Oracle® Communications Convergent Charging Controller

MM Provisioning Interface Commands

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Contents

About This Document

Scope

The scope of this document includes all the information required to configure the Provisioning Interface commands.

Audience

The audience for this document includes system administrators responsible for the monitoring, maintenance, and configuration of the Oracle Communications Convergent Charging Controller IN applications.

Prerequisites

A solid understanding of UNIX and a familiarity with IN concepts are an essential prerequisite for safely using the information contained in this technical guide.

Although it is not a prerequisite to using this guide, familiarity with the target platform would be an advantage.

This manual describes system tasks that should only be carried out by suitably trained operators.

Related Documents

The following documents are related to this document:

- *Provisioning Interface User's and Technical Guide*
- *Virtual Private Network User's Guide*

Document Conventions

Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Convergent Charging Controller documentation.

Formatting Convention	Type of Information
Special Bold	Items you must select, such as names of tabs. Names of database tables and fields.
Italics	Name of a document, chapter, topic or other publication. Emphasis within text.
Button	The name of a button to click or a key to press. **Example:** To close the window, either click **Close**, or press **Esc**.
Key+Key	Key combinations for which the user must press and hold down one key and then press another. Example: **Ctrl+P** or **Alt+F4**.
`Monospace`	Examples of code or standard output.
`Monospace Bold`	Text that you must enter.
variable	Used to indicate variables or text that should be replaced with an actual value.
menu option > menu option >	Used to indicate the cascading menu option to be selected. Example: **Operator Functions > Report Functions**
hypertext link	Used to indicate a hypertext link.

Specialized terms and acronyms are defined in the glossary at the end of this guide.

Chapter 1

PI Commands Overview

Overview

Introduction

The provisioning interface (PI) uses TCP/IP-based UNIX sockets to receive provisioning commands and parameters. These are translated into SQL commands that update prepaid application tables of the SMF and E2BE Oracle databases. This chapter defines the rules and packages required to translate the provisioning commands into SQL commands.

In this chapter

This chapter contains the following topics.

Command List

Command list

The following table lists the functions available and their corresponding commands. To use the commands they must have been installed with the `piXmsSms` package.

Function	piXmsSms
Add an adapter	XMSADP=ADD
Modify an adapter	XMSADP=CHG
Remove an adapter	XMSADP=DEL
Query an adapter	XMSADP=QRY
Add a path	XMSPTH=ADD
Modify a path	XMSPTH=CHG
Remove a path	XMSPTH=DEL
Query a path	XMSPTH=QRY
Add a connection	XMSCON=ADD
Modify a connection	XMSCON=CHG
Remove a connection	XMSCON=DEL
Query a connection	XMSCON=QRY

Parameter Formats

Formats

This table describes the format of each PI parameter.

Note: Lengths are largely determined by the size of fields in the database, with exceptions noted in the table.

Parameter	Format
SCHEME	50 character string
PROTOCOL	40 character string
NAME	50 character string
NEW_NAME	50 character string
ASP	50 character string

Chapter 2

piXmsSms Package

Overview

Introduction

This chapter describes the available PI commands for provisioning Messaging Manager entries on the SMS.

These commands are added by the `pixmsSms` package. For installation details, see the *PI Technical Guide*.

In this chapter

This chapter contains the following topics.

Add an Adapter

Description

Add an adapter to a routing scheme.

Command

XMSADP=ADD

Logic and restraints

The following rules apply when using the command:

- When a new adapter is created, its owning routing scheme will be automatically stored in MMX_PLUGIN.ROUTING_SCHEME_ID.
- It the optional adapter NAME parameter is not supplied, it defaults to the protocol name. The protocol number supplied with the command is used in a foreign key lookup of the value field in the MMX_CONSTANTS table for the protocol name.
- The adapter names must be unique within a routing scheme, but can be re-used in other routing schemes.

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme to add the adapter to
PROTOCOL	Adapter protocol

Required parameters

This table describes the optional parameters.

Parameter	Description
NAME	Adapter name, defaults to *protocol*.

Error codes

1, 2, 3, 4, 5, 6, 7, 9, 14

See *PI Command Errors* (on page 15) for a description of each error.

Change an Adapter

Description

Modify an existing adapter name within a routing scheme.

Command

XMSADP=CHG

Logic and restraints

The following rules apply when using the command:

- The adapter names must be unique within a routing scheme, but can be used in other routing schemes.

If the optional adapter NEW_NAME parameter is not supplied, it defaults to the protocol name. The protocol number supplied with the command is used in a foreign key lookup of the value field in the MMX_CONSTANTS table for the protocol name.

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme the adapter belongs to.
NAME	Name of the adapter to modify.

Optional parameters

This table describes the optional parameters.

Parameter	Description
NEW_NAME	New adapter name, defaults to the protocol name.

Error codes

1, 2, 3, 4, 5, 10, 12, 14

See *PI Command Errors* (on page 15) for a description of each error.

Delete an Adapter

Description

Delete an adapter from a routing scheme.

Command

XMSADP=DEL

Logic and constraints

None

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme to delete the adapter from.
NAME	Name of the adapter to delete.

Error codes

1, 2, 3, 4, 5, 10, 12

See *PI Command Errors* (on page 15) for a description of each error.

Query an Adapter

Description

Query an adapter.

Command

XMSADP=QRY

Logic and constraints

None

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme of the adapter to query.
NAME	Name of the adapter to query.

Error codes

1, 2, 3, 4, 5, 10, 12

See *PI Command Errors* (on page 15) for a description of each error.

Add a Path

Description

Add a new path to a routing scheme. It will also be associated with an ASP account.

Command

XMSPTH=ADD

Logic and constraints

The following rules apply when using the command:

- Paths can only be added to an ASP account if the adapter protocol is in the account's list of allowed protocols.
- The ENDPOINT_TYPE must be either SME or MC
- If the path name is not supplied, it defaults to *adapter_ name_ENDPOINT_TYPE*

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme to add the path to.
ADAPTER	Adapter name to add the path to.
ASP	ASP account (ACS Customer) name.

Optional parameters

This table describes the optional parameters.

Parameter	Description
NAME	Path name, defaults to *adapter_name*_SME

Error codes

1, 2, 3, 4, 5, 11, 16, 17, 18, 19, 24, 25, 32

See *PI Command Errors* (on page 15) for a description of each error.

Change a Path

Description

Change a path in a routing scheme.

Command

XMSPTH=CHG

Logic and constraints

The following rules apply when using the command:

- If the Path name is not supplied, it defaults to *adaptername_endpointtype*
- When a path is attached to an ASP account, all of the ASP's applications need to be set up so that messages delivered to them will use the right path.

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme the path belongs to.
NAME	Name of path to modify.

Optional parameters

This table describes the optional parameters.

Parameter	Description
NEW_NAME	New value to change path name to.

Error codes

1, 2, 3, 4, 5, 10, 12, 14

See *PI Command Errors* (on page 15) for a description of each error.

Delete a Path

Description

Delete a path from a routing scheme.

Command

XMSPTH=DEL

Logic and restraints

The following rules apply when using the command:

- When a path is deleted it must be removed from all the ASP account applications.

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme to delete the path from.
NAME	Name of path to delete.

Error codes

1, 2, 3, 4, 5, 10, 12

See *PI Command Errors* (on page 15) for a description of each error.

Query a Path

Description

Query a path in a routing scheme.

Command

XMSPTH=QRY

Logic and constraints

None

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme of the path to query.
NAME	Name of path to query.

Settings queried

This command queries the following settings of an existing path.

Field	Description
ADAPTER	Adapter name
TYPE	Endpoint type (SME or MC)

Field	Description
ASP	ASP account (ACS customer) name
MESSAGE_CENTRE	Message center name
DEFAULT_ROUTE	Default routing path name
STATS_CATEGORY	Statistics category
TRUSTED	Trusted path flag
RATE_LIMIT	Maximum allowed number of messages per second.

Error codes

1, 2, 3, 4, 5, 10, 12

See *PI Command Errors* (on page 15) for a description of each error.

Add a Connection

Description

Use this command to add a connection to a routing scheme. The SMPP and EMI connection protocols are supported.

Command

XMSCON=ADD

Logic and constraints

The following rules apply when using the command:

- If a connection name is not supplied, it defaults to the adapter name.
- A valid pair of either an mmx listen address and port, or remote listen address and port must be supplied.

Required parameters

This table describes the required parameters.

Field	Description
SCHEME	Routing scheme to add connection to.
PATH	Path name to attach connection to.
WEIGHT	The relative load for this connection on the path. This value is converted to a percentage of all the connection weightings on this path which in turn is used as the loading factor for the connection. **Allowed values:** 0 to 100.
PREOPEN	How to open the connection.
TX	Whether to allow this connection to transmit messages (remote point of view).
RX	Whether the remote endpoint of this connection can receive messages from MM.

Field	Description
AUGMENT_IDS	Should externally-visible message_ids be prefixed by SMSC names.
MAX_CONNECTIONS	Allow the same ASP to connect this number of times on the same port using the same login.

Optional parameters

This table describes the optional parameters.

Parameter	Description
MMX_USERNAME	Authorized user name for Messaging Manager access from ASP.
MMX_PASSWORD	Required password for the local username.
REMOTE_USERNAME	Authorized user name for Messaging Manager to access SMSC.
REMOTE_PASSWORD	Required password for the remote username.
CORRELATION_ID	The Correlation ID of the SMPP SMSC connection.
REMOTE_SOURCE_ADDRESS	Only these sources are allowed to connect to Messaging Manager.
REMOTE_LISTEN_ADDRESS	IP address/ host name of the remote listener for connections from Messaging Manager.
REMOTE_LISTEN_PORT	Port number of the remote listener.
MMX_LISTEN_ADDRESS	IP address/ host name of the local listener defined in **eserv.config**.
MMX_LISTEN_PORT	Port number of the local listener.
MMX_SOURCE_ADDRESS	Used when Messaging Manager connects to a remote listener.
MMX_SOURCE_PORT	Port number of the local source.
ENABLED	Whether this connection can be used.
NAME	Connection name.
TYPE	Protocol spoken by this MSC. Applicable to connections on MC paths only.
WINDOW_SIZE	Determines the number of messages that Messaging Manager can receive from the ASP before waiting for a response. **Allowed values:** 0-100
MAX_WINDOW_QUEUE_LENGTH	When the Window size is exceeded, the messages are queued up and this parameter determines the length of the queue.
LOGIN_OTON	Originator Type Of Number.
LOGIN_ONPI	Originator Numbering Plan ID.
ALERT_POLL_TIME	How long to wait before polling for alerts.
ALERT_PID	Alert Protocol Identifier.
SESSION_TIMEOUT	Timeout (in seconds) for the EMI connection to the ASP.
PROVIDE_VMSC_IN_HPLMN	If true Messaging Manager will populate the VMSC address in the HPLMN field if available.

Parameter	Description
RESPONSE_TIMEOUT	The time in seconds that the adapter listener will wait for a response from the ASP to any EMI message it sends.
RESPONSE_POLL_TIME	The length of time (in seconds) between polls.
ALLOW_USER_TIMEZONES	If set to true, the EMI adapter converts timezones of all outgoing times using the user timezone from a genericSM.
SMPP_VERSION	The version of SMPP that will be used by default.
SYSTEM_ID	ID of Messaging Manager application. Used on SMPP messages.
MAX_CONCURRENT_TRANSACTIONS	Number of concurrent transactions allowed per second.
OUTGOING_TIMEOUT	Timeout on outgoing side.
IDLE_TIMEOUT	How long a connection may be idle for.
HEARTBEAT_INTERVAL	Specifies the length of time to wait after receiving a message from the peer until an enquire_link message is sent.
ESG_EXTENSIONS	Whether to transmit non-standard esg data on this connection. That is, is the path used to communicate with SEI instead of an SMPP ASP.

Error codes

1, 2, 3, 4, 5, 6, 11, 13, 14, 20, 22, 23, 27, 28, 29

See *PI Command Errors* (on page 15) for a description of each error.

Change a Connection

Description

Change a connection name in a routing scheme.

Command

XMSCON=CHG

Logic and restraints

The following rule applies when using the command:

- If a new connection name is not supplied, it defaults to the adapter name.

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme with connection to modify.
PATH	Path of connection to modify.

Parameter	Description
NAME	Name of connection to modify.

Optional parameters

This table describes the optional parameters.

Parameter	Description
NEW_NAME	New value to change connection name to.

Error codes

1, 2, 3, 4, 5, 6, 9, 12, 14, 20, 22, 26

See *PI Command Errors* (on page 15) for a description of each error.

Delete a Connection

Description

Delete a connection from a routing scheme.

Command

XMSCON=DEL

Logic and constraints

None

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme with connection to remove.
NAME	Name of connection to remove.
PATH	Path of connection to remove.

Error codes

1, 2, 3, 4, 5, 6, 12, 20, 22, 26

See *PI Command Errors* (on page 15) for a description of each error.

Query a Connection

Description

Query the connection parameters in a routing scheme.

Command

XMSCON=QRY

Logic and constraints

None

Required parameters

This table describes the required parameters.

Parameter	Description
SCHEME	Routing scheme with connection to query.
NAME	Name of connection to query.
PATH	Path of connection to query.

Path name and fields queried

This command queries the following path name and fields.

Field	Description
PATH	Path name
WEIGHT	The relative load for this connection on the path.
MMX_USERNAME	Authorized user name for Messaging Manager access from ASP.
MMX_PASSWORD	Required password for the local username.
MMX_LISTEN_ADDRESS	IP address/ host name of the local listener defined in **eserv.config**.
MMX_LISTEN_PORT	Port number of the local listener.
MMX_SOURCE_ADDRESS	Used when Messaging Manager connects to a remote listener.
MMX_SOURCE_PORT	Port number of the local source.
REMOTE_USERNAME	Authorized user name for Messaging Manager to access SMSC.
REMOTE_PASSWORD	Required password for the remote username.
REMOTE_LISTEN_ADDRESS	IP address/ host name of the remote listener for connections from Messaging Manager.
REMOTE_LISTEN_PORT	Port number of the remote listener.
REMOTE_SOURCE_ADDRESS	Used when Messaging Manager connects to a remote listener.
PREOPEN	How to open the connection.
TX	Whether to allow this connection to transmit messages (remote point of view).
RX	Whether the remote endpoint of this connection can receive messages from MM.
MAX_CONNECTIONS	Allow the same ASP to connect this number of times on the same port using the same login.
CORRELATION_ID	The Correlation ID of the SMPP SMSC connection.
AUGMENT_IDS	Should externally-visible message_ids be prefixed by SMSC names.

Error codes

1, 2, 3, 4, 5, 6, 12, 20, 22, 26

See *PI Command Errors* (on page 15) for a description of each error.

Chapter 3

Error Code Lists

Overview

Introduction

This chapter explains the error codes for Oracle Communications Convergent Charging Controller provisioning interface (PI) commands.

In this chapter

This chapter contains the following topics.

PI Command Errors

Error list

This table describes the PI Command error codes.

Error Code	Error Message
1	Invalid action
2	No parameters
3	SQL error
4	SCHEME not found
5	SCHEME not specified
6	PROTOCOL not found
7	PROTOCOL not specified
9	NAME in use
10	NAME not specified
11	NAME too large
12	NAME not found
13	NAME in use
14	NEW_NAME too large
16	ADAPTER not specified
17	ADAPTER not found
18	ENDPOINT_TYPE not specified
19	TRUSTED not specified
20	PATH not specified
22	PATH not found
23	Valid MMX or REMOTE LISTEN_ADDRESS & PORT must be specified

Error Code	Error Message
24	ASP not specified
25	ASP not found
26	Connection not found
27	CORRELATION_ID param too large
28	PASSWORD too large
29	USERNAME too large
32	ENDPOINT_TYPE invalid MC/SME