

# SCCP Management

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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/mobicents-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.

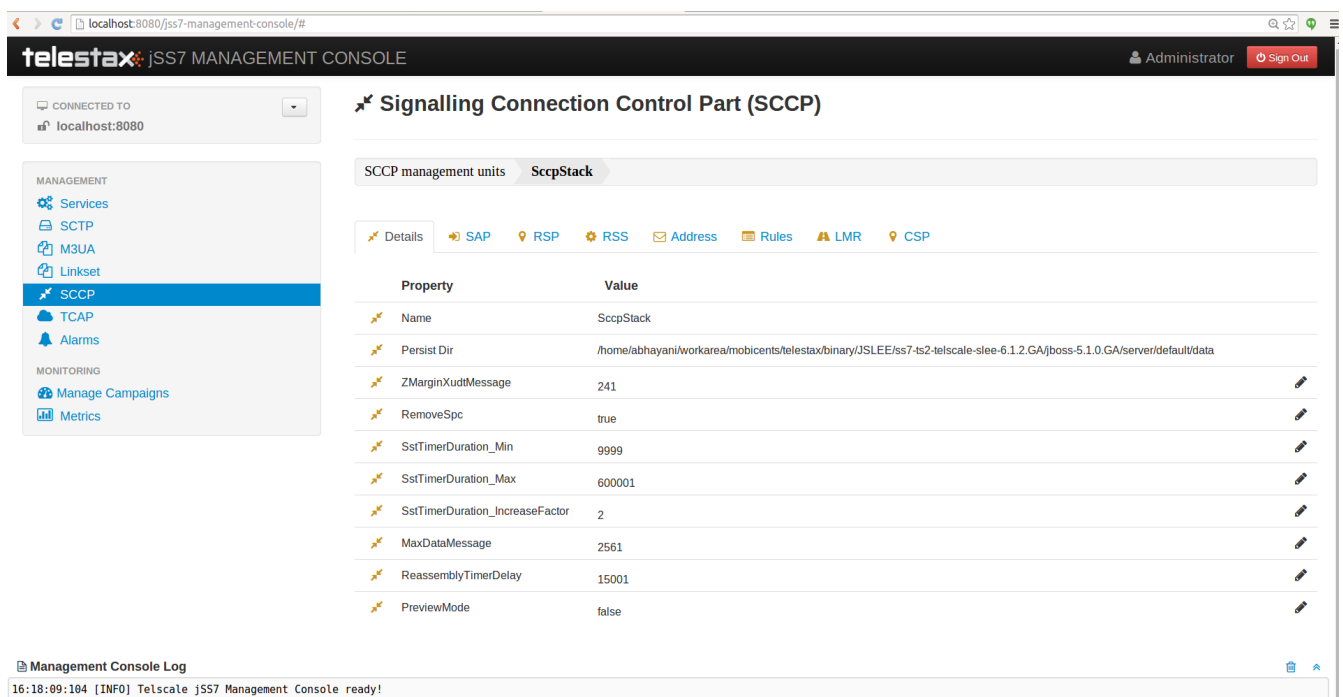


Figure 1. GUI - SCCP Management

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.

## 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 get removespc`

#### SYNOPSIS

`sccp get removespc stackname <stack-name>`

#### DESCRIPTION

Gets the value for removespc property.

#### 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 get removespc`

## Using GUI

On SCCP management page, click on pencil against the 'RemoveSpc' 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 get ssttimerduration_increasefactor
```

#### SYNOPSIS

```
sccp get ssttimerduration_increasefactor stackname <stack-name>
```

#### DESCRIPTION

Gets the value for ssttimerduration\_increasefactor property.

#### 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 get ssttimerduration_increasefactor
```

## 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 get ssttimerduration_max`

#### SYNOPSIS

`sccp get ssttimerduration_max stackname <stack-name>`

#### DESCRIPTION

Gets the value for `ssttimerduration_max` property.

#### 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 get ssttimerduration_max`

## 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 get ssttimerduration_min`

#### SYNOPSIS

`sccp get ssttimerduration_min stackname <stack-name>`

#### DESCRIPTION

Gets the value for `ssttimerduration_min` property.

#### 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 get ssttimerduration_min`

## 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 get ssttimerduration_min`

#### SYNOPSIS

`sccp get ssttimerduration_min stackname <stack-name>`

#### DESCRIPTION

Gets the value for `ssttimerduration_min` property.

#### 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 get ssttimerduration_min`

## Using GUI

On SCCP management page, click on pencil against the 'ZMarginXudtMessage' 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>
```

## 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"/>](#).

## EXAMPLES

```
sccp sap create 1 1 101 2
```

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> <opc> <ni> stackname <stack-name> networkid <networkId>
```

## 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.
- <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"/>](#).

## EXAMPLES

```
sccp sap modify 1 2 102 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> <last-dpc> <first-sls> <last-sls>  
<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.
- `<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 modify 1 1 201 299 0 255 255
```

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> 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> <point-code> <subsystem-number>  
<translation-type> <numbering-plan> <nature-of-address-indicator> <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.

<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.

## 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> 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/\*"

- Rules with GT digits having the wildcard "?" are always above digits having the wildcard "\*". For example, Digit1 "800/????/9" will be above Digit2 "999/\*"
- 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"
- 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.

## 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>
stackname <stack-name> networkid <networkId>
```

### 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 current implementation 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 current implementation 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 parameter 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 parameter 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 parameter 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 these 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. ( <code>&lt;backup-address-id&gt;</code> 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 <code>&lt;loadsharing-algorithm&gt;</code> 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	<p>if( (SLS &amp; 0x10) == 0 )            &lt;route to primary&gt; else            &lt;route to backup&gt;</p> <p>This algorithm is the best if all traffic is local (mobicents stack) originated</p>
bit3	<p>if( (SLS &amp; 0x08) == 0 )            &lt;route to primary&gt; else            &lt;route to backup&gt;</p> <p>This algorithm can be used if not all traffic is local (mobicents stack) originated. But only 8 links are acceptable in both linksets.</p>
bit2	<p>if( (SLS &amp; 0x04) == 0 )            &lt;route to primary&gt; else            &lt;route to backup&gt;</p> <p>This algorithm can be used if not all traffic is local (mobicents stack) originated. But only 8 links are acceptable in both linksets.</p>
bit1	<p>if( (SLS &amp; 0x02) == 0 )            &lt;route to primary&gt; else            &lt;route to backup&gt;</p> <p>This algorithm can be used if not all traffic is local (mobicents stack) originated. But only 8 links are acceptable in both linksets.</p>
bit0	<p>if( (SLS &amp; 0x01) == 0 )            &lt;route to primary&gt; else            &lt;route to backup&gt;</p> <p>This algorithm can be used if not all traffic is local (mobicents stack) originated. But only 8 links are acceptable in both linksets.</p>

<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"/>.

#### 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
```

## 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> <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>
stackname <stack-name> networkid <networkId>
```

#### 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.

`<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 parameter 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 current implementation 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 current implementation 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 parameter 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 parameter 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 parameter 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 these 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.
```

<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.

# 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> 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> <rspc-flag> <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> 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-ssn> <rss-flag>  
<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.
- <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.

### 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.

### 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.

# 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> 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 and ludt.

### 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> <last-spc> <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.
- `<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 and ludd.

##### 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 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> 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.