Oracle® Communications ASAP

LUCENT_HLR_1_0_WIRELESS_1_0 Cartridge Guide

First Edition

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Oracle Communications LUCENT_HLR_1_0_WIRELESS_1_0 Cartridge Guide, First Edition

Contents

1 Cartridge Overview

2 Atomic Service Description Layer (ASDL) Commands

3 Service Definition

1

Cartridge Overview

This guide provides a detailed description of the LUCENT_HLR_1_0_WIRELESS_1_0 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 Oracle Communications ASAP (ASAP) as it pertains to the use of this cartridge. It is not intended to be a complete ASAP reference guide. For additional information when using this cartridge, refer to the ASAP documentation.

The LUCENT_HLR_1_0_WIRELESS_1_0 cartridge provides the ASAP service configuration and network element (NE) interface to activate subscriber services on LUHLR NEs.

Hardware and Software Requirements

The following sections contain the high-level software and hardware environment requirements for provisioning subscriber services on authentication center:

- NE Interface
- ASAP Version

NE Interface

The following database tables in Service Activation Request Manager (SARM) are configured to support the NE configuration:

- tbl_host_clli
- tbl_clli_route
- tbl_comm_param
- tbl_resource_pool
- tbl_ne_config

ASAP Version

This cartridge was developed and tested using ASAP version 7.0.2.

For more information on the operating environment of this ASAP version, refer to the ASAP version 7.0.2 Release Notes.

Connecting to the NE

The cartridge uses Telnet/SSH protocol.

Services, Features, and Options

This cartridge supports the following services:

Table 1–1 Supported Services

Service	Description
C_LU-HLR_1-0_ADD_AUC	Adds an authentication code.
C_LU-HLR_1-0_DEL_AUC	Deletes an authentication code.
C_LU-HLR_1-0_ADD_FEAT	Adds a feature to the subscriber.
C_LU-HLR_1-0_DEL_FEAT	Deletes a feature from the subscriber.
C_LU-HLR_1-0_ADD_FRAUD	Inserts a record in the fraud table.
C_LU-HLR_1-0_DEL_FRAUD	Deletes a record from the fraud table.
C_LU-HLR_1-0_ACTIVATE_SUB	Activates a subscriber.
C_LU-HLR_1-0_ADD_SUB	Adds a subscriber.
C_LU-HLR_1-0_DEL_SUB	Deletes a subscriber.
C_LU-HLR_1-0_MOD_SUB	Modifies a subscriber's details.
C_LU-HLR_1-0_SUSPEND_SUB	Suspends a subscriber account.

Communication Parameters

The following is the list of parameters for the sample NE configuration XML used by Service Activation Configuration Tool (SACT).

Table 1–2 Communication Parameters

Parameter Label	Parameter Value	Description
HOST_IPADDR	172.27.102.50	The network IP Address for the NE host
PORT	23	Telnet port
LUCNT_LOGIN	prepagar	Lucent Login value
LUCNT_PASSWORD	Pre05PaGar	Lucent Password value
HOST_LOGIN	asap1	Login value for SAM IPaddress
HOST_PASSWORD	m3tasolv$	Password value for SAM IPaddress
AG_PASSWORD	m3tasolv$	AG Password value for SAM IPaddress
DESTINATION_VALUE	sam1	Destination alue for Lucent VMS cartridge
READ_TIMEOUT	5	Read Time Out in Seconds
CONNECTION_PAUSE	5	Configured to wait for response
INTERACTIVE_PROGRAM	apxrcv -text	Lucent HLR provisioning shell program
PROMPT	:	Normal Lucent HLR provisioning prompt

Table 1–2 (Cont.) Communication Parameters

Parameter Label	Parameter Value	Description
RESPONSELOG	TRUE	Flag to turn on or off response log
MML_TOKEN_LENGTH	255	Maximmum MML command length value
USE_SAM	NO	Whether to use SAM for connecting to NE

Related Documentation

This cartridge is developed according to the following NE provisioning specifications:

- Cartridge Development Guide (CDK1_3_1.pdf)
- Codetel Wireless Project Requirement Version 1.0

2

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 2–1 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. Scalar parameters are conventional name-value pair parameters. ■ C - Compound, specifies the base name of the compound parameter transmitted on the ASDL command. A compound parameter contains structures or arrays of information that are represented by a particular structure name or compound parameter name. Each compound parameter can contain a large number of elements. If you use compound parameters, you only require a single entry in the ASAP translation tables to call the compound parameter and all its associated parameter elements. ■ I - Indexed, identifies a parameter that contains a sequential numerical index value to tell the SARM that it should execute the same operation (for example, an ASDL command) for all occurrences of that index. Consequently, if there are several options on a particular CSDL command (OPT1, OPT2, OPT3, etc.), you can specify the OPT parameter as an indexed parameter. When you specify the OPT parameter as an indexed parameter, the SARM generates several occurrences of that same ASDL command and each command has a different value for the option being transmitted to the NEP. For more information on parameter types, refer to the *ASAP Developer's Guide*.

Table 2–1 (Cont.) 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 Administrator's Guide.*

ASDL Commands

This cartridge provides the following ASDL commands:

- A_LU-HLR_1-0_ACTIVATE_SUB
- A_LU-HLR_1-0_ADD_AUC
- A_LU-HLR_1-0_ADD_FEAT
- A_LU-HLR_1-0_ADD_FRAUD
- A_LU-HLR_1-0_ADD_SUB
- A_LU-HLR_1-0_DEL_AUC
- A_LU-HLR_1-0_DEL_FEAT
- A_LU-HLR_1-0_DEL_FRAUD
- A_LU-HLR_1-0_DEL_SUB
- A_LU-HLR_1-0_MOD_SUB
- A_LU-HLR_1-0_SUSPEND_SUB

A_LU-HLR_1-0_ACTIVATE_SUB

Activates a subscriber. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.activateSubscriber.**

Table 2–2 A_LU-HLR_1-0_ACTIVATE_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
LTMAJ	Home terminating major class.	N/A	N/A	S	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
dc1= ltmaj=<LTMAJ> smsorigres=n cpnd=y u
```

Output Parameters

NA

A_LU-HLR_1-0_ADD_AUC

Adds an authentication code. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.addAuthenticationCode.**

Table 2–3 A_LU-HLR_1-0_ADD_AUC

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
AKEY	Authentication code key.	N/A	N/A	S	O
AUTH_ACT	Authentication active indicator.	N/A	N/A	S	R
AUTOSSD	Automatic shared secret data update indicator.	N/A	N/A	S	R

MML commands

MML Syntax :

```
min_msid=<NPA><NXX><MDN> imsi= akey=<AKEY> auth_act=<AUTH_ACT> autossd=<AUTOSSD> I
```

Output Parameters

NA

A_LU-HLR_1-0_ADD_FEAT

Adds a feature for a subscriber. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.addFeature.**

Table 2–4 A_LU-HLR_1-0_ADD_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R

Table 2–4 (Cont.) A_LU-HLR_1-0_ADD_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
<FEAT_LIST[n] details Refer Appendix II>
u
```

Output Parameters

NA

A_LU-HLR_1-0_ADD_FRAUD

Inserts a record to the fraud table. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.addFraud.**

Table 2–5 A_LU-HLR_1-0_ADD_FRAUD

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	R
DAY	Two digit day of the date in the range of 1to 31.	N/A	N/A	S	O
MONTH	Two digit month of the date in the range of 1 to 12.	N/A	N/A	S	O
YEAR	Two digit year of the date in the range of 0 to 99.	N/A	N/A	S	O
DISPLAY	Serial number display mode. Default = a. Possible values are a, h, o, d, m, p.	N/A	N/A	S	O
SERIAL_NO_TYPE	Serial number check type. Default = n. Possible values are n - negative check and p - positive check.	N/A	N/A	S	O

MML commands

MML Syntax :

```
srno.srnum=<SERIAL_NUM> lsndisp=<DISPLAY> ldate.mnth=<MONTH> ldate.dy=<DAY>
ldate.yr=<YEAR> srnotype=<SERIAL_NO_TYPE> sub_dirno.subnpa=<NPA> sub_
dirno.subnxx=<NXX> sub_dirno.submdn=<MDN> I
```

Output Parameters

NA

A_LU-HLR_1-0_ADD_SUB

Adds a subscriber. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.addSubscriber.**

Table 2–6 A_LU-HLR_1-0_ADD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	O
DC1	Primary dialing class.	N/A	N/A	S	O
DC2	Secondary dialing class.	N/A	N/A	S	O
HPIN_TYPE	Home Personal Identification Number (PIN) type.	N/A	N/A	S	O
PIN_ACTIVE	Indicates whether the PIN feature is active.	N/A	N/A	S	O
LCW	Call waiting feature.	N/A	N/A	S	O
LCFDA	Call forward don't answer.	N/A	N/A	S	O
LCFNPR	Call forward no paging response.	N/A	N/A	S	O
LCWAR	Distinctive ringback on call waiting.	N/A	N/A	S	O
VMAJ	Originating major class in visited system.	N/A	N/A	S	O
LCCFDT	Call forward don't answer time. Time interval to wait before forwarding number or Message Recording Service(MRS).	N/A	N/A	S	O
SVCALW_C	Indicates whether the mobile unit is allowed the CDMA service.	N/A	N/A	S	O
LBILL_TYPE	Method used to bill the subscriber.	N/A	N/A	S	O
LTMAJ	Home terminating major class.	N/A	N/A	S	O
LRAC1	Primary rate center 1.	N/A	N/A	S	O
LRAC2	Primary rate center 2.	N/A	N/A	S	O
EXMIN	Long Mobile Identification Number (MIN) or short MIN indicator.	N/A	N/A	S	O
SOS_AVAIL	Speech option selection feature.	N/A	N/A	S	O

Table 2–6 (Cont.) A_LU-HLR_1-0_ADD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
CALDLALO	Call delivery outside FTN access.	N/A	N/A	S	O
CALDLACT	Call delivery outside FTN active indicator.	N/A	N/A	S	O
LSALIST_LSALVL1	Specifies the subscriber's billing level on the first row.	N/A	N/A	S	O
LSALIST_LSANUM1	Specifies the service that the subscriber should have.	N/A	N/A	S	O
PREF_EV	Specifies the preference order for EVRC vocoding algorithm in the SOS list.	N/A	N/A	S	O
PREF_13K	Specifies the preference order for 13K vocoding algorithm in the SOS list.	N/A	N/A	S	O
FLTR_IS41_OI	Unknown.	N/A	N/A	S	O
ASYNC_AUTH	Unknown.	N/A	N/A	S	O
FAX_AUTH	Unknown.	N/A	N/A	S	O
MISC	Unknown.	N/A	N/A	S	O
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
lsrno.srnum=<SERIAL_NUM> lrc=<LRC> dc1=<DC1> dc2=<DC2> hpin_type=<HPIN_TYPE> pin_
active=<PIN_ACTIVE> lcw=<LCW> lcfda=<LCFDA> lcfnpr=<LCFNPR> lcwar=<LCWAR>
vmaj=<VMAJ> lccfdt=<LCCFDT> lsalist.lsalvl[1]=< lsalist.lsalvl1>
lsalist.lsanum[1]=<lsalist.lsanum1>  svcalw_c=<SVCALW_C> lbill_typ=<LBILL_TYPE>
ltmaj=<LTMAJ> exmin=<EXMIN> lrac2= lmrsno=<LMRSNO> lmrs=<LMRS> lmrsact=<LMRSACT>
mwi_active=<MWI_ACTIVE> no_msgs=<NO_MSGS> vman_mail=<VMAN_MAIL> CPND=<CPND> SOS_
AVAIL=<SOS_AVAIL> pref_ev=<PREF_EV> pref_13k=<PREF_13K>  caldlalo=<CALDLALO>
caldlact=<CALDLACT> smsorigres=<SMSORIGRES> <FEAT_LIST[n] parameter value, Refer
Appendix II>
I
```

Output Parameters

NA

A_LU-HLR_1-0_DEL_AUC

Deletes an authentication code. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.deleteAuthenticationCode.**

Table 2–7 A_LU-HLR_1-0_DEL_AUC

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digit of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R

MML commands

MML Syntax :

```
min_msid=<NPA><NXX><MDN> imsi= d
```

Output Parameters

NA

A_LU-HLR_1-0_DEL_FEAT

Deletes a feature from a subscriber. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.deleteFeature.**

Table 2–8 A_LU-HLR_1-0_DEL_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
<FEAT_LIST[n] details Refer Appendix II >
u
```

Output Parameters

NA

A_LU-HLR_1-0_DEL_FRAUD

Deletes a record from the fraud table. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.deleteFraud.**

Table 2–9 A_LU-HLR_1-0_DEL_FRAUD

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	R

MML commands

MML Syntax :

```
srno.srnum=<SERIAL_NUM> d
```

Output Parameters

NA

A_LU-HLR_1-0_DEL_SUB

Deletes a subscriber. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.deleteSubscriber.**

Table 2–10 A_LU-HLR_1-0_DEL_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi= d
```

Output Parameters

NA

A_LU-HLR_1-0_MOD_SUB

Modifies a subscriber's details. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.modifySubscriber.**

Table 2–11 A_LU-HLR_1-0_MOD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	O
DC1	Primary dialing class.	N/A	N/A	S	O
DC2	Secondary dialing class	N/A	N/A	S	O
HPIN_TYPE	Home Personal Identification Number (PIN) type.	N/A	N/A	S	O
PIN_ACTIVE	Indicates whether the PIN feature is active.	N/A	N/A	S	O
LCW	Call waiting feature.	N/A	N/A	S	O
LCFDA	Call forward don't answer.	N/A	N/A	S	O
LCFNPR	Call forward no paging response.	N/A	N/A	S	O
LCWAR	Distinctive ringback on call waiting.	N/A	N/A	S	O
VMAJ	Originating major class in visited system.	N/A	N/A	S	O
LCCFDT	Call forward don't answer time. Time interval to wait before forwarding number or Message Recording Service (MRS).	N/A	N/A	S	O
SVCALW_C	Indicates whether the mobile unit is allowed the CDMA service.	N/A	N/A	S	O
LBILL_TYPE	Method used to bill the subscriber.	N/A	N/A	S	O
LTMAJ	Home terminating major class.	N/A	N/A	S	O
LRAC1	Primary rate center 1.	N/A	N/A	S	O
LRAC2	Primary rate center 2.	N/A	N/A	S	O
EXMIN	Long Mobile Identification Number (MIN) or short MIN indicator.	N/A	N/A	S	O
SOS_AVAIL	Speech option selection feature.	N/A	N/A	S	O
CALDLALO	Call delivery outside FTN access.	N/A	N/A	S	O
CALDLACT	Call delivery outside FTN active indicator.	N/A	N/A	S	O
LSALIST_LSALVL1	Specifies the subscriber's billing level on the first row.	N/A	N/A	S	O
LSALIST_LSANUM1	Specifies the service that the subscriber should have.	N/A	N/A	S	O
PREF_EV	Specifies the preference order for EVRC vocoding algorithm in the SOS list.	N/A	N/A	S	O
PREF_13K	Specifies the preference order for 13K vocoding algorithm in the SOS list.	N/A	N/A	S	O

Table 2–11 (Cont.) A_LU-HLR_1-0_MOD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
FLTR_IS41_OI	Unknown.	N/A	N/A	S	O
ASYNC_AUTH	Unknown.	N/A	N/A	S	O
FAX_AUTH	Unknown.	N/A	N/A	S	O
MISC	Unknown.	N/A	N/A	S	O
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
lsrno.srnum=<SERIAL_NUM> lrc=<LRC> dc1=<DC1> dc2=<DC2> hpin_type=<HPIN_TYPE> pin_
active=<PIN_ACTIVE> lcw=<LCW> lcfda=<LCFDA> lcfnpr=<LCFNPR> lcwar=<LCWAR>
vmaj=<VMAJ> lccfdt=<LCCFDT> lsalist.lsalvl[1]=< lsalist.lsalvl1>
lsalist.lsanum[1]=<lsalist.lsanum1>  svcalw_c=<SVCALW_C> lbill_typ=<LBILL_TYPE>
ltmaj=<LTMAJ> exmin=<EXMIN> lrac2= lmrsno=<LMRSNO> lmrs=<LMRS> lmrsact=<LMRSACT>
mwi_active=<MWI_ACTIVE> no_msgs=<NO_MSGS> vman_mail=<VMAN_MAIL> CPND=<CPND> SOS_
AVAIL=<SOS_AVAIL> pref_ev=<PREF_EV> pref_13k=<PREF_13K>  caldlalo=<CALDLALO>
caldlact=<CALDLACT> smsorigres=<SMSORIGRES> <FEAT_LIST[n] parameter value, Refer
Appendix II>
U
```

Output Parameters

NA

A_LU-HLR_1-0_SUSPEND_SUB

Suspends a subscriber account. It is implemented by the Java method **com.metasolv.cartridge.oss.lu_hlr_1_0.prov.LucentHlrProv.suspendSubscriber.**

Table 2–12 A_LU-HLR_1-0_SUSPEND_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MCLI	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
DC1	Primary dialing class.	N/A	N/A	S	O
VMAJ	Originating major class in visited system.	N/A	N/A	S	O

MML commands

MML Syntax :

```
dirno.npa=<NPA> dirno.nxx=<NXX> dirno.mdn=<MDN> min_msid=<NPA><NXX><MDN> imsi=
dc1=<DC1> vmaj=<VMAJ> cpnd=n smsorigres=y u
```

Output Parameters

NA

User Exit Types

User exit types allow cartridge developers and systems administrators to map ASDL exit codes to one of the predefined base exit types. Base exit types determine the product behavior. Cartridges map return codes and status values from a network element to a user defined exit type.

Regular expressions (regex) are used to perform pattern searches on responses from network elements. The pattern is stored in "tbl_user_err" in the SARM database. The user exit type contains a regex pattern that is applied at runtime.

Regular expressions enable users to associate a series of responses to a specific base type. For example, a regular expression "6." can identify a pattern where any response with the character "6" followed by any number of characters will translate to base type of FAIL.

Regular expressions can also allow very specific searches within a response from a network element. Regular expressions are typically compiled before being executed. Compilation produces a binary version of the expression and ensures that the syntax of the regular expression is correct. This compilation occurs using SACT\SADT when user exit types are deployed into ASAP. If the syntax is deemed to be incorrect during compilation, SADT displays an error message and the deployment of the user exit type will fail.

For more information on pattern matching, refer to the *ASAP Developer's Guide* and the *ASAP Administrator's Guide*.

Understanding User Exit Type XML Files

```
…
<userDefinedExitType>
<neDescriptor>
<softwareLoad>DYNAMIC_SL</softwareLoad>
<technology>DYNAMIC_VENDOR-DYNAMIC_TECH</technology>
</neDescriptor>
<searchPattern>SUCCESS.</searchPattern>...1
<userType>U_SUCCEED</userType>...2
<baseType>SUCCEED<</baseType>...3
<description>The ASDL provisioning was successful</description>
</userDefinedExitType>
<userDefinedExitType>
<searchPattern>90.</searchPattern>
<userType>U_FAIL</userType>
<baseType>FAIL</baseType>
<description>The ASDL failed - fail the current order and stop
processing.</description>
</userDefinedExitType>
<userDefinedExitType>
<searchPattern>101-110[201-215]</searchPattern>...4
<userType>U_SOFT_FAIL</userType>
<baseType>SOFT_FAIL</baseType>
<description>The ASDL has encountered a soft failure. Processing will
continue.</description>
```

```
</userDefinedExitType>
<userDefinedExitType>
<searchPattern>801-850</searchPattern>...5
<userType>U_MINOR_ERROR</userType>
<baseType>SOFT_FAIL</baseType>
<description>The ASDL has encountered a soft failure. Processing will
continue.</description>
</userDefinedExitType>
<userDefinedExitType>
<searchPattern>251-275&&[^261-265]</searchPattern>...6
<userType>U_DELAYED_FAIL</userType>
<baseType>DELAYED_FAIL</baseType>
<description>The ASDL has failed during provisioning.</description>
</userDefinedExitType>
<userDefinedExitType>
<neDescriptor>
<softwareLoad>BCS36</softwareLoad>
<technology>NORTEL_DMS</technology>
<neVendor>Nortel</neVendor>
</neDescriptor>
<searchPattern>*.</searchPattern>
<userType>U_MAINTAIN</userType>
<baseType>MAINTENANCE</baseType>
<description>The ASDL will Wait until the NE comes out of Maintenance
Mode</description>
</userDefinedExitType>
```

The numbered elements highlighted in bold in the previous code sample are explained as follows:

1. Pattern searches accommodate situations in which responses from the device contain small variants that represent the same meaning. The user type contains an associated search pattern that is applied at runtime. Using regular expressions, you can default a series of responses. For example a regular expression "90." can specify a pattern where any response with the character "90" followed by any character will translate to base type of FAIL. If the regular expression is defined as "90*", then any response with the character "90" followed by any number of characters will translate to base type of FAIL.
2. The user type that the search pattern maps to.
3. The base type that maps to the user type.
4. 101 to 110 and 201 to 215 will translate to a base type of SOFT_FAIL
5. 801-850 will translate to a base type of SOFT_FAIL. Note that the user type differs from the previous range.
6. 251 to 275 but not 261 to 265 will translate to a base type of DELAYED_FAILURE.

The previous code sample shows some typical search pattern examples. Some additional examples follow:

- ^.*\b(one|two|three)\b.*$ = matches a complete line of text that contains any of the words "one", "two" or "three"
- ^(?=.*?\bone\b)(?=.*?\btwo\b)(?=.*?\bthree\b).*$ matches a complete line of text that contains all of the words "one", "two" and "three"
- "[^"\r\n]*" matches a single-line string that does not allow the quote character to appear inside the string.
- \b\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\b matches any IP address.

For more information on search patterns, refer to http://java.sun.com/j2se/1.4.2/docs/api/java/util/regex/Pattern.html.

For more information on user exit types, refer to the *ASAP Developer's Guide*.

User Defined ASDL Exit Types

The following table lists the user defined ASDL exit types.

Table 2–13 User Defined ASDL Exit Types

Search Pattern	User Type	Base Type	Description
((?s).)*Enter Command((?s).)*	LU_HLR_SUCCEED	SUCCEED	Successfully provisioned the requested command
((?s).)*ERROR:((?s).)*	LU_HLR_FAIL	FAIL	Provisioning command failed
((?s).)*The Mobile Directory Number is invalid((?s).)*	LU_HLR_SOFT_FAIL	SOFT_FAIL	ASDL completed successfully
((?s).)*AKEY is BLANK or INVALID((?s).)*	LU_HLR_AKEY_VAL	FAIL	AKEY value is invalid
((?s).)*Simultaneous record update((?s).)*	LU_HLR_SRUPDT_RETRY	RETRY	The ASDL Failed - Retry after User Configured Interval
((?s).)*Database audb locked((?s).)*	LU_HLR_DBLOCK_RETRY	RETRY	The ASDL Failed - Retry after database unlocked.
((?s).)*Other user has updated this form((?s).)*	LU_HLR_USRUPDT_RETRY	RETRY	The ASDL Failed - Retry after other user updates on this form gets completed.
((?s).)*Database subauxdb locked((?s).)*	LU_HLR_SUB_DB_RETRY	RETRY	The ASDL Failed - Retry after database subaucdb unlocked.
((?s).)*invalid keyword((?s).)*	LU_HLR_INVLDKY_FAIL	FAIL	The ASDL Failed - Invalid keyword.
((?s).)*record must exist((?s).)*	LU_HLR_RCDME_FAIL	FAIL	Record must exist error.
((?s).)*Form not found((?s).)*	LU_HLR_FNF_SOFT_FAIL	SOFT_FAIL	Form not found error.
((?s).)*MIN/IMSI already exists((?s).)*	LU_HLR_FAIL_3	FAIL	Description goes Here.
((?s).)*Success((?s).)*	LU_HLR_SUCCEED_1	SUCCEED	Description goes Here.
((?s).)*Check Fraudulent Serial Numbers for 1st Serial Number((?s).)*	LU_HLR_FAIL_4	FAIL	Description goes Here.
((?s).)*Fail((?s).)*	LU_HLR_FAIL_5	FAIL	Description goes Here.

UserExitType.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<serviceModel xmlns="http://www.metasolv.com/ServiceActivation/2003/ServiceModel">
     <userDefinedExitType>
          <neDescriptor>
               <softwareLoad>1-0<//softwareLoad>
               <technology>HLR<//technology>
               <neVendor>LU<//neVendor>
          <//neDescriptor>
          <searchPattern>((?s).)*Enter Command((?s).)*<//searchPattern>
          <userType>LU_HLR_SUCCEED<//userType>
```

```
          <baseType>SUCCEED<//baseType>
          <description>Successfully provisioned the requested
command<//description>
     <//userDefinedExitType>
     ......................
     <//serviceModel >
```

3

Service Definition

The LUCENT_HLR_1_0_WIRELESS_1_0 Cartridge 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 about the CSDL parameters in this cartridge. The following table lists and describes the type of parameter information that is included.

Table 3–1 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. Scalar parameters are conventional name-value pair parameters. ■ C - Compound, specifies the base name of the compound parameter transmitted on the ASDL command. A compound parameter contains structures or arrays of information that are represented by a particular structure name or compound parameter name. Each compound parameter can contain a large number of elements. If you use compound parameters, you only require a single entry in the ASAP translation tables to call the compound parameter and all its associated parameter elements. ■ I - Indexed, identifies a parameter that contains a sequential numerical index value to tell the SARM that it should execute the same operation (for example, an ASDL command) for all occurrences of that index. Consequently, if there are several options on a particular CSDL command (OPT1, OPT2, OPT3, etc.), you can specify the OPT parameter as an indexed parameter. When you specify the OPT parameter as an indexed parameter, the SARM generates several occurrences of that same ASDL command and each command has a different value for the option being transmitted to the NEP. For more information on parameter types, refer to the *ASAP Developer's Guide*.

Table 3–1 (Cont.) 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 Administrator's Guide.*

CSDL Commands

This cartridge provides the following CSDL commands:

- C_LU-HLR_1-0_ACTIVATE_SUB
- C_LU-HLR_1-0_ADD_AUC
- C_LU-HLR_1-0_ADD_FEAT
- C_LU-HLR_1-0_ADD_FRAUD
- C_LU-HLR_1-0_ADD_SUB
- C_LU-HLR_1-0_DEL_AUC
- C_LU-HLR_1-0_DEL_FEAT
- C_LU-HLR_1-0_DEL_FRAUD
- C_LU-HLR_1-0_DEL_SUB
- C_LU-HLR_1-0_MOD_SUB
- C_LU-HLR_1-0_SUSPEND_SUB

C_LU-HLR_1-0_ACTIVATE_SUB

Activates a subscriber.

Table 3–2 C_LU-HLR_1-0_ACTIVATE_SUB

Parameter Name	Description	Range	Default Value	Type	Class
LTMAJ	Home terminating major class.	N/A	N/A	S	O
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–3 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_ACTIVATE_SUB	A_LU-HLR_1-0_ACTIVATE_SUB

C_LU-HLR_1-0_ADD_AUC

Adds an authentication code.

Table 3–4 C_LU-HLR_1-0_ADD_AUC

Parameter Name	Description	Range	Default Value	Type	Class
AKEY	Authentication code key.	N/A	N/A	S	O
AUTH_ACT	Authentication active indicator.	N/A	N/A	S	R
AUTOSSD	Automatic shared secret data update indicator.	N/A	N/A	S	R
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–5 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_ADD_AUC	A_LU-HLR_1-0_ADD_AUC

C_LU-HLR_1-0_ADD_FEAT

Adds a feature to the subscriber.

Table 3–6 C_LU-HLR_1-0_ADD_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–7 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_ADD_FEAT	A_LU-HLR_1-0_ADD_FEAT

C_LU-HLR_1-0_ADD_FRAUD

Inserts a record in the fraud table.

Table 3–8 C_LU-HLR_1-0_ADD_FRAUD

Parameter Name	Description	Range	Default Value	Type	Class
DAY	Two digit day of the date in the range of 1to 31.	N/A	N/A	S	O
DISPLAY	Serial number display mode. Default = a. Possible values are a, h, o, d, m, p.	N/A	N/A	S	O
MDN	The four digit line extension number.	N/A	N/A	S	R
MONTH	Two digit month of the date in the range of 1 to 12.	N/A	N/A	S	O
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
SERIAL_NO_TYPE	Serial number check type. Default = n. Possible values are n - negative check and p - positive check.	N/A	N/A	S	O
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	R
YEAR	Two digit year of the date in the range of 0 to 99.	N/A	N/A	S	O

Mapping to ASDLs

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

Table 3–9 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_ADD_FRAUD	A_LU-HLR_1-0_ADD_FRAUD

C_LU-HLR_1-0_ADD_SUB

Adds a subscriber.

Table 3–10 C_LU-HLR_1-0_ADD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
ASYNC_AUTH	Unknown.	N/A	N/A	S	O
CALDLACT	Call delivery outside FTN active indicator.	N/A	N/A	S	O
CALDLALO	Call delivery outside FTN access.	N/A	N/A	S	O
DC1	Primary dialing class.	N/A	N/A	S	O

Table 3–10 (Cont.) C_LU-HLR_1-0_ADD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
DC2	Secondary dialing class.	N/A	N/A	S	O
EXMIN	Long Mobile Identification Number (MIN) or short MIN indicator.	N/A	N/A	S	O
FAX_AUTH	Unknown.	N/A	N/A	S	O
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O
FLTR_IS41_OI	Unknown.	N/A	N/A	S	O
HPIN_TYPE	Home Personal Identification Number (PIN) type.	N/A	N/A	S	O
LBILL_TYPE	Method used to bill the subscriber.	N/A	N/A	S	O
LCCFDT	Call forward don't answer time. Time interval to wait before forwarding number or Message Recording Service(MRS).	N/A	N/A	S	O
LCFDA	Call forward don't answer.	N/A	N/A	S	O
LCFNPR	Call forward no paging response.	N/A	N/A	S	O
LCW	Call waiting feature.	N/A	N/A	S	O
LCWAR	Distinctive ringback on call waiting.	N/A	N/A	S	O
LRAC1	Primary rate center 1.	N/A	N/A	S	O
LRAC2	Primary rate center 2.	N/A	N/A	S	O
LSALIST_LSALVL1	Specifies the subscriber's billing level on the first row.	N/A	N/A	S	O
LSALIST_LSANUM1	Specifies the service that the subscriber should have.	N/A	N/A	S	O
LTMAJ	Home terminating major class.	N/A	N/A	S	O
MDN	The four digit line extension number.	N/A	N/A	S	R
MISC	Unknown.	N/A	N/A	S	O
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
PIN_ACTIVE	Indicates whether the PIN feature is active.	N/A	N/A	S	O
PREF_13K	Specifies the preference order for 13K vocoding algorithm in the SOS list.	N/A	N/A	S	O
PREF_EV	Specifies the preference order for EVRC vocoding algorithm in the SOS list.	N/A	N/A	S	O
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	O

Table 3–10 (Cont.) C_LU-HLR_1-0_ADD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
SOS_AVAIL	Speech option selection feature.	N/A	N/A	S	O
SVCALW_C	Indicates whether the mobile unit is allowed the CDMA service.	N/A	N/A	S	O
VMAJ	Originating major class in visited system.	N/A	N/A	S	O

Mapping to ASDLs

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

Table 3–11 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_ADD_SUB	A_LU-HLR_1-0_ADD_SUB

C_LU-HLR_1-0_DEL_AUC

Deletes an authentication code.

Table 3–12 C_LU-HLR_1-0_DEL_AUC

Parameter Name	Description	Range	Default Value	Type	Class
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digit of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–13 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_DEL_AUC	A_LU-HLR_1-0_DEL_AUC

C_LU-HLR_1-0_DEL_FEAT

Deletes a feature from the subscriber.

Table 3–14 C_LU-HLR_1-0_DEL_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O
MDN	The four digit line extension number.	N/A	N/A	S	R

Table 3–14 (Cont.) C_LU-HLR_1-0_DEL_FEAT

Parameter Name	Description	Range	Default Value	Type	Class
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–15 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_DEL_FEAT	A_LU-HLR_1-0_DEL_FEAT

C_LU-HLR_1-0_DEL_FRAUD

Deletes a record from the fraud table.

Table 3–16 C_LU-HLR_1-0_DEL_FRAUD

Parameter Name	Description	Range	Default Value	Type	Class
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–17 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_DEL_FRAUD	A_LU-HLR_1-0_DEL_FRAUD

C_LU-HLR_1-0_DEL_SUB

Deletes a subscriber.

Table 3–18 C_LU-HLR_1-0_DEL_SUB

Parameter Name	Description	Range	Default Value	Type	Class
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R

Mapping to ASDLs

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

Table 3–19 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_DEL_SUB	A_LU-HLR_1-0_DEL_SUB

C_LU-HLR_1-0_MOD_SUB

Modifies a subscriber's details.

Table 3–20 C_LU-HLR_1-0_MOD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
ASYNC_AUTH	Unknown.	N/A	N/A	S	O
CALDLACT	Call delivery outside FTN active indicator.	N/A	N/A	S	O
CALDLALO	Call delivery outside FTN access.	N/A	N/A	S	O
DC1	Primary dialing class.	N/A	N/A	S	O
DC2	Secondary dialing class	N/A	N/A	S	O
EXMIN	Long Mobile Identification Number (MIN) or short MIN indicator.	N/A	N/A	S	O
FAX_AUTH	Unknown.	N/A	N/A	S	O
FEAT_LIST	Optional feature list compound indexed parameter.	N/A	N/A	C	O
FLTR_IS41_OI	Unknown.	N/A	N/A	S	O
HPIN_TYPE	Home Personal Identification Number (PIN) type.	N/A	N/A	S	O
LBILL_TYPE	Method used to bill the subscriber.	N/A	N/A	S	O
LCCFDT	Call forward don't answer time. Time interval to wait before forwarding number or Message Recording Service (MRS).	N/A	N/A	S	O
LCFDA	Call forward don't answer.	N/A	N/A	S	O
LCFNPR	Call forward no paging response.	N/A	N/A	S	O
LCW	Call waiting feature.	N/A	N/A	S	O
LCWAR	Distinctive ringback on call waiting.	N/A	N/A	S	O
LRAC1	Primary rate center 1.	N/A	N/A	S	O
LRAC2	Primary rate center 2.	N/A	N/A	S	O
LSALIST_LSALVL1	Specifies the subscriber's billing level on the first row.	N/A	N/A	S	O
LSALIST_LSANUM1	Specifies the service that the subscriber should have.	N/A	N/A	S	O
LTMAJ	Home terminating major class.	N/A	N/A	S	O
MDN	The four digit line extension number.	N/A	N/A	S	R
MISC	Unknown.	N/A	N/A	S	O
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R

Table 3–20 (Cont.) C_LU-HLR_1-0_MOD_SUB

Parameter Name	Description	Range	Default Value	Type	Class
NXX	The first three digits of a line number.	N/A	N/A	S	R
PIN_ACTIVE	Indicates whether the PIN feature is active.	N/A	N/A	S	O
PREF_13K	Specifies the preference order for 13K vocoding algorithm in the SOS list.	N/A	N/A	S	O
PREF_EV	Specifies the preference order for EVRC vocoding algorithm in the SOS list.	N/A	N/A	S	O
SERIAL_NUMBER	The electronic serial number (ESN) unique to each mobile.	N/A	N/A	S	O
SOS_AVAIL	Speech option selection feature.	N/A	N/A	S	O
SVCALW_C	Indicates whether the mobile unit is allowed the CDMA service.	N/A	N/A	S	O
VMAJ	Originating major class in visited system.	N/A	N/A	S	O

Mapping to ASDLs

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

Table 3–21 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_MOD_SUB	A_LU-HLR_1-0_MOD_SUB

C_LU-HLR_1-0_SUSPEND_SUB

Suspends a subscriber account.

Table 3–22 C_LU-HLR_1-0_SUSPEND_SUB

Parameter Name	Description	Range	Default Value	Type	Class
DC1	Primary dialing class.	N/A	N/A	S	O
MDN	The four digit line extension number.	N/A	N/A	S	R
NE_ID_LU-HLR	Host NE identifier.	N/A	N/A	S	R
NPA	The three digit area code.	N/A	N/A	S	R
NXX	The first three digits of a line number.	N/A	N/A	S	R
VMAJ	Originating major class in visited system.	N/A	N/A	S	O

Mapping to ASDLs

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

Table 3–23 CSDL to ASDL Mapping

CSDL	ASDL
C_LU-HLR_1-0_SUSPEND_SUB	A_LU-HLR_1-0_SUSPEND_SUB

4

Configuring ASAP to Support Additional NE Instances

You can configure Oracle Communications ASAP (ASAP) to support the LUHLR - NEP configuration using the Service Activation Configuration Tool (SACT). Refer to the *ASAP System Administrator's Guide* for more information.

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, copy the .sar file to the new directory and un-jar the sar file.
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 file, you must create a new sar file, then restart the cartridge using the new file.

Configuration XML File

Below is an example of the Activation.Configuration.XML file for the LUCENT_HLR_1_0_WIRELESS_1_0 Cartridge 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="LUPOOL">
          <device name="LU_tel_dev1">
               <environment>DEVELOPMENT</environment>
               <lineType>TELNET_CONNECTION</lineType>
          </device>
     </connectionPool>
     <element name="LUHLR">
          <vendor>LU</vendor>
          <technology>HLR</technology>
          <softwareLoad>1-0</softwareLoad>
```

```
<nepServerName>$NEP</nepServerName>
<primaryPool>LUPOOL</primaryPool>
<maximumConnections>1</maximumConnections>
<dropTimeout>2</dropTimeout>
<spawnThreshold>10</spawnThreshold>
<killThreshold>8</killThreshold>
<routingElement name="LUHLR"/>
<communicationParameter>
     <label>HOST_IPADDR</label>
     <value>
          <value>172.27.102.50</value>
     </value>
     <description>The network IP Address for the NE host</description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>PORT</label>
     <value>
          <value>23</value>
     </value>
     <description>Telnet port</description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>LUCNT_LOGIN</label>
     <value>
          <value>prepagar</value>
     </value>
     <description>Lucent Login value </description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>LUCNT_PASSWORD</label>
     <value>
          <value>Pre05PaGar</value>
     </value>
     <description>Lucent Password value </description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>HOST_LOGIN</label>
     <value>
          <value>asap1</value>
     </value>
     <description>Login value for SAM IPaddress</description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>HOST_PASSWORD</label>
     <value>
          <value>m3tasolv$</value>
     </value>
     <description>Password value for SAM IPaddress</description>
     <lineType>TELNET_CONNECTION</lineType>
</communicationParameter>
<communicationParameter>
     <label>AG_PASSWORD</label>
     <value>
          <value>m3tasolv$</value>
     </value>
```

```
                    <description>AG Password value for SAM IPaddress</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>DESTINATION_VALUE</label>
                    <value>
                         <value>sam1</value>
                    </value>
                    <description>Destination alue for Lucent VMS
cartridge</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>READ_TIMEOUT</label>
                    <value>
                         <value>5</value>
                    </value>
                    <description>Read Time Out in Seconds</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>CONNECTION_PAUSE</label>
                    <value>
                         <value>5</value>
                    </value>
                    <description>Configured to wait for response </description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>INTERACTIVE_PROGRAM</label>
                    <value>
                         <value>apxrcv -text</value>
                    </value>
                    <description>Lucent HLR provisioning shell program</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>PROMPT</label>
                    <value>
                         <value>:</value>
                    </value>
                    <description>Normal Lucent HLR 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 log</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
               <communicationParameter>
                    <label>MML_TOKEN_LENGTH</label>
                    <value>
                         <value>255</value>
                    </value>
                    <description>Maximmum MML command length value</description>
                    <lineType>TELNET_CONNECTION</lineType>
               </communicationParameter>
```

```
            <communicationParameter>
                 <label>USE_SAM</label>
                 <value>
                      <value>NO</value>
                 </value>
                 <description>Whether to use SAM for connecting to NE</description>
                 <lineType>TELNET_CONNECTION</lineType>
            </communicationParameter>
       </element>
  </activationConfig>
```

A

FEAT_LIST COMPOUND PARAMETER

The FEAT_LIST compound parameter will be an indexed list of MML supplied by the upstream to add, modify or delete feature details to a subscriber line. Each entry in the FEAT_LIST will represent MML for each of the feature to be added/deleted, etc. The index starts with 1.

Example:

FEAT_LIST[1] = mml 1

FEAT_LIST[2] = mml 2

The cartridge will not check the validity of the MML string being passed by the upstream. This will just add the MML string to the MML constructed for the ASDL with the separator of space.