

# Oracle® Communications Convergent Charging Controller MM Provisioning Interface Commands



Release 15.1

April 2025

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

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

# 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.

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## 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 |

# 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.

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| Query an Adapter .....    | 5  |
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| Delete a Path.....        | 7  |
| Query a Path .....        | 8  |
| Add a Connection .....    | 9  |
| Change a Connection.....  | 11 |
| Delete a Connection ..... | 12 |
| Query a Connection.....   | 12 |

## 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`.
- If 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 <i>protocol</i> . |

## 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 <i>adapter_name_SME</i> |

## 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.<br><b>Allowed values:</b> 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 <b>eserv.config</b> .                                                                     |
| 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.<br><b>Allowed values:</b> 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 <b>eserv.config</b> .              |
| 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.

# Error Code Lists

## Overview

### Introduction

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

### In this chapter

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This chapter contains the following topics.

PI Command Errors..... 15

## 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   |