Oracle Communications® ASAP™ Cartridge 1.0
GA Release for Nokia SRRi M12

Nokia SRRi M12 Cartridge Guide

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Cartridge Overview

ASAP cartridges are discrete software components that are developed for the ASAP product. An ASAP cartridge offers specific domain behavior on top of the core ASAP software, and provides the configuration that supports a set of services on a network element (NE).

An ASAP cartridge is not a stand-alone component, but operates in conjunction with the ASAP core product. ASAP cartridges offer the following benefits:

- **Reduced Time to Market**—time to market of new services is reduced through simplified development, implementation, and extension of cartridges on customer sites.
- **Extendable**—cartridges can be extended to include additional services and components that deliver business value, without requiring changes to the original cartridge.
- **Simplified Effort**—the effort and technical knowledge that is required to perform customizations is reduced.
- **Ease of Installation**—cartridges can be installed into an ASAP environment without interfering with the existing install base.

An ASAP cartridge can be used to configure ASAP to provision the following:

- NEs from a specific vendor, such as Nortel or Lucent.
- Technologies, such as Asynchronous Transfer Mode (ATM) and Frame Relay switches, or Internet Protocol (IP) routers.
- Services that are supported on the NE, such as ATM, IP Virtual Private Networks (VPN), Wireless, or Optical.

Cartridges are designed for a specific technology, software load, and service.

An ASAP cartridge supports a particular set of services on an NE. These services are independent of customer-specific service definitions. Professional Services or systems integrators can perform extensions to the cartridge to support customer-specific requirements.

For more information on extending a cartridge, refer to the *ASAP Cartridge Development Guide for Service Activation*.

Cartridge content

An ASAP cartridge contains the following:

- An interface to the NE
- A set of scripts, such as State Tables or Java methods
- A set of atomic actions in the form of Atomic Service Description Layer (ASDL) commands
- A set of Common Service Description Layer (CSDL) commands that form meaningful services
- Sample work orders
- Installation scripts

Prerequisites

System integrators such as managers, designers, programmers, and testers who are responsible for the adaptation and integration of ASAP-based solutions should use this manual as a reference. It assumes that readers possess the following skills:

- A knowledge of ASAP programming concepts
- A good working knowledge of the UNIX operating system
- A thorough understanding of service and network provisioning
- Familiarity with telecommunications

About this guide

This guide provides a detailed description of the Nokia SRRi M12 cartridge. It contains overview and technical information to assist with extending and integrating the cartridge into a customer environment.

The scope of this guide includes ASAP as it pertains to this cartridge. It is not a complete ASAP reference guide.

For additional ASAP information when using this cartridge, refer to the following supporting documentation:

- **ASAP documentation set**—for detailed information on the ASAP core product.
- **ASAP Cartridge Development Guide for Service Activation**—for information on how to extend a cartridge.

The Nokia SRRi M12 cartridge provides the ASAP service configuration and network element (NE) interface to activate Service Routing Register services on NE_NOK-SRRI_M12-HOST.xml.

Services, features, and options

The following table lists the provisioning services provided in the cartridge:

Table 1: Nokia SRRi services

Service	Service Description
Create SRR numbers	This cartridge creates Service Routing Register numbers.
Delete SRR numbers	This cartridge deletes Service Routing Register numbers.
Modify SRR numbers	This cartridge modifies Service Routing Register numbers.
Query Output SRR numbers	This cartridge queries Service Routing Register numbers.

Hardware and software requirements

The following sections contain the high-level software and hardware environment requirements for provisioning Service Routing Register services using this cartridge, including:

- Network element (NE) interface
- ASAP version

Network element (NE) interface

This cartridge operates with the following:

- NOK_SRRI_M12_1_0
- Software Load M12

ASAP version

This cartridge was developed and tested using ASAP 4.6.3

For more information on the operating environment of this ASAP version, refer to the ASAP 4.6.3 Release Record.

Connecting to the NE

This cartridge supports both Telnet /TCP protocols, to connect to the NE.

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Installing and Testing the Cartridge

This chapter describes the following procedures related to installing and testing the cartridge:

- Downloading the cartridge
- Installing the cartridge using scripts
- Testing the cartridge installation
- Testing the cartridge installation
- Uninstallation and Undeployment of the cartridge using Studio

Downloading the cartridge

Before you can install the cartridge, you must use the internet to download the cartridge's TAR file from Oracle's Customer Portal.

Use the following instructions to download, then unTAR the TAR file.

To download the TAR file

1. Login to Oracle MetaLink internet home page (http://www.metalink.oracle.com).
2. Download the cartridge patch to your workstation.

To unTAR the TAR file

1. On your workstation, create a repository directory—the naming of which is your choice.

   ```
   mkdir <repository dir>
   ```

2. Untar NokiaSRR_M12_R1_0_0.<build>tar.

   ```
   tar xvf NokiaSRR_M12_R1_0_0.<build>tar
   ```

3. Copy the resulting /Repository Directory directory and its contents to the repository directory.

   ```
   cp -rf /Repository Directory <repository_dir>
   ```

The directory structure in the repository directory should look like the following illustration. (this illustration describes the minimum required structure; you can enhance this directory structure with additional directories based on your requirements and deliverables).

```
<repository_directory>
   Repository Directory
      /README
      /installCartridge
      /uninstallCartridge
      /NOK_SRRI_M12_1_0.sar
```

Starting ASAP

Before installing the cartridge, ensure that ASAP is running.

To start ASAP

1. To start ASAP, execute the following script:

   ```
   start_asap_sys
   ```

2. Ensure the ASAP Daemon (DAM_$ENV_ID) is running by checking the ASAP status using the ASAP script “status”.

3. Check whether the WebLogic instance for this ASAP environment is running. If not, start the WebLogic instance.

The *ASAP System Configuration and Management Guide* contains more information on starting ASAP, the ASAP Daemon, and WebLogic.

Installing the cartridge using scripts

Run the installation script *installCartridge* to install the cartridge. The script executes the following tasks:

- Configures the Nokia SRRi M12-specific NE using the SACT.
- Deploys the Nokia SRRi M12 cartridge service model (only if the Nokia SRRi M12 service model is not yet deployed) using the Service Activation Deployment Tool (SADT).
- Copies the Nokia SRRi M12-specific jar files and the cpp library file to the ASAP environment.
- Loads the sample work orders to the SRP database.

For information on the SACT and the SADT, refer to the *ASAP Administration Guide*.

To install the cartridge

1. Run the installCartridge script. At the prompt, type:

   ```
   installCartridge NOK_SRRI_M12_1_0.sar
   ```

2. The script prompts you for the values of the following WebLogic login parameters

Parameters	Default Value	Description
WEBLOGIC_HOST	loclahost	WebLogic host name
WEBLOGIC_PORT	7001	WebLogic port number
WEBLOGIC_USER	weblogic	WebLogic user name
WEBLOGIC_PASSWORD	weblogic	WebLogic password

:

   The script loads the NEP-NE configuration and the CSDL-ASDL configuration to the SARM database, and loads sample work orders to the SRP database. The script also copies the cartridge-specific jar files and cpp library file to the ASAP environment.

3. Copy studio_2-6_0.jar file to the $ASAP_BASE/lib directory.
4. Add ${ASAP_BASE}/lib/studio_2_6_0.jar to the CLASSPATH in the JInterpreter file under $ASAP_BASE/programs directory.
5. Restart ASAP to upload the cartridge configuration into ASAP.

Uninstalling the cartridge using scripts

Run the uninstallation script *uninstallCartridge* to uninstall the Nokia SRRi M12 cartridge. The script executes the following tasks:

- Unconfigures Nokia SRRi M12-specific NEs using the SACT.
- Undeploys the Nokia SRRi M12 cartridge service model (only if the Nokia SRRi M12 service model is already deployed) using the Service Activation Deployment Tool (SADT).
- Removes the Nokia SRRi M12-specific jar files and cpp library file from the ASAP environment.

For more information on the SACT and the SADT, refer to the *ASAP Administration Guide*.

To uninstall the cartridge

1. Run the *uninstallCartridge* script. At the prompt, type:

```
uninstallCartridge NOK_SRRI_M12_1_0.<timestamp>.sar
```

2. The script prompts you for the values of the following WebLogic login parameters

Parameters	Default Value	Description
WEBLOGIC_HOST	loclahost	WebLogic host name
WEBLOGIC_PORT	7001	WebLogic port number
WEBLOGIC_USER	weblogic	WebLogic user name
WEBLOGIC_PASSWORD	weblogic	WebLogic password

The script unloads the NEP-NE configuration and CSDL-ASDL configuration from SARM database. It also removes the cartridge specific jar files and cpp library file from the ASAP environment.Installing the cartridge

Run the installation script installCartridge to install the cartridge. You will find this script under /Repository Directory. The script executes the following tasks:

- Configures the Nokia SRRi M12-specific NE using the SACT.
- Deploys the Nokia SRRi M12 cartridge service model (only if the Nokia SRRi M12 service model is not yet deployed) using the Service Activation Deployment Tool (SADT).
- Copies the Nokia SRRi M12-specific jar files and the cpp library file to the ASAP environment.
- Loads the sample work orders to the SRP database.

For information on the SACT and the SADT, refer to the *ASAP System Configuration and Management Guide*.

Testing the cartridge installation

To test this cartridge installation, you need to know about the network element (NE), services, and basic ASAP configuration. You may need to perform adjustments to provision a service for a specific NE, network, or connectivity configuration.

You can test the cartridge installation using one of the following methods:

- **Loopback mode**—does not actually connect to or send commands to the NE.
- **Live mode**—connects to and sends commands to a live NE.

Configuring loopback and live mode parameters

The following sections tell you which variables you must configure in ASAP.cfg and ne_config.xml to use the loopback and live testing modes.

Loopback mode

The following table details the parameters that you must set to test the cartridge in loopback mode.

Table 2: Loopback Mode Parameter Settings

Configuration Variable	Parameter Settings	Location
LOOPBACK_ON	1 (default setting)	ASAP.cfg

The following are the list of parameters for the sample NE configuration XML used by SACT for loopback testing:

Table 3: Communication parameters in ne_config XML

Parameters	Default Value	Description
HOST_IPADDR	127.0.0.1	Network IP address for the host NE.
l PORT	23	Telnet service port.
HOST_USERID	user For Java only.	User name.
HOST_PASSWORD	password For Java only.	Password.
OPEN_TIMEOUT	5	For Java only. Connection establishment timeout (in seconds).
READ_TIMEOUT	15	For Java only. Timeout for the telnet read functions (in seconds).

Table 3: Communication parameters in ne_config XML

Parameters	Default Value	Description
LOGIN_PROMPT	ENTER USERNAME <	For Java only. The login prompt expected in the telnet session.
PASSWORD_PROMPT	ENTER PASSWORD <	For Java only. The password prompt expected in the telnet session.
PROMPT	<	Provisioning prompt.
RESPONSELOG	TRUE	Flag to turn on or off response logging.
USER_EXIT_TYPES_FILE	/config/ NokiaSRRIUserExitTypesFile.cfg	The User Exit types file. This file is relative to ASAP_BASE directory.

Live mode

The following table details the parameters that you must set in ASAP.cfg to test the cartridge in live mode.

Table 4: Live Mode Parameter Settings

Configuration Variable	Parameter Settings	Location
LOOPBACK_ON	0	ASAP.cfg

Modifying NE_NOK-SRRI_M12-HOST.xml

Use the following procedure to modify NE_NOK-SRRI_M12-HOST.xml.

To modify NE_NOK-SRRI_M12-HOST.xml

1. Create a new source directory under /Repository Directory. You can give this directory any appropriate, meaningful name you want to.

   ```
   mkdir <new_source_directory>
   ```

2. Copy NOK_SRRI_M12_1_0.sar to this new source directory.

   ```
   cp NOK_SRRI_M12_1_0.sar/<new_source_directory>
   ```

3. Change directory to <new_source_directory>.

   ```
   cd <new_source_directory>
   ```

4. Un-jar NOK_SRRI_M12_1_0.sar This extracts the contents of the sar file.

```
jar xvf NOK_SRRI_M12_1_0.sar
```

5. Edit <new_source_directory>/Repository Directory/common/application_config/NE_NOK-SRRI_M12-HOST.xml in with the appropriate changes.
6. Create a new sar file at the <new_source_directory> level.

```
CreateSar $PWD
```

7. Uninstall the cartridge using NOK_SRRI_M12_1_0.sar in /Repository Directory (That is, use the original sar file that you copied in Step 2 above—see "Testing the cartridge installation" on page 9 for uninstallation instructions).
8. After you uninstall the cartridge, rename the sar file in /Repository Directory so you have a backup copy of it.
9. Copy the new sar file from <new_source_directory> to /Repository Directory.
10. Reinstall the cartridge (see "Installing the cartridge using scripts" on page 7 for installation instructions).

Testing the installation

The following procedure describes the steps required to test the cartridge installation in loopback mode. We recommend that you perform the initial cartridge installation test in loopback mode.

To test in loopback mode

1. Stop ASAP by typing the following command at the UNIX prompt:

```
stop_asap_sys
```

2. Ensure loop back mode is on. See "Loopback mode" on page 9 for a description of how to set the loop back parameter to "On".
3. Start ASAP by typing:

```
start_asap_sys
```

4. Send the sample work orders through the SRP Emulator by typing:

```
run_suite $SRP <ctrl_password> <suite name>
```

You can locate the suite names in /Repository Directory/sample_wo by typing:

```
grep   SUITE * | grep -v END
```

A list of all available suites appears.

To see the sample work orders, refer to Viewing the sample work orders, below.

For more information on the SRP Emulator, refer to the *ASAP System Configuration and Management Guide*.

5. Verify the status of the sample work orders by typing:

```
asap_utils l
```

All successful work orders return the 104 state.

To view the sample work orders provided with this cartridge, refer to the Nokia SRRi M12 cartridge source.

Viewing the sample work orders

You find the sample work orders under the sample_wo directory in the sar file. The following procedure describes how to view the sample work orders.

To view the sample work orders

1. If necessary, create a repository directory under /Repository Directory, copy the sar file to the new directory and un-jar the sar file, as described by Step 1 through Step 4 in "Modifying NE_NOK-SRRI_M12-HOST.xml" on page 10.
2. Locate and view the sample work order files under /Repository Directory.

Installation and deployment of the cartridge using Studio

Before installing the cartridge, ensure weblogic and ASAP are started and running.

The following are the steps involved:

1. Open Studio in design perspective. Choose **Import** from the **File** menu and select **Activation Archive (SAR)** under **Studio Wizards** to import the sar file. Browse for the path to the sar file and click **Finish**.
2. Create a new **Service Activation Project**.
3. Define a new **NE Entity**, based on the **NE Template** contained in the cartridge provided by Oracle.
4. Ensure that the primary pool of the newly created NE is different from the NE template primary pool. You can modify it, if necessary.
5. Ensure that the test work order provided with the cartridge targets the newly defined NE. If not, then modify the test work orders file(s).
6. Create a new **Activation Environment Project** from the **Studio** menu. (Use Studio help for more information).
7. Create **Activation Environment** inside the **Activation Environment Project** and configure the **Connection Details** tab with your Environment ID, Activation version and weblogic data.
8. Connect to your environment using the **Connect** button.

9. Select the **Cartridge** tab of the **Activation Environment** and click **Add** to add your projects to the environment. The cartridge and the newly created **Service Activation** should appear in the **Cartridges** list.
10. First Deploy the **Service Activation** (SA) project as follows:
    - On the **Cartridge** tab, select the necessary SA cartridge and press the **Deploy** button.
    - Select the **NEP Map** tab of the **Activation Environment**. Choose the necessary **NEP** server from the drop-down box of the **Network Element Processors**.(Use Studio help for more information).
    - Select the SA cartridge from the **Network Element Processor Map** and click the **Deploy** button.
11. Deploy the **NetworkActivation** (NA) cartridge provided by Oracle. (No NE information is to be deployed with this cartridge, therefore it isn't necessary to deploy the **NEP map** info).
12. Select the **NEP Map** tab of the **Activation Environment**. Choose the necessary **NEP** server from the drop-down box of the **Network Element Processors**. (Use Studio help for more information).
13. Verify the **SADT** console to confirm the installation.
14. Go to ASAP environment.
15. Copy studio_2-6_0.jar file to the $ASAP_BASE/lib directory.
16. Add ${ASAP_BASE}/lib/studio_2_6_0.jar to the CLASSPATH in the JInterpreter file under $ASAP_BASE/programs directory.
17. Restart ASAP in order to start working with the cartridge.

Uninstallation and Undeployment of the cartridge using Studio

The following are the steps involved:

1. Connect to your environment using the **Connect** button.
2. Select the necessary cartridge from the **Environment Cartridge** list in Studio and click the **Undeploy** button.
3. Verify the **Environment Cartridge** list. The check box with the name of the cartridge that is disabled should be unchecked.

Note:

Multiple cartridges may refer the same libraries like axis.jar while using more than one SOAP based cartridge in the same environment. Some of these libraries may be removed while un-installing any one of the cartridge which may lead other interface hanging.

To avoid this situation, the required libraries have to be manually copied as outlined in the steps bellow:

1. Compare ASAP_BASE/lib folder with "NOK_SRRI_M12_1_0.sar\lib" for missing libraries

2. Copy the missing libraries from the "NOK_SRRI_M12_1_0.sar\lib" into ASAP_BASE/lib folder

4. 3. Restart ASAP Service

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Atomic Service Description Layer (ASDL) Commands

ASDL commands represent a set of atomic actions that ASAP can perform on a network element (NE). ASAP can combine ASDLs to create meaningful services (CSDLs) within a cartridge.

This chapter presents detailed information on the ASDL parameters that we provide with this cartridge. The following table lists and describes the type of parameter information that is included.

Table 5: ASDL parameter information

Item	Description
Parameter Name	Identifies the parameter that is configured for the stated service.
Description	Describes the parameter.
Range	Describes or lists the range of values that can be used to satisfy this parameter.
Default Value	Configures a default value for the parameter so that it is not mandatory for the upstream system to provide a value.
Type	Indicates one of the following parameter types: ◆ S—Scalar, specifies the parameter label transmitted on the ASDL command. ◆ C—Compound, specifies the base name of the compound parameter transmitted on the ASDL command. ◆ I—Indexed, specifies the base name of the ASDL command transmitted on the ASDL command

Table 5: ASDL parameter information

Item	Description
Class	Indicates one of the following parameter classifications: ◆ R—Required scalar parameter ◆ O—Optional scalar parameter ◆ C—Required compound parameter ◆ N—Optional compound parameter ◆ M—Mandatory indexed parameter ◆ I—Optional indexed parameter ◆ S—Parameter count

For a detailed description of the Required and Optional parameter classifications, refer to the *ASAP System Configuration and Management Guide.*

This cartridge provides the following ASDL commands:

- A_NOK-SRRI_M12_CREATE_NUMBER
- A_NOK-SRRI_M12_DELETE_NUMBER
- A_NOK-SRRI_M12_MODIFY_NUMBER
- A_NOK-SRRI_M12_QUERY_NUMBER

A_NOK-SRRI_M12_CREATE_NUMBER

This service creates an entry in the SRR (Service Routing Register) database. The entry consists of a single number or number range, and the data related to the entry. It is implemented by the Java method

com.mslv.activation.cartridge.nok.srri.m12.number.create.generated.CreateNumberProxy.execute

Table 6: A_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
SINGLE_NUMBER	This parameter specifies a single number to be stored in the SRR number database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range to be stored in the SRR range database.			S	O
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_CATEGORY	This parameter specifies the category of the given number or number range.			S	R
DIRECTION_INDEX	This parameter is used to define the direction index.			S	R
PRIMARY_ASSOCIATION	This parameter specifies the routing info association for the primary routing info.			S	O
PRIMARY_NUMBERING_PLAN	This parameter specifies the numbering plan for the primary routing info.			S	O
PRIMARY_NUMBER_TYPE	This parameter specifies the type of number for the primary routing info.			S	O
PRIMARY_ROUTING_NUMBER	This parameter specifies the primary routing number.			S	O
PRIMARY_START_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of removed digits.			S	O

Table 6: A_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
PRIMARY_NUMBER_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the number of removed digits.			S	O
PRIMARY_START_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of added digits.			S	O
PRIMARY_NUMBER_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the digits to be added.			S	O
ADDITIONAL_ASSOCIATION	This parameter specifies the routing info association for the additional routing info.			S	O
ADDITIONAL_NUMBERING_PLAN	This parameter specifies the numbering plan for the additional routing info.			S	O
ADDITIONAL_NUMBER_TYPE	This parameter specifies the type of number for the additional routing info.			S	O
ADDITIONAL_ROUTING_NUMBER	This parameter specifies the additional routing number.			S	O
ADDITIONAL_START_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of removed digits.			S	O
ADDITIONAL_NUMBER_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the number of removed digits.			S	O
ADDITIONAL_START_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of added digits.			S	O

Table 6: A_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
ADDITIONAL_NUMBER_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the digits to be added.			S	O
NUMBER_RANGE_END	This parameter specifies the number range to be stored in the SRR range database.			S	O
MCLI	Host Clli.			S	R

MML Commands

M1C: (<single number> | <number range>...) ,

[<numbering plan> | E164 def] :

CAT = <number category> ,

DIRE = <direction index> :

[PASS = <association of primary info> | N def] ,

[PNP = <numbering plan for primary info> | E164 def] ,

[PTON = <type of number for primary info> | INT def] ,

(PRN = <primary routing number> |

[[PSRD = <start of removed digits for primary info> | 0 def] |

[PNRD = <number of removed digits for primary info> | 0 def] |

[PSAD = <start of added digits for primary info> | 0 def] |

PDIG = <digits to be added for primary info>]...) :

[AASS = <association of additional info> | NA def] ,

[ANP = <numbering plan for additional info> | E164 def] ,

[ATON = <type of number for additional info> | INT def] ,

[ARN = <additional routing number> |

[[ASRD = <start of removed digits for additional info> | 0 def] |

[ANRD = <number of removed digits for additional info> | 0 def] |

[ASAD = <start of added digits for additional info> | 0 def] |

ADIG = <digits to be added for additional info>]...] ;

Number Range:

You can give the number range by giving only a single truncated number (for example 123, where all numbers

starting with 123 are found from the range) or by giving two truncated numbers separated by &&, for example:

12345&&12378. When the number range is stored into the database, the end of the first number is filled with zeroes and

the end of the last number is filled with nines. The first number in range must be smaller than the last. The type of this

number is always INT.

Examples:

1. Create an entry to the SRR number database. The stored number is

358401122334, the numbering plan is e.164 (ISDN), and the direction

index is 213. The given number is associated with routing number

358401234 as the primary routing info and with modification rule

additional routing info. The primary routing info is stored with an 1:1

association and the additional info with an 1:N association. After the

modification of the additional rule, the number is 0501122334 and number

type has changed to national number.

M1C:358401122334:CAT=IN,DIRE=213:
PASS=1,PRN=358401234:AASS=N,ATON=NAT,ASRD=1,ANRD=4,ASAD=1,ADIG=05;

2. Create an entry to the SRR number range database. The range consists of

truncated numbers ranging from 358401000000 to 358402000000. The

numbering plan is e.164 (ISDN), the number category is ported out, and

the direction index is 146. The given range is associated with a

modification rule as primary routing info. The default primary routing

association is 1:N. Additional routing info is not given.

M1C:,358401000000&&358402000000:CAT=OUT,DIRE=146:PSRD=1,PNRD=3,PSAD=1,
PDIG=0;

3. Create an entry to the SRR number range database. The range consists of

all numbers starting with 87935840123. The numbering plan is e.212

(IMSI), the number category is ported out and the direction index is 76.

The given range is associated with routing number 358401234 as the primary routing info and it is stored with the 1:1 association. Additional routing info is not given.

M1C:,87935840123,E212:CAT=OUT,DIRE=76:PASS=1,PRN=358401234;

4. Create an entry to the SRR number database. The stored number is 358401234567 , the number category is ported out and the direction index is 126. The default primary routing info is a modification rule which does not modify the given number at all. Additional routing info is not given.

M1C:,87935840123,E212:CAT=OUT,DIRE=76:PASS=1,

PRN=358401234;

If an error occurs, the system display a general MML semamntic error message.

Execution error messages:

/*** NUMBER ALREADY EXISTS ***/ - The given number already exists in the single number database.

Use the M1M command to modify the existing entry.

/*** OVERLAPPING RANGES ***/ - The given range overlaps with an existing range.

Use the M1O command to display the existing number ranges.

The system may also display a general MML execution message

Output Parameters

Return as CSDL parameter:

A_NOK-SRRI_M12_CREATE_NUMBER_UDET=<user defined exit type>

Return as info parameter:

A_NOK-SRRI_M12_CREATE_NUMBER_RETURN_INFO=<NE error description>

A_NOK-SRRI_M12_DELETE_NUMBER

This service deletes number entries from the SRR (Service Routing Register) databases. It is implemented by the Java method

com.mslv.activation.cartridge.nok.srri.m12.number.delete.generated.DeleteNumberProxy.execute

Table 7: A_NOK-SRRI_M12_DELETE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host Clli.			S	R
SINGLE_NUMBER	This parameter specifies a single number to be deleted in the SRR number database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range start to be deleted in the SRR range database.			S	O
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_RANGE_END	This parameter specifies the number range end to be deleted in the SRR range database.			S	O

MML Commands

M1D: (<single number> | <number range>...) ,

[<numbering plan> | E164 def] ;

Number Range:

You can give the number range by giving only a single truncated number (for example 123, where all numbers

starting with 123 are found from the range) or by giving two truncated numbers separated by &&, for example:

12345&&12378. When the number range is stored into the database, the end of the first number is filled with zeroes and

the end of the last number is filled with nines. The first number in range must be smaller than the last. The type of this

number is always INT.

Examples:

1. Delete the number 358401122334 from the SRRi number database.

MID:358401122334;

2. Delete the range 358401000000 - 358402000000 the SRRi number range database.

M1D:,358401000000&&358402000000;

3. Delete the truncated range from the SRRi number range database. Numbering plan is E212.

M1D:,38540112,E212;

If an error occurs, the system display a general MML semamntic error message.

Execution error messages:

/*** NUMBER IS NOT FOUND FROM DB ***/ - the given number canno be found from the databse.

/*** RANGE IS NOT FOUND FROM DB ***/ - The given range cannot be found from the database.

Output Parameters

Return as CSDL parameter:
A_NOK-SRRI_M12_DELETE_NUMBER_UDET=<user defined exit type>
Return as info parameter:
A_NOK-SRRI_M12_DELETE_NUMBER_RETURN_INFO=<NE error description>

A_NOK-SRRI_M12_MODIFY_NUMBER

This service modifies number entry related data in the SRR (Service Routing Register) database. It is implemented by the Java method **com.mslv.activation.cartridge.nok.srri.m12.number.modify.generated.ModifyNumberProxy.execute**

Table 8: A_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host Clli.			S	R
SINGLE_NUMBER	This parameter specifies a single number to be modified in the SRR number database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range to be modified in the SRR range database.			S	O

Table 8: A_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_RANGE_END	This parameter specifies the number range to be stored in the SRR range database.			S	O
NUMBER_CATEGORY	This parameter specifies the category of the given number or number range.			S	O
DIRECTION_INDEX	This parameter is used to define the direction index.			S	O
PRIMARY_ASSOCIATION	This parameter specifies the routing info association for the primary routing info.			S	O
PRIMARY_NUMBERING_PLAN	This parameter specifies the numbering plan for the primary routing info.			S	O
PRIMARY_NUMBER_TYPE	This parameter specifies the type of number for the primary routing info.			S	O
PRIMARY_ROUTING_NUMBER	This parameter specifies the primary routing number.			S	O
PRIMARY_START_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of removed digits.			S	O
PRIMARY_NUMBER_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the number of removed digits.			S	O
PRIMARY_START_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of added digits.			S	O

Table 8: A_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
PRIMARY_NUMBER_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the digits to be added.			S	O
ADDITIONAL_ASSOCIATION	This parameter specifies the routing info association for the additional routing info.			S	O
ADDITIONAL_NUMBERING_PLAN	This parameter specifies the numbering plan for the additional routing info.			S	O
ADDITIONAL_NUMBER_TYPE	This parameter specifies the type of number for the additional routing info.			S	O
ADDITIONAL_ROUTING_NUMBER	This parameter specifies the additional routing number.			S	O
ADDITIONAL_START_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of removed digits.			S	O
ADDITIONAL_NUMBER_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the number of removed digits.			S	O
ADDITIONAL_START_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of added digits.			S	O
ADDITIONAL_NUMBER_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the digits to be added.			S	O

MML Commands

M1M: (<single number> | <number range>...) ,

[<numbering plan> | E164 def] :

CAT = <number category> |

DIRE = <direction index>] ... :

[PASS = <association of primary info> | NA def] ,

[PNP = <numbering plan for primary info> | E164 def] ,

[PTON = <type of number for primary info> | INT def] ,

[PRN = <primary routing number> |

[[PSRD = <start of removed digits for primary info> | 0 def] |

[PNRD = <number of removed digits for primary info> | 0 def] |

[PSAD = <start of added digits for primary info> | 0 def] |

PDIG = <digits to be added for primary info>]...] :

[AASS = <association of additional info> | NA def] ,

[ANP = <numbering plan for additional info> | E164 def] ,

[ATON = <type of number for additional info> | INT def] ,

[ARN = <additional routing number> |

[[ASRD = <start of removed digits for additional info> | 0 def] |

[ANRD = <number of removed digits for additional info> | 0 def] |

[ASAD = <start of added digits for additional info> | 0 def] |

[ADIG = <digits to be added for additional info>]...] ;

Number Range:

You can give the number range by giving only a single truncated number (for example 123, where all numbers

starting with 123 are found from the range) or by giving two truncated numbers separated by &&, for example:

12345&&12378. When the number range is stored into the database, the end of the first number is filled with zeroes and

the end of the last number is filled with nines. The first number in range must be smaller than the last. The type of this

number is always INT.

Examples:

1. Modify an entry in the SRR number database. The modified number is

358401122334. The new direction index is 67 and the new primary routing

info is a routing number 358401234. The new primary routing info is

stored with an 1:N association. Additional routing info is not given.

M1M:358401122334:DIRE=67:PASS=N,PRN=358401234;

2. Modify an entry in the SRR number range database. The modified entry is a truncated range 3584011. The new primary routing info is a modification rule, which is stored with an 1:1 association. The numbering plan of the new primary routing info is E.212. Additional routing info is not given.

M1M:,3584011::PASS=1,PNP=E212,PSRD=1,PNRD=8,PSAD=1,PDIG=879358400;

3. Modify an entry in the SRR number range database. The modified entry is a range 358401111-358402222 with e.212 numbering plan. The new additional routing info is a modification rule. Primary routing info is not given.

M1M:,358401111&&358402222,E212:::AASS=N,ASRD=1,ANRD=5,ASAD=1,ADIG=358400;

If an error occurs, the system display a general MML semamntic error message.

Execution error messages:

/*** NUMBER IS NOT FOUND FROM DB ***/ - The given number cannot be found from the database.

/*** RANGE IS NOT FOUND FROM DB ***/ - The given range cannot be found from the database.

Output Parameters

Return as CSDL parameter:

A_NOK-SRRI_M12_MODIFY_NUMBER_UDET=<user defined exit type>

Return as info parameter:

A_NOK-SRRI_M12_MODIFY_NUMBER_RETURN_INFO=<NE error description>

A_NOK-SRRI_M12_QUERY_NUMBER

This service displays the number of entries or the data related to the given number from the SRRi number and number range databases. It is implemented by the Java method

com.mslv.activation.cartridge.nok.srri.m12.number.query.generated.QueryNumberProxy.execute.

Table 9: A_NOK-SRRI_M12_QUERY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host Clli.			S	R
SINGLE_NUMBER	This parameter specifies a single number to be searched in the SRR number database.			S	O
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
DATABASE	This parameter specifies the database where the given number's routing information is searched from.			S	O

MML Commands

M1O: [<number>] ,

[<numbering plan> | E164 def] :

[DB = <database> | B def] ;

Examples:

1. Display the routing information of number 35801223344 in both SRRi databases.

M1O:358401223344;

2. Display the number of entries in both SRRi databases.

M1O;

3. Display the routing information of number 3584076544321 with an e.212 numbering plan in the SRRi number range database.

M1O:3584076544321,,E212:DB=R;

4. Display the routing information of number 3584076544321 in both SRR databases.

M1O:3584076544321;

If an error occurs, the system display a general MML semamntic error message.

Execution error messages:

/*** NUMBER IS NOT FOUND FROM DB ***/ - The given number cannot be found from the number database.

/*** RANGE IS NOT FOUND FROM DB ***/ - The given range cannot be found from the number range database

Output Parameters

Return as CSDL parameter:

A_NOK-SRR_M12_QUERY_NUMBER_UDET=<user defined exit type>

Return as info parameter:

A_NOK-SRR_M12_QUERY_NUMBER_RETURN_INFO=<NE error description>.

If query exit type = SUCCEED, and a user provide SINGLE_NUMBER, following return parameters are returned if value exists:

1. SINGLE_NUMBER
2. NUMBERING_PLAN
3. NUMBER_RANGE_START
4. NUMBER_RANGE_END
5. NUM_DATA.NUMBER_CATEGORY
6. NUM_DATA.DIRECTION_INDEX
7. NUM_DATA.DIRECTION_NAME
8. NUM_DATA.PRIMARY_ASSOCIATION
9. NUM_DATA.PRIMARY_ROUTING_NUMBER
10. NUM_DATA.PRIMARY_NUMBER_TYPE
11. NUM_DATA.PRIMARY_NUMBERING_PLAN
12. NUM_DATA.PRIMARY_START_REMOVED_DIGITS
13. NUM_DATA.PRIMARY_NUMBER_REMOVED_DIGITS
14. NUM_DATA.PRIMARY_START_ADDED_DIGITS
15. NUM_DATA.PRIMARY_NUMBER_ADDED_DIGITS
16. NUM_DATA.ADDITIONAL_ASSOCIATION

17. NUM_DATA.ADDITIONAL_ROUTING_NUMBER
18. NUM_DATA.ADDITIONAL_NUMBER_TYPE
19. NUM_DATA.ADDITIONAL_NUMBERING_PLAN
20. NUM_DATA.ADDITIONAL_START_REMOVED_DIGITS
21. NUM_DATA.ADDITIONAL_NUMBER_REMOVED_DIGITS
22. NUM_DATA.ADDITIONAL_START_ADDED_DIGITS
23. NUM_DATA.ADDITIONAL_NUMBER_ADDED_DIGITS
24. RANGE_DATA.NUMBER_CATEGORY
25. RANGE_DATA.DIRECTION_INDEX
26. RANGE_DATA.DIRECTION_NAME
27. RANGE_DATA.PRIMARY_ASSOCIATION
28. RANGE_DATA.PRIMARY_ROUTING_NUMBER
29. RANGE_DATA.PRIMARY_NUMBER_TYPE
30. RANGE_DATA.PRIMARY_NUMBERING_PLAN
31. RANGE_DATA.PRIMARY_START_REMOVED_DIGITS
32. RANGE_DATA.PRIMARY_NUMBER_REMOVED_DIGITS
33. RANGE_DATA.PRIMARY_START_ADDED_DIGITS
34. RANGE_DATA.PRIMARY_NUMBER_ADDED_DIGITS
35. RANGE_DATA.ADDITIONAL_ASSOCIATION
36. RANGE_DATA.ADDITIONAL_ROUTING_NUMBER
37. RANGE_DATA.ADDITIONAL_NUMBER_TYPE
38. RANGE_DATA.ADDITIONAL_NUMBERING_PLAN
39. RANGE_DATA.ADDITIONAL_START_REMOVED_DIGITS
40. RANGE_DATA.ADDITIONAL_NUMBER_REMOVED_DIGITS
41. RANGE_DATA.ADDITIONAL_START_ADDED_DIGITS
42. RANGE_DATA.ADDITIONAL_NUMBER_ADDED_DIGITSRANGE

If query exit type = SUCCEED, and a user did not provide SINGLE_NUMBER, following return parameters are returned if value exists:

1. NUMBER_RANGE_TOTAL
2. SINGLE_NUMBER_TOTAL

and for each database which appears in the query report, database name as CSDL label and a number as CSDL parameter value

User exit types

- The cartridge uses NokiaSRRIUserExitTypesFile.cfg file for defining the pattern to be looked up in the response message
- The search pattern used for the user defined exit type will be the result code for success and failure cases returned by switch. And the match will be exact match.
- User also should deploy deploy_user_err.sql file in SARM database to set UDET and ASAP exit base type.

Deploy_User_err.sql

Definition of the stored procedures:

int SSP_del_err_type(<User Exit Type> [, <ASDL Command Name>])

where ASDL Command Name is optional

int SSP_new_err_type(<User Exit Type>, <Base Exit Type> [, <Description>] [, <ASDL Command Name>])

where Description and ASDL Command Name are optional

*/

set serveroutput on

var retval number

exec :retval := SSP_del_err_type('COMMAND_EXECUTED');

exec :retval := SSP_new_err_type('COMMAND_EXECUTED', 'SUCCEED', 'Command Succeed');

print :retval;

exec :retval := SSP_del_err_type('NUMBER_NOT_FOUND_DB');

exec :retval := SSP_new_err_type('NUMBER_NOT_FOUND_DB', 'FAIL', 'NUMBER IS NOT FOUND FROM DB');

print :retval;

exec :retval := SSP_del_err_type('RANGE_NOT_FOUND_DB');

exec :retval := SSP_new_err_type('RANGE_NOT_FOUND_DB', 'FAIL', 'RANGE IS NOT FOUND FROM DB');

print :retval;

exec :retval := SSP_del_err_type('NUMBER_ALREADY_EXIST');

exec :retval := SSP_new_err_type('NUMBER_ALREADY_EXIST', 'FAIL', 'NUMBER ALREADY EXISTS');

print :retval;

exec :retval := SSP_del_err_type('OVERLAPPING_RANGES');

exec :retval := SSP_new_err_type('OVERLAPPING_RANGES', 'FAIL', 'OVERLLAPING RANGES');

print :retval;

exec :retval := SSP_del_err_type('NO_MATCH');

exec :retval := SSP_new_err_type('NO_MATCH', 'FAIL', 'NO_MATCH found');

print :retval;

exec :retval := SSP_del_err_type('NUMBER_NOT_FOUND');

exec :retval := SSP_new_err_type('NUMBER_NOT_FOUND', 'FAIL', 'User should provide either SINGLE_NUMBER or NUMBER_RANGE_START value');

print :retval;

Undeploy_User_err.sql

Definition of the stored procedures:

int SSP_del_err_type(<User Exit Type> [, <ASDL Command Name>])

where ASDL Command Name is optional

int SSP_new_err_type(<User Exit Type>, <Base Exit Type> [, <Description>] [, <ASDL Command Name>])

where Description and ASDL Command Name are optional

*/

set serveroutput on

var retval number

exec :retval := SSP_del_err_type('COMMAND_EXECUTED');

print :retval;

exec :retval := SSP_del_err_type('NUMBER_NOT_FOUND_DB');

print :retval;

exec :retval := SSP_del_err_type('RANGE_NOT_FOUND_DB');

print :retval;

exec :retval := SSP_del_err_type('NUMBER_ALREADY_EXIST');

```
print :retval;
exec :retval := SSP_del_err_type( 'OVERLAPPING_RANGES');
print :retval;
exec :retval := SSP_del_err_type( 'NO_MATCH');
print :retval;
exec :retval := SSP_del_err_type( 'NUMBER_NOT_FOUND');
print :retval;
```

4

Service Definition

The Nokia SRRi M12 cartridge contains a set of CSDLs that map to one or more ASDL commands. You can also create additional CSDLs that map to existing and newly-created ASDLs. An upstream system can assemble any of these CSDL commands onto a work order for provisioning.

This chapter presents detailed information on the CSDL parameters that we provide in this cartridge. The following table lists and describes the type of parameter information that is included.

Table 10: CSDL parameter information

Item	Description
Parameter Name	Identifies the parameter that is configured for the stated service.
Description	Describes the parameter.
Range	Describes or lists the range of values that can be used to satisfy this parameter.
Default Value	Configures a default value for the parameter so that it is not mandatory for the upstream system to provide a value.
Type	Indicates one of the following parameter types: ◆ S—Scalar, specifies the parameter label transmitted on the CSDL command. ◆ C—Compound, specifies the base name of the compound parameter transmitted on the CSDL command. ◆ I—Indexed, specifies the base name of the CSDL command transmitted on the CSDL command

Table 10: CSDL parameter information

Item	Description
Class	Indicates one of the following parameter classifications: ◆ R—Required scalar parameter ◆ O—Optional scalar parameter ◆ C—Required compound parameter ◆ N—Optional compound parameter ◆ M—Mandatory indexed parameter ◆ I—Optional indexed parameter ◆ S—Parameter count

For a detailed description of the Required and Optional parameter classifications, refer to the *ASAP System Configuration and Management Guide.*

This cartridge provides the following CSDL Commands:

- C_NOK-SRRI_M12_CREATE_NUMBER
- C_NOK-SRRI_M12_DELETE_NUMBER
- C_NOK-SRRI_M12_MODIFY_NUMBER
- C_NOK-SRRI_M12_QUERY_NUMBER

C_NOK-SRRI_M12_CREATE_NUMBER

This service creates number entries in the SRR (Service Routing Register) network element number entrie in the SRR network element.

Table 11: C_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
ADDITIONAL_ASSOCIATION	This parameter specifies the routing info association for the additional routing info.			S	O
ADDITIONAL_NUMBERING_PLAN	This parameter specifies the numbering plan for the additional routing info.			S	O
ADDITIONAL_NUMBER_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the digits to be added.			S	O

Table 11: C_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
ADDITIONAL_NUMBER_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the number of removed digits.			S	O
ADDITIONAL_NUMBER_TYPE	This parameter specifies the type of number for the additional routing info.			S	O
ADDITIONAL_ROUTING_NUMBER	This parameter specifies the additional routing number.			S	O
ADDITIONAL_START_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of added digits.			S	O
ADDITIONAL_START_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of removed digits.			S	O
DIRECTION_INDEX	This parameter is used to define the direction index.			S	R
NE_ID_NOK-SRRI	Host Clli.			S	R
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_CATEGORY	This parameter specifies the category of the given number or number range..			S	R
NUMBER_RANGE_END	This parameter specifies the number range to be stored in the SRR range database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range to be stored in the SRR range database.			S	O

Table 11: C_NOK-SRRI_M12_CREATE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
PRIMARY_ASSOCIATION	This parameter specifies the routing info association for the primary routing info.			S	O
PRIMARY_NUMBERING_PLAN	This parameter specifies the numbering plan for the primary routing info.			S	O
PRIMARY_NUMBER_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the digits to be added.			S	O
PRIMARY_NUMBER_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the number of removed digits.			S	O
PRIMARY_NUMBER_TYPE	This parameter specifies the type of number for the primary routing info.			S	O
PRIMARY_ROUTING_NUMBER	This parameter specifies the primary routing number.			S	O
PRIMARY_START_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of added digits.			S	O
PRIMARY_START_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of removed digits.			S	O
SINGLE_NUMBER	This parameter specifies a single number to be stored in the SRR number database.			S	O

Mapping to ASDLs

The following table illustrates the CSDL to ASDL mapping for this service.

Table 12: CSDL to ASDL Mapping

CSDL	ASDL
C_NOK-SRRI_M12_CREATE_NUMBER	A_NOK-SRRI_M12_CREATE_NUMBER

C_NOK-SRRI_M12_DELETE_NUMBER

This service deletes number entries in the SRR (Service Routing Register) network element number entrie in the SRR network element.

Table 13: C_NOK-SRRI_M12_DELETE_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
NE_ID_NOK-SRRI	Host Clli.			S	R
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_RANGE_END	This parameter specifies the number range end to be deleted in the SRR range database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range start to be deleted in the SRR range database.			S	O
SINGLE_NUMBER	This parameter specifies a single number to be deleted in the SRR number database.			S	O

Mapping to ASDLs

The following table illustrates the CSDL to ASDL mapping for this service.

Table 14: CSDL to ASDL Mapping

CSDL	ASDL
C_NOK-SRRI_M12_DELETE_NUMBER	A_NOK-SRRI_M12_DELETE_NUMBER

C_NOK-SRRI_M12_MODIFY_NUMBER

This service modify number entries in the SRR (Service Routing Register) network element number entrie in the SRR network element.

Table 15: C_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
ADDITIONAL_ASSOCIATION	This parameter specifies the routing info association for the additional routing info.			S	O
ADDITIONAL_NUMBERING_PLAN	This parameter specifies the numbering plan for the additional routing info.			S	O
ADDITIONAL_NUMBER_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the digits to be added.			S	O
ADDITIONAL_NUMBER_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the number of removed digits.			S	O
ADDITIONAL_NUMBER_TYPE	This parameter specifies the type of number for the additional routing info.			S	O
ADDITIONAL_ROUTING_NUMBER	This parameter specifies the additional routing number.			S	O
ADDITIONAL_START_ADDED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of added digits.			S	O
ADDITIONAL_START_REMOVED_DIGITS	This parameter is a part of the additional modification rule and specifies the start point of removed digits.			S	O
DIRECTION_INDEX	This parameter is used to define the direction index.			S	O
NE_ID_NOK-SRRI	Host Clli.			S	R

Table 15: C_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O
NUMBER_CATEGORY	This parameter specifies the category of the given number or number range.			S	O
NUMBER_RANGE_END	This parameter specifies the number range to be stored in the SRR range database.			S	O
NUMBER_RANGE_START	This parameter specifies the number range to be modified in the SRR range database.			S	O
PRIMARY_ASSOCIATION	This parameter specifies the routing info association for the primary routing info.			S	O
PRIMARY_NUMBERING_PLAN	This parameter specifies the numbering plan for the primary routing info.			S	O
PRIMARY_NUMBER_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the digits to be added.			S	O
PRIMARY_NUMBER_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the number of removed digits.			S	O
PRIMARY_NUMBER_TYPE	This parameter specifies the type of number for the primary routing info.			S	O
PRIMARY_ROUTING_NUMBER	This parameter specifies the primary routing number.			S	O
PRIMARY_START_ADDED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of added digits.			S	O

Table 15: C_NOK-SRRI_M12_MODIFY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
PRIMARY_START_REMOVED_DIGITS	This parameter is a part of the primary modification rule and specifies the start point of removed digits.			S	O
SINGLE_NUMBER	This parameter specifies a single number to be modified in the SRR number database.			S	O

Mapping to ASDLs

The following table illustrates the CSDL to ASDL mapping for this service.

Table 16: CSDL to ASDL Mapping

CSDL	ASDL
C_NOK-SRRI_M12_MODIFY_NUMBER	A_NOK-SRRI_M12_MODIFY_NUMBER

C_NOK-SRRI_M12_QUERY_NUMBER

This service queries output number entries in the SRR (Service Routing Register) network element number entrie in the SRR network element.

Table 17: C_NOK-SRRI_M12_QUERY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
DATABASE	This parameter specifies the database where the given number's routing information is searched from.			S	O
NE_ID_NOK-SRRI	Host Clli.			S	R
NUMBERING_PLAN	This parameter specifies the numbering plan of the given number or number range.			S	O

Table 17: C_NOK-SRRI_M12_QUERY_NUMBER

Parameter Name	Description	Range	Default Value	Type	Class
SINGLE_NUMBER	This parameter specifies a single number to be searched in the SRR number database.			S	O

Mapping to ASDLs

The following table illustrates the CSDL to ASDL mapping for this service.

Table 18: CSDL to ASDL Mapping

CSDL	ASDL
C_NOK-SRRI_M12_QUERY_NUMBER	A_NOK-SRRI_M12_QUERY_NUMBER

5

Configuring ASAP to Support Additional NE Instances

You can configure ASAP to support the mtbpsx06 - NEP configuration using the Service Activation Configuration Tool (SACT). Refer to the *ASAP System Configuration and Management Guide* fore more information.

Below is an example of the Activation.Configuration.XML file for the Nokia SRRi M12 cartridge.

```
<?xml version="1.0" encoding="UTF-8"?>
<activationConfig xmlns="http://www.metasolv.com/ServiceActivation/2003/
ActivationConfig" xmlns:cfg="http://www.mslv.com/studio/activation/model/
config" xmlns:route="http://www.mslv.com/studio/activation/model/routing"
xmlns:sm="http://www.metasolv.com/ServiceActivation/2003/ServiceModel"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <connectionPool name="SRRIPOOL">
        <device name="SRRI_Conn1">
            <environment/>
            <lineType>TELNET_CONNECTION</lineType>
            </device>
        <device name="SRRI_Conn2">
            <environment/>
            <lineType>TELNET_CONNECTION</lineType>
        </device>
        <device name="SRRI_Conn3">
            <environment/>
            <lineType>TELNET_CONNECTION</lineType>
        </device>
    </connectionPool>
    <element name="NE_NOK-SRRI_M12-HOST">
        <vendor>NOK</vendor>
        <technology>SRRI</technology>
        <softwareLoad>M12</softwareLoad>
        <nepServerName>$NEP</nepServerName>
        <primaryPool>SRRIPOOL</primaryPool>
        <maximumConnections>3</maximumConnections>
        <dropTimeout>1</dropTimeout>
        <spawnThreshold>6</spawnThreshold>
        <killThreshold>3</killThreshold>
        <routingElement name="NE_NOK-SRRI_M12-HOST"/>
```

```
<communicationParameter>
    <label>HOST_IPADDR</label>
    <value>
        <value>127.0.0.1</value>
        </value>
        <description>Network IP address for the host NE.</description>
        <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>PORT</label>
    <value>
        <value>23</value>
    </value>
    <description>Telnet service port.</description>
    <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>HOST_USERID</label>
    <value>
        <value>user</value>
    </value>
    <description>For Java only. User name.</description>
    <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>HOST_PASSWORD</label>
    <value>
        <value>password</value>
    </value>
    <description>For Java only. Password.</description>
    <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>OPEN_TIMEOUT</label>
    <value>
        <value>5</value>
    </value>
    <description>For Java only. Connection establishment timeout (in
    seconds).</description>
    <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>READ_TIMEOUT</label>
    <value>
        <value>15</value>
    </value>
    <description>For Java only. Timeout for the telnet read functions
    (in seconds).</description>
    <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
    <label>LOGIN_PROMPT</label>
```

```
            <value>
               <value>ENTER USERNAME &lt;</value>
            </value>
            <description>For Java only. The login prompt expected in the telnet
            session.</description>
            <lineType>TELNET_CONNECTION</lineType>
         </communicationParameter>
         <communicationParameter>
            <label>PASSWORD_PROMPT</label>
            <value>
               <value>ENTER PASSWORD &lt;</value>
            </value>
            <description>For Java only. The password prompt expected in the
            telnet session.</description>
            <lineType>TELNET_CONNECTION</lineType>
         </communicationParameter>
         <communicationParameter>
            <label>PROMPT</label>
            <value>
               <value>&lt;</value>
            </value>
               <description>Provisioning prompt</description>
               <lineType>TELNET_CONNECTION</lineType>
         </communicationParameter>
         <communicationParameter>
            <label>RESPONSELOG</label>
            <value>
               <value>TRUE</value>
            </value>
            <description>Flag to turn on or off response logging</description>
            <lineType>TELNET_CONNECTION</lineType>
         </communicationParameter>
         <communicationParameter>
            <label>USER_EXIT_TYPES_FILE</label>
            <value>
               <value>/config/NokiaSRRIUserExitTypesFile.cfg</value>
            </value>
            <description>The User Exit types file. This file is relative to
            ASAP_BASE directory</description>
            <lineType>TELNET_CONNECTION</lineType>
         </communicationParameter>
      </element>
</activationConfig>
```

Extracting source files

Before you can access an XML file to modify it, you must extract it from the sar file. Use the following procedure to extract source files from the sar file.

To extract source files

1. If necessary, create a repository directory under /Sar dir, copy the .sar file to the new directory and un-jar the sar file, as described by Step 1 through Step 4 in "Modifying NE_NOK-SRRI_M12-HOST.xml" on page 10.
2. After you un-jar the sar file, you can access the XML files.

Loading a new XML file

When you finish modifying an XML, you must create a new sar file, then restart the cartridge using the new file.

Follow the instructions in "Modifying NE_NOK-SRRI_M12-HOST.xml" on page 10 for directions on how to load a new XML file.