SCCP Management

Table of Contents

SCCP provides connectionless and connection-oriented network services. This includes address(GTT) translation and routing, flow control, segmentation and reassembly. A global title is an address (e.g., a dialed 800 number, calling card number, or mobile subscriber identification number) which is translated by SCCP into a destination point code and subsystem number. A subsystem number uniquely identifies an application at the destination signaling point. is used as the transport layer for -based services.

The first step in configuring SCCP is defining service access points (sap). This step is mandatory. Each SCCP stack can use one or more Mtp3UserPart (Refer [_configuring_sccp] about Mtp3UserPart settings). A sap is a logical definition of the Mtp3UserPart [corresponding local SPC, network indicator (NI) and a set of destinations (remote SPC list)].

The second step is the definition of a list of available remote signaling pointcodes (SPC - rsp) and a list of available remote Sub-Systems (SNN - rss). This step is also mandatory. If routing only by GlobalTitle is used then it is not required to configure remote Sub-Systems.

Since acts as a message router, it is required to configure routing information. Rules (rule), primary and backup (address) (if backup addresses are available) addresses should be configured. If XUDT and LUDT messages are available in the SS7 network, you should configure a set of long message rules (lmr) that will allow long messages. This step is not mandatory. If no long message rules are configured only UDT messages will be used.

The last step is optional. You can configure a set of concerned signaling point codes (csp). Each point code will be announced when local SCCP user becomes unavailable.

Using CLI

You can manage all SCCP related configurations through the Command Line Interface by using the `sccp` command with appropriate parameters. You can create, modify, delete and view SCCP Service Access Points (sap) and Destinations (dest), Remote Signaling Point Codes (rsp), Remote Sub Systems (rss), Concerned Signaling Point Codes (csp), Routing information (rules, primary and backup addresses) and Long Message Rules (lmr). You can also set and get values for general parameters using this command.

Using GUI

The GUI will allow you to manage your SCCP configurations efficiently using a user-friendly interface. Open a Web Browser and navigate to http://localhost:8080/jss7-management-console/. Click on the 'SCCP' link in the left panel. The main panel will display the names of all configured SCCP Management units. To configure or view the settings of a particular SCCP Management Unit you must click on the name of that unit. The GUI will look similar to the figure below and is divided into tabs.

The first tab will display the properties of the SCCP Management unit. These details displayed here are fetched from the XML descriptor file *jboss-beans.xml*, which is located at

$JBOSS_HOME/server/profile_name/deploy/restcomm-ss7-service/META-INF, where `profile_name` is the server profile name. These properties can be modified here in the GUI. To modify them you must click on pencil, make changes and save. The GUI will then display the modified values.

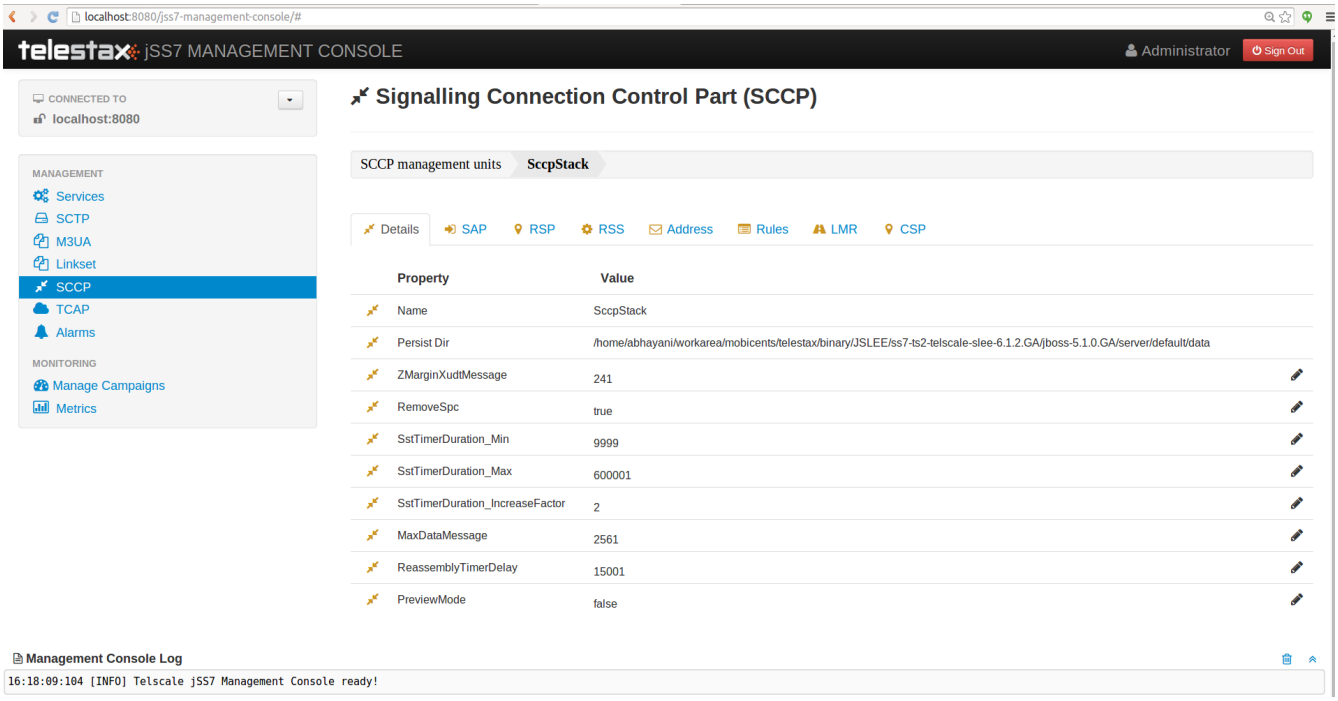

Figure 1. GUI - SCCP Management

The other seven tabs will allow you to manage all SCCP configurations within this SCCP Management unit.

SCCP stack properties

SCCP protocol version

Using CLI

We can specify which protocol specification will use SCCP stack (ITU-T or ANSI).

You can set the 'sccpprotocolversion' by issuing the command `sccp set sccpprotocolversion` with appropriate parameters as described below. You can verify this by issuing the command `sccp get sccpprotocolversion` which will display the value set for this property.

```
Name
    sccp set sccpprotocolversion

SYNOPSIS
    sccp set sccpprotocolversion <ITU | ANSI> stackname <stack-name>

DESCRIPTION
    Sets the value for sccpprotocolversion property ITU or ANSI.
    Default value is ITU.

PARAMETERS

    Optional Parameters

    <stack-name>    -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set sccpprotocolversion ITU
```

Using GUI

On SCCP management page, click on pencil against the 'ReservedForNationalUseValue of AddressIndicator' property and text box becomes editable. Change value and save.

Period of logging

Using CLI

You can set the 'periodoflogging' by issuing the command `sccp set periodoflogging` with appropriate parameters as described below. You can verify this by issuing the command `sccp get periodoflogging` which will display the value set for this property.

```
Name
    sccp set periodoflogging

SYNOPSIS
    sccp set periodoflogging <periodoflogging> stackname <stack-name>

DESCRIPTION
    Sets period of logging warning messages in ms. Default value is 10000.

PARAMETERS

    Standard Parameters

    <periodoflogging> -   Period in ms.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set periodoflogging 10000
```

Using GUI

On SCCP management page, click on pencil against the 'PeriodOfLogging' property and text box becomes editable. Change value and save.

Maximum Data Message

Using CLI

You can set the 'maxdatamessage' by issuing the command `sccp set maxdatamessage` with appropriate parameters as described below. You can verify this by issuing the command `sccp get maxdatamessage` which will display the value set for this property.

```
Name
    sccp set maxdatamessage

SYNOPSIS
    sccp set maxdatamessage <maxdatamessage> stackname <stack-name>

DESCRIPTION
    Sets Max available SCCP message data for all message types. Range is 2560 to 3952.
    If passed value is less than 2560, it sets to 2560 and if passed value is greater
    than 3952, it sets to 3952.

PARAMETERS

    Standard Parameters

    <maxdatamessage>  -   Maximum data message size.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set maxdatamessage 30000
```

Using GUI

On SCCP management page, click on pencil against the 'PreviewMode' property and text box becomes editable. Change value and save.

Preview Mode

Using CLI

You can set the 'previewmode' by issuing the command `sccp set previewmode` with appropriate parameters as described below. You can verify this by issuing the command `sccp get previewmode` which will display the value set for this property.

```
Name
    sccp set previewmode

SYNOPSIS
    sccp set previewmode <true | false> stackname <stack-name>

DESCRIPTION
    If set to true, stack only listens for incoming messages and does not
    send anything out of stack. Messages are silently dropped.

PARAMETERS

    Standard Parameters

    <previewmode> -   Set preview mode to true or false.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set previewmode false
```

Using GUI

On SCCP management page, click on pencil against the 'PreviewMode' property and text box becomes editable. Change value and save.

Reassembly Timer Delay

Using CLI

You can set the 'reassemblytimerdelay' by issuing the command `sccp set reassemblytimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get reassemblytimerdelay` which will display the value set for this property.

```
Name
    sccp set reassemblytimerdelay

SYNOPSIS
    sccp set reassemblytimerdelay <reassemblytimerdelay> stackname <stack-name>

DESCRIPTION
    Sets SCCP segmented message reassembling timeout (in milliseconds).
    Range is 10000 to 20000. If passed value is less than 10000, it sets to 10000 and
    if passed value is greater than 20000, it sets to 20000

PARAMETERS

    Standard Parameters

    <reassemblytimerdelay>    -   Re-assembly time delay in milliseconds

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set reassemblytimerdelay 20000
```

Using GUI

On SCCP management page, click on pencil against the 'ReassemblyTimerDelay' property and text box becomes editable. Change value and save.

Remove Signaling Point Code

Using CLI

You can set the 'removespc' by issuing the command `sccp set removespc` with appropriate parameters as described below. You can verify this by issuing the command `sccp get removespc` which will display the value set for this property.

```
Name
    sccp set removespc

SYNOPSIS
    sccp set removespc <false | true> stackname <stack-name>

DESCRIPTION
    If set, the signaling point code from SCCP called/calling address will
    be removed if corresponding routing is based on GT

PARAMETERS

    Standard Parameters

    <removespc>   -   true or false value.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set removespc true
```

Using GUI

On SCCP management page, click on pencil against the 'RemoveSpc' property and text box becomes editable. Change value and save.

Respect Point Code

Using CLI

You can set the 'respectpc' by issuing the command `sccp set respectpc` with appropriate parameters as described below. You can verify this by issuing the command `sccp get respectpc` which will display the value set for this property.

```
Name
    sccp set respectpc

SYNOPSIS
    sccp set respectpc <false | true> stackname <stack-name>

DESCRIPTION
    If set, the PC will be used for choosing primary or secondary address
    for outgoing messages if corresponding routing is based on GT

PARAMETERS

    Standard Parameters

    <respectpc>   -   true or false value.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set respectpc true
```

Using GUI

On SCCP management page, click on pencil against the 'RespectPc' property and text box becomes editable. Change value and save.

SST Timer Duration Increase Factor

Using CLI

You can set the 'ssttimerduration_increasefactor' by issuing the command `sccp set ssttimerduration_increasefactor` with appropriate parameters as described below. You can verify this by issuing the command `sccp get ssttimerduration_increasefactor` which will display the value set for this property.

```
Name
    sccp set ssttimerduration_increasefactor

SYNOPSIS
    sccp set ssttimerduration_increasefactor <ssttimerduration_increasefactor>
    stackname <stack-name>

DESCRIPTION
    Set multiplicator of SST sending interval (next interval will be greater then
    the current by sstTimerDuration_IncreaseFactor). Range is 1 to 4. If passed
    value is less than 1, it sets to 1 and if passed value is greater than 4,
    it sets to 4

PARAMETERS

    Standard Parameters

    <ssttimerduration_increasefactor> -   values from 1 to 4 for SST duration increase
                                        factor.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set ssttimerduration_increasefactor 1
```

Using GUI

On SCCP management page, click on pencil against the 'SstTimerDuration_IncreaseFactor' property and text box becomes editable. Change value and save.

SST Timer Duration Max

Using CLI

You can set the 'ssttimerduration_max' by issuing the command `sccp set ssttimerduration_max` with appropriate parameters as described below. You can verify this by issuing the command `sccp get ssttimerduration_max` which will display the value set for this property.

```
Name
    sccp set ssttimerduration_max

SYNOPSIS
    sccp set ssttimerduration_max <ssttimerduration_max> stackname <stack-name>

DESCRIPTION
    Sets Max (after increasing) SST sending interval (in 600000 - 1200000
milliseconds).
    Value can be from 600000 to 1200000. If value passed is less than 600000, it sets
to
    600000 and if value passed is greater than 1200000, it sets to 1200000

PARAMETERS

    Standard Parameters

    <ssttimerduration_max>    -   values from 600000 - 1200000 milliseconds.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set ssttimerduration_max 600000
```

Using GUI

On SCCP management page, click on pencil against the 'SstTimerDuration_Max' property and text box becomes editable. Change value and save.

SST Timer Duration Min

Using CLI

You can set the 'ssttimerduration_min' by issuing the command `sccp set ssttimerduration_min` with appropriate parameters as described below. You can verify this by issuing the command `sccp get ssttimerduration_min` which will display the value set for this property.

```
Name
    sccp set ssttimerduration_min

SYNOPSIS
    sccp set ssttimerduration_min <ssttimerduration_min> stackname <stack-name>

DESCRIPTION
    Set's min (starting) SST sending interval (in milliseconds). Value can be
    from 5000 to 10000.If value passed is less than 5000, it sets to 5000 and
    if value passed is greater than 10000, its set to 10000

PARAMETERS

    Standard Parameters

    <ssttimerduration_min>    -   values from 5000 to 10000.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set ssttimerduration_min 10000
```

Using GUI

On SCCP management page, click on pencil against the 'SstTimerDuration_Max' property and text box becomes editable. Change value and save.

ZMargin XUDT Message

Using CLI

You can set the 'zmarginxudtmessage' by issuing the command `sccp set zmarginxudtmessage` with appropriate parameters as described below. You can verify this by issuing the command `sccp get zmarginxudtmessage` which will display the value set for this property.

```
Name
    sccp set ssttimerduration_min

SYNOPSIS
    sccp set zmarginxudtmessage <zmarginxudtmessage> stackname <stack-name>

DESCRIPTION
    Sets segmentation length. If the XUDT message data length greater this value,
    segmentation is processed. Otherwise no segmentation.
    Range is 160 to 255. If passed value is less than 160, it sets to 160 and
    if passed value is greater than 255, it sets to 255.

PARAMETERS

    Standard Parameters

    <zmarginxudtmessage>  -   values from 160 to 255.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set zmarginxudtmessage 255
```

Using GUI

On SCCP management page, click on pencil against the 'ZMarginXudtMessage' property and text box becomes editable. Change value and save.

Timer A value for the congestion control

Using CLI

You can set the 'cc_timer_a' by issuing the command `sccp set cc_timer_a` with appropriate parameters as described below. You can verify this by issuing the command `sccp get cc_timer_a` which will display the value set for this property.

```
Name
    sccp get cc_timer_a

SYNOPSIS
    sccp get cc_timer_a stackname <stack-name>

DESCRIPTION
    Sets the Timer A value in milliseconds.
    This timer starts at next MTP-STATUS(cong) primitive coming.
    During this timer no more MTP-STATUS(cong) are accepted.

    Default value is 400.
    Possible values are between 60 and 1000.

PARAMETERS

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set cc_timer_a 400
```

Using GUI

On SCCP management page, click on pencil against the 'Congestion control: Timer A' property and text box becomes editable. Change value and save.

Timer D value for the congestion control

Using CLI

You can set the 'cc_timer_d' by issuing the command `sccp set cc_timer_d` with appropriate parameters as described below. You can verify this by issuing the command `sccp get cc_timer_d` which will display the value set for this property.

```
Name
    sccp get cc_timer_d

SYNOPSIS
    sccp get cc_timer_d stackname <stack-name>

DESCRIPTION
    Sets the Timer D value in milliseconds.
    This timer starts after last MTP-STATUS(cong) primitive coming.
    After end of this timer (without new coming MTP-STATUS(cong))
    RSLM (the congestion level) will be reduced.

    Default value is 2000.
    Possible values are between 500 and 10000.

PARAMETERS

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set cc_timer_d 2000
```

Using GUI

On SCCP management page, click on pencil against the 'Congestion control: Timer A' property and text box becomes editable. Change value and save.

Can relay value

Using CLI

You can set the 'canrelay' by issuing the command `sccp set canrelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get canrelay` which will display the value set for this property.

```
Name
    sccp set canrelay

SYNOPSIS
    sccp set canrelay <canrelay>
    stackname <stack-name>

DESCRIPTION
    Enable (true) or disable (false) ability to be relay node with coupling

PARAMETERS

    Standard Parameters

    <canrelay>    -   boolean values true or false.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set canrelay true
```

Connection establishing timer delay value

Using CLI

You can set the 'connesttimerdelay' by issuing the command `sccp set connesttimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get connesttimerdelay` which will display the value set for this property.

```
Name
    sccp set connesttimerdelay

SYNOPSIS
    sccp set connesttimerdelay <connesttimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(conn est) timer delay (for how long connection waits for connection
    confirm message). Range is 60000 to 120000. If passed value is less than
    60000, it sets to 60000 and if passed value is greater than 120000,
    it sets to 120000

PARAMETERS

    Standard Parameters

    <connesttimerdelay>   -   values from 60000 to 120000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set connesttimerdelay 60000
```

Connection IT send timer delay value

Using CLI

You can set the 'iastimerdelay' by issuing the command `sccp set iastimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get iastimerdelay` which will display the value set for this property.

```
Name
    sccp set iastimerdelay

SYNOPSIS
    sccp set iastimerdelay <iastimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(ias) timer delay (after what period of time IT message will be sent
    if no messages was sent). Range is 300000 to 600000. If passed value is less
    than 300000, it sets to 300000 and if passed value is greater than 600000,
    it sets to 600000

PARAMETERS

    Standard Parameters

    <iastimerdelay>   -   values from 300000 to 600000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set iastimerdelay 300000
```

Connection message receive timer delay value

Using CLI

You can set the 'iartimerdelay' by issuing the command `sccp set iartimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get iartimerdelay` which will display the value set for this property.

```
Name
    sccp set iartimerdelay

SYNOPSIS
    sccp set iartimerdelay <iartimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(iar) timer delay (for how long connection waits to receive a message).
    Range is 660000 to 1260000. If passed value is less than 660000, it sets to
    660000 and if passed value is greater than 1260000, it sets to 1260000

PARAMETERS

    Standard Parameters

    <iartimerdelay>   -   values from 660000 to 1260000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set iartimerdelay 660000
```

Connection release complete message timer delay value

Using CLI

You can set the 'reltimerdelay' by issuing the command `sccp set reltimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get reltimerdelay` which will display the value set for this property.

```
Name
    sccp set reltimerdelay

SYNOPSIS
    sccp set reltimerdelay <iartimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(rel) timer delay (for how long connection waits for release complete
    message). Range is 10000 to 20000. If passed value is less than 10000, it
    sets to 10000 and if passed value is greater than 20000, it sets to 20000

PARAMETERS

    Standard Parameters

    <reltimerdelay>   -   values from 10000 to 20000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set reltimerdelay 10000
```

Connection released message repeat timer delay value

Using CLI

You can set the 'repeatreltimerdelay' by issuing the command `sccp set repeatreltimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get repeatreltimerdelay` which will display the value set for this property.

```
Name
    sccp set repeatreltimerdelay

SYNOPSIS
    sccp set repeatreltimerdelay <repeatreltimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(repeat rel) timer delay (for how long connection waits for release complete
    message or to repeat sending release message after T(rel) timer fire). Range is
    10000 to 20000. If passed value is less than 10000, it sets to 10000 and if passed
    value is greater than 20000, it sets to 20000

PARAMETERS

    Standard Parameters

    <repeatreltimerdelay> -   values from 10000 to 20000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set repeatreltimerdelay 10000
```

Connection resources release timer delay value

Using CLI

You can set the 'inttimerdelay' by issuing the command `sccp set inttimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get inttimerdelay` which will display the value set for this property.

```
Name
    sccp set inttimerdelay

SYNOPSIS
    sccp set inttimerdelay <inttimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(int) timer delay (for how long connection waits for release complete
    message or to release connection resources). Range is 0 to 60000. If passed
    value is less than 0, it sets to 0 and if passed value is greater than
    60000, it sets to 60000

PARAMETERS

    Standard Parameters

    <inttimerdelay>   -   values from 0 to 60000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set inttimerdelay 0
```

Connection work resume after restart time delay value

Using CLI

You can set the 'guardtimerdelay' by issuing the command `sccp set guardtimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get guardtimerdelay` which will display the value set for this property.

```
Name
    sccp set guardtimerdelay

SYNOPSIS
    sccp set guardtimerdelay <guardtimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(guard) timer delay (for how long connection waits to resume work
    after restart). Range is 1380000 to 1500000. If passed value is less
    than 1380000, it sets to 1380000 and if passed value is greater than
    1500000, it sets to 1500000

PARAMETERS

    Standard Parameters

    <guardtimerdelay> -   values from 1380000 to 1500000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set guardtimerdelay 1380000
```

Connection release after reset delay value

Using CLI

You can set the 'resettimerdelay' by issuing the command `sccp set resettimerdelay` with appropriate parameters as described below. You can verify this by issuing the command `sccp get resettimerdelay` which will display the value set for this property.

```
Name
    sccp set resettimerdelay

SYNOPSIS
    sccp set resettimerdelay <resettimerdelay>
    stackname <stack-name>

DESCRIPTION
    Set T(reset) timer delay (for how long connection waits to release after
    sending reset message). Range is 10000 to 20000. If passed value is less
    than 10000, it sets to 10000 and if passed value is greater than 20000,
    it sets to 20000

PARAMETERS

    Standard Parameters

    <resettimerdelay> -   values from 10000 to 20000 for timer delay.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set resettimerdelay 10000
```

Thread count in connections timers thread pool value

Using CLI

You can set the 'timerexecutors_threadcount' by issuing the command `sccp set timerexecutors_threadcount` with appropriate parameters as described below. You can verify this by issuing the command `sccp get timerexecutors_threadcount` which will display the value set for this property.

```
Name
    sccp set timerexecutors_threadcount

SYNOPSIS
    sccp set timerexecutors_threadcount <timerexecutors_threadcount>
    stackname <stack-name>

DESCRIPTION
    Set number of threads in thread pool for connections timers. Range is from 1
    to 100. If passed value is less than 1, it sets to 1 and if passed
    value is greater than 1000, it sets to 1000

PARAMETERS

    Standard Parameters

    <timerexecutors_threadcount>  -   values from 1 to 1000.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set timerexecutors_threadcount 10
```

Algorithm of the congestion control at SCCP level

Using CLI

You can set the 'cc_algo' by issuing the command `sccp set cc_algo` with appropriate parameters as described below. You can verify this by issuing the command `sccp get cc_algo` which will display the value set for this property.

```
Name
    sccp set cc_algo

SYNOPSIS
    sccp set cc_algo <international | levelDepended> stackname <stack-name>

DESCRIPTION
    Sets the algorithm of the congestion control at SCCP level for outgoing
    messages.
    Possible values are international or levelDepended.
    international algorithm - only one level is provided by MTP3 level
    (in MTP-STATUS primitive). Each MTP-STATUS increases N / M levels.
    international algorithm - MTP3 level (MTP-STATUS primitive) provides
    3 levels of a congestion (1-3) and SCCP congestion will increase to
    the next level after MTP-STATUS next level increase (MTP-STATUS 1
    to N up to 3, MTP-STATUS 2 to N up to 5, MTP-STATUS 3 to N up to 7).

    Default value is international.

PARAMETERS

    Standard Parameters

    <cc_algo> -   international | levelDepended.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set cc_algo international
```

Using GUI

On SCCP management page, click on pencil against the 'Congestion control: algorithm' property and text box becomes editable. Change value and save.

Blocking of outgoing messages in case of the congestion

Using CLI

You can set the 'cc_blockingoutgoungsccpmessages' by issuing the command `sccp set cc_blockingoutgoungsccpmessages` with appropriate parameters as described below. You can verify this by issuing the command `sccp get cc_blockingoutgoungsccpmessages` which will display the value set for this property.

```
Name
    sccp set cc_blockingoutgoungsccpmessages

SYNOPSIS
    sccp set cc_blockingoutgoungsccpmessages <false | true> stackname <stack-name>

DESCRIPTION
    Sets the value of if outgoing SCCP messages will be blocked in congestion.
    (depending on message type, UDP messages from level N=6).
    true means that message will be blocken in the congestion case,
    false means not.

    Default value is false.

PARAMETERS

    Standard Parameters

    <cc_blockingoutgoungsccpmessages> -   false or true.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp set cc_blockingoutgoungsccpmessages false
```

Using GUI

On SCCP management page, click on pencil against the 'Congestion control: blocking of outgoing messages' property and text box becomes editable. Change value and save.

View all Service Access Points (SAP)

Using CLI

You can view the details of all configured Service Access Points by issuing the command `sccp sap show` as described below:

```
Name
    sccp sap show

SYNOPSIS
    sccp sap show <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all Service Access Points. If an <id>
    is specified, the command will only display the details of the SAP identified by
    the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>          -   The id of the SAP whose details are to be displayed. If
                      this parameter is not specified, the details of all
                      defined SAPs will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'SAP' tab. Here you can view a list of all the Service Access Points created. Every correctly configured Service Access Point will be displayed in a row with their defined values. The last column 'Action' will allow you to delete the Service Access Point.

Create a new Service Access Point

Using CLI

You can create a new Service Access Point by issuing the command `sccp sap create` with appropriate parameters as described below:

```
Name
    sccp sap create

SYNOPSIS
    sccp sap create <id> <mtp3-id> <opc> <ni> stackname <stack-name> networkid
<networkId>
    localgtdigits <localGtDigits>

DESCRIPTION
```

```
    This command is used to define a new Service Access Point.

PARAMETERS

    Standard Parameters

    <id>          -   The newly defined SAP will be identified using this 'id'.
                  This must be a unique number.

    <mtp3-id>     -   Mtp3UserPart index - used as an index of 'mtp3UserPart'
                  property of the SccpStack Bean. For each Mtp3UserPart,
                  a sap must be configured.

    <opc>         -   MTP Point code of the local signaling point. Takes an
                  Integer Value.

    <ni>          -   Network indicator that forms part of the
                  Service Information Octet (SIO).

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                  If not passed, the first stack configured in ShellExecutor
                  will be used.

    <networkId>     - A digital parameter that means to which virtual SS7 network
                  belongs Service Access Point (SAP). If this parameter is
                  skipped - networkId will be set to "0" when SAP creation.
                  Refer <xref linkend="design_multitenancy"/>.

    <localGtDigits> - Local GT digits. An incoming message will be brought to this
                  sap if GT digits of callePartyAddress matches to this value.
                  "null" value matches to any incoming message. If this parameter
                  is skipped - networkId will be set to "null" by default.


EXAMPLES
    sccp sap create 1 1 101 2 networkid 2 localgtdigits 999888777

    The above command will create a new Service Access Point identified by the
    number '1'. The values for 'mtp3-id', 'opc' and 'ni' are 1, 101 and 2
respectively.
```

Using GUI

Procedure: Create a new Service Access Point using GUI

1. Navigate to the 'SAP' tab in the SCCP Management window and click on the 'Create SAP' button. This will launch a pop-up 'Create SAP'.
2. In the 'Create SAP' pop-up, add details of the new Service Access Point. You must ensure that you

fill in all the mandatory parameters (Id, MTP3 Id, OPC, NI). For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.

3. Verify the details entered and then click on the 'Create' button. A new SAP will be created with parameters as specified. If there is an error in creating the SAP then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create SAP' pop-up.

Modify a Service Access Point

Using CLI

You can modify the values of a Service Access Point by issuing the command `sccp sap modify` with appropriate parameters as described below:

```
Name
    sccp sap modify

SYNOPSIS
    sccp sap modify <id> mtp3-id <mtp3-id> opc <opc> ni <ni> stackname <stack-name>
networkid <networkId>
    localgtdigits <localGtDigits>

DESCRIPTION
    This command is used to modify a previously defined Service Access Point.

PARAMETERS

    Standard Parameters

    <id>          -   The id of the SAP whose values are being modified.

    Optional Parameters

    <mtp3-id>     -   Mtp3UserPart index - used as an index of 'mtp3UserPart'
                    property of the SccpStack Bean. For each Mtp3UserPart, a
                    sap must be configured.

    <opc>         -   MTP Point code of the local signaling point. Takes an
                    Integer Value.

    <ni>          -   Network indicator that forms part of the Service
                    Information Octet (SIO).

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

    <networkId>     - A digital parameter that means to which virtual SS7 network
                    belongs Service Access Point (SAP). If this parameter is
                    skipped - networkId will be set to "0" when SAP creation.
                    Refer <xref linkend="design_multitenancy"/>.

    <localGtDigits> - Local GT digits. An incoming message will be brought to this
                    sap if GT digits of callePartyAddress matches to this value.
                    "null" value matches to any incoming message. If this parameter
                    is skipped - networkId will be set to "null" by default.


EXAMPLES
    sccp sap modify 1 mtp3-id 2 opc 102 ni 2

    The above command will modify the values of the Service Access Point identified
    by the number '1'. The new values for 'mtp3-id', 'opc' and 'ni' are 2, 102 and 2
    respectively.
```

Delete a Service Access Point

Using CLI

You can delete a SAP by issuing the command `sccp sap delete` with appropriate parameters as described below:

```
Name
    sccp sap delete

SYNOPSIS
    sccp sap delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to delete a previously defined Service Access Point.

PARAMETERS

    Standard Parameters

    <id>          -   The id of the SAP that is being deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp sap delete 1

    The above command will delete the SAP identified by the number '1'.
```

Using GUI

Procedure: Delete a SAP using GUI

1. Navigate to the 'SAP' tab in the SCCP Management Unit window and locate the row corresponding to the SAP you wish to delete.
2. The last column for 'Delete' action will display a 'x' button in red and will be enabled.
3. Click on the red 'x' button to delete the corresponding SAP.

View all Destinations specified for a SAP

Using CLI

You can view the details of all Destinations specified for a Service Access Point by issuing the command `sccp dest show` as described below:

```
Name
    sccp dest show

SYNOPSIS
    sccp dest show <sap-id> <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all Destinations specified for a
    Service Access Point. If an <id> is specified in the command, it will only display
    the details of the Destination identified by the value of the 'id' specified.

PARAMETERS

    Standard Parameters

    <sap-id>  -   The id of the SAP whose Destination details are to be
                displayed.


    Optional Parameters

    <id>          -   The id of the Destination whose details are to be
                    displayed. If this parameter is not specified, the details
                    of all Destinations defined within the SAP 'sap-id' will
                    be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'SAP' tab. Here you can view a list of all the Service Access Points created. Every correctly configured Service Access Point will be displayed in a row with their defined values. To view the Destination details of a specific SAP, click on the row corresponding to the SAP. The row will expand below to display the details of all configured Destinations.

Define a new Destination for a SAP

Using CLI

You can define a new Destination for a Service Access Point by issuing the command `sccp dest create` with appropriate parameters as described below:

```
Name
    sccp dest create

SYNOPSIS
    sccp dest create <sap-id> <id> <first-dpc> <last-dpc> <first-sls> <last-sls>
    <sls-mask> stackname <stack-name>

DESCRIPTION
    This command is used to define a new Destination for a Service Access Point.
    For every SAP in the system, you should configure one or more Destinations.

PARAMETERS

    Standard Parameters

    <sap-id>  -   The identifier of the SAP for which this new Destination
                is being defined. You must ensure that the SAP has been
                created prior to issuing this command.

    <id>      -   An identifier for this newly created Destination.
                The number must be unique within each SAP.

    <first-dpc>   -   The first value of the remote signaling point codes range.

    <last-dpc>    -   The last value of the remote signaling point codes range.
                If the Destination specifies only a single Signaling
                Point Code, this value must be equal to the value
                specified for 'first-dpc'.

    <first-sls>   -   The first value of the SLS range.
                SLS value range is from 0 to 255.

    <last-sls>    -   The last value of the SLS range.

    <sls-mask>    -   The mask value. SLS of a message will be exposed by
                performing a bitwise AND operation with this mask prior to
                comparing it with first-sls and last-sls values.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.
```

```
EXAMPLES
    sccp dest create 1 1 201 201 0 7 7

    The above command will create a new Destination (identified by number '1') for
    a Service Access Point identified by the number '1'. The values for 'first-dpc',
    'last-dpc', 'first-sls', 'last-sls' and 'sls-mask' are 201, 201, 0, 7 and 7
    respectively.

    sccp dest create 2 1 300 399 0 255 255

    The above command will create a new Destination (identified by number '2') for
    a Service Access Point identified by the number '1'. The values for 'first-dpc',
    'last-dpc', 'first-sls', 'last-sls' and 'sls-mask' are 300, 399, 0, 255 and 255
    respectively. This Destination will cover all possible SLS values.
    Therefore the value for first-sls =0, last-sls=255 and sls-mask=255
```

Using GUI

Procedure: Define a new Destination for a Service Access Point using GUI

1. Navigate to the 'SAP' tab in the SCCP Management window and click on the row corresponding to the SAP for which you would like to define a new Destination.
2. The SAP row will expand below to display the details of all configured Destinations. In this section for Destinations, click on the 'Create Destination' button. This will launch a new pop-up 'Create MTP3 Destination'.
3. In the 'Create MTP3 Destination' pop-up, add details of the new Destination being defined for the Service Access Point. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
4. Verify the details entered and then click on the 'Create' button. A new Destination will be created with parameters as specified. If there is an error in creating the SAP then you will find the details of the error in the Management Console Log section below.
5. Click on the 'Close' button to close the 'Create MTP3 Destination' pop-up.

Modify a Destination defined for a SAP

Using CLI

You can modify the values of a Destination defined for a Service Access Point by issuing the command `sccp dest modify` with appropriate parameters as described below:

```
Name
    sccp dest modify

SYNOPSIS
    sccp dest modify <sap-id> <id> first-dpc <first-dpc> last-dpc <last-dpc> first-sls
<first-sls> last-sls <last-sls>
    sls-mask <sls-mask> stackname <stack-name>


DESCRIPTION
    This command is used to modify the values of a Destination previously defined for
    a Service Access Point.

PARAMETERS

    Standard Parameters

    <sap-id>  -   The identifier of the SAP whose Destination is being
                modified.

    <id>      -   The identifier of the Destination that is being modified.

    Optional Parameters
    <first-dpc>   -   The first value of the remote signaling point codes range.

    <last-dpc>    -   The last value of the remote signaling point codes range.
                If the Destination specifies only a single Signaling
                Point Code, this value must be equal to the value
                specified for 'first-dpc'.

    <first-sls>   -   The first value of the SLS range.
                SLS value range is from 0 to 255.

    <last-sls>    -   The last value of the SLS range.

    <sls-mask>    -   The mask value. SLS of a message will be exposed by
                performing a bitwise AND operation with this mask prior to
                comparing it with first-sls and last-sls values.
    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp dest modify 1 1 first-dpc 201 last-dpc 299 first-sls 0 last-sls 255 sls-mask
255

    The above command will modify the values of the Destination identified by the
    number '1' within the Service Access Point identified by the number '1'.
    The new values for 'first-dpc', 'last-dpc', 'first-sls', 'last-sls' and 'sls-mask'
    are 201, 299, 0, 255 and 255 respectively.
```

Delete a Destination defined for a SAP

Using CLI

You can delete a Destination defined for a SAP by issuing the command `sccp dest delete` with appropriate parameters as described below:

```
Name
    sccp dest delete

SYNOPSIS
    sccp dest delete <sap-id> <id> stackname <stack-name>

DESCRIPTION
    This command is used to remove a previously defined Destination from a
    Service Access Point.

PARAMETERS

    Standard Parameters

    <sap-id>  -   The identifier of the SAP whose Destination is being
                deleted.

    <id>      -   The identifier of the Destination that is being
                deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp dest delete 1 1

    The above command will delete the Destination identified by the number '1' from
    the SAP identified by the number '1'.
```

Using GUI

Procedure: Delete a Destination defined for a SAP using GUI

1. Navigate to the 'SAP' tab in the SCCP Management Unit window and click on the row corresponding to the SAP from which you wish to delete a Destination.
2. The SAP row will expand below to display the details of all configured Destinations. In this section for Destinations, locate the specific Destination you wish to remove from the list.

3. In the row corresponding to the identified Destination, click on the red 'x' button in the actions column to delete that Destination.

View all configured SCCP Addresses

Using CLI

You can view the details of all configured SCCP Addresses by issuing the command `sccp address show` as described below:

```
Name
    sccp address show

SYNOPSIS
    sccp address show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all configured addresses.
    If an <id> is specified in the command, it will only display the details of the
    Address identified by the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>          -   The id of the Address whose details are to be displayed.
                    If this parameter is not specified, the details of all
                    configured Addresses will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'Address' tab. Here you can view a list of all the configured Addresses. Every correctly configured Address will be displayed in a row along with the defined values.

Create a new Primary/Backup address

Using CLI

You can create a new primary address or backup address of translation by issuing the command `sccp address create` with appropriate parameters as described below:

```
Name
    sccp address create

SYNOPSIS
    sccp address create <id> <address-indicator> <point-code> <subsystem-number>
    <translation-type> <numbering-plan> <nature-of-address-indicator> <digits>
    stackname <stack-name>

DESCRIPTION
    This command is used to create a new primary address or backup address of
    translation. You can create a new newCallingParty address as well
    using this command. The global title address information of this command is
combined with
    the global title being translated by examining the mask provided in the
    'sccp rule create' command.

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this address.

    <address-indicator>   -   The address indicator is the first field in a SCCP
                    Party Address (called/calling) and is one octet in
                    length. Its function is to indicate which
                    information elements are present so that the
                    address can be interpreted. In other words, it
                    indicates the type of addressing information that
                    is to be found in the address field. The
                    addressing information from the original global
                    title is then compared with the passed address
                    information to match the rule.

                    SCCP ADDRESS INDICATOR
                    --------------------------------
                    | 8 | 7 | 6 | 5 | 4 |3 | 2 | 1 |
                    --------------------------------

                    Bit '1'     : PC Indicator
                              (1 = included)

                    Bit '2'     : SSN Indicator
                              (1 = included)

                    Bit '3 - 6' : GT Indicator
                              (0000 = GT not included)
                              (0001 = GT includes
                                  Nature of Address)
                              (0010 = GT includes
                                  Translation Type)
```

```
                          (0011 = GT includes
                              Translation Type,
                              Numbering Plan and
                              Encoding Scheme)
                          (0100 = GT includes
                              Translation Type,
                              Numbering Plan and
                              Encoding Scheme and
                              Nature of Address)

                Bit '7'     : Routing Indicator
                          (0 = Route on GT,
                          1 = Route on PC + SSN)

                Bit '8'     : Reserved for National use.

                Only two fields of Address Indicator is used now for GTT:
                - GT Indicator (this is used for GlobalTitle type that
                  will be created)
                - Routing Indicator bit (0 = Route on GT, 1 = Route on
                  PC + SSN)
                GT Indicator for ITU-T network that is mostly used is -
                0100 (GT includes Translation Type, Numbering Plan and
                Encoding Scheme and Nature of Address). Digital value
                for it is - 16.
                For 0100 GT Indicator we will use two possible values:
                16 - 0100 GT Indicator and Route on GT
                80 - 0100 GT Indicator and Route on PC + SSN
                Even when SCCP stack works in ANSI mode Address Indicator
                value for CLI and GUI must have values that we use for
                ITU-T mode.

<point-code>      -   MTP Signaling Point Code.
                This parameter contains a point code to which message will
                be routed after GTT (DPC field).
                This parameter is mandatory.

<subsystem-number>    - This parameter contains SSN which will be placed
                into CalledPartyAddress. If you set this parameter to "0",
                SSN from CalledPartyAddress of an original message will be
                put into CalledPartyAddress.

<translation-type>    -   This is ignored if GT Indicator is 0000 or 0001.

                TRANSLATION TYPE VALUES

                Value       Description
                ---------------------------------
                0       Unknown

                1  - 63     International Service
```

```
                64 - 127    Spare

                128 - 254   National Network Specific

                255     Reserved for Expansion

                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 0 - translation-type - Unknown

<numbering-plan>  -   The Number Plan (NP) field specifies the numbering
                plan which the address information follows. This
                is ignored if GT Indicator is 0000, 0001 or 0010.

                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 1 - numbering-plan - ISDN/telephony

<nature-of-address>   -   The Nature of Address Indicator (NAI) field
                defines the address range for a specific numbering
                plan. This is only used if GT Indicator is 0100.

                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 4 - nature-of-address - International

<digits>      -   The global title address information to translate
                to. Specified as string of digits divided into
                subsections using separator '/' depending on if
                the mask contains separator or not.
                The digits string can contain:

                DIGIT PATTERN

                Value       Description
                ---------------------------------
                -       padding - ignored

                /       separator used to split the digit
                        pattern into sections.
                        Each section is processed
                        differently as specified by the
                        mask parameter in the
                        'sccp rule create' command.

                We need this parameter if at least one section of Rule
                mask contains "R" (replace) value. Else set this field
```

```
                    to "0". If this field is needed it should contain the
                    same subsections as the rule mask has.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp address create 1 71 2 8 0 0 3 123456789
```

Using GUI

Procedure: Create a new Primary/Backup Address using GUI

1. Navigate to the 'Address' tab in the SCCP Management window and click on the 'Create Address' button. This will launch a new pop-up 'Create SCCP Address'.
2. In the 'Create SCCP Address' pop-up, add details of the new SCCP Address being defined. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
3. Verify the details entered and then click on the 'Create' button. A new Address will be created with parameters as specified. If there is an error in creating the Address then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create SCCP Address' pop-up.

Modify a Primary/Backup Address

Using CLI

You can modify the values of a primary address or backup address of translation by issuing the command `sccp address modify` with appropriate parameters as described below:

```
Name
    sccp address modify

SYNOPSIS
    sccp address modify <id> address-indicator <address-indicator> point-code <point-
code> subsystem-number <subsystem-number>
    translation-type <translation-type> numbering-plan <numbering-plan> nature-of-
address-indicator <nature-of-address-indicator> digits <digits>
    stackname <stack-name>

DESCRIPTION
    This command is used to modify the values of an address
    previously defined.
```

```
PARAMETERS

    Standard Parameters

    <id>          -   Identifier of the address to be modified.

    Optional Parameters
    <address-indicator>   -   The address indicator is the first field in a SCCP
                    Party Address (called/calling) and is one octet in
                    length. Its function is to indicate which
                    information elements are present so that the
                    address can be interpreted. In other words, it
                    indicates the type of addressing information that
                    is to be found in the address field. The
                    addressing information from the original global
                    title is then compared with the passed address
                    information to match the rule.

                    SCCP ADDRESS INDICATOR
                    --------------------------------
                    | 8 | 7 | 6 | 5 | 4 |3 | 2 | 1 |
                    --------------------------------

                    Bit '1'     : PC Indicator
                              (1 = included)

                    Bit '2'     : SSN Indicator
                              (1 = included)

                    Bit '3 - 6' : GT Indicator
                              (0000 = GT not included)
                              (0001 = GT includes
                                  Nature of Address)
                              (0010 = GT includes
                                  Translation Type)
                              (0011 = GT includes
                                  Translation Type,
                                  Numbering Plan and
                                  Encoding Scheme)
                              (0100 = GT includes
                                  Translation Type,
                                  Numbering Plan and
                                  Encoding Scheme and
                                  Nature of Address)

                    Bit '7'     : Routing Indicator
                              (0 = Route on GT,
                              1 = Route on PC + SSN)

                    Bit '8'     : Reserved for National use.
```

```
                Only two fields of Address Indicator is used now for GTT:
                - GT Indicator (this is used for GlobalTitle type that
                  will be created)
                - Routing Indicator bit (0 = Route on GT, 1 = Route on
                  PC + SSN)
                GT Indicator for ITU-T network that is mostly used is -
                0100 (GT includes Translation Type, Numbering Plan and
                Encoding Scheme and Nature of Address). Digital value
                for it is - 16.
                For 0100 GT Indicator we will use two possible values:
                16 - 0100 GT Indicator and Route on GT
                80 - 0100 GT Indicator and Route on PC + SSN
                Even when SCCP stack works in ANSI mode Address Indicator
                value for CLI and GUI must have values that we use for
                ITU-T mode.

<point-code>        -   MTP Signaling Point Code.
                This parameter contains a point code to which message will
                be routed after GTT (DPC field).
                This parameter is mandatory.

<subsystem-number>  - This parameter contains SSN which will be placed
                into CalledPartyAddress. If you set this parameter to "0",
                SSN from CalledPartyAddress of an original message will be
                put into CalledPartyAddress.

<translation-type>    -   This is ignored if GT Indicator is 0000 or 0001.

                TRANSLATION TYPE VALUES

                Value       Description
                ---------------------------------
                0       Unknown

                1  - 63     International Service

                64 - 127    Spare

                128 - 254   National Network Specific

                255     Reserved for Expansion

                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 0 - translation-type - Unknown

<numbering-plan>    -   The Number Plan (NP) field specifies the numbering
                plan which the address information follows. This
                is ignored if GT Indicator is 0000, 0001 or 0010.
```

```
                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 1 - numbering-plan - ISDN/telephony

<nature-of-address> -   The Nature of Address Indicator (NAI) field
                defines the address range for a specific numbering
                plan. This is only used if GT Indicator is 0100.

                Value of this parameter will be placed into
                CalledPartyAddress. This parameter is mandatory if GT
                Indicator suppose this parameter is included into GT.
                Most used value: 4 - nature-of-address - International

<digits>      -   The global title address information to translate
                to. Specified as string of digits divided into
                subsections using separator '/' depending on if
                the mask contains separator or not.
                The digits string can contain:

                DIGIT PATTERN

                Value       Description
                ---------------------------------
                -       padding - ignored

                /       separator used to split the digit
                        pattern into sections.
                        Each section is processed
                        differently as specified by the
                        mask parameter in the
                        'sccp rule create' command.

                We need this parameter if at least one section of Rule
                mask contains "R" (replace) value. Else set this field
                to "0". If this field is needed it should contain the
                same subsections as the rule mask has.

<stack-name>  -   Name of the stack on which this command is executed.
                If not passed, the first stack configured in ShellExecutor
                will be used.
```

Delete a Primary/Backup Address

Using CLI

You can delete a Primary or Backup Address by issuing the command `sccp address delete` with appropriate parameters as described below:

```
Name
    sccp address delete

SYNOPSIS
    sccp address delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to remove previously defined addresses.

PARAMETERS

    Standard Parameters

    <id>      -   The identifier of the address that is being deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp address delete 1

    The above command will delete the address identified by the number '1'.
```

Using GUI

Procedure: Delete a Primary/Backup Address using GUI

1. Navigate to the 'Address' tab in the SCCP Management Unit window and locate the row corresponding to the Address you wish to delete.
2. In the row corresponding to the identified Address, click on the red 'x' button in the actions column to delete that Address.

View all configured SCCP Rules

Using CLI

You can view the details of all configured SCCP Rules by issuing the command `sccp rule show` as described below:

```
Name
    sccp rule show

SYNOPSIS
    sccp rule show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all Rules configured. If an <id> is
    specified in the command, it will only display the details of the Rule identified
    by the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>      -   The id of the Rule whose details are to be displayed.
                  If this parameter is not specified, the details of all
                  configured Rules will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                  If not passed, the first stack configured in ShellExecutor
                  will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'Rules' tab. Here you can view a list of all the configured Rules. Every correctly configured Rule will be displayed in a row along with the defined values.

Create a new SCCP Rule

Sorting Algorithm

When you define Rules, a comparison function imposes ordering the collection of SCCP Rules using a sorting algorithm that is based on the GT digits. The algorithm is defined below:

1. Rules defined with OriginationType==localOriginated or OriginationType==remoteOriginated, are always at the top of the list. Rules defined with OriginationType==All are always at the bottom of the list.

   Among rules with the same values for OriginationType (All or localOriginated/remoteOriginated), the sorting is done using the below rules.

2. Rules with GT digits having no wildcard (* or ?) are always at the top of the list. Between two Rules with GT digits, both having no wildcards, the one with the shortest length is at the top of the list. For example, Digit1 "123456" will be above Digit2 "1234567890" and this will be above Digit3 "999/*

3. Rules with GT digits having the wildcard "?" are always above digits having the wildcard "**". For example, Digit1 "800/????/9" will be above Digit2 "999/**
4. Between Rules with two GT digits both having wildcard "?", the one with the least number of wildcard "?" is at the top of the list. For example, Digit1 "800/????/9" will be above Digit2 "800/?????/9"
5. Between Rules with two GT digits both having an equal number of wildcard "?", the digit whose first appearance of "?" is after other, is at the top of the list. For example between Digit1 "80/??/0/???/9" and Digit 2 "800/?????/9", Digit2 is above Digit1. When a Rule is compared during Translation, comparison always starts from the top of the list.
6. If 2 rules have exactly same digits then rules are sorted using the above logic for calling digits.

Parameters backup-addressid (when ruleType parameter is "solitary"), loadsharing-algo (when ruleType parameter is not "loadshared"), newcgparty-addressid, origination-type, networkid, stackname and parameters for a calling party address (calling-ai, calling-pc, calling-ssn, calling-tt, calling-np, calling-nai, calling-digits-pattern) are optional. If newcgparty-addressid is not specified then calling party address will not be changed. If origination-type is not specified then a rule applies to all messages regardless of their origination. If networkid is not specified then networkid will be assigned to 0. If stackname is not specified then a rule will be applied to a default SCCP stack. If calling party address parameters are not specified then only called party address patterns will be taken into account.

Using CLI

You can create a new Rule by issuing the command `sccp rule create` with appropriate parameters as described below:

```
Name
    sccp rule create

SYNOPSIS
    sccp rule create <id> <mask> <address-indicator> <point-code> <subsystem-number>
    <translation-type> <numbering-plan> <nature-of-address-indicator> <digits>
    <ruleType> <primary-address-id> backup-addressid <backup-address-id>
    loadsharing-algo <loadsharing-algorithm> newcgparty-addressid
    <new-callingPartyAddress-id> origination-type <originationType>
    networkid <networkId> calling-ai <calling-address-indicator>
    calling-pc <calling-point-code> calling-ssn <calling-subsystem-number>
    calling-tt <calling-translation-type> calling-np <calling-numbering-plan>
    calling-nai <calling-nature-of-address-indicator>
    calling-digits-pattern <calling-digits-pattern> stackname <stack-name>

DESCRIPTION
    This command is used to create a new SCCP Routing Rule. You must ensure that
    primary and backup addresses are configured properly prior to executing this
    command.

PARAMETERS
```

```
Standard Parameters

<id>          -   A unique number to identify this Rule.

<mask>          -   A mask defines which part of the originally dialed
                digits remains in the translated digits and which
                part is replaced by the digits from primary or
                backup address. A mask is divided into sections by
                separator '/'. The number of sections in a mask
                should be equal to the sections in digits passed
                in this command and the sections in primary or
                backup address. This paramter is mandatory.

                MASK DEFINITIONS

                Mnemonic    Function
                ---------------------------------
                -       Ignore

                /       Separator used to split the mask
                        into sections.

                K       Retain the original dialed digits
                        of this section in the translated
                        digits.

                R       Replace the original dialed digits
                        of this section with the same
                        section from primary or backup
                        address in the translated digits.

<address-indicator>   -   The address indicator is the first field in a SCCP
                Party Address (called/calling) and is one octet in
                length. Its function is to indicate which
                information elements are present so that the
                address can be interpreted. In other words, it
                indicates the type of addressing information that
                is to be found in the address field. The
                addressing information from the original global
                title is then compared with the passed address
                information to match the rule.

                SCCP ADDRESS INDICATOR
                --------------------------------
                | 8 | 7 | 6 | 5 | 4 |3 | 2 | 1 |
                --------------------------------

                Bit '1'     : PC Indicator
                          (1 = included)
```

```
                Bit '2'     : SSN Indicator
                          (1 = included)

                Bit '3 - 6' : GT Indicator
                          (0000 = GT not included)
                          (0001 = GT includes
                              Nature of Address)
                          (0010 = GT includes
                              Translation Type)
                          (0011 = GT includes
                              Translation Type,
                              Numbering Plan and
                              Encoding Scheme)
                          (0100 = GT includes
                              Translation Type,
                              Numbering Plan and
                              Encoding Scheme and
                              Nature of Address)

                Bit '7'     : Routing Indicator
                          (0 = Route on GT,
                          1 = Route on PC + SSN)

                Bit '8'     : Reserved for National use.

                Only GT Indicator is used in the current implementation.
                A Rule matches to an original address only if GT Indicator
                from address-indicator is the same in a rule and in an
                original address. GT Indicator for ITU-T network that is
                mostly used is - 0100 (GT includes Translation Type,
                Numbering Plan and Encoding Scheme and Nature of Address).
                If you also use 0100 - use digital value for it - 16.
                Even when SCCP stack works in ANSI mode Address Indicator
                value for CLI and GUI must have values that we use for
                ITU-T mode.

<point-code>      -   MTP Signaling Point Code. This is ignored if
                Bit '0' of address-indicator is not set.
                This parameter is not used in currentimplemetation and
                can be set to "0".

<subsystem-number>    -   This is ignored if Bit '1' of address-indicator is
                not set.
                This parameter is not used in currentimplemetation and
                can be set to "0".

<translation-type>    -   This is ignored if GT Indicator is 0000 or 0001.

                TRANSLATION TYPE VALUES

                Value       Description
```

```
                  ---------------------------------
                  0       Unknown

                  1  - 63     International Service

                  64 - 127    Spare

                  128 - 254   National Network Specific

                  255     Reserved for Expansion

                  This paramter is mandatory.
                  A Rule matches to an original address only if a value of
                  this parameter is the same in a rule and in an original
                  address. Values are compared only if GT type contains this
                  parameter (see GT Indicator description in
                  <address-indicator> parameter).
                  Most used values:
                  0 - translation-type - Unknown

<numbering-plan>  -   The Number Plan (NP) field specifies the numbering
                  plan which the address information follows. This
                  is ignored if GT Indicator is 0000, 0001 or 0010.

                  NUMBER PLAN VALUES

                  Value       Description
                  ---------------------------------
                  0       Unknown

                  1       ISDN/Telephony Number Plan
                          (Recommendations E.163 and E.164)

                  2       Generic Numbering Plan

                  3       Data Numbering Plan
                          (Recommendations X.121)

                  4       Telex Numbering Plan
                          (Recommendations F.69)

                  5       Maritime Mobile Numbering Plan
                          (Recommendations E.210, E.211)

                  6       Land Mobile Numbering Plan
                          (Recommendations E.212)

                  7       ISDN/Mobile Numbering Plan
                          (Recommendations E.214)

                  8 to 13     Spare
```

```
                  14      Private Network or
                          Network-Specific Numbering Plan

                  15      Reserved

                  This paramter is mandatory.
                  A Rule matches to an original address only if a value of
                  this parameter is the same in a rule and in an original
                  address. Values are compared only if GT type contains this
                  parameter (see GT Indicator description in
                  <address-indicator> parameter).
                  Most used values:
                  1 - numbering-plan - ISDN/telephony

<nature-of-address>   -   The Nature of Address Indicator (NAI) field
                  defines the address range for a specific numbering
                  plan. This is only used if GT Indicator is 0100.

                  NAI VALUES

                  Value       Description
                  ---------------------------------
                  0       Unknown

                  1       Subscriber Number

                  2       Reserved for National use

                  3       National Significant Number

                  4       International Number

                  5 to 127    Spare

                  This paramter is mandatory.
                  A Rule matches to an original address only if a value of
                  this parameter is the same in a rule and in an original
                  address. Values are compared only if GT type contains this
                  parameter (see GT Indicator description in
                  <address-indicator> parameter).
                  Most used values:
                  4 - nature-of-address - International

<digits>      -   Specifies the string of digits divided into
                  subsections using separator '/' depending on if
                  the mask contains separator or not. The dialed
                  digits should match with theses digits as per the
                  rule specified below:

                  DIGIT PATTERN
```

```
                    Value       Description
                    ---------------------------------
                    -       padding - ignored

                    *       wildcard - matches any number of
                            digits

                    ?       wildcard - matches exactly one
                            digit

                    /       separator used to split the digit
                            pattern into sections.
                            Each section can be processed
                            differently as specified
                            by the mask parameter.

                    This parameter is mandatory. It should contain the same
                    subsections count as the rule mask has.

    <ruleType>        -   Takes one of the following values defined below.

                    RULE TYPE VALUES

                    Value       Description
                    ---------------------------------
                    solitary    Only one (primary) address is used
                            for routing.
                            (<backup-address-id> may be missed
                            in this case).

                    dominant    Both primary and backup
                            addresses are used and mandatory.
                            If both the addresses are
                            available, the primary address is
                            used for routing.

                    loadshared  Both primary and backup
                            addresses are used and mandatory.
                            If both the addresses are
                            available, either primary or
                            backup address is used for
                            routing.
                            The <loadsharing-algorithm> should
                            be configured in this case.

                    broadcast   Both primary and backup addresses
                            are used and are mandatory. All
                            messages are routed to both
                            addresses.
```

```
<primary-address-id>  -   Identifies the SCCP Address used as the primary
                translation.

Optional Parameters

<backup-address-id>   -   Identifies the SCCP Address used as the backup
                translation in case the pointcode specified by the
                primary address is not available. Backup address
                is used if <ruleType> is not "solitary".

<loadsharing-algorithm>   -   This parameter is mandatory if <ruleType> is
                "loadshared". The Loadsharing algorithm is
                configured here. Possible values of the parameter
                are:

                LOAD SHARING ALGORITHM VALUES

                Value       Description
                ---------------------------------
                bit4        if( (SLS & 0x10) == 0 )
                        <route to primary> else
                        <route to backup>

                        This algorithm is the best if all
                        traffic is local (mobicents stack)
                        originated

                bit3        if( (SLS & 0x08) == 0 )
                        <route to primary> else
                        <route to backup>
                        This algorithm can be used if not
                        all traffic is local
                        (mobicents stack) originated.
                        But only 8 links are acceptable in
                        both linksets.

                bit2        if( (SLS & 0x04) == 0 )
                        <route to primary> else
                        <route to backup>
                        This algorithm can be used if not
                        all traffic is local
                        (mobicents stack) originated.
                        But only 8 links are acceptable in
                        both linksets.

                bit1        if( (SLS & 0x02) == 0 )
                        <route to primary> else
                        <route to backup>
                        This algorithm can be used if not
                        all traffic is local
                        (mobicents stack) originated.
```

```
                        But only 8 links are acceptable in
                        both linksets.

                bit0        if( (SLS & 0x01) == 0 )
                        <route to primary> else
                        <route to backup>
                        This algorithm can be used if not
                        all traffic is local
                        (mobicents stack) originated.
                        But only 8 links are acceptable in
                        both linksets.


<new-callingPartyAddress-id>
            -   This address will replace the
                callingPartyAddresses of messages that fit a Rule.

<originationType> -   Takes one of the following values defined below.
                If the parameter is not defined, rule applies to
                all messages regardless of their origination.

                ORIGINATION TYPE VALUES

                Value           Description
                -----------------------------------
                localOriginated     If this parameter is
                            "localOriginated", then a
                            rule applies only for
                            messages originating from
                            local SCCP users
                            (for example a local
                            TCAP stack).

                remoteOriginated    If this parameter is
                            "remoteOriginated", then a
                            rule applies only for
                            messages originating from
                            SS7 network and not for
                            messages originating from
                            local SCCP users.

<stack-name>  -   Name of the stack on which this command is executed.
                If not passed, the first stack configured in ShellExecutor
                will be used.

<networkId>     - A digital parameter that means to which virtual SS7 network
                belongs a Rule. If this parameter is skipped - networkId will
                be set to "0" when a Rule creation.
                Refer <xref linkend="design_multitenancy"/>.

<calling-address-indicator>
```

```
                -   Address indicator for calling address matching.
                    See above address-indicator

    <calling-point-code>
                -   Pointcode of calling sccp address. MTP Signaling Point Code.
                    This is ignored if Bit '0' of address-indicator is not set.

    <calling-subsystem-number>
                -   This is ignored if Bit '1' of address-indicator is
                    not set.

    <calling-translation-type>
                -   This is ignored if GT Indicator is 0000 or 0001.
                    See <translation-type> above for more details.

    <calling-numbering-plan>
                -   A digital parameter that specifies to which virtual SS7
                    network this rule belongs. If this parameter
                    is skipped - networkId will be set to "0" by default.

    <calling-nature-of-address-indicator>
                -   The Nature of Address Indicator (NAI) field
                    defines the address range for a specific numbering
                    plan. This is only used if GT Indicator is 0100.

     <calling-digits-pattern>
                -   Specifies the string of digits for pattern matching.
                    There is no mask for calling digits, hence the division separator
is ignored.
                    See above <digits> for more information on pattern matching.

EXAMPLES
    sccp rule create 1 R 71 2 8 0 0 3 123456789 solitary 1

    sccp rule create 2 R 71 2 8 0 0 3 123456789 dominant 1 1

    sccp rule create 2 R 71 2 8 0 0 3 123456789 loadshared 1 1 bit4

    sccp rule create 21 R 71 2 8 0 0 3 123456789 dominant 2 backup-addressid 1
loadsharing-algo bit3 newcgparty-addressid 1 origination-type remoteoriginated
calling-ai 18 calling-pc 0 calling-ssn 0 calling-tt 0 calling-nai 0 calling-np 0
calling-digits-pattern 567*
```

Using GUI

Procedure: Create a new Rule using GUI

1. Navigate to the 'Rules' tab in the SCCP Management window and click on the 'Create Rule' button. This will launch a new pop-up 'Create Rule'.
2. In the 'Create Rule' pop-up, add details of the new SCCP Rule being defined. You must ensure

that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.

3. Verify the details entered and then click on the 'Create' button. A new Rule will be created with parameters as specified. If there is an error in creating the Rule then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create Rule' pop-up.

Modify a SCCP Rule

Using CLI

You can modify the values of a Rule by issuing the command `sccp rule modify` with appropriate parameters as described below:

```
Name
    sccp rule modify

SYNOPSIS
    sccp rule modify <id> mask <mask> address-indicator <address-indicator> point-code
<point-code> subsystem-number <subsystem-number>
    translation-type <translation-type> numbering-plan <numbering-plan> nature-of-
address-indicator <nature-of-address-indicator> digits <digits>
    rule-type <rule-type> primary-address-id <primary-address-id> backup-addressid
<backup-address-id>
    loadsharing-algo <loadsharing-algorithm> newcgparty-addressid
    <new-callingPartyAddress-id> origination-type <originationType>
    networkid <networkId> calling-ai <calling-address-indicator>
    calling-pc <calling-point-code> calling-ssn <calling-subsystem-number>
    calling-tt <calling-translation-type> calling-np <calling-numbering-plan>
    calling-nai <calling-nature-of-address-indicator>
    calling-digits-pattern <calling-digits-pattern> stackname <stack-name>

DESCRIPTION
    This command is used to modify the values of a SCCP Route previously defined.

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this Rule.

    Optional Parameters
    <mask>            -   A mask defines which part of the originally dialed
                    digits remains in the translated digits and which
                    part is replaced by the digits from primary or
                    backup address. A mask is divided into sections by
                    separator '/'. The number of sections in a mask
```

```
                should be equal to the sections in digits passed
                in this command and the sections in primary or
                backup address. This paramter is mandatory.

                MASK DEFINITIONS

                Mnemonic    Function
                ---------------------------------
                -       Ignore

                /       Separator used to split the mask
                        into sections.

                K       Retain the original dialed digits
                        of this section in the translated
                        digits.

                R       Replace the original dialed digits
                        of this section with the same
                        section from primary or backup
                        address in the translated digits.

<address-indicator>   -   The address indicator is the first field in a SCCP
                Party Address (called/calling) and is one octet in
                length. Its function is to indicate which
                information elements are present so that the
                address can be interpreted. In other words, it
                indicates the type of addressing information that
                is to be found in the address field. The
                addressing information from the original global
                title is then compared with the passed address
                information to match the rule.

                SCCP ADDRESS INDICATOR
                --------------------------------
                | 8 | 7 | 6 | 5 | 4 |3 | 2 | 1 |
                --------------------------------

                Bit '1'     : PC Indicator
                          (1 = included)

                Bit '2'     : SSN Indicator
                          (1 = included)

                Bit '3 - 6' : GT Indicator
                          (0000 = GT not included)
                          (0001 = GT includes
                              Nature of Address)
                          (0010 = GT includes
                              Translation Type)
                          (0011 = GT includes
```

```
                                Translation Type,
                                Numbering Plan and
                                Encoding Scheme)
                           (0100 = GT includes
                                Translation Type,
                                Numbering Plan and
                                Encoding Scheme and
                                Nature of Address)

                    Bit '7'     : Routing Indicator
                              (0 = Route on GT,
                              1 = Route on PC + SSN)

                    Bit '8'     : Reserved for National use.

                    Only GT Indicator is used in the current implementation.
                    A Rule matches to an original address only if GT Indicator
                    from address-indicator is the same in a rule and in an
                    original address. GT Indicator for ITU-T network that is
                    mostly used is - 0100 (GT includes Translation Type,
                    Numbering Plan and Encoding Scheme and Nature of Address).
                    If you also use 0100 - use digital value for it - 16.
                    Even when SCCP stack works in ANSI mode Address Indicator
                    value for CLI and GUI must have values that we use for
                    ITU-T mode.

    <point-code>      -   MTP Signaling Point Code. This is ignored if
                    Bit '0' of address-indicator is not set.
                    This parameter is not used in currentimplemetation and
                    can be set to "0".

    <subsystem-number>    -   This is ignored if Bit '1' of address-indicator is
                    not set.
                    This parameter is not used in currentimplemetation and
                    can be set to "0".

    <translation-type>    -   This is ignored if GT Indicator is 0000 or 0001.

                    TRANSLATION TYPE VALUES

                    Value       Description
                    ---------------------------------
                    0       Unknown

                    1  - 63     International Service

                    64 - 127    Spare

                    128 - 254   National Network Specific

                    255     Reserved for Expansion
```

```
                This paramter is mandatory.
                A Rule matches to an original address only if a value of
                this parameter is the same in a rule and in an original
                address. Values are compared only if GT type contains this
                parameter (see GT Indicator description in
                <address-indicator> parameter).
                Most used values:
                0 - translation-type - Unknown

<numbering-plan>  -   The Number Plan (NP) field specifies the numbering
                plan which the address information follows. This
                is ignored if GT Indicator is 0000, 0001 or 0010.

                NUMBER PLAN VALUES

                Value       Description
                ---------------------------------
                0       Unknown

                1       ISDN/Telephony Number Plan
                        (Recommendations E.163 and E.164)

                2       Generic Numbering Plan

                3       Data Numbering Plan
                        (Recommendations X.121)

                4       Telex Numbering Plan
                        (Recommendations F.69)

                5       Maritime Mobile Numbering Plan
                        (Recommendations E.210, E.211)

                6       Land Mobile Numbering Plan
                        (Recommendations E.212)

                7       ISDN/Mobile Numbering Plan
                        (Recommendations E.214)

                8 to 13     Spare

                14      Private Network or
                        Network-Specific Numbering Plan

                15      Reserved

                This paramter is mandatory.
                A Rule matches to an original address only if a value of
                this parameter is the same in a rule and in an original
                address. Values are compared only if GT type contains this
```

```
                parameter (see GT Indicator description in
                <address-indicator> parameter).
                Most used values:
                1 - numbering-plan - ISDN/telephony

<nature-of-address>   -   The Nature of Address Indicator (NAI) field
                defines the address range for a specific numbering
                plan. This is only used if GT Indicator is 0100.

                NAI VALUES

                Value       Description
                ---------------------------------
                0       Unknown

                1       Subscriber Number

                2       Reserved for National use

                3       National Significant Number

                4       International Number

                5 to 127    Spare

                This paramter is mandatory.
                A Rule matches to an original address only if a value of
                this parameter is the same in a rule and in an original
                address. Values are compared only if GT type contains this
                parameter (see GT Indicator description in
                <address-indicator> parameter).
                Most used values:
                4 - nature-of-address - International

<digits>      -   Specifies the string of digits divided into
                subsections using separator '/' depending on if
                the mask contains separator or not. The dialed
                digits should match with theses digits as per the
                rule specified below:

                DIGIT PATTERN

                Value       Description
                ---------------------------------
                -       padding - ignored

                *       wildcard - matches any number of
                        digits

                ?       wildcard - matches exactly one
                        digit
```

```
                /       separator used to split the digit
                        pattern into sections.
                        Each section can be processed
                        differently as specified
                        by the mask parameter.

                This parameter is mandatory. It should contain the same
                subsections count as the rule mask has.

<ruleType>        -   Takes one of the following values defined below.

                RULE TYPE VALUES

                Value       Description
                ---------------------------------
                solitary    Only one (primary) address is used
                        for routing.
                        (<backup-address-id> may be missed
                        in this case).

                dominant    Both primary and backup
                        addresses are used and mandatory.
                        If both the addresses are
                        available, the primary address is
                        used for routing.

                loadshared  Both primary and backup
                        addresses are used and mandatory.
                        If both the addresses are
                        available, either primary or
                        backup address is used for
                        routing.
                        The <loadsharing-algorithm> should
                        be configured in this case.

                broadcast   Both primary and backup addresses
                        are used and are mandatory. All
                        messages are routed to both
                        addresses.

<primary-address-id>  -   Identifies the SCCP Address used as the primary
                translation.


<backup-address-id>   -   Identifies the SCCP Address used as the backup
                translation in case the pointcode specified by the
                primary address is not available. Backup address
                is used if <ruleType> is not "solitary".

<loadsharing-algorithm>   -   This parameter is mandatory if <ruleType> is
```

```
                "loadshared". The Loadsharing algorithm is
                configured here. Possible values of the parameter
                are:

                LOAD SHARING ALGORITHM VALUES

                Value       Description
                ----------------------------------
                bit4        if( (SLS & 0x10) == 0 )
                        <route to primary> else
                        <route to backup>

                        This algorithm is the best if all
                        traffic is local (mobicents stack)
                        originated

                bit3        if( (SLS & 0x08) == 0 )
                        <route to primary> else
                        <route to backup>
                        This algorithm can be used if not
                        all traffic is local
                        (mobicents stack) originated.
                        But only 8 links are acceptable in
                        both linksets.

<new-callingPartyAddress-id>
            -   This address will replace the
                callingPartyAddresses of messages that fit a Rule.

<originationType> -   Takes one of the following values defined below.
                If the parameter is not defined, rule applies to
                all messages regardless of their origination.

                ORIGINATION TYPE VALUES

                Value           Description
                ------------------------------------
                localOriginated     If this parameter is
                            "localOriginated", then a
                            rule applies only for
                            messages originating from
                            local SCCP users
                            (for example a local
                            TCAP stack).

                remoteOriginated    If this parameter is
                            "remoteOriginated", then a
                            rule applies only for
                            messages originating from
                            SS7 network and not for
                            messages originating from
```

```
                                local SCCP users.

     <stack-name>  -   Name of the stack on which this command is executed.
                     If not passed, the first stack configured in ShellExecutor
                     will be used.

     <networkId>     - A digital parameter that means to which virtual SS7 network
                     belongs a Rule. If this parameter is skipped - networkId will
                     be set to "0" when a Rule creation.
                     Refer <xref linkend="design_multitenancy"/>.

    <calling-address-indicator>
                -   Address indicator for calling address matching.
                    See above address-indicator

    <calling-point-code>
                -   Pointcode of calling sccp address. MTP Signaling Point Code.
                    This is ignored if Bit '0' of address-indicator is not set.

    <calling-subsystem-number>
                -   This is ignored if Bit '1' of address-indicator is
                    not set.

    <calling-translation-type>
                -   This is ignored if GT Indicator is 0000 or 0001.
                    See <translation-type> above for more details.

    <calling-numbering-plan>
                -   A digital parameter that specifies to which virtual SS7
                    network this rule belongs. If this parameter
                    is skipped - networkId will be set to "0" by default.

    <calling-nature-of-address-indicator>
                -   The Nature of Address Indicator (NAI) field
                    defines the address range for a specific numbering
                    plan. This is only used if GT Indicator is 0100.

     <calling-digits-pattern>
                -   Specifies the string of digits for pattern matching.
                    There is no mask for calling digits, hence the division separator
is ignored.
                    See above <digits> for more information on pattern matching.
```

Delete a Rule

Using CLI

You can delete a Rule by issuing the command `sccp rule delete` with appropriate parameters as described below:

```
Name
    sccp rule delete

SYNOPSIS
    sccp rule delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to remove a previously defined Rule.

PARAMETERS

    Standard Parameters

    <id>          -   The identifier of the Rule that is being deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp rule delete 1

    The above command will delete the Rule identified by the number '1'.
```

Using GUI

Procedure: Delete a Rule using GUI

1. Navigate to the 'Rules' tab in the SCCP Management Unit window and locate the row corresponding to the Rule you wish to delete.
2. In the row corresponding to the identified Rule, click on the red 'x' button in the actions column to delete that Rule.

View all configured Remote Signaling Points (RSP)

Using CLI

You can view the details of all configured Remote Signaling Points by issuing the command `sccp rsp show` as described below:

```
Name
    sccp rsp show

SYNOPSIS
    sccp rsp show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all configured Remote Signaling
Points.

    If an <id> is specified in the command, it will only display the details of the
    Remote Signaling Point identified by the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>      -   The id of the Remote Signaling Point whose details are
                  to be displayed. If this parameter is not specified, the
                  details of all configured Remote Signaling Points will be
                  displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'RSP' tab. Here you can view a list of all the configured Remote Signaling Pointcodes. Every correctly configured RSP will be displayed in a row along with the defined values.

Create a new Remote Signaling Pointcode

Using CLI

You can create a new RSP by issuing the command `sccp rsp create` with appropriate parameters as described below:

```
Name
    sccp rsp create

SYNOPSIS
    sccp rsp create <id> <remote-spc> <rspc-flag> <mask>
    stackname <stack-name>

DESCRIPTION
    This command is used to define a new Remote Signaling Point. Each remote signaling
    point that SCCP can communicate with must be configured using this command.

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this
                      Remote Signaling Point.

    <remote-spc>      -   The Remote Signaling Point

    <rspc-flag>       -   32 bit value. Not used for now.
                      Reserved for future

    <mask>            -   32 bit value. Not used for now.
                      Reserved for future

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp rsp create 1 6477 0 0
```

Using GUI

Procedure: Create a new RSP using GUI

1. Navigate to the 'RSP' tab in the SCCP Management window and click on the 'Create RSP' button. This will launch a new pop-up 'Create Remote Signaling Pointcode'.
2. In the 'Create Remote Signaling Pointcode' pop-up, add details of the new RSP being defined. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
3. Verify the details entered and then click on the 'Create' button. A new RSP will be created with parameters as specified. If there is an error in creating the RSP then you will find the details of the error in the Management Console Log section below.

4. Click on the 'Close' button to close the 'Create Remote Signaling Pointcode' pop-up.

Modify a Remote Signaling Pointcode

Using CLI

You can modify the values of a RSP by issuing the command `sccp rsp modify` with appropriate parameters as described below:

```
Name
    sccp rsp modify

SYNOPSIS
    sccp rsp modify <id> remote-spc <remote-spc> rspc-flag <rspc-flag> mask <mask>
stackname <stack-name>

DESCRIPTION
    This command is used to modify the values of a Remote Signaling Point previously
    defined.

PARAMETERS

    Standard Parameters

    <id>          -   Identifier of the Remote Signaling Point to be
                    modified.

    <remote-spc>      -   The Remote Signaling Point

    <rspc-flag>       -   32 bit value. Not used for now.
                    Reserved for future

    <mask>            -   32 bit value. Not used for now.
                    Reserved for future

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.
```

Delete a Remote Signaling Pointcode

Using CLI

You can delete a RSP by issuing the command `sccp rsp delete` with appropriate parameters as

described below:

```
Name
    sccp rsp delete

SYNOPSIS
    sccp rsp delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to delete a Remote Signaling Point.

PARAMETERS

    Standard Parameters

    <id>      -   The identifier of the Remote Signaling Point that is being
                  deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp rsp delete 1

    The above command will delete the Remote Signaling Point identified by the
    number '1'.
```

Using GUI

Procedure: Delete a RSP using GUI

1. Navigate to the 'RSP' tab in the SCCP Management Unit window and locate the row corresponding to the RSP you wish to delete.
2. In the row corresponding to the identified RSP, click on the red 'x' button in the actions column to delete that RSP.

View all configured Remote Sub-Systems (RSS)

Using CLI

You can view the details of all configured Remote Sub-Systems by issuing the command `sccp rss show` as described below:

```
Name
    sccp rss show

SYNOPSIS
    sccp rss show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all configured Remote Sub-Systems.
    If an <id> is specified in the command, it will only display the details of the
    Remote Sub-System identified by the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>      -   The id of the Remote Sub-System whose details are to be
                  displayed. If this parameter is not specified, the details
                  of all configured Remote Sub-Systems will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'RSS' tab. Here you can view a list of all the configured Remote Sub-Systems. Every correctly configured RSS will be displayed in a row along with the defined values.

Create a new Remote Sub-System

Using CLI

You can create a new RSS by issuing the command `sccp rss create` with appropriate parameters as described below:

```
Name
    sccp rss create

SYNOPSIS
    sccp rss create <id> <remote-spc> <remote-ssn> <rss-flag>
    <mark-prohibited-when-spc-resuming> stackname <stack-name>

DESCRIPTION
    This command is used to define a new Remote Sub-System. Each Remote Sub-System
    that SCCP can communicate with must be configured using this command. You must
    ensure that the Remote Signaling Point is configured prior to issuing this
    command.

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this Remote
                    Sub-System.

    <remote-spc>      -   The Remote Signaling Point where this Remote
                    Sub-System is being deployed.

    <remote-ssn>      -   The Remote Sub-System number.

    <rss-flag>        -   32 bit value. Not used for now.
                    Reserved for future.

    Optional Parameters

    <mark-prohibited-when-spc-resuming>
                -   Possible value: prohibitedWhenSpcResuming.
                    When this parameter is specified, the configured
                    subsystem is marked as prohibited when its
                    corresponding signaling point code has been
                    resumed.

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp rss create 1 6477 8 0 prohibitedWhenSpcResuming
```

Using GUI

Procedure: Create a new RSS using GUI

1. Navigate to the 'RSS' tab in the SCCP Management window and click on the 'Create RSS' button.

This will launch a new pop-up 'Create Remote Sub-System'.

2. In the 'Create Remote Sub-System' pop-up, add details of the new RSS being defined. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
3. Verify the details entered and then click on the 'Create' button. A new RSS will be created with parameters as specified. If there is an error in creating the RSS then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create Remote Sub-System' pop-up.

Modify a Remote Signaling Sub-System

Using CLI

You can modify the values of a RSS by issuing the command `sccp rss modify` with appropriate parameters as described below:

```
Name
    sccp rss modify

SYNOPSIS
    sccp rss modify <id> remote-spc <remote-spc> remote-ssn <remote-ssn> rss-flag
<rss-flag>
    prohibitedwhenspcresuming <mark-prohibited-when-spc-resuming> stackname <stack-
name>

DESCRIPTION
    This command is used to modify the values of a Remote Sub-System previously
    defined.

PARAMETERS

    Standard Parameters

    <id>          -   Identifier of the Remote Sub-System to be
                      modified.

    Optional Parameters

    <remote-spc>      -   The Remote Signaling Point where this Remote
                      Sub-System is deployed.

    <remote-ssn>      -   The Remote Sub-System number.

    <rss-flag>        -   32 bit value. Not used for now.
                      Reserved for future.

    <mark-prohibited-when-spc-resuming>
                -   Possible value: prohibitedWhenSpcResuming.
                    When this parameter is specified, the configured
                    subsystem is marked as prohibited when its
                    corresponding signaling point code has been
                    resumed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Delete a Remote Signaling Sub-System

Using CLI

You can delete a RSS by issuing the command `sccp rss delete` with appropriate parameters as described below:

```
Name
    sccp rss delete

SYNOPSIS
    sccp rss delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to delete a Remote Sub-System.

PARAMETERS

    Standard Parameters

    <id>      -   The identifier of the Remote Sub-System that is being
                  deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                    If not passed, the first stack configured in ShellExecutor
                    will be used.

EXAMPLES
    sccp rss delete 1

    The above command will delete the Remote Sub-System identified by the number '1'.
```

Using GUI

Procedure: Delete a RSS using GUI

1. Navigate to the 'RSS' tab in the SCCP Management Unit window and locate the row corresponding to the RSS you wish to delete.
2. In the row corresponding to the identified RSS, click on the red 'x' button in the actions column to delete that RSS.

View all configured Long Message Rules (LMR)

Using CLI

You can view the details of all configured Long Message Rules by issuing the command `sccp lmr show` as described below:

```
Name
    sccp lmr show

SYNOPSIS
    sccp lmr show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all configured Long Message Rules.
    If an <id> is specified in the command, it will only display the details of the
    Long Message Rule identified by the value of the 'id' specified.

PARAMETERS

    Optional Parameters

    <id>          -   The id of the Long Message Rule whose details are to be
                      displayed. If this parameter is not specified, the details
                      of all configured Long Message Rules will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'LMR' tab. Here you can view a list of all the configured Long Message Rules. Every correctly configured LMR will be displayed in a row along with the defined values.

Create a new Long Message Rule

Using CLI

You can create a new LMR by issuing the command `sccp lmr create` with appropriate parameters as described below:

```
Name
    sccp lmr create

SYNOPSIS
    sccp lmr create <id> <first-spc> <last-spc> <long-message-rule-type>
    stackname <stack-name>

DESCRIPTION
    This command is used to define a new Long Message Rule. Long message rules specify
    which message types (UDT/XUDT/LUDT) will be used for outgoing message encoding
    depends on dpc. If long message rules are not configured only UDT messages
    will be used.

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this
                      Long Message Rule.

    <first-spc>       -   The first value of the remote signaling
                      point code range, for which this Long message Rule
                      will apply.

    <last-spc>        -   The last value of the remote signaling point code
                      range. If Long message rule specifies a single
                      signaling point code, this value must be equal to
                      first-spc.

    <long-message-rule-type>- Message types used for the remote signaling
                      point codes range.
                      Possible values : udt, xudt, ludt and ludt_segm.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp lmr create 1 201 201 xudt

    sccp lmr create 2 230 239 udt
```

Using GUI

Procedure: Create a new LMR using GUI

1. Navigate to the 'LMR' tab in the SCCP Management window and click on the 'Create LMR'

button. This will launch a new pop-up 'Create Long Message Rule'.

2. In the 'Create Long Message Rule' pop-up, add details of the new LMR being defined. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
3. Verify the details entered and then click on the 'Create' button. A new LMR will be created with parameters as specified. If there is an error in creating the LMR then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create Long Message Rule' pop-up.

Modify a Long Message Rule

Using CLI

You can modify the values of a LMR by issuing the command `sccp lmr modify` with appropriate parameters as described below:

```
Name
    sccp lmr modify

SYNOPSIS
    sccp lmr modify <id> first-spc <first-spc> last-spc <last-spc> rule-type <long-
message-rule-type>
    stackname <stack-name>

DESCRIPTION
    This command is used to modify the values of a Long Message Rule previously
    defined.

PARAMETERS

    Standard Parameters

    <id>          -   Identifier of the Long Message Rule to be
                      modified.

    Optional Parameters
    <first-spc>       -   The first value of the remote signaling
                      point code range, for which this Long message Rule
                      will apply.

    <last-spc>        -   The last value of the remote signaling point code
                      range. If Long message rule specifies a single
                      signaling point code, this value must be equal to
                      first-spc.

    <long-message-rule-type>- Message types used for the remote signaling point
                      codes range.
                      Possible values : udt, xudt, ludt and ludt_segm.
    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Delete a Long Message Rule

Using CLI

You can delete a LMR by issuing the command `sccp lmr delete` with appropriate parameters as described below:

```
Name
    sccp lmr delete

SYNOPSIS
    sccp lmr delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to delete a Long Message Rule.

PARAMETERS

    Standard Parameters

    <id>      -   The identifier of the Long Message Rule that is being
                  deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp lmr delete 1

    The above command will delete the Long Message Rule identified by the number '1'.
```

Using GUI

Procedure: Delete a Long Message Rule using GUI

1. Navigate to the 'LMR' tab in the SCCP Management Unit window and locate the row corresponding to the LMR you wish to delete.
2. In the row corresponding to the identified LMR, click on the red 'x' button in the actions column to delete that LMR.

View all configured Concerned Signaling Point Codes (CSP)

Using CLI

You can view the details of all configured Concerned Signaling Point Codes by issuing the command `sccp csp show` as described below:

```
Name
    sccp csp show

SYNOPSIS
    sccp csp show id <id> stackname <stack-name>

DESCRIPTION
    This command is used to view the details of all configured Concerned Signaling
    Point Codes. If an <id> is specified in the command, it will only display the
    details of the Concerned Signaling Point Code identified by the value of the 'id'
    specified.

PARAMETERS

    Optional Parameters

    <id>          -   The id of the Concerned Signaling Point Code whose details
                      are to be displayed. If this parameter is not specified,
                      the details of all configured Concerned Signaling Point
                      Codes will be displayed.

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Using GUI

Navigate to the specific SCCP Management unit and switch to the 'CSP' tab. Here you can view a list of all the configured Concerned Signaling Point Code. Every correctly configured CSP will be displayed in a row along with the defined values.

Create a new Concerned Signaling Point Code

Using CLI

You can create a new CSP by issuing the command `sccp csp create` with appropriate parameters as described below:

```
Name
    sccp csp create

SYNOPSIS
    sccp csp create <id> <spc> stackname <stack-name>

DESCRIPTION
    This command is used to define a new Concerned Signaling Point Code. Concerned
    signaling point codes define a DPC list that will be notified when local SSN is
    registered (SSA messages) or unregistered (SSP messages).

PARAMETERS

    Standard Parameters

    <id>          -   A unique number to identify this
                      Concerned Signaling Point Code.

    <spc>         -   The Remote Signaling Point Code,
                      which will be notified.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.


EXAMPLES
    sccp csp create 1 201

    sccp csp create 2 202
```

Using GUI

Procedure: Create a new CSP using GUI

1. Navigate to the 'CSP' tab in the SCCP Management window and click on the 'Create CSP' button. This will launch a new pop-up 'Create Concerned Signaling Point Code'.
2. In the 'Create Concerned Signaling Point Code' pop-up, add details of the new CSP being defined. You must ensure that you fill in all the mandatory parameters. For definition of these parameters, please refer to the description of the CLI command for the same in the preceding section.
3. Verify the details entered and then click on the 'Create' button. A new CSP will be created with parameters as specified. If there is an error in creating the CSP then you will find the details of the error in the Management Console Log section below.
4. Click on the 'Close' button to close the 'Create Concerned Signaling Point Code' pop-up.

Modify a Concerned Signaling Point Code

Using CLI

You can modify the values of a CSP by issuing the command `sccp csp modify` with appropriate parameters as described below:

```
Name
    sccp csp modify

SYNOPSIS
    sccp csp modify <id> <spc> stackname <stack-name>

DESCRIPTION
    This command is used to modify the values of a Concerned Signaling Point Code
    previously defined.

PARAMETERS

    Standard Parameters

    <id>          -   Identifier of the Concerned Signaling Point Code
                      to be modified.

    <spc>         -   The Remote Signaling Point Code, which will be
                      notified.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.
```

Delete a Concerned Signaling Point Code

Using CLI

You can delete a CSP by issuing the command `sccp csp delete` with appropriate parameters as described below:

```
Name
    sccp csp delete

SYNOPSIS
    sccp csp delete <id> stackname <stack-name>

DESCRIPTION
    This command is used to delete a Concerned Signaling Point Code.

PARAMETERS

    Standard Parameters

    <id>      -   The identifier of the Concerned Signaling Point Code
                  that is being deleted.

    Optional Parameters

    <stack-name>  -   Name of the stack on which this command is executed.
                      If not passed, the first stack configured in ShellExecutor
                      will be used.

EXAMPLES
    sccp csp delete 1

    The above command will delete the Concerned Signaling Point Code identified by the
    number '1'.
```

Using GUI

Procedure: Delete a Concerned Signaling Point Code using GUI

1. Navigate to the 'CSP' tab in the SCCP Management Unit window and locate the row corresponding to the CSP you wish to delete.
2. In the row corresponding to the identified CSP, click on the red 'x' button in the actions column to delete that CSP.