alphanumeric characters.

Default: SGSN-ORIGINATED

---

**Usage Guidelines**

Use this command to define a test pattern string for the signalling link test match (SLTM).

**Example**

```
mtp3-test-pattern TEST1-HomeOffice
```

## priority

Configures the MTP3 Link Priority.

---

**Product**

SGSN

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**Privilege**

Security Administrator, Administrator

---

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

**priority** *pri\_value*  
**no priority**

**no**

Removes the priority configuration.

**pri\_value**

*pri\_value*: 0 represents highest priority and 15 represents the lowest priority.

---

**Usage Guidelines**

Use this command to configure the link priority within the MTP3 link set.

**Example**

```
priority 2
```

## signaling-link-code

Configures the signaling link code (SLC).

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

**Syntax Description**

```
signaling-link-code code  
no signaling-link-code
```

**no**

Removes the SLC configuration.

**code**

*code*: integer from 0 to 15.

**Usage Guidelines**

Use this command to uniquely identify the signaling link to be used for MTP3 management messages.

**Example**

```
signaling-link-code 4
```

## sscf-nni-n1

Configures the SSCF NNI N1. This command is only available for ATM-broadband link-types.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration



```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

```
sscf-nni-n1 value  
no sscf-nni-n1
```

**default**

Removes the sscf-nni-n1 configuration.

**value**

*value*: integer from 1 to 65535.

Default: 1000

---

**Usage Guidelines**

Use this command to identify the network-to-node interface (NNI) between the MTP3 and SSCOP layers.

**Example**

```
sscf-nni-n1 4064
```

## sscop-max-cc

Configure the maximum value for the SSCOP connection control (CC) state variable. This command is only available for ATM-broadband link-types.

---

**Product**

SGSN

---

**Privilege**

Security Administrator, Administrator

---

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

```
sscop-max-cc value  
no sscop-max-cc
```

**default**

Removes the sscop-max-cc configuration.

**value**

*value*: integer from 1 to 65535.

Default: 4

---

**Usage Guidelines**

Use this command as part of the configuration responsible for managing the SSCOP connection. This command sets the number of times retries.

**Example**

```
sscop-max-cc 256
```

## sscop-max-pd

Configures the maximum acceptable value for the SSCOP state variable VT(PD). This command is only available for ATM-broadband link-types.

---

**Product**

SGSN

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**Privilege**

Security Administrator, Administrator

---

**Command Modes**

Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

```
configure > ss7-routing-domain domain_id variant var_type > linkset id linkset_id > link id link_id
```

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description**

```
sscop-max-pd value  
no sscop-max-pd
```

**default**

Removes the **sscop-max-pd** configuration.

**value**

*value*: integer from 1 to 65535.

Default: 500

---

**Usage Guidelines**

Use this command to define the maximum number of data PDUs transmitted between POLL PDUs.

**Example**

```
sscop-max-pd 2500
```

## sscop-max-stat

Configures the maximum number of elements included in a status PDU. This command is only available for ATM-broadband link-types.

---

**Product** SGSN

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**Privilege** Security Administrator, Administrator

---

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

---

**Syntax Description** **sscop-max-stat** *value*  
**no sscop-max-stat**

### default

Removes the **sscop-max-stat** configuration.

### value

*value*: integer from 3 to 65535. This parameter should be an odd integer greater than or equal to 3.

Default: 67

---

**Usage Guidelines** Received in response to a POLL PDU, the STAT PDU includes information about the number of SD PDUs that have been received.

### Example

```
sscop-max-stat 56000
```

## timeout

This command enables configuration of an array of signaling and flow control timers - for MTP, SSCF, and SSCOP.

---

**Product** SGSN

---

**Privilege** Security Administrator, Administrator

---

**Command Modes** Exec > Global Configuration > SS7 Routing Domain Configuration > Linkset Configuration > Link Configuration

**configure** > **ss7-routing-domain** *domain\_id* **variant** *var\_type* > **linkset id** *linkset\_id* > **link id** *link\_id*

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ss7-rd-linkset-linkset_id-link-link_id)#
```

### Syntax Description

[ no ] **timeout** *timer timer\_value*

#### no

Adding **no** to the **timeout** command removes the timer configuration.

#### *timer timer\_value*

Select the timer and enter a value from the range.

For timers having different ranges for highspeed and lowspeed links or for different variants, the appropriate ranges will be displayed based on the link-type configured.



### Important

Currently, the China variant uses ITU values.

Timer	Link Type & Variant	Range of Times Granularity = 100ms	Default Time
<b>mtp2-tmr-t1</b> Alignment ready timer	Highspeed; ITU	160..3500 (16 - 350 seconds)	3000 (300 seconds)
	Lowspeed; ITU	120 - 500 (12 - 50 seconds)	400 (40 seconds)
	Highspeed; ANSI	160 - 3500 (16 to 350 seconds)	1700 (170 seconds)
	Lowspeed; ANSI	120 - 500 (12 - 50 seconds)	130 (13 seconds)
<b>mtp2-tmr-t2</b> Not aligned timer	Highspeed; ITU	50 - 1500 (5 - 150 seconds)	50 (5 seconds)
	Lowspeed; ITU	50 - 150 (5 - 15 seconds)	50 (5 seconds)
	Highspeed; ANSI	50 - 1500 (5 - 150 seconds)	230 (23 seconds)
	Lowspeed; ANSI	50 - 150 (5 - 15 seconds)	115 (11.5 seconds)
<b>mtp2-tmr-t3</b> Aligned timer	Highspeed/Lowspeed; ITU	10 - 140 (1 - 14 seconds)	15 (1.5 seconds)
	Highspeed/Lowspeed; ANSI	10 - 140 (1 - 14 seconds)	115 (11.5 seconds)

Timer	Link Type & Variant	Range of Times Granularity = 100ms	Default Time
<b>mtp2-tmr-t4e</b> Emergency proving period timer	Highspeed; ITU	4 - 60 (400 milliseconds - 6 seconds)	5 (500 milliseconds)
	Lowspeed; ITU	4 - 6 (400 - 600 milliseconds)	5 (500 milliseconds)
	Highspeed; ANSI	4 - 60 (400 milliseconds - 6 seconds)	50 (5 seconds)
	Lowspeed; ANSI	4 - 6 (400 - 600 milliseconds)	6 (600 milliseconds)
<b>mtp2-tmr-t4n</b> Normal proving period timer Once set this timer can be reset but it can not be disabled.	Highspeed; ITU	30 - 700 (3 to 70 seconds)	3 (30 seconds)
	Lowspeed; ITU	20 - 95 (2 - 9.5 seconds)	82 (8.2 seconds)
	Highspeed; ANSI	30 - 700 (3 to 70 seconds)	3 (30 seconds)
	Lowspeed; ANSI	20 - 95 (2 - 9.5 seconds)	23 (2.3 seconds)
<b>mtp2-tmr-t5</b> Sending status indication busy (SIB) timer	Highspeed/Lowspeed ITU/ANSI	1 - 2 (100 - 200 milliseconds)	1 (100 milliseconds)
<b>mtp2-tmr-t6</b> Remote congestion timer	Highspeed/Lowspeed ITU/ANSI	10 - 60 (1 to 6 seconds)	30 (3 seconds)
<b>mtp2-tmr-t7</b> Excessive delay of acknowledgement timer	Highspeed/Lowspeed ITU/ANSI	5 - 20 (500 milliseconds - 2 seconds)	10 (1 second)
<b>mtp2-tmr-t8</b> Interval timer for error interval monitor timer	Highspeed ITU/ANSI	1 - 2 (100 - 200 milliseconds)	1 (100 milliseconds)
<b>mtp3-tmr-t1</b> Delay to avoid mis-sequencing on changeover timer	Highspeed/Lowspeed ITU/ANSI	5 - 12 (500 - 1200 milliseconds)	5 (500 milliseconds)

Timer	Link Type & Variant	Range of Times Granularity = 100ms	Default Time
<b>mtp3-tmr-t12</b> Waiting for uninhibit acknowledgement timer	Highspeed/Lowspeed ITU/ANSI	8 - 15 (800 - 1500 milliseconds)	8 (800 milliseconds)
<b>mtp3-tmr-t13</b> Waiting for force uninhibit timer	Highspeed/Lowspeed ITU/ANSI	8 - 15 (800 - 1500 milliseconds)	8 (800 milliseconds)
<b>mtp3-tmr-t14</b> Waiting for inhibition acknowledgement timer	Highspeed/Lowspeed ITU/ANSI	20 - 30 (2000 - 3000 milliseconds)	20 (2000 milliseconds)
<b>mtp3-tmr-t17</b> Delay to avoid oscillation of initial alignment failure and link restart	Highspeed/Lowspeed ITU/ANSI	8 - 15 (800 - 1500 milliseconds)	8 (800 milliseconds)
<b>mtp3-tmr-t2</b> Waiting for changeover acknowledgement	Highspeed/Lowspeed ITU/ANSI	7 - 20 (700 - 2000 milliseconds)	7 (700 milliseconds)
<b>mtp3-tmr-t22</b> Local inhibit test timer	Highspeed/Lowspeed ITU/ANSI	1800 - 3000 (180 - 300 seconds)	1800 (180 seconds)
<b>mtp3-tmr-t23</b> Remote inhibit test timer	Highspeed/Lowspeed ITU/ANSI	1800 - 3000 (180 - 300 seconds)	1800 (180 seconds)
<b>mtp3-tmr-t24</b> Stabilising timer after removal of local processor outage, used in LPO latching to RPO (national option)	Highspeed/Lowspeed ITU/ANSI	5 - 15 (500 - 1500 milliseconds)	5 (500 milliseconds)
<b>mtp3-tmr-t3</b> Time controlled diversion-delay to avoid mis-sequencing on changeback	Highspeed/Lowspeed ITU/ANSI	5 - 12 (500 - 1200 milliseconds)	5 (500 milliseconds)
<b>mtp3-tmr-t31</b> BSN requested timer	Highspeed/Lowspeed ITU/ANSI	50 - 100 (5 to 10 seconds)	50 (5 seconds)

Timer	Link Type & Variant	Range of Times Granularity = 100ms	Default Time
<b>mtp3-tmr-t32</b> SLT timer	Highspeed/Lowspeed ITU/ANSI	40 - 120 (4 - 12 seconds)	100 (10 seconds)
<b>mtp3-tmr-t33</b> Connecting timer	Highspeed/Lowspeed ITU/ANSI	50 - 100 (5 to 10 seconds)	50 (5 seconds)
<b>mtp3-tmr-t34</b> Periodic signalling link test timer	Highspeed/Lowspeed ITU/ANSI	300 - 900 (30 to 90 seconds)	600 (60 seconds)
<b>mtp3-tmr-t4</b> Waiting for changeback acknowledgement (first attempt)	Highspeed/Lowspeed ITU/ANSI	5 - 12 (500 to 1200 milliseconds)	5 (500 milliseconds)
<b>mtp3-tmr-t5</b> Waiting for changeback acknowledgement (second attempt)	Highspeed/Lowspeed ITU/ANSI	5 - 12 (500 to 1200 milliseconds)	5 (500 milliseconds)
<b>mtp3-tmr-t7</b> Waiting for signalling data link connection acknowledgement	Highspeed/Lowspeed ITU/ANSI	10 - 20 (1000 - 2000 milliseconds)	10 (1000 milliseconds)

Timer	Link type & Variant	Range of Times	Default Time
<b>sscf-nni-tmr-t1</b>	ATM Broadband ITU/ANSI	1 - 65535 (10 - 655350 milliseconds) Granularity = 10 ms	500 (5 seconds)
<b>sscf-nni-tmr-t2</b>	ATM Broadband ITU/ANSI	1 - 65535 (10 - 655350 milliseconds) Granularity = 10 ms	3000 (30 seconds)
<b>sscf-nni-tmr-t3</b>	ATM Broadband ITU/ANSI	1 - 65535 (10 - 655350 milliseconds) Granularity = 10 ms	1 (10 milliseconds)
<b>sscop-tmr-cc</b> SSCOP CC timer	ATM Broadband ITU/ANSI	1 - 65535 (100 - 6553500 milliseconds) Granularity = 100 ms	2 (200 milliseconds)

Timer	Link type & Variant	Range of Times	Default Time
<b>sscop-tmr-idle</b> SSCOP idle timer (UNI 3.1 only)	ATM Broadband ITU/ANSI	1 - 65535 (100 - 6553500 milliseconds) Granularity = 100 ms	1 (100 milliseconds)
<b>sscop-tmr-keep-alive</b> SSCOP keep alive timer  For stability purposes, tmrKeepAlive >= tmrPoll and tmrKeepAlive < tmrNoResponse.	ATM Broadband ITU/ANSI	1 - 65535 (100 - 6553500 milliseconds) Granularity = 100 ms	1 (100 milliseconds)
<b>sscop-tmr-no-rsp</b> SSCOP no response timer  For stability purposes, tmrNoResponse > tmrKeepAlive.	ATM Broadband ITU/ANSI	1 - 65535 (100 - 6553500 milliseconds) Granularity = 100 ms	15 (1.5 seconds)
<b>sscop-tmr-poll</b> SSCOP poll timer  For stability purposes, tmrPoll <= tmrKeepAlive.	ATM Broadband ITU/ANSI	1 - 65535 (100 - 6553500 milliseconds) Granularity = 100 ms	1 (100 milliseconds)

**Usage Guidelines**

For a single link and specified link-type (highspeed or lowspeed), this command sets the timer values listed above. The SS7 variant is determined when the SS7 routing domain is first defined from the Global Configuration mode.

Repeat the **timeout** command (one timer and value per entry) as needed to configure all required timers.

**Important**

Currently, the China variant uses the same timers, values, and defaults as the ITU variant.

**Example**

```
timeout timer timer_value
```